

MEETING: REGULAR MEETING OF THE PLAN COMMISSION
DATE & TIME: Monday, June 9, 2025 at 6:30 PM
LOCATION: Germantown Village Hall Board Room
N112 W17001 Mequon Road

Any member of the body and/or citizen also attend the meeting virtually through the WebEx platform, Meeting #: **2553 216 2843** Password: **qRNIKJrY345** which can be accessed by phone at **408-418-9388** or by logging on at <https://villageofgermantown.my.webex.com/villageofgermantown.my/j.php?MTID=m3e60c9657945a5ad89155bdbfd3c356f>

Citizens not wishing to attend the meeting personally or virtually may submit any public comments by sending an email to comments@germantownwi.gov by 4 p.m. on the day of the meeting so that it can be provided to the members of the body for their consideration.

Previously recorded Village Board Meeting Videos can be viewed at https://www.youtube.com/channel/UCOYp0EgELzTCa9X_iCohyQ.

AGENDA

- I. **CALL TO ORDER:** *This meeting has been given public notice in accordance with Section 19.83 and 19.84, Wis. Stats, in such form that will apprise the general public and news media of subject matter that is intended for consideration and action.*
- II. **ROLL CALL:**
- III. **APPROVAL OF MINUTES:**
 - A. PC Minutes 5/12/25
- IV. **CITIZEN INPUT/PUBLIC APPEARANCE:** *(Please be advised per 19.84(2) that information and comment will be received from the public. It is the policy of this municipality that public input be limited to a four (4) minute period per person with a time extension granted at the discretion of the Chairperson. Be advised that there may be limited discussion of the information received but no action will be taken under public comments.) Comments that may be injurious to village personnel or other individuals will not be allowed.*
- V. **UNFINISHED BUSINESS:**
 - A. Parish Survey & Engineering, Agent for Matt Seban and TLC Acres, Property Owner W210N10738 Appleton Avenue. Site Plan Review for a 5,200 sqft building and a Conditional Use Permit (CUP) Application to allow grading & filling within a 25' wetland and 75' navigable waterway setback. (ACTION; Continued from April 28)
- VI. **NEW BUSINESS:**
 - A. Ken Frank, Agent for Home Path Financial, LP, and Mohrhussen Family Farm, LLC, Property Owner. Rezoning application to create the "Sutton Farm" Planned Development District (PDD) and Rezone 88.3 acres from the A-1: Agricultural District into the Sutton Farm PDD; and a Preliminary Subdivision Plat for an 88.3-acre residential neighborhood comprised of 171 single-family units and 102 multi-family units located at the northeast corner of Lannon Road (CTH Y) @ County Line Road (CTH Q) in the Lannon Gateway Neighborhood. (PUBLIC HEARING & ACTION)
 - B. Village of Germantown Community Development Department - Proposed Text Amendments to Section 17 (Zoning) of the Village of Germantown Municipal Code. (PUBLIC HEARING AND ACTION)

- C. Elevated Identity, Inc., Agent for Exeter Holy Hill, LP, Property Owner. Sign Review Application for Generac located at W210 N12800 Holy Hill Road in the Holy Hill Gateway District. (ACTION)

VII. ANNOUNCEMENTS:

VIII. ADJOURNMENT:

UPON REASONABLE NOTICE, efforts will be made to accommodate the needs of disabled individuals through appropriate aids and services. For additional information or to request this service, please contact the Village Clerk at (262)250-4745 at least 2 days prior to the meeting.

Notice is hereby given that a possible quorum of other boards, committees, and/or commissions may attend this meeting to gather information about an item over which they have decision-making responsibility. This may constitute a meeting of these bodies per State ex rel. Badke v Greendale Village Board, even though these bodies will not take formal action at this meeting.

MEETING:	REGULAR MEETING OF THE PLAN COMMISSION
DATE AND TIME:	Monday, May 12, 2025 6:30 PM
LOCATION:	Germantown Village Hall Board Room N112 W17001 Mequon Road

MINUTES

- I. **CALL TO ORDER:** *This meeting has been given public notice in accordance with Section 19.83 and 19.84, Wis. Stats, in such form that will apprise the general public and news media of subject matter that is intended for consideration and action.*
Chairman Soderberg called the meeting to order at 6:34pm.
- II. **ROLL CALL:**
Chairman Soderberg and Committee Members Warren, Williams, Shadid and Henk were all present. Also present were Associate Planner Yanke and Administrative Coordinator Remich (via Webex). Community Development Director Retzlaff and Committee Members Tarantino and Ewert were absent excused.
- III. **APPROVAL OF MINUTES:**
 - A. PC Minutes 4/28/25
Motion: Approve as presented
Motioned By: Robert Warren
Seconded By: William Shadid
Yes: Bob Soderberg, Robert Warren, William Shadid, Robert Williams, Bridget Henk
No: None
Abstain: None
Motion Passed (Yes 5, No 0, Abstained 0)
- IV. **CITIZEN INPUT/PUBLIC APPEARANCE:** *(Please be advised per 19.84(2) that information and comment will be received from the public. It is the policy of this municipality that public input be limited to a three (3) minute period per person with a time extension granted at the discretion of the Chairperson. Be advised that there may be limited discussion of the information received but no action will be taken under public comments.) Comments that may be injurious to village personnel or other individuals will not be allowed.*
Citizens that spoke included:
Lynn Bednarz who lives on Pawnee Court.
Melanie Smythe who lives on Cedar Lane.
Scott Hefle who lives on Old Farm Road.
Sarah Larson who lives on Butternut Road.
David Baum who lives on Highland Road.
- V. **UNFINISHED BUSINESS:**

A. Discussion of a Potential Policy on the Amount of Multi-Family Housing Development in the Village of Germantown (DISCUSSION - CONTINUED FROM APRIL 28)

Chairman Soderberg stated that this topic was discussed at the last Village Board meeting and tonight is just a continuation of that discussion. The next steps: This will go back to the Village Board for further discussion and then return to this Commission one more time before returning to the Village Board for a final decision. Associate Planner Yanke went over bullet points of information that were discussed at the Village Board meeting and stated that there hasn't been time for more research since last Monday's Village Board meeting.

Discussion followed. Including staff suggested tasks:

1. Develop an image inventory of housing product types to associate with definitions
2. Develop a housing type equivalency table based on common terminology used by developers to aid in classifying different housing types i.e. row houses, attached villas, townhouses, duplexes, zero-lot line units, garden-style apartments, walk-ups, etc.
3. Gather or prepare a reasonably accurate "cost of community services" comparison for different types of residential housing to answer:

a. Which type of housing is more impactful on schools, police, fire, emergency medical, sewer & water utilities, transportation systems?

b. Which type of housing generates more relative value and property tax base?

These were felt to be the most vital, along with the need to consider the results of the School District Facilities & Student Population Projection Reports, which are expected at any time.

Chairman Soderberg stated that he would like the answers to the questions of: age demographics, school enrollment and whether it's going down or up and if we weren't an aging community - would those numbers go up, whether we need to do a survey for cursory fact-finding in order to determine exactly what Germantown needs. He also stated that the Village will need a public safety building in the near future and, in order to lessen that tax burden for residents, we would need additional growth and development. If we have no growth, the only way to pay for Village needs in the future would be to increase taxes. And if the School District reports come back stating that they are at capacity, then we will need to have a serious discussion on options with the school board. The school district can't be a pothole in the road to growth. And would their needs then trigger a school referendum?

VI. NEW BUSINESS:

- A. Adam Altis and James Gehrke, Agents for Blades Indoor Golf, LLC, and Ozaukee Development Corporation, Property Owner. Conditional Use Permit (CUP) for a 9,600 sqft Indoor Golf Entertainment/Recreation Establishment located at W188 N11770 Maple Road in the Germantown Industrial Park. (PUBLIC HEARING & ACTION)

Associate Planner Yanke went over the proposal, which is within an existing building and zoned M-1. The facility is composed of 8 golf simulator bays, 1 putting green, office space, restrooms and front desk, as well as a beverage cart to give the feel of being on an actual golf course.

Chairman Soderberg opened the public hearing at 7:28pm.

No residents came forward to speak.

Chairman Soderberg closed the public hearing at 7:29pm.

Staff recommends approval of the Conditional Use Permit for a 9,600 square foot (Suites 2, 3, and 4) indoor golf entertainment/recreation establishment located at W188 N11770 Maple Road, subject to the following conditions:

1. The uses and activities allowed on the property shall be limited to those uses and activities specified in the Conditional Use Permit (CUP) application and supporting documents received April 14, 2025, and floor plan dated May 5, 2025. Days and hours of operation shall be limited to those specified in the CUP supporting documents submitted to the Village.
2. The owner/operator is responsible for reporting any significant changes in the type, intensity, amount, or location of the land uses and activities, days and hours of operation, size or location or other operational characteristics of said uses and activities authorized under this CUP to the Village Zoning Administrator.
3. If the use, activities and/or operation subject of this permit falls out of conformity with the conditions herein, or, where there is a change in the nature, character, intensity or extent of the activities or uses which causes problems or harmful effects that were not anticipated at the time of approval of this CUP, the Conditional Use Permit (CUP) may be modified or terminated by the Village Board by the amendment to or addition of conditions after public hearing thereon.
4. All temporary and permanent exterior signs require a permit and shall comply with all current sign regulations. Off-premises advertising and directional signage is regulated by the Village and requires a permit if/when allowed.
5. All future site improvements, including all building, parking area, landscaping, storm water management facilities, signage, exterior lighting, and any other improvements made to or on the property that are necessary for the land uses and activities authorized under this CUP shall be submitted for review and approval by the Village through the Zoning Permit or Site Plan application process as determined by the Village Zoning Administrator. If required, Site Plan review and approval will include Plan Commission review and approval.
6. State agency (DSPS) approved plans and a \$20,000 occupancy bond are required by Inspection Services. The Village of Germantown is an authorized delegated agent of DSPS and may be used as an alternative to provide all commercial plan review and inspection services through SAFEBuilt of WI and the Village of Germantown.
7. The owner/operator shall be responsible for obtaining any/all liquor license(s) required under State statutes and/or Village ordinances, and, complying with same for the facility. The owner/operator is responsible for contacting the Village Clerk's Office to initiate a license application separate from the Conditional Use Permit approval process.

8. The owner/operator shall be responsible for obtaining any/all permits required under County or State statutes for the proposed sale of food.
9. Pursuant to Section 17.47 of the Zoning Code, if the Village observes and/or receives complaints regarding negative impacts associated with and/or created by business-related activities conducted on the property, including but not limited to noise, dust or other airborne materials, the Property Owner/Operator shall work with the Village to identify the source of such impact(s), evaluate alternative mitigation measures, and implement a mutually-agreeable solution to mitigating the impact(s).

Motion 1: Approve as presented

Motioned By: Robert Warren

Seconded By: William Shadid

Motion 2: Amend to add a non-transferrable condition to the CUP.

Motioned By: Robert Williams

Seconded By: William Shadid

Yes: Bob Soderberg, Robert Warren, William Shadid, Robert Williams, Bridget Henk

No: None

Abstain: None

Motion Passed (Yes 5, No 0, Abstained 0)

Results of Motion 1:

Yes: Bob Soderberg, Robert Warren, William Shadid, Robert Williams, Bridget Henk

No: None

Abstain: None

Motion Passed (Yes 5, No 0, Abstained 0)

- B. Design 2 Construct Development Corp. Agent for JDV Real Estate Holdings/Enviro-Safe, Property Owner W130 N10500 Washington Drive. Site Plan for a 6,068 sqft building and 18-stall parking lot expansion. (ACTION)

Associate Planner Yanke gave a brief description of the proposed expansion and some background of the business.

Staff recommends the approval of the site development and building plans expansion for a 6,068 sqft warehouse and laboratory expansion to the existing Enviro-Safe Resource Recovery facility located at W130 N10500 Washington Drive in the Germantown Business Park subject to the following conditions:

1. This approval is for the various plan sheets that comprise the site development plan set as noted below and is subject to compliance with all the conditions and requirements set forth herein and subsequently adopted and/or revised by the Plan Commission. Approval is granted for the following unless superseded by subsequent plan sheets approved by Village Staff pursuant to revisions required herein and/or by the Plan Commission: a. Civil engineering plan set dated April 17, 2025, b. Architectural plan set dated March 7, 2025, c. Lighting plan dated May 7, 2025.

If revised plan sheets are necessary, each revised sheet shall contain the date of said revision clearly stamped in the lower right corner.

2. A revised landscaping plan shall be prepared and submitted for review and approval by the Village Forester to address the following requirements: a. interior parking lot landscaping shall include one 3" caliper deciduous tree for every ten parking spaces, b. perimeter plantings are required around the parking lot for screening from adjacent properties. This plan does not include perimeter plantings along the south parking lot expansion boundary to buffer from the adjacent roadway.
3. All issues and plan revisions identified in the May 7, 2025, memo from the Village Engineer shall be addressed and reflected in revised plans and/or supplemental information reviewed and approved by Village staff prior to issuance of a building permit (excluding "early start" site clearing and footing/foundation work approved by the Village and/or WI DSPS).
4. All landscaping, screening, grading, paving, storm water management, utility and other improvements that are not fire-safety related as shown on the approved site plans shall be installed as proposed prior to issuance of an occupancy permit unless a cash bond or letter of credit in an amount equal to 120 percent of the estimated installation and material costs reviewed and approved by the Village is submitted to the Village as necessary to ensure that installation of the proposed features and improvements will be completed within one (1) year after issuance of the occupancy permit.
5. All exterior doors (except primary entrance) shall be clearly marked with reflective 5" or larger letters/numbers to aid emergency personnel access as required by the Police Department.
6. State agency (DSPS) approved plans and a \$20,000 occupancy bond are required by Inspection Services. The Village of Germantown is an authorized delegated agent of DSPS and may be used as an alternative to provide all commercial plan review and inspection services through SAFEBuilt of WI and the Village of Germantown.
7. Enviro-Safe shall re-evaluate and update the Closure Plan required under in Conditional Use Permit #06-15 given the larger amount of storage capability for both hazardous and non-hazardous material and adjust the financial surety amount accordingly. Results of said re-evaluation shall be submitted to the Village Planner for review and approval within six (6) months after the date the occupancy permit is used for the proposed building expansion.
8. Enviro-Safe shall re-evaluate and update the Spill Prevention, Control and Countermeasure Plan (SPCC) required under Condition #1 in Conditional Use Permit #06-15 given the larger amount of storage capability for both hazardous and non-hazardous material. Results of said re-evaluation and updated SPCC shall be submitted to the Village Fire Chief for review and approval within six (6) months after the date the occupancy permit is used for the proposed building expansion.

Discussion Followed.

Motion 1: Approve as presented

Motioned By: Bridget Henk

Seconded By: Robert Williams

Motion 2: Amend to add Condition 9 to add the Village as an insured party on their Pollution Liability Insurance Policy. Proof of compliance with this condition shall be submitted to and accepted by the Village.

Motioned By: Robert Williams

Seconded By: William Shadid

Yes: Bob Soderberg, Robert Warren, William Shadid, Robert Williams, Bridget Henk

No: None

Abstain: None

Motion Passed (Yes 5, No 0, Abstained 0)

Results of Motion 1:

Yes: Bob Soderberg, Robert Warren, William Shadid, Robert Williams, Bridget Henk

No: None

Abstain: None

Motion Passed (Yes 5, No 0, Abstained 0)

C. Robert Overmier, Property Owner. Certified Survey Map (CSM) application to combine two (2) existing parcels into one (1) parcel totaling 53.8 acres. Property located at N144 W12531 Pioneer Road in the "Rural Preservation District". (ACTION)

Associate Planner Yanke went over the proposal.

Staff recommends approval of the proposed 1-lot Certified Survey Map (CSM) for the Robert Overmier property located at N144 W12531 Pioneer Road, subject to the following conditions:

1. All technical issues and corrections identified by the Village Surveyor (see April 10, 2025, memo from Bob Beilfuss, PLC) shall be addressed and reflected in a revised CSM reviewed and approved by Village staff prior to recording.
2. Prior to recording, a note requiring a wetland delineation and soil evaluations if/when Lot 1 is proposed for development shall be included on the CSM.
3. Prior to recording, the right-of-way (ROW) dedication note on the CSM shall be revised to reflect the accurate jurisdictions that ROW will be dedicated to along Pioneer Road and Wasaukee Road.
4. Prior to recording, setbacks/building lines required by the Village Zoning Code shall be shown on the CSM.

Motion: Approve as presented

Motioned By: Robert Warren

Seconded By: William Shadid

Yes: Bob Soderberg, Robert Warren, William Shadid, Robert Williams, Bridget Henk

No: None

Abstain: None

Motion Passed (Yes 5, No 0, Abstained 0)

VII. ANNOUNCEMENTS:

None.

VIII. ADJOURNMENT:

Chairman Soderberg adjourned the meeting at 7:46pm.

SITE PLAN & CONDITIONAL USE PERMIT (CUP) APPLICATIONS

6/9/25 Plan Commission Meeting

TLC Acres LLC / Matthew Seban

Village Planner Report

Germantown, Wisconsin

Summary

Evan Nicodem, Parish Survey & Engineering, Agent for Matt Seban and TLC Acres LLC property owners, is requesting Site Plan approval for a 5,200 sqft accessory building addition and a Conditional Use Permit (CUP) to allow an encroachment into a 25' wetland and 75' navigable waterway setback on the 53.4-acre TLC Acres property located at W210 N10738 Appleton Avenue.

Location: W210 N10738 Appleton Avenue

Applicant/

Property Owner: Evan Nicodem
Parish Engineering
West Bend, WI

Matthew Seban
W210 N10738 Appleton Avenue
Germantown, WI

Zoning: A-2: Agricultural

Adjacent Land Uses		Zoning
North	Agricultural	A-1/A-2
South	Residential	Rs-2/Rs-3/Rs-4/Rs-5
East	Agricultural	A-1
West	Residential/Business	Rs-2/Rs-3/Rs-4/B-3



Update

Since the April 28 Plan Commission meeting at which the public hearing of the CUP application was opened and closed, Village Staff met with the Owner and Engineer to discuss further revisions to the Site Plan. As a result, a revised Site Plan set (dated June 5, 2025) has been submitted that addresses the following:

1. removes proposed filling east of the proposed storm basin above the pre-existing elevations;
2. relocates the proposed building to the required minimum setback from the north/west property line;
3. adds a defined drainage path through the site for the existing 42" culverts; and
4. adds an additional drainage ditch around the south side of the proposed storm basin to guide run-off from the Appleton Ave/STH175 right-of-way

According to the Engineer, the amount of disturbance within the 25' wetland and 75' navigable waterway setback areas will not change.

NOTE: The balance of this report is repeated from the April 28 Staff Report and Recommendation except where highlighted to show items that were changed or deleted or added.

Background

Matt & Amy Seban, MSTLC LLC, agents for TLC Acres LLC and property owners, obtained a Conditional Use Permit (CUP #08-2019) in 2019 to operate a landscape maintenance and construction services business and sell retail products not raised on the 53.4-acre tree nursery property located at W210 N10738 Appleton Avenue. The property is located in an A-2: Agricultural Zoning District.

Fundamental to the nursery operation is the concept of growing plants, e.g. evergreen and deciduous trees and shrubs, on elevated "plateaus" or "tiers". After acquiring the property in 2019 Seban began trucking in fill material (and continue to do so) to create two (2) tiers in the area abutting Appleton Avenue south of an existing drainage ditch and existing maintenance building. Tier 1 (approximately 1.75 acres in area) was completed and a portion planted with trees in 2018. Tier 2 (approximately 4.85 acres in area) is currently under construction.

In addition to the tree nursery, Seban leases approximately 3 acres of land to MSTLC LLC, a.k.a. "Total Lawn Care", a landscaping maintenance and construction services business also owned and operated by Seban. The area leased to MSTLC is used for parking and storage of business and employee vehicles, equipment and materials used in the landscape maintenance and construction services operation. This mutually beneficial lease arrangement also involves the use of MSTLC vehicles and equipment for the tree nursery and other farming-related activities on the 53.4-acre TLC Acres property. (Note: the original application and staff report are included in the packet for additional background information).

Proposal

At this time, Evan Nicodem, agent for Matt Seban and TLC Acres LLC, is requesting

Site Plan approval for a 5,200 sqft accessory building and a Conditional Use Permit (CUP) to allow encroachment into a 25' wetland and 75' navigable waterway setback on the 53.4-acre TLC Acres property as detailed below.

Site Plan Application

Seban is requesting approval of site development and building plans for a 50' x 104' (5,200 sqft) accessory building addition and associated site improvements with the following characteristics:

Site Improvements

- Reconstruct and asphalt pave approximately 11,000 sqft of existing gravel driveway internal to the site adjacent to the new building
- Construct an on-site storm water management basin and swales south of the existing navigable waterway to control the treatment and discharge of run-off from the developed portions of the property (designed to accommodate an additional future 10,000 sqft of building area and 30,000 sqft of asphalt pavement)

Building Improvements

- 5,200 sqft single-story building addition (existing 40' x 60' 2,400 sqft building)
- metal pole building w/ metal exterior wall and roof panels @ 16' wall height & 25' peak height
- equipment and material storage

No additional landscaping, lighting or signage is proposed.

Conditional Use Permit (CUP) Application

A Conditional Use Permit (CUP) application has been submitted for a proposed encroachment into the Village's 25' wetland and 75' navigable waterway setback along the south side of the drainage ditch that runs through the property. Ongoing site disturbance activities associated with the tree nursery operation, including topsoil excavation & screening along with future disturbance associated with constructing the storm water basin and swale south of the drainage ditch.

As shown and discussed in the Wetland and Navigable Waterway Setback Compensation Plan (dated January 30, 2025), collectively, these activities will result in approximately 57,650 sqft (1.32 acres) of 25' wetland & 75' waterway setback disturbance.

Under the Village's Shoreland-Wetland Code, development may be permitted within both a 25' wetland and a 75' waterway setback provided that additional buffering for these features and/or other compensation is provided somewhere else on the property. The ratio of compensation required is based on a 1:1 ratio for "horizontal" development (defined as grading or filling with < 3' of elevation change) or a 2:1 ratio for "vertical" development (defined as any structural improvements, grading or filling with a >3' of elevation change). As detailed in the Compensation Plan, all the 57,650 sqft of

disturbance qualifies as being “horizontal” development that requires a minimum compensation ratio of 1:1.

As shown on Exhibits CUP-1 & CUP-2, Seban proposes to restore a 21,895 sqft area within which past farming activities have occurred (highlighted GREEN on CUP-2) and a 41,335 sqft area adjacent to and south of the waterway (highlighted BLUE on CUP-2) will be planted with a vegetated buffer. A total of 63,230 sqft (1.45 acres) of area will eventually be converted into a permanent vegetated buffer along and adjacent to the south side of the waterway a mitigation ratio greater than the minimum required (1: 1.10 is proposed). Compensation will be in the form of installing/seeding with native grass seed mix and plant forbs to create a permanent vegetated buffer.

Staff Comments

Consistency with Village’s 2050 Plan & A-2 Zoning District.

Under the Village’s 2050 Plan this property is located within the “Willow Creek/Weidenbach Neighborhood”. The current zoning of the property is A-2: Agricultural. As discussed above, many of the activities conducted on or from the property are permitted “by right” land uses and not subject the Village’s CUP requirements. Agricultural activities such as these are “desirable” land uses consistent with the 2050 Plan.

As discussed in 2019 when the TLC Acres operations were originally approved, full-service landscaping operations such as the Seban’s MSTLC/Total Lawn Care business are typically located in agricultural zoning districts. Particularly those that involve growing their own trees and other plant material, as well as those that provide landscaping maintenance and hardscaping services that include the storage and screening of topsoil, the hauling, cutting, grinding and mulching of cut trees and other plant debris. While not the same as more traditional agricultural operations as dairy farming or crop raising, landscaping services businesses are one of many specialized land uses that is typical and customary for agriculturally zoned districts.

With that said, the circumstances unique to this property and Seban’s business operations are: (1) the previous owner of the 53.4-acre property also operated a tree nursery but to a much lesser degree. It did not include a full-service landscaping business with the maintenance, hardscape construction or snow management services like the MSTLC/Total Lawn Care operation; and (2) the property is relatively close to pre-existing residential neighborhoods that “were there first” before Seban acquired the property and started the MSTLC/Total Lawn Care business. This is slightly different than what has been experienced with other similar operations such as the D.J. Frank Contracting or the Wendland Landscape and Nursery operations that were already in business at their respective locations well before those areas were developed with nearby residential development.

For these reasons, Staff supports the proposed accessory building and pavement construction because these improvements will further lessen potential impacts on the nearby residential neighborhood and adjacent properties, e.g. visual buffer with covered

storage, protection against tracking mud on roads, etc.

With that said, the proposed location of the building addition does not meet the minimum required 50' property line setback from the side (north) property line. While the existing 40' x 60' building appears to be located at/on the 50' setback, the addition does not and will have to be moved slightly to meet the setback requirement (as will the existing hoop structure and relocated shipping container east of the proposed building addition will have to be moved to meet the same 50' minimum setback.

Also, the proposed 5,200 sqft storage building addition is not listed as an improvement or asset contemplated or included in the original CUP application nor reflected in CUP #08-2019 (either as part of the TLC Acres nursery operation or the MSTLC landscaping services operation that leases land from TLC Acres. Therefore, CUP #08-2019 should be revised to include a revised site layout showing the proposed building addition and site improvements subject of the current Site Plan application and the revised site layout submitted on January 21, 2022.

Figure 1- Revised (1-21-2022) Site Layout-submitted for CUP #08-2019



The building and site improvements, including the proposed storm basin, were initially discussed with Village staff in 2024. At that time, a “stop work order” was issued against certain grading and filling activities that were underway on the property, i.e. topsoil excavation and screening, given close proximity of that activity to the existing drainage ditch that runs through the property and wetlands associated with it. Until that time, this

ditch was assumed to be an unregulated, man-made ditch.

However, in the fall of 2024, the DNR declared the ditch to be a navigable and, therefore, a regulated waterway. Consequently, the topsoiling activity was stopped pending the approval of Village and DNR permits and approvals for land disturbing activity within the Village's 25' wetland and 75' navigable waterway setbacks and within the DNR's jurisdictional area outward from navigable waterways (the Chapter 30 waterway protection permitting process regulates activities such as constructing ponds within 500' of a waterway, grading along the banks of a waterway, etc). In addition to the CUP application, Seban will also have to obtain whatever additional permits or approvals are required by the DNR for the proposed storm basin construction and any other land disturbing activities that may fall within DNR jurisdiction on this property.

It is important to point out that the ongoing filling and grading activities associated with construction of the tree nursery "tiers" and the topsoil excavation & screening activities were included in the original plan of operation details submitted in support of the original CUP that was eventually issued in 2019 (CUP #08-2019). While not a traditional farming activity that is exempt from certain zoning restrictions and regulation under Wisconsin's "right to farm" statutes, the tree nursery "tier" filling and grading and topsoil excavation activities are temporary land disturbing activities that are subject to the Village's erosion control permitting regulations. Seban has an existing erosion control permit from the Village and, as a result of this proposal, will need to revise that erosion control permit accordingly to reflect these proposed site improvements and land disturbing activities on the property.

Finally, the Village's flood hazard rate maps (FIRMs) that establish the 100-year floodplain boundary used by the federal government (FEMA) for determining eligibility in the National Flood Insurance Program (NFIP) and by state and local municipalities for various regulatory purposes, are in the process of being revised. Sometime in 2025, the new FIRM's will become effective, and the Village will be required to update our Floodplain Zoning Code to include the new maps. As a result of adopting the new maps, additional land area, including some developed properties with buildings and other undeveloped properties, will be subject to new and more restrictive floodplain zoning regulations. Land uses and activities, such as filling and building construction, may be impacted by these new regulations and, in some cases, may no longer even be allowed, after the new FIRM maps are adopted.

It appears that this is/will be the case with respect to the TLC Acres property. As shown in figure 1 below, the "new" 100-year floodplain boundary presented on the new FIRM map (at an elevation approximately 850') for this area shows in a wide swath of the TLC Acres property being located within the 100-year floodplain boundary (see BLUE solid line with hatching). Under the current FIRM map (Figure 2), the floodplain boundary effectively stops at Hilltop Drive and does not extend onto the TLC Acres

property.

Figure 3- CURRENT FIRM 100-Year Floodplain



As presented in the proposed revised Site Plan, in addition to the proposed grading and drainage swales leading to and around the proposed storm basin, Seban intends to continue filling the Tier 2 growing area as well as additional land east of Tier 2 all the way over to Hilltop Drive south of the navigable waterway (these areas are shown on Site Plan Sheet C1.04 as "Ongoing Fill Area"). As topsoil is excavated from these areas, it will be replaced with clean dirt fill and the areas raised anywhere from 1 to 7 feet to an of elevation up to 853' and above the floodplain.

Although Seban has agreed to withdraw the plan to fill the area east of the storm basin to the 853' elevation above the future floodplain elevation, he intends to continue excavating peat & topsoil from this area and replace it with clean fill to restore the original elevations shown on the revised Site Plan so the area can, once again, drain to the north toward the waterway. This area is shown on the revised Site Plan as "ongoing grading area". The Engineer estimates that this filling and re-grading will be completed by the end of the current 2025 growing season (typically sometime in October).

Although the "ongoing grading fill areas" on the east side of the property can be filled today because these areas are not located in the currently adopted 100-year floodplain, it's a relative certainty that the new FIRM's are going to become effective in 2025 and adopted by the Village as part of the Floodplain Zoning Code in 2025. Therefore, unless the areas are filled and restored as presented in the proposed Site Plan before the new FIRM's become effective, the area NOT completely filled and restored before the FIRM map effective date will become regulated under the Village's Floodplain Zoning Code and possibly not permitted.

More importantly, this filling process now has a "date certain" end date in October, 2025. Because of local resident concerns with the unknown amount and duration of the previously proposed filling activities, Staff recommends including conditions of approval that prohibit filling beyond the intended October, 2025 end date, and, restricts the day and hours that the remaining filling activity can occur.

Public Works/ Village Engineer

The Village Engineer has identified several technical corrections items related to grading, storm water management, and grading that will need to be resolved in revised plans and/or supplemental documents prior to commencing construction activities in a June 6 February 21, 2025 review memo (copy attached).

VILLAGE STAFF RECOMMENDATIONS

APPROVE a Conditional Use Permit to allow encroachment into a 25' wetland and 75' navigable waterway setback as presented in the Wetland and Navigable Waterway Setback Compensation Plan (dated January 30, 2025) for the TLC Acres property pursuant to Section 24.04 of the Shoreland-Wetland Zoning Code and subject to the following conditions:

1. To the extent practicable, CUP #08-2019 should be revised to include approval of the setback encroachment and Wetland and Navigable Waterway Setback Compensation Plan (dated January 30, 2025).
2. If the use, activities and/or operation subject of this permit falls out of conformity with the conditions herein, or, where there is a change in the nature, character, intensity or extent of the activities or uses which causes problems or harmful effects that were not anticipated at the time of approval of this CUP, the conditional use permit may be modified or terminated by the Village Board by the amendment to or addition of conditions after public hearing thereon.
3. The Property Owner shall implement the setback compensation measures as set forth in the Setback Compensation Plan dated January 30, 2025, as part of the site development activities. Any changes to the mitigation plan or changes to any proposed development of the site that impacts the ability to implement the mitigation plan shall be reported to the Village.
4. The Property Owner shall prepare and submit an annual monitoring report to the Village concerning the management activities proposed in the CUP narrative including the planting of native vegetation. Said report shall, at a minimum, detail the type and number of seeding and plantings, activities carried out in the previous year and the observed success (or failure) of previous activities, and detail on the planned activities to be carried out for the coming year. Said report shall be submitted to the Community Development Department annually at the end of each year beginning in 2025 and for a period of three (3) years.

APPROVE site development and building plans for a 5,200 sqft accessory building addition subject to the following conditions:

1. This approval is subject to all the conditions and requirements set forth herein and adopted by the Plan Commission. Approval is granted for the following plans unless the conditions of approval adopted by the Plan Commission require or necessitate revisions to these plans:
 - a. *Architectural, Building & Elevation plans dated March 19, 2024;*
 - b. *Civil Engineering plans dated ~~June 5 January 29,~~ 2025;*
 - c. *Storm water Management Report dated January 23, 2025;*
 - d. *Wetland and Navigable Waterway Setback Compensation Plan (dated January 30, 2025).*

2. The proposed building addition, existing hoop storage structure and re-located shipping container shall be moved constructed to meet the minimum required 50 feet property line setback from the side yard (north) property line. The Site Plan set shall be revised accordingly to show the minimum required 50' setback line and building/structure locations in compliance with said setback and submitted to the Village Planner prior to issuance of a building permit for the proposed building addition.
3. CUP #08-2019 shall be revised to include by reference the proposed Site Plan set including the proposed building addition, asphalt paving, and storm water basin improvements as approved by the Plan Commission.
4. The Owner/operator shall submit a revised erosion control permit application to the Village of Germantown as necessary to include the site improvements and other land disturbing activities approved as part of this Site Plan so the permit and any requirements stipulated in the erosion control permit are accurate and up-to-date. No additional land disturbing activity shall commence until a revised erosion control permit has been issued by the Village.
5. All landscaping, screening, grading, and paving improvements shown on the approved site plans related to construction of the building shall be installed as proposed prior to issuance of an occupancy permit unless a cash bond or letter of credit in an amount equal to 120 percent of the estimated installation and material costs reviewed and approved by the Village is submitted to the Village as necessary to ensure that installation of the proposed features and improvements will be completed within one (1) year after issuance of the occupancy permit for the shell building.
6. All exterior doors (except primary entrance) shall be clearly marked with reflective 5" or larger letters/numbers to aid emergency personnel access as required by the Police Department.
7. All comments and issues raised in the Village engineer's February 21, 2025 and June 6, 2025 review memo's shall be resolved and reflected in additional information and/or revised plans submitted to the Engineer for further review, comment, and approval prior to commencing construction or issuance of building permits (excluding any "early start" site clearing and footing/foundation work approved by the Village and/or WI DSPS).
8. The owner/operator is responsible for applying for and obtaining all permits or approvals required by the Wisconsin Department of Natural Resources (WisDNR) for construction of the storm basin and other land disturbing activities located on the property prior to commencing said construction or land disturbing activities.
9. At such time as the shipping container is no longer used for farm-related storage purposes it shall be removed from the property pursuant to Section

17.41(7)(c) of the Zoning Code.

10. The owner/operator is advised that the Village's flood hazard rate maps (FIRMs) that establish the 100-year floodplain boundary used for determining eligibility in the National Flood Insurance Program (NFIP) and by the Wisconsin DNR and Village of Germantown for regulatory purposes are in the process of being revised. Sometime in late 2025 or early 2026, the new FIRMs will become effective, and the Village will update the Floodplain Zoning Code to include the new maps. As a result, portions of the TLC Acres property are expected to become impacted by and subsequently further regulated by the 100-year floodplain boundary and Floodplain Zoning Code. That part of the TLC Acres property will be subject to new and more restrictive floodplain zoning regulations and any the proposed grading, filling or and other elevation changes and improvements may be prohibited or otherwise impacted by these new regulations to the extent that said elevation changes and improvements may not be allowed after the new FIRM maps and Floodplain Zoning Code are adopted. To the extent provided by law, Village approval of the Site Plan referenced herein does not provide a vested right to the owner/operator to complete the grading, filling and other improvements set forth in said Site Plan plans in the event the new FIRMs and resulting 100-year floodplain boundary, revised Village of Germantown Floodplain Zoning Code, or other applicable floodplain regulations effect the TLC Acres property.
11. Filling, grading and site restoration activities in the area east of the proposed storm basin and shown on the revised Site Plan as "Ongoing Grading Area" shall be completed by November 1, 2025. Filling in this area shall only be allowed to the extent that the pre-existing elevations shown on the revised Site Plan are restored and positive drainage toward the waterway is achieved.
12. All trucking associated with the filling, grading and site restoration activities in #4 above shall be restricted to only the following days and hours in any given week:
 - a. Monday through Friday 10:00am to 5:00pm



Fee must accompany application

- ☐ \$700 Minor Addition
- ☐ \$1,240 Construction <10,000 SF
- ☒ \$2,095 Construction 10,000 SF to 50,000
- ☐ \$3,460 Industrial Construction >50,000 SF
- ☐ \$3,460 Commercial Construction >50,000 SF
- ☐ \$200 Plan Commission Consultation
- ☐ \$125 Fire Department Plan Review

PAID

OR

DATE

2/3/25

chk# 2672

SITE PLAN REVIEW APPLICATION

Pursuant to Section 17.43 of the Municipal Code

Please read and complete this application carefully. All applications must be signed and dated.

1 APPLICANT OR AGENT

Evan Nickodem

Parish Survey & Engineering

122 Wisconsin Street

West Bend, WI 53095

Phone (262) 333-2167

E-Mail enickodem@parishse.com

PROPERTY OWNER

Matt Seban

TLC Acres

W210 N10738 Appleton Ave

Germantown, WI 53022

Phone (414) 403-8956

E-Mail matt@tlcwisconsin.com

2 PROPERTY ADDRESS

W210 N10738 Appleton Ave

3 NEIGHBORING USES – Specify name and type of use, e.g. Enviro Tech – Industrial, Smith – Residential, etc.

North A-1, Idleman Land A-2, Ahmad and Saeed land	South RS-2, Schnickel RS-2, Sell RS-5, Steinbach	East A-1, Pfaff Land Trust	West RS-2, Powell RS-6, Vidal B-3, Aeron LLC
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4 READ AND INITIAL THE FOLLOWING:

_____ I am aware of the Village of Germantown ordinance requiring fire sprinklers in most new construction.

_____ I understand that all new development is subject to Impact and/or Connection Fees that must be paid before building permits will be issued.

_____ I understand that an incomplete application will be withdrawn from the Plan Commission agenda and that all resubmissions to the Plan Commission are subject to a new application fee.

5 SIGNATURES – ALL APPLICATION MUST BE SIGNED BY OWNER!

Evan P. Nickodem 01/29/2025

Applicant

Date

Matt Seban

Owner





Fee must accompany application

✗ \$1460

Paid

Date

2/3/25

CHK # 2672

CONDITIONAL USE PERMIT APPLICATION

Pursuant to Section 17.42 of the Municipal Code

Please read and complete this application carefully. All applications must be signed and dated.

1 APPLICANT OR AGENT

Evan Nickodem

Parish Survey & Engineering

122 Wisconsin Street

West Bend, WI 53095

Phone (262) 333-2167

Fax ()

E-Mail enickodem@parishse.com

PROPERTY OWNER

Matt Seban

TLC Acres

W210 N10738 Appleton Ave

Germantown, WI 53022

Phone (414) 403-8956

matt@tlcwisconsin.com

2 TO WHOM SHOULD THE PERMIT BE ISSUED?

Matt Seban

TLC Acres

3 PROPERTY ADDRESS

W210 N10738 Appleton Ave

TAX KEY NUMBER

304959

4 DESCRIPTION OF EXISTING OPERATION

Briefly describe the use as it exists today, including use, size, number of employees, hours of operation, etc. If this permit involves new construction, describe the current status of the property, e.g. "vacant." Use additional pages as necessary.

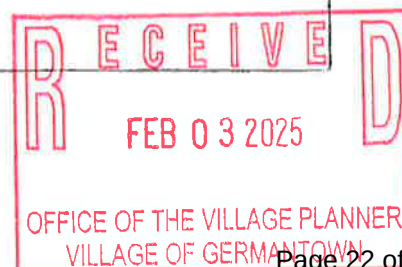
landscaping materials and supply, agricultural uses

5 DESCRIPTION OF PROPOSED OPERATION

Write the name of the proposed conditional use exactly as it appears in the Municipal Code

no change in use or operation

Describe the proposed use, including size, number of employees, hours of operation and extent of any new construction/alterations.



6 METES AND BOUNDS LEGAL DESCRIPTION OF PROPERTY – REQUIRED

THAT PART OF THE NORTHEAST 1/4 AND NORTHWEST 1/4 OF THE SOUTHEAST 1/4 SECTION 30, TOWN 9 NORTH, RANGE 20 EAST, VILLAGE OF GERMANTOWN, WASHINGTON COUNTY, WISCONSIN, BOUNDED AND DESCRIBED AS FOLLOWS: BEGINNING AT THE EAST 1/4 CORNER, SECTION 30-9-20, THENCE SOUTH 0 DEGREES 27' 58" EAST ON THE EAST LINE OF THE SOUTHEAST 1/4 OF SAID SECTION 1222.00 FEET, THENCE SOUTH 89 DEGREES 32' 02" WEST -670.00 FEET, THENCE NORTH 0 DEGREES 27' 58" WEST 118.80 FEET, THENCE SOUTH 81 DEGREES 32' 02" WEST -863.51 FEET, THENCE NORTH 55 DEGREES 27' 58" WEST ON THE C/L OF APPLETON AVENUE 113.65 FEET, THENCE NORTH 55 DEGREES 21' 58" WEST ON SAID C/L 148.60 FEET, THENCE NORTH 53 DEGREES 08' 58" WEST, ON SAID C/L 107.70 FEET, THENCE NORTH 44 DEGREES 39' 18" WEST, ON SAID C/L 203.19 FEET, THENCE NORTH 40 DEGREES 55' 06" WEST, ON SAID C/L 199.71 FEET, THENCE NORTH 54 DEGREES 23' 20" EAST, -669.00 FEET, THENCE NORTH 75 DEGREES 12' 40" WEST, -310.40 FEET, THENCE NORTH 64 DEGREES 10' 40" WEST, -471.50 FEET, THENCE SOUTH 89 DEGREES 30' 20" WEST -175.40 FEET, THENCE NORTH 26 DEGREES 14' 40" WEST, -36.70 FEET, THENCE NORTH 89 DEGREES 30' 20" EAST, ON THE EAST 1/4 LINE OF SAID SECTION 2463.18 FEET TO THE POINT OF BEGINNING.

7 SUPPORTING DOCUMENTATION:

- ☒ Site Plan and elevations for new construction (can be conceptual)
- ☐ Photos of existing use and/or proposed use operating elsewhere
- ☐ _____
- ☐ _____

8 READ AND INITIAL THE FOLLOWING:

- _____ I understand that the Village is under no obligation to issue a Conditional Use Permit and will do so only if the applicant successfully demonstrates that the proposed use is harmonious with the neighborhood and the long range goals of the Village.
- _____ I will notify the Village if any aspects of the conditional use changes. I understand that failure to do so may result in the revocation of the CUP.
- _____ I understand that a Conditional Use Permit is valid only if the conditions and restrictions of the permit are met. I understand that failure to comply with any aspect of the permit may result in revocation.
- _____ I understand that Village Staff is required to post one or more signs along the street frontage of and/or on the property subject of this application that indicate to nearby property owners and the general public that a public hearing of my application will be held before the Village Plan Commission and/or Village Board prior to action being taken on this application; I hereby grant Village Staff permission to enter onto the property for the expressed purpose of installing said sign(s) provided Village Staff is responsible for installing, maintaining and removing said signs in a reasonable manner and timeframe.

9 SIGNATURES – ALL APPLICATIONS MUST BE SIGNED BY OWNER!

Erin P. Nalalen 01/30/2025
Applicant Date

Matthew Sh 2/3/25
Owner Date

Village of

Germantown

Village of Germantown
Inspection
N112W17001 MEQUON ROAD
Germantown, WI 53022
(262)250-4700
Welcome

02/03/2025 04:18PM Inspectio
000835-0012
Payment Effective Date 01/31/2025

MISCELLANEOUS

PLAN COMMISSION REVIEW

FEES (GENPLN)

2025 Item: GENPLN

1 @ \$3,555.0000

PLAN COMMISSION REVIEW

FEES (GENPLN)

\$3,555.00

\$3,555.00

Subtotal

\$3,555.00

Total

\$3,555.00

CHECK

\$3,555.00

Check Number 2672

Change due

\$0.00

Thank you for your payment

CUSTOMER COPY

NOTICE OF PUBLIC HEARING VILLAGE OF GERMANTOWN

NOTICE is hereby given that a Public Hearing will be held before the Village of Germantown Plan Commission at the Germantown Village Hall located at N112W17001 Mequon Road, Germantown, Wisconsin and virtually through the WebEx platform on the following date and at the time noted below (or soon thereafter):

DATE: Monday, April 28th, 2025
TIME: 6:30 pm or later

The purpose of said hearing is to hear all parties, their attorneys or agents, for the following application:
CONDITIONAL USE PERMIT application to allow grading and filling into portions of a 25' wetland and 75' navigable waterway setback pursuant to Section 24.04(3)(c)(5) of the Village Zoning Code and to amend CUP #08-2019 as necessary for the properties described below:

Applicant: Parish Survey & Engineering, Agent for Matthew & Amy Seban, Property Owners
Property Address: W210N10738 Appleton Avenue (GTNV_304959)

Property Description:

THAT PART OF THE NORTHEAST ¼ AND NORTHWEST ¼ OF THE SOUTHWEST ¼ SECTION 30, TOWN 9 NORTH, RANGE 20 EAST, VILLAGE OF GERMANTOWN, WASHINGTON COUNTY, WISCONSIN, BOUNDED AND DESCRIBED AS FOLLOWS: BEGINNING AT THE EAST ¼ CORNER, SECTION 30-9-20, THENCE SOUTH 0 DEGREES 27' 58" EAST ON THE EAST LINE OF THE SOUTHWEST ¼ OF SAID SECTION 1,222.00 FEET; THENCE SOUTH 89 DEGREES 32' 02" WEST, 670.00 FEET; THENCE 0 DEGREES 27' 58" WEST, 118.80 FEET; THENCE SOUTH 81 DEGREES 32' 02" WEST, 863.51 FEET; THENCE NORTH 55 DEGREES 27' 58" WEST ON THE CENTER LINE OF APPLETON AVENUE 113.65 FEET; THENCE NORTH 55 DEGREES 21' 58" WEST ON SAID CENTER LINE 148.60 FEET; THENCE NORTH 53 DEGREES 08' 58" WEST ON SAID CENTERLINE 107.70 FEET; THENCE NORTH 44 DEGREES 39' 18" WEST ON SAID CENTER LINE 203.19 FEET; THENCE NORTH 40 DEGREES 55' 06" WEST ON SAID CENTER LINE 199.71 FEET; THENCE NORTH 54 DEGREES 23' 20" EAST, 669.00 FEET; THENCE NORTH 75 DEGREES 12' 40" WEST, 310.40 FEET; THENCE NORTH 64 DEGREES 10' 40" WEST, 471.50 FEET; THENCE SOUTH 89 DEGREES 30' 20" WEST, 175.40 FEET; THENCE NORTH 26 DEGREES 14' 40" WEST, 36.70 FEET; THENCE NORTH 89 DEGREES 30' 20" EAST ON THE EAST ¼ LINE OF SAID SECTION 2,463.18 FEET TO THE POINT OF BEGINNING CONTAINING 53.39 Acres.

A copy of the application and a map showing the property described above are on file at the Community Development Department-Planning & Zoning Services office in the Germantown Village Hall and can be viewed on the Village's website by following this link:

Website: <https://www.germantownwi.gov/589/Proposed-Development-Projects>

Citizens wishing to submit any public comments should do so by sending them by email to: comments@germantownwi.gov no later than 4:00pm on the meeting date listed above.

Donna Ott, Village Clerk
Dated this 2nd day of April 2025

To Be Published On: April 9th and April 16th, 2025

**Fee must accompany application**

- ☐ \$700 Minor Addition
- ☐ \$1,240 Construction <10,000 SF
- ☒ \$2,095 Construction 10,000 SF to 50,000
- ☐ \$3,460 Industrial Construction >50,000 SF
- ☐ \$3,460 Commercial Construction >50,000
- ☐ \$200 Plan Commission Consultation
- ☐ \$125 Fire Department Plan Review

PAID _____ DATE _____

SITE PLAN REVIEW APPLICATION

Pursuant to Section 17.43 of the Municipal Code

Please read and complete this application carefully. All applications must be signed and dated.

1**APPLICANT OR AGENT**Evan NickodemParish Survey & Engineering122 Wisconsin StreetWest Bend, WI 53095Phone (262) 333-2167E-Mail enickodem@parishse.com**PROPERTY OWNER**Matt SebanTLC AcresW210 N10738 Appleton AveGermantown, WI 53022Phone (414) 403-8956E-Mail matt@tlcwisconsin.com**2****PROPERTY ADDRESS**W210 N10738 Appleton Ave**3****NEIGHBORING USES** – Specify name and type of use, e.g. Enviro Tech – Industrial, Smith – Residential, etc.

North	A-1, Idleman Land A-2, Ahmad and Saeed land	South	RS-2, Schnickel RS-2, Sell RS-5, Steinbach	East	A-1, Pfaff Land Trust	West	RS-2, Powell RS-6, Vidal B-3, Aeronia LLC
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4**READ AND INITIAL THE FOLLOWING:**

_____ I am aware of the Village of Germantown ordinance requiring fire sprinklers in most new construction.

_____ I understand that all new development is subject to Impact and/or Connection Fees that must be paid before building permits will be issued.

_____ I understand that an incomplete application will be withdrawn from the Plan Commission agenda and that all resubmissions to the Plan Commission are subject to a new application fee.

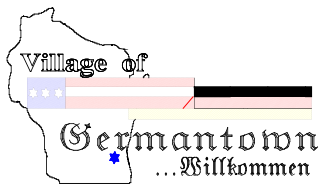
5**SIGNATURES – ALL APPLICATION MUST BE SIGNED BY OWNER!**Evan P. Nickodem 01/29/2025

Applicant

Date

Owner

Date



N112 W17001 Mequon Rd.
P.O. Box 337
Germantown, Wisconsin 53022-0337
Phone: (262) 250-4720 (Engineering)
FAX: (262) 253-8255

Permit #:

STORMWATER MANAGEMENT PERMIT APPLICATION

Applicant/Agent	Property Owner
Name: Evan Nickodem	Name: Matt Seban
Address: Parish Survey & Engineering 122 Wisconsin Street West Bend, WI 53095	Address: TLC Acres W210 N10738 Appleton Ave Germantown, WI 53022
Phone: 262 333-2167	Phone: 414 403-8956
E-mail: enickodem@parishse.com	E-mail: matt@tlcwisconsin.com

Property Address: W210 N10738 Appleton Ave

Base SWM Permit Application Fee (Non-Refundable):

- ☐ \$300.00.
- ☒ Waived, if application associated with Planning Department's Site Plan Review Application.

First-Time SWM Plan Report Review Fee (Non-Refundable):

- ☐ \$200.00 for First Detention/Infiltration/Retention Pond or Water Quality Device.
- ☐ \$25.00 for each Additional Detention/Infiltration/Retention Pond or Water Quality Device. Quantity: (____)
- ☐ \$10.00 for each Channel/Culvert/Storm Sewer Branch. Quantity: (____)
- ☐ \$500.00 Additional Fee for Optional Expedited Review (3 business days).
- ☒ Waived, if application associated with Planning Department's Site Plan Review Application.

Additional SWM Plan Report Review Fee (Non-Refundable):

- ☐ \$250.00 for 2nd SWM Plan Review (i.e., review of 1st SWM Plan revision).
- ☐ \$500.00 for each Additional SWM Plan Review (i.e., review of 2nd, 3rd, 4th, etc. SWM Plan revision).
- ☐ \$500.00 Additional Fee for Optional Expedited Review for each Additional SWM Plan Review (3 business days).

Certification:

I hereby certify that the information contained herein, including all attachments, is true, accurate, and complete to the best of my knowledge. Further, I grant the Village of Germantown's employees and agents to enter the property to review information included with this application, and to make inspections during and after construction. Application and report review times, approval/denial, and final action shall be as set in Chapter 27, Mun. Ord. Applicant/Agent and Property Owner understand other fee mechanisms (i.e., Site Plan Review Fee) are in place for Village review and approval of the Stormwater Management Plan Report. I am aware that this permit expires the date the Village Engineer or designee notifies me that all stormwater management practices have passed final inspection required under subsection (4)(d) and an approved Maintenance Declaration is recorded with the Register of Deeds as required under section 27.11, or after two years of issuance, whichever occurs first.

Applicant/Agent Signature & Date:

Evan P. Nickodem 01/29/2025

Property Owner Signature & Date:

REPORT CHECKLIST

The storm water management plan for a site shall include:

- ☒ Detailed report containing a narrative description of the storm water facility design, assumptions, and computations
- ☒ Detailed maps showing pre-development and post-development conditions, 24" x 36" sheets
- ☒ Signature and seal by a Wisconsin Registered Professional Engineer
- ☐ Detailed tabular estimate of construction costs for proposed facilities
- ☒ Two complete copies of the entire plan

The report describing the site conditions and detention design shall include the following:

- ☒ Full watershed of site with contours
- ☒ Sub area boundaries
- ☒ Time of concentration determination with lengths and slopes
- ☒ Hydrologic soil groups
- ☒ Curve numbers
- ☒ Existing flood plain and wetlands shown, including setback lines
- ☐ Comparison of different agency analysis, if appropriate, in tabular format
- ☐ Cross section/details of vegetation proposed on berm, safety shelf, water line areas, etc.
- ☒ Detention basin volumes
- ☒ Existing and proposed contours in pond area at one foot contour interval
- ☒ Stage-discharge curve or table for proposed outfall structure
- ☒ Site hydrograph for 100-year and 2-year storm predeveloped condition without detention
- ☒ Site hydrograph for 100-year and 2-year storm post-developed condition without detention
- ☒ Pond output hydrograph for 100-year and 2-year storm post-developed condition with detention
- ☒ Clearly indicate pre-development and post-development site discharge for the 2-year and 100-year storm events.
- ☒ Draft copy of long term maintenance plan in recordable format
- ☒ Completed copy of this checklist

Project Name: TLC Acres

Village staff only:

Permit #: _____

Initial submittal date: _____

Response date: _____

Subsequent response date(s): _____

Approval date: _____

Date sent to MMSD (If applicable) _____

MMSD approval date: _____

Date financial guarantee provided and amount: _____

Facility Certification-date approved: _____

Final maintenance declaration recorded: _____

Financial guarantee released: _____

TLC Acres

Project Narrative

Written By: Matthew Seban

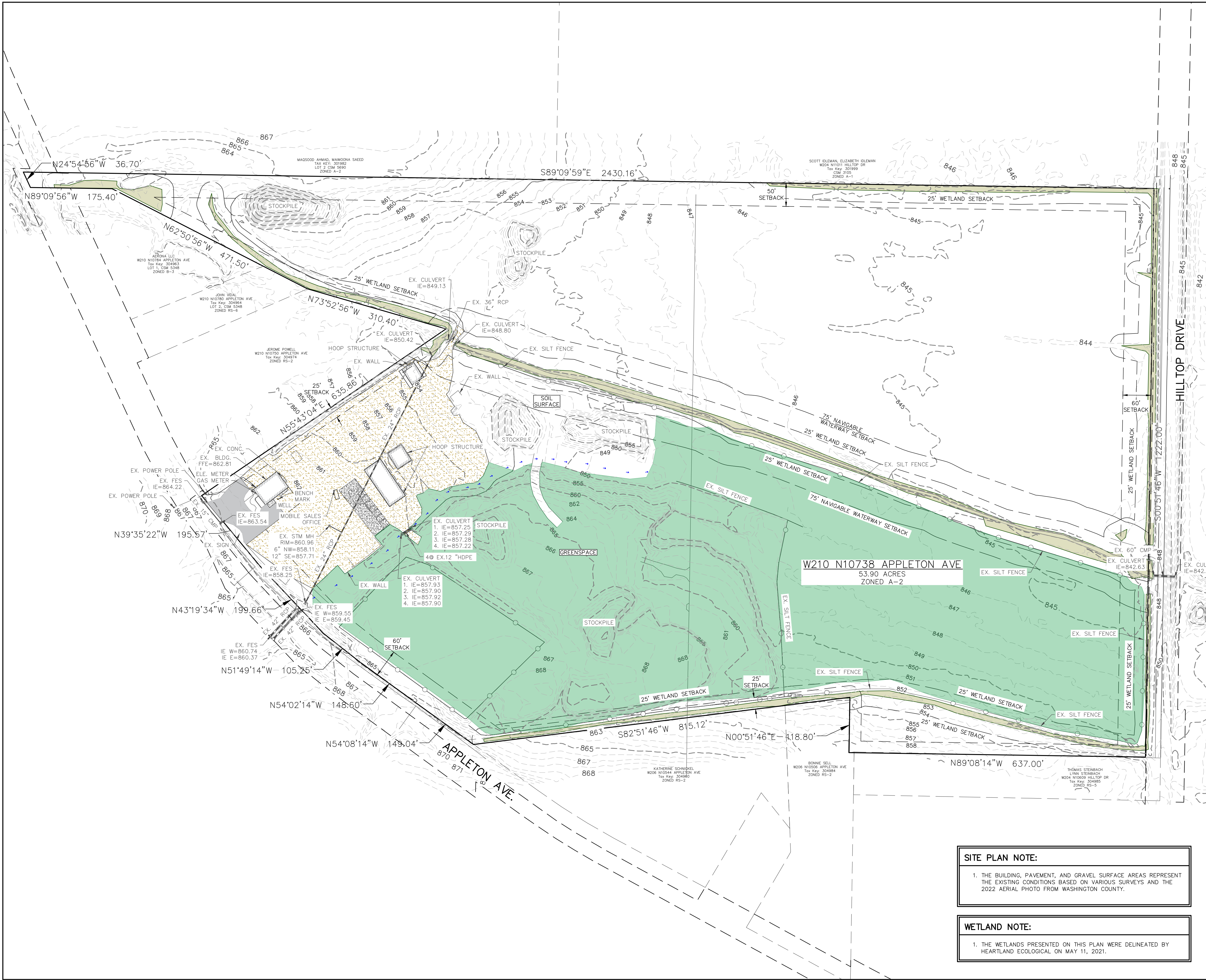
(414) 403-8956

6/10/24

TLC Acres is proposing to build an addition to our existing pole building. We hired Parish Engineering to complete all the survey and engineering required for this project.

The proposed building is 50' x 100'. It will be used as vehicle and equipment storage for both TLC Acres as well as MSTLC, LLC. The peak of the building will be 25' high and the sidewalls will be 16'. The exterior will match the existing building using the same materials.

As of June 10, TLC Acres has an open zoning permit application for a roughly 10,000 square foot addition to our existing drive lane. The final requirement for approval is for a storm water management plan which is also being submitted today for that permit. This stormwater management plan has been calculated for both the additional paved surface as well as the new addition.

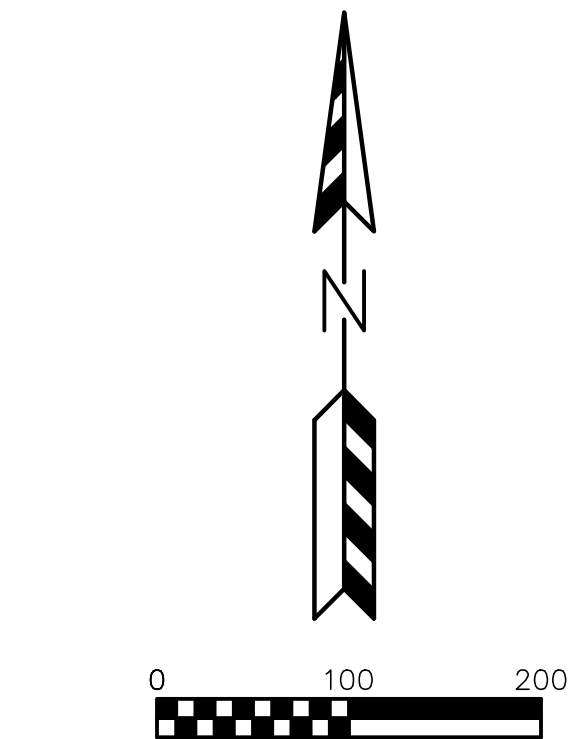


SITE PLAN NOTE:

1. THE BUILDING, PAVEMENT, AND GRAVEL SURFACE AREAS REPRESENT THE EXISTING CONDITIONS BASED ON VARIOUS SURVEYS AND THE 2022 AERIAL PHOTO FROM WASHINGTON COUNTY.

WETLAND NOTE:

1. THE WETLANDS PRESENTED ON THIS PLAN WERE DELINEATED BY HEARTLAND ECOLOGICAL ON MAY 11, 2021.



- LEGEND:**
- EXISTING WETLANDS.
 - EXISTING GRANULAR SURFACE.
 - EXISTING ASPHALT SURFACE.
 - EXISTING CONCRETE SURFACE.
 - EXISTING OVERLAND FLOW ROUTE.
 - EXISTING MINOR CONTOUR.
 - EXISTING MAJOR CONTOUR.
 - OVERHEAD ELECTRIC LINE.
 - BURIED ELECTRIC LINE.
 - BURIED TELEPHONE LINE.
 - FIBER OPTIC LINE.
 - GAS LINE.
 - FENCE
 - STORM SEWER LINE.
 - ELECTRIC METER.
 - GAS METER.
 - GAS VALVE.
 - POWER POLE.
 - STORM SEWER MANHOLE.
 - STORM SEWER INLET.
 - TELEPHONE PEDESTAL.
 - TRANSFORMER.

REVISIONS:	
NO.	DESCRIPTION

PSE
PARISH SURVEY & ENGINEERING
122 Wisconsin Street, West Bend, WI 53095
262.346.7800 www.parishse.com

PROJECT TITLE:
**TLC ACRES
W210 N10738 APPLETON AVENUE
GERMANTOWN, WI 53022**

PLAN TITLE:
**EXISTING
CONDITIONS
PLAN**

DRAWN BY:
WWS
DESIGNED BY:
EPN
CHECKED BY:
KJP

PLAN DATE:
6/5/2025

PROJECT NO:
\TL-05-21

BID SET

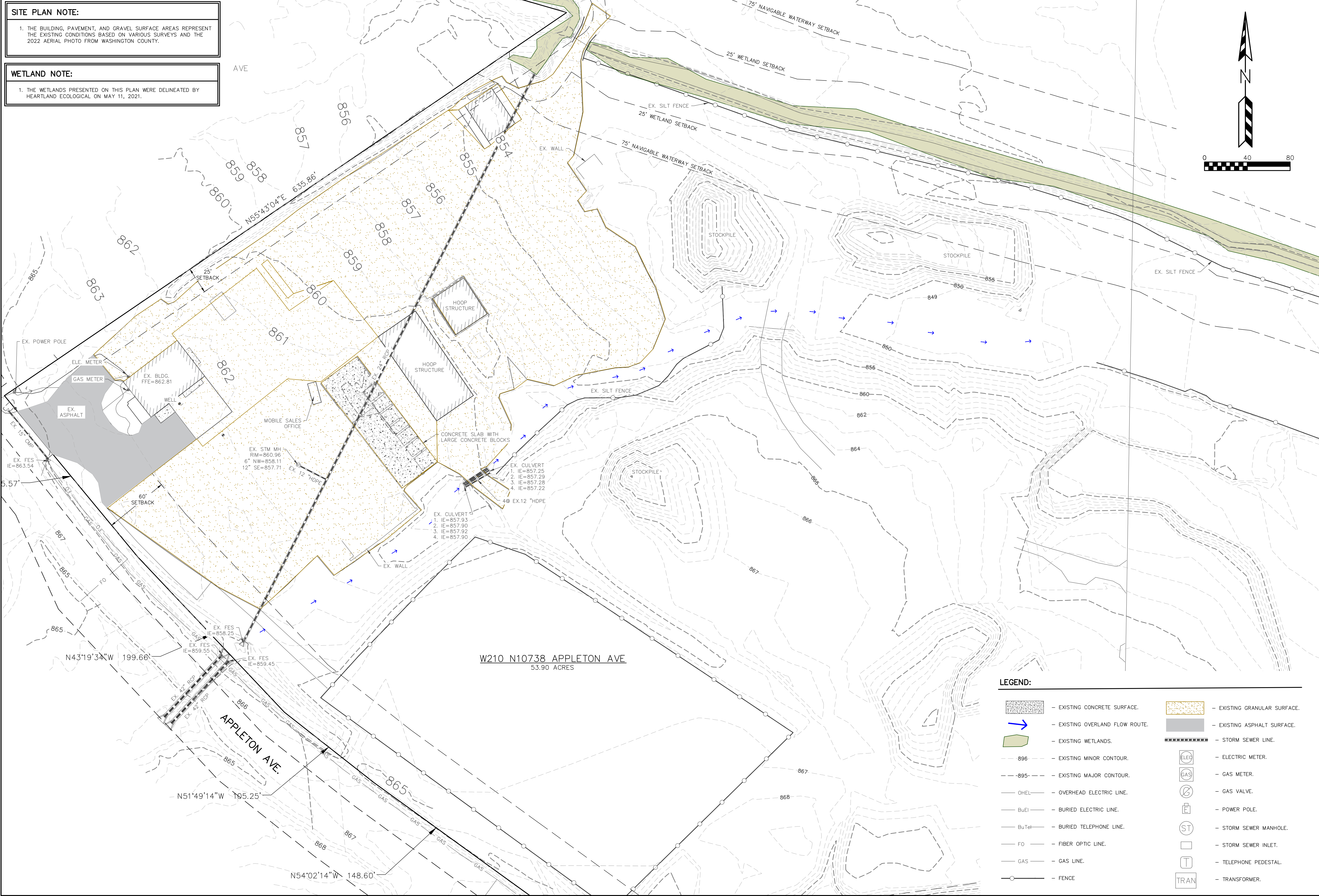
SHEET NO:
C1.01

SITE PLAN NOTE:

1. THE BUILDING, PAVEMENT, AND GRAVEL SURFACE AREAS REPRESENT THE EXISTING CONDITIONS BASED ON VARIOUS SURVEYS AND THE 2022 AERIAL PHOTO FROM WASHINGTON COUNTY.

WETLAND NOTE:

1. THE WETLANDS PRESENTED ON THIS PLAN WERE DELINEATED BY HEARTLAND ECOLOGICAL ON MAY 11, 2021.



- LEGEND:**
- | | | | |
|--|------------------------------------|--|------------------------------|
| | - EXISTING CONCRETE SURFACE. | | - EXISTING GRANULAR SURFACE. |
| | - EXISTING OVERLAND FLOW ROUTE. | | - EXISTING ASPHALT SURFACE. |
| | - EXISTING WETLANDS. | | - STORM SEWER LINE. |
| | - 896 - - EXISTING MINOR CONTOUR. | | - ELECTRIC METER. |
| | - 895 - - EXISTING MAJOR CONTOUR. | | - GAS METER. |
| | - OHEL - - OVERHEAD ELECTRIC LINE. | | - GAS VALVE. |
| | - BuEl - - BURIED ELECTRIC LINE. | | - POWER POLE. |
| | - BuTel - - BURIED TELEPHONE LINE. | | - STORM SEWER MANHOLE. |
| | - FO - - FIBER OPTIC LINE. | | - STORM SEWER INLET. |
| | - GAS - - GAS LINE. | | - TELEPHONE PEDESTAL. |
| | - FENCE | | - TRANSFORMER. |

REVISIONS:	
NO.	DESCRIPTION

PSE
PARISH SURVEY & ENGINEERING
122 Wisconsin Street, West Bend, WI 53095
262.346.7800 www.parishse.com

PROJECT TITLE:
**TLC ACRES
W210 N10738 APPLETON AVENUE
GERMANTOWN, WI 53022**

PLAN TITLE:
**EXISTING
CONDITIONS
WEST**

DRAWN BY:
WWS
DESIGNED BY:
EPN
CHECKED BY:
KJP

PLAN DATE:
6/5/2025

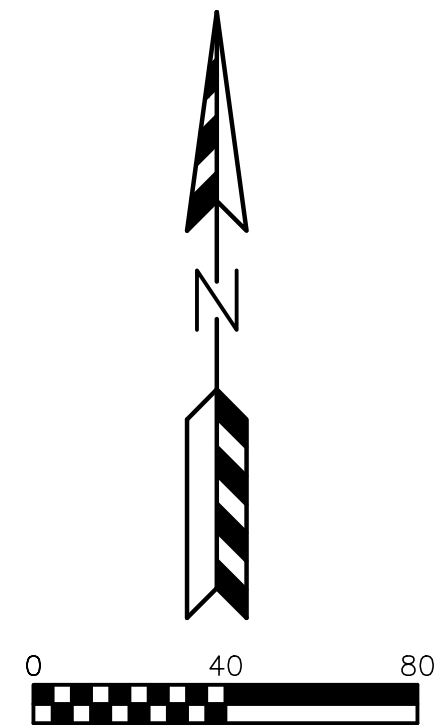
PROJECT NO:
\TL-05-21

BID SET

SHEET NO:
C1.02

1. THE BUILDING, PAVEMENT, AND GRAVEL SURFACE AREAS REPRESENT THE EXISTING CONDITIONS BASED ON VARIOUS SURVEYS AND THE 2022 AERIAL PHOTO FROM WASHINGTON COUNTY.

1. THE WETLANDS PRESENTED ON THIS PLAN WERE DELINEATED BY HEARTLAND ECOLOGICAL ON MAY 11, 2021.

[illegible]

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www.parishse.com

PROJECT TITLE:
**TLC ACRES
W210 N10738 APPLETON AVENUE
GERMANTOWN, WI 53022**

PLAN TITLE:

**SITE PLAN
WEST**

DRAWN BY:
WWS

DESIGNED BY:
EPN

CHECKED BY:
KJP

PLAN DATE:
6/5/2025

PROJECT NO:
\TL-05-21

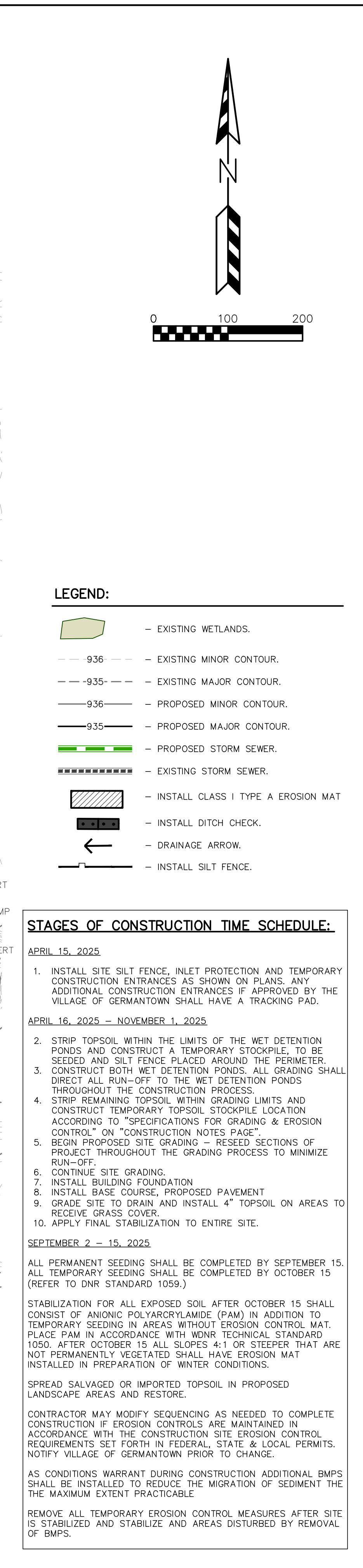
BID SET

SHEET NO:

C1.03

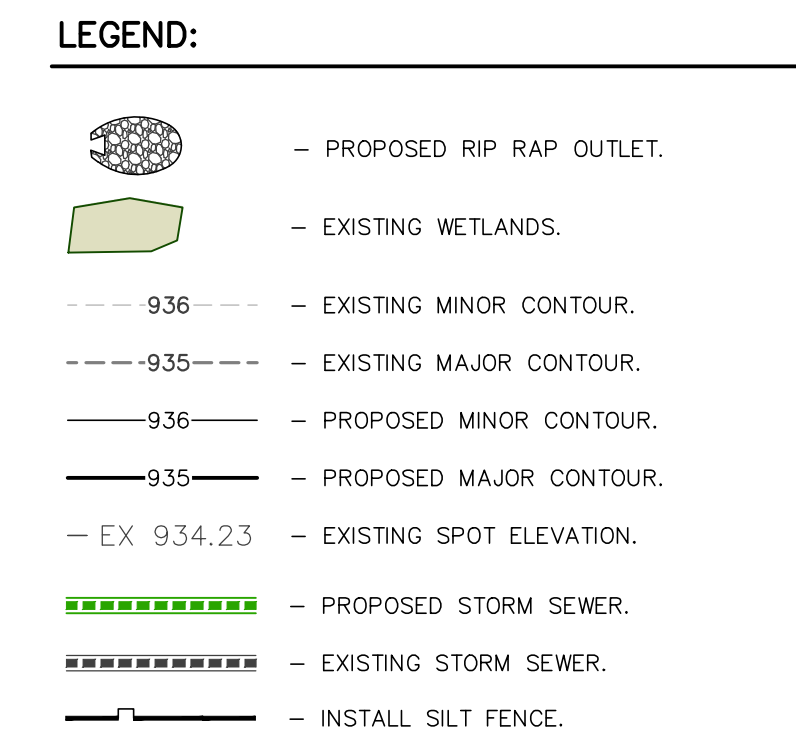
ASPHALT PAVEMENT
8" CRUSHED AGGREGATE BASE COURSE
2 1/4" ASPHALTIC BINDER 3 LT 58-28 S
1 3/4" ASPHALTIC SURFACE 4 LT 58-28 S

	- PROPOSED ASPHALT SURFACE.		- EXISTING ASPHALT SURFACE.
	- EXISTING GRANULAR SURFACE.		- EXISTING CONCRETE SURFACE.
-----	- PROPOSED POND.		- EX FENCE.
—————	- PROPOSED PAVEMENT.		- STORM SEWER LINE.
	- EXISTING WETLANDS.		- ELECTRIC METER.
— — — — — 896 — — — — —	- EXISTING MINOR CONTOUR.		- GAS METER.
— — — — — 895 — — — — —	- EXISTING MAJOR CONTOUR.		- GAS VALVE.
— OHEL ———	- OVERHEAD ELECTRIC LINE.		- POWER POLE.
— BuEl ———	- BURIED ELECTRIC LINE.		- STORM SEWER MANHOLE.
— BuTel ———	- BURIED TELEPHONE LINE.		- STORM SEWER INLET.
— FO ———	- FIBER OPTIC LINE.		- TELEPHONE PEDESTAL.
— GAS ———	- GAS LINE.		- TRANSFORMER.

Page 34 of 885

1. THE BUILDING, PAVEMENT, AND GRAVEL SURFACE AREAS REPRESENT THE EXISTING CONDITIONS BASED ON VARIOUS SURVEYS AND THE 2022 AERIAL PHOTO FROM WASHINGTON COUNTY.

1. THE WETLANDS PRESENTED ON THIS PLAN WERE DELINEATED BY HEARTLAND ECOLOGICAL ON MAY 11, 2021.

[illegible]

PS&E
PARISH SURVEY & ENGINEERING
122 Wisconsin Street, West Bend, WI 53095
262.346.7800 www.parishse.com

PROJECT TITLE:
**TLC ACRES
W210 N10738 APPLETON AVENUE
GERMANTOWN, WI 53022**

PLAN TITLE:

**GRADING
PLAN WEST**

DRAWN BY: **WWS**
DESIGNED BY: **EPN**
CHECKED BY: **KJP**

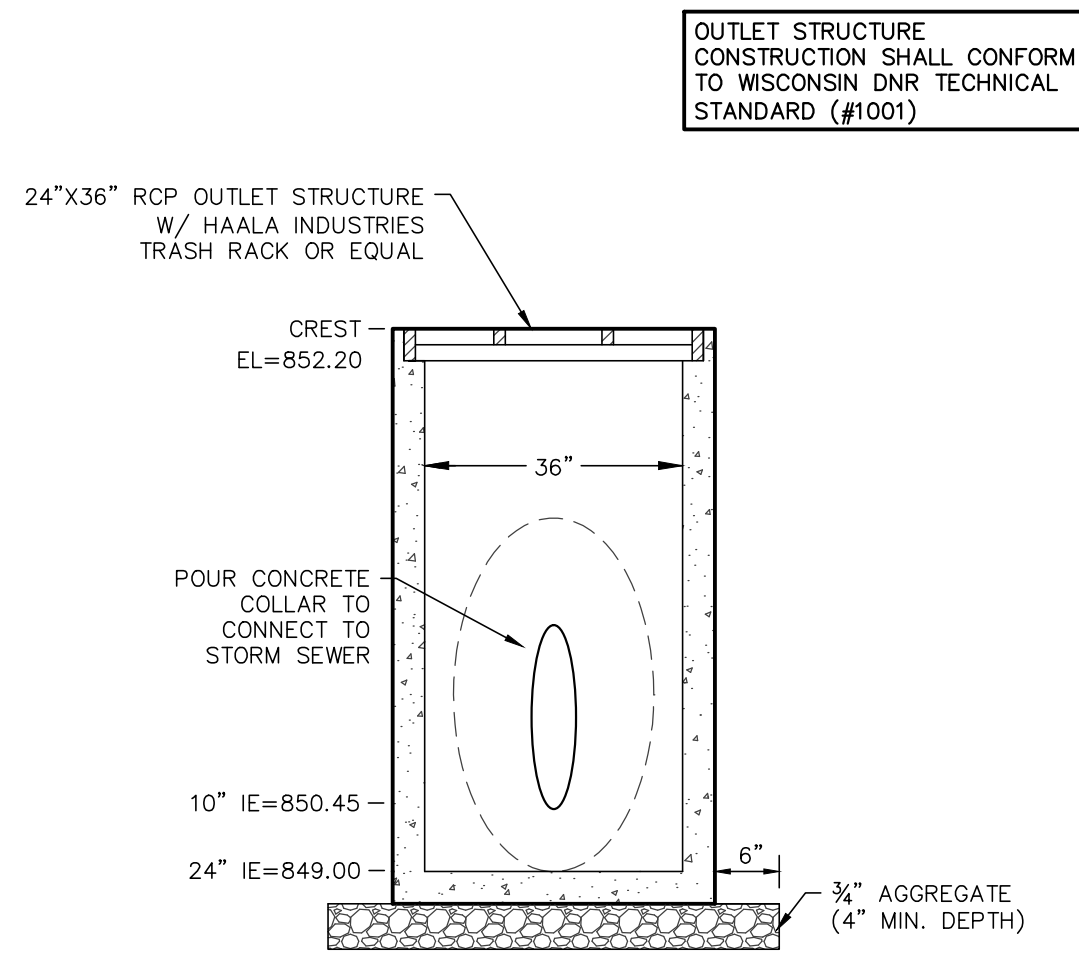
PLAN DATE:
6/5/2025

PROJECT NO:
\TL-05-21

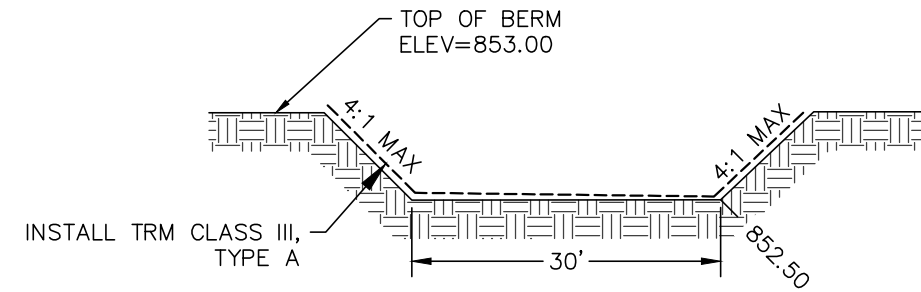
BID SET

SHEET NO:

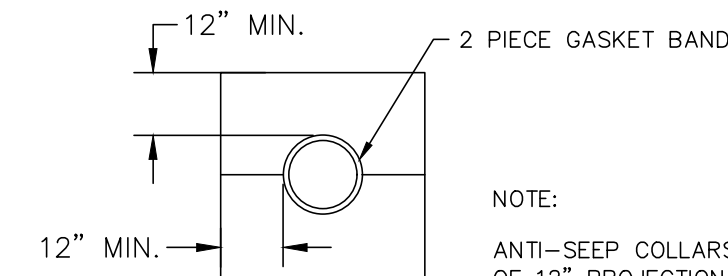
C1.05



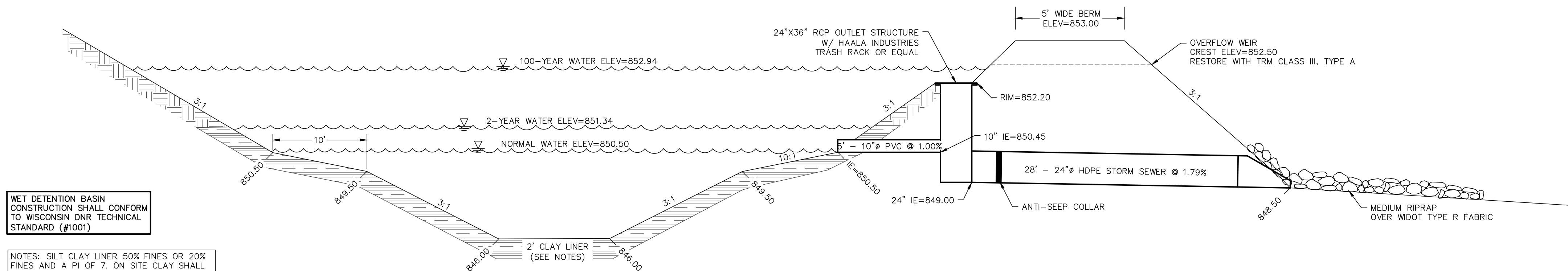
POND OUTLET – OUTLET STRUCTURE #1 DETAIL



OVERFLOW WEIR CROSS SECTION



ANTI-SEEP COLLAR DETAIL



RETENTION BASIN CROSS SECTION

REVISIONS:

NO. DATE DESCRIPTION

PSE
PARISH SURVEY & ENGINEERING
122 Wisconsin Street, West Bend, WI 53095
262.346.7800 www.parishse.com

PROJECT TITLE:

**TLC ACRES
W210 N10738 APPLETON AVENUE
GERMANTOWN, WI 53022**

PLAN TITLE:

**STORMWATER
MANAGEMENT
DETAILS**

DRAWN BY:

EPN

DESIGNED BY:

EPN

CHECKED BY:

EPN

PLAN DATE:

1/28/2025

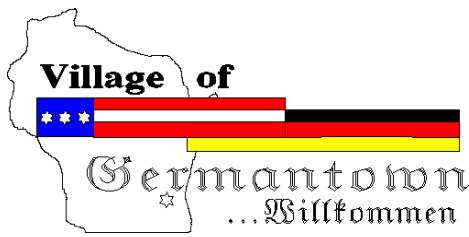
PROJECT NO:

\TL-05-21

BID SET

SHEET NO:

C2.02



Engineering Department Memorandum

To : Jeffrey W. Retzlaff, AICP, Planning Director/Zoning Administrator
From : Kevin Driscoll, P.E., Village Engineer
Date : February 21, 2025
Re : TLC Acres – Review #2

Items Reviewed:

1. Civil Plan Set Dated: 01-28-25
2. Stormwater Management Plan Dates: 01-23-25

General Comments:

1. Please respond to each item below. **A written response addressing each item shall be included in your submittal.**
2. The submitted plans have been reviewed for general conformance with State and Village design guidelines. Additional comments could arise as a result of the plan completion and modifications. The items listed below will need to be fully resolved before the Engineering Dept. can recommend a formal approval of the plans and permit for construction.
3. This project will require a WRAPP/NOI from the DNR. Please submit a copy of the approved permit prior to final approval.
4. As-builts prepared to Village standards shall be prepared and provided to the Village post-construction (for all applicable items).
5. A professional engineer's original seal is to be affixed, signed and dated on the final set of construction plans.
6. Utility permits and permits for work within the ROW are required. Contact the Village engineering department to obtain permits.
7. As a guide to the review response: Items in *italics* are resolved or acknowledged, items in regular font are to be addressed yet, items in **Bold** are additional feedback to remaining original comment.

C-1.01 Overall Existing Conditions

1. Provide an existing site survey stamped by a licensed surveyor.
2. Provide additional contour labels. Specifically in Appleton Ave and Hilltop drive areas (typ for all sheets that the existing contours show up on)
3. Clearly define areas of existing pavement, gravel and greenspace.

C-1.03 Site Plan

4. Clearly denotes areas of existing gravel to remain and greenspace.

C-1.04 Erosion Control Plan

5. Is the large area in the center of the site being re-graded intended to be topsoiled and seeded? Please note restoration requirements on the plans.
6. Silt fence is not an appropriate BMP for concentrated flow areas. Install rock bag silt fence relief at concentrated flow areas including the pond outlet.
7. *Update dates on the construction schedule.*

C-1.05 Grading Plan - West

8. Provide grading plan for the proposed building.
9. Plans show two 42" culvert pipes under Appleton drive and a 24" existing pipe routing that runoff across the site. Provide a capacity analysis showing the existing pipe has adequate capacity. Increase pipe size if needed or provide a safe overland flow path that routes water through the site without ponding on Appleton Ave. If overland flow route will drain to the proposed basin include that flow in the calcs.
10. Provide proposed grading plan for all areas noted as fill areas.
11. Provide capacity calculations for the north swale.
12. Adjust north swale to have a minimum slope of 1%

C-1.06 Pond Grading Plan

13. Pond outlet pipe is 3' above existing grade. Show proposed grading in this area.
14. Show approximate floodplain delineation and WSEL 850.5 with respect to outlet. Note if submerged or free surface during 100-yr flood. Reference Village of Germantown webpage: <https://www.germantownwi.gov/731/Floodplain-Mapping-Update---FIRM-Panels>

C-2.02 Stormwater Management Details

15. *Revise safety shelf to meet WDNR requirements.*
16. Revise basin to have a 5' minimum depth per WDNR technical standards

Stormwater Management Plan

17. Show the locations of the future building and pavement on the plans. Remove the sentence about not requiring future permitting or reviews. Permits and plans will be required for future work.
18. *Adjust curve numbers for cropland to Maximum allowed by NR151.*
19. Clearly delineate on the drainage maps ground covers used to determine the curve numbers.
20. Area W is routed to the basin, but its not clear how that entire area gets to the basin. A catch basin connected to the existing 24" appears to route some of the area to the drainageway and a portion along the west property line appears to route to the drainageway and not to the basin.
21. Revised basin to contain the 100 year event without using the emergency spillway.
22. *Revise WinSLAMM model to clayey soils for type C soils.*
23. Adjusted initial stage elevation to 5' in SLAMM model and review outlet information. It doesn't appear to match the plan.

24. All disturbed areas of the site must be included in the stormwater management plan.
25. Show Tc path for the proposed conditions. Use a calculated Tc time, not just the minimum of 6 minutes.



PARISH SURVEY & ENGINEERING

January 30, 2025

Village of Germantown

W210 N10738 Appleton Avenue
Germantown, WI 53022

Re: Wetland and Navigable Waterway Setback Compensation Plan
TLC Acres
W210 N10738 Appleton Avenue
Germantown, WI 53022

Project Description

TLC Acres has been in operation at this location for many years and includes some existing buildings, parking lot, material handling areas, farmed areas, and green space on the north side of Appleton Ave and west of Hilltop Drive. The lot has wetlands that were delineated by Heartland Ecological on May 11, 2021. The wetlands are confined to ditchlines in the center of the site, along Hilltop Drive and on the south side of the site. During the summer of 2024, the Wisconsin Department of Natural Resources declared the ditchline in the center of the property to be navigable. As a result, there are 25' setbacks for wetlands and 75' setbacks to a navigable waterway on this site.

The plan for this development is to add a 5,000 square foot building to the existing office and install approximately 11,000sf of asphalt pavement. In addition to this hard surface, all hard surfacing added since 2017 needs to be considered as new impervious surfacing. And finally, the plan will include an additional 10,000sf for future building and 30,000sf for future pavement if at some point in the future new areas are constructed.

A Conditional Use Permit application has been submitted to the Village for grading within 25 feet of a wetland and within 75 feet of a navigable waterway. This narrative and the attached plans are submitted to address the conditional use application. The mitigation proposed for this project includes creating a permanent wetland setback and/or vegetative buffer equal to the disturbance area (1:1) for horizontal development.

Much of the area within these setbacks that are graded as part of this conditional use permit have been within active work areas

Setback Mitigation Plan

Exhibit 1 and 2 identifies post-construction wetland/navigable waterway setback areas and vegetative buffers. Exhibit 1 (CUP 1) shows a total area totaling 1.323 acres. The areas to the east of the restoration areas has been agricultural use areas for many years. Not all of the operational area will be restored since it's will continue to be part of the ongoing site operations. However, over half an acre of the operational area will be restored back to grass. These areas will include the backslopes for the stormwater pond or ditchlines within the setbacks and any active work areas north of the stormwater features. Areas to the east that are currently being farmed, will be turned into a vegetative buffer area and will be permanently stabilized with a native seed mix made up of grasses and forbs that are indigenous to the area. The native seed mix once established, will provide a permanent cover and vegetative buffer within the setback area.

Summary

Navigable Waterway / Wetland Setback Current Operational Area 57,650 sf = 1.323 acres

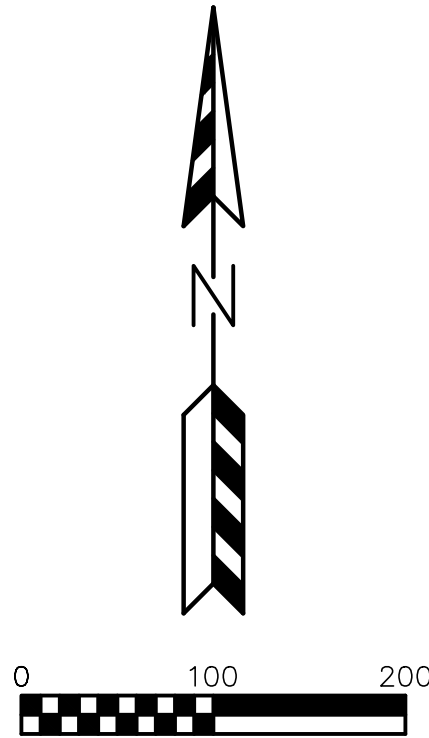
Mitigation Area

Native Seed Restoration 21,895 sf = 0.503 acres

Vegetative Buffer 41,335 sf = 0.949 acres

Total Mitigation Area 63,230 sf = 1.452 acres

Mitigation Ratio: 1: 1.097 greater than the minimum 1:1 ratio

[illegible]

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122 Wisconsin Street, West Bend, WI 53095
262.346.7800
www.parishse.com

**TLC ACRES
W210 N10738 APPLETON AVENUE
GERMANTOWN, WI 53022**

PLAN TITLE:

**EXISTING
OPERATIONS
PLAN**

RAWN BY:
WWS

DESIGNED BY:
EPM

CHECKED BY: **KJP**

LAN DATE:
1/30/2025

PROJECT NO:
TL-05-21

BID SET

SHEET NO:

CUP-1

DIGGERS HOTLINE

Dial **811** or (800)242-8511
www.DiggersHotline.com

LEGEND:

- | | |
|---|--|
|  | - EXISTING WETLANDS. |
| --- 936 --- | - EXISTING MINOR CONTOUR. |
| --- 935 --- | - EXISTING MAJOR CONTOUR. |
| —— 936 —— | - PROPOSED MINOR CONTOUR. |
| ===== 935 ===== | - PROPOSED MAJOR CONTOUR. |
| - EX 934.23 | - EXISTING SPOT ELEVATION. |
| - 934.23 | - PROPOSED CURB FLANGE ELEVATION. |
| - TC 934.23 | - PROPOSED TOP OF CURB ELEVATION. |
| - SW 934.23 | - PROPOSED SIDEWALK ELEVATION. |
| - EP 934.23 | - PROPOSED EDGE OF PAVEMENT ELEVATION. |
| - EXP 934.23 | - PROPOSED BUILDING EXPOSURE ELEVATION. |
| - FFE 934.23 | - PROPOSED BUILDING FIRST FLOOR ELEVATION. |
|  | - PROPOSED STORM SEWER. |
|  | - EXISTING STORM SEWER. |

CONDITIONAL USE PERMIT AREAS:

- CURRENTLY DISTURBED AREAS WITHIN SETBACKS

WETLAND NOTE:

1. THE WETLANDS PRESENTED ON THIS PLAN WERE DELINEATED BY HEARTLAND ECOLOGICAL ON MAY 11, 2021.

CUP # 08-19
Document No.

CONDITIONAL USE PERMIT
Document Title

**VILLAGE OF GERMANTOWN, WASHINGTON COUNTY, WISCONSIN
CONDITIONAL USE ZONING PERMIT**

Document # **1475483**
WASHINGTON COUNTY WISCONSIN
07-15-2019 02:35 PM

Sharon A. Martin
SHARON A MARTIN
WASHINGTON COUNTY
REGISTER OF DEEDS
Fee: \$30.00

Pages: 4

4

Whereas the Applicant:

**Matthew & Amy Seban, Agents for TLC Acres LLC,
Property Owner**

agrees to comply with applicable Codes and Ordinances of the Village of Germantown, Wisconsin, and further agrees that all land uses and activities conducted on the property will conform with the applications and supporting information filed with and approvals granted by the Village for the purpose of obtaining this permit.

Therefore, this permit is issued to the Applicant to allow: (1) the operation of a landscape services business that provides services including: landscape maintenance and construction services business; (2) the retail sale of nursery products not raised on the property; and (3) the storage of commercial vehicles and equipment on the property located at W210 N10738 Appleton Avenue pursuant to Section 17.07(3)(a), 17.12(2)(l) & 17.12(2)(gg) of the Village Zoning Code.

Name & Return Address:

**Village of Germantown
P.O. Box 337
Germantown, WI 53022**

Parcel Identification No:

GTNV 304-959

**On the following described property located in the Village of Germantown,
Washington County, Wisconsin:**

That part of the NORTHEAST ¼ and NORTHWEST ¼ of the SOUTHWEST ¼ of Section 30, Town 9 North, Range 20 East, Village of Germantown, Washington County, Wisconsin, bounded and described as follows: beginning at the EAST ¼ corner, SECTION 30-9-20, thence South 0° 27' 58" East on the east line of the Southeast ¼ of said Section 1,222.00 feet; thence South 89° 32' 02" West, 670.00 feet; thence 0° 27' 58" West, 118.80 feet; thence South 81° 32' 02" West, 863.51 feet; thence North 55° 27' 58" West on the center line of Appleton Avenue 113.65 feet; thence North 55° 21' 58" West on said center line 148.60 feet; thence North 53° 08' 58" West on said center line 107.70 feet; thence North 44° 39' 18" West on said center line 203.19 feet; thence North 40° 55' 06" West on said center line 199.71 feet; thence North 54° 23' 20" East, 669.00 feet; thence North 75° 12' 40" West, 310.40 feet; thence North 64° 10' 40" West, 471.50 feet; thence South 89° 30' 20" West, 175.40 feet; thence North 26° 14' 40" West, 36.70 feet; thence North 89° 30' 20" East on the East ¼ line of said Section 2,463.18 feet to the point of beginning . Containing 53.39 Acres.

W210 N10738 Appleton Avenue; Tax Key: GTNV 304-959

Pursuant to the following condition(s):

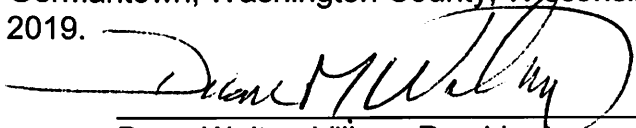
1. The uses and activities allowed on the property shall be limited to those uses and activities and relative locations specified in the conditional use permit (CUP) application and supporting documents dated February 26, 2019. The size and relative location of those areas within the property from which said uses and activities are permitted are limited to that presented in the detailed site plan and description submitted with the supporting documents. Days and hours of operation shall be limited to those specified in the CUP application and supporting documents submitted to the Village. The Owner/Operator is responsible for reporting any significant changes in the type, intensity, amount or location of the land uses and activities, days and hours of operation, size or location or other operational characteristics of said uses and activities

authorized under this CUP to the Village Planner.

2. All temporary and permanent exterior signs require a permit and shall comply with all current sign regulations. Off-premise advertising and directional signage is regulated by the Village and requires a permit if/when allowed.
3. In the event the Village receives complaints regarding noise negatively affecting the nearby residential neighborhood and adjacent properties, including but not limited to noise from truck-mounted backup alarms, the Owner/Operator shall work cooperatively with the Village to mitigate the noise and resolve the issue. The Owner/Operator shall implement the measures and practices described in the application and supporting documents to mitigate noise, dust and traffic impacts on the surrounding area on a continual basis.
4. Site improvements, buildings, shelters, parking areas, signage, exterior lighting and any other improvements on the property that benefit the vehicles, equipment, materials, employees, and/or customers of or are necessary for the land uses and activities authorized under this CUP shall be reviewed and approved by the Village through the Zoning Permit or Site Plan application process as determined by the Village Zoning Administrator. If required, Site Plan review and approval will include Plan Commission review and approval.
5. The area leased to MSTLC/Total Lawn Care for purposes of parking and storage of vehicles and equipment shall be visually buffered in some manner from the residential properties to the north, west and south. This requirement is not intended to require a complete opaque visual screen, but rather a buffer comprised of either landscape plantings and trees, fencing, berming or a combination, that lessens the impact of viewing commercial vehicles that are primarily used by and for the MSTLC/Total Lawn Care business and not the tree nursery. A detailed grading and landscape plan for the required visual buffer and the "landscape berm" shown in the Site Plan shall be prepared and submitted to the Village Planner for review and approval within six (6) months after issuance of the CUP.
6. No inoperable vehicles, trailers, equipment, junk or trash that may negatively affect the nearby residential areas and adjacent properties shall be kept on the property.
7. If the use, activities and/or operation subject of this permit falls out of conformity with the conditions herein, or where there is a change in the nature, character, intensity or extent of the permitted conditional uses and activities which cause special problems or harmful effects associated with the permitted uses and activities that were not revealed or anticipated at the time this CUP was granted, or, where conditions imposed by this CUP that were anticipated to mitigate or eliminate harmful effects associated with the uses and activities but are subsequently insufficient to do so, or, for similar cause based upon consideration for the public comfort, safety, and welfare, this conditional use permit may be terminated or modified by the Village Board by the amendment to or addition of conditions after public hearing thereon.
8. Residential or other non-agricultural uses not permitted "by right", as an accessory use or authorized under this CUP may constitute a violation of the Village's Zoning Code or this CUP.
9. Matt Seban shall notify the Community Development Department-Planning & Zoning Services Division on the date that Tier 2 is fully completed and has ceased filling operations.

10. The Conditional Use Permit shall come back to the Plan Commission for review in one (1) year after Village Board approval and include a public hearing.

Granted by the Village Board of the Village of Germantown, Washington County, Wisconsin on the 17 day of June, 2019.

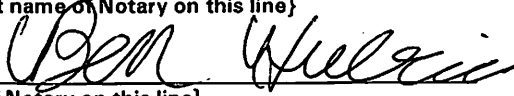

Dean Wolter, Village President

ATTEST:

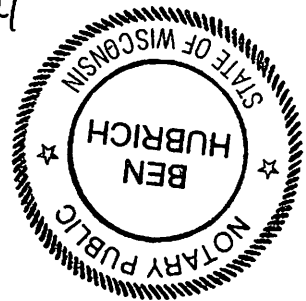

Deanna B. Braunschweig, WCMC/CMC, Village Clerk

STATE OF WISCONSIN) SS
WASHINGTON COUNTY)

Personally came before me this 17 day of June, 2019, the above named Dean Wolter, Village President, and Deanna B. Braunschweig, Village Clerk, to me known to be the persons who executed the foregoing instrument and acknowledged the same.

Ben Hubrich
{type or print name of Notary on this line}

{signature of Notary on this line}

Notary Public, State of Wisconsin
My Commission Expires: 5/25/2021



ACCEPTANCE OF TERMS AND CONDITIONS BY OPERATOR

As agent for TLC Acres LLC, property owner, and business operator, we hereby accept the terms and conditions set forth herein and realize that non-adherence to the terms and conditions as stated herein may result in the revocation of this Permit by the Village of Germantown.

Dated this 11 day of July, 2019

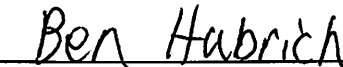
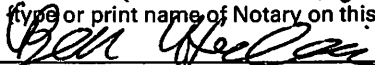

Matthew Seban, Agent for TLC Acres LLC, Property Owner

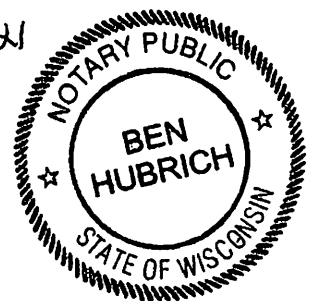

Amy Seban, Agent for TLC Acres LLC, Property Owner

STATE OF WISCONSIN) SS

Washington COUNTY)

Personally came before me this 11 day of July, 2019, being the above named Matthew & Amy Seban, to me known to be the person who executed the foregoing instrument and acknowledged the same.


(type or print name of Notary on this line)

(signature of Notary on this line)
Notary Public, State of Wisconsin
My Commission Expires: 5/25/2021



CONDITIONAL USE PERMIT (CUP) APPLICATION

4/8/19 Plan Commission Meeting

TLC Acres LLC / Matthew & Amy Seban

Village Planner Report

Germantown, Wisconsin

Summary

Matt & Amy Seban, MSTLC LLC, agents for TLC Acres LLC and property owners, are requesting approval of a Conditional Use Permit (CUP) to operate a landscape maintenance and construction services business and to sell retail products not raised on the 53.4-acre TLC Acres LLC property located at W210 N10738 Appleton Avenue.

Location: W210 N10738 Appleton Avenue

Applicant/

Property Owner: Matthew & Amy Seban
W210 N10738 Appleton Avenue
Germantown, WI

Zoning: A-1: Agricultural

Adjacent Land Uses		Zoning
North	Agricultural	A-1/A-2
South	Residential	Rs-2/Rs-3/Rs-4/Rs-5
East	Agricultural	A-1
West	Residential/Business	Rs-2/Rs-3/Rs-4/B-3

Location Map



History/Proposal

Matt & Amy Seban, MSTLC LLC, agents for TLC Acres LLC and property owners, are requesting approval of a Conditional Use Permit (CUP) to operate a landscape maintenance and construction services business, and, to sell retail products not raised on the 53.4-acre TLC Acres LLC property located at W210 N10738 Appleton Avenue.

As detailed in their application and supporting documentation, the Seban's purchased the 53.4-acre property in 2017. Like the former owner, Dick Gerschke, the Seban's are operating a tree nursery on the property.

Fundamental to their nursery operation is the concept of growing plant material (evergreen and deciduous trees and shrubs) on elevated "plateaus" or "tiers". Soon after purchasing the property the Seban's began trucking in fill material (and continue to do so) in order to create two (2) tiers in the area abutting Appleton Avenue south of an existing drainage ditch and existing maintenance building (see site plans in back of bound supporting documents). Tier 1 (approximately 1.75 acres in area) was completed and a portion planted in 2018. Tier 2 (approximately 4.85 acres in area) is currently under construction that will continue this spring and be ready for planting in 2019. Both tiers will be irrigated with pole-mounted overhead water "cannons" and planted with Spruce and Arborvitae trees, a variety of deciduous trees and other plants.

In addition to their tree nursery, the Seban's lease approximately 16 acres of land located off Hilltop Drive to the Pfaff Sod operation, and, lease an unspecified amount of land to MSTLC LLC, a.k.a. "Total Lawn Care", a landscaping maintenance and construction services business also owned and operated by the Seban's. The area leased to MSTLC/Total Lawn Care is used for parking and storage of business and employee vehicles, equipment and materials used in the landscape maintenance and construction services operation. This mutually-beneficial lease arrangement also involves the use of MSTLC/Total Lawn Care vehicles and equipment for the tree nursery and other farming-related activities on the 53.4-acre TLC Acres property.

The 53.4-acre property is located in an A-1: Agricultural Zoning District. Tree nursery, sod farming and the sale (wholesale or retail) of plant material raised on the property are all permitted "by-right" land uses and activities in the A-1 District. The uses and activities that are not allowed "by right" in the A-1 District that the Seban's are required to get a conditional use permit (CUP) for include:

1. Retail sale of nursery products not raised on the property
2. Operation of a landscape maintenance and construction services business

Conditional Use #1 (Retail sale of nursery products not raised on the property)

As detailed in the supporting documents, in addition to selling plant and soil material grown or extracted from the property, e.g. trees, shrubs, topsoil, peat moss and sod, the Seban's intend to sell plant and landscape material that is NOT raised on the property, including: trees, perennials, mulch, topsoil, stone and firewood.

The retail sale of these products not raised on the property will occur during the general hours of operation associated with the TLC Acres nursery operation:

April 1 through November 1

7:30am to 4:30pm Monday through Saturday

9:00am to 4:30pm Sundays

Conditional Use #2 (landscape maintenance and construction services business)

As mentioned above, the Seban's lease an unspecified amount of land to MSTLC LLC, a.k.a. "Total Lawn Care", a landscaping services business also owned and operated by the Seban's. In return, some vehicles and equipment owned and used for the MSTLC/Total Lawn Care business are also used for the TLC Acres tree nursery and other farming-related activities on the 53.4-acre property.

The MSTLC/Total Lawn Care landscape maintenance and construction business has four (4) divisions or service areas, including:

1. Total Lawn Care
 - a. Provides landscape maintenance services for commercial and residential properties
2. TLC Hardscapes
 - a. Provides design and installation of outdoor living areas and features
3. TLC Athletic Fields
 - a. Provides athletic field and complex maintenance
4. Snow Management Solutions
 - a. Provides snow plowing & removal services for commercial and residential properties

Almost all business activities for each of the four divisions is done off-site on customer properties and sites located elsewhere and not on the 53.4-acre property. Activities associated with the MSTLC/Total Lawn Care business that are conducted on-site include: vehicle and equipment maintenance (existing pole building on site is used for office and maintenance functions), parking of business and employee vehicles, storage of equipment and materials, and farm-related activities utilizing vehicles, equipment and/or employees contracted through TLC Acres for unspecified tree nursery and farming activities (including the temporary filling & grading activities associated with construction of the two nursery tiers on the property).

MSTLC/Total Lawn Care days and hours of operation for the first three (3) divisions listed above are:

March 15 through December 1 (Lawn Care, Hardscapes & Athletic Fields)

6:00am to 8:00pm Sunday through Saturday (on-site/indoor shop employees)

7:15am to 8:00pm Sunday through Saturday (field laborers)

The days and hours of operation for the fourth division listed above are:

November 1 through April 1 (Snow Management)
6:00am to 8:00pm Sunday through Saturday (on-site/indoor shop employees)
Unspecified days & hours for off-site location employees

MSTLC/Total Lawn Care currently employs eight (8) full-time and as many as (23) part-time employees.

NOTE: Other details regarding the TLC Acres tree nursery operation and the MSTLC/Total Lawn Care operation are contained in the application and supporting documents.

It is important to point out that a CUP is NOT required for the temporary filling and grading activities associated with construction of the two “tiers” that have gone on since 2017 and will continue into 2019. While not a farming activity that is exempt from certain zoning restrictions and regulation under Wisconsin’s “right to farm” statutes, these temporary land disturbing activities are subject to the Village’s erosion control permitting and storm water management regulations while this construction is ongoing. The Seban’s have obtained the necessary erosion control permits from the Village and, if necessary, will be required to prepare a storm water management plan for and install storm water management measures on their property.

Staff Comments

Consistency with Village’s Land Use Plan & A-1 Zoning District.

The 2020 Land Use Plan map classifies this property as “Agricultural/Conservation Residential”. The current zoning of the property is A-1: Agricultural. As discussed above, many of the activities conducted on or from the property are permitted “by right” land uses and not subject the Village’s CUP requirements. Agricultural activities such as these are generally consistent with the 2020 Land Use Plan map.

While not specifically named or described in the list of “permitted” or “conditional” uses in the A-1 District regulations, landscape maintenance and construction businesses like the Seban’s operation is and has been allowed in A-1 Zoning Districts throughout the Village as one of many “unclassified uses” that is considered to be the same or similar to other permitted uses in the A-1 District. Similar landscaping businesses such as D.J. Frank Landscape Contracting Inc., Wendland Landscape Service Inc., and Dan Larsen Landscaping Inc., all provide varying levels of the same or similar services and are all located in A-1 Districts in different areas the Village. While it is not uncommon to see landscape maintenance operations located in industrial zoning districts (and even small-scale operations in residential districts operating as “home occupations”), full-service landscaping operations such as the Seban’s MSTLC/Total Lawn Care business are typically located in agricultural zoning districts. Particularly those that involve growing their own trees and other plant material, as well as, those that provide services that include the storage and screening of topsoil, and the hauling, cutting, grinding and mulching of cut trees and other plant debris. While not the same as more traditional

agricultural operations as dairy farming or crop raising, landscaping services businesses are one of many specialized land uses that is typical and customary for agriculturally zoned districts.

With that said, the circumstances unique to this particular CUP request are: (1) the previous property owner of the 53.4-acre property also operated a tree nursery on the property, but to a lesser degree than the Seban's full-service landscaping maintenance and construction business; The Gerschke operation did not provide all of the same landscape maintenance, hardscape construction or snow management services as does the MSTLC/Total Lawn Care operation; and (2) the Seban's property is relatively close to pre-existing residential neighborhoods that "were here first" before the Seban's acquired the property and certainly before the MSTLC/Total Lawn Care business came into being on this property. This is different than the D.J. Frank and Wendland landscaping operations that are located further away from or otherwise buffered from existing residential areas, or, were already in business on those properties well before the nearby residential development came about.

For these reasons, Staff supports the CUP proposal provided that certain mitigative measures are put into place and continually practiced and maintained to lessen or mitigate impacts associated with the uses requiring the CUP that can negatively affect the nearby residential neighborhood and adjacent properties.

Finally, in the application and supporting documents, the Seban's refer to the existing pole building as a storage and maintenance shop for TLC Acres. This building is also referred to as a "man cave" to be used by family and friends. The property is zoned for agricultural land uses and activities and not residential primary or accessory uses. While it is understandable that the owners would want to take advantage of the value and amenities that their property provides, but it should be noted that residential or other non-agricultural uses not permitted "by right" or as may be allowed with a conditional use permit may not comply with the Zoning Code or terms of any CUP issued for the property.

Village Planner Recommendation

APPROVE a conditional use permit (CUP) for Matthew and Amy Seban to allow the operation of a landscape maintenance and construction services business, and, to sell retail products not raised on the 53.4-acre TLC Acres LLC property located at W210 N10738 Appleton Avenue subject to the following conditions:

1. The uses and activities allowed on the property shall be limited to those uses and activities and relative locations specified in the conditional use permit (CUP) application and supporting documents dated February 26, 2019. The size and relative location of those areas within the property from which said uses and activities are permitted are limited to that presented in the detailed site plan and description submitted with the supporting documents. Days and hours of operation shall be limited to those specified in the CUP application and supporting documents submitted to the Village. The Owner/Operator is responsible for reporting any significant changes in the type, intensity, amount or location of the land uses and activities, days and hours of operation, size or location or other operational characteristics of said uses and activities authorized under this CUP to the Village Planner.
2. All temporary and permanent exterior signs require a permit and shall comply with all current sign regulations. Off-premise advertising and directional signage is regulated by the Village and requires a permit if/when allowed.
3. In the event the Village receives complaints regarding noise negatively affecting the nearby residential neighborhood and adjacent properties, including but not limited to noise from truck-mounted backup alarms, the Owner/Operator shall work cooperatively with the Village to mitigate the noise and resolve the issue. The Owner/Operator shall implement the measures and practices described in the application and supporting documents to mitigate noise, dust and traffic impacts on the surrounding area on a continual basis.
4. Site improvements, buildings, shelters, parking areas, signage, exterior lighting and any other improvements on the property that benefit the vehicles, equipment, materials, employees, and/or customers of or are necessary for the land uses and activities authorized under this CUP shall be reviewed and approved by the Village through the Zoning Permit or Site Plan application process as determined by the Village Zoning Administrator. If required, Site Plan review and approval will include Plan Commission review and approval.
5. The area leased to MSTLC/Total Lawn Care for purposes of parking and storage of vehicles and equipment shall be visually buffered in some manner from the residential properties to the north, west and south. This requirement is not intended to require a complete opaque visual screen, but rather a buffer comprised of either landscape plantings and trees, fencing, berming or a combination, that lessens the impact of viewing commercial vehicles that are primarily used by and for the MSTLC/Total Lawn Care business and not the tree nursery. A detailed grading and landscape plan for the required visual buffer and the "landscape burm" shown in the Site Plan shall be prepared and submitted to the Village Planner for review and approval within six (6) months after issuance of the CUP.
6. No inoperable vehicles, trailers, equipment, junk or trash that may negatively affect the nearby residential areas and adjacent properties shall be kept on the property.

Village Planner Recommendation (cont.)

7. If the use, activities and/or operation subject of this permit falls out of conformity with the conditions herein, or where there is a change in the nature, character, intensity or extent of the permitted conditional uses and activities which cause special problems or harmful effects associated with the permitted uses and activities that were not revealed or anticipated at the time this CUP was granted, or, where conditions imposed by this CUP that were anticipated to mitigate or eliminate harmful effects associated with the uses and activities but are subsequently insufficient to do so, or, for similar cause based upon consideration for the public comfort, safety, and welfare, this conditional use permit may be terminated or modified by the Village Board by the amendment to or addition of conditions after public hearing thereon.
8. Residential or other non-agricultural uses not permitted “by right”, as an accessory use or authorized under this CUP may constitute a violation of the Village’s Zoning Code or this CUP.



Village of



Germantown

Willkommen

Fee must accompany application

☒ \$1460 Paid \$ Date 2/26/19

CONDITIONAL USE PERMIT APPLICATION

Pursuant to Section 17.42 of the Municipal Code

Please read and complete this application carefully. All applications must be signed and dated.

1 APPLICANT OR AGENT

MSTLC. LLC
PO BOX 55
Menomonee Falls, WI
53052
Phone (414) 584-9292
Fax ()
E-Mail mattletotalawncareswi.com

PROPERTY OWNER

Matt & Amy Schan
W210 N10738 Appleton Ave
Germantown, WI
53022
Phone (414) 403-8956

2 TO WHOM SHOULD THE PERMIT BE ISSUED?

MSTLC. LLC

3 PROPERTY ADDRESS

W210 N10738 Appleton Ave.

TAX KEY NUMBER

GTNV 304959

4 DESCRIPTION OF EXISTING OPERATION

Briefly describe the use as it exists today, including use, size, number of employees, hours of operation, etc. If this permit involves new construction, describe the current status of the property, e.g. "vacant." Use additional pages as necessary.

5 DESCRIPTION OF PROPOSED OPERATION

Write the name of the proposed conditional use exactly as it appears in the Municipal Code.

Describe the proposed use, including size, number of employees, hours of operation and extent of any new construction/alterations.

METES AND BOUNDS LEGAL DESCRIPTION OF PROPERTY — REQUIRED

6

Attach pages as necessary.

SUPPORTING DOCUMENTATION:

7

- ☐ Site plan and elevations for new construction (can be conceptual)
- ☐ Photos of existing use and/or proposed use operating elsewhere

☐ _____

☐ _____

READ AND INITIAL THE FOLLOWING:

8

MS

I understand that the Village is under no obligation to issue a Conditional Use Permit and will do so only if the applicant successfully demonstrates that the proposed use is harmonious with the neighborhood and the long range goals of the Village.

MS

I will notify the Village if any aspect of the conditional use changes. I understand that failure to do so may result in the revocation of the CUP.

MS

I understand that a Conditional Use Permit is valid only if the conditions and restrictions of the permit are met. I understand that failure to comply with any aspect of the permit may result in revocation.

SIGNATURES — ALL APPLICATIONS MUST BE SIGNED BY OWNER!

9

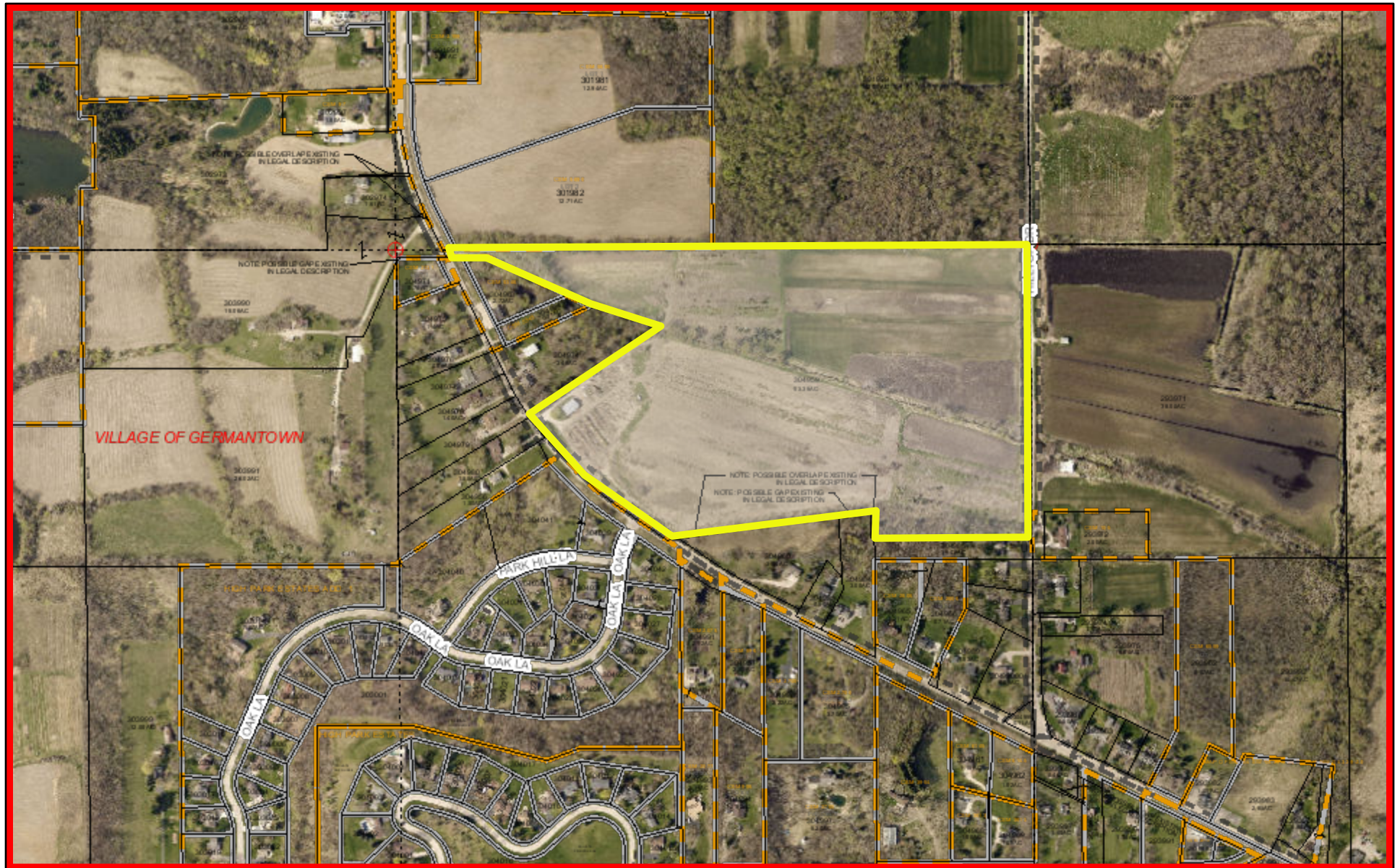
Matthew Sosa
Applicant

2/11/19
Date

Matthew Sosa
Owner

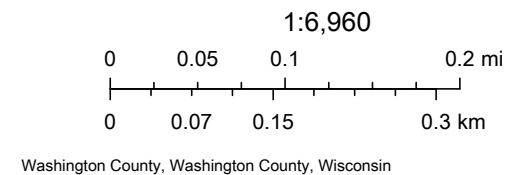
2/11/19
Date

Matt & Amy Seban-MSTLC Property



March 25, 2019

- | | | | |
|----------------------------|-----------------------------|--------------------|---------------|
| County Boundary | Washington County Landmarks | Public Open Spaces | Meander Line |
| City, Village or Town Hall | Airports | Current Parcel | PLSS Monument |
| Libraries | Trails | Landhook | PLSS Boundary |



TLC Acres, LLC – W210 N10738 Appleton Ave.

Table Of Contents

- I. Table of Contents & Legal Description of Property
- II. TLC Acres History Narrative (2 Pages)
- III. TLC Acres & MSTLC Operational Information (5 Pages)
- IV. TLC Acres Site Map Description (2 Pages)
- V. TLC Acres Site Plan Full Map
- VI. TLC Acres Site Plan Main Yard Map

Legal Description Of Property

THAT PART OF THE NORTHEAST $\frac{1}{4}$ AND NORTHWEST $\frac{1}{4}$ OF THE SOUTHWEST $\frac{1}{4}$ SECTION 30, TOWN 9 NORTH, RANGE 20 EAST, VILLAGE OF GERMANTOWN, WASHINGTON COUNTY, WISCONSIN, BOUNDED AND DESCRIBED AS FOLLOWS: BEGINNING AT THE EAST $\frac{1}{4}$ CORNER, SECTION 30-9-20, THENCE SOUTH 0 DEGREES 27' 58" EAST ON THE EAST LINE OF THE SOUTHEAST $\frac{1}{4}$ OF SAID SECTION 1222.00 FEET, THENCE SOUTH 89 DEGREES 32' 02" WEST - 670.00 FEET, THENCE 0 DEGREES 27' 58" WEST 118.80 FEET, THENCE SOUTH 81 DEGREES 32' 02" WEST - 863.51 FEET, THENCE NORTH 55 DEGREES 27' 58" WEST ON THE C/L OF APPLETON AVENUE 113.65 FEET, THENCE NORTH 55 DEGREES 21' 58" WEST ON SAID C/L 148.60 FEET, THENCE NORTH 53 DEGREES 08' 58" WEST, ON SAID C/L 107.70 FEET, THENCE NORTH 44 DEGREES 39' 18" WEST, ON SAID C/L 203.19 FEET, THENCE NORTH 40 DEGREES 55' 06" WEST, ON SAID C/L 199.71 FEET, THENCE NORTH 54 DEGREES 23' 20" EAST, -669.00 FEET, THENCE NORTH 75 DEGREES 12' 40" WEST, -310.40 FEET, THENCE NORTH 64 DEGREES 10' 40" WEST, -471.50 FEET, THENCE SOUTH 89 DEGREES 30' 20" WEST -175.40 FEET, THENCE NORTH 26 DEGREES 14' 40" WEST, -36.70 FEET, THENCE NORTH 89 DEGREES 30' 20" EAST, ON THE EAST $\frac{1}{4}$ LINE OF SAID SECTION 2463.18 FEET TO THE POINT OF BEGINNING.

Specific Operational Information For TLC Acres, LLC & MSTLC, LLC

W210 N10738 Appleton Ave.

This outline follows the specific request for information in a letter received on January 23rd from Jeff Retzlaff. The numbers and letters reflect the outline as it is laid out in said letter so that can be used as a reference if necessary. All this information is 100% accurate without omissions as of February 20, 2019. The information requested has been answered in outline form two times. The first time the information was given as it pertains to TLC Acres, LLC and the second time as it pertains to MSTLC, LLC.

2a. Operational Information for TLC Acres, LLC

A. Days And Hours Of Operation

- April 01 – November 01
 1. 7:30 a.m. - 4:30 p.m. Monday thru Saturday
 2. 9:00 a.m. – 4:30 p.m. Sundays
 3. Occasional use outside of these hours for specific circumstances.
 4. Farming activities will take place 12 months out of the year and will be done per village ordinance.

B. Employees

- TLC Acres currently has no employees outside of the Seban family. Any labor for TLC Acres is contracted labor through MSTLC, LLC

C. Services And Products Provided

i. Products Grown Or Extracted From On Site

- i. Trees, Shrubs, Plant Material
- ii. Extracted - Topsoil, Pete Moss, Sod

ii. Products Not Grown Or Extracted From On Site

- iii. Spruce Trees purchased from the “Morse Nursery” (1600 trees over next 4 years)
- iv. Plant material including trees, plants, perennials purchased wholesale for retail sale from Johnsons Nursery, Minors, etc.
- v. Mulch- Hardwood, Brown Enviro, Red Enviro, Pine, Hemlock, Wood Chips, etc.
- vi. Topsoil- Screened, Field Run, and Engineered
- vii. Stone- Clear, T.B., Decorative, etc.
- viii. Firewood

D. Assets / Types Of Vehicles And Equipment Of TLC Acres, LLC

- New Holland 100hp tractor – **onsite**
- John Deere 544-wheel loader – **both**
- John Deere 333G Track skid steer w/ Tree Spade – **both**
- 2001 International 20' Box Truck – **onsite**
- 2001 Ford F-250 – **both**
- New Holland 46hp Tractor – **both**
- Various Hand Tools – **onsite**
- Various small engine equipment – **both**
- Other numerous small equipment necessary to support a tree nursery - **Both**

E. Plant And Non-Plant Material Stored On Site

- Mulch- Bins hold max. capacity 400 yds. at any one time
- Stone- Bins hold max capacity 200 ton at any one time
- Topsoil- Pile currently holds 8000 yds.
- Various palletized fertilizers
- Various chemicals supporting farming operations
- Plant Material- 150 spruce trees
- Max 2 acres – healed in nursery stock (trees & shrubs)

F. Description Of Leased Acres And Purpose

- Parking Lot- Leased to MSTLC, LLC (see attached map)
- 16 Acres- Leased to Pfaff Sod (see attached map)

G. Expected Time Frame Remaining To Complete Tier 2 (see attached map)

- Depending on fill availability and weather, the soonest completion date is April 15th
- Tier 2 will be completed fully in 2019
 - Trucks**
 - trucks of soil imported range from 10-75 units per day with a normal day being 40 loads
 - Hours- filling hours and operations 7:30am-6:30pm Monday thru Friday, 8:00am-2:00pm Saturday, no activities on Sundays
 - Extraordinary circumstances hours may be extended to village operation ordinance
 - Equipment Used**
 - Bulldozer
 - Wheel Loader
 - Track Skid steer
 - Quad Axle Dump Truck
 - Road Sweeper
 - Compactor

iii. Measures Taken To Migrate Noise, Dust, Traffic

- All vehicles owned by TLC Acres, LLC & MSTLC, LLC, have been equipped with “white noise” back up alarms. Any leased equipment may have regular back up alarms. We will make every effort to keep these back up alarms to a minimal use.
- Paperwork pointing out our rules is distributed to every new truck driver that enters our property. Included in these rules we cover both safety and respect to neighbors.
- Road is swept as needed
- On dry days, driveway is watered down to control airborne dust
- The Village of Germantown is looking into signage on Hwy. 175 regarding trucks entering and leaving, no engine braking, etc.

2b. Operational Information for **MSTLC, LLC**

A. Days And Hours Of Operation

- March 15 – December 1 (landscape maintenance, landscape construction, hardscape installation, and athletic fields)
 1. 6:00 a.m.-8:00 p.m. Shop Employees (indoor duties)
 2. 7:15 a.m.-3:00/8:00 p.m. Field Employees (laborers)
 3. It is important to note that all MSTLC LLC employees report to TLC Acres as the terminal of MSTLC LLC and no work is done on site. The only time employees will work on site is if they are contracted by TLC Acres
- November 01- April 1 (Snow Management Operations)
 1. 6:00 a.m.-8:00 p.m. Shop Employees (indoor duties)
 2. Field Employees (laborers) Times are not specific
 3. Typically equipment is stored at job sites or equipment is picked up a day prior to a snow event
 4. Only a small amount of equipment is dispatched from TLC Acres location
 5. During an overnight snow event, there will be a minimal amount of traffic through TLC Acres to reload materials
 6. It is a current policy to shut off all flashing lights when on or entering premises after dark
- Occasional use outside of these hours for specific circumstances.

B. Employees

- MSTLC LLC currently has (8) full time employees. When we are fully staffed with seasonal labor, we have as many as 23 employees.

C. Services And Products Provided

i. MSTLC, LLC

- i. Total Lawn Care/ division of MSTLC, LLC - Landscape management including mowing, fertilizing, plant and bed maintenance, spring and fall cleanups for residential and commercial locations
- ii. TLC Hardscapes/ division of MSTLC, LLC – design and installation of outdoor living areas, including retaining walls, patios, water features, outdoor kitchens, outcropping and more.
- iii. TLC Athletic Fields/ division of MSTLC, LLC – Manage, maintain & renovate athletic complexes
- iv. Snow Management Solutions/ division of MSTLC, LLC – Provides snow management services for commercial property, schools, church's, retail and residential sites

D. Assets / Types Of Vehicles And Equipment Of MSTLC, LLC

7. 10 Trucks which include pickup trucks, dump trucks & flat beds that are used to support both companies
8. 2 Skid steers used to support both companies
9. 1 Mini Excavator used to support both companies
10. 2 40hp tractors used to support both companies
11. 2 Wheel loaders used to support both companies
12. Trailers- 6 enclosed / 4 open used to support both companies
13. Various lawn mowers
14. Various small engine equipment
15. Various hand tools
16. Other equipment "common" to support use in both companies

E. Plant And Non-Plant Material Stored On Site – (and other miscellaneous items that would support a landscape construction & maintenance company)

- Palletized Fertilizer
- Rolls of erosion control mat
- Outcropping block
- Grass seed
- Pallets of pavers and block
- Inventory will vary from time to time, not for resale at TLC Acres

F. Description Of Leased Acres And Purpose

- MSTLC LLC has a lease agreement with TLC Acres to lease an area of parking lot (highlighted on site plan map)
- The purpose and use of this area is to provide a terminal or hub for MSTLC LLC
- Parked on this site includes but is not limited to trucks, trailers and other miscellaneous equipment owned by MSTLC LLC
- It will also provide a place for Total Lawn Care employees to park their vehicles while at work for the day.

Description Of Site Plan For TLC Acres (see attached maps)

W210 N10738 Appleton Ave.

- I. Existing Pole Building
 - A. Storage and shop area for TLC Acres
 - B. “Man Cave” for use by Seban family and friends
 - C. The well location noted on the site map. It provides the water to all of the irrigation lines for the nursery.
- II. Proposed Landscape Patio
 - A. Brick paver patio and fire pit area for use by Seban family and friends
 - B. Landscaping will include: trees, shrubs, and perennials to beautify the front of the property.
- III. Proposed Landscape Berm
 - A. This berm will include spruce trees as well as other perennials and shrubs to create a soft barrier for the neighbor to the north.
- IV. Proposed Sign Location
 - A. This is the approximate location identified at this time where a future sign will be built. There are currently no specific plans for a sign. The sign will be subject to a sign permit from the Village of Germantown.
- V. Nursery Staging Area
 - A. This area is to store and display plant material that is ready for sale.
 - B. This will be an irrigated area.
- VI. Parking And Loading Area For TLC Acres
 - A. This area will be used for visitor parking, loading area, and other TLC Acres activities. This lot is not designated for any activities of MSTLC, LLC.
- VII. Mulch And Stone Bins
 - A. These bins are designated to hold and keep separate specific materials. These materials include: various varieties of mulch and stone, firewood, etc.
- VIII. Cold Storage Building
 - A. This building is used for storage of many items. Here are some examples of what is stored in this building.
 - 1. Tractors
 - 2. Irrigation equipment
 - 3. Palletized fertilizer
 - 4. Straw matting
 - 5. 3 point implements such as plows, mowers, and tillers
 - 6. Various tools including power and hand tools
- IX. Dry Materials Building
 - A. In summer screened topsoil and peat moss is stored inside to keep dry.
 - B. In winter bulk salt is stored inside.
- X. Topsoil
 - A. This is a topsoil pile that we use to support farming operations as well as have available for sale.

- B. This area is subject to an erosion control permit through the Village of Germantown. We currently hold this permit in good standing.
- XI. Overland Runoff Swale
 - A. This swale has been engineered to control the overflow from the ditch along Hwy. 175 as well as is designed to handle the runoff off the existing parking area and nursery staging area.
 - B. This swale is made of “no mow” fescue grass. This is done specifically for erosion control.
- XII. Lot Leased To MSTLC, LLC
 - A. TLC Acres has an agreement to lease this area of the property to MSTLC, LLC for the purpose of being a terminal or hub for MSTLC, LLC.
 - B. This is an area where autos and equipment owned by MSTLC, LLC are staged.
 - C. This is an area for employees of MSTLC, LLC to park their personal autos while working.
 - D. This area will be used as outside storage for MSTLC, LLC.
- XIII. Tier 1
 - A. This area is approximately 1.75 acres
 - B. A portion of this tier was planted in the Fall of 2018
 - C. The remainder of this tier will be planted in the spring of 2019
 - D. When complete this tier will contain spruce trees, arborvitae, deciduous trees, and other plant material consistent with a nursery.
 - E. This tier will be irrigated.
- XIV. Tier 2
 - A. This area is currently under construction. The silt fence as well as topsoil stockpiles are identified as they are on the erosion control plan submitted to the Village of Germantown.
 - B. When complete it will be approximately 4.85 acres in size.
 - C. When complete this tier will contain spruce trees, arborvitae, deciduous trees, and other plant material consistent with a nursery.
 - D. This tier will be irrigated.
- XV. Tillable Acreage
 - A. This area is the tillable acreage available to TLC Acres for planting cash crops.
- XVI. Unnamed Waterway
 - A. This is a creek that runs through the property.
 - B. There is currently a vegetation buffer that is greater than 10’ wide on both sides of the creek. This area is left natural to control the erosion of soil that can potentially run into this creek.
- XVII. Existing Planted Nursery Stock
 - A. This is nursery stock that was existing when we purchased the property in 2017.
- XVIII. Acreage Leased To Pfaff Sod
 - A. This acreage is leased to Pfaff Sod to raise and sell sod. Pfaff has been leasing this land for 15+ years.



Documents Pertaining to Conditional Use Permit Application

TLC Acres LLC
Matthew and Amy Seban
W210 N10738 Appleton Avenue
Germantown, WI 53022
(414) 403-8956

Description Of Proposed Operation

W210 N10738 Appleton Ave.

TLC Acres LLC is a family owned and operated tree nursery which is located at W210N10738 Appleton Avenue in the Village of Germantown (the "Property"). Matt and Amy Seban purchased the Property in June of 2017. In their first year of ownership they have dedicated many hours of man power and made a significant monetary investment towards cleaning up the property from the eyesore that it was when they took ownership. They look forward to continuing to invest in and build out this tree nursery into a more modern operation. They look forward to being a great neighbor and resident of Germantown for many years to come.

The Seban secured a loan to purchase the Property through the Farm Service Of America (FSA) which is a branch of the Federal Government. This loan requires the Seban to "farm" the Property for the 25-year term of the loan. They have site visits and are audited annually by a member of the FSA as a condition of their loan.

TLC Acres operates during normal farming hours that can vary depending on the time of the year. They have been and will continue to be respectful to neighbors of the property with respect to the hours that they work.

The Seban worked with the Germantown Building inspector to renovate the existing pole building that was on site. They did not change the footprint of this structure. This building acts as a storage shed as well as a place to work on and house equipment to support their farming operation. This building does not have running water or septic.

The Seban purchased this property as an existing tree nursery which they understand had been operated for 25 years and are not looking to change the fundamental use of the Property. The primary use will be as a nursery to raise growing stock, a permitted use under the A-1 Zoning. (Section 17.12(1)(g), (i)) Outlined below is some additional information regarding the proposed use of the Property:

Growing Trees & Shrubs - Beyond the trees that are currently growing on the property the Seban first crop was planted in the Fall of 2018. The first crop is scheduled to be planted on the plateau built (Tier 1) out by Appleton Ave. Building these plateaus -- which includes the use of fill brought to the property and graded by the Seban -- is a big part of the long-term plan for plant material on this land.

As part of a "new generation" of tree farmers, the Seban are always looking for ways to become more progressive and environmentally friendly. Building and farming on plateaus allows them to control the moisture that is provided for the plants during the various seasons as well as the different points in the plant's gestational maturation.

The first plateau is ready for planting. The topsoil has been redistributed and the land is ready for planting. They have installed telephone poles in a grid that will act as the means of irrigation. Large water cannons will be placed on each pole which will allow them to control the amount of moisture that plants receive. By monitoring the soil's moisture level they can be more responsible with their water usage by giving water to the plant when it is necessary and withholding water from the plant when it does not need water.

The Seban are currently in the process of creating the second plateau (Tier 2). There is an existing erosion control permit that is in place which has been approved by the Village of Germantown for use during the construction of the plateau. Once the plateau is complete the land will be viewed as A1 and no erosion control plan will be necessary for future farming operations. The process of building a plateau involves stripping the topsoil from the existing land and stacking available topsoil to redistribute on to the top of the plateau once it is built. They are currently bringing in clean fill when it is available to them for use in the creation of this second plateau. Each load that is brought to the farm is tracked and the source is disclosed to the Seban. All of this information is maintained as part of the Seban's records. Once the plateau is complete they will GPS grade it for proper drainage and then cover it with the very same topsoil that was stripped off the land in preparation for this plateau. They will then irrigate the plateau and it will be ready for planting in 2019.

Selling Nursery Stock & Related Materials - The Seban understand that for many years the Property has been

used an outlet for local landscapers, other growers, as well as the public to purchase nursery stock as well as related materials. Sale of nursery stock which is not raised on site is a conditional use under the Village's code, and we would therefore read that sale of nursery stock that is raised on site is a permitted use. (Section 17.12(1)(m) and (2)(l)) When in season, the Sebans are selling trees, shrubs, topsoil, stone, and mulch.

This is not a brick and mortar location with indoor retail space. The renovated pole shed is intended for storage and maintenance of farm equipment as well as a "dream farm man cave" for the Sebans use. It is posted on each door that the public is not allowed inside the building.

Lease Of Land To Pfaff Sod – The Sebans currently lease 16 acres of the land to Pfaff Sod for a sod growing operation. This is a permitted use in the A-1 district. (Section 17.12(1)(j)).

Rental Of Parking Space To M.S.T.L.C., LLC ("Total Lawn Care") - There is a current rental agreement between TLC Acres, LLC and Total Lawn Care for use of parking space for the storage of equipment, trucks, and employee vehicles and the corresponding use of the Total Lawn Care equipment by TLC Acres, LLC. As a matter of background, Total Lawn Care is a local landscape company that services Germantown and the surrounding areas. Matt and Amy Seban are the only members of Total Lawn Care, so there is common ownership with TLC Acres LLC. Total Lawn Care currently services and maintains great relationships with the Germantown School District, where they manage the fertilizer and weed control for all of their schools, the Germantown Hwy./ Parks/ Park & Rec Departments where they manage the fertilizer, weed control, and athletic field maintenance for the Germantown parks, and the Germantown Little League where they manage they manage all of the turf at their various locations. Total Lawn Care has been a great long-term partner with these local organizations because they are local, follow through on their promises, and do quality work. Total Lawn Care also services local businesses and residents, helping them with their landscaping needs from maintenance to construction.

The current area used by Total Lawn Care for parking space is not the final area that they will be using in the future. The Sebans are continuing to build out this property as time and funds allow. The final area that will be designated for Total Lawn Care will be tucked back behind the building (see site plan).



EXISTING PLANTED
NURSERY STOCK

TLC ACRES TILLABLE ACREAGE

ACREAGE LEASED TO PFAFF SOD

LOT LEASED TO MSTLC LLC

UNNAMED WATERWAY

10" WIDE VEGETATION BUFFER

TLC ACRES TILLABLE ACREAGE

UNNAMED WATERWAY

TLC ACRES TILLABLE ACREAGE

SILT FENCE

TIER 2

TIER 1

PROPOSED LANDSCAPE BURM

EXISTING BUILDING

PROPOSED LANDSCAPE PATIO

WELL

PROPOSED SIGN LOCATION

DRIVEWAY

PARKING

LOADING AREA FOR TLC ACRES

NURSERY STAGING AREA

OVERLAND RUNOFF SWALE

WATER INLET

MULCH AND STONE BINS

COLD STORAGE BUILDING

DRY MATERIALS BUILDING

TLC Acres View 1

PROPOSED LANDSCAPE BURM

EXISTING
BUILDING

PROPOSED
LANDSCAPE PATIO

WELL

LOT LEASED TO MSTLC LLC

PROPOSED SIGN
LOCATION

IRRIGATED
NURSERY STAGING AREA

PARKING

LOADING AREA
FOR TLC ACRES

MULCH AND STONE BINS

COLD STORAGE
BUILDING

DRY MATERIALS
BUILDING

TOPSOIL

OVERLAND RUNOFF SWALE

WATER INLET

TIER 1

TIER 2

STORMWATER
MANAGEMENT REPORT

TLC Acres
W210 N10738 Appleton Avenue
Village of Germantown, Wisconsin

January 23, 2025

PROJECT OWNER:

TLC Acres
W210 N10738 Appleton Avenue
Germantown, WI 53022

PREPARED FOR:

TLC Acres
W210 N10738 Appleton Avenue
Germantown, WI 53022

PREPARED BY:

Parish Survey & Engineering, LLC
122 Wisconsin Street,
West Bend, WI 53095

TL-05-21



PARISH SURVEY & ENGINEERING

122 Wisconsin Street | West Bend, WI 53095
www.parishse.com

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Design Standards	2
Existing Site Conditions.....	3
Subsurface Soil Conditions.....	5
Proposed Site Conditions.....	5
Summary of Results	7
Maintenance of Stormwater Systems	8
Conclusion.....	8

APPENDICES

- A. Location Map
- B. Soils Information
- C. Calculations: Water Quantity, Existing Site Conditions
 - 1) Topography w/ Drainage Basins, Tc Path, and CN
 - 2) Calculations
- D. Calculations: Water Quantity, Proposed Site Conditions
 - 1) Site Plan and Topography w/ Drainage Basins, Tc Path, and CN
 - 2) Calculations
- E. Calculations: Water Quality - TSS Reduction
- F. Civil Design Plans
- G. Stormwater Management Practice Agreement

PROJECT OVERVIEW

Executive Summary

This project is located at W210 N10738 Appleton Ave (STH 175) in the Village of Germantown, WI (Village). The property covers 53.39 acres fronting both Appleton Avenue to the west, and Hilltop Drive on the east. The property has been used as an agriculture property for the known history based on review of historical aerial photos from Washington County. In general, the property drains from west to east with a ditchline roughly in the center of the site that collects water and directs runoff to a culvert under Hilltop Drive.

The primary entrance to the property is the main driveway off Appleton Ave. on the southwest side of the property. There are two agriculture access driveways off Hilltop Drive on the east side of the property.

Over the last 10 years, the property has expanded it's function both producing and selling nursery stock along with the sale of topsoil and other products while maintaining the agriculture use. The Village noted that there has been activity and changes to the surfaces by adding gravel driveways, paved driveways, and buildings when comparing the 2017 aerial photo from Washington County to the 2022 aerial photo. These changes to surfacing have occurred primarily in the southwest corner of the site near the existing building and Appleton Ave driveway. This report will focus on changes between 2017 and the current condition, included the proposed building addition and asphalt pavement additions during the 2024 construction season, and address future considerations for additional pavement and buildings.

During the summer of 2024, the Village requested the Wisconsin Department of Natural Resources (WDNR) review the ditchline on the site to determine if this would be classified as a navigable waterway. After the review, the WDNR did classify the ditchline as navigable.

A proposed stormwater basin in the center of the site, south of the drainage ditch, will be designed to capture runoff from the southwest side of the property for treatment and discharge to meet current Village of Germantown requirements. The assumption will be that the existing conditions are based on the 2017 aerial photo from Washington County. All gravel, pavement, and rooftop added between 2017 and current day will be considered "new" for the purposes of this stormwater management plan. Next, this plan will provide stormwater management for proposed modifications to the property which will include a 5,000sf addition to the main building and an 11,000sf addition to the asphalt pavement. And finally, this stormwater plan will provide for a future building addition of 10,000sf along with an additional 30,000sf of asphalt pavement that could occur at some point in the future.

Finally, this site is located within the Menomonee River watershed and is located within the Milwaukee Metropolitan Sewerage District (MMSD) jurisdictional service area.

DESIGN STANDARDS

Method of Analysis

The storm water runoff rates and quantities have been analyzed using HydroCAD® software, using the United States Department of Agriculture Soil Conservation Service Technical Release 55 (TR-55) methodology. The MSE 3, 24-hour rainfall distribution curve is used for the calculations.

The selected design storms were based on NOAA Atlas 14 as noted in Table 1 below.

Table 1 – NOAA Rainfall Depths

Rainfall Amount	
Recurrence Interval (Year)	Rainfall Depth (in)
1	2.37
2	2.68
100	6.36

TSS reduction results for the areas disturbed, as well as the areas draining to the ponds were analyzed with WinSLAMM Source Loading and Management Model. The “Milwaukee 1969” rainfall file was used with the winter season between December 6th to March 28th.

Infiltration

Soil testing is required to determine if the existing soil layers are suitable for infiltration. Per Wisconsin DNR Standard 1002, if soils have an infiltration rate of less than 0.6 in/hr the site is exempt from infiltration requirements.

If the soils are conducive for infiltration and the development has more than 40% but less than 80% of connected imperviousness, then the site will be designed to infiltrate sufficient runoff volume such that the post-development infiltration volume is at least 60% of the pre-development infiltration volume, based on an average annual rainfall. Furthermore, no more than 2% of the project site is required as an effective infiltration area, otherwise, infiltrate 10% of the post-development runoff from the 2-year, 24-hour design storm.

Peak Discharge (Water Quantity)

The target design criteria for the stormwater management facilities proposed in this report follows the Village, MMSD Chapter 13 Surface Water and Stormwater Rule, and NR 151 of the WI Administrative Code. MMSD allows the use of one of two methods for calculating storm water discharge for a developed site. For this design, the volumetric design procedure will be used to demonstrate compliance with the water quantity requirements for both MMSD and the Village. The volumetric procedure requires that the calculated existing runoff volume not be exceeded during the critical time period within a given drainage basin. This site is located within the Menomonee River basin and has a critical period of 9.5 hours. The critical time period for the watershed starts at 11:45 and ends at 21:15. HydroCAD® software is used with specific reporting parameters to provide quantities at the required time interval.

Stormwater Quality

At a minimum, a best management practice that relies on ponding runoff and settling of suspended solids shall be designed for a reduction, on an average annual basis, of 80 percent of the total estimated suspended solids load from a developed site.

EXISTING SITE CONDITIONS

As mentioned above, the single property site covers a total of 53.39 acres. The north site of the property has a field access across the ditchline on the west side of the site and an access off Hilltop Dr. The south portion of the site, which will be the focus of this report, has a primary access off Appleton Ave, STH 175, and a field entrance off Hilltop Dr. south of the ditchline running through the property. Based on discussions with the Village of Germantown, the existing conditions will be considered based on the 2017 aerial photo as found in the Washington County GIS. Figure 1 is the aerial photo from 2017 showing the entire property. Figure 2 is a detailed view of the southwest nursery and landscaping area just off Appleton Ave (STH 175).

Figure 1 – 2017 Aerial Photo - Entire Site



Watersheds

In general, for this proposed pond, there is one watershed that captures the runoff from the front business area (SW corner of site) and will also account for the areas where a proposed building will be constructed and where additional asphalt will be installed. have been delineated to define the runoff under existing conditions. The report delineates the watershed based on topography of the site.

Figure 2 – 2017 Aerial Photo – SW Portion of Site



Soils Analysis

This project is exempt from infiltration requirements based on the existing soil types and presence of high groundwater within the soil test pits. The information from testing of the existing site soils can be found in the appendices. Since the surrounding soils are silt and very fine silt, there may be some natural infiltration that will occur however for purposes of this design, infiltration is considered negligible.

Surficial soils based on the NRCS Web Soil Survey are noted as silt loam soils which could be consistent with the topsoil found in the soil borings discussed above.

Offsite

While some areas discharge to this site, particularly the west side of Appleton Avenue which drains to a culvert running under Appleton Ave to this site. A number of years ago, a culvert was installed on this property to pick up drainage from Appleton Ave. and discharge it to the drainage ditch running west to east in the center of the site. Since this is pass-through flow and will not be directed through our site pond, this run-on to the site is ignored. Other site run-on from the west or north flows to the west-east ditchline and will not impact the design of the proposed pond.

SUBSURFACE SOIL CONDITIONS

Soil borings and testing was conducted on April 24, 2024. A total of 2 soil test pits were conducted on the east side of the site in the location of a future stormwater basin. The soil test pits were evaluated and documented on the Soil Evaluation – Storm form per the DSPS using the USDA soil classification system.

East Drainage Area

Table 2 below has the soils information as presented on the Soil Evaluation – Storm form from Eric Schmitz Corporation. Since these soils have an infiltration rate of less than 0.6 in/hr, except for the surface soils and a thin sand/gravel layer with groundwater, the site is exempt from infiltration requirements per NR 151.12(6)(c).

Table 2 – Southeast Soils Information

B-1			B-2		
Depth (ft)	Soil Texture USDA	Infiltration Rate (in/hr)	Depth (ft)	Soil Texture USDA	Infiltration Rate (in/hr)
0.0' – 0.7'	Sil	0.8	0.0' – 0.7'	Sil	0.8
0.7' – 1.3'	Peat	0.0	0.7' – 1.3'	Peat	0.0
1.3' – 2.7'	Peat	0.0	1.3' – 3.0'	Peat	0.0
2.7' – 6.0'	SiCl/Lfs & Gr	0.3/1.0	3.0' – 6.0'	SiCl/Lfs & Gr	0.3/1.0
6.0' – 10.0'	SiCl/vfSl	0.0/0.2	6.0' – 10.0'	SiCl/vfSl	0.0/0.2

PROPOSED SITE CONDITIONS

As mentioned above, the total site covers 53.39 acres and is divided, roughly north and south with a drainage swale running down the center of the property from west to east. The proposed conditions will focus on the south side of the drainage swale since the north side will remain strictly agricultural. The proposed stormwater basin will be designed on the east side of the site and will capture runoff from the south side of the property for treatment and discharge to meet current Village of Germantown requirements. The assumption will be that the existing conditions are based on the 2017 aerial photo from Washington County. All gravel, pavement, and rooftop added between 2017 and current day will be considered “new” for the purposes of this stormwater management plan.

Proposed Building and Pavement Additions

This stormwater plan will provide runoff management for proposed modifications to the property in 2025 which will include a 5,000sf addition to the main building and an 11,000sf addition to the asphalt pavement. Both the building addition and the proposed asphalt are shown on the design plans.

Future Building and Pavement Additions

At some point in the future, the owner may choose to construct another addition to the building or install additional pavement. This stormwater plan includes considerations for a future building addition of 10,000sf along and/or the addition of 30,000sf of asphalt pavement without changes to the proposed stormwater basin.

Undeveloped Areas with Detention

The undeveloped areas within the larger 53.39-acre property consist primarily of upland farmland with some minor wetland areas as presented on the design plans. This stormwater management plan is set up to detain all the developed areas in the southwest corner of the site and all the undeveloped farmland area south of the west-east drainage swale.

Undeveloped Areas Without Detention

The remaining undeveloped property both east of the proposed basin and north of the west-east drainage swale will need to have a stormwater basin designed and installed to account for future development in these areas. All these areas drain east and will not be impacted by the development proposed in this plan.

Figure 3 is the aerial photo from 2024 showing the entire property. Figure 4, is a detailed view of the southwest nursery and landscaping area just off Appleton Ave (STH 175).

Figure 3 – 2024 Aerial Photo - Entire Site



Figure 4 – 2024 Aerial Photo – SW Portion of Site



SUMMARY OF RESULTS

Stormwater Quantity

As mentioned above, the post construction stormwater quantity requirement for this project will be met using the MMSD volumetric design procedure. Below is a summary of the existing condition discharge from the southwest portion of the site that includes the proposed development areas. The HydroCAD® results for both pre-development and post-development can be found in Appendix D and E respectively.

Drainage area maps for both pre-development and post-development can be found in Appendix F and G respectively.

Table 3 – Total Site Discharge Results

Rain Event	1Ex Pre-Dev. Runoff (acre-ft)	2P Post-Dev. Runoff (acre-ft)
2-year	0.841	0.773
100-year	3.452	3.436

As required by the Village, the site maintains or lowers the volume discharge as compared to the existing conditions.

Stormwater Quality

The post construction stormwater quality requirement for this project is met using the standard design procedure. The proposed ponds will provide greater than 80% TSS reduction for the proposed development areas draining through one of the ponds. Appendix E contains the details of the calculations.

Table 4 – Total Suspended Solids Discharge Results

	Total Influent Load (lbs)	Total Effluent Load (lbs)	TSS Reduction
Site Total	2211	319.7	85.54%

MAINTENANCE OF STORMWATER SYSTEMS

The stormwater management system will be maintained by the owner, TLC Acres. The maintenance agreement is presented in Appendix J.

CONCLUSION

The stormwater management system for the proposed development will meet the post-construction stormwater requirements for the Village of Germantown, MMDS, and the Wisconsin DNR. Additionally, both the storm water quantity and quality are controlled at a greater rate than required per the local ordinance, and State Statute.

Appendix A

Location Map



PARISH SURVEY & ENGINEERING

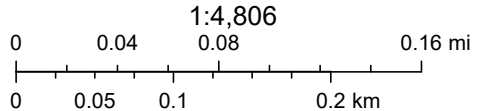
122 Wisconsin Street | West Bend, WI 53095
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Washington County, Wisconsin



6/5/2024, 11:42:41 AM

-  Current Parcel
-  Address Point
-  Road Centerline STH, CTH
-  State Highway



Appendix B

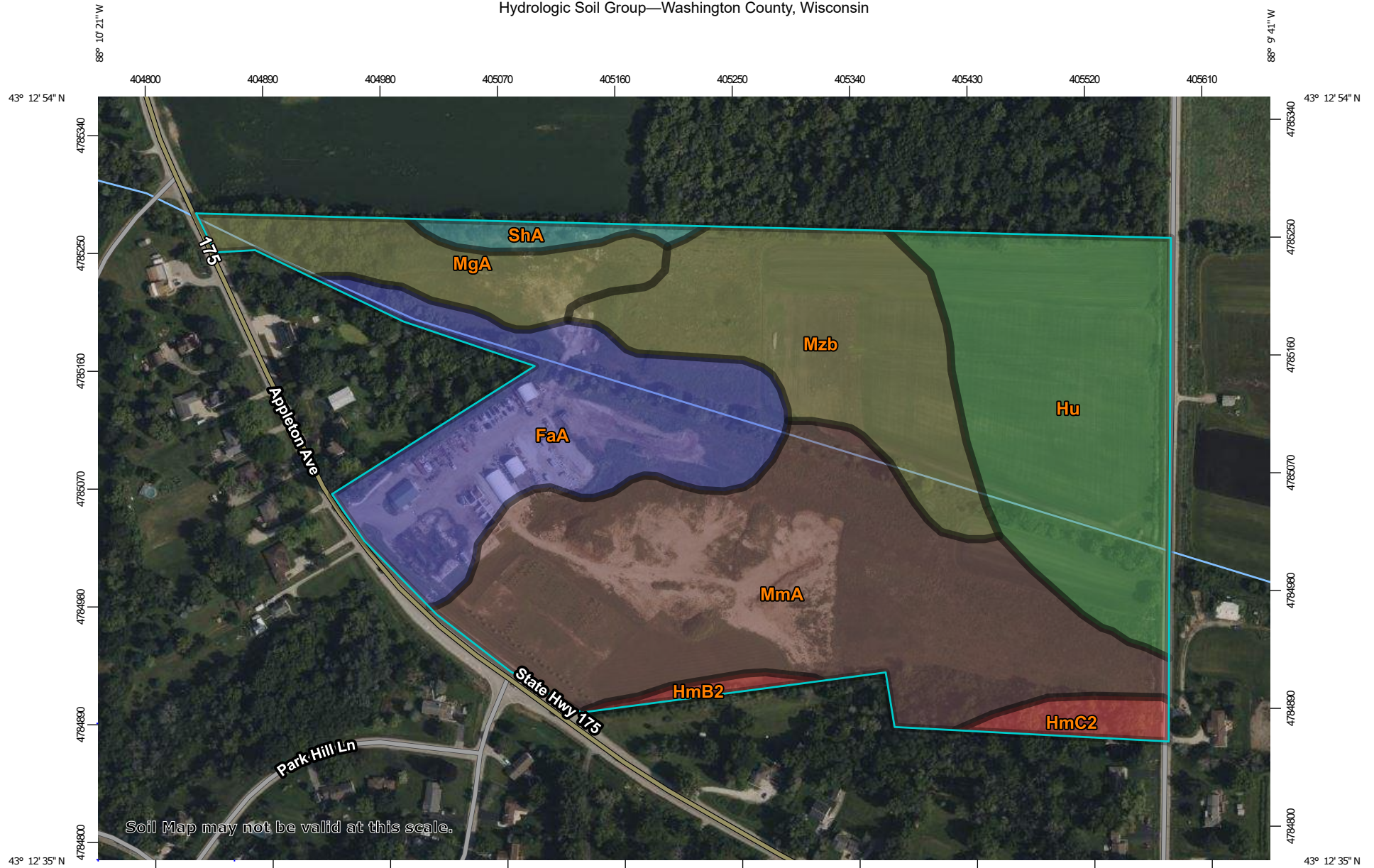
Soils Information



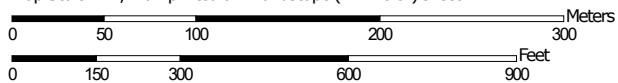
PARISH SURVEY & ENGINEERING

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Hydrologic Soil Group—Washington County, Wisconsin



Map Scale: 1:4,110 if printed on A landscape (11" x 8.5") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 16N WGS84



**Natural Resources
Conservation Service**

Web Soil Survey
National Cooperative Soil Survey

MAP LEGEND**Area of Interest (AOI)**
 Area of Interest (AOI)
Soils**Soil Rating Polygons**

-  A
-  A/D
-  B
-  B/D
-  C
-  C/D
-  D
-  Not rated or not available

Soil Rating Lines

-  A
-  A/D
-  B
-  B/D
-  C
-  C/D
-  D
-  Not rated or not available

Soil Rating Points

-  A
-  A/D
-  B
-  B/D

-  C
-  C/D
-  D
-  Not rated or not available

Water Features
 Streams and Canals
Transportation

-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads

Background
 Aerial Photography
MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Washington County, Wisconsin
Survey Area Data: Version 23, Sep 8, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Aug 4, 2022—Sep 13, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
FaA	Fabius loam, 1 to 3 percent slopes	B	9.4	17.5%
HmB2	Hochheim loam, 2 to 6 percent slopes, eroded	D	0.4	0.8%
HmC2	Hochheim loam, 6 to 12 percent slopes, eroded	D	1.0	1.9%
Hu	Houghton mucky peat, 0 to 2 percent slopes	A/D	11.2	20.9%
MgA	Martinton silt loam, 1 to 3 percent slopes	C/D	3.9	7.2%
MmA	Matherton silt loam, 1 to 3 percent slopes	B/D	18.2	34.0%
Mzb	Montgomery silty clay loam	C/D	8.6	16.1%
ShA	Saylesville silt loam, 0 to 2 percent slopes	C	0.9	1.7%
Totals for Area of Interest			53.7	100.0%

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher



Department of Commerce
Division of Safety and Buildings

SOIL EVALUATION - STORM

in accordance with Comm 82.365 & 85, Wis. Adm. Code

#5182

Page 1 of 2
Eric Schmitz Corporation

Attach complete site plan on paper not less than 8 1/2 x 11 inches in size. Plan must include, but not limited to: vertical and horizontal reference point (BM), direction and percent slope, scale or dimensions, north arrow, and BM referenced to nearest road.

Please print all information.

Personal information you provide may be used for secondary purposes (Privacy Law, s. 15.04 (1) (m)).

County	Washington
Parcel I.D.	GTNV 304959
Reviewed By	Date

Property Owner Matthew & Amy Seban	Property Location Govt. Lot 1/4, SE1/4, S30, T9N, R20E
Property Owner's Mailing Address P.O. Box 727	Lot # Block # Subd. Name or CSM# 53.39 Acre Parcel
City State Zip Code Phone Number Menomonee Falls WI 53052	☐ City ☒ Village ☐ Town Nearest Road Germantown See Drawing

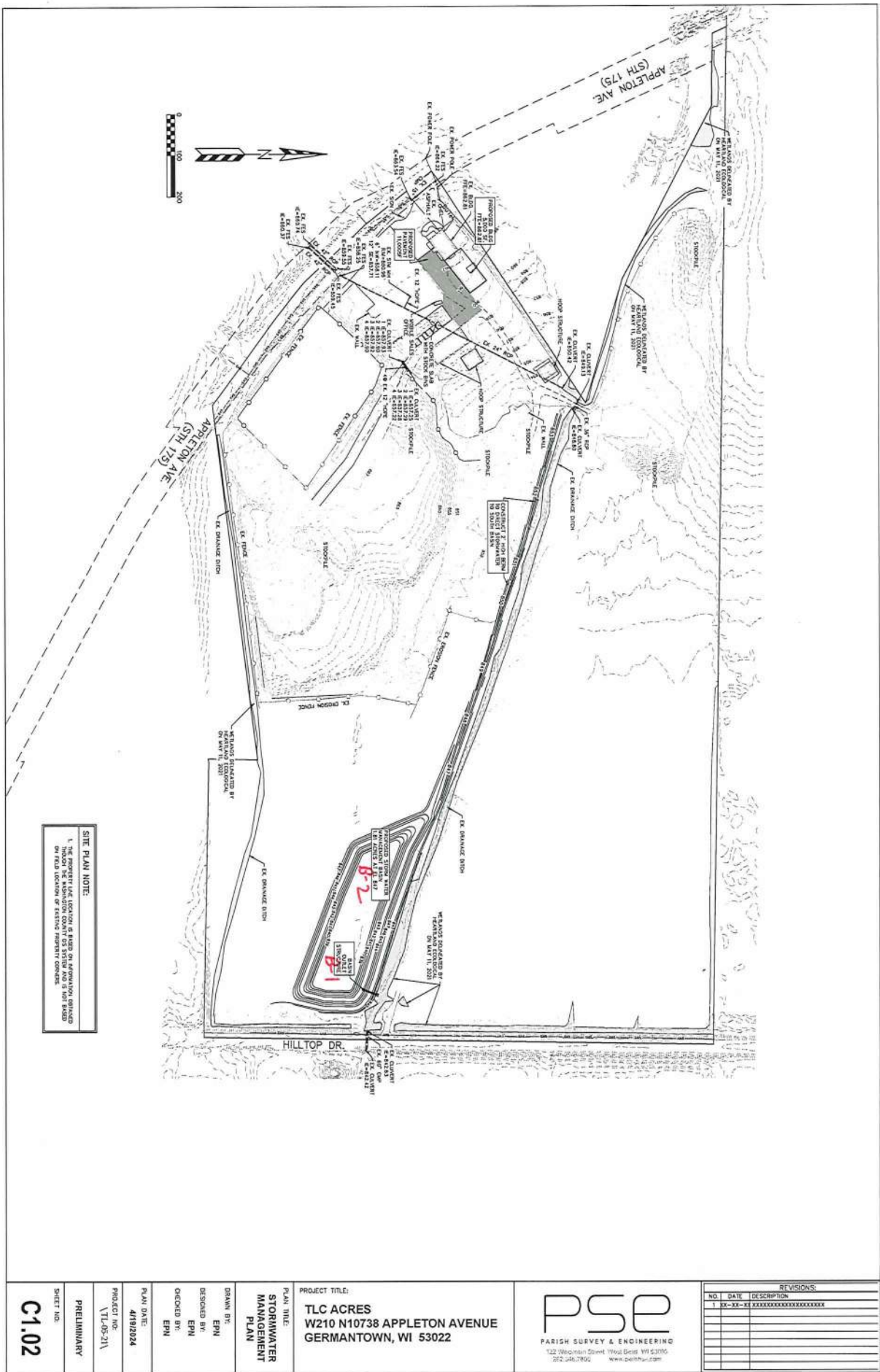
Drainage area _____ sq. ft. _____ acres Optional: Test Site Suitable for (check all that apply) ☐ Irrigation ☐ Bioretention trench ☐ Trench(es) ☐ Rain garden ☐ Grassed swale ☐ Reuse ☐ Infiltration trench ☐ SDS (> 15' wide) ☐ Other _____	Hydraulic Application Test Method: ☒ Morphological Evaluation ☐ Double-Ring Infiltrometer ☐ Other (specify) _____ SITE ADDRESS: W210 N10738 APPLETON AVE. GERMANTOWN, WI 53022
--	---

1	Obs. #	☐ Boring ☒ Pit	Ground surface elev. <u>845 ±</u> ft.	Depth to limiting factor <u>0</u> in.	Hydraulic App. Rate				
Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frag.	Inches/Hr
A p	0-8	7.5YR2/1	f-1-d 7.5YR5/8	sil	2fgr	mvfr	as	0	0.8
A-2	8-16	7.5YR2.5/1	c-2-d 7.5YR5/8	peat	0 m	mvfr	as	0	0.0
A-2	16-32	7.5YR2.5/2	c-2-d 7.5YR5/8	peat	0 m	mvfr	as	0	0.0
BC	32-72	5YR4/1	m-2-p 5YR5/6	sicl	1fabk	mfr	cw	0	0.3
<u>5645/1 GLEYED</u>		mixturing of:	<u>OBSERVED HIGH GROUNDWATER AT 32"</u>	lfs & gr	1fsbk	mvfr	-	10	1.0
C	72-120	5YR5/1	m-2-p 5YR5/6	sicl	0 m	mfr	-	0	0.0
		mixturing of:	<u>5647/1 GLEYED</u>	vfsi	2fpl	mfr	-	0	0.2

2	Obs. #	☐ Boring ☒ Pit	Ground surface elev. <u>845 ±</u> ft.	Depth to limiting factor <u>0</u> in.	Hydraulic App. Rate				
Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frag.	Inches/Hr
A p	0-8	7.5YR2/1	f-1-d 7.5YR5/8	sil	2fgr	mvfr	as	0	0.8
A-2	8-16	7.5YR2.5/1	c-2-d 7.5YR5/8	peat	0 m	mvfr	as	0	0.0
A-2	16-36	7.5YR2.5/2	c-2-d 7.5YR5/8	peat	0 m	mvfr	as	0	0.0
BC	<u>32</u> -72	5YR4/1	m-2-p 5YR5/6	sicl	1fabk	mfr	cw	0	0.3
<u>5645/1 GLEYED</u>		mixturing of:	<u>OBSERVED HIGH GROUNDWATER AT 36"</u>	lfs & gr	1fsbk	mvfr	-	10	1.0
C	72-120	5YR5/1	m-2-p 5YR5/6	sicl	0 m	mfr	-	0	0.0
		mixturing of:	<u>5647/1 GLEYED</u>	vfsi	2fpl	mfr	-	0	0.2

CST/PSS Name (Please Print) Eric M. Schmitz	Signature: 	CST/PSS Number 222021
Address Eric Schmitz Corporation 2334 Stonebridge Circle Unit A West Bend, WI 53095	Date Evaluation Conducted 4/25/2024	Telephone Number 262-338-6994

SBD-10793 (R.01/05)



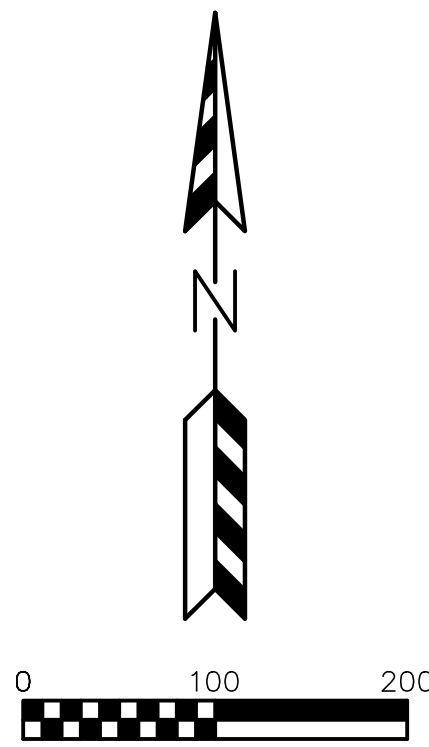
Appendix C

Calculations: Water Quantity Existing Site Conditions

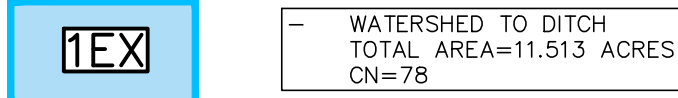


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WATERSHEDS



- LEGEND:
- EXISTING WETLANDS.
 - 896 — — EXISTING MINOR CONTOUR.
 - 895 — — EXISTING MAJOR CONTOUR.



REVISIONS:	
NO.	DESCRIPTION

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122 Wisconsin Street, West Bend, WI 53095
262.346.7800 www.parishse.com

PROJECT TITLE:
**TLC ACRES
W210 N10738 APPLETON AVENUE
GERMANTOWN, WI 53022**

PLAN TITLE:
**EXISTING
DRAINAGE
PLAN**

DRAWN BY:
EPN
DESIGNED BY:
EPN
CHECKED BY:
EPN

PLAN DATE:
1/27/2025

PROJECT NO:
\TL-05-21

BID SET

SHEET NO:
EX-1

Site Pond

Prepared by {enter your company name here}

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TL-05 Site Pond
MSE 24-hr 3 2 Year Rainfall=2.68"
Printed 1/27/2025

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1Ex: 2017 West

Runoff Area=501,508 sf 0.55% Impervious Runoff Depth>0.91"
Flow Length=760' Tc=10.0 min CN=78 Runoff=15.52 cfs 0.870 af

Total Runoff Area = 11.513 ac Runoff Volume = 0.870 af Average Runoff Depth = 0.91"
99.45% Pervious = 11.450 ac 0.55% Impervious = 0.063 ac

Site Pond

Prepared by {enter your company name here}

HydroCAD® 10.00-24 s/n 06587 © 2018 HydroCAD Software Solutions LLC

TL-05 Site Pond
MSE 24-hr 3 2 Year Rainfall=2.68"
Printed 1/27/2025

Summary for Subcatchment 1Ex: 2017 West

Runoff = 15.52 cfs @ 12.19 hrs, Volume= 0.870 af, Depth> 0.91"

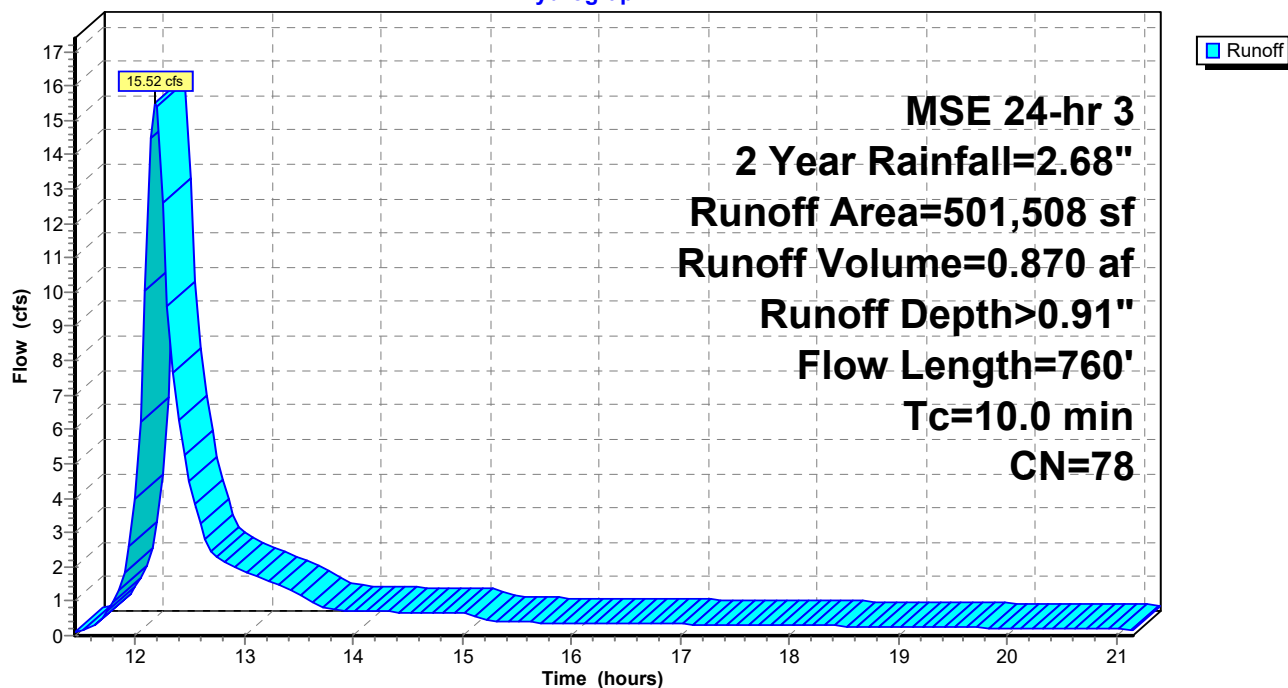
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 2 Year Rainfall=2.68"

Area (sf)	CN	Description
* 2,734	98	Main Bldg
* 41,200	87	Dirt roads, HSG C 2017 Aerial
* 22,500	74	>75% Grass cover, Good, HSG C 2017 Aerial
* 77,100	77	cultivated w/o conservation treatment
* 357,974	77	cultivated w/o conservation treatment
501,508	78	Weighted Average
498,774		99.45% Pervious Area
2,734		0.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.8	100	0.0164	0.35		Sheet Flow, Fallow n= 0.050 P2= 2.68"
5.2	660	0.0174	2.12		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
10.0	760	Total			

Subcatchment 1Ex: 2017 West

Hydrograph



Site Pond**MSE 24-hr 3 2 Year Rainfall=2.68"**

Prepared by {enter your company name here}

Printed 1/27/2025

HydroCAD® 10.00-24 s/n 06587 © 2018 HydroCAD Software Solutions LLC

Hydrograph for Subcatchment 1Ex: 2017 West

Time (hours)	Precip. (inches)	Runoff (cfs)	Runoff-Volume (acre-feet)	Time (hours)	Precip. (inches)	Runoff (cfs)	Runoff-Volume (acre-feet)
11.45	0.65	0.09	0.001	16.65	2.49	0.35	0.744
11.55	0.69	0.18	0.002	16.75	2.49	0.35	0.747
11.65	0.75	0.36	0.005	16.85	2.50	0.34	0.750
11.75	0.82	0.69	0.009	16.95	2.50	0.34	0.752
11.85	0.93	1.32	0.019	17.05	2.50	0.33	0.755
11.95	1.12	2.60	0.037	17.15	2.51	0.33	0.758
12.05	1.46	6.22	0.079	17.25	2.51	0.33	0.761
12.15	1.75	14.48	0.181	17.35	2.52	0.32	0.763
12.25	1.86	12.62	0.296	17.45	2.52	0.32	0.766
12.35	1.93	7.63	0.368	17.55	2.53	0.32	0.769
12.45	1.99	5.25	0.415	17.65	2.53	0.31	0.771
12.55	2.03	3.84	0.450	17.75	2.53	0.31	0.774
12.65	2.06	2.80	0.475	17.85	2.54	0.30	0.776
12.75	2.10	2.28	0.494	17.95	2.54	0.30	0.779
12.85	2.12	2.08	0.512	18.05	2.55	0.30	0.781
12.95	2.15	1.94	0.528	18.15	2.55	0.29	0.784
13.05	2.18	1.82	0.543	18.25	2.55	0.29	0.786
13.15	2.20	1.69	0.558	18.35	2.56	0.29	0.788
13.25	2.22	1.57	0.571	18.45	2.56	0.28	0.791
13.35	2.24	1.44	0.583	18.55	2.56	0.28	0.793
13.45	2.25	1.30	0.594	18.65	2.57	0.27	0.795
13.55	2.27	1.16	0.604	18.75	2.57	0.27	0.798
13.65	2.28	0.91	0.612	18.85	2.57	0.27	0.800
13.75	2.29	0.77	0.619	18.95	2.58	0.26	0.802
13.85	2.30	0.74	0.625	19.05	2.58	0.26	0.804
13.95	2.31	0.72	0.631	19.15	2.58	0.25	0.806
14.05	2.32	0.71	0.637	19.25	2.59	0.25	0.808
14.15	2.33	0.71	0.643	19.35	2.59	0.25	0.810
14.25	2.34	0.70	0.648	19.45	2.59	0.24	0.812
14.35	2.35	0.69	0.654	19.55	2.60	0.24	0.814
14.45	2.35	0.68	0.660	19.65	2.60	0.24	0.816
14.55	2.36	0.68	0.665	19.75	2.60	0.23	0.818
14.65	2.37	0.67	0.671	19.85	2.61	0.23	0.820
14.75	2.38	0.66	0.676	19.95	2.61	0.22	0.822
14.85	2.39	0.66	0.682	20.05	2.61	0.22	0.824
14.95	2.40	0.65	0.687	20.15	2.61	0.22	0.826
15.05	2.41	0.63	0.693	20.25	2.62	0.21	0.827
15.15	2.41	0.51	0.697	20.35	2.62	0.21	0.829
15.25	2.42	0.42	0.701	20.45	2.62	0.20	0.831
15.35	2.42	0.40	0.704	20.55	2.62	0.20	0.832
15.45	2.43	0.39	0.707	20.65	2.63	0.20	0.834
15.55	2.43	0.39	0.710	20.75	2.63	0.19	0.836
15.65	2.44	0.38	0.714	20.85	2.63	0.19	0.837
15.75	2.44	0.38	0.717	20.95	2.63	0.18	0.839
15.85	2.45	0.38	0.720	21.05	2.64	0.18	0.840
15.95	2.45	0.37	0.723	21.15	2.64	0.18	0.842
16.05	2.46	0.37	0.726				
16.15	2.46	0.37	0.729				
16.25	2.47	0.36	0.732				
16.35	2.47	0.36	0.735				
16.45	2.48	0.36	0.738				
16.55	2.48	0.35	0.741				

Site Pond

Prepared by {enter your company name here}

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TL-05 Site Pond

MSE 24-hr 3 100 Year Rainfall=6.36"

Printed 1/27/2025

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1Ex: 2017 West

Runoff Area=501,508 sf 0.55% Impervious Runoff Depth>3.90"
Flow Length=760' Tc=10.0 min CN=78 Runoff=67.50 cfs 3.739 af

Total Runoff Area = 11.513 ac Runoff Volume = 3.739 af Average Runoff Depth = 3.90"
99.45% Pervious = 11.450 ac 0.55% Impervious = 0.063 ac

Site Pond

Prepared by {enter your company name here}

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TL-05 Site Pond

MSE 24-hr 3 100 Year Rainfall=6.36"

Printed 1/27/2025

Summary for Subcatchment 1Ex: 2017 West

Runoff = 67.50 cfs @ 12.18 hrs, Volume= 3.739 af, Depth> 3.90"

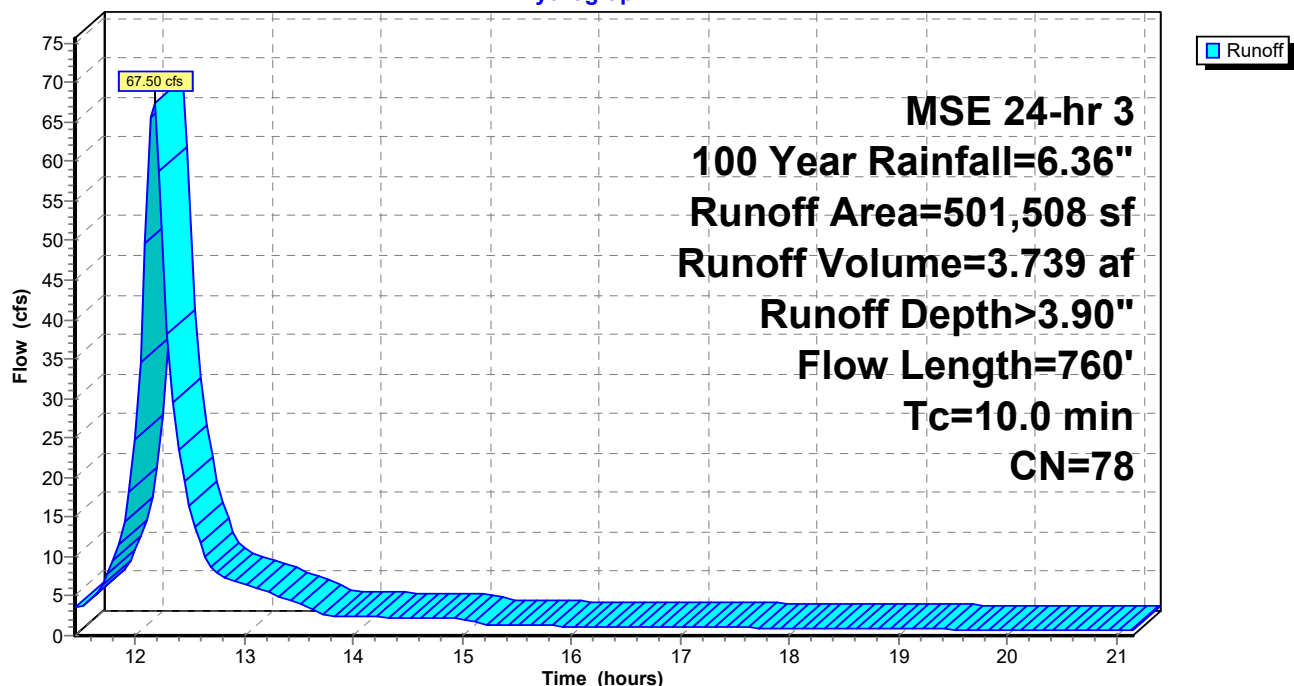
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100 Year Rainfall=6.36"

Area (sf)	CN	Description
* 2,734	98	Main Bldg
* 41,200	87	Dirt roads, HSG C 2017 Aerial
* 22,500	74	>75% Grass cover, Good, HSG C 2017 Aerial
* 77,100	77	cultivated w/o conservation treatment
* 357,974	77	cultivated w/o conservation treatment
501,508	78	Weighted Average
498,774		99.45% Pervious Area
2,734		0.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.8	100	0.0164	0.35		Sheet Flow, Fallow n= 0.050 P2= 2.68"
5.2	660	0.0174	2.12		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
10.0	760	Total			

Subcatchment 1Ex: 2017 West

Hydrograph



Site Pond

MSE 24-hr 3 100 Year Rainfall=6.36"

Prepared by {enter your company name here}

Printed 1/27/2025

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Hydrograph for Subcatchment 1Ex: 2017 West

Time (hours)	Precip. (inches)	Runoff (cfs)	Runoff-Volume (acre-feet)	Time (hours)	Precip. (inches)	Runoff (cfs)	Runoff-Volume (acre-feet)
11.45	1.54	3.47	0.199	16.65	5.90	1.13	3.338
11.55	1.64	3.97	0.231	16.75	5.91	1.12	3.347
11.65	1.77	5.41	0.272	16.85	5.92	1.11	3.356
11.75	1.96	7.82	0.331	16.95	5.93	1.09	3.365
11.85	2.22	11.56	0.418	17.05	5.94	1.08	3.374
11.95	2.66	18.13	0.552	17.15	5.95	1.07	3.383
12.05	3.47	34.52	0.797	17.25	5.96	1.05	3.392
12.15	4.14	65.57	1.273	17.35	5.97	1.04	3.400
12.25	4.40	51.83	1.760	17.45	5.98	1.03	3.409
12.35	4.59	29.46	2.039	17.55	5.99	1.02	3.417
12.45	4.72	19.44	2.217	17.65	6.00	1.00	3.426
12.55	4.82	13.85	2.342	17.75	6.01	0.99	3.434
12.65	4.90	9.92	2.431	17.85	6.02	0.98	3.442
12.75	4.97	8.02	2.500	17.95	6.03	0.97	3.450
12.85	5.04	7.25	2.561	18.05	6.04	0.95	3.458
12.95	5.10	6.73	2.618	18.15	6.05	0.94	3.466
13.05	5.16	6.26	2.671	18.25	6.06	0.93	3.473
13.15	5.22	5.80	2.720	18.35	6.07	0.92	3.481
13.25	5.26	5.34	2.765	18.45	6.08	0.90	3.488
13.35	5.31	4.87	2.806	18.55	6.08	0.89	3.496
13.45	5.35	4.40	2.843	18.65	6.09	0.88	3.503
13.55	5.38	3.90	2.877	18.75	6.10	0.86	3.510
13.65	5.40	3.07	2.904	18.85	6.11	0.85	3.517
13.75	5.43	2.59	2.926	18.95	6.12	0.84	3.524
13.85	5.45	2.46	2.946	19.05	6.13	0.83	3.531
13.95	5.47	2.41	2.966	19.15	6.13	0.81	3.538
14.05	5.50	2.38	2.986	19.25	6.14	0.80	3.545
14.15	5.52	2.35	3.006	19.35	6.15	0.79	3.551
14.25	5.54	2.32	3.025	19.45	6.16	0.78	3.558
14.35	5.57	2.30	3.044	19.55	6.16	0.76	3.564
14.45	5.59	2.27	3.063	19.65	6.17	0.75	3.570
14.55	5.61	2.24	3.081	19.75	6.18	0.74	3.576
14.65	5.63	2.21	3.100	19.85	6.18	0.73	3.582
14.75	5.65	2.18	3.118	19.95	6.19	0.71	3.588
14.85	5.67	2.16	3.136	20.05	6.20	0.70	3.594
14.95	5.69	2.13	3.153	20.15	6.20	0.69	3.600
15.05	5.71	2.08	3.171	20.25	6.21	0.67	3.605
15.15	5.72	1.66	3.185	20.35	6.22	0.66	3.611
15.25	5.74	1.38	3.197	20.45	6.22	0.65	3.616
15.35	5.75	1.31	3.208	20.55	6.23	0.64	3.622
15.45	5.76	1.28	3.219	20.65	6.23	0.62	3.627
15.55	5.77	1.26	3.229	20.75	6.24	0.61	3.632
15.65	5.79	1.25	3.240	20.85	6.25	0.60	3.637
15.75	5.80	1.24	3.250	20.95	6.25	0.59	3.642
15.85	5.81	1.23	3.260	21.05	6.26	0.57	3.646
15.95	5.82	1.21	3.270	21.15	6.26	0.56	3.651
16.05	5.83	1.20	3.280				
16.15	5.84	1.19	3.290				
16.25	5.86	1.18	3.300				
16.35	5.87	1.16	3.309				
16.45	5.88	1.15	3.319				
16.55	5.89	1.14	3.328				

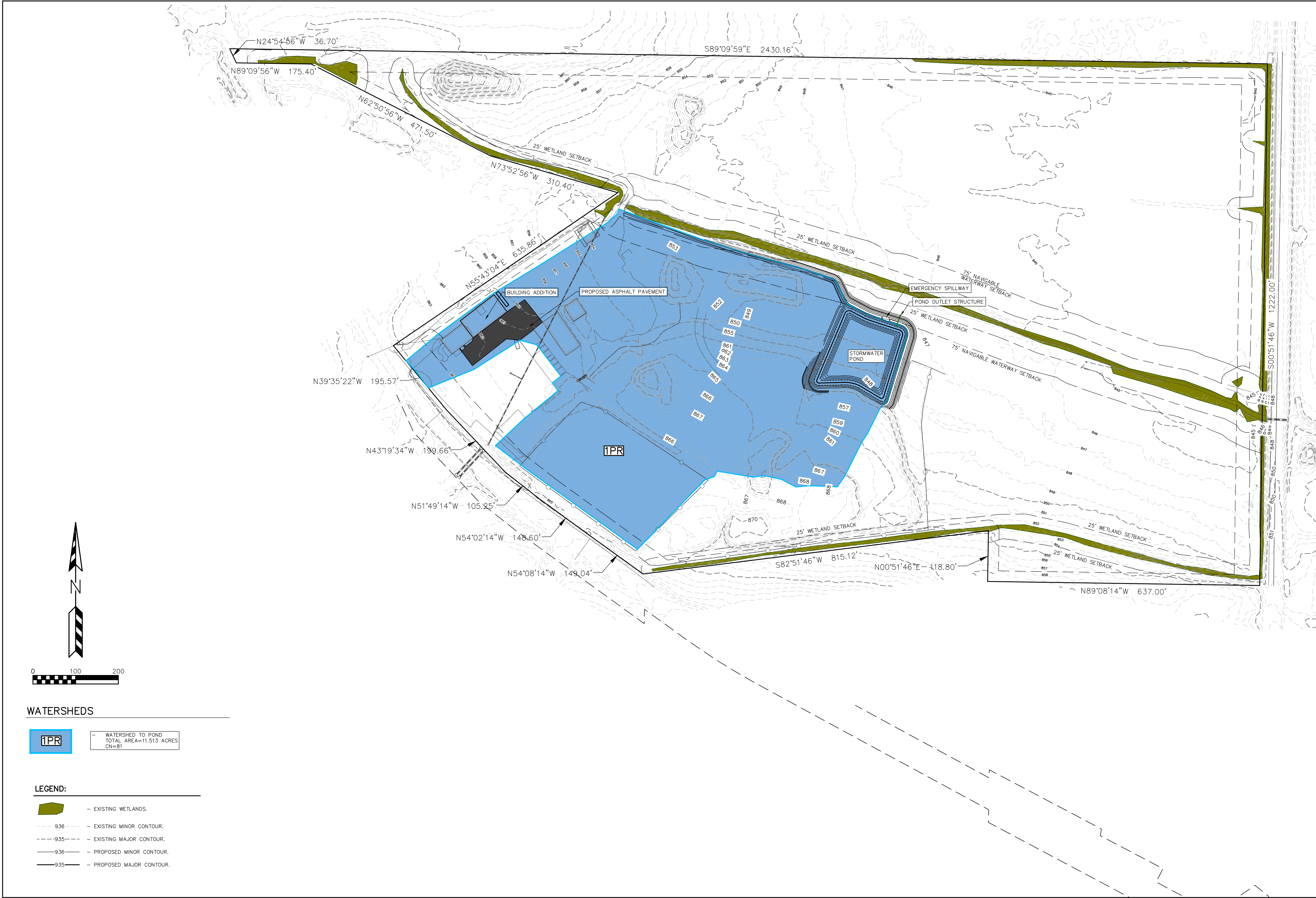
Appendix D

Calculations: Water Quantity Proposed Site Conditions

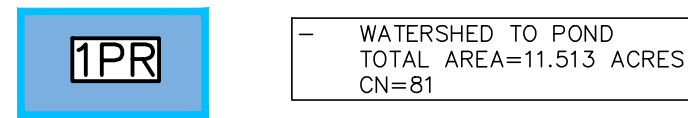


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WATERSHEDS



- LEGEND:
- EXISTING WETLANDS.
 - 936 --- EXISTING MINOR CONTOUR.
 - 935 --- EXISTING MAJOR CONTOUR.
 - 936 — PROPOSED MINOR CONTOUR.
 - 935 — PROPOSED MAJOR CONTOUR.

REVISIONS:	
NO.	DESCRIPTION

PSE
PARISH SURVEY & ENGINEERING
122 Wisconsin Street, West Bend, WI 53095
262.346.7800
www.parishse.com

PROJECT TITLE:
**TLC ACRES
W210 N10738 APPLETON AVENUE
GERMANTOWN, WI 53022**

PLAN TITLE:
**PROPOSED
DRAINAGE
PLAN**

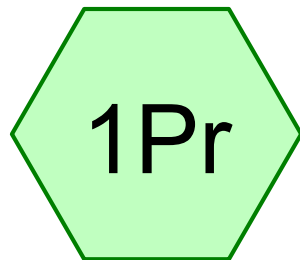
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DESIGNED BY:
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CHECKED BY:
EPN

PLAN DATE:
1/27/2025

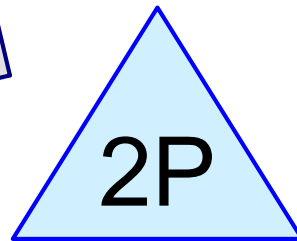
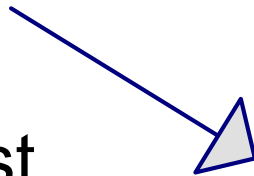
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\TL-05-21

BID SET

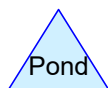
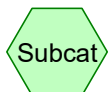
SHEET NO:
PR-1



2024 West



Main area pond



Routing Diagram for Site Pond

Prepared by {enter your company name here}, Printed 1/27/2025
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Site Pond

Prepared by {enter your company name here}

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TL-05 Site Pond
MSE 24-hr 3 2 Year Rainfall=2.68"
Printed 1/27/2025

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1Pr: 2024 West

Runoff Area=501,508 sf 21.57% Impervious Runoff Depth>1.07"
Tc=6.0 min CN=81 Runoff=22.16 cfs 1.029 af

Pond 2P: Main area pond

Peak Elev=851.34' Storage=24,289 cf Inflow=22.16 cfs 1.029 af
Outflow=1.71 cfs 0.854 af

Total Runoff Area = 11.513 ac Runoff Volume = 1.029 af Average Runoff Depth = 1.07"
78.43% Pervious = 9.030 ac 21.57% Impervious = 2.483 ac

Site Pond

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TL-05 Site Pond

MSE 24-hr 3 2 Year Rainfall=2.68"

Printed 1/27/2025

Summary for Subcatchment 1Pr: 2024 West

Runoff = 22.16 cfs @ 12.14 hrs, Volume= 1.029 af, Depth> 1.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 2 Year Rainfall=2.68"

	Area (sf)	CN	Description
*	2,734	98	Main Bldg
*	7,241	98	2023 Bldgs
*	15,977	98	2023 asphalt/concrete
*	70,966	87	Dirt Roads, HSG C 2023 Aerial
*	5,000	98	2024 Proposed Bldg
*	10,000	98	Future bldg
*	11,000	98	2024 Proposed Pavement
*	30,000	98	Future pavement
*	15,000	74	>75% Grass cover, Good, HSG C 2017 Aerial
*	77,100	77	cultivated w/o conservation treatment
	230,267	74	Pasture/grassland/range, Good, HSG C
	26,223	98	Water Surface, HSG C
	501,508	81	Weighted Average
	393,333		78.43% Pervious Area
	108,175		21.57% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, min Tc

Site Pond

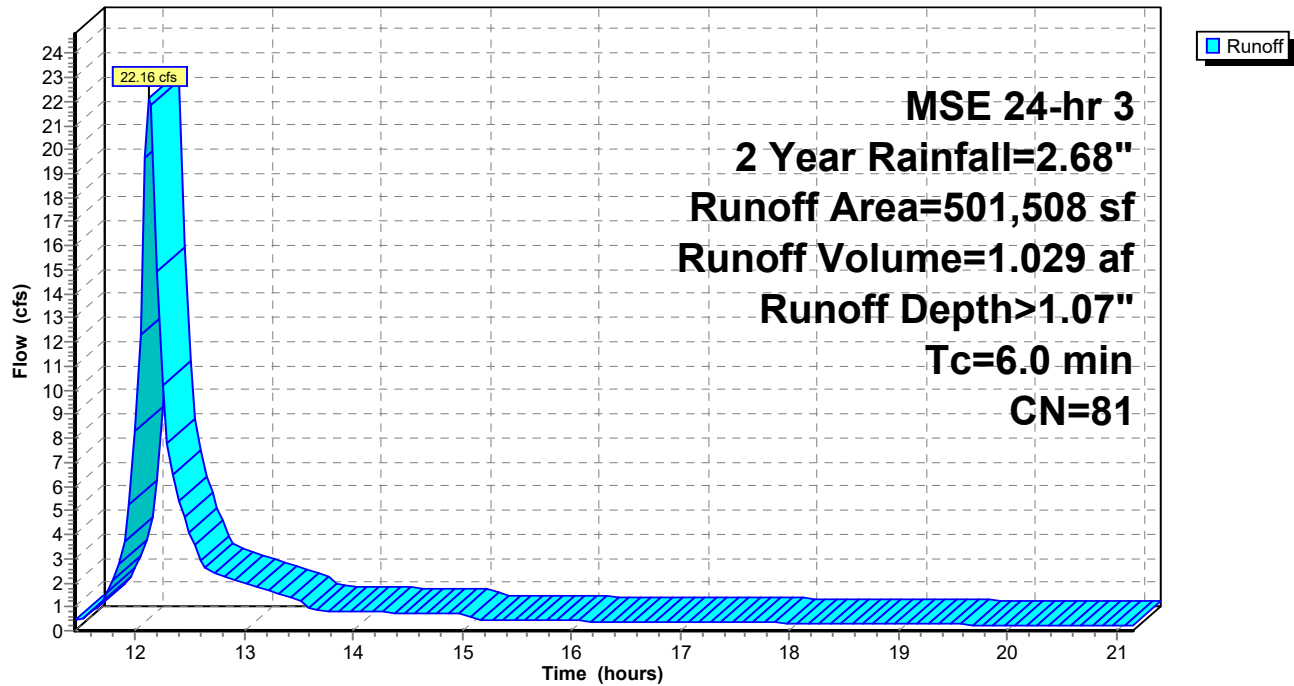
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TL-05 Site Pond
MSE 24-hr 3 2 Year Rainfall=2.68"
Printed 1/27/2025

Subcatchment 1Pr: 2024 West

Hydrograph



Site Pond

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TL-05 Site Pond
MSE 24-hr 3 2 Year Rainfall=2.68"
Printed 1/27/2025

Summary for Pond 2P: Main area pond

Inflow Area = 11.513 ac, 21.57% Impervious, Inflow Depth > 1.07" for 2 Year event
Inflow = 22.16 cfs @ 12.14 hrs, Volume= 1.029 af
Outflow = 1.71 cfs @ 13.22 hrs, Volume= 0.854 af, Atten= 92%, Lag= 64.7 min
Primary = 1.71 cfs @ 13.22 hrs, Volume= 0.854 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 851.34' @ 13.22 hrs Surf.Area= 29,834 sf Storage= 24,289 cf
Flood Elev= 844.50' Surf.Area= 0 sf Storage= 0 cf

Plug-Flow detention time= 217.6 min calculated for 0.853 af (83% of inflow)
Center-of-Mass det. time= 155.9 min (974.4 - 818.4)

Volume	Invert	Avail.Storage	Storage Description
#1	850.50'	76,760 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
850.50	28,025	0	0
851.00	29,125	14,288	14,288
852.00	31,215	30,170	44,458
853.00	33,390	32,303	76,760

Device	Routing	Invert	Outlet Devices
#1	Primary	849.00'	24.0" Round Culvert L= 28.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 849.00' / 848.50' S= 0.0179 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#2	Device 1	850.50'	10.0" Vert. Orifice/Grate C= 0.600
#3	Device 1	852.20'	24.0" x 36.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#4	Primary	852.50'	20.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=1.71 cfs @ 13.22 hrs HW=851.34' (Free Discharge)

1=Culvert (Passes 1.71 cfs of 17.51 cfs potential flow)
2=Orifice/Grate (Orifice Controls 1.71 cfs @ 3.13 fps)
3=Orifice/Grate (Controls 0.00 cfs)
4=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

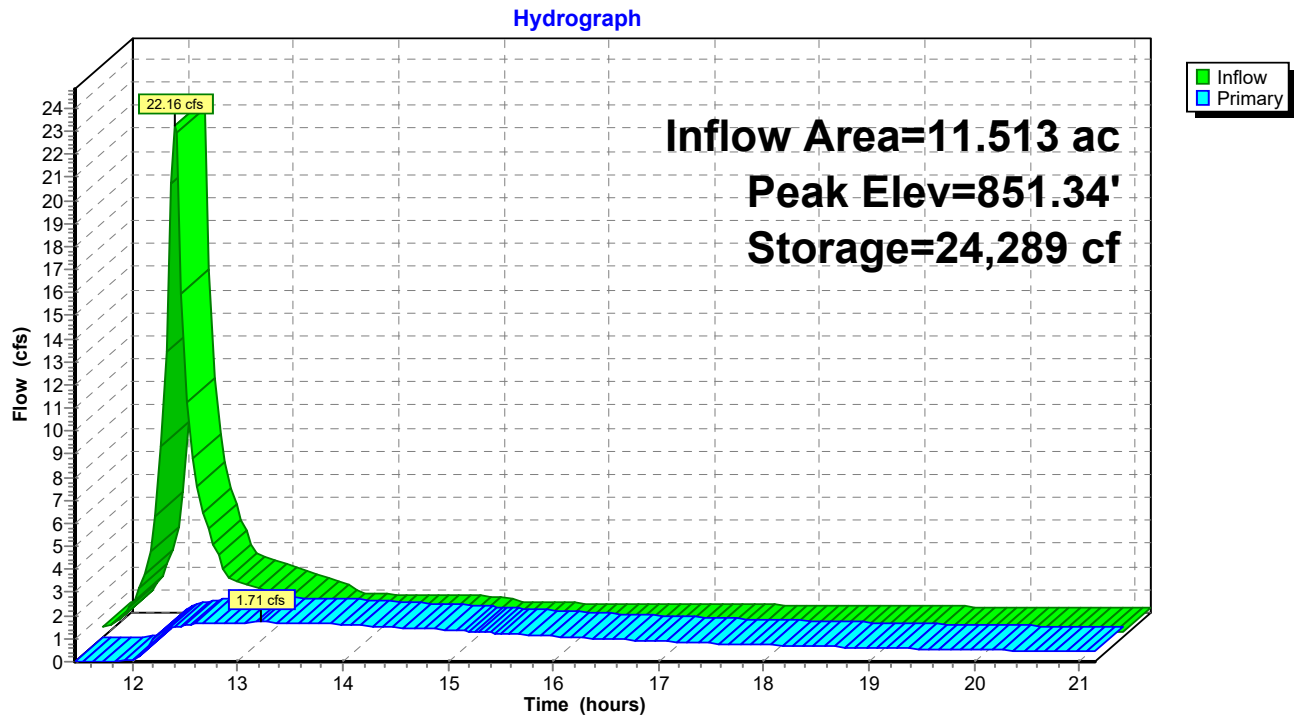
Site Pond

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TL-05 Site Pond
MSE 24-hr 3 2 Year Rainfall=2.68"
Printed 1/27/2025

Pond 2P: Main area pond



Site Pond

MSE 24-hr 3 2 Year Rainfall=2.68"

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Hydrograph for Pond 2P: Main area pond

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)	Outflow-Volume (acre-feet)
11.45	0.43	372	850.51	0.00	0.000
11.55	0.58	550	850.52	0.00	0.000
11.65	0.98	828	850.53	0.00	0.000
11.75	1.61	1,288	850.55	0.01	0.000
11.85	2.76	2,062	850.57	0.02	0.000
11.95	5.24	3,440	850.62	0.06	0.001
12.05	12.34	6,470	850.73	0.20	0.002
12.15	21.86	12,934	850.95	0.70	0.006
12.25	10.19	18,150	851.13	1.20	0.015
12.35	6.51	20,573	851.21	1.43	0.027
12.45	4.73	22,022	851.26	1.56	0.040
12.55	3.56	22,925	851.29	1.62	0.053
12.65	2.61	23,419	851.31	1.66	0.067
12.75	2.38	23,710	851.32	1.67	0.080
12.85	2.24	23,932	851.33	1.69	0.094
12.95	2.10	24,101	851.33	1.70	0.108
13.05	1.96	24,216	851.34	1.71	0.122
13.15	1.81	24,278	851.34	1.71	0.136
13.25	1.66	24,286	851.34	1.71	0.151
13.35	1.51	24,242	851.34	1.71	0.165
13.45	1.36	24,144	851.33	1.70	0.179
13.55	1.17	23,990	851.33	1.69	0.193
13.65	0.86	23,741	851.32	1.68	0.207
13.75	0.81	23,441	851.31	1.66	0.220
13.85	0.80	23,138	851.30	1.64	0.234
13.95	0.80	22,839	851.29	1.62	0.247
14.05	0.79	22,545	851.28	1.60	0.261
14.15	0.78	22,256	851.27	1.57	0.274
14.25	0.77	21,972	851.26	1.55	0.287
14.35	0.76	21,693	851.25	1.53	0.299
14.45	0.75	21,420	851.24	1.51	0.312
14.55	0.75	21,152	851.23	1.48	0.324
14.65	0.74	20,889	851.22	1.46	0.336
14.75	0.73	20,631	851.22	1.44	0.348
14.85	0.72	20,379	851.21	1.41	0.360
14.95	0.71	20,132	851.20	1.39	0.371
15.05	0.66	19,886	851.19	1.37	0.383
15.15	0.47	19,597	851.18	1.34	0.394
15.25	0.44	19,281	851.17	1.31	0.405
15.35	0.43	18,971	851.16	1.28	0.415
15.45	0.43	18,671	851.15	1.25	0.426
15.55	0.42	18,378	851.14	1.22	0.436
15.65	0.42	18,095	851.13	1.20	0.446
15.75	0.42	17,821	851.12	1.17	0.456
15.85	0.41	17,554	851.11	1.14	0.465
15.95	0.41	17,295	851.10	1.12	0.474
16.05	0.41	17,044	851.09	1.09	0.483
16.15	0.40	16,801	851.09	1.07	0.492
16.25	0.40	16,564	851.08	1.04	0.501
16.35	0.39	16,334	851.07	1.02	0.510
16.45	0.39	16,111	851.06	1.00	0.518
16.55	0.39	15,894	851.06	0.98	0.526

Site Pond*MSE 24-hr 3 2 Year Rainfall=2.68"*

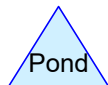
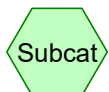
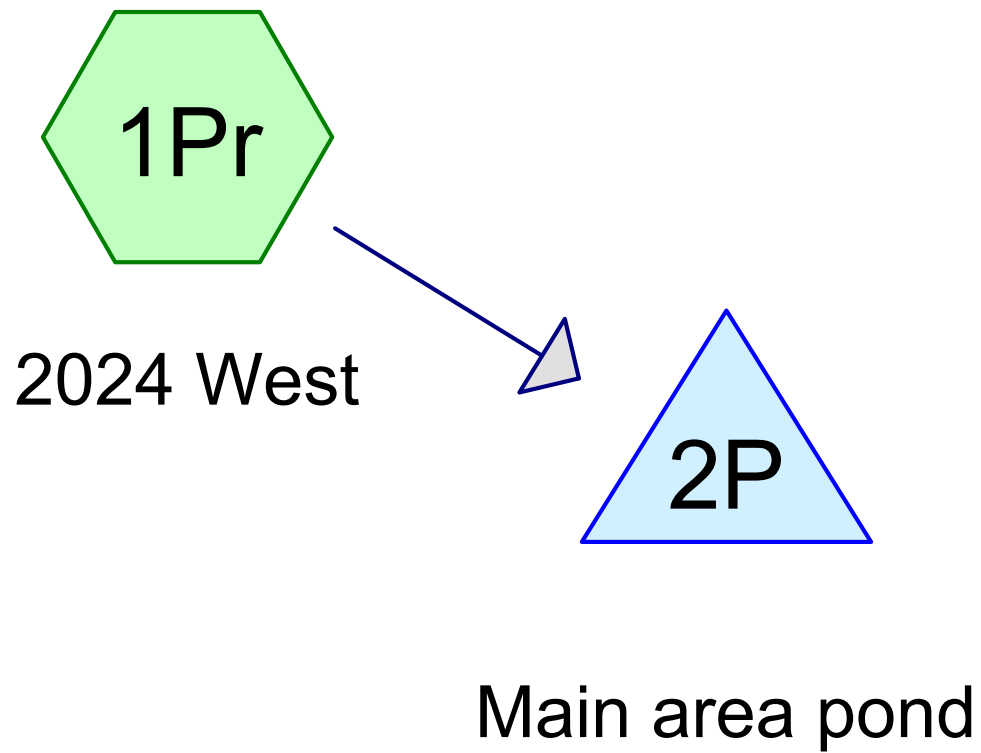
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Hydrograph for Pond 2P: Main area pond (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)	Outflow-Volume (acre-feet)
16.65	0.38	15,684	851.05	0.96	0.534
16.75	0.38	15,479	851.04	0.94	0.542
16.85	0.37	15,280	851.03	0.92	0.549
16.95	0.37	15,086	851.03	0.90	0.557
17.05	0.36	14,898	851.02	0.88	0.564
17.15	0.36	14,714	851.01	0.86	0.571
17.25	0.36	14,536	851.01	0.85	0.578
17.35	0.35	14,362	851.00	0.83	0.585
17.45	0.35	14,192	851.00	0.81	0.592
17.55	0.34	14,027	850.99	0.80	0.599
17.65	0.34	13,866	850.99	0.78	0.605
17.75	0.34	13,709	850.98	0.77	0.612
17.85	0.33	13,555	850.97	0.75	0.618
17.95	0.33	13,406	850.97	0.74	0.624
18.05	0.32	13,259	850.96	0.73	0.630
18.15	0.32	13,116	850.96	0.71	0.636
18.25	0.32	12,976	850.95	0.70	0.642
18.35	0.31	12,839	850.95	0.69	0.647
18.45	0.31	12,705	850.95	0.67	0.653
18.55	0.30	12,575	850.94	0.66	0.658
18.65	0.30	12,447	850.94	0.65	0.664
18.75	0.29	12,321	850.93	0.64	0.669
18.85	0.29	12,197	850.93	0.63	0.674
18.95	0.29	12,077	850.92	0.62	0.680
19.05	0.28	11,959	850.92	0.61	0.685
19.15	0.28	11,842	850.92	0.60	0.690
19.25	0.27	11,728	850.91	0.59	0.694
19.35	0.27	11,616	850.91	0.58	0.699
19.45	0.27	11,506	850.90	0.57	0.704
19.55	0.26	11,397	850.90	0.56	0.709
19.65	0.26	11,291	850.90	0.55	0.713
19.75	0.25	11,186	850.89	0.54	0.718
19.85	0.25	11,083	850.89	0.53	0.722
19.95	0.24	10,981	850.89	0.52	0.726
20.05	0.24	10,881	850.88	0.51	0.731
20.15	0.23	10,782	850.88	0.51	0.735
20.25	0.23	10,685	850.88	0.50	0.739
20.35	0.23	10,589	850.87	0.49	0.743
20.45	0.22	10,494	850.87	0.48	0.747
20.55	0.22	10,401	850.87	0.47	0.751
20.65	0.21	10,308	850.86	0.47	0.755
20.75	0.21	10,217	850.86	0.46	0.759
20.85	0.20	10,126	850.86	0.45	0.762
20.95	0.20	10,037	850.85	0.45	0.766
21.05	0.20	9,949	850.85	0.44	0.770
21.15	0.19	9,862	850.85	0.43	0.773



Routing Diagram for Site Pond

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Site Pond

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TL-05 Site Pond

MSE 24-hr 3 100 Year Rainfall=6.36"

Printed 1/27/2025

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1Pr: 2024 West

Runoff Area=501,508 sf 21.57% Impervious Runoff Depth>4.21"

Tc=6.0 min CN=81 Runoff=84.51 cfs 4.041 af

Pond 2P: Main area pond

Peak Elev=852.94' Storage=74,914 cf Inflow=84.51 cfs 4.041 af

Outflow=40.12 cfs 3.723 af

Total Runoff Area = 11.513 ac Runoff Volume = 4.041 af Average Runoff Depth = 4.21"

78.43% Pervious = 9.030 ac 21.57% Impervious = 2.483 ac

Site Pond

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TL-05 Site Pond

MSE 24-hr 3 100 Year Rainfall=6.36"

Printed 1/27/2025

Summary for Subcatchment 1Pr: 2024 West

Runoff = 84.51 cfs @ 12.13 hrs, Volume= 4.041 af, Depth> 4.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100 Year Rainfall=6.36"

	Area (sf)	CN	Description
*	2,734	98	Main Bldg
*	7,241	98	2023 Bldgs
*	15,977	98	2023 asphalt/concrete
*	70,966	87	Dirt Roads, HSG C 2023 Aerial
*	5,000	98	2024 Proposed Bldg
*	10,000	98	Future bldg
*	11,000	98	2024 Proposed Pavement
*	30,000	98	Future pavement
*	15,000	74	>75% Grass cover, Good, HSG C 2017 Aerial
*	77,100	77	cultivated w/o conservation treatment
	230,267	74	Pasture/grassland/range, Good, HSG C
	26,223	98	Water Surface, HSG C
	501,508	81	Weighted Average
	393,333		78.43% Pervious Area
	108,175		21.57% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, min Tc

Site Pond

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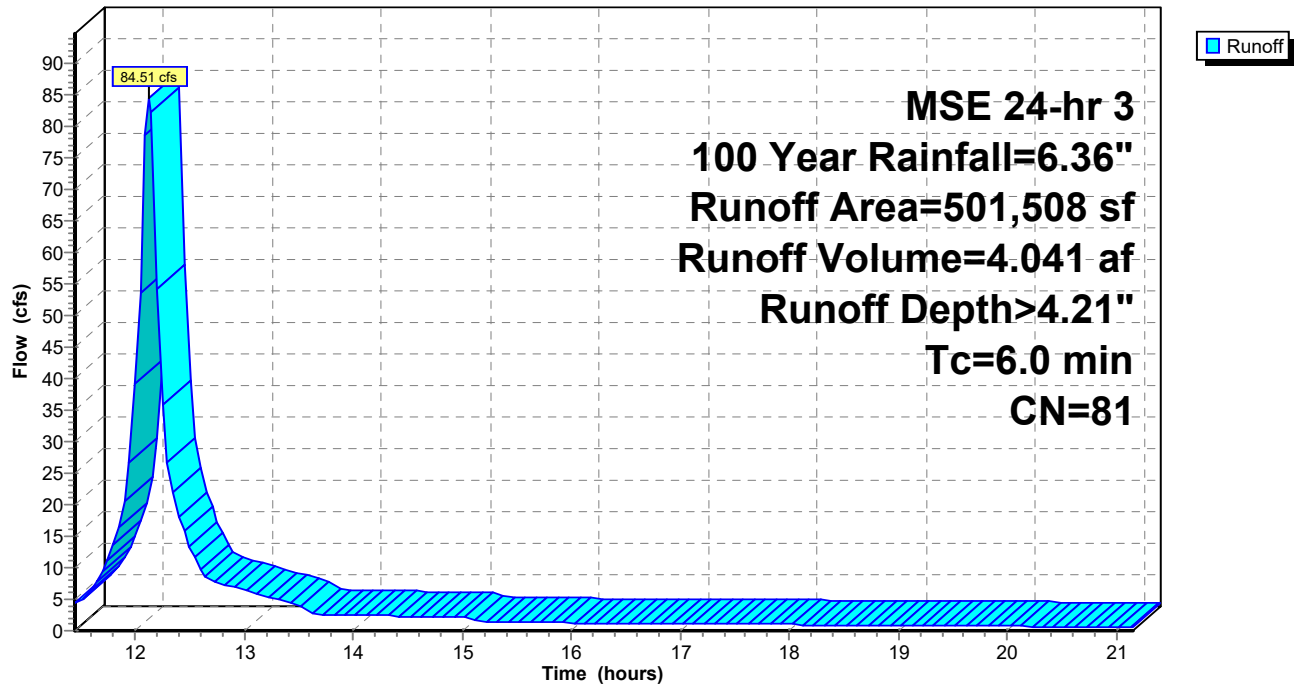
TL-05 Site Pond

MSE 24-hr 3 100 Year Rainfall=6.36"

Printed 1/27/2025

Subcatchment 1Pr: 2024 West

Hydrograph



Site Pond

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TL-05 Site Pond
MSE 24-hr 3 100 Year Rainfall=6.36"
Printed 1/27/2025

Summary for Pond 2P: Main area pond

Inflow Area = 11.513 ac, 21.57% Impervious, Inflow Depth > 4.21" for 100 Year event
Inflow = 84.51 cfs @ 12.13 hrs, Volume= 4.041 af
Outflow = 40.12 cfs @ 12.25 hrs, Volume= 3.723 af, Atten= 53%, Lag= 7.1 min
Primary = 40.12 cfs @ 12.25 hrs, Volume= 3.723 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 852.94' @ 12.25 hrs Surf.Area= 33,270 sf Storage= 74,914 cf
Flood Elev= 844.50' Surf.Area= 0 sf Storage= 0 cf

Plug-Flow detention time= 148.6 min calculated for 3.723 af (92% of inflow)
Center-of-Mass det. time= 113.1 min (903.7 - 790.6)

Volume	Invert	Avail.Storage	Storage Description
#1	850.50'	76,760 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
850.50	28,025	0	0
851.00	29,125	14,288	14,288
852.00	31,215	30,170	44,458
853.00	33,390	32,303	76,760

Device	Routing	Invert	Outlet Devices
#1	Primary	849.00'	24.0" Round Culvert L= 28.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 849.00' / 848.50' S= 0.0179 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#2	Device 1	850.50'	10.0" Vert. Orifice/Grate C= 0.600
#3	Device 1	852.20'	24.0" x 36.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#4	Primary	852.50'	20.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=40.06 cfs @ 12.25 hrs HW=852.94' (Free Discharge)

1=Culvert (Passes 24.73 cfs of 25.95 cfs potential flow)
2=Orifice/Grate (Orifice Controls 3.74 cfs @ 6.86 fps)
3=Orifice/Grate (Weir Controls 20.99 cfs @ 2.82 fps)
4=Broad-Crested Rectangular Weir (Weir Controls 15.33 cfs @ 1.73 fps)

Site Pond

Prepared by {enter your company name here}

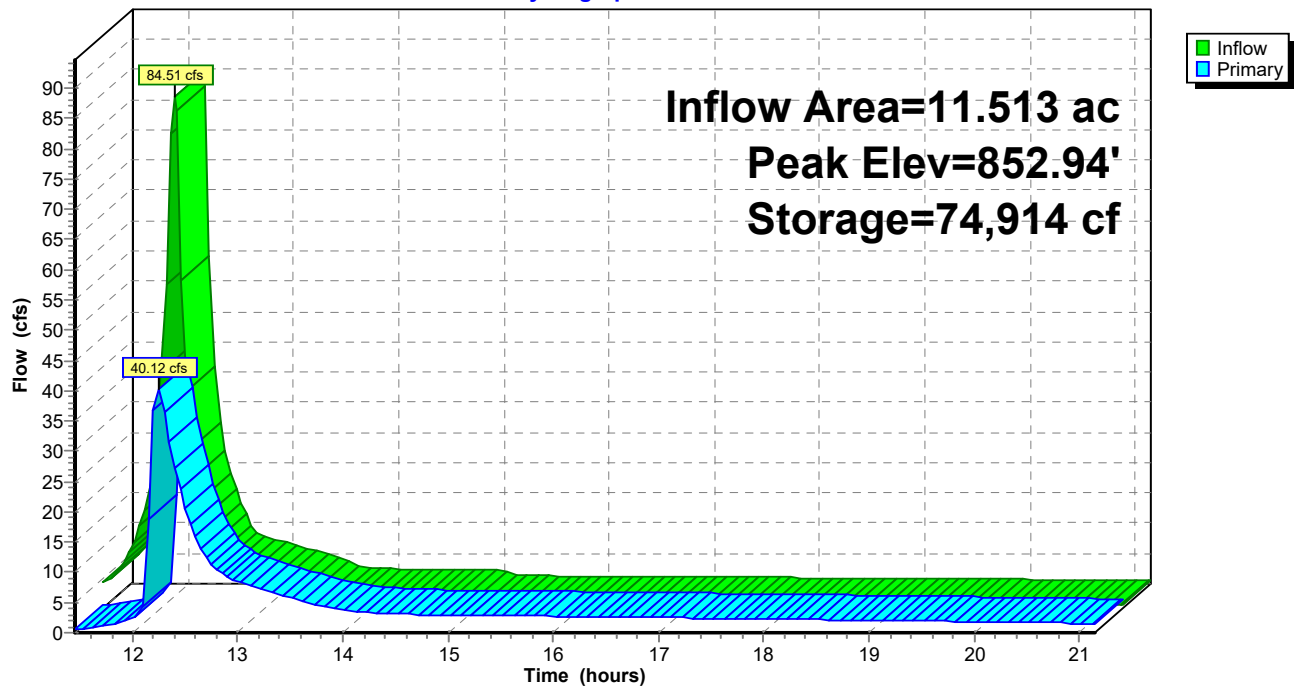
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TL-05 Site Pond
MSE 24-hr 3 100 Year Rainfall=6.36"

Printed 1/27/2025

Pond 2P: Main area pond

Hydrograph



Site Pond

MSE 24-hr 3 100 Year Rainfall=6.36"

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Hydrograph for Pond 2P: Main area pond

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)	Outflow-Volume (acre-feet)
11.45	4.44	11,522	850.90	0.57	0.022
11.55	5.25	13,013	850.96	0.70	0.027
11.65	7.67	15,059	851.03	0.90	0.034
11.75	10.99	18,040	851.13	1.19	0.044
11.85	16.31	22,445	851.28	1.59	0.056
11.95	26.77	29,380	851.51	2.02	0.072
12.05	53.57	42,806	851.95	2.67	0.092
12.15	82.17	66,462	852.69	18.74	0.187
12.25	35.88	74,914	852.94	40.12	0.504
12.35	22.06	71,913	852.85	31.68	0.786
12.45	15.72	68,680	852.76	23.63	0.996
12.55	11.67	66,105	852.68	18.00	1.156
12.65	8.50	63,938	852.61	13.89	1.278
12.75	7.68	62,334	852.56	11.26	1.376
12.85	7.19	61,245	852.53	9.72	1.459
12.95	6.71	60,419	852.50	8.77	1.534
13.05	6.23	59,702	852.48	8.14	1.602
13.15	5.74	59,022	852.46	7.58	1.666
13.25	5.26	58,364	852.44	7.06	1.725
13.35	4.77	57,713	852.42	6.56	1.781
13.45	4.28	57,060	852.40	6.08	1.832
13.55	3.66	56,387	852.38	5.61	1.879
13.65	2.70	55,579	852.35	5.08	1.922
13.75	2.54	54,774	852.33	4.60	1.961
13.85	2.51	54,096	852.31	4.22	1.997
13.95	2.48	53,528	852.29	3.93	2.030
14.05	2.45	53,042	852.27	3.70	2.061
14.15	2.42	52,618	852.26	3.52	2.090
14.25	2.39	52,244	852.25	3.37	2.119
14.35	2.36	51,906	852.24	3.26	2.146
14.45	2.33	51,597	852.23	3.15	2.172
14.55	2.31	51,308	852.22	3.09	2.198
14.65	2.27	51,030	852.21	3.03	2.223
14.75	2.24	50,760	852.20	2.98	2.248
14.85	2.22	50,494	852.19	2.97	2.272
14.95	2.19	50,220	852.18	2.96	2.296
15.05	2.03	49,928	852.17	2.94	2.321
15.15	1.43	49,479	852.16	2.93	2.345
15.25	1.34	48,924	852.14	2.91	2.369
15.35	1.33	48,361	852.12	2.89	2.393
15.45	1.31	47,801	852.11	2.86	2.417
15.55	1.30	47,243	852.09	2.84	2.440
15.65	1.29	46,689	852.07	2.82	2.464
15.75	1.27	46,137	852.05	2.80	2.487
15.85	1.26	45,589	852.04	2.78	2.510
15.95	1.25	45,044	852.02	2.76	2.533
16.05	1.24	44,503	852.00	2.74	2.555
16.15	1.22	43,964	851.98	2.71	2.578
16.25	1.21	43,429	851.97	2.69	2.600
16.35	1.19	42,897	851.95	2.67	2.622
16.45	1.19	42,368	851.93	2.65	2.644
16.55	1.17	41,843	851.92	2.63	2.666

Site Pond

MSE 24-hr 3 100 Year Rainfall=6.36"

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Hydrograph for Pond 2P: Main area pond (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)	Outflow-Volume (acre-feet)
16.65	1.16	41,321	851.90	2.60	2.687
16.75	1.15	40,802	851.88	2.58	2.709
16.85	1.13	40,287	851.87	2.56	2.730
16.95	1.12	39,776	851.85	2.54	2.751
17.05	1.10	39,267	851.83	2.51	2.772
17.15	1.09	38,761	851.82	2.49	2.792
17.25	1.08	38,260	851.80	2.47	2.813
17.35	1.07	37,762	851.78	2.45	2.833
17.45	1.06	37,268	851.77	2.42	2.853
17.55	1.04	36,777	851.75	2.40	2.873
17.65	1.03	36,290	851.74	2.38	2.893
17.75	1.02	35,806	851.72	2.35	2.912
17.85	1.00	35,326	851.70	2.33	2.932
17.95	0.99	34,849	851.69	2.31	2.951
18.05	0.98	34,376	851.67	2.28	2.970
18.15	0.96	33,907	851.66	2.26	2.988
18.25	0.95	33,441	851.64	2.24	3.007
18.35	0.94	32,979	851.63	2.21	3.025
18.45	0.92	32,520	851.61	2.19	3.043
18.55	0.91	32,067	851.60	2.17	3.061
18.65	0.90	31,617	851.58	2.14	3.079
18.75	0.88	31,170	851.57	2.12	3.097
18.85	0.87	30,726	851.55	2.10	3.114
18.95	0.86	30,288	851.54	2.07	3.131
19.05	0.84	29,853	851.52	2.05	3.148
19.15	0.83	29,422	851.51	2.02	3.165
19.25	0.82	28,995	851.50	2.00	3.182
19.35	0.80	28,572	851.48	1.97	3.198
19.45	0.79	28,153	851.47	1.95	3.214
19.55	0.78	27,738	851.45	1.93	3.230
19.65	0.77	27,328	851.44	1.90	3.246
19.75	0.75	26,921	851.43	1.88	3.261
19.85	0.74	26,518	851.41	1.85	3.277
19.95	0.72	26,120	851.40	1.83	3.292
20.05	0.72	25,726	851.39	1.80	3.307
20.15	0.70	25,337	851.37	1.78	3.322
20.25	0.68	24,951	851.36	1.75	3.336
20.35	0.67	24,569	851.35	1.73	3.350
20.45	0.66	24,193	851.34	1.70	3.365
20.55	0.65	23,819	851.32	1.68	3.379
20.65	0.63	23,448	851.31	1.66	3.392
20.75	0.62	23,080	851.30	1.64	3.406
20.85	0.61	22,717	851.29	1.61	3.419
20.95	0.59	22,359	851.27	1.58	3.432
21.05	0.58	22,006	851.26	1.55	3.445
21.15	0.57	21,658	851.25	1.53	3.458

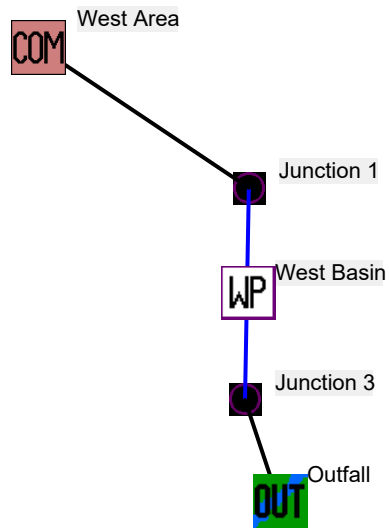
Appendix E

Calculations: Water Quality TSS Reduction



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Data file name: W:\Projects\TL-05-21\SWMP\TLAcrs.mdb
WinSLAMM Version 10.4.1
Rain file name: C:\WinSLAMM Files\Rain Files\WisReg - Milwaukee WI 1969.RAN
Particulate Solids Concentration file name: C:\WinSLAMM Files\v10.1 WI_AVG01.pscx
Runoff Coefficient file name: C:\WinSLAMM Files\WI_SL06 Dec06.rsvx
Residential Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Institutional Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Commercial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Industrial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Other Urban Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Freeway Street Delivery file name: C:\WinSLAMM Files\Freeway Dec06.std
Apply Street Delivery Files to Adjust the After Event Load Street Dirt Mass Balance: False
Pollutant Relative Concentration file name: C:\WinSLAMM Files\WI_GEO03.ppd
Source Area PSD and Peak to Average Flow Ratio File: C:\WinSLAMM Files\NURP Source Area PSD Files.csv
Cost Data file name:
Seed for random number generator: -42
Study period starting date: 01/05/69 Study period ending date: 12/31/69
Start of Winter Season: 12/06 End of Winter Season: 03/28
Date: 01-27-2025 Time: 16:26:34
Site information:

LU# 1 - Commercial: West Area Total area (ac): 11.513
1 - Roofs: 0.063 ac. Pitched Connected PSD File: C:\WinSLAMM Files\NURP.cpz
2 - Roofs 2: 0.166 ac. Pitched Connected PSD File: C:\WinSLAMM Files\NURP.cpz
3 - Roofs 3: 0.115 ac. Pitched Connected PSD File: C:\WinSLAMM Files\NURP.cpz
4 - Roofs 4: 0.230 ac. Pitched Connected PSD File: C:\WinSLAMM Files\NURP.cpz
13 - Paved Parking 1: 0.367 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz
14 - Paved Parking 2: 0.252 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz
15 - Paved Parking 3: 0.689 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz
25 - Driveways 1: 1.629 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz
45 - Large Landscaped Areas 1: 0.344 ac. Normal Clayey Low Density PSD File: C:\WinSLAMM Files\NURP.cpz
57 - Undeveloped Areas 1: 5.286 ac. Normal Silty PSD File: C:\WinSLAMM Files\NURP.cpz
58 - Undeveloped Areas 2: 1.770 ac. Normal Clayey Low Density PSD File: C:\WinSLAMM Files\NURP.cpz
70 - Water Body Areas: 0.602 ac. PSD File:

Control Practice 1: Wet Detention Pond CP# 1 (DS) - West Basin

Particle Size Distribution file name: Not needed - calculated by program

Initial stage elevation (ft): 0

Peak to Average Flow Ratio: 3.8

Maximum flow allowed into pond (cfs): No maximum value entered

Outlet Characteristics:

Outlet type: Orifice 1

1. Orifice diameter (ft): 0.83
2. Number of orifices: 1
3. Invert elevation above datum (ft): 4.5

Outlet type: Broad Crested Weir

1. Weir crest length (ft): 20
2. Weir crest width (ft): 10
3. Height from datum to bottom of weir opening: 6.5

Outlet type: Vertical Stand Pipe

1. Stand pipe diameter (ft): 2
2. Stand pipe height above datum (ft): 6.2

Pond stage and surface area

Entry Number	Stage (ft)	Pond Area (acres)	Natural Seepage (in/hr)	Other Outflow (cfs)
0	0.00	0.0000	0.00	0.00
1	0.01	0.3551	0.00	0.00
2	1.00	0.3923	0.00	0.00
3	2.00	0.4314	0.00	0.00
4	3.00	0.4723	0.00	0.00
5	3.50	0.4935	0.00	0.00
6	4.00	0.5665	0.00	0.00
7	4.50	0.6434	0.00	0.00
8	5.00	0.6686	0.00	0.00
9	6.00	0.7166	0.00	0.00
10	7.00	0.7665	0.00	0.00

Data file name: W:\Projects\TL-05-21\SWMP\TLAcres.mdb
WinSLAMM Version 10.4.1
Rain file name: C:\WinSLAMM Files\Rain Files\WisReg - Milwaukee WI 1969.RAN
Particulate Solids Concentration file name: C:\WinSLAMM Files\v10.1 WI_AVG01.pscx
Runoff Coefficient file name: C:\WinSLAMM Files\WI_SL06 Dec06.rsvx
Pollutant Relative Concentration file name: C:\WinSLAMM Files\WI_GEO03.ppdx
Residential Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Institutional Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Commercial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Industrial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Other Urban Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Freeway Street Delivery file name: C:\WinSLAMM Files\Freeway Dec06.std
Apply Street Delivery Files to Adjust the After Event Load Street Dirt Mass Balance: False
Source Area PSD and Peak to Average Flow Ratio File: C:\WinSLAMM Files\NURP Source Area PSD Files.csv
Cost Data file name:
Seed for random number generator: -42
Study period starting date: 01/05/69 Study period ending date: 12/31/69
Start of Winter Season: 12/06 End of Winter Season: 03/28
Model Run Start Date: 01/05/69 Model Run End Date: 12/31/69
Date of run: 01-27-2025 Time of run: 16:24:35
Total Area Modeled (acres): 11.513
Years in Model Run: 0.99

	Runoff Volume (cu ft)	Percent Runoff Volume Reduction	Particulate Solids Conc. (mg/L)	Particulate Solids Yield (lbs)	Percent Particulate Solids Reduction
Total of all Land Uses without Controls:	388292	-	91.21	2211	-
Outfall Total with Controls:	299680	22.82%	17.09	319.7	85.54%
Annualized Total After Outfall Controls:	303842			324.1	

Appendix F

Civil Design Plans



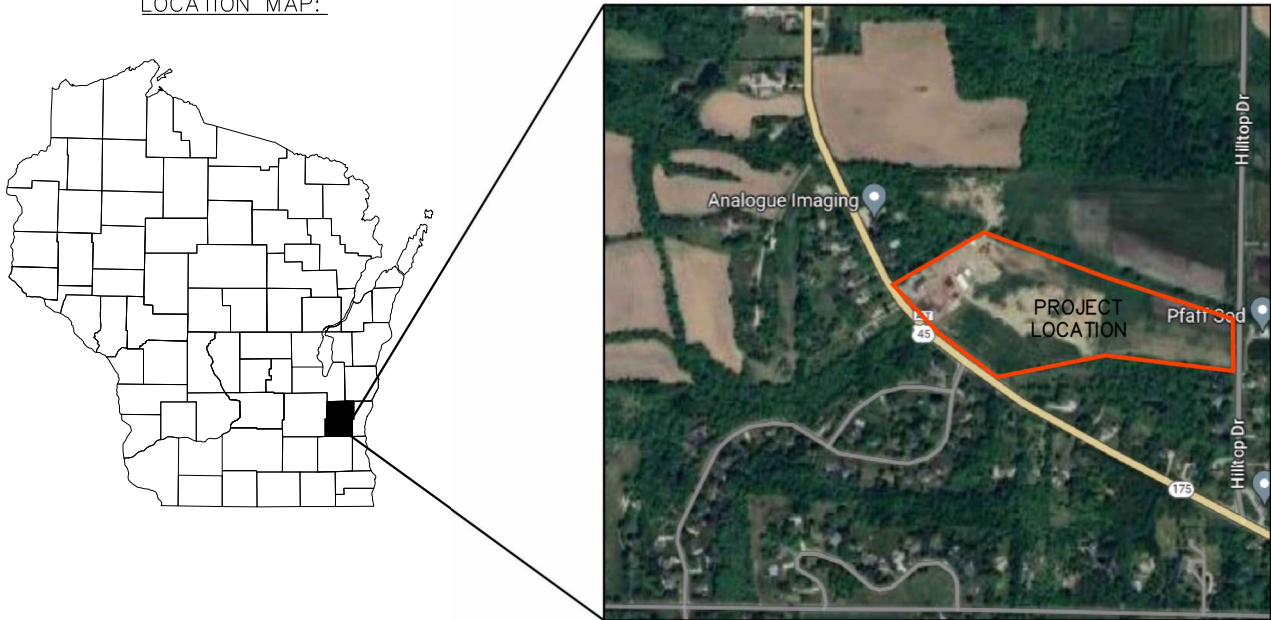
PARISH SURVEY & ENGINEERING

122 Wisconsin Street | West Bend, WI 53095
www.parishse.com

TLC ACRES

W210 N10738 APPLETON AVENUE

LOCATION MAP:



Professional Engineer's Seal



PROJECT CONTACTS:

OWNER:
TLC ACRES
ATTN: MATT SEBAN
W210 N10738 APPLETON AVE
GERMANTOWN, WI 53022

CIVIL:
PSE, LLC
ATTN: EVAN NICKODEM
122 WISCONSIN STREET
WEST BEND, WI 53095

DIGGERSHOTLINE
Dial 811 or (800)242-8511
www.DiggersHotline.com

BENCHMARK:

SITE BENCHMARK:
TOP OF WELL CASING
EAST SIDE OF EXISTING BUILDING
ELEV=862.67

SECTION CORNER:
EX: NE 1/4 OF SEC 30, T9N, R20E.
BRASS DISC IN CONCRETE
ELEV=849.11

CIVIL SHEET INDEX:	
SHEET	SHEET TITLE
C1.00	TITLE
C1.01	EXISTING CONDITIONS PLAN
C1.02	EXISTING CONDITIONS WEST
C1.03	SITE PLAN WEST
C1.04	OVERALL EROSION CONTROL PLAN
C1.05	GRADING PLAN WEST
C1.06	POND GRADING PLAN
C2.01	EROSION CONTROL DETAILS
C2.02	STORMWATER MANAGEMENT DETAILS

REVISIONS:	
NO.	DESCRIPTION

PSE
PARISH SURVEY & ENGINEERING
122 Wisconsin Street, West Bend, WI 53095
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PROJECT TITLE:
**TLC ACRES
W210 N10738 APPLETON AVENUE
GERMANTOWN, WI 53022**

PLAN TITLE:
TITLE SHEET

DRAWN BY:
WWS

DESIGNED BY:
EPN

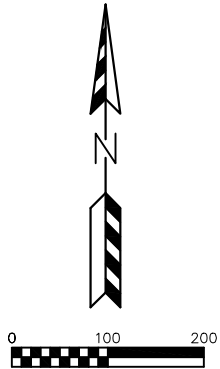
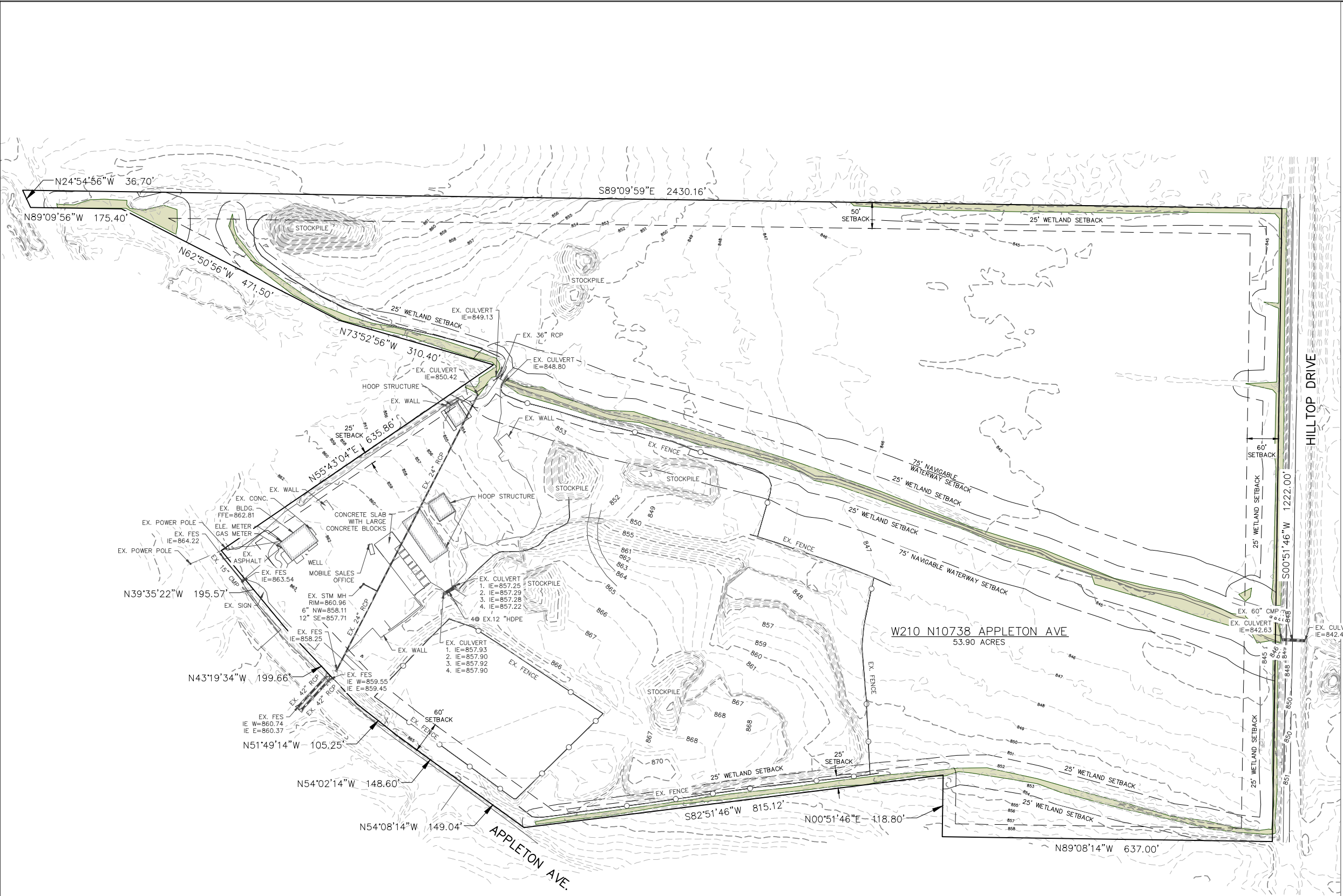
CHECKED BY:
KJP

PLAN DATE:
1/28/2025

PROJECT NO:
\TL-05-21

BID SET

SHEET NO:
C1.00



LEGEND:

- EXISTING WETLANDS.
- EXISTING MINOR CONTOUR.
- EXISTING MAJOR CONTOUR.
- OVERHEAD ELECTRIC LINE.
- BURIED ELECTRIC LINE.
- BURIED TELEPHONE LINE.
- FIBER OPTIC LINE.
- GAS LINE.
- FENCE.
- STORM SEWER LINE.
- ELECTRIC METER.
- GAS METER.
- GAS VALVE.
- POWER POLE.
- STORM SEWER MANHOLE.
- STORM SEWER INLET.
- TELEPHONE PEDESTAL.
- TRANSFORMER.

SITE PLAN NOTE:

1. THE BUILDING, PAVEMENT, AND GRAVEL SURFACE AREAS REPRESENT THE EXISTING CONDITIONS BASED ON VARIOUS SURVEYS AND THE 2022 AERIAL PHOTO FROM WASHINGTON COUNTY.

WETLAND NOTE:

1. THE WETLANDS PRESENTED ON THIS PLAN WERE DELINEATED BY HEARTLAND ECOLOGICAL ON MAY 11, 2021.

REVISIONS:	
NO.	DESCRIPTION

PSE

PARISH SURVEY & ENGINEERING
122 Wisconsin Street, West Bend, WI 53095
262.346.7800
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PROJECT TITLE:

TLC ACRES
W210 N10738 APPLETON AVENUE
GERMANTOWN, WI 53022

PLAN TITLE:

EXISTING
CONDITIONS
PLAN

DRAWN BY:

WWS

DESIGNED BY:

EPN

CHECKED BY:

KJP

PLAN DATE:

1/28/2025

PROJECT NO:

(TL-05-21)

BID SET

SHEET NO:

C1.01

SITE PLAN NOTE:

1. THE BUILDING, PAVEMENT, AND GRAVEL SURFACE AREAS REPRESENT THE EXISTING CONDITIONS BASED ON VARIOUS SURVEYS AND THE 2022 AERIAL PHOTO FROM WASHINGTON COUNTY.

WETLAND NOTE:

1. THE WETLANDS PRESENTED ON THIS PLAN WERE DELINEATED BY HEARTLAND ECOLOGICAL ON MAY 11, 2021.



REVISIONS:	
NO.	DESCRIPTION

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PROJECT TITLE:

TLC ACRES
W210 N10738 APPLETON AVENUE
GERMANTOWN, WI 53022

PLAN TITLE:

EXISTING
CONDITIONS
WEST

DRAWN BY:

WWS

DESIGNED BY:

EPN

CHECKED BY:

KJP

PLAN DATE:

1/28/2025

PROJECT NO:

(TL-05-21)

BID SET

SHEET NO:

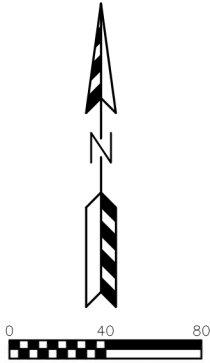
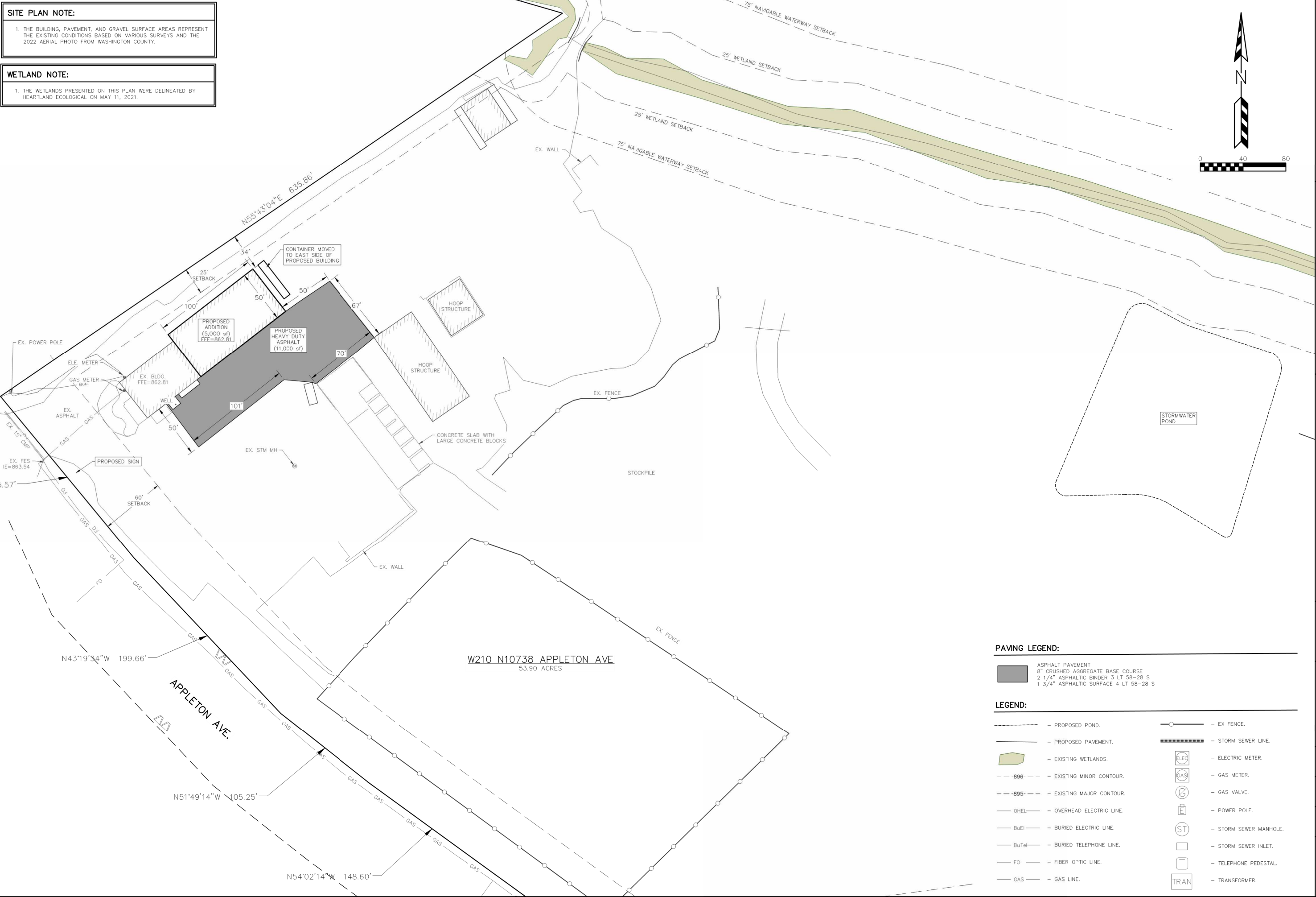
C1.02

SITE PLAN NOTE:

1. THE BUILDING, PAVEMENT, AND GRAVEL SURFACE AREAS REPRESENT THE EXISTING CONDITIONS BASED ON VARIOUS SURVEYS AND THE 2022 AERIAL PHOTO FROM WASHINGTON COUNTY.

WETLAND NOTE:

1. THE WETLANDS PRESENTED ON THIS PLAN WERE DELINEATED BY HEARTLAND ECOLOGICAL ON MAY 11, 2021.



REVISIONS:	
NO.	DESCRIPTION

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PROJECT TITLE:
**TLC ACRES
W210 N10738 APPLETON AVENUE
GERMANTOWN, WI 53022**

PLAN TITLE:
**SITE PLAN
WEST**

DRAWN BY:
WWS

DESIGNED BY:
EPN

CHECKED BY:
KJP

PLAN DATE:
1/28/2025

PROJECT NO:
(TL-05-21)

BID SET

SHEET NO:
C1.03

PAVING LEGEND:

	ASPHALT PAVEMENT 8" CRUSHED AGGREGATE BASE COURSE 2 1/4" ASPHALTIC BINDER 3 LT 58-28 S 1 3/4" ASPHALTIC SURFACE 4 LT 58-28 S
--	---

LEGEND:

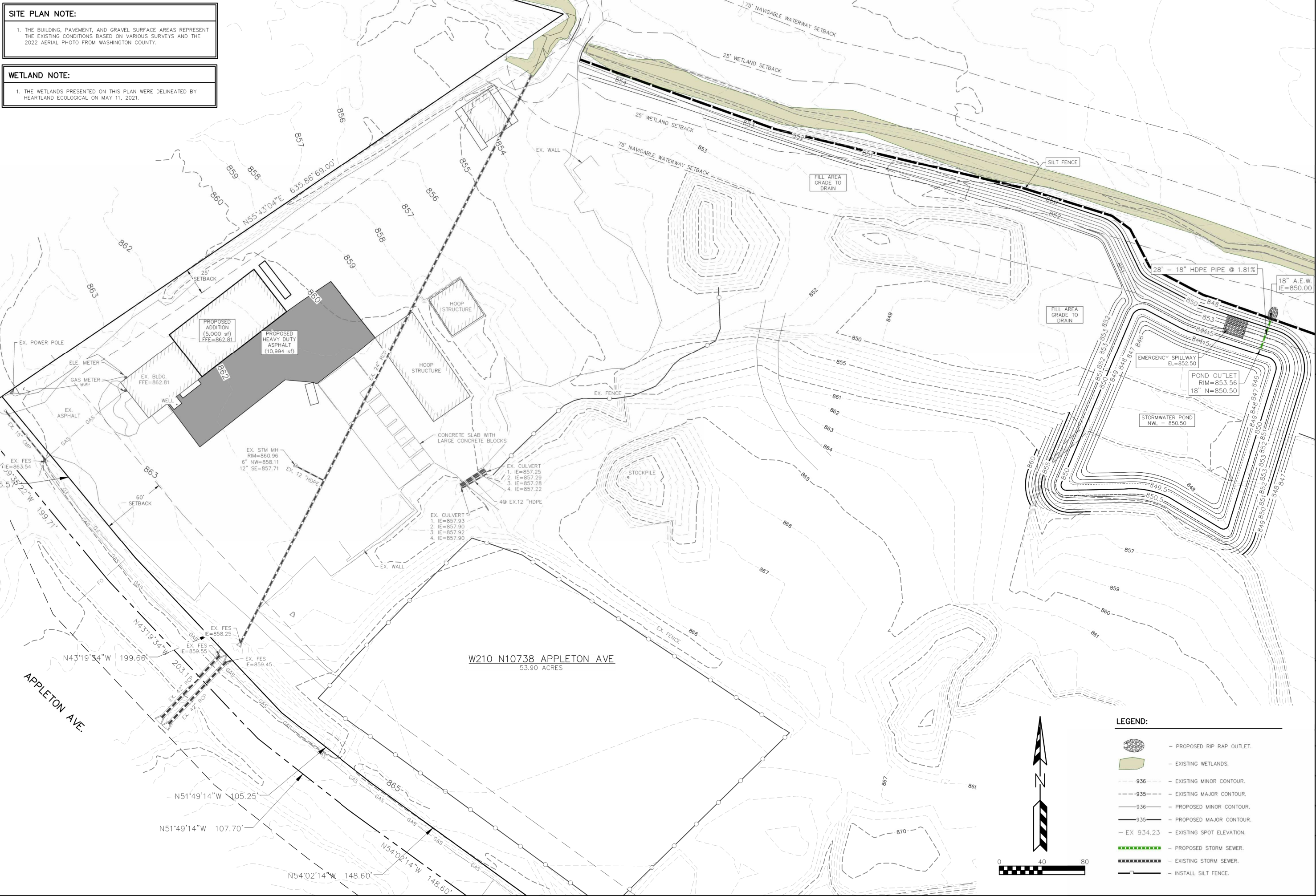
	PROPOSED POND.		EX FENCE.
	PROPOSED PAVEMENT.		STORM SEWER LINE.
	EXISTING WETLANDS.		ELECTRIC METER.
	EXISTING MINOR CONTOUR.		GAS METER.
	EXISTING MAJOR CONTOUR.		GAS VALVE.
	OHEL OVERHEAD ELECTRIC LINE.		POWER POLE.
	BuEl BURIED ELECTRIC LINE.		STORM SEWER MANHOLE.
	BuTel BURIED TELEPHONE LINE.		STORM SEWER INLET.
	FO FIBER OPTIC LINE.		TELEPHONE PEDESTAL.
	GAS GAS LINE.		TRANSFORMER.

SITE PLAN NOTE:

1. THE BUILDING, PAVEMENT, AND GRAVEL SURFACE AREAS REPRESENT THE EXISTING CONDITIONS BASED ON VARIOUS SURVEYS AND THE 2022 AERIAL PHOTO FROM WASHINGTON COUNTY.

WETLAND NOTE:

1. THE WETLANDS PRESENTED ON THIS PLAN WERE DELINEATED BY HEARTLAND ECOLOGICAL ON MAY 11, 2021.



REVISIONS:	
NO.	DESCRIPTION

PSE

P

S

E

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122 Wisconsin Street, West Bend, WI 53095

262.346.7800

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PROJECT TITLE:

TLC ACRES

W210 N10738 APPLETON AVENUE

GERMANTOWN, WI 53022

PLAN TITLE:

GRADING
PLAN WEST

DRAWN BY:

WWS

DESIGNED BY:

EPN

CHECKED BY:

KJP

PLAN DATE:

1/28/2025

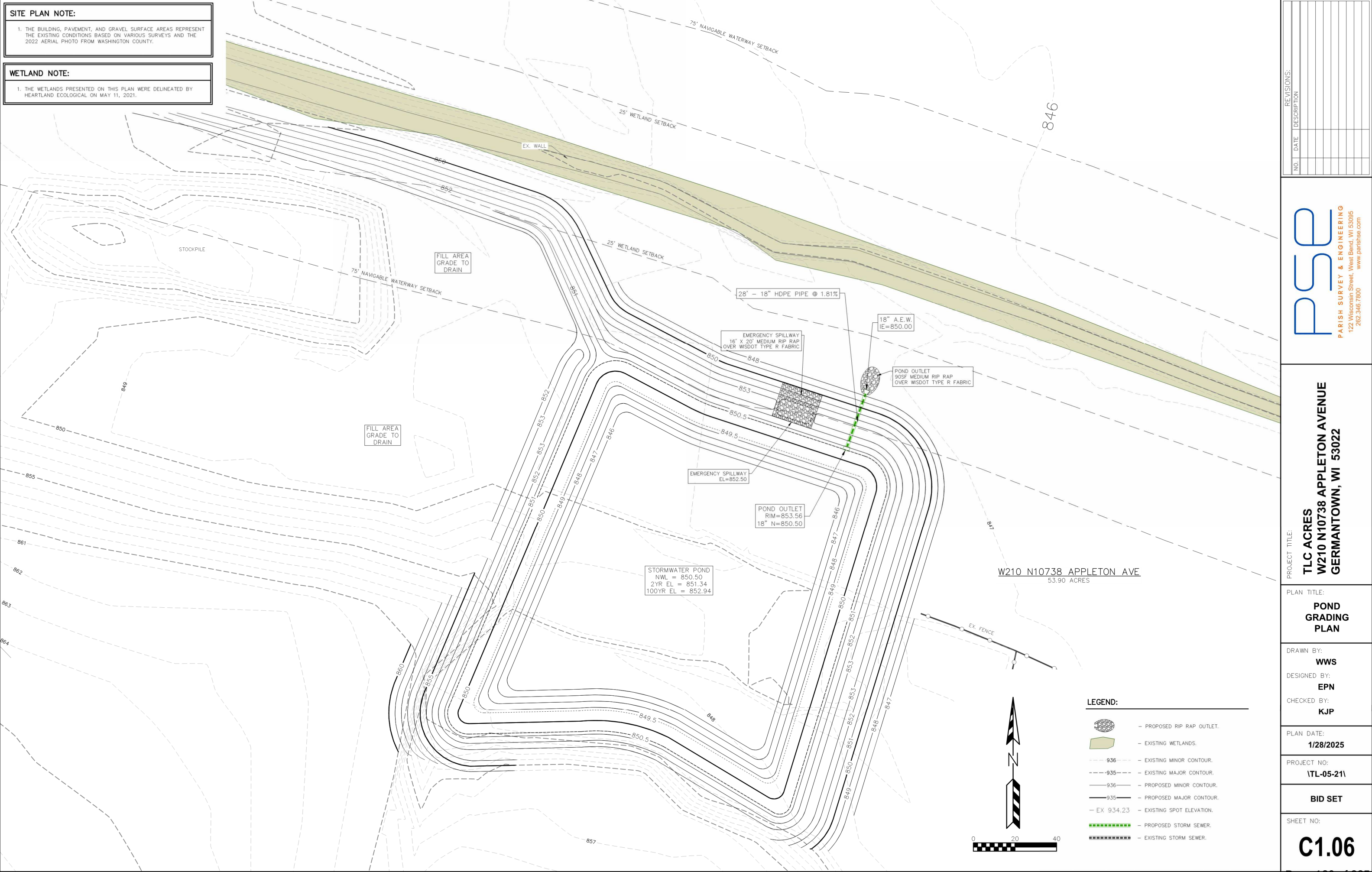
PROJECT NO:

(TL-05-21)

BID SET

SHEET NO:

C1.05



REVISIONS:	
NO.	DESCRIPTION

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122 Wisconsin Street, West Bend, WI 53095

262.346.7800

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PROJECT TITLE:

TLC ACRES
W210 N10738 APPLETON AVENUE
GERMANTOWN, WI 53022

PLAN TITLE:

POND
GRADING
PLAN

DRAWN BY:

WWS

DESIGNED BY:

EPN

CHECKED BY:

KJP

PLAN DATE:

1/28/2025

PROJECT NO:

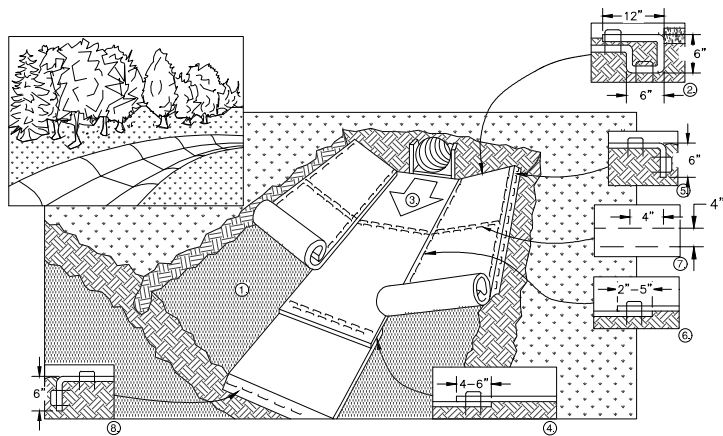
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BID SET

SHEET NO:

C1.06

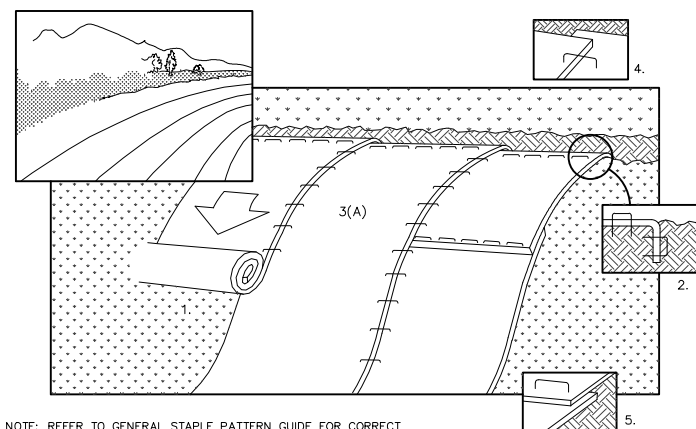
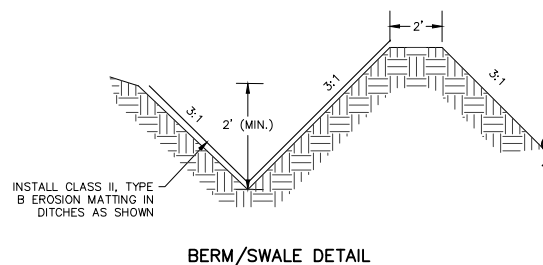
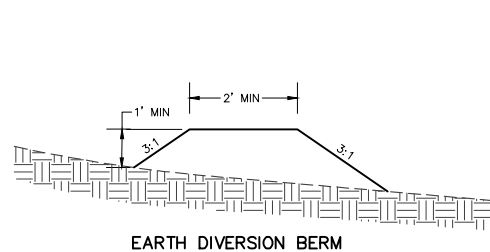
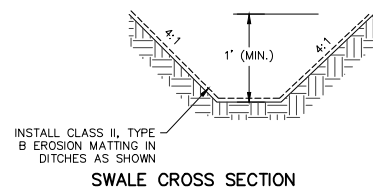
MAXIMUM PERIOD OF BARE SOIL FOR SLOPES > 20%		
SLOPE AREA DRAINS TO SEDIMENT BASIN OR SEDIMENT TRAP?	MAXIMUM PERIOD OF BARE SOIL EXPOSURE (CALENDAR DAYS)	
	LAND DISTURBANCE BETWEEN SEPTEMBER 16TH AND MAY 1ST	LAND DISTURBANCE BETWEEN MAY 2ND AND SEPTEMBER 15TH
YES	90	90
NO	60	30



1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING APPLICATION OF FERTILIZER AND SEED.
2. BEGIN AT THE TOP OF THE CHANNEL BY ANCHORING THE BLANKET IN A 6" DEEP X 6" WIDE TRENCH WITH APPROXIMATELY 12" OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" 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 THE SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS RECOMMENDED BY THE MANUFACTURER.
4. PLACE CONSECUTIVE BLANKETS END OVER END (SHINGLE STYLE) WITH A 4-6" OVERLAP. USE A DOUBLE ROW OF STAPLES STAGGERED 4" APART AND 4" ON CENTER TO SECURE BLANKETS.
5. FULL LENGTH EDGE OF BLANKETS AT TOP OF SIDE SLOPE MUST BE ANCHORED WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN A 6" DEEP X 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
6. ADJACENT BLANKETS MUST BE OVERLAPPED APPROXIMATELY 4" AND STAPLED.
7. A STAPLE CHECK SLOT IS RECOMMENDED AT 30 TO 40 FOOT INTERVALS. USE A DOUBLE ROW OF STAPLES STAGGERED 4" APART AND 4" 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" APART IN A 6" DEEP X 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.

NOTE: ALL STAPLES MUST BE 6" OR GREATER IN LENGTH

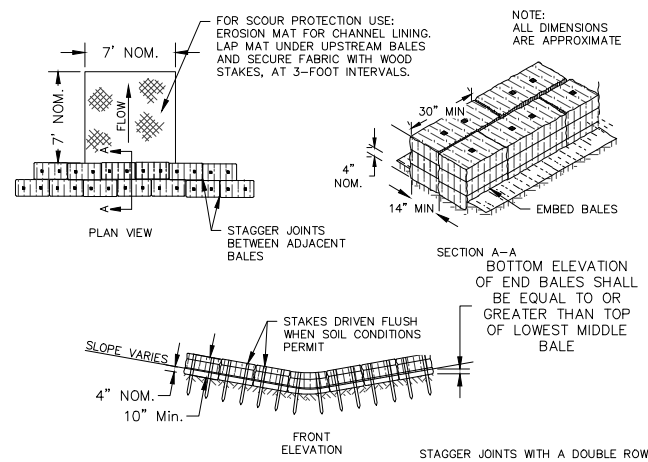
EROSION CONTROL MAT – CHANNEL INSTALLATION



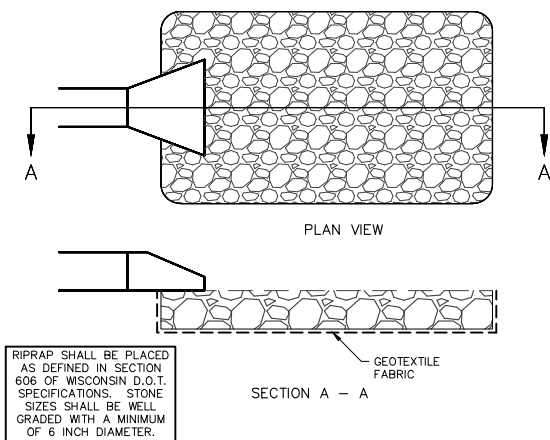
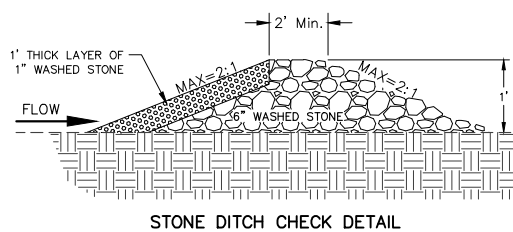
NOTE: REFER TO GENERAL STAPLE PATTERN GUIDE FOR CORRECT STAPLE PATTERN RECOMMENDATIONS FOR SLOPE INSTALLATIONS.

1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING APPLICATION OF 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 6" DEEP X 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
3. ROLL THE BLANKETS (A) DOWN OR (B.) HORIZONTALLY ACROSS THE SLOPE.
4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2" OVERLAP.
5. WHEN BLANKETS MUST BE SPLICED DOWN THE SLOPE, PLACE BLANKETS END OVER END (SHINGLE STYLE) WITH APPROXIMATELY 4" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART.
6. ALL BLANKETS MUST BE SECURELY FASTENED TO THE SLOPE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS RECOMMENDED BY THE MANUFACTURER.

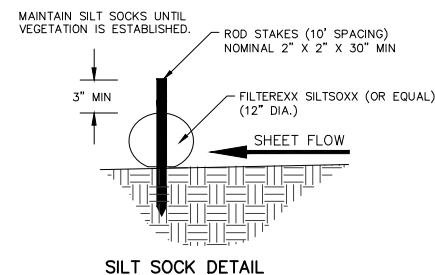
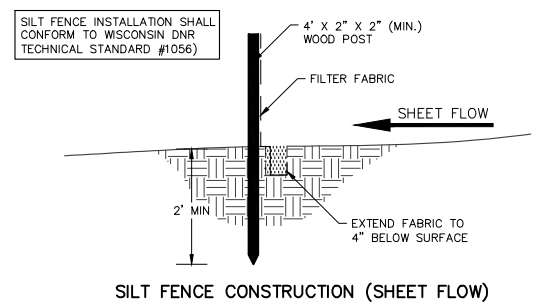
EROSION CONTROL MAT – SLOPE INSTALLATION

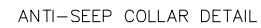
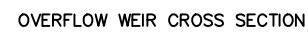


DITCH CHECK DETAIL



RIPRAP OUTLET DETAIL

[illegible]

[illegible]

PROJECT TITLE:

**ILC ACRES
W210 N10738 APPLETON AVENUE
GERMANTOWN, WI 53022**

PLAN TITLE:

STORMWATER MANAGEMENT DETAILS

DRAWN BY:

EPN

DESIGNED BY:

EPN

CHECKED BY:

EPN

PLAN DATE:

1/28/2025

PROJECT NO:

TL-05-21\

BID SET

SHEET NO:

C2.02

Appendix G

Stormwater Maintenance Agreement



PARISH SURVEY & ENGINEERING

122 Wisconsin Street | West Bend, WI 53095
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STORM WATER MANAGEMENT PRACTICES MAINTENANCE AGREEMENT

THIS AGREEMENT, made and entered into this _____ day of _____, 2024, by and between TLC Acres hereinafter called the “Owner,” and the Village of Germantown, a municipal corporation located in Washington County, Wisconsin, hereinafter called the “Village.”

WITNESSETH:

WHEREAS, the Owner is the owner of the following described lands situated in the Village of Germantown, Washington County, State of Wisconsin:

Being a part of the Southeast ¼ of Section 30, Town 9 North, Range 20 East, Village of Germantown, Washington County, Wisconsin.

hereinafter called the “Property.”

WHEREAS, the Owner is developing the Property; and

WHEREAS, the Site Plan known as Appleton Avenue Storage, hereinafter called the “Plan,” which is expressly made a part hereof, as approved or to be approved by the Village, provides for on-site storm water management practices within the confines of the Property; and

WHEREAS, the Village and the Owner agree that the health, safety and welfare of the residents of the Village of Germantown, require that on-site storm water management practices be constructed and maintained on the Property; and

WHEREAS, the Village requires that on-site storm water management facilities as shown on the Plan be constructed and adequately maintained by the Owner.

NOW, THEREFORE, in consideration of the foregoing recitals, the mutual covenants contained herein, and the following terms and conditions, the parties hereto agree as follows:

1. The on-site storm water management facilities shall be constructed by the Owner in accordance with the plans and specifications indicated in the Plan and applicable statutes, ordinances and rules. The storm water management practices shall serve the drainage area designated in the Plan.
2. The Owner shall regularly inspect the storm water management facilities and specifically the function of the approved storm water management system as often as conditions require, but in any event at least once each year. The Operations and Maintenance Manual attached to this agreement as Exhibit A and each by this reference made a part hereof, shall be followed for the regular inspections of the storm water management facilities. The Owner shall keep the operation and maintenance reports from past inspections as well as a log of maintenance activities indicating the date and type of maintenance completed. The reports and maintenance log shall be submitted to the Department of Public Works Director and retained by the Village for a period of 10 years. The purpose of the inspections is to assure safe and proper functioning

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Village of Germantown
N210 W10738 Appleton Ave
Germantown, WI 53022

Parcel No.: GTNV_193.975

of the facilities. The inspections shall cover all facilities including, but not limited to, berms, outlet structures, pond areas and access roads. Deficiencies shall be noted in the operation and maintenance reports.

3. The Owner shall adequately maintain the storm water management facilities including, but not limited to, all pipes and channels built to convey storm water to the facility, as well as all structures, improvements and vegetation provided to control the quantity and quality of the storm water. Adequate maintenance, in accordance with Exhibit A, is herein defined as keeping the storm water management facilities in good working condition so that these facilities are performing their design functions and are maintained in accordance with the Plan.
4. The Owner hereby grants permission to the Village, its authorized agents and employees, to enter upon the Property and to inspect the storm water management facilities whenever the Village deems necessary. The purpose of the Village's inspection is to investigate reported deficiencies and/or to respond to citizen complaints. The Village shall provide the Owner with copies of the inspection findings and a directive to commence with repairs if necessary. Corrective actions shall be taken within a reasonable timeframe as established by the Department of Public Works Director.
5. If the Owner fails to maintain the storm water management facilities in good working condition, consistent with the terms of the Plan and does not perform the required corrective actions and inspections in the specified time, the Village may perform the corrective actions identified in the inspection report and charge the Owner for the cost of such work. If the Owner fails pay to such costs to the Village within 30 days as required by Section 7, below, the cost of such work may be specially assessed against the Property pursuant to Wisconsin Statutes Section 66.0703. The Owner hereby acknowledges that the Property benefits from the corrective actions taken by the Village and hereby waives any right to notice or hearing of said special assessment pursuant to Section 66.0703(7)(b), Stats.
6. The Owner shall perform the work necessary to keep the storm water management facilities in good working order as appropriate. In the event a maintenance schedule for the storm water management facilities (including sediment removal) is outlined on the approved plans, the schedule shall be followed. The minimal amount of maintenance on the storm water management facilities shall be in accordance with Exhibit A.
7. In the event the Village, pursuant to this Agreement, performs work of any nature or expends any funds in performance of said work for labor, use of equipment, supplies, materials, and the like, the Owner shall reimburse the Village within 30 days of receipt of an invoice for all actual costs incurred by the Village hereunder.
8. This Agreement imposes no liability of any kind whatsoever on the Village, its officers, agents and employees, and the Owner agrees to indemnify and hold the Village harmless as and against any and all claims, actions, causes of action, demands, including attorney fees and court costs which the Village may incur as a result of the failure of the storm water management system and/or actions taken or not taken by the Village to enforce the terms of this Agreement including, but not limited to, the performance of maintenance activities.
9. This Agreement shall be recorded at the Washington County Register of Deeds Office and shall constitute a covenant running with the land and shall be binding on the Owner, its administrators, executors, assigns, heirs and any other successors in interests or future owners of the Property, including any homeowners or condominium association.

10. Notwithstanding anything in this Agreement to the contrary, in the event the Owner, or the Owner's successors and assigns, sell or otherwise transfer ownership in the Property, the Owner or the successor or assigns making said transfer, is hereby released from any and all liabilities and obligations under the terms of this Agreement. The liabilities and obligations under this Agreement shall transfer with the ownership of the Property to the new owner of the Property.

VILLAGE OF GERMANTOWN

By: _____ Dated: _____
Steven Kreklow, Village Administrator

By: _____ Dated: _____
Deanna Braunschweig, Village Clerk

A C K N O W L E D G M E N T

STATE OF WISCONSIN)
)ss.
WASHINGTON COUNTY)

Personally came before me the ____ day of _____, 20____ the above named Steven Kreklow, to me known to be the Administrator of the Village of Germantown and to me known to be the person who executed the foregoing document and acknowledged the same.

Notary Public, State of Wisconsin
Washington County.
My Commission is permanent. (If NOT, expiration date is: _____)

A C K N O W L E D G M E N T

STATE OF WISCONSIN)
)ss.
WASHINGTON COUNTY)

Personally came before me the ____ day of _____, 20____ the above named Deanna Braunschweig, to me known to be the Clerk of the Village of Germantown and to me known to be the person who executed the foregoing document and acknowledged the same.

Notary Public, State of Wisconsin
Washington County.
My Commission is permanent. (If NOT, expiration date is: _____)

BUZDUM TRUST

By: _____ Dated: _____
Name, Title

This Document Drafted By *Evan P. Nickodem*
 Parish Survey & Engineering, LLC
June 7, 2024



Assured Wetland Delineation Report

STH 175 Parcel

Village of Germantown, Washington County, Wisconsin

January 10, 2021

Project Number: 20210495

STH 175 Parcel

Village of Germantown, Washington County, Wisconsin

January 10, 2021

Prepared for:

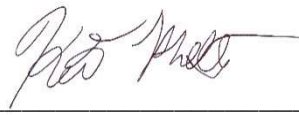
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1.0 Introduction

Heartland Ecological Group, Inc. ("Heartland") completed an assured wetland determination and delineation on the STH 175 Parcel site on May 11, 2021, at the request of Quam Engineering, LLC. Fieldwork was completed by Eric Parker, an assured delineator qualified via the Wisconsin Department of Natural Resources' (WDNR's) Wetland Delineation Assurance Program (Appendix E, Qualifications). The 50.67-acre site (the "Study Area") is northwest of the intersection of State Trunk Highway (STH) 175 and County Trunk Highway (CTH) Y, in the southeast ¼ of Section 30, T9N, R20E, Village of Germantown, Washington County, WI (Figure 1, Appendix A). The purpose of the wetland delineation was to determine the location and extent of wetlands within the Study Area.

Two (2) wetland areas totaling approximately 1.82 acres were delineated and mapped within the Study Area (Figure 6, Appendix A). Three (3) waterways were mapped in the field within the central portion, and along the southern and eastern edges, of the Study Area. Wetlands discussed in this report may be subject to federal regulation under the jurisdiction of the U.S. Army Corps of Engineers (USACE), state regulation under the jurisdiction of the WDNR, and local zoning authorities. Heartland recommends this report be submitted to local authorities, the WDNR, and USACE for final jurisdictional review and concurrence.



2.0 Methods

2.1 Wetlands

Wetlands were determined and delineated using the criteria and methods described in the USACE Wetlands Delineation Manual, T.R. Y-87-1 ("1987 Corps Manual") and the applicable *Regional Supplement to the Corps of Engineers Wetland Delineation Manual*. In addition, the *Guidance for Submittal of Delineation Reports to the St. Paul District USACE and the WDNR* (WDNR, 2015) was followed in completing the wetland delineation and report.

Determinations and delineations utilized available resources including the U.S. Geological Survey's (USGS) *WI 7.5 Minute Series (Topographic) Map* (Figure 2, Appendix A), the Natural Resource Conservation Service's (NRCS) Soil Survey Geographic Database (SSURGO), U.S. Department of Agriculture's (USDA) *Web Soil Survey* (Figure 3, Appendix A), the WDNR's *Surface Water Data Viewer's* wetland indicator data layer (Figure 4, Appendix A), the WDNR's *Wisconsin Wetland Inventory* data layer (Figure 5, Appendix A), and aerial imagery available through the USDA Farm Service Agency's (FSA's) National Agriculture Imagery Program (NAIP), and Washington County's interactive mapping. The USGS *National Hydrography Dataset* is included on Figures 2 and 5, Appendix A.

Wetland determinations were completed on-site at sample points, often along transects, using the three (3) criteria (vegetation, soil, and hydrology) approach per the 1987 Corps Manual and the Regional Supplement. Procedures in these sources were followed to demonstrate that, under normal circumstances, wetlands were present or not present based on a predominance of hydrophytic vegetation, hydric soils, and wetland hydrology.

Atypical conditions were encountered within the Study Area due to the presence of agricultural fields including row-cropping and hay fields in areas with soils that may be hydric based on the *Web Soil Survey* and the WDNR *Surface Water Data Viewer's* wetland indicator data layer. Therefore, procedures for managed plant communities in the *Problematic hydrophytic vegetation* section described in Chapter 5 of the Regional Supplement were used. NAIP imagery were reviewed for evidence of crop stress, saturation, or inundation signatures. Sample point placements for the wetland delineation were partially determined based on such signatures.



Wetland signatures often vary based on the type and seasonal date of the aerial imagery. For example, there are seven (7) standardized signature types in actively farmed settings described in the July 2016 Guidance. To assist in interpretations of wetland signatures, a WETS analysis was used to compare antecedent precipitation in the three (3) months leading up to each aerial image to the long-term (30-year) precipitation averages and standard deviation to determine if antecedent conditions for each image was normal, wet, or dry. Areas within agricultural fields are typically determined to be wetland if hydric soils are present and aerial images taken in the five (5) (or more) most recent normal precipitation images show at least one (1) of the wetland signatures per the July 2016 Guidance. Although the off-site analysis concentrates on wetland signatures in normal precipitation images, the images determined to be wet and dry were also analyzed and considered. Determinations and delineation of wetlands in agricultural areas are typically based on an outline of the largest wetland signature on an image taken under “normal” antecedent conditions and based on the consistency of the signatures (USDA, NRCS 1998).

Recent weather conditions influence the visibility or presence of certain wetland hydrology indicators. An assessment of recent precipitation patterns helps to determine if climatic/hydrologic conditions were typical when the field investigation was completed. Therefore, a review of the antecedent precipitation in the three (3) months leading up to the field investigation was completed. Using a WETS analysis developed by the USACE, the amounts of precipitation in these three (3) months were compared to averages and standard deviation thresholds over the past 30 years to generally represent if conditions encountered during the investigation were normal, wet, or dry. Recent precipitation events in the week prior to the investigation were considered while interpreting wetland hydrology indicators. In some cases, the Palmer Drought Index was checked for long-term drought or moist conditions (NOAA, 2018).

The uppermost wetland boundary and sample points were identified and marked with wetland flagging and located with a Global Positioning System (GPS) capable of sub-meter accuracy. In some cases, wetland flagging was not utilized to mark the boundary and the location was only recorded with a GPS unit, particularly in active agricultural areas. The GPS data was then used to map the wetlands using ESRI ArcMap™ 10.6 software.



3.0 Results and Discussion

3.1 Desktop Review

Climatic Conditions

According to the WETS analysis using the previous three (3) months of precipitation data, conditions encountered at the time of the fieldwork were expected to be dry for the time of year (Appendix B). The Palmer Drought Index was checked online and the long-term conditions at the time of the fieldwork were in the mid wetness range. Fieldwork was completed outside the dry season based on long-term regional hydrology data utilized in the WebWIMP Climatic Water Balance web site.

General Topography and Land Use

The topography within the Study Area was generally level with a broad and gentle south facing slope in the northwest corner of the Study Area. Ditched agricultural waterways were present in the center of the Study area in addition to its southern and eastern edges. These ditches, which are tributary to Willow Creek and the Menomonee River, were historically excavated for the use of the adjacent fields as a sod farm. Associated drain tiles were assumed to be present in the fields. A topographic high of approximately 866 feet above mean sea level (msl) occurred in the northwest corner, and a topographic low of approximately 844 feet above msl along the central-east edge (Figures 2 and 6, Appendix A). Land uses within the Study Area and surrounding areas are primarily sod fields, tree nursery use, and row cropping, with residential and woodland areas also present. General drainage is to the northeast and east toward the waterways.

Soil Mapping

Soils mapped by the NRCS Soil Survey within the Study Area and their hydric status are summarized in Table 1. Wetlands identified during the field investigation are located primarily within areas mapped as hydric or partially hydric soils including wetland indicator soils (Figures 3 and 4, Appendix A).



Quam Engineering, LLC.
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 January 10, 2022

Table 1. Summary of NRCS Mapped Soils within the Study Area

Soil Symbol: Soil Unit Name	Soil Unit Component	Soil Unit Component Percentage	Landform	Hydric status
FaA: Fabius loam, 1-3% slopes	Fabius	90	Flats	No
	Sebewa	10	Depressions	Yes
HmB2: Hochheim loam, 2-6% slopes, eroded	Hochheim-Eroded	80-91	Drumlins	No
	Theresa-Eroded	6-12	Till plains	No
	Lamartine	3-8	Drumlins	No
HmC2: Hochheim loam, 6-12% slopes, eroded	Hochheim-Eroded	85-92	Drumlins	No
	Hochheim	4-7	Drumlins	No
	Theresa	4-8	Drumlins	No
Hu: Houghton mucky peat, 0-2% slopes	Houghton-Mucky peat	85-95	Depressions	Yes
	Houghton-Ponded	3-7	Depressions	Yes
	Adrian	1-5	Lakebeds (relict)	Yes
	Palms-Mucky peat	1-3	Interdrumlins	Yes
MgA: Martinton silt loam, 1-3% slopes	Martinton	90	Drainageways	No
	Pella	10	Depressions	Yes
MmA: Matherton silt loam, 1-3% slopes	Matherton	90	Drainageways	No
	Pella	5	Depressions	Yes
	Colwood	5	Depressions	Yes
Mzb: Montgomery silty clay loam	Montgomery	95	Depressions	Yes
	Martinton	5	Drainageways	No
ShA: Saylesville silt loam, 0-2% slopes	Saylesville	100	Lakebeds (relict)	No

Wetland Mapping

The Wisconsin Wetlands Inventory (WWI) mapping (Figure 5, Appendix A) depicts one (1) wetland areas within the Study Area. One (1) forested/ emergent wet meadow wetland in the central portion of the Study Area, within a ditch-way.



Previous Wetland Delineations

A previous wetland delineation on adjacent properties to the Study Area was completed by The Southeastern Wisconsin Regional Planning Commission (SEWRPC) in 2015 (Appendix G). This wetland delineation, which focused on and near the STH 175 right-of-way, indicated the presence of wetlands and secondary environmental corridor (SEC) along the tributary to Willow Creek traversing the central portion of the Study Area. Only a small portion of wetlands in the northwest corner of the Study Area were field delineated by SEWRPC. A wet ditch was also mapped along the southwestern edge of the Study Area. This wet ditch was no longer present during Heartland's 2021 fieldwork, assumed to be due to improvements to STH 175 prior to Heartland's fieldwork and after SEWRPC's delineation.

Aerial Photography / Off-Site Analysis

Agricultural fields within the Study Area have significant mapped hydric or potentially hydric soils and were the focus of the off-site aerial imagery analysis (Appendix F). The fields were used for sod production. From the aerial imagery, no primary wetland hydrology indicators were observed. However, in two (2) areas, the secondary wetland hydrology indicator "Saturation Visible on Aerial Imagery" (C9) was in evidence. In one (1) of these areas, "Stunted or Stressed Plants" (D1) was also noted.

A total of 29 images from 1990-2020 were selected and reviewed based on availability and quality of the imagery. Of these images, eighteen (18) were within the normal precipitation range. Signatures were noted in two (2) areas within the Study Area within landscape positions described by the NRCS to support hydric soil components and were the focus of the off-site analysis. At least one (1) of the seven (7) described wetland signatures per the July 2016 Guidance were noted in these areas. In the wet precipitation years, such wetland signatures were noted in three (3) of the six (6) years. In the four (4) dry precipitation years, wetland signatures were not noted.

Based on the off-site analysis, the two (2) areas assessed were unlikely to be wetland prior to the fieldwork. One (1) of these areas appeared to be located at the toe of a gentle slope in the southeastern portion of the Study Area. While there were no drain tile signatures noted in the off-site analysis, fieldwork confirmed the presence of drain tile systems in both areas.



3.2 Field Review

Two (2) wetlands were identified and delineated within the Study Area. Wetland determination data sheets (Appendix C) were completed at 12 sample points that were representative of the wetland and upland conditions near the boundary and where potential wetlands may be present based on the desktop review and field reconnaissance. Appendix D provides photographs, typically at the sample point locations of the wetlands and adjacent uplands. The wetland boundary and sample point locations are shown on Figure 6 (Appendix A) and the wetlands are summarized in Table 2 and detailed in the following sections.

Table 2. Summary of Wetlands Identified within the Study Area

Wetland ID	Wetland Description	*Surface Water Connections	*NR151 Protective Area	Acreage (on-site)
W-1	Wet Meadow/ Shrub Carr	Contiguous to a tributary to Willow Creek	Less susceptible, 10-30 feet	1.73
W-2	Wet Meadow/ Shrub Carr	Likely Contiguous to a tributary to Willow Creek	Less susceptible, 10-30 feet	0.10
*Classification based on Heartland's professional opinion. Jurisdictional authority of wetland and waterway protective areas under NR 151 lies with the WDNR. Local zoning authorities may have additional restrictions. USACE has authority for determining federal jurisdiction of wetlands and waterways.				1.82

Wetland 1 (W-1)

Wetland 1 (W-1) is a 1.73-acre complex of wet meadow and shrub carr located in historically excavated waterways in the central, northern, eastern, and southern portions of the Study Area. The central portion of W-1 is also part of SEC identified by SEWRPC.

Dominant vegetation observed in W-1 was mostly reed canary grass (*Phalaris arundinacea*, FACW). Other dominants noted at sample points included spotted jewelweed (*Impatiens capensis*, FACW), common elderberry (*Sambucus nigra*, FACW), wild black currant (*Ribes americanum*, FACW), silver maple (*Acer saccharinum*, FACW), common buckthorn (*Rhamnus cathartica*, FAC), nannyberry (*Viburnum lentago*, FAC), riverbank grape (*Vitis riparia*, FAC), and boxelder (*Acer negundo*, FAC). Dominant vegetation was mostly hydrophytic and met the wetland vegetation parameter.



Depleted Below Dark Surface (A11), Thick Dark Surface (A12), Loamy Mucky Mineral (F1), Depleted Matrix (F3), and Redox Dark Surface (F6) hydric soil indicators were noted in W-1, which is consistent with depressions of the mapped Fabius loam, Montgomery silty clay loam, Martinton silt loam, and Houghton mucky peat soil types.

The primary wetland hydrology indicators of Surface Water (A1), High Water Table (A2), Saturation (A3), Drift Deposits (B3), and Water-Stained Leaves (B9) were noted within W-1, while the secondary indicators noted were Geomorphic Position (D2) and a positive FAC-Neutral Test (D5). Therefore, the wetland hydrology parameter was met in W-1.

Wetland W-1 is contiguous with WW-1, WW-2, and WW-3 (Figure 6, Appendix A), which are tributaries of Willow Creek and the Menomonee River. These waterways are connected by culverts. The boundary of W-1 generally followed the toe of slope of an excavated waterway.

Wetland 2 (W-2)

Wetland W-2 is a 0.10-acre shrub carr/ wet meadow wetland that is positioned in a swale in the northwestern corner of the Study Area. W-2 and the surrounding wooded area are part of SEC identified by SEWRPC. The boundary of W-2 generally followed a moderately defined topographic break following historic fill materials. W-2 continued outside the Study Area to the south and appeared to be connected to a system of contiguous ponds on the adjacent property. These ponds are thought to have outlets into W-1 and WW-1.

Dominant vegetation observed in W-2 included reed canary grass, spotted jewelweed, meadow willow (*Salix petiolaris*, FACW), common buckthorn, riverbank grape, and boxelder. Therefore, the wetland vegetation parameter was met.

The Redox Dark Surface (F6) hydric soil indicator was noted in W-2 which is consistent with hydric soil depressions in the NRCS-mapped Martinton silt loam soil type. Therefore, the hydric soil parameter was met.

Primary wetland hydrology indicators noted in W-2 included High Water Table (A2) and Saturation (A3), while secondary indicators of Geomorphic Position (D2) and a positive FAC-Neutral Test (D5) were noted. Therefore, the wetland hydrology parameter was met.



3.3 Other Considerations

This report is limited to the identification and delineation of wetlands within the Study Area. Other regulated environmental resources that result in land use restrictions may be present within the Study Area that were not evaluated by Heartland (e.g. navigable waterways, floodplains, cultural resources, and threatened or endangered species).

Wisconsin Act 183 provides exemptions to permitting requirements for certain nonfederal wetlands. Nonfederal wetlands are wetlands that are not subject to federal jurisdiction. Exemptions apply to projects in urban areas with wetland impacts up to 1-acre per parcel. An urban area is defined as an incorporated area; an area within ½ mile of an incorporated area; or an area served by a sewerage system. Exemptions for nonfederal wetlands also apply to projects in rural areas with wetland impacts up to three (3) acres per parcel. Exemptions in rural areas only apply to structures with an agricultural purpose such as buildings, roads, and driveways. The determination of federal and nonfederal wetlands MUST be made by the USACE through an Approved Jurisdictional Determination (AJD). This report may be submitted to the USACE to assist with their determination.

Wis. Adm. Code NR 151 ("NR 151") requires that a "protective area" (buffer) be determined from the Ordinary High-Water Mark (OHWM) of lakes, streams and rivers, or at the delineated boundary of wetlands. Per NR 151.12, the protective area width for "less susceptible" wetlands is determined by using 10% of the average wetland width, no less than 10 feet or more than 30 feet. "Moderately susceptible" wetlands, lakes, and perennial and intermittent streams identified on recent mapping require a protective area width of 50 feet; while "highly susceptible wetlands" are associated with outstanding or exceptional resource waters in areas of special natural resource interest and require protective area width of 75 feet. Table 2 above lists the potential wetland buffers per NR 151 for each wetland identified based on Heartland's professional opinion. Please note that jurisdictional authority on wetland and waterway protective areas under NR 151 lies with the WDNR. Local zoning authorities and regional planning organizations may have additional land use restrictions within or adjacent to wetlands.



4.0 Conclusion

Heartland completed an assured wetland determination and delineation within the STH 175 Parcel on May 11, 2021, at the request of Quam Engineering, LLC. Fieldwork was completed by Eric C. Parker, SPWS, an assured delineator qualified via the WDNR's Wetland Delineation Assurance Program (Appendix E). The Study Area lies in Section 30, T9N, R20E, Village of Germantown, Washington County, WI (Figure 1, Appendix A).

Two (2) wetland areas were delineated and mapped within the 50.67-acre Study Area (Figure 6, Appendix A). The wetlands, which may be classified as shrub carr and wet meadow, total approximately 1.82 acres within the Study Area. Waterways within the Study Area are historically excavated for agricultural purposes, are connected to each other via culverts, and are tributary to Willow Creek and the Menomonee River.

Wetlands and waterways discussed in this report may be subject to federal regulation under the jurisdiction of the USACE, state regulation under the jurisdiction of the WDNR, and the local zoning authority. Heartland recommends this report be submitted to the USACE and WDNR for final jurisdictional review and concurrence. Review by local authorities may be necessary for determination of any applicable zoning and setback restrictions.

Heartland recommends that all applicable regulatory agency reviews and permits are obtained prior to beginning work within the Study Area or within or adjacent to wetlands or waterways. Heartland can assist with evaluating the need for additional environmental reviews, surveys, or regulatory agency coordination in consideration of the proposed activity and land use as requested but is outside of the scope of the wetland delineation.

Experienced and qualified professionals completed the wetland determination and delineation using standard practices and professional judgment. Wetland boundaries may be affected by conditions present within the Study Area at the time of the fieldwork. All final decisions on wetlands and their boundaries are made by the USACE, the WDNR, and/or sometimes a local unit of government. Wetland determination and boundary reviews by regulatory agencies may result in modifications to the findings presented to the Client. These modifications may result from varying conditions between the time the wetland delineation was completed and the time of the review. Factors that may influence the findings may include but not limited to precipitation patterns, drainage modifications, changes or modification to vegetation, and the time of year.



Quam Engineering, LLC.
 STH 175 Parcel
 Project #: 20210495
 January 10, 2022

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 January 10, 2022

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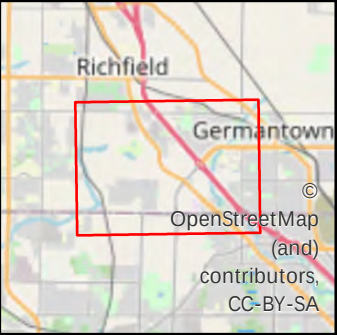
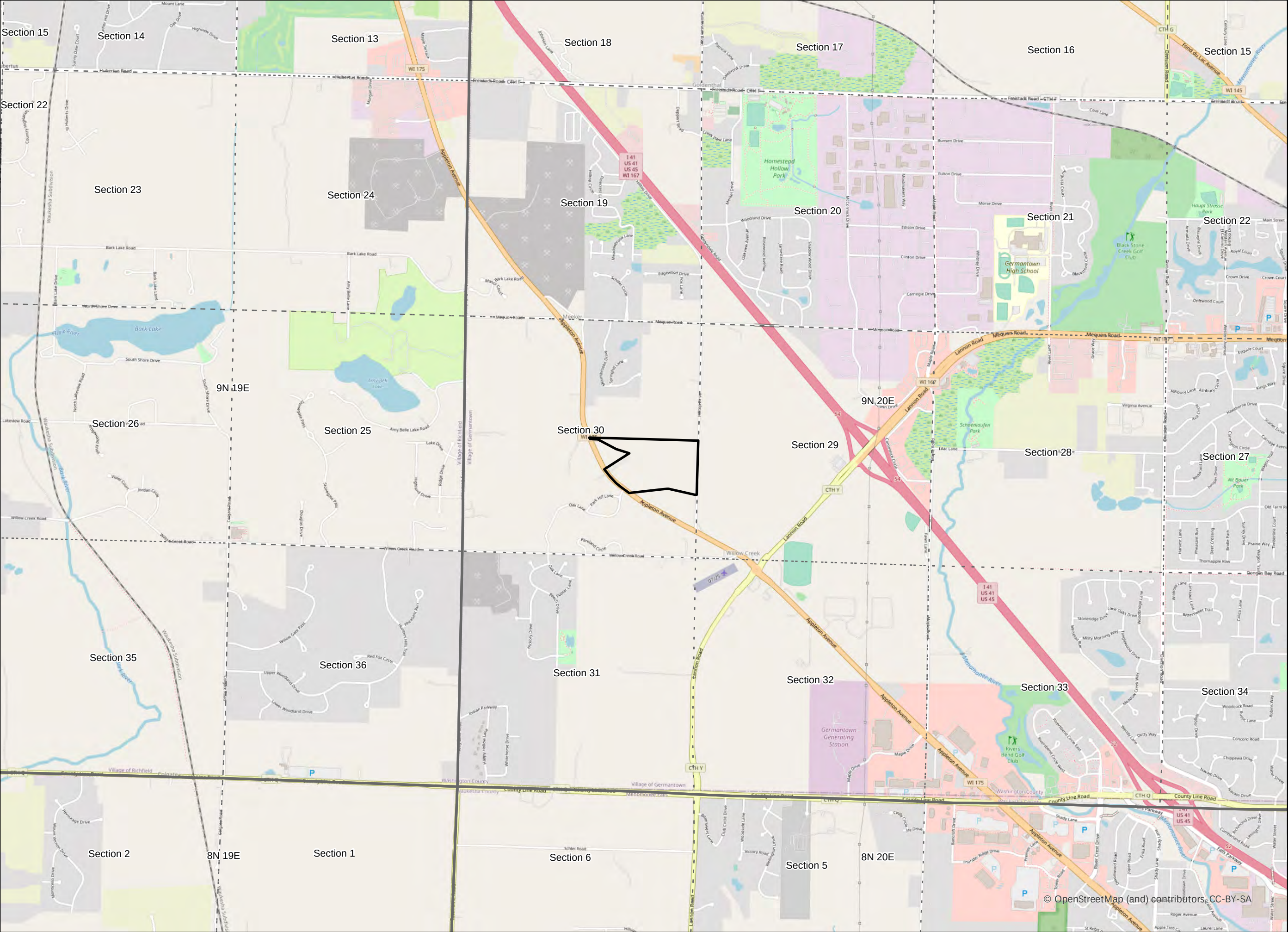
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Project #: 20210495
January 10, 2022

Appendix A | Figures

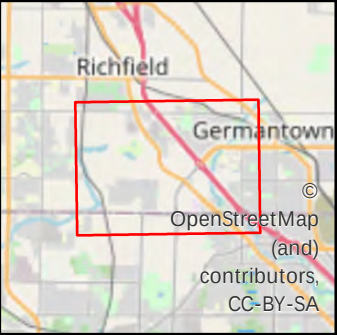
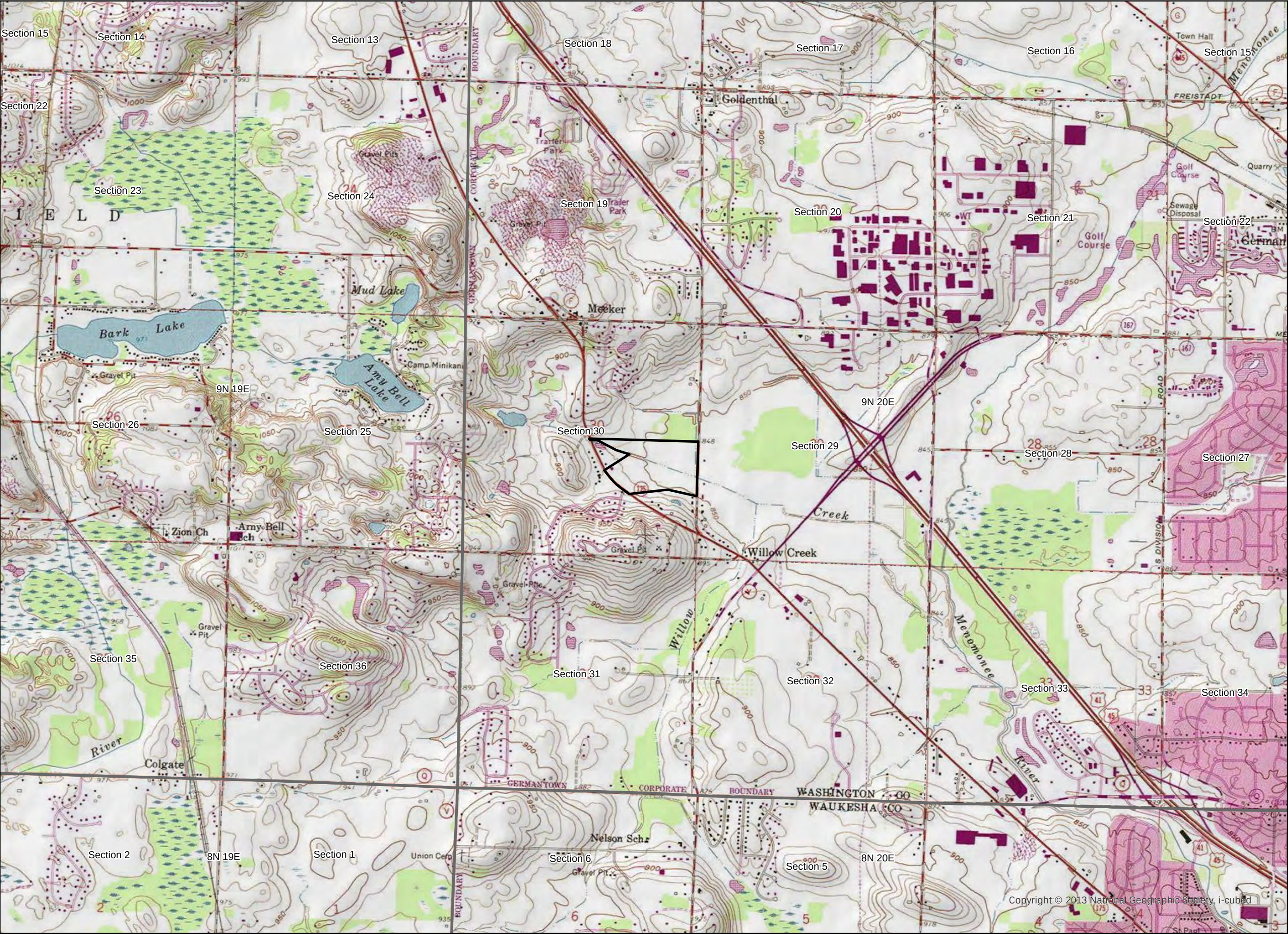


-  Study Area (50.67 ac)
-  Township
-  Section

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Figure 1. Project Location
STH 175 Parcel
Project #20210495
T9N, R20E, S30
V Germantown, Washington Co

OpenStreetMap
ESRI



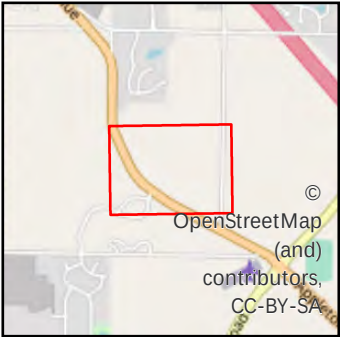
- Study Area (50.67 ac)
- Township
- Section

Heartland
ECOLOGICAL GROUP INC

Figure 2. USGS
Topography
STH 175 Parcel
Project #20210495
T9N, R20E, S30
V Germantown, Washington Co

USGSTopo
USGS

Copyright:© 2013 National Geographic Society, i-cubed



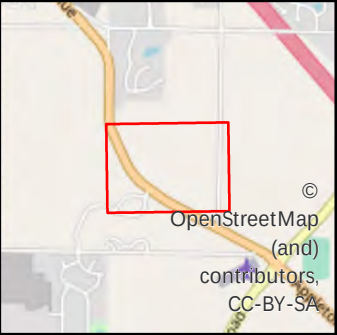
Study Area (50.67 ac)

NRCS Soil Survey Data

- Predominantly Hydric (85-100%)
- Partially Hydric (16-84%)
- Predominantly Non-Hydric (1-15%)
- Non-Hydric (0%)

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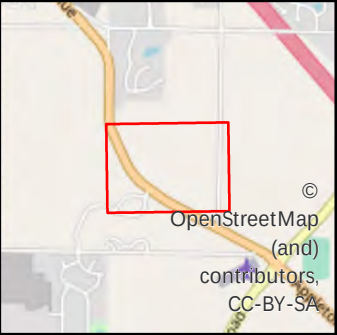
Figure 3. NRCS
Hydric Soils
STH 175 Parcel
Project #20210495
T9N, R20E, S30
V Germantown, Washington Co
2020 NAIP
NRCS



Study Area (50.67 ac)
Maximum Extent Wetland Indicators

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Figure 4. SWDV
Wetland Indicators
STH 175 Parcel
Project #20210495
T9N, R20E, S30
V Germantown, Washington Co
2020 NAIP
WDNR

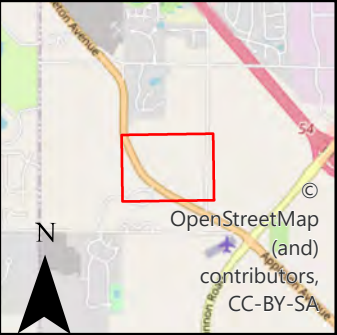
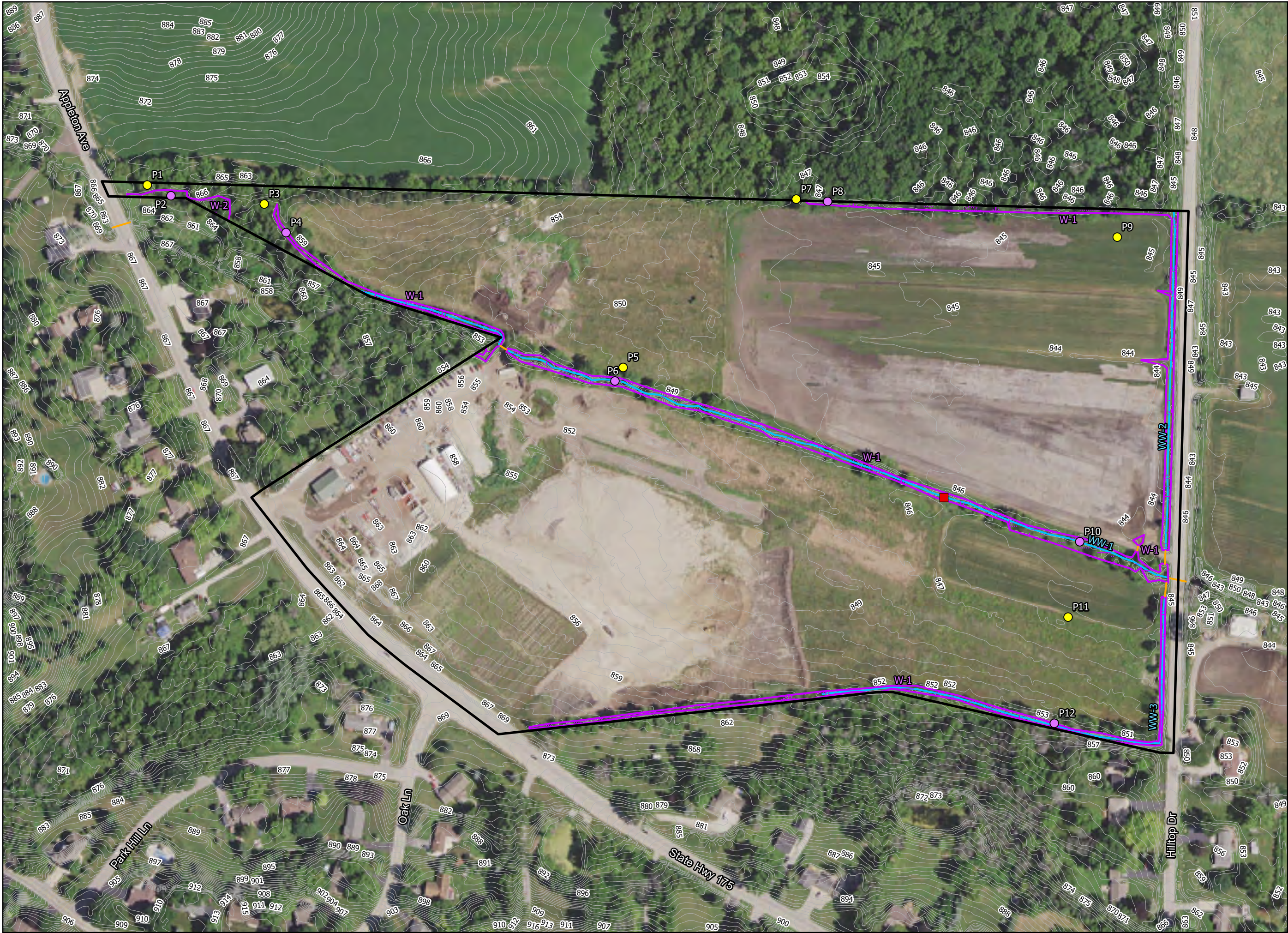


- Study Area (50.67 ac)
- WWI Wetlands
- NHD Waterway
- NHD Waterbody

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Figure 5. Wisconsin
 Wetland Inventory
 STH 175 Parcel
 Project #20210495
 T9N, R20E, S30
 V Germantown, Washington Co

 2020 NAIP
 WDNR, USGS



- Study Area (50.67 ac)
 - Field Delineated Wetland (1.82 ac)
 - Culvert
 - Washington Co 1' Contours
 - Waterway
 - Tile Outlet Found
- Sample Points**
- Upland
 - Wetland

Heartland
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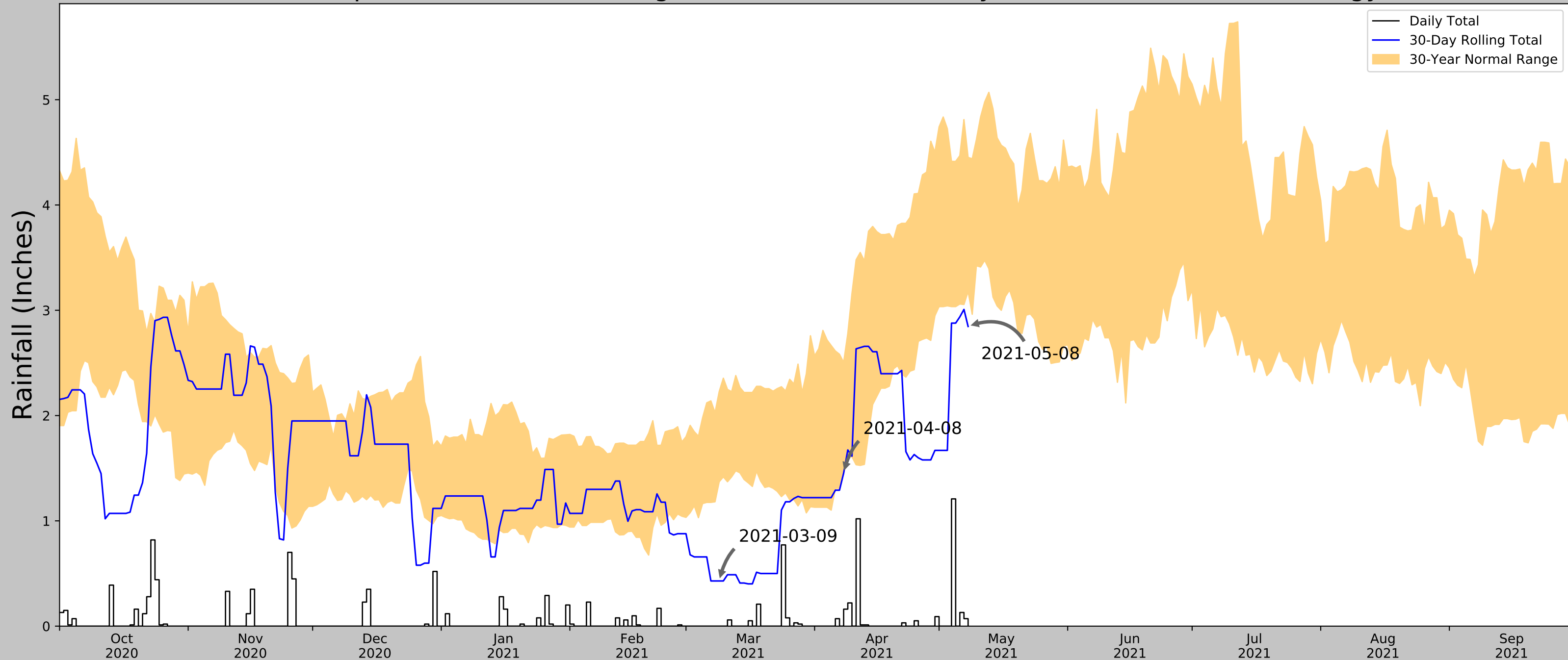
Figure 6. Field Delineated Wetlands
STH 175 Parcel
Project #20210495
T9N, R20E, S30
V Germantown, Washington Co
2020 NAIP
Washington Co, HEG



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STH 175 Parcel
Project #: 20210495
January 10, 2022

Appendix B | WETS Analysis

Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	43.212709, -88.165060
Observation Date	2021-05-08
Elevation (ft)	847.42
Drought Index (PDSI)	Incipient wetness (2021-04)
WebWIMP H ₂ O Balance	Dry Season

30 Days Ending	30 th %ile (in)	70 th %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2021-05-08	3.178347	4.451969	2.846457	Dry	1	3	3
2021-04-08	1.454331	2.505512	1.452756	Dry	1	2	2
2021-03-09	1.37126	2.227559	0.429134	Dry	1	1	1
Result							Drier than Normal - 6



Figure and tables made by the
Antecedent Precipitation Tool
Version 1.0

Written by Jason Deters
U.S. Army Corps of Engineers

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
GERMANTOWN	43.2389, -88.1222	850.066	2.816	2.646	1.275	11307	83
GERMANTOWN 0.6 S	43.2268, -88.1214	855.971	0.837	5.905	0.382	0	7
GERMANTOWN 1.3 NE	43.2313, -88.1023	887.139	1.131	37.073	0.551	2	0
MENOMONEE FALLS 3.2 NNW	43.1882, -88.1555	881.89	3.884	31.824	1.871	2	0
CEDARBURG 3.7 WSW	43.2788, -88.0566	878.937	4.301	28.871	2.06	2	0
JACKSON 0.5 SSE	43.3144, -88.1617	895.997	5.582	45.931	2.768	3	0
RICHFIELD 3 SSW	43.2111, -88.2092	983.924	4.783	133.858	2.793	4	0
WEST BEND	43.3681, -88.0858	939.961	9.113	89.895	4.92	27	0
W BEND FIRE STN #2	43.4319, -88.1603	895.013	13.472	44.947	6.668	4	0
MT MARY COLLEGE	43.0722, -88.0294	714.895	12.431	135.171	7.274	2	0



Quam Engineering, LLC.
STH 175 Parcel
Project #: 20210495
January 10, 2022

Appendix C | Wetland Determination Data Sheets

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: TLC Property City/County: V Germantown / Washington Co Sampling Date: 2021-05-11
Applicant/Owner: Quam Engineering State: Wisconsin Sampling Point: P1
Investigator(s): Eric C Parker, SPWS Section, Township, Range: Section 30, T9N, R20E
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Linear Slope (%): 1-2
Subregion (LRR or MLRA): _____ Lat: 43.2142029 Long: -88.1711933 Datum: WGS 84
Soil Map Unit Name: Martinton SiL (MgA) NWI classification: T3/E1K

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 ☒ If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes _____ No ☒	
Wetland Hydrology Present? Yes _____ No ☒	
Remarks: (Explain alternative procedures here or in a separate report.) WETS Analysis indicates antecedent precipitation conditions are in the drier than normal range.	

HYDROLOGY

Wetland Hydrology Indicators:		<u>Secondary Indicators (minimum of two required)</u>
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		____ Surface Soil Cracks (B6)
____ Surface Water (A1)	____ Water-Stained Leaves (B9)	____ Drainage Patterns (B10)
____ High Water Table (A2)	____ Aquatic Fauna (B13)	____ Moss Trim Lines (B16)
____ Saturation (A3)	____ Marl Deposits (B15)	____ Dry-Season Water Table (C2)
____ Water Marks (B1)	____ Hydrogen Sulfide Odor (C1)	____ Crayfish Burrows (C8)
____ Sediment Deposits (B2)	____ Oxidized Rhizospheres on Living Roots (C3)	____ Saturation Visible on Aerial Imagery (C9)
____ Drift Deposits (B3)	____ Presence of Reduced Iron (C4)	____ Stunted or Stressed Plants (D1)
____ Algal Mat or Crust (B4)	____ Recent Iron Reduction in Tilled Soils (C6)	____ Geomorphic Position (D2)
____ Iron Deposits (B5)	____ Thin Muck Surface (C7)	____ Shallow Aquitard (D3)
____ Inundation Visible on Aerial Imagery (B7)	____ Other (Explain in Remarks)	____ Microtopographic Relief (D4)
____ Sparsely Vegetated Concave Surface (B8)		____ FAC-Neutral Test (D5)
Field Observations:		Wetland Hydrology Present? Yes _____ No ☒
Surface Water Present? Yes _____ No ☒ Depth (inches): _____	Water Table Present? Yes _____ No ☒ Depth (inches): _____	
Saturation Present? Yes _____ No ☒ Depth (inches): _____ (includes capillary fringe)		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: No wetland hydrology indicators observed, no saturation.		

VEGETATION – Use scientific names of plants.

 Sampling Point: P1

Tree Stratum (Plot size: <u>30 ft r</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
1. <u>Acer negundo</u>	<u>25</u>	☒	<u>FAC</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A) Total Number of Dominant Species Across All Strata: <u>8</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>63</u> (A/B)														
2. <u>Rhamnus cathartica</u>	<u>15</u>	☒	<u>FAC</u>															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
		<u>40%</u>	= Total Cover	Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>5</u></td> <td>x 2 = <u>10</u></td> </tr> <tr> <td>FAC species <u>65</u></td> <td>x 3 = <u>195</u></td> </tr> <tr> <td>FACU species <u>75</u></td> <td>x 4 = <u>300</u></td> </tr> <tr> <td>UPL species <u>7</u></td> <td>x 5 = <u>35</u></td> </tr> <tr> <td>Column Totals: <u>152</u> (A)</td> <td><u>540</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>3.6</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>5</u>	x 2 = <u>10</u>	FAC species <u>65</u>	x 3 = <u>195</u>	FACU species <u>75</u>	x 4 = <u>300</u>	UPL species <u>7</u>	x 5 = <u>35</u>	Column Totals: <u>152</u> (A)	<u>540</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>5</u>	x 2 = <u>10</u>																	
FAC species <u>65</u>	x 3 = <u>195</u>																	
FACU species <u>75</u>	x 4 = <u>300</u>																	
UPL species <u>7</u>	x 5 = <u>35</u>																	
Column Totals: <u>152</u> (A)	<u>540</u> (B)																	
Sapling/Shrub Stratum (Plot size: <u>15 ft r</u>)																		
1. <u>Acer negundo</u>	<u>10</u>	☒	<u>FAC</u>															
2. <u>Lonicera X bella</u>	<u>10</u>	☒	<u>FACU</u>															
3. <u>Rhamnus cathartica</u>	<u>10</u>	☒	<u>FAC</u>															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
		<u>30%</u>	= Total Cover															
Herb Stratum (Plot size: <u>5 ft r</u>)																		
1. <u>Hesperis matronalis</u>	<u>25</u>	☒	<u>FACU</u>	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.														
2. <u>Alliaria petiolata</u>	<u>15</u>	☒	<u>FACU</u>															
3. <u>Arctium minus</u>	<u>10</u>	_____	<u>FACU</u>															
4. <u>Circaea canadensis</u>	<u>10</u>	_____	<u>FACU</u>															
5. <u>Bromus inermis</u>	<u>7</u>	_____	<u>UPL</u>															
6. <u>Galium aparine</u>	<u>5</u>	_____	<u>FACU</u>															
7. <u>Heracleum maximum</u>	<u>5</u>	_____	<u>FACW</u>															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
11. _____	_____	_____	_____															
12. _____	_____	_____	_____															
		<u>77%</u>	= Total Cover															
Woody Vine Stratum (Plot size: <u>30 ft r</u>)																		
1. <u>Vitis riparia</u>	<u>5</u>	☒	<u>FAC</u>	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
		<u>5%</u>	= Total Cover															
Hydrophytic Vegetation Present? Yes ☒ No _____																		
Remarks: (Include photo numbers here or on a separate sheet.)																		

SOIL

Sampling Point: P1**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 9	10YR 3/2	100					Silt Loam	With 5% gravel
9 - 17	10YR 3/1	100					Silt Loam	W/20% gravel
-								
-								
-								
-								
-								
-								
-								
-								
-								
-								
-								
-								
-								
-								

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators:**

- ☐ Histosol (A1) ☐ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
☐ Histic Epipedon (A2) ☐ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
☐ Black Histic (A3) ☐ Loamy Mucky Mineral (F1) (**LRR K, L**)
☐ Hydrogen Sulfide (A4) ☐ Loamy Gleyed Matrix (F2)
☐ Stratified Layers (A5) ☐ Depleted Matrix (F3)
☐ Depleted Below Dark Surface (A11) ☐ Redox Dark Surface (F6)
☐ Thick Dark Surface (A12) ☐ Depleted Dark Surface (F7)
☐ Sandy Mucky Mineral (S1) ☐ Redox Depressions (F8)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Dark Surface (S7) (**LRR R, MLRA 149B**)

Indicators for Problematic Hydric Soils³:

- ☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
☐ Dark Surface (S7) (**LRR K, L**)
☐ Polyvalue Below Surface (S8) (**LRR K, L**)
☐ Thin Dark Surface (S9) (**LRR K, L**)
☐ Iron-Manganese Masses (F12) (**LRR K, L, R**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if observed):**Type: GravelDepth (inches): 17Hydric Soil Present? Yes ☐ No ☒

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: TLC Property City/County: V Germantown / Washington Co Sampling Date: 2021-05-11
 Applicant/Owner: Quam Engineering State: Wisconsin Sampling Point: P2
 Investigator(s): Eric C Parker, SPWS Section, Township, Range: Section 30, T9N, R20E
 Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): Concave Slope (%): 1-2
 Subregion (LRR or MLRA): _____ Lat: 43.2141113 Long: -88.1709808 Datum: WGS 84
 Soil Map Unit Name: Martinton SiL (MgA) NWI classification: T3/E1K

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 _____ If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes ☒ No _____	
Wetland Hydrology Present? Yes ☒ No _____	

Remarks: (Explain alternative procedures here or in a separate report.)

WETS Analysis indicates antecedent precipitation conditions are in the drier than normal range.

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)		_____ Surface Soil Cracks (B6)
_____ Surface Water (A1)	_____ Water-Stained Leaves (B9)	_____ Drainage Patterns (B10)
☒ High Water Table (A2)	_____ Aquatic Fauna (B13)	_____ Moss Trim Lines (B16)
☒ Saturation (A3)	_____ Marl Deposits (B15)	_____ Dry-Season Water Table (C2)
_____ Water Marks (B1)	_____ Hydrogen Sulfide Odor (C1)	_____ Crayfish Burrows (C8)
_____ Sediment Deposits (B2)	_____ Oxidized Rhizospheres on Living Roots (C3)	_____ Saturation Visible on Aerial Imagery (C9)
_____ Drift Deposits (B3)	_____ Presence of Reduced Iron (C4)	_____ Stunted or Stressed Plants (D1)
_____ Algal Mat or Crust (B4)	_____ Recent Iron Reduction in Tilled Soils (C6)	☒ Geomorphic Position (D2)
_____ Iron Deposits (B5)	_____ Thin Muck Surface (C7)	_____ Shallow Aquitard (D3)
_____ Inundation Visible on Aerial Imagery (B7)	_____ Other (Explain in Remarks)	_____ Microtopographic Relief (D4)
_____ Sparsely Vegetated Concave Surface (B8)		☒ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ☒ Depth (inches): _____
 Water Table Present? Yes ☒ No _____ Depth (inches): 12
 Saturation Present? Yes ☒ No _____ Depth (inches): 9
 (includes capillary fringe)

Wetland Hydrology Present? Yes ☒ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: P2

Tree Stratum (Plot size: <u>30 ft r</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
1. <u>Acer negundo</u>	<u>10</u>	☒	<u>FAC</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>6</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>10%</u> = Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>10</u></td> <td>x 1 = <u>10</u></td> </tr> <tr> <td>FACW species <u>73</u></td> <td>x 2 = <u>146</u></td> </tr> <tr> <td>FAC species <u>22</u></td> <td>x 3 = <u>66</u></td> </tr> <tr> <td>FACU species <u>3</u></td> <td>x 4 = <u>12</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>108</u> (A)</td> <td><u>234</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>2.2</u>	Total % Cover of:	Multiply by:	OBL species <u>10</u>	x 1 = <u>10</u>	FACW species <u>73</u>	x 2 = <u>146</u>	FAC species <u>22</u>	x 3 = <u>66</u>	FACU species <u>3</u>	x 4 = <u>12</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>108</u> (A)	<u>234</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>10</u>	x 1 = <u>10</u>																	
FACW species <u>73</u>	x 2 = <u>146</u>																	
FAC species <u>22</u>	x 3 = <u>66</u>																	
FACU species <u>3</u>	x 4 = <u>12</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>108</u> (A)	<u>234</u> (B)																	
<u>25%</u> = Total Cover																		
Sapling/Shrub Stratum (Plot size: <u>15 ft r</u>)																		
1. <u>Salix petiolaris</u>	<u>20</u>	☒	<u>FACW</u>															
2. <u>Rhamnus cathartica</u>	<u>5</u>	☒	<u>FAC</u>															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>25%</u> = Total Cover																		
Herb Stratum (Plot size: <u>5 ft r</u>)																		
1. _____	_____	_____	_____															
1. <u>Phalaris arundinacea</u>	<u>30</u>	☒	<u>FACW</u>															
2. <u>Impatiens capensis</u>	<u>15</u>	☒	<u>FACW</u>															
3. <u>Caltha palustris</u>	<u>10</u>	_____	<u>OBL</u>															
4. <u>Hesperis matronalis</u>	<u>3</u>	_____	<u>FACU</u>															
5. <u>Ribes americanum</u>	<u>3</u>	_____	<u>FACW</u>															
6. <u>Solidago gigantea</u>	<u>3</u>	_____	<u>FACW</u>															
7. <u>Equisetum arvense</u>	<u>2</u>	_____	<u>FAC</u>															
8. <u>Heracleum maximum</u>	<u>2</u>	_____	<u>FACW</u>															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
11. _____	_____	_____	_____															
12. _____	_____	_____	_____															
<u>68%</u> = Total Cover																		
Woody Vine Stratum (Plot size: <u>30 ft r</u>)																		
1. <u>Vitis riparia</u>	<u>5</u>	☒	<u>FAC</u>															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
<u>5%</u> = Total Cover																		
Remarks: (Include photo numbers here or on a separate sheet.)				Hydrophytic Vegetation Present? Yes ☒ No _____														

SOIL

Sampling Point: P2**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 5	10YR 3/1	98	10YR 3/3	2	C	M	Silt Loam	
5 - 13	10YR 3/1	90	10YR 4/3	10	C	M	Silt Loam	
13 - 24	10YR 4/2	85	10YR 4/6	15	C	M	Silty Clay Loam	
-								
-								
-								
-								
-								
-								
-								
-								
-								
-								
-								
-								

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators:**

- ☐ Histosol (A1) ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
☐ Histic Epipedon (A2) ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
☐ Black Histic (A3) ☐ Loamy Mucky Mineral (F1) (LRR K, L)
☐ Hydrogen Sulfide (A4) ☐ Loamy Gleyed Matrix (F2)
☐ Stratified Layers (A5) ☐ Depleted Matrix (F3)
☐ Depleted Below Dark Surface (A11) ☒ Redox Dark Surface (F6)
☐ Thick Dark Surface (A12) ☐ Depleted Dark Surface (F7)
☐ Sandy Mucky Mineral (S1) ☐ Redox Depressions (F8)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Dark Surface (S7) (LRR R, MLRA 149B)

Indicators for Problematic Hydric Soils³:

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
☐ Coast Prairie Redox (A16) (LRR K, L, R)
☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
☐ Dark Surface (S7) (LRR K, L)
☐ Polyvalue Below Surface (S8) (LRR K, L)
☐ Thin Dark Surface (S9) (LRR K, L)
☐ Iron-Manganese Masses (F12) (LRR K, L, R)
☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if observed):**Type: GravelDepth (inches): 17Hydric Soil Present? Yes ☒ No ☐

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: TLC Property City/County: V Germantown / Washington Co Sampling Date: 2021-05-11
 Applicant/Owner: Quam Engineering State: Wisconsin Sampling Point: P3
 Investigator(s): Eric C Parker, SPWS Section, Township, Range: Section 30, T9N, R20E
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Linear Slope (%): 2-3
 Subregion (LRR or MLRA): _____ Lat: 43.2140808 Long: -88.1701797 Datum: WGS 84
 Soil Map Unit Name: Martinton SiL (MgA) NWI classification: T3/E1K

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 ☒ If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes _____ No ☒	
Wetland Hydrology Present? Yes _____ No ☒	

Remarks: (Explain alternative procedures here or in a separate report.)

WETS Analysis indicates antecedent precipitation conditions are in the drier than normal range.

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)		
☐ Surface Water (A1)	☐ Water-Stained Leaves (B9)	☐ Surface Soil Cracks (B6)
☐ High Water Table (A2)	☐ Aquatic Fauna (B13)	☐ Drainage Patterns (B10)
☐ Saturation (A3)	☐ Marl Deposits (B15)	☐ Moss Trim Lines (B16)
☐ Water Marks (B1)	☐ Hydrogen Sulfide Odor (C1)	☐ Dry-Season Water Table (C2)
☐ Sediment Deposits (B2)	☐ Oxidized Rhizospheres on Living Roots (C3)	☐ Crayfish Burrows (C8)
☐ Drift Deposits (B3)	☐ Presence of Reduced Iron (C4)	☐ Saturation Visible on Aerial Imagery (C9)
☐ Algal Mat or Crust (B4)	☐ Recent Iron Reduction in Tilled Soils (C6)	☐ Stunted or Stressed Plants (D1)
☐ Iron Deposits (B5)	☐ Thin Muck Surface (C7)	☐ Geomorphic Position (D2)
☐ Inundation Visible on Aerial Imagery (B7)	☐ Other (Explain in Remarks)	☐ Shallow Aquitard (D3)
☐ Sparsely Vegetated Concave Surface (B8)		☐ Microtopographic Relief (D4)
		☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ☒ Depth (inches): _____	Wetland Hydrology Present? Yes _____ No ☒
Water Table Present? Yes _____ No ☒ Depth (inches): _____	
Saturation Present? Yes _____ No ☒ Depth (inches): _____ (includes capillary fringe)	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No wetland hydrology indicators observed, no saturation.

VEGETATION – Use scientific names of plants.

 Sampling Point: **P3**

Tree Stratum (Plot size: <u>30 ft r</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
1. <u>Acer negundo</u>	<u>50</u>	☒	<u>FAC</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
		<u>50%</u> = Total Cover		Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>5</u></td> <td>x 2 = <u>10</u></td> </tr> <tr> <td>FAC species <u>102</u></td> <td>x 3 = <u>306</u></td> </tr> <tr> <td>FACU species <u>86</u></td> <td>x 4 = <u>344</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>193</u> (A)</td> <td><u>660</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>3.4</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>5</u>	x 2 = <u>10</u>	FAC species <u>102</u>	x 3 = <u>306</u>	FACU species <u>86</u>	x 4 = <u>344</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>193</u> (A)	<u>660</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>5</u>	x 2 = <u>10</u>																	
FAC species <u>102</u>	x 3 = <u>306</u>																	
FACU species <u>86</u>	x 4 = <u>344</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>193</u> (A)	<u>660</u> (B)																	
Sapling/Shrub Stratum (Plot size: <u>15 ft r</u>)																		
1. <u>Rhamnus cathartica</u>	<u>50</u>	☒	<u>FAC</u>															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
		<u>50%</u> = Total Cover																
Herb Stratum (Plot size: <u>5 ft r</u>)																		
1. <u>Alliaria petiolata</u>	<u>50</u>	☒	<u>FACU</u>	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.														
2. <u>Glechoma hederacea</u>	<u>20</u>	☒	<u>FACU</u>															
3. <u>Circaea canadensis</u>	<u>5</u>	_____	<u>FACU</u>															
4. <u>Heracleum maximum</u>	<u>5</u>	_____	<u>FACW</u>															
5. <u>Hesperis matronalis</u>	<u>5</u>	_____	<u>FACU</u>															
6. <u>Arctium minus</u>	<u>3</u>	_____	<u>FACU</u>															
7. <u>Galium aparine</u>	<u>3</u>	_____	<u>FACU</u>															
8. <u>Geum canadense</u>	<u>2</u>	_____	<u>FAC</u>															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
11. _____	_____	_____	_____															
12. _____	_____	_____	_____															
		<u>93%</u> = Total Cover																
Woody Vine Stratum (Plot size: <u>30 ft r</u>)																		
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
		_____ = Total Cover																
Hydrophytic Vegetation Present? Yes _____ No ☒																		
Remarks: (Include photo numbers here or on a separate sheet.) 																		

SOIL

Sampling Point: P3**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 13	7.5YR 3/2	100					Silt Loam	
13 - 24	10YR 4/2	93	10YR 4/4	7	C	M	Silty Clay Loam	
-								
-								
-								
-								
-								
-								
-								
-								
-								
-								
-								
-								
-								
-								

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators:**

- | | |
|--|---|
| ☐ Histosol (A1) | ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B) |
| ☐ Histic Epipedon (A2) | ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B) |
| ☐ Black Histic (A3) | ☐ Loamy Mucky Mineral (F1) (LRR K, L) |
| ☐ Hydrogen Sulfide (A4) | ☐ Loamy Gleyed Matrix (F2) |
| ☐ Stratified Layers (A5) | ☐ Depleted Matrix (F3) |
| ☐ Depleted Below Dark Surface (A11) | ☐ Redox Dark Surface (F6) |
| ☐ Thick Dark Surface (A12) | ☐ Depleted Dark Surface (F7) |
| ☐ Sandy Mucky Mineral (S1) | ☐ Redox Depressions (F8) |
| ☐ Sandy Gleyed Matrix (S4) | |
| ☐ Sandy Redox (S5) | |
| ☐ Stripped Matrix (S6) | |
| ☐ Dark Surface (S7) (LRR R, MLRA 149B) | |

Indicators for Problematic Hydric Soils³:

- | |
|---|
| ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B) |
| ☐ Coast Prairie Redox (A16) (LRR K, L, R) |
| ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R) |
| ☐ Dark Surface (S7) (LRR K, L) |
| ☐ Polyvalue Below Surface (S8) (LRR K, L) |
| ☐ Thin Dark Surface (S9) (LRR K, L) |
| ☐ Iron-Manganese Masses (F12) (LRR K, L, R) |
| ☐ Piedmont Floodplain Soils (F19) (MLRA 149B) |
| ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B) |
| ☐ Red Parent Material (F21) |
| ☐ Very Shallow Dark Surface (TF12) |
| ☐ Other (Explain in Remarks) |

³Indicators 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:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: TLC Property City/County: V Germantown / Washington Co Sampling Date: 2021-05-11
Applicant/Owner: Quam Engineering State: Wisconsin Sampling Point: P4
Investigator(s): Eric C Parker, SPWS Section, Township, Range: Section 30, T9N, R20E
Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): Concave Slope (%): 1-2
Subregion (LRR or MLRA): _____ Lat: 43.2139282 Long: -88.1700337 Datum: WGS 84
Soil Map Unit Name: Martinton SiL (MgA) NWI classification: T3/E1K

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 _____ If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes ☒ No _____	
Wetland Hydrology Present? Yes ☒ No _____	
Remarks: (Explain alternative procedures here or in a separate report.) WETS Analysis indicates antecedent precipitation conditions are in the drier than normal range.	

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)		_____ Surface Soil Cracks (B6)
☒ Surface Water (A1)	☒ Water-Stained Leaves (B9)	_____ Drainage Patterns (B10)
☒ High Water Table (A2)	_____ Aquatic Fauna (B13)	_____ Moss Trim Lines (B16)
☒ Saturation (A3)	_____ Marl Deposits (B15)	_____ Dry-Season Water Table (C2)
_____ Water Marks (B1)	_____ Hydrogen Sulfide Odor (C1)	_____ Crayfish Burrows (C8)
_____ Sediment Deposits (B2)	_____ Oxidized Rhizospheres on Living Roots (C3)	_____ Saturation Visible on Aerial Imagery (C9)
_____ Drift Deposits (B3)	_____ Presence of Reduced Iron (C4)	_____ Stunted or Stressed Plants (D1)
_____ Algal Mat or Crust (B4)	_____ Recent Iron Reduction in Tilled Soils (C6)	☒ Geomorphic Position (D2)
_____ Iron Deposits (B5)	_____ Thin Muck Surface (C7)	_____ Shallow Aquitard (D3)
_____ Inundation Visible on Aerial Imagery (B7)	_____ Other (Explain in Remarks)	_____ Microtopographic Relief (D4)
_____ Sparsely Vegetated Concave Surface (B8)		☒ FAC-Neutral Test (D5)
Field Observations:		
Surface Water Present? Yes ☒ No _____ Depth (inches): <u>1</u>	Wetland Hydrology Present? Yes ☒ No _____	
Water Table Present? Yes ☒ No _____ Depth (inches): <u>0</u>		
Saturation Present? (includes capillary fringe) Yes ☒ No _____ Depth (inches): <u>0</u>		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: Historically excavated swale approx 6ft in width		

VEGETATION – Use scientific names of plants.

 Sampling Point: **P4**

Tree Stratum (Plot size: <u>30 ft r</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
_____ = Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>27</u></td> <td>x 2 = <u>54</u></td> </tr> <tr> <td>FAC species <u>20</u></td> <td>x 3 = <u>60</u></td> </tr> <tr> <td>FACU species <u>5</u></td> <td>x 4 = <u>20</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>52</u> (A)</td> <td><u>134</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>2.6</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>27</u>	x 2 = <u>54</u>	FAC species <u>20</u>	x 3 = <u>60</u>	FACU species <u>5</u>	x 4 = <u>20</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>52</u> (A)	<u>134</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>27</u>	x 2 = <u>54</u>																	
FAC species <u>20</u>	x 3 = <u>60</u>																	
FACU species <u>5</u>	x 4 = <u>20</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>52</u> (A)	<u>134</u> (B)																	
Sapling/Shrub Stratum (Plot size: <u>15 ft r</u>)																		
1. <u>Rhamnus cathartica</u>	<u>10</u>	☒	<u>FAC</u>															
2. <u>Acer negundo</u>	<u>5</u>	☒	<u>FAC</u>															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>15%</u> = Total Cover																		
Herb Stratum (Plot size: <u>5 ft r</u>)																		
1. <u>Impatiens capensis</u>	<u>15</u>	☒	<u>FACW</u>															
2. <u>Ribes americanum</u>	<u>7</u>	☒	<u>FACW</u>															
3. <u>Viburnum opulus</u>	<u>5</u>	_____	<u>FACW</u>															
4. <u>Galium aparine</u>	<u>3</u>	_____	<u>FACU</u>															
5. <u>Alliaria petiolata</u>	<u>2</u>	_____	<u>FACU</u>															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
11. _____	_____	_____	_____															
12. _____	_____	_____	_____															
<u>32%</u> = Total Cover																		
Woody Vine Stratum (Plot size: <u>30 ft r</u>)																		
1. <u>Vitis riparia</u>	<u>5</u>	☒	<u>FAC</u>															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
<u>5%</u> = Total Cover																		
Remarks: (Include photo numbers here or on a separate sheet.)																		

Hydrophytic Vegetation Indicators:
 ___ 1 - Rapid Test for Hydrophytic Vegetation
☒ 2 - Dominance Test is >50%
☒ 3 - Prevalence Index is ≤3.0¹
 ___ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 ___ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ☒ No _____

SOIL

Sampling Point: **P4****Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 9	10YR 2/1	100					Silt Loam	
9 - 18	10YR 4/2	95	10YR 4/4	5	C	M	Silt Loam	
18 - 24	10YR 4/1	90	10YR 4/4	10	C	M	Silty Clay Loam	
-								
-								
-								
-								
-								
-								
-								
-								
-								
-								
-								
-								
-								

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators:**

- | | |
|---|--|
| ☐ Histosol (A1) | ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B) |
| ☐ Histic Epipedon (A2) | ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B) |
| ☐ Black Histic (A3) | ☐ Loamy Mucky Mineral (F1) (LRR K, L) |
| ☐ Hydrogen Sulfide (A4) | ☐ Loamy Gleyed Matrix (F2) |
| ☐ Stratified Layers (A5) | ☐ Depleted Matrix (F3) |
| ☐ Depleted Below Dark Surface (A11) | ☒ Redox Dark Surface (F6) |
| ☐ Thick Dark Surface (A12) | ☐ Depleted Dark Surface (F7) |
| ☐ Sandy Mucky Mineral (S1) | ☐ Redox Depressions (F8) |
| ☐ Sandy Gleyed Matrix (S4) | |
| ☐ Sandy Redox (S5) | |
| ☐ Stripped Matrix (S6) | |
| ☐ Dark Surface (S7) (LRR R, MLRA 149B) | |

Indicators for Problematic Hydric Soils³:

- | |
|--|
| ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B) |
| ☐ Coast Prairie Redox (A16) (LRR K, L, R) |
| ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R) |
| ☐ Dark Surface (S7) (LRR K, L) |
| ☐ Polyvalue Below Surface (S8) (LRR K, L) |
| ☐ Thin Dark Surface (S9) (LRR K, L) |
| ☐ Iron-Manganese Masses (F12) (LRR K, L, R) |
| ☐ Piedmont Floodplain Soils (F19) (MLRA 149B) |
| ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B) |
| ☐ Red Parent Material (F21) |
| ☐ Very Shallow Dark Surface (TF12) |
| ☐ Other (Explain in Remarks) |

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if observed):**Type: GravelDepth (inches): 17Hydric Soil Present? Yes ☒ No ☐

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: TLC Property City/County: V Germantown / Washington Co Sampling Date: 2021-05-11
Applicant/Owner: Quam Engineering State: Wisconsin Sampling Point: P5
Investigator(s): Eric C Parker, SPWS Section, Township, Range: Section 30, T9N, R20E
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Linear Slope (%): 1-2
Subregion (LRR or MLRA): _____ Lat: 43.2131042 Long: -88.1671285 Datum: WGS 84
Soil Map Unit Name: Fabius L (FaA) NWI classification: None depicted

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 ☒ If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes _____ No ☒	
Wetland Hydrology Present? Yes _____ No ☒	

Remarks: (Explain alternative procedures here or in a separate report.)

WETS Analysis indicates antecedent precipitation conditions are in the drier than normal range.

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)		_____ Surface Soil Cracks (B6)
_____ Surface Water (A1)	_____ Water-Stained Leaves (B9)	_____ Drainage Patterns (B10)
_____ High Water Table (A2)	_____ Aquatic Fauna (B13)	_____ Moss Trim Lines (B16)
_____ Saturation (A3)	_____ Marl Deposits (B15)	_____ Dry-Season Water Table (C2)
_____ Water Marks (B1)	_____ Hydrogen Sulfide Odor (C1)	_____ Crayfish Burrows (C8)
_____ Sediment Deposits (B2)	_____ Oxidized Rhizospheres on Living Roots (C3)	_____ Saturation Visible on Aerial Imagery (C9)
_____ Drift Deposits (B3)	_____ Presence of Reduced Iron (C4)	_____ Stunted or Stressed Plants (D1)
_____ Algal Mat or Crust (B4)	_____ Recent Iron Reduction in Tilled Soils (C6)	_____ Geomorphic Position (D2)
_____ Iron Deposits (B5)	_____ Thin Muck Surface (C7)	_____ Shallow Aquitard (D3)
_____ Inundation Visible on Aerial Imagery (B7)	_____ Other (Explain in Remarks)	_____ Microtopographic Relief (D4)
_____ Sparsely Vegetated Concave Surface (B8)		_____ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ☒ Depth (inches): _____
Water Table Present? Yes _____ No ☒ Depth (inches): _____
Saturation Present? Yes _____ No ☒ Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present? Yes _____ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No wetland hydrology indicators observed, no saturation.

VEGETATION – Use scientific names of plants.

Sampling Point: P5

Tree Stratum (Plot size: <u>30 ft r</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
1. <u>Acer platanoides</u>	<u>15</u>	☒	<u>UPL</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>25</u> (A/B)														
2. <u>Acer negundo</u>	<u>7</u>	☒	<u>FAC</u>															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>22%</u> = Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>9</u></td> <td>x 3 = <u>27</u></td> </tr> <tr> <td>FACU species <u>110</u></td> <td>x 4 = <u>440</u></td> </tr> <tr> <td>UPL species <u>22</u></td> <td>x 5 = <u>110</u></td> </tr> <tr> <td>Column Totals: <u>141</u> (A)</td> <td><u>577</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>4.1</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>9</u>	x 3 = <u>27</u>	FACU species <u>110</u>	x 4 = <u>440</u>	UPL species <u>22</u>	x 5 = <u>110</u>	Column Totals: <u>141</u> (A)	<u>577</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>0</u>	x 2 = <u>0</u>																	
FAC species <u>9</u>	x 3 = <u>27</u>																	
FACU species <u>110</u>	x 4 = <u>440</u>																	
UPL species <u>22</u>	x 5 = <u>110</u>																	
Column Totals: <u>141</u> (A)	<u>577</u> (B)																	
Sapling/Shrub Stratum (Plot size: <u>15 ft r</u>)																		
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____	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.														
_____ = Total Cover																		
Herb Stratum (Plot size: <u>5 ft r</u>)																		
1. <u>Poa pratensis</u>	<u>60</u>	☒	<u>FACU</u>															
2. <u>Glechoma hederacea</u>	<u>30</u>	☒	<u>FACU</u>															
3. <u>Taraxacum officinale</u>	<u>10</u>	_____	<u>FACU</u>															
4. <u>Daucus carota</u>	<u>7</u>	_____	<u>UPL</u>															
5. <u>Trifolium pratense</u>	<u>5</u>	_____	<u>FACU</u>															
6. <u>Cirsium arvense</u>	<u>3</u>	_____	<u>FACU</u>															
7. <u>Geum canadense</u>	<u>2</u>	_____	<u>FAC</u>	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.														
8. <u>Solidago canadensis</u>	<u>2</u>	_____	<u>FACU</u>															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
11. _____	_____	_____	_____															
12. _____	_____	_____	_____															
<u>119%</u> = Total Cover																		
Woody Vine Stratum (Plot size: <u>30 ft r</u>)																		
1. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes _____ No ☒														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
_____ = Total Cover																		
Remarks: (Include photo numbers here or on a separate sheet.)																		

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 9	10YR 3/2	100					Silt Loam	
9 - 12	10YR 3/2	97	10YR 3/4	3	C	M	Silt Loam	
12 - 24	10YR 3/2	40	10YR 4/4	7			Silty Clay Loam	Mixed matrix
12 - 24	10YR 4/6	30					Silty Clay Loam	Mixed matrix
12 - 24	2.5Y 4/2	20	10YR 4/4	3	C	M	Silty Clay Loam	Mixed matrix
-								
-								
-								
-								
-								
-								
-								
-								

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators:**

- | | |
|---|--|
| ☐ Histosol (A1) | ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B) |
| ☐ Histic Epipedon (A2) | ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B) |
| ☐ Black Histic (A3) | ☐ Loamy Mucky Mineral (F1) (LRR K, L) |
| ☐ Hydrogen Sulfide (A4) | ☐ Loamy Gleyed Matrix (F2) |
| ☐ Stratified Layers (A5) | ☐ Depleted Matrix (F3) |
| ☐ Depleted Below Dark Surface (A11) | ☐ Redox Dark Surface (F6) |
| ☐ Thick Dark Surface (A12) | ☐ Depleted Dark Surface (F7) |
| ☐ Sandy Mucky Mineral (S1) | ☐ Redox Depressions (F8) |
| ☐ Sandy Gleyed Matrix (S4) | |
| ☐ Sandy Redox (S5) | |
| ☐ Stripped Matrix (S6) | |
| ☐ Dark Surface (S7) (LRR R, MLRA 149B) | |

Indicators for Problematic Hydric Soils³:

- | |
|--|
| ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B) |
| ☐ Coast Prairie Redox (A16) (LRR K, L, R) |
| ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R) |
| ☐ Dark Surface (S7) (LRR K, L) |
| ☐ Polyvalue Below Surface (S8) (LRR K, L) |
| ☐ Thin Dark Surface (S9) (LRR K, L) |
| ☐ Iron-Manganese Masses (F12) (LRR K, L, R) |
| ☐ Piedmont Floodplain Soils (F19) (MLRA 149B) |
| ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B) |
| ☐ Red Parent Material (F21) |
| ☐ Very Shallow Dark Surface (TF12) |
| ☐ Other (Explain in Remarks) |

³Indicators 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:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: TLC Property City/County: V Germantown / Washington Co Sampling Date: 2021-05-11
 Applicant/Owner: Quam Engineering State: Wisconsin Sampling Point: P6
 Investigator(s): Eric C Parker, SPWS Section, Township, Range: Section 30, T9N, R20E
 Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): Concave Slope (%): 1-2
 Subregion (LRR or MLRA): _____ Lat: 43.2130127 Long: -88.1672002 Datum: WGS 84
 Soil Map Unit Name: Fabius L (FaA) NWI classification: T3/E1K

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 _____ If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes ☒ No _____	
Wetland Hydrology Present? Yes ☒ No _____	

Remarks: (Explain alternative procedures here or in a separate report.)

WETS Analysis indicates antecedent precipitation conditions are in the drier than normal range.

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)		_____ Surface Soil Cracks (B6)
☒ Surface Water (A1)	_____ Water-Stained Leaves (B9)	☒ Drainage Patterns (B10)
☒ High Water Table (A2)	_____ Aquatic Fauna (B13)	_____ Moss Trim Lines (B16)
☒ Saturation (A3)	_____ Marl Deposits (B15)	_____ Dry-Season Water Table (C2)
_____ Water Marks (B1)	_____ Hydrogen Sulfide Odor (C1)	_____ Crayfish Burrows (C8)
_____ Sediment Deposits (B2)	_____ Oxidized Rhizospheres on Living Roots (C3)	_____ Saturation Visible on Aerial Imagery (C9)
☒ Drift Deposits (B3)	_____ Presence of Reduced Iron (C4)	_____ Stunted or Stressed Plants (D1)
_____ Algal Mat or Crust (B4)	_____ Recent Iron Reduction in Tilled Soils (C6)	☒ Geomorphic Position (D2)
_____ Iron Deposits (B5)	_____ Thin Muck Surface (C7)	_____ Shallow Aquitard (D3)
_____ Inundation Visible on Aerial Imagery (B7)	_____ Other (Explain in Remarks)	_____ Microtopographic Relief (D4)
_____ Sparsely Vegetated Concave Surface (B8)		☒ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ☒ No _____ Depth (inches): 4
 Water Table Present? Yes ☒ No _____ Depth (inches): 0
 Saturation Present? Yes ☒ No _____ Depth (inches): 0
 (includes capillary fringe)

Wetland Hydrology Present? Yes ☒ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Historically excavated swale approx 12-15ft in width. 85% of width is waterway channel, 15% fringe is wetland.

VEGETATION – Use scientific names of plants.

Sampling Point: P6

Tree Stratum (Plot size: <u>30 ft r</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
1. <u>Acer negundo</u>	<u>20</u>	☒	<u>FAC</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
		<u>20%</u> = Total Cover		Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>13</u></td> <td>x 2 = <u>26</u></td> </tr> <tr> <td>FAC species <u>41</u></td> <td>x 3 = <u>123</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>54</u> (A)</td> <td><u>149</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>2.8</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>13</u>	x 2 = <u>26</u>	FAC species <u>41</u>	x 3 = <u>123</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>54</u> (A)	<u>149</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>13</u>	x 2 = <u>26</u>																	
FAC species <u>41</u>	x 3 = <u>123</u>																	
FACU species <u>0</u>	x 4 = <u>0</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>54</u> (A)	<u>149</u> (B)																	
Sapling/Shrub Stratum (Plot size: <u>15 ft r</u>)																		
1. <u>Rhamnus cathartica</u>	<u>5</u>	☒	<u>FAC</u>															
2. <u>Acer negundo</u>	<u>3</u>	☒	<u>FAC</u>															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
		<u>8%</u> = Total Cover																
Herb Stratum (Plot size: <u>5 ft r</u>)																		
1. <u>Impatiens capensis</u>	<u>10</u>	☒	<u>FACW</u>	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.														
2. <u>Hydrophyllum virginianum</u>	<u>3</u>	_____	<u>FAC</u>															
3. <u>Rhamnus cathartica</u>	<u>3</u>	_____	<u>FAC</u>															
4. <u>Ribes americanum</u>	<u>3</u>	_____	<u>FACW</u>															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
11. _____	_____	_____	_____															
12. _____	_____	_____	_____															
		<u>19%</u> = Total Cover																
Woody Vine Stratum (Plot size: <u>30 ft r</u>)																		
1. <u>Vitis riparia</u>	<u>7</u>	☒	<u>FAC</u>															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
		<u>7%</u> = Total Cover																
Hydrophytic Vegetation Present? Yes ☒ No _____																		
Remarks: (Include photo numbers here or on a separate sheet.)																		

SOIL

Sampling Point: **P6****Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 5	10YR 2/1	100					Silt Loam	
5 - 12	10YR 4/2	95	10YR 4/4	5	C	M	Silt Loam	
12 - 24	10YR 4/1	93	10YR 4/3	7	C	M	Silty Clay Loam	
-								
-								
-								
-								
-								
-								
-								
-								
-								
-								
-								
-								

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators:**

- | | |
|--|---|
| ☐ Histosol (A1) | ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B) |
| ☐ Histic Epipedon (A2) | ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B) |
| ☐ Black Histic (A3) | ☐ Loamy Mucky Mineral (F1) (LRR K, L) |
| ☐ Hydrogen Sulfide (A4) | ☐ Loamy Gleyed Matrix (F2) |
| ☐ Stratified Layers (A5) | ☒ Depleted Matrix (F3) |
| ☒ Depleted Below Dark Surface (A11) | ☐ Redox Dark Surface (F6) |
| ☐ Thick Dark Surface (A12) | ☐ Depleted Dark Surface (F7) |
| ☐ Sandy Mucky Mineral (S1) | ☐ Redox Depressions (F8) |
| ☐ Sandy Gleyed Matrix (S4) | |
| ☐ Sandy Redox (S5) | |
| ☐ Stripped Matrix (S6) | |
| ☐ Dark Surface (S7) (LRR R, MLRA 149B) | |

Indicators for Problematic Hydric Soils³:

- | |
|---|
| ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B) |
| ☐ Coast Prairie Redox (A16) (LRR K, L, R) |
| ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R) |
| ☐ Dark Surface (S7) (LRR K, L) |
| ☐ Polyvalue Below Surface (S8) (LRR K, L) |
| ☐ Thin Dark Surface (S9) (LRR K, L) |
| ☐ Iron-Manganese Masses (F12) (LRR K, L, R) |
| ☐ Piedmont Floodplain Soils (F19) (MLRA 149B) |
| ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B) |
| ☐ Red Parent Material (F21) |
| ☐ Very Shallow Dark Surface (TF12) |
| ☐ Other (Explain in Remarks) |

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if observed):**Type: GravelDepth (inches): 17Hydric Soil Present? Yes ☒ No ☐

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: TLC Property City/County: V Germantown / Washington Co Sampling Date: 2021-05-11
 Applicant/Owner: Quam Engineering State: Wisconsin Sampling Point: P7
 Investigator(s): Eric C Parker, SPWS Section, Township, Range: Section 30, T9N, R20E
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Linear Slope (%): 1-2
 Subregion (LRR or MLRA): _____ Lat: 43.2141724 Long: -88.1657037 Datum: WGS 84
 Soil Map Unit Name: Montgomery SiCL (MzB) NWI classification: T3K

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 ☒ If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes ☒ No _____	
Wetland Hydrology Present? Yes _____ No ☒	
Remarks: (Explain alternative procedures here or in a separate report.)	
WETS Analysis indicates antecedent precipitation conditions are in the drier than normal range. Drain tiles present in adjacent sod field. Artificially lowered water table.	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> ___ Surface Water (A1) ___ Water-Stained Leaves (B9) ___ High Water Table (A2) ___ Aquatic Fauna (B13) ___ Saturation (A3) ___ Marl Deposits (B15) ___ Water Marks (B1) ___ Hydrogen Sulfide Odor (C1) ___ Sediment Deposits (B2) ___ Oxidized Rhizospheres on Living Roots (C3) ___ Drift Deposits (B3) ___ Presence of Reduced Iron (C4) ___ Algal Mat or Crust (B4) ___ Recent Iron Reduction in Tilled Soils (C6) ___ Iron Deposits (B5) ___ Thin Muck Surface (C7) ___ Inundation Visible on Aerial Imagery (B7) ___ Other (Explain in Remarks) ___ Sparsely Vegetated Concave Surface (B8)		<u>Secondary Indicators (minimum of two required)</u> ___ Surface Soil Cracks (B6) ___ Drainage Patterns (B10) ___ Moss Trim Lines (B16) ___ Dry-Season Water Table (C2) ___ Crayfish Burrows (C8) ___ Saturation Visible on Aerial Imagery (C9) ___ Stunted or Stressed Plants (D1) ___ Geomorphic Position (D2) ___ Shallow Aquitard (D3) ___ Microtopographic Relief (D4) ☒ FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No ☒ Depth (inches): _____ Water Table Present? Yes ☒ No _____ Depth (inches): <u>19</u> Saturation Present? Yes ☒ No _____ Depth (inches): <u>15</u> (includes capillary fringe)		Wetland Hydrology Present? Yes _____ No ☒
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		
No wetland hydrology indicators observed.		

VEGETATION – Use scientific names of plants.

Sampling Point: P7

Tree Stratum (Plot size: <u>30 ft r</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
1. <u>Acer saccharinum</u>	<u>40</u>	☒	<u>FACW</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>80</u> (A/B)														
2. <u>Ulmus americana</u>	<u>10</u>		<u>FACW</u>															
3. <u>Acer negundo</u>	<u>7</u>		<u>FAC</u>															
4. _____	_____																	
5. _____	_____																	
6. _____	_____																	
7. _____	_____																	
<u>57%</u> = Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>55</u></td> <td>x 2 = <u>110</u></td> </tr> <tr> <td>FAC species <u>77</u></td> <td>x 3 = <u>231</u></td> </tr> <tr> <td>FACU species <u>12</u></td> <td>x 4 = <u>48</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>144</u> (A)</td> <td><u>389</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>2.7</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>55</u>	x 2 = <u>110</u>	FAC species <u>77</u>	x 3 = <u>231</u>	FACU species <u>12</u>	x 4 = <u>48</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>144</u> (A)	<u>389</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>55</u>	x 2 = <u>110</u>																	
FAC species <u>77</u>	x 3 = <u>231</u>																	
FACU species <u>12</u>	x 4 = <u>48</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>144</u> (A)	<u>389</u> (B)																	
Sapling/Shrub Stratum (Plot size: <u>15 ft r</u>)																		
1. <u>Rhamnus cathartica</u>	<u>60</u>	☒	<u>FAC</u>															
2. _____	_____																	
3. _____	_____																	
4. _____	_____																	
5. _____	_____																	
6. _____	_____																	
7. _____	_____																	
<u>60%</u> = Total Cover																		
Herb Stratum (Plot size: <u>5 ft r</u>)																		
1. <u>Circaea canadensis</u>	<u>10</u>	☒	<u>FACU</u>	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.														
2. <u>Impatiens capensis</u>	<u>5</u>	☒	<u>FACW</u>															
3. <u>Arisaema triphyllum</u>	<u>3</u>		<u>FAC</u>															
4. <u>Geum canadense</u>	<u>2</u>		<u>FAC</u>															
5. <u>Hesperis matronalis</u>	<u>2</u>		<u>FACU</u>															
6. _____	_____																	
7. _____	_____																	
8. _____	_____																	
9. _____	_____																	
10. _____	_____																	
11. _____	_____																	
12. _____	_____																	
<u>22%</u> = Total Cover																		
Woody Vine Stratum (Plot size: <u>30 ft r</u>)																		
1. <u>Vitis riparia</u>	<u>5</u>	☒	<u>FAC</u>	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.														
2. _____	_____																	
3. _____	_____																	
4. _____	_____																	
<u>5%</u> = Total Cover																		
Remarks: (Include photo numbers here or on a separate sheet.)				Hydrophytic Vegetation Present? Yes ☒ No _____														

SOIL

Sampling Point: P7**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 10	10YR 2/1	100					Silt Loam	
10 - 14	10YR 3/1	95	10YR 3/3	5	C	M	Mucky Loam/Clay	
14 - 24	10YR 3/1	90	10YR 3/3	10	C	M	Mucky Peat	
-								
-								
-								
-								
-								
-								
-								
-								
-								
-								
-								
-								
-								

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators:**

- ☒ Histosol (A1) ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
☐ Histic Epipedon (A2) ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
☐ Black Histic (A3) ☐ Loamy Mucky Mineral (F1) (LRR K, L)
☐ Hydrogen Sulfide (A4) ☐ Loamy Gleyed Matrix (F2)
☐ Stratified Layers (A5) ☐ Depleted Matrix (F3)
☐ Depleted Below Dark Surface (A11) ☐ Redox Dark Surface (F6)
☐ Thick Dark Surface (A12) ☐ Depleted Dark Surface (F7)
☐ Sandy Mucky Mineral (S1) ☐ Redox Depressions (F8)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Dark Surface (S7) (LRR R, MLRA 149B)

Indicators for Problematic Hydric Soils³:

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
☐ Coast Prairie Redox (A16) (LRR K, L, R)
☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
☐ Dark Surface (S7) (LRR K, L)
☐ Polyvalue Below Surface (S8) (LRR K, L)
☐ Thin Dark Surface (S9) (LRR K, L)
☐ Iron-Manganese Masses (F12) (LRR K, L, R)
☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators 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:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: TLC Property City/County: V Germantown / Washington Co Sampling Date: 2021-05-11
 Applicant/Owner: Quam Engineering State: Wisconsin Sampling Point: P8
 Investigator(s): Eric C Parker, SPWS Section, Township, Range: Section 30, T9N, R20E
 Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): Concave Slope (%): 1-2
 Subregion (LRR or MLRA): _____ Lat: 43.2141418 Long: -88.1654257 Datum: WGS 84
 Soil Map Unit Name: Montgomery SiCL (Mzb) NWI classification: T3K adjacent

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 _____ If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes ☒ No _____	
Wetland Hydrology Present? Yes ☒ No _____	
Remarks: (Explain alternative procedures here or in a separate report.)	
WETS Analysis indicates antecedent precipitation conditions are in the drier than normal range.	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>
☐ 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) ☐ Marl Deposits (B15) ☐ 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) ☐ Other (Explain in Remarks)	☐ Surface Soil Cracks (B6) ☐ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry-Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Stunted or Stressed Plants (D1) ☒ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☐ Microtopographic Relief (D4) ☒ FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No ☒ Depth (inches): _____ Water Table Present? Yes ☒ No _____ Depth (inches): <u>0</u> Saturation Present? Yes ☒ No _____ Depth (inches): <u>0</u> (includes capillary fringe)		Wetland Hydrology Present? Yes ☒ No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		
Historically excavated swale approx 10ft in width. 100% of width is wetland.		

Sampling Point: P8

Tree Stratum (Plot size: 30 ft r)			Absolute % Cover	Dominant Species?	Indicator Status
1.	Acer saccharinum		20	✓	FACW
2.	Acer negundo		7	✓	FAC
3.					
4.					
5.					
6.					
7.					
			27%	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft r)			Absolute % Cover	Dominant Species?	Indicator Status
1.	Rhamnus cathartica		30	✓	FAC
2.	Acer negundo		3		FAC
3.					
4.					
5.					
6.					
7.					
			33%	= Total Cover	
Herb Stratum (Plot size: 5 ft r)			Absolute % Cover	Dominant Species?	Indicator Status
1.	Impatiens capensis		15	✓	FACW
2.	Rhamnus cathartica		5		FAC
3.	Symplocarpus foetidus		5		OBL
4.	Solidago gigantea		3		FACW
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
			28%	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft r)			Absolute % Cover	Dominant Species?	Indicator Status
1.	Vitis riparia		3		FAC
2.					
3.					
4.					
			3%	= 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 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species 5	x 1 = 5
FACW species 38	x 2 = 76
FAC species 48	x 3 = 144
FACU species 0	x 4 = 0
UPL species 0	x 5 = 0
Column Totals: 91 (A)	225 (B)

Prevalence Index = B/A = 2.5

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

✓ 3 - Prevalence Index is ≤3.0¹

___ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: P8**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 4	10YR 2/1	100					Mucky Loam/Clay	
4 - 13	10YR 2/1	95	10YR 3/3	5	C	M	Mucky Loam/Clay	
13 - 24	10YR 5/2	80	10YR 5/6	20	C	M	Loamy Sand	
-								
-								
-								
-								
-								
-								
-								
-								
-								
-								
-								
-								
-								

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators:**

- | | |
|---|--|
| ☐ Histosol (A1) | ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B) |
| ☐ Histic Epipedon (A2) | ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B) |
| ☐ Black Histic (A3) | ☒ Loamy Mucky Mineral (F1) (LRR K, L) |
| ☐ Hydrogen Sulfide (A4) | ☐ Loamy Gleyed Matrix (F2) |
| ☐ Stratified Layers (A5) | ☐ Depleted Matrix (F3) |
| ☐ Depleted Below Dark Surface (A11) | ☒ Redox Dark Surface (F6) |
| ☒ Thick Dark Surface (A12) | ☐ Depleted Dark Surface (F7) |
| ☐ Sandy Mucky Mineral (S1) | ☐ Redox Depressions (F8) |
| ☐ Sandy Gleyed Matrix (S4) | |
| ☐ Sandy Redox (S5) | |
| ☐ Stripped Matrix (S6) | |
| ☐ Dark Surface (S7) (LRR R, MLRA 149B) | |

Indicators for Problematic Hydric Soils³:

- | |
|--|
| ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B) |
| ☐ Coast Prairie Redox (A16) (LRR K, L, R) |
| ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R) |
| ☐ Dark Surface (S7) (LRR K, L) |
| ☐ Polyvalue Below Surface (S8) (LRR K, L) |
| ☐ Thin Dark Surface (S9) (LRR K, L) |
| ☐ Iron-Manganese Masses (F12) (LRR K, L, R) |
| ☐ Piedmont Floodplain Soils (F19) (MLRA 149B) |
| ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B) |
| ☐ Red Parent Material (F21) |
| ☐ Very Shallow Dark Surface (TF12) |
| ☐ Other (Explain in Remarks) |

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if observed):**Type: GravelDepth (inches): 17Hydric Soil Present? Yes ☒ No ☐

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: TLC Property City/County: V Germantown / Washington Co Sampling Date: 2021-05-11
 Applicant/Owner: Quam Engineering State: Wisconsin Sampling Point: P9
 Investigator(s): Eric C Parker, SPWS Section, Township, Range: Section 30, T9N, R20E
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Linear Slope (%): 0-1
 Subregion (LRR or MLRA): A Lat: 43.2140198 Long: -88.1626951 Datum: WGS 84
 Soil Map Unit Name: Houghton Mucky peat (Hu) NWI classification: None depicted

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 ☒ If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes ☒ No _____	
Wetland Hydrology Present? Yes ☒ No _____	
Remarks: (Explain alternative procedures here or in a separate report.)	
WETS Analysis indicates antecedent precipitation conditions are in the drier than normal range. Sod field, no weeds present. Water table drained down by tiles-ditches. Not NC.	

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)		
☐ Surface Water (A1)	☐ Water-Stained Leaves (B9)	☐ Surface Soil Cracks (B6)
☐ High Water Table (A2)	☐ Aquatic Fauna (B13)	☐ Drainage Patterns (B10)
☐ Saturation (A3)	☐ Marl Deposits (B15)	☐ Moss Trim Lines (B16)
☐ Water Marks (B1)	☐ Hydrogen Sulfide Odor (C1)	☐ Dry-Season Water Table (C2)
☐ Sediment Deposits (B2)	☐ Oxidized Rhizospheres on Living Roots (C3)	☒ Saturation Visible on Aerial Imagery (C9)
☐ Drift Deposits (B3)	☐ Presence of Reduced Iron (C4)	☒ Stunted or Stressed Plants (D1)
☐ Algal Mat or Crust (B4)	☐ Recent Iron Reduction in Tilled Soils (C6)	☐ Geomorphic Position (D2)
☐ Iron Deposits (B5)	☐ Thin Muck Surface (C7)	☐ Shallow Aquitard (D3)
☐ Inundation Visible on Aerial Imagery (B7)	☐ Other (Explain in Remarks)	☐ Microtopographic Relief (D4)
☐ Sparsely Vegetated Concave Surface (B8)		☐ FAC-Neutral Test (D5)
Field Observations:		
Surface Water Present? Yes _____ No ☒ Depth (inches): _____	Wetland Hydrology Present? Yes ☒ No _____	
Water Table Present? Yes _____ No ☒ Depth (inches): _____		
Saturation Present? Yes _____ No ☒ Depth (inches): _____ (includes capillary fringe)		

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

OSA Completed, C9 and D1 are derived only from the OSA

Remarks:

No field wetland hydrology indicators observed, no saturation. Drain tile system present, therefore D2 not present.

VEGETATION – Use scientific names of plants.

Sampling Point: P9

Tree Stratum (Plot size: <u>30 ft r</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>0</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>NaN</u> (A/B)														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>0%</u> = Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>0</u> (A)</td> <td><u>0</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>NaN</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>0</u> (A)	<u>0</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>0</u>	x 2 = <u>0</u>																	
FAC species <u>0</u>	x 3 = <u>0</u>																	
FACU species <u>0</u>	x 4 = <u>0</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>0</u> (A)	<u>0</u> (B)																	
<u>0%</u> = Total Cover																		
Sapling/Shrub Stratum (Plot size: <u>15 ft r</u>)																		
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>0%</u> = Total Cover				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.														
Herb Stratum (Plot size: <u>5 ft r</u>)																		
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
11. _____	_____	_____	_____															
12. _____	_____	_____	_____															
<u>0%</u> = Total Cover				Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.														
Woody Vine Stratum (Plot size: <u>30 ft r</u>)																		
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
<u>0%</u> = Total Cover																		
Hydrophytic Vegetation Present? Yes _____ No ☒																		

Remarks: (Include photo numbers here or on a separate sheet.)

No weeds present. This is a sod field where sod has been removed, not NC.

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 13	10YR 2/1	100					Muck	
13 - 24	10YR 2/1	70					Mucky Peat	Mixed matrix mucky peaty materials
13 - 24	5YR 3/3	30					Mucky Peat	Mixed matrix mucky peaty materials
-								
-								
-								
-								
-								
-								
-								
-								
-								
-								
-								
-								
-								

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators:**

- ☒ Histosol (A1) ☐ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
☐ Histic Epipedon (A2) ☐ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
☐ Black Histic (A3) ☐ Loamy Mucky Mineral (F1) (**LRR K, L**)
☐ Hydrogen Sulfide (A4) ☐ Loamy Gleyed Matrix (F2)
☐ Stratified Layers (A5) ☐ Depleted Matrix (F3)
☐ Depleted Below Dark Surface (A11) ☐ Redox Dark Surface (F6)
☐ Thick Dark Surface (A12) ☐ Depleted Dark Surface (F7)
☐ Sandy Mucky Mineral (S1) ☐ Redox Depressions (F8)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Dark Surface (S7) (**LRR R, MLRA 149B**)

Indicators for Problematic Hydric Soils³:

- ☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
☐ Dark Surface (S7) (**LRR K, L**)
☐ Polyvalue Below Surface (S8) (**LRR K, L**)
☐ Thin Dark Surface (S9) (**LRR K, L**)
☐ Iron-Manganese Masses (F12) (**LRR K, L, R**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators 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:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: TLC Property City/County: V Germantown / Washington Co Sampling Date: 2021-05-11
 Applicant/Owner: Quam Engineering State: Wisconsin Sampling Point: P10
 Investigator(s): Eric C Parker, SPWS Section, Township, Range: Section 30, T9N, R20E
 Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): Concave Slope (%): 1-2
 Subregion (LRR or MLRA): _____ Lat: 43.2116089 Long: -88.1633305 Datum: WGS 84
 Soil Map Unit Name: Houghton mucky peat (Hu) NWI classification: T3/E1K

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 _____ If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes ☒ No _____	
Wetland Hydrology Present? Yes ☒ No _____	

Remarks: (Explain alternative procedures here or in a separate report.)

WETS Analysis indicates antecedent precipitation conditions are in the drier than normal range.

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)		_____ Surface Soil Cracks (B6)
_____ Surface Water (A1)	☒ Water-Stained Leaves (B9)	_____ Drainage Patterns (B10)
☒ High Water Table (A2)	_____ Aquatic Fauna (B13)	_____ Moss Trim Lines (B16)
☒ Saturation (A3)	_____ Marl Deposits (B15)	_____ Dry-Season Water Table (C2)
_____ Water Marks (B1)	_____ Hydrogen Sulfide Odor (C1)	_____ Crayfish Burrows (C8)
_____ Sediment Deposits (B2)	_____ Oxidized Rhizospheres on Living Roots (C3)	_____ Saturation Visible on Aerial Imagery (C9)
_____ Drift Deposits (B3)	_____ Presence of Reduced Iron (C4)	_____ Stunted or Stressed Plants (D1)
_____ Algal Mat or Crust (B4)	_____ Recent Iron Reduction in Tilled Soils (C6)	☒ Geomorphic Position (D2)
_____ Iron Deposits (B5)	_____ Thin Muck Surface (C7)	_____ Shallow Aquitard (D3)
_____ Inundation Visible on Aerial Imagery (B7)	_____ Other (Explain in Remarks)	_____ Microtopographic Relief (D4)
_____ Sparsely Vegetated Concave Surface (B8)		☒ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ☒ Depth (inches): _____
 Water Table Present? Yes ☒ No _____ Depth (inches): 12
 Saturation Present? Yes ☒ No _____ Depth (inches): 9
 (includes capillary fringe)

Wetland Hydrology Present? Yes ☒ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Historically excavated swale approx 20ft in width. 60% of width is wetland, the rest is the waterway channel.

VEGETATION – Use scientific names of plants.

 Sampling Point: **P10**

Tree Stratum (Plot size: <u>30 ft r</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
1. <u>Acer negundo</u>	<u>7</u>	☒	<u>FAC</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)														
2. <u>Rhamnus cathartica</u>	<u>5</u>	☒	<u>FAC</u>															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>12%</u> = Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>107</u></td> <td>x 2 = <u>214</u></td> </tr> <tr> <td>FAC species <u>17</u></td> <td>x 3 = <u>51</u></td> </tr> <tr> <td>FACU species <u>10</u></td> <td>x 4 = <u>40</u></td> </tr> <tr> <td>UPL species <u>3</u></td> <td>x 5 = <u>15</u></td> </tr> <tr> <td>Column Totals: <u>137</u> (A)</td> <td><u>320</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>2.3</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>107</u>	x 2 = <u>214</u>	FAC species <u>17</u>	x 3 = <u>51</u>	FACU species <u>10</u>	x 4 = <u>40</u>	UPL species <u>3</u>	x 5 = <u>15</u>	Column Totals: <u>137</u> (A)	<u>320</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>107</u>	x 2 = <u>214</u>																	
FAC species <u>17</u>	x 3 = <u>51</u>																	
FACU species <u>10</u>	x 4 = <u>40</u>																	
UPL species <u>3</u>	x 5 = <u>15</u>																	
Column Totals: <u>137</u> (A)	<u>320</u> (B)																	
Sapling/Shrub Stratum (Plot size: <u>15 ft r</u>)																		
1. <u>Ribes americanum</u>	<u>10</u>	☒	<u>FACW</u>															
2. <u>Sambucus nigra</u>	<u>7</u>	☒	<u>FACW</u>															
3. <u>Lonicera X bella</u>	<u>5</u>	_____	<u>FACU</u>															
4. <u>Rubus idaeus</u>	<u>5</u>	_____	<u>FACU</u>															
5. <u>Cornus alba</u>	<u>3</u>	_____	<u>FACW</u>															
6. <u>Rhamnus cathartica</u>	<u>3</u>	_____	<u>FAC</u>															
7. _____	_____	_____	_____	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.														
<u>33%</u> = Total Cover																		
Herb Stratum (Plot size: <u>5 ft r</u>)																		
1. <u>Phalaris arundinacea</u>	<u>70</u>	☒	<u>FACW</u>															
2. <u>Ribes americanum</u>	<u>10</u>	_____	<u>FACW</u>															
3. <u>Thalictrum dasycarpum</u>	<u>5</u>	_____	<u>FACW</u>															
4. <u>Pastinaca sativa</u>	<u>3</u>	_____	<u>UPL</u>															
5. <u>Impatiens capensis</u>	<u>2</u>	_____	<u>FACW</u>															
6. <u>Urtica dioica</u>	<u>2</u>	_____	<u>FAC</u>															
7. _____	_____	_____	_____	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.														
<u>92%</u> = Total Cover																		
Woody Vine Stratum (Plot size: <u>30 ft r</u>)																		
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
_____ = Total Cover																		
Remarks: (Include photo numbers here or on a separate sheet.)				Hydrophytic Vegetation Present? Yes ☒ No _____														

SOIL

Sampling Point: **P10****Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 7	10YR 4/2	100					Silt Loam	
7 - 17	10YR 4/2	95	10YR 3/4	5	C	M	Silt Loam	
17 - 24	10YR 4/2	90	10YR 4/4	10	C	M	Silty Clay Loam	
-								
-								
-								
-								
-								
-								
-								
-								
-								
-								
-								
-								

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators:**

- | | |
|---|--|
| ☐ Histosol (A1) | ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B) |
| ☐ Histic Epipedon (A2) | ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B) |
| ☐ Black Histic (A3) | ☒ Loamy Mucky Mineral (F1) (LRR K, L) |
| ☐ Hydrogen Sulfide (A4) | ☐ Loamy Gleyed Matrix (F2) |
| ☐ Stratified Layers (A5) | ☐ Depleted Matrix (F3) |
| ☐ Depleted Below Dark Surface (A11) | ☒ Redox Dark Surface (F6) |
| ☒ Thick Dark Surface (A12) | ☐ Depleted Dark Surface (F7) |
| ☐ Sandy Mucky Mineral (S1) | ☐ Redox Depressions (F8) |
| ☐ Sandy Gleyed Matrix (S4) | |
| ☐ Sandy Redox (S5) | |
| ☐ Stripped Matrix (S6) | |
| ☐ Dark Surface (S7) (LRR R, MLRA 149B) | |

Indicators for Problematic Hydric Soils³:

- | |
|--|
| ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B) |
| ☐ Coast Prairie Redox (A16) (LRR K, L, R) |
| ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R) |
| ☐ Dark Surface (S7) (LRR K, L) |
| ☐ Polyvalue Below Surface (S8) (LRR K, L) |
| ☐ Thin Dark Surface (S9) (LRR K, L) |
| ☐ Iron-Manganese Masses (F12) (LRR K, L, R) |
| ☐ Piedmont Floodplain Soils (F19) (MLRA 149B) |
| ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B) |
| ☐ Red Parent Material (F21) |
| ☐ Very Shallow Dark Surface (TF12) |
| ☐ Other (Explain in Remarks) |

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if observed):**Type: GravelDepth (inches): 17Hydric Soil Present? Yes ☒ No ☐

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: TLC Property City/County: V Germantown / Washington Co Sampling Date: 2021-05-11
Applicant/Owner: Quam Engineering State: Wisconsin Sampling Point: P11
Investigator(s): Eric C Parker, SPWS Section, Township, Range: Section 30, T9N, R20E
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Linear Slope (%): 1-2
Subregion (LRR or MLRA): A Lat: 43.2116089 Long: -88.1633306 Datum: WGS 84
Soil Map Unit Name: Matherton SiL (MmA) NWI classification: None depicted

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 ☒ If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes _____ No ☒	
Wetland Hydrology Present? Yes _____ No ☒	

Remarks: (Explain alternative procedures here or in a separate report.)

WETS Analysis indicates antecedent precipitation conditions are in the drier than normal range. Immediately adjacent to sod field at same elevation, old field weeds present.

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)		
☐ Surface Water (A1)	☐ Water-Stained Leaves (B9)	☐ Surface Soil Cracks (B6)
☐ High Water Table (A2)	☐ Aquatic Fauna (B13)	☐ Drainage Patterns (B10)
☐ Saturation (A3)	☐ Marl Deposits (B15)	☐ Moss Trim Lines (B16)
☐ Water Marks (B1)	☐ Hydrogen Sulfide Odor (C1)	☐ Dry-Season Water Table (C2)
☐ Sediment Deposits (B2)	☐ Oxidized Rhizospheres on Living Roots (C3)	☒ Saturation Visible on Aerial Imagery (C9)
☐ Drift Deposits (B3)	☐ Presence of Reduced Iron (C4)	☐ Stunted or Stressed Plants (D1)
☐ Algal Mat or Crust (B4)	☐ Recent Iron Reduction in Tilled Soils (C6)	☐ Geomorphic Position (D2)
☐ Iron Deposits (B5)	☐ Thin Muck Surface (C7)	☐ Shallow Aquitard (D3)
☐ Inundation Visible on Aerial Imagery (B7)	☐ Other (Explain in Remarks)	☐ Microtopographic Relief (D4)
☐ Sparsely Vegetated Concave Surface (B8)		☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ☒ Depth (inches): _____	Wetland Hydrology Present? Yes _____ No ☒
Water Table Present? Yes _____ No ☒ Depth (inches): _____	
Saturation Present? Yes _____ No ☒ Depth (inches): _____ (includes capillary fringe)	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

OSA completed for this part of sod field. Signatures inconsistent.

Remarks:

No field wetland hydrology indicators observed, no saturation. C9 derived from the OSA. Tiles present, so D2 is not present.

VEGETATION – Use scientific names of plants.

 Sampling Point: **P11**

Tree Stratum (Plot size: <u>30 ft r</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
_____ = Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>3</u></td> <td>x 3 = <u>9</u></td> </tr> <tr> <td>FACU species <u>90</u></td> <td>x 4 = <u>360</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>93</u> (A)</td> <td><u>369</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>3.97</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>3</u>	x 3 = <u>9</u>	FACU species <u>90</u>	x 4 = <u>360</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>93</u> (A)	<u>369</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>0</u>	x 2 = <u>0</u>																	
FAC species <u>3</u>	x 3 = <u>9</u>																	
FACU species <u>90</u>	x 4 = <u>360</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>93</u> (A)	<u>369</u> (B)																	
_____ = Total Cover																		
Sapling/Shrub Stratum (Plot size: <u>15 ft r</u>)																		
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
_____ = Total Cover																		
Herb Stratum (Plot size: <u>5 ft r</u>)																		
1. <u>Poa pratensis</u>	<u>60</u>	<u>✓</u>	<u>FACU</u>	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.														
2. <u>Solidago canadensis</u>	<u>20</u>	<u>✓</u>	<u>FACU</u>															
3. <u>Glechoma hederacea</u>	<u>5</u>		<u>FACU</u>															
4. <u>Taraxacum officinale</u>	<u>5</u>		<u>FACU</u>															
5. <u>Geum aleppicum</u>	<u>3</u>		<u>FAC</u>															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
11. _____	_____	_____	_____															
12. _____	_____	_____	_____															
<u>93%</u> = Total Cover																		
Woody Vine Stratum (Plot size: <u>30 ft r</u>)																		
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
_____ = Total Cover																		
Remarks: (Include photo numbers here or on a separate sheet.)																		

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 14	10YR 3/1	100					Silt Loam	
14 - 24	10YR 2/1	100					Silt Loam	
-								
-								
-								
-								
-								
-								
-								
-								
-								
-								
-								
-								
-								
-								

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators:**

- ☐ Histosol (A1) ☐ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
☐ Histic Epipedon (A2) ☐ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
☐ Black Histic (A3) ☐ Loamy Mucky Mineral (F1) (**LRR K, L**)
☐ Hydrogen Sulfide (A4) ☐ Loamy Gleyed Matrix (F2)
☐ Stratified Layers (A5) ☐ Depleted Matrix (F3)
☐ Depleted Below Dark Surface (A11) ☐ Redox Dark Surface (F6)
☐ Thick Dark Surface (A12) ☐ Depleted Dark Surface (F7)
☐ Sandy Mucky Mineral (S1) ☐ Redox Depressions (F8)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Dark Surface (S7) (**LRR R, MLRA 149B**)

Indicators for Problematic Hydric Soils³:

- ☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
☐ Dark Surface (S7) (**LRR K, L**)
☐ Polyvalue Below Surface (S8) (**LRR K, L**)
☐ Thin Dark Surface (S9) (**LRR K, L**)
☐ Iron-Manganese Masses (F12) (**LRR K, L, R**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators 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:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: TLC Property City/County: V Germantown / Washington Co Sampling Date: 2021-05-11
 Applicant/Owner: Quam Engineering State: Wisconsin Sampling Point: P12
 Investigator(s): Eric C Parker, SPWS Section, Township, Range: Section 30, T9N, R20E
 Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): Concave Slope (%): 1-2
 Subregion (LRR or MLRA): _____ Lat: 43.2109375 Long: -88.1634388 Datum: WGS 84
 Soil Map Unit Name: Hochheim L (HmC2) NWI classification: None depicted

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 _____ If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes ☒ No _____	
Wetland Hydrology Present? Yes ☒ No _____	

Remarks: (Explain alternative procedures here or in a separate report.)

WETS Analysis indicates antecedent precipitation conditions are in the drier than normal range.

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)		_____ Surface Soil Cracks (B6)
☒ Surface Water (A1)	_____ Water-Stained Leaves (B9)	_____ Drainage Patterns (B10)
☒ High Water Table (A2)	_____ Aquatic Fauna (B13)	_____ Moss Trim Lines (B16)
☒ Saturation (A3)	_____ Marl Deposits (B15)	_____ Dry-Season Water Table (C2)
_____ Water Marks (B1)	_____ Hydrogen Sulfide Odor (C1)	_____ Crayfish Burrows (C8)
_____ Sediment Deposits (B2)	_____ Oxidized Rhizospheres on Living Roots (C3)	_____ Saturation Visible on Aerial Imagery (C9)
_____ Drift Deposits (B3)	_____ Presence of Reduced Iron (C4)	_____ Stunted or Stressed Plants (D1)
_____ Algal Mat or Crust (B4)	_____ Recent Iron Reduction in Tilled Soils (C6)	☒ Geomorphic Position (D2)
_____ Iron Deposits (B5)	_____ Thin Muck Surface (C7)	_____ Shallow Aquitard (D3)
_____ Inundation Visible on Aerial Imagery (B7)	_____ Other (Explain in Remarks)	_____ Microtopographic Relief (D4)
_____ Sparsely Vegetated Concave Surface (B8)		☒ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ☒ No _____ Depth (inches): 2
 Water Table Present? Yes ☒ No _____ Depth (inches): 0
 Saturation Present? Yes ☒ No _____ Depth (inches): 0
 (includes capillary fringe)

Wetland Hydrology Present? Yes ☒ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Historically excavated swale approx 6ft in width. 50% of width is waterway channel, 50% fringe is wetland.

VEGETATION – Use scientific names of plants.

Sampling Point: P12

Tree Stratum (Plot size: <u>30 ft r</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
1. <u>Acer negundo</u>	<u>20</u>	☒	<u>FAC</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>6</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
		<u>20%</u>	= Total Cover	Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td>Total % Cover of:</td> <td>Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>25</u></td> <td>x 2 = <u>50</u></td> </tr> <tr> <td>FAC species <u>61</u></td> <td>x 3 = <u>183</u></td> </tr> <tr> <td>FACU species <u>2</u></td> <td>x 4 = <u>8</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>88</u> (A)</td> <td><u>241</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>2.7</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>25</u>	x 2 = <u>50</u>	FAC species <u>61</u>	x 3 = <u>183</u>	FACU species <u>2</u>	x 4 = <u>8</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>88</u> (A)	<u>241</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>25</u>	x 2 = <u>50</u>																	
FAC species <u>61</u>	x 3 = <u>183</u>																	
FACU species <u>2</u>	x 4 = <u>8</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>88</u> (A)	<u>241</u> (B)																	
Sapling/Shrub Stratum (Plot size: <u>15 ft r</u>)																		
1. <u>Rhamnus cathartica</u>	<u>15</u>	☒	<u>FAC</u>															
2. <u>Viburnum lentago</u>	<u>7</u>	☒	<u>FAC</u>															
3. <u>Acer negundo</u>	<u>5</u>	_____	<u>FAC</u>															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
		<u>27%</u>	= Total Cover															
Herb Stratum (Plot size: <u>5 ft r</u>)																		
1. <u>Impatiens capensis</u>	<u>10</u>	☒	<u>FACW</u>	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.														
2. <u>Ribes americanum</u>	<u>10</u>	☒	<u>FACW</u>															
3. <u>Geum canadense</u>	<u>3</u>	_____	<u>FAC</u>															
4. <u>Solidago gigantea</u>	<u>3</u>	_____	<u>FACW</u>															
5. <u>Rosa multiflora</u>	<u>2</u>	_____	<u>FACU</u>															
6. <u>Symphotrichum lanceolatum</u>	<u>2</u>	_____	<u>FACW</u>															
7. <u>Rhamnus cathartica</u>	<u>1</u>	_____	<u>FAC</u>															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
11. _____	_____	_____	_____															
12. _____	_____	_____	_____															
		<u>31%</u>	= Total Cover															
Woody Vine Stratum (Plot size: <u>30 ft r</u>)																		
1. <u>Vitis riparia</u>	<u>10</u>	☒	<u>FAC</u>	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
		<u>10%</u>	= Total Cover															
Remarks: (Include photo numbers here or on a separate sheet.)																		

SOIL

Sampling Point: **P12****Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 4	2.5Y 3/1	100					Silt Loam	
4 - 9	2.5Y 4/1	95	10YR 4/4	5	C	M	Silt Loam	
9 - 19	5Y 4/1	93	5Y 4/3	7	C	M	Sandy Clay Loam	
-								
-								
-								
-								
-								
-								
-								
-								
-								
-								
-								
-								

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators:**

- ☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☒ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Sandy Mucky Mineral (S1)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
☐ Loamy Mucky Mineral (F1) (LRR K, L)
☐ Loamy Gleyed Matrix (F2)
☒ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils³:

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
☐ Coast Prairie Redox (A16) (LRR K, L, R)
☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
☐ Dark Surface (S7) (LRR K, L)
☐ Polyvalue Below Surface (S8) (LRR K, L)
☐ Thin Dark Surface (S9) (LRR K, L)
☐ Iron-Manganese Masses (F12) (LRR K, L, R)
☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if observed):**Type: GravelDepth (inches): 19Hydric Soil Present? Yes ☒ No ☐

Remarks:



Quam Engineering, LLC.
STH 175 Parcel
Project #: 20210495
January 10, 2022

Appendix D | Site Photographs

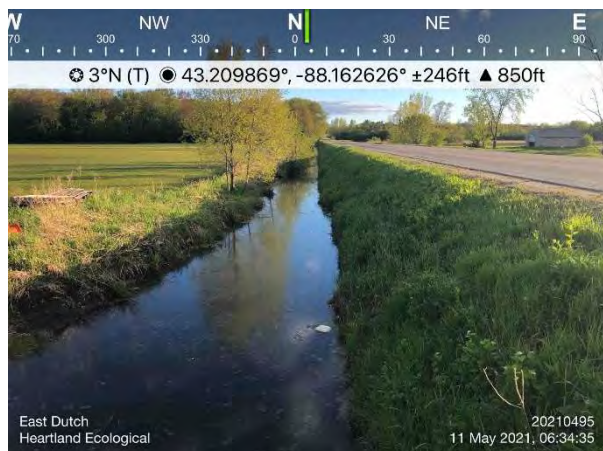


Photo #1 Photo of east ditch (WW-2)



Photo #2 Photo of central ditch (W-1 / WW-1)



Photo #3 Photo of W-1 along north edge of Study Area



Photo #4 Photo of W-1 along north edge of Study Area



Photo #5 Photo of southeast ditch (WW-3)



Photo #6 Photo of southeast ditch (WW-3)

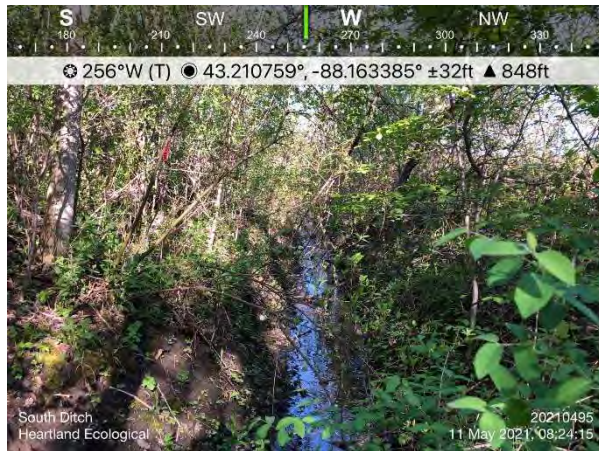


Photo #7 Photo of south ditch (WW-3)



Photo #8 Photo of central ditch (WW-1)



Photo #9 Photo of central ditch (WW-1)

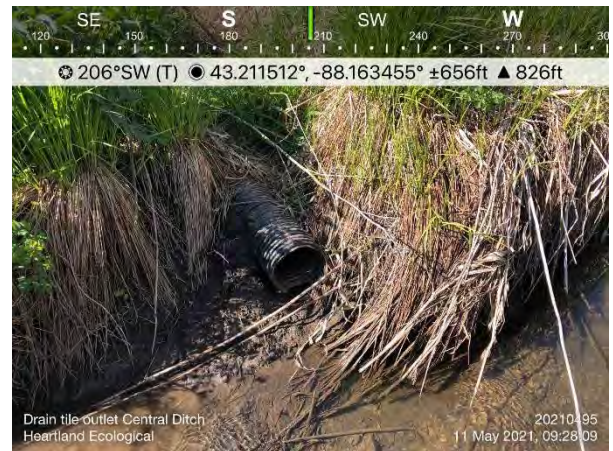


Photo #10 Photo of drain tile outlet located in the central ditch (WW-1)



Photo #11 Photo of western portion of central ditch (WW-1) from culvert crossing



Photo #12 Photo of western portion of central ditch (WW-1) from culvert crossing



Photo #13 Sample point P1



Photo #14 Sample point P1



Photo #15 Sample point P1



Photo #16 Sample point P1



Photo #17 Sample point P2



Photo #18 Sample point P2



Photo #19 Sample point P2



Photo #20 Sample point P2



Photo #21 Sample point P3



Photo #22 Sample point P3



Photo #23 Sample point P3



Photo #24 Sample point P3



Photo #25 Sample point P4



Photo #26 Sample point P4



Photo #27 Sample point P4



Photo #28 Sample point P4



Photo #29 Sample point P5



Photo #30 Sample point P5



Photo #31 Sample point P5



Photo #32 Sample point P5



Photo #33 Sample point P6



Photo #34 Sample point P6



Photo #35 Sample point P6



Photo #36 Sample point P6



Photo #37 Sample point P7



Photo #38 Sample point P7



Photo #39 Sample point P7



Photo #40 Sample point P7



Photo #41 Sample point P8



Photo #42 Sample point P8



Photo #43 Sample point P8



Photo #44 Sample point P8



Photo #45 Sample point P9



Photo #46 Sample point P9



Photo #47 Sample point P9



Photo #48 Sample point P9



Photo #49 Sample point P10



Photo #50 Sample point P10



Photo #51 Sample point P10



Photo #52 Sample point P10



Photo #53 Sample point P11



Photo #54 Sample point P11



Photo #55 Sample point P11



Photo #56 Sample point P11



Photo #57 Sample point P12



Photo #58 Sample point P12



Photo #59 Sample point P12



Photo #60 Sample point P12



Quam Engineering, LLC.
STH 175 Parcel
Project #: 20210495
January 10, 2022

Appendix E | Delineator Qualifications



March 22, 2021

Eric Parker
Heartland Ecological Group, Inc.
4821 Elm Island Circle
Waterford, WI 53185

Subject: 2021 Assured Wetland Delineator Confirmation

Mr. Parker,

This letter provides Wisconsin Department of Natural Resources (WDNR) confirmation for the wetland delineations you conduct during the 2021 growing season. You and your clients will not need to wait for the WDNR to review your wetland delineations before moving forward with project planning. This will help expedite the review process for WDNR's wetland regulatory program. Your name and contact information will continue to be listed on our website at: <http://dnr.wi.gov/topic/wetlands/assurance.html>.

In the instance where a municipality may require a letter of confirmation for your work prior to moving forward in the local regulatory process, this letter shall serve as that confirmation. Although your wetland delineations do not require WDNR field review, inclusion of a Wetland Delineation Report is required for projects needing State authorized wetland, waterway and/or storm water permit approvals.

If you or any client has a question regarding your status in the Wetland Delineation Professional Assurance Program, contact me by email at kara.brooks@wisconsin.gov or phone at 414-308-6780. Thank you for all your hard work and best wishes for the upcoming field season.

Sincerely,

Kara Brooks
Wetland Identification Coordinator
Bureau of Watershed Management



Eric C. Parker, SPWS

Principal Scientist
506 Springdale Street
Mount Horeb, WI 53572
eric@heartlandecological.com
(414) 380-0269



Mr. Parker is a Senior Professional Wetland Scientist and Professionally Assured Wetland Delineator in Wisconsin with 33 years of experience assisting public and private clientele. He has completed wetland projects in other states including IL, IN, OH, MI, ND, MO, PA, TX, MD, VA, and NC. His work has supported thousands of institutional, commercial, utility, residential, industrial & transportation projects. Mr. Parker's natural resource specialties include botanical surveys, wetland science, restoration and mitigation, and environmental corridor mapping. He has a widespread understanding of the scientific, technical, and regulatory aspects of natural resources projects. His interests also include floristic quality assessment (FQA) and wetness categorization of plant species.

Mr. Parker's experience includes the following: Botanical / Biological Surveys and Natural Resource Inventories; Rare Species Surveys, Conservation Plans and Monitoring; Wetland Determination, Delineation and Functional Assessment; Wetland Exemptions; Environmental Corridor Determinations/Mapping; Wetland Restoration, Mitigation, Banking and Monitoring; Habitat Restoration, Wildlife Surveys, SCAT surveys, Environmental Assessments; Local, state, federal permit applications; Expert Witness testimony; and Regulatory permit compliance.

Education

BS, Watershed Management, Soils Minor
University of WI - Stevens Point, 1983

Wetland Ecosystems (including delineation & assessment), USEPA Graduate School Washington DC, 1988

Field Oriented Wetland Delineation Course (1987 Corps Manual) Wetlands Training Institute (WTI) St. Paul, MN, 1994

Basic Wetland Delineation Training Wisconsin Dept. of Administration Waukesha, WI, 1997

Vegetation Description, UWM Cedarburg Bog Field Station, Saukville, WI, 1998

Advanced Wetland Delineation, U. of WI - La Crosse, Bayfield County, WI, 2001

Critical Methods in Wetland Delineation, University of WI - La Crosse Continuing Education and Extension, Madison, WI, 2006, 2008, 2010, 2014, 2016-2020

Mosses ID & Ecology, UWM Cedarburg Bog Field Station, Saukville, WI, 1998

Sedges ID & Ecology, UWM Cedarburg Bog Field Station, Saukville, WI, 2002, 2006, 2010

Grasses ID & Ecology, UWM Cedarburg Bog Field Station, Saukville, WI, 1998

Registrations

Senior Professional Wetland Scientist #838, (SPWS), Society of Wetland Scientists Professional Certification Program, 1995-current

Certified Wetland Scientist #C-058, (CWS), Stormwater Management Commission Lake County, IL, 2002-current

Qualified Wetland Review Specialist #W-057, (QWRS), Kane County, IL, 2006-current



Project Experience

Wetland Delineation & Regulatory Support

2020 Wetland Delineations, Exemption Submittals, and Permitting (90 sites)

Courtney Street Storage Buildings, Racine Co., WI (Feb); 86th Ave & STH 165 Parcel, Kenosha Co., WI (Feb-Apr); Harris Gravel Pit, Dane Co., WI (Mar-Apr); Alliant Birnamwood Substation, Shawano Co., WI (Apr); Rolling Meadows Drive Parcel, Fond du Lac Co., WI (Apr); Lieds Nursery Site, Waukesha Co., WI (Apr); Plas-Tech Engineering Site, Walworth Co., WI (Apr); Fink Parcel, Racine Co., WI (Apr); Lot 1 Proposed CSM 3258, Racine Co., WI (Apr); Harris Gravel Pit, Dane Co., WI (May); Schumacher Rd Reconstruction, Dane Co., WI (Apr); Whitetail Ridge Ph2, Kenosha Co., WI (Apr), Kelly Pit Addition, Dane Co., WI (Apr); Myrtle Way Road Improvements, Rock Co., WI (Apr); Pewaukee Industrial Park South, Waukesha Co., WI (May); Mueller Property, Fond du Lac Co., WI (Apr); 3901 Kipp Street Site, Dane Co., WI (Apr); Witte Parcels, Dane Co., WI (Apr); Sandalwood Lots 7-8, Oconto Co., WI (Apr); Yellowstone Outdoor Resort, Lafayette Co., WI (Apr); S&L Underground Expansion, Columbia Co., WI (May); 200 Baraboo Street, Sauk Co., WI (May); Jefferson Pit, Jefferson Co., WI (May); Rock Point Village, Waukesha Co., WI (May); Blanchardville Coop Oil & NGSD Parcels, Green Co., WI (May); Logtown Development, Sauk Co., WI (Jun); Maple Ave Property, Waukesha Co., WI (May); Wanasek Property, Racine Co., WI (May); Meier Farms, Dane Co., WI (Jun); 76th & Ryan Site, Sauk Co., WI (May); Milton Townline Road Site, Rock County, WI (May); Somers Multi-family Site, Kenosha Co., WI (May); Cazenovia WWTP Expansion, Waukesha Co., WI (Jun); Waukegan Property, Lake Co., IL (Jun); Ozaukee Christian School, Washington Co., WI (Jun); Kohler Distribution Center, Sheboygan Co., WI (Jun); Veterans Memorial Park West Site, Kenosha County, WI (Jun); Veterans Memorial Park East Site, Kenosha County, WI (Oct); Bristol Commons Site, Kenosha Co., WI (Jun); Barels Property, Racine Co., WI (Jun); Rogich Property, Milwaukee Co., WI (Jun); CTH MM Intersection Reconstruction, Dane Co., WI (Jul); Rose Property, Racine Co., WI (Jun); Baldev Court Property, Ozaukee Co., WI (Jul); Paul-Meghan Dominie Property, Dane Co., WI (Jul); Union Court Site, Kenosha Co., WI (Jul); Webcrafters Parcels, Dane Co., WI (Jul); Site Security Upgrades Site, Waukesha Co., WI (Jul); Scuppernong Creek Site, Waukesha Co., WI (Jul); W9030 Oak Ridge Road Property, Jackson Co., WI (Jul); Cherokee Golf Course, Dane Co., WI (Aug); W3948 South Shore Drive, Walworth Co., WI (Aug); Caledonia Multifamily Site, Racine Co., WI (Aug), Mittelstaedt Property, Sauk Co., WI (Aug); 1525 Bryce Drive Parcel, Winnebago Co., WI (Sep); Platten Property, Outagamie Co., WI (Sep); St. Mary's Springs Site, Fond du Lac Co., WI (Sep); Fairway Village Site, Ozaukee Co., WI (Sep); Quarry Park Site, Waukesha Co., WI (Sep); CTH F-Concord Site, Jefferson Co., WI (Sep); HJ Williams Farm, Adams Co., WI (Oct); STH 16-Lisbon Rd Parcel, Waukesha Co., WI (Sep); Golden Lake Road Property, Waukesha Co., WI (Sep); 4522 CTH P Parcel, Washington Co., WI (Sep); Darby Farms, Kenosha Co., WI (Sep); 227 Sussex Street, Waukesha Co., WI (Sep); Lexus of Brookfield Site, Milwaukee Co., WI (Sep); Wesner Greenfield Ave Parcels, Waukesha Co., WI (Sep); Oriole Lane Parcels, Ozaukee Co., WI (Oct); Wayside Parkview Estates, Brown Co., WI (Sep); Wind Point Parcel, Racine Co., WI (Oct); Geneva National Lot 18-23, Walworth Co., WI (Oct); Badger Farm, Racine Co., WI (Oct); Dorset Corners Substation, Monroe Co., WI (Sep); Covered Bridge Rd Site, Ozaukee Co., WI (Oct); Trek Distribution Center, Jefferson Co., WI (Oct); Craftsman Drive Parcel, Waukesha Co., WI (Oct); Village Green Subdivision, Ozaukee Co., WI (Oct); Ansay Farm, Ozaukee Co., WI (Oct); Zenner Farm Property, Racine Co., WI (Oct); West Snell Rd Site, Winnebago Co., WI (Oct); Kenosha County Bridges, Kenosha Co., WI (Oct); Confidential Site Janesville, Rock Co., WI (Oct); Janesville Airport Site, Rock Co., WI (Oct); 10920 West Liberty Drive, Milwaukee Co., WI (Oct); V of River Hills 53-Acre Site, Milwaukee Co., WI (Oct); Hwy 14 & Lacy Rd Site, Dane Co., WI (Oct); Wilderness Way Parcel, Waukesha County, WI (Oct); Hummingbird Lane Parcel, Sheboygan Co., WI (Oct); Plainview Rd Site, Waukesha Co., WI (Nov); Delimat Property, Kenosha Co., WI (Nov); 11900 N Port Washington Rd Parcel, Ozaukee Co., WI (Nov); Canopy Hills Artificial Wetland, Racine Co., WI (Dec); Strauss Brands Facility, Milwaukee County, WI (Dec).

2019 Wetland Delineations, Exemption Submittals, and Permitting (39 sites)

North Hills Subdivision, Waukesha Co., WI (Jan); Prairie Walk Subdivision, Waukesha Co., WI (Apr); Loomis Parcel Determination, WI (Mar-Apr); Lamminem Parcel, Kenosha Co., WI (Apr); Lot 103 Burlington, Racine Co., WI (Apr); 7220 Ryan Rd Parcel, Milwaukee Co., WI (Apr); 1-Acre Franklin Parcel, Milwaukee Co., WI (June); 256th Ave Site, Kenosha Co., WI (May); 915 Main St Mukwonago, Waukesha Co., WI (May); Muskego Lakes CC, Muskego, Waukesha Co., WI (June), Bonniwell Road Parcel, Ozaukee Co., WI (July); 333 Portland Rd Site, City of Waterloo, Jefferson Co., WI (May); Thompson Lane Parcel, Village of Chenequa, Waukesha Co., WI (May); Schmitz Redi-Mix Site, Village of Mt. Pleasant, Racine Co., WI (June); New Berlin Redi-Mix Site, City of New Berlin, Waukesha Co., WI (May); Elm Grove Road Basin, City of New Berlin, Waukesha Co., WI (May); Lathrop-Meacham Parcels Mitigation Site, Village of Mt. Pleasant, Racine Co., WI (May-July); Lot



18-31 Geneva National Site, Town of Geneva, Walworth Co., WI (July); Bohner's Lake Parcel, Town of Burlington, Racine Co., WI (Sept); 6970 South 6th St., City of Oak Creek, Milwaukee Co., WI (Aug); Weatherstone Meadows site, City of New Berlin, Waukesha Co., WI (Aug); Parkview Apartments site, Village of Somers, Kenosha Co., WI (Aug); Volkswagen Expansion site, Village of Pleasant Prairie, Kenosha Co., WI (Aug); Pewaukee-Brookfield Trail, Waukesha Co., WI (Aug-Sept); Parcel 1268-993, City of New Berlin, Waukesha Co., WI (Aug); Germantown Industrial Business Park, Washington Co., WI (Oct); Haasch- Finger site, City of Brookfield, Waukesha Co., WI (Oct); Kennedy Property, Village of Waunakee, Dane Co., WI (Oct); Jefferson County Interurban Trail, Towns of Watertown and Ixonia, Jefferson Co., WI (Oct); Mukwonago Residential Parcel, Village of Mukwonago, Waukesha Co., WI (Oct); Pine Ridge Estates, City of Oconomowoc, Waukesha Co., WI (Oct); Silver Lake Parcels, Village of Salem Lakes, Kenosha Co., WI (Oct); New Berlin Trail Phase II, City of Waukesha, Waukesha Co., WI (Oct); 1910 W Puetz Road site, City of Oak Creek, Milwaukee County, WI (Oct); Project Redline, Village of Menomonee Falls, WI (Oct); CSM 3232 Oulot 1, Village of Mt. Pleasant, Racine Co., WI (Oct); Plant Community Mapping and Assessment, City of Oak Creek, Milwaukee Co., WI (Nov); Faber Property, Village of Williams Bay, Walworth Co., WI (Nov); Campus Drive Property, Village of Hartland, Waukesha Co., WI (Dec).

Example 2018 Wetland Delineations in WI and IL (50 sites)

Homestead Acres, Racine Co., WI (Apr); Greenmeadows, Racine Co., WI (Apr), Wind Point School, Racine Co., WI (Apr); Vintage Parc East, Kenosha Co., WI (Apr); Nelson-Heckel, Kenosha Co., WI (Apr); Caledonia Storage, Racine Co., WI (Apr); New Berlin Storage, Waukesha Co., WI (Mar); Manke Gravel Pit, Columbia Co., WI (May); Drissel-Wallace, Kenosha Co., WI (May); LaBelle Golf Course, Waukesha Co., WI (May); Waterloo Aluminum, Jefferson Co., WI (May); Salem Business Park, Kenosha Co., WI (May); Audubon Arboretum, Racine Co., WI (May); Briarwood, Racine Co., WI (May); Basting-Brown Parcels, Waukesha Co., WI (May); 84-Acre Site, Racine Co., WI (May); Jolenta Lane, Waukesha Co., WI (Apr); Rock Road Storage, Walworth Co., WI (May); Wildwood Creek, Winnebago Co., WI (Jun); Green Bay Site, Brown Co., WI (Jun); Main Street Market, Kenosha Co., WI (Jul), Armstrong Eddy Park, Rock Co., WI (May), Hickory St Site, Ozaukee Co., WI (Jun), Parcel DW 800004, Walworth Co. (Jun); Lot 8 Parcel WCA-0003, Walworth Co., WI (Jun); RRR Grundy, Kane Co., IL (Jul); Coleman Norris Parcel, Waukesha Co., WI (Jul); Deaton Parcel, Kenosha Co., WI (Aug); Hintz Parcel, Washington Co., WI (Aug); Loomis-Ryan Rds Site, Milwaukee Co., WI (Aug); Grass Parcels, Waukesha Co., WI (Sep); Mallard Ridge Landfill Pipeline, Walworth Co., WI (Sep); Glacier Ridge Landfill Pipeline, Dodge Co., WI (Sep); Ravenwoods, Waukesha Co., WI (Aug); Canopy Hills, Racine Co., WI (Sep); Duck Pond, Kenosha Co., WI (Sep); Splinter Parcels, Racine Co., WI (Oct); Berget Parcel, Walworth Co., WI (Sep); Saylesville Rd Parcel, Waukesha Co., WI (Oct); Racine Ave-Lawnsdale Rd Parcel, Waukesha Co., WI (Oct); Braun Rd-90th St Parcel, Racine Co., WI (Oct); Grafton Parcels, Ozaukee Co., WI (Dec); Crawford Parcel, Racine Co., WI (Nov); Kotas Parcels, Racine Co., WI (Nov); Altamount Acres South, Racine Co., WI (Dec); Christina Estates, Racine Co., WI (Dec); Christina Estates NE, Racine Co., WI (Dec); Lathrop Parcel, Racine Co., WI (Dec); Hillside Ridge, Waukesha Co., WI (Dec); Stolz Property, Waukesha Co., WI (Dec).

Example 2017 Wetland Delineations in WI, MI, IN, and IL (31 Sites)

Back 40 Mine, Menominee Co., MI (Jan); Oakdale Rd Site, Waukesha Co., WI (Sep), Birds Eye Foods, Walworth Co., WI (Sep); Boss Property, Leelanau Co., MI (Jul); Brighton Estates, Waukesha Co., WI (Sep); Saltzman North, Waukesha Co., WI (Sep); Susnar Parcel, Waukesha Co., WI (Sep); Wrenwood Site, Washington Co., WI; Chorneyko Site, Walworth Co., WI (Apr); CN Railroad Bridges-6 Sites, Fond du Lac & Winnebago Co's, WI; CN Railroad Freeport Culvert, Kane Co., IL (May); Herrling Site, Dane Co., WI (Sep); MMSD Sewerage Project, Milwaukee Co., WI (May); Spring St Site, Racine Co., WI (Oct); Goshen Midway Cell Tower, Elkhart Co., IN (Apr); Two Creeks Utility Site, Manitowoc Co., WI (Nov); Suncast Site, Kane Co., IL (Dec); Lot 51 Lakeview Corp Park, Kenosha Co., WI (Oct); Lakefront Gun Range, Racine Co., WI (Oct); WI Club Golf Course, Milwaukee Co., WI (Apr); WisDOT Improvements, STH 32 Racine Co (Aug), STH 67 Walworth Co. (Sep), STH 20, Racine Co. (Oct), 27th St, Milwaukee Co. (Sep); Conference Point Boat Launch, Walworth Co., WI (Oct); Lake View RR Corridor, Portage Co., WI (Sep).

Example 2016 Wetland Delineations in WI, OH, MI and IL (Mostly Large Projects)

AEP Wavery-Adams-Seaman 138 kV Trans. Line Rebuild, Adams & Pike Co's, OH (Dec); Kansas West-Faraday Trans. Line Rebuild-Macon, Moultrie, & Coles Co's, IL (Jan), Riveredge Nature Center Preliminary, Ozaukee Co., WI (Feb); Lost Creek Mitigation Site, Portage Co., WI (Jun); I-41 Burleigh to Good Hope Corridor WisDOT, Milwaukee Co., WI (Jul); STH 60 Corridor, Ozaukee & Washington Co's, WI (Aug-Oct); Erin Hills Golf Course, Washington Co., WI (Sep); Back 40 Mine, Menominee Co., MI; Lake Zurich SW Cell Tower, Lake Co., IL (Oct); Acme Steel Coke Site, Cook Co., IL (Dec).



Example 2015 Wetland Delineations in WI, IL, and MO (Mostly Large Projects)

Bolser Street MO33211-M Cell Tower Site, Grundy Co., MO (Sep); Section 9 Site, Dane Co., WI (Apr); Franzel Rd Site, Bayfield Co., WI (Apr); Big Eau Pleine Mitigation Site, Marathon Co., WI (Aug); Taylor Road Siding Track, Jackson Co., WI (Nov); UPS-CACH Site, Cook Co., IL (Jun); Eggers Woods Forest Preserve, Cook Co., IL (Mar).

Example 2014 Wetland Delineations in WI, IL, and MI (Mostly Large Projects)

Emerald Park Western Expansion, Waukesha Co., WI (Oct); Arcadia Mining Site-Trempealeau Co., WI (Apr); Kalamazoo River Parcel, Kalamazoo and Calhoun Co's, MI (Jul); G2 Mitigation Site - Winnebago Co., WI (May); Line 6A MP 378.94, McHenry Co., IL (Sep); Geneva National Site, Walworth Co., WI (Nov); Nortrax Site -Lincoln Co., WI (Oct); Toberman Parcel- Crawford Co., WI (Oct).

Example 2013 Wetland Delineations in WI, IL, OH, and MI (Mostly Large Projects)

West Central Lateral - Eau Claire, Clark, Jackson & Monroe Co's, WI (Apr-May); Walker Cranberry 80- acre Parcel – Jackson Co., WI (Sept - Oct); Berne to Natrium Pipeline, Monroe Co., OH (Oct); CNX Noble Pipeline – Noble Co., OH (Oct); Deer Grove Forest Preserve, Cook Co., IL (Nov).

Example 2012 Wetland Delineations in WI, IL, IN, and TX (Mostly Large Projects)

West Central Lateral (190 miles), Eau Claire, Clark, Jackson & Monroe Co's, WI (Sep-Nov); Morrison Creek Cranberry Parcel, Jackson Co., WI (Aug); London Mitigation Site, Jefferson Co., WI (July); Southern Access Pipeline, Sawyer & Washburn Co's, WI (Jun); I-80 Interchange, LaPorte Co., IN (Mar); Eagle-Ford Shale Plays, LaSalle & McMullen Co's, TX (Jan-Feb).

I-94 Corridor Wetland and Primary Environmental Corridor Mapping and Endangered Species Study, Milwaukee, Racine, and Kenosha Counties, WI (Project Manager and Lead Scientist)

Primary Environmental Corridor Delineation Parkview Site, Village of Somers, WI (Lead Scientist)

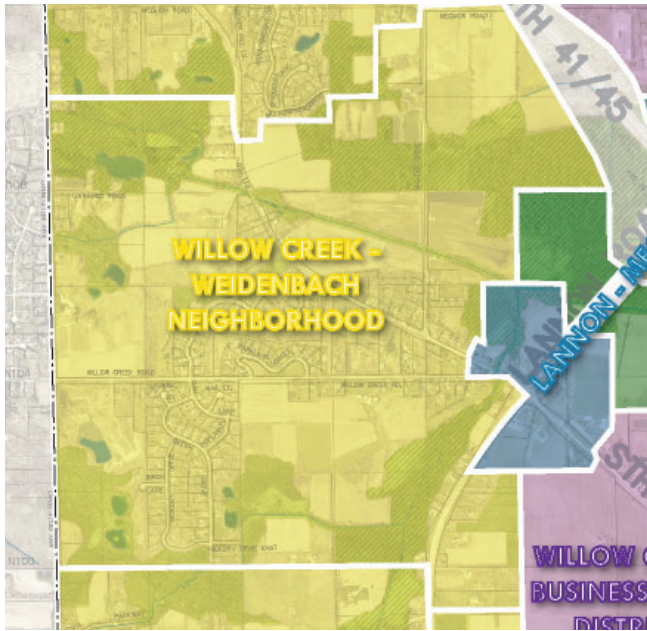
Elm Road Generating Station, Oak Creek & Caledonia, WI (Project Manager & Lead Scientist)

Tri-State Tollway, Deerfield Plaza Wetland and Endangered Species Investigation, Lake and Cook Counties, IL (Lead Scientist)

Guardian II Laterals, Fox Valley, Hartford and West Bend, WI (Project Manager and Lead Scientist)

ATC Paris to St. Martins (KK3025) 138KV Line Rebuild, Kenosha, Racine and Milwaukee Counties, WI (Project Manager and Lead Scientist)

Willow Creek-Weidenbach NEIGHBORHOOD



SPECIAL FEATURES

Transportation The Willow Creek - Weidenbach neighborhood is bounded by the western limits of the Village and the Lannon-Mequon Road Corridor to the east. Appleton Avenue (Hwy 175 runs from the north central area of the neighborhood, south and east to connect with Lannon Road, which provides access to I-41.

Environmental, Natural & Agricultural Environmental corridor areas make up a large portion of the northern, eastern and southern areas of the neighborhood. Much of the remaining undeveloped area is in agricultural row crop production.

Public Park, Education, Safety & Utility Weidenbach Park is located in the south-central area of the Weidenbach neighborhood, containing 4 acres. This neighborhood is located outside the Sewer Service Area. Residential lots are served by onsite septic and well water.

GENERAL CHARACTER

The Willow Creek-Weidenbach neighborhood is a predominantly single-family residential neighborhood located in the southwest area of the Village. The neighborhood is home to residential subdivisions north and south of Willow Creek Road and along Appleton Avenue, pre-existing commercial properties scattered along Appleton Avenue and individual large-lot residential lots and agricultural parcels throughout the neighborhood. Residential zoning within this neighborhood is predominantly Rs-4 (2.2 DU's/acre with minimum 20,000 sqft lots) and Rs-2 (.5 DU's/acre with minimum 2-acre lots).

PREFERRED FUTURE LAND USE

Willow Creek-Weidenbach Neighborhood

Preferred Future Land Uses												Enviro Corr.	SSA	Preferred Site Design			Maximum Density (residential uses)
Existing Uses (+ existing non-conforming zoning) See NOTE 5 for details	Residential: Single Family	Residential: Two to Four Family	Residential: Multi-family / Senior	Mixed-Use: Commercial / Residential	Mixed-Use: Commercial / Industrial	Commercial (includes "Activity Centers")	Institutional	Open Space & Recreational	Mineral Extraction	Industrial	Agricultural / Hobby Farming / Agribusiness	Contains an Environmental Corridor?	Sewered? (Y/N/Partial)	Traditional Neighborhood	Suburban Subdivision	Conservation Subdivision**	Dwelling Units / Acre See NOTE 4 for details
A	D	u	u	u	u	u	u	D	u	u	D	Yes	No	A	U	D	see NOTE 2 and NOTE 3

Desirable future land uses within the Willow Creek-Weidenbach neighborhood include undeveloped open space, recreational areas, agricultural and hobby farm uses, and limited residential development given that this neighborhood is currently outside of the sewer service area. Future residential development is acceptable at an average density of 1 DU/5 acres for 4 or fewer individual lots created by minor land division (certified survey map), or 1 DU/3 acres for 5 or greater conservation subdivision lots.

In the event that the SSA is expanded and public sewer and water facilities extended into this neighborhood, future residential development is acceptable at an average density of 2.2 DU's/acre for 4 or fewer lots created by minor land division (certified survey map)

D =	Desirable – These uses should be encouraged because they are consistent with, support, and enhance the desired character of the area.
A =	Allowable – These uses are generally considered appropriate for the area, but may require additional consideration and/or specific modification or developed features to be compatible with other uses in the area.
u =	Undesirable – These uses should not be encouraged but may still be acceptable for the area under special circumstances.

or 3.5 DU's/acre for 5 or more lots in a conservation subdivision.

Other than the pre-existing commercial parcels along Appleton Avenue, no additional commercial uses are intended to develop in this neighborhood.

NOTE 2:	Neighborhood in SSA (w/ water & sewer)	2.2 units/ acre (4 or fewer CSM lots)
		3.5 units/acre with Conservation Subdivision (5 or greater lots subdivided)
NOTE 3:	Neighborhood outside SSA (no sewer & water)	1 unit/ 5 acres (4 or fewer CSM lots)
		1 unit/ 3 acres with Conservation Subdivision (5 or greater lots subdivided)

See all notes on page 42.

Jeff Retzlaff

To: Jeff Retzlaff
Subject: FW: June 9 PC Meeting
Attachments: 2025-06-06_comments.pdf

From: Kevin Driscoll <kdriscoll@Germantownwi.gov>
Sent: Friday, June 6, 2025 2:12 PM
To: Jeff Retzlaff <jretzlaff@germantownwi.gov>
Subject: Re: June 9 PC Meeting

Jeff,

They need to REVISE AND RESUBMIT.

1. Applicant to follow the Development Handbook. See attached.
2. Missing cover page. Add cover page.
3. Sheet C1.01 - Missing benchmarks. Show reference datum.
4. Sheet C1.02 - Existing stockpiles. Are those to remain?
5. Sheet C1.03 - Storm Water Pond is shown at 850.5. That corresponds to the new floodplain elevation.
6. Sheet C1.04 - Show drainage path, (per 1.3.2.10 & 1.3.2.16) and slope at 1.5% minimum (per 4.1.5)
7. Sheet C1.05 - Proposed berm elevation of 853 around proposed storm water pond. No fill allowed in any future floodplain once maps adopted.
8. Sheet C1.05 - Elevations to match sheet C2.02
9. Sheet C2.01 - follow WDNR BMPs
10. Sheet C2.02 - Elevations to match sheet C1.05

Kevin R. Driscoll, P.E.

Village Engineer

(262) 250-4724 - office

(414) 745-9999 - mobile

N112 W17001 Mequon Road

Germantown, WI 53022-0337



1 CONSTRUCTION PLAN REQUIREMENTS

1.1 GENERAL SPECIFICATIONS

1.1.1 Sheet Requirements

1.1.1.1 Plans submitted for approval shall be on "D" size paper, 24-inches x 36-inches. The only exception is the master grading plan. The master grading plan shall not exceed a size of 30-inches x 36-inches and shall show the entire development if possible. If additional sheets are required match lines shall be used. Plans may be submitted electronically on a flash drive or through a file sharing program and/or on 11-inch x 17-inch paper if approved by Director of Public Works. If submitted electronically, the drawings shall be a .pdf file type.

1.1.1.2 Plans shall be drawn to a recognized Engineering scale, i.e.: 1" = 40' or 1" = 50' horizontal and 1" = 4', 1" = 5' vertical.

1.1.1.3 Plans shall use local datum (NVGD 1988 datum) in establishing benchmarks and elevations.

1.1.1.4 Title blocks are required on each plan page and shall include all of the following fields:

1.1.1.4.1 Consulting Firm and Contact Information

1.1.1.4.2 Drawn By

1.1.1.4.3 Designed By

1.1.1.4.4 Checked By

1.1.1.4.5 Date

1.1.1.4.6 Scale

1.1.1.4.7 Revision History

1.1.1.4.8 Project Name

1.1.1.4.9 Project Location

1.1.1.4.10 Plan Sheet Type

1.1.1.4.11 Sheet Number

1.1.1.5 Stationing shall be at 100-foot intervals from South to North or West to East and shall be indicated on plan and profiles. Every 100-foot station shall be noted.

1.1.1.6 Each set of plans, drawings, documents, specifications, and reports shall be signed, dated, and stamped by a registered Professional Engineer in the State of Wisconsin, according to the Wisconsin Administrative Code Chapter A-E 2(4). The design Engineer shall bear the responsibility for the coordination of submitting all development plans for review. Any plans that are submitted without a professional seal will be rejected.

1.1.1.7 A cover sheet is required for the plan set. The cover sheet shall include a 1" =200' scale drawing of the project area that shows the locations of the proposed improvements. Plan sheets shall be indexed on this 200-scale system plan. NAD83 and NAVD88 are to be used.

1.1.1.8 Each cover sheet shall show the locations, elevations, and descriptions of the project benchmarks as established by the project surveyor. The cover sheet shall also show a location map with township, range, and section labeled.

1.1.1.9 Profile view shall be located below the plan view on plan/profile drawings and the two views should be in alignment vertically.

1.1.1.10 Each plan sheet shall show a north arrow. North direction shall be to the top or to the right of the sheet and indicated by a north arrow.

1.1.1.11 A legend shall be included in the plan set to designate line types.

1.1.1.12 Four (4) sets of all preliminary plans and specifications shall be submitted for initial review and corrections. Plans and support documents (i.e. stormwater management report, maintenance agreement, etc.) requiring state approval from MMSD and DNR, shall be processed through the Village. After Village review and approval, the documents will be sent to the appropriate state agencies by the Village Engineer.

1.1.1.13 Two full size and two half size sets of approved complete construction plans and specifications which meet all the requirements shall be submitted to the Village at least three working days prior to the preconstruction meeting. The preconstruction meeting is to be overseen by the Director of Public Works or their designee. Failure to submit plans and specs within the required time frame will result in the cancellation of the preconstruction meeting. These construction plans shall include but not be limited to the following:

1.2 PLAN REVIEW

1.2.1 Detail Sheet

1.2.1.1 A minimum of five (5) working days shall be required for approval of any revisions or changes to previously approved plans. The approval shall be in writing from the Village Engineer. No construction related to these proposed revisions or changes shall proceed prior to the approval of such revisions.

1.2.1.2 Preliminary proposed and existing grading plans (with plan view of preliminary sanitary sewer) shall be reviewed prior to all other preliminary construction plans being submitted. Complete detail and calculations for detention/retention objectives should be shown.

1.2.1.3 Digger's Hotline number of 1-800-242-8511 shall be noted on the plan set.

1.2.1.4 All requirements of the Village of Germantown Municipal Code, the DNR, and MMSD shall be met.

1.2.1.5 A construction estimate including materials, quantities, and cost will be included with the plans for water, sanitary, roadway, storm water, and grading.

1.2.1.6 A copy of the approved plans shall be submitted to the Village on CD in AutoCAD v2020.

1.2.2 Plan View

1.2.2.1 Lot, block, street, property, ¼ section, and easement line shall be shown.

1.2.2.2 Lot and block numbers, subdivision name, and existing physical features shall be shown.

1.2.2.3 Lot or property frontage, street width and easement dimensions shall be indicated.

1.2.2.4 Street names shall be shown.

1.2.2.5 Street centerline shall be indicated.

1.2.2.6 Match lines shall be shown to next plan sheet.

1.2.2.7 Dimensions showing offset from right-of-way and proposed roadway or easement centerline to proposed utility alignment.

1.2.3 Profile View

1.2.3.1 Elevations shall be based on the Village of Germantown datum (NAVD88) and given to the nearest 0.01 of a foot. Benchmarks used shall be indicated on the plans.

1.2.3.2 Conversion factor to Milwaukee Metropolitan Sewerage District datum shall be shown on the plans. (-580.61')

1.2.3.3 Signage Plan

1.2.3.4 Sign types, locations, and regulations to be listed and clearly stated.

1.3 MASTER GRADING & DRAINAGE PLANS

1.3.1 General

1.3.1.1 Scale of the plans shall be 1" = 100' for the master plan and 1" = 40' for the individual plan sheets.

1.3.1.2 A note shall be prominently placed on each sheet of the Master Grading Plan indicating "The Village of Germantown shall not approve any grade change in excess of 0.25 feet unless authorized to do so by the Village Engineer."

1.3.2 Plan View shall show the following:

1.3.2.1 Subdivision boundary lines and all lot lines.

1.3.2.2 Adjoining and inclusive roadways and their names.

1.3.2.3 Contour lines at 2-foot intervals. These contour lines shall extend at least 100 feet into adjacent parcels. Contours shall show all offsite drainage that is tributary to the site. Existing contour lines shall be dashed while proposed contour lines shall be solid, with the 10-foot increments in boldface.

1.3.2.4 Existing and proposed culvert locations, invert elevations, sizes, and materials on and within 200 feet of the proposed development.

1.3.2.5 Existing and proposed storm sewer locations, invert elevations, sizes, and materials on and within 200 feet of the proposed development, including catch basins, manholes, inlets, and BMP's.

1.3.2.6 Location of existing trees with Diameter at Breast Height (DABH) and type.

1.3.2.7 Location of proposed topsoil stockpile.

1.3.2.8 Proposed building pad locations and finished floor elevation for each lot, which incorporate setbacks and offsets and show finished yard grade, and exposure grade, if applicable, elevations to the nearest tenth of a foot. If it is desirable to maintain post grading/pre-building construction yard grades low, to not exceed 1.5 feet, it shall be noted prominently on plan.

1.3.2.9 Proposed elevations at all property corners.

1.3.2.10 Show all high points, low points, and overland drainage paths with elevations.

1.3.2.11 Notes required to sequence the construction activities (i.e. erosion and grading notes and plans which shall be done ahead of other operations on site to manage storm water runoff).

1.3.2.12 Specific details on all retention/detention basins, ponds, overflows, outlet structures, etc.

1.3.2.13 Obstructions within the project limits including but not limited to: trees, landscaping, fences, structures, light poles, etc.

1.3.2.14 Finished street centerline elevations shall be indicated at 100-foot stations, all intersections, cul-de-sacs, and other changes in slope. At vertical curves, elevations shall be shown at P.V.C., P.O.C., P.V.T. and at 25-foot intervals for curves 100 feet long or less. For vertical curves over 100 feet long, elevations at 50-foot intervals along the V.C., plus the P.O.C. and P.V.I.

1.3.2.15 Channel or swale flow-line elevations shall be indicated every 25 feet within public land or easement.

1.3.2.16 Arrows indicating path and direction of sheet flow shall be shown for each proposed lot.

1.3.2.17 Mapped wetland boundaries and 100-year floodplain shall be delineated along with setbacks.

1.3.2.18 Overflow discharge and overland flow path.

1.3.3 Grading Record Drawing

1.3.3.1 After finished grading is accomplished, a grading record drawing shall be created and submitted to verify conformance with the approved grading plan. The drawing shall consist of the following:

1.3.3.1.1 Use approved grading plan as the base sheet. Denote "record drawing" in bold letters at the top and specify the firm doing the record. Cross out the name of the design firm if different than the firm doing record drawings. Drawings should denote a Record Drawing (As-Built) Date.

1.3.3.1.2 Spot elevations in the center of all lot building pads to the nearest tenth of a foot.

1.3.3.1.3 Spot elevations at all property corners to the nearest tenth of a foot.

1.3.3.1.4 Crossroad culvert invert elevations to the nearest hundredth of a foot.

1.3.3.1.5 Flowline ditch elevations at every even station to the nearest tenth of a foot.

1.3.3.1.6 Berm elevations to the nearest tenth of a foot.

1.3.3.1.7 Spot elevations at all high and low points to the nearest tenth of a foot.

1.3.3.1.8 Verify topo lines as directed by the Village Engineer.

1.3.3.1.9 Field inlet grate elevations.

1.4 EROSION CONTROL PLAN

1.4.1 General

1.4.1.1 Plans shall conform to Chapter 17 Zoning Code, Section 17.44 Erosion Control of the Municipal Code.

1.4.1.2 Plans shall conform to The Wisconsin Stormwater Manual and the Wisconsin Construction Site Best Management Practice Handbook.

1.4.1.3 In certain instances, it is accepted to combine the grading and drainage plan with the erosion control plan, as long as all required items are discernible.

1.4.2 Plan View shall show the following:

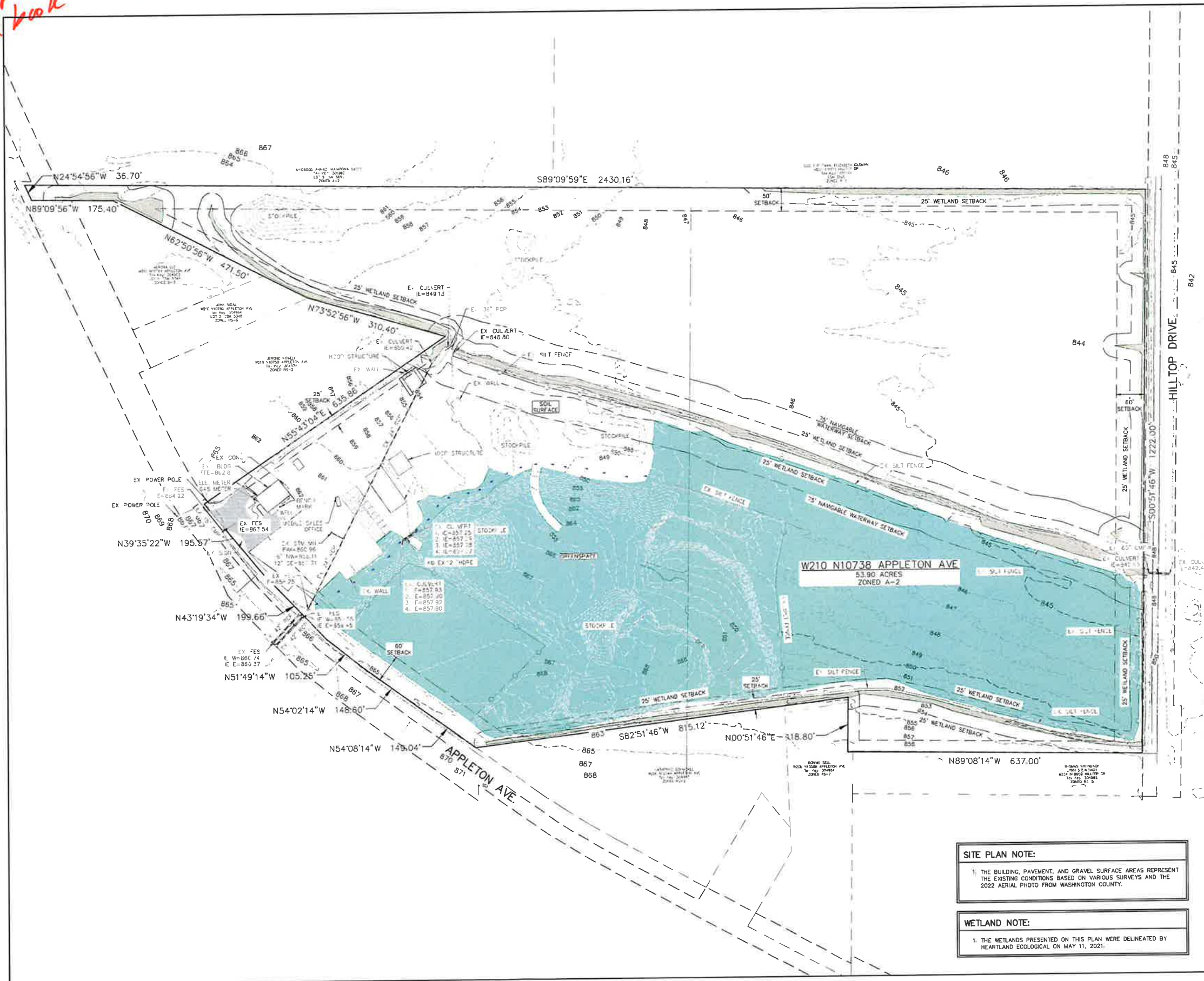
1.4.2.1 Site boundaries and adjacent lands.

1.4.2.2 Vegetative cover and soil type.

1.4.2.3 The limits of any areas which need special stabilization techniques.

1.4.2.4 Mapped wetland boundaries, 100-year floodplain, and watercourses shall be delineated along with setbacks.

Foreign Development Handbook - Missing cover sheet - missing benchmark references

[illegible]

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122 Wisconsin Street, West Bend, WI 53095
262 346 7800 www.parishse.com

PROJECT TITLE:
**TLC ACRES
W210 N10738 APPLETON AVENUE
GERMANTOWN, WI 53022**

PLAN TITLE:
**EXISTING
CONDITIONS
PLAN**

DRAWN BY:
WWS

DESIGNED BY:
EPN

CHECKED BY:
KJP

PLAN DATE:	6/5/2023
PROJECT NO:	ITL-05-2

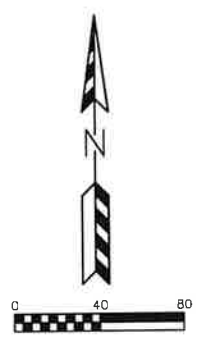
BID SE

SHEET NO:

C1.01

1. THE BUILDING, PAVEMENT, AND GRAVEL SURFACE AREAS REPRESENT THE EXISTING CONDITIONS BASED ON VARIOUS SURVEYS AND THE 2022 AERIAL PHOTO FROM WASHINGTON COUNTY.

1. THE WETLANDS PRESENTED ON THIS PLAN WERE DELINEATED BY HEARTLAND ECOLOGICAL ON MAY 11, 2021.



REVISIONS:

PASE
PARISH SURVEY & ENGINEERING
1122 Wisconsin Street, West Bend, WI 53095
608.246.7800
www.parishse.com

PROJECT TITLE:
**TLC ACRES
W210 N10738 APPLETON AVENUE
GERMANTOWN, WI 53022**

PLAN TITLE:
**EXISTING
CONDITIONS
WEST**

DRAWN BY: **WWS**
DESIGNED BY: **EPN**
CHECKED BY: **KJP**

PLAN DATE:
6/5/2025

PROJECT NO:
ITL-05-21

BID SET

SHEET NO:

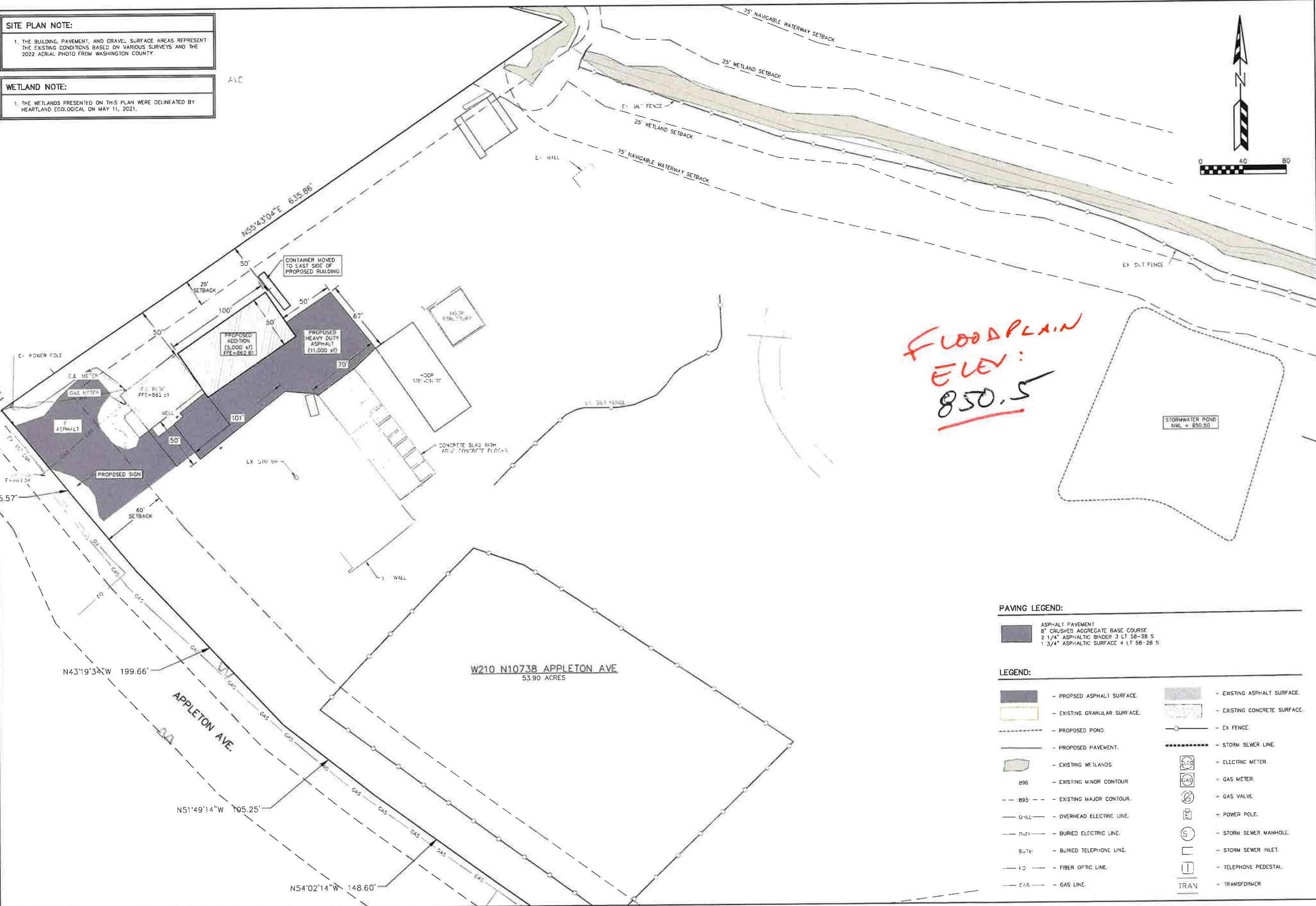
C1.02

LEGEND:

- | | | | |
|---|---------------------------------|---|------------------------------|
|  | = EXISTING CONCRETE SURFACE. |  | = EXISTING GRANULAR SURFACE. |
|  | = EXISTING OVERLAND FLOW ROUTE. |  | = EXISTING ASPHALT SURFACE. |
|  | = EXISTING WETLANDS. |  | = STORM SEWER LINE. |
| B96 | = EXISTING MINOR CONTOUR. |  | = ELECTRIC METER. |
| B95 | = EXISTING MAJOR CONTOUR. |  | = GAS METER. |
| O-EL | = OVERHEAD ELECTRIC LINE. |  | = GAS VALVE. |
|  | = BURIED ELECTRIC LINE. |  | = POWER POLE. |
|  | = BURIED TELEPHONE LINE. |  | = STORM SEWER MANHOLE. |
| FO | = FIBER OPTIC LINE. |  | = STORM SEWER INLET. |
|  | = GAS LINE. |  | = TELEPHONE PEDESTAL. |
|  | = FENCE. | TRAN | = TRANSFORMER. |

SITE PLAN NOTE:
1. THE BUILDING, PAVEMENT, AND GRAVEL SURFACE AREAS REPRESENT THE EXISTING CONDITIONS BASED ON VARIOUS SURVEYS AND THE 2022 AERIAL PHOTO FROM WASHINGTON COUNTY.

WETLAND NOTE:
1. THE WETLANDS PRESENTED ON THIS PLAN WERE DELINEATED BY HEARTLAND ECOLOGICAL ON MAY 11, 2021.



REVISIONS:	
NO.	DATE DESCRIPTION
PSE PARISH SURVEY & ENGINEERING 122 Wisconsin Street, West Bend, WI 53095 262.346.7800 www.parishse.com	
PROJECT TITLE: TLC ACRES W210 N10738 APPLETON AVENUE GERMANTOWN, WI 53022	
PLAN TITLE: SITE PLAN WEST	
DRAWN BY: WWS	
DESIGNED BY: EPN	
CHECKED BY: KJP	
PLAN DATE: 6/5/2025	
PROJECT NO: \TL-05-21\	
BID SET	
SHEET NO: C1.03	

SITE PLAN NOTE:

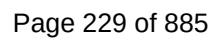
1. THE BUILDING, PAVEMENT, AND GRAVEL SURFACE AREAS REPRESENT THE EXISTING CONDITIONS BASED ON VARIOUS SURVEYS AND THE 2022 AERIAL PHOTO FROM WASHINGTON COUNTY.

WETLAND NOTE:

1. THE WETLANDS PRESENTED ON THIS PLAN WERE DELINEATED BY THE WETLANDS ECOLOGICAL, ON MAY 11, 2021.

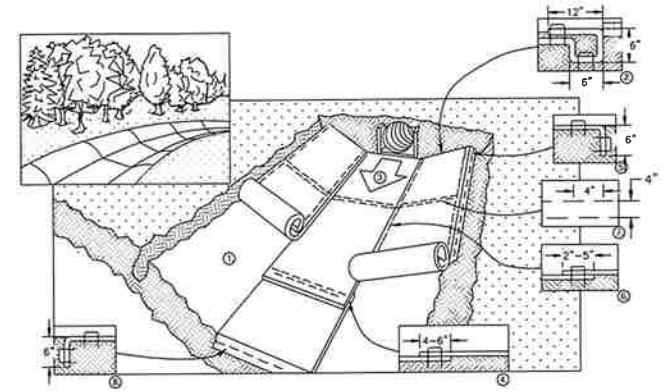


IS THIS FILL
IN THE
NEW/PROP.
Floodplain?



Follow WADR BMP's For ETC

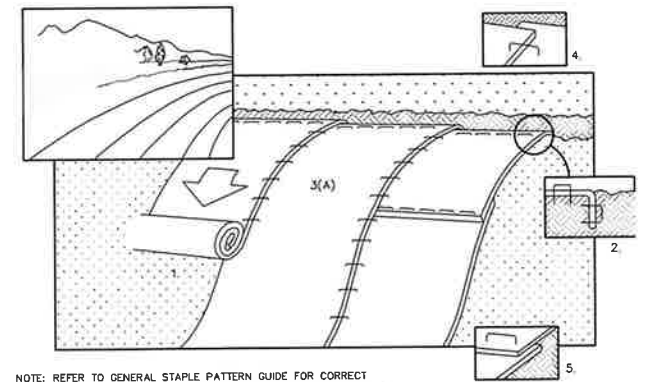
MAXIMUM PERIOD OF BARE SOIL FOR SLOPES > 20%		
SLOPE AREA DRAINS TO SEDIMENT BASIN OR SEDIMENT TRAP?	MAXIMUM PERIOD OF BARE SOIL EXPOSURE (CALENDAR DAYS)	
LAND DISTURBANCE BETWEEN SEPTEMBER 16TH AND MAY 1ST	LAND DISTURBANCE BETWEEN MAY 2ND AND SEPTEMBER 15TH	
YES	90	90
NO	60	30



1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING APPLICATION OF FERTILIZER AND SEED.
2. BEGIN AT THE TOP OF THE CHANNEL BY ANCHORING THE BLANKET IN A 6" DEEP X 6" WIDE TRENCH WITH APPROXIMATELY 12" OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" 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 THE SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS RECOMMENDED BY THE MANUFACTURER.
4. PLACE CONSECUTIVE BLANKETS END OVER END (SHINGLE STYLE) WITH A 4"-6" OVERLAP. USE A DOUBLE ROW OF STAPLES STAGGERED 4" APART AND 4" ON CENTER TO SECURE BLANKETS.
5. FULL LENGTH EDGE OF BLANKETS AT TOP OF SIDE SLOPE MUST BE ANCHORED WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN A 6" DEEP X 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
6. ADJACENT BLANKETS MUST BE OVERLAPPED APPROXIMATELY 4" AND STAPLED.
7. A STAPLE CHECK SLOT IS RECOMMENDED AT 30 TO 40 FOOT INTERVALS. USE A DOUBLE ROW OF STAPLES STAGGERED 4" APART AND 4" 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" APART IN A 6" DEEP X 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.

NOTE: ALL STAPLES MUST BE 6" OR GREATER IN LENGTH

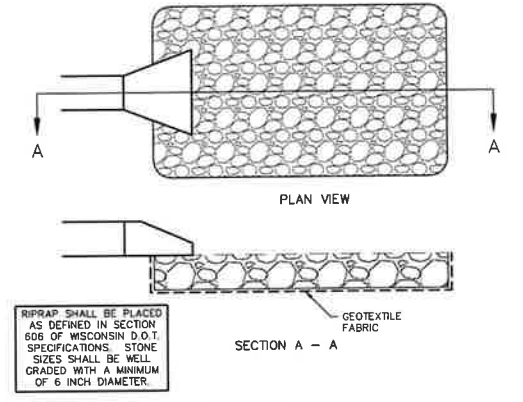
EROSION CONTROL MAT - CHANNEL INSTALLATION



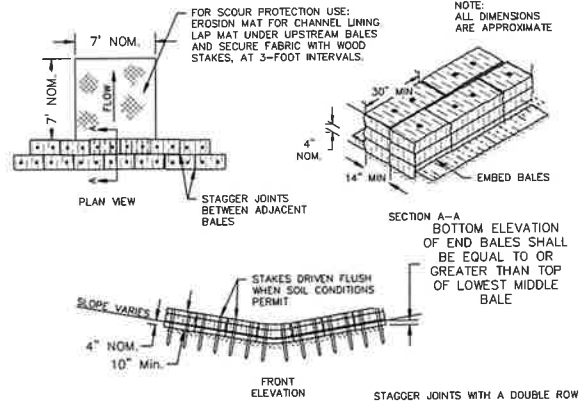
NOTE: REFER TO GENERAL STAPLE PATTERN GUIDE FOR CORRECT STAPLE PATTERN RECOMMENDATIONS FOR SLOPE INSTALLATIONS.

1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING APPLICATION OF 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 6" DEEP X 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
3. ROLL THE BLANKETS (A.) DOWN OR (B.) HORIZONTALLY ACROSS THE SLOPE.
4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2" OVERLAP.
5. WHEN BLANKETS MUST BE SPICED DOWN THE SLOPE, PLACE BLANKETS END OVER END (SHINGLE STYLE) WITH APPROXIMATELY 4" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY
6. ALL BLANKETS MUST BE SECURELY FASTENED TO THE SLOPE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS RECOMMENDED BY THE MANUFACTURER.

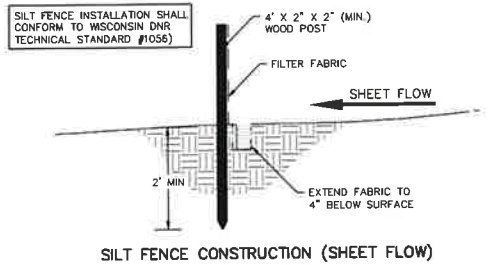
EROSION CONTROL MAT - SLOPE INSTALLATION



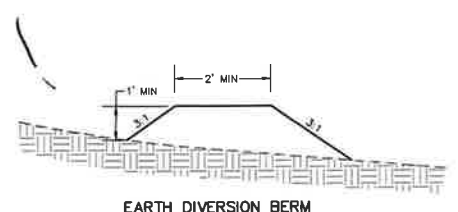
RIPRAP OUTLET DETAIL



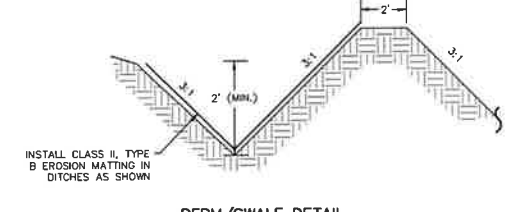
DITCH CHECK DETAIL



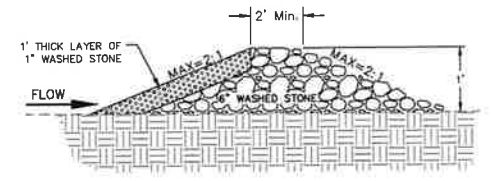
SILT FENCE CONSTRUCTION (SHEET FLOW)



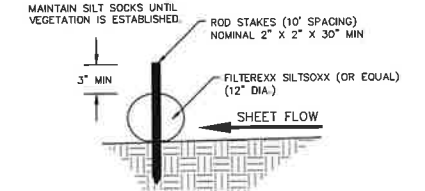
EARTH DIVERSION BERM



BERM/SWALE DETAIL



STONE DITCH CHECK DETAIL



SILT SOCK DETAIL

REVISIONS:
NO. DATE DESCRIPTION

PSE

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www.parishse.com

PROJECT TITLE:
**TLC ACRES
W210 N10738 APPLETON AVENUE
GERMANTOWN, WI 53022**

DRAWN BY:
EPN

DESIGNED BY:
EPN

CHECKED BY:
EPN

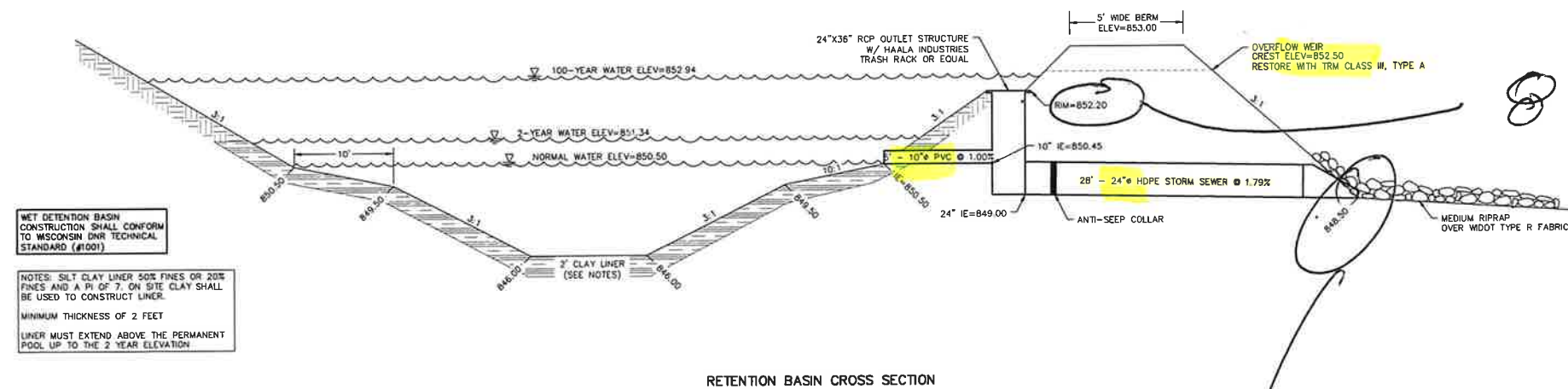
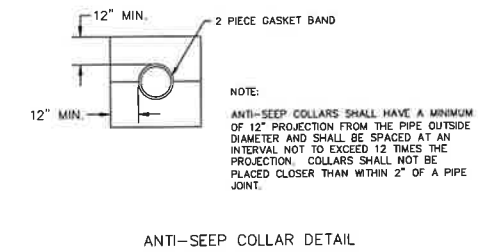
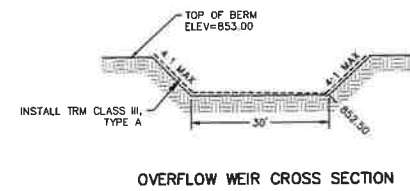
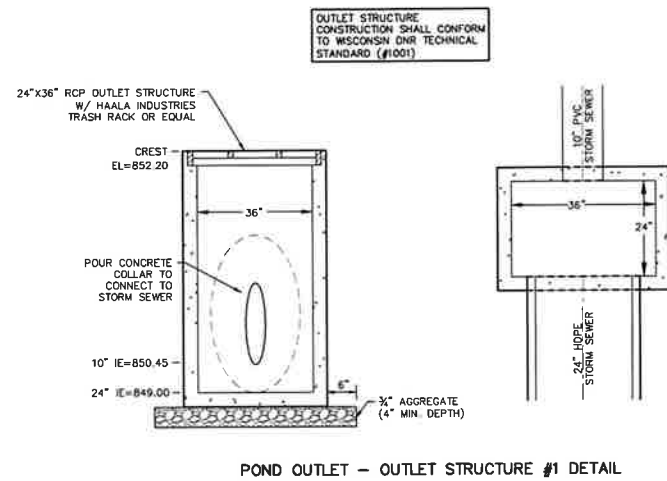
PLAN DATE:
1/28/2025

PROJECT NO:
1TL-05-21

BID SET

SHEET NO:
C2.01

Page 230 of 885



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ON 850
C 1.05

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PROJECT TITLE:
TLC ACRES
W210 N10738 APPLETON AVENUE
GERMANTOWN, WI 53022

PLAN TITLE:

**STORMWATER
MANAGEMENT
DETAILS**

DRAWN BY: EPN
DESIGNED BY: EPN
CHECKED BY: EPN

PLAN DATE:
1/28/2025

PROJECT NO:
 \TL-05-21\

BID SET

SHEET NO:

C2.02

PLANNED DEVELOPMENT DISTRICT (PDD) REZONING & PRELIMINARY SUBDIVISION PLAT

6/9/25 Plan Commission Meeting

Home Path Financial, LP / Mohrhusen Family Farm, LLC

Village Staff Report & Recommendation

Germantown, Wisconsin

SUMMARY

Ken Frank, Agent for Home Path Financial, LP, and Mohrhusen Family Farm, LLC, Property Owner, is requesting approval of a rezoning application to create a Planned Development District (PDD) and a Preliminary Subdivision Plat for an 88.3-acre residential neighborhood known as "Sutton Farm" comprised of 171 single-family units and 102 multi-family units located at the Lannon Road (CTH Y) @ County Line Road (CTH Q) intersection in the "Lannon Gateway Neighborhood".

Property Location: Lannon Road (CTH Y) @ County Line Road (CTH Q)

Applicant/Owner: Home Path Financial, LP Mohrhusen Family Farm, LLC
5116 N 126TH Street P.O. Box 99
Butler, WI 53007 Menomonee Falls, WI 53052

Current Zoning: A-1: Agricultural District
Proposed Zoning: Rs-7: Single-Family & Rm-2 Multi-Family with Planned Development District (PDD) Overlay

Adjacent Land Uses		Zoning
North	Agricultural/Residential	A-1/A-2
South	Residential (Men. Falls)	N/A
East	Institutional	I
West	Agricultural/Residential	A-1/A-2/Rs-2/Rs-4



Proposal

Ken Frank, Agent for Home Path Financial, LP, and Mohrhussen Family Farm, LLC, Property Owner, is requesting approval of a rezoning application to create a Planned Development District (PDD) and a Preliminary Subdivision Plat for an 88.3-acre residential neighborhood known as “Sutton Farm” comprised of 171 single-family units and 102 multi-family units located at the Lannon Road (CTH Y) @ County Line Road (CTH Q) intersection in the “Lannon Gateway Neighborhood”.

Land Uses & Development Density

As presented in the Project Narrative and shown on the General Development Plan (GDP), Sutton Farm is a proposed residential neighborhood comprised of four (4) areas with a mixture of residential dwelling types. The areas are interconnected with public and private streets, sidewalks, pedestrian pathways, and both interior and perimeter open space areas. Thirty-two (32) percent of the total property is set aside in open space including a central park and an existing 10-ac woodland area.

Table 1 presents a summary of the proposed Sutton Farm residential neighborhood characteristics:

TABLE 1.
Sutton Farm Summary

Total Property Area	88.3 ac
Environmental Corridor/Wetland Area	0.09 ac
Right-of-Way (proposed internal streets)	13.2 ac
Open Space (5 Outlots)	28.1 ac
Total # of DU's	273
Gross Density (DU/ac)	3.1
Net Density (DU/ac)	5.8
# Single-Family DU's (detached)	171
# Multi-Family DU's (attached condominium)	102
Lot Size (range) “Flagship” Homes	12-16,092 sqft
Lot Size (range) “Pathway Plus” Homes	10-11,682 sqft
Lot Size (range) “Pathway Ltd” Homes	6,875 -9,999 sqft
Lot Size (range) Paired Ranch Villas	11,888-15,723 sqft

To accomplish this mixture of residential housing types within one neighborhood, the Developer is proposing to create a Planned Development District (PDD) that combines the Village’s Rs-7: Single-Family and Rm-2: Multi-Family Zoning Districts under one General Development Plan and set of zoning regulations with minor adjustments to specific requirements in the two underlying district regulations.

As shown in the Zoning Plan, 80.7% (71.3 ac) of the site will effectively be developed under the Rs-7 regulations and 19.3% (17 ac) under the Rm-2 regulations.

As detailed in the GDP and depicted in the color elevations included in the application packet, the single-family housing types proposed for the Rs-7 area include the following:

1. Flagship Series. (44) single-family ranch and 2-story homes ranging from 1,800 sqft to 2,700+ sqft in area with 2 & 3-car garages and varying architecture from the Stepping Stone Homes portfolio. The Flagship homes will be constructed in the northwest area of the property on lots ranging in size from 12,000 to 16,100 sqft. The average sale price for a Flagship Series home and lot is expected to be from \$675K-\$800K;
2. Pathway Series. (99) single-family ranch and 2-story homes ranging from 1,450 sqft to 2,450 sqft in area with 2 & 3-car garages will be constructed in the central and east side of the property on lots ranging in size from 10,000 sqft to 11,700 sqft. The average sale price for a Pathway Series home and lot is expected to be from \$500K-\$550K;
3. Paired Ranch Villas. (28) ranch villas starting at 1,200 sqft in area with 2 & 3 bedrooms and 2-car garages will be constructed in the central portion of the site on lots ranging in size from 11,900 sqft to 15,725 sqft. The average sale price for a paired villa and lot is expected to be from \$475K to \$550K;

The multi-family housing type proposed for the Rm-2 area in the Sutton Farm neighborhood includes:

4. Attached Townhouse. (102) condominium-style 2-story homes with a basement level 2-car garage ranging from 1,650 sqft to 2,200 sqft will be constructed across the lower portion of the property closer to Lannon and County Line Road. These multi-family units are referred to as “attached single-family” given that they are a “for sale” product with separate attached garages and separate entrances. Also called “row homes” because there are twenty-five 4-unit structures that share common walls between units (two structures have 5 units). The average sale price for an attached townhouse is expected to be from \$450K to \$500K.

Access and Traffic Circulation

Access to the development will be provided by three (3) new public street intersections, one onto Lannon Road and two onto County Line Road, that will serve a series of public streets serving the single-family areas and a private driveway serving the two multi-family areas. Sidewalks will be constructed on both sides of all public streets. Additional pedestrian access through the neighborhood will be provided via woodchip pedestrian paths. All access intersection, street, and pedestrian path improvement costs are the responsibility of the Developer.

Water & Sanitary Sewer Utilities

Public water main (12" & 8") and sanitary sewer (15" & 8") facilities will be extended westerly along County Line Road to the southeast corner of the property and then into the property to serve the development. Sewer will be extended to the west side of the property near Lannon Road for possible extension along and/or across Lannon Road to serve future

development. A separate system of private lift station, force main, and sanitary sewer will be installed in and serve the multi-family area. A 1-ac site is being set aside in the wooded area along Lannon Road for a future public water supply well (well only; no tower). All water & sanitary sewer improvement costs are the responsibility of the Developer.

Storm Water Management

Public and private storm sewers will be installed to drain the development to a series of five storm water detention basins constructed through the development. The topography of the property includes a ridge that runs through the property from the northwest to the southeast. All storm sewer improvement costs are the responsibility of the Developer.

Open Space, Landscaping, and Buffering

The proposed Sutton Farm development is designed as a type of “conservation subdivision” with smaller lots and building footprints clustered in areas with common open space within and around the perimeter of the development. In this case, an existing 10-ac wooded area along Lannon Road will also be preserved. A total of 28 acres of common open spaces provides a perimeter buffer and internal active park areas owned and maintained in common by a neighborhood association of all the property owners.

Landscaping comprised of decorative fencing, berms, landscaped beds with perennial plantings, trees, and ornamental trees and shrubs will be installed at all the access intersections and perimeter edges. Street trees will be planted along all public streets consistent with the Village’s Tree Plan and street tree requirements.

Planned Development District (PDD) Creation & Rezoning

As discussed above, the Developer is proposing to create a new Planned Development District (the Sutton Farm PDD) and rezone the property into the PDD with appropriate residential zoning district regulations that are consistent with the “Lannon Gateway Neighborhood”.

As stated in the Applicant’s project narrative and shown in the Zoning exhibit, the Applicant is proposing the following zoning district changes for the 88.3-acre property:

- Rezone 71.34 acres of land in from the A-1: Agricultural District to the RS-7: Single-Family District.
- Rezone 16.97 acres from the A-1: Agricultural District to the Rm-2: Multi-Family District.
- Create a Planned Development District (PDD) for the entire 88.3-acre property with a General Development Plan and set of restrictions that specifies a maximum of 171 single-family units at a density not to exceed 2.2 dwelling units/ac and a maximum of 102 multi-family units at a density not to exceed 5.9 dwelling units/ac

The proposed densities will be less than the maximum allowed in the underlying Rs-7 District (4.4 DU/acre) and Rm-2 District (8 DU/acre), respectively, and less than the maximum densities prescribed for the Lannon Gateway Neighborhood (up to 2.9 DU/ac for single-family and 10 DU/ac for multi-family).

Further, the PDD District will be created to take advantage of the “flexibility” available to provide a more creative layout that contains the many “conservation design” features designed into the development, e.g. large contiguous tracts of open space with smaller, clustered lots. To facilitate this conservation site design, the Developer is proposing to modify some of the underlying Rs-7 and Rm-2 Zoning District requirements that would ordinarily apply, e.g. lot width, lot size, etc.

As indicated in the Applicant’s Zoning Compliance Table attachment, the proposed modifications to the Rs-7 and Rm-2 District requirements are limited to the following:

- Rs-7: Single-Family Zoning District requirements:
 - Reduce maximum density from 4.4 DU/ac to 2.7 DU/ac;
 - Reduce minimum Lot Width from 80 feet to 56 feet;
 - Reduce minimum Lot Area from 10,000 sqft to 7,315 sqft;
 - Reduce minimum side yard setback from 10 feet to 8 feet;
 - Increase rear yard setback from 25 feet to 30 feet;
 - Increase minimum dwelling size from 1,200 sqft for 3 bedroom to 1,450 sqft;
 - Increase minimum dwelling size from 1,200 sqft for 4 bedroom to 1,690 sqft.
- Rm-2: Multi-Family Zoning District requirements:
 - Reduce the maximum density from 8 DU/ac to 6.1 DU/ac;
 - eliminate the minimum lot area requirement to allow the clustering of the attached townhouse units and develop as a condominium;
 - Reduce the minimum front yard setback from 35 feet to 25 feet;
 - Reduce the minimum side yard setback from 25 feet to a combined total of 25 feet;
 - Reduce the minimum rear yard setback from 35 feet to 25 feet;
 - Increase the maximum number of stories from 2.5 to 3.0 on the rear elevation;
 - Increase minimum dwelling size from 800 sqft for 2 bedroom to 1,650 sqft;
 - Increase minimum dwelling size from 1,000 sqft for 3 bedroom to 1,750 sqft;
 - Increase minimum dwelling size from 1,000 sqft for 4 bedroom to 2,200 sqft.

Other features and amenities of the proposed PDD development are described in the Applicant’s narrative, including:

- Preservation of 10 acres of woodland and .09 acres of wetland;
- 28 acres of open space or 31.7% of total 88.3 acres;
- Street access entrance & perimeter buffer landscaping;
- 1-Acre well site land reservation;
- Water & sanitary sewer extensions located & sized to accommodate future extension and service to other property.

[NOTE: A separate PDD Conditions & Restrictions resolution containing these development-specific allowances, references to the detailed general development plan, and any other conditions of approval deemed appropriate by the Village, will be prepared by Village staff at the time the PDD is considered by the Village Board].

Preliminary Subdivision Plat

In addition to the PDD Rezoning application, the Developer has submitted a preliminary subdivision plat for the entire 88.3 ac development site. The Sutton Farm Preliminary Plat contains the level of detail required under the Village's Subdivision & Platting Code and is a prerequisite for subsequent approvals including: final plat, construction plan, Development Agreement, land conveyance, and eventually building permits. The preliminary plat details the creation of 157 lots for the single-family area containing 171 total units (Lots #135-142 & 152-157 are for the paired villas with 2 units per lot) and 2 lots for the attached townhouse condominium units. Separate condominium plats are required by the Village for the condominium development proposed for Lots #158 & #159 and will be reviewed and processed like a Site Plan application when submitted.

The phasing plan indicates that development will start with Phase I (highlighted GREEN) in the southeast corner of the property with approximately (50) single-family homes, (8) paired ranch villas, the internal open space park, and both access street intersections to County Line Road. The Developer has indicated that (34) townhouse condo units in the southeast (Lot #159 highlighted BROWN) will also be developed beginning in Phase I. Phase II (highlighted PURPLE) in the west central area of the property will contain (40) single-family homes, (20) paired ranch villas, and the Lannon Road access intersection. Development of the remaining attached townhouse condo area (Lot #158 highlighted BROWN) will also be developed beginning in Phase II. Phase III (highlighted ORANGE) in the northeast part of the property will contain (28) single-family homes. Phase IV (highlighted BLUE) in the northwest part of the property will contain (26) single-family homes. No specific start date for each phase has been identified.

Staff CommentsCommunity Development: PDD Rezoning & General Development Plan (GDP)

Creation of the Sutton Farm PDD as proposed and the rezoning of 88.3 acres from the A-1 District to the Rs-7 & Rm-2 Districts will be consistent with the preferred land uses and density provisions for the "Lannon Gateway Neighborhood" as set forth in the 2050 Plan. Prior to Village Board consideration and action, a detailed set of Sutton Farm PDD "conditions and restrictions" will need to be drafted by Staff to codify the proposed development features and underlying Rs-7 and Rm-2 Zoning District requirements and proposed modifications summarized above that will guide development.

The General Development Plan (GDP) presents the overall site design and layout to which development is required to be generally consistent as part of the PDD Zoning District. In this case, the GDP provides an adequate level of detail to guide future development with the following exceptions that should be revised prior to adoption of the PDD by the Village Board:

1. A minimum 30' wide landscaped buffer is required around the perimeter of the property; the only location where this perimeter buffer is not provided on the GDP is around the two "existing farmstead" parcels on County Line Road. The buffer in this area is particularly important because of the existing differences in lot size and use on these pre-existing parcels and potential incompatibilities with the higher density residential uses proposed in the subdivision around them.
2. Details are needed regarding the intended use of and improvements to (if any) the common open space areas, including the 0.85-ac internal park and pedestrian paths

(can be provided as a supplement to the GDP).

With respect to local resident concerns regarding land use, it is important to note that from about 2004 up to the fall of 2022, under the old 2020 Comprehensive Land Use Plan, the Village's plan for this property and others along County Line Road was for commercial and industrial development. Three years ago, alternative developer proposals for various combinations of commercial, industrial and high-density, multi-family residential apartment development consistent with the 2020 Plan were presented to the Village and eventually withdrawn given public reaction. As part of the Village's 2050 planning process that was completed soon thereafter in 2022, the 2050 future land use plan for this area was changed in direct response to that public sentiment to reduce the intensity of future development to only allow low & moderate-density residential uses on this and other property along County Line Road.

With respect to local resident concerns that the homes and density in the Sutton Farm proposal are not the same or similar to existing homes particularly in the Menomonee Falls neighborhoods to the south, one needs to realize that the Club Drive and Woodside Lane neighborhood was developed in the early 1960's with relatively larger lots (~1/2 acre) to meet 1960 plumbing code and land area requirements necessary to accommodate the individual wells & septic systems serving those homes in Menomonee Falls as well as the existing homes in Germantown. A lot has changed in the last 60+ years. The Village of Germantown has made plans to serve the area north of County Line Road and east of Lannon Road with public water & sewer. In addition to wanting to provide a variety of housing choices that current and future residents can afford, future development needs to also be cost-effective for the Village to provide these services to its residents and taxpayers. As stated above, The Sutton Farm proposal is consistent with the Village's 2050 Plan for this area and is in line with the current needs for different housing choices that are within the "affordability" price range (upper end) for those seeking single-family housing in the Germantown market as identified in the 2024 Tracy Cross Residential Market Analysis.

One aspect of the Sutton Farm proposal that the Developer points out in the Project Narrative is the financial impact the development would have (\$1.8M in property tax revenue). As summarized in the tables below, this development is expected to generate approximately \$662K in annual property tax revenue for the Village of Germantown (only) and \$2.3M in one-time impact fee revenue.

Housing Type	Units	Projected Ave Price	Estimated Total Value	Estimated Property Taxes
Flagship Series	44	\$ 737,500	\$ 32,450,000	\$ 146,025
Pathway Series	99	\$ 525,000	\$ 51,975,000	\$ 233,888
Paired Single Family	28	\$ 512,500	\$ 14,350,000	\$ 64,575
Attached Single Family	102	\$ 475,000	\$ 48,450,000	\$ 218,025
Total	273		\$147,225,000	\$ 662,513
Impact Fee	Units	Fee	Total	
Water Connection	273	\$ 1,003	\$ 273,819	
Fire Protection	273	\$ 171	\$ 46,683	
Police Protection	273	\$ 148	\$ 40,404	
Park & Rec	273	\$ 1,311	\$ 357,903	
Library	273	\$ 711	\$ 194,103	
Sewer Connection	273	\$ 5,079	\$ 1,386,567	
Total			\$ 2,299,479	

As discussed with the Plan Commission earlier this year during the February consultation, a Traffic Impact Analysis (TIA) was completed for the proposed development (see TADI Technical Memorandum dated May 6, 2025). As summarized therein, the development is expected to generate a total of 170 morning peak-hour trips, 225 evening peak-hour trips, and an overall 2,430 daily trips that will impact the existing local road system and intersections. The TIA concludes that the impact will not reduce the level of service (LOS) on the roads and intersections below an acceptable LOS "D" condition during the peak-hours. As 4-lane divided highways, there is adequate capacity to accommodate the additional traffic expect to be generated from the Sutton Farm development. With that said, there are site access related improvements, i.e. turn-lanes and stop controls, that will need to be installed to ensure safe and efficient access to/from the development entrances onto Lannon Road and County Line Road.

Community Development: Preliminary Plat

In accordance with the Village's Subdivision Code, the Plan Commission is responsible for reviewing the preliminary plat application and forwarding a recommendation to the Village Board along with comments received from any official "objecting agencies". As of October 2023, Washington County discontinued their objecting authority for subdivision plats within the incorporated areas of the county. While the Wisconsin Department of Administration (DOA) is an official objecting agency, no comments have been received from the DOA to date.

The Developer has not submitted a street tree or detailed landscaping plan for all of the common area improvements or perimeter buffer areas at this time. Nor has a detailed design been submitted for the internal "active" park or internal pedestrian trails. When the Developer prepares and submits detailed construction street and utility plans for final approval, the detailed plans for landscaping, the park, and pedestrian trails should also be submitted to the Plan Commission and Village Forester for review and approval.

A Development Agreement (DA) between the Village and Developer is a requirement of the subdivision platting process. The DA is prepared and adopted by the Village's Public Works & Highway Committee and Village Board prior to final approval and acceptance of the detailed construction plans and drawings for all public improvements. The DA contains any developer commitments and other provisions and requirements specific to the proposed development. In this case, Staff recommends that the DA include or otherwise address the following:

1. A requirement that subdivision deed restrictions and covenants be submitted to the Village prior to final plat submittal that includes a requirement that each individual lot contain the minimum landscaping required under Section 17.43(5).
2. The Developer has tentatively agreed to set aside a 1-ac area within the 10-ac wooded area along Lannon road for a future public potable water well site. The Developer and Village need to work cooperatively with the Village's consultant to identify the specific location and other details regarding this commitment.

Village Engineer/Public Works

The developer has submitted civil engineering plans, a storm water management plan, traffic impact analysis, and a preliminary plat indicating the development is feasible. In review memos dated May 16, 2025, and June 6, 2025, the Village Engineer identifies a series of issues and plan corrections in the submittals that need to be addressed and/or corrected in a revised plan submittal prior to granting formal approval.

The Village Engineer memos express concerns with the proposed private sanitary lift station and force main, in addition to the proposed private road. Therefore, prior to the Village Board approving a Development Agreement, the Village Engineer is recommending the developer provide clarification on the financial guarantee for private repair, maintenance, and replacement of the proposed private lift station and private road. It is also recommended that the developer establish a provision in the Declarations for the subdivision that allows the Village to assess liens against properties in the event special assessment is needed to properly maintain the private facilities.

Village Surveyor

In a review memo dated April 14, 2025 (copy attached), the Village Surveyor identifies a series of issues that need to be addressed and/or corrected in a revised preliminary plat. The applicant has since submitted a revised preliminary plat addressing these comments, which is currently under review by the Village Surveyor.

Fire and Police Departments

No comments at this time. The Fire Department and Police Department will be able to detailed comments at the final design and site planning stages of the project.

Washington & Waukesha County

As of October 2023, Washington County discontinued their objecting authority for subdivision plats within the incorporated areas of the county. However, the Washington County Highway Department has jurisdiction over Lannon Road and is reviewing the Traffic Impact Analysis (TIA) to verify and agree with the recommended access intersection turn-lane and traffic control improvements. The Highway Department is also evaluating sight

distances to/from the proposed access intersection on Lannon Road to ensure adequate visibility.

Waukesha County has jurisdiction over County Line Road and is also reviewing the TIA to verify and agree with the recommended access intersection turn-lane and traffic control improvements on County Line Road.

Wisconsin Department of Administration

No comments received.

Village Forester

The plans were reviewed by the Village Forester, who provided the following comments:

- Site Illustrative Plan and Landscapes A – D. Selected tree species and quantities will need to be revised/updated to reflect the approved right-of-way tree species list identified on pages 6-9 of the Village's Comprehensive tree plan. A tree planting schedule will also be required in future planning stages.
- Grading plan – Include specifications and measures that will be implemented to preserve existing woodlands that have been described in the project narrative. These specifications should include how tree protection zones (TPZ) will be planned, implemented, and enforced on site to preserve existing tree health amidst ongoing construction and site changes.

The applicant has acknowledged these comments and has confirmed they will be addressed through final landscape design and plan submittals if the General Development Plan (GDP) and rezoning request is approved.

VILLAGE STAFF RECOMMENDATIONS

APPROVE creating a planned Development District (PDD) based on the underlying Rs-7: Single-Family and Rm-2: Multi-Family Zoning Districts to be known as the “Sutton Farm PDD” for the 88.3-acre Mohrhussen Family Farm, LLC property and rezoning said 88.3 acres from the A-1: Agricultural District into the “Sutton Farm PDD”, subject to the following requirements and conditions:

1. The Rs-7: Single-Family Zoning District and Rm-2: Multi-Family Zoning District regulations shall constitute the underlying conditions and restrictions for the PDD subject to the Developer proposed modifications and Village staff provisions summarized herein. A complete “conditions & restrictions” resolution establishing all use and development allowances, requirements, and restrictions shall be drafted for review and approval by the Village Board concurrent with review and approval of an ordinance creating the Sutton Farm Planned Development District (PDD).
2. The Site Illustrative Plan revised dated March 25, 2025, and any subsequent revisions necessary as a result of satisfying Village approval shall constitute the General Development Plan (GDP) required under Section 17.27 of the Zoning Code.
3. The General Development Plan (GDP) and PDD conditions and restrictions shall be revised to include the following:
 - a. A minimum 30’ wide landscaped buffer is required around the perimeter of the property including around the two “existing farmstead” parcels on County Line Road.
 - b. Details regarding the intend use of and improvements to (if any) the common open space areas, including the .85-ac internal park and pedestrian paths (can be provided in a supplement to the GDP).

APPROVE the preliminary subdivision plat for “Sutton Farm”, subject to the following conditions:

1. Approval of the preliminary plat is subject to creation of and rezoning of the 88.3-ac Mohrhussen property into the proposed “Sutton Farm Planned Development District” by the Village Board.
2. Approval of the preliminary plat is subject to approval/acceptance of the Traffic Impact Analysis (TIA) by the Washington County Highway Department and Waukesha County Department of Public Works, for the proposed access/intersection locations, recommended turn-lane, and traffic control improvements.
3. Approval of the preliminary plat is subject to it being accepted (i.e. no objections) by the Wisconsin Department of Administration (DOA).
4. Developer shall enter into a Development Agreement with the Village pursuant to Section 18 of the Village Code (Subdivision and Platting), as well as, the preparation of detailed construction plans for the public improvements including, but not limited to public street and intersection improvements, sanitary sewer, water, storm water management facilities, master grading and erosion control, landscaping & street trees, open space trails, lighting and signage. At a minimum, said agreement shall require

-
- the review and approval of said plans by Village staff prior to the commencement of construction activities and establish the timing for installation of said improvements (or as otherwise provided for therein).
5. The Development Agreement shall include a requirement that subdivision deed restrictions and covenants be submitted to the Village prior to final plat submittal that include a requirement that each individual lot contain the minimum landscaping required under Section 17.43(5).
 6. The Developer shall submit a detailed street tree and landscaping plan for any common area improvements to the Plan Commission and Village Forester for review and approval prior to execution of a Development Agreement with the Village.
 7. All technical issues and corrections identified by the Village Surveyor (see April 14, 2025, memo from Bob Beilfuss, PLC) shall be addressed and reflected in a revised preliminary subdivision plat reviewed and approved by Village staff prior to recording.
 8. All items, issues and technical requirements identified in the May 16, 2025 review memo from the Village Engineer and Public Works Department shall be addressed and reflected in additional information and/or revised plans submitted to Village staff for further review, comment, and approval prior to recording the preliminary plat and final approval of construction plans for all public and private improvements.
 9. The Developer proposes to install a private sanitary lift station and force main that is not recommended by Public Works Department Staff as detailed in the May 16, 2025 and June 6, 2025, review memos from the Village Engineer. As stated therein, prior to recommending approval of the proposed private sanitary system, the Village Engineer has requested additional information that is needed to ensure the private system will be installed and properly maintained by the Developer and/or Homeowner's Association into the future and not become a financial burden to nor the responsibility of the Village. The Developer shall provide the information requested in the June 6, 2025, memo to the Village Public Works Department Staff prior to recording the preliminary plat and final approval of construction plans for all public and private improvements. If deemed necessary by the Village and agreed to with the Developer, adequate provisions to protect the Village shall be incorporated into the Development Agreement and/or Homeowner's Association restrictions and protective covenants.

Sutton Farm Project Narrative

A. Project Summary

Total Site Area	88.31 acres
Total Residential Units	273
P.E.C.	0.0
171 Single Family	71.34 gross acres
104 Attached Homes	16.97 gross acres
<u>Gross Density</u>	<u>3.11 acres</u>
Open Space	28.00 acres
<u>Net overall Res. Density</u>	<u>4.56 du/ac</u>
Net Single Family Density	2.2 du/ac
Net Attch'd Home Density	5.9 du/ac
Public R.O.W.	13.70 acres

B. Request for Action

1. Rezoning from A-1 to Rs-7 & Rm-2, with PDD Overlay
2. Preliminary Plat Approval

C. Existing Site Analysis

The proposed neighborhood to be developed is an 'L' shaped 88.3 acre site that is currently in cultivated farmland bisected by tree lines and has a 9 acre area that is currently somewhat degraded woodlands, located at the northwest corner of Lannon (CTH Y) and Couty Line Road (CTH Q). The site is a large part of the Lannon Gateway Neighborhood as identified in the 2050 Comprehensive Plan which states that "desirable future land uses within the Lannon Gateway Neighborhood include single family and multifamily residential. Future residential development is acceptable at an average density of 2.9 du/ac for single family and 10 du/ac for multifamily".

There are 3 (zoned Rs-2, Rs-3, and Rs-4) residential parcels that are 'cut-outs' from the original parcel that were part of the original farmstead. The lands to the east are zoned I-Institutional, A-1 farmland to the northeast and a large rural residential lot that is A-2 to the northwest, the lands to the west are A-1, Rs-4 and Rs-2 scattered site zoning. The Village of Menomonie Falls is to the south and consists of rural residential.

The topography of the site has a ridge that runs through the site from the northwest to the southeast and will require 5 water detention/retention areas. There are no Primary Environmental Corridors on the property.

Lannon and County Line Roads have recently been improved to include center medians and a fully improved intersection. There are opportunities to create access points on County Line Road at Club Circle and Woodside Lane. Access points are available at key locations along Lannon Road based on elevations and the gentle curve of the road.

D. Proposed Zoning and Land Use

The parcel is currently zoned A-1. The neighborhood was designed to incorporate rolling terrain, set aside ample buffers from the surrounding roads and land uses, provide a range of house types to attract young families and empty-nesters, and create a thoughtful road pattern that creates an organized circulation pattern for pedestrians and vehicles. To achieve our design goals, we are requesting that we be zoned as Rs-7/PDD for the single family area and Rm-2/PDD following the preferred land uses laid out in the Lannon Gateway Neighborhood Plan in the 2050 Comprehensive Plan.

The parcel serves as a transition area between the commercial corridor and business park to our east, and the rural residential areas to the west.

E. Proposed Utilities

The developer worked together with Village Engineering and Public Works staff to thoughtfully plan extension of public utilities. As such, the proposal contemplates installation of sanitary sewer and water main through the development, extending from existing facilities near the intersection of County Line Road and Cross View Way. Public sanitary sewer ranging from 15-inch to 8-inch will meet the needs of the proposed neighborhood, as well as support future growth of the Village. Public water main ranging from 12-inch to 8-inch will meet the needs of the proposed neighborhood, as well as support future potential of a new Village well in the general vicinity. Public streets will drain via public storm sewer to multiple storm water management areas within the neighborhood. Townhouse blocks within the neighborhood will be served by private sanitary sewer and private streets will drain via private storm sewer. All utilities will meet Village standards and satisfy State regulations.

F. Description of Development

We created 4 areas that are connected by pedestrian pathways to provide a range of housing types that will ensure we have a dynamic neighborhood, open space, and neighborhood streets. 32% of the site is set aside as open space which includes the preservation of a 9.8 acre woodland area, a central active park, and buffer and storm water detention areas. There are 2 connections provided to County Line Road and one to Lannon Road to provide efficient access to the neighborhood.

The 4 types of homes:

1. The 44 Flagship Homes are the pinnacle of Stepping Stone Homes portfolio. Homes range in size starting at 1,800 sf for ranch models, to over 2,700 sf for 2-story homes, all with 2 and 3 car garages. Many of the Flagship homes back up to open space and can provide for standard, walkout, and lookout basements.
2. The 99 Pathway Homes woven into the neighborhood are a mid-range home that provides a wide range of options for young families, and families looking to upsize into a larger home. These range in size from 1,450 to 2,450 sf in ranch and 2 story models all with 2 or 3 car garages.
3. The 28 paired homes are one story 2 and 3 bedroom ranch homes that can provide a maintenance free option for young families or empty nesters.
4. The 17-acre area set aside for the 102 attached homes is planned for townhouse style homes that will be designed to take advantage of the south sloping terrain and be accessed by a private drive with common outdoor space and additional guest parking. Each will have 2 garage spaces, driveways, outdoor space and connections to the open space and neighborhood.

G. Bulk Table

Rs-7 Areas include the Flagship lots, the Pathway lots, and the Paired Homes:

A. Setbacks:

	Flagship	Pathway	Paired	Attached
Front	30'	30'	30'	25'
Side	12'	8'	6'	16'
Corner Side	25'	25'	25'	25'
Rear	30'	30'	25'	20'

H. Deed Restrictions Single Family Detached

Ranch homes minimum 1,450sf

2 story homes minimum 1,750sf

General exterior finishes - Brick, Stone, Wood, Stucco, Vinyl, Other high quality man-made or natural materials

All elevations within the Stepping Stone Homes portfolio

I. Common Open Space and Parkland

28 acres of open space surrounds the site as landscape buffer, stormwater detention, and woodland preservation. All connected by green corridors, with an active park in the center of the neighborhood, maintained by the Homeowners Association.

Central areas within the neighborhood will be maintained lawn and shrub beds and the perimeter landscaped buffers will be maintained trees, shrub beds, and lawns. The woodland and detention areas will be designed with native plantings and maintained to ensure a pleasing and efficient storm water system and natural aesthetics.

The 3 entrance areas will provide neighborhood signage, decorative fencing and landscaped beds with perennials, ornamental trees and shrubs. These areas will be integrated into the buffer areas to provide a perimeter image for the neighborhood and will provide a consistent landscaped edge for the village at this key gateway location.

Neighborhood trails will be provided as shown on the Site Plan and will be low-impact woodchip and mowed paths. Areas at slopes and high traffic areas being limestone screening or asphalt paving.

J. Benefits to the Village

Anticipated increase of approximately \$1.8M in additional tax revenue to the Village of Germantown. The SW corner of the site provides for monumentation at a gateway into Germantown, from the west. Adding a variety of price points for additional needed housing stock within Germantown. Public sanitary sewer and water main extensions through the proposed neighborhood will support future growth/demand within this part of the Village.



FEES MUST BE PAID AT TIME OF APPLICATION

\$200 Plan Commission Consultation
 \$1,085 Rezoning
 \$1,240 PDD < 5 acres
 \$2,095 PDD 5-20 acre site
 \$3,460 PDD > 20 acre site

Date Paid: _____ Received by: _____

REZONING & PDD APPLICATION

Pursuant to Section 17.51 of the Municipal Code

Please read and complete this application carefully. **All applications must be signed and dated.**

1

APPLICANT OR AGENT

Home Path Financial Limited Partnership
 ATTN: Ken Frank
 5116 N 126th St
 Butler, WI 53007
 Phone (262) 328-4939
 E-Mail kfrank@myhomepath.com

PROPERTY OWNER

Mohrhusen Family Farm, LLC; et al
 Dittmar Realty, Inc. ATTN: Kevin Dittmar
 PO Box 99
 Menomonee Falls, WI 53052
 Phone (414) 870-5810
 E-Mail cdunn@drilots.com

2

PROPERTY ADDRESS OR GENERAL LOCATION

TAX KEY NUMBER

Property on Northeast corner of County Line Road and Lannon Road

GTNV_323995, GTNV_323986
 and GTNV_323987

3

REZONING REQUEST

FROM
 Agricultural

TO
 RS-7 and RM-2
 with PDD Overlay

4

METES AND BOUNDS LEGAL DESCRIPTION OF PROPERTY – REQUIRED

Attach pages as necessary

Please see attached Legal Description.

5 PURPOSE OF REZONING REQUEST

Briefly describe why the applicant is rezoning the property. Include a description of the proposed use, including any new construction and number of employees, if applicable.

Please see attached Project Narrative.

6 SUPPORTING DOCUMENTATION:

- ☒ Plat of Survey (1:100)
- ☒ Site Plan and elevations for new construction (can be conceptual)

7 READ AND INITIAL THE FOLLOWING:

K7

I understand that the Village is under no obligation to rezone property and that density and lot coverages provided in the Zoning Code are maximums. Actual build out will depend on myriad factors including topography and other natural conditions, surrounding neighborhood context and the detailed design of a project.

K7

I understand that Village Staff, Plan Commission and/or Village Board may request additional information to properly evaluate this request and failure to provide such information may in itself be sufficient cause to deny the petition.

K7

I am aware that this rezoning shall go into effect immediately upon the final approval of the Village Board and its execution of the rezoning ordinance

K7

I understand that Village Staff is required to post one or more signs along the street frontage of and/or on the property subject of this application that indicate to nearby property owners and the general public that a public hearing of my application will be held before the Village Plan Commission and/or Village Board prior to action taken on this application; I hereby grant Village Staff permission to enter onto the property for the expressed purpose of installing said sign(s) provided Village Staff is responsible for installing, maintaining and removing said signs in a reasonable manner and time frame.

8 SIGNATURES – ALL APPLICATIONS MUST BE SIGNED BY OWNER!

Authentisign

 Applicant _____ Date 03/27/25


 Owner _____ Date 3/27/25
 Kevin S. Dittmar, President of
 Dittmar Realty, Inc., Manager of
 Mohrhusen Family Farm, LLC


**Fee must accompany application
Preliminary & Final Plat Fees Combined**

Under 10 lots \$4,575
11-25 lots \$5,600
26-50 lots \$6,625
Over 51 lots \$7,650

☐
☐
☐
☒

SUBDIVISION PLAT APPLICATION

Pursuant to Section 18.04 and 18.05 of the Municipal Code

Please read and complete this application carefully. **All applications must be signed and dated.**

1
APPLICANT OR AGENT

Home Path Financial Limited Partnership

ATTN: Ken Frank

5116 N 126th St

Butler, WI 53007

Phone (262) 328-4939

Fax ()

E-Mail kfrank@myhomepath.com

PROPERTY OWNER

Mohrhusen Family Farm, LLC; et al

Dittmar Realty, Inc. ATTN: Kevin Dittmar

PO Box 99

Menomonee Falls, WI 53052

Phone (414) 870-5810

cdunn@drilots.com

2
PROPERTY ADDRESS OR GENERAL LOCATION
TAX KEY NUMBER(S)

Property on Northeast corner of County Line Road
and Lannon Road

GTNV_323995, GTNV_323986
and GTNV_323987

3
READ AND INITIAL THE FOLLOWING:

KF

I understand that the Subdivision Plat is not valid until recorded at the Washington County Register of Deeds. The Village will record the document and charge the applicant all applicable recording fees.

KF

If technical corrections to the Plat are required, I understand that the document will not be recorded until all corrections are made and approved by the Village.

KF

I understand that all applicable impact fees must be paid prior to recording. Failure to pay fees will delay recording and may ultimately result in the revocation of Village approval. I understand that parcels created outside the Sewer Service Area will require a soil test. I also understand that all properties abutting a State Highway will require DOT approval and I will be responsible for securing such approval prior to recording.

KF

I understand all delinquent property taxes on any of the properties involved shall be paid prior to recording.

KF

I understand that a Developer's Agreement will be required prior to recording of the plat.

4
SIGNATURES -- ALL APPLICATIONS MUST BE SIGNED BY OWNER!

Authentisign

Ken Frank

Applicant

03/27/25

Date

Kevin S. Dittmar 3/27/25

Owner

Date

Kevin S. Dittmar, President of
Dittmar Realty, Inc. Manager of
Mohrhusen Family Farm, LLC

ZONING DATA:

Gross Site Area 88.3 acres

Rs - 7 PDD 71.34 ac
80.7%
Net Density 2.2 du/acre

Bulk Standards:

Setbacks

Front 30'

Side 8'

Corner Side 25'

Rear 30'

Height 35'

Lot Coverage 30%

Min. Width 56'

Min. SF 7,286 sf

Rm - 2 PDD 16.97 ac
19.3%
Net Density 5.9 du/acre

Bulk Standards:

Setbacks

Front 25'

Side 10'

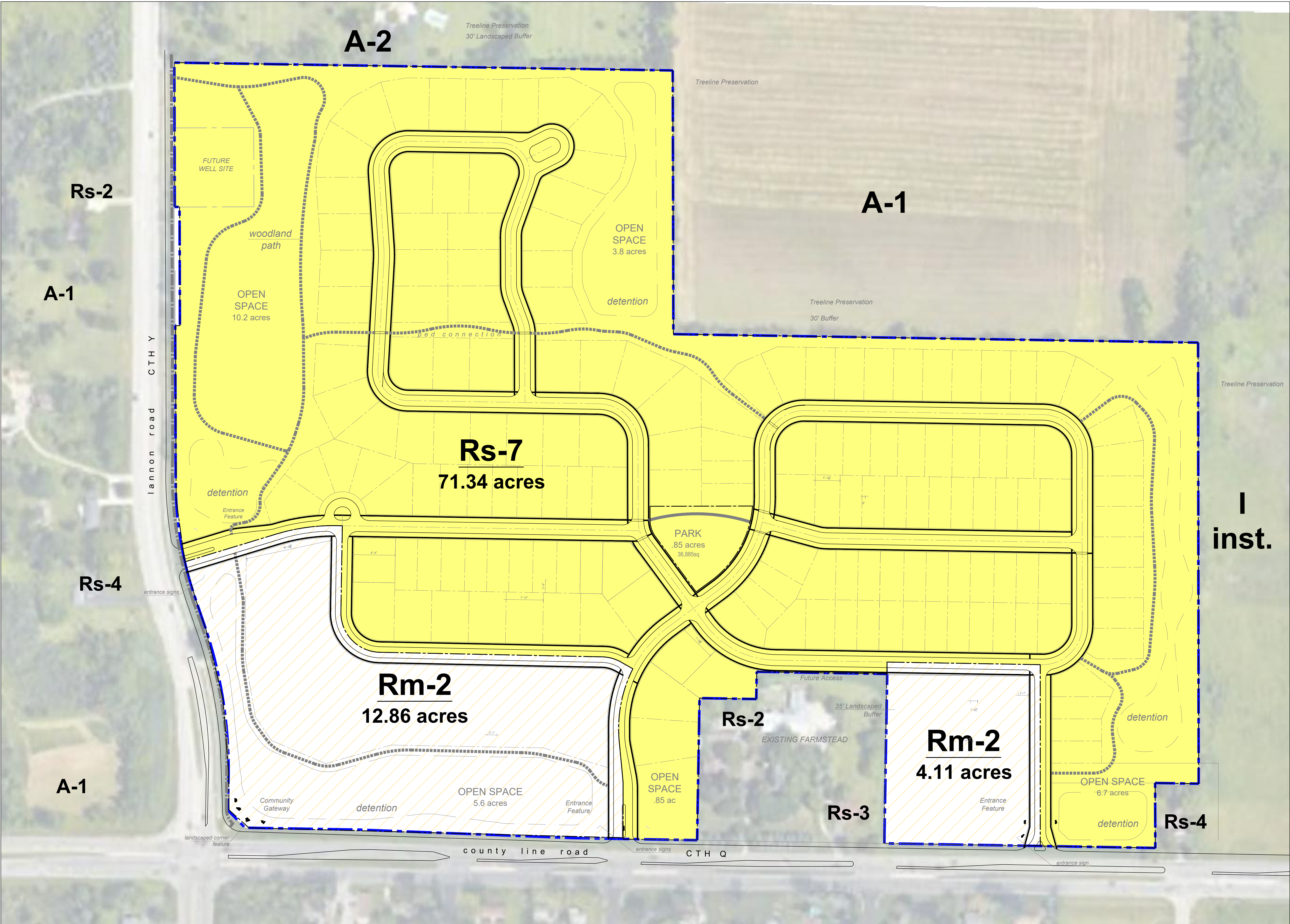
Corner Side 25'

Rear 20'

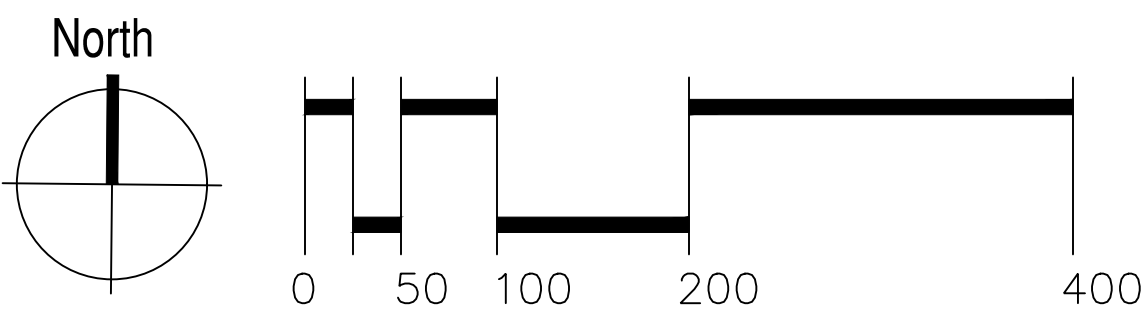
Height 45'

Lot Coverage 40%

Min. SF/unit 7,330 sf



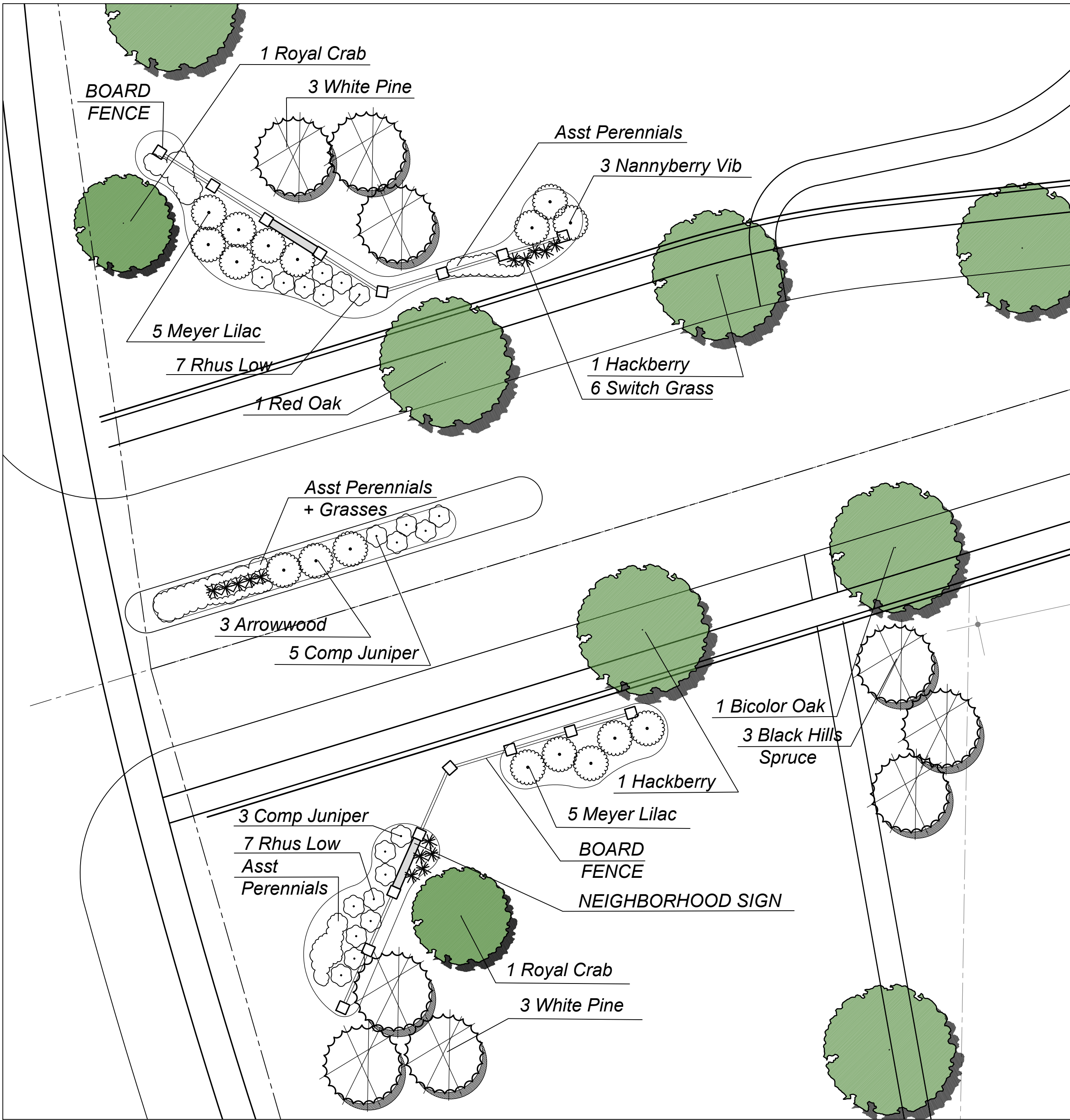
Zoning Map



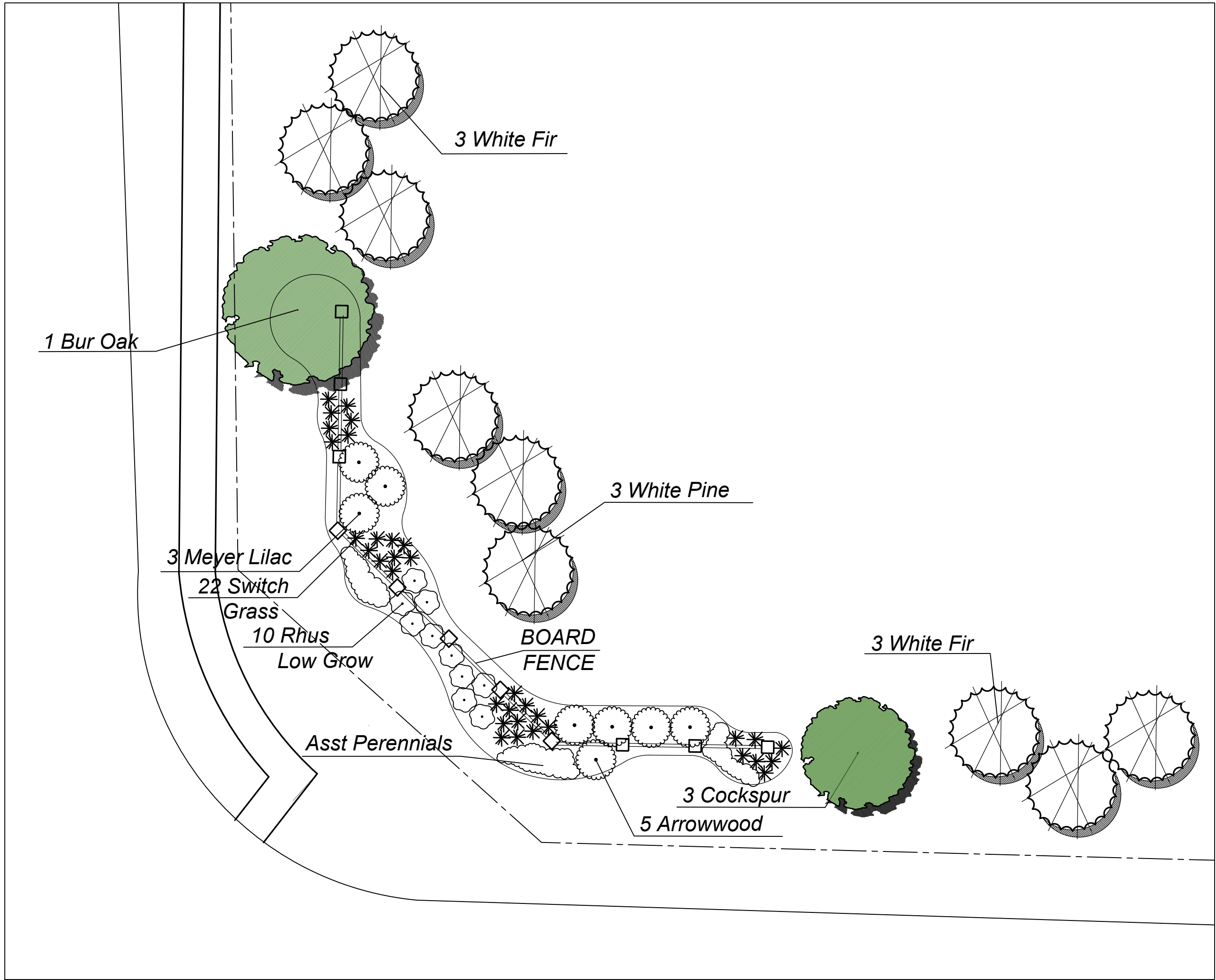
SUTTON FARM
Germantown, Wisconsin

SINGLE FAMILY/PAIRED	Rs-7	Proposed Zoning Rs-7 PUD	TOWN HOMES	Rm-2	Proposed Zoning Rs-7 PUD
TOTAL AREA		2,770,416 nsf	TOTAL NET AREA		723,096 nsf
Dwelling Units/Acre	4.4 du/acre	2.7 du/acre	Dwelling Units/Acre	8.0 du/acre	6.1 du/acre
LOT FRONTAGE	80'	56' min.	LOT FRONTAGE	120'	216' min.
<i>Paired Duplex</i>	<i>100' (Rd-2)</i>	<i>94'</i>	<i>102 Attached Homes</i>		
<i>51 Pathway LTD</i>		<i>56'</i>			
<i>48 Pathway Plus</i>		<i>65' - 77'</i>			
<i>44 Flagship</i>		<i>92'</i>			
<i>Est. Average</i>		<i>72'</i>			
LOT AREA	10,000 sf	7,315 min	LOT AREA	.5 acres	16.6 net acres*
<i>Paired Duplex</i>	<i>15,000 (Rd-2)</i>	<i>11,750 sf</i>	<i>102 Attached Homes</i>		*Buildable
<i>51 Pathway LTD</i>		<i>7,315 sf</i>			Rm-2 area
<i>48 Pathway Plus</i>		<i>9,517 sf</i>	LOT AREA PER UNIT	5,445 sf	7,089 nsf
<i>44 Flagship</i>		<i>12,512 sf</i>			
<i>Est Net Average/Lot</i>		<i>16,201/Lot</i>			
SETBACKS:			SETBACKS:		
Front Yard	30'	30'	Front Yard	35'	25'
Side Yard	10'	8' min	Side Yard	25'	25' combined
Rear Yard	25'	30'	Rear Yard	35'	25'
HEIGHT	35'	35'	HEIGHT	45'	40' at rear
Stories	2.5	2.5	Stories	2.5	3 at rear
LOT COVERAGE	30%	28%	LOT COVERAGE	40%	15%
DWELLING SIZE			DWELLING SIZE		
1 bed	1,200 sf	0	1 bed	650	
2 bed	1,200 sf	0	2 bed	800	1,650
3 bed	1,200 sf	1,450 sf	3 bed	1,000	1,750
4 bed	1,400 sf	1,690 sf	4 bed	1,000	2,200
MIN. GROUND AREA	1,000 sf	1,450 sf	MIN. GROUND AREA	n/a	n/a
OFF-STREET PARKING	Min 2 spaces min 1 garage	all 2 car 4/unit	OFF-STREET PARKING	Min 2 spaces min 1 garage	all 2 car 4/unit

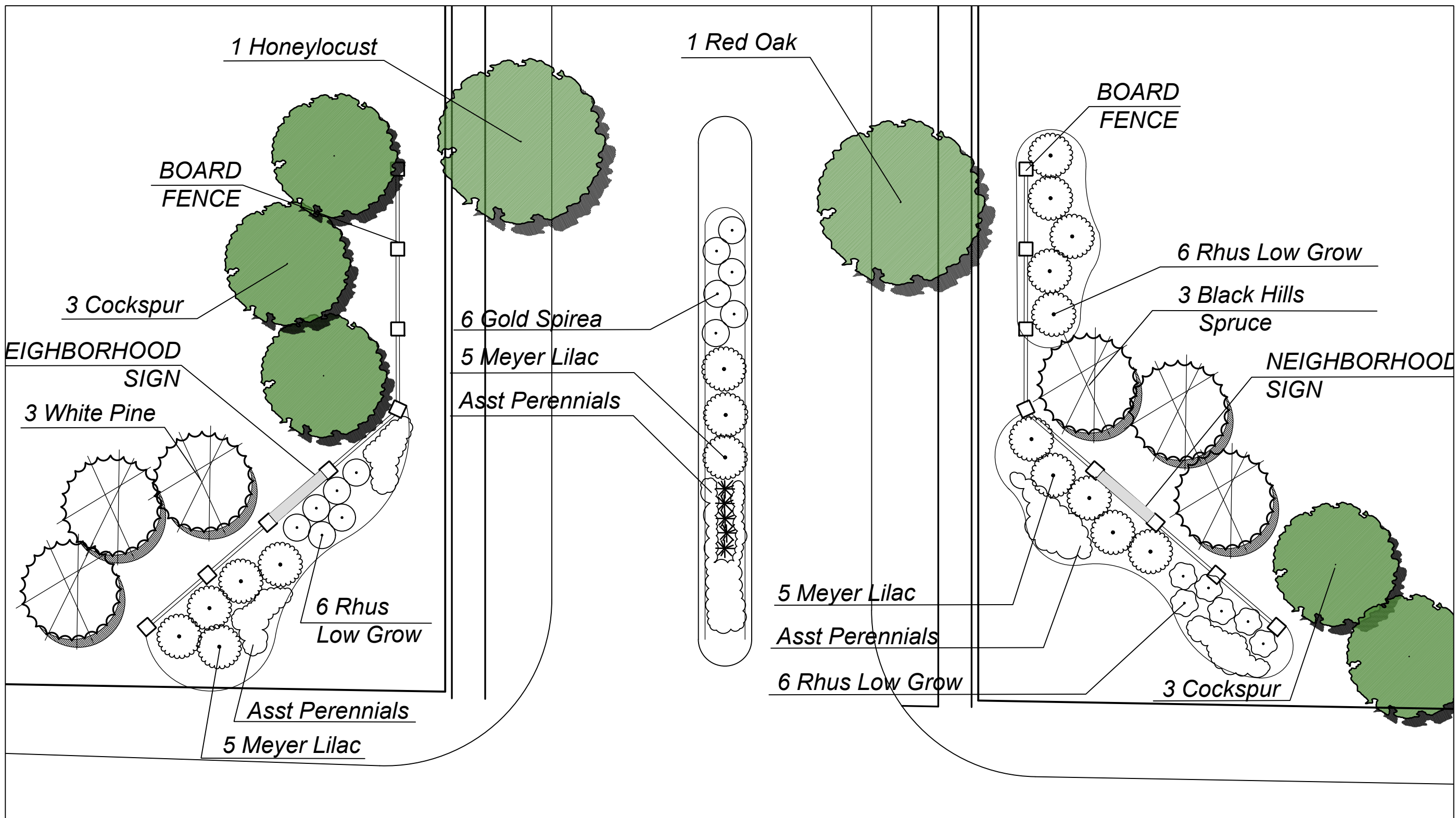
Landscape A



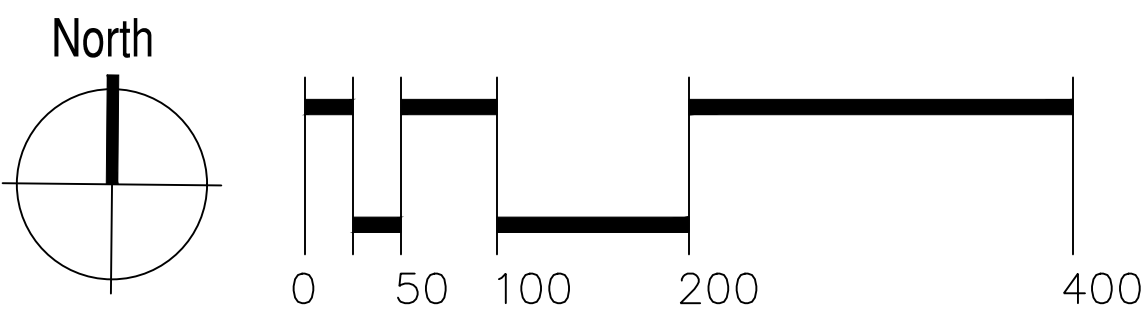
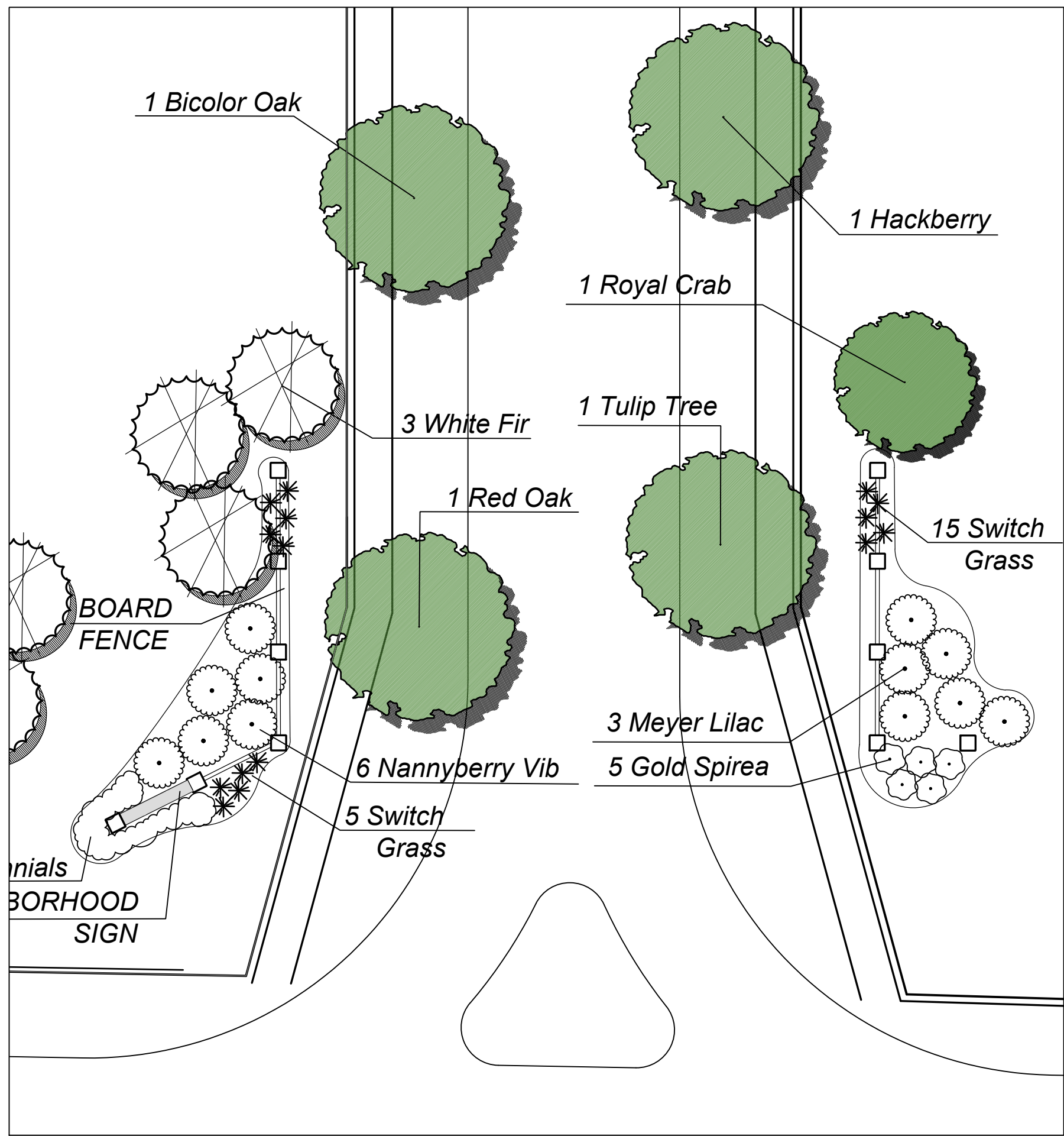
Landscape B



Landscape C



Landscape D



OPEN SPACE DATA:

Gross Site Area	88.3 acres
Open Space	28.0 acres
Open Space Ratio	31.7%
Development Area	60.3
Dwelling Units	273
Density Ratio	4.56 du/acre
Public R.O.W.	13.7 acres

PEDESTRIAN CONNECTIVITY:

Existing Lannon Road Public Path	-----
Neighborhood Pathway	-----
Public Sidewalks	-----



Open Space Plan

North

0

50

100

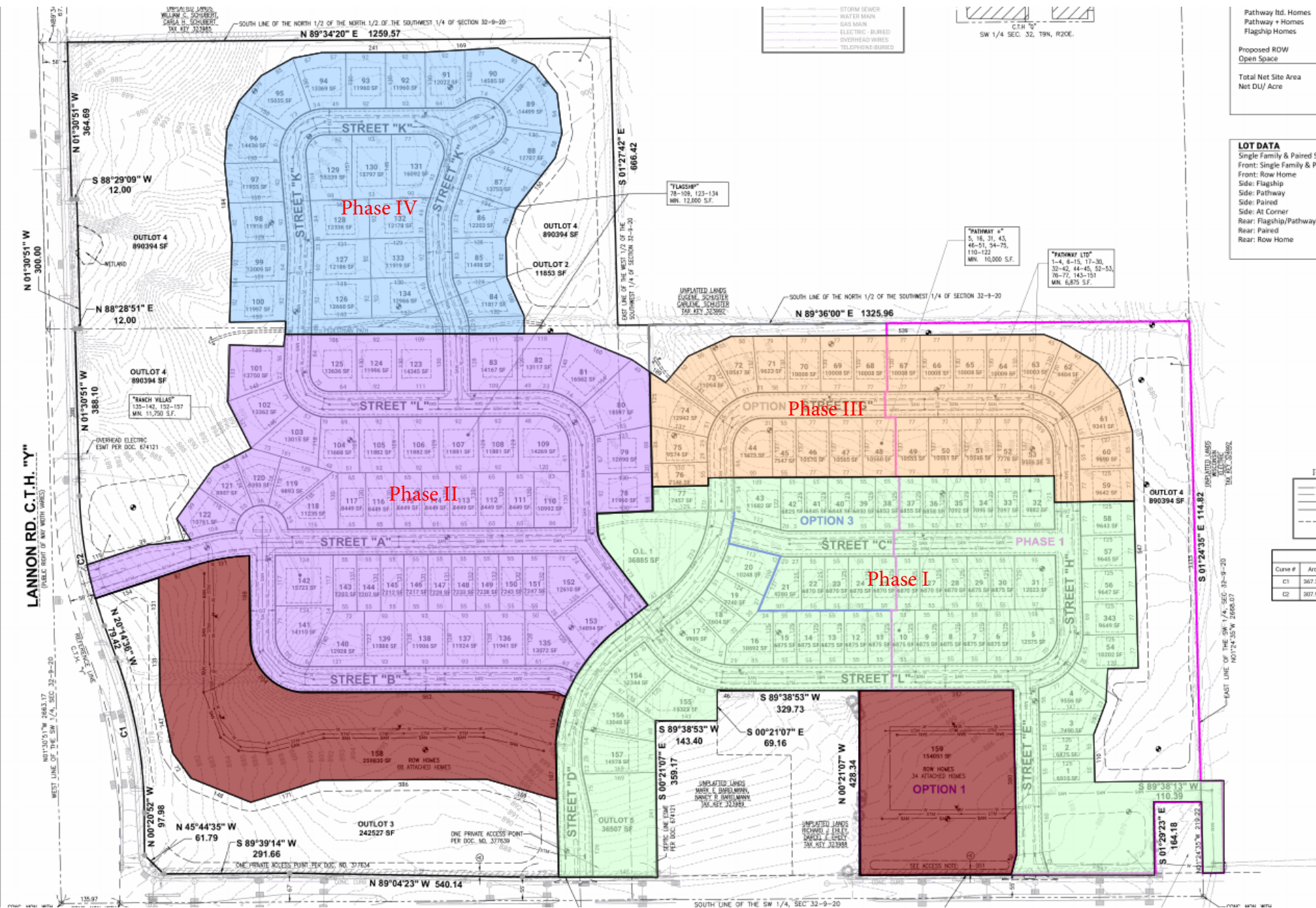
200

400

HOME PATH FINANCIAL

Opening a path to success

SUTTON FARM
Lannon & County Line Neighborhood
Germentown, Wisconsin



PRELIMINARY PLAT
OF
SUTTON FARM

That part of the Northwest 1/4 of the Southwest 1/4 and the Southwest 1/4 of the Southwest 1/4 and part of the Southeast 1/4 of the Southwest 1/4 of Section Thirty-two (32), Town Nine (9) North, Range Twenty (20) East, Village of Germantown, Washington County, Wisconsin.

HORIZONTAL DATUM:
This survey is referenced to Wisconsin State Plane Coordinate System Grid, South-Zone (NAD83/2011), in which the West line of the Southwest 1/4, Section 32, Township 9 North, Range 20 East bears North 01°30'51" West.

VERTICAL DATUM:
Vertical Datum is based on North American Vertical Datum of 1988. (NAVD1988).

FLOODPLAIN NOTE:
According to the flood insurance rate map of the County of Washington, Community Panel No. 55131C0358E & 55131C0359D, effective date of November 20, 2013, this site falls in Zone X (Areas determined to be outside the 0.2% annual chance floodplain).

AGENCIES HAVING AUTHORITY OF OBJECT:
- State of Wisconsin, Department of Administration.
- Washington County.

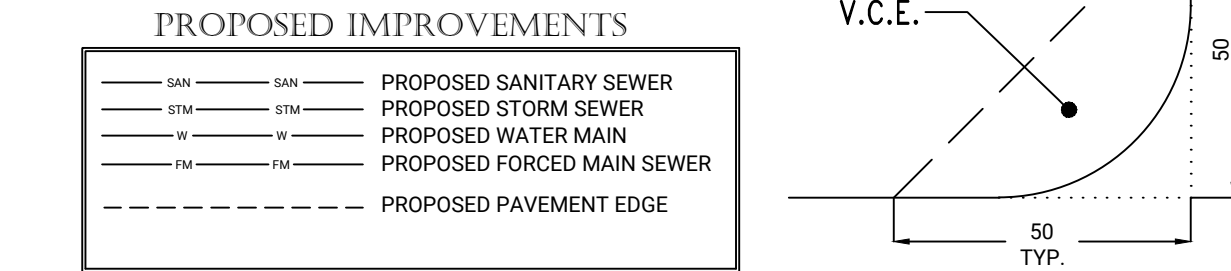
APPROVING AUTHORITY:
- Village of Germantown.

DEVELOPMENT SUMMARY:
1. Tax Key Number 323995, 323986 & 323987.
2. Subdivision contains 88.30 Acres.
3. Subdivision contains 160 Lots and 5 Outlots.
4. Proposed Zoning = (PD) Planned Development District.
5. All lots to be served with Sanitary Sewer & Watermain.
6. Public Roads to have Concrete Curb and Gutter, Asphalt Pavement with Storm Sewer.
7. Stormwater Management Facilities are located on Outlot 3 and 4 of this Subdivision. The owners of the residential Lots within this Subdivision shall each be liable for an equal undivided fractional share of the cost to repairs, maintain or restore said Stormwater Management Facilities within this Subdivision. Said repairs, maintenance and restoration shall be performed by the Owners of all Lots within this Subdivision.
8. The Owners of all Lots within this Subdivision shall each own an equal undivided fractional interest in Outlots 1 thru 5 of this Subdivision. Washington County shall not be liable for fees or special charges in the event they become the owner of any Lot or Outlot in the Subdivision by reason of tax delinquency.
9. Lot 160 to be used for Future Well Site.

Notes
• Street A, B, C, D, E, G, H, K & L to be dedicated to the Public.
• Access easement note per Doc. No. 377634: (Public access points must be at least 400' from any public access point to C.T.H. "Q", 300' from any private access point to C.T.H. "Q" include a dedication of vision triangles which have a 150' leg, as measured along the centerline of C.T.H. "Q" and a 100' leg as measured along the centerline of intersection public access point and include the restriction of access across said triangles.
• 12' Electric Easement per Doc. 856645

WETLANDS:
Wetlands are delineation by Hey & Associates, Inc conducted October 2024.

VISION CORNER EASEMENT: (V.C.E.)
Corner lots & outlots are herein subject to a Vision Corner Easement in that nothing maybe grown, stored or erected to a height more than two feet above ground surface.



Curve Table						
Curve #	Arc	Radius	Delta	Chord	TAN IN	TAN OUT
C1	367.38	1058.00	01°19' 53" 44"	365.54	N10°17'44"W	N00°20' 52"W
C2	307.93	942.00	01°18' 43" 45"	306.56	N10°52'43"W	N01°30' 51"W

I hereby certify that this preliminary plat is a correct representation of all existing land divisions and features and that I have fully complied with the provisions of the subdivision and platting code of the Village of German Town.

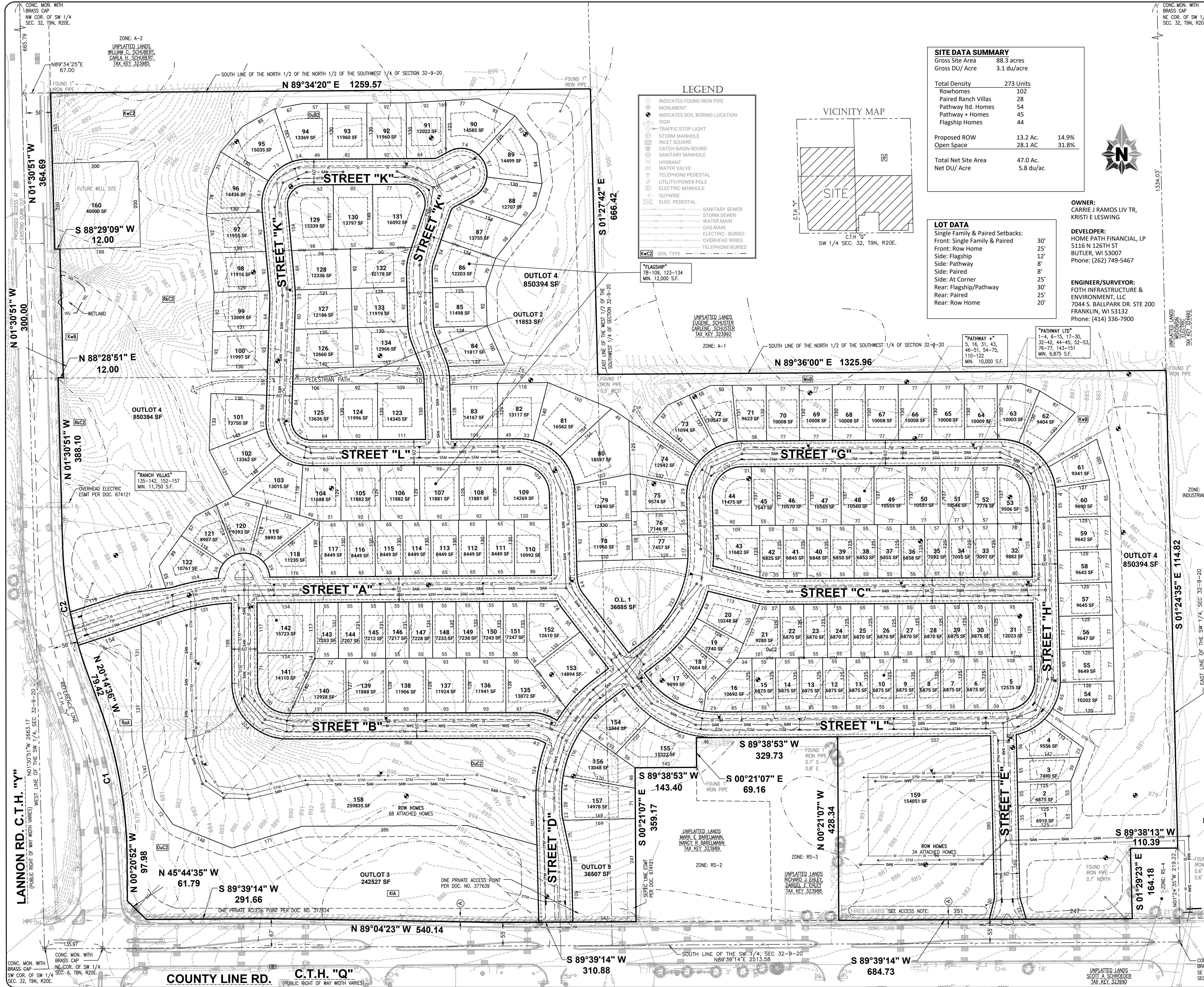
Date of Plat or Map:
March 25, 2025
Rev: May 30, 2025
Field Date: March 5, 2025

WISCONSIN
ANDREW J. MIAZGA
REGISTERED LAND SURVEYOR
MUKWONGO, WI
Andrew J. Miazga, PLS (S-2826)

VILLAGE OF GERMANTOWN

SUTTON FARM

SCALE		PROJECT ID: 0025H025.00	
0 100 200			
DATE:	MAY/30/2025	Foth	SHEET 1 OF 1
PREPARED BY:	FXA		
CHECKED BY:	AJM		





MARCH 2025

SUTTON FARM SUBDIVISION

HOME PATH FINANCIAL
VILLAGE OF GERMANTOWN
0025H025.00

UTILITY AND EMERGENCY TELEPHONE NUMBERS

EMERGENCY: 911
VILLAGE ENGINEERING: (262) 250-4721
VILLAGE PUBLIC WORKS: (262) 250-4725

OWNER CONTACT INFORMATION

KEN FRANK
DIRECTOR OF LAND & DEVELOPMENT
HOME PATH FINANCIAL, LP
5116 NORTH 126TH STREET
BUTLER, WI 53007
(262) 328-4939

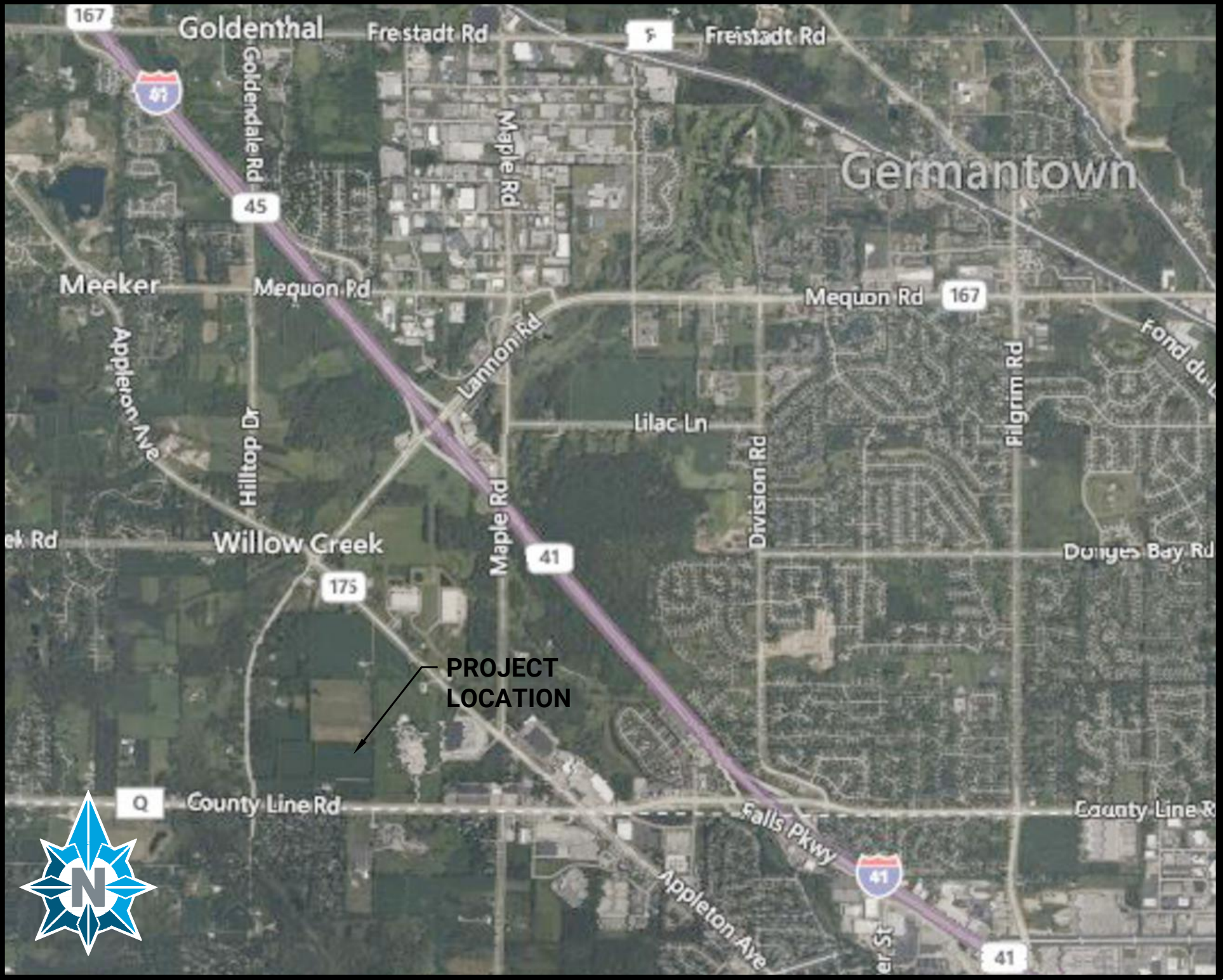
ENGINEER CONTACT INFORMATION

CHRIS HITCH - P.E.
FOTH INFRASTRUCTURE & ENVIRONMENT, LLC
BALLPARK COMMONS OFFICE BUILDING
7044 SOUTH BALLPARK DRIVE, SUITE 200
FRANKLIN, WI 53132
PHONE: (414) 336-7900

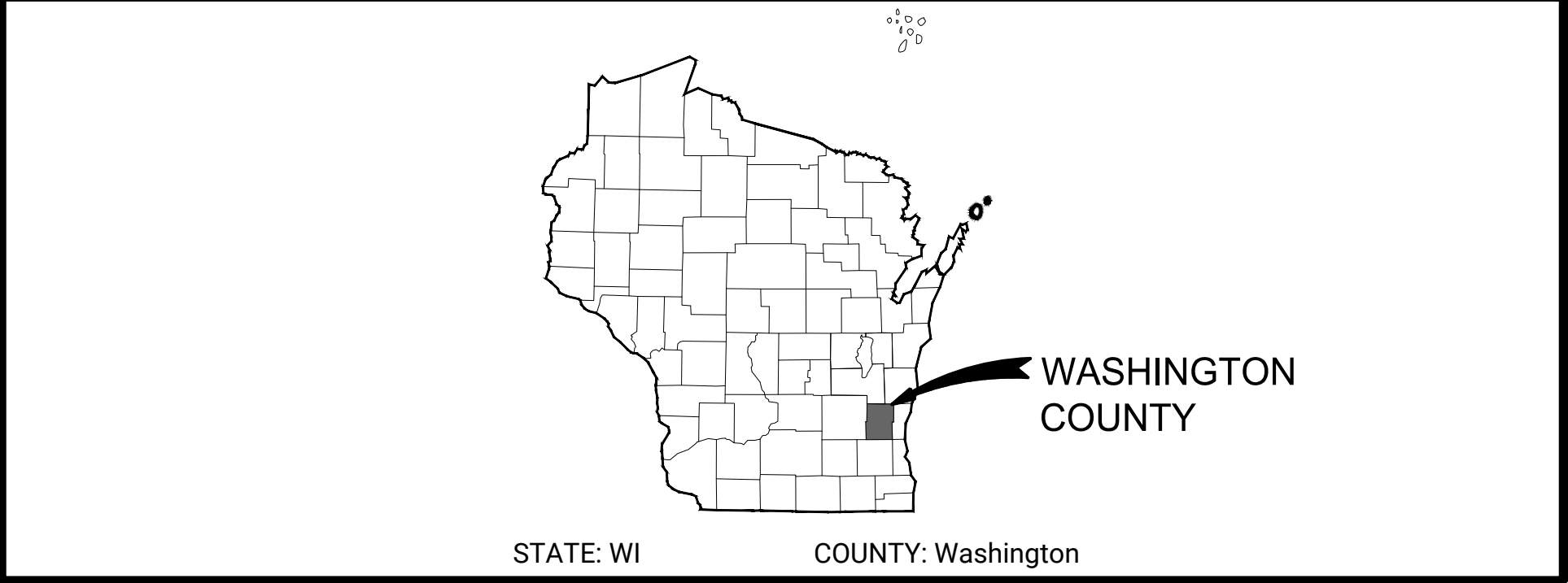
PROJECT ADDRESS

CTH Q & CTH Y GERMANTOWN, WI 53022

LOCATION MAP



STATE & COUNTY LOCATION



PRELIMINARY - NOT FOR CONSTRUCTION ISSUE FOR ESTIMATION

INDEX OF SHEETS

SHEET NO.	SHEET TITLE
G1.00	TITLE SHEET
G2.00	STANDARD LEGEND AND ABBREVIATIONS
G3.00	TYPICAL SECTIONS
C1.01	EXISTING CONDITIONS
C1.02	GRADING PLAN SHEET LAYOUT
C1.04 - C1.07	GRADING PLAN
C1.08 - C1.09	DRAINAGE POND DETAILS
C1.10	UTILITY SYSTEM PLAN SHEET LAYOUT
C1.11 - C1.14	UTILITY SYSTEM PLAN
C1.11 - C1.14	UTILITY SYSTEM PLAN
C2.01 - C2.16	SANITARY SEWER PLAN AND PROFILE
C5.01	EROSION CONTROL DETAILS
C5.02	UTILITY DETAILS



	EXISTING	PROPOSED
EASEMENT - PERMANENT	_____	_____
EASEMENT - TEMPORARY	_____	_____
PROPERTY - PROPERTY LINE	--- .. --- .. --- ..	--- .. --- .. --- ..
PROPERTY - RIGHT OF WAY	_____ROW_____	_____ROW_____
PROPERTY - RIGHT OF WAY MARKER	ROW	ROW
PROPERTY - SECTION LINES	_____	_____
PROPERTY - SETBACK		

	EXISTING	PROPOSED
CONTROL POINT - GENERAL		
CONTROL - IRON ROD, REBAR OR PIPE		

	EXISTING	PROPOSED
BRIDGE - GENERAL		
RAILROAD - CONTROL BOX		
RAILROAD - CENTERLINE OF TRACKS		
RAILROAD - SIGNAL		
RAILROAD - TRACK (RAIL)		
ROADWAY - ASPHALT EDGE		
ROADWAY - ASPHALT PATTERN		
ROADWAY - CENTERLINE		
ROADWAY - CONCRETE EDGE		
ROADWAY - CONCRETE PATTERN		
ROADWAY - CURB		
ROADWAY - GRAVEL EDGE		
ROADWAY - GRAVEL PATTERN		
ROADWAY - GUARDRAIL		
ROADWAY - JOINTS		
ROADWAY - METER		
ROADWAY - SIGN - HIGHWAY		
ROADWAY - WHEELSTOP		
SIDEWALK EDGE		
SIDEWALK PATTERN		

	EXISTING	PROPOSED
SITE - BUILDING FOUNDATION		
SITE - BUILDING OUTLINE		
SITE - FENCE - BARBED WIRE		
SITE - FENCE - CHAIN LINK		
SITE - FENCE - FIELD		
SITE - FENCE - WOOD		
SITE - GATE		
SITE - LIGHT		
	LIGHT - ORNAMENTAL	LIGHT - STREET
SITE - MAILBOX		
SITE - BOULDER		
SITE - SEPTIC TANK		
SITE - SIGN - MISC		
SITE - TRAIL		
SITE - RETAINING WALL		

	EXISTING	PROPOSED
CONTOUR - MAJOR WITH IDENTIFIER		
CONTOUR - MINOR		
CONTOUR - MINOR - DEPRESSION		
ROADWAY - SLOPE INTERCEPT		
SILT FENCE		
SITE - GRADING LIMITS		
SITE - GRADING - RIPRAP BOUNDARY	TYPE 1 	TYPE 2
SITE - GRADING - RIPRAP PATTERN		
SITE - SPOT ELEVATION		
SITE - STOCKPILE - TOPSOIL		
TRACKOUT PAD		

	EXISTING	PROPOSED
DRAINAGE - DITCH - CENTERLINE		
DRAINAGE - DITCH - EDGE OF WATER		
DRAINAGE - FLOW		
DRAINAGE - POND EDGE		
DRAINAGE - TILE DRAIN		
DRAINAGE - ARROW		

	EXISTING	PROPOSED
ELECTRICAL - EQUIPMENT	FIRE ALARM BOX	FIRE ALARM BOX
ELECTRICAL - JUNCTION BOX		
ELECTRICAL - LIGHT FIXTURE	UTILITY & LIGHT POLE	UTILITY & LIGHT POLE
ELECTRICAL - OVERHEAD CABLE	_____OHE_____	_____OHE_____
ELECTRICAL - PAVEMENT SENSOR	_____	_____
ELECTRICAL - PEDESTAL		
ELECTRICAL - POLE	UTILITY POLE WITH TRANSFORMER	UTILITY POLE WITH TRANSFORMER
ELECTRICAL - TOWER		
ELECTRICAL - UNDERGROUND CABLE	_____E_____	_____E_____
ELECTRICAL - UNDERGROUND DUCT	_____	_____
ELECTRICAL - UNDERGROUND STRUCTURE		
ELECTRICAL - TRANSFORMER ENCLOSURE	_____	_____

	EXISTING	PROPOSED
FUEL	-----	-----
NATURAL GAS - APPURTENANCE	PROBE VALVE G METER	PROBE VALVE G METER
NATURAL GAS - PIPE HIGH PRESSURE	-----GHP-----	
NATURAL GAS - PIPE MAIN	-----G-----	-----G-----
NATURAL GAS - PIPE SERVICE	-----G-----	-----G-----
NATURAL GAS - STRUCTURE		
NATURAL GAS - VENT		

	EXISTING	PROPOSED
GEOTECHNICAL - SOILS BOUNDARY		
GEOTECHNICAL - SOIL BORING	⊕ BORING #	⊕ BORING #

	EXISTING	PROPOSED
EDGE OF WATER - RIVER OR STREAM		
EDGE OF WATER - LAKE OR POND		
FLOODPLAIN - 100 YEAR		
FLOODPLAIN - NON-REGULATORY		
WETLAND - BOUNDARY		
WETLAND - PATTERN		

	EXISTING		PROPOSED	
	CONF.	DECD.	CONF.	DECD.
PLANTING - BUSH				
PLANTING - EDGE	_____	_____	_____	_____
PLANTING - EVERGREEN	_____	_____	_____	_____
PLANTING - GROUND COVER				
PLANTING - SHRUB				
PLANTING - STUMP				
PLANTING - TREE	CONF. 10'	DECD. 12'	CONF. 10'	DECD. 12'
PLANTING - TREE LINE				

	EXISTING	PROPOSED
MISC. UTILITY		
MISC. UTILITY - GUY POLE, WIRE, ANCHOR		
MISC. UTILITY - MANHOLE		
MISC. UTILITY - OVERHEAD CABLE		
MISC. UTILITY - PIPE CASING		
MISC. UTILITY - POLE		
SITE - TRENCH DAM		

	EXISTING	PROPOSED
SANITARY SEWER (PLAN)		
SANITARY SEWER (PROFILE)		
SANITARY FORCE MAIN (PLAN)		
SANITARY FORCE MAIN (PROFILE)		
SANITARY SEWER - CLEANOUT		
SANITARY SEWER - LIFT STATION		
SANITARY SEWER - STRUCTURE		

	EXISTING	PROPOSED
STORM SEWER (PLAN)	STM	STM
STORM SEWER (PROFILE)		
STORM SEWER - CULVERT		
STORM SEWER - STRUCTURE	ST	ST
STORM SEWER - INLET OR CATCH BASIN		
STORM SEWER - LIFT STATION	LS	

	EXISTING	PROPOSED
WATER - PIPE (PLAN)		
WATER - PIPE (PROFILE)		
WATER - IRRIGATION		
WATER - APPURTENANCE		
WATER - HYDRANT		
WATER - STRUCTURE		
WATER - VALVE		
WATER - WELL		

	EXISTING	PROPOSED
CABLE TELEVISION - OVERHEAD	—OHC—	—OHC—
CABLE TELEVISION - PEDESTAL	▽	▽
CABLE TELEVISION - UNDERGROUND	—CTV—	—CTV—
FIBER OPTIC - UNDERGROUND CABLE	—FO—	—FO—
FIBER OPTIC - JUNCTION BOX/STRUCTURE	□	□
TELECOM - MISCELLANEOUS	—(util)—	—(util)—
TELEPHONE - BURIED	—T—	—T—
TELEPHONE - OVERHEAD CABLE	—OHT—	—OHT—
TELEPHONE - PEDESTAL	▽	▽
TELEPHONE - STRUCTURE	⊙	⊙
TELEPHONE - SWITCH	—	—

	EXISTING	PROPOSED
CONSTRUCTION ACCESS POINT		
TRAFFIC CONTROL - BARREL		
ROADWAY - MARKING CENTER		
ROADWAY - MARKING EDGE		
ROADWAY - MARKING LANE		
ROADWAY - MARKING SYMBOL		
TRAFFIC SIGNAL		
TRAFFIC SIGNAL - EQUIPMENT		
TRAFFIC SIGNAL - JUNCTION BOX		
TRAFFIC SIGNAL - LIGHT		
TRAFFIC SIGNAL - STRUCTURE		
TRAFFIC SIGNAL - UNDERGROUND LOOP		

SANITARY SEWER - EXISTING	————— SAN —————
SANITARY SEWER - EXISTING SUE LVL A	————— SAN(A) -----
SANITARY SEWER - EXISTING SUE LVL B	————— SAN(B) -----
SANITARY SEWER - EXISTING SUE LVL C	————— SAN(C) -----
SANITARY SEWER - EXISTING SUE LVL D	————— SAN(D) -----
SANITARY SEWER - ABANDONED	/ / / / SAN / / / /
SANITARY SEWER - REMOVED/DEMO	XXXXXX SAN XXXXXX
SANITARY SEWER - PROPOSED	————— SAN —————
SANITARY SEWER - FUTURE	————— —————

△	CENTRAL ANGLE OR DELTA	MH	MANHOLE
ADT	AVERAGE DAILY TRAFFIC	MP	MARKER POST
AGGR	AGGREGATE	MW	METER-WATER OR MONITORING WELL
AH	AHEAD	N	NORTH
ASPH	ASPHALT	NB	NORTHBOUND
B/B	BACK TO BACK	NC	NORMAL CROWN
BARR	BARRICADE	NE	NORTHEAST
BOC	BACK OF CURB	NO	NUMBER
BK	BACK	NTS	NOT TO SCALE
BLDG	BUILDING	NW	NORTHWEST
BM	BENCH MARK	O	OIL
BSMT	BASEMENT	O&C	OIL & CHIP
C	CUT	OBLIT	OBLITERATE
C&G	CURB AND GUTTER	OD	OUTSIDE DIAMETER
C/C	CENTER TO CENTER	PC	POINT OF CURVATURE
CABC	CRUSHED AGGREGATE BASE COURSE	PCC	POINT OF COMPOUND CURVE
CB	CATCH BASIN	PED	PEDESTAL
CE	CONSTRUCTION ENTRANCE	PLE	PERMANENT LIMITED EASEMENT
CIP	CAST IRON PIPE	PVMT	PAVEMENT
CL	CENTERLINE	PCC	PORTLAND CEMENT CONCRETE
OMP	CORRUGATED METAL PIPE	PE	PRIVATE ENTRANCE
CNTY	COUNTY	PI	POINT OF INTERSECTION
CO	CLEAN OUT	PJF	PRE-FORMED JOINT FILLER
CONC	CONCRETE	PL	PROPERTY LINE
CONSTR	CONSTRUCTION	POC	POINT OF CURVE
CONSTR JT	CONSTRUCTION JOINT	POT	POINT ON TANGENT
CP	CONTROL POINT	PP	POWER POLE
CTH	COUNTY TRUNK HIGHWAY	PRC URE	POINT OF REVERSE CURVATURE
CTRL JT	CONTROL JOINT	PROJ	PROJECT
CTV	CABLE TV	PROP	PROPOSED
CU YD	CUBIC YARD	PSI	POUND PER SQUARE INCH
C	CURB STOP	PT	POINT OF TANGENCY
D	DEGREE OF CURVE	PVC	POLYVINYL CHLORIDE
DD	DIRECTIONAL DRILLED	PVC	POINT OF VERTICAL CURVATURE
DEG	DEGREE	PVI	POINT OF VERTICAL INTERSECTION
DIA	DIAMETER	PVRT	POINT OF VERTICAL REVERSE CURVE
DI	DUCTILE IRON PIPE	PVC	POINT OF VERTICAL TANGENCY
DISCH	DISCHARGE	R	RANGE OR RADIUS
DW	DRIVEWAY	RCP	REINFORCED CONCRETE PIPE
E	EAST	REBAR	REINFORCEMENT BAR
E OR	ELECTRIC (IN LINE STYLES)	REL	RELOCATE
EA	EACH	REM	REMAINING
EB	EAST BOUND	REQD	REQUIRED
EBS	EXCAVATION BELOW SUBGRADE	RL	REFERENCE LINE
ECS	EXTERNAL CHIMNEY SEAL	ROW	RIGHT-OF-WAY
EL	ELEVATION	RP	REFERENCE POINT
ELEC	ELECTRIC	RR	RAILROAD
EMB	EMBANKMENT	RT	RIGHT
ENTR	ENTRANCE	RW	RETAINING WALL
EP	EDGE OF PAVEMENT	S	SOUTH
ET	ELECTRIC TRANSFORMER	SALV	SALVAGE
EW	ENDWALL	SAN	SANITARY
EXC	EXCAVATION	SC	STORM CONNECTION
EXIST	EXISTING	SB	SOUTHBOUND
F	FILL	SDWK	SIDEWALK
F/F	FACE TO FACE	SE	SOUTHEAST
FDN	FOUNDATION	SF	SILT FENCE
FE	FIELD ENTRANCE	SIG	SIGNAL
FERT	FERTILIZER	SL	SANITARY LATERAL
FH	FIRE HYDRANT	SQ FT	SQUARE FEET
FIN GR	FINISHED GRADE	SHLDR	SHOULDER
FL	FLOW LINE	SQ YD	SQUARE YARD
FM	FORCE MAIN	SSD	STOPPING SIGHT DISTANCE
FO	FIBER OPTIC	STA	STATION
FT	FOOT	STD	STANDARD
FTG	FOOTING	STH	STATE TRUNK HIGHWAY
G	GAS	STM	STORM OR STORM SEWER
GV	GAS VALVE	STP	SEWAGE TREATMENT PLANT
GW	GUY WIRE	STRUCT	STRUCTURE OR STRUCTURAL
HDPE	HIGH DENSITY POLYETHYLENE	SW	SOUTHWEST
HORIZ	HORIZONTAL	TAN	TANGENT
HR	HANDICAP RAMP	T	TOWN
HSE	HOUSE	T OR	TELEPHONE (IN LINE STYLE)
HT	HEIGHT	TEL	TELEPHONE
I	INTERSECTION ANGLE	TEMP	TEMPORARY
ICS	INTERNAL CHIMNEY SEAL	TLE	TEMPORARY LIMITED EASEMENT
ID	INSIDE DIAMETER	TOC	TOP OF CURB
IN	INCH	TRANS	TRANSITION
INL	INLET	TYP	TYPICAL
INTERS	INTERSECTION	UG	UNDERGROUND
INV	INVERT	USH	US HIGHWAY
IP	IRON PIPE OR PIN	VC	VERTICAL CURVE
JCT	JUNCTION	VERT	VERTICAL
L	LENGTH (OF CURVE)	VOL	VOLUME
LC	LONG CHORD OF CURVE	W	WEST
LP	LIGHT POLE	WB	WESTBOUND
LS	LIFT STATION OR LUMP SUM	WM	WATER MAIN
LT	LEFT	WS	WATER SERVICE
MAINT	MAINTENANCE	WTP	WATER TREATMENT PLANT
MATL	MATERIAL	WV	WATER VALVE
MB	MAILBOX	WWTP	WASTE WATER TREATMENT PLANT
MG	METER-GAS	YD	YARD



HOME PATH
FINANCIAL

[illegible]

**SUTTON FARM SUBDIVISION
HOME PATH FINANCIAL
VILLAGE OF GERMANTOWN, WI**

STANDARD LEGEND AND ABBREVIATIONS

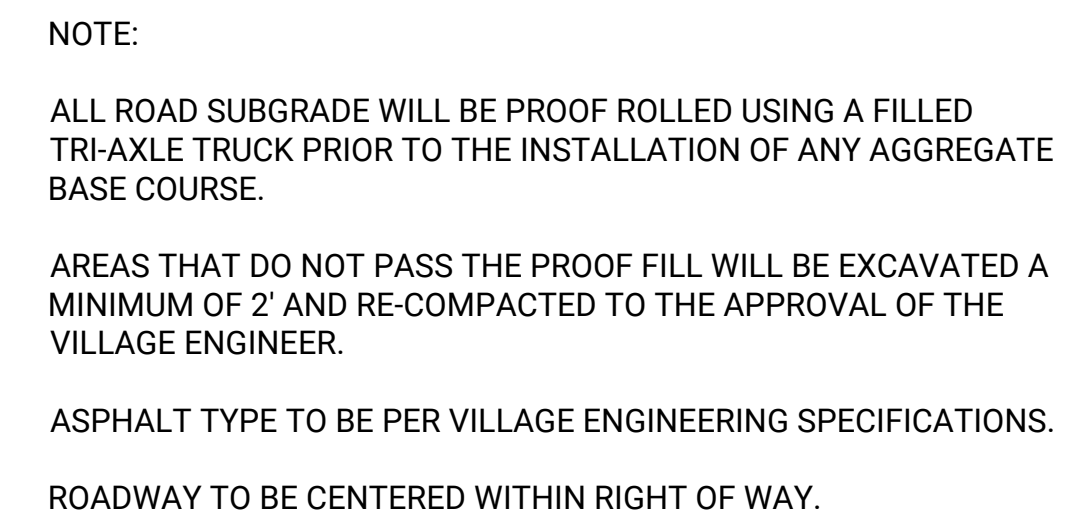


DESIGNED: NCR	DRAWN: CJZ	CHECKED: CDH
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PROJECT NO: 0025H025.00

SHEET NO.

G2.00



TYPICAL CROSS SECTION PUBLIC RESIDENTIAL STREET DETAIL

[illegible]

**SUTTON FARM SUBDIVISION
HOME PATH FINANCIAL
VILLAGE OF GERMANTOWN, WI**

TYPICAL SECTIONS



DESIGNED: NCR	DRAWN: CJZ	CHECKED: CDH
PROJECT NO: 0025H025.00		
PRINT DATE: 5/30/2025		
SHEET NO.		

G3.00

CAD FILE C:\PW\WORKDIR\PW\LEID0867226\1.XX-EXISTING CONDITIONS.DWG Layout: C1.01 By: RIZZARDI, NICK

CALVIN MARTINEZ
PARCEL #: 314985

WILLIAM & CARLA SHUBERT
PARCEL #: 323985

PROPERTY LINE (TYP)



0 150 300
scale feet

DENNIS & KATHLEEN SCHNEIDER
PARCEL #: 314986

RONALD & KATHLEEN SCHNEIDER
PARCEL #: 314987

GIDGET STROIK
PARCEL #: 3144997

TAMARA SCHNEIDER
PARCEL #: 3144998

CARRIE RAMOS & KRISTIE LESWING
PARCEL #: 323995

EUGENE & CARLENE SCHUSTER
PARCEL #: 323992

CARRIE RAMOS & KRISTIE LESWING
PARCEL #: 323986

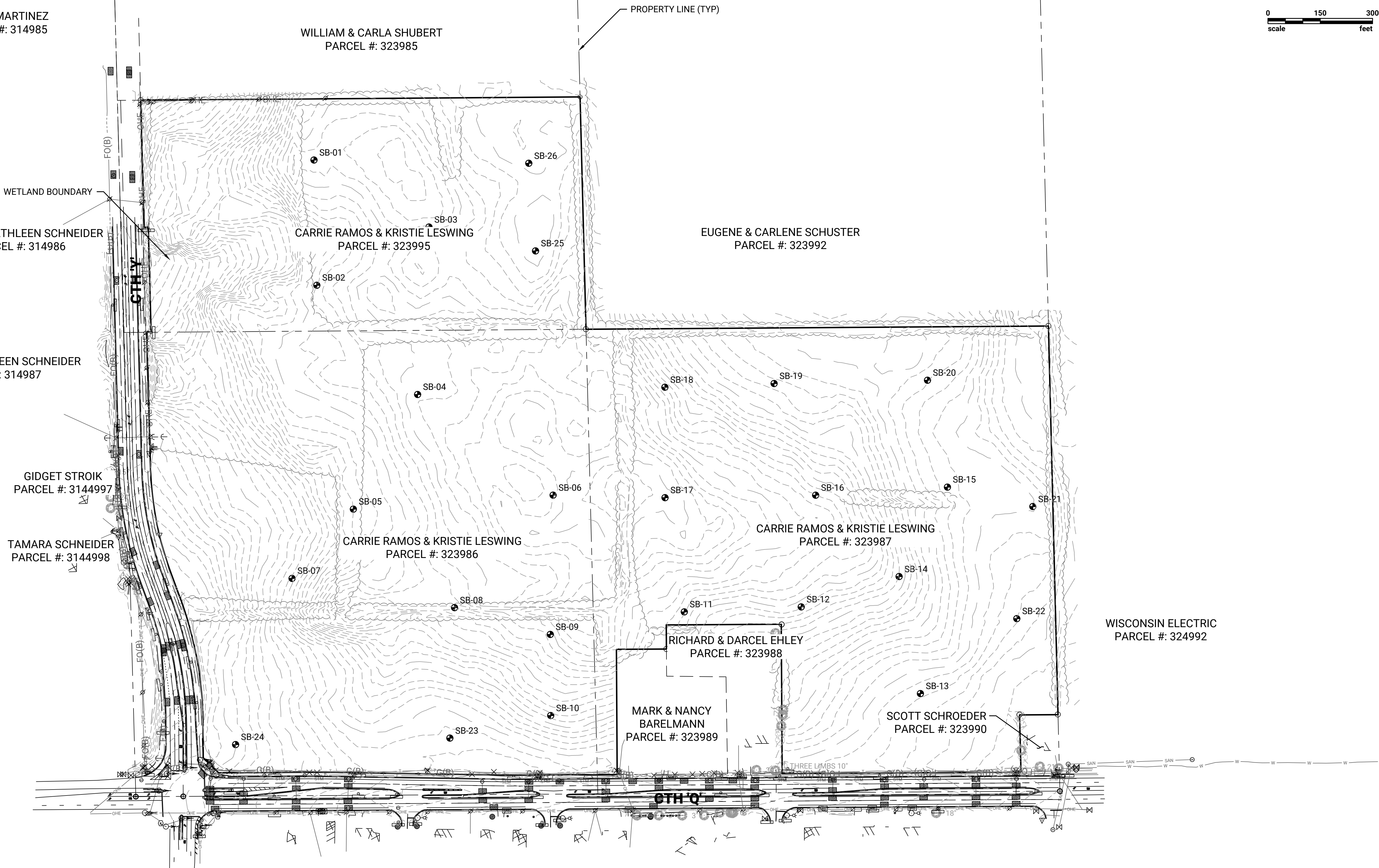
CARRIE RAMOS & KRISTIE LESWING
PARCEL #: 323987

WISCONSIN ELECTRIC
PARCEL #: 324992

RICHARD & DARCEL EHLEY
PARCEL #: 323988

MARK & NANCY
BARELMANN
PARCEL #: 323989

SCOTT SCHROEDER
PARCEL #: 323990



PREPARED FOR:



PREPARED BY:



REVISION DESCRIPTION

BY

DATE

NO

SUTTON FARM SUBDIVISION
HOME PATH FINANCIAL
VILLAGE OF GERMANTOWN, WI

EXISTING CONDITIONS

**SUBJECT TO CHANGE
NOT FOR CONSTRUCTION**

DESIGNED: NCR DRAWN: CJZ CHECKED: CDH

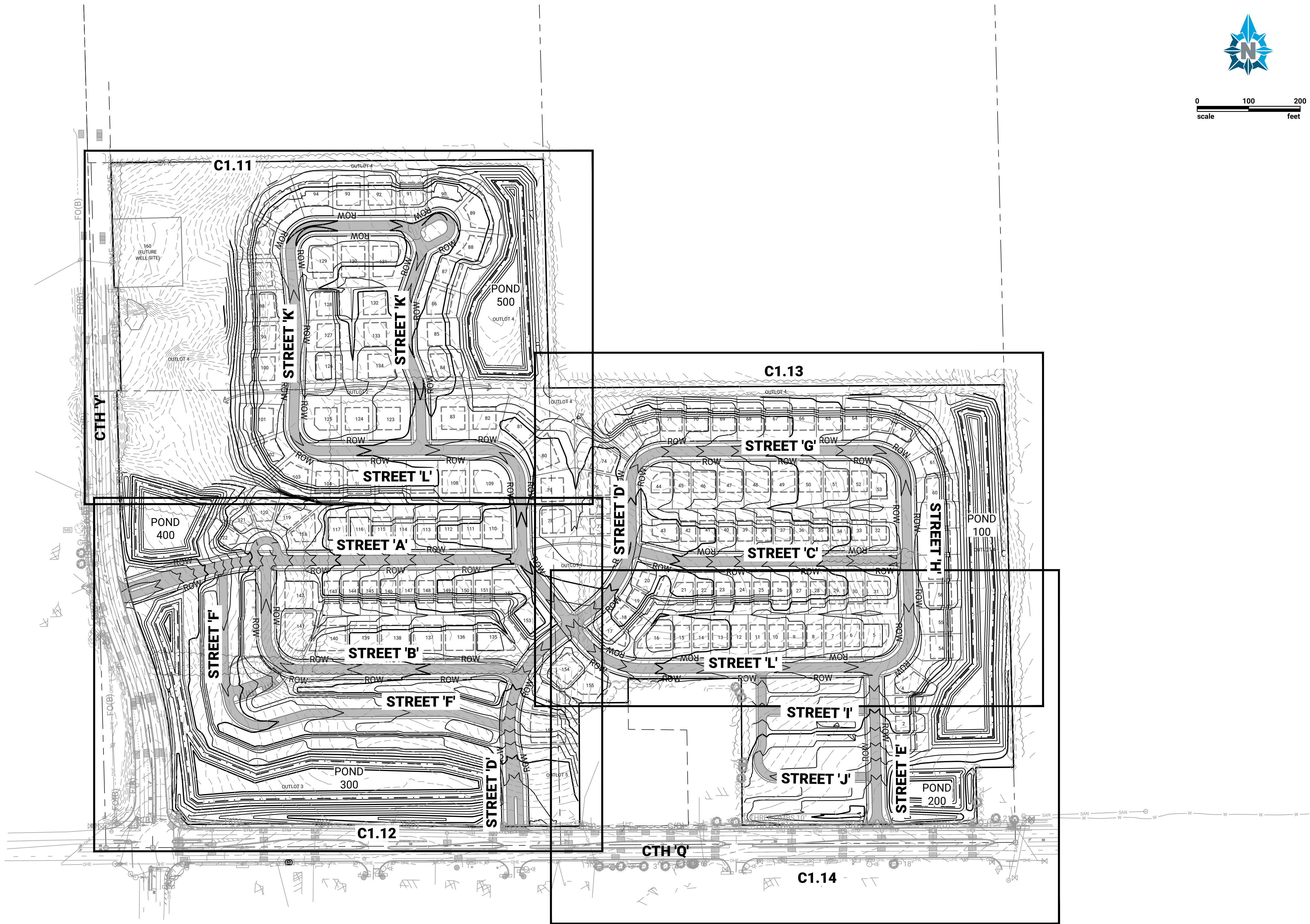
PROJECT NO: 0025H025.00

PRINT DATE: 5/30/2025

SHEET NO.

C1.01

CAD FILE C:\PW\WORKDIR\PW\LEID0867226\CT.XX GRADING PLAN OVERALL DWG Layout CT.02 BY RIZZARDI, NICK



0 100 200
scale feet

PREPARED FOR:



PREPARED BY:



REVISION DESCRIPTION

BY

DATE

NO

SUTTON FARM SUBDIVISION
HOME PATH FINANCIAL
VILLAGE OF GERMANTOWN, WI

GRADING PLAN SHEET LAYOUT

**SUBJECT TO CHANGE
NOT FOR CONSTRUCTION**

DESIGNED: NCR DRAWN: C.JZ CHECKED: CDH

PROJECT NO: 0025H025.00

PRINT DATE: 5/30/2025

SHEET NO.

C1.02



03 POND 200 OUTLET CONTROL DETAIL

05 POND 300 OUTLET CONTROL DETAIL

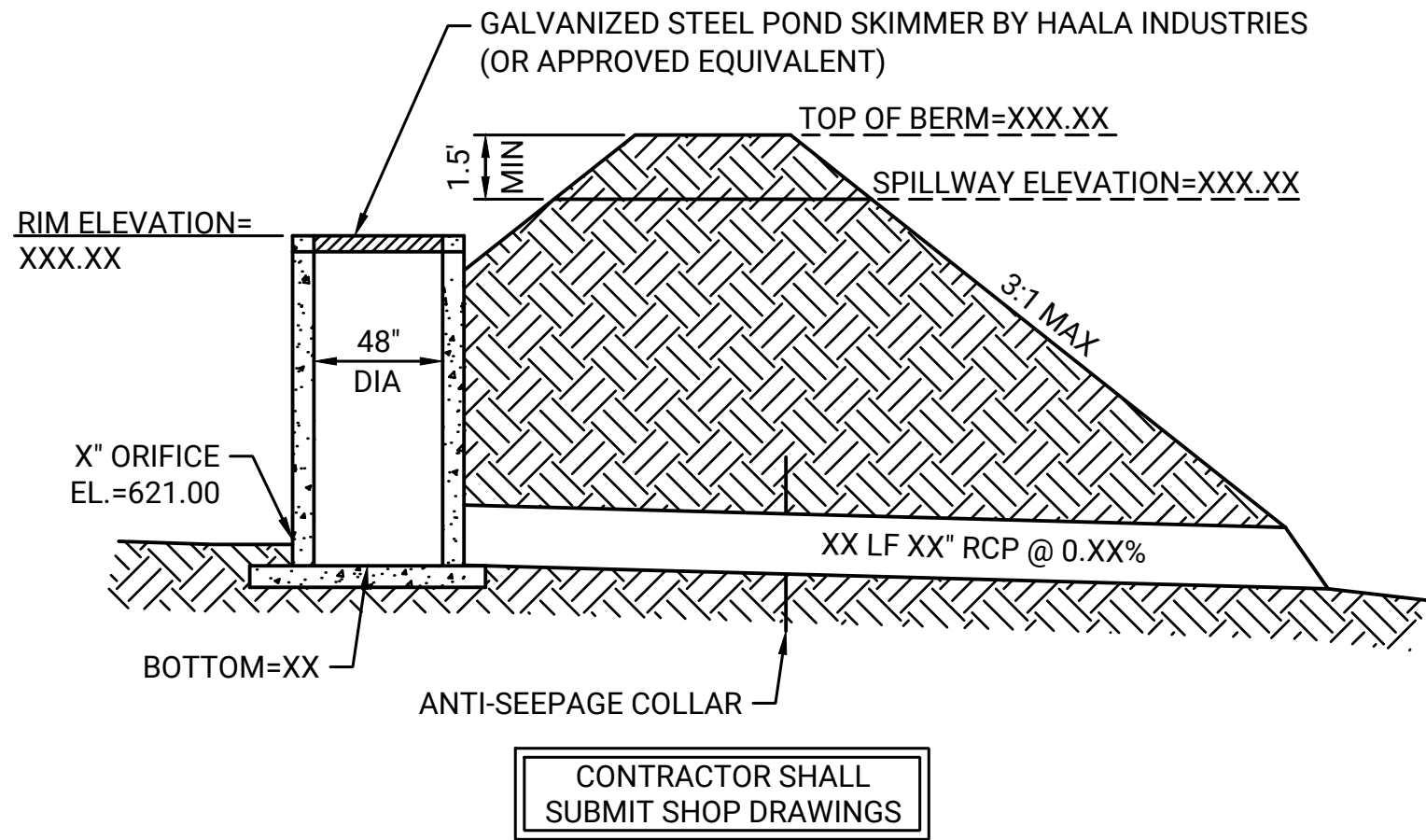
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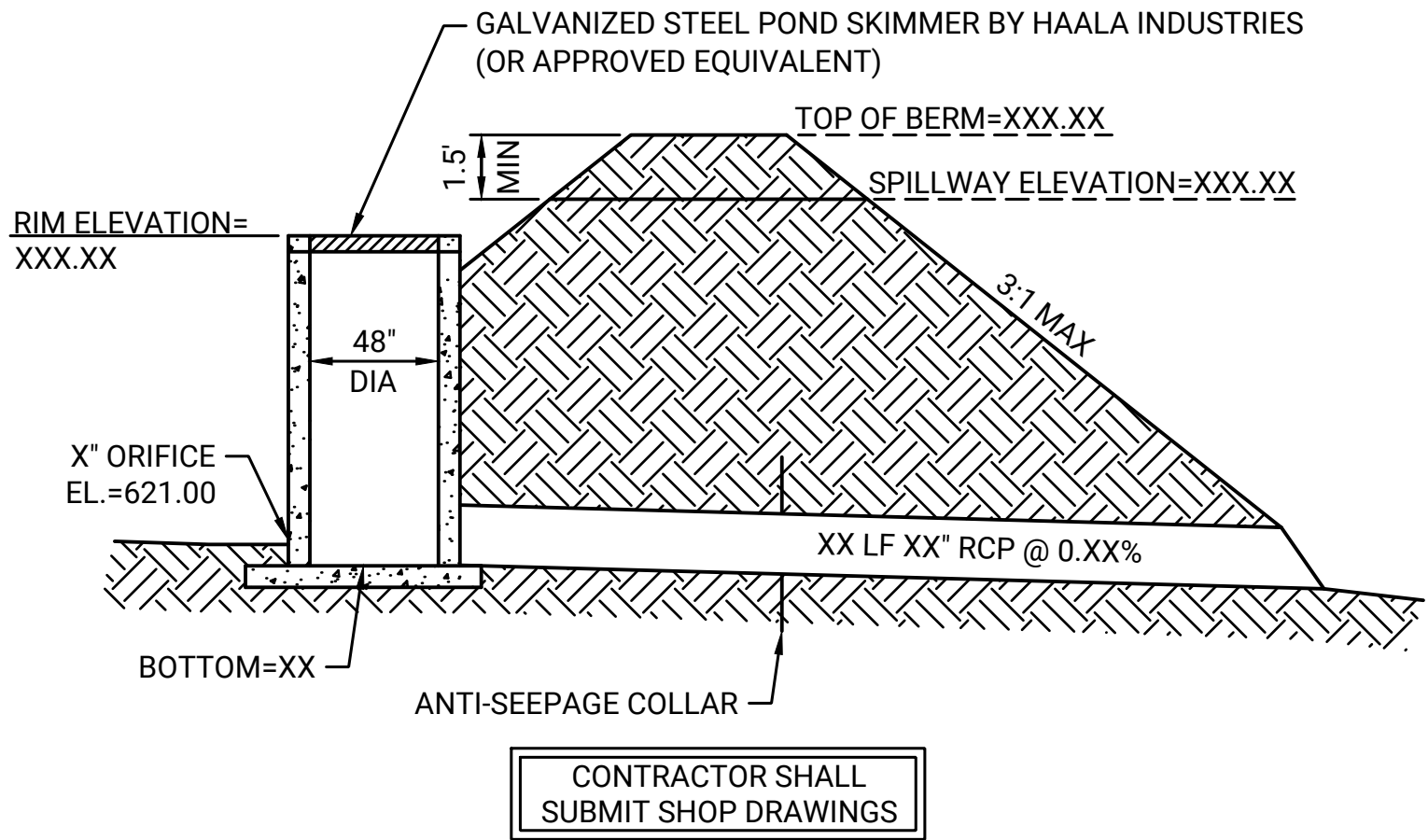
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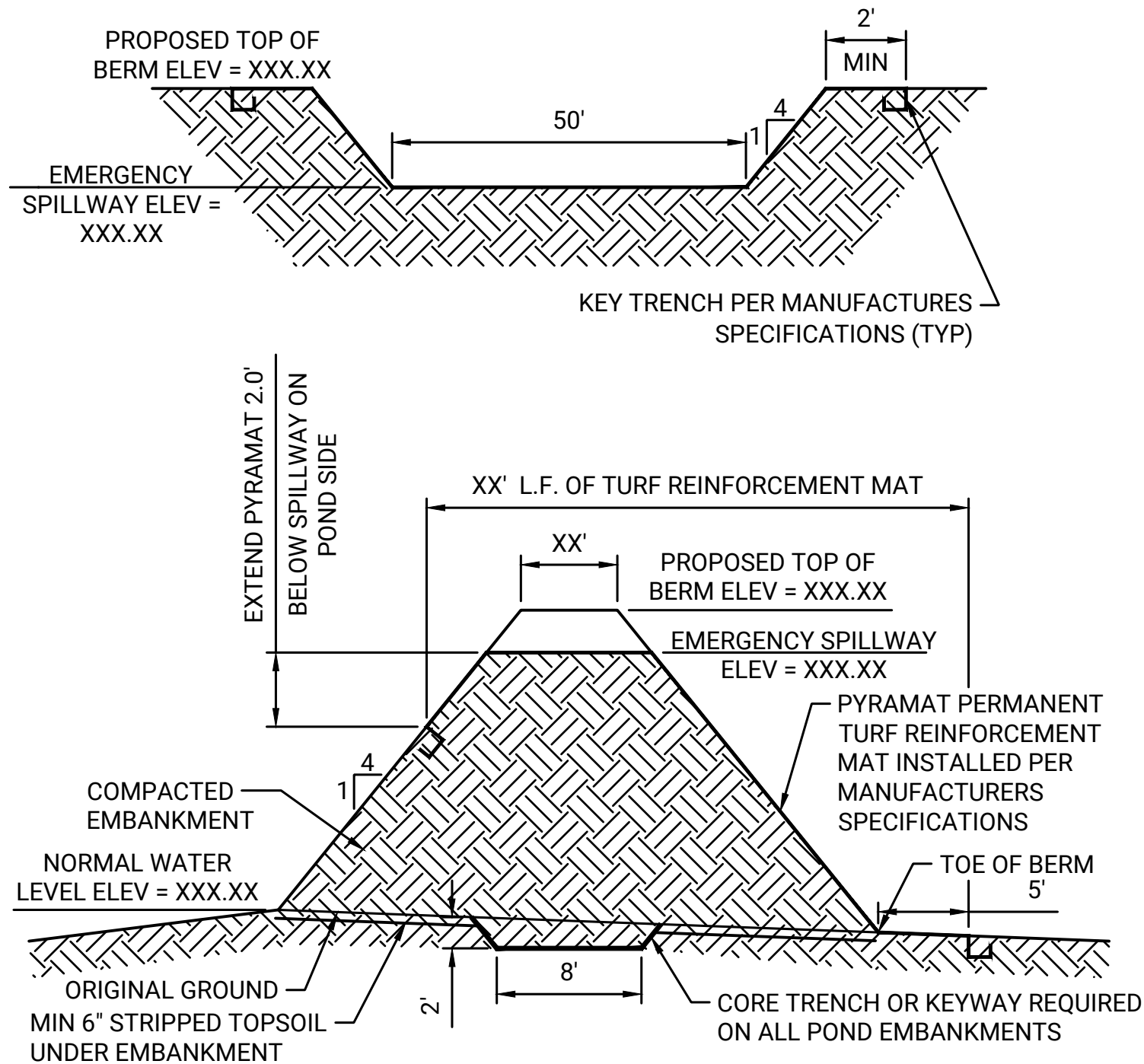
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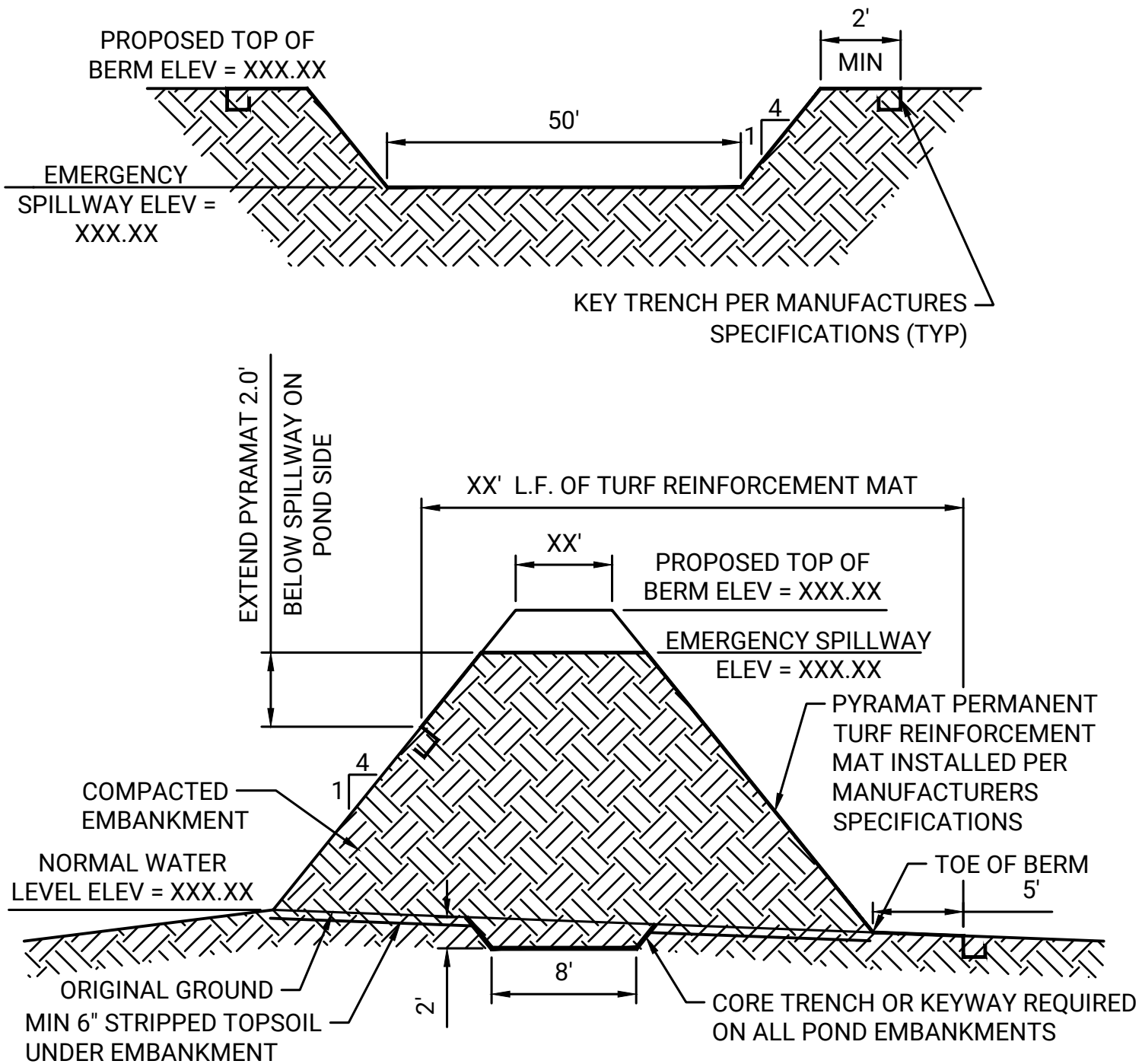
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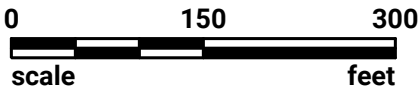
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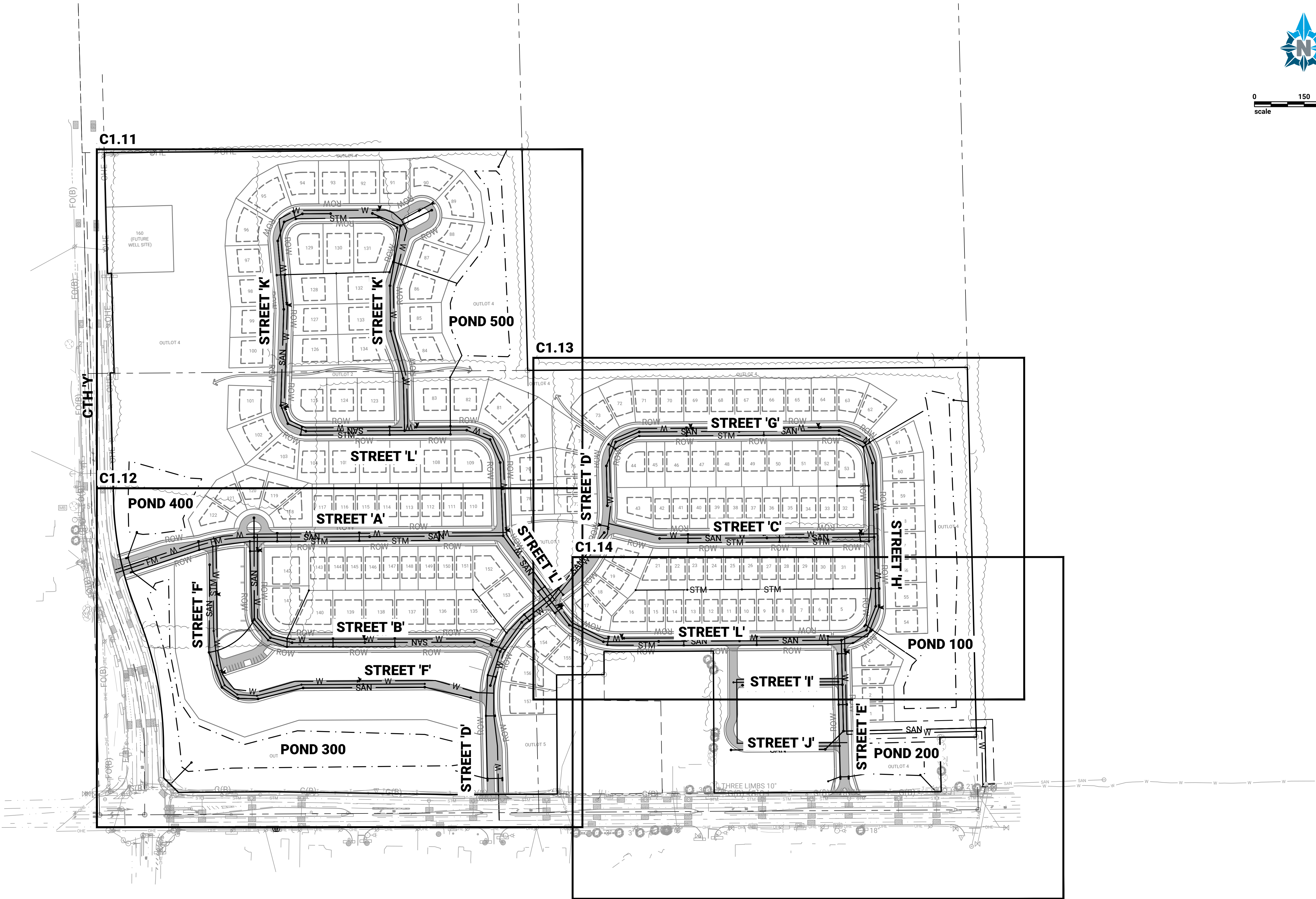
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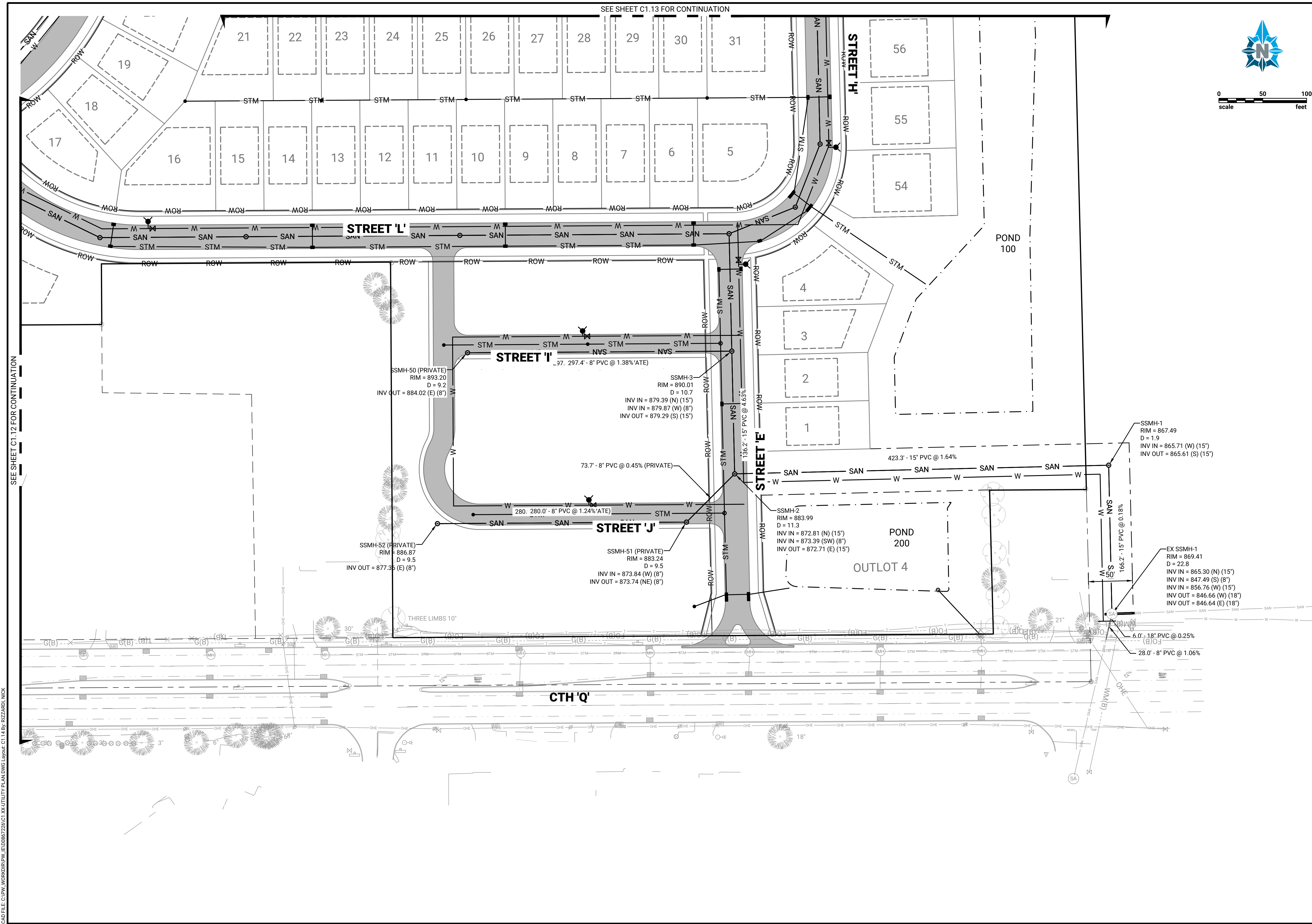
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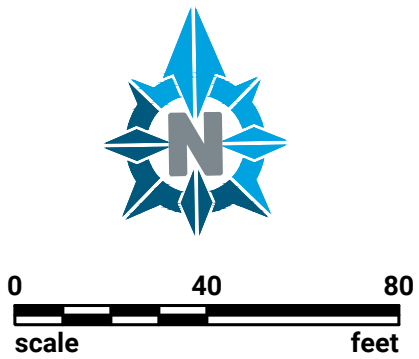
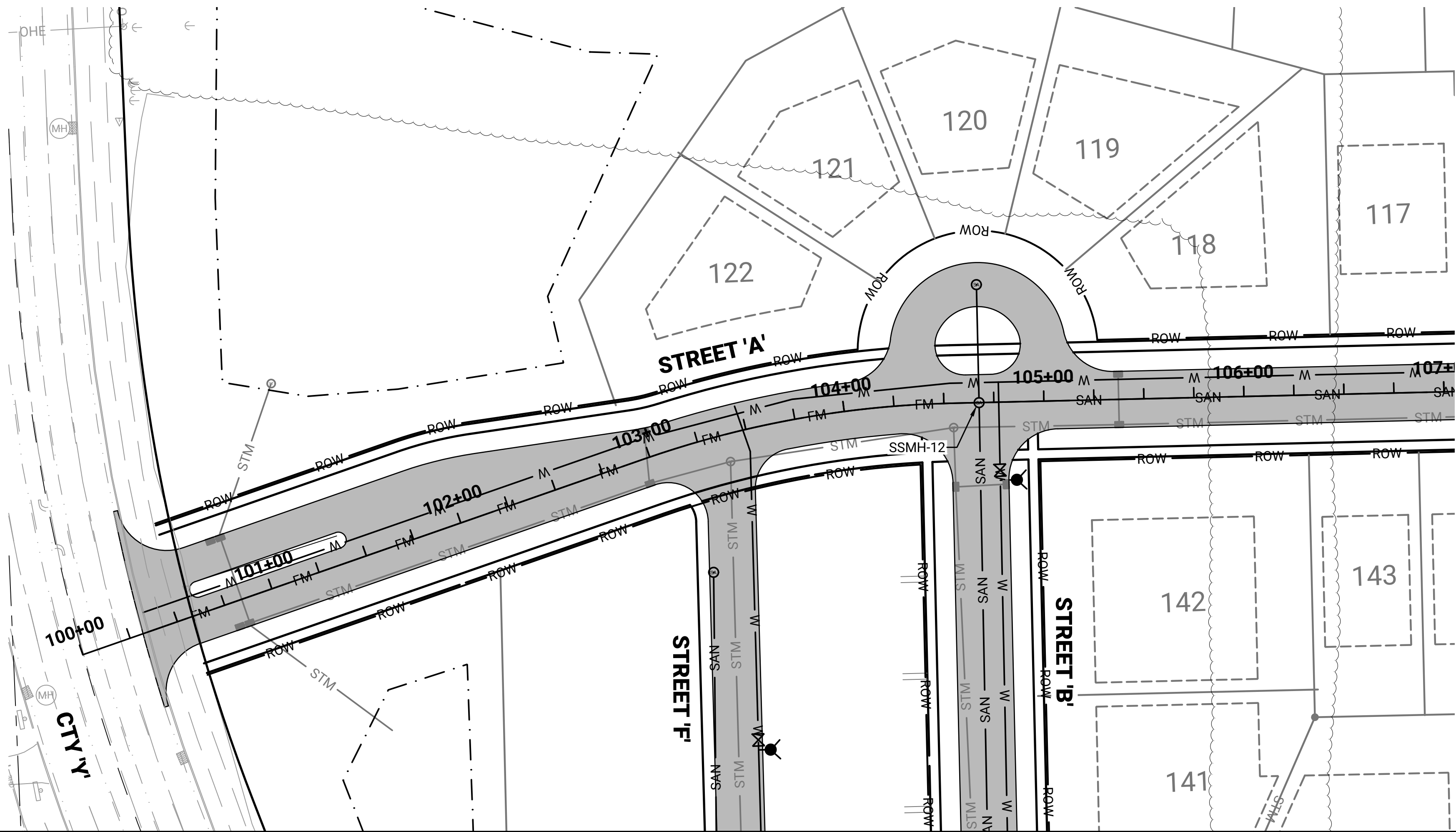
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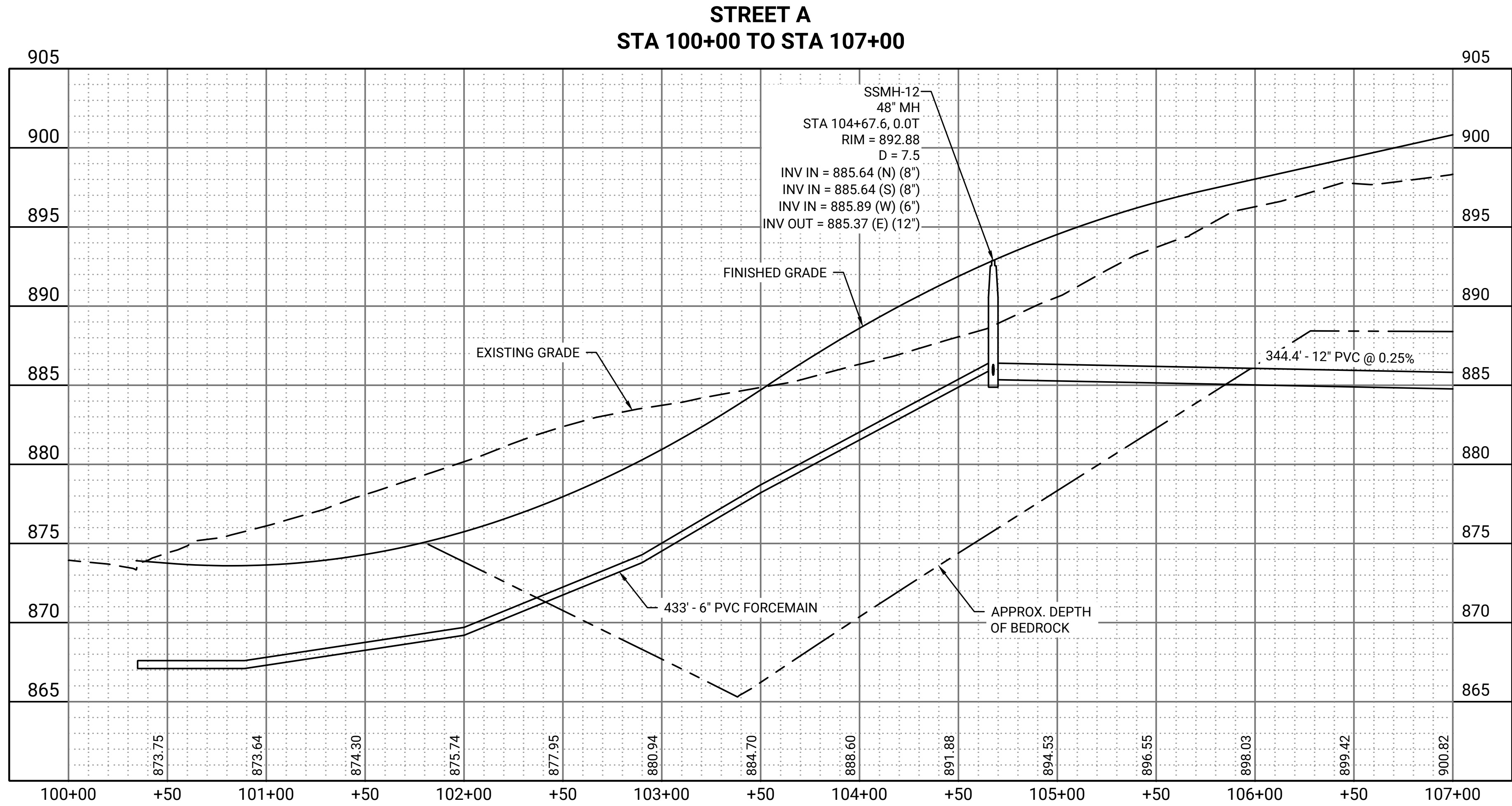
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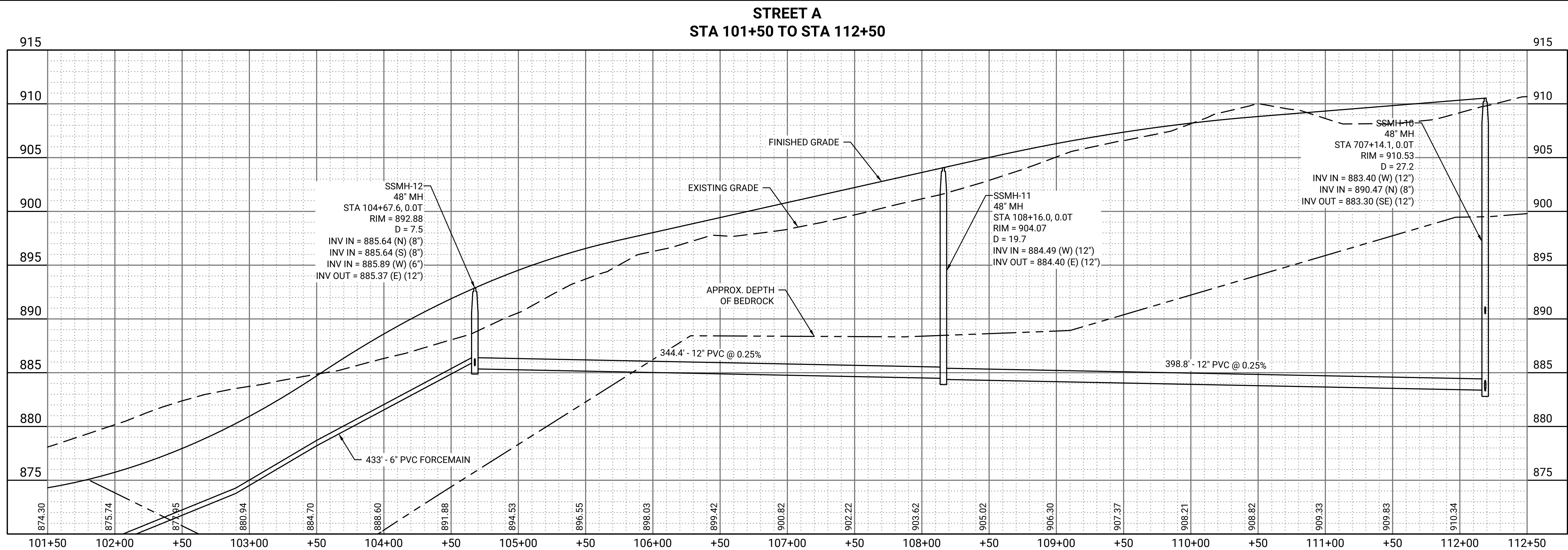
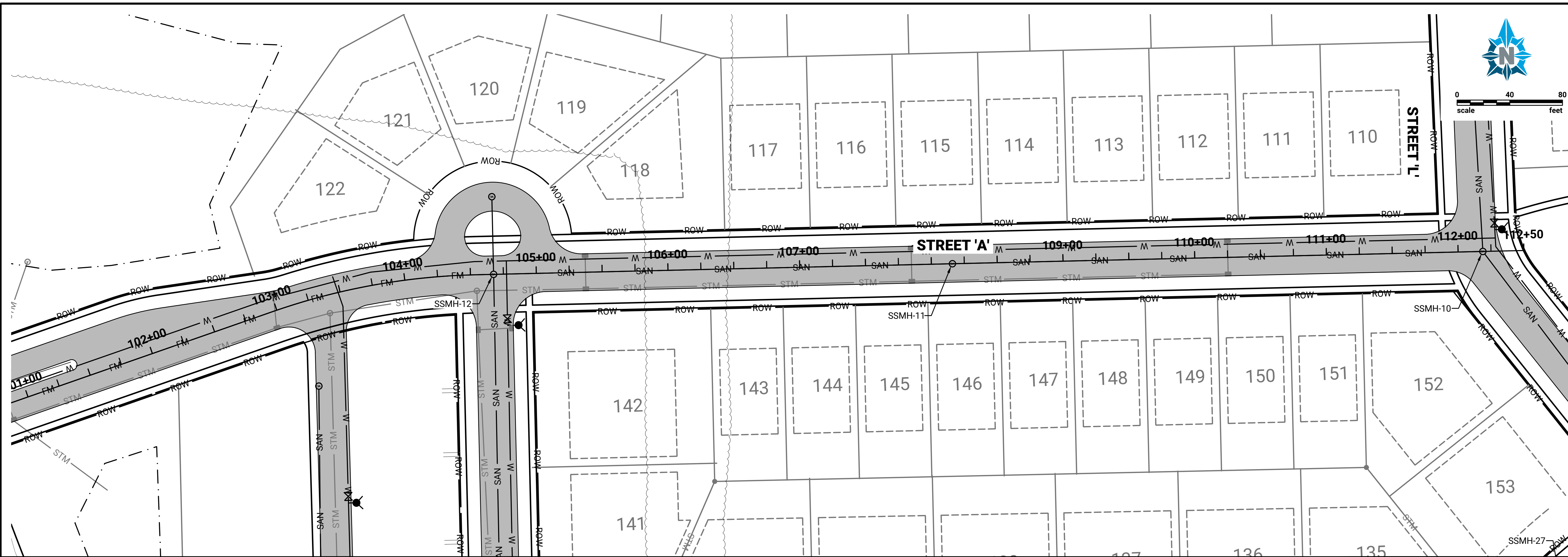
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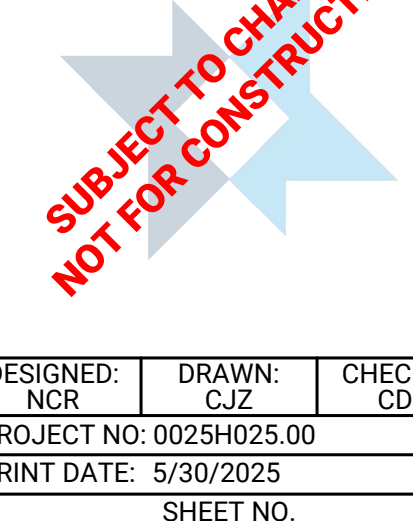


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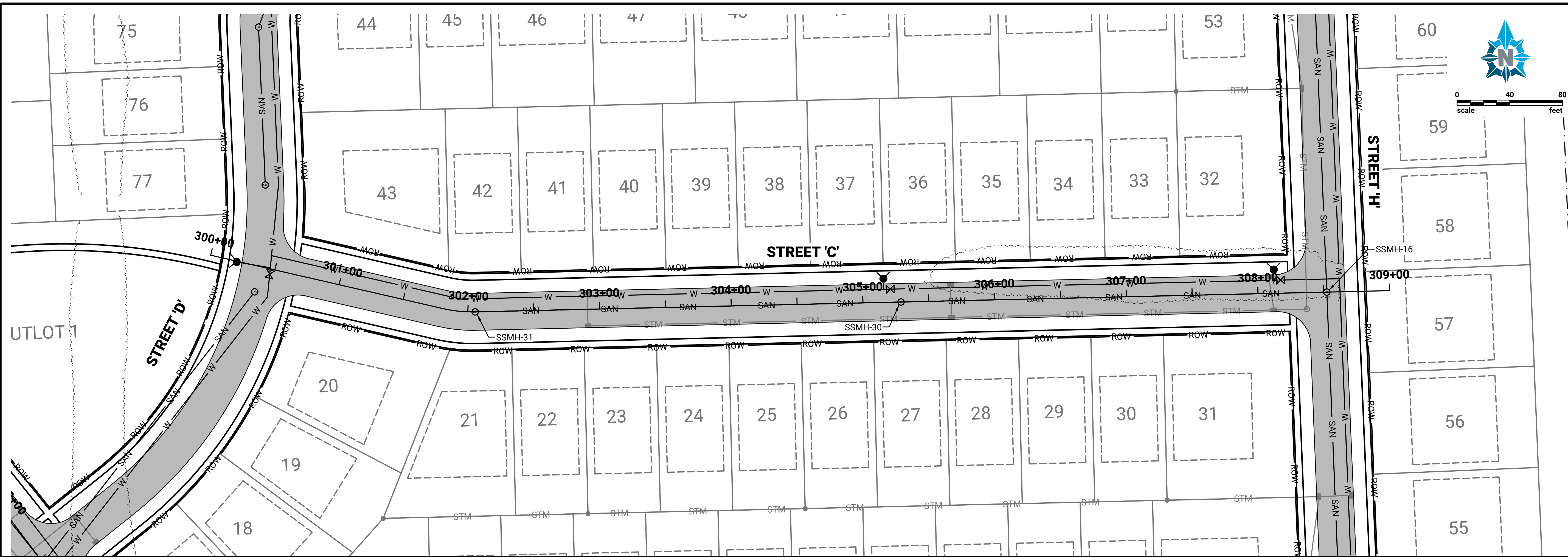
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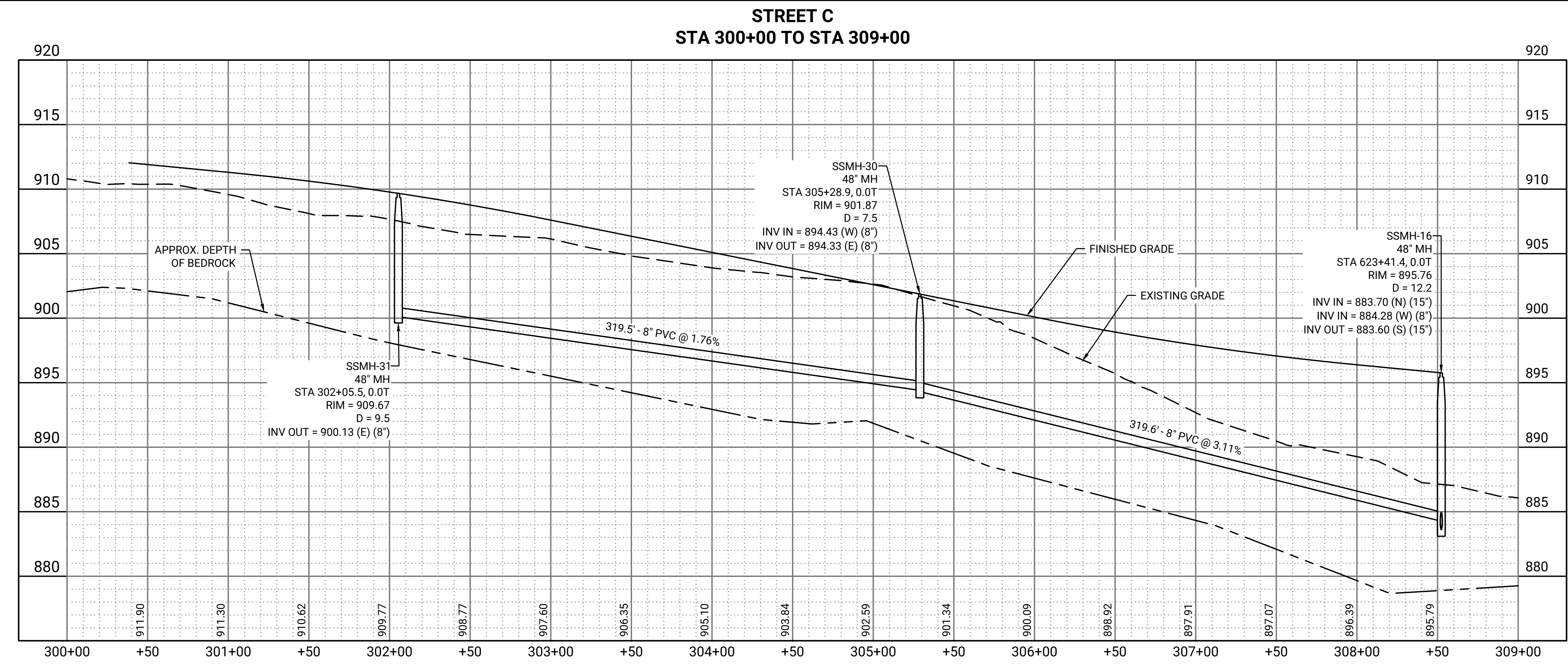
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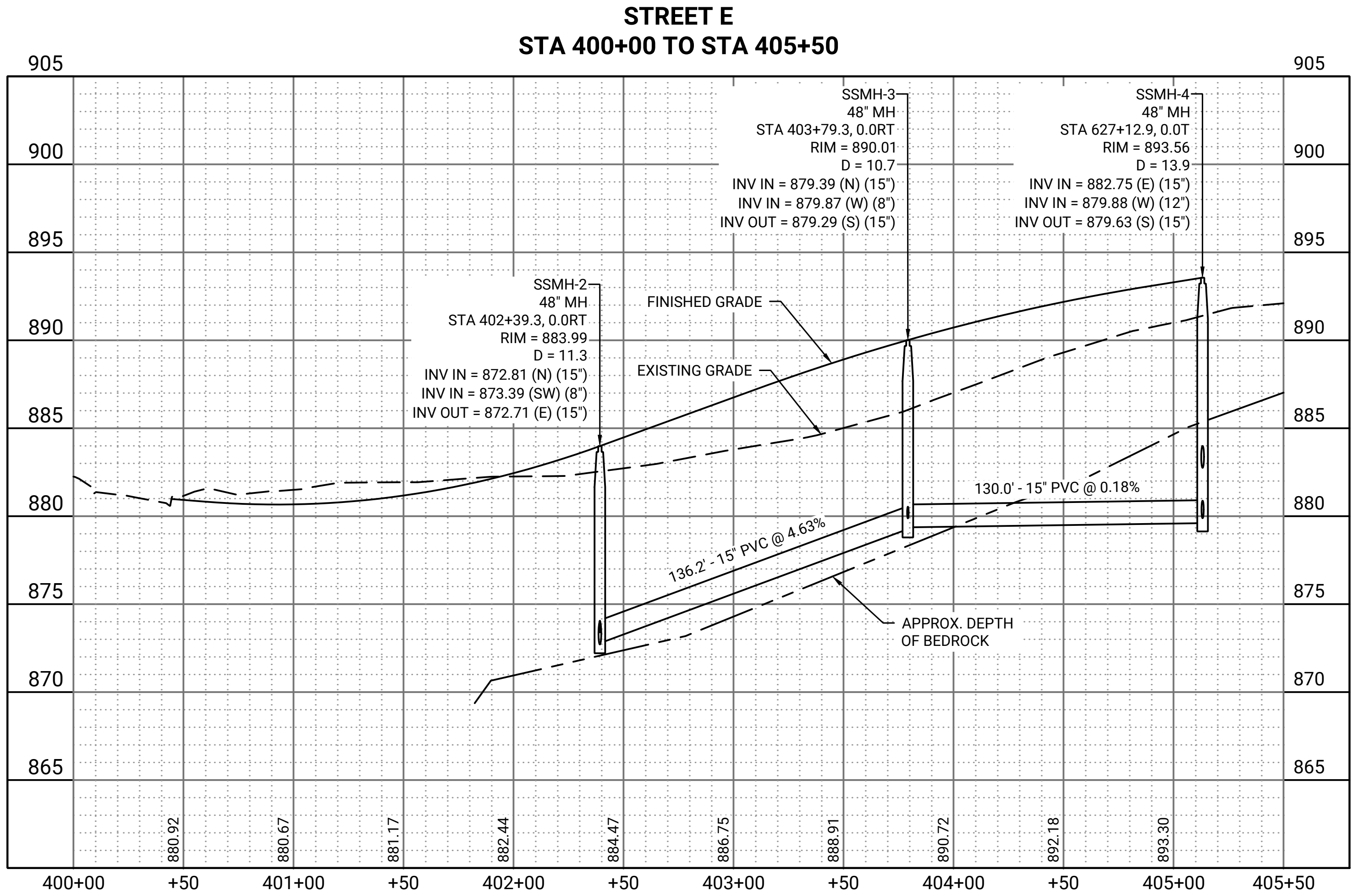
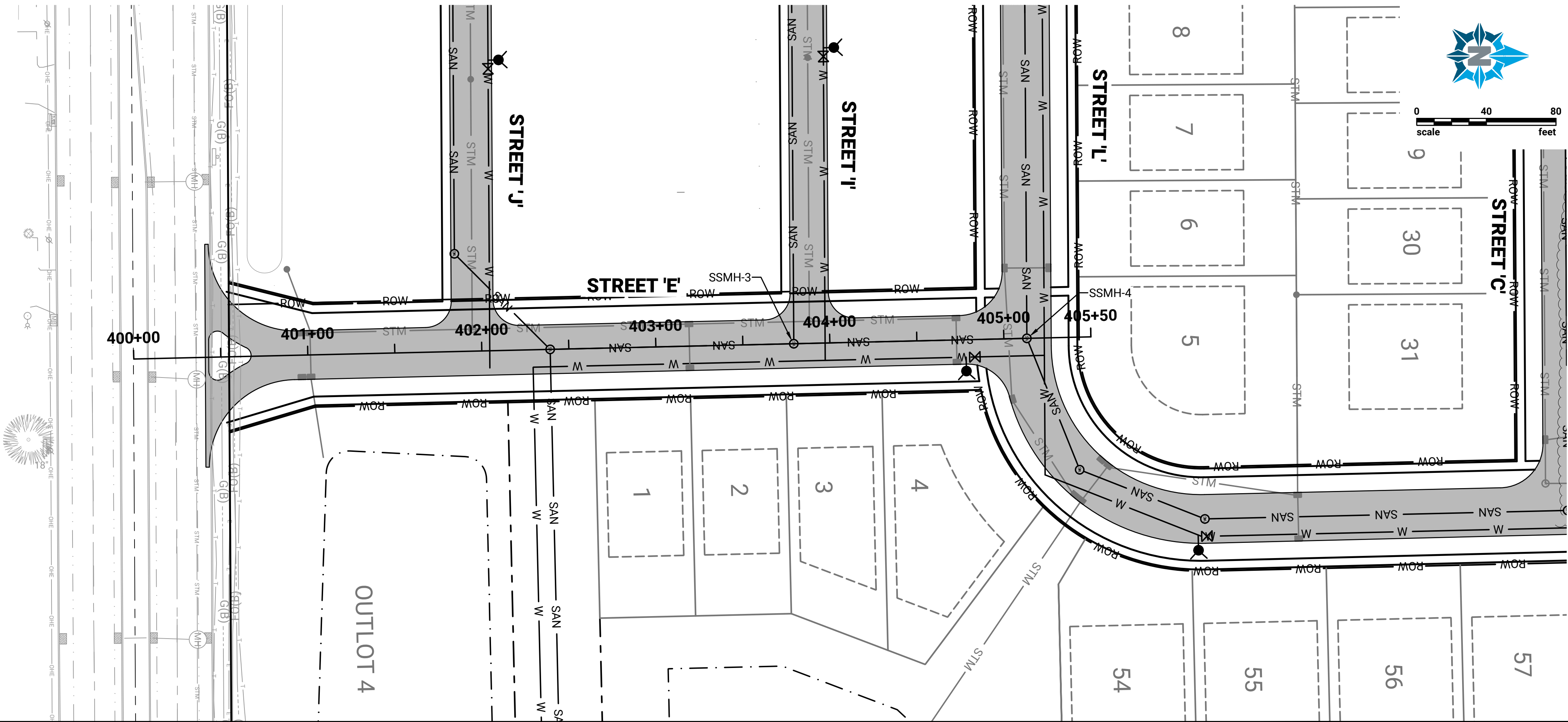
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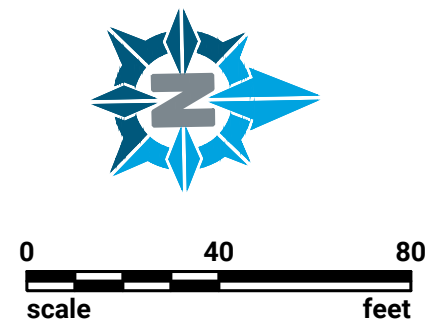
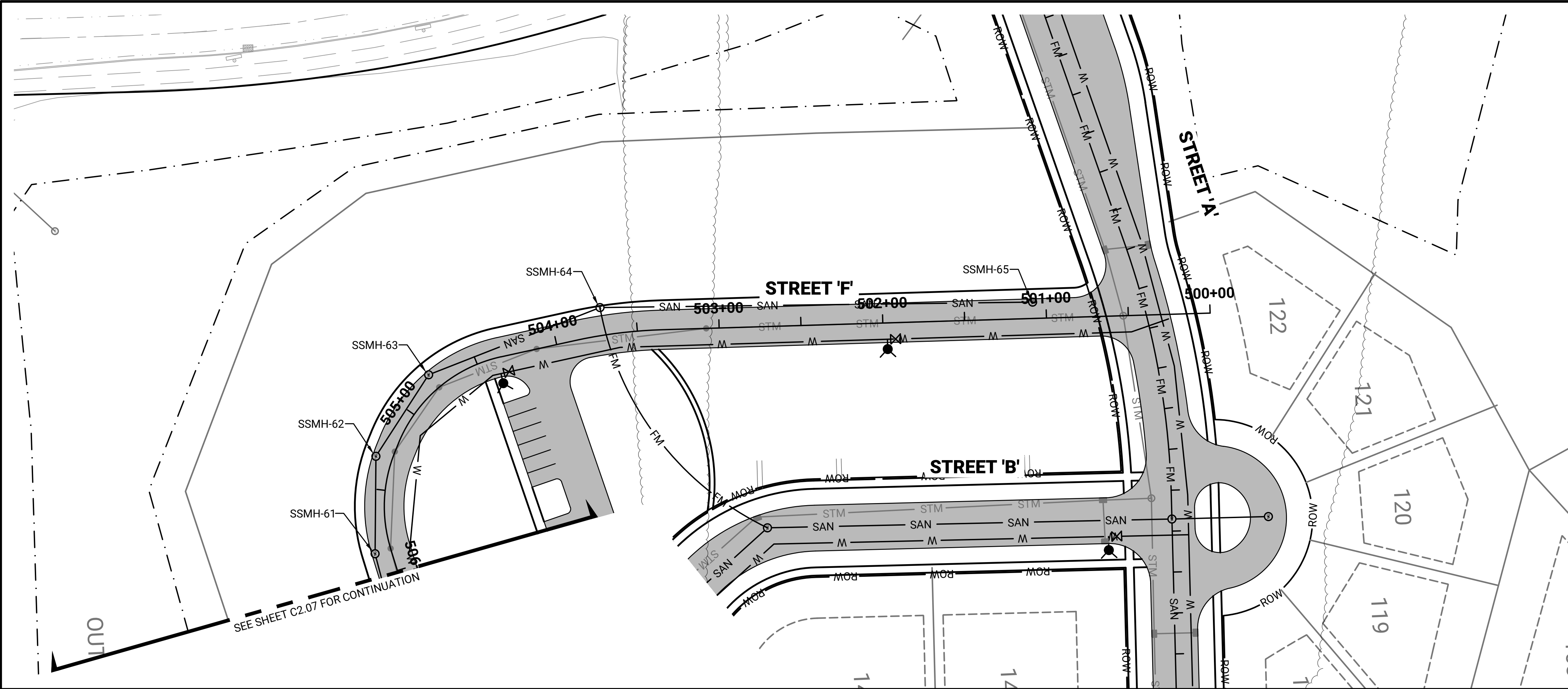
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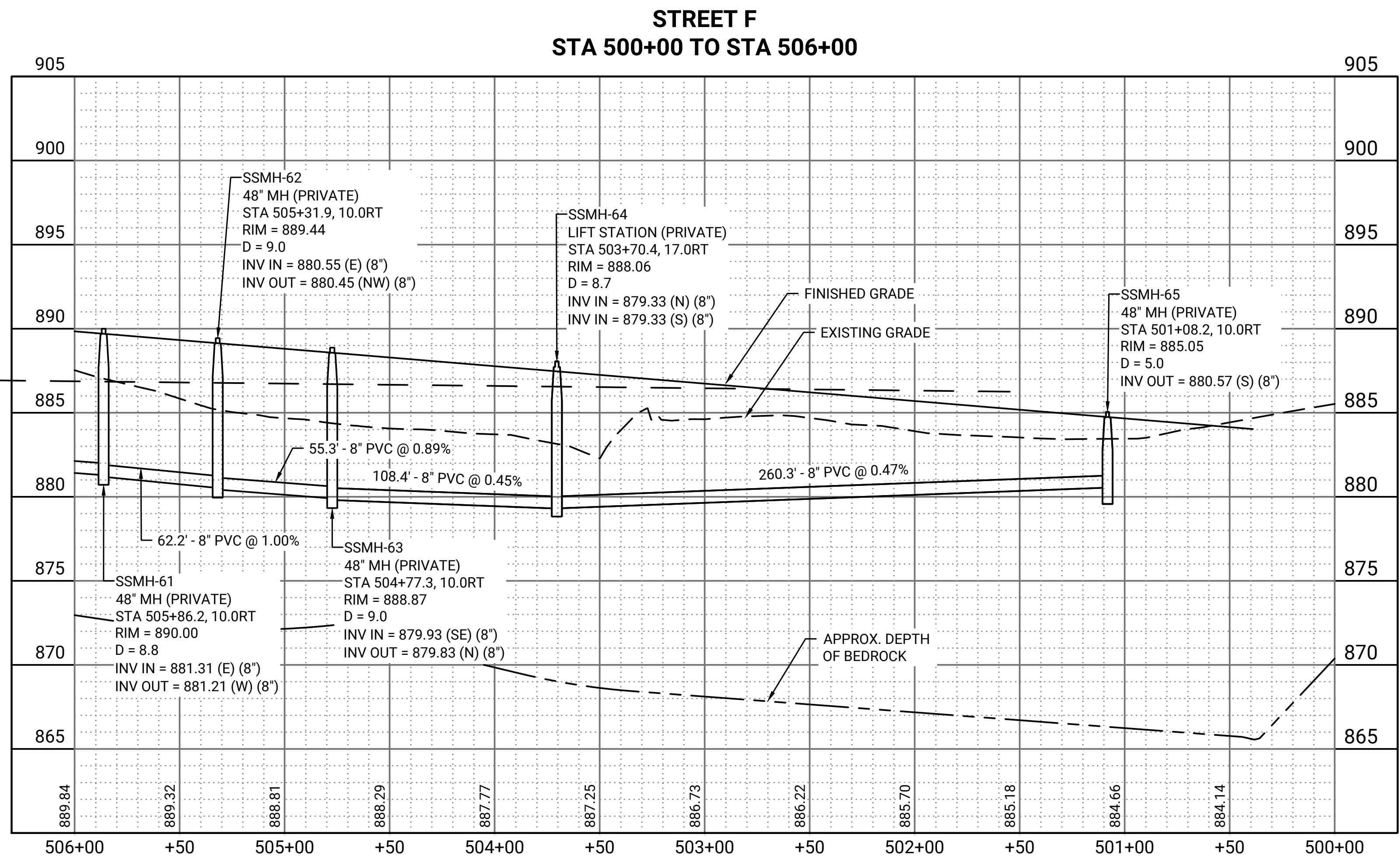


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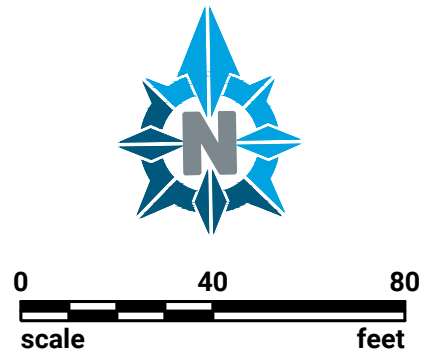
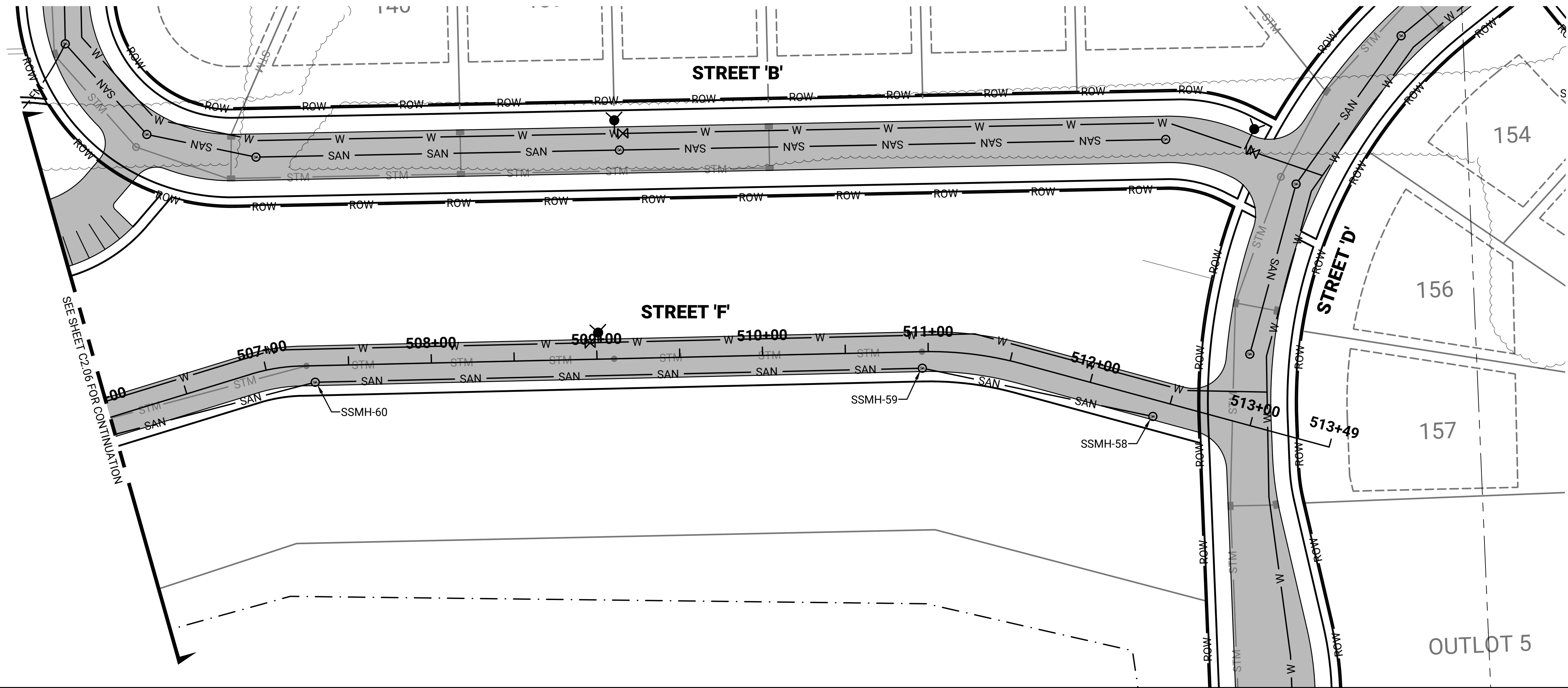
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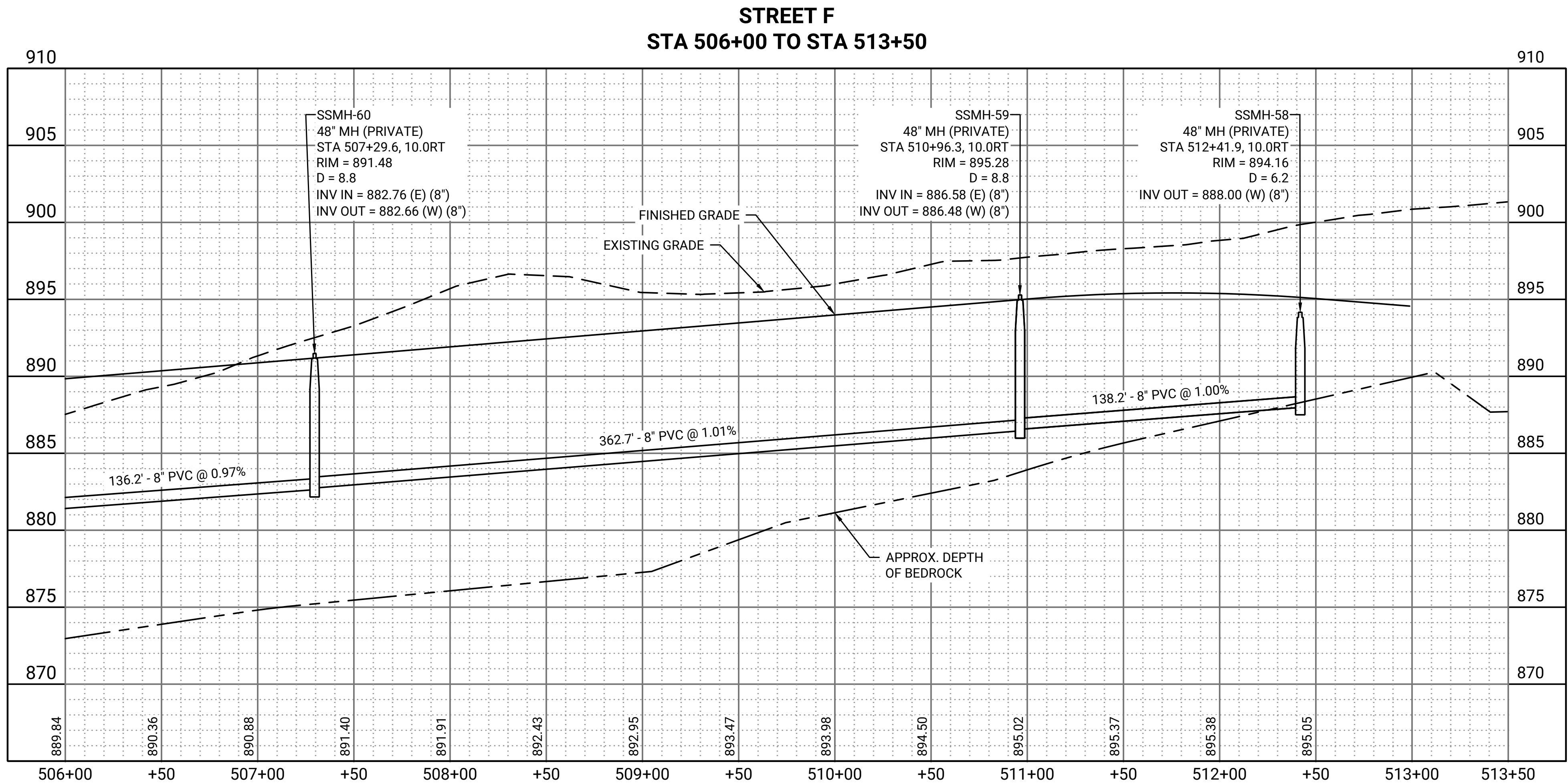
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HOME PATH FINANCIAL
VILLAGE OF GERMANTOWN, WI

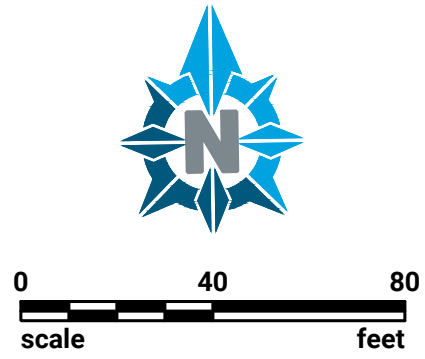
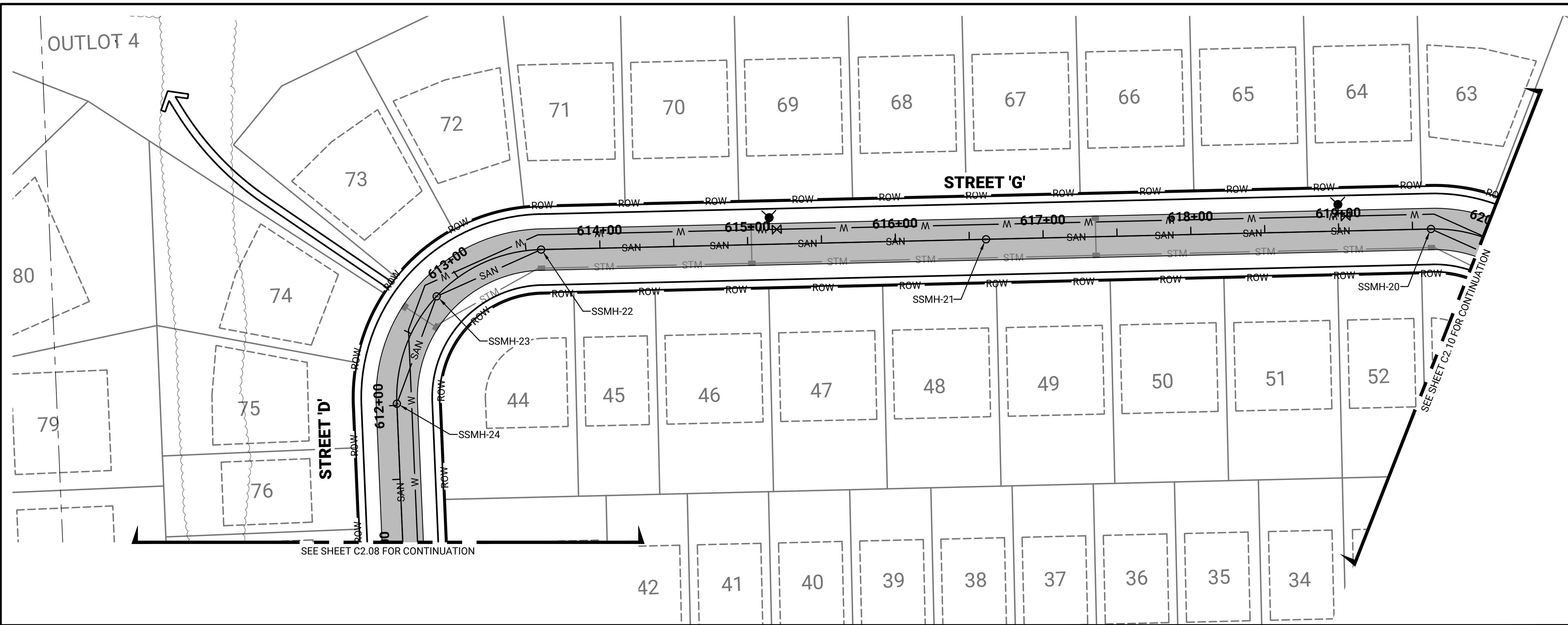
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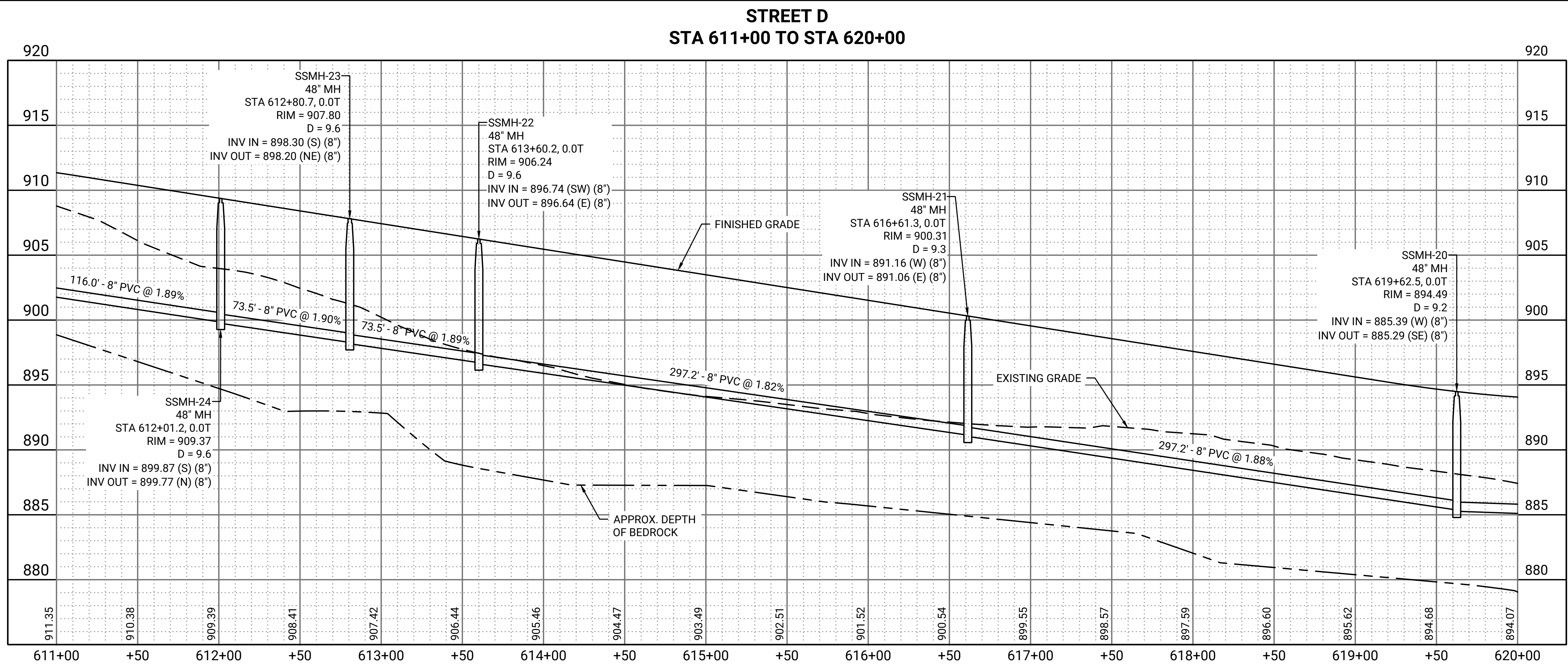
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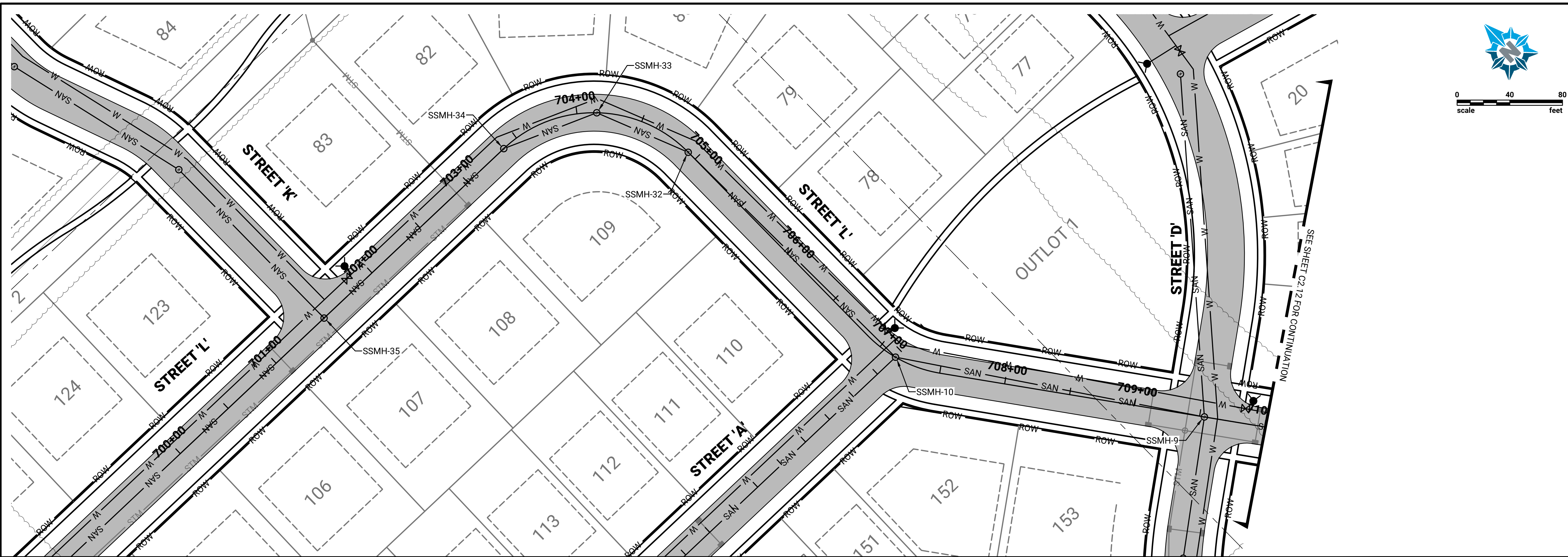
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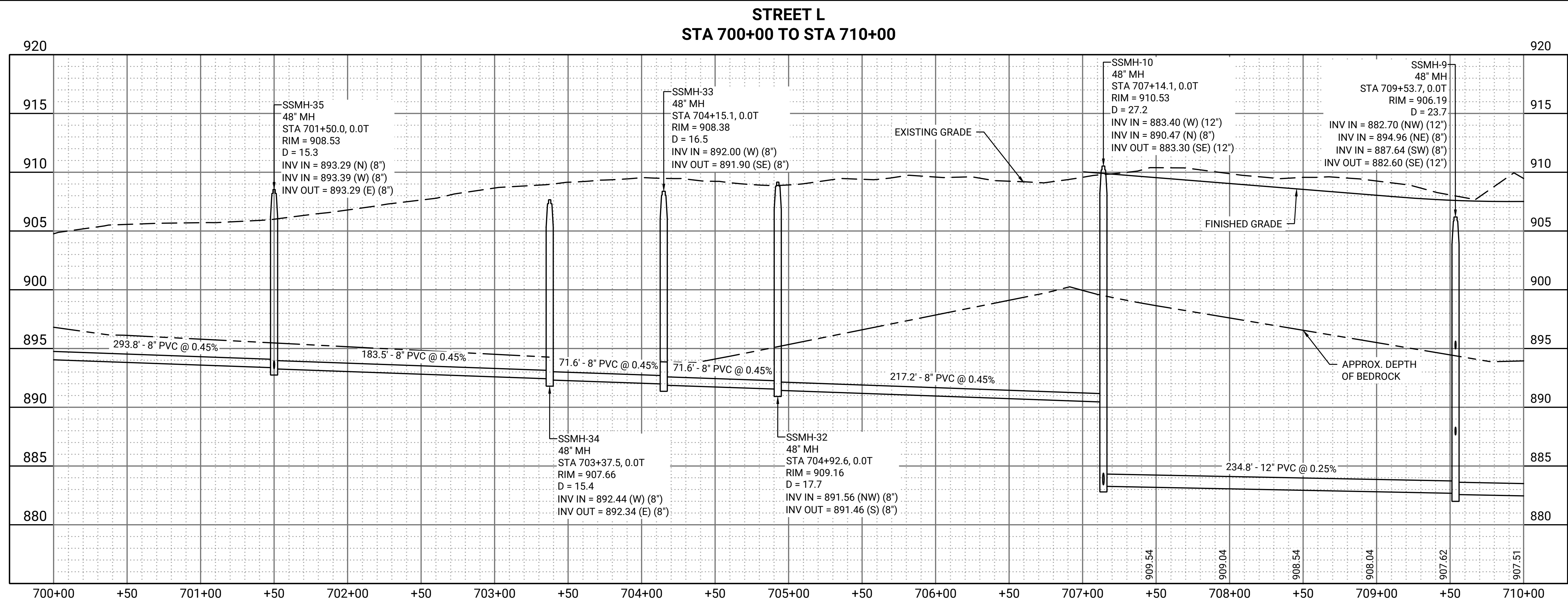


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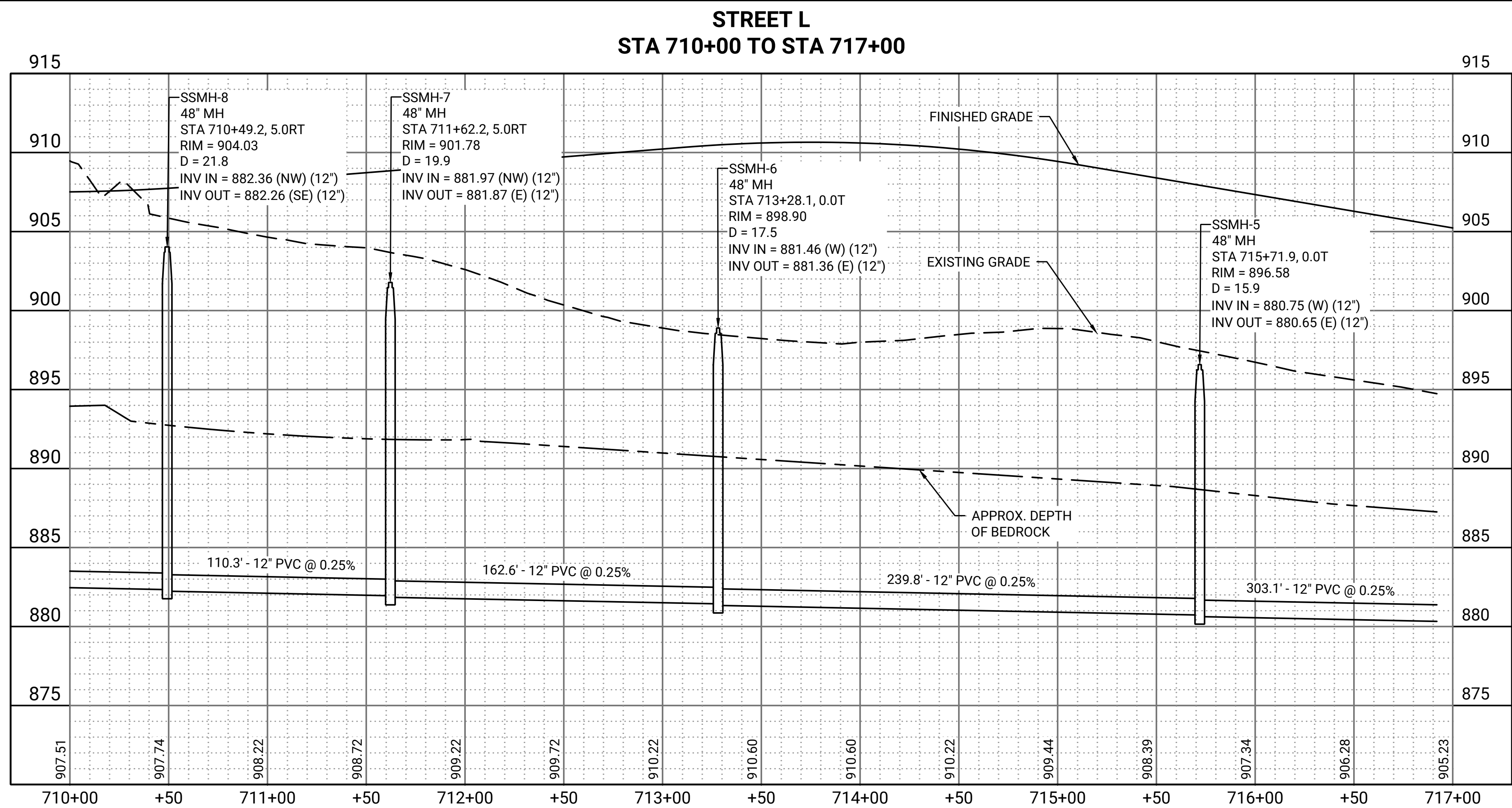
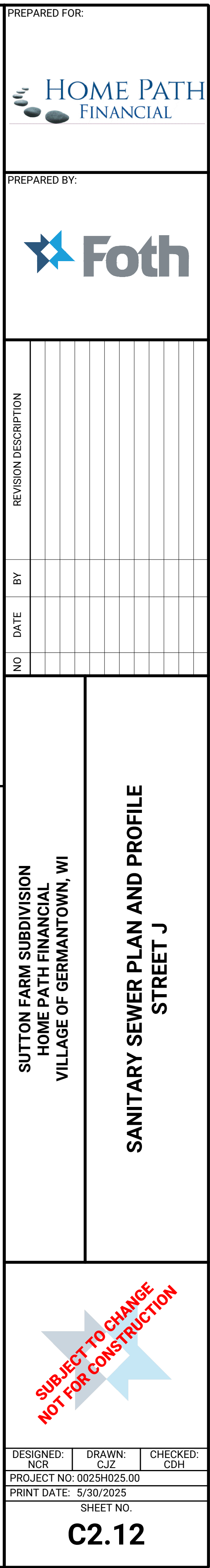
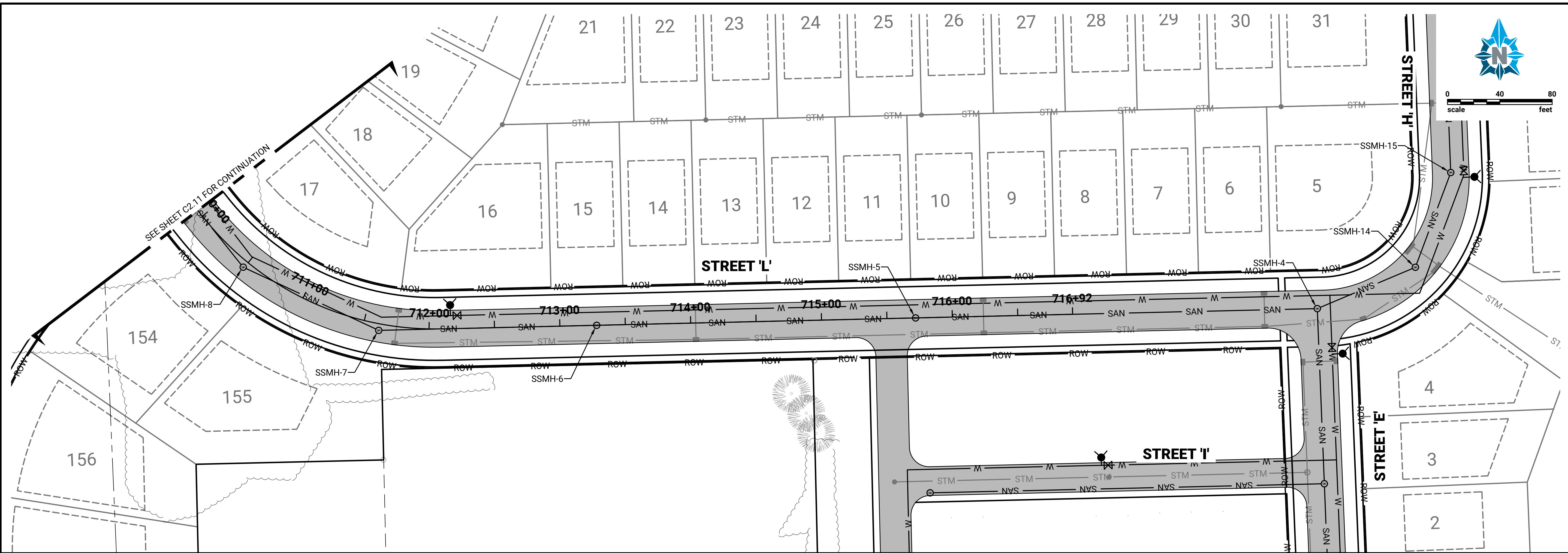
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HOME PATH FINANCIAL
VILLAGE OF GERMANTOWN, WI**

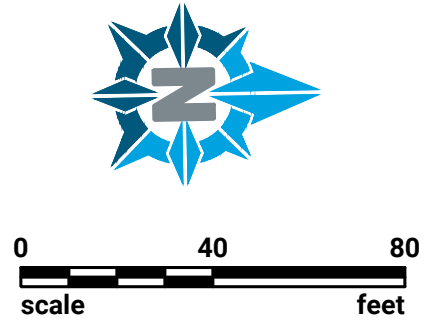
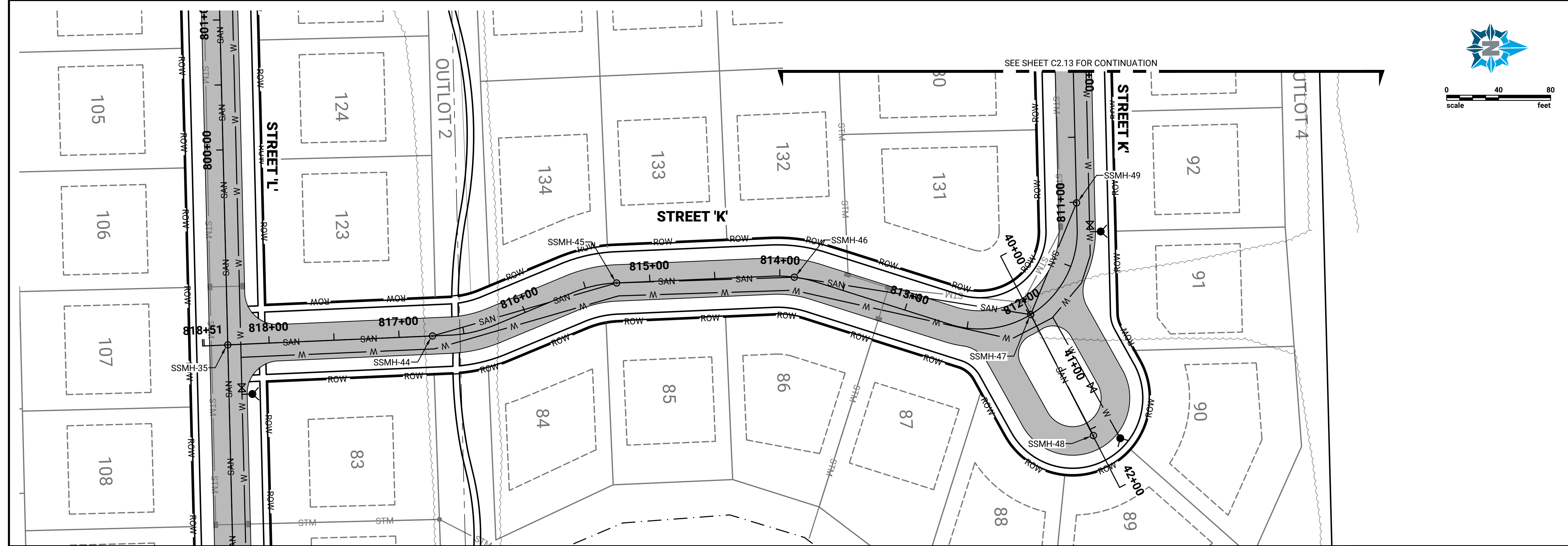


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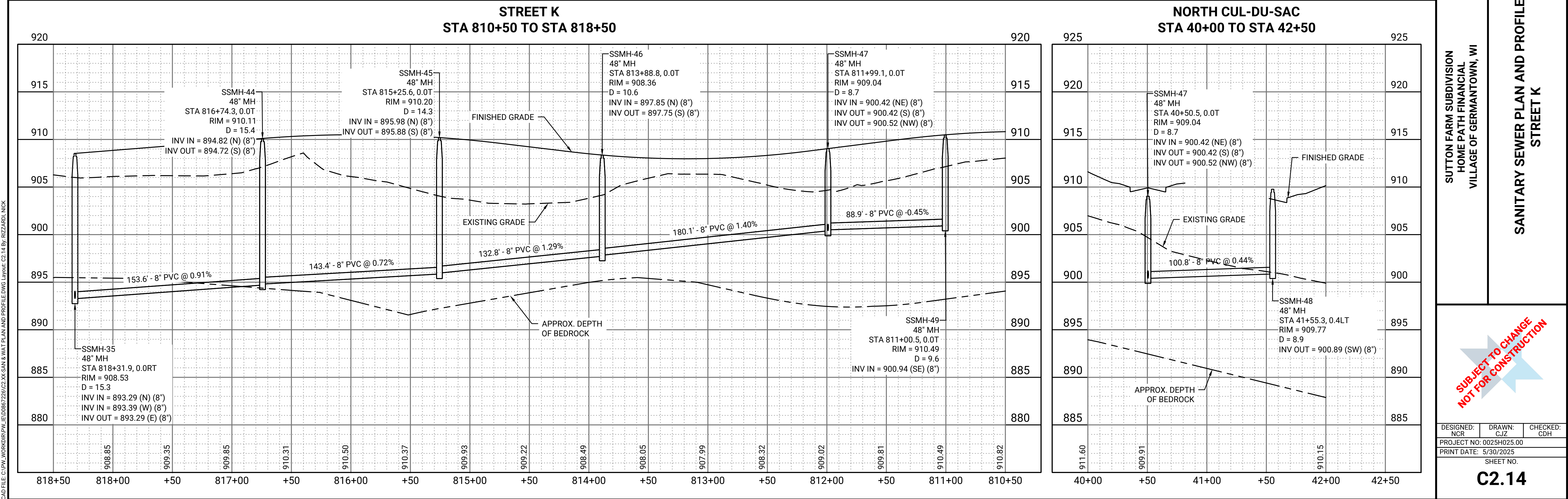
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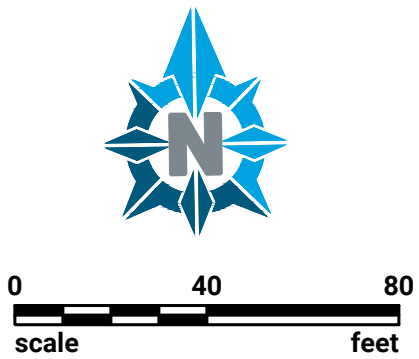
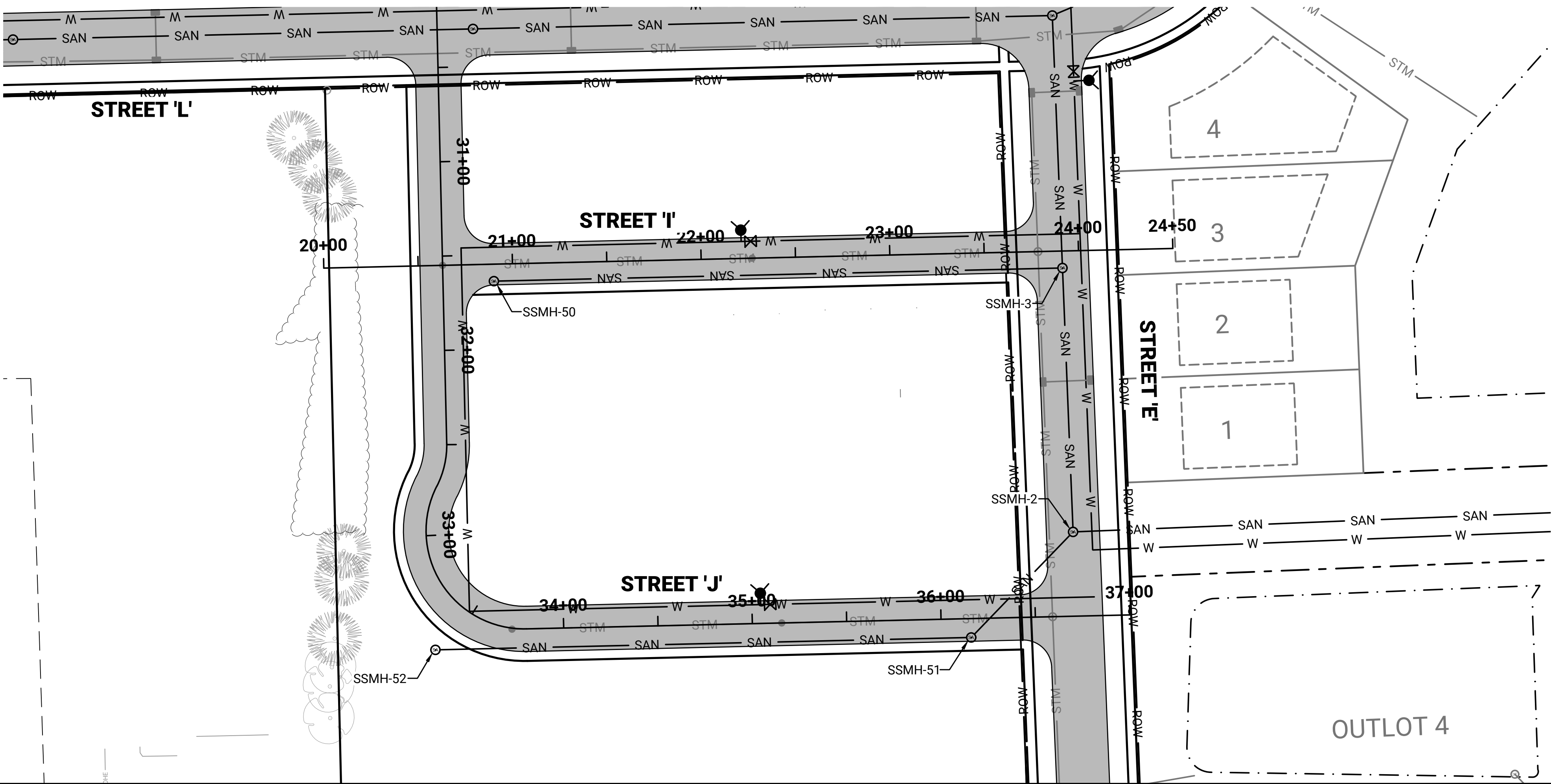
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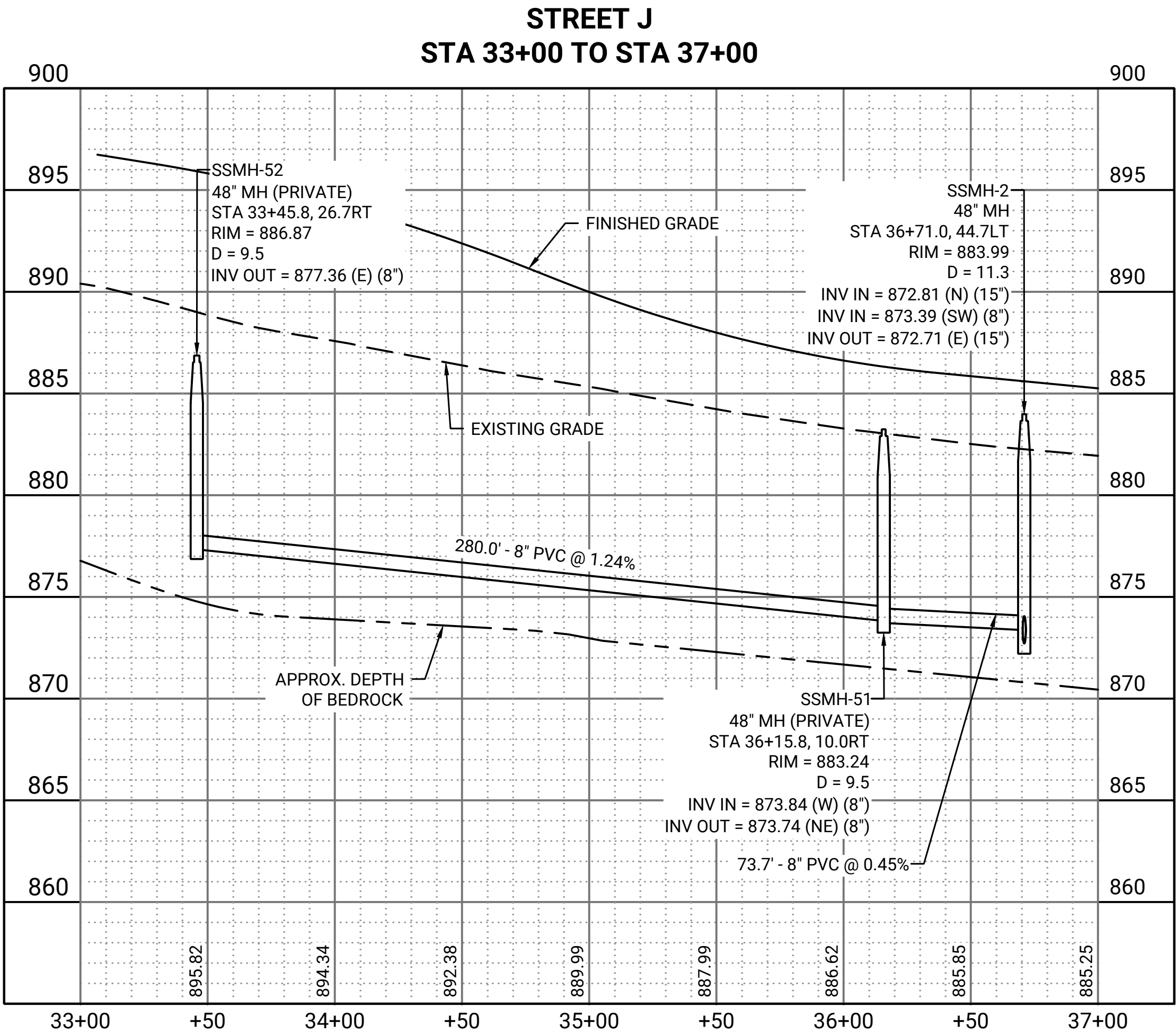
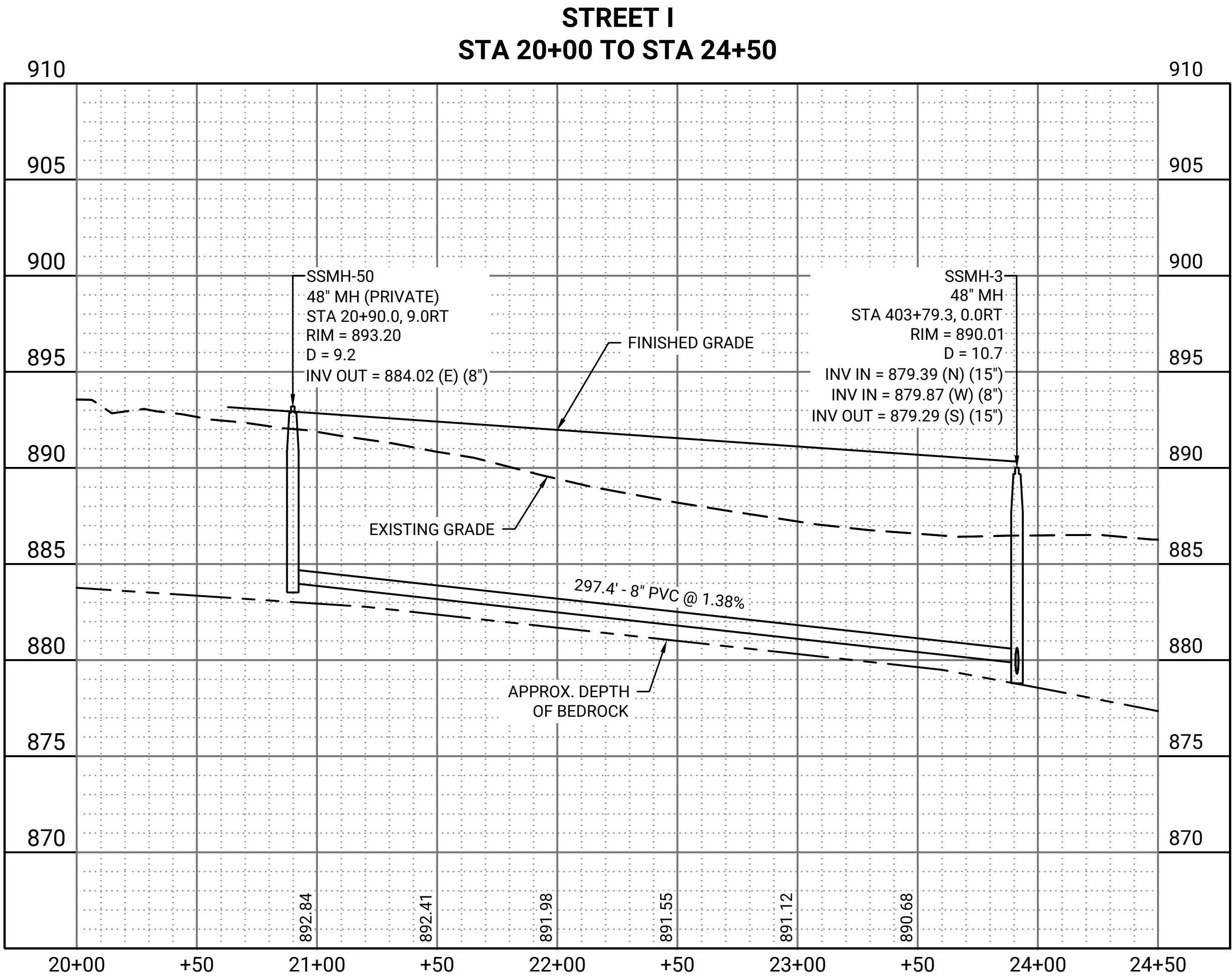
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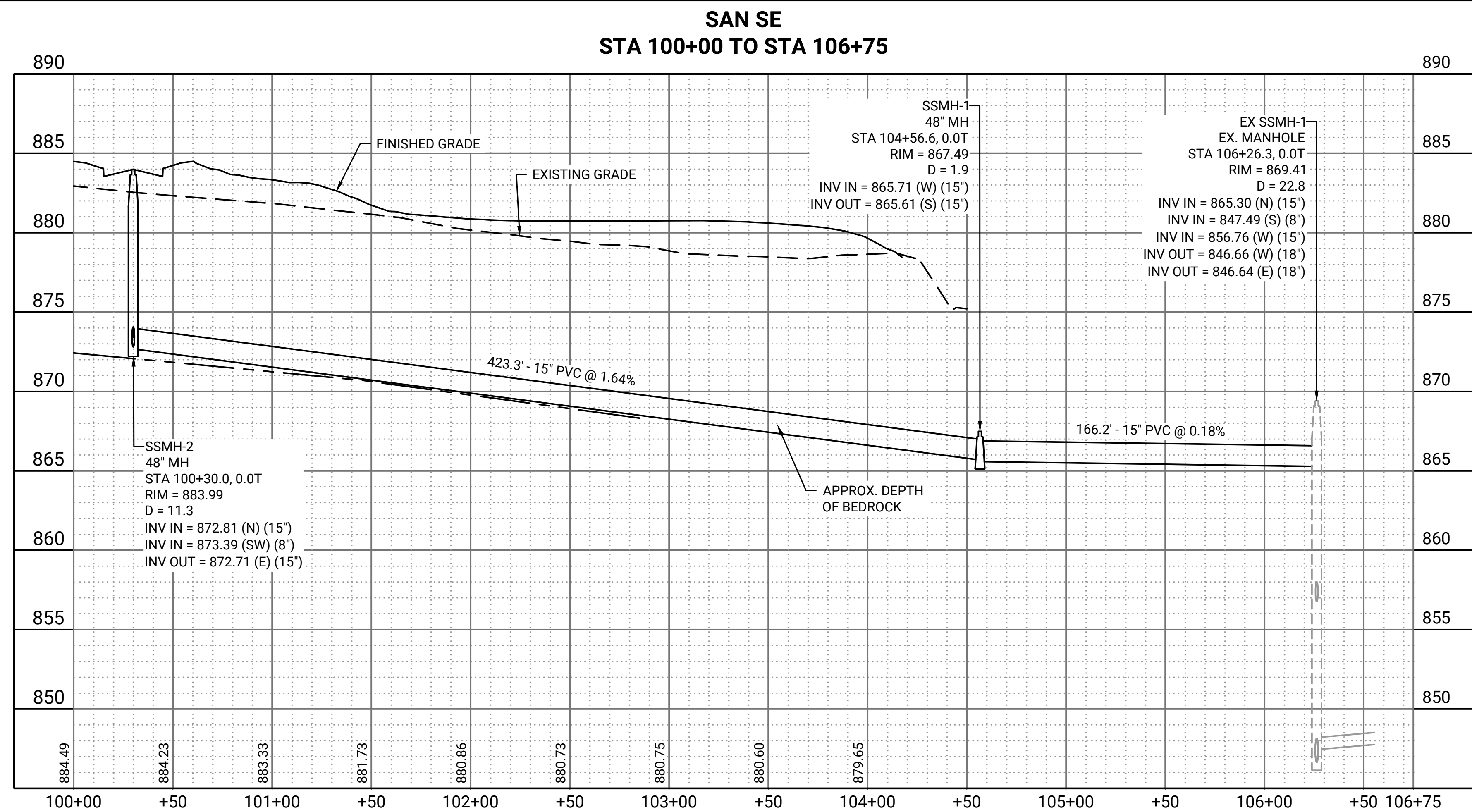
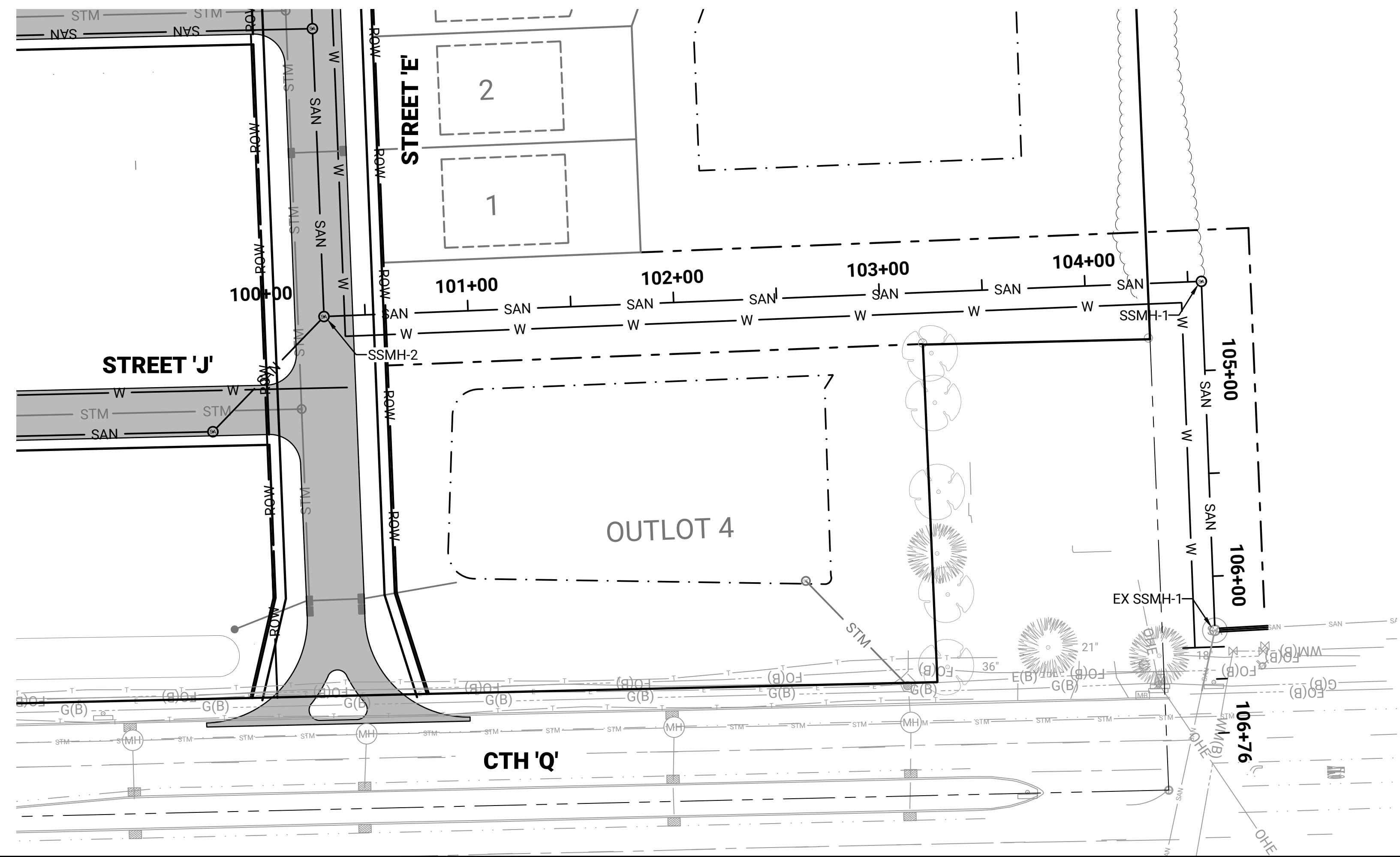
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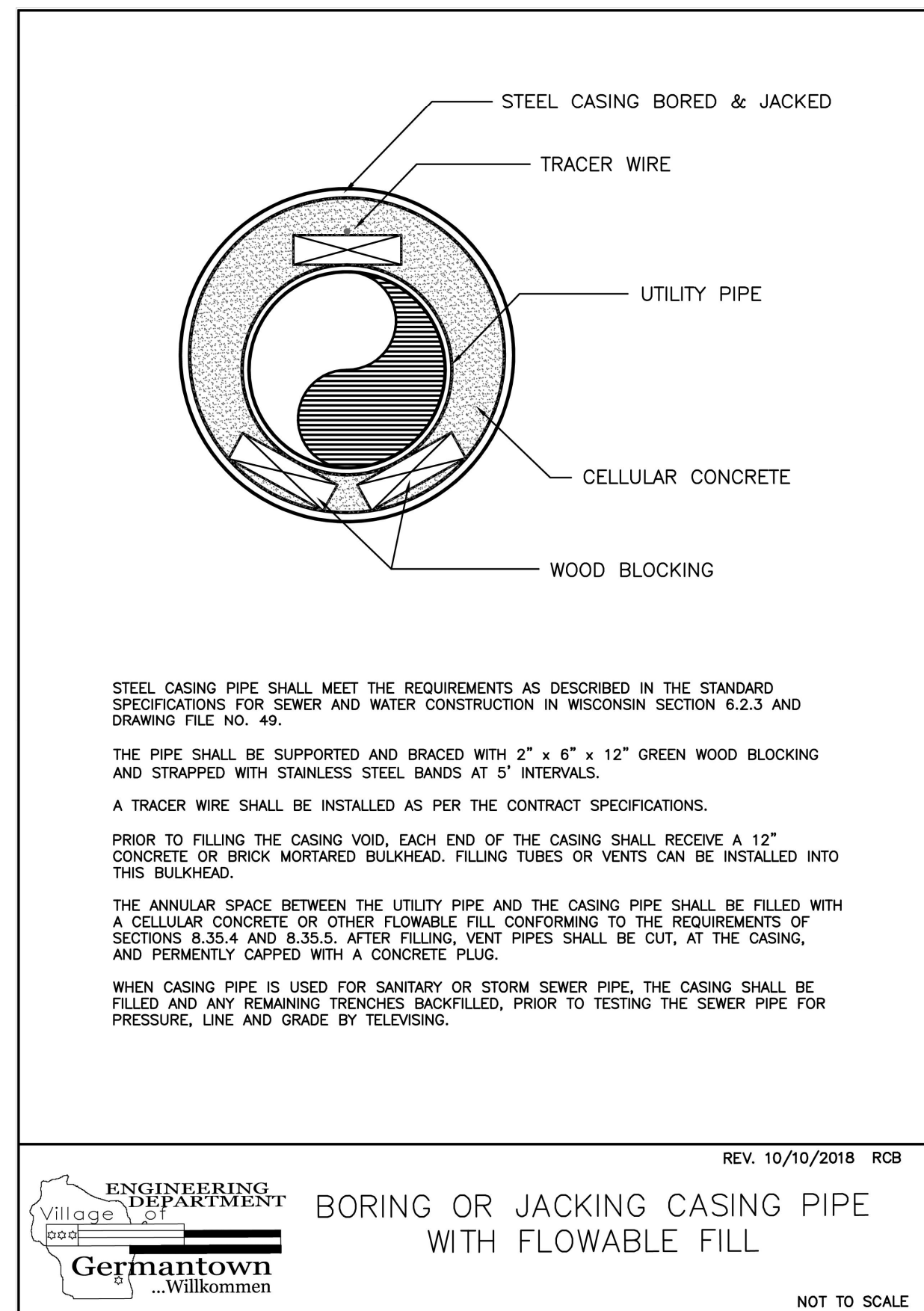
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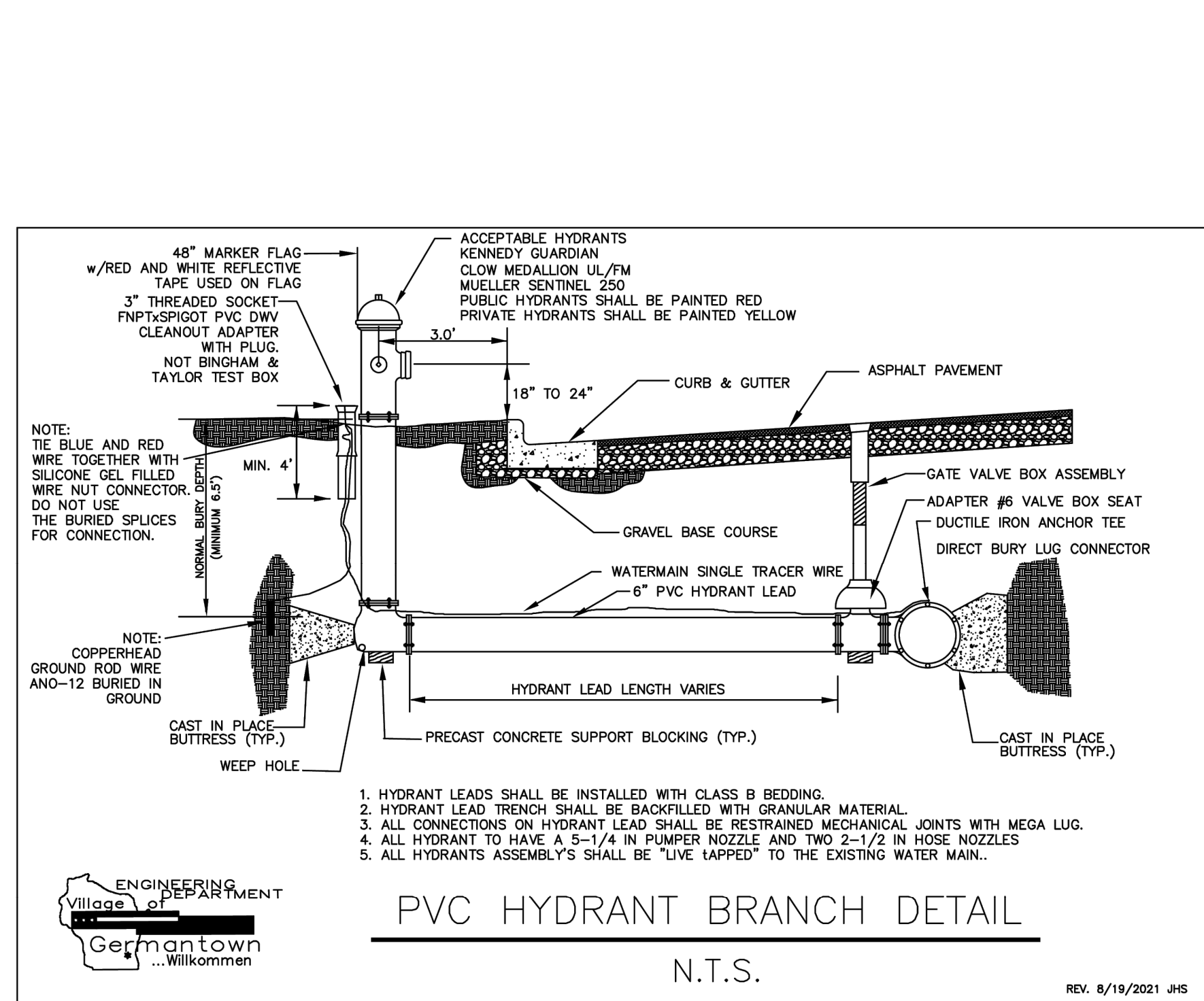
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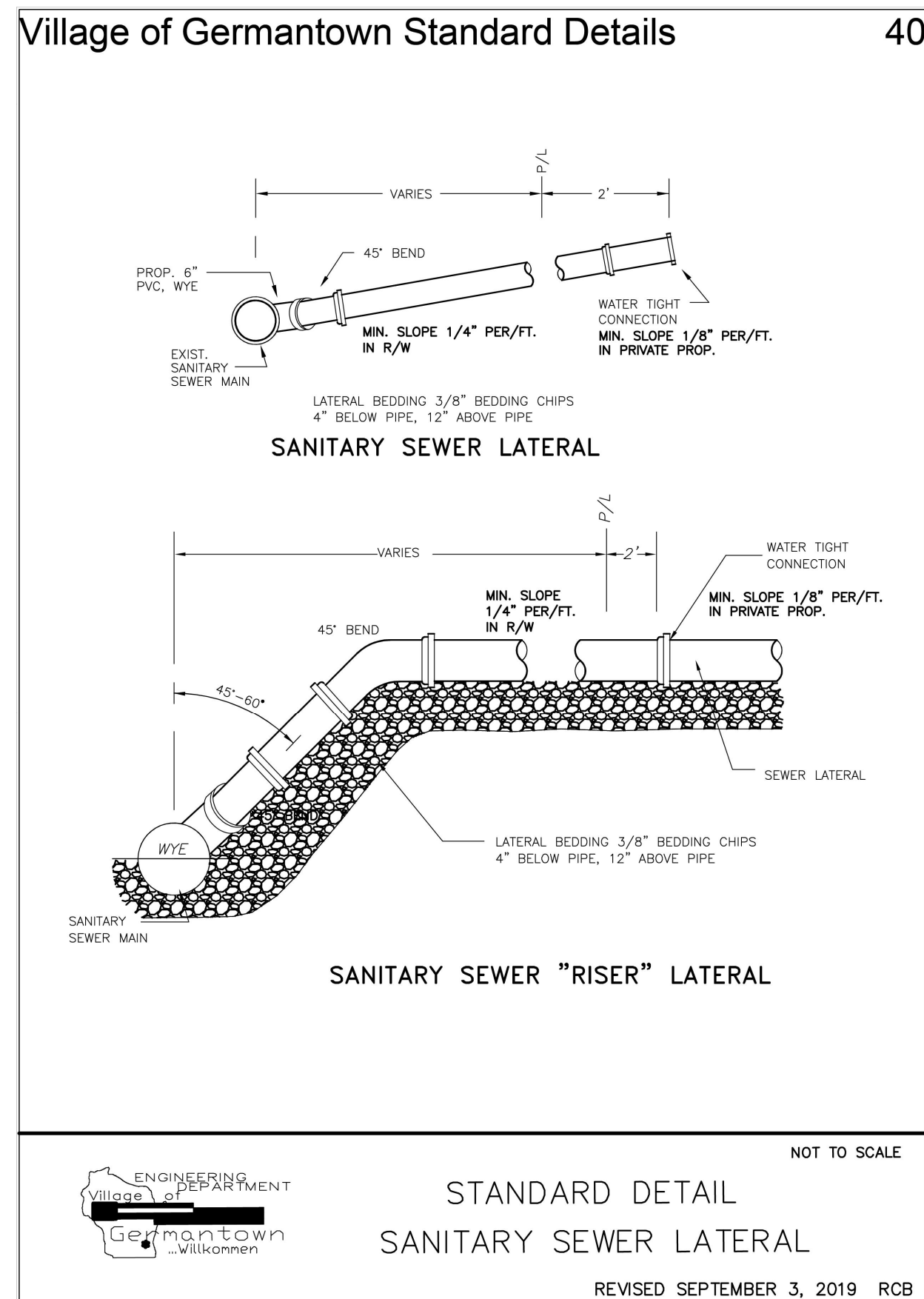
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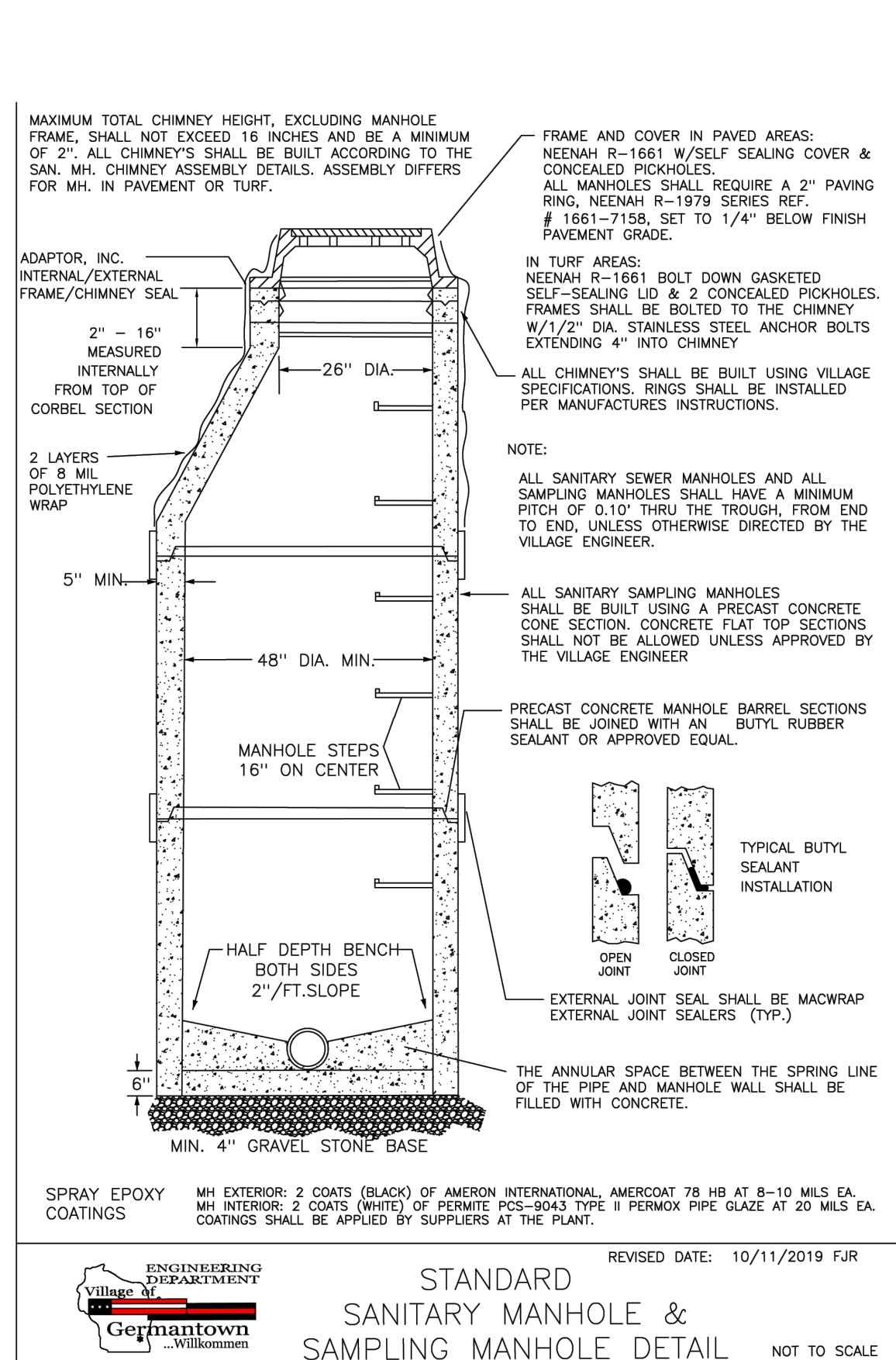
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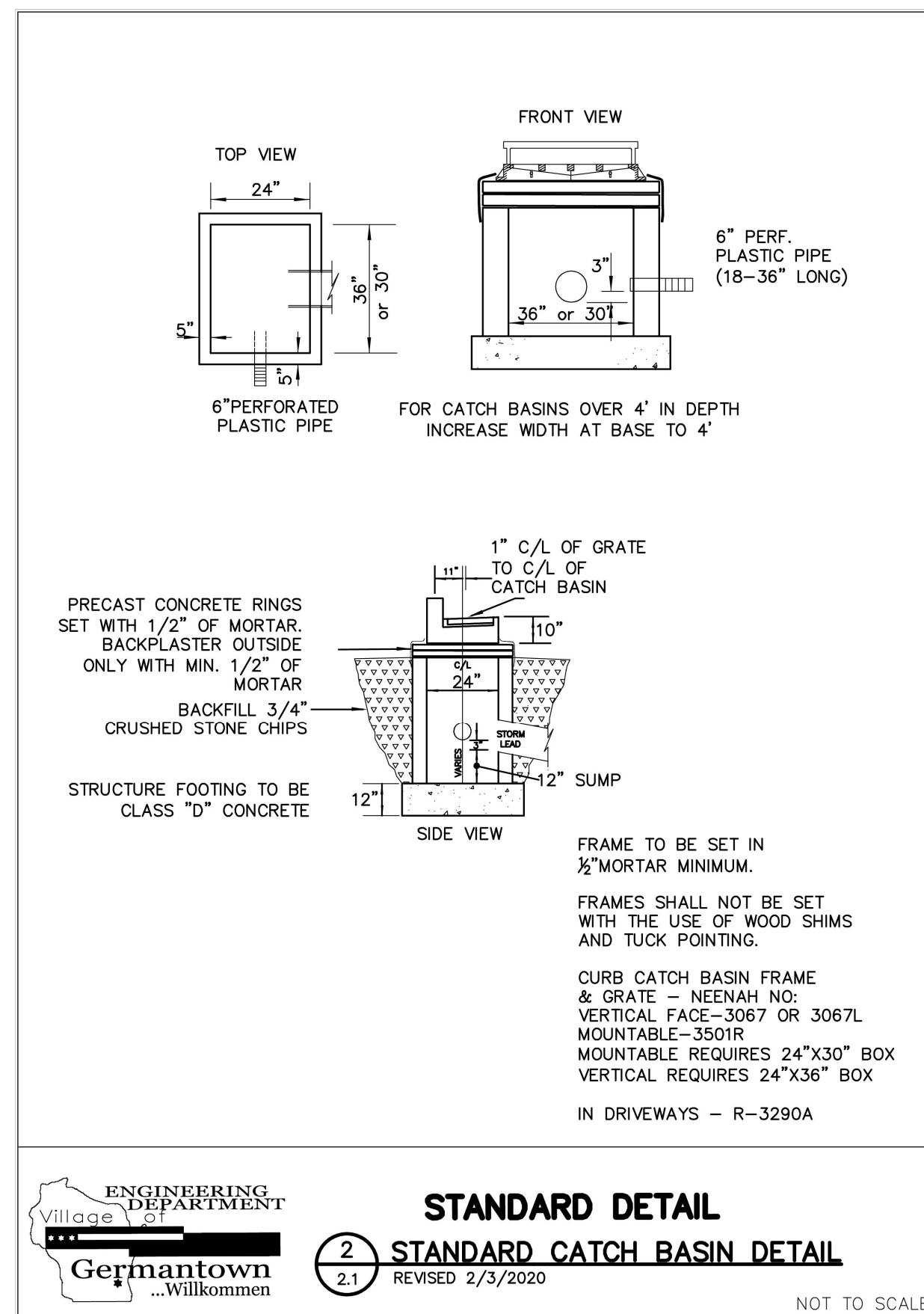
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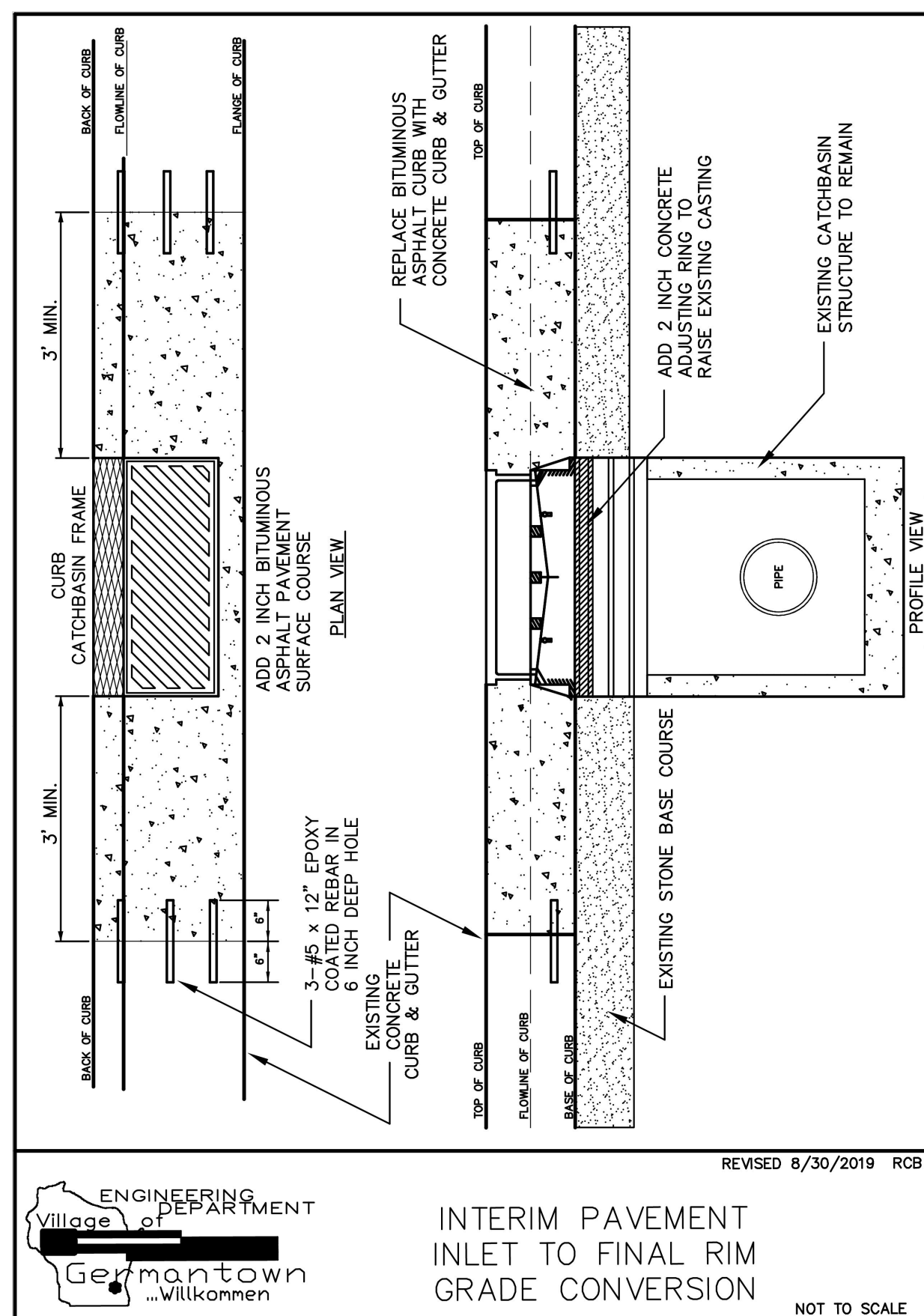
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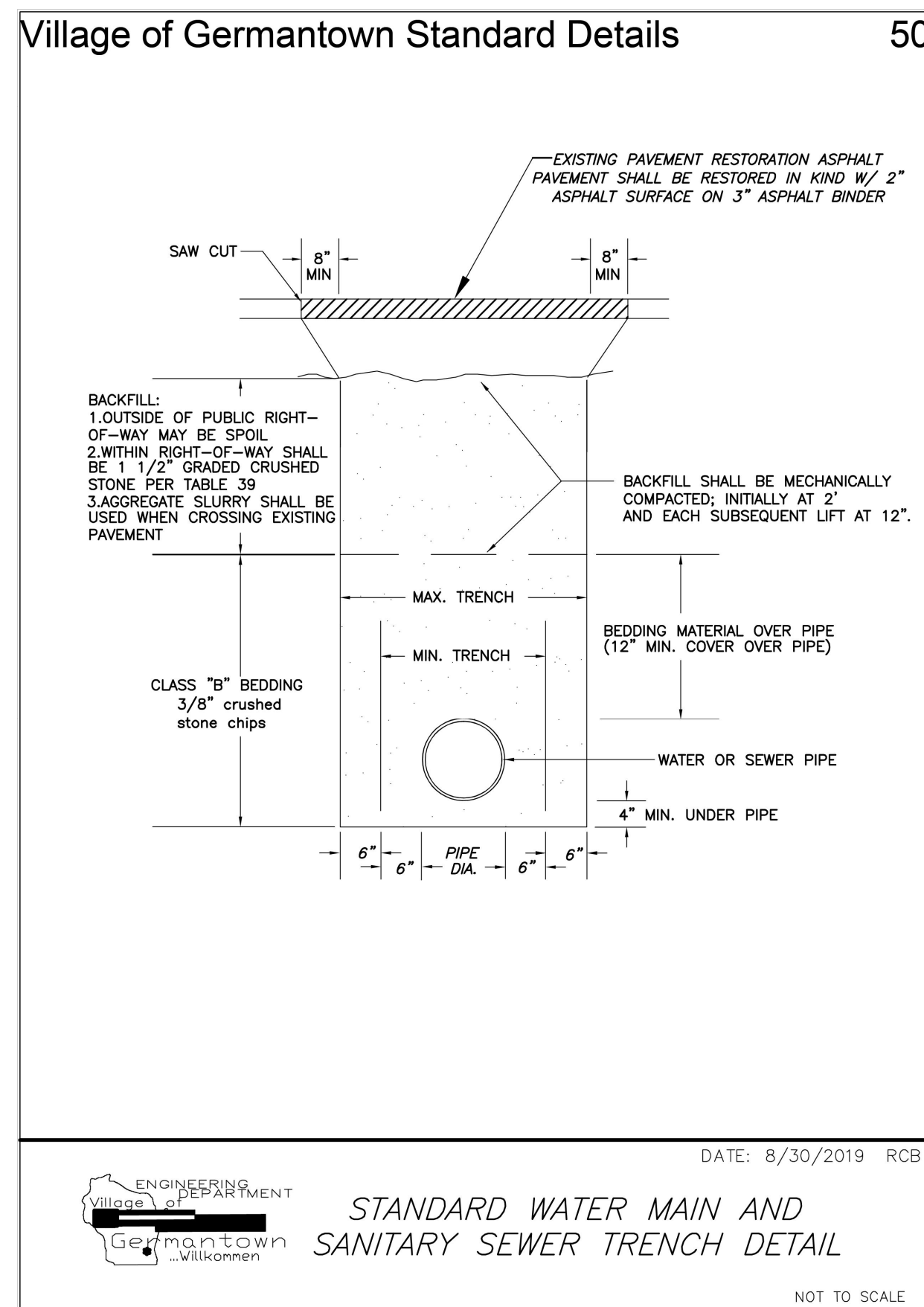
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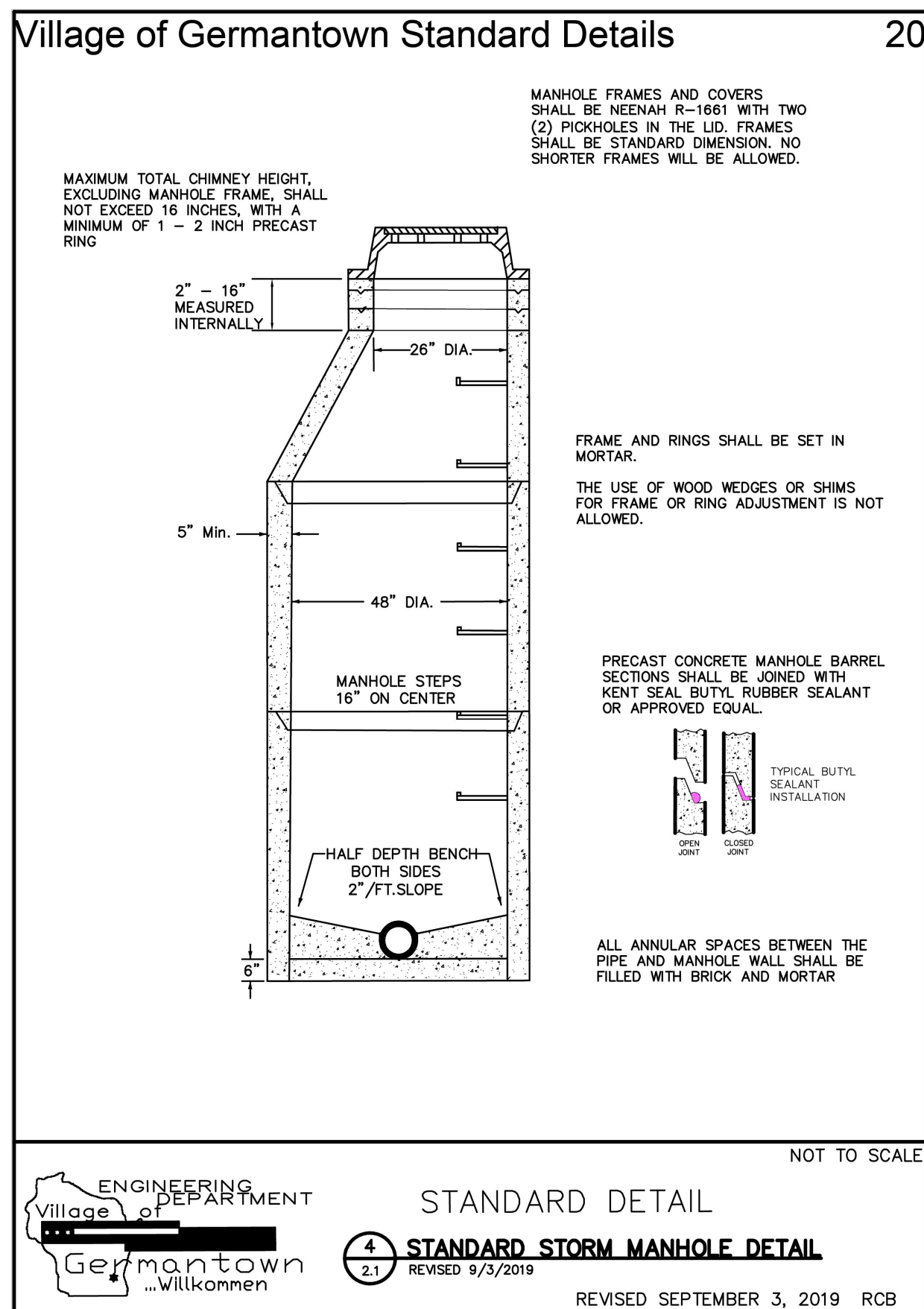
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**SUTTON FARM SUBDIVISION
HOME PATH FINANCIAL
VILLAGE OF GERMANTOWN, WI**

UTILITY DETAILS



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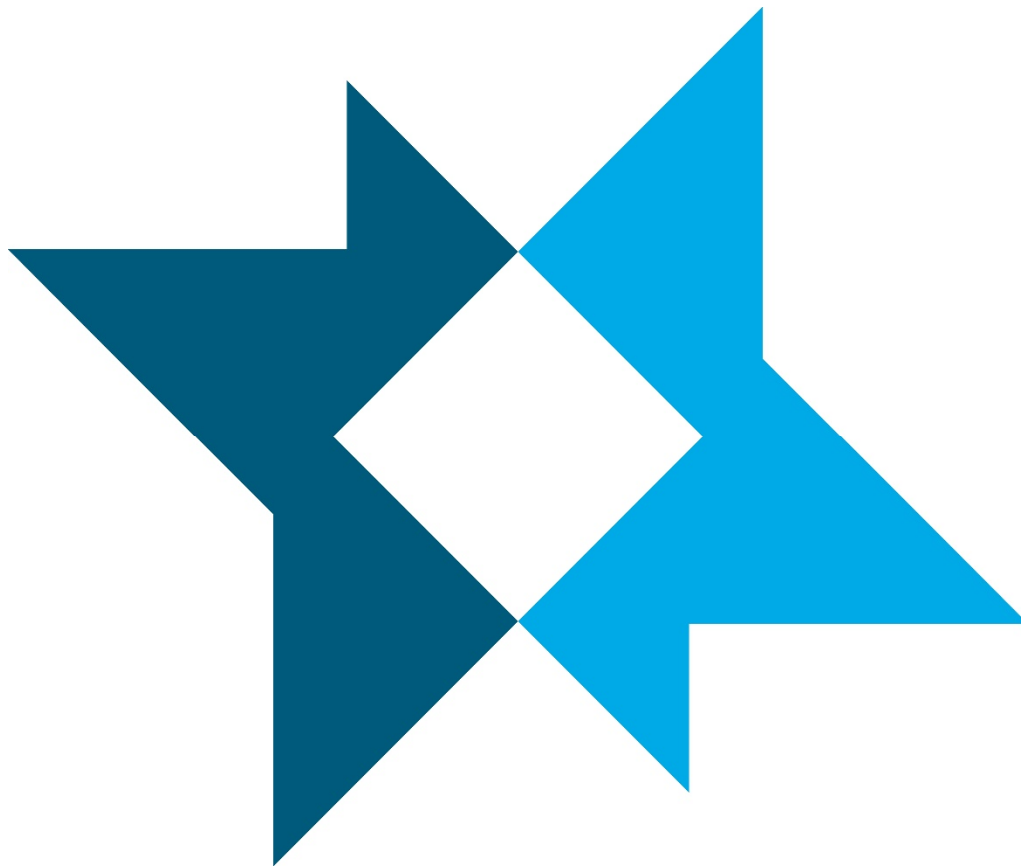
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Storm Water Management Plan

MOHRHUSEN FARM

Germantown, Wisconsin



March 2025

Project ID: 25H025.00

**Solving our clients' toughest
science and engineering challenges.**

Storm Water Management Plan

Project ID: 25H025.00

Prepared for
Home Path Financial
Butler, WI 53007

Prepared by
Foth Infrastructure & Environment, LLC

March 2025

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Storm Water Management Plan

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Appendix B	Preliminary Geotechnical Report
Appendix C	NRCS Soil Report
Appendix D	HydroCAD Report

Purpose

Storm water management for this development is regulated by the Milwaukee Metropolitan Sewerage District (MMSD) and the Wisconsin Department of Natural Resources (DNR). The analysis presented in this report addresses post-construction water quantity, water quality, and construction site sedimentation control.

Methods of Analysis

The hydrologic analysis included in this report was performed using the HydroCAD hydrologic simulation computer model, version 10.20-5c by HydroCAD Software Solutions LLC. The discharges were generated using the SCS Dimensionless Unit Hydrograph Method for a 24-hour duration storm. Model parameters include drainage area, SCS runoff curve number, time of concentration, and 24-hour precipitation events populated from the National Oceanic and Atmospheric Administration (NOAA) Precipitation Frequency Data Server. Rainfall events required to be modeled are the 2-year and 100-year event.

Table 1: Design Storm Events – City of Germantown

Frequency (years)	Duration (hours)	Depth (in)
2	24	2.68
10	24	3.83
100	24	6.34

Site Characteristics

The site is located in the northeast quadrant of the intersection of County Line Road and Lannon Road in the Village of Germantown.

The proposed development includes a variety of single family and ROW homes to be constructed in multiple phases.

The site is approximately 88 acres, with approximately 7 acres of wooded area to remain untouched, 10 acres of wooded area to be disturbed, and the remaining covered by cropland. The site has significant slope change generally from the middle of the site out to the boundary.

Existing site runoff flows offsite either to lower ground to the north or east, or to existing storm sewer systems within County Line Road and Lannon Road to the south and west respectively.

There is bedrock within the site ranging in depth across the site, but generally 8 feet or more below existing ground.

Existing soils are categorized by the USDA NRCS as 0-3 percent slopes: Radford silt loam; 1-3 percent slopes: Kendall silt loam; 2-6 percent slopes: Knowles silt loam, Mayville silt loam, Ozaukee silt loam, Theresa silt loam; 6-12 percent slopes: Knowles silt loam, Ozaukee silt loam, Ritchey silt loam. Most soils are Hydrologic Soil Group C, with a small mix of B/D. Refer to the geotechnical report and boring logs in Appendix B for specific soil layer information. The Hydrological Soil Group on site can be viewed in Appendix C.

Water Quantity Design

Water quantity requirements are regulated by the Milwaukee Metropolitan Sewerage District.

The MMSD requires the “Allowable runoff release rate” for a post-development peak outflow during the 100-year (1% probability) storm event is no more than 0.5 cubic feet per second (cfs) multiplied by the area of the site in acres and a post-development peak outflow during the 2-year (50% probability) storm event is no more than 0.15 cfs multiplied by the area of the site in acres (defined in Chapter 13 Surface and Stormwater Rules and Requirements). The “Allowable runoff volume” is no greater than pre-development volume for both the 100-year and 2-year storm events during the critical time.

Table 2: Proposed Peak Discharge Rates

Design Storm	Area (ac)	Multiplier	Allowable Runoff Release Rate (cfs)	Proposed Peak Discharge (cfs)
2-year/24-hour Type II	81.03	0.15	12.15	6.01
100-year/24-hour Type II	81.03	0.50	40.51	24.87

Table 3: Existing and Proposed Runoff Volumes

Design Storm	Runoff Volume (af)	
	Existing Condition	Proposed Condition
2-year/24-hour Type II	5.73 af	4.47 af
10-year/24-hour Type II	11.27 af	10.46 af
100-year/24-hour Type II	25.40 af	24.70 af

Drainage maps for both the existing and proposed conditions can be viewed in Appendix A. Both existing and proposed conditions were evaluated and can be viewed in the HydroCAD report in Appendix D.

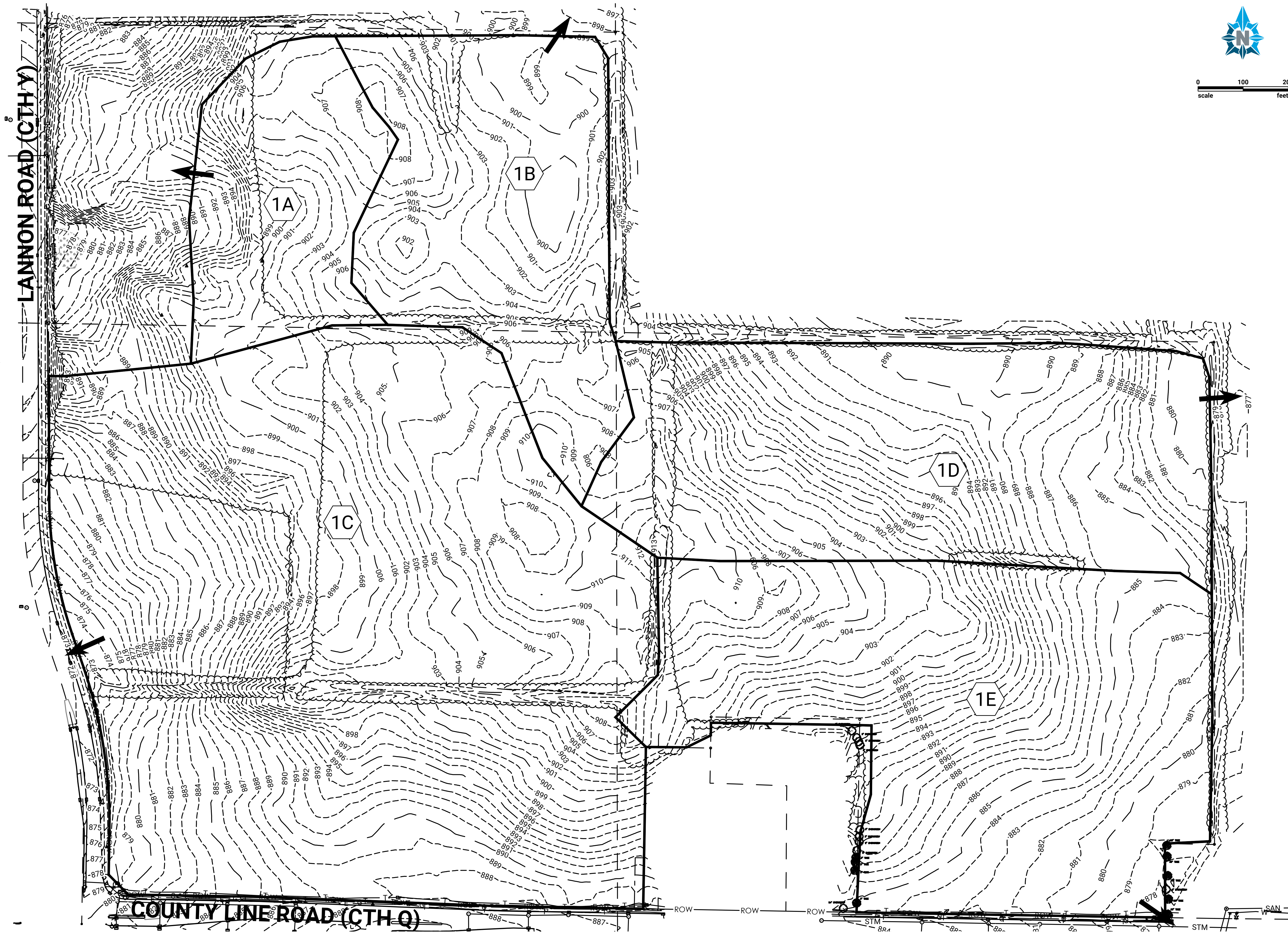
Summary

Stormwater management facilities for the proposed development site were designed according to the Milwaukee Metropolitan Sewerage District Requirements.

Post-development basins are releasing runoff at a rate equal to or lower than the 100-year and 2-year multiplier as required. The total volume being released in the post development condition is less than the existing condition volume flowing offsite.

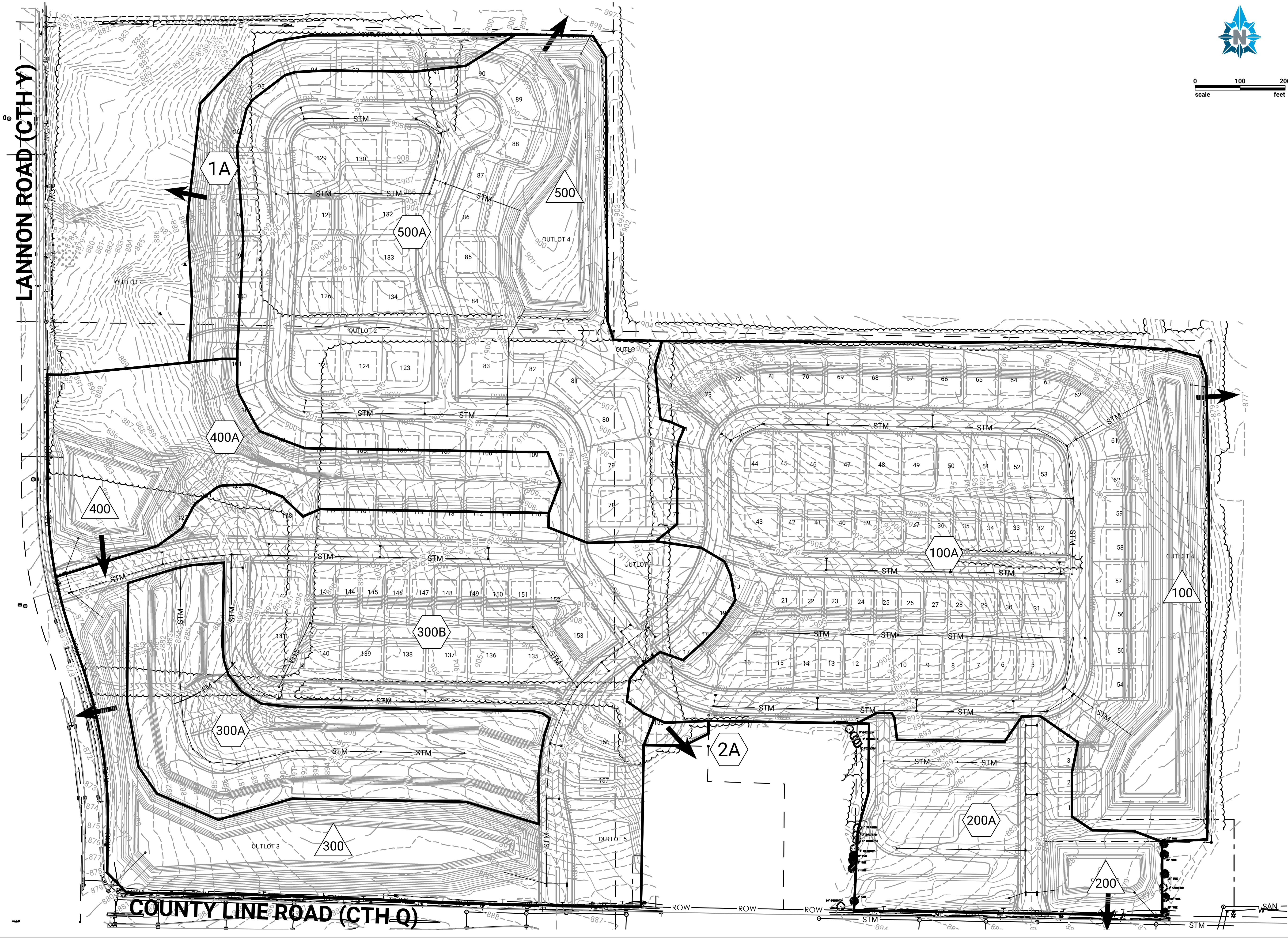
Appendix A

Pre and Post Development Conditions



PREPARED FOR:

CAD FILE C:\PW\WORKDIR\PW\LEDD0870500\0025H025.00\HYDRO\PR.DWG Layout.1 By: RIZZARDI, NICK



0 100 200
scale feet

PREPARED FOR:



PREPARED BY:



REVISION DESCRIPTION

BY

DATE

NO

MOHRHUSEN FARM
HOME PATH FINANCIAL
GERMANTOWN, WI

PROPOSED HYDROLOGY

**SUBJECT TO CHANGE
NOT FOR CONSTRUCTION**

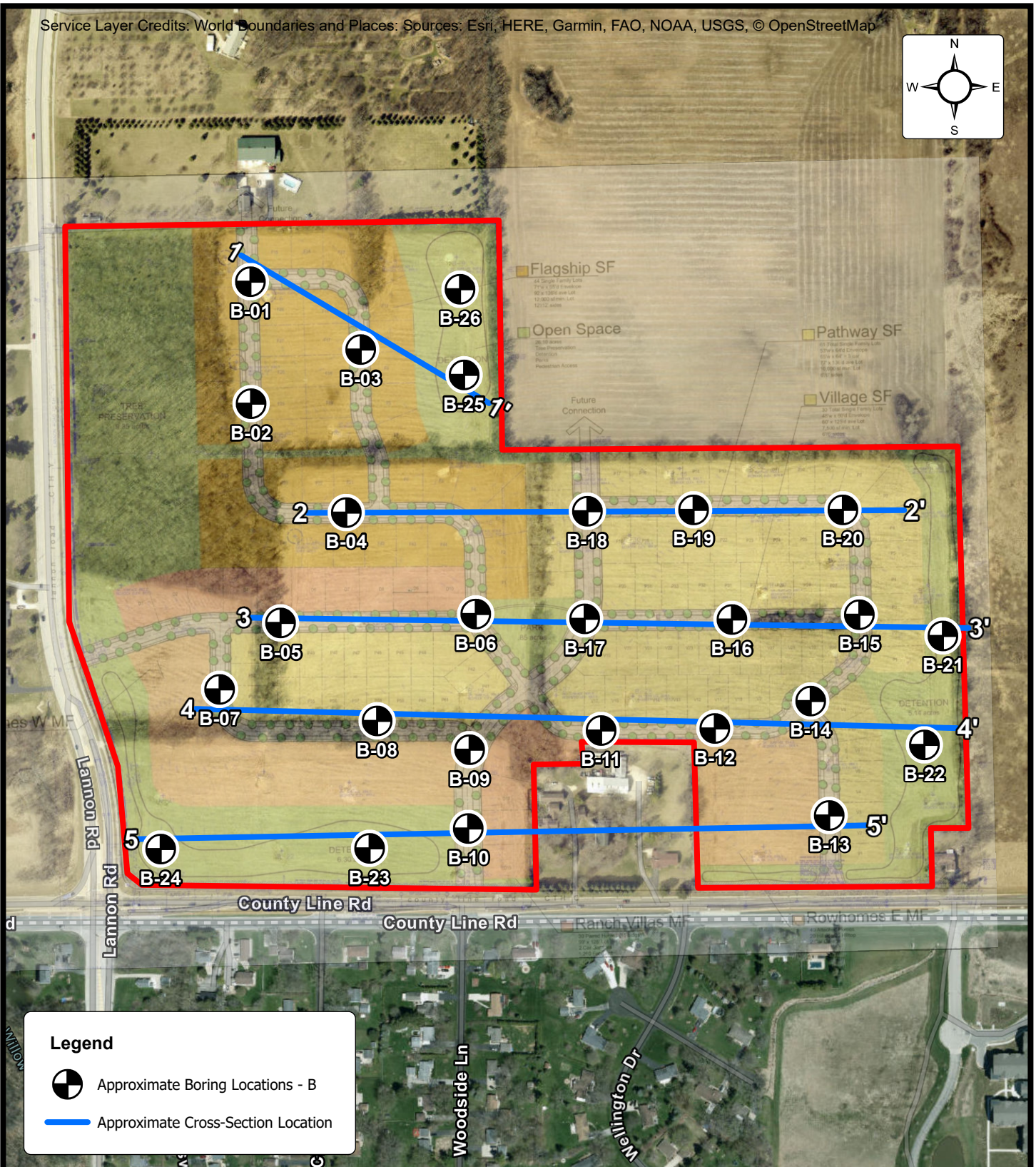
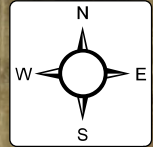
DESIGNED: NCR DRAWN: NCR CHECKED: CDH
PROJECT NO: 0025H025.00
PRINT DATE: 3/24/2025
SHEET NO.

1

Appendix B

Preliminary Geotechnical Report

Service Layer Credits: World Boundaries and Places: Sources: Esri, HERE, Garmin, FAO, NOAA, USGS, © OpenStreetMap

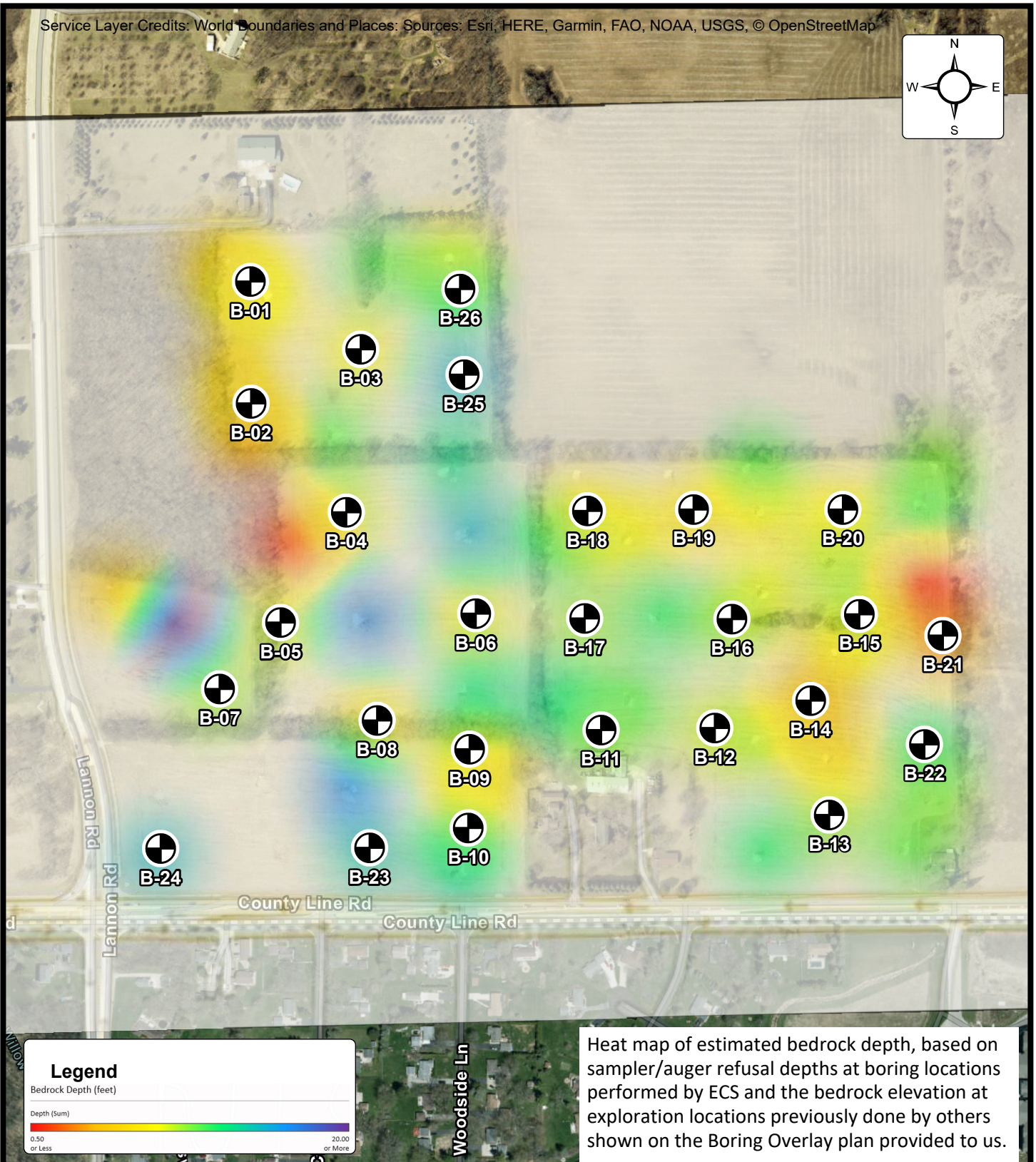
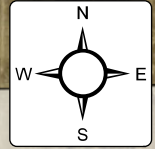


BORING LOCATION DIAGRAM **Mohrhusen Farm** County Line Road & Lannon Road, Germantown, Wisconsin Home Path Financial

ENGINEER	DM1
SCALE	1" = 400'
PROJECT NO.	42:2684
SHEET	BLD
DATE	1/27/2025

Boring Number	Approx. GS Elev	Approx. Sampler/Auger Refusal	
		depth	Elev
B-01	906	9.2	896.8
B-02	902	8.8	893.2
B-03	905	8.6	896.4
B-04	905.5	9.2	896.3
B-05	909	9.2	899.9
B-06	897.5	8.7	888.8
B-07	890	> 10	< 880.0
B-08	903	8.0	895.0
B-09	905	> 10	< 895.0
B-10	897	> 10	< 887.0
B-11	902	> 10	< 892.0
B-12	898	9.2	888.8
B-13	883	> 10	< 873.0
B-14	895	3.5	891.5
B-15	887	> 10	< 877.0
B-16	902	> 10	< 892.0
B-17	910	> 10	< 900.0
B-18	921	7.5	913.5
B-19	892	7.0	885.0
B-20	888	8.0	880.0
B-21	884.5	4.0	880.5
B-22	881.5	11.9	869.6
B-23	888.5	14.3	874.3
B-24	880	> 15	< 865.0
B-25	900	> 15	< 885.0
B-26	900	13.0	887.0

Service Layer Credits: World Boundaries and Places: Sources: Esri, HERE, Garmin, FAO, NOAA, USGS, © OpenStreetMap



Heat map of estimated bedrock depth, based on sampler/auger refusal depths at boring locations performed by ECS and the bedrock elevation at exploration locations previously done by others shown on the Boring Overlay plan provided to us.



BEDROCK DEPTH HEAT MAP

Mohrhusen Farm

**County Line Road & Lannon Road, Germantown,
Wisconsin**

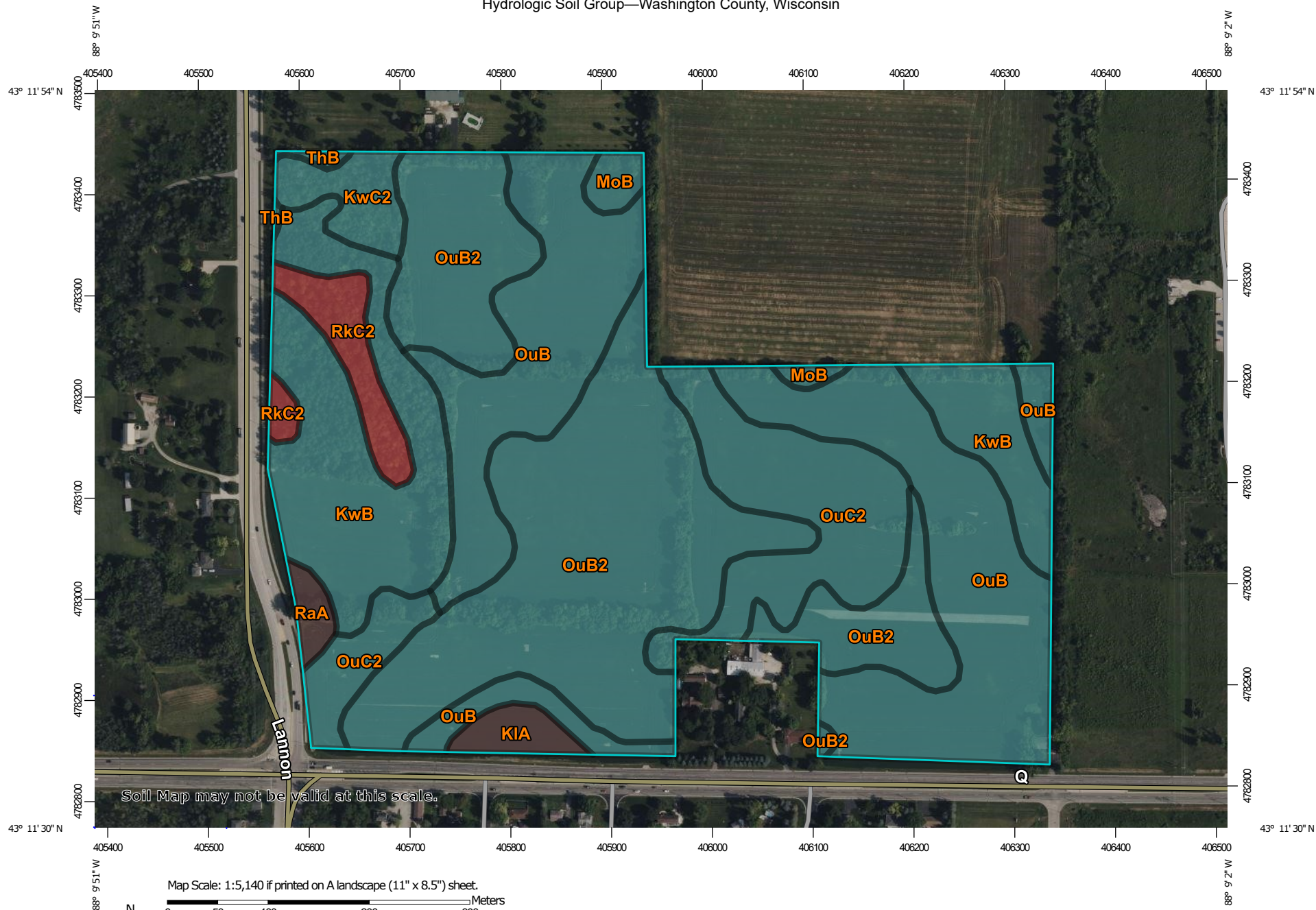
Home Path Financial

ENGINEER DM1
SCALE 1" = 400'
PROJECT NO. 42:2684
SHEET BRHM
DATE 1/27/2025

Appendix C

NRCS Soil Report

Hydrologic Soil Group—Washington County, Wisconsin



Natural Resources
Conservation Service

Web Soil Survey
National Cooperative Soil Survey

3/6/2025
Page 1 of 4
Page 305 of 885

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

Soil Rating Polygons

 A
 A/D
 B
 B/D
 C
 C/D
 D
 Not rated or not available

Soil Rating Lines

 A
 A/D
 B
 B/D
 C
 C/D
 D
 Not rated or not available

Soil Rating Points

 A
 A/D
 B
 B/D

 C
 C/D
 D
 Not rated or not available

Water Features

 Streams and Canals

Transportation

 Rails
 Interstate Highways
 US Routes
 Major Roads
 Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL:
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Washington County, Wisconsin
 Survey Area Data: Version 24, Sep 3, 2024

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Aug 4, 2022—Sep 13, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
KIA	Kendall silt loam, 1 to 3 percent slopes	B/D	1.2	1.3%
KwB	Knowles silt loam, 2 to 6 percent slopes	C	14.1	16.1%
KwC2	Knowles silt loam, 6 to 12 percent slopes, eroded	C	2.2	2.5%
MoB	Mayville silt loam, 2 to 6 percent slopes	C	1.0	1.2%
OuB	Ozaukee silt loam, high carbonate substratum, 2 to 6 percent slopes	C	25.5	29.0%
OuB2	Ozaukee silt loam, high carbonate substratum, 2 to 6 percent slopes, eroded	C	29.8	33.9%
OuC2	Ozaukee silt loam, high carbonate substratum, 6 to 12 percent slopes, eroded	C	10.4	11.8%
RaA	Radford silt loam, 0 to 3 percent slopes	B/D	0.7	0.8%
RkC2	Ritchey silt loam, 6 to 12 percent slopes, eroded	D	2.8	3.2%
ThB	Theresa silt loam, 2 to 6 percent slopes	C	0.2	0.3%
Totals for Area of Interest			88.0	100.0%

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

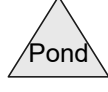
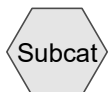
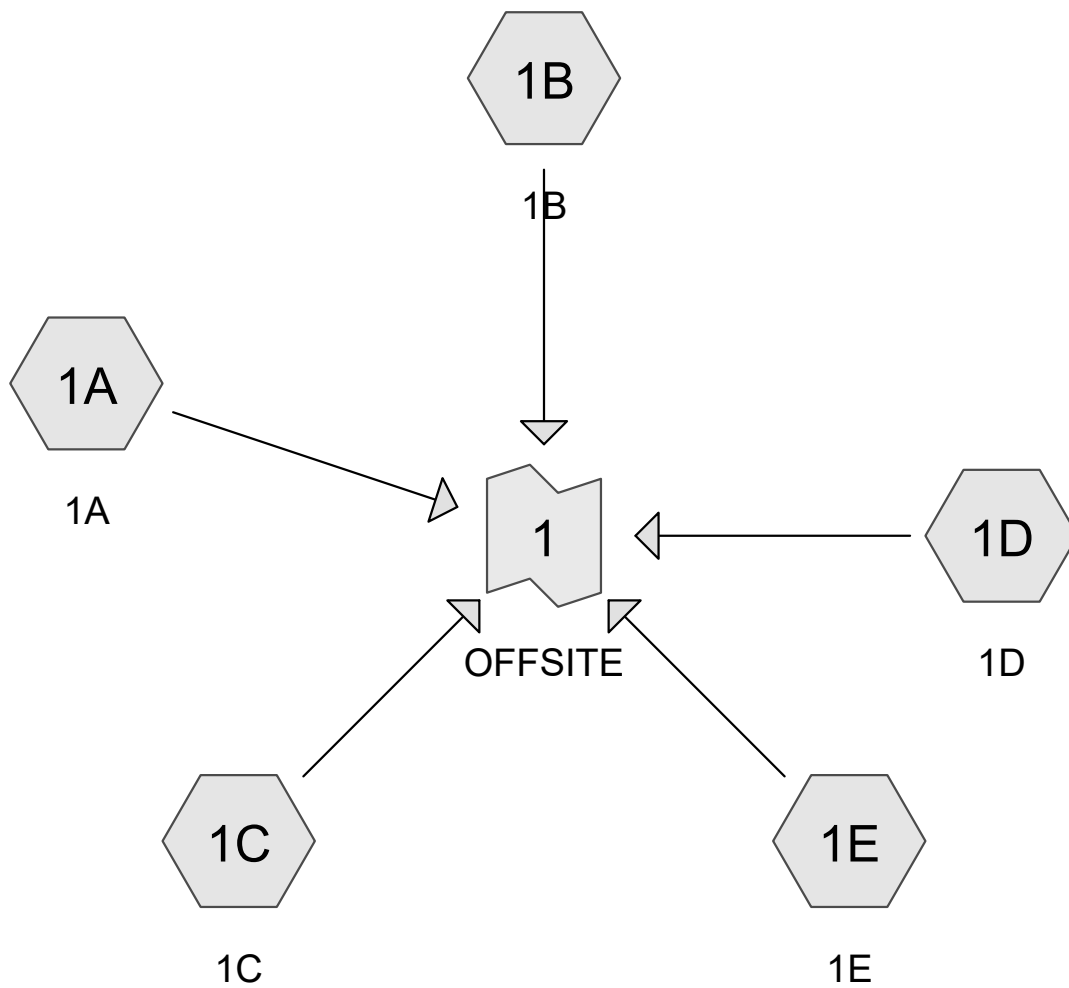
Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Appendix D

HydroCAD Report



Routing Diagram for Existing Conditions
 Prepared by Foth & Van Dyke, LLC, Printed 3/24/2025
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Existing Conditions

Prepared by Foth & Van Dyke, LLC

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Page 2

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	Type 2 - 2-Year	Type II 24-hr		Default	24.00	1	2.68	2
2	Type 2 - 5-Year	Type II 24-hr		Default	24.00	1	3.26	2
3	Type 2 - 10-Year	Type II 24-hr		Default	24.00	1	3.83	2
4	Type 2 - 25-Year	Type II 24-hr		Default	24.00	1	4.71	2
5	Type 2 - 50-Year	Type II 24-hr		Default	24.00	1	5.49	2
6	Type 2 - 100-Year	Type II 24-hr		Default	24.00	1	6.34	2

Existing Conditions

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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
70.415	78	Cropland (1A, 1B, 1C, 1D, 1E)
10.611	70	Woods, Good, HSG C (1A, 1B, 1C, 1D, 1E)
81.027	77	TOTAL AREA

Existing Conditions

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Type II 24-hr Type 2 - 2-Year Rainfall=2.68"

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Page 4

Time span=0.01-120.00 hrs, dt=0.01 hrs, 12000 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1A: 1A

Runoff Area=243,883 sf 0.00% Impervious Runoff Depth=0.76"
Flow Length=475' Tc=17.9 min CN=75 Runoff=4.65 cfs 0.354 af

Subcatchment1B: 1B

Runoff Area=422,611 sf 0.00% Impervious Runoff Depth=0.86"
Flow Length=920' Slope=0.0200 '/' Tc=24.2 min CN=77 Runoff=7.74 cfs 0.692 af

Subcatchment1C: 1C

Runoff Area=1,462,058 sf 0.00% Impervious Runoff Depth=0.81"
Flow Length=1,280' Tc=20.4 min CN=76 Runoff=27.71 cfs 2.254 af

Subcatchment1D: 1D

Runoff Area=644,193 sf 0.00% Impervious Runoff Depth=0.91"
Flow Length=1,260' Tc=20.1 min CN=78 Runoff=14.22 cfs 1.118 af

Subcatchment1E: 1E

Runoff Area=756,790 sf 0.00% Impervious Runoff Depth=0.91"
Flow Length=1,365' Tc=25.2 min CN=78 Runoff=14.45 cfs 1.313 af

Link 1: OFFSITE

Inflow=67.71 cfs 5.730 af
Primary=67.71 cfs 5.730 af

Total Runoff Area = 81.027 ac Runoff Volume = 5.730 af Average Runoff Depth = 0.85"
100.00% Pervious = 81.027 ac 0.00% Impervious = 0.000 ac

Existing Conditions

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Type II 24-hr Type 2 - 2-Year Rainfall=2.68"

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Summary for Subcatchment 1A: 1A

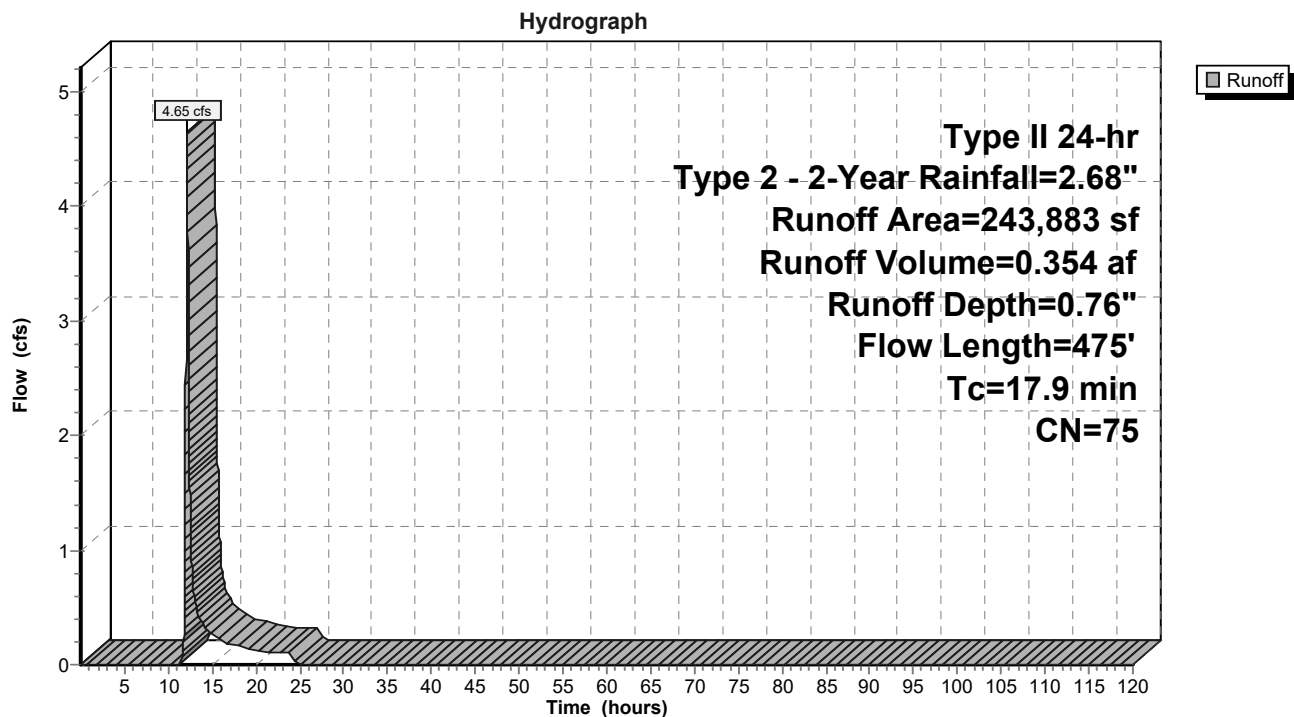
Runoff = 4.65 cfs @ 12.12 hrs, Volume= 0.354 af, Depth= 0.76"
Routed to Link 1 : OFFSITE

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs
Type II 24-hr Type 2 - 2-Year Rainfall=2.68"

	Area (sf)	CN	Description
*	148,310	78	Cropland
	95,573	70	Woods, Good, HSG C
	243,883	75	Weighted Average
	243,883		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.7	120	0.0200	0.15		Sheet Flow, Sheet Flow Cultivated: Residue>20% n= 0.170 P2= 2.68"
2.5	190	0.0200	1.27		Shallow Concentrated Flow, Flow Cultivated Straight Rows Kv= 9.0 fps
1.7	165	0.1000	1.58		Shallow Concentrated Flow, Tree Flow Woodland Kv= 5.0 fps
17.9	475	Total			

Subcatchment 1A: 1A



Existing Conditions

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Type II 24-hr Type 2 - 2-Year Rainfall=2.68"

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Hydrograph for Subcatchment 1A: 1A

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.01	0.00	0.00	0.00	104.01	2.68	0.76	0.00
2.01	0.06	0.00	0.00	106.01	2.68	0.76	0.00
4.01	0.13	0.00	0.00	108.01	2.68	0.76	0.00
6.01	0.21	0.00	0.00	110.01	2.68	0.76	0.00
8.01	0.32	0.00	0.00	112.01	2.68	0.76	0.00
10.01	0.49	0.00	0.00	114.01	2.68	0.76	0.00
12.01	1.78	0.28	3.11	116.01	2.68	0.76	0.00
14.01	2.20	0.48	0.34	118.01	2.68	0.76	0.00
16.01	2.36	0.57	0.21				
18.01	2.47	0.63	0.16				
20.01	2.55	0.68	0.12				
22.01	2.62	0.72	0.11				
24.01	2.68	0.76	0.10				
26.01	2.68	0.76	0.00				
28.01	2.68	0.76	0.00				
30.01	2.68	0.76	0.00				
32.01	2.68	0.76	0.00				
34.01	2.68	0.76	0.00				
36.01	2.68	0.76	0.00				
38.01	2.68	0.76	0.00				
40.01	2.68	0.76	0.00				
42.01	2.68	0.76	0.00				
44.01	2.68	0.76	0.00				
46.01	2.68	0.76	0.00				
48.01	2.68	0.76	0.00				
50.01	2.68	0.76	0.00				
52.01	2.68	0.76	0.00				
54.01	2.68	0.76	0.00				
56.01	2.68	0.76	0.00				
58.01	2.68	0.76	0.00				
60.01	2.68	0.76	0.00				
62.01	2.68	0.76	0.00				
64.01	2.68	0.76	0.00				
66.01	2.68	0.76	0.00				
68.01	2.68	0.76	0.00				
70.01	2.68	0.76	0.00				
72.01	2.68	0.76	0.00				
74.01	2.68	0.76	0.00				
76.01	2.68	0.76	0.00				
78.01	2.68	0.76	0.00				
80.01	2.68	0.76	0.00				
82.01	2.68	0.76	0.00				
84.01	2.68	0.76	0.00				
86.01	2.68	0.76	0.00				
88.01	2.68	0.76	0.00				
90.01	2.68	0.76	0.00				
92.01	2.68	0.76	0.00				
94.01	2.68	0.76	0.00				
96.01	2.68	0.76	0.00				
98.01	2.68	0.76	0.00				
100.01	2.68	0.76	0.00				
102.01	2.68	0.76	0.00				

Existing Conditions

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Type II 24-hr Type 2 - 2-Year Rainfall=2.68"

Printed 3/24/2025

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Summary for Subcatchment 1B: 1B

Runoff = 7.74 cfs @ 12.18 hrs, Volume= 0.692 af, Depth= 0.86"
Routed to Link 1 : OFFSITE

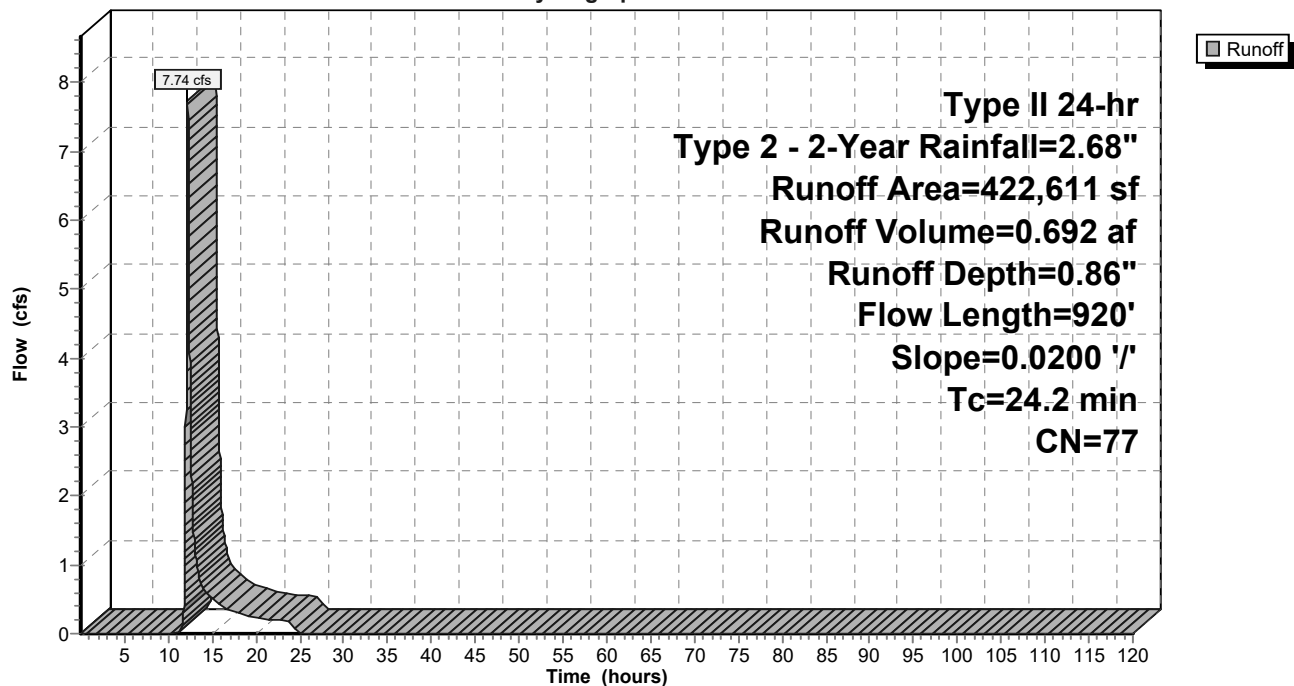
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs
Type II 24-hr Type 2 - 2-Year Rainfall=2.68"

Area (sf)	CN	Description
30,229	70	Woods, Good, HSG C
* 392,382	78	Cropland
422,611	77	Weighted Average
422,611		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.7	120	0.0200	0.15		Sheet Flow, Sheet Flow
					Cultivated: Residue>20% n= 0.170 P2= 2.68"
10.5	800	0.0200	1.27		Shallow Concentrated Flow, Flow
					Cultivated Straight Rows Kv= 9.0 fps
24.2	920	Total			

Subcatchment 1B: 1B

Hydrograph



Existing Conditions

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Type II 24-hr Type 2 - 2-Year Rainfall=2.68"

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Hydrograph for Subcatchment 1B: 1B

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.01	0.00	0.00	0.00	104.01	2.68	0.86	0.00
2.01	0.06	0.00	0.00	106.01	2.68	0.86	0.00
4.01	0.13	0.00	0.00	108.01	2.68	0.86	0.00
6.01	0.21	0.00	0.00	110.01	2.68	0.86	0.00
8.01	0.32	0.00	0.00	112.01	2.68	0.86	0.00
10.01	0.49	0.00	0.00	114.01	2.68	0.86	0.00
12.01	1.78	0.34	3.81	116.01	2.68	0.86	0.00
14.01	2.20	0.56	0.66	118.01	2.68	0.86	0.00
16.01	2.36	0.65	0.40				
18.01	2.47	0.72	0.31				
20.01	2.55	0.77	0.23				
22.01	2.62	0.82	0.21				
24.01	2.68	0.86	0.19				
26.01	2.68	0.86	0.00				
28.01	2.68	0.86	0.00				
30.01	2.68	0.86	0.00				
32.01	2.68	0.86	0.00				
34.01	2.68	0.86	0.00				
36.01	2.68	0.86	0.00				
38.01	2.68	0.86	0.00				
40.01	2.68	0.86	0.00				
42.01	2.68	0.86	0.00				
44.01	2.68	0.86	0.00				
46.01	2.68	0.86	0.00				
48.01	2.68	0.86	0.00				
50.01	2.68	0.86	0.00				
52.01	2.68	0.86	0.00				
54.01	2.68	0.86	0.00				
56.01	2.68	0.86	0.00				
58.01	2.68	0.86	0.00				
60.01	2.68	0.86	0.00				
62.01	2.68	0.86	0.00				
64.01	2.68	0.86	0.00				
66.01	2.68	0.86	0.00				
68.01	2.68	0.86	0.00				
70.01	2.68	0.86	0.00				
72.01	2.68	0.86	0.00				
74.01	2.68	0.86	0.00				
76.01	2.68	0.86	0.00				
78.01	2.68	0.86	0.00				
80.01	2.68	0.86	0.00				
82.01	2.68	0.86	0.00				
84.01	2.68	0.86	0.00				
86.01	2.68	0.86	0.00				
88.01	2.68	0.86	0.00				
90.01	2.68	0.86	0.00				
92.01	2.68	0.86	0.00				
94.01	2.68	0.86	0.00				
96.01	2.68	0.86	0.00				
98.01	2.68	0.86	0.00				
100.01	2.68	0.86	0.00				
102.01	2.68	0.86	0.00				

Existing Conditions

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Type II 24-hr Type 2 - 2-Year Rainfall=2.68"
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Summary for Subcatchment 1C: 1C

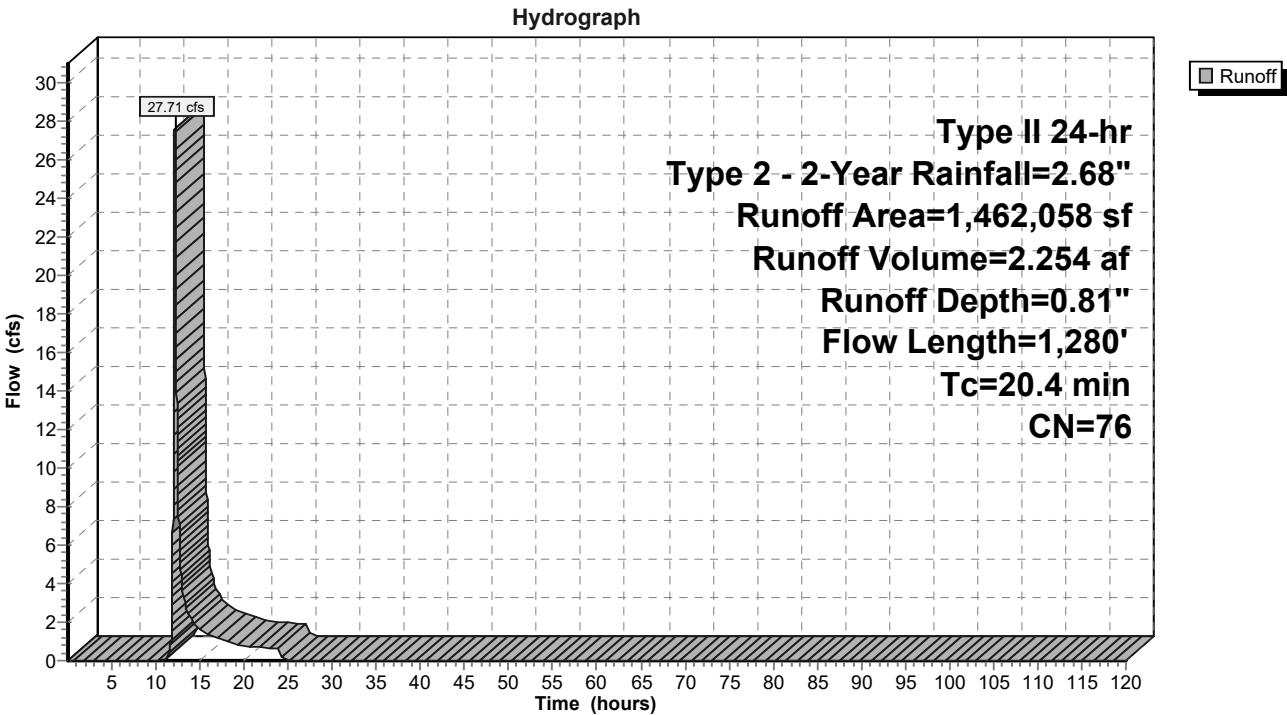
Runoff = 27.71 cfs @ 12.15 hrs, Volume= 2.254 af, Depth= 0.81"
Routed to Link 1 : OFFSITE

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs
Type II 24-hr Type 2 - 2-Year Rainfall=2.68"

Area (sf)	CN	Description
275,724	70	Woods, Good, HSG C
* 1,186,334	78	Cropland
1,462,058	76	Weighted Average
1,462,058		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.6	120	0.0300	0.17		Sheet Flow, Sheet Flow
					Cultivated: Residue>20% n= 0.170 P2= 2.68"
8.8	1,160	0.0600	2.20		Shallow Concentrated Flow, Flow
					Cultivated Straight Rows Kv= 9.0 fps
20.4	1,280	Total			

Subcatchment 1C: 1C



Existing Conditions

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Type II 24-hr Type 2 - 2-Year Rainfall=2.68"

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Hydrograph for Subcatchment 1C: 1C

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.01	0.00	0.00	0.00	104.01	2.68	0.81	0.00
2.01	0.06	0.00	0.00	106.01	2.68	0.81	0.00
4.01	0.13	0.00	0.00	108.01	2.68	0.81	0.00
6.01	0.21	0.00	0.00	110.01	2.68	0.81	0.00
8.01	0.32	0.00	0.00	112.01	2.68	0.81	0.00
10.01	0.49	0.00	0.00	114.01	2.68	0.81	0.00
12.01	1.78	0.31	16.44	116.01	2.68	0.81	0.00
14.01	2.20	0.52	2.14	118.01	2.68	0.81	0.00
16.01	2.36	0.61	1.32				
18.01	2.47	0.68	1.02				
20.01	2.55	0.73	0.76				
22.01	2.62	0.77	0.69				
24.01	2.68	0.81	0.64				
26.01	2.68	0.81	0.00				
28.01	2.68	0.81	0.00				
30.01	2.68	0.81	0.00				
32.01	2.68	0.81	0.00				
34.01	2.68	0.81	0.00				
36.01	2.68	0.81	0.00				
38.01	2.68	0.81	0.00				
40.01	2.68	0.81	0.00				
42.01	2.68	0.81	0.00				
44.01	2.68	0.81	0.00				
46.01	2.68	0.81	0.00				
48.01	2.68	0.81	0.00				
50.01	2.68	0.81	0.00				
52.01	2.68	0.81	0.00				
54.01	2.68	0.81	0.00				
56.01	2.68	0.81	0.00				
58.01	2.68	0.81	0.00				
60.01	2.68	0.81	0.00				
62.01	2.68	0.81	0.00				
64.01	2.68	0.81	0.00				
66.01	2.68	0.81	0.00				
68.01	2.68	0.81	0.00				
70.01	2.68	0.81	0.00				
72.01	2.68	0.81	0.00				
74.01	2.68	0.81	0.00				
76.01	2.68	0.81	0.00				
78.01	2.68	0.81	0.00				
80.01	2.68	0.81	0.00				
82.01	2.68	0.81	0.00				
84.01	2.68	0.81	0.00				
86.01	2.68	0.81	0.00				
88.01	2.68	0.81	0.00				
90.01	2.68	0.81	0.00				
92.01	2.68	0.81	0.00				
94.01	2.68	0.81	0.00				
96.01	2.68	0.81	0.00				
98.01	2.68	0.81	0.00				
100.01	2.68	0.81	0.00				
102.01	2.68	0.81	0.00				

Existing Conditions

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Type II 24-hr Type 2 - 2-Year Rainfall=2.68"
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Summary for Subcatchment 1D: 1D

Runoff = 14.22 cfs @ 12.13 hrs, Volume= 1.118 af, Depth= 0.91"
Routed to Link 1 : OFFSITE

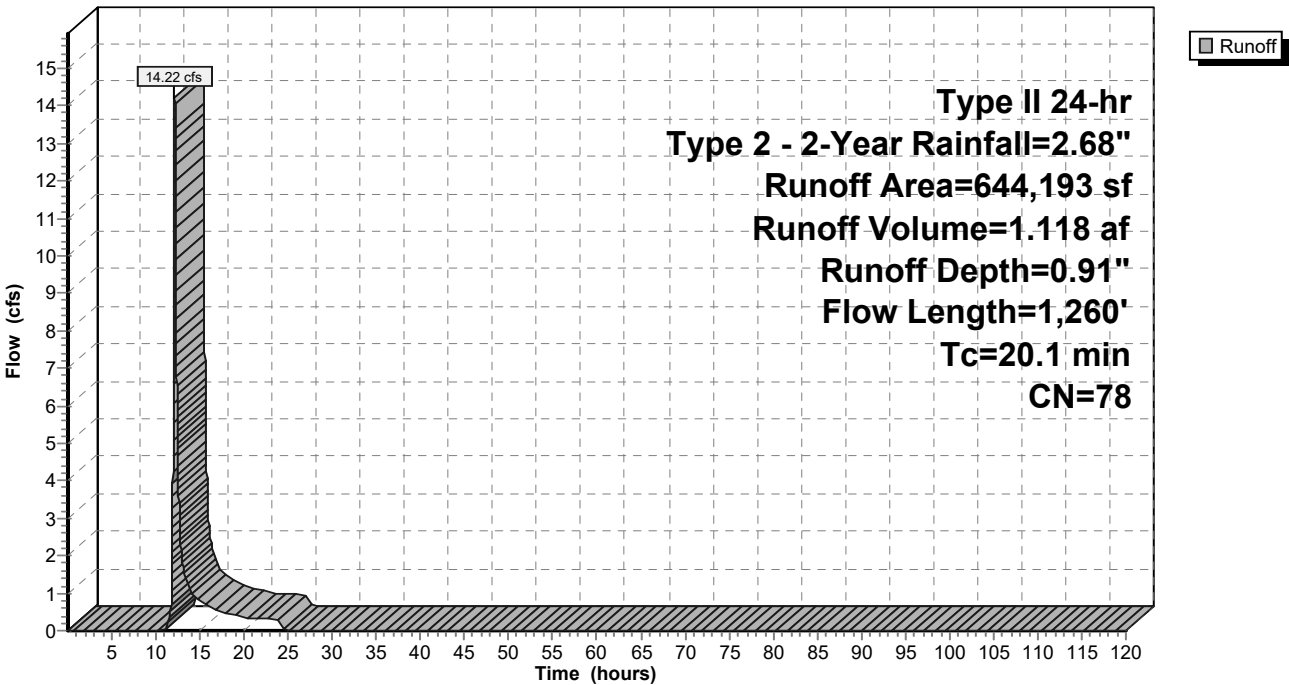
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs
Type II 24-hr Type 2 - 2-Year Rainfall=2.68"

Area (sf)	CN	Description
33,653	70	Woods, Good, HSG C
* 610,540	78	Cropland
644,193	78	Weighted Average
644,193		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	120	0.0500	0.21		Sheet Flow, Sheet Flow
					Cultivated: Residue>20% n= 0.170 P2= 2.68"
10.6	1,140	0.0400	1.80		Shallow Concentrated Flow, Flow
					Cultivated Straight Rows Kv= 9.0 fps
20.1	1,260	Total			

Subcatchment 1D: 1D

Hydrograph



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Type II 24-hr Type 2 - 2-Year Rainfall=2.68"

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Hydrograph for Subcatchment 1D: 1D

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.01	0.00	0.00	0.00	104.01	2.68	0.91	0.00
2.01	0.06	0.00	0.00	106.01	2.68	0.91	0.00
4.01	0.13	0.00	0.00	108.01	2.68	0.91	0.00
6.01	0.21	0.00	0.00	110.01	2.68	0.91	0.00
8.01	0.32	0.00	0.00	112.01	2.68	0.91	0.00
10.01	0.49	0.00	0.00	114.01	2.68	0.91	0.00
12.01	1.78	0.37	8.94	116.01	2.68	0.91	0.00
14.01	2.20	0.60	1.02	118.01	2.68	0.91	0.00
16.01	2.36	0.70	0.63				
18.01	2.47	0.77	0.48				
20.01	2.55	0.82	0.36				
22.01	2.62	0.87	0.32				
24.01	2.68	0.91	0.30				
26.01	2.68	0.91	0.00				
28.01	2.68	0.91	0.00				
30.01	2.68	0.91	0.00				
32.01	2.68	0.91	0.00				
34.01	2.68	0.91	0.00				
36.01	2.68	0.91	0.00				
38.01	2.68	0.91	0.00				
40.01	2.68	0.91	0.00				
42.01	2.68	0.91	0.00				
44.01	2.68	0.91	0.00				
46.01	2.68	0.91	0.00				
48.01	2.68	0.91	0.00				
50.01	2.68	0.91	0.00				
52.01	2.68	0.91	0.00				
54.01	2.68	0.91	0.00				
56.01	2.68	0.91	0.00				
58.01	2.68	0.91	0.00				
60.01	2.68	0.91	0.00				
62.01	2.68	0.91	0.00				
64.01	2.68	0.91	0.00				
66.01	2.68	0.91	0.00				
68.01	2.68	0.91	0.00				
70.01	2.68	0.91	0.00				
72.01	2.68	0.91	0.00				
74.01	2.68	0.91	0.00				
76.01	2.68	0.91	0.00				
78.01	2.68	0.91	0.00				
80.01	2.68	0.91	0.00				
82.01	2.68	0.91	0.00				
84.01	2.68	0.91	0.00				
86.01	2.68	0.91	0.00				
88.01	2.68	0.91	0.00				
90.01	2.68	0.91	0.00				
92.01	2.68	0.91	0.00				
94.01	2.68	0.91	0.00				
96.01	2.68	0.91	0.00				
98.01	2.68	0.91	0.00				
100.01	2.68	0.91	0.00				
102.01	2.68	0.91	0.00				

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Type II 24-hr Type 2 - 2-Year Rainfall=2.68"

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Summary for Subcatchment 1E: 1E

Runoff = 14.45 cfs @ 12.20 hrs, Volume= 1.313 af, Depth= 0.91"
Routed to Link 1 : OFFSITE

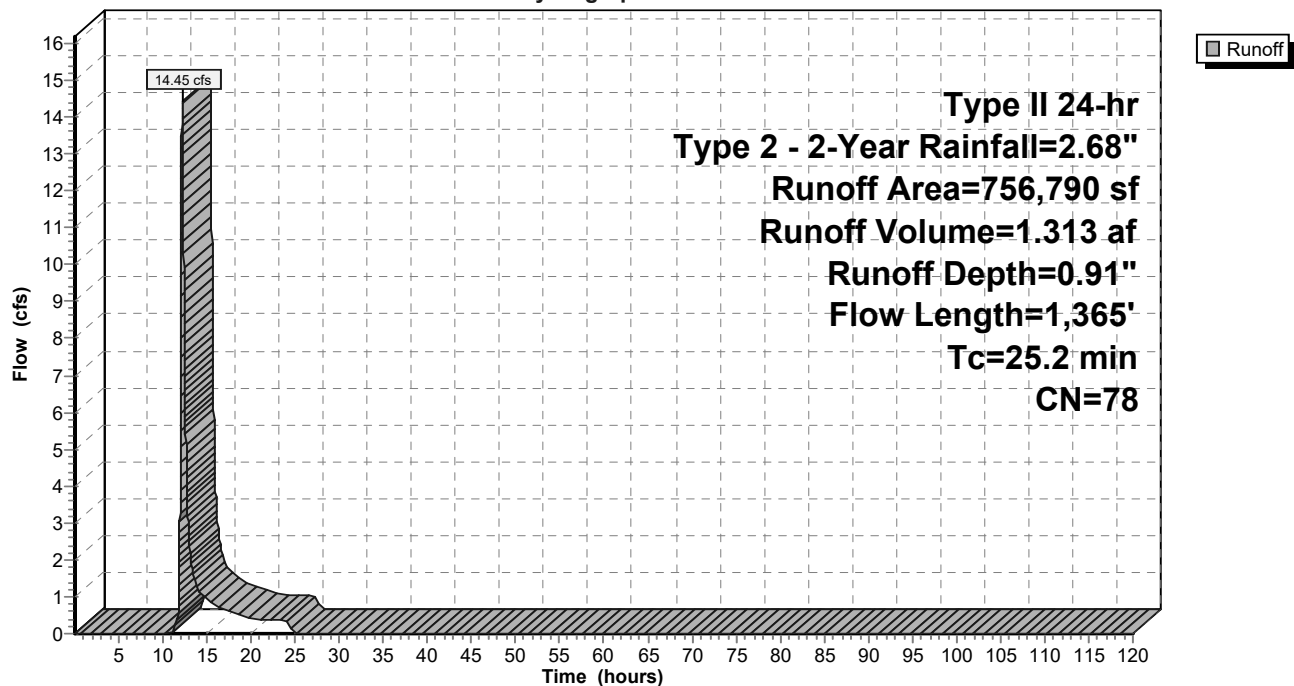
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs
Type II 24-hr Type 2 - 2-Year Rainfall=2.68"

Area (sf)	CN	Description
27,057	70	Woods, Good, HSG C
* 729,733	78	Cropland
756,790	78	Weighted Average
756,790		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.7	120	0.0200	0.15		Sheet Flow, Sheet Flow
					Cultivated: Residue>20% n= 0.170 P2= 2.68"
11.5	1,245	0.0400	1.80		Shallow Concentrated Flow, Flow
					Cultivated Straight Rows Kv= 9.0 fps
25.2	1,365	Total			

Subcatchment 1E: 1E

Hydrograph



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Type II 24-hr Type 2 - 2-Year Rainfall=2.68"

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Hydrograph for Subcatchment 1E: 1E

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.01	0.00	0.00	0.00	104.01	2.68	0.91	0.00
2.01	0.06	0.00	0.00	106.01	2.68	0.91	0.00
4.01	0.13	0.00	0.00	108.01	2.68	0.91	0.00
6.01	0.21	0.00	0.00	110.01	2.68	0.91	0.00
8.01	0.32	0.00	0.00	112.01	2.68	0.91	0.00
10.01	0.49	0.00	0.00	114.01	2.68	0.91	0.00
12.01	1.78	0.37	6.96	116.01	2.68	0.91	0.00
14.01	2.20	0.60	1.24	118.01	2.68	0.91	0.00
16.01	2.36	0.70	0.75				
18.01	2.47	0.77	0.57				
20.01	2.55	0.82	0.43				
22.01	2.62	0.87	0.38				
24.01	2.68	0.91	0.35				
26.01	2.68	0.91	0.00				
28.01	2.68	0.91	0.00				
30.01	2.68	0.91	0.00				
32.01	2.68	0.91	0.00				
34.01	2.68	0.91	0.00				
36.01	2.68	0.91	0.00				
38.01	2.68	0.91	0.00				
40.01	2.68	0.91	0.00				
42.01	2.68	0.91	0.00				
44.01	2.68	0.91	0.00				
46.01	2.68	0.91	0.00				
48.01	2.68	0.91	0.00				
50.01	2.68	0.91	0.00				
52.01	2.68	0.91	0.00				
54.01	2.68	0.91	0.00				
56.01	2.68	0.91	0.00				
58.01	2.68	0.91	0.00				
60.01	2.68	0.91	0.00				
62.01	2.68	0.91	0.00				
64.01	2.68	0.91	0.00				
66.01	2.68	0.91	0.00				
68.01	2.68	0.91	0.00				
70.01	2.68	0.91	0.00				
72.01	2.68	0.91	0.00				
74.01	2.68	0.91	0.00				
76.01	2.68	0.91	0.00				
78.01	2.68	0.91	0.00				
80.01	2.68	0.91	0.00				
82.01	2.68	0.91	0.00				
84.01	2.68	0.91	0.00				
86.01	2.68	0.91	0.00				
88.01	2.68	0.91	0.00				
90.01	2.68	0.91	0.00				
92.01	2.68	0.91	0.00				
94.01	2.68	0.91	0.00				
96.01	2.68	0.91	0.00				
98.01	2.68	0.91	0.00				
100.01	2.68	0.91	0.00				
102.01	2.68	0.91	0.00				

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Type II 24-hr Type 2 - 2-Year Rainfall=2.68"

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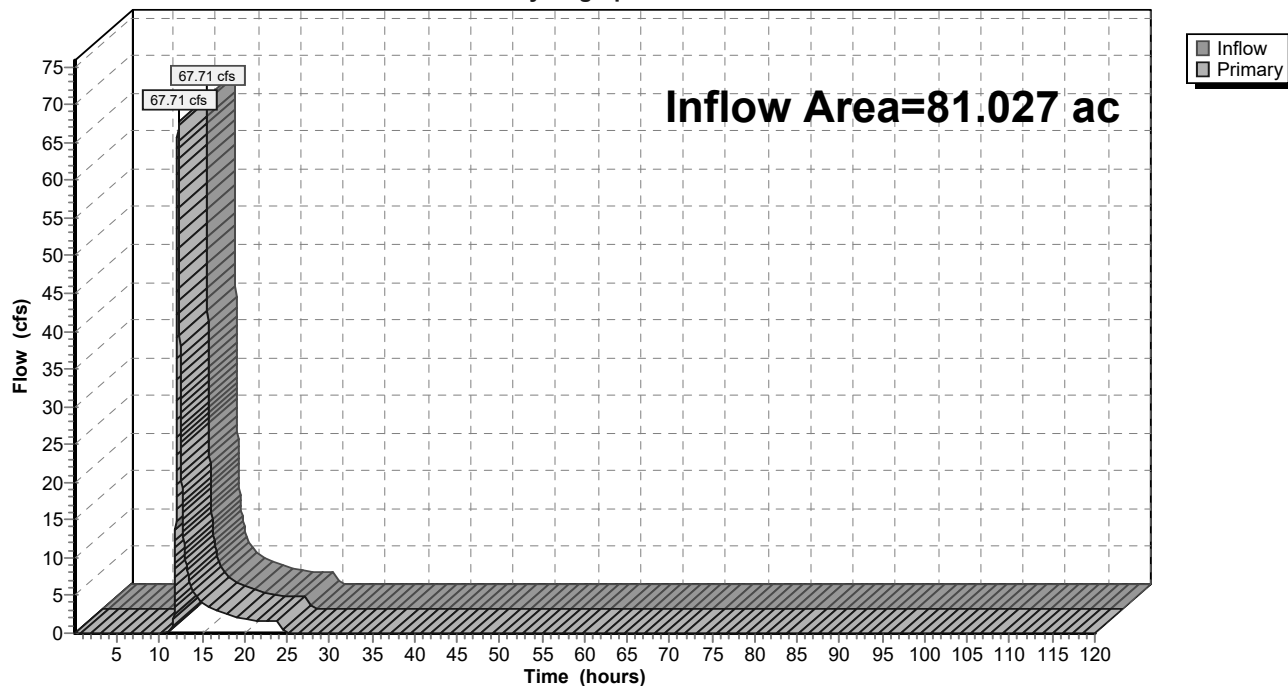
Summary for Link 1: OFFSITE

Inflow Area = 81.027 ac, 0.00% Impervious, Inflow Depth = 0.85" for Type 2 - 2-Year event
Inflow = 67.71 cfs @ 12.16 hrs, Volume= 5.730 af
Primary = 67.71 cfs @ 12.16 hrs, Volume= 5.730 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs

Link 1: OFFSITE

Hydrograph



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Type II 24-hr Type 2 - 2-Year Rainfall=2.68"

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Hydrograph for Link 1: OFFSITE

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.01	0.00	0.00	0.00	104.01	0.00	0.00	0.00
2.01	0.00	0.00	0.00	106.01	0.00	0.00	0.00
4.01	0.00	0.00	0.00	108.01	0.00	0.00	0.00
6.01	0.00	0.00	0.00	110.01	0.00	0.00	0.00
8.01	0.00	0.00	0.00	112.01	0.00	0.00	0.00
10.01	0.00	0.00	0.00	114.01	0.00	0.00	0.00
12.01	39.25	0.00	39.25	116.01	0.00	0.00	0.00
14.01	5.41	0.00	5.41	118.01	0.00	0.00	0.00
16.01	3.31	0.00	3.31				
18.01	2.54	0.00	2.54				
20.01	1.90	0.00	1.90				
22.01	1.70	0.00	1.70				
24.01	1.59	0.00	1.59				
26.01	0.00	0.00	0.00				
28.01	0.00	0.00	0.00				
30.01	0.00	0.00	0.00				
32.01	0.00	0.00	0.00				
34.01	0.00	0.00	0.00				
36.01	0.00	0.00	0.00				
38.01	0.00	0.00	0.00				
40.01	0.00	0.00	0.00				
42.01	0.00	0.00	0.00				
44.01	0.00	0.00	0.00				
46.01	0.00	0.00	0.00				
48.01	0.00	0.00	0.00				
50.01	0.00	0.00	0.00				
52.01	0.00	0.00	0.00				
54.01	0.00	0.00	0.00				
56.01	0.00	0.00	0.00				
58.01	0.00	0.00	0.00				
60.01	0.00	0.00	0.00				
62.01	0.00	0.00	0.00				
64.01	0.00	0.00	0.00				
66.01	0.00	0.00	0.00				
68.01	0.00	0.00	0.00				
70.01	0.00	0.00	0.00				
72.01	0.00	0.00	0.00				
74.01	0.00	0.00	0.00				
76.01	0.00	0.00	0.00				
78.01	0.00	0.00	0.00				
80.01	0.00	0.00	0.00				
82.01	0.00	0.00	0.00				
84.01	0.00	0.00	0.00				
86.01	0.00	0.00	0.00				
88.01	0.00	0.00	0.00				
90.01	0.00	0.00	0.00				
92.01	0.00	0.00	0.00				
94.01	0.00	0.00	0.00				
96.01	0.00	0.00	0.00				
98.01	0.00	0.00	0.00				
100.01	0.00	0.00	0.00				
102.01	0.00	0.00	0.00				

Existing Conditions

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Type II 24-hr Type 2 - 5-Year Rainfall=3.26"

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Time span=0.01-120.00 hrs, dt=0.01 hrs, 12000 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1A: 1A

Runoff Area=243,883 sf 0.00% Impervious Runoff Depth=1.13"
Flow Length=475' Tc=17.9 min CN=75 Runoff=7.26 cfs 0.529 af

Subcatchment1B: 1B

Runoff Area=422,611 sf 0.00% Impervious Runoff Depth=1.25"
Flow Length=920' Slope=0.0200 '/' Tc=24.2 min CN=77 Runoff=11.77 cfs 1.015 af

Subcatchment1C: 1C

Runoff Area=1,462,058 sf 0.00% Impervious Runoff Depth=1.19"
Flow Length=1,280' Tc=20.4 min CN=76 Runoff=42.60 cfs 3.340 af

Subcatchment1D: 1D

Runoff Area=644,193 sf 0.00% Impervious Runoff Depth=1.32"
Flow Length=1,260' Tc=20.1 min CN=78 Runoff=21.23 cfs 1.624 af

Subcatchment1E: 1E

Runoff Area=756,790 sf 0.00% Impervious Runoff Depth=1.32"
Flow Length=1,365' Tc=25.2 min CN=78 Runoff=21.64 cfs 1.907 af

Link 1: OFFSITE

Inflow=102.97 cfs 8.415 af
Primary=102.97 cfs 8.415 af

Total Runoff Area = 81.027 ac Runoff Volume = 8.415 af Average Runoff Depth = 1.25"
100.00% Pervious = 81.027 ac 0.00% Impervious = 0.000 ac

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Type II 24-hr Type 2 - 5-Year Rainfall=3.26"

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Summary for Subcatchment 1A: 1A

Runoff = 7.26 cfs @ 12.11 hrs, Volume= 0.529 af, Depth= 1.13"
Routed to Link 1 : OFFSITE

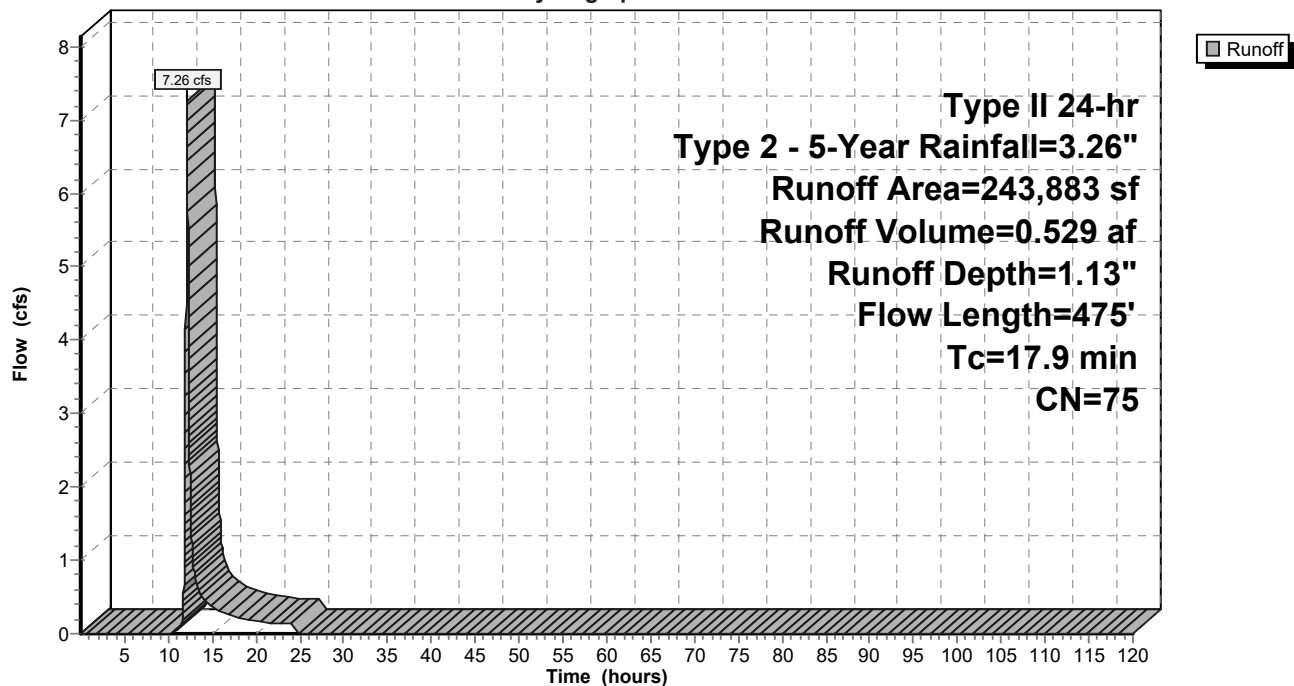
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs
Type II 24-hr Type 2 - 5-Year Rainfall=3.26"

	Area (sf)	CN	Description
*	148,310	78	Cropland
	95,573	70	Woods, Good, HSG C
	243,883	75	Weighted Average
	243,883		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.7	120	0.0200	0.15		Sheet Flow, Sheet Flow Cultivated: Residue>20% n= 0.170 P2= 2.68"
2.5	190	0.0200	1.27		Shallow Concentrated Flow, Flow Cultivated Straight Rows Kv= 9.0 fps
1.7	165	0.1000	1.58		Shallow Concentrated Flow, Tree Flow Woodland Kv= 5.0 fps
17.9	475	Total			

Subcatchment 1A: 1A

Hydrograph



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Type II 24-hr Type 2 - 5-Year Rainfall=3.26"

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Hydrograph for Subcatchment 1A: 1A

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.01	0.00	0.00	0.00	104.01	3.26	1.13	0.00
2.01	0.07	0.00	0.00	106.01	3.26	1.13	0.00
4.01	0.16	0.00	0.00	108.01	3.26	1.13	0.00
6.01	0.26	0.00	0.00	110.01	3.26	1.13	0.00
8.01	0.39	0.00	0.00	112.01	3.26	1.13	0.00
10.01	0.59	0.00	0.00	114.01	3.26	1.13	0.00
12.01	2.17	0.47	5.15	116.01	3.26	1.13	0.00
14.01	2.67	0.75	0.47	118.01	3.26	1.13	0.00
16.01	2.87	0.88	0.29				
18.01	3.00	0.96	0.22				
20.01	3.10	1.03	0.17				
22.01	3.19	1.08	0.15				
24.01	3.26	1.13	0.14				
26.01	3.26	1.13	0.00				
28.01	3.26	1.13	0.00				
30.01	3.26	1.13	0.00				
32.01	3.26	1.13	0.00				
34.01	3.26	1.13	0.00				
36.01	3.26	1.13	0.00				
38.01	3.26	1.13	0.00				
40.01	3.26	1.13	0.00				
42.01	3.26	1.13	0.00				
44.01	3.26	1.13	0.00				
46.01	3.26	1.13	0.00				
48.01	3.26	1.13	0.00				
50.01	3.26	1.13	0.00				
52.01	3.26	1.13	0.00				
54.01	3.26	1.13	0.00				
56.01	3.26	1.13	0.00				
58.01	3.26	1.13	0.00				
60.01	3.26	1.13	0.00				
62.01	3.26	1.13	0.00				
64.01	3.26	1.13	0.00				
66.01	3.26	1.13	0.00				
68.01	3.26	1.13	0.00				
70.01	3.26	1.13	0.00				
72.01	3.26	1.13	0.00				
74.01	3.26	1.13	0.00				
76.01	3.26	1.13	0.00				
78.01	3.26	1.13	0.00				
80.01	3.26	1.13	0.00				
82.01	3.26	1.13	0.00				
84.01	3.26	1.13	0.00				
86.01	3.26	1.13	0.00				
88.01	3.26	1.13	0.00				
90.01	3.26	1.13	0.00				
92.01	3.26	1.13	0.00				
94.01	3.26	1.13	0.00				
96.01	3.26	1.13	0.00				
98.01	3.26	1.13	0.00				
100.01	3.26	1.13	0.00				
102.01	3.26	1.13	0.00				

Existing Conditions

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Type II 24-hr Type 2 - 5-Year Rainfall=3.26"

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Summary for Subcatchment 1B: 1B

Runoff = 11.77 cfs @ 12.18 hrs, Volume= 1.015 af, Depth= 1.25"
Routed to Link 1 : OFFSITE

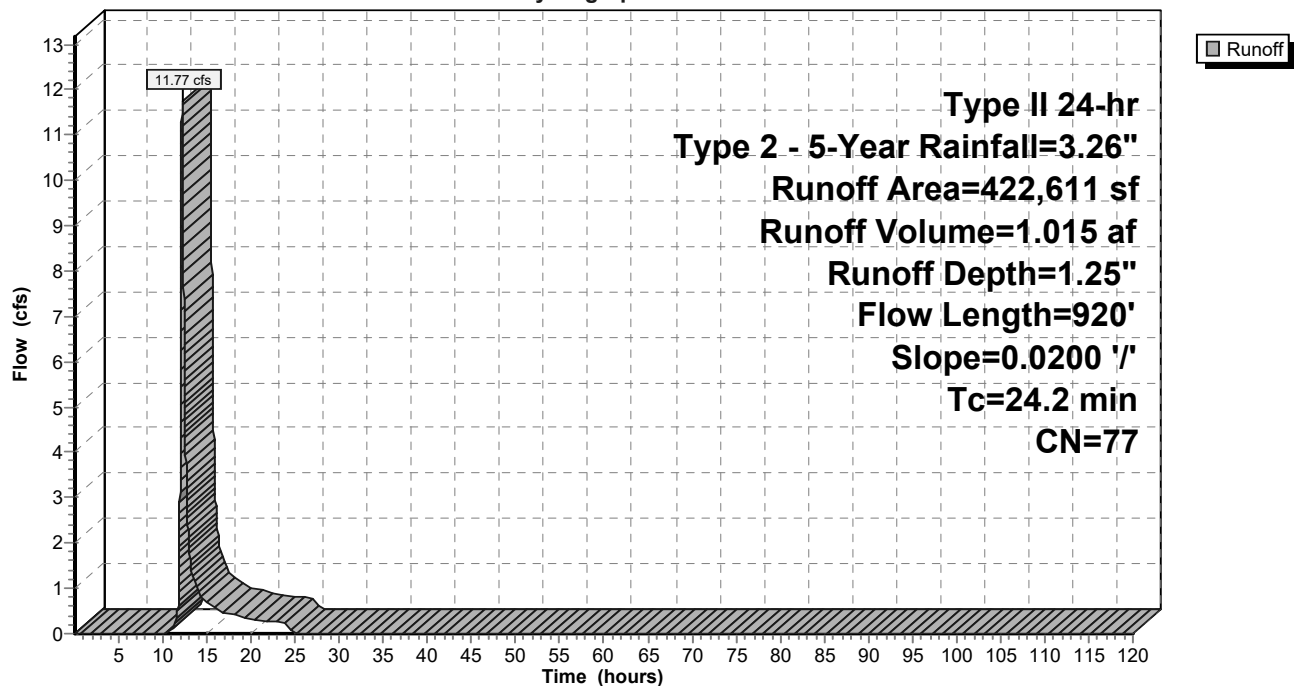
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs
Type II 24-hr Type 2 - 5-Year Rainfall=3.26"

Area (sf)	CN	Description
30,229	70	Woods, Good, HSG C
* 392,382	78	Cropland
422,611	77	Weighted Average
422,611		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.7	120	0.0200	0.15		Sheet Flow, Sheet Flow
					Cultivated: Residue>20% n= 0.170 P2= 2.68"
10.5	800	0.0200	1.27		Shallow Concentrated Flow, Flow
					Cultivated Straight Rows Kv= 9.0 fps
24.2	920	Total			

Subcatchment 1B: 1B

Hydrograph



Existing Conditions

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Type II 24-hr Type 2 - 5-Year Rainfall=3.26"

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Hydrograph for Subcatchment 1B: 1B

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.01	0.00	0.00	0.00	104.01	3.26	1.25	0.00
2.01	0.07	0.00	0.00	106.01	3.26	1.25	0.00
4.01	0.16	0.00	0.00	108.01	3.26	1.25	0.00
6.01	0.26	0.00	0.00	110.01	3.26	1.25	0.00
8.01	0.39	0.00	0.00	112.01	3.26	1.25	0.00
10.01	0.59	0.00	0.00	114.01	3.26	1.25	0.00
12.01	2.17	0.54	6.27	116.01	3.26	1.25	0.00
14.01	2.67	0.85	0.92	118.01	3.26	1.25	0.00
16.01	2.87	0.98	0.55				
18.01	3.00	1.07	0.42				
20.01	3.10	1.14	0.31				
22.01	3.19	1.20	0.28				
24.01	3.26	1.25	0.26				
26.01	3.26	1.25	0.00				
28.01	3.26	1.25	0.00				
30.01	3.26	1.25	0.00				
32.01	3.26	1.25	0.00				
34.01	3.26	1.25	0.00				
36.01	3.26	1.25	0.00				
38.01	3.26	1.25	0.00				
40.01	3.26	1.25	0.00				
42.01	3.26	1.25	0.00				
44.01	3.26	1.25	0.00				
46.01	3.26	1.25	0.00				
48.01	3.26	1.25	0.00				
50.01	3.26	1.25	0.00				
52.01	3.26	1.25	0.00				
54.01	3.26	1.25	0.00				
56.01	3.26	1.25	0.00				
58.01	3.26	1.25	0.00				
60.01	3.26	1.25	0.00				
62.01	3.26	1.25	0.00				
64.01	3.26	1.25	0.00				
66.01	3.26	1.25	0.00				
68.01	3.26	1.25	0.00				
70.01	3.26	1.25	0.00				
72.01	3.26	1.25	0.00				
74.01	3.26	1.25	0.00				
76.01	3.26	1.25	0.00				
78.01	3.26	1.25	0.00				
80.01	3.26	1.25	0.00				
82.01	3.26	1.25	0.00				
84.01	3.26	1.25	0.00				
86.01	3.26	1.25	0.00				
88.01	3.26	1.25	0.00				
90.01	3.26	1.25	0.00				
92.01	3.26	1.25	0.00				
94.01	3.26	1.25	0.00				
96.01	3.26	1.25	0.00				
98.01	3.26	1.25	0.00				
100.01	3.26	1.25	0.00				
102.01	3.26	1.25	0.00				

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Type II 24-hr Type 2 - 5-Year Rainfall=3.26"

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Summary for Subcatchment 1C: 1C

Runoff = 42.60 cfs @ 12.14 hrs, Volume= 3.340 af, Depth= 1.19"
Routed to Link 1 : OFFSITE

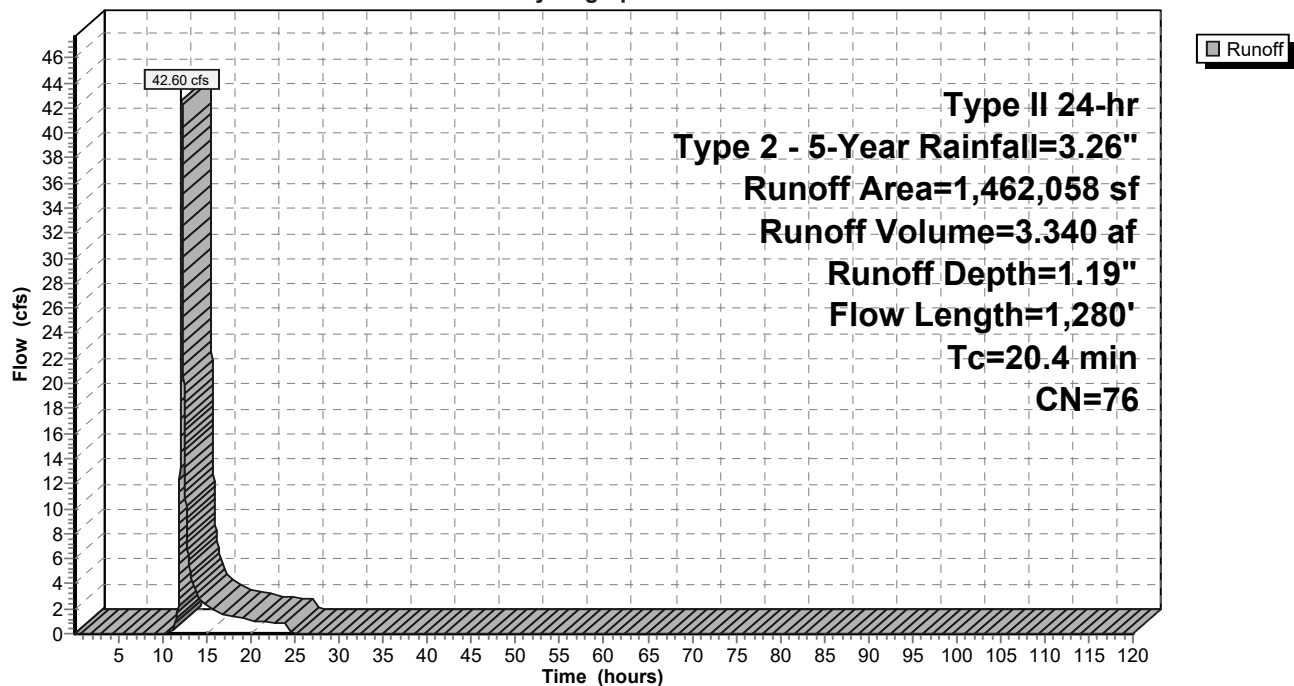
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs
Type II 24-hr Type 2 - 5-Year Rainfall=3.26"

Area (sf)	CN	Description
275,724	70	Woods, Good, HSG C
* 1,186,334	78	Cropland
1,462,058	76	Weighted Average
1,462,058		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.6	120	0.0300	0.17		Sheet Flow, Sheet Flow
					Cultivated: Residue>20% n= 0.170 P2= 2.68"
8.8	1,160	0.0600	2.20		Shallow Concentrated Flow, Flow
					Cultivated Straight Rows Kv= 9.0 fps
20.4	1,280	Total			

Subcatchment 1C: 1C

Hydrograph



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Type II 24-hr Type 2 - 5-Year Rainfall=3.26"

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Hydrograph for Subcatchment 1C: 1C

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.01	0.00	0.00	0.00	104.01	3.26	1.19	0.00
2.01	0.07	0.00	0.00	106.01	3.26	1.19	0.00
4.01	0.16	0.00	0.00	108.01	3.26	1.19	0.00
6.01	0.26	0.00	0.00	110.01	3.26	1.19	0.00
8.01	0.39	0.00	0.00	112.01	3.26	1.19	0.00
10.01	0.59	0.00	0.00	114.01	3.26	1.19	0.00
12.01	2.17	0.50	27.08	116.01	3.26	1.19	0.00
14.01	2.67	0.80	2.98	118.01	3.26	1.19	0.00
16.01	2.87	0.93	1.81				
18.01	3.00	1.02	1.39				
20.01	3.10	1.09	1.04				
22.01	3.19	1.14	0.93				
24.01	3.26	1.19	0.86				
26.01	3.26	1.19	0.00				
28.01	3.26	1.19	0.00				
30.01	3.26	1.19	0.00				
32.01	3.26	1.19	0.00				
34.01	3.26	1.19	0.00				
36.01	3.26	1.19	0.00				
38.01	3.26	1.19	0.00				
40.01	3.26	1.19	0.00				
42.01	3.26	1.19	0.00				
44.01	3.26	1.19	0.00				
46.01	3.26	1.19	0.00				
48.01	3.26	1.19	0.00				
50.01	3.26	1.19	0.00				
52.01	3.26	1.19	0.00				
54.01	3.26	1.19	0.00				
56.01	3.26	1.19	0.00				
58.01	3.26	1.19	0.00				
60.01	3.26	1.19	0.00				
62.01	3.26	1.19	0.00				
64.01	3.26	1.19	0.00				
66.01	3.26	1.19	0.00				
68.01	3.26	1.19	0.00				
70.01	3.26	1.19	0.00				
72.01	3.26	1.19	0.00				
74.01	3.26	1.19	0.00				
76.01	3.26	1.19	0.00				
78.01	3.26	1.19	0.00				
80.01	3.26	1.19	0.00				
82.01	3.26	1.19	0.00				
84.01	3.26	1.19	0.00				
86.01	3.26	1.19	0.00				
88.01	3.26	1.19	0.00				
90.01	3.26	1.19	0.00				
92.01	3.26	1.19	0.00				
94.01	3.26	1.19	0.00				
96.01	3.26	1.19	0.00				
98.01	3.26	1.19	0.00				
100.01	3.26	1.19	0.00				
102.01	3.26	1.19	0.00				

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Type II 24-hr Type 2 - 5-Year Rainfall=3.26"

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Summary for Subcatchment 1D: 1D

Runoff = 21.23 cfs @ 12.13 hrs, Volume= 1.624 af, Depth= 1.32"
Routed to Link 1 : OFFSITE

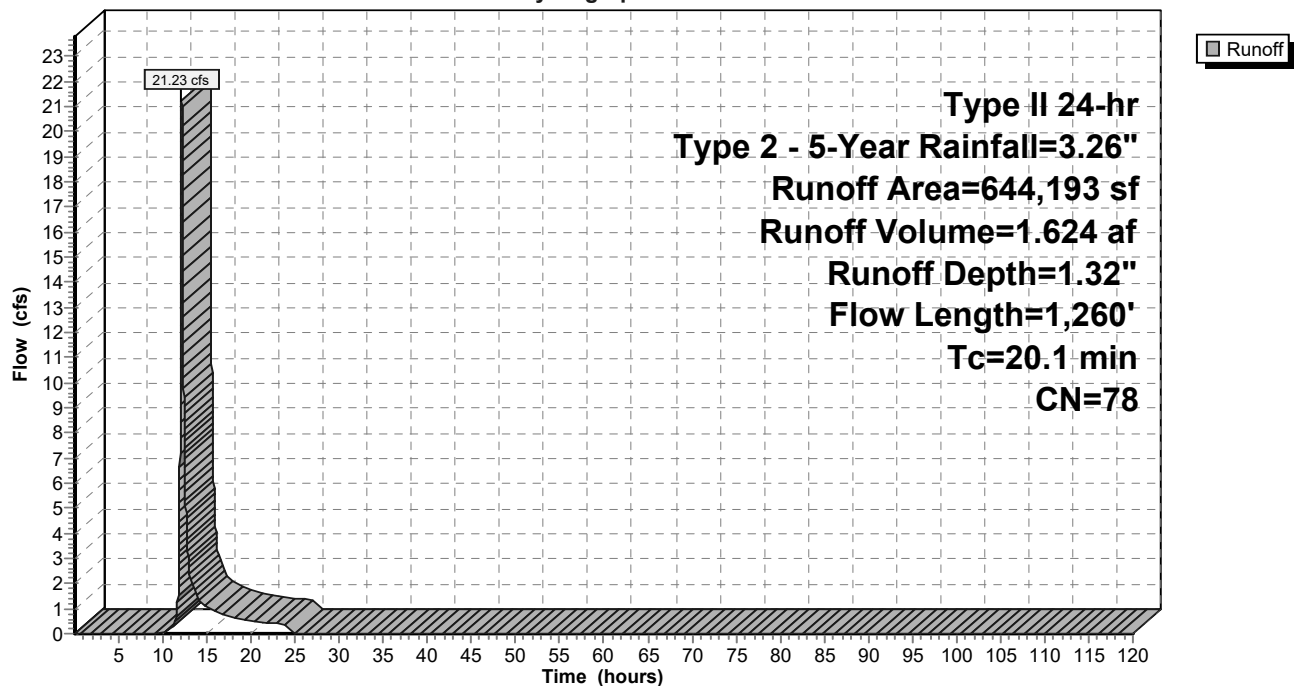
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs
Type II 24-hr Type 2 - 5-Year Rainfall=3.26"

Area (sf)	CN	Description
33,653	70	Woods, Good, HSG C
* 610,540	78	Cropland
644,193	78	Weighted Average
644,193		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	120	0.0500	0.21		Sheet Flow, Sheet Flow
					Cultivated: Residue>20% n= 0.170 P2= 2.68"
10.6	1,140	0.0400	1.80		Shallow Concentrated Flow, Flow
					Cultivated Straight Rows Kv= 9.0 fps
20.1	1,260	Total			

Subcatchment 1D: 1D

Hydrograph



Existing Conditions

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Type II 24-hr Type 2 - 5-Year Rainfall=3.26"

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Hydrograph for Subcatchment 1D: 1D

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.01	0.00	0.00	0.00	104.01	3.26	1.32	0.00
2.01	0.07	0.00	0.00	106.01	3.26	1.32	0.00
4.01	0.16	0.00	0.00	108.01	3.26	1.32	0.00
6.01	0.26	0.00	0.00	110.01	3.26	1.32	0.00
8.01	0.39	0.00	0.00	112.01	3.26	1.32	0.00
10.01	0.59	0.00	0.00	114.01	3.26	1.32	0.00
12.01	2.17	0.58	14.04	116.01	3.26	1.32	0.00
14.01	2.67	0.90	1.40	118.01	3.26	1.32	0.00
16.01	2.87	1.04	0.85				
18.01	3.00	1.13	0.65				
20.01	3.10	1.20	0.48				
22.01	3.19	1.26	0.43				
24.01	3.26	1.32	0.40				
26.01	3.26	1.32	0.00				
28.01	3.26	1.32	0.00				
30.01	3.26	1.32	0.00				
32.01	3.26	1.32	0.00				
34.01	3.26	1.32	0.00				
36.01	3.26	1.32	0.00				
38.01	3.26	1.32	0.00				
40.01	3.26	1.32	0.00				
42.01	3.26	1.32	0.00				
44.01	3.26	1.32	0.00				
46.01	3.26	1.32	0.00				
48.01	3.26	1.32	0.00				
50.01	3.26	1.32	0.00				
52.01	3.26	1.32	0.00				
54.01	3.26	1.32	0.00				
56.01	3.26	1.32	0.00				
58.01	3.26	1.32	0.00				
60.01	3.26	1.32	0.00				
62.01	3.26	1.32	0.00				
64.01	3.26	1.32	0.00				
66.01	3.26	1.32	0.00				
68.01	3.26	1.32	0.00				
70.01	3.26	1.32	0.00				
72.01	3.26	1.32	0.00				
74.01	3.26	1.32	0.00				
76.01	3.26	1.32	0.00				
78.01	3.26	1.32	0.00				
80.01	3.26	1.32	0.00				
82.01	3.26	1.32	0.00				
84.01	3.26	1.32	0.00				
86.01	3.26	1.32	0.00				
88.01	3.26	1.32	0.00				
90.01	3.26	1.32	0.00				
92.01	3.26	1.32	0.00				
94.01	3.26	1.32	0.00				
96.01	3.26	1.32	0.00				
98.01	3.26	1.32	0.00				
100.01	3.26	1.32	0.00				
102.01	3.26	1.32	0.00				

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Type II 24-hr Type 2 - 5-Year Rainfall=3.26"

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Summary for Subcatchment 1E: 1E

Runoff = 21.64 cfs @ 12.19 hrs, Volume= 1.907 af, Depth= 1.32"
Routed to Link 1 : OFFSITE

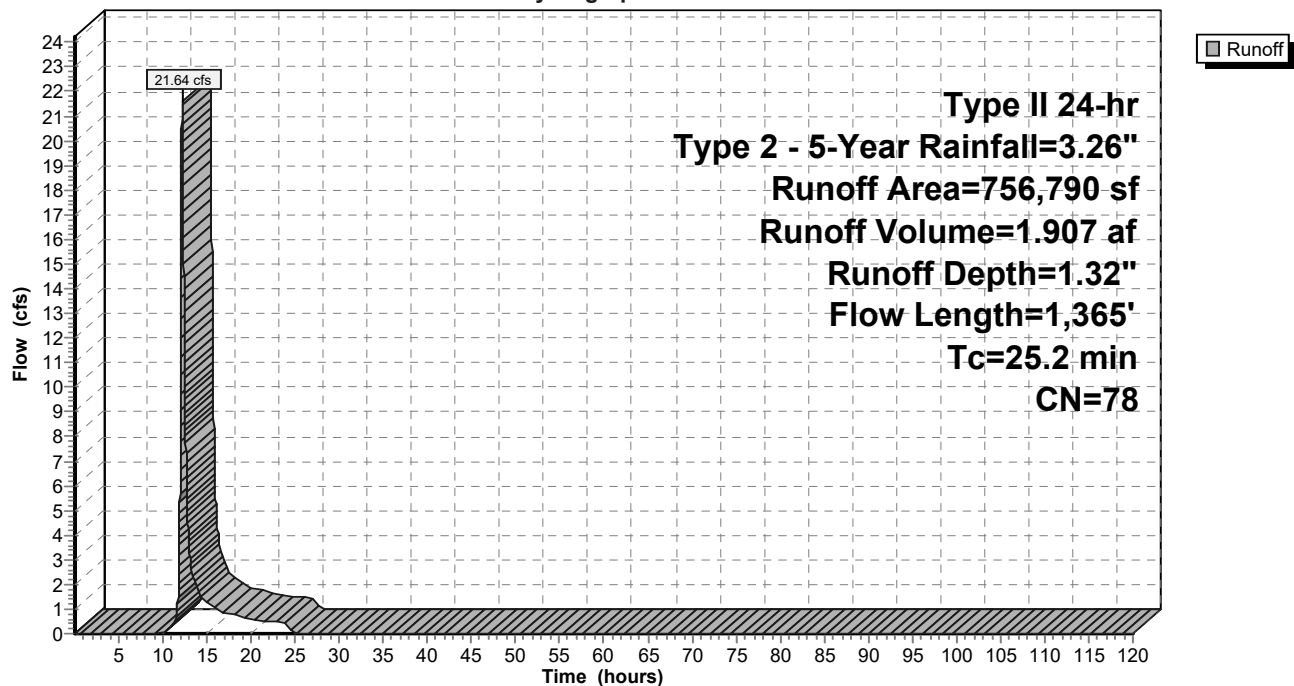
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs
Type II 24-hr Type 2 - 5-Year Rainfall=3.26"

Area (sf)	CN	Description
27,057	70	Woods, Good, HSG C
* 729,733	78	Cropland
756,790	78	Weighted Average
756,790		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.7	120	0.0200	0.15		Sheet Flow, Sheet Flow
					Cultivated: Residue>20% n= 0.170 P2= 2.68"
11.5	1,245	0.0400	1.80		Shallow Concentrated Flow, Flow
					Cultivated Straight Rows Kv= 9.0 fps
25.2	1,365	Total			

Subcatchment 1E: 1E

Hydrograph



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Type II 24-hr Type 2 - 5-Year Rainfall=3.26"

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Hydrograph for Subcatchment 1E: 1E

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.01	0.00	0.00	0.00	104.01	3.26	1.32	0.00
2.01	0.07	0.00	0.00	106.01	3.26	1.32	0.00
4.01	0.16	0.00	0.00	108.01	3.26	1.32	0.00
6.01	0.26	0.00	0.00	110.01	3.26	1.32	0.00
8.01	0.39	0.00	0.00	112.01	3.26	1.32	0.00
10.01	0.59	0.00	0.00	114.01	3.26	1.32	0.00
12.01	2.17	0.58	11.23	116.01	3.26	1.32	0.00
14.01	2.67	0.90	1.71	118.01	3.26	1.32	0.00
16.01	2.87	1.04	1.02				
18.01	3.00	1.13	0.77				
20.01	3.10	1.20	0.57				
22.01	3.19	1.26	0.51				
24.01	3.26	1.32	0.47				
26.01	3.26	1.32	0.00				
28.01	3.26	1.32	0.00				
30.01	3.26	1.32	0.00				
32.01	3.26	1.32	0.00				
34.01	3.26	1.32	0.00				
36.01	3.26	1.32	0.00				
38.01	3.26	1.32	0.00				
40.01	3.26	1.32	0.00				
42.01	3.26	1.32	0.00				
44.01	3.26	1.32	0.00				
46.01	3.26	1.32	0.00				
48.01	3.26	1.32	0.00				
50.01	3.26	1.32	0.00				
52.01	3.26	1.32	0.00				
54.01	3.26	1.32	0.00				
56.01	3.26	1.32	0.00				
58.01	3.26	1.32	0.00				
60.01	3.26	1.32	0.00				
62.01	3.26	1.32	0.00				
64.01	3.26	1.32	0.00				
66.01	3.26	1.32	0.00				
68.01	3.26	1.32	0.00				
70.01	3.26	1.32	0.00				
72.01	3.26	1.32	0.00				
74.01	3.26	1.32	0.00				
76.01	3.26	1.32	0.00				
78.01	3.26	1.32	0.00				
80.01	3.26	1.32	0.00				
82.01	3.26	1.32	0.00				
84.01	3.26	1.32	0.00				
86.01	3.26	1.32	0.00				
88.01	3.26	1.32	0.00				
90.01	3.26	1.32	0.00				
92.01	3.26	1.32	0.00				
94.01	3.26	1.32	0.00				
96.01	3.26	1.32	0.00				
98.01	3.26	1.32	0.00				
100.01	3.26	1.32	0.00				
102.01	3.26	1.32	0.00				

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Type II 24-hr Type 2 - 5-Year Rainfall=3.26"

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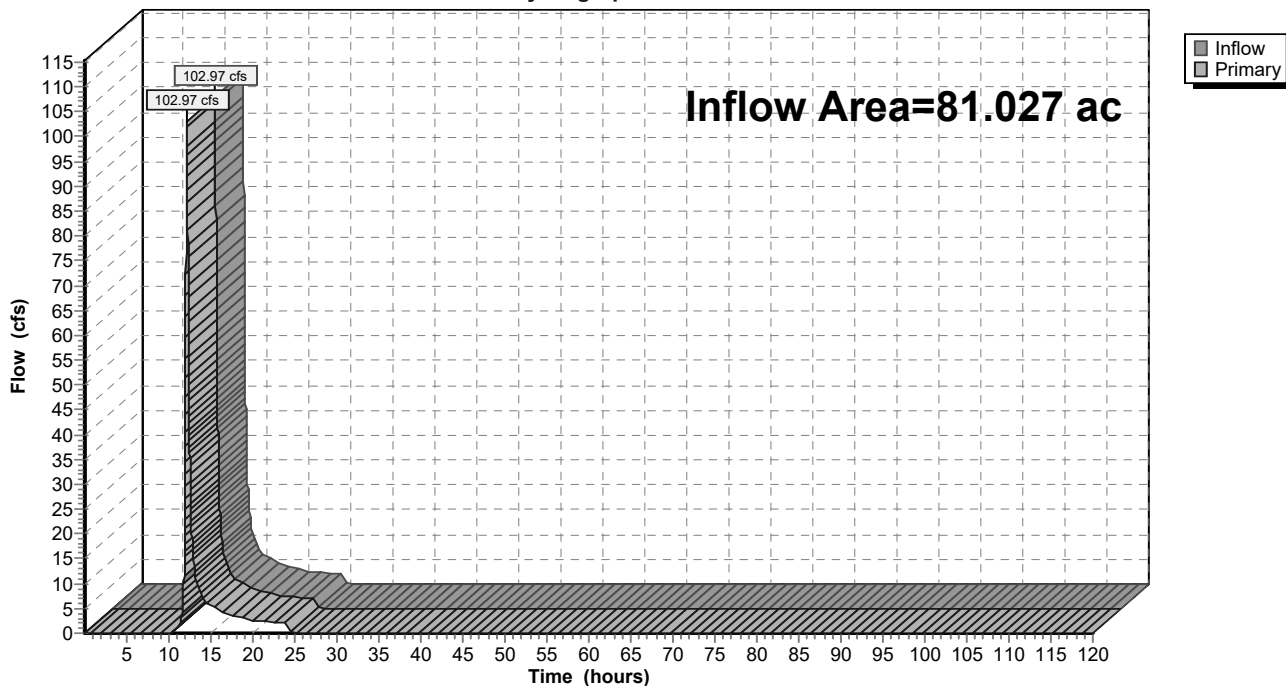
Summary for Link 1: OFFSITE

Inflow Area = 81.027 ac, 0.00% Impervious, Inflow Depth = 1.25" for Type 2 - 5-Year event
Inflow = 102.97 cfs @ 12.15 hrs, Volume= 8.415 af
Primary = 102.97 cfs @ 12.15 hrs, Volume= 8.415 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs

Link 1: OFFSITE

Hydrograph



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Type II 24-hr Type 2 - 5-Year Rainfall=3.26"

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Hydrograph for Link 1: OFFSITE

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.01	0.00	0.00	0.00	104.01	0.00	0.00	0.00
2.01	0.00	0.00	0.00	106.01	0.00	0.00	0.00
4.01	0.00	0.00	0.00	108.01	0.00	0.00	0.00
6.01	0.00	0.00	0.00	110.01	0.00	0.00	0.00
8.01	0.00	0.00	0.00	112.01	0.00	0.00	0.00
10.01	0.00	0.00	0.00	114.01	0.00	0.00	0.00
12.01	63.77	0.00	63.77	116.01	0.00	0.00	0.00
14.01	7.47	0.00	7.47	118.01	0.00	0.00	0.00
16.01	4.52	0.00	4.52				
18.01	3.45	0.00	3.45				
20.01	2.57	0.00	2.57				
22.01	2.30	0.00	2.30				
24.01	2.13	0.00	2.13				
26.01	0.00	0.00	0.00				
28.01	0.00	0.00	0.00				
30.01	0.00	0.00	0.00				
32.01	0.00	0.00	0.00				
34.01	0.00	0.00	0.00				
36.01	0.00	0.00	0.00				
38.01	0.00	0.00	0.00				
40.01	0.00	0.00	0.00				
42.01	0.00	0.00	0.00				
44.01	0.00	0.00	0.00				
46.01	0.00	0.00	0.00				
48.01	0.00	0.00	0.00				
50.01	0.00	0.00	0.00				
52.01	0.00	0.00	0.00				
54.01	0.00	0.00	0.00				
56.01	0.00	0.00	0.00				
58.01	0.00	0.00	0.00				
60.01	0.00	0.00	0.00				
62.01	0.00	0.00	0.00				
64.01	0.00	0.00	0.00				
66.01	0.00	0.00	0.00				
68.01	0.00	0.00	0.00				
70.01	0.00	0.00	0.00				
72.01	0.00	0.00	0.00				
74.01	0.00	0.00	0.00				
76.01	0.00	0.00	0.00				
78.01	0.00	0.00	0.00				
80.01	0.00	0.00	0.00				
82.01	0.00	0.00	0.00				
84.01	0.00	0.00	0.00				
86.01	0.00	0.00	0.00				
88.01	0.00	0.00	0.00				
90.01	0.00	0.00	0.00				
92.01	0.00	0.00	0.00				
94.01	0.00	0.00	0.00				
96.01	0.00	0.00	0.00				
98.01	0.00	0.00	0.00				
100.01	0.00	0.00	0.00				
102.01	0.00	0.00	0.00				

Existing Conditions

Type II 24-hr Type 2 - 10-Year Rainfall=3.83"

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Time span=0.01-120.00 hrs, dt=0.01 hrs, 12000 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1A: 1A

Runoff Area=243,883 sf 0.00% Impervious Runoff Depth=1.54"
Flow Length=475' Tc=17.9 min CN=75 Runoff=10.05 cfs 0.719 af

Subcatchment1B: 1B

Runoff Area=422,611 sf 0.00% Impervious Runoff Depth=1.68"
Flow Length=920' Slope=0.0200 '/' Tc=24.2 min CN=77 Runoff=16.02 cfs 1.358 af

Subcatchment1C: 1C

Runoff Area=1,462,058 sf 0.00% Impervious Runoff Depth=1.61"
Flow Length=1,280' Tc=20.4 min CN=76 Runoff=58.56 cfs 4.502 af

Subcatchment1D: 1D

Runoff Area=644,193 sf 0.00% Impervious Runoff Depth=1.75"
Flow Length=1,260' Tc=20.1 min CN=78 Runoff=28.59 cfs 2.160 af

Subcatchment1E: 1E

Runoff Area=756,790 sf 0.00% Impervious Runoff Depth=1.75"
Flow Length=1,365' Tc=25.2 min CN=78 Runoff=29.25 cfs 2.537 af

Link 1: OFFSITE

Inflow=140.23 cfs 11.275 af
Primary=140.23 cfs 11.275 af

Total Runoff Area = 81.027 ac Runoff Volume = 11.275 af Average Runoff Depth = 1.67"
100.00% Pervious = 81.027 ac 0.00% Impervious = 0.000 ac

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Type II 24-hr Type 2 - 10-Year Rainfall=3.83"

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Summary for Subcatchment 1A: 1A

Runoff = 10.05 cfs @ 12.11 hrs, Volume= 0.719 af, Depth= 1.54"
Routed to Link 1 : OFFSITE

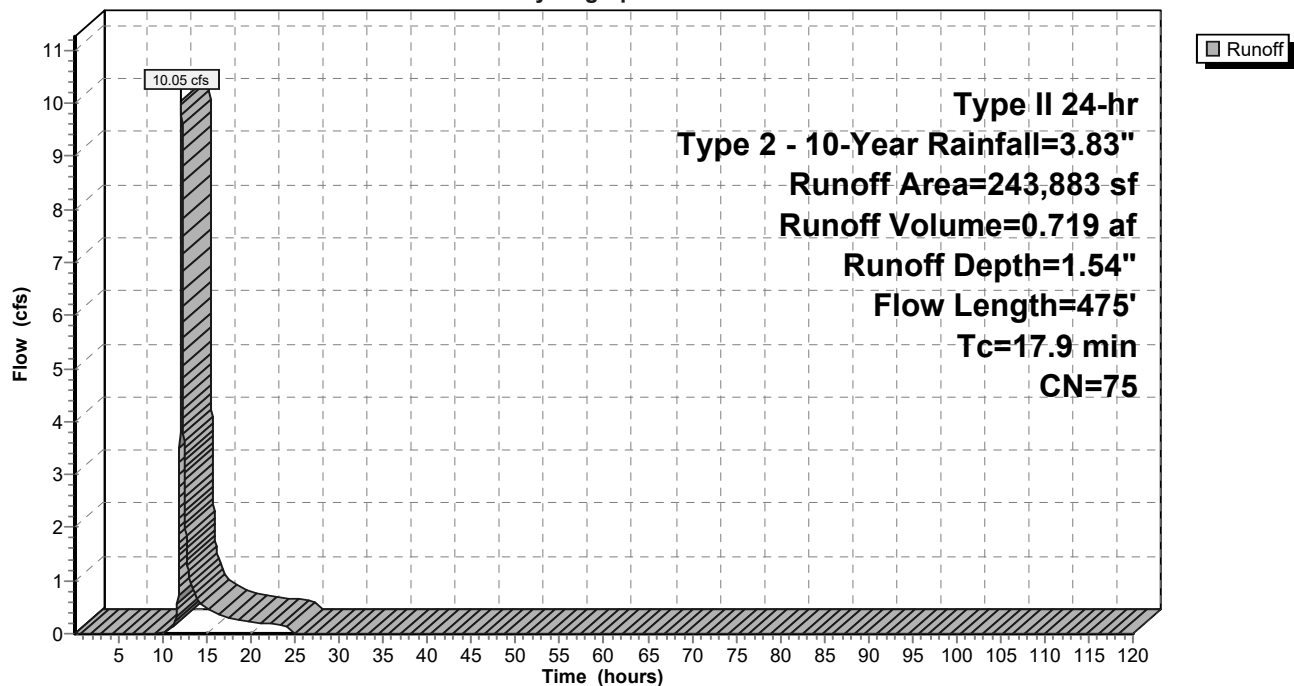
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs
Type II 24-hr Type 2 - 10-Year Rainfall=3.83"

	Area (sf)	CN	Description
*	148,310	78	Cropland
	95,573	70	Woods, Good, HSG C
	243,883	75	Weighted Average
	243,883		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.7	120	0.0200	0.15		Sheet Flow, Sheet Flow Cultivated: Residue>20% n= 0.170 P2= 2.68"
2.5	190	0.0200	1.27		Shallow Concentrated Flow, Flow Cultivated Straight Rows Kv= 9.0 fps
1.7	165	0.1000	1.58		Shallow Concentrated Flow, Tree Flow Woodland Kv= 5.0 fps
17.9	475	Total			

Subcatchment 1A: 1A

Hydrograph



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Type II 24-hr Type 2 - 10-Year Rainfall=3.83"

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Hydrograph for Subcatchment 1A: 1A

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.01	0.00	0.00	0.00	104.01	3.83	1.54	0.00
2.01	0.08	0.00	0.00	106.01	3.83	1.54	0.00
4.01	0.18	0.00	0.00	108.01	3.83	1.54	0.00
6.01	0.31	0.00	0.00	110.01	3.83	1.54	0.00
8.01	0.46	0.00	0.00	112.01	3.83	1.54	0.00
10.01	0.69	0.00	0.00	114.01	3.83	1.54	0.00
12.01	2.55	0.68	7.36	116.01	3.83	1.54	0.00
14.01	3.14	1.05	0.61	118.01	3.83	1.54	0.00
16.01	3.37	1.21	0.37				
18.01	3.53	1.32	0.29				
20.01	3.65	1.41	0.21				
22.01	3.74	1.48	0.19				
24.01	3.83	1.54	0.18				
26.01	3.83	1.54	0.00				
28.01	3.83	1.54	0.00				
30.01	3.83	1.54	0.00				
32.01	3.83	1.54	0.00				
34.01	3.83	1.54	0.00				
36.01	3.83	1.54	0.00				
38.01	3.83	1.54	0.00				
40.01	3.83	1.54	0.00				
42.01	3.83	1.54	0.00				
44.01	3.83	1.54	0.00				
46.01	3.83	1.54	0.00				
48.01	3.83	1.54	0.00				
50.01	3.83	1.54	0.00				
52.01	3.83	1.54	0.00				
54.01	3.83	1.54	0.00				
56.01	3.83	1.54	0.00				
58.01	3.83	1.54	0.00				
60.01	3.83	1.54	0.00				
62.01	3.83	1.54	0.00				
64.01	3.83	1.54	0.00				
66.01	3.83	1.54	0.00				
68.01	3.83	1.54	0.00				
70.01	3.83	1.54	0.00				
72.01	3.83	1.54	0.00				
74.01	3.83	1.54	0.00				
76.01	3.83	1.54	0.00				
78.01	3.83	1.54	0.00				
80.01	3.83	1.54	0.00				
82.01	3.83	1.54	0.00				
84.01	3.83	1.54	0.00				
86.01	3.83	1.54	0.00				
88.01	3.83	1.54	0.00				
90.01	3.83	1.54	0.00				
92.01	3.83	1.54	0.00				
94.01	3.83	1.54	0.00				
96.01	3.83	1.54	0.00				
98.01	3.83	1.54	0.00				
100.01	3.83	1.54	0.00				
102.01	3.83	1.54	0.00				

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Type II 24-hr Type 2 - 10-Year Rainfall=3.83"

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Summary for Subcatchment 1B: 1B

Runoff = 16.02 cfs @ 12.18 hrs, Volume= 1.358 af, Depth= 1.68"
Routed to Link 1 : OFFSITE

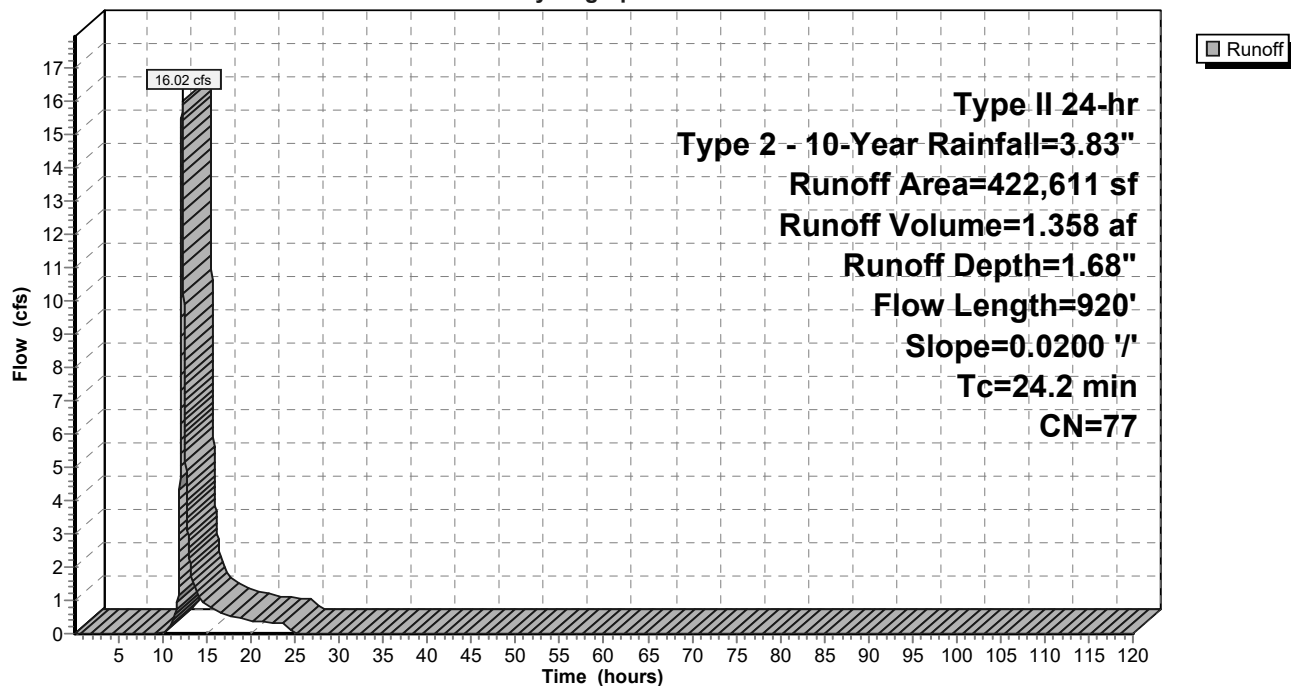
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs
Type II 24-hr Type 2 - 10-Year Rainfall=3.83"

Area (sf)	CN	Description
30,229	70	Woods, Good, HSG C
* 392,382	78	Cropland
422,611	77	Weighted Average
422,611		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.7	120	0.0200	0.15		Sheet Flow, Sheet Flow
					Cultivated: Residue>20% n= 0.170 P2= 2.68"
10.5	800	0.0200	1.27		Shallow Concentrated Flow, Flow
					Cultivated Straight Rows Kv= 9.0 fps
24.2	920	Total			

Subcatchment 1B: 1B

Hydrograph



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Type II 24-hr Type 2 - 10-Year Rainfall=3.83"

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Hydrograph for Subcatchment 1B: 1B

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.01	0.00	0.00	0.00	104.01	3.83	1.68	0.00
2.01	0.08	0.00	0.00	106.01	3.83	1.68	0.00
4.01	0.18	0.00	0.00	108.01	3.83	1.68	0.00
6.01	0.31	0.00	0.00	110.01	3.83	1.68	0.00
8.01	0.46	0.00	0.00	112.01	3.83	1.68	0.00
10.01	0.69	0.00	0.04	114.01	3.83	1.68	0.00
12.01	2.55	0.77	8.94	116.01	3.83	1.68	0.00
14.01	3.14	1.17	1.17	118.01	3.83	1.68	0.00
16.01	3.37	1.34	0.70				
18.01	3.53	1.45	0.53				
20.01	3.65	1.54	0.39				
22.01	3.74	1.61	0.35				
24.01	3.83	1.68	0.32				
26.01	3.83	1.68	0.00				
28.01	3.83	1.68	0.00				
30.01	3.83	1.68	0.00				
32.01	3.83	1.68	0.00				
34.01	3.83	1.68	0.00				
36.01	3.83	1.68	0.00				
38.01	3.83	1.68	0.00				
40.01	3.83	1.68	0.00				
42.01	3.83	1.68	0.00				
44.01	3.83	1.68	0.00				
46.01	3.83	1.68	0.00				
48.01	3.83	1.68	0.00				
50.01	3.83	1.68	0.00				
52.01	3.83	1.68	0.00				
54.01	3.83	1.68	0.00				
56.01	3.83	1.68	0.00				
58.01	3.83	1.68	0.00				
60.01	3.83	1.68	0.00				
62.01	3.83	1.68	0.00				
64.01	3.83	1.68	0.00				
66.01	3.83	1.68	0.00				
68.01	3.83	1.68	0.00				
70.01	3.83	1.68	0.00				
72.01	3.83	1.68	0.00				
74.01	3.83	1.68	0.00				
76.01	3.83	1.68	0.00				
78.01	3.83	1.68	0.00				
80.01	3.83	1.68	0.00				
82.01	3.83	1.68	0.00				
84.01	3.83	1.68	0.00				
86.01	3.83	1.68	0.00				
88.01	3.83	1.68	0.00				
90.01	3.83	1.68	0.00				
92.01	3.83	1.68	0.00				
94.01	3.83	1.68	0.00				
96.01	3.83	1.68	0.00				
98.01	3.83	1.68	0.00				
100.01	3.83	1.68	0.00				
102.01	3.83	1.68	0.00				

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Type II 24-hr Type 2 - 10-Year Rainfall=3.83"

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Summary for Subcatchment 1C: 1C

Runoff = 58.56 cfs @ 12.13 hrs, Volume= 4.502 af, Depth= 1.61"
Routed to Link 1 : OFFSITE

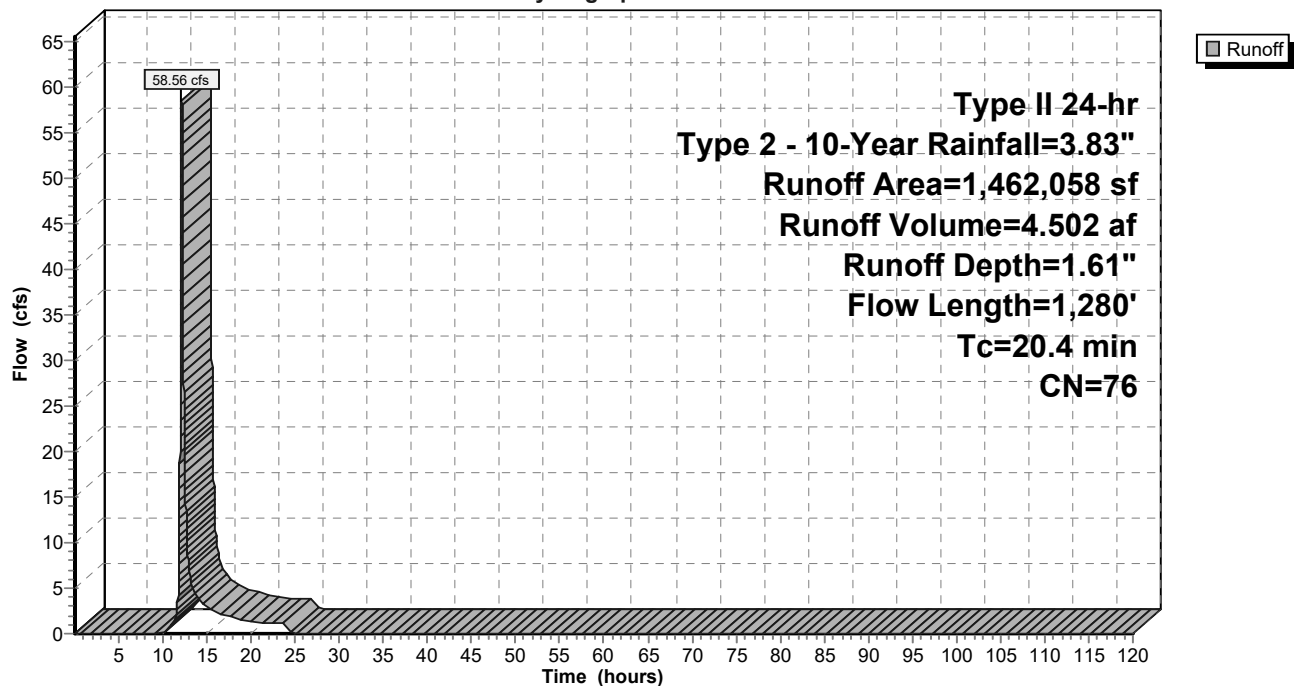
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs
Type II 24-hr Type 2 - 10-Year Rainfall=3.83"

Area (sf)	CN	Description
275,724	70	Woods, Good, HSG C
* 1,186,334	78	Cropland
1,462,058	76	Weighted Average
1,462,058		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.6	120	0.0300	0.17		Sheet Flow, Sheet Flow
					Cultivated: Residue>20% n= 0.170 P2= 2.68"
8.8	1,160	0.0600	2.20		Shallow Concentrated Flow, Flow
					Cultivated Straight Rows Kv= 9.0 fps
20.4	1,280	Total			

Subcatchment 1C: 1C

Hydrograph



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Type II 24-hr Type 2 - 10-Year Rainfall=3.83"

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Hydrograph for Subcatchment 1C: 1C

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.01	0.00	0.00	0.00	104.01	3.83	1.61	0.00
2.01	0.08	0.00	0.00	106.01	3.83	1.61	0.00
4.01	0.18	0.00	0.00	108.01	3.83	1.61	0.00
6.01	0.31	0.00	0.00	110.01	3.83	1.61	0.00
8.01	0.46	0.00	0.00	112.01	3.83	1.61	0.00
10.01	0.69	0.00	0.06	114.01	3.83	1.61	0.00
12.01	2.55	0.72	38.59	116.01	3.83	1.61	0.00
14.01	3.14	1.11	3.83	118.01	3.83	1.61	0.00
16.01	3.37	1.27	2.31				
18.01	3.53	1.39	1.77				
20.01	3.65	1.47	1.32				
22.01	3.74	1.54	1.17				
24.01	3.83	1.61	1.09				
26.01	3.83	1.61	0.00				
28.01	3.83	1.61	0.00				
30.01	3.83	1.61	0.00				
32.01	3.83	1.61	0.00				
34.01	3.83	1.61	0.00				
36.01	3.83	1.61	0.00				
38.01	3.83	1.61	0.00				
40.01	3.83	1.61	0.00				
42.01	3.83	1.61	0.00				
44.01	3.83	1.61	0.00				
46.01	3.83	1.61	0.00				
48.01	3.83	1.61	0.00				
50.01	3.83	1.61	0.00				
52.01	3.83	1.61	0.00				
54.01	3.83	1.61	0.00				
56.01	3.83	1.61	0.00				
58.01	3.83	1.61	0.00				
60.01	3.83	1.61	0.00				
62.01	3.83	1.61	0.00				
64.01	3.83	1.61	0.00				
66.01	3.83	1.61	0.00				
68.01	3.83	1.61	0.00				
70.01	3.83	1.61	0.00				
72.01	3.83	1.61	0.00				
74.01	3.83	1.61	0.00				
76.01	3.83	1.61	0.00				
78.01	3.83	1.61	0.00				
80.01	3.83	1.61	0.00				
82.01	3.83	1.61	0.00				
84.01	3.83	1.61	0.00				
86.01	3.83	1.61	0.00				
88.01	3.83	1.61	0.00				
90.01	3.83	1.61	0.00				
92.01	3.83	1.61	0.00				
94.01	3.83	1.61	0.00				
96.01	3.83	1.61	0.00				
98.01	3.83	1.61	0.00				
100.01	3.83	1.61	0.00				
102.01	3.83	1.61	0.00				

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Type II 24-hr Type 2 - 10-Year Rainfall=3.83"

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Summary for Subcatchment 1D: 1D

Runoff = 28.59 cfs @ 12.13 hrs, Volume= 2.160 af, Depth= 1.75"
Routed to Link 1 : OFFSITE

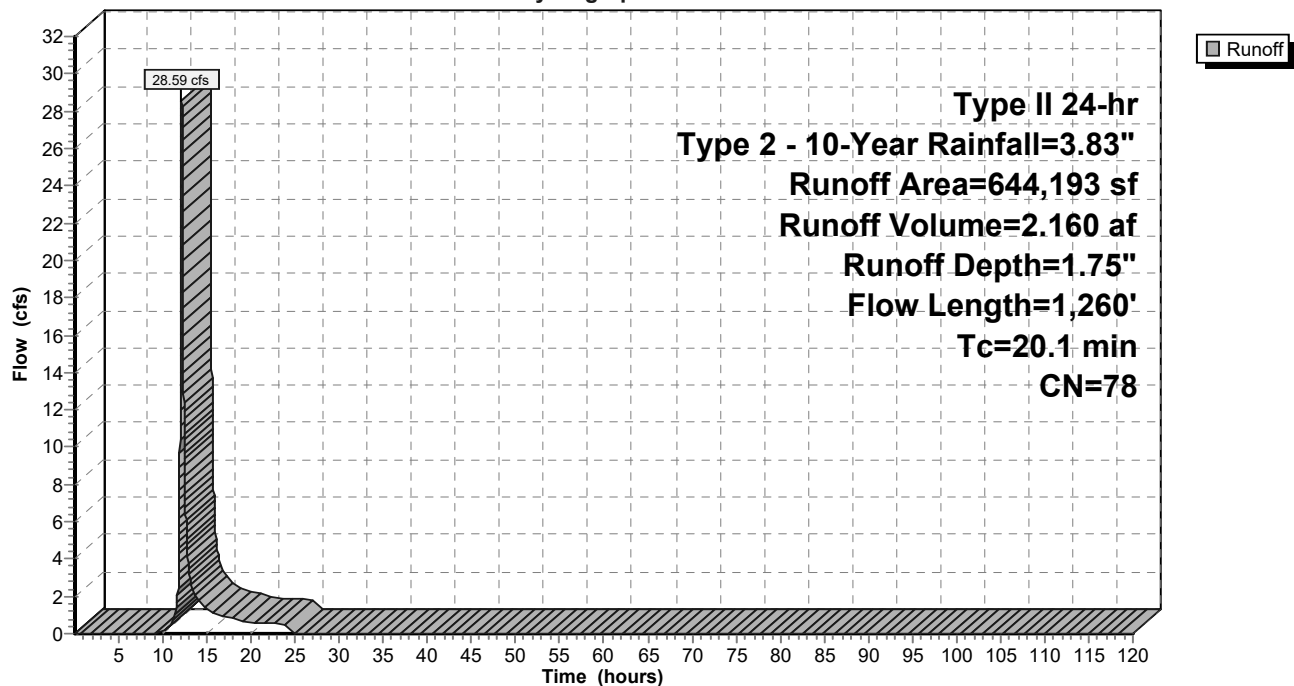
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs
Type II 24-hr Type 2 - 10-Year Rainfall=3.83"

Area (sf)	CN	Description
33,653	70	Woods, Good, HSG C
* 610,540	78	Cropland
644,193	78	Weighted Average
644,193		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	120	0.0500	0.21		Sheet Flow, Sheet Flow Cultivated: Residue>20% n= 0.170 P2= 2.68"
10.6	1,140	0.0400	1.80		Shallow Concentrated Flow, Flow Cultivated Straight Rows Kv= 9.0 fps
20.1	1,260	Total			

Subcatchment 1D: 1D

Hydrograph



Existing Conditions

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Type II 24-hr Type 2 - 10-Year Rainfall=3.83"

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Hydrograph for Subcatchment 1D: 1D

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.01	0.00	0.00	0.00	104.01	3.83	1.75	0.00
2.01	0.08	0.00	0.00	106.01	3.83	1.75	0.00
4.01	0.18	0.00	0.00	108.01	3.83	1.75	0.00
6.01	0.31	0.00	0.00	110.01	3.83	1.75	0.00
8.01	0.46	0.00	0.00	112.01	3.83	1.75	0.00
10.01	0.69	0.01	0.12	114.01	3.83	1.75	0.00
12.01	2.55	0.82	19.48	116.01	3.83	1.75	0.00
14.01	3.14	1.23	1.78	118.01	3.83	1.75	0.00
16.01	3.37	1.40	1.07				
18.01	3.53	1.52	0.81				
20.01	3.65	1.61	0.60				
22.01	3.74	1.68	0.54				
24.01	3.83	1.75	0.50				
26.01	3.83	1.75	0.00				
28.01	3.83	1.75	0.00				
30.01	3.83	1.75	0.00				
32.01	3.83	1.75	0.00				
34.01	3.83	1.75	0.00				
36.01	3.83	1.75	0.00				
38.01	3.83	1.75	0.00				
40.01	3.83	1.75	0.00				
42.01	3.83	1.75	0.00				
44.01	3.83	1.75	0.00				
46.01	3.83	1.75	0.00				
48.01	3.83	1.75	0.00				
50.01	3.83	1.75	0.00				
52.01	3.83	1.75	0.00				
54.01	3.83	1.75	0.00				
56.01	3.83	1.75	0.00				
58.01	3.83	1.75	0.00				
60.01	3.83	1.75	0.00				
62.01	3.83	1.75	0.00				
64.01	3.83	1.75	0.00				
66.01	3.83	1.75	0.00				
68.01	3.83	1.75	0.00				
70.01	3.83	1.75	0.00				
72.01	3.83	1.75	0.00				
74.01	3.83	1.75	0.00				
76.01	3.83	1.75	0.00				
78.01	3.83	1.75	0.00				
80.01	3.83	1.75	0.00				
82.01	3.83	1.75	0.00				
84.01	3.83	1.75	0.00				
86.01	3.83	1.75	0.00				
88.01	3.83	1.75	0.00				
90.01	3.83	1.75	0.00				
92.01	3.83	1.75	0.00				
94.01	3.83	1.75	0.00				
96.01	3.83	1.75	0.00				
98.01	3.83	1.75	0.00				
100.01	3.83	1.75	0.00				
102.01	3.83	1.75	0.00				

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Type II 24-hr Type 2 - 10-Year Rainfall=3.83"

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Summary for Subcatchment 1E: 1E

Runoff = 29.25 cfs @ 12.18 hrs, Volume= 2.537 af, Depth= 1.75"
Routed to Link 1 : OFFSITE

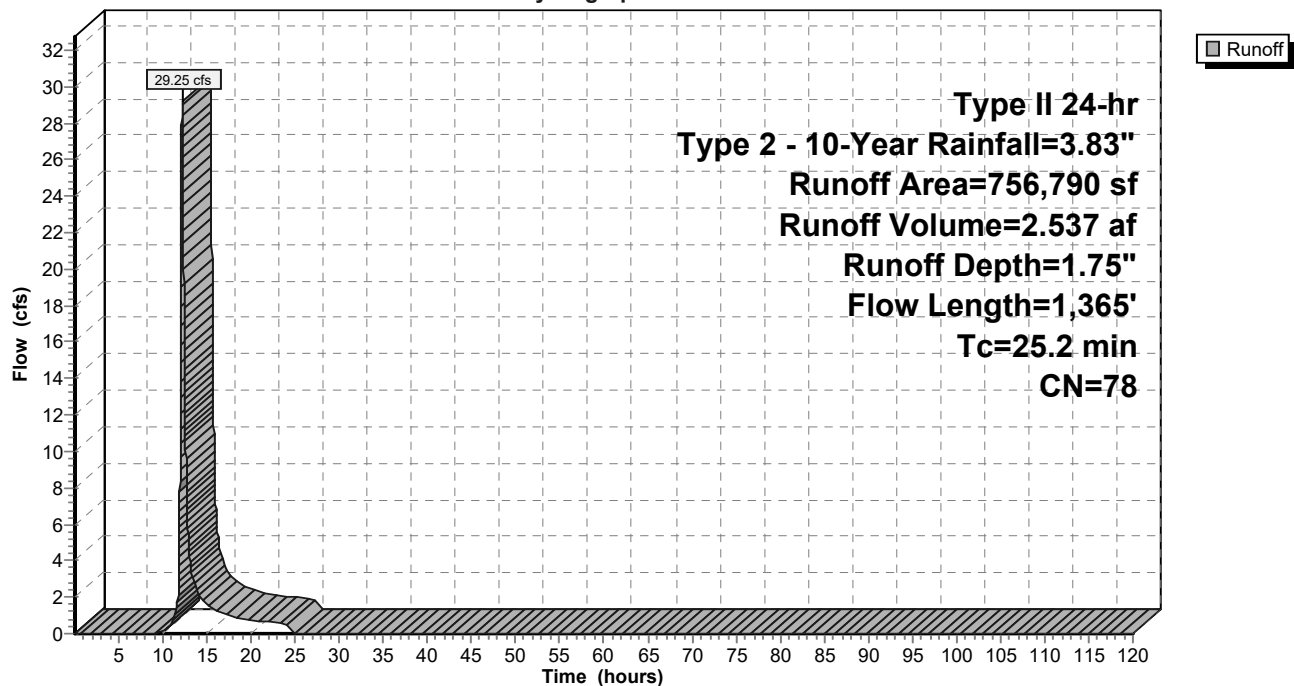
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs
Type II 24-hr Type 2 - 10-Year Rainfall=3.83"

Area (sf)	CN	Description
27,057	70	Woods, Good, HSG C
* 729,733	78	Cropland
756,790	78	Weighted Average
756,790		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.7	120	0.0200	0.15		Sheet Flow, Sheet Flow
					Cultivated: Residue>20% n= 0.170 P2= 2.68"
11.5	1,245	0.0400	1.80		Shallow Concentrated Flow, Flow
					Cultivated Straight Rows Kv= 9.0 fps
25.2	1,365	Total			

Subcatchment 1E: 1E

Hydrograph



Existing Conditions

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Type II 24-hr Type 2 - 10-Year Rainfall=3.83"

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Hydrograph for Subcatchment 1E: 1E

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.01	0.00	0.00	0.00	104.01	3.83	1.75	0.00
2.01	0.08	0.00	0.00	106.01	3.83	1.75	0.00
4.01	0.18	0.00	0.00	108.01	3.83	1.75	0.00
6.01	0.31	0.00	0.00	110.01	3.83	1.75	0.00
8.01	0.46	0.00	0.00	112.01	3.83	1.75	0.00
10.01	0.69	0.01	0.12	114.01	3.83	1.75	0.00
12.01	2.55	0.82	15.83	116.01	3.83	1.75	0.00
14.01	3.14	1.23	2.17	118.01	3.83	1.75	0.00
16.01	3.37	1.40	1.28				
18.01	3.53	1.52	0.97				
20.01	3.65	1.61	0.72				
22.01	3.74	1.68	0.64				
24.01	3.83	1.75	0.59				
26.01	3.83	1.75	0.00				
28.01	3.83	1.75	0.00				
30.01	3.83	1.75	0.00				
32.01	3.83	1.75	0.00				
34.01	3.83	1.75	0.00				
36.01	3.83	1.75	0.00				
38.01	3.83	1.75	0.00				
40.01	3.83	1.75	0.00				
42.01	3.83	1.75	0.00				
44.01	3.83	1.75	0.00				
46.01	3.83	1.75	0.00				
48.01	3.83	1.75	0.00				
50.01	3.83	1.75	0.00				
52.01	3.83	1.75	0.00				
54.01	3.83	1.75	0.00				
56.01	3.83	1.75	0.00				
58.01	3.83	1.75	0.00				
60.01	3.83	1.75	0.00				
62.01	3.83	1.75	0.00				
64.01	3.83	1.75	0.00				
66.01	3.83	1.75	0.00				
68.01	3.83	1.75	0.00				
70.01	3.83	1.75	0.00				
72.01	3.83	1.75	0.00				
74.01	3.83	1.75	0.00				
76.01	3.83	1.75	0.00				
78.01	3.83	1.75	0.00				
80.01	3.83	1.75	0.00				
82.01	3.83	1.75	0.00				
84.01	3.83	1.75	0.00				
86.01	3.83	1.75	0.00				
88.01	3.83	1.75	0.00				
90.01	3.83	1.75	0.00				
92.01	3.83	1.75	0.00				
94.01	3.83	1.75	0.00				
96.01	3.83	1.75	0.00				
98.01	3.83	1.75	0.00				
100.01	3.83	1.75	0.00				
102.01	3.83	1.75	0.00				

Existing Conditions

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Type II 24-hr Type 2 - 10-Year Rainfall=3.83"

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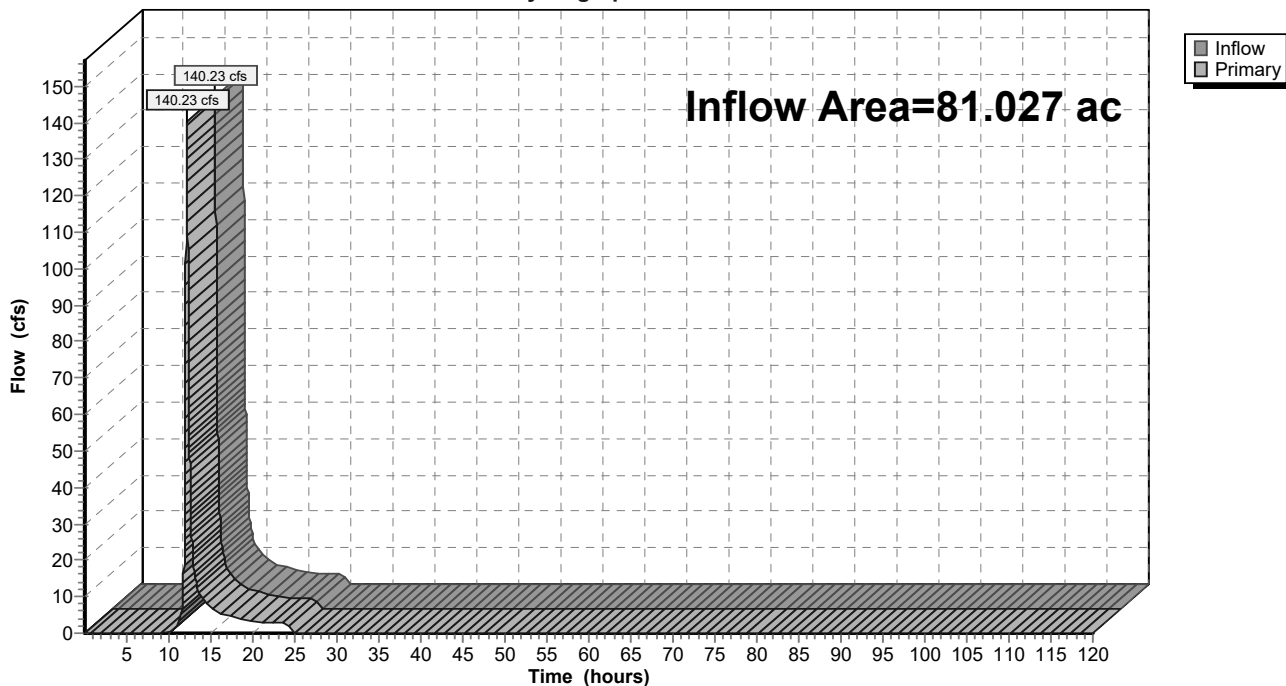
Summary for Link 1: OFFSITE

Inflow Area = 81.027 ac, 0.00% Impervious, Inflow Depth = 1.67" for Type 2 - 10-Year event
Inflow = 140.23 cfs @ 12.15 hrs, Volume= 11.275 af
Primary = 140.23 cfs @ 12.15 hrs, Volume= 11.275 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs

Link 1: OFFSITE

Hydrograph



Existing Conditions

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Type II 24-hr Type 2 - 10-Year Rainfall=3.83"

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Hydrograph for Link 1: OFFSITE

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.01	0.00	0.00	0.00	104.01	0.00	0.00	0.00
2.01	0.00	0.00	0.00	106.01	0.00	0.00	0.00
4.01	0.00	0.00	0.00	108.01	0.00	0.00	0.00
6.01	0.00	0.00	0.00	110.01	0.00	0.00	0.00
8.01	0.00	0.00	0.00	112.01	0.00	0.00	0.00
10.01	0.34	0.00	0.34	114.01	0.00	0.00	0.00
12.01	90.20	0.00	90.20	116.01	0.00	0.00	0.00
14.01	9.56	0.00	9.56	118.01	0.00	0.00	0.00
16.01	5.74	0.00	5.74				
18.01	4.36	0.00	4.36				
20.01	3.25	0.00	3.25				
22.01	2.89	0.00	2.89				
24.01	2.68	0.00	2.68				
26.01	0.00	0.00	0.00				
28.01	0.00	0.00	0.00				
30.01	0.00	0.00	0.00				
32.01	0.00	0.00	0.00				
34.01	0.00	0.00	0.00				
36.01	0.00	0.00	0.00				
38.01	0.00	0.00	0.00				
40.01	0.00	0.00	0.00				
42.01	0.00	0.00	0.00				
44.01	0.00	0.00	0.00				
46.01	0.00	0.00	0.00				
48.01	0.00	0.00	0.00				
50.01	0.00	0.00	0.00				
52.01	0.00	0.00	0.00				
54.01	0.00	0.00	0.00				
56.01	0.00	0.00	0.00				
58.01	0.00	0.00	0.00				
60.01	0.00	0.00	0.00				
62.01	0.00	0.00	0.00				
64.01	0.00	0.00	0.00				
66.01	0.00	0.00	0.00				
68.01	0.00	0.00	0.00				
70.01	0.00	0.00	0.00				
72.01	0.00	0.00	0.00				
74.01	0.00	0.00	0.00				
76.01	0.00	0.00	0.00				
78.01	0.00	0.00	0.00				
80.01	0.00	0.00	0.00				
82.01	0.00	0.00	0.00				
84.01	0.00	0.00	0.00				
86.01	0.00	0.00	0.00				
88.01	0.00	0.00	0.00				
90.01	0.00	0.00	0.00				
92.01	0.00	0.00	0.00				
94.01	0.00	0.00	0.00				
96.01	0.00	0.00	0.00				
98.01	0.00	0.00	0.00				
100.01	0.00	0.00	0.00				
102.01	0.00	0.00	0.00				

Existing Conditions

Type II 24-hr Type 2 - 25-Year Rainfall=4.71"

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Time span=0.01-120.00 hrs, dt=0.01 hrs, 12000 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1A: 1A

Runoff Area=243,883 sf 0.00% Impervious Runoff Depth=2.22"
Flow Length=475' Tc=17.9 min CN=75 Runoff=14.64 cfs 1.034 af

Subcatchment1B: 1B

Runoff Area=422,611 sf 0.00% Impervious Runoff Depth=2.38"
Flow Length=920' Slope=0.0200 '/' Tc=24.2 min CN=77 Runoff=22.97 cfs 1.926 af

Subcatchment1C: 1C

Runoff Area=1,462,058 sf 0.00% Impervious Runoff Depth=2.30"
Flow Length=1,280' Tc=20.4 min CN=76 Runoff=84.68 cfs 6.429 af

Subcatchment1D: 1D

Runoff Area=644,193 sf 0.00% Impervious Runoff Depth=2.47"
Flow Length=1,260' Tc=20.1 min CN=78 Runoff=40.53 cfs 3.041 af

Subcatchment1E: 1E

Runoff Area=756,790 sf 0.00% Impervious Runoff Depth=2.47"
Flow Length=1,365' Tc=25.2 min CN=78 Runoff=41.60 cfs 3.572 af

Link 1: OFFSITE

Inflow=201.16 cfs 16.002 af
Primary=201.16 cfs 16.002 af

Total Runoff Area = 81.027 ac Runoff Volume = 16.002 af Average Runoff Depth = 2.37"
100.00% Pervious = 81.027 ac 0.00% Impervious = 0.000 ac

Existing Conditions

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Type II 24-hr Type 2 - 25-Year Rainfall=4.71"

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Summary for Subcatchment 1A: 1A

Runoff = 14.64 cfs @ 12.11 hrs, Volume= 1.034 af, Depth= 2.22"
Routed to Link 1 : OFFSITE

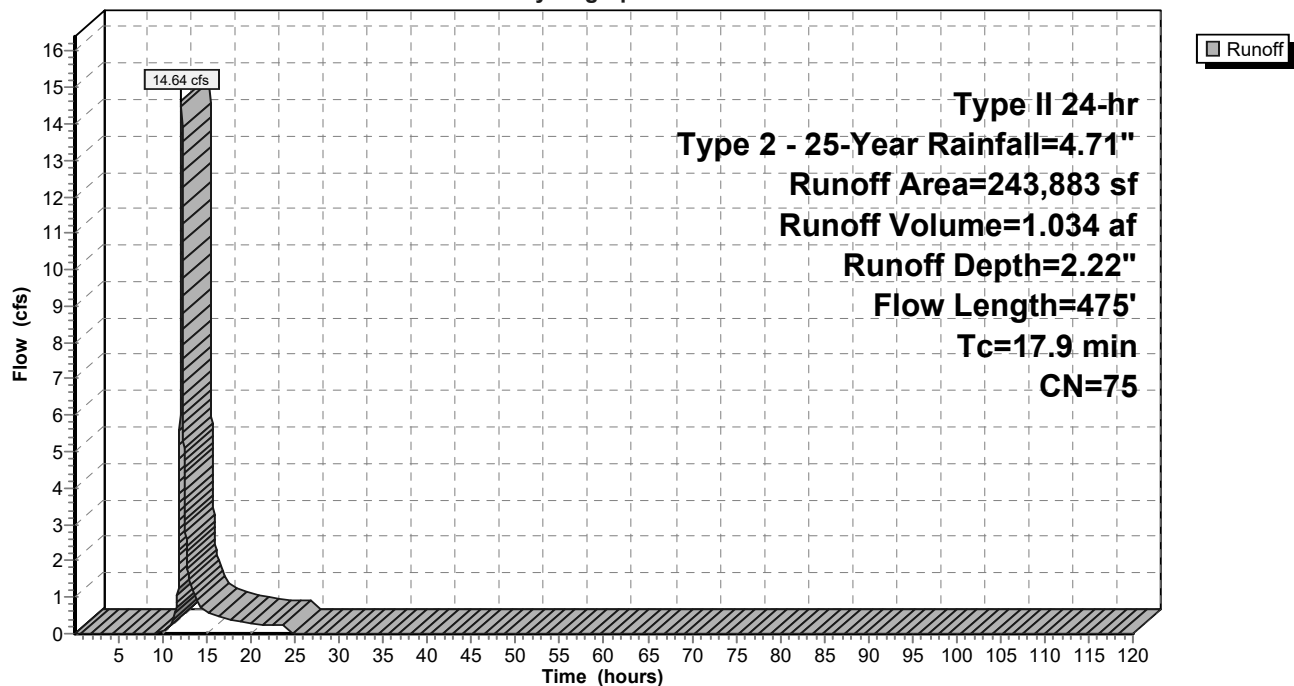
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs
Type II 24-hr Type 2 - 25-Year Rainfall=4.71"

	Area (sf)	CN	Description
*	148,310	78	Cropland
	95,573	70	Woods, Good, HSG C
	243,883	75	Weighted Average
	243,883		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.7	120	0.0200	0.15		Sheet Flow, Sheet Flow Cultivated: Residue>20% n= 0.170 P2= 2.68"
2.5	190	0.0200	1.27		Shallow Concentrated Flow, Flow Cultivated Straight Rows Kv= 9.0 fps
1.7	165	0.1000	1.58		Shallow Concentrated Flow, Tree Flow Woodland Kv= 5.0 fps
17.9	475	Total			

Subcatchment 1A: 1A

Hydrograph



Existing Conditions

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Type II 24-hr Type 2 - 25-Year Rainfall=4.71"

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Hydrograph for Subcatchment 1A: 1A

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.01	0.00	0.00	0.00	104.01	4.71	2.22	0.00
2.01	0.10	0.00	0.00	106.01	4.71	2.22	0.00
4.01	0.23	0.00	0.00	108.01	4.71	2.22	0.00
6.01	0.38	0.00	0.00	110.01	4.71	2.22	0.00
8.01	0.57	0.00	0.00	112.01	4.71	2.22	0.00
10.01	0.85	0.01	0.08	114.01	4.71	2.22	0.00
12.01	3.13	1.05	11.07	116.01	4.71	2.22	0.00
14.01	3.86	1.57	0.83	118.01	4.71	2.22	0.00
16.01	4.15	1.78	0.50				
18.01	4.34	1.92	0.38				
20.01	4.48	2.04	0.28				
22.01	4.60	2.13	0.25				
24.01	4.71	2.22	0.24				
26.01	4.71	2.22	0.00				
28.01	4.71	2.22	0.00				
30.01	4.71	2.22	0.00				
32.01	4.71	2.22	0.00				
34.01	4.71	2.22	0.00				
36.01	4.71	2.22	0.00				
38.01	4.71	2.22	0.00				
40.01	4.71	2.22	0.00				
42.01	4.71	2.22	0.00				
44.01	4.71	2.22	0.00				
46.01	4.71	2.22	0.00				
48.01	4.71	2.22	0.00				
50.01	4.71	2.22	0.00				
52.01	4.71	2.22	0.00				
54.01	4.71	2.22	0.00				
56.01	4.71	2.22	0.00				
58.01	4.71	2.22	0.00				
60.01	4.71	2.22	0.00				
62.01	4.71	2.22	0.00				
64.01	4.71	2.22	0.00				
66.01	4.71	2.22	0.00				
68.01	4.71	2.22	0.00				
70.01	4.71	2.22	0.00				
72.01	4.71	2.22	0.00				
74.01	4.71	2.22	0.00				
76.01	4.71	2.22	0.00				
78.01	4.71	2.22	0.00				
80.01	4.71	2.22	0.00				
82.01	4.71	2.22	0.00				
84.01	4.71	2.22	0.00				
86.01	4.71	2.22	0.00				
88.01	4.71	2.22	0.00				
90.01	4.71	2.22	0.00				
92.01	4.71	2.22	0.00				
94.01	4.71	2.22	0.00				
96.01	4.71	2.22	0.00				
98.01	4.71	2.22	0.00				
100.01	4.71	2.22	0.00				
102.01	4.71	2.22	0.00				

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Type II 24-hr Type 2 - 25-Year Rainfall=4.71"

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Summary for Subcatchment 1B: 1B

Runoff = 22.97 cfs @ 12.18 hrs, Volume= 1.926 af, Depth= 2.38"
Routed to Link 1 : OFFSITE

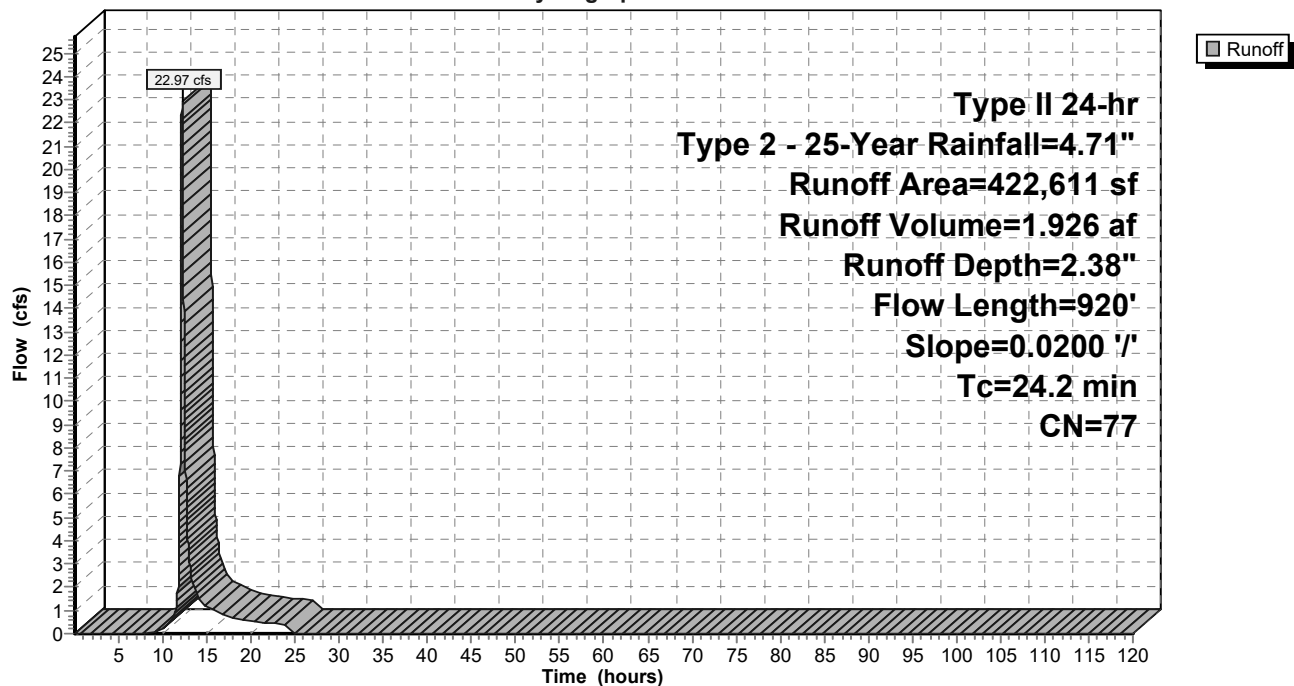
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs
Type II 24-hr Type 2 - 25-Year Rainfall=4.71"

Area (sf)	CN	Description
30,229	70	Woods, Good, HSG C
* 392,382	78	Cropland
422,611	77	Weighted Average
422,611		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.7	120	0.0200	0.15		Sheet Flow, Sheet Flow
					Cultivated: Residue>20% n= 0.170 P2= 2.68"
10.5	800	0.0200	1.27		Shallow Concentrated Flow, Flow
					Cultivated Straight Rows Kv= 9.0 fps
24.2	920	Total			

Subcatchment 1B: 1B

Hydrograph



Existing Conditions

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Type II 24-hr Type 2 - 25-Year Rainfall=4.71"

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Hydrograph for Subcatchment 1B: 1B

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.01	0.00	0.00	0.00	104.01	4.71	2.38	0.00
2.01	0.10	0.00	0.00	106.01	4.71	2.38	0.00
4.01	0.23	0.00	0.00	108.01	4.71	2.38	0.00
6.01	0.38	0.00	0.00	110.01	4.71	2.38	0.00
8.01	0.57	0.00	0.00	112.01	4.71	2.38	0.00
10.01	0.85	0.02	0.19	114.01	4.71	2.38	0.00
12.01	3.13	1.16	13.39	116.01	4.71	2.38	0.00
14.01	3.86	1.71	1.57	118.01	4.71	2.38	0.00
16.01	4.15	1.93	0.93				
18.01	4.34	2.08	0.70				
20.01	4.48	2.20	0.52				
22.01	4.60	2.29	0.46				
24.01	4.71	2.38	0.42				
26.01	4.71	2.38	0.00				
28.01	4.71	2.38	0.00				
30.01	4.71	2.38	0.00				
32.01	4.71	2.38	0.00				
34.01	4.71	2.38	0.00				
36.01	4.71	2.38	0.00				
38.01	4.71	2.38	0.00				
40.01	4.71	2.38	0.00				
42.01	4.71	2.38	0.00				
44.01	4.71	2.38	0.00				
46.01	4.71	2.38	0.00				
48.01	4.71	2.38	0.00				
50.01	4.71	2.38	0.00				
52.01	4.71	2.38	0.00				
54.01	4.71	2.38	0.00				
56.01	4.71	2.38	0.00				
58.01	4.71	2.38	0.00				
60.01	4.71	2.38	0.00				
62.01	4.71	2.38	0.00				
64.01	4.71	2.38	0.00				
66.01	4.71	2.38	0.00				
68.01	4.71	2.38	0.00				
70.01	4.71	2.38	0.00				
72.01	4.71	2.38	0.00				
74.01	4.71	2.38	0.00				
76.01	4.71	2.38	0.00				
78.01	4.71	2.38	0.00				
80.01	4.71	2.38	0.00				
82.01	4.71	2.38	0.00				
84.01	4.71	2.38	0.00				
86.01	4.71	2.38	0.00				
88.01	4.71	2.38	0.00				
90.01	4.71	2.38	0.00				
92.01	4.71	2.38	0.00				
94.01	4.71	2.38	0.00				
96.01	4.71	2.38	0.00				
98.01	4.71	2.38	0.00				
100.01	4.71	2.38	0.00				
102.01	4.71	2.38	0.00				

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Type II 24-hr Type 2 - 25-Year Rainfall=4.71"

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Summary for Subcatchment 1C: 1C

Runoff = 84.68 cfs @ 12.13 hrs, Volume= 6.429 af, Depth= 2.30"
Routed to Link 1 : OFFSITE

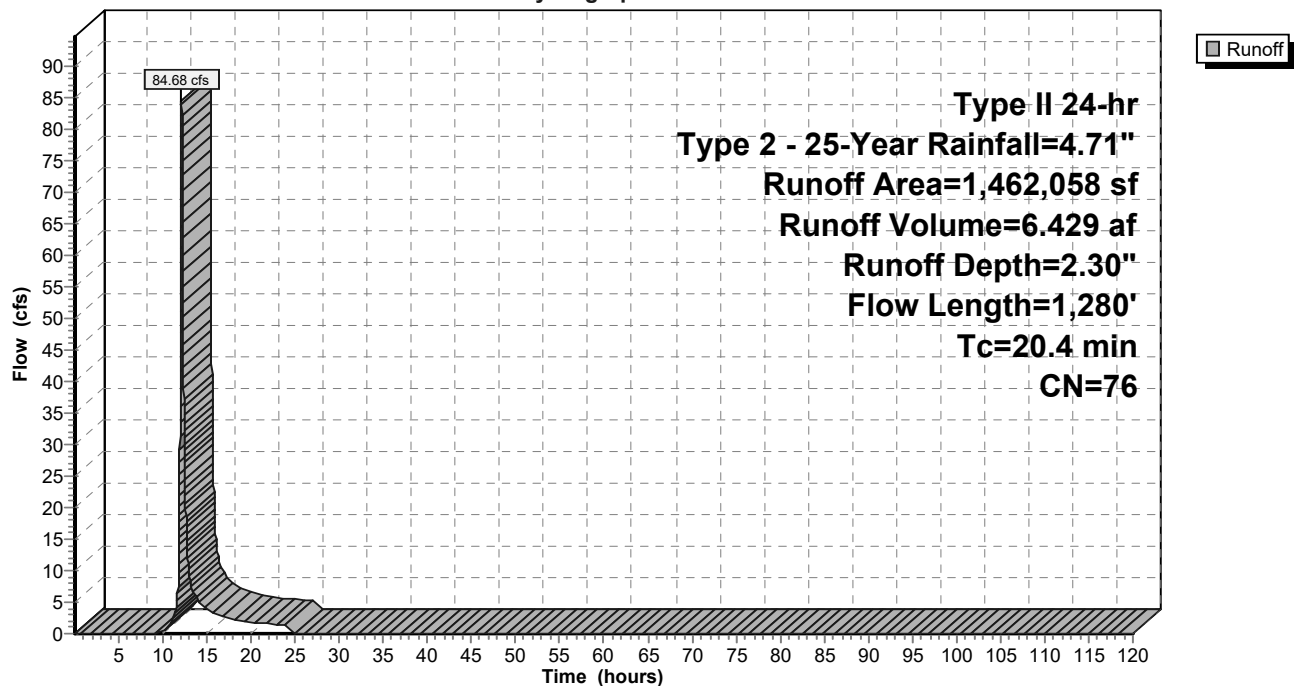
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs
Type II 24-hr Type 2 - 25-Year Rainfall=4.71"

Area (sf)	CN	Description
275,724	70	Woods, Good, HSG C
* 1,186,334	78	Cropland
1,462,058	76	Weighted Average
1,462,058		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.6	120	0.0300	0.17		Sheet Flow, Sheet Flow
					Cultivated: Residue>20% n= 0.170 P2= 2.68"
8.8	1,160	0.0600	2.20		Shallow Concentrated Flow, Flow
					Cultivated Straight Rows Kv= 9.0 fps
20.4	1,280	Total			

Subcatchment 1C: 1C

Hydrograph



Existing Conditions

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Type II 24-hr Type 2 - 25-Year Rainfall=4.71"

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Hydrograph for Subcatchment 1C: 1C

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.01	0.00	0.00	0.00	104.01	4.71	2.30	0.00
2.01	0.10	0.00	0.00	106.01	4.71	2.30	0.00
4.01	0.23	0.00	0.00	108.01	4.71	2.30	0.00
6.01	0.38	0.00	0.00	110.01	4.71	2.30	0.00
8.01	0.57	0.00	0.00	112.01	4.71	2.30	0.00
10.01	0.85	0.01	0.56	114.01	4.71	2.30	0.00
12.01	3.13	1.11	57.82	116.01	4.71	2.30	0.00
14.01	3.86	1.64	5.17	118.01	4.71	2.30	0.00
16.01	4.15	1.85	3.10				
18.01	4.34	2.00	2.35				
20.01	4.48	2.12	1.75				
22.01	4.60	2.21	1.56				
24.01	4.71	2.30	1.44				
26.01	4.71	2.30	0.00				
28.01	4.71	2.30	0.00				
30.01	4.71	2.30	0.00				
32.01	4.71	2.30	0.00				
34.01	4.71	2.30	0.00				
36.01	4.71	2.30	0.00				
38.01	4.71	2.30	0.00				
40.01	4.71	2.30	0.00				
42.01	4.71	2.30	0.00				
44.01	4.71	2.30	0.00				
46.01	4.71	2.30	0.00				
48.01	4.71	2.30	0.00				
50.01	4.71	2.30	0.00				
52.01	4.71	2.30	0.00				
54.01	4.71	2.30	0.00				
56.01	4.71	2.30	0.00				
58.01	4.71	2.30	0.00				
60.01	4.71	2.30	0.00				
62.01	4.71	2.30	0.00				
64.01	4.71	2.30	0.00				
66.01	4.71	2.30	0.00				
68.01	4.71	2.30	0.00				
70.01	4.71	2.30	0.00				
72.01	4.71	2.30	0.00				
74.01	4.71	2.30	0.00				
76.01	4.71	2.30	0.00				
78.01	4.71	2.30	0.00				
80.01	4.71	2.30	0.00				
82.01	4.71	2.30	0.00				
84.01	4.71	2.30	0.00				
86.01	4.71	2.30	0.00				
88.01	4.71	2.30	0.00				
90.01	4.71	2.30	0.00				
92.01	4.71	2.30	0.00				
94.01	4.71	2.30	0.00				
96.01	4.71	2.30	0.00				
98.01	4.71	2.30	0.00				
100.01	4.71	2.30	0.00				
102.01	4.71	2.30	0.00				

Existing Conditions

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Type II 24-hr Type 2 - 25-Year Rainfall=4.71"

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Summary for Subcatchment 1D: 1D

Runoff = 40.53 cfs @ 12.13 hrs, Volume= 3.041 af, Depth= 2.47"
Routed to Link 1 : OFFSITE

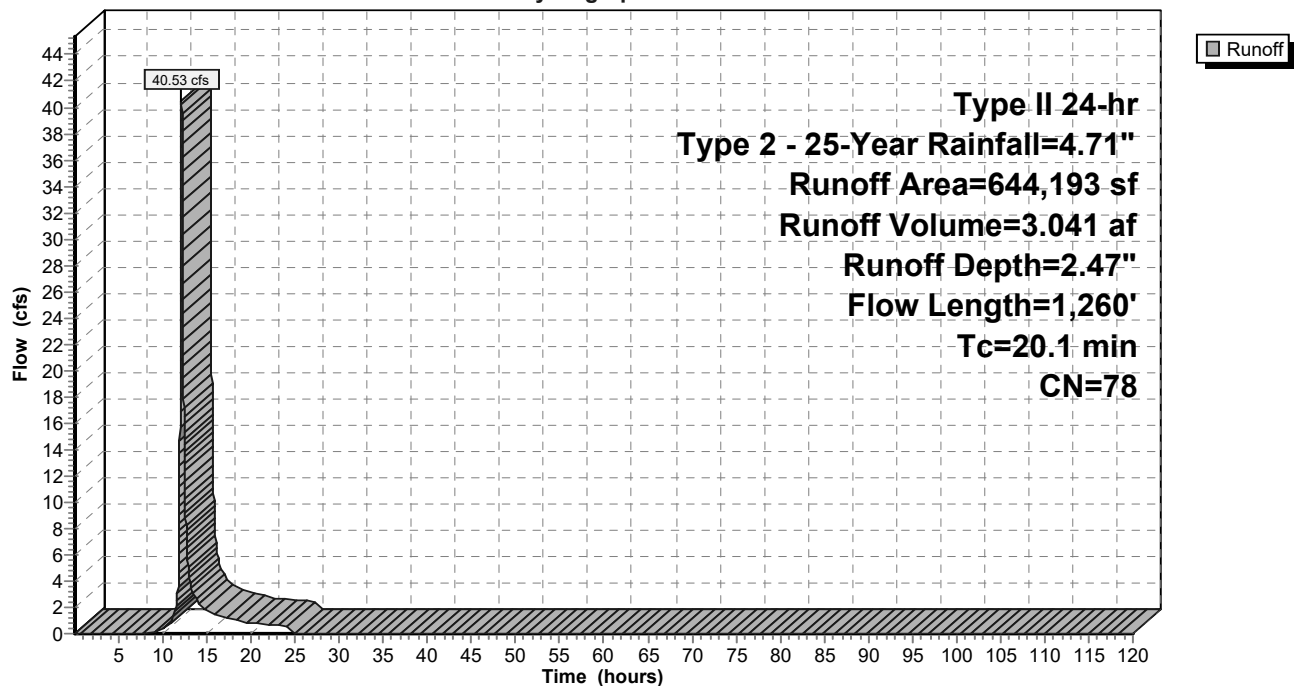
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs
Type II 24-hr Type 2 - 25-Year Rainfall=4.71"

Area (sf)	CN	Description
33,653	70	Woods, Good, HSG C
* 610,540	78	Cropland
644,193	78	Weighted Average
644,193		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	120	0.0500	0.21		Sheet Flow, Sheet Flow
					Cultivated: Residue>20% n= 0.170 P2= 2.68"
10.6	1,140	0.0400	1.80		Shallow Concentrated Flow, Flow
					Cultivated Straight Rows Kv= 9.0 fps
20.1	1,260	Total			

Subcatchment 1D: 1D

Hydrograph



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Type II 24-hr Type 2 - 25-Year Rainfall=4.71"

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Hydrograph for Subcatchment 1D: 1D

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.01	0.00	0.00	0.00	104.01	4.71	2.47	0.00
2.01	0.10	0.00	0.00	106.01	4.71	2.47	0.00
4.01	0.23	0.00	0.00	108.01	4.71	2.47	0.00
6.01	0.38	0.00	0.00	110.01	4.71	2.47	0.00
8.01	0.57	0.00	0.00	112.01	4.71	2.47	0.00
10.01	0.85	0.03	0.37	114.01	4.71	2.47	0.00
12.01	3.13	1.22	28.45	116.01	4.71	2.47	0.00
14.01	3.86	1.78	2.37	118.01	4.71	2.47	0.00
16.01	4.15	2.00	1.42				
18.01	4.34	2.16	1.07				
20.01	4.48	2.28	0.80				
22.01	4.60	2.38	0.71				
24.01	4.71	2.47	0.65				
26.01	4.71	2.47	0.00				
28.01	4.71	2.47	0.00				
30.01	4.71	2.47	0.00				
32.01	4.71	2.47	0.00				
34.01	4.71	2.47	0.00				
36.01	4.71	2.47	0.00				
38.01	4.71	2.47	0.00				
40.01	4.71	2.47	0.00				
42.01	4.71	2.47	0.00				
44.01	4.71	2.47	0.00				
46.01	4.71	2.47	0.00				
48.01	4.71	2.47	0.00				
50.01	4.71	2.47	0.00				
52.01	4.71	2.47	0.00				
54.01	4.71	2.47	0.00				
56.01	4.71	2.47	0.00				
58.01	4.71	2.47	0.00				
60.01	4.71	2.47	0.00				
62.01	4.71	2.47	0.00				
64.01	4.71	2.47	0.00				
66.01	4.71	2.47	0.00				
68.01	4.71	2.47	0.00				
70.01	4.71	2.47	0.00				
72.01	4.71	2.47	0.00				
74.01	4.71	2.47	0.00				
76.01	4.71	2.47	0.00				
78.01	4.71	2.47	0.00				
80.01	4.71	2.47	0.00				
82.01	4.71	2.47	0.00				
84.01	4.71	2.47	0.00				
86.01	4.71	2.47	0.00				
88.01	4.71	2.47	0.00				
90.01	4.71	2.47	0.00				
92.01	4.71	2.47	0.00				
94.01	4.71	2.47	0.00				
96.01	4.71	2.47	0.00				
98.01	4.71	2.47	0.00				
100.01	4.71	2.47	0.00				
102.01	4.71	2.47	0.00				

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Type II 24-hr Type 2 - 25-Year Rainfall=4.71"

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Summary for Subcatchment 1E: 1E

Runoff = 41.60 cfs @ 12.18 hrs, Volume= 3.572 af, Depth= 2.47"
Routed to Link 1 : OFFSITE

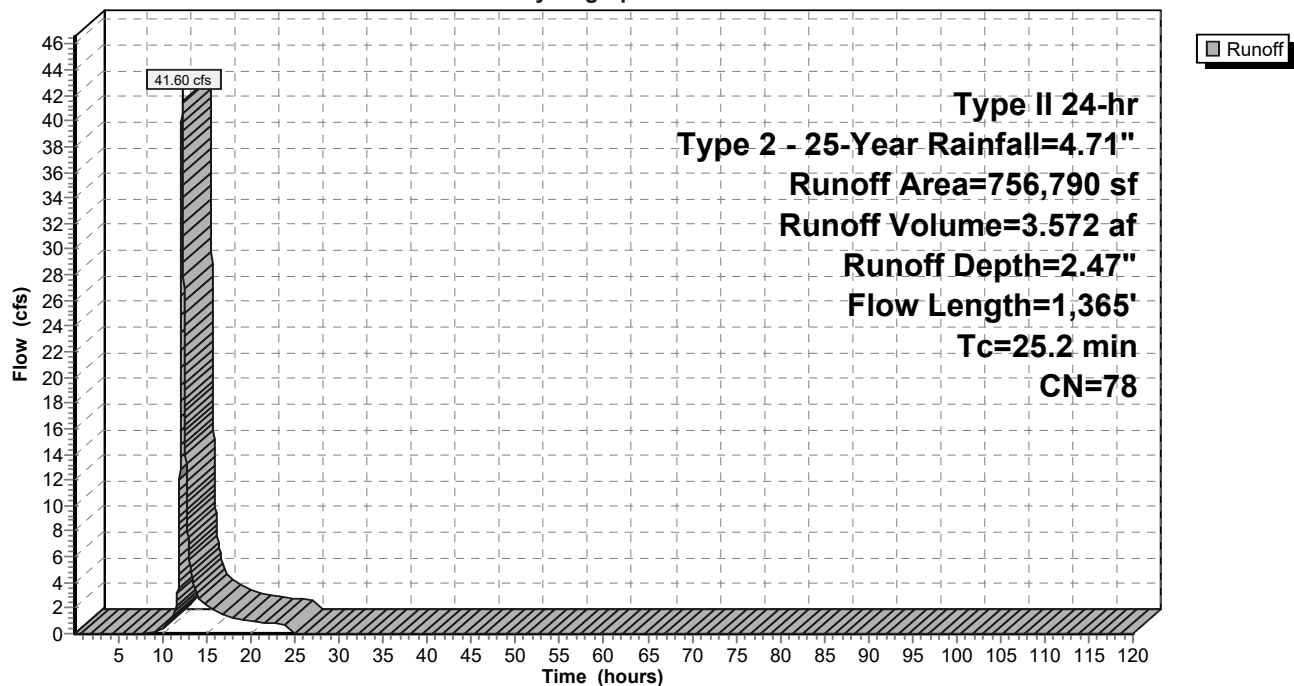
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs
Type II 24-hr Type 2 - 25-Year Rainfall=4.71"

Area (sf)	CN	Description
27,057	70	Woods, Good, HSG C
* 729,733	78	Cropland
756,790	78	Weighted Average
756,790		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.7	120	0.0200	0.15		Sheet Flow, Sheet Flow
					Cultivated: Residue>20% n= 0.170 P2= 2.68"
11.5	1,245	0.0400	1.80		Shallow Concentrated Flow, Flow
					Cultivated Straight Rows Kv= 9.0 fps
25.2	1,365	Total			

Subcatchment 1E: 1E

Hydrograph



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Type II 24-hr Type 2 - 25-Year Rainfall=4.71"

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Hydrograph for Subcatchment 1E: 1E

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.01	0.00	0.00	0.00	104.01	4.71	2.47	0.00
2.01	0.10	0.00	0.00	106.01	4.71	2.47	0.00
4.01	0.23	0.00	0.00	108.01	4.71	2.47	0.00
6.01	0.38	0.00	0.00	110.01	4.71	2.47	0.00
8.01	0.57	0.00	0.00	112.01	4.71	2.47	0.00
10.01	0.85	0.03	0.40	114.01	4.71	2.47	0.00
12.01	3.13	1.22	23.47	116.01	4.71	2.47	0.00
14.01	3.86	1.78	2.90	118.01	4.71	2.47	0.00
16.01	4.15	2.00	1.70				
18.01	4.34	2.16	1.28				
20.01	4.48	2.28	0.95				
22.01	4.60	2.38	0.83				
24.01	4.71	2.47	0.77				
26.01	4.71	2.47	0.00				
28.01	4.71	2.47	0.00				
30.01	4.71	2.47	0.00				
32.01	4.71	2.47	0.00				
34.01	4.71	2.47	0.00				
36.01	4.71	2.47	0.00				
38.01	4.71	2.47	0.00				
40.01	4.71	2.47	0.00				
42.01	4.71	2.47	0.00				
44.01	4.71	2.47	0.00				
46.01	4.71	2.47	0.00				
48.01	4.71	2.47	0.00				
50.01	4.71	2.47	0.00				
52.01	4.71	2.47	0.00				
54.01	4.71	2.47	0.00				
56.01	4.71	2.47	0.00				
58.01	4.71	2.47	0.00				
60.01	4.71	2.47	0.00				
62.01	4.71	2.47	0.00				
64.01	4.71	2.47	0.00				
66.01	4.71	2.47	0.00				
68.01	4.71	2.47	0.00				
70.01	4.71	2.47	0.00				
72.01	4.71	2.47	0.00				
74.01	4.71	2.47	0.00				
76.01	4.71	2.47	0.00				
78.01	4.71	2.47	0.00				
80.01	4.71	2.47	0.00				
82.01	4.71	2.47	0.00				
84.01	4.71	2.47	0.00				
86.01	4.71	2.47	0.00				
88.01	4.71	2.47	0.00				
90.01	4.71	2.47	0.00				
92.01	4.71	2.47	0.00				
94.01	4.71	2.47	0.00				
96.01	4.71	2.47	0.00				
98.01	4.71	2.47	0.00				
100.01	4.71	2.47	0.00				
102.01	4.71	2.47	0.00				

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Type II 24-hr Type 2 - 25-Year Rainfall=4.71"

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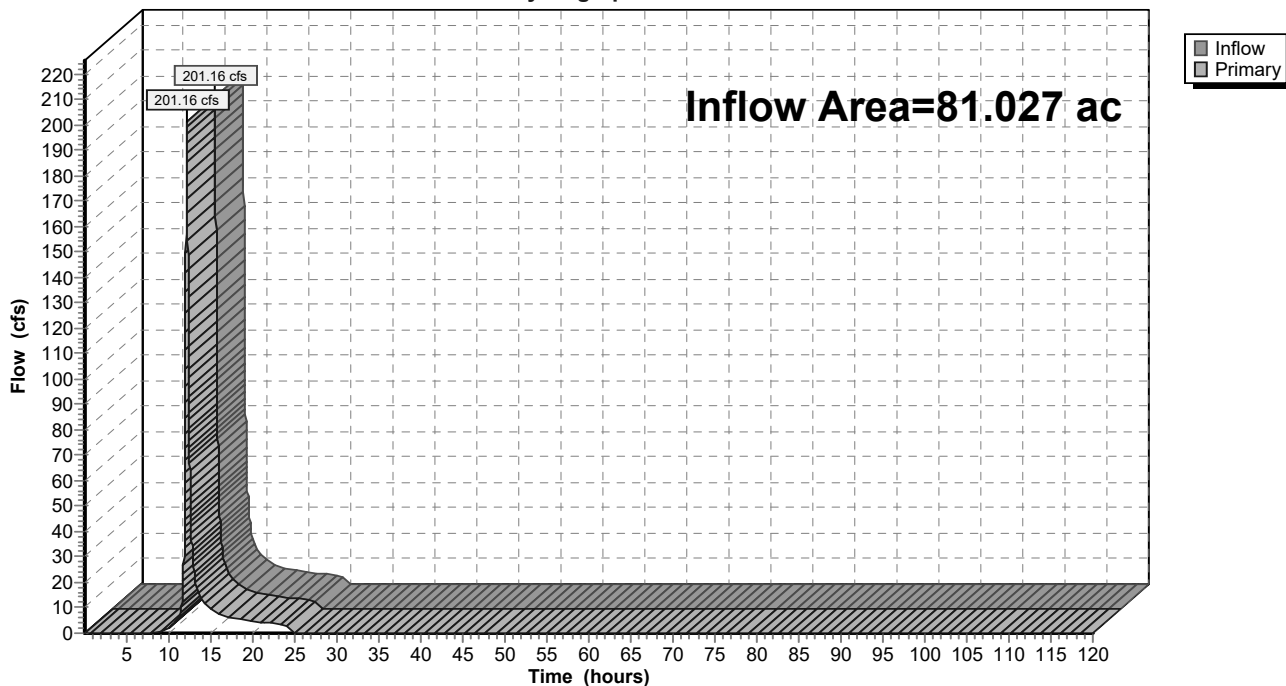
Summary for Link 1: OFFSITE

Inflow Area = 81.027 ac, 0.00% Impervious, Inflow Depth = 2.37" for Type 2 - 25-Year event
Inflow = 201.16 cfs @ 12.15 hrs, Volume= 16.002 af
Primary = 201.16 cfs @ 12.15 hrs, Volume= 16.002 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs

Link 1: OFFSITE

Hydrograph



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Type II 24-hr Type 2 - 25-Year Rainfall=4.71"

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Hydrograph for Link 1: OFFSITE

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.01	0.00	0.00	0.00	104.01	0.00	0.00	0.00
2.01	0.00	0.00	0.00	106.01	0.00	0.00	0.00
4.01	0.00	0.00	0.00	108.01	0.00	0.00	0.00
6.01	0.00	0.00	0.00	110.01	0.00	0.00	0.00
8.01	0.00	0.00	0.00	112.01	0.00	0.00	0.00
10.01	1.59	0.00	1.59	114.01	0.00	0.00	0.00
12.01	134.20	0.00	134.20	116.01	0.00	0.00	0.00
14.01	12.84	0.00	12.84	118.01	0.00	0.00	0.00
16.01	7.65	0.00	7.65				
18.01	5.78	0.00	5.78				
20.01	4.29	0.00	4.29				
22.01	3.81	0.00	3.81				
24.01	3.52	0.00	3.52				
26.01	0.00	0.00	0.00				
28.01	0.00	0.00	0.00				
30.01	0.00	0.00	0.00				
32.01	0.00	0.00	0.00				
34.01	0.00	0.00	0.00				
36.01	0.00	0.00	0.00				
38.01	0.00	0.00	0.00				
40.01	0.00	0.00	0.00				
42.01	0.00	0.00	0.00				
44.01	0.00	0.00	0.00				
46.01	0.00	0.00	0.00				
48.01	0.00	0.00	0.00				
50.01	0.00	0.00	0.00				
52.01	0.00	0.00	0.00				
54.01	0.00	0.00	0.00				
56.01	0.00	0.00	0.00				
58.01	0.00	0.00	0.00				
60.01	0.00	0.00	0.00				
62.01	0.00	0.00	0.00				
64.01	0.00	0.00	0.00				
66.01	0.00	0.00	0.00				
68.01	0.00	0.00	0.00				
70.01	0.00	0.00	0.00				
72.01	0.00	0.00	0.00				
74.01	0.00	0.00	0.00				
76.01	0.00	0.00	0.00				
78.01	0.00	0.00	0.00				
80.01	0.00	0.00	0.00				
82.01	0.00	0.00	0.00				
84.01	0.00	0.00	0.00				
86.01	0.00	0.00	0.00				
88.01	0.00	0.00	0.00				
90.01	0.00	0.00	0.00				
92.01	0.00	0.00	0.00				
94.01	0.00	0.00	0.00				
96.01	0.00	0.00	0.00				
98.01	0.00	0.00	0.00				
100.01	0.00	0.00	0.00				
102.01	0.00	0.00	0.00				

Existing Conditions

Type II 24-hr Type 2 - 50-Year Rainfall=5.49"

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Time span=0.01-120.00 hrs, dt=0.01 hrs, 12000 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1A: 1A

Runoff Area=243,883 sf 0.00% Impervious Runoff Depth=2.85"
Flow Length=475' Tc=17.9 min CN=75 Runoff=18.91 cfs 1.331 af

Subcatchment1B: 1B

Runoff Area=422,611 sf 0.00% Impervious Runoff Depth=3.04"
Flow Length=920' Slope=0.0200 '/' Tc=24.2 min CN=77 Runoff=29.38 cfs 2.456 af

Subcatchment1C: 1C

Runoff Area=1,462,058 sf 0.00% Impervious Runoff Depth=2.94"
Flow Length=1,280' Tc=20.4 min CN=76 Runoff=108.87 cfs 8.236 af

Subcatchment1D: 1D

Runoff Area=644,193 sf 0.00% Impervious Runoff Depth=3.13"
Flow Length=1,260' Tc=20.1 min CN=78 Runoff=51.49 cfs 3.860 af

Subcatchment1E: 1E

Runoff Area=756,790 sf 0.00% Impervious Runoff Depth=3.13"
Flow Length=1,365' Tc=25.2 min CN=78 Runoff=52.95 cfs 4.535 af

Link 1: OFFSITE

Inflow=257.33 cfs 20.418 af
Primary=257.33 cfs 20.418 af

Total Runoff Area = 81.027 ac Runoff Volume = 20.418 af Average Runoff Depth = 3.02"
100.00% Pervious = 81.027 ac 0.00% Impervious = 0.000 ac

Existing Conditions

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Type II 24-hr Type 2 - 50-Year Rainfall=5.49"

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Summary for Subcatchment 1A: 1A

Runoff = 18.91 cfs @ 12.11 hrs, Volume= 1.331 af, Depth= 2.85"
Routed to Link 1 : OFFSITE

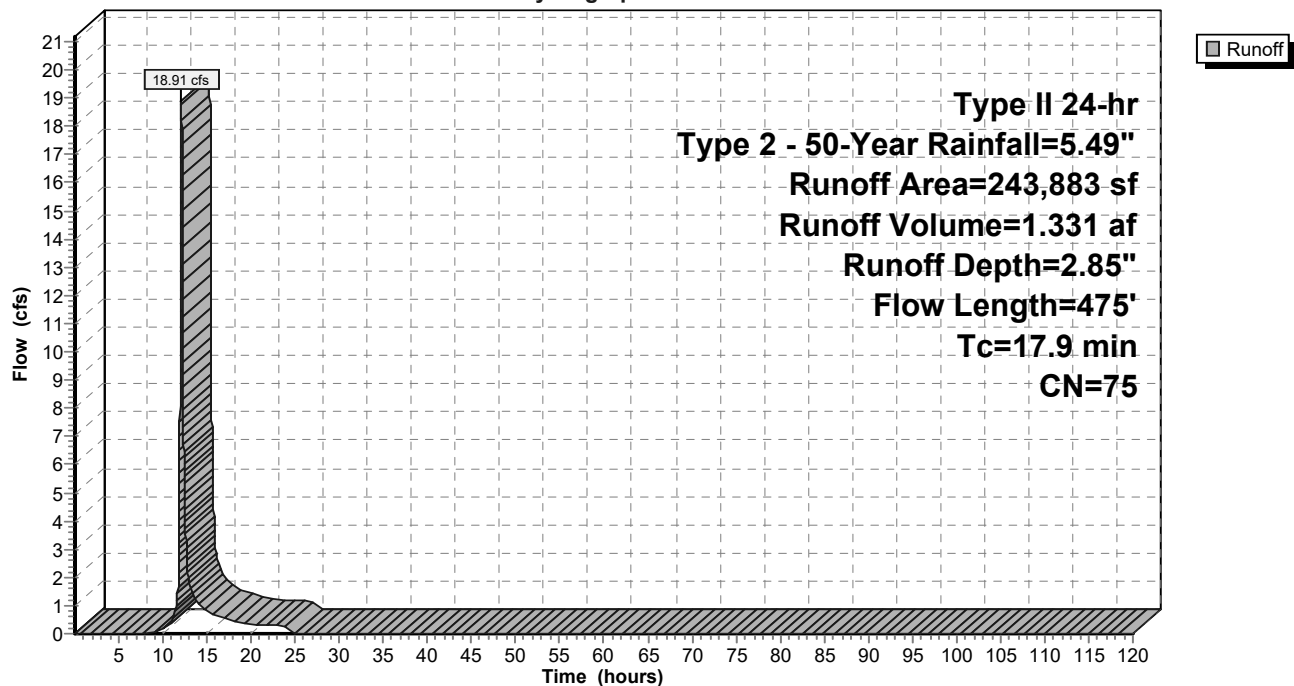
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs
Type II 24-hr Type 2 - 50-Year Rainfall=5.49"

	Area (sf)	CN	Description
*	148,310	78	Cropland
	95,573	70	Woods, Good, HSG C
	243,883	75	Weighted Average
	243,883		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.7	120	0.0200	0.15		Sheet Flow, Sheet Flow Cultivated: Residue>20% n= 0.170 P2= 2.68"
2.5	190	0.0200	1.27		Shallow Concentrated Flow, Flow Cultivated Straight Rows Kv= 9.0 fps
1.7	165	0.1000	1.58		Shallow Concentrated Flow, Tree Flow Woodland Kv= 5.0 fps
17.9	475	Total			

Subcatchment 1A: 1A

Hydrograph



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Type II 24-hr Type 2 - 50-Year Rainfall=5.49"

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Hydrograph for Subcatchment 1A: 1A

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.01	0.00	0.00	0.00	104.01	5.49	2.85	0.00
2.01	0.12	0.00	0.00	106.01	5.49	2.85	0.00
4.01	0.26	0.00	0.00	108.01	5.49	2.85	0.00
6.01	0.44	0.00	0.00	110.01	5.49	2.85	0.00
8.01	0.66	0.00	0.00	112.01	5.49	2.85	0.00
10.01	1.00	0.03	0.16	114.01	5.49	2.85	0.00
12.01	3.65	1.41	14.55	116.01	5.49	2.85	0.00
14.01	4.50	2.05	1.02	118.01	5.49	2.85	0.00
16.01	4.83	2.31	0.62				
18.01	5.06	2.50	0.47				
20.01	5.23	2.63	0.35				
22.01	5.36	2.75	0.31				
24.01	5.49	2.85	0.29				
26.01	5.49	2.85	0.00				
28.01	5.49	2.85	0.00				
30.01	5.49	2.85	0.00				
32.01	5.49	2.85	0.00				
34.01	5.49	2.85	0.00				
36.01	5.49	2.85	0.00				
38.01	5.49	2.85	0.00				
40.01	5.49	2.85	0.00				
42.01	5.49	2.85	0.00				
44.01	5.49	2.85	0.00				
46.01	5.49	2.85	0.00				
48.01	5.49	2.85	0.00				
50.01	5.49	2.85	0.00				
52.01	5.49	2.85	0.00				
54.01	5.49	2.85	0.00				
56.01	5.49	2.85	0.00				
58.01	5.49	2.85	0.00				
60.01	5.49	2.85	0.00				
62.01	5.49	2.85	0.00				
64.01	5.49	2.85	0.00				
66.01	5.49	2.85	0.00				
68.01	5.49	2.85	0.00				
70.01	5.49	2.85	0.00				
72.01	5.49	2.85	0.00				
74.01	5.49	2.85	0.00				
76.01	5.49	2.85	0.00				
78.01	5.49	2.85	0.00				
80.01	5.49	2.85	0.00				
82.01	5.49	2.85	0.00				
84.01	5.49	2.85	0.00				
86.01	5.49	2.85	0.00				
88.01	5.49	2.85	0.00				
90.01	5.49	2.85	0.00				
92.01	5.49	2.85	0.00				
94.01	5.49	2.85	0.00				
96.01	5.49	2.85	0.00				
98.01	5.49	2.85	0.00				
100.01	5.49	2.85	0.00				
102.01	5.49	2.85	0.00				

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Type II 24-hr Type 2 - 50-Year Rainfall=5.49"

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Summary for Subcatchment 1B: 1B

Runoff = 29.38 cfs @ 12.18 hrs, Volume= 2.456 af, Depth= 3.04"
Routed to Link 1 : OFFSITE

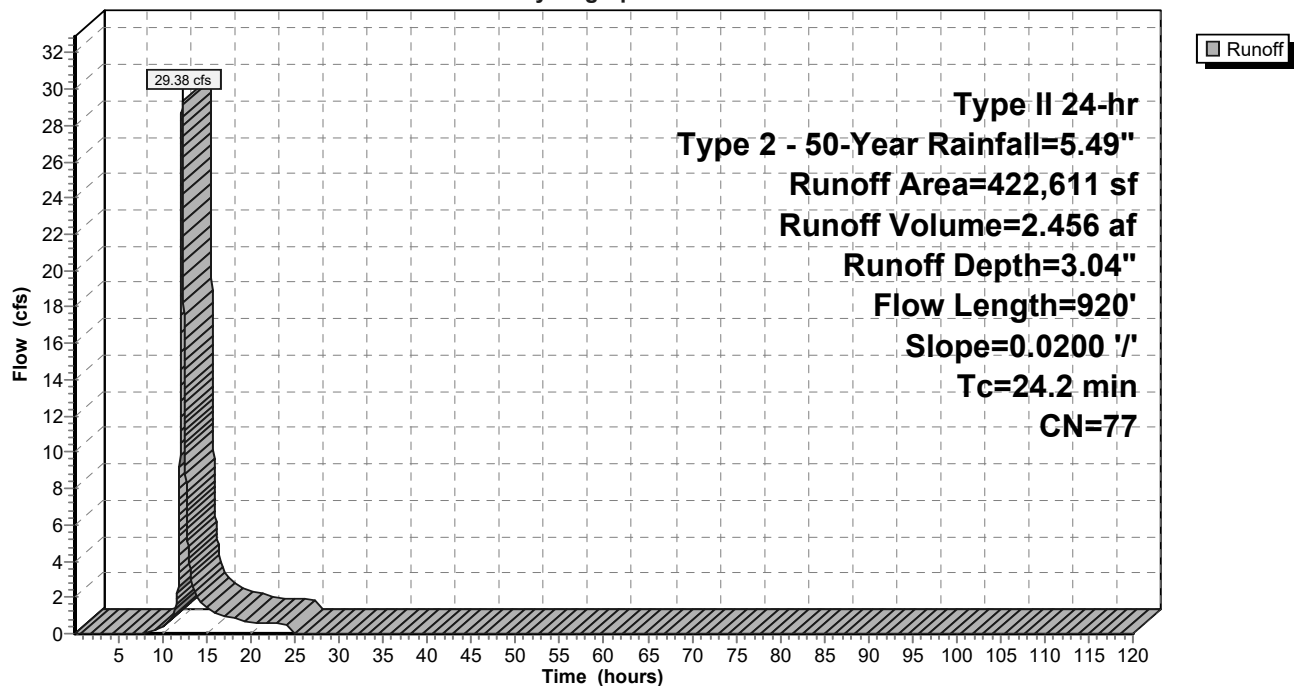
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs
Type II 24-hr Type 2 - 50-Year Rainfall=5.49"

Area (sf)	CN	Description
30,229	70	Woods, Good, HSG C
* 392,382	78	Cropland
422,611	77	Weighted Average
422,611		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.7	120	0.0200	0.15		Sheet Flow, Sheet Flow
					Cultivated: Residue>20% n= 0.170 P2= 2.68"
10.5	800	0.0200	1.27		Shallow Concentrated Flow, Flow
					Cultivated Straight Rows Kv= 9.0 fps
24.2	920	Total			

Subcatchment 1B: 1B

Hydrograph



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Type II 24-hr Type 2 - 50-Year Rainfall=5.49"

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Hydrograph for Subcatchment 1B: 1B

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.01	0.00	0.00	0.00	104.01	5.49	3.04	0.00
2.01	0.12	0.00	0.00	106.01	5.49	3.04	0.00
4.01	0.26	0.00	0.00	108.01	5.49	3.04	0.00
6.01	0.44	0.00	0.00	110.01	5.49	3.04	0.00
8.01	0.66	0.00	0.02	112.01	5.49	3.04	0.00
10.01	1.00	0.05	0.35	114.01	5.49	3.04	0.00
12.01	3.65	1.54	17.57	116.01	5.49	3.04	0.00
14.01	4.50	2.21	1.93	118.01	5.49	3.04	0.00
16.01	4.83	2.48	1.13				
18.01	5.06	2.67	0.85				
20.01	5.23	2.81	0.63				
22.01	5.36	2.93	0.56				
24.01	5.49	3.04	0.51				
26.01	5.49	3.04	0.00				
28.01	5.49	3.04	0.00				
30.01	5.49	3.04	0.00				
32.01	5.49	3.04	0.00				
34.01	5.49	3.04	0.00				
36.01	5.49	3.04	0.00				
38.01	5.49	3.04	0.00				
40.01	5.49	3.04	0.00				
42.01	5.49	3.04	0.00				
44.01	5.49	3.04	0.00				
46.01	5.49	3.04	0.00				
48.01	5.49	3.04	0.00				
50.01	5.49	3.04	0.00				
52.01	5.49	3.04	0.00				
54.01	5.49	3.04	0.00				
56.01	5.49	3.04	0.00				
58.01	5.49	3.04	0.00				
60.01	5.49	3.04	0.00				
62.01	5.49	3.04	0.00				
64.01	5.49	3.04	0.00				
66.01	5.49	3.04	0.00				
68.01	5.49	3.04	0.00				
70.01	5.49	3.04	0.00				
72.01	5.49	3.04	0.00				
74.01	5.49	3.04	0.00				
76.01	5.49	3.04	0.00				
78.01	5.49	3.04	0.00				
80.01	5.49	3.04	0.00				
82.01	5.49	3.04	0.00				
84.01	5.49	3.04	0.00				
86.01	5.49	3.04	0.00				
88.01	5.49	3.04	0.00				
90.01	5.49	3.04	0.00				
92.01	5.49	3.04	0.00				
94.01	5.49	3.04	0.00				
96.01	5.49	3.04	0.00				
98.01	5.49	3.04	0.00				
100.01	5.49	3.04	0.00				
102.01	5.49	3.04	0.00				

Existing Conditions

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Type II 24-hr Type 2 - 50-Year Rainfall=5.49"

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Summary for Subcatchment 1C: 1C

Runoff = 108.87 cfs @ 12.13 hrs, Volume= 8.236 af, Depth= 2.94"
Routed to Link 1 : OFFSITE

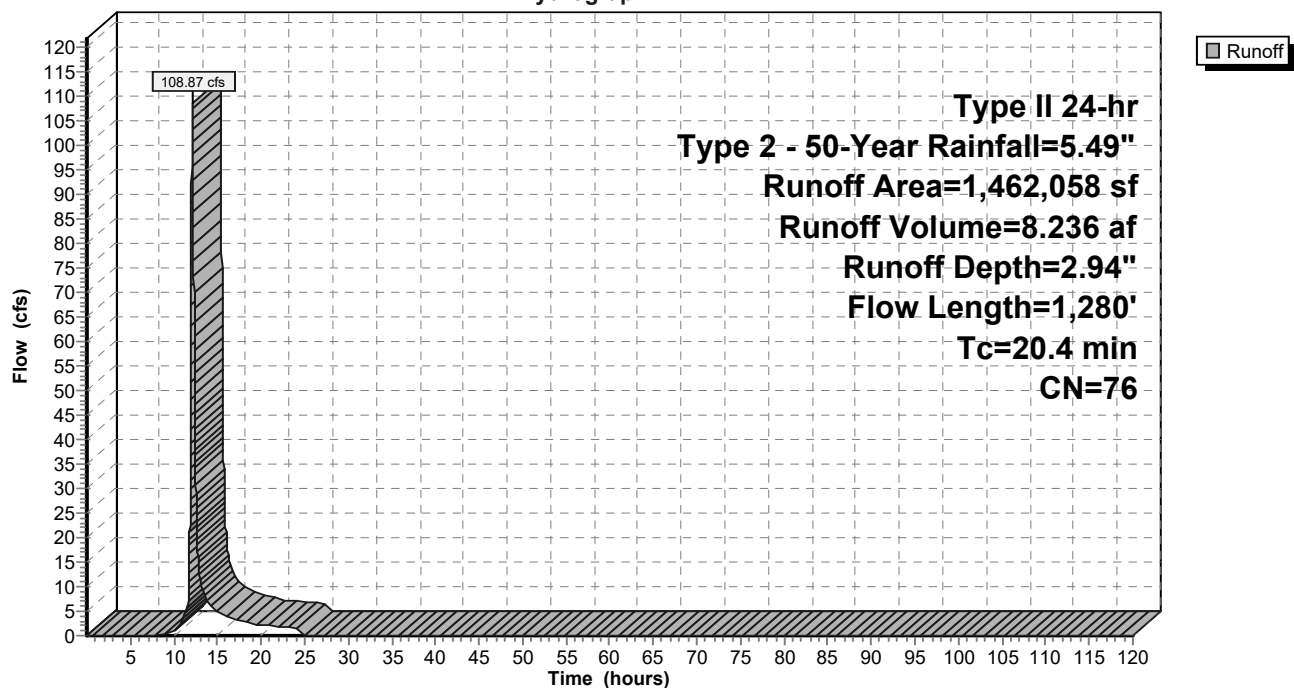
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs
Type II 24-hr Type 2 - 50-Year Rainfall=5.49"

Area (sf)	CN	Description
275,724	70	Woods, Good, HSG C
* 1,186,334	78	Cropland
1,462,058	76	Weighted Average
1,462,058		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.6	120	0.0300	0.17		Sheet Flow, Sheet Flow
					Cultivated: Residue>20% n= 0.170 P2= 2.68"
8.8	1,160	0.0600	2.20		Shallow Concentrated Flow, Flow
					Cultivated Straight Rows Kv= 9.0 fps
20.4	1,280	Total			

Subcatchment 1C: 1C

Hydrograph



Existing Conditions

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Type II 24-hr Type 2 - 50-Year Rainfall=5.49"

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Hydrograph for Subcatchment 1C: 1C

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.01	0.00	0.00	0.00	104.01	5.49	2.94	0.00
2.01	0.12	0.00	0.00	106.01	5.49	2.94	0.00
4.01	0.26	0.00	0.00	108.01	5.49	2.94	0.00
6.01	0.44	0.00	0.00	110.01	5.49	2.94	0.00
8.01	0.66	0.00	0.01	112.01	5.49	2.94	0.00
10.01	1.00	0.04	1.09	114.01	5.49	2.94	0.00
12.01	3.65	1.48	75.87	116.01	5.49	2.94	0.00
14.01	4.50	2.13	6.37	118.01	5.49	2.94	0.00
16.01	4.83	2.40	3.80				
18.01	5.06	2.58	2.88				
20.01	5.23	2.72	2.13				
22.01	5.36	2.84	1.90				
24.01	5.49	2.94	1.75				
26.01	5.49	2.94	0.00				
28.01	5.49	2.94	0.00				
30.01	5.49	2.94	0.00				
32.01	5.49	2.94	0.00				
34.01	5.49	2.94	0.00				
36.01	5.49	2.94	0.00				
38.01	5.49	2.94	0.00				
40.01	5.49	2.94	0.00				
42.01	5.49	2.94	0.00				
44.01	5.49	2.94	0.00				
46.01	5.49	2.94	0.00				
48.01	5.49	2.94	0.00				
50.01	5.49	2.94	0.00				
52.01	5.49	2.94	0.00				
54.01	5.49	2.94	0.00				
56.01	5.49	2.94	0.00				
58.01	5.49	2.94	0.00				
60.01	5.49	2.94	0.00				
62.01	5.49	2.94	0.00				
64.01	5.49	2.94	0.00				
66.01	5.49	2.94	0.00				
68.01	5.49	2.94	0.00				
70.01	5.49	2.94	0.00				
72.01	5.49	2.94	0.00				
74.01	5.49	2.94	0.00				
76.01	5.49	2.94	0.00				
78.01	5.49	2.94	0.00				
80.01	5.49	2.94	0.00				
82.01	5.49	2.94	0.00				
84.01	5.49	2.94	0.00				
86.01	5.49	2.94	0.00				
88.01	5.49	2.94	0.00				
90.01	5.49	2.94	0.00				
92.01	5.49	2.94	0.00				
94.01	5.49	2.94	0.00				
96.01	5.49	2.94	0.00				
98.01	5.49	2.94	0.00				
100.01	5.49	2.94	0.00				
102.01	5.49	2.94	0.00				

Existing Conditions

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Type II 24-hr Type 2 - 50-Year Rainfall=5.49"

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Summary for Subcatchment 1D: 1D

Runoff = 51.49 cfs @ 12.13 hrs, Volume= 3.860 af, Depth= 3.13"
Routed to Link 1 : OFFSITE

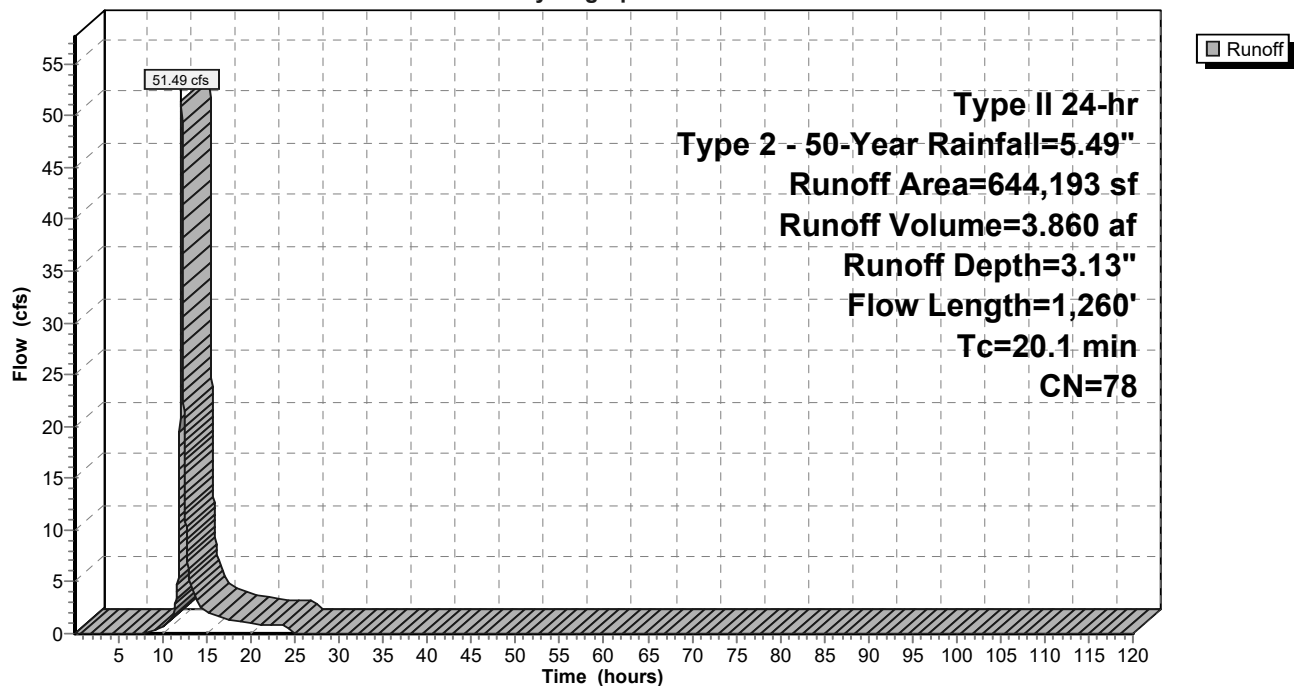
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs
Type II 24-hr Type 2 - 50-Year Rainfall=5.49"

Area (sf)	CN	Description
33,653	70	Woods, Good, HSG C
* 610,540	78	Cropland
644,193	78	Weighted Average
644,193		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	120	0.0500	0.21		Sheet Flow, Sheet Flow
					Cultivated: Residue>20% n= 0.170 P2= 2.68"
10.6	1,140	0.0400	1.80		Shallow Concentrated Flow, Flow
					Cultivated Straight Rows Kv= 9.0 fps
20.1	1,260	Total			

Subcatchment 1D: 1D

Hydrograph



Existing Conditions

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Type II 24-hr Type 2 - 50-Year Rainfall=5.49"

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Hydrograph for Subcatchment 1D: 1D

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.01	0.00	0.00	0.00	104.01	5.49	3.13	0.00
2.01	0.12	0.00	0.00	106.01	5.49	3.13	0.00
4.01	0.26	0.00	0.00	108.01	5.49	3.13	0.00
6.01	0.44	0.00	0.00	110.01	5.49	3.13	0.00
8.01	0.66	0.00	0.07	112.01	5.49	3.13	0.00
10.01	1.00	0.06	0.63	114.01	5.49	3.13	0.00
12.01	3.65	1.61	36.78	116.01	5.49	3.13	0.00
14.01	4.50	2.30	2.90	118.01	5.49	3.13	0.00
16.01	4.83	2.57	1.73				
18.01	5.06	2.76	1.30				
20.01	5.23	2.91	0.96				
22.01	5.36	3.02	0.86				
24.01	5.49	3.13	0.79				
26.01	5.49	3.13	0.00				
28.01	5.49	3.13	0.00				
30.01	5.49	3.13	0.00				
32.01	5.49	3.13	0.00				
34.01	5.49	3.13	0.00				
36.01	5.49	3.13	0.00				
38.01	5.49	3.13	0.00				
40.01	5.49	3.13	0.00				
42.01	5.49	3.13	0.00				
44.01	5.49	3.13	0.00				
46.01	5.49	3.13	0.00				
48.01	5.49	3.13	0.00				
50.01	5.49	3.13	0.00				
52.01	5.49	3.13	0.00				
54.01	5.49	3.13	0.00				
56.01	5.49	3.13	0.00				
58.01	5.49	3.13	0.00				
60.01	5.49	3.13	0.00				
62.01	5.49	3.13	0.00				
64.01	5.49	3.13	0.00				
66.01	5.49	3.13	0.00				
68.01	5.49	3.13	0.00				
70.01	5.49	3.13	0.00				
72.01	5.49	3.13	0.00				
74.01	5.49	3.13	0.00				
76.01	5.49	3.13	0.00				
78.01	5.49	3.13	0.00				
80.01	5.49	3.13	0.00				
82.01	5.49	3.13	0.00				
84.01	5.49	3.13	0.00				
86.01	5.49	3.13	0.00				
88.01	5.49	3.13	0.00				
90.01	5.49	3.13	0.00				
92.01	5.49	3.13	0.00				
94.01	5.49	3.13	0.00				
96.01	5.49	3.13	0.00				
98.01	5.49	3.13	0.00				
100.01	5.49	3.13	0.00				
102.01	5.49	3.13	0.00				

Existing Conditions

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Type II 24-hr Type 2 - 50-Year Rainfall=5.49"

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Summary for Subcatchment 1E: 1E

Runoff = 52.95 cfs @ 12.18 hrs, Volume= 4.535 af, Depth= 3.13"
Routed to Link 1 : OFFSITE

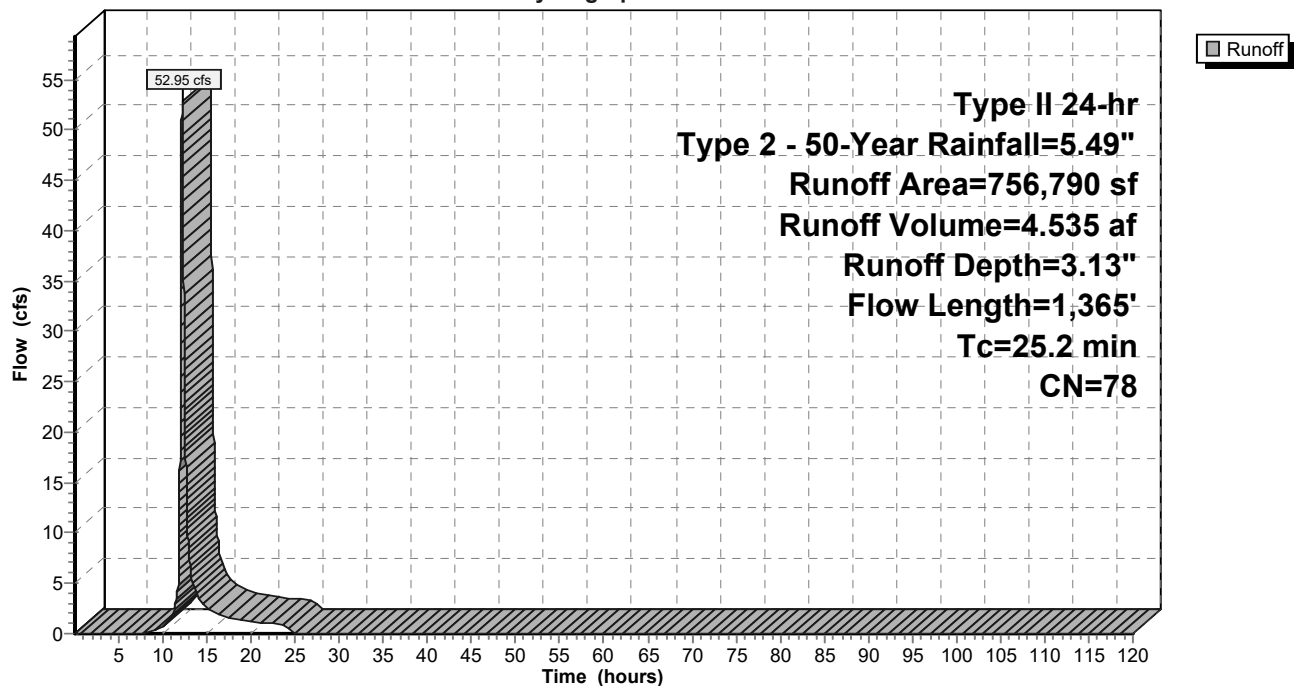
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs
Type II 24-hr Type 2 - 50-Year Rainfall=5.49"

Area (sf)	CN	Description
27,057	70	Woods, Good, HSG C
* 729,733	78	Cropland
756,790	78	Weighted Average
756,790		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.7	120	0.0200	0.15		Sheet Flow, Sheet Flow
					Cultivated: Residue>20% n= 0.170 P2= 2.68"
11.5	1,245	0.0400	1.80		Shallow Concentrated Flow, Flow
					Cultivated Straight Rows Kv= 9.0 fps
25.2	1,365	Total			

Subcatchment 1E: 1E

Hydrograph



Existing Conditions

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Type II 24-hr Type 2 - 50-Year Rainfall=5.49"

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Hydrograph for Subcatchment 1E: 1E

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.01	0.00	0.00	0.00	104.01	5.49	3.13	0.00
2.01	0.12	0.00	0.00	106.01	5.49	3.13	0.00
4.01	0.26	0.00	0.00	108.01	5.49	3.13	0.00
6.01	0.44	0.00	0.00	110.01	5.49	3.13	0.00
8.01	0.66	0.00	0.07	112.01	5.49	3.13	0.00
10.01	1.00	0.06	0.70	114.01	5.49	3.13	0.00
12.01	3.65	1.61	30.62	116.01	5.49	3.13	0.00
14.01	4.50	2.30	3.54	118.01	5.49	3.13	0.00
16.01	4.83	2.57	2.07				
18.01	5.06	2.76	1.55				
20.01	5.23	2.91	1.15				
22.01	5.36	3.02	1.01				
24.01	5.49	3.13	0.93				
26.01	5.49	3.13	0.00				
28.01	5.49	3.13	0.00				
30.01	5.49	3.13	0.00				
32.01	5.49	3.13	0.00				
34.01	5.49	3.13	0.00				
36.01	5.49	3.13	0.00				
38.01	5.49	3.13	0.00				
40.01	5.49	3.13	0.00				
42.01	5.49	3.13	0.00				
44.01	5.49	3.13	0.00				
46.01	5.49	3.13	0.00				
48.01	5.49	3.13	0.00				
50.01	5.49	3.13	0.00				
52.01	5.49	3.13	0.00				
54.01	5.49	3.13	0.00				
56.01	5.49	3.13	0.00				
58.01	5.49	3.13	0.00				
60.01	5.49	3.13	0.00				
62.01	5.49	3.13	0.00				
64.01	5.49	3.13	0.00				
66.01	5.49	3.13	0.00				
68.01	5.49	3.13	0.00				
70.01	5.49	3.13	0.00				
72.01	5.49	3.13	0.00				
74.01	5.49	3.13	0.00				
76.01	5.49	3.13	0.00				
78.01	5.49	3.13	0.00				
80.01	5.49	3.13	0.00				
82.01	5.49	3.13	0.00				
84.01	5.49	3.13	0.00				
86.01	5.49	3.13	0.00				
88.01	5.49	3.13	0.00				
90.01	5.49	3.13	0.00				
92.01	5.49	3.13	0.00				
94.01	5.49	3.13	0.00				
96.01	5.49	3.13	0.00				
98.01	5.49	3.13	0.00				
100.01	5.49	3.13	0.00				
102.01	5.49	3.13	0.00				

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Type II 24-hr Type 2 - 50-Year Rainfall=5.49"

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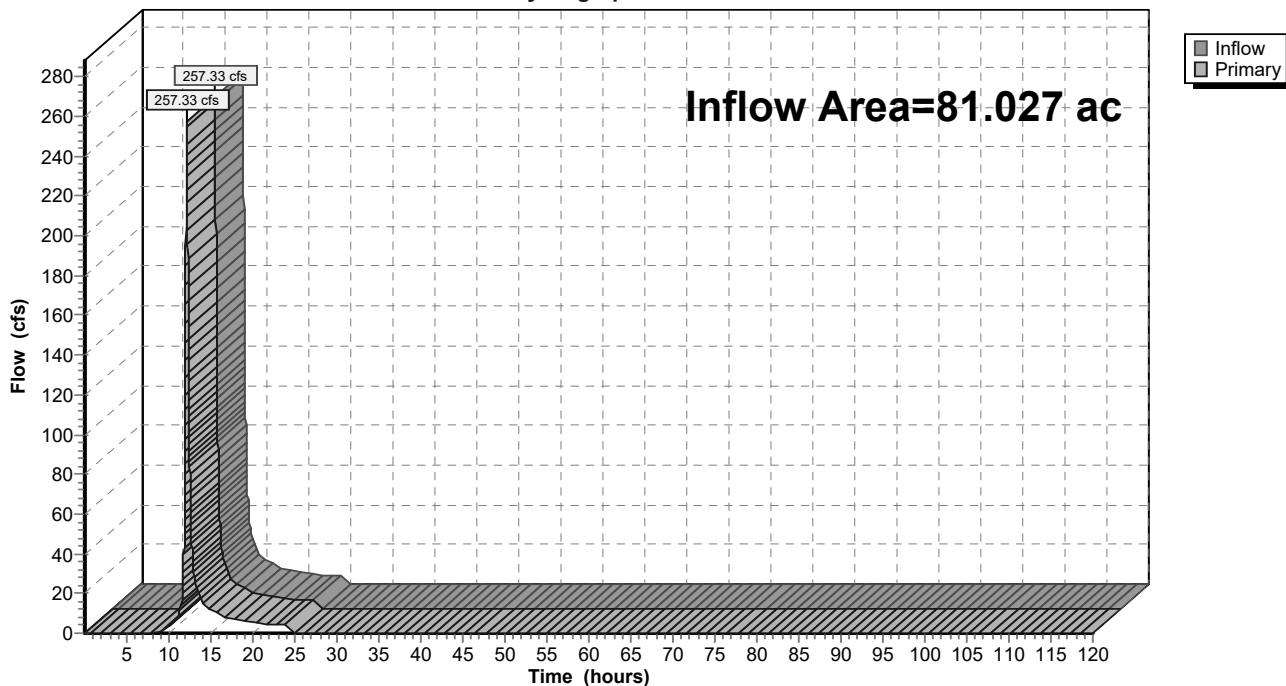
Summary for Link 1: OFFSITE

Inflow Area = 81.027 ac, 0.00% Impervious, Inflow Depth = 3.02" for Type 2 - 50-Year event
Inflow = 257.33 cfs @ 12.14 hrs, Volume= 20.418 af
Primary = 257.33 cfs @ 12.14 hrs, Volume= 20.418 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs

Link 1: OFFSITE

Hydrograph



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Type II 24-hr Type 2 - 50-Year Rainfall=5.49"

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Hydrograph for Link 1: OFFSITE

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.01	0.00	0.00	0.00	104.01	0.00	0.00	0.00
2.01	0.00	0.00	0.00	106.01	0.00	0.00	0.00
4.01	0.00	0.00	0.00	108.01	0.00	0.00	0.00
6.01	0.00	0.00	0.00	110.01	0.00	0.00	0.00
8.01	0.17	0.00	0.17	112.01	0.00	0.00	0.00
10.01	2.93	0.00	2.93	114.01	0.00	0.00	0.00
12.01	175.40	0.00	175.40	116.01	0.00	0.00	0.00
14.01	15.77	0.00	15.77	118.01	0.00	0.00	0.00
16.01	9.35	0.00	9.35				
18.01	7.05	0.00	7.05				
20.01	5.22	0.00	5.22				
22.01	4.63	0.00	4.63				
24.01	4.28	0.00	4.28				
26.01	0.00	0.00	0.00				
28.01	0.00	0.00	0.00				
30.01	0.00	0.00	0.00				
32.01	0.00	0.00	0.00				
34.01	0.00	0.00	0.00				
36.01	0.00	0.00	0.00				
38.01	0.00	0.00	0.00				
40.01	0.00	0.00	0.00				
42.01	0.00	0.00	0.00				
44.01	0.00	0.00	0.00				
46.01	0.00	0.00	0.00				
48.01	0.00	0.00	0.00				
50.01	0.00	0.00	0.00				
52.01	0.00	0.00	0.00				
54.01	0.00	0.00	0.00				
56.01	0.00	0.00	0.00				
58.01	0.00	0.00	0.00				
60.01	0.00	0.00	0.00				
62.01	0.00	0.00	0.00				
64.01	0.00	0.00	0.00				
66.01	0.00	0.00	0.00				
68.01	0.00	0.00	0.00				
70.01	0.00	0.00	0.00				
72.01	0.00	0.00	0.00				
74.01	0.00	0.00	0.00				
76.01	0.00	0.00	0.00				
78.01	0.00	0.00	0.00				
80.01	0.00	0.00	0.00				
82.01	0.00	0.00	0.00				
84.01	0.00	0.00	0.00				
86.01	0.00	0.00	0.00				
88.01	0.00	0.00	0.00				
90.01	0.00	0.00	0.00				
92.01	0.00	0.00	0.00				
94.01	0.00	0.00	0.00				
96.01	0.00	0.00	0.00				
98.01	0.00	0.00	0.00				
100.01	0.00	0.00	0.00				
102.01	0.00	0.00	0.00				

Existing Conditions

Type II 24-hr Type 2 - 100-Year Rainfall=6.34"

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Time span=0.01-120.00 hrs, dt=0.01 hrs, 12000 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1A: 1A

Runoff Area=243,883 sf 0.00% Impervious Runoff Depth=3.57"
Flow Length=475' Tc=17.9 min CN=75 Runoff=23.69 cfs 1.667 af

Subcatchment1B: 1B

Runoff Area=422,611 sf 0.00% Impervious Runoff Depth=3.78"
Flow Length=920' Slope=0.0200 '/' Tc=24.2 min CN=77 Runoff=36.52 cfs 3.054 af

Subcatchment1C: 1C

Runoff Area=1,462,058 sf 0.00% Impervious Runoff Depth=3.68"
Flow Length=1,280' Tc=20.4 min CN=76 Runoff=135.92 cfs 10.280 af

Subcatchment1D: 1D

Runoff Area=644,193 sf 0.00% Impervious Runoff Depth=3.88"
Flow Length=1,260' Tc=20.1 min CN=78 Runoff=63.67 cfs 4.783 af

Subcatchment1E: 1E

Runoff Area=756,790 sf 0.00% Impervious Runoff Depth=3.88"
Flow Length=1,365' Tc=25.2 min CN=78 Runoff=65.57 cfs 5.619 af

Link 1: OFFSITE

Inflow=320.52 cfs 25.403 af
Primary=320.52 cfs 25.403 af

Total Runoff Area = 81.027 ac Runoff Volume = 25.403 af Average Runoff Depth = 3.76"
100.00% Pervious = 81.027 ac 0.00% Impervious = 0.000 ac

Existing Conditions

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Type II 24-hr Type 2 - 100-Year Rainfall=6.34"

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Summary for Subcatchment 1A: 1A

Runoff = 23.69 cfs @ 12.11 hrs, Volume= 1.667 af, Depth= 3.57"
Routed to Link 1 : OFFSITE

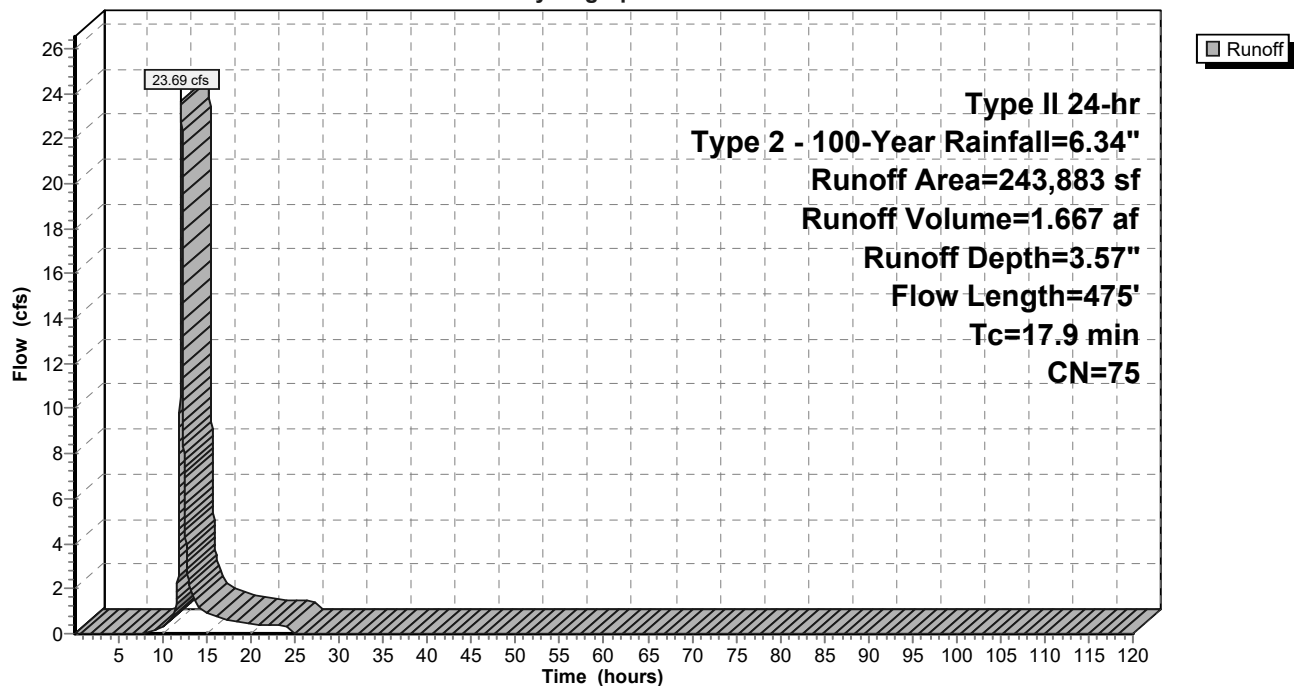
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs
Type II 24-hr Type 2 - 100-Year Rainfall=6.34"

	Area (sf)	CN	Description
*	148,310	78	Cropland
	95,573	70	Woods, Good, HSG C
	243,883	75	Weighted Average
	243,883		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.7	120	0.0200	0.15		Sheet Flow, Sheet Flow Cultivated: Residue>20% n= 0.170 P2= 2.68"
2.5	190	0.0200	1.27		Shallow Concentrated Flow, Flow Cultivated Straight Rows Kv= 9.0 fps
1.7	165	0.1000	1.58		Shallow Concentrated Flow, Tree Flow Woodland Kv= 5.0 fps
17.9	475	Total			

Subcatchment 1A: 1A

Hydrograph



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Type II 24-hr Type 2 - 100-Year Rainfall=6.34"

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Hydrograph for Subcatchment 1A: 1A

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.01	0.00	0.00	0.00	104.01	6.34	3.57	0.00
2.01	0.14	0.00	0.00	106.01	6.34	3.57	0.00
4.01	0.31	0.00	0.00	108.01	6.34	3.57	0.00
6.01	0.51	0.00	0.00	110.01	6.34	3.57	0.00
8.01	0.76	0.00	0.03	112.01	6.34	3.57	0.00
10.01	1.15	0.06	0.27	114.01	6.34	3.57	0.00
12.01	4.22	1.83	18.48	116.01	6.34	3.57	0.00
14.01	5.20	2.61	1.24	118.01	6.34	3.57	0.00
16.01	5.58	2.93	0.74				
18.01	5.84	3.15	0.56				
20.01	6.04	3.31	0.42				
22.01	6.19	3.45	0.37				
24.01	6.34	3.57	0.34				
26.01	6.34	3.57	0.00				
28.01	6.34	3.57	0.00				
30.01	6.34	3.57	0.00				
32.01	6.34	3.57	0.00				
34.01	6.34	3.57	0.00				
36.01	6.34	3.57	0.00				
38.01	6.34	3.57	0.00				
40.01	6.34	3.57	0.00				
42.01	6.34	3.57	0.00				
44.01	6.34	3.57	0.00				
46.01	6.34	3.57	0.00				
48.01	6.34	3.57	0.00				
50.01	6.34	3.57	0.00				
52.01	6.34	3.57	0.00				
54.01	6.34	3.57	0.00				
56.01	6.34	3.57	0.00				
58.01	6.34	3.57	0.00				
60.01	6.34	3.57	0.00				
62.01	6.34	3.57	0.00				
64.01	6.34	3.57	0.00				
66.01	6.34	3.57	0.00				
68.01	6.34	3.57	0.00				
70.01	6.34	3.57	0.00				
72.01	6.34	3.57	0.00				
74.01	6.34	3.57	0.00				
76.01	6.34	3.57	0.00				
78.01	6.34	3.57	0.00				
80.01	6.34	3.57	0.00				
82.01	6.34	3.57	0.00				
84.01	6.34	3.57	0.00				
86.01	6.34	3.57	0.00				
88.01	6.34	3.57	0.00				
90.01	6.34	3.57	0.00				
92.01	6.34	3.57	0.00				
94.01	6.34	3.57	0.00				
96.01	6.34	3.57	0.00				
98.01	6.34	3.57	0.00				
100.01	6.34	3.57	0.00				
102.01	6.34	3.57	0.00				

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Type II 24-hr Type 2 - 100-Year Rainfall=6.34"

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Summary for Subcatchment 1B: 1B

Runoff = 36.52 cfs @ 12.18 hrs, Volume= 3.054 af, Depth= 3.78"
Routed to Link 1 : OFFSITE

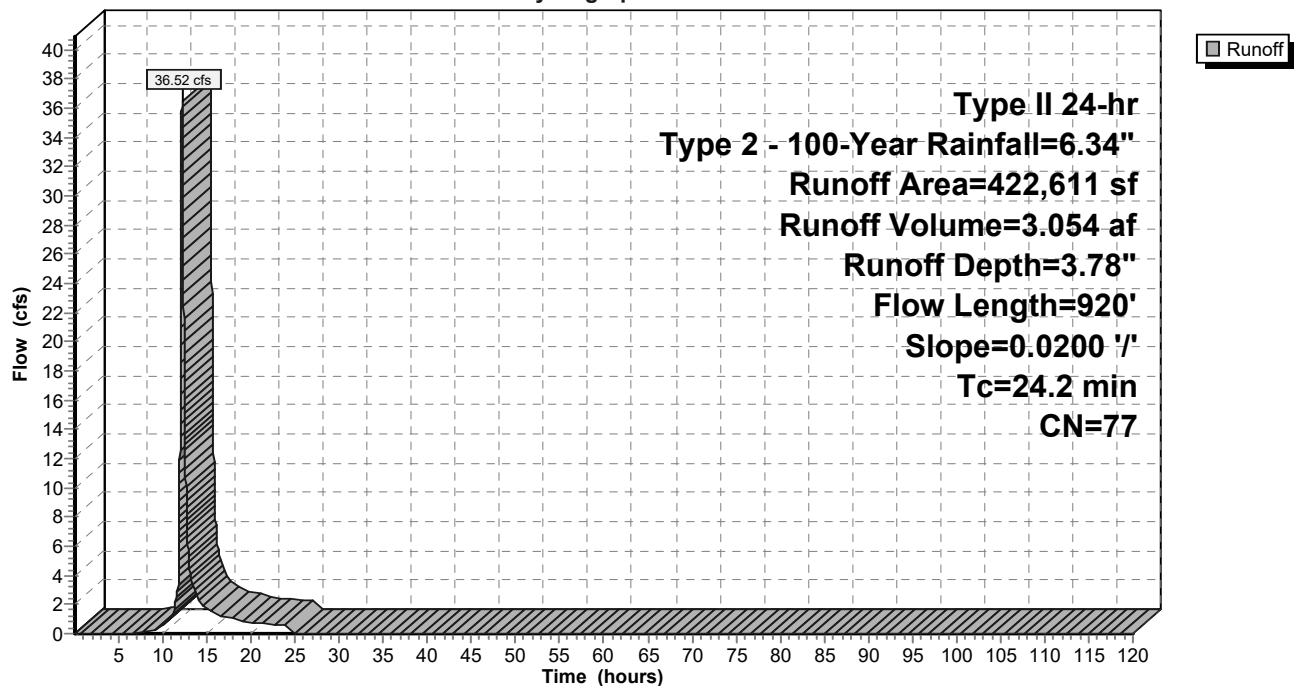
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs
Type II 24-hr Type 2 - 100-Year Rainfall=6.34"

Area (sf)	CN	Description
30,229	70	Woods, Good, HSG C
* 392,382	78	Cropland
422,611	77	Weighted Average
422,611		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.7	120	0.0200	0.15		Sheet Flow, Sheet Flow
					Cultivated: Residue>20% n= 0.170 P2= 2.68"
10.5	800	0.0200	1.27		Shallow Concentrated Flow, Flow
					Cultivated Straight Rows Kv= 9.0 fps
24.2	920	Total			

Subcatchment 1B: 1B

Hydrograph



Existing Conditions

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Type II 24-hr Type 2 - 100-Year Rainfall=6.34"

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Hydrograph for Subcatchment 1B: 1B

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.01	0.00	0.00	0.00	104.01	6.34	3.78	0.00
2.01	0.14	0.00	0.00	106.01	6.34	3.78	0.00
4.01	0.31	0.00	0.00	108.01	6.34	3.78	0.00
6.01	0.51	0.00	0.00	110.01	6.34	3.78	0.00
8.01	0.76	0.01	0.10	112.01	6.34	3.78	0.00
10.01	1.15	0.09	0.54	114.01	6.34	3.78	0.00
12.01	4.22	1.98	22.29	116.01	6.34	3.78	0.00
14.01	5.20	2.79	2.32	118.01	6.34	3.78	0.00
16.01	5.58	3.12	1.36				
18.01	5.84	3.34	1.02				
20.01	6.04	3.51	0.75				
22.01	6.19	3.65	0.66				
24.01	6.34	3.78	0.61				
26.01	6.34	3.78	0.00				
28.01	6.34	3.78	0.00				
30.01	6.34	3.78	0.00				
32.01	6.34	3.78	0.00				
34.01	6.34	3.78	0.00				
36.01	6.34	3.78	0.00				
38.01	6.34	3.78	0.00				
40.01	6.34	3.78	0.00				
42.01	6.34	3.78	0.00				
44.01	6.34	3.78	0.00				
46.01	6.34	3.78	0.00				
48.01	6.34	3.78	0.00				
50.01	6.34	3.78	0.00				
52.01	6.34	3.78	0.00				
54.01	6.34	3.78	0.00				
56.01	6.34	3.78	0.00				
58.01	6.34	3.78	0.00				
60.01	6.34	3.78	0.00				
62.01	6.34	3.78	0.00				
64.01	6.34	3.78	0.00				
66.01	6.34	3.78	0.00				
68.01	6.34	3.78	0.00				
70.01	6.34	3.78	0.00				
72.01	6.34	3.78	0.00				
74.01	6.34	3.78	0.00				
76.01	6.34	3.78	0.00				
78.01	6.34	3.78	0.00				
80.01	6.34	3.78	0.00				
82.01	6.34	3.78	0.00				
84.01	6.34	3.78	0.00				
86.01	6.34	3.78	0.00				
88.01	6.34	3.78	0.00				
90.01	6.34	3.78	0.00				
92.01	6.34	3.78	0.00				
94.01	6.34	3.78	0.00				
96.01	6.34	3.78	0.00				
98.01	6.34	3.78	0.00				
100.01	6.34	3.78	0.00				
102.01	6.34	3.78	0.00				

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Type II 24-hr Type 2 - 100-Year Rainfall=6.34"

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Summary for Subcatchment 1C: 1C

Runoff = 135.92 cfs @ 12.13 hrs, Volume= 10.280 af, Depth= 3.68"
Routed to Link 1 : OFFSITE

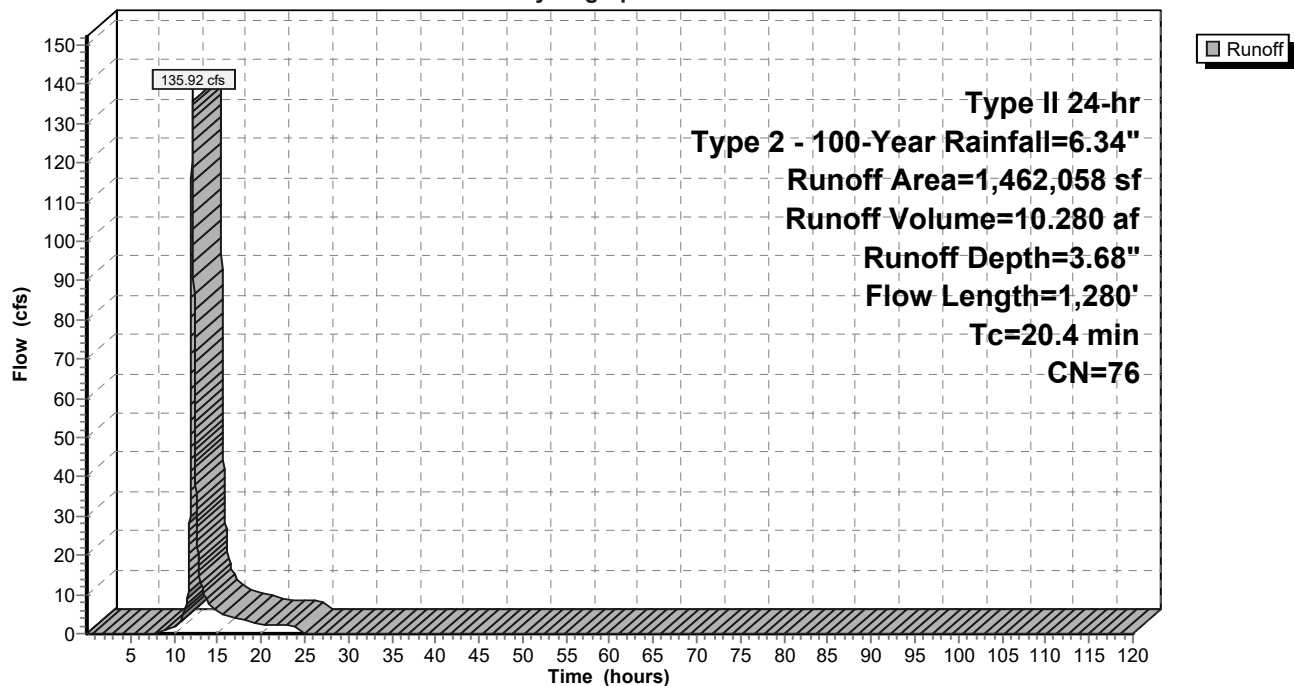
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs
Type II 24-hr Type 2 - 100-Year Rainfall=6.34"

Area (sf)	CN	Description
275,724	70	Woods, Good, HSG C
* 1,186,334	78	Cropland
1,462,058	76	Weighted Average
1,462,058		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.6	120	0.0300	0.17		Sheet Flow, Sheet Flow
					Cultivated: Residue>20% n= 0.170 P2= 2.68"
8.8	1,160	0.0600	2.20		Shallow Concentrated Flow, Flow
					Cultivated Straight Rows Kv= 9.0 fps
20.4	1,280	Total			

Subcatchment 1C: 1C

Hydrograph



Existing Conditions

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Type II 24-hr Type 2 - 100-Year Rainfall=6.34"

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Hydrograph for Subcatchment 1C: 1C

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.01	0.00	0.00	0.00	104.01	6.34	3.68	0.00
2.01	0.14	0.00	0.00	106.01	6.34	3.68	0.00
4.01	0.31	0.00	0.00	108.01	6.34	3.68	0.00
6.01	0.51	0.00	0.00	110.01	6.34	3.68	0.00
8.01	0.76	0.01	0.24	112.01	6.34	3.68	0.00
10.01	1.15	0.07	1.76	114.01	6.34	3.68	0.00
12.01	4.22	1.91	96.26	116.01	6.34	3.68	0.00
14.01	5.20	2.70	7.68	118.01	6.34	3.68	0.00
16.01	5.58	3.02	4.56				
18.01	5.84	3.24	3.45				
20.01	6.04	3.41	2.55				
22.01	6.19	3.55	2.27				
24.01	6.34	3.68	2.09				
26.01	6.34	3.68	0.00				
28.01	6.34	3.68	0.00				
30.01	6.34	3.68	0.00				
32.01	6.34	3.68	0.00				
34.01	6.34	3.68	0.00				
36.01	6.34	3.68	0.00				
38.01	6.34	3.68	0.00				
40.01	6.34	3.68	0.00				
42.01	6.34	3.68	0.00				
44.01	6.34	3.68	0.00				
46.01	6.34	3.68	0.00				
48.01	6.34	3.68	0.00				
50.01	6.34	3.68	0.00				
52.01	6.34	3.68	0.00				
54.01	6.34	3.68	0.00				
56.01	6.34	3.68	0.00				
58.01	6.34	3.68	0.00				
60.01	6.34	3.68	0.00				
62.01	6.34	3.68	0.00				
64.01	6.34	3.68	0.00				
66.01	6.34	3.68	0.00				
68.01	6.34	3.68	0.00				
70.01	6.34	3.68	0.00				
72.01	6.34	3.68	0.00				
74.01	6.34	3.68	0.00				
76.01	6.34	3.68	0.00				
78.01	6.34	3.68	0.00				
80.01	6.34	3.68	0.00				
82.01	6.34	3.68	0.00				
84.01	6.34	3.68	0.00				
86.01	6.34	3.68	0.00				
88.01	6.34	3.68	0.00				
90.01	6.34	3.68	0.00				
92.01	6.34	3.68	0.00				
94.01	6.34	3.68	0.00				
96.01	6.34	3.68	0.00				
98.01	6.34	3.68	0.00				
100.01	6.34	3.68	0.00				
102.01	6.34	3.68	0.00				

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Type II 24-hr Type 2 - 100-Year Rainfall=6.34"

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Summary for Subcatchment 1D: 1D

Runoff = 63.67 cfs @ 12.13 hrs, Volume= 4.783 af, Depth= 3.88"
Routed to Link 1 : OFFSITE

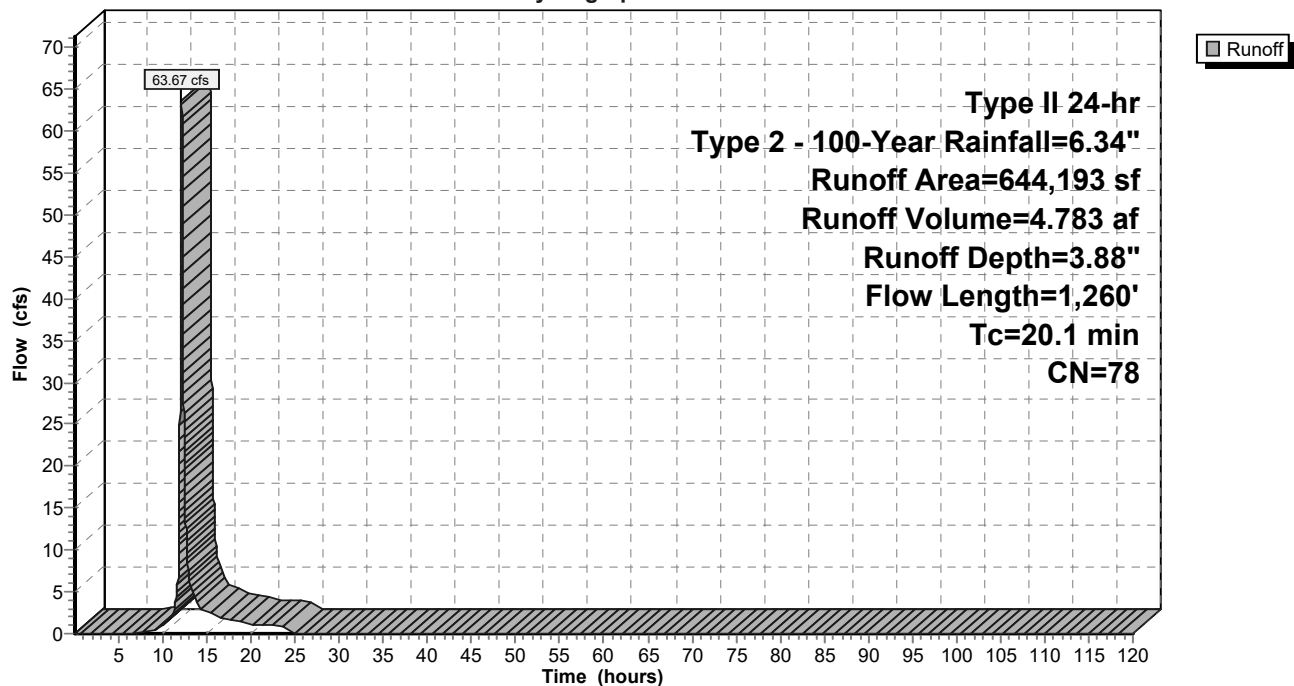
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs
Type II 24-hr Type 2 - 100-Year Rainfall=6.34"

Area (sf)	CN	Description
33,653	70	Woods, Good, HSG C
* 610,540	78	Cropland
644,193	78	Weighted Average
644,193		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	120	0.0500	0.21		Sheet Flow, Sheet Flow
					Cultivated: Residue>20% n= 0.170 P2= 2.68"
10.6	1,140	0.0400	1.80		Shallow Concentrated Flow, Flow
					Cultivated Straight Rows Kv= 9.0 fps
20.1	1,260	Total			

Subcatchment 1D: 1D

Hydrograph



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Type II 24-hr Type 2 - 100-Year Rainfall=6.34"

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Hydrograph for Subcatchment 1D: 1D

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.01	0.00	0.00	0.00	104.01	6.34	3.88	0.00
2.01	0.14	0.00	0.00	106.01	6.34	3.88	0.00
4.01	0.31	0.00	0.00	108.01	6.34	3.88	0.00
6.01	0.51	0.00	0.00	110.01	6.34	3.88	0.00
8.01	0.76	0.01	0.21	112.01	6.34	3.88	0.00
10.01	1.15	0.10	0.95	114.01	6.34	3.88	0.00
12.01	4.22	2.06	46.13	116.01	6.34	3.88	0.00
14.01	5.20	2.88	3.48	118.01	6.34	3.88	0.00
16.01	5.58	3.21	2.06				
18.01	5.84	3.44	1.56				
20.01	6.04	3.61	1.15				
22.01	6.19	3.75	1.02				
24.01	6.34	3.88	0.94				
26.01	6.34	3.88	0.00				
28.01	6.34	3.88	0.00				
30.01	6.34	3.88	0.00				
32.01	6.34	3.88	0.00				
34.01	6.34	3.88	0.00				
36.01	6.34	3.88	0.00				
38.01	6.34	3.88	0.00				
40.01	6.34	3.88	0.00				
42.01	6.34	3.88	0.00				
44.01	6.34	3.88	0.00				
46.01	6.34	3.88	0.00				
48.01	6.34	3.88	0.00				
50.01	6.34	3.88	0.00				
52.01	6.34	3.88	0.00				
54.01	6.34	3.88	0.00				
56.01	6.34	3.88	0.00				
58.01	6.34	3.88	0.00				
60.01	6.34	3.88	0.00				
62.01	6.34	3.88	0.00				
64.01	6.34	3.88	0.00				
66.01	6.34	3.88	0.00				
68.01	6.34	3.88	0.00				
70.01	6.34	3.88	0.00				
72.01	6.34	3.88	0.00				
74.01	6.34	3.88	0.00				
76.01	6.34	3.88	0.00				
78.01	6.34	3.88	0.00				
80.01	6.34	3.88	0.00				
82.01	6.34	3.88	0.00				
84.01	6.34	3.88	0.00				
86.01	6.34	3.88	0.00				
88.01	6.34	3.88	0.00				
90.01	6.34	3.88	0.00				
92.01	6.34	3.88	0.00				
94.01	6.34	3.88	0.00				
96.01	6.34	3.88	0.00				
98.01	6.34	3.88	0.00				
100.01	6.34	3.88	0.00				
102.01	6.34	3.88	0.00				

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Type II 24-hr Type 2 - 100-Year Rainfall=6.34"

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Summary for Subcatchment 1E: 1E

Runoff = 65.57 cfs @ 12.18 hrs, Volume= 5.619 af, Depth= 3.88"
Routed to Link 1 : OFFSITE

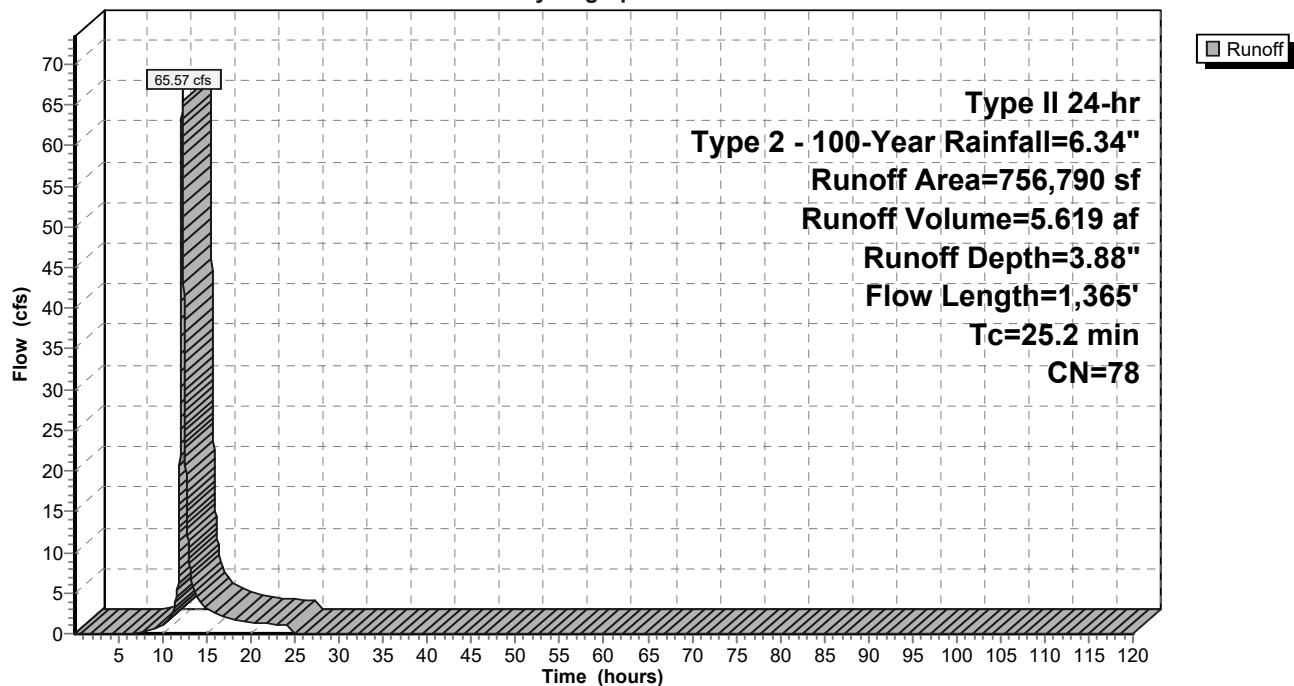
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs
Type II 24-hr Type 2 - 100-Year Rainfall=6.34"

Area (sf)	CN	Description
27,057	70	Woods, Good, HSG C
* 729,733	78	Cropland
756,790	78	Weighted Average
756,790		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.7	120	0.0200	0.15		Sheet Flow, Sheet Flow
					Cultivated: Residue>20% n= 0.170 P2= 2.68"
11.5	1,245	0.0400	1.80		Shallow Concentrated Flow, Flow
					Cultivated Straight Rows Kv= 9.0 fps
25.2	1,365	Total			

Subcatchment 1E: 1E

Hydrograph



Existing Conditions

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Type II 24-hr Type 2 - 100-Year Rainfall=6.34"

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Hydrograph for Subcatchment 1E: 1E

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.01	0.00	0.00	0.00	104.01	6.34	3.88	0.00
2.01	0.14	0.00	0.00	106.01	6.34	3.88	0.00
4.01	0.31	0.00	0.00	108.01	6.34	3.88	0.00
6.01	0.51	0.00	0.00	110.01	6.34	3.88	0.00
8.01	0.76	0.01	0.22	112.01	6.34	3.88	0.00
10.01	1.15	0.10	1.06	114.01	6.34	3.88	0.00
12.01	4.22	2.06	38.68	116.01	6.34	3.88	0.00
14.01	5.20	2.88	4.25	118.01	6.34	3.88	0.00
16.01	5.58	3.21	2.47				
18.01	5.84	3.44	1.85				
20.01	6.04	3.61	1.37				
22.01	6.19	3.75	1.20				
24.01	6.34	3.88	1.11				
26.01	6.34	3.88	0.00				
28.01	6.34	3.88	0.00				
30.01	6.34	3.88	0.00				
32.01	6.34	3.88	0.00				
34.01	6.34	3.88	0.00				
36.01	6.34	3.88	0.00				
38.01	6.34	3.88	0.00				
40.01	6.34	3.88	0.00				
42.01	6.34	3.88	0.00				
44.01	6.34	3.88	0.00				
46.01	6.34	3.88	0.00				
48.01	6.34	3.88	0.00				
50.01	6.34	3.88	0.00				
52.01	6.34	3.88	0.00				
54.01	6.34	3.88	0.00				
56.01	6.34	3.88	0.00				
58.01	6.34	3.88	0.00				
60.01	6.34	3.88	0.00				
62.01	6.34	3.88	0.00				
64.01	6.34	3.88	0.00				
66.01	6.34	3.88	0.00				
68.01	6.34	3.88	0.00				
70.01	6.34	3.88	0.00				
72.01	6.34	3.88	0.00				
74.01	6.34	3.88	0.00				
76.01	6.34	3.88	0.00				
78.01	6.34	3.88	0.00				
80.01	6.34	3.88	0.00				
82.01	6.34	3.88	0.00				
84.01	6.34	3.88	0.00				
86.01	6.34	3.88	0.00				
88.01	6.34	3.88	0.00				
90.01	6.34	3.88	0.00				
92.01	6.34	3.88	0.00				
94.01	6.34	3.88	0.00				
96.01	6.34	3.88	0.00				
98.01	6.34	3.88	0.00				
100.01	6.34	3.88	0.00				
102.01	6.34	3.88	0.00				

Existing Conditions

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Type II 24-hr Type 2 - 100-Year Rainfall=6.34"

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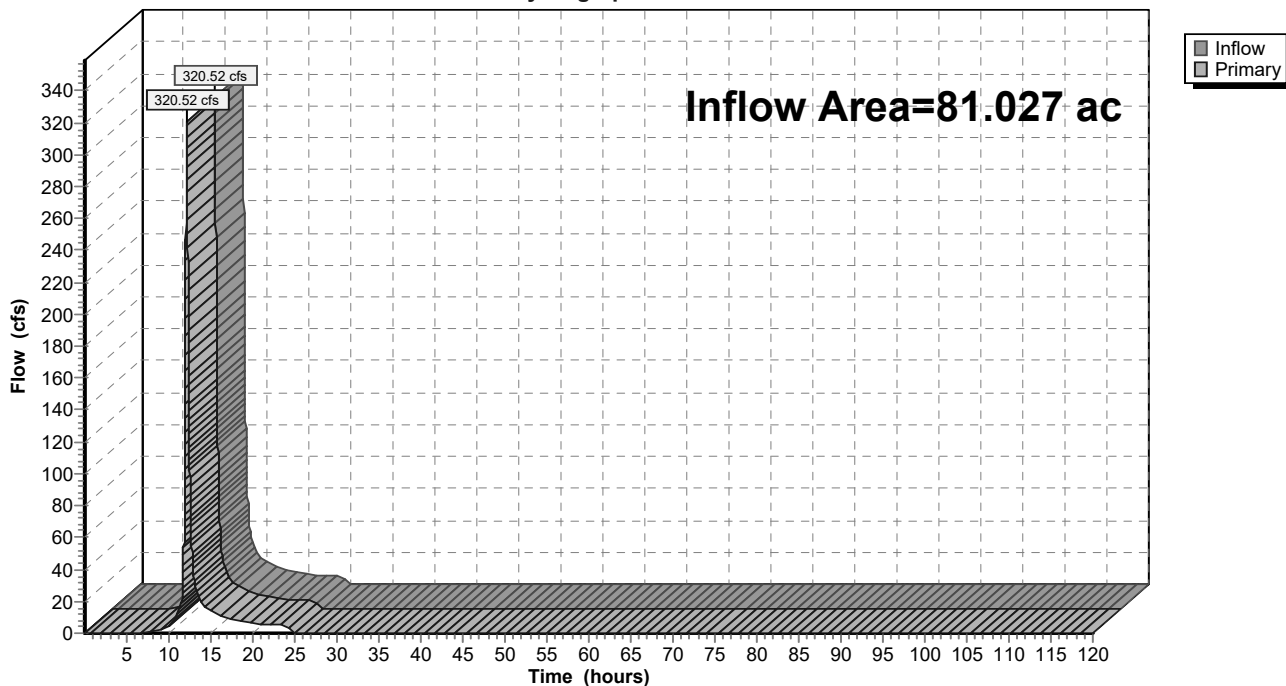
Summary for Link 1: OFFSITE

Inflow Area = 81.027 ac, 0.00% Impervious, Inflow Depth = 3.76" for Type 2 - 100-Year event
Inflow = 320.52 cfs @ 12.13 hrs, Volume= 25.403 af
Primary = 320.52 cfs @ 12.13 hrs, Volume= 25.403 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs

Link 1: OFFSITE

Hydrograph



Existing Conditions

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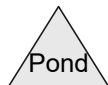
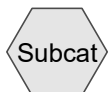
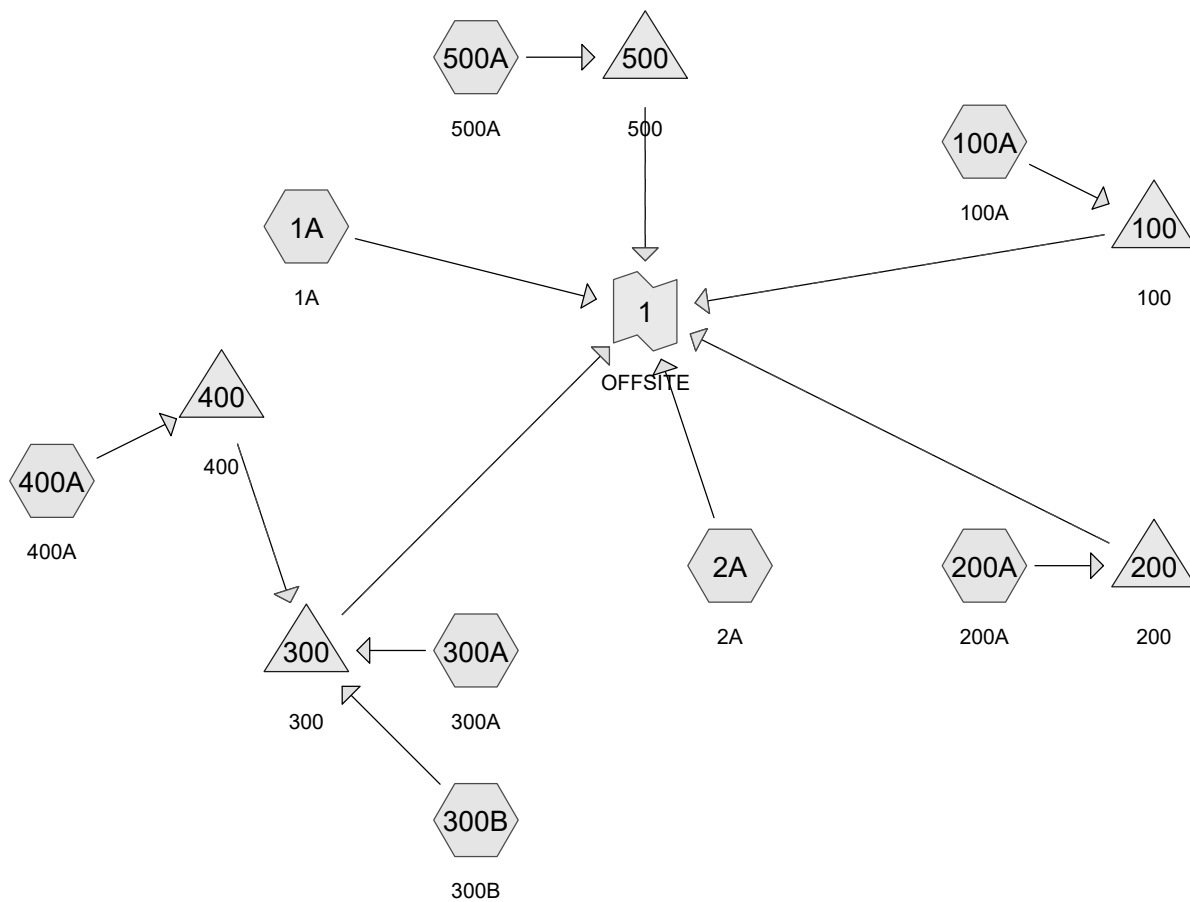
Type II 24-hr Type 2 - 100-Year Rainfall=6.34"

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Hydrograph for Link 1: OFFSITE

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.01	0.00	0.00	0.00	104.01	0.00	0.00	0.00
2.01	0.00	0.00	0.00	106.01	0.00	0.00	0.00
4.01	0.00	0.00	0.00	108.01	0.00	0.00	0.00
6.01	0.00	0.00	0.00	110.01	0.00	0.00	0.00
8.01	0.80	0.00	0.80	112.01	0.00	0.00	0.00
10.01	4.58	0.00	4.58	114.01	0.00	0.00	0.00
12.01	221.84	0.00	221.84	116.01	0.00	0.00	0.00
14.01	18.98	0.00	18.98	118.01	0.00	0.00	0.00
16.01	11.20	0.00	11.20				
18.01	8.43	0.00	8.43				
20.01	6.24	0.00	6.24				
22.01	5.52	0.00	5.52				
24.01	5.09	0.00	5.09				
26.01	0.00	0.00	0.00				
28.01	0.00	0.00	0.00				
30.01	0.00	0.00	0.00				
32.01	0.00	0.00	0.00				
34.01	0.00	0.00	0.00				
36.01	0.00	0.00	0.00				
38.01	0.00	0.00	0.00				
40.01	0.00	0.00	0.00				
42.01	0.00	0.00	0.00				
44.01	0.00	0.00	0.00				
46.01	0.00	0.00	0.00				
48.01	0.00	0.00	0.00				
50.01	0.00	0.00	0.00				
52.01	0.00	0.00	0.00				
54.01	0.00	0.00	0.00				
56.01	0.00	0.00	0.00				
58.01	0.00	0.00	0.00				
60.01	0.00	0.00	0.00				
62.01	0.00	0.00	0.00				
64.01	0.00	0.00	0.00				
66.01	0.00	0.00	0.00				
68.01	0.00	0.00	0.00				
70.01	0.00	0.00	0.00				
72.01	0.00	0.00	0.00				
74.01	0.00	0.00	0.00				
76.01	0.00	0.00	0.00				
78.01	0.00	0.00	0.00				
80.01	0.00	0.00	0.00				
82.01	0.00	0.00	0.00				
84.01	0.00	0.00	0.00				
86.01	0.00	0.00	0.00				
88.01	0.00	0.00	0.00				
90.01	0.00	0.00	0.00				
92.01	0.00	0.00	0.00				
94.01	0.00	0.00	0.00				
96.01	0.00	0.00	0.00				
98.01	0.00	0.00	0.00				
100.01	0.00	0.00	0.00				
102.01	0.00	0.00	0.00				



Routing Diagram for Proposed Conditions

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Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	Type 2 - 2-Year	Type II 24-hr		Default	24.00	1	2.68	2
2	Type 2 - 5-Year	Type II 24-hr		Default	24.00	1	3.26	2
3	Type 2 - 10-Year	Type II 24-hr		Default	24.00	1	3.83	2
4	Type 2 - 25-Year	Type II 24-hr		Default	24.00	1	4.71	2
5	Type 2 - 50-Year	Type II 24-hr		Default	24.00	1	5.49	2
6	Type 2 - 100-Year	Type II 24-hr		Default	24.00	1	6.34	2

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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
56.514	83	1/4 acre lots, 38% imp, HSG C (1A, 2A, 100A, 300B, 400A, 500A)
10.656	90	1/8 acre lots, 65% imp, HSG C (200A, 300A)
6.787	98	Water Surface, HSG C (100A, 200A, 300B, 400A, 500A)
1.086	70	Woods, Good, HSG C (400A)
75.043	85	TOTAL AREA

Proposed Conditions

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Type II 24-hr Type 2 - 2-Year Rainfall=2.68"

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Time span=0.01-120.00 hrs, dt=0.01 hrs, 12000 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1A: 1A Runoff Area=110,816 sf 38.00% Impervious Runoff Depth=1.19"
Tc=5.0 min CN=83 Runoff=5.65 cfs 0.253 af

Subcatchment2A: 2A Runoff Area=6,401 sf 38.00% Impervious Runoff Depth=1.19"
Tc=5.0 min CN=83 Runoff=0.33 cfs 0.015 af

Subcatchment100A: 100A Runoff Area=1,074,428 sf 42.06% Impervious Runoff Depth=1.26"
Tc=5.0 min CN=84 Runoff=57.65 cfs 2.584 af

Subcatchment200A: 200A Runoff Area=225,239 sf 68.37% Impervious Runoff Depth=1.77"
Tc=5.0 min CN=91 Runoff=16.46 cfs 0.765 af

Subcatchment300A: 300A Runoff Area=260,648 sf 65.00% Impervious Runoff Depth=1.69"
Tc=5.0 min CN=90 Runoff=18.31 cfs 0.844 af

Subcatchment300B: 300B Runoff Area=552,525 sf 50.37% Impervious Runoff Depth=1.39"
Tc=5.0 min CN=86 Runoff=32.64 cfs 1.471 af

Subcatchment400A: 400A Runoff Area=257,377 sf 39.66% Impervious Runoff Depth=1.19"
Tc=5.0 min CN=83 Runoff=13.13 cfs 0.588 af

Subcatchment500A: 500A Runoff Area=781,453 sf 42.55% Impervious Runoff Depth=1.26"
Tc=5.0 min CN=84 Runoff=41.93 cfs 1.880 af

Pond 100: 100 Peak Elev=880.17' Storage=296,128 cf Inflow=57.65 cfs 2.584 af
Primary=0.61 cfs 1.637 af Secondary=0.00 cfs 0.000 af Outflow=0.61 cfs 1.637 af

Pond 200: 200 Peak Elev=875.97' Storage=93,135 cf Inflow=16.46 cfs 0.765 af
Primary=0.44 cfs 0.506 af Secondary=0.00 cfs 0.000 af Outflow=0.44 cfs 0.506 af

Pond 300: 300 Peak Elev=875.83' Storage=484,308 cf Inflow=50.95 cfs 2.463 af
Primary=0.27 cfs 0.919 af Secondary=0.00 cfs 0.000 af Outflow=0.27 cfs 0.919 af

Pond 400: 400 Peak Elev=877.66' Storage=154,224 cf Inflow=13.13 cfs 0.588 af
Primary=0.07 cfs 0.148 af Secondary=0.00 cfs 0.000 af Outflow=0.07 cfs 0.148 af

Pond 500: 500 Peak Elev=900.04' Storage=259,307 cf Inflow=41.93 cfs 1.880 af
Primary=0.51 cfs 1.145 af Secondary=0.00 cfs 0.000 af Outflow=0.51 cfs 1.145 af

Link 1: OFFSITE Inflow=6.01 cfs 4.475 af
Primary=6.01 cfs 4.475 af

Total Runoff Area = 75.043 ac Runoff Volume = 8.400 af Average Runoff Depth = 1.34"
53.11% Pervious = 39.854 ac 46.89% Impervious = 35.189 ac

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Type II 24-hr Type 2 - 2-Year Rainfall=2.68"

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Summary for Subcatchment 1A: 1A

Runoff = 5.65 cfs @ 11.96 hrs, Volume= 0.253 af, Depth= 1.19"
Routed to Link 1 : OFFSITE

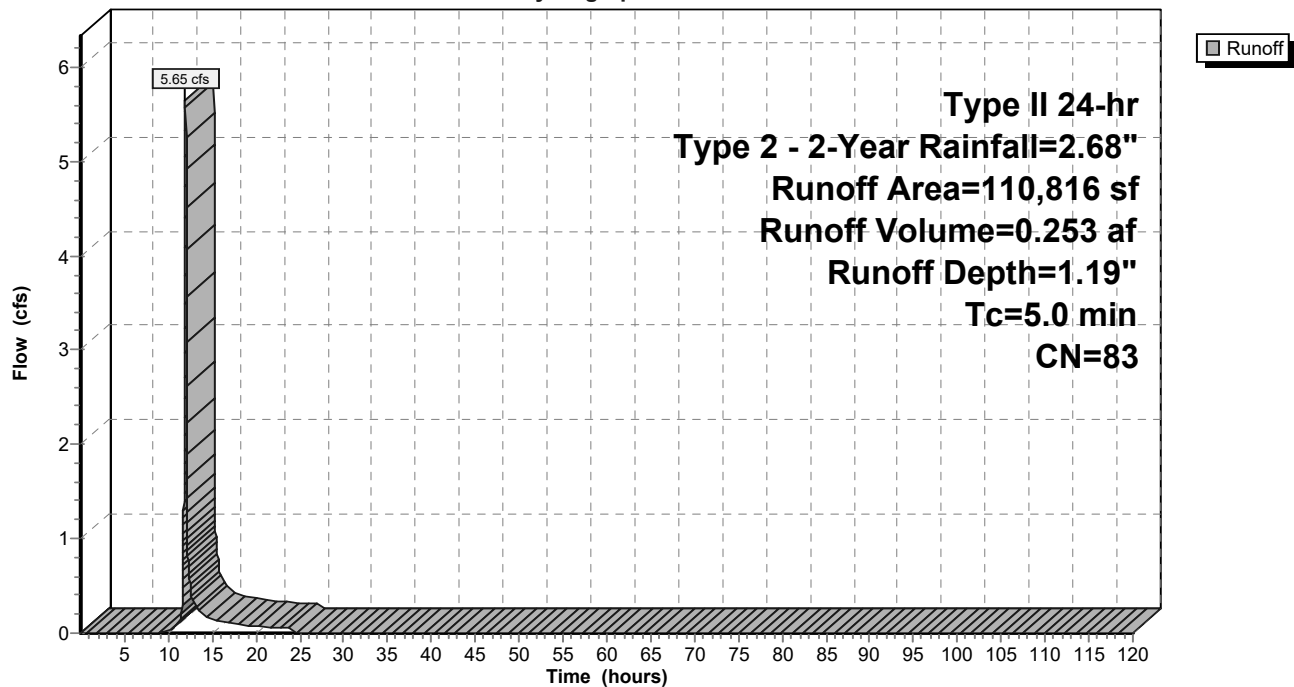
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs
Type II 24-hr Type 2 - 2-Year Rainfall=2.68"

Area (sf)	CN	Description
110,816	83	1/4 acre lots, 38% imp, HSG C
68,706		62.00% Pervious Area
42,110		38.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, Direct

Subcatchment 1A: 1A

Hydrograph



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Type II 24-hr Type 2 - 2-Year Rainfall=2.68"

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Hydrograph for Subcatchment 1A: 1A

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.01	0.00	0.00	0.00	104.01	2.68	1.19	0.00
2.01	0.06	0.00	0.00	106.01	2.68	1.19	0.00
4.01	0.13	0.00	0.00	108.01	2.68	1.19	0.00
6.01	0.21	0.00	0.00	110.01	2.68	1.19	0.00
8.01	0.32	0.00	0.00	112.01	2.68	1.19	0.00
10.01	0.49	0.00	0.02	114.01	2.68	1.19	0.00
12.01	1.78	0.55	4.52	116.01	2.68	1.19	0.00
14.01	2.20	0.83	0.19	118.01	2.68	1.19	0.00
16.01	2.36	0.95	0.12				
18.01	2.47	1.03	0.09				
20.01	2.55	1.10	0.07				
22.01	2.62	1.15	0.06				
24.01	2.68	1.19	0.06				
26.01	2.68	1.19	0.00				
28.01	2.68	1.19	0.00				
30.01	2.68	1.19	0.00				
32.01	2.68	1.19	0.00				
34.01	2.68	1.19	0.00				
36.01	2.68	1.19	0.00				
38.01	2.68	1.19	0.00				
40.01	2.68	1.19	0.00				
42.01	2.68	1.19	0.00				
44.01	2.68	1.19	0.00				
46.01	2.68	1.19	0.00				
48.01	2.68	1.19	0.00				
50.01	2.68	1.19	0.00				
52.01	2.68	1.19	0.00				
54.01	2.68	1.19	0.00				
56.01	2.68	1.19	0.00				
58.01	2.68	1.19	0.00				
60.01	2.68	1.19	0.00				
62.01	2.68	1.19	0.00				
64.01	2.68	1.19	0.00				
66.01	2.68	1.19	0.00				
68.01	2.68	1.19	0.00				
70.01	2.68	1.19	0.00				
72.01	2.68	1.19	0.00				
74.01	2.68	1.19	0.00				
76.01	2.68	1.19	0.00				
78.01	2.68	1.19	0.00				
80.01	2.68	1.19	0.00				
82.01	2.68	1.19	0.00				
84.01	2.68	1.19	0.00				
86.01	2.68	1.19	0.00				
88.01	2.68	1.19	0.00				
90.01	2.68	1.19	0.00				
92.01	2.68	1.19	0.00				
94.01	2.68	1.19	0.00				
96.01	2.68	1.19	0.00				
98.01	2.68	1.19	0.00				
100.01	2.68	1.19	0.00				
102.01	2.68	1.19	0.00				

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Type II 24-hr Type 2 - 2-Year Rainfall=2.68"

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Summary for Subcatchment 2A: 2A

Runoff = 0.33 cfs @ 11.96 hrs, Volume= 0.015 af, Depth= 1.19"
Routed to Link 1 : OFFSITE

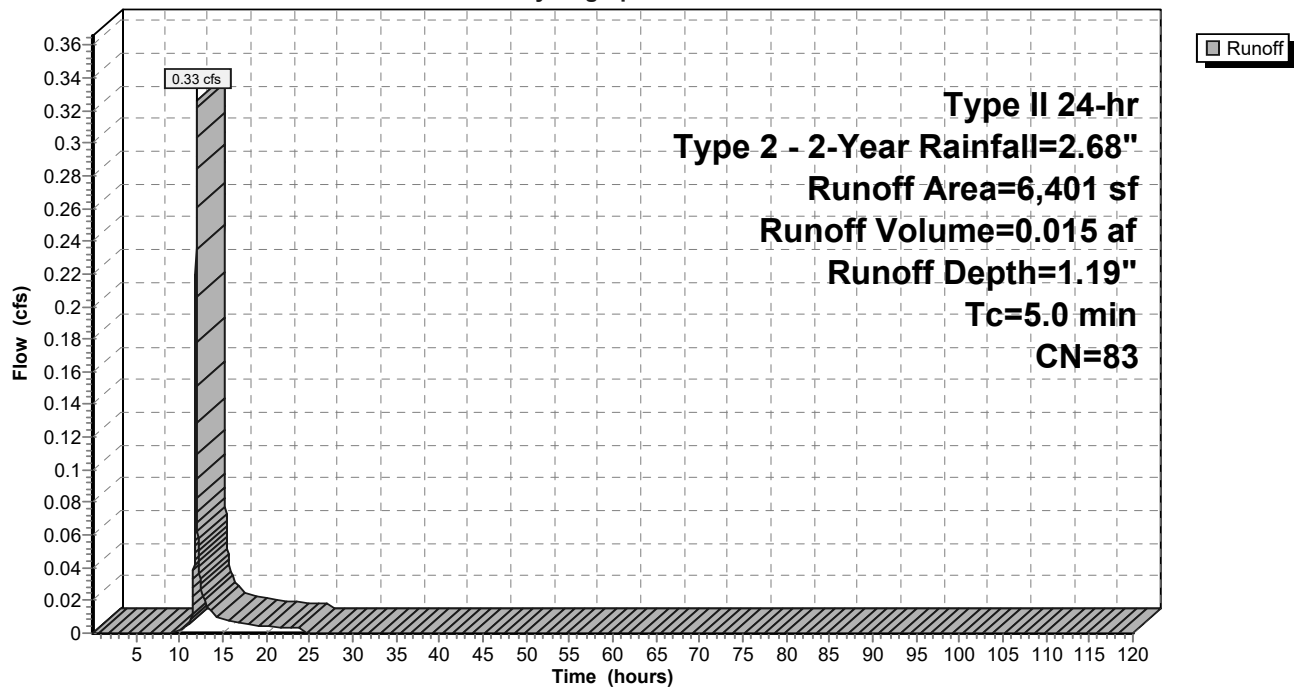
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs
Type II 24-hr Type 2 - 2-Year Rainfall=2.68"

Area (sf)	CN	Description
6,401	83	1/4 acre lots, 38% imp, HSG C
3,969		62.00% Pervious Area
2,432		38.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, Direct

Subcatchment 2A: 2A

Hydrograph



Proposed Conditions

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Type II 24-hr Type 2 - 2-Year Rainfall=2.68"

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Hydrograph for Subcatchment 2A: 2A

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.01	0.00	0.00	0.00	104.01	2.68	1.19	0.00
2.01	0.06	0.00	0.00	106.01	2.68	1.19	0.00
4.01	0.13	0.00	0.00	108.01	2.68	1.19	0.00
6.01	0.21	0.00	0.00	110.01	2.68	1.19	0.00
8.01	0.32	0.00	0.00	112.01	2.68	1.19	0.00
10.01	0.49	0.00	0.00	114.01	2.68	1.19	0.00
12.01	1.78	0.55	0.26	116.01	2.68	1.19	0.00
14.01	2.20	0.83	0.01	118.01	2.68	1.19	0.00
16.01	2.36	0.95	0.01				
18.01	2.47	1.03	0.01				
20.01	2.55	1.10	0.00				
22.01	2.62	1.15	0.00				
24.01	2.68	1.19	0.00				
26.01	2.68	1.19	0.00				
28.01	2.68	1.19	0.00				
30.01	2.68	1.19	0.00				
32.01	2.68	1.19	0.00				
34.01	2.68	1.19	0.00				
36.01	2.68	1.19	0.00				
38.01	2.68	1.19	0.00				
40.01	2.68	1.19	0.00				
42.01	2.68	1.19	0.00				
44.01	2.68	1.19	0.00				
46.01	2.68	1.19	0.00				
48.01	2.68	1.19	0.00				
50.01	2.68	1.19	0.00				
52.01	2.68	1.19	0.00				
54.01	2.68	1.19	0.00				
56.01	2.68	1.19	0.00				
58.01	2.68	1.19	0.00				
60.01	2.68	1.19	0.00				
62.01	2.68	1.19	0.00				
64.01	2.68	1.19	0.00				
66.01	2.68	1.19	0.00				
68.01	2.68	1.19	0.00				
70.01	2.68	1.19	0.00				
72.01	2.68	1.19	0.00				
74.01	2.68	1.19	0.00				
76.01	2.68	1.19	0.00				
78.01	2.68	1.19	0.00				
80.01	2.68	1.19	0.00				
82.01	2.68	1.19	0.00				
84.01	2.68	1.19	0.00				
86.01	2.68	1.19	0.00				
88.01	2.68	1.19	0.00				
90.01	2.68	1.19	0.00				
92.01	2.68	1.19	0.00				
94.01	2.68	1.19	0.00				
96.01	2.68	1.19	0.00				
98.01	2.68	1.19	0.00				
100.01	2.68	1.19	0.00				
102.01	2.68	1.19	0.00				

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Type II 24-hr Type 2 - 2-Year Rainfall=2.68"

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Summary for Subcatchment 100A: 100A

Runoff = 57.65 cfs @ 11.96 hrs, Volume= 2.584 af, Depth= 1.26"
Routed to Pond 100 : 100

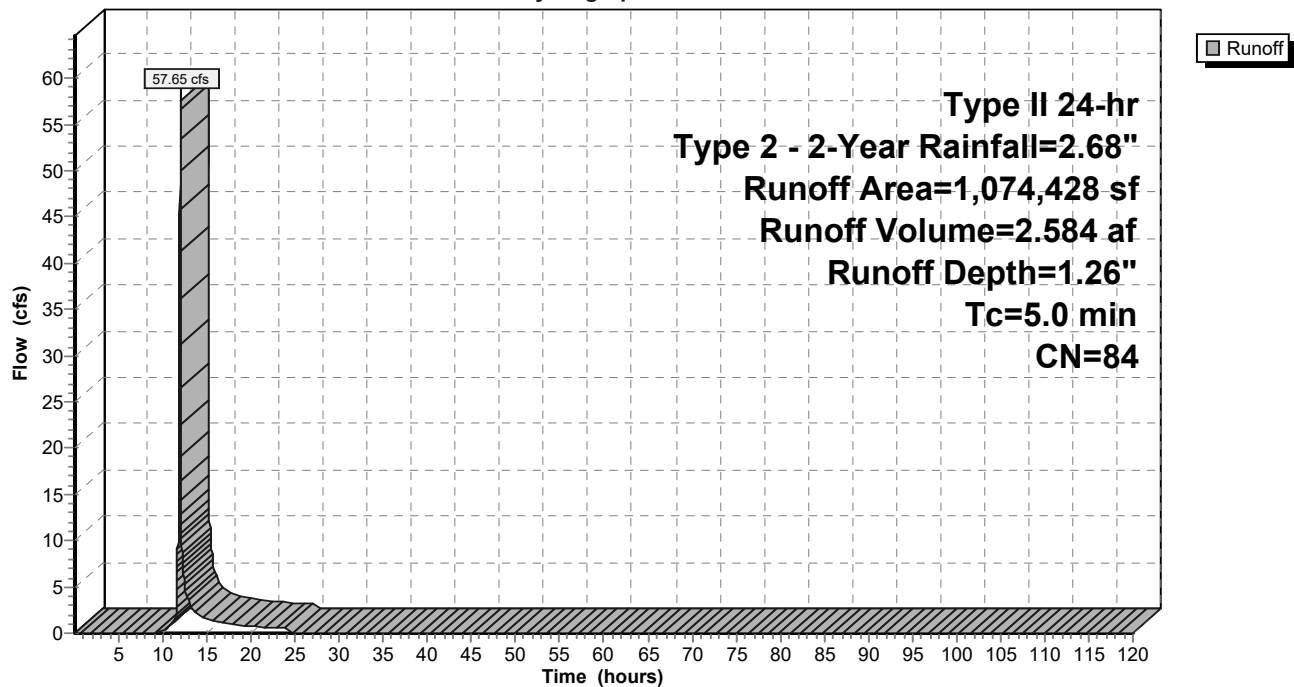
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs
Type II 24-hr Type 2 - 2-Year Rainfall=2.68"

Area (sf)	CN	Description
70,439	98	Water Surface, HSG C
1,003,989	83	1/4 acre lots, 38% imp, HSG C
1,074,428	84	Weighted Average
622,473		57.94% Pervious Area
451,955		42.06% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, Direct

Subcatchment 100A: 100A

Hydrograph



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Type II 24-hr Type 2 - 2-Year Rainfall=2.68"

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Hydrograph for Subcatchment 100A: 100A

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.01	0.00	0.00	0.00	104.01	2.68	1.26	0.00
2.01	0.06	0.00	0.00	106.01	2.68	1.26	0.00
4.01	0.13	0.00	0.00	108.01	2.68	1.26	0.00
6.01	0.21	0.00	0.00	110.01	2.68	1.26	0.00
8.01	0.32	0.00	0.00	112.01	2.68	1.26	0.00
10.01	0.49	0.01	0.25	114.01	2.68	1.26	0.00
12.01	1.78	0.59	45.86	116.01	2.68	1.26	0.00
14.01	2.20	0.89	1.88	118.01	2.68	1.26	0.00
16.01	2.36	1.01	1.19				
18.01	2.47	1.09	0.93				
20.01	2.55	1.16	0.69				
22.01	2.62	1.21	0.63				
24.01	2.68	1.26	0.58				
26.01	2.68	1.26	0.00				
28.01	2.68	1.26	0.00				
30.01	2.68	1.26	0.00				
32.01	2.68	1.26	0.00				
34.01	2.68	1.26	0.00				
36.01	2.68	1.26	0.00				
38.01	2.68	1.26	0.00				
40.01	2.68	1.26	0.00				
42.01	2.68	1.26	0.00				
44.01	2.68	1.26	0.00				
46.01	2.68	1.26	0.00				
48.01	2.68	1.26	0.00				
50.01	2.68	1.26	0.00				
52.01	2.68	1.26	0.00				
54.01	2.68	1.26	0.00				
56.01	2.68	1.26	0.00				
58.01	2.68	1.26	0.00				
60.01	2.68	1.26	0.00				
62.01	2.68	1.26	0.00				
64.01	2.68	1.26	0.00				
66.01	2.68	1.26	0.00				
68.01	2.68	1.26	0.00				
70.01	2.68	1.26	0.00				
72.01	2.68	1.26	0.00				
74.01	2.68	1.26	0.00				
76.01	2.68	1.26	0.00				
78.01	2.68	1.26	0.00				
80.01	2.68	1.26	0.00				
82.01	2.68	1.26	0.00				
84.01	2.68	1.26	0.00				
86.01	2.68	1.26	0.00				
88.01	2.68	1.26	0.00				
90.01	2.68	1.26	0.00				
92.01	2.68	1.26	0.00				
94.01	2.68	1.26	0.00				
96.01	2.68	1.26	0.00				
98.01	2.68	1.26	0.00				
100.01	2.68	1.26	0.00				
102.01	2.68	1.26	0.00				

Proposed Conditions

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Type II 24-hr Type 2 - 2-Year Rainfall=2.68"

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Summary for Subcatchment 200A: 200A

Runoff = 16.46 cfs @ 11.96 hrs, Volume= 0.765 af, Depth= 1.77"
Routed to Pond 200 : 200

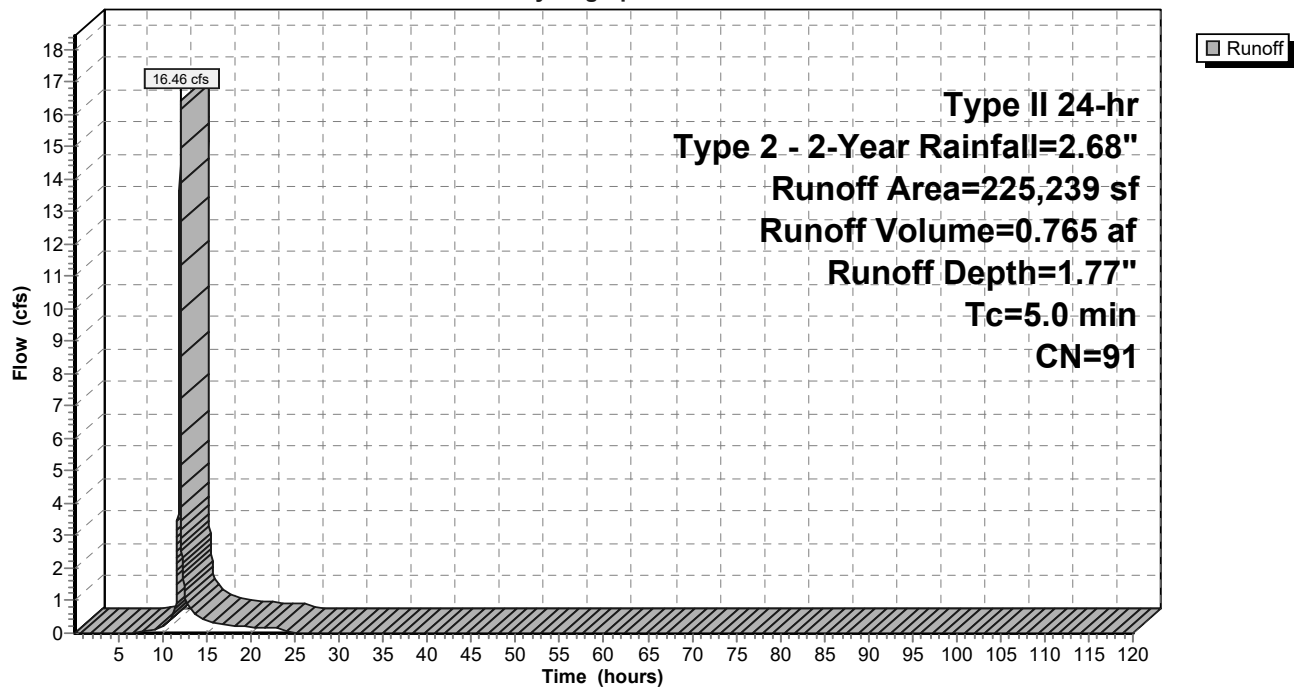
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs
Type II 24-hr Type 2 - 2-Year Rainfall=2.68"

Area (sf)	CN	Description
21,699	98	Water Surface, HSG C
203,540	90	1/8 acre lots, 65% imp, HSG C
225,239	91	Weighted Average
71,239		31.63% Pervious Area
154,000		68.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, Direct

Subcatchment 200A: 200A

Hydrograph



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Type II 24-hr Type 2 - 2-Year Rainfall=2.68"

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Hydrograph for Subcatchment 200A: 200A

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.01	0.00	0.00	0.00	104.01	2.68	1.77	0.00
2.01	0.06	0.00	0.00	106.01	2.68	1.77	0.00
4.01	0.13	0.00	0.00	108.01	2.68	1.77	0.00
6.01	0.21	0.00	0.01	110.01	2.68	1.77	0.00
8.01	0.32	0.01	0.06	112.01	2.68	1.77	0.00
10.01	0.49	0.07	0.21	114.01	2.68	1.77	0.00
12.01	1.78	0.98	12.69	116.01	2.68	1.77	0.00
14.01	2.20	1.34	0.48	118.01	2.68	1.77	0.00
16.01	2.36	1.48	0.30				
18.01	2.47	1.58	0.23				
20.01	2.55	1.66	0.17				
22.01	2.62	1.72	0.15				
24.01	2.68	1.77	0.14				
26.01	2.68	1.77	0.00				
28.01	2.68	1.77	0.00				
30.01	2.68	1.77	0.00				
32.01	2.68	1.77	0.00				
34.01	2.68	1.77	0.00				
36.01	2.68	1.77	0.00				
38.01	2.68	1.77	0.00				
40.01	2.68	1.77	0.00				
42.01	2.68	1.77	0.00				
44.01	2.68	1.77	0.00				
46.01	2.68	1.77	0.00				
48.01	2.68	1.77	0.00				
50.01	2.68	1.77	0.00				
52.01	2.68	1.77	0.00				
54.01	2.68	1.77	0.00				
56.01	2.68	1.77	0.00				
58.01	2.68	1.77	0.00				
60.01	2.68	1.77	0.00				
62.01	2.68	1.77	0.00				
64.01	2.68	1.77	0.00				
66.01	2.68	1.77	0.00				
68.01	2.68	1.77	0.00				
70.01	2.68	1.77	0.00				
72.01	2.68	1.77	0.00				
74.01	2.68	1.77	0.00				
76.01	2.68	1.77	0.00				
78.01	2.68	1.77	0.00				
80.01	2.68	1.77	0.00				
82.01	2.68	1.77	0.00				
84.01	2.68	1.77	0.00				
86.01	2.68	1.77	0.00				
88.01	2.68	1.77	0.00				
90.01	2.68	1.77	0.00				
92.01	2.68	1.77	0.00				
94.01	2.68	1.77	0.00				
96.01	2.68	1.77	0.00				
98.01	2.68	1.77	0.00				
100.01	2.68	1.77	0.00				
102.01	2.68	1.77	0.00				

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Type II 24-hr Type 2 - 2-Year Rainfall=2.68"

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Summary for Subcatchment 300A: 300A

Runoff = 18.31 cfs @ 11.96 hrs, Volume= 0.844 af, Depth= 1.69"
Routed to Pond 300 : 300

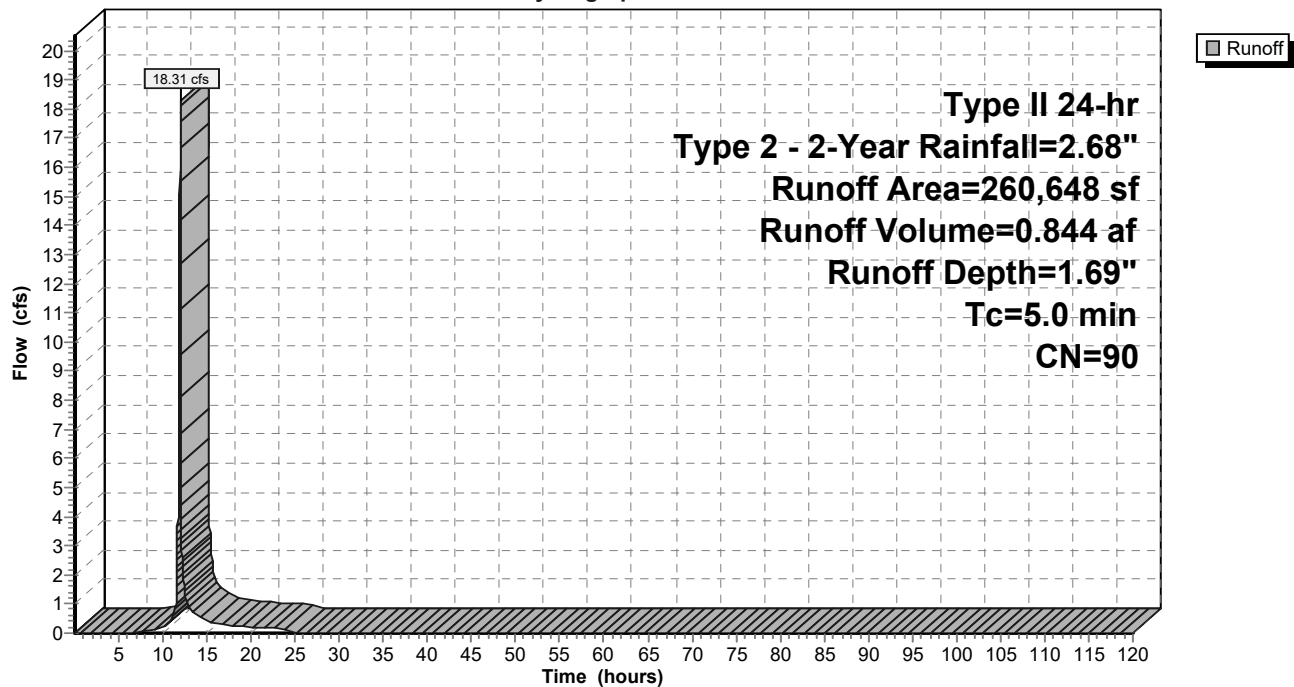
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs
Type II 24-hr Type 2 - 2-Year Rainfall=2.68"

Area (sf)	CN	Description
260,648	90	1/8 acre lots, 65% imp, HSG C
91,227		35.00% Pervious Area
169,421		65.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, Direct

Subcatchment 300A: 300A

Hydrograph



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Type II 24-hr Type 2 - 2-Year Rainfall=2.68"

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Hydrograph for Subcatchment 300A: 300A

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.01	0.00	0.00	0.00	104.01	2.68	1.69	0.00
2.01	0.06	0.00	0.00	106.01	2.68	1.69	0.00
4.01	0.13	0.00	0.00	108.01	2.68	1.69	0.00
6.01	0.21	0.00	0.00	110.01	2.68	1.69	0.00
8.01	0.32	0.01	0.05	112.01	2.68	1.69	0.00
10.01	0.49	0.05	0.21	114.01	2.68	1.69	0.00
12.01	1.78	0.91	14.19	116.01	2.68	1.69	0.00
14.01	2.20	1.27	0.54	118.01	2.68	1.69	0.00
16.01	2.36	1.41	0.33				
18.01	2.47	1.50	0.26				
20.01	2.55	1.58	0.19				
22.01	2.62	1.64	0.18				
24.01	2.68	1.69	0.16				
26.01	2.68	1.69	0.00				
28.01	2.68	1.69	0.00				
30.01	2.68	1.69	0.00				
32.01	2.68	1.69	0.00				
34.01	2.68	1.69	0.00				
36.01	2.68	1.69	0.00				
38.01	2.68	1.69	0.00				
40.01	2.68	1.69	0.00				
42.01	2.68	1.69	0.00				
44.01	2.68	1.69	0.00				
46.01	2.68	1.69	0.00				
48.01	2.68	1.69	0.00				
50.01	2.68	1.69	0.00				
52.01	2.68	1.69	0.00				
54.01	2.68	1.69	0.00				
56.01	2.68	1.69	0.00				
58.01	2.68	1.69	0.00				
60.01	2.68	1.69	0.00				
62.01	2.68	1.69	0.00				
64.01	2.68	1.69	0.00				
66.01	2.68	1.69	0.00				
68.01	2.68	1.69	0.00				
70.01	2.68	1.69	0.00				
72.01	2.68	1.69	0.00				
74.01	2.68	1.69	0.00				
76.01	2.68	1.69	0.00				
78.01	2.68	1.69	0.00				
80.01	2.68	1.69	0.00				
82.01	2.68	1.69	0.00				
84.01	2.68	1.69	0.00				
86.01	2.68	1.69	0.00				
88.01	2.68	1.69	0.00				
90.01	2.68	1.69	0.00				
92.01	2.68	1.69	0.00				
94.01	2.68	1.69	0.00				
96.01	2.68	1.69	0.00				
98.01	2.68	1.69	0.00				
100.01	2.68	1.69	0.00				
102.01	2.68	1.69	0.00				

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Type II 24-hr Type 2 - 2-Year Rainfall=2.68"

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Summary for Subcatchment 300B: 300B

Runoff = 32.64 cfs @ 11.96 hrs, Volume= 1.471 af, Depth= 1.39"
Routed to Pond 300 : 300

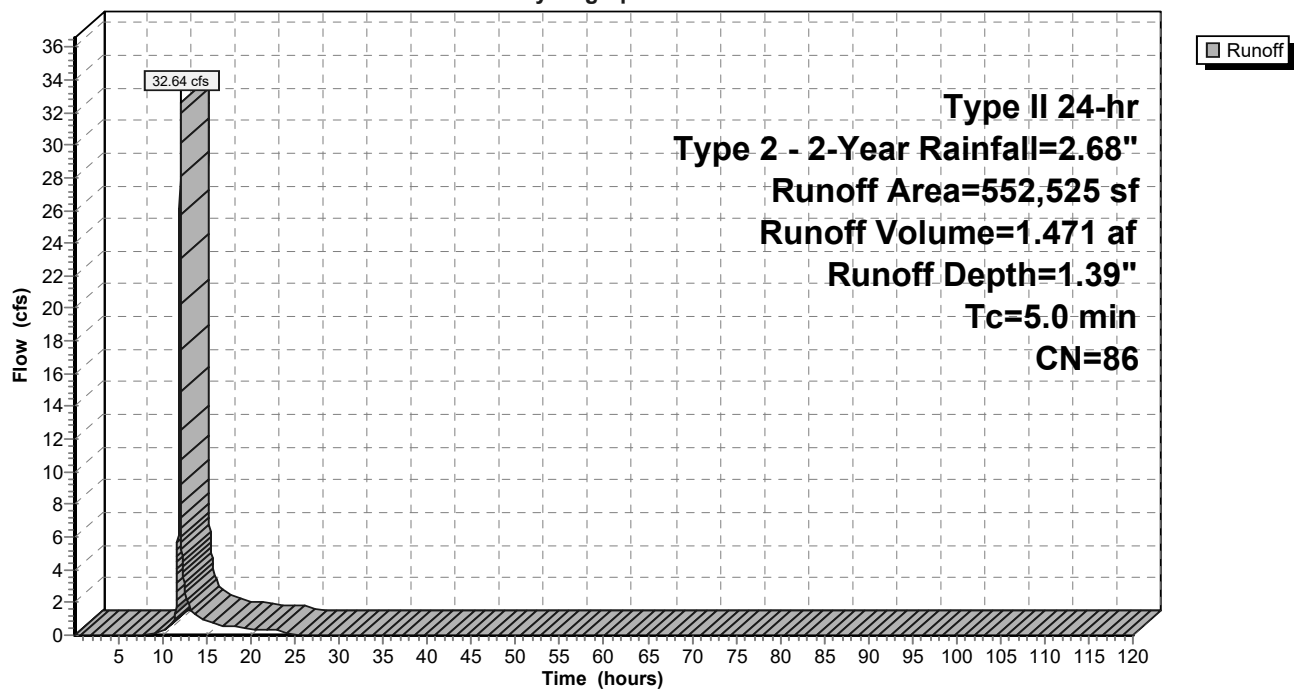
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs
Type II 24-hr Type 2 - 2-Year Rainfall=2.68"

Area (sf)	CN	Description
442,263	83	1/4 acre lots, 38% imp, HSG C
110,262	98	Water Surface, HSG C
552,525	86	Weighted Average
274,203		49.63% Pervious Area
278,322		50.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, Direct

Subcatchment 300B: 300B

Hydrograph



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Type II 24-hr Type 2 - 2-Year Rainfall=2.68"

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Hydrograph for Subcatchment 300B: 300B

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.01	0.00	0.00	0.00	104.01	2.68	1.39	0.00
2.01	0.06	0.00	0.00	106.01	2.68	1.39	0.00
4.01	0.13	0.00	0.00	108.01	2.68	1.39	0.00
6.01	0.21	0.00	0.00	110.01	2.68	1.39	0.00
8.01	0.32	0.00	0.00	112.01	2.68	1.39	0.00
10.01	0.49	0.01	0.22	114.01	2.68	1.39	0.00
12.01	1.78	0.69	25.73	116.01	2.68	1.39	0.00
14.01	2.20	1.00	1.03	118.01	2.68	1.39	0.00
16.01	2.36	1.13	0.65				
18.01	2.47	1.22	0.51				
20.01	2.55	1.29	0.37				
22.01	2.62	1.34	0.34				
24.01	2.68	1.39	0.31				
26.01	2.68	1.39	0.00				
28.01	2.68	1.39	0.00				
30.01	2.68	1.39	0.00				
32.01	2.68	1.39	0.00				
34.01	2.68	1.39	0.00				
36.01	2.68	1.39	0.00				
38.01	2.68	1.39	0.00				
40.01	2.68	1.39	0.00				
42.01	2.68	1.39	0.00				
44.01	2.68	1.39	0.00				
46.01	2.68	1.39	0.00				
48.01	2.68	1.39	0.00				
50.01	2.68	1.39	0.00				
52.01	2.68	1.39	0.00				
54.01	2.68	1.39	0.00				
56.01	2.68	1.39	0.00				
58.01	2.68	1.39	0.00				
60.01	2.68	1.39	0.00				
62.01	2.68	1.39	0.00				
64.01	2.68	1.39	0.00				
66.01	2.68	1.39	0.00				
68.01	2.68	1.39	0.00				
70.01	2.68	1.39	0.00				
72.01	2.68	1.39	0.00				
74.01	2.68	1.39	0.00				
76.01	2.68	1.39	0.00				
78.01	2.68	1.39	0.00				
80.01	2.68	1.39	0.00				
82.01	2.68	1.39	0.00				
84.01	2.68	1.39	0.00				
86.01	2.68	1.39	0.00				
88.01	2.68	1.39	0.00				
90.01	2.68	1.39	0.00				
92.01	2.68	1.39	0.00				
94.01	2.68	1.39	0.00				
96.01	2.68	1.39	0.00				
98.01	2.68	1.39	0.00				
100.01	2.68	1.39	0.00				
102.01	2.68	1.39	0.00				

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Type II 24-hr Type 2 - 2-Year Rainfall=2.68"

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Summary for Subcatchment 400A: 400A

Runoff = 13.13 cfs @ 11.96 hrs, Volume= 0.588 af, Depth= 1.19"
Routed to Pond 400 : 400

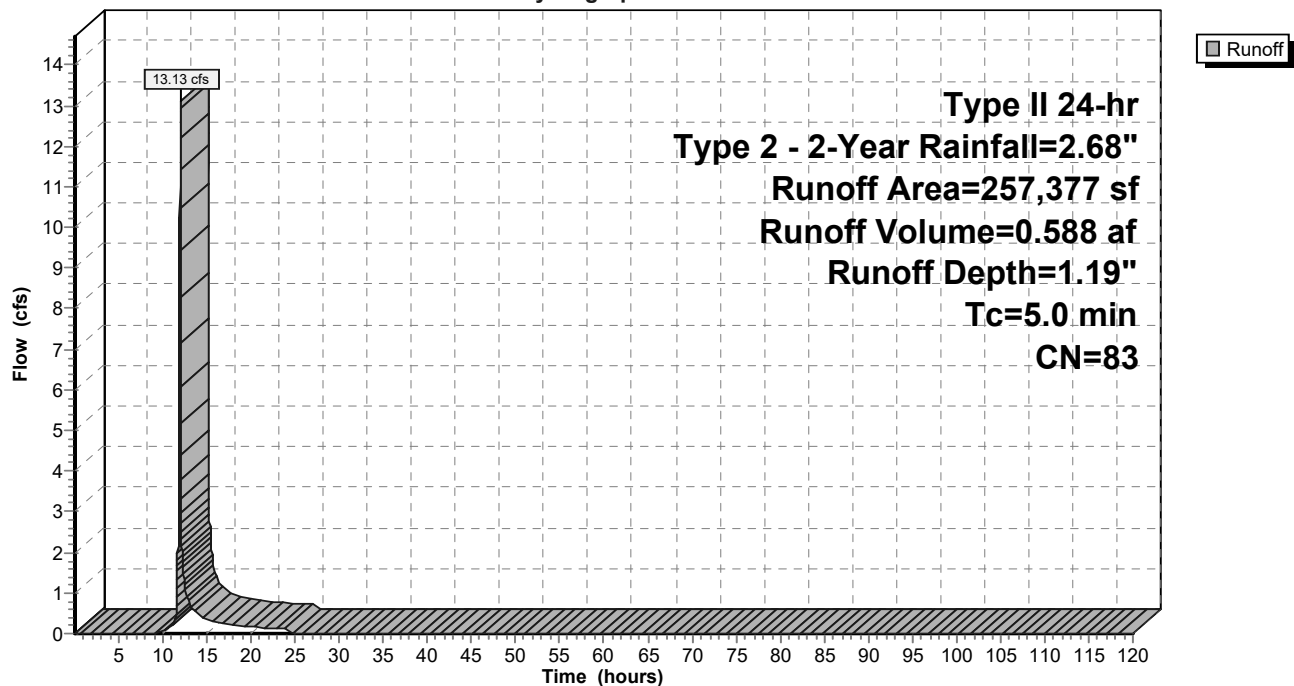
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs
Type II 24-hr Type 2 - 2-Year Rainfall=2.68"

Area (sf)	CN	Description
47,305	70	Woods, Good, HSG C
35,903	98	Water Surface, HSG C
174,169	83	1/4 acre lots, 38% imp, HSG C
257,377	83	Weighted Average
155,290		60.34% Pervious Area
102,087		39.66% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, Direct

Subcatchment 400A: 400A

Hydrograph



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Type II 24-hr Type 2 - 2-Year Rainfall=2.68"

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Hydrograph for Subcatchment 400A: 400A

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.01	0.00	0.00	0.00	104.01	2.68	1.19	0.00
2.01	0.06	0.00	0.00	106.01	2.68	1.19	0.00
4.01	0.13	0.00	0.00	108.01	2.68	1.19	0.00
6.01	0.21	0.00	0.00	110.01	2.68	1.19	0.00
8.01	0.32	0.00	0.00	112.01	2.68	1.19	0.00
10.01	0.49	0.00	0.04	114.01	2.68	1.19	0.00
12.01	1.78	0.55	10.49	116.01	2.68	1.19	0.00
14.01	2.20	0.83	0.44	118.01	2.68	1.19	0.00
16.01	2.36	0.95	0.28				
18.01	2.47	1.03	0.22				
20.01	2.55	1.10	0.16				
22.01	2.62	1.15	0.15				
24.01	2.68	1.19	0.14				
26.01	2.68	1.19	0.00				
28.01	2.68	1.19	0.00				
30.01	2.68	1.19	0.00				
32.01	2.68	1.19	0.00				
34.01	2.68	1.19	0.00				
36.01	2.68	1.19	0.00				
38.01	2.68	1.19	0.00				
40.01	2.68	1.19	0.00				
42.01	2.68	1.19	0.00				
44.01	2.68	1.19	0.00				
46.01	2.68	1.19	0.00				
48.01	2.68	1.19	0.00				
50.01	2.68	1.19	0.00				
52.01	2.68	1.19	0.00				
54.01	2.68	1.19	0.00				
56.01	2.68	1.19	0.00				
58.01	2.68	1.19	0.00				
60.01	2.68	1.19	0.00				
62.01	2.68	1.19	0.00				
64.01	2.68	1.19	0.00				
66.01	2.68	1.19	0.00				
68.01	2.68	1.19	0.00				
70.01	2.68	1.19	0.00				
72.01	2.68	1.19	0.00				
74.01	2.68	1.19	0.00				
76.01	2.68	1.19	0.00				
78.01	2.68	1.19	0.00				
80.01	2.68	1.19	0.00				
82.01	2.68	1.19	0.00				
84.01	2.68	1.19	0.00				
86.01	2.68	1.19	0.00				
88.01	2.68	1.19	0.00				
90.01	2.68	1.19	0.00				
92.01	2.68	1.19	0.00				
94.01	2.68	1.19	0.00				
96.01	2.68	1.19	0.00				
98.01	2.68	1.19	0.00				
100.01	2.68	1.19	0.00				
102.01	2.68	1.19	0.00				

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Type II 24-hr Type 2 - 2-Year Rainfall=2.68"

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Summary for Subcatchment 500A: 500A

Runoff = 41.93 cfs @ 11.96 hrs, Volume= 1.880 af, Depth= 1.26"
Routed to Pond 500 : 500

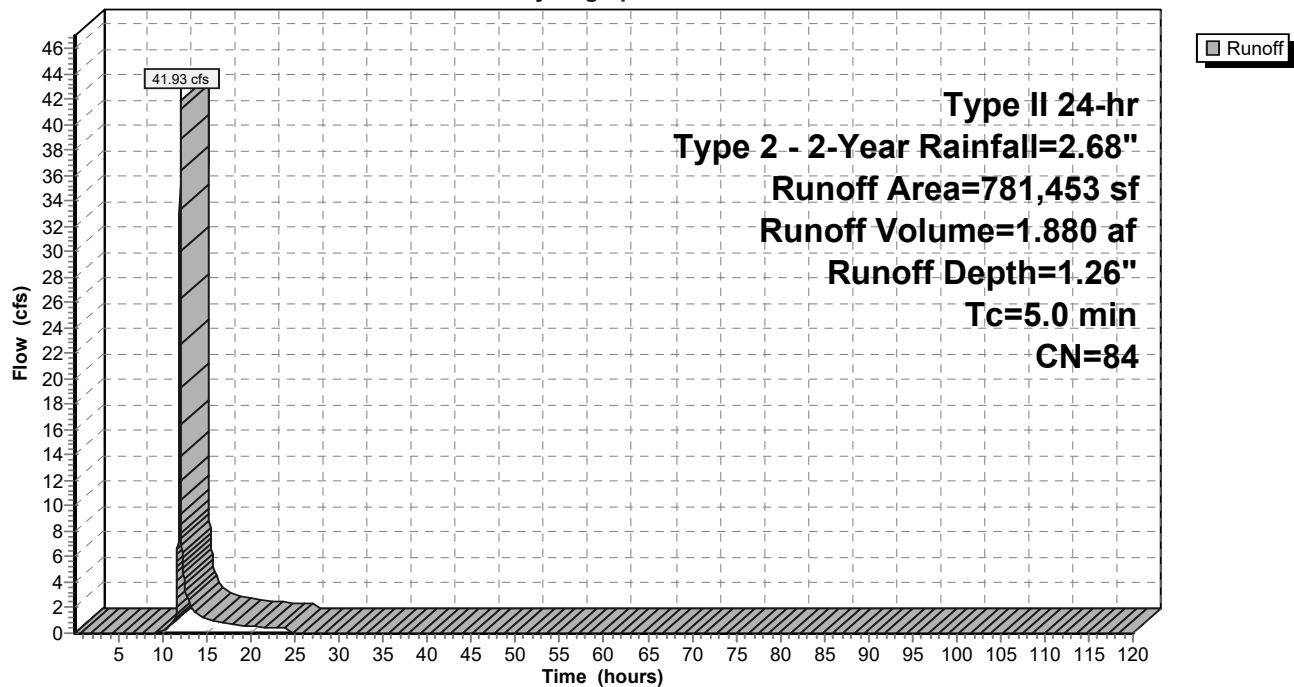
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs
Type II 24-hr Type 2 - 2-Year Rainfall=2.68"

Area (sf)	CN	Description
57,355	98	Water Surface, HSG C
724,098	83	1/4 acre lots, 38% imp, HSG C
781,453	84	Weighted Average
448,941		57.45% Pervious Area
332,512		42.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, Direct

Subcatchment 500A: 500A

Hydrograph



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Type II 24-hr Type 2 - 2-Year Rainfall=2.68"

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Hydrograph for Subcatchment 500A: 500A

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.01	0.00	0.00	0.00	104.01	2.68	1.26	0.00
2.01	0.06	0.00	0.00	106.01	2.68	1.26	0.00
4.01	0.13	0.00	0.00	108.01	2.68	1.26	0.00
6.01	0.21	0.00	0.00	110.01	2.68	1.26	0.00
8.01	0.32	0.00	0.00	112.01	2.68	1.26	0.00
10.01	0.49	0.01	0.18	114.01	2.68	1.26	0.00
12.01	1.78	0.59	33.35	116.01	2.68	1.26	0.00
14.01	2.20	0.89	1.37	118.01	2.68	1.26	0.00
16.01	2.36	1.01	0.86				
18.01	2.47	1.09	0.68				
20.01	2.55	1.16	0.50				
22.01	2.62	1.21	0.46				
24.01	2.68	1.26	0.42				
26.01	2.68	1.26	0.00				
28.01	2.68	1.26	0.00				
30.01	2.68	1.26	0.00				
32.01	2.68	1.26	0.00				
34.01	2.68	1.26	0.00				
36.01	2.68	1.26	0.00				
38.01	2.68	1.26	0.00				
40.01	2.68	1.26	0.00				
42.01	2.68	1.26	0.00				
44.01	2.68	1.26	0.00				
46.01	2.68	1.26	0.00				
48.01	2.68	1.26	0.00				
50.01	2.68	1.26	0.00				
52.01	2.68	1.26	0.00				
54.01	2.68	1.26	0.00				
56.01	2.68	1.26	0.00				
58.01	2.68	1.26	0.00				
60.01	2.68	1.26	0.00				
62.01	2.68	1.26	0.00				
64.01	2.68	1.26	0.00				
66.01	2.68	1.26	0.00				
68.01	2.68	1.26	0.00				
70.01	2.68	1.26	0.00				
72.01	2.68	1.26	0.00				
74.01	2.68	1.26	0.00				
76.01	2.68	1.26	0.00				
78.01	2.68	1.26	0.00				
80.01	2.68	1.26	0.00				
82.01	2.68	1.26	0.00				
84.01	2.68	1.26	0.00				
86.01	2.68	1.26	0.00				
88.01	2.68	1.26	0.00				
90.01	2.68	1.26	0.00				
92.01	2.68	1.26	0.00				
94.01	2.68	1.26	0.00				
96.01	2.68	1.26	0.00				
98.01	2.68	1.26	0.00				
100.01	2.68	1.26	0.00				
102.01	2.68	1.26	0.00				

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Type II 24-hr Type 2 - 2-Year Rainfall=2.68"

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Summary for Pond 100: 100

Inflow Area = 24.665 ac, 42.06% Impervious, Inflow Depth = 1.26" for Type 2 - 2-Year event
 Inflow = 57.65 cfs @ 11.96 hrs, Volume= 2.584 af
 Outflow = 0.61 cfs @ 22.77 hrs, Volume= 1.637 af, Atten= 99%, Lag= 648.4 min
 Primary = 0.61 cfs @ 22.77 hrs, Volume= 1.637 af
 Routed to Link 1 : OFFSITE
 Secondary = 0.00 cfs @ 0.01 hrs, Volume= 0.000 af
 Routed to Link 1 : OFFSITE

Routing by Stor-Ind method, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs

Starting Elev= 879.00' Surf.Area= 70,439 sf Storage= 207,488 cf

Peak Elev= 880.17' @ 22.77 hrs Surf.Area= 80,668 sf Storage= 296,128 cf (88,640 cf above start)

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)

Center-of-Mass det. time= 1,339.5 min (2,173.4 - 833.8)

Volume	Invert	Avail.Storage	Storage Description
#1	874.00'	670,255 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
874.00	24,774	0	0
875.00	30,784	27,779	27,779
876.00	36,863	33,824	61,603
877.00	43,009	39,936	101,539
878.00	49,225	46,117	147,656
879.00	70,439	59,832	207,488
880.00	79,139	74,789	282,277
881.00	87,959	83,549	365,826
882.00	96,903	92,431	458,257
883.00	105,969	101,436	559,693
884.00	115,156	110,563	670,255

Device	Routing	Invert	Outlet Devices
#1	Primary	879.00'	24.0" Round RCP_Round 24" L= 70.0' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 879.00' / 878.00' S= 0.0143 '/' Cc= 0.900 n= 0.011 Concrete pipe, finished, Flow Area= 3.14 sf
#2	Device 1	879.50'	6.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Secondary	883.00'	25.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.62 cfs @ 22.77 hrs HW=880.17' (Free Discharge)↑ **1=RCP_Round 24"** (Passes 0.62 cfs of 6.23 cfs potential flow)↑ **2=Orifice/Grate** (Orifice Controls 0.62 cfs @ 3.13 fps)**Secondary OutFlow** Max=0.00 cfs @ 0.01 hrs HW=879.00' (Free Discharge)↑ **3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

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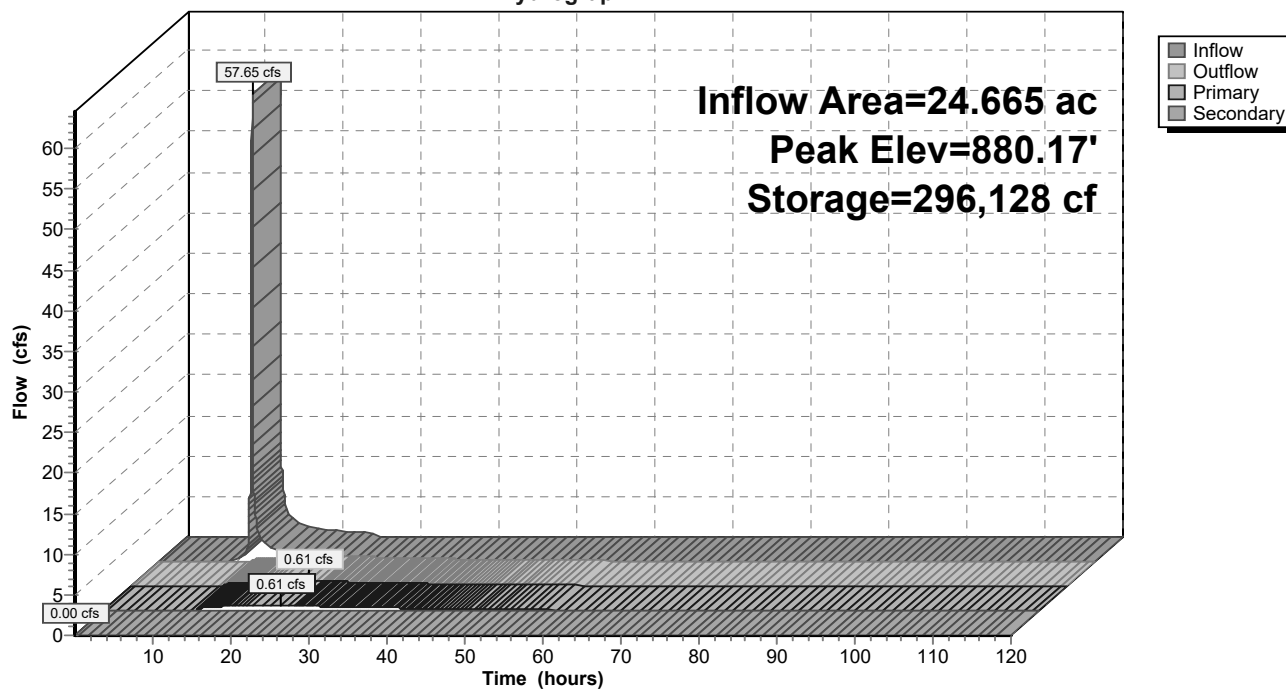
Type II 24-hr Type 2 - 2-Year Rainfall=2.68"

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Pond 100: 100

Hydrograph



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Type II 24-hr Type 2 - 2-Year Rainfall=2.68"

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Hydrograph for Pond 100: 100

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.01	0.00	207,488	879.00	0.00	0.00	0.00
5.01	0.00	207,488	879.00	0.00	0.00	0.00
10.01	0.25	207,909	879.01	0.00	0.00	0.00
15.01	1.52	288,033	880.07	0.54	0.54	0.00
20.01	0.69	295,802	880.17	0.61	0.61	0.00
25.01	0.00	294,035	880.15	0.59	0.59	0.00
30.01	0.00	284,232	880.02	0.49	0.49	0.00
35.01	0.00	276,285	879.92	0.39	0.39	0.00
40.01	0.00	270,180	879.85	0.29	0.29	0.00
45.01	0.00	265,680	879.79	0.21	0.21	0.00
50.01	0.00	262,297	879.74	0.16	0.16	0.00
55.01	0.00	259,729	879.71	0.12	0.12	0.00
60.01	0.00	257,750	879.68	0.10	0.10	0.00
65.01	0.00	256,128	879.66	0.08	0.08	0.00
70.01	0.00	254,791	879.65	0.07	0.07	0.00
75.01	0.00	253,689	879.63	0.06	0.06	0.00
80.01	0.00	252,780	879.62	0.05	0.05	0.00
85.01	0.00	252,030	879.61	0.04	0.04	0.00
90.01	0.00	251,412	879.60	0.03	0.03	0.00
95.01	0.00	250,882	879.59	0.03	0.03	0.00
100.01	0.00	250,390	879.59	0.03	0.03	0.00
105.01	0.00	249,931	879.58	0.02	0.02	0.00
110.01	0.00	249,505	879.58	0.02	0.02	0.00
115.01	0.00	249,108	879.57	0.02	0.02	0.00

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Summary for Pond 200: 200

Inflow Area = 5.171 ac, 68.37% Impervious, Inflow Depth = 1.77" for Type 2 - 2-Year event
 Inflow = 16.46 cfs @ 11.96 hrs, Volume= 0.765 af
 Outflow = 0.44 cfs @ 14.28 hrs, Volume= 0.506 af, Atten= 97%, Lag= 139.5 min
 Primary = 0.44 cfs @ 14.28 hrs, Volume= 0.506 af
 Routed to Link 1 : OFFSITE
 Secondary = 0.00 cfs @ 0.01 hrs, Volume= 0.000 af
 Routed to Link 1 : OFFSITE

Routing by Stor-Ind method, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs

Starting Elev= 875.00' Surf.Area= 21,699 sf Storage= 70,918 cf

Peak Elev= 875.97' @ 14.28 hrs Surf.Area= 24,107 sf Storage= 93,135 cf (22,218 cf above start)

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)

Center-of-Mass det. time= 642.1 min (1,447.4 - 805.3)

Volume	Invert	Avail.Storage	Storage Description
#1	870.00'	177,226 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
870.00	10,192	0	0
871.00	11,543	10,868	10,868
872.00	12,964	12,254	23,121
873.00	14,453	13,709	36,830
874.00	16,012	15,233	52,062
875.00	21,699	18,856	70,918
876.00	24,181	22,940	93,858
877.00	26,780	25,481	119,338
878.00	29,498	28,139	147,477
879.00	30,000	29,749	177,226

Device	Routing	Invert	Outlet Devices
#1	Primary	875.00'	12.0" Round RCP_Round 12" L= 70.0' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 875.00' / 874.00' S= 0.0143 '/' Cc= 0.900 n= 0.011 Concrete pipe, finished, Flow Area= 0.79 sf
#2	Device 1	875.50'	6.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	878.00'	60.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#4	Secondary	878.00'	25.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

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Type II 24-hr Type 2 - 2-Year Rainfall=2.68"

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Primary OutFlow Max=0.45 cfs @ 14.28 hrs HW=875.97' (Free Discharge)

1=RCP_Round 12" (Passes 0.45 cfs of 2.30 cfs potential flow)

2=Orifice/Grate (Orifice Controls 0.45 cfs @ 2.33 fps)

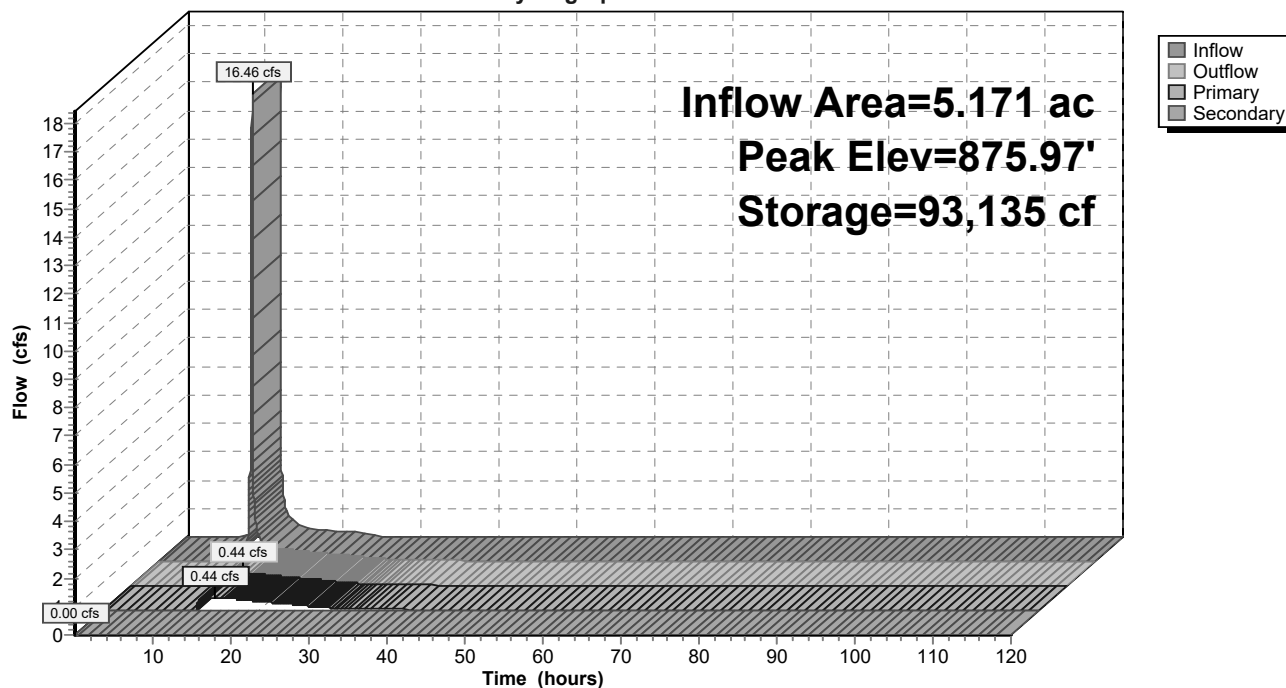
3=Orifice/Grate (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.01 hrs HW=875.00' (Free Discharge)

4=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Pond 200: 200

Hydrograph



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Type II 24-hr Type 2 - 2-Year Rainfall=2.68"

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Hydrograph for Pond 200: 200

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.01	0.00	70,918	875.00	0.00	0.00	0.00
5.01	0.00	70,918	875.00	0.00	0.00	0.00
10.01	0.21	72,079	875.05	0.00	0.00	0.00
15.01	0.38	93,059	875.97	0.44	0.44	0.00
20.01	0.17	90,647	875.87	0.32	0.32	0.00
25.01	0.00	88,292	875.77	0.19	0.19	0.00
30.01	0.00	86,000	875.67	0.08	0.08	0.00
35.01	0.00	84,858	875.62	0.05	0.05	0.00
40.01	0.00	84,194	875.59	0.03	0.03	0.00
45.01	0.00	83,801	875.57	0.02	0.02	0.00
50.01	0.00	83,502	875.56	0.02	0.02	0.00
55.01	0.00	83,254	875.55	0.01	0.01	0.00
60.01	0.00	83,050	875.54	0.01	0.01	0.00
65.01	0.00	82,881	875.53	0.01	0.01	0.00
70.01	0.00	82,742	875.53	0.01	0.01	0.00
75.01	0.00	82,626	875.52	0.01	0.01	0.00
80.01	0.00	82,531	875.52	0.00	0.00	0.00
85.01	0.00	82,452	875.52	0.00	0.00	0.00
90.01	0.00	82,387	875.51	0.00	0.00	0.00
95.01	0.00	82,333	875.51	0.00	0.00	0.00
100.01	0.00	82,289	875.51	0.00	0.00	0.00
105.01	0.00	82,252	875.51	0.00	0.00	0.00
110.01	0.00	82,222	875.51	0.00	0.00	0.00
115.01	0.00	82,197	875.51	0.00	0.00	0.00

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Type II 24-hr Type 2 - 2-Year Rainfall=2.68"

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Summary for Pond 300: 300

Inflow Area = 24.576 ac, 51.36% Impervious, Inflow Depth = 1.20" for Type 2 - 2-Year event
 Inflow = 50.95 cfs @ 11.96 hrs, Volume= 2.463 af
 Outflow = 0.27 cfs @ 24.08 hrs, Volume= 0.919 af, Atten= 99%, Lag= 727.0 min
 Primary = 0.27 cfs @ 24.08 hrs, Volume= 0.919 af
 Routed to Link 1 : OFFSITE
 Secondary = 0.00 cfs @ 0.01 hrs, Volume= 0.000 af
 Routed to Link 1 : OFFSITE

Routing by Stor-Ind method, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs

Starting Elev= 875.00' Surf.Area= 110,262 sf Storage= 389,084 cf

Peak Elev= 875.83' @ 24.08 hrs Surf.Area= 119,567 sf Storage= 484,308 cf (95,224 cf above start)

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)

Center-of-Mass det. time= 2,009.9 min (2,931.8 - 921.9)

Volume	Invert	Avail.Storage	Storage Description
#1	870.00'	920,841 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
870.00	61,061	0	0
871.00	66,666	63,864	63,864
872.00	72,581	69,624	133,487
873.00	78,813	75,697	209,184
874.00	85,362	82,088	291,272
875.00	110,262	97,812	389,084
876.00	121,491	115,877	504,960
877.00	132,845	127,168	632,128
878.00	144,325	138,585	770,713
879.00	155,931	150,128	920,841

Device	Routing	Invert	Outlet Devices
#1	Primary	875.00'	24.0" Round RCP_Round 24" L= 100.0' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 875.00' / 874.00' S= 0.0100 '/' Cc= 0.900 n= 0.011 Concrete pipe, finished, Flow Area= 3.14 sf
#2	Device 1	875.50'	6.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	876.30'	4.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s)
#4	Device 1	878.00'	48.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#5	Secondary	878.00'	25.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

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Primary OutFlow Max=0.27 cfs @ 24.08 hrs HW=875.83' (Free Discharge)

1=RCP_Round 24" (Passes 0.27 cfs of 3.36 cfs potential flow)

2=Orifice/Grate (Orifice Controls 0.27 cfs @ 1.95 fps)

3=Sharp-Crested Rectangular Weir(Controls 0.00 cfs)

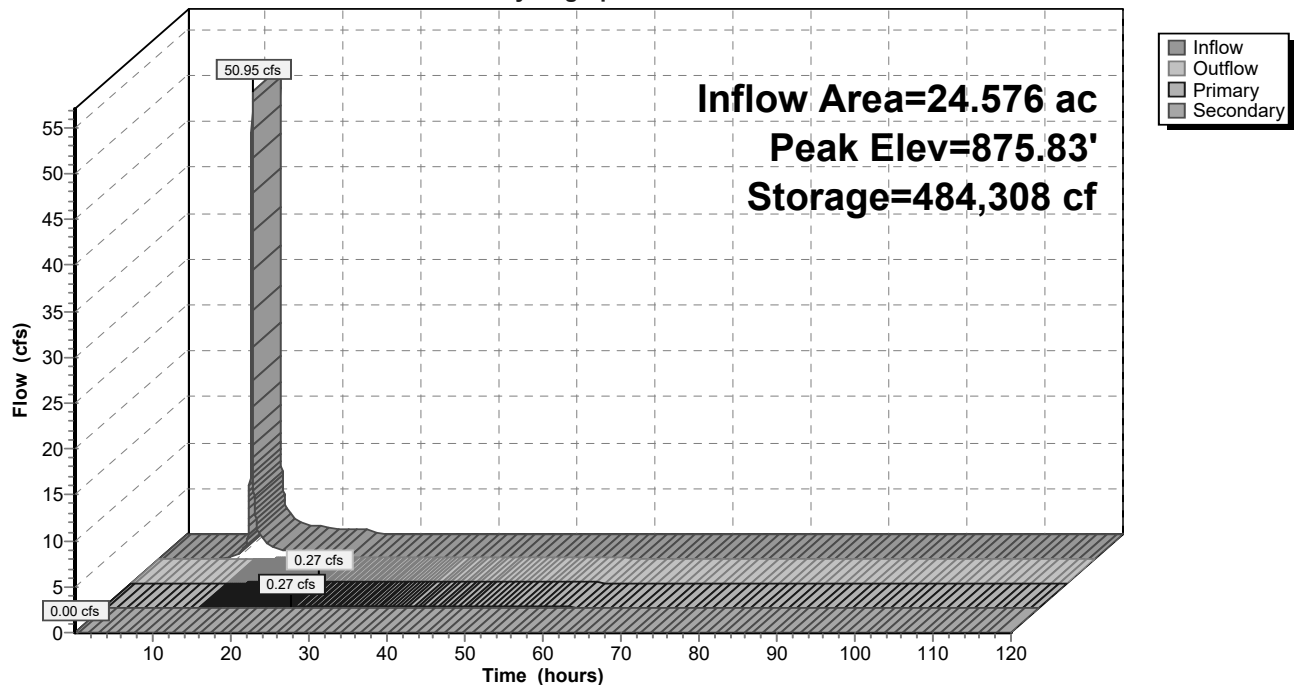
4=Orifice/Grate (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.01 hrs HW=875.00' (Free Discharge)

5=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Pond 300: 300

Hydrograph



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Type II 24-hr Type 2 - 2-Year Rainfall=2.68"

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Hydrograph for Pond 300: 300

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.01	0.00	389,084	875.00	0.00	0.00	0.00
5.01	0.00	389,084	875.00	0.00	0.00	0.00
10.01	0.43	390,724	875.01	0.00	0.00	0.00
15.01	1.26	466,848	875.68	0.10	0.10	0.00
20.01	0.61	479,449	875.79	0.22	0.22	0.00
25.01	0.07	483,689	875.82	0.26	0.26	0.00
30.01	0.05	480,349	875.80	0.22	0.22	0.00
35.01	0.03	477,316	875.77	0.19	0.19	0.00
40.01	0.03	474,635	875.75	0.17	0.17	0.00
45.01	0.02	472,287	875.73	0.14	0.14	0.00
50.01	0.02	470,229	875.71	0.13	0.13	0.00
55.01	0.02	468,426	875.69	0.11	0.11	0.00
60.01	0.01	466,850	875.68	0.10	0.10	0.00
65.01	0.01	465,474	875.67	0.08	0.08	0.00
70.01	0.01	464,239	875.66	0.08	0.08	0.00
75.01	0.01	463,103	875.65	0.07	0.07	0.00
80.01	0.01	462,059	875.64	0.06	0.06	0.00
85.01	0.01	461,102	875.63	0.06	0.06	0.00
90.01	0.00	460,227	875.63	0.05	0.05	0.00
95.01	0.00	459,427	875.62	0.05	0.05	0.00
100.01	0.00	458,696	875.61	0.04	0.04	0.00
105.01	0.00	458,031	875.61	0.04	0.04	0.00
110.01	0.00	457,425	875.60	0.03	0.03	0.00
115.01	0.00	456,874	875.60	0.03	0.03	0.00

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Type II 24-hr Type 2 - 2-Year Rainfall=2.68"

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Summary for Pond 400: 400

Inflow Area = 5.909 ac, 39.66% Impervious, Inflow Depth = 1.19" for Type 2 - 2-Year event
 Inflow = 13.13 cfs @ 11.96 hrs, Volume= 0.588 af
 Outflow = 0.07 cfs @ 24.07 hrs, Volume= 0.148 af, Atten= 99%, Lag= 726.2 min
 Primary = 0.07 cfs @ 24.07 hrs, Volume= 0.148 af
 Routed to Pond 300 : 300
 Secondary = 0.00 cfs @ 0.01 hrs, Volume= 0.000 af
 Routed to Pond 300 : 300

Routing by Stor-Ind method, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs

Starting Elev= 877.00' Surf.Area= 35,903 sf Storage= 129,985 cf

Peak Elev= 877.66' @ 24.07 hrs Surf.Area= 38,031 sf Storage= 154,224 cf (24,239 cf above start)

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)

Center-of-Mass det. time= 1,672.2 min (2,509.6 - 837.4)

Volume	Invert	Avail.Storage	Storage Description
#1	872.00'	252,651 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
872.00	20,703	0	0
873.00	22,504	21,604	21,604
874.00	24,391	23,448	45,051
875.00	26,364	25,378	70,429
876.00	28,423	27,394	97,822
877.00	35,903	32,163	129,985
878.00	39,148	37,526	167,511
879.00	42,535	40,842	208,352
880.00	46,063	44,299	252,651

Device	Routing	Invert	Outlet Devices
#1	Primary	877.00'	24.0" Round RCP_Round 24" L= 90.0' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 877.00' / 876.50' S= 0.0056 '/' Cc= 0.900 n= 0.011 Concrete pipe, finished, Flow Area= 3.14 sf
#2	Device 1	877.50'	6.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Secondary	879.00'	25.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.07 cfs @ 24.07 hrs HW=877.66' TW=876.30' (Fixed TW Elev= 876.30')

1=RCP_Round 24" (Passes 0.07 cfs of 2.14 cfs potential flow)

2=Orifice/Grate (Orifice Controls 0.07 cfs @ 1.34 fps)

Secondary OutFlow Max=0.00 cfs @ 0.01 hrs HW=877.00' (Free Discharge)

3=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

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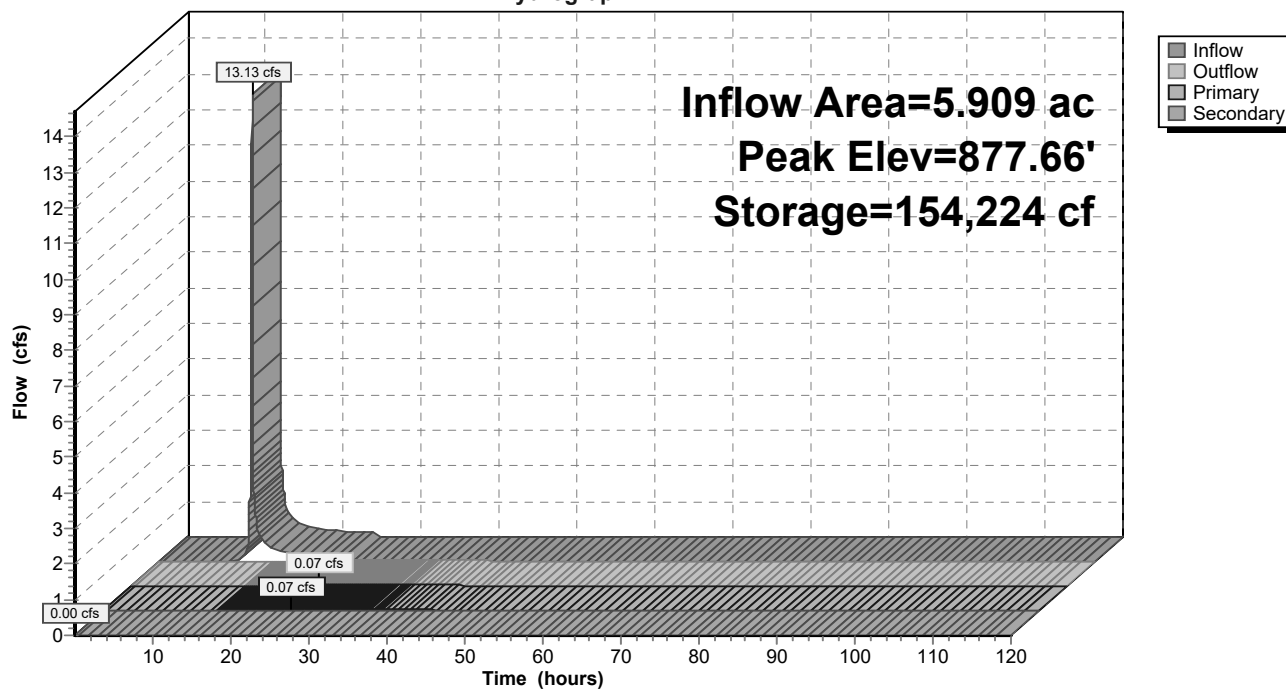
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Pond 400: 400

Hydrograph



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Type II 24-hr Type 2 - 2-Year Rainfall=2.68"

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Hydrograph for Pond 400: 400

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.01	0.00	129,985	877.00	0.00	0.00	0.00
5.01	0.00	129,985	877.00	0.00	0.00	0.00
10.01	0.04	130,032	877.00	0.00	0.00	0.00
15.01	0.35	149,161	877.52	0.00	0.00	0.00
20.01	0.16	152,978	877.62	0.05	0.05	0.00
25.01	0.00	153,995	877.65	0.07	0.07	0.00
30.01	0.00	152,963	877.62	0.05	0.05	0.00
35.01	0.00	152,248	877.60	0.03	0.03	0.00
40.01	0.00	151,726	877.59	0.03	0.03	0.00
45.01	0.00	151,289	877.58	0.02	0.02	0.00
50.01	0.00	150,921	877.57	0.02	0.02	0.00
55.01	0.00	150,611	877.56	0.02	0.02	0.00
60.01	0.00	150,351	877.55	0.01	0.01	0.00
65.01	0.00	150,131	877.55	0.01	0.01	0.00
70.01	0.00	149,946	877.54	0.01	0.01	0.00
75.01	0.00	149,790	877.54	0.01	0.01	0.00
80.01	0.00	149,659	877.54	0.01	0.01	0.00
85.01	0.00	149,549	877.53	0.01	0.01	0.00
90.01	0.00	149,456	877.53	0.00	0.00	0.00
95.01	0.00	149,378	877.53	0.00	0.00	0.00
100.01	0.00	149,312	877.53	0.00	0.00	0.00
105.01	0.00	149,256	877.52	0.00	0.00	0.00
110.01	0.00	149,209	877.52	0.00	0.00	0.00
115.01	0.00	149,170	877.52	0.00	0.00	0.00

Proposed Conditions

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Type II 24-hr Type 2 - 2-Year Rainfall=2.68"

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Summary for Pond 500: 500

Inflow Area = 17.940 ac, 42.55% Impervious, Inflow Depth = 1.26" for Type 2 - 2-Year event
Inflow = 41.93 cfs @ 11.96 hrs, Volume= 1.880 af
Outflow = 0.51 cfs @ 19.89 hrs, Volume= 1.145 af, Atten= 99%, Lag= 475.4 min
Primary = 0.51 cfs @ 19.89 hrs, Volume= 1.145 af
Routed to Link 1 : OFFSITE
Secondary = 0.00 cfs @ 0.01 hrs, Volume= 0.000 af
Routed to Link 1 : OFFSITE

Routing by Stor-Ind method, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs

Starting Elev= 899.00' Surf.Area= 57,355 sf Storage= 196,414 cf

Peak Elev= 900.04' @ 19.89 hrs Surf.Area= 63,222 sf Storage= 259,307 cf (62,893 cf above start)

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)

Center-of-Mass det. time= 1,209.1 min (2,042.9 - 833.8)

Volume	Invert	Avail.Storage	Storage Description
#1	894.00'	555,429 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
894.00	29,616	0	0
895.00	32,756	31,186	31,186
896.00	36,239	34,498	65,684
897.00	40,030	38,135	103,818
898.00	43,903	41,967	145,785
899.00	57,355	50,629	196,414
900.00	62,973	60,164	256,578
901.00	68,725	65,849	322,427
902.00	74,612	71,669	394,095
903.00	80,633	77,623	471,718
904.00	86,790	83,712	555,429

Device	Routing	Invert	Outlet Devices
#1	Primary	899.00'	24.0" Round RCP_Round 24" L= 80.0' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 899.00' / 898.00' S= 0.0125 '/' Cc= 0.900 n= 0.011 Concrete pipe, finished, Flow Area= 3.14 sf
#2	Device 1	899.50'	6.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Secondary	903.00'	25.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.51 cfs @ 19.89 hrs HW=900.04' (Free Discharge)

↑ **1=RCP_Round 24"** (Passes 0.51 cfs of 5.09 cfs potential flow)

↑ **2=Orifice/Grate** (Orifice Controls 0.51 cfs @ 2.61 fps)

Secondary OutFlow Max=0.00 cfs @ 0.01 hrs HW=899.00' (Free Discharge)

↑ **3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

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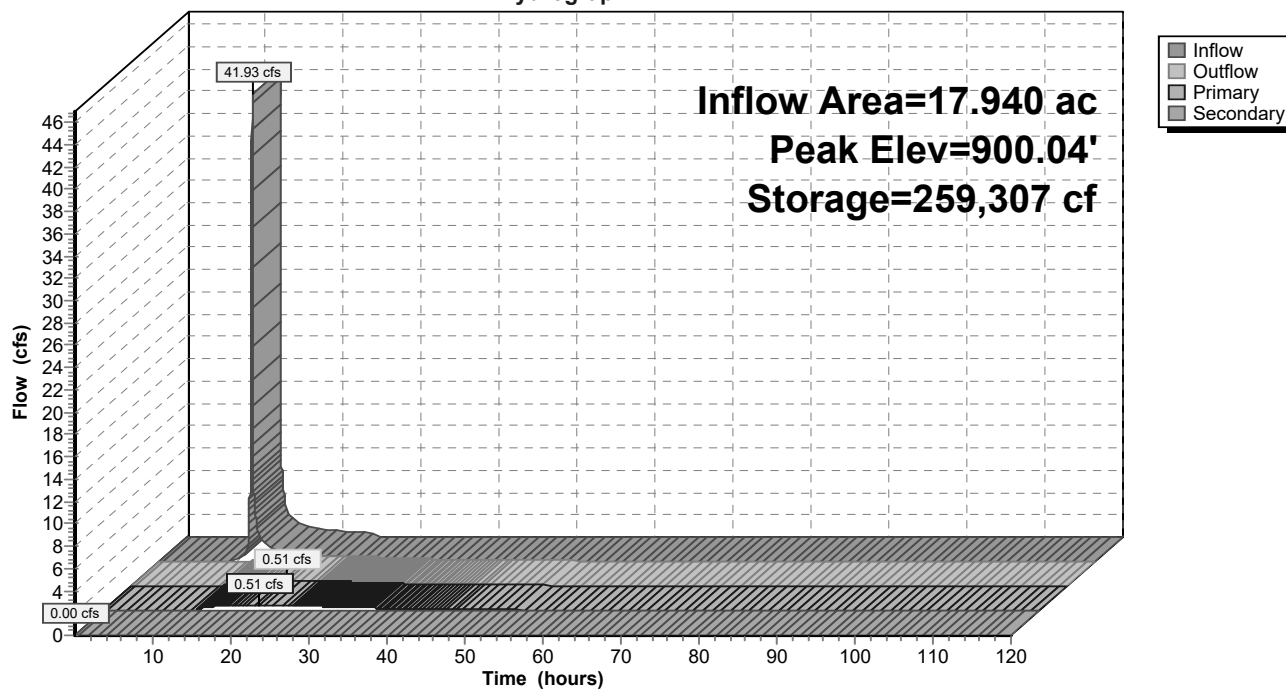
Type II 24-hr Type 2 - 2-Year Rainfall=2.68"

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Pond 500: 500

Hydrograph



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Type II 24-hr Type 2 - 2-Year Rainfall=2.68"

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Hydrograph for Pond 500: 500

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.01	0.00	196,414	899.00	0.00	0.00	0.00
5.01	0.00	196,414	899.00	0.00	0.00	0.00
10.01	0.18	196,720	899.01	0.00	0.00	0.00
15.01	1.11	254,829	899.97	0.44	0.44	0.00
20.01	0.50	259,311	900.04	0.51	0.51	0.00
25.01	0.00	256,977	900.01	0.48	0.48	0.00
30.01	0.00	249,577	899.89	0.35	0.35	0.00
35.01	0.00	244,396	899.80	0.24	0.24	0.00
40.01	0.00	240,815	899.75	0.17	0.17	0.00
45.01	0.00	238,277	899.71	0.12	0.12	0.00
50.01	0.00	236,415	899.68	0.09	0.09	0.00
55.01	0.00	234,955	899.65	0.07	0.07	0.00
60.01	0.00	233,806	899.63	0.06	0.06	0.00
65.01	0.00	232,904	899.62	0.04	0.04	0.00
70.01	0.00	232,194	899.61	0.03	0.03	0.00
75.01	0.00	231,631	899.60	0.03	0.03	0.00
80.01	0.00	231,130	899.59	0.03	0.03	0.00
85.01	0.00	230,673	899.58	0.02	0.02	0.00
90.01	0.00	230,254	899.57	0.02	0.02	0.00
95.01	0.00	229,872	899.57	0.02	0.02	0.00
100.01	0.00	229,522	899.56	0.02	0.02	0.00
105.01	0.00	229,202	899.56	0.02	0.02	0.00
110.01	0.00	228,910	899.55	0.02	0.02	0.00
115.01	0.00	228,643	899.55	0.01	0.01	0.00

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Type II 24-hr Type 2 - 2-Year Rainfall=2.68"

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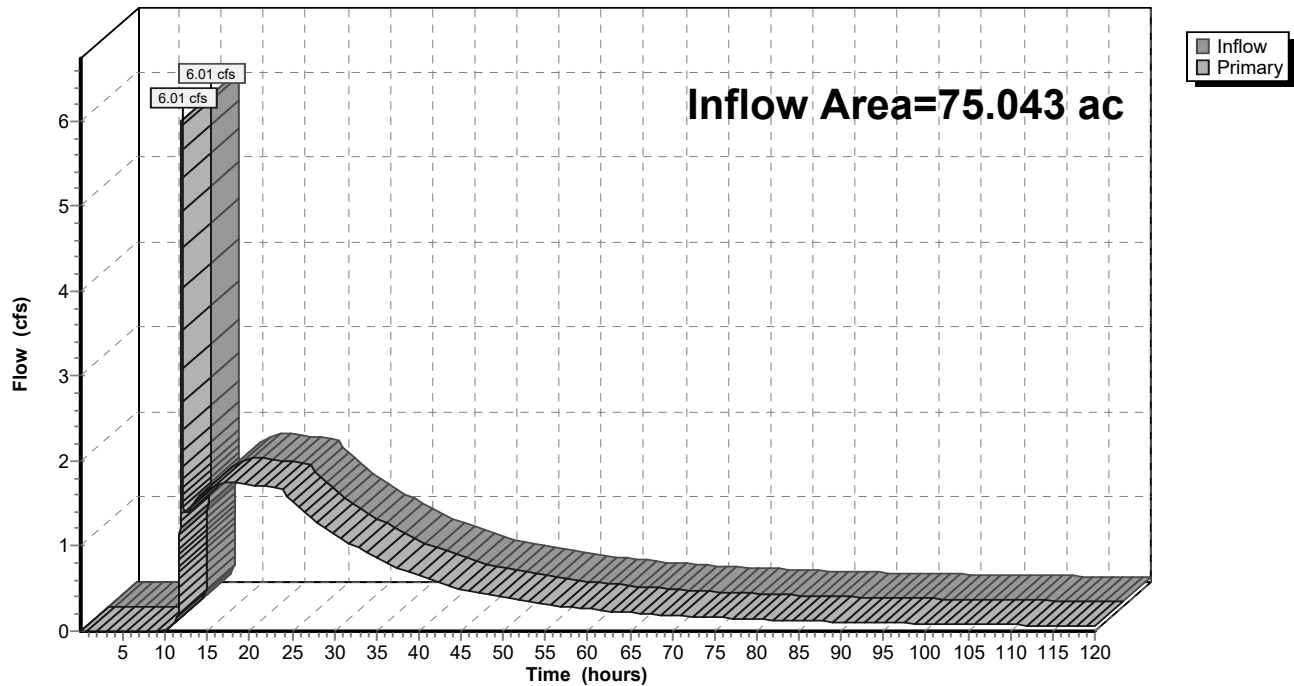
Summary for Link 1: OFFSITE

Inflow Area = 75.043 ac, 46.89% Impervious, Inflow Depth > 0.72" for Type 2 - 2-Year event
Inflow = 6.01 cfs @ 11.97 hrs, Volume= 4.475 af
Primary = 6.01 cfs @ 11.97 hrs, Volume= 4.475 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs

Link 1: OFFSITE

Hydrograph



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Type II 24-hr Type 2 - 2-Year Rainfall=2.68"

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Hydrograph for Link 1: OFFSITE

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.01	0.00	0.00	0.00	104.01	0.08	0.00	0.08
2.01	0.00	0.00	0.00	106.01	0.08	0.00	0.08
4.01	0.00	0.00	0.00	108.01	0.08	0.00	0.08
6.01	0.00	0.00	0.00	110.01	0.07	0.00	0.07
8.01	0.00	0.00	0.00	112.01	0.07	0.00	0.07
10.01	0.02	0.00	0.02	114.01	0.07	0.00	0.07
12.01	4.95	0.00	4.95	116.01	0.07	0.00	0.07
14.01	1.58	0.00	1.58	118.01	0.06	0.00	0.06
16.01	1.72	0.00	1.72				
18.01	1.75	0.00	1.75				
20.01	1.73	0.00	1.73				
22.01	1.70	0.00	1.70				
24.01	1.67	0.00	1.67				
26.01	1.44	0.00	1.44				
28.01	1.28	0.00	1.28				
30.01	1.15	0.00	1.15				
32.01	1.03	0.00	1.03				
34.01	0.92	0.00	0.92				
36.01	0.82	0.00	0.82				
38.01	0.73	0.00	0.73				
40.01	0.65	0.00	0.65				
42.01	0.58	0.00	0.58				
44.01	0.52	0.00	0.52				
46.01	0.47	0.00	0.47				
48.01	0.43	0.00	0.43				
50.01	0.40	0.00	0.40				
52.01	0.36	0.00	0.36				
54.01	0.33	0.00	0.33				
56.01	0.30	0.00	0.30				
58.01	0.28	0.00	0.28				
60.01	0.26	0.00	0.26				
62.01	0.24	0.00	0.24				
64.01	0.23	0.00	0.23				
66.01	0.21	0.00	0.21				
68.01	0.20	0.00	0.20				
70.01	0.18	0.00	0.18				
72.01	0.17	0.00	0.17				
74.01	0.16	0.00	0.16				
76.01	0.15	0.00	0.15				
78.01	0.15	0.00	0.15				
80.01	0.14	0.00	0.14				
82.01	0.13	0.00	0.13				
84.01	0.13	0.00	0.13				
86.01	0.12	0.00	0.12				
88.01	0.11	0.00	0.11				
90.01	0.11	0.00	0.11				
92.01	0.10	0.00	0.10				
94.01	0.10	0.00	0.10				
96.01	0.10	0.00	0.10				
98.01	0.09	0.00	0.09				
100.01	0.09	0.00	0.09				
102.01	0.09	0.00	0.09				

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Type II 24-hr Type 2 - 5-Year Rainfall=3.26"

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Time span=0.01-120.00 hrs, dt=0.01 hrs, 12000 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1A: 1A Runoff Area=110,816 sf 38.00% Impervious Runoff Depth=1.66"
Tc=5.0 min CN=83 Runoff=7.81 cfs 0.352 af

Subcatchment2A: 2A Runoff Area=6,401 sf 38.00% Impervious Runoff Depth=1.66"
Tc=5.0 min CN=83 Runoff=0.45 cfs 0.020 af

Subcatchment100A: 100A Runoff Area=1,074,428 sf 42.06% Impervious Runoff Depth=1.73"
Tc=5.0 min CN=84 Runoff=78.88 cfs 3.561 af

Subcatchment200A: 200A Runoff Area=225,239 sf 68.37% Impervious Runoff Depth=2.31"
Tc=5.0 min CN=91 Runoff=21.13 cfs 0.997 af

Subcatchment300A: 300A Runoff Area=260,648 sf 65.00% Impervious Runoff Depth=2.22"
Tc=5.0 min CN=90 Runoff=23.72 cfs 1.109 af

Subcatchment300B: 300B Runoff Area=552,525 sf 50.37% Impervious Runoff Depth=1.89"
Tc=5.0 min CN=86 Runoff=43.82 cfs 1.995 af

Subcatchment400A: 400A Runoff Area=257,377 sf 39.66% Impervious Runoff Depth=1.66"
Tc=5.0 min CN=83 Runoff=18.14 cfs 0.817 af

Subcatchment500A: 500A Runoff Area=781,453 sf 42.55% Impervious Runoff Depth=1.73"
Tc=5.0 min CN=84 Runoff=57.37 cfs 2.590 af

Pond 100: 100 Peak Elev=880.56' Storage=328,080 cf Inflow=78.88 cfs 3.561 af
Primary=0.85 cfs 2.593 af Secondary=0.00 cfs 0.000 af Outflow=0.85 cfs 2.593 af

Pond 200: 200 Peak Elev=876.23' Storage=99,426 cf Inflow=21.13 cfs 0.997 af
Primary=0.65 cfs 0.739 af Secondary=0.00 cfs 0.000 af Outflow=0.65 cfs 0.739 af

Pond 300: 300 Peak Elev=876.06' Storage=512,852 cf Inflow=67.53 cfs 3.479 af
Primary=0.53 cfs 1.881 af Secondary=0.00 cfs 0.000 af Outflow=0.53 cfs 1.881 af

Pond 400: 400 Peak Elev=877.78' Storage=158,867 cf Inflow=18.14 cfs 0.817 af
Primary=0.20 cfs 0.375 af Secondary=0.00 cfs 0.000 af Outflow=0.20 cfs 0.375 af

Pond 500: 500 Peak Elev=900.38' Storage=280,704 cf Inflow=57.37 cfs 2.590 af
Primary=0.75 cfs 1.846 af Secondary=0.00 cfs 0.000 af Outflow=0.75 cfs 1.846 af

Link 1: OFFSITE Inflow=8.75 cfs 7.430 af
Primary=8.75 cfs 7.430 af

Total Runoff Area = 75.043 ac Runoff Volume = 11.442 af Average Runoff Depth = 1.83"
53.11% Pervious = 39.854 ac 46.89% Impervious = 35.189 ac

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Type II 24-hr Type 2 - 5-Year Rainfall=3.26"

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Summary for Subcatchment 1A: 1A

Runoff = 7.81 cfs @ 11.96 hrs, Volume= 0.352 af, Depth= 1.66"
Routed to Link 1 : OFFSITE

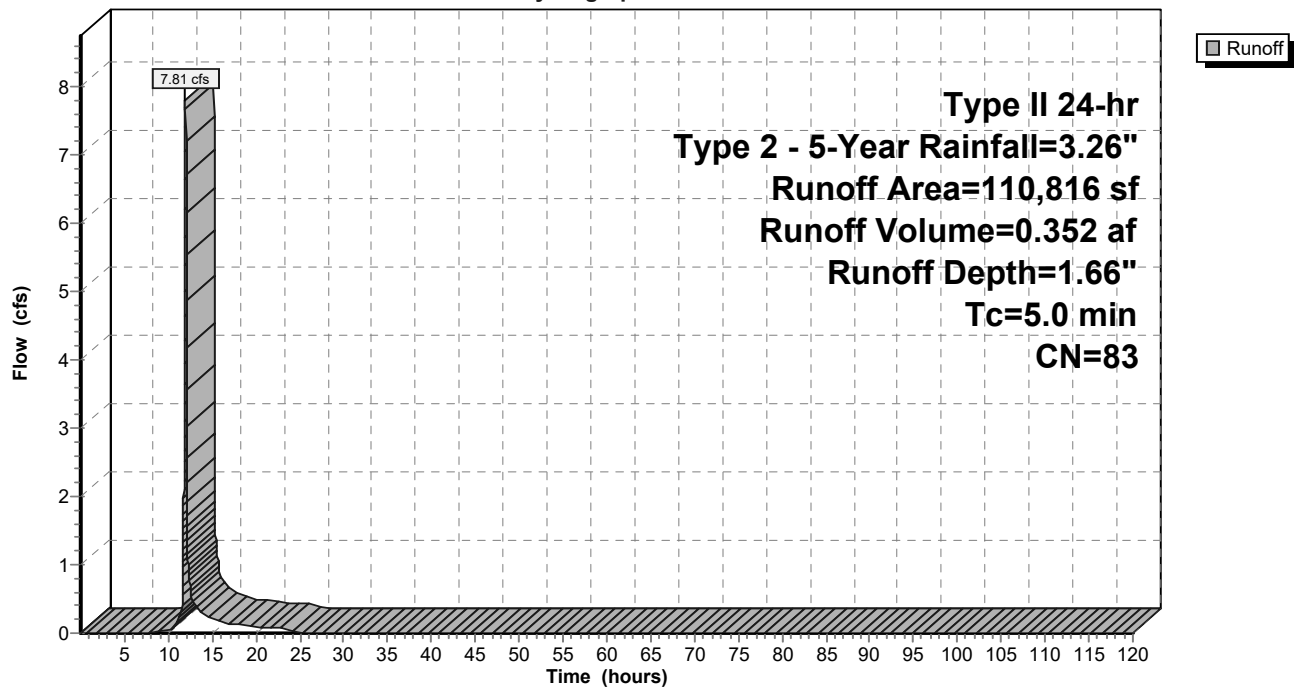
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs
Type II 24-hr Type 2 - 5-Year Rainfall=3.26"

Area (sf)	CN	Description
110,816	83	1/4 acre lots, 38% imp, HSG C
68,706		62.00% Pervious Area
42,110		38.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, Direct

Subcatchment 1A: 1A

Hydrograph



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Type II 24-hr Type 2 - 5-Year Rainfall=3.26"

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Hydrograph for Subcatchment 1A: 1A

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.01	0.00	0.00	0.00	104.01	3.26	1.66	0.00
2.01	0.07	0.00	0.00	106.01	3.26	1.66	0.00
4.01	0.16	0.00	0.00	108.01	3.26	1.66	0.00
6.01	0.26	0.00	0.00	110.01	3.26	1.66	0.00
8.01	0.39	0.00	0.00	112.01	3.26	1.66	0.00
10.01	0.59	0.01	0.05	114.01	3.26	1.66	0.00
12.01	2.17	0.81	6.17	116.01	3.26	1.66	0.00
14.01	2.67	1.19	0.25	118.01	3.26	1.66	0.00
16.01	2.87	1.34	0.16				
18.01	3.00	1.45	0.12				
20.01	3.10	1.53	0.09				
22.01	3.19	1.60	0.08				
24.01	3.26	1.66	0.08				
26.01	3.26	1.66	0.00				
28.01	3.26	1.66	0.00				
30.01	3.26	1.66	0.00				
32.01	3.26	1.66	0.00				
34.01	3.26	1.66	0.00				
36.01	3.26	1.66	0.00				
38.01	3.26	1.66	0.00				
40.01	3.26	1.66	0.00				
42.01	3.26	1.66	0.00				
44.01	3.26	1.66	0.00				
46.01	3.26	1.66	0.00				
48.01	3.26	1.66	0.00				
50.01	3.26	1.66	0.00				
52.01	3.26	1.66	0.00				
54.01	3.26	1.66	0.00				
56.01	3.26	1.66	0.00				
58.01	3.26	1.66	0.00				
60.01	3.26	1.66	0.00				
62.01	3.26	1.66	0.00				
64.01	3.26	1.66	0.00				
66.01	3.26	1.66	0.00				
68.01	3.26	1.66	0.00				
70.01	3.26	1.66	0.00				
72.01	3.26	1.66	0.00				
74.01	3.26	1.66	0.00				
76.01	3.26	1.66	0.00				
78.01	3.26	1.66	0.00				
80.01	3.26	1.66	0.00				
82.01	3.26	1.66	0.00				
84.01	3.26	1.66	0.00				
86.01	3.26	1.66	0.00				
88.01	3.26	1.66	0.00				
90.01	3.26	1.66	0.00				
92.01	3.26	1.66	0.00				
94.01	3.26	1.66	0.00				
96.01	3.26	1.66	0.00				
98.01	3.26	1.66	0.00				
100.01	3.26	1.66	0.00				
102.01	3.26	1.66	0.00				

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Type II 24-hr Type 2 - 5-Year Rainfall=3.26"

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Summary for Subcatchment 2A: 2A

Runoff = 0.45 cfs @ 11.96 hrs, Volume= 0.020 af, Depth= 1.66"
Routed to Link 1 : OFFSITE

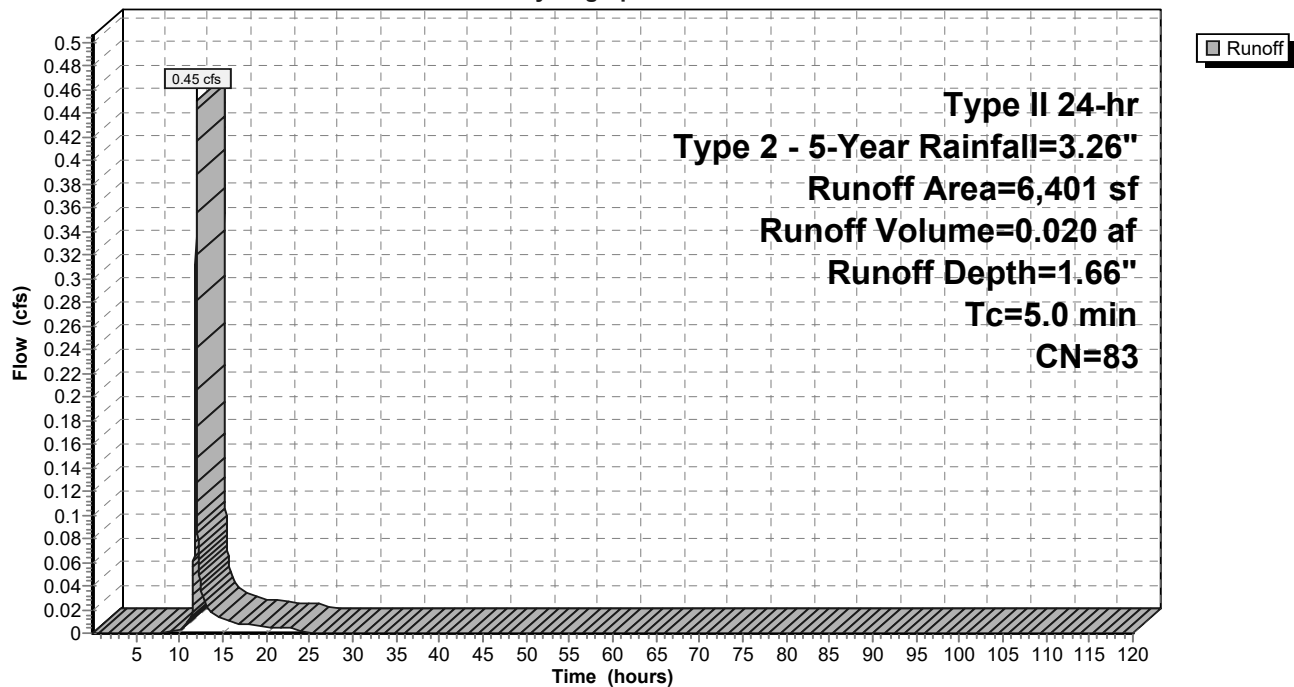
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs
Type II 24-hr Type 2 - 5-Year Rainfall=3.26"

Area (sf)	CN	Description
6,401	83	1/4 acre lots, 38% imp, HSG C
3,969		62.00% Pervious Area
2,432		38.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, Direct

Subcatchment 2A: 2A

Hydrograph



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Type II 24-hr Type 2 - 5-Year Rainfall=3.26"

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Hydrograph for Subcatchment 2A: 2A

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.01	0.00	0.00	0.00	104.01	3.26	1.66	0.00
2.01	0.07	0.00	0.00	106.01	3.26	1.66	0.00
4.01	0.16	0.00	0.00	108.01	3.26	1.66	0.00
6.01	0.26	0.00	0.00	110.01	3.26	1.66	0.00
8.01	0.39	0.00	0.00	112.01	3.26	1.66	0.00
10.01	0.59	0.01	0.00	114.01	3.26	1.66	0.00
12.01	2.17	0.81	0.36	116.01	3.26	1.66	0.00
14.01	2.67	1.19	0.01	118.01	3.26	1.66	0.00
16.01	2.87	1.34	0.01				
18.01	3.00	1.45	0.01				
20.01	3.10	1.53	0.01				
22.01	3.19	1.60	0.00				
24.01	3.26	1.66	0.00				
26.01	3.26	1.66	0.00				
28.01	3.26	1.66	0.00				
30.01	3.26	1.66	0.00				
32.01	3.26	1.66	0.00				
34.01	3.26	1.66	0.00				
36.01	3.26	1.66	0.00				
38.01	3.26	1.66	0.00				
40.01	3.26	1.66	0.00				
42.01	3.26	1.66	0.00				
44.01	3.26	1.66	0.00				
46.01	3.26	1.66	0.00				
48.01	3.26	1.66	0.00				
50.01	3.26	1.66	0.00				
52.01	3.26	1.66	0.00				
54.01	3.26	1.66	0.00				
56.01	3.26	1.66	0.00				
58.01	3.26	1.66	0.00				
60.01	3.26	1.66	0.00				
62.01	3.26	1.66	0.00				
64.01	3.26	1.66	0.00				
66.01	3.26	1.66	0.00				
68.01	3.26	1.66	0.00				
70.01	3.26	1.66	0.00				
72.01	3.26	1.66	0.00				
74.01	3.26	1.66	0.00				
76.01	3.26	1.66	0.00				
78.01	3.26	1.66	0.00				
80.01	3.26	1.66	0.00				
82.01	3.26	1.66	0.00				
84.01	3.26	1.66	0.00				
86.01	3.26	1.66	0.00				
88.01	3.26	1.66	0.00				
90.01	3.26	1.66	0.00				
92.01	3.26	1.66	0.00				
94.01	3.26	1.66	0.00				
96.01	3.26	1.66	0.00				
98.01	3.26	1.66	0.00				
100.01	3.26	1.66	0.00				
102.01	3.26	1.66	0.00				

Proposed Conditions

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Type II 24-hr Type 2 - 5-Year Rainfall=3.26"

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Summary for Subcatchment 100A: 100A

Runoff = 78.88 cfs @ 11.96 hrs, Volume= 3.561 af, Depth= 1.73"
Routed to Pond 100 : 100

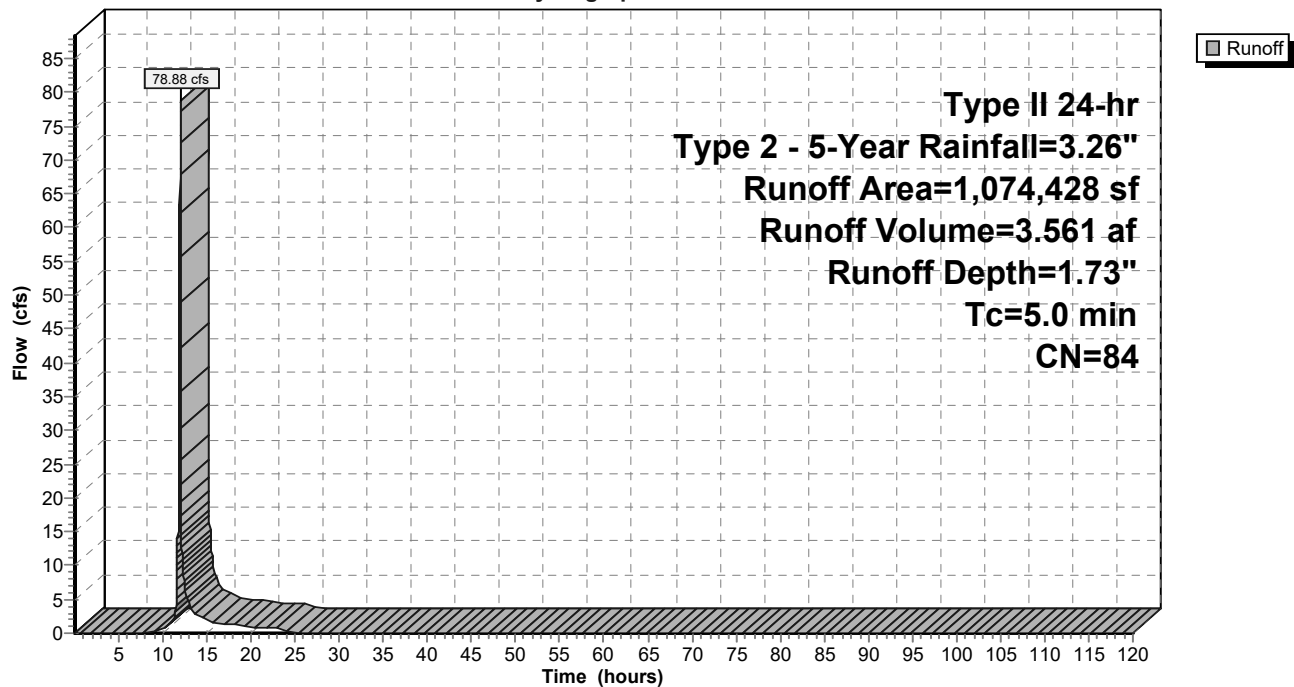
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs
Type II 24-hr Type 2 - 5-Year Rainfall=3.26"

Area (sf)	CN	Description
70,439	98	Water Surface, HSG C
1,003,989	83	1/4 acre lots, 38% imp, HSG C
1,074,428	84	Weighted Average
622,473		57.94% Pervious Area
451,955		42.06% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, Direct

Subcatchment 100A: 100A

Hydrograph



Proposed Conditions

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Type II 24-hr Type 2 - 5-Year Rainfall=3.26"

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Hydrograph for Subcatchment 100A: 100A

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.01	0.00	0.00	0.00	104.01	3.26	1.73	0.00
2.01	0.07	0.00	0.00	106.01	3.26	1.73	0.00
4.01	0.16	0.00	0.00	108.01	3.26	1.73	0.00
6.01	0.26	0.00	0.00	110.01	3.26	1.73	0.00
8.01	0.39	0.00	0.01	112.01	3.26	1.73	0.00
10.01	0.59	0.02	0.57	114.01	3.26	1.73	0.00
12.01	2.17	0.86	62.05	116.01	3.26	1.73	0.00
14.01	2.67	1.25	2.47	118.01	3.26	1.73	0.00
16.01	2.87	1.41	1.54				
18.01	3.00	1.52	1.21				
20.01	3.10	1.60	0.89				
22.01	3.19	1.67	0.82				
24.01	3.26	1.73	0.75				
26.01	3.26	1.73	0.00				
28.01	3.26	1.73	0.00				
30.01	3.26	1.73	0.00				
32.01	3.26	1.73	0.00				
34.01	3.26	1.73	0.00				
36.01	3.26	1.73	0.00				
38.01	3.26	1.73	0.00				
40.01	3.26	1.73	0.00				
42.01	3.26	1.73	0.00				
44.01	3.26	1.73	0.00				
46.01	3.26	1.73	0.00				
48.01	3.26	1.73	0.00				
50.01	3.26	1.73	0.00				
52.01	3.26	1.73	0.00				
54.01	3.26	1.73	0.00				
56.01	3.26	1.73	0.00				
58.01	3.26	1.73	0.00				
60.01	3.26	1.73	0.00				
62.01	3.26	1.73	0.00				
64.01	3.26	1.73	0.00				
66.01	3.26	1.73	0.00				
68.01	3.26	1.73	0.00				
70.01	3.26	1.73	0.00				
72.01	3.26	1.73	0.00				
74.01	3.26	1.73	0.00				
76.01	3.26	1.73	0.00				
78.01	3.26	1.73	0.00				
80.01	3.26	1.73	0.00				
82.01	3.26	1.73	0.00				
84.01	3.26	1.73	0.00				
86.01	3.26	1.73	0.00				
88.01	3.26	1.73	0.00				
90.01	3.26	1.73	0.00				
92.01	3.26	1.73	0.00				
94.01	3.26	1.73	0.00				
96.01	3.26	1.73	0.00				
98.01	3.26	1.73	0.00				
100.01	3.26	1.73	0.00				
102.01	3.26	1.73	0.00				

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Type II 24-hr Type 2 - 5-Year Rainfall=3.26"

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Summary for Subcatchment 200A: 200A

Runoff = 21.13 cfs @ 11.96 hrs, Volume= 0.997 af, Depth= 2.31"
Routed to Pond 200 : 200

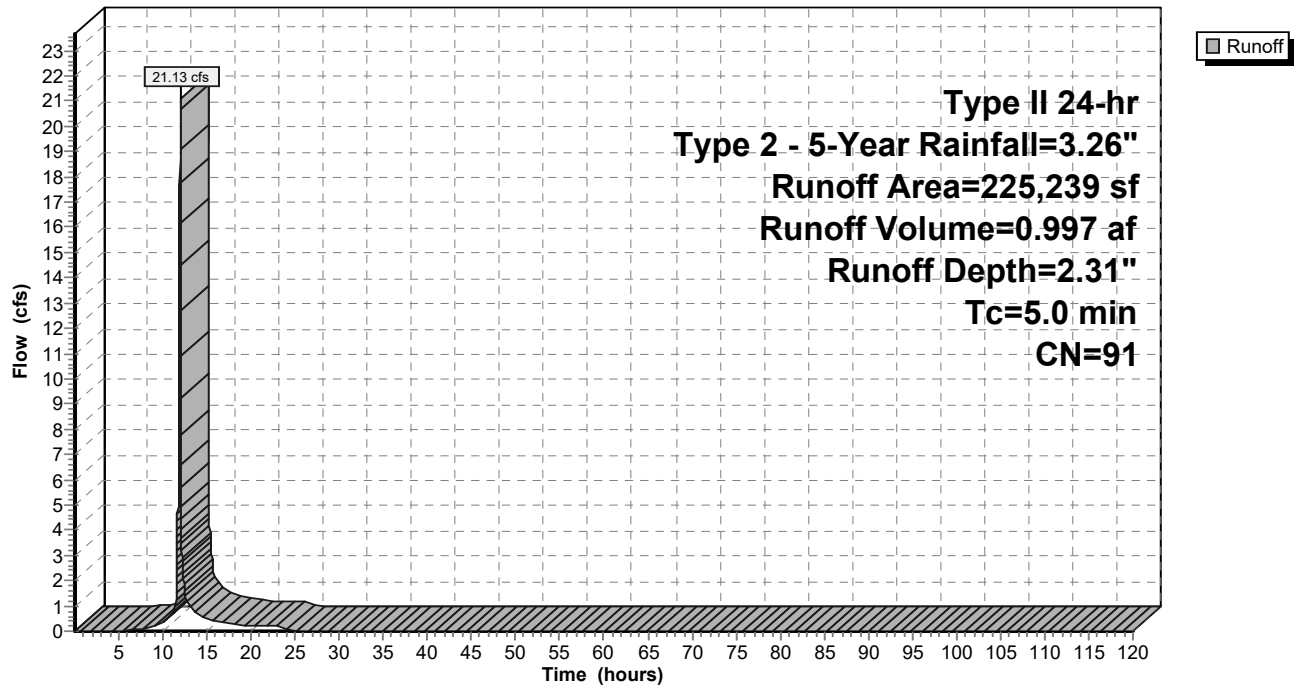
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs
Type II 24-hr Type 2 - 5-Year Rainfall=3.26"

Area (sf)	CN	Description
21,699	98	Water Surface, HSG C
203,540	90	1/8 acre lots, 65% imp, HSG C
225,239	91	Weighted Average
71,239		31.63% Pervious Area
154,000		68.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, Direct

Subcatchment 200A: 200A

Hydrograph



Proposed Conditions

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Type II 24-hr Type 2 - 5-Year Rainfall=3.26"

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Hydrograph for Subcatchment 200A: 200A

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.01	0.00	0.00	0.00	104.01	3.26	2.31	0.00
2.01	0.07	0.00	0.00	106.01	3.26	2.31	0.00
4.01	0.16	0.00	0.00	108.01	3.26	2.31	0.00
6.01	0.26	0.00	0.03	110.01	3.26	2.31	0.00
8.01	0.39	0.03	0.11	112.01	3.26	2.31	0.00
10.01	0.59	0.11	0.32	114.01	3.26	2.31	0.00
12.01	2.17	1.31	16.20	116.01	3.26	2.31	0.00
14.01	2.67	1.77	0.60	118.01	3.26	2.31	0.00
16.01	2.87	1.95	0.37				
18.01	3.00	2.07	0.29				
20.01	3.10	2.17	0.21				
22.01	3.19	2.24	0.19				
24.01	3.26	2.31	0.18				
26.01	3.26	2.31	0.00				
28.01	3.26	2.31	0.00				
30.01	3.26	2.31	0.00				
32.01	3.26	2.31	0.00				
34.01	3.26	2.31	0.00				
36.01	3.26	2.31	0.00				
38.01	3.26	2.31	0.00				
40.01	3.26	2.31	0.00				
42.01	3.26	2.31	0.00				
44.01	3.26	2.31	0.00				
46.01	3.26	2.31	0.00				
48.01	3.26	2.31	0.00				
50.01	3.26	2.31	0.00				
52.01	3.26	2.31	0.00				
54.01	3.26	2.31	0.00				
56.01	3.26	2.31	0.00				
58.01	3.26	2.31	0.00				
60.01	3.26	2.31	0.00				
62.01	3.26	2.31	0.00				
64.01	3.26	2.31	0.00				
66.01	3.26	2.31	0.00				
68.01	3.26	2.31	0.00				
70.01	3.26	2.31	0.00				
72.01	3.26	2.31	0.00				
74.01	3.26	2.31	0.00				
76.01	3.26	2.31	0.00				
78.01	3.26	2.31	0.00				
80.01	3.26	2.31	0.00				
82.01	3.26	2.31	0.00				
84.01	3.26	2.31	0.00				
86.01	3.26	2.31	0.00				
88.01	3.26	2.31	0.00				
90.01	3.26	2.31	0.00				
92.01	3.26	2.31	0.00				
94.01	3.26	2.31	0.00				
96.01	3.26	2.31	0.00				
98.01	3.26	2.31	0.00				
100.01	3.26	2.31	0.00				
102.01	3.26	2.31	0.00				

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Type II 24-hr Type 2 - 5-Year Rainfall=3.26"

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Summary for Subcatchment 300A: 300A

Runoff = 23.72 cfs @ 11.96 hrs, Volume= 1.109 af, Depth= 2.22"
Routed to Pond 300 : 300

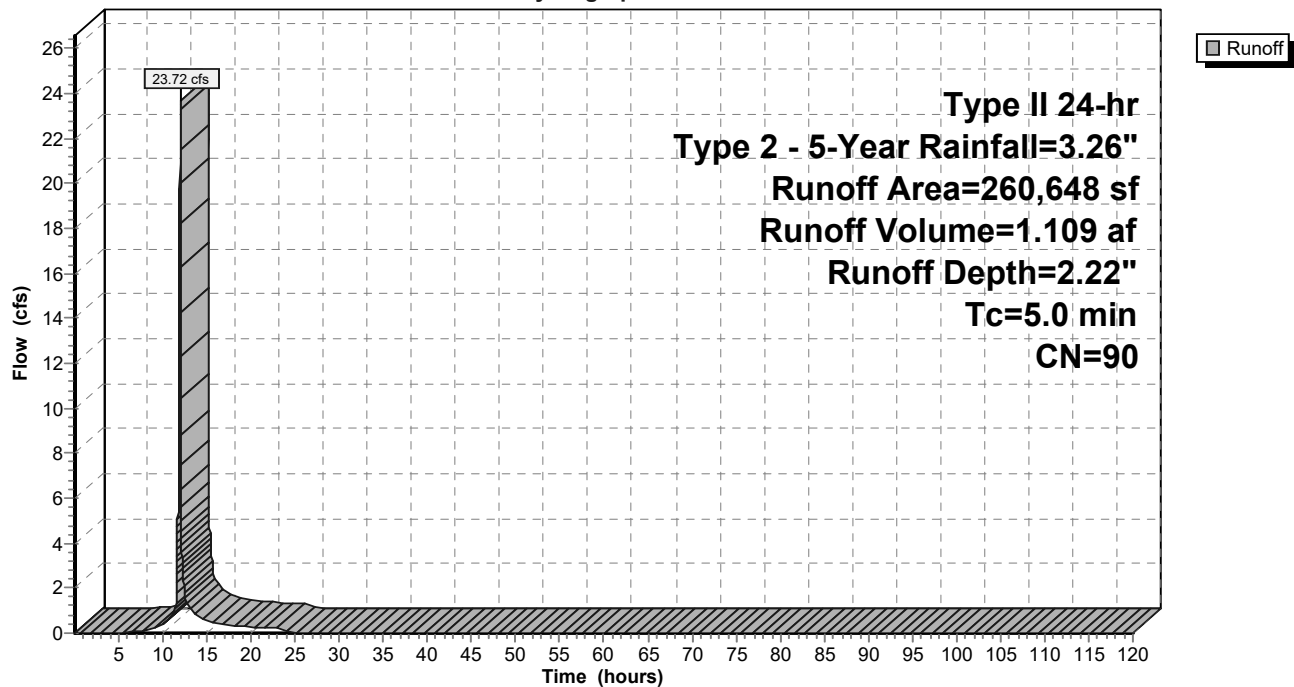
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs
Type II 24-hr Type 2 - 5-Year Rainfall=3.26"

Area (sf)	CN	Description
260,648	90	1/8 acre lots, 65% imp, HSG C
91,227		35.00% Pervious Area
169,421		65.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, Direct

Subcatchment 300A: 300A

Hydrograph



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Type II 24-hr Type 2 - 5-Year Rainfall=3.26"

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Hydrograph for Subcatchment 300A: 300A

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.01	0.00	0.00	0.00	104.01	3.26	2.22	0.00
2.01	0.07	0.00	0.00	106.01	3.26	2.22	0.00
4.01	0.16	0.00	0.00	108.01	3.26	2.22	0.00
6.01	0.26	0.00	0.02	110.01	3.26	2.22	0.00
8.01	0.39	0.02	0.10	112.01	3.26	2.22	0.00
10.01	0.59	0.09	0.33	114.01	3.26	2.22	0.00
12.01	2.17	1.24	18.25	116.01	3.26	2.22	0.00
14.01	2.67	1.69	0.68	118.01	3.26	2.22	0.00
16.01	2.87	1.86	0.42				
18.01	3.00	1.99	0.33				
20.01	3.10	2.08	0.24				
22.01	3.19	2.16	0.22				
24.01	3.26	2.22	0.20				
26.01	3.26	2.22	0.00				
28.01	3.26	2.22	0.00				
30.01	3.26	2.22	0.00				
32.01	3.26	2.22	0.00				
34.01	3.26	2.22	0.00				
36.01	3.26	2.22	0.00				
38.01	3.26	2.22	0.00				
40.01	3.26	2.22	0.00				
42.01	3.26	2.22	0.00				
44.01	3.26	2.22	0.00				
46.01	3.26	2.22	0.00				
48.01	3.26	2.22	0.00				
50.01	3.26	2.22	0.00				
52.01	3.26	2.22	0.00				
54.01	3.26	2.22	0.00				
56.01	3.26	2.22	0.00				
58.01	3.26	2.22	0.00				
60.01	3.26	2.22	0.00				
62.01	3.26	2.22	0.00				
64.01	3.26	2.22	0.00				
66.01	3.26	2.22	0.00				
68.01	3.26	2.22	0.00				
70.01	3.26	2.22	0.00				
72.01	3.26	2.22	0.00				
74.01	3.26	2.22	0.00				
76.01	3.26	2.22	0.00				
78.01	3.26	2.22	0.00				
80.01	3.26	2.22	0.00				
82.01	3.26	2.22	0.00				
84.01	3.26	2.22	0.00				
86.01	3.26	2.22	0.00				
88.01	3.26	2.22	0.00				
90.01	3.26	2.22	0.00				
92.01	3.26	2.22	0.00				
94.01	3.26	2.22	0.00				
96.01	3.26	2.22	0.00				
98.01	3.26	2.22	0.00				
100.01	3.26	2.22	0.00				
102.01	3.26	2.22	0.00				

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Type II 24-hr Type 2 - 5-Year Rainfall=3.26"

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Summary for Subcatchment 300B: 300B

Runoff = 43.82 cfs @ 11.96 hrs, Volume= 1.995 af, Depth= 1.89"
Routed to Pond 300 : 300

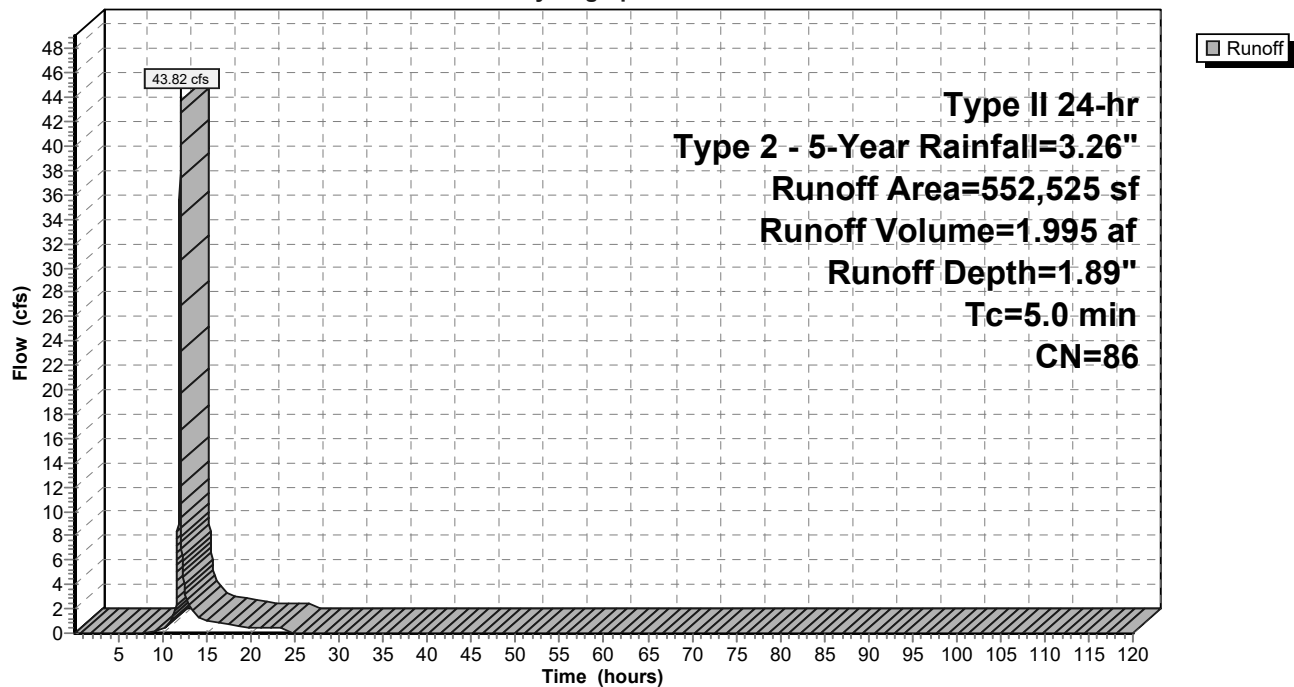
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs
Type II 24-hr Type 2 - 5-Year Rainfall=3.26"

Area (sf)	CN	Description
442,263	83	1/4 acre lots, 38% imp, HSG C
110,262	98	Water Surface, HSG C
552,525	86	Weighted Average
274,203		49.63% Pervious Area
278,322		50.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, Direct

Subcatchment 300B: 300B

Hydrograph



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Type II 24-hr Type 2 - 5-Year Rainfall=3.26"

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Hydrograph for Subcatchment 300B: 300B

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.01	0.00	0.00	0.00	104.01	3.26	1.89	0.00
2.01	0.07	0.00	0.00	106.01	3.26	1.89	0.00
4.01	0.16	0.00	0.00	108.01	3.26	1.89	0.00
6.01	0.26	0.00	0.00	110.01	3.26	1.89	0.00
8.01	0.39	0.00	0.06	112.01	3.26	1.89	0.00
10.01	0.59	0.04	0.41	114.01	3.26	1.89	0.00
12.01	2.17	0.98	34.21	116.01	3.26	1.89	0.00
14.01	2.67	1.39	1.33	118.01	3.26	1.89	0.00
16.01	2.87	1.55	0.83				
18.01	3.00	1.67	0.65				
20.01	3.10	1.75	0.47				
22.01	3.19	1.82	0.44				
24.01	3.26	1.89	0.40				
26.01	3.26	1.89	0.00				
28.01	3.26	1.89	0.00				
30.01	3.26	1.89	0.00				
32.01	3.26	1.89	0.00				
34.01	3.26	1.89	0.00				
36.01	3.26	1.89	0.00				
38.01	3.26	1.89	0.00				
40.01	3.26	1.89	0.00				
42.01	3.26	1.89	0.00				
44.01	3.26	1.89	0.00				
46.01	3.26	1.89	0.00				
48.01	3.26	1.89	0.00				
50.01	3.26	1.89	0.00				
52.01	3.26	1.89	0.00				
54.01	3.26	1.89	0.00				
56.01	3.26	1.89	0.00				
58.01	3.26	1.89	0.00				
60.01	3.26	1.89	0.00				
62.01	3.26	1.89	0.00				
64.01	3.26	1.89	0.00				
66.01	3.26	1.89	0.00				
68.01	3.26	1.89	0.00				
70.01	3.26	1.89	0.00				
72.01	3.26	1.89	0.00				
74.01	3.26	1.89	0.00				
76.01	3.26	1.89	0.00				
78.01	3.26	1.89	0.00				
80.01	3.26	1.89	0.00				
82.01	3.26	1.89	0.00				
84.01	3.26	1.89	0.00				
86.01	3.26	1.89	0.00				
88.01	3.26	1.89	0.00				
90.01	3.26	1.89	0.00				
92.01	3.26	1.89	0.00				
94.01	3.26	1.89	0.00				
96.01	3.26	1.89	0.00				
98.01	3.26	1.89	0.00				
100.01	3.26	1.89	0.00				
102.01	3.26	1.89	0.00				

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Type II 24-hr Type 2 - 5-Year Rainfall=3.26"

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Summary for Subcatchment 400A: 400A

Runoff = 18.14 cfs @ 11.96 hrs, Volume= 0.817 af, Depth= 1.66"
Routed to Pond 400 : 400

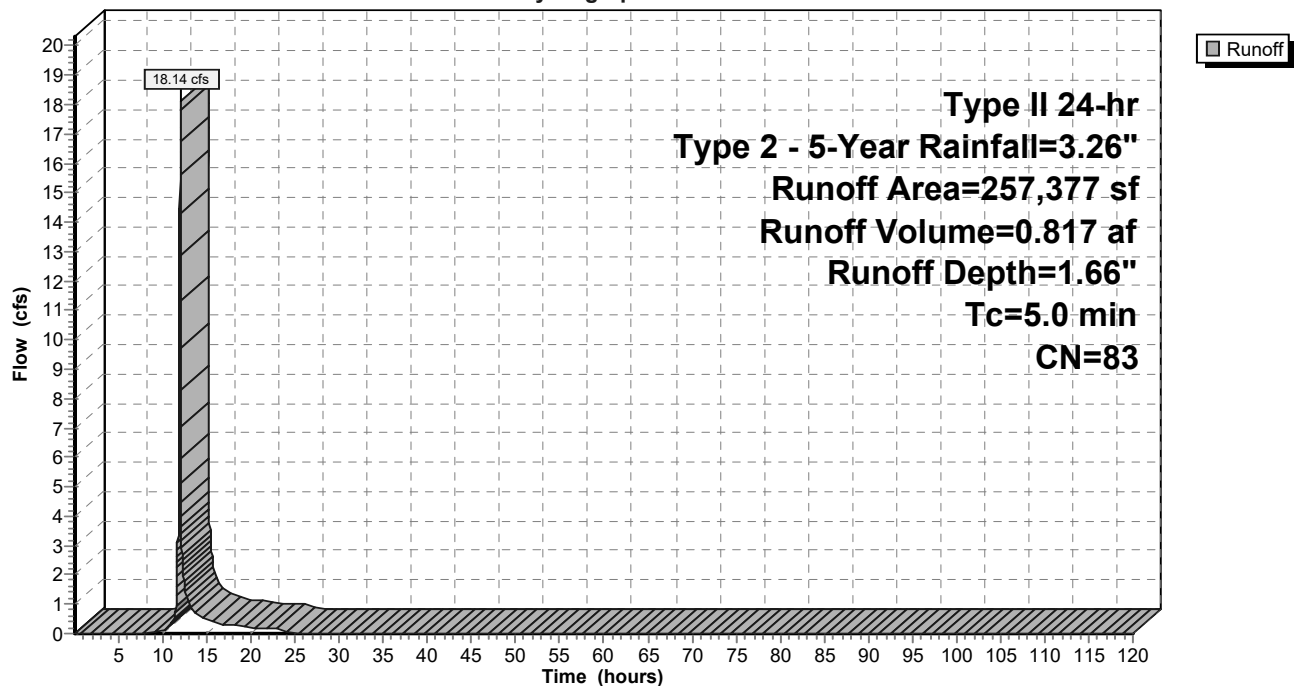
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs
Type II 24-hr Type 2 - 5-Year Rainfall=3.26"

Area (sf)	CN	Description
47,305	70	Woods, Good, HSG C
35,903	98	Water Surface, HSG C
174,169	83	1/4 acre lots, 38% imp, HSG C
257,377	83	Weighted Average
155,290		60.34% Pervious Area
102,087		39.66% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, Direct

Subcatchment 400A: 400A

Hydrograph



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Type II 24-hr Type 2 - 5-Year Rainfall=3.26"

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Hydrograph for Subcatchment 400A: 400A

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.01	0.00	0.00	0.00	104.01	3.26	1.66	0.00
2.01	0.07	0.00	0.00	106.01	3.26	1.66	0.00
4.01	0.16	0.00	0.00	108.01	3.26	1.66	0.00
6.01	0.26	0.00	0.00	110.01	3.26	1.66	0.00
8.01	0.39	0.00	0.00	112.01	3.26	1.66	0.00
10.01	0.59	0.01	0.11	114.01	3.26	1.66	0.00
12.01	2.17	0.81	14.33	116.01	3.26	1.66	0.00
14.01	2.67	1.19	0.58	118.01	3.26	1.66	0.00
16.01	2.87	1.34	0.36				
18.01	3.00	1.45	0.28				
20.01	3.10	1.53	0.21				
22.01	3.19	1.60	0.19				
24.01	3.26	1.66	0.18				
26.01	3.26	1.66	0.00				
28.01	3.26	1.66	0.00				
30.01	3.26	1.66	0.00				
32.01	3.26	1.66	0.00				
34.01	3.26	1.66	0.00				
36.01	3.26	1.66	0.00				
38.01	3.26	1.66	0.00				
40.01	3.26	1.66	0.00				
42.01	3.26	1.66	0.00				
44.01	3.26	1.66	0.00				
46.01	3.26	1.66	0.00				
48.01	3.26	1.66	0.00				
50.01	3.26	1.66	0.00				
52.01	3.26	1.66	0.00				
54.01	3.26	1.66	0.00				
56.01	3.26	1.66	0.00				
58.01	3.26	1.66	0.00				
60.01	3.26	1.66	0.00				
62.01	3.26	1.66	0.00				
64.01	3.26	1.66	0.00				
66.01	3.26	1.66	0.00				
68.01	3.26	1.66	0.00				
70.01	3.26	1.66	0.00				
72.01	3.26	1.66	0.00				
74.01	3.26	1.66	0.00				
76.01	3.26	1.66	0.00				
78.01	3.26	1.66	0.00				
80.01	3.26	1.66	0.00				
82.01	3.26	1.66	0.00				
84.01	3.26	1.66	0.00				
86.01	3.26	1.66	0.00				
88.01	3.26	1.66	0.00				
90.01	3.26	1.66	0.00				
92.01	3.26	1.66	0.00				
94.01	3.26	1.66	0.00				
96.01	3.26	1.66	0.00				
98.01	3.26	1.66	0.00				
100.01	3.26	1.66	0.00				
102.01	3.26	1.66	0.00				

Proposed Conditions

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Type II 24-hr Type 2 - 5-Year Rainfall=3.26"

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Summary for Subcatchment 500A: 500A

Runoff = 57.37 cfs @ 11.96 hrs, Volume= 2.590 af, Depth= 1.73"
Routed to Pond 500 : 500

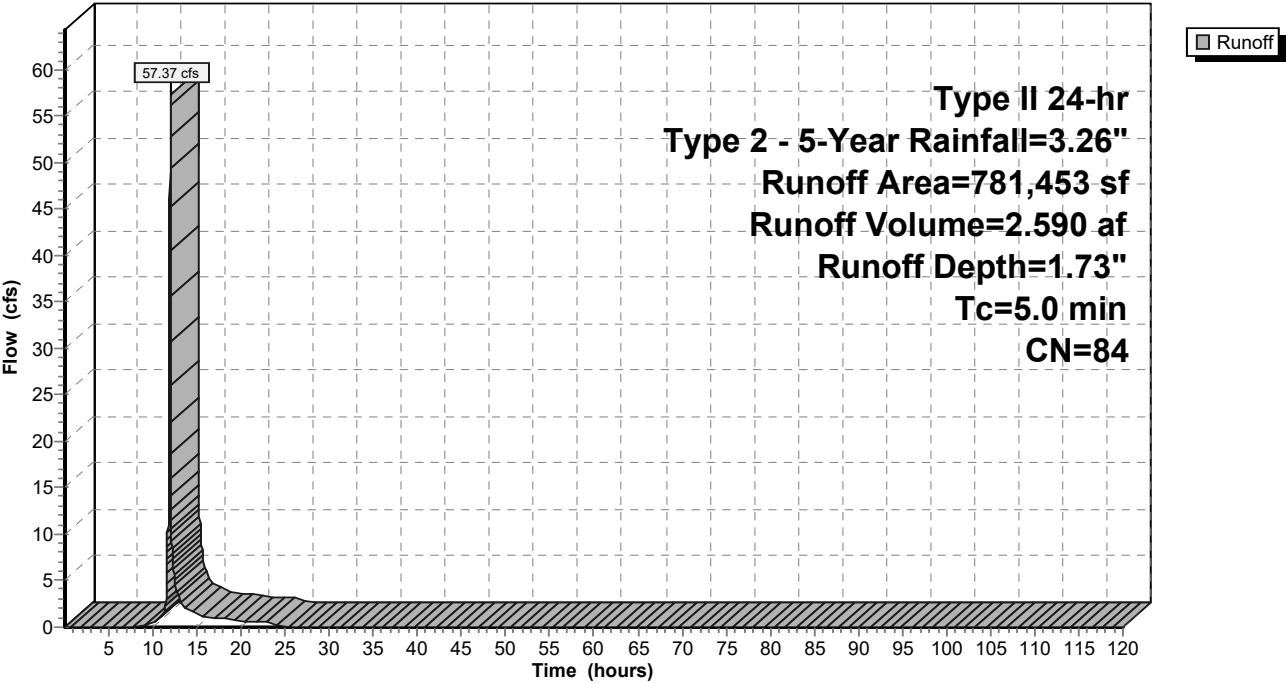
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs
Type II 24-hr Type 2 - 5-Year Rainfall=3.26"

Area (sf)	CN	Description
57,355	98	Water Surface, HSG C
724,098	83	1/4 acre lots, 38% imp, HSG C
781,453	84	Weighted Average
448,941		57.45% Pervious Area
332,512		42.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, Direct

Subcatchment 500A: 500A

Hydrograph



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Type II 24-hr Type 2 - 5-Year Rainfall=3.26"

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Hydrograph for Subcatchment 500A: 500A

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.01	0.00	0.00	0.00	104.01	3.26	1.73	0.00
2.01	0.07	0.00	0.00	106.01	3.26	1.73	0.00
4.01	0.16	0.00	0.00	108.01	3.26	1.73	0.00
6.01	0.26	0.00	0.00	110.01	3.26	1.73	0.00
8.01	0.39	0.00	0.01	112.01	3.26	1.73	0.00
10.01	0.59	0.02	0.42	114.01	3.26	1.73	0.00
12.01	2.17	0.86	45.13	116.01	3.26	1.73	0.00
14.01	2.67	1.25	1.79	118.01	3.26	1.73	0.00
16.01	2.87	1.41	1.12				
18.01	3.00	1.52	0.88				
20.01	3.10	1.60	0.64				
22.01	3.19	1.67	0.59				
24.01	3.26	1.73	0.55				
26.01	3.26	1.73	0.00				
28.01	3.26	1.73	0.00				
30.01	3.26	1.73	0.00				
32.01	3.26	1.73	0.00				
34.01	3.26	1.73	0.00				
36.01	3.26	1.73	0.00				
38.01	3.26	1.73	0.00				
40.01	3.26	1.73	0.00				
42.01	3.26	1.73	0.00				
44.01	3.26	1.73	0.00				
46.01	3.26	1.73	0.00				
48.01	3.26	1.73	0.00				
50.01	3.26	1.73	0.00				
52.01	3.26	1.73	0.00				
54.01	3.26	1.73	0.00				
56.01	3.26	1.73	0.00				
58.01	3.26	1.73	0.00				
60.01	3.26	1.73	0.00				
62.01	3.26	1.73	0.00				
64.01	3.26	1.73	0.00				
66.01	3.26	1.73	0.00				
68.01	3.26	1.73	0.00				
70.01	3.26	1.73	0.00				
72.01	3.26	1.73	0.00				
74.01	3.26	1.73	0.00				
76.01	3.26	1.73	0.00				
78.01	3.26	1.73	0.00				
80.01	3.26	1.73	0.00				
82.01	3.26	1.73	0.00				
84.01	3.26	1.73	0.00				
86.01	3.26	1.73	0.00				
88.01	3.26	1.73	0.00				
90.01	3.26	1.73	0.00				
92.01	3.26	1.73	0.00				
94.01	3.26	1.73	0.00				
96.01	3.26	1.73	0.00				
98.01	3.26	1.73	0.00				
100.01	3.26	1.73	0.00				
102.01	3.26	1.73	0.00				

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Type II 24-hr Type 2 - 5-Year Rainfall=3.26"

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Summary for Pond 100: 100

Inflow Area = 24.665 ac, 42.06% Impervious, Inflow Depth = 1.73" for Type 2 - 5-Year event
 Inflow = 78.88 cfs @ 11.96 hrs, Volume= 3.561 af
 Outflow = 0.85 cfs @ 20.87 hrs, Volume= 2.593 af, Atten= 99%, Lag= 534.6 min
 Primary = 0.85 cfs @ 20.87 hrs, Volume= 2.593 af
 Routed to Link 1 : OFFSITE
 Secondary = 0.00 cfs @ 0.01 hrs, Volume= 0.000 af
 Routed to Link 1 : OFFSITE

Routing by Stor-Ind method, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs

Starting Elev= 879.00' Surf.Area= 70,439 sf Storage= 207,488 cf

Peak Elev= 880.56' @ 20.87 hrs Surf.Area= 84,089 sf Storage= 328,080 cf (120,593 cf above start)

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)

Center-of-Mass det. time= 1,387.4 min (2,212.0 - 824.6)

Volume	Invert	Avail.Storage	Storage Description
#1	874.00'	670,255 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
874.00	24,774	0	0
875.00	30,784	27,779	27,779
876.00	36,863	33,824	61,603
877.00	43,009	39,936	101,539
878.00	49,225	46,117	147,656
879.00	70,439	59,832	207,488
880.00	79,139	74,789	282,277
881.00	87,959	83,549	365,826
882.00	96,903	92,431	458,257
883.00	105,969	101,436	559,693
884.00	115,156	110,563	670,255

Device	Routing	Invert	Outlet Devices
#1	Primary	879.00'	24.0" Round RCP_Round 24" L= 70.0' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 879.00' / 878.00' S= 0.0143 '/' Cc= 0.900 n= 0.011 Concrete pipe, finished, Flow Area= 3.14 sf
#2	Device 1	879.50'	6.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Secondary	883.00'	25.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.85 cfs @ 20.87 hrs HW=880.56' (Free Discharge)↑ **1=RCP_Round 24"** (Passes 0.85 cfs of 9.88 cfs potential flow)↑ **2=Orifice/Grate** (Orifice Controls 0.85 cfs @ 4.34 fps)**Secondary OutFlow** Max=0.00 cfs @ 0.01 hrs HW=879.00' (Free Discharge)↑ **3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

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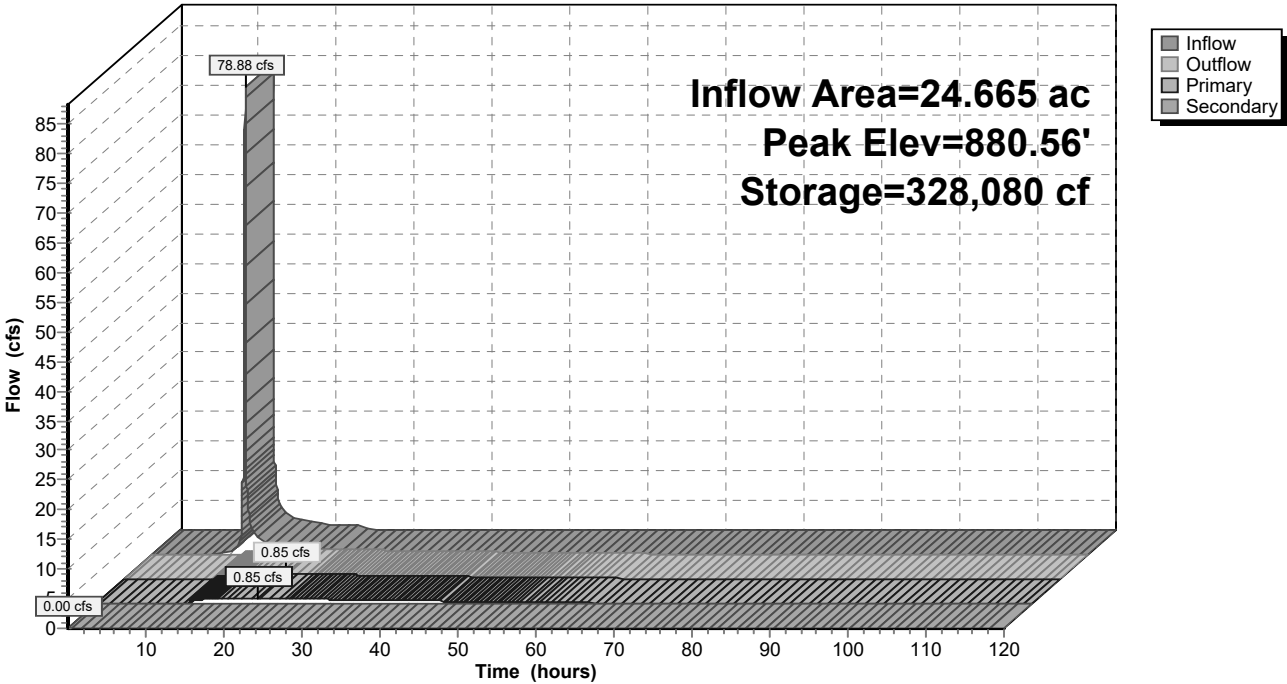
Type II 24-hr Type 2 - 5-Year Rainfall=3.26"

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Pond 100: 100

Hydrograph



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Type II 24-hr Type 2 - 5-Year Rainfall=3.26"

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Hydrograph for Pond 100: 100

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.01	0.00	207,488	879.00	0.00	0.00	0.00
5.01	0.00	207,488	879.00	0.00	0.00	0.00
10.01	0.57	209,198	879.02	0.00	0.00	0.00
15.01	1.99	319,254	880.46	0.79	0.79	0.00
20.01	0.89	328,048	880.56	0.85	0.85	0.00
25.01	0.00	324,711	880.52	0.83	0.83	0.00
30.01	0.00	310,645	880.35	0.73	0.73	0.00
35.01	0.00	298,341	880.20	0.63	0.63	0.00
40.01	0.00	287,829	880.07	0.53	0.53	0.00
45.01	0.00	279,147	879.96	0.43	0.43	0.00
50.01	0.00	272,341	879.87	0.33	0.33	0.00
55.01	0.00	267,271	879.81	0.24	0.24	0.00
60.01	0.00	263,505	879.76	0.18	0.18	0.00
65.01	0.00	260,646	879.72	0.14	0.14	0.00
70.01	0.00	258,470	879.69	0.11	0.11	0.00
75.01	0.00	256,722	879.67	0.09	0.09	0.00
80.01	0.00	255,281	879.65	0.07	0.07	0.00
85.01	0.00	254,093	879.64	0.06	0.06	0.00
90.01	0.00	253,113	879.62	0.05	0.05	0.00
95.01	0.00	252,305	879.61	0.04	0.04	0.00
100.01	0.00	251,639	879.60	0.03	0.03	0.00
105.01	0.00	251,084	879.60	0.03	0.03	0.00
110.01	0.00	250,577	879.59	0.03	0.03	0.00
115.01	0.00	250,106	879.58	0.03	0.03	0.00

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Type II 24-hr Type 2 - 5-Year Rainfall=3.26"

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Summary for Pond 200: 200

Inflow Area = 5.171 ac, 68.37% Impervious, Inflow Depth = 2.31" for Type 2 - 5-Year event
 Inflow = 21.13 cfs @ 11.96 hrs, Volume= 0.997 af
 Outflow = 0.65 cfs @ 13.83 hrs, Volume= 0.739 af, Atten= 97%, Lag= 112.5 min
 Primary = 0.65 cfs @ 13.83 hrs, Volume= 0.739 af
 Routed to Link 1 : OFFSITE
 Secondary = 0.00 cfs @ 0.01 hrs, Volume= 0.000 af
 Routed to Link 1 : OFFSITE

Routing by Stor-Ind method, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs

Starting Elev= 875.00' Surf.Area= 21,699 sf Storage= 70,918 cf

Peak Elev= 876.23' @ 13.83 hrs Surf.Area= 24,772 sf Storage= 99,426 cf (28,509 cf above start)

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)

Center-of-Mass det. time= 577.1 min (1,374.9 - 797.7)

Volume	Invert	Avail.Storage	Storage Description
#1	870.00'	177,226 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
870.00	10,192	0	0
871.00	11,543	10,868	10,868
872.00	12,964	12,254	23,121
873.00	14,453	13,709	36,830
874.00	16,012	15,233	52,062
875.00	21,699	18,856	70,918
876.00	24,181	22,940	93,858
877.00	26,780	25,481	119,338
878.00	29,498	28,139	147,477
879.00	30,000	29,749	177,226

Device	Routing	Invert	Outlet Devices
#1	Primary	875.00'	12.0" Round RCP_Round 12" L= 70.0' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 875.00' / 874.00' S= 0.0143 '/' Cc= 0.900 n= 0.011 Concrete pipe, finished, Flow Area= 0.79 sf
#2	Device 1	875.50'	6.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	878.00'	60.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#4	Secondary	878.00'	25.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

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Type II 24-hr Type 2 - 5-Year Rainfall=3.26"

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Primary OutFlow Max=0.65 cfs @ 13.83 hrs HW=876.23' (Free Discharge)

↑ **1=RCP_Round 12"** (Passes 0.65 cfs of 2.85 cfs potential flow)

↑ **2=Orifice/Grate** (Orifice Controls 0.65 cfs @ 3.33 fps)

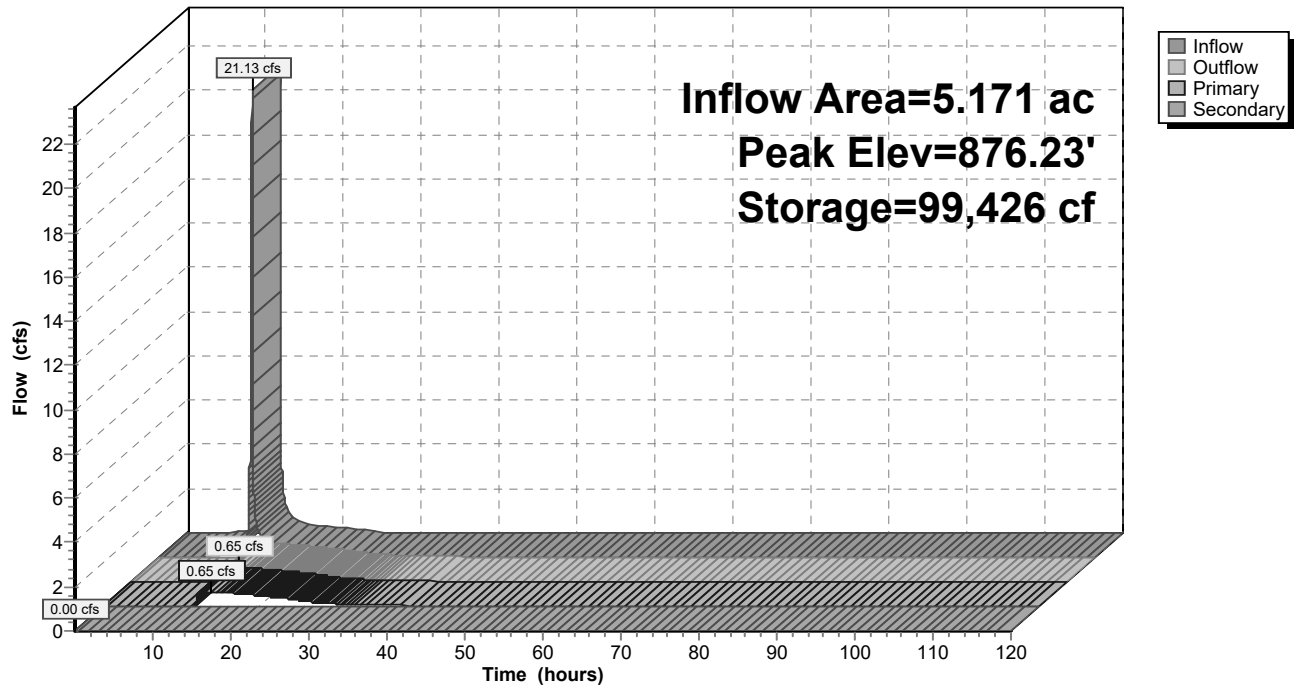
↑ **3=Orifice/Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.01 hrs HW=875.00' (Free Discharge)

↑ **4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 200: 200

Hydrograph



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Type II 24-hr Type 2 - 5-Year Rainfall=3.26"

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Hydrograph for Pond 200: 200

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.01	0.00	70,918	875.00	0.00	0.00	0.00
5.01	0.00	70,918	875.00	0.00	0.00	0.00
10.01	0.32	72,930	875.09	0.00	0.00	0.00
15.01	0.48	98,995	876.21	0.64	0.64	0.00
20.01	0.21	94,348	876.02	0.49	0.49	0.00
25.01	0.00	90,032	875.84	0.28	0.28	0.00
30.01	0.00	86,732	875.70	0.12	0.12	0.00
35.01	0.00	85,259	875.64	0.06	0.06	0.00
40.01	0.00	84,427	875.60	0.03	0.03	0.00
45.01	0.00	83,943	875.58	0.02	0.02	0.00
50.01	0.00	83,619	875.57	0.02	0.02	0.00
55.01	0.00	83,352	875.56	0.01	0.01	0.00
60.01	0.00	83,130	875.55	0.01	0.01	0.00
65.01	0.00	82,947	875.54	0.01	0.01	0.00
70.01	0.00	82,796	875.53	0.01	0.01	0.00
75.01	0.00	82,671	875.53	0.01	0.01	0.00
80.01	0.00	82,568	875.52	0.01	0.01	0.00
85.01	0.00	82,483	875.52	0.00	0.00	0.00
90.01	0.00	82,413	875.51	0.00	0.00	0.00
95.01	0.00	82,354	875.51	0.00	0.00	0.00
100.01	0.00	82,306	875.51	0.00	0.00	0.00
105.01	0.00	82,266	875.51	0.00	0.00	0.00
110.01	0.00	82,234	875.51	0.00	0.00	0.00
115.01	0.00	82,206	875.51	0.00	0.00	0.00

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Summary for Pond 300: 300

Inflow Area = 24.576 ac, 51.36% Impervious, Inflow Depth = 1.70" for Type 2 - 5-Year event
 Inflow = 67.53 cfs @ 11.96 hrs, Volume= 3.479 af
 Outflow = 0.53 cfs @ 24.07 hrs, Volume= 1.881 af, Atten= 99%, Lag= 726.4 min
 Primary = 0.53 cfs @ 24.07 hrs, Volume= 1.881 af
 Routed to Link 1 : OFFSITE
 Secondary = 0.00 cfs @ 0.01 hrs, Volume= 0.000 af
 Routed to Link 1 : OFFSITE

Routing by Stor-Ind method, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs

Starting Elev= 875.00' Surf.Area= 110,262 sf Storage= 389,084 cf

Peak Elev= 876.06' @ 24.07 hrs Surf.Area= 122,226 sf Storage= 512,852 cf (123,768 cf above start)

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)

Center-of-Mass det. time= 1,741.1 min (2,680.8 - 939.8)

Volume	Invert	Avail.Storage	Storage Description
#1	870.00'	920,841 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
870.00	61,061	0	0
871.00	66,666	63,864	63,864
872.00	72,581	69,624	133,487
873.00	78,813	75,697	209,184
874.00	85,362	82,088	291,272
875.00	110,262	97,812	389,084
876.00	121,491	115,877	504,960
877.00	132,845	127,168	632,128
878.00	144,325	138,585	770,713
879.00	155,931	150,128	920,841

Device	Routing	Invert	Outlet Devices
#1	Primary	875.00'	24.0" Round RCP_Round 24" L= 100.0' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 875.00' / 874.00' S= 0.0100 ' S= 0.0100 ' Cc= 0.900 n= 0.011 Concrete pipe, finished, Flow Area= 3.14 sf
#2	Device 1	875.50'	6.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	876.30'	4.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s)
#4	Device 1	878.00'	48.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#5	Secondary	878.00'	25.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

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Primary OutFlow Max=0.53 cfs @ 24.07 hrs HW=876.06' (Free Discharge)

1=RCP_Round 24" (Passes 0.53 cfs of 5.27 cfs potential flow)

2=Orifice/Grate (Orifice Controls 0.53 cfs @ 2.70 fps)

3=Sharp-Crested Rectangular Weir (Controls 0.00 cfs)

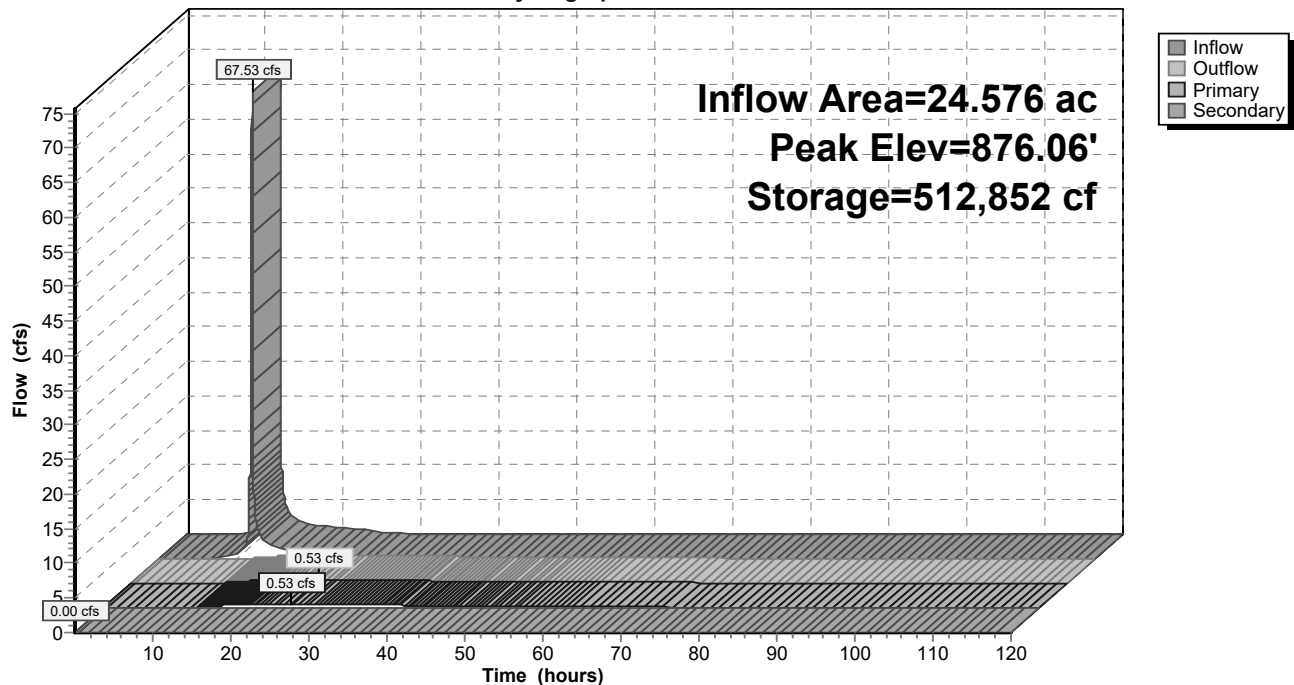
4=Orifice/Grate (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.01 hrs HW=875.00' (Free Discharge)

5=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 300: 300

Hydrograph



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Type II 24-hr Type 2 - 5-Year Rainfall=3.26"

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Hydrograph for Pond 300: 300

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.01	0.00	389,084	875.00	0.00	0.00	0.00
5.01	0.00	389,084	875.00	0.00	0.00	0.00
10.01	0.74	392,590	875.03	0.00	0.00	0.00
15.01	1.74	493,550	875.91	0.37	0.37	0.00
20.01	0.91	507,911	876.02	0.49	0.49	0.00
25.01	0.18	511,752	876.06	0.52	0.52	0.00
30.01	0.11	505,250	876.00	0.47	0.47	0.00
35.01	0.07	498,722	875.95	0.42	0.42	0.00
40.01	0.05	492,742	875.90	0.36	0.36	0.00
45.01	0.03	487,527	875.86	0.30	0.30	0.00
50.01	0.03	483,055	875.82	0.25	0.25	0.00
55.01	0.02	479,298	875.79	0.21	0.21	0.00
60.01	0.02	476,143	875.76	0.18	0.18	0.00
65.01	0.02	473,455	875.74	0.15	0.15	0.00
70.01	0.01	471,125	875.72	0.13	0.13	0.00
75.01	0.01	469,108	875.70	0.12	0.12	0.00
80.01	0.01	467,362	875.69	0.10	0.10	0.00
85.01	0.01	465,851	875.67	0.09	0.09	0.00
90.01	0.01	464,526	875.66	0.08	0.08	0.00
95.01	0.01	463,319	875.65	0.07	0.07	0.00
100.01	0.00	462,218	875.64	0.06	0.06	0.00
105.01	0.00	461,216	875.63	0.06	0.06	0.00
110.01	0.00	460,304	875.63	0.05	0.05	0.00
115.01	0.00	459,475	875.62	0.05	0.05	0.00

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Type II 24-hr Type 2 - 5-Year Rainfall=3.26"

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Summary for Pond 400: 400

Inflow Area = 5.909 ac, 39.66% Impervious, Inflow Depth = 1.66" for Type 2 - 5-Year event
Inflow = 18.14 cfs @ 11.96 hrs, Volume= 0.817 af
Outflow = 0.20 cfs @ 20.66 hrs, Volume= 0.375 af, Atten= 99%, Lag= 522.1 min
Primary = 0.20 cfs @ 20.66 hrs, Volume= 0.375 af
Routed to Pond 300 : 300
Secondary = 0.00 cfs @ 0.01 hrs, Volume= 0.000 af
Routed to Pond 300 : 300

Routing by Stor-Ind method, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs

Starting Elev= 877.00' Surf.Area= 35,903 sf Storage= 129,985 cf

Peak Elev= 877.78' @ 20.66 hrs Surf.Area= 38,425 sf Storage= 158,867 cf (28,882 cf above start)

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)

Center-of-Mass det. time= 1,167.5 min (1,995.5 - 828.0)

Volume	Invert	Avail.Storage	Storage Description
#1	872.00'	252,651 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
872.00	20,703	0	0
873.00	22,504	21,604	21,604
874.00	24,391	23,448	45,051
875.00	26,364	25,378	70,429
876.00	28,423	27,394	97,822
877.00	35,903	32,163	129,985
878.00	39,148	37,526	167,511
879.00	42,535	40,842	208,352
880.00	46,063	44,299	252,651

Device	Routing	Invert	Outlet Devices
#1	Primary	877.00'	24.0" Round RCP_Round 24" L= 90.0' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 877.00' / 876.50' S= 0.0056 '/' Cc= 0.900 n= 0.011 Concrete pipe, finished, Flow Area= 3.14 sf
#2	Device 1	877.50'	6.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Secondary	879.00'	25.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.20 cfs @ 20.66 hrs HW=877.78' TW=876.30' (Fixed TW Elev= 876.30')

↑ **1=RCP_Round 24"** (Passes 0.20 cfs of 2.90 cfs potential flow)

↑ **2=Orifice/Grate** (Orifice Controls 0.20 cfs @ 1.79 fps)

Secondary OutFlow Max=0.00 cfs @ 0.01 hrs HW=877.00' (Free Discharge)

↑ **3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

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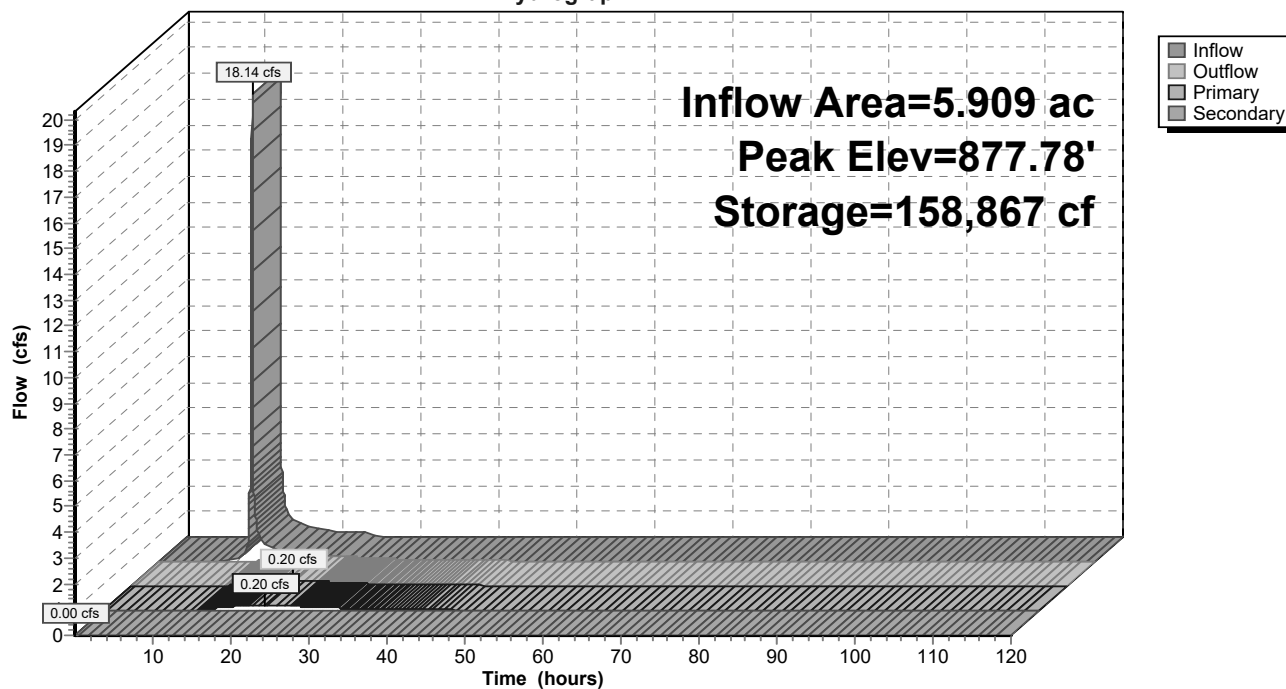
Type II 24-hr Type 2 - 5-Year Rainfall=3.26"

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Pond 400: 400

Hydrograph



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Type II 24-hr Type 2 - 5-Year Rainfall=3.26"

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Hydrograph for Pond 400: 400

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.01	0.00	129,985	877.00	0.00	0.00	0.00
5.01	0.00	129,985	877.00	0.00	0.00	0.00
10.01	0.11	130,270	877.01	0.00	0.00	0.00
15.01	0.46	156,489	877.72	0.13	0.13	0.00
20.01	0.21	158,863	877.78	0.20	0.20	0.00
25.01	0.00	158,111	877.76	0.18	0.18	0.00
30.01	0.00	155,628	877.69	0.11	0.11	0.00
35.01	0.00	154,089	877.65	0.07	0.07	0.00
40.01	0.00	153,029	877.62	0.05	0.05	0.00
45.01	0.00	152,294	877.60	0.03	0.03	0.00
50.01	0.00	151,762	877.59	0.03	0.03	0.00
55.01	0.00	151,320	877.58	0.02	0.02	0.00
60.01	0.00	150,947	877.57	0.02	0.02	0.00
65.01	0.00	150,633	877.56	0.02	0.02	0.00
70.01	0.00	150,369	877.55	0.01	0.01	0.00
75.01	0.00	150,146	877.55	0.01	0.01	0.00
80.01	0.00	149,959	877.54	0.01	0.01	0.00
85.01	0.00	149,801	877.54	0.01	0.01	0.00
90.01	0.00	149,668	877.54	0.01	0.01	0.00
95.01	0.00	149,557	877.53	0.01	0.01	0.00
100.01	0.00	149,462	877.53	0.00	0.00	0.00
105.01	0.00	149,383	877.53	0.00	0.00	0.00
110.01	0.00	149,316	877.53	0.00	0.00	0.00
115.01	0.00	149,260	877.52	0.00	0.00	0.00

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Type II 24-hr Type 2 - 5-Year Rainfall=3.26"

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Summary for Pond 500: 500

Inflow Area = 17.940 ac, 42.55% Impervious, Inflow Depth = 1.73" for Type 2 - 5-Year event
Inflow = 57.37 cfs @ 11.96 hrs, Volume= 2.590 af
Outflow = 0.75 cfs @ 19.15 hrs, Volume= 1.846 af, Atten= 99%, Lag= 431.0 min
Primary = 0.75 cfs @ 19.15 hrs, Volume= 1.846 af
Routed to Link 1 : OFFSITE
Secondary = 0.00 cfs @ 0.01 hrs, Volume= 0.000 af
Routed to Link 1 : OFFSITE

Routing by Stor-Ind method, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs

Starting Elev= 899.00' Surf.Area= 57,355 sf Storage= 196,414 cf

Peak Elev= 900.38' @ 19.15 hrs Surf.Area= 65,140 sf Storage= 280,704 cf (84,291 cf above start)

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)

Center-of-Mass det. time= 1,168.0 min (1,992.6 - 824.6)

Volume	Invert	Avail.Storage	Storage Description
#1	894.00'	555,429 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
894.00	29,616	0	0
895.00	32,756	31,186	31,186
896.00	36,239	34,498	65,684
897.00	40,030	38,135	103,818
898.00	43,903	41,967	145,785
899.00	57,355	50,629	196,414
900.00	62,973	60,164	256,578
901.00	68,725	65,849	322,427
902.00	74,612	71,669	394,095
903.00	80,633	77,623	471,718
904.00	86,790	83,712	555,429

Device	Routing	Invert	Outlet Devices
#1	Primary	899.00'	24.0" Round RCP_Round 24" L= 80.0' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 899.00' / 898.00' S= 0.0125 '/' Cc= 0.900 n= 0.011 Concrete pipe, finished, Flow Area= 3.14 sf
#2	Device 1	899.50'	6.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Secondary	903.00'	25.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.75 cfs @ 19.15 hrs HW=900.38' (Free Discharge)

↑ **1=RCP_Round 24"** (Passes 0.75 cfs of 8.13 cfs potential flow)

↑ **2=Orifice/Grate** (Orifice Controls 0.75 cfs @ 3.81 fps)

Secondary OutFlow Max=0.00 cfs @ 0.01 hrs HW=899.00' (Free Discharge)

↑ **3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

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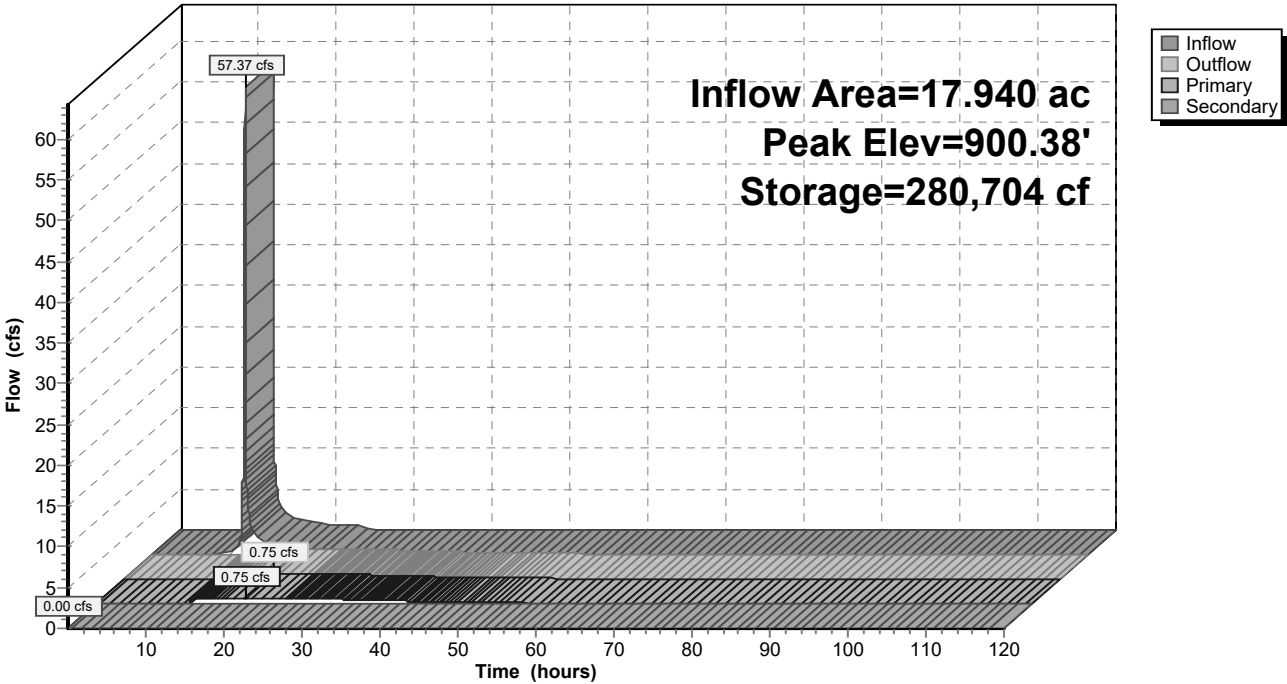
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Pond 500: 500

Hydrograph



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Hydrograph for Pond 500: 500

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.01	0.00	196,414	899.00	0.00	0.00	0.00
5.01	0.00	196,414	899.00	0.00	0.00	0.00
10.01	0.42	197,657	899.02	0.00	0.00	0.00
15.01	1.44	276,538	900.31	0.71	0.71	0.00
20.01	0.64	280,551	900.37	0.75	0.75	0.00
25.01	0.00	276,029	900.30	0.70	0.70	0.00
30.01	0.00	264,492	900.12	0.58	0.58	0.00
35.01	0.00	255,233	899.98	0.45	0.45	0.00
40.01	0.00	248,324	899.87	0.32	0.32	0.00
45.01	0.00	243,543	899.79	0.22	0.22	0.00
50.01	0.00	240,211	899.74	0.16	0.16	0.00
55.01	0.00	237,848	899.70	0.11	0.11	0.00
60.01	0.00	236,081	899.67	0.09	0.09	0.00
65.01	0.00	234,692	899.65	0.07	0.07	0.00
70.01	0.00	233,600	899.63	0.05	0.05	0.00
75.01	0.00	232,741	899.61	0.04	0.04	0.00
80.01	0.00	232,066	899.60	0.03	0.03	0.00
85.01	0.00	231,522	899.59	0.03	0.03	0.00
90.01	0.00	231,031	899.59	0.03	0.03	0.00
95.01	0.00	230,582	899.58	0.02	0.02	0.00
100.01	0.00	230,172	899.57	0.02	0.02	0.00
105.01	0.00	229,796	899.57	0.02	0.02	0.00
110.01	0.00	229,453	899.56	0.02	0.02	0.00
115.01	0.00	229,139	899.56	0.02	0.02	0.00

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Type II 24-hr Type 2 - 5-Year Rainfall=3.26"

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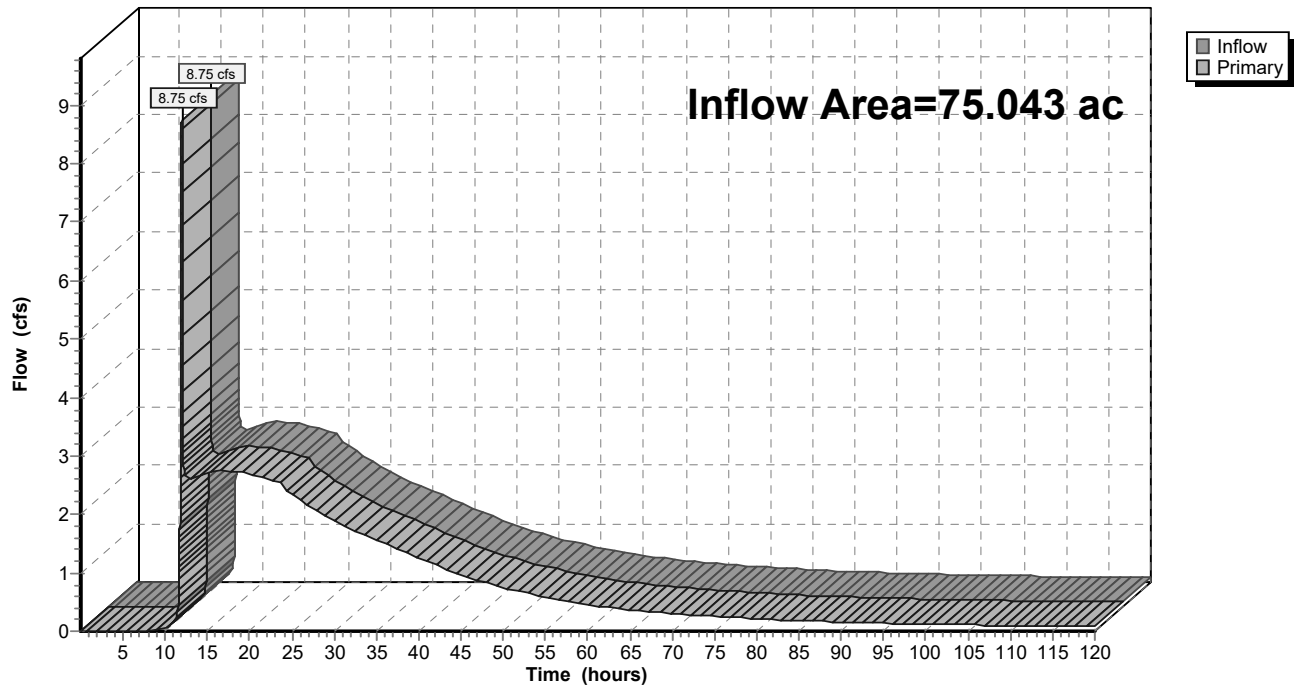
Summary for Link 1: OFFSITE

Inflow Area = 75.043 ac, 46.89% Impervious, Inflow Depth > 1.19" for Type 2 - 5-Year event
Inflow = 8.75 cfs @ 11.97 hrs, Volume= 7.430 af
Primary = 8.75 cfs @ 11.97 hrs, Volume= 7.430 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs

Link 1: OFFSITE

Hydrograph



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Type II 24-hr Type 2 - 5-Year Rainfall=3.26"

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Hydrograph for Link 1: OFFSITE

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.01	0.00	0.00	0.00	104.01	0.11	0.00	0.11
2.01	0.00	0.00	0.00	106.01	0.11	0.00	0.11
4.01	0.00	0.00	0.00	108.01	0.10	0.00	0.10
6.01	0.00	0.00	0.00	110.01	0.10	0.00	0.10
8.01	0.00	0.00	0.00	112.01	0.10	0.00	0.10
10.01	0.05	0.00	0.05	114.01	0.09	0.00	0.09
12.01	7.53	0.00	7.53	116.01	0.09	0.00	0.09
14.01	2.66	0.00	2.66	118.01	0.09	0.00	0.09
16.01	2.74	0.00	2.74				
18.01	2.74	0.00	2.74				
20.01	2.68	0.00	2.68				
22.01	2.61	0.00	2.61				
24.01	2.53	0.00	2.53				
26.01	2.23	0.00	2.23				
28.01	2.06	0.00	2.06				
30.01	1.90	0.00	1.90				
32.01	1.76	0.00	1.76				
34.01	1.63	0.00	1.63				
36.01	1.50	0.00	1.50				
38.01	1.37	0.00	1.37				
40.01	1.25	0.00	1.25				
42.01	1.13	0.00	1.13				
44.01	1.02	0.00	1.02				
46.01	0.92	0.00	0.92				
48.01	0.84	0.00	0.84				
50.01	0.75	0.00	0.75				
52.01	0.68	0.00	0.68				
54.01	0.61	0.00	0.61				
56.01	0.55	0.00	0.55				
58.01	0.50	0.00	0.50				
60.01	0.46	0.00	0.46				
62.01	0.42	0.00	0.42				
64.01	0.39	0.00	0.39				
66.01	0.35	0.00	0.35				
68.01	0.33	0.00	0.33				
70.01	0.30	0.00	0.30				
72.01	0.28	0.00	0.28				
74.01	0.26	0.00	0.26				
76.01	0.24	0.00	0.24				
78.01	0.23	0.00	0.23				
80.01	0.21	0.00	0.21				
82.01	0.20	0.00	0.20				
84.01	0.18	0.00	0.18				
86.01	0.17	0.00	0.17				
88.01	0.16	0.00	0.16				
90.01	0.16	0.00	0.16				
92.01	0.15	0.00	0.15				
94.01	0.14	0.00	0.14				
96.01	0.13	0.00	0.13				
98.01	0.13	0.00	0.13				
100.01	0.12	0.00	0.12				
102.01	0.12	0.00	0.12				

Proposed Conditions

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Type II 24-hr Type 2 - 10-Year Rainfall=3.83"

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Time span=0.01-120.00 hrs, dt=0.01 hrs, 12000 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1A: 1A Runoff Area=110,816 sf 38.00% Impervious Runoff Depth=2.14"
Tc=5.0 min CN=83 Runoff=10.00 cfs 0.454 af

Subcatchment2A: 2A Runoff Area=6,401 sf 38.00% Impervious Runoff Depth=2.14"
Tc=5.0 min CN=83 Runoff=0.58 cfs 0.026 af

Subcatchment100A: 100A Runoff Area=1,074,428 sf 42.06% Impervious Runoff Depth=2.22"
Tc=5.0 min CN=84 Runoff=100.29 cfs 4.567 af

Subcatchment200A: 200A Runoff Area=225,239 sf 68.37% Impervious Runoff Depth=2.85"
Tc=5.0 min CN=91 Runoff=25.72 cfs 1.230 af

Subcatchment300A: 300A Runoff Area=260,648 sf 65.00% Impervious Runoff Depth=2.76"
Tc=5.0 min CN=90 Runoff=29.04 cfs 1.375 af

Subcatchment300B: 300B Runoff Area=552,525 sf 50.37% Impervious Runoff Depth=2.39"
Tc=5.0 min CN=86 Runoff=54.98 cfs 2.529 af

Subcatchment400A: 400A Runoff Area=257,377 sf 39.66% Impervious Runoff Depth=2.14"
Tc=5.0 min CN=83 Runoff=23.23 cfs 1.053 af

Subcatchment500A: 500A Runoff Area=781,453 sf 42.55% Impervious Runoff Depth=2.22"
Tc=5.0 min CN=84 Runoff=72.94 cfs 3.322 af

Pond 100: 100 Peak Elev=880.97' Storage=363,404 cf Inflow=100.29 cfs 4.567 af
Primary=1.05 cfs 3.577 af Secondary=0.00 cfs 0.000 af Outflow=1.05 cfs 3.577 af

Pond 200: 200 Peak Elev=876.50' Storage=106,228 cf Inflow=25.72 cfs 1.230 af
Primary=0.82 cfs 0.971 af Secondary=0.00 cfs 0.000 af Outflow=0.82 cfs 0.971 af

Pond 300: 300 Peak Elev=876.33' Storage=545,207 cf Inflow=84.01 cfs 4.516 af
Primary=0.82 cfs 2.867 af Secondary=0.00 cfs 0.000 af Outflow=0.82 cfs 2.867 af

Pond 400: 400 Peak Elev=877.90' Storage=163,756 cf Inflow=23.23 cfs 1.053 af
Primary=0.37 cfs 0.611 af Secondary=0.00 cfs 0.000 af Outflow=0.37 cfs 0.611 af

Pond 500: 500 Peak Elev=900.74' Storage=304,891 cf Inflow=72.94 cfs 3.322 af
Primary=0.94 cfs 2.566 af Secondary=0.00 cfs 0.000 af Outflow=0.94 cfs 2.566 af

Link 1: OFFSITE Inflow=11.91 cfs 10.462 af
Primary=11.91 cfs 10.462 af

Total Runoff Area = 75.043 ac Runoff Volume = 14.557 af Average Runoff Depth = 2.33"
53.11% Pervious = 39.854 ac 46.89% Impervious = 35.189 ac

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Type II 24-hr Type 2 - 10-Year Rainfall=3.83"

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Summary for Subcatchment 1A: 1A

Runoff = 10.00 cfs @ 11.96 hrs, Volume= 0.454 af, Depth= 2.14"
Routed to Link 1 : OFFSITE

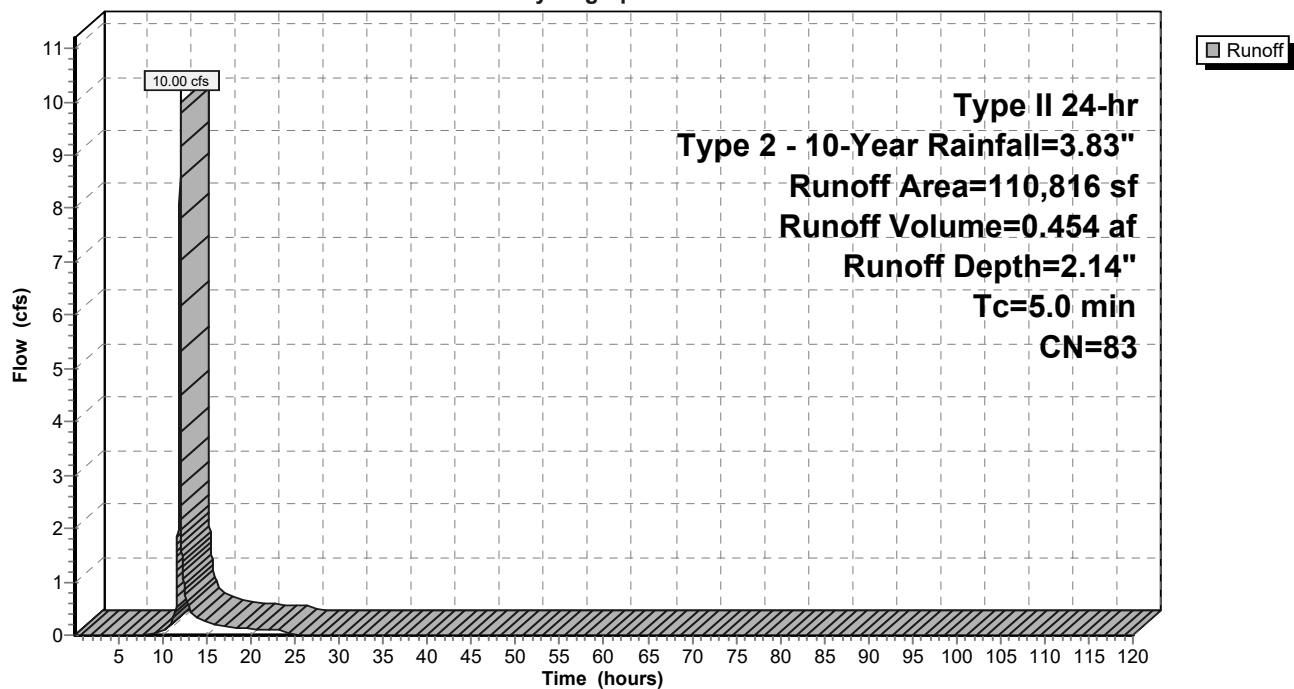
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs
Type II 24-hr Type 2 - 10-Year Rainfall=3.83"

Area (sf)	CN	Description
110,816	83	1/4 acre lots, 38% imp, HSG C
68,706		62.00% Pervious Area
42,110		38.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, Direct

Subcatchment 1A: 1A

Hydrograph



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Type II 24-hr Type 2 - 10-Year Rainfall=3.83"

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Hydrograph for Subcatchment 1A: 1A

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.01	0.00	0.00	0.00	104.01	3.83	2.14	0.00
2.01	0.08	0.00	0.00	106.01	3.83	2.14	0.00
4.01	0.18	0.00	0.00	108.01	3.83	2.14	0.00
6.01	0.31	0.00	0.00	110.01	3.83	2.14	0.00
8.01	0.46	0.00	0.01	112.01	3.83	2.14	0.00
10.01	0.69	0.03	0.08	114.01	3.83	2.14	0.00
12.01	2.55	1.09	7.83	116.01	3.83	2.14	0.00
14.01	3.14	1.56	0.31	118.01	3.83	2.14	0.00
16.01	3.37	1.75	0.19				
18.01	3.53	1.88	0.15				
20.01	3.65	1.98	0.11				
22.01	3.74	2.06	0.10				
24.01	3.83	2.14	0.09				
26.01	3.83	2.14	0.00				
28.01	3.83	2.14	0.00				
30.01	3.83	2.14	0.00				
32.01	3.83	2.14	0.00				
34.01	3.83	2.14	0.00				
36.01	3.83	2.14	0.00				
38.01	3.83	2.14	0.00				
40.01	3.83	2.14	0.00				
42.01	3.83	2.14	0.00				
44.01	3.83	2.14	0.00				
46.01	3.83	2.14	0.00				
48.01	3.83	2.14	0.00				
50.01	3.83	2.14	0.00				
52.01	3.83	2.14	0.00				
54.01	3.83	2.14	0.00				
56.01	3.83	2.14	0.00				
58.01	3.83	2.14	0.00				
60.01	3.83	2.14	0.00				
62.01	3.83	2.14	0.00				
64.01	3.83	2.14	0.00				
66.01	3.83	2.14	0.00				
68.01	3.83	2.14	0.00				
70.01	3.83	2.14	0.00				
72.01	3.83	2.14	0.00				
74.01	3.83	2.14	0.00				
76.01	3.83	2.14	0.00				
78.01	3.83	2.14	0.00				
80.01	3.83	2.14	0.00				
82.01	3.83	2.14	0.00				
84.01	3.83	2.14	0.00				
86.01	3.83	2.14	0.00				
88.01	3.83	2.14	0.00				
90.01	3.83	2.14	0.00				
92.01	3.83	2.14	0.00				
94.01	3.83	2.14	0.00				
96.01	3.83	2.14	0.00				
98.01	3.83	2.14	0.00				
100.01	3.83	2.14	0.00				
102.01	3.83	2.14	0.00				

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Type II 24-hr Type 2 - 10-Year Rainfall=3.83"

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Summary for Subcatchment 2A: 2A

Runoff = 0.58 cfs @ 11.96 hrs, Volume= 0.026 af, Depth= 2.14"
Routed to Link 1 : OFFSITE

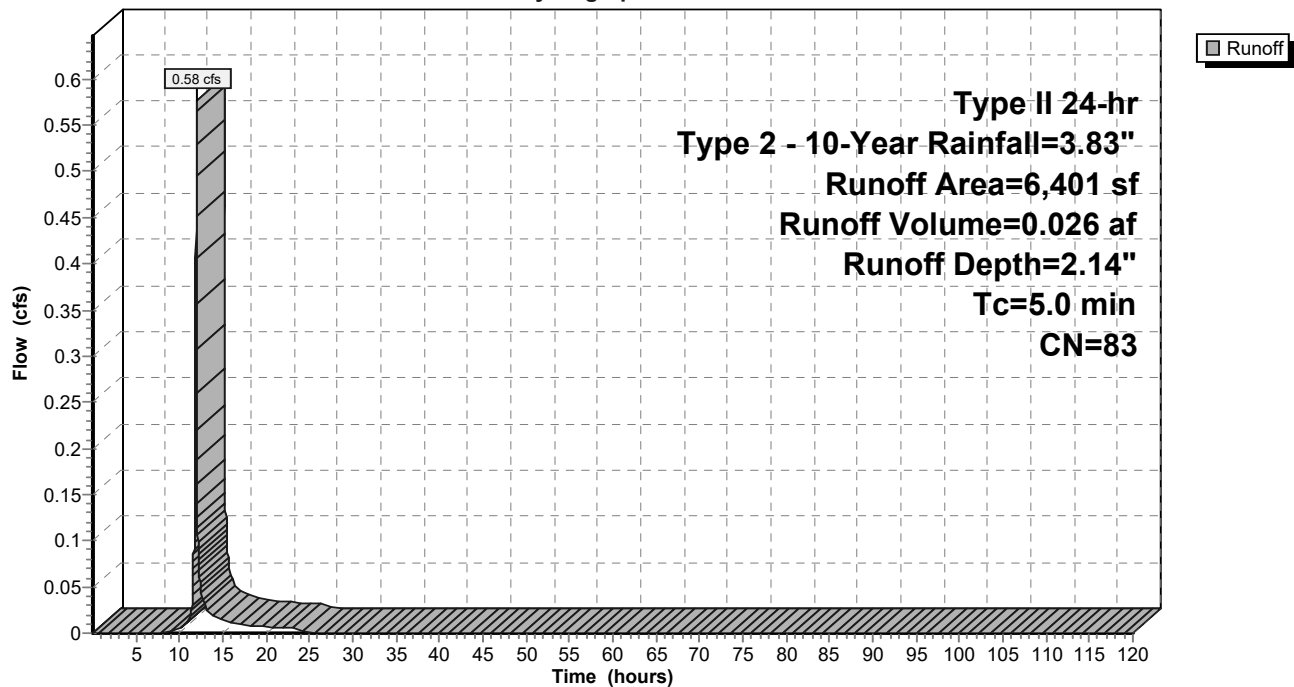
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs
Type II 24-hr Type 2 - 10-Year Rainfall=3.83"

Area (sf)	CN	Description
6,401	83	1/4 acre lots, 38% imp, HSG C
3,969		62.00% Pervious Area
2,432		38.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, Direct

Subcatchment 2A: 2A

Hydrograph



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Type II 24-hr Type 2 - 10-Year Rainfall=3.83"

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Hydrograph for Subcatchment 2A: 2A

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.01	0.00	0.00	0.00	104.01	3.83	2.14	0.00
2.01	0.08	0.00	0.00	106.01	3.83	2.14	0.00
4.01	0.18	0.00	0.00	108.01	3.83	2.14	0.00
6.01	0.31	0.00	0.00	110.01	3.83	2.14	0.00
8.01	0.46	0.00	0.00	112.01	3.83	2.14	0.00
10.01	0.69	0.03	0.00	114.01	3.83	2.14	0.00
12.01	2.55	1.09	0.45	116.01	3.83	2.14	0.00
14.01	3.14	1.56	0.02	118.01	3.83	2.14	0.00
16.01	3.37	1.75	0.01				
18.01	3.53	1.88	0.01				
20.01	3.65	1.98	0.01				
22.01	3.74	2.06	0.01				
24.01	3.83	2.14	0.01				
26.01	3.83	2.14	0.00				
28.01	3.83	2.14	0.00				
30.01	3.83	2.14	0.00				
32.01	3.83	2.14	0.00				
34.01	3.83	2.14	0.00				
36.01	3.83	2.14	0.00				
38.01	3.83	2.14	0.00				
40.01	3.83	2.14	0.00				
42.01	3.83	2.14	0.00				
44.01	3.83	2.14	0.00				
46.01	3.83	2.14	0.00				
48.01	3.83	2.14	0.00				
50.01	3.83	2.14	0.00				
52.01	3.83	2.14	0.00				
54.01	3.83	2.14	0.00				
56.01	3.83	2.14	0.00				
58.01	3.83	2.14	0.00				
60.01	3.83	2.14	0.00				
62.01	3.83	2.14	0.00				
64.01	3.83	2.14	0.00				
66.01	3.83	2.14	0.00				
68.01	3.83	2.14	0.00				
70.01	3.83	2.14	0.00				
72.01	3.83	2.14	0.00				
74.01	3.83	2.14	0.00				
76.01	3.83	2.14	0.00				
78.01	3.83	2.14	0.00				
80.01	3.83	2.14	0.00				
82.01	3.83	2.14	0.00				
84.01	3.83	2.14	0.00				
86.01	3.83	2.14	0.00				
88.01	3.83	2.14	0.00				
90.01	3.83	2.14	0.00				
92.01	3.83	2.14	0.00				
94.01	3.83	2.14	0.00				
96.01	3.83	2.14	0.00				
98.01	3.83	2.14	0.00				
100.01	3.83	2.14	0.00				
102.01	3.83	2.14	0.00				

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Type II 24-hr Type 2 - 10-Year Rainfall=3.83"

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Summary for Subcatchment 100A: 100A

Runoff = 100.29 cfs @ 11.96 hrs, Volume= 4.567 af, Depth= 2.22"
Routed to Pond 100 : 100

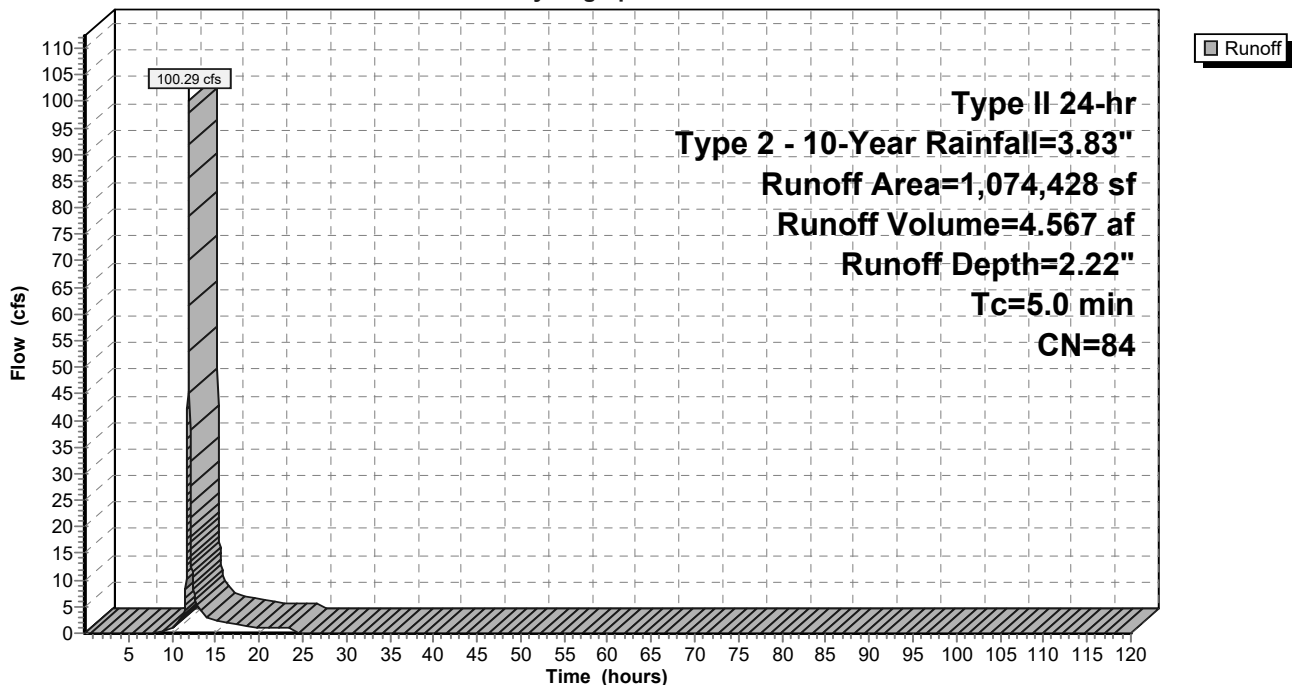
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs
Type II 24-hr Type 2 - 10-Year Rainfall=3.83"

Area (sf)	CN	Description
70,439	98	Water Surface, HSG C
1,003,989	83	1/4 acre lots, 38% imp, HSG C
1,074,428	84	Weighted Average
622,473		57.94% Pervious Area
451,955		42.06% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, Direct

Subcatchment 100A: 100A

Hydrograph



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Type II 24-hr Type 2 - 10-Year Rainfall=3.83"

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Hydrograph for Subcatchment 100A: 100A

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.01	0.00	0.00	0.00	104.01	3.83	2.22	0.00
2.01	0.08	0.00	0.00	106.01	3.83	2.22	0.00
4.01	0.18	0.00	0.00	108.01	3.83	2.22	0.00
6.01	0.31	0.00	0.00	110.01	3.83	2.22	0.00
8.01	0.46	0.00	0.15	112.01	3.83	2.22	0.00
10.01	0.69	0.04	0.95	114.01	3.83	2.22	0.00
12.01	2.55	1.15	78.28	116.01	3.83	2.22	0.00
14.01	3.14	1.63	3.04	118.01	3.83	2.22	0.00
16.01	3.37	1.83	1.90				
18.01	3.53	1.96	1.48				
20.01	3.65	2.06	1.08				
22.01	3.74	2.15	1.00				
24.01	3.83	2.22	0.92				
26.01	3.83	2.22	0.00				
28.01	3.83	2.22	0.00				
30.01	3.83	2.22	0.00				
32.01	3.83	2.22	0.00				
34.01	3.83	2.22	0.00				
36.01	3.83	2.22	0.00				
38.01	3.83	2.22	0.00				
40.01	3.83	2.22	0.00				
42.01	3.83	2.22	0.00				
44.01	3.83	2.22	0.00				
46.01	3.83	2.22	0.00				
48.01	3.83	2.22	0.00				
50.01	3.83	2.22	0.00				
52.01	3.83	2.22	0.00				
54.01	3.83	2.22	0.00				
56.01	3.83	2.22	0.00				
58.01	3.83	2.22	0.00				
60.01	3.83	2.22	0.00				
62.01	3.83	2.22	0.00				
64.01	3.83	2.22	0.00				
66.01	3.83	2.22	0.00				
68.01	3.83	2.22	0.00				
70.01	3.83	2.22	0.00				
72.01	3.83	2.22	0.00				
74.01	3.83	2.22	0.00				
76.01	3.83	2.22	0.00				
78.01	3.83	2.22	0.00				
80.01	3.83	2.22	0.00				
82.01	3.83	2.22	0.00				
84.01	3.83	2.22	0.00				
86.01	3.83	2.22	0.00				
88.01	3.83	2.22	0.00				
90.01	3.83	2.22	0.00				
92.01	3.83	2.22	0.00				
94.01	3.83	2.22	0.00				
96.01	3.83	2.22	0.00				
98.01	3.83	2.22	0.00				
100.01	3.83	2.22	0.00				
102.01	3.83	2.22	0.00				

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Type II 24-hr Type 2 - 10-Year Rainfall=3.83"

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Summary for Subcatchment 200A: 200A

Runoff = 25.72 cfs @ 11.96 hrs, Volume= 1.230 af, Depth= 2.85"
Routed to Pond 200 : 200

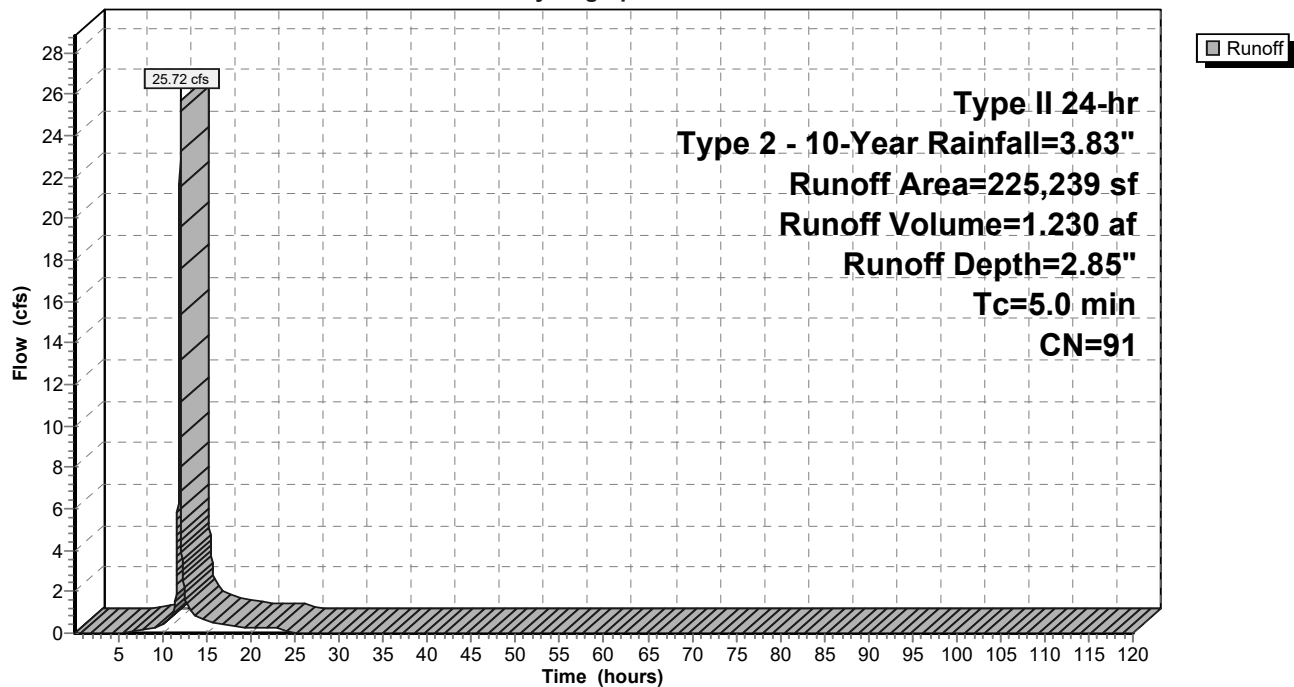
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs
Type II 24-hr Type 2 - 10-Year Rainfall=3.83"

Area (sf)	CN	Description
21,699	98	Water Surface, HSG C
203,540	90	1/8 acre lots, 65% imp, HSG C
225,239	91	Weighted Average
71,239		31.63% Pervious Area
154,000		68.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, Direct

Subcatchment 200A: 200A

Hydrograph



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Type II 24-hr Type 2 - 10-Year Rainfall=3.83"

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Hydrograph for Subcatchment 200A: 200A

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.01	0.00	0.00	0.00	104.01	3.83	2.85	0.00
2.01	0.08	0.00	0.00	106.01	3.83	2.85	0.00
4.01	0.18	0.00	0.00	108.01	3.83	2.85	0.00
6.01	0.31	0.01	0.06	110.01	3.83	2.85	0.00
8.01	0.46	0.06	0.16	112.01	3.83	2.85	0.00
10.01	0.69	0.17	0.43	114.01	3.83	2.85	0.00
12.01	2.55	1.65	19.63	116.01	3.83	2.85	0.00
14.01	3.14	2.20	0.72	118.01	3.83	2.85	0.00
16.01	3.37	2.42	0.44				
18.01	3.53	2.57	0.34				
20.01	3.65	2.68	0.25				
22.01	3.74	2.77	0.23				
24.01	3.83	2.85	0.21				
26.01	3.83	2.85	0.00				
28.01	3.83	2.85	0.00				
30.01	3.83	2.85	0.00				
32.01	3.83	2.85	0.00				
34.01	3.83	2.85	0.00				
36.01	3.83	2.85	0.00				
38.01	3.83	2.85	0.00				
40.01	3.83	2.85	0.00				
42.01	3.83	2.85	0.00				
44.01	3.83	2.85	0.00				
46.01	3.83	2.85	0.00				
48.01	3.83	2.85	0.00				
50.01	3.83	2.85	0.00				
52.01	3.83	2.85	0.00				
54.01	3.83	2.85	0.00				
56.01	3.83	2.85	0.00				
58.01	3.83	2.85	0.00				
60.01	3.83	2.85	0.00				
62.01	3.83	2.85	0.00				
64.01	3.83	2.85	0.00				
66.01	3.83	2.85	0.00				
68.01	3.83	2.85	0.00				
70.01	3.83	2.85	0.00				
72.01	3.83	2.85	0.00				
74.01	3.83	2.85	0.00				
76.01	3.83	2.85	0.00				
78.01	3.83	2.85	0.00				
80.01	3.83	2.85	0.00				
82.01	3.83	2.85	0.00				
84.01	3.83	2.85	0.00				
86.01	3.83	2.85	0.00				
88.01	3.83	2.85	0.00				
90.01	3.83	2.85	0.00				
92.01	3.83	2.85	0.00				
94.01	3.83	2.85	0.00				
96.01	3.83	2.85	0.00				
98.01	3.83	2.85	0.00				
100.01	3.83	2.85	0.00				
102.01	3.83	2.85	0.00				

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Type II 24-hr Type 2 - 10-Year Rainfall=3.83"

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Summary for Subcatchment 300A: 300A

Runoff = 29.04 cfs @ 11.96 hrs, Volume= 1.375 af, Depth= 2.76"
Routed to Pond 300 : 300

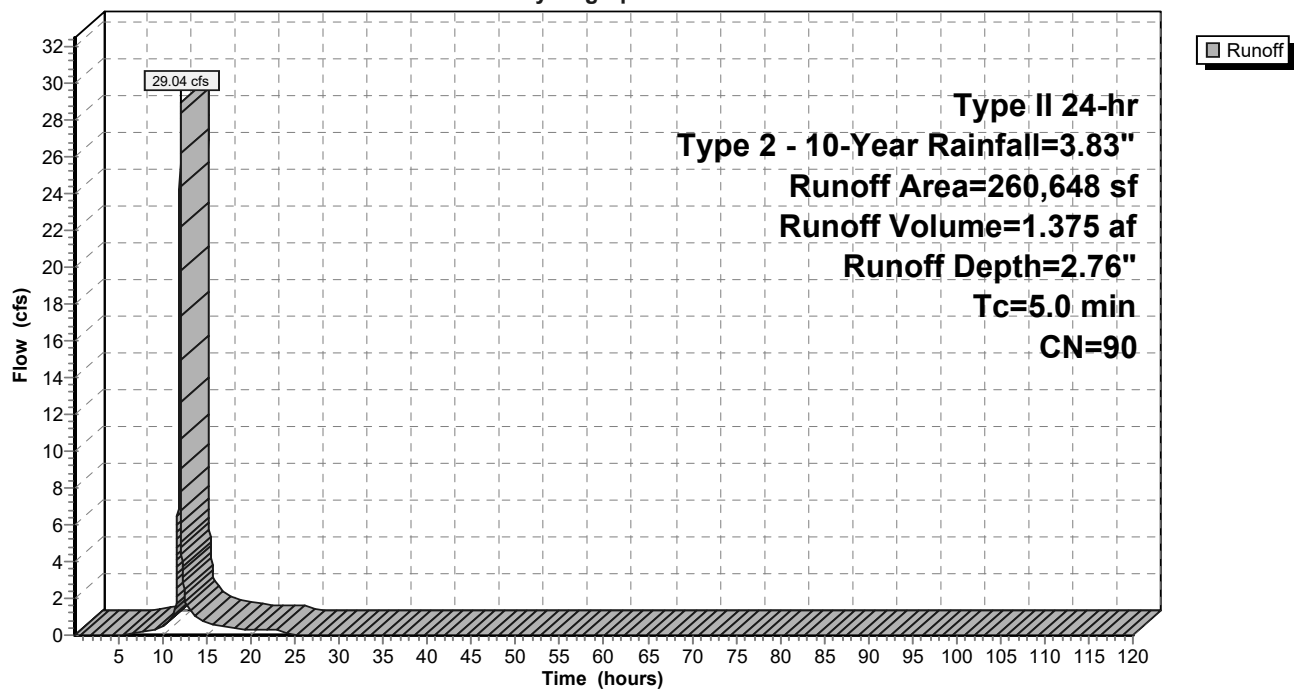
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs
Type II 24-hr Type 2 - 10-Year Rainfall=3.83"

Area (sf)	CN	Description
260,648	90	1/8 acre lots, 65% imp, HSG C
91,227		35.00% Pervious Area
169,421		65.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, Direct

Subcatchment 300A: 300A

Hydrograph



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Type II 24-hr Type 2 - 10-Year Rainfall=3.83"

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Hydrograph for Subcatchment 300A: 300A

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.01	0.00	0.00	0.00	104.01	3.83	2.76	0.00
2.01	0.08	0.00	0.00	106.01	3.83	2.76	0.00
4.01	0.18	0.00	0.00	108.01	3.83	2.76	0.00
6.01	0.31	0.01	0.05	110.01	3.83	2.76	0.00
8.01	0.46	0.04	0.16	112.01	3.83	2.76	0.00
10.01	0.69	0.14	0.45	114.01	3.83	2.76	0.00
12.01	2.55	1.57	22.23	116.01	3.83	2.76	0.00
14.01	3.14	2.11	0.82	118.01	3.83	2.76	0.00
16.01	3.37	2.33	0.51				
18.01	3.53	2.47	0.39				
20.01	3.65	2.59	0.29				
22.01	3.74	2.68	0.26				
24.01	3.83	2.76	0.24				
26.01	3.83	2.76	0.00				
28.01	3.83	2.76	0.00				
30.01	3.83	2.76	0.00				
32.01	3.83	2.76	0.00				
34.01	3.83	2.76	0.00				
36.01	3.83	2.76	0.00				
38.01	3.83	2.76	0.00				
40.01	3.83	2.76	0.00				
42.01	3.83	2.76	0.00				
44.01	3.83	2.76	0.00				
46.01	3.83	2.76	0.00				
48.01	3.83	2.76	0.00				
50.01	3.83	2.76	0.00				
52.01	3.83	2.76	0.00				
54.01	3.83	2.76	0.00				
56.01	3.83	2.76	0.00				
58.01	3.83	2.76	0.00				
60.01	3.83	2.76	0.00				
62.01	3.83	2.76	0.00				
64.01	3.83	2.76	0.00				
66.01	3.83	2.76	0.00				
68.01	3.83	2.76	0.00				
70.01	3.83	2.76	0.00				
72.01	3.83	2.76	0.00				
74.01	3.83	2.76	0.00				
76.01	3.83	2.76	0.00				
78.01	3.83	2.76	0.00				
80.01	3.83	2.76	0.00				
82.01	3.83	2.76	0.00				
84.01	3.83	2.76	0.00				
86.01	3.83	2.76	0.00				
88.01	3.83	2.76	0.00				
90.01	3.83	2.76	0.00				
92.01	3.83	2.76	0.00				
94.01	3.83	2.76	0.00				
96.01	3.83	2.76	0.00				
98.01	3.83	2.76	0.00				
100.01	3.83	2.76	0.00				
102.01	3.83	2.76	0.00				

Proposed Conditions

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Type II 24-hr Type 2 - 10-Year Rainfall=3.83"

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Summary for Subcatchment 300B: 300B

Runoff = 54.98 cfs @ 11.96 hrs, Volume= 2.529 af, Depth= 2.39"
Routed to Pond 300 : 300

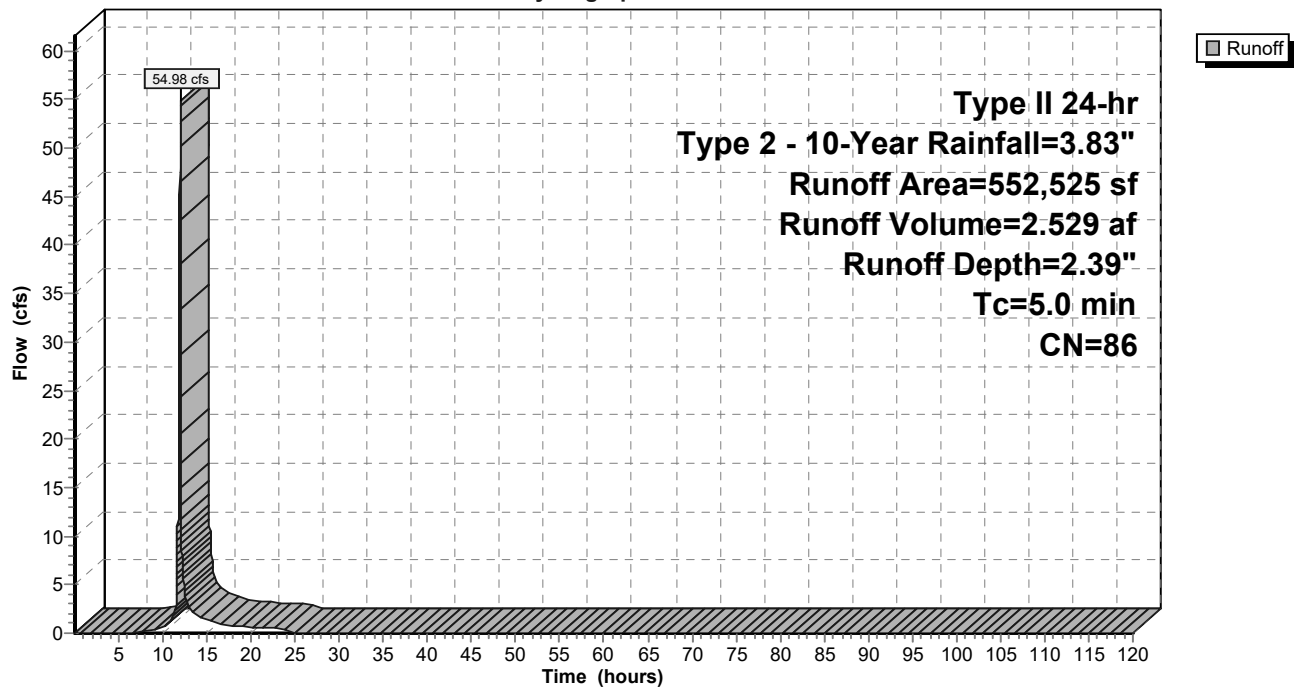
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs
Type II 24-hr Type 2 - 10-Year Rainfall=3.83"

Area (sf)	CN	Description
442,263	83	1/4 acre lots, 38% imp, HSG C
110,262	98	Water Surface, HSG C
552,525	86	Weighted Average
274,203		49.63% Pervious Area
278,322		50.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, Direct

Subcatchment 300B: 300B

Hydrograph



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Type II 24-hr Type 2 - 10-Year Rainfall=3.83"

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Hydrograph for Subcatchment 300B: 300B

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.01	0.00	0.00	0.00	104.01	3.83	2.39	0.00
2.01	0.08	0.00	0.00	106.01	3.83	2.39	0.00
4.01	0.18	0.00	0.00	108.01	3.83	2.39	0.00
6.01	0.31	0.00	0.00	110.01	3.83	2.39	0.00
8.01	0.46	0.01	0.15	112.01	3.83	2.39	0.00
10.01	0.69	0.07	0.62	114.01	3.83	2.39	0.00
12.01	2.55	1.28	42.63	116.01	3.83	2.39	0.00
14.01	3.14	1.78	1.62	118.01	3.83	2.39	0.00
16.01	3.37	1.98	1.01				
18.01	3.53	2.12	0.79				
20.01	3.65	2.23	0.58				
22.01	3.74	2.31	0.53				
24.01	3.83	2.39	0.49				
26.01	3.83	2.39	0.00				
28.01	3.83	2.39	0.00				
30.01	3.83	2.39	0.00				
32.01	3.83	2.39	0.00				
34.01	3.83	2.39	0.00				
36.01	3.83	2.39	0.00				
38.01	3.83	2.39	0.00				
40.01	3.83	2.39	0.00				
42.01	3.83	2.39	0.00				
44.01	3.83	2.39	0.00				
46.01	3.83	2.39	0.00				
48.01	3.83	2.39	0.00				
50.01	3.83	2.39	0.00				
52.01	3.83	2.39	0.00				
54.01	3.83	2.39	0.00				
56.01	3.83	2.39	0.00				
58.01	3.83	2.39	0.00				
60.01	3.83	2.39	0.00				
62.01	3.83	2.39	0.00				
64.01	3.83	2.39	0.00				
66.01	3.83	2.39	0.00				
68.01	3.83	2.39	0.00				
70.01	3.83	2.39	0.00				
72.01	3.83	2.39	0.00				
74.01	3.83	2.39	0.00				
76.01	3.83	2.39	0.00				
78.01	3.83	2.39	0.00				
80.01	3.83	2.39	0.00				
82.01	3.83	2.39	0.00				
84.01	3.83	2.39	0.00				
86.01	3.83	2.39	0.00				
88.01	3.83	2.39	0.00				
90.01	3.83	2.39	0.00				
92.01	3.83	2.39	0.00				
94.01	3.83	2.39	0.00				
96.01	3.83	2.39	0.00				
98.01	3.83	2.39	0.00				
100.01	3.83	2.39	0.00				
102.01	3.83	2.39	0.00				

Proposed Conditions

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Type II 24-hr Type 2 - 10-Year Rainfall=3.83"

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Summary for Subcatchment 400A: 400A

Runoff = 23.23 cfs @ 11.96 hrs, Volume= 1.053 af, Depth= 2.14"
Routed to Pond 400 : 400

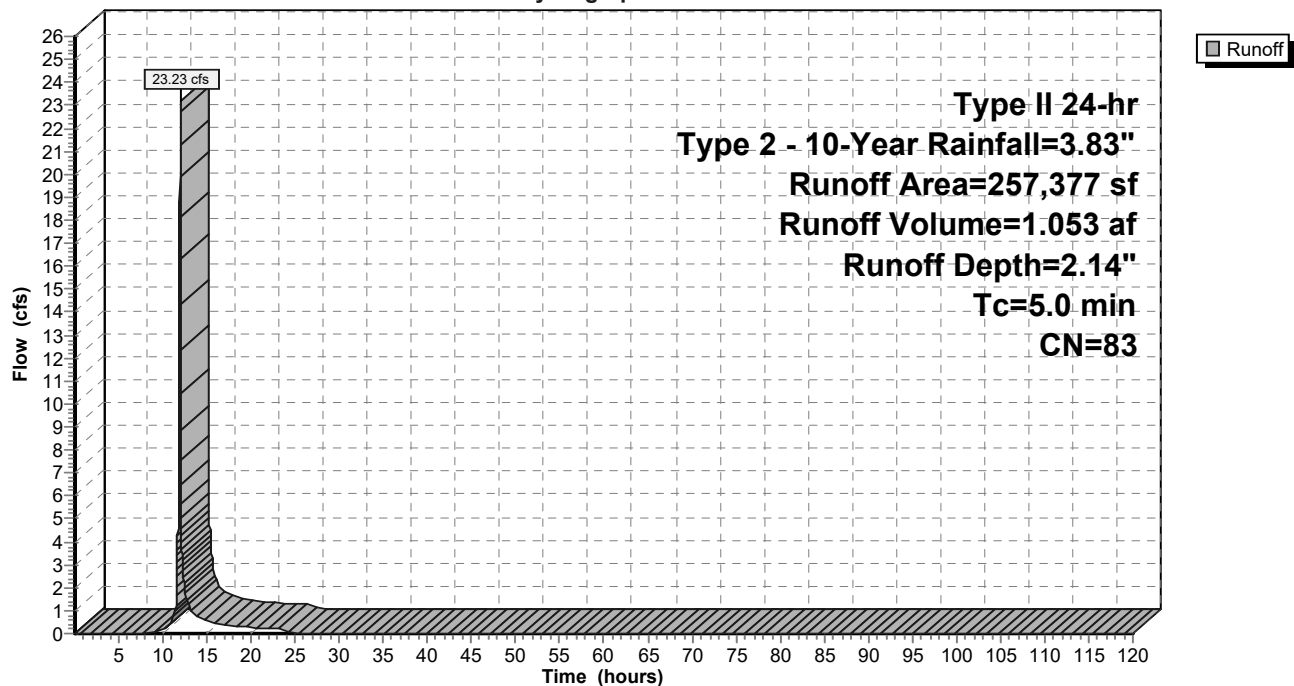
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs
Type II 24-hr Type 2 - 10-Year Rainfall=3.83"

Area (sf)	CN	Description
47,305	70	Woods, Good, HSG C
35,903	98	Water Surface, HSG C
174,169	83	1/4 acre lots, 38% imp, HSG C
257,377	83	Weighted Average
155,290		60.34% Pervious Area
102,087		39.66% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, Direct

Subcatchment 400A: 400A

Hydrograph



Proposed Conditions

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Type II 24-hr Type 2 - 10-Year Rainfall=3.83"

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Hydrograph for Subcatchment 400A: 400A

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.01	0.00	0.00	0.00	104.01	3.83	2.14	0.00
2.01	0.08	0.00	0.00	106.01	3.83	2.14	0.00
4.01	0.18	0.00	0.00	108.01	3.83	2.14	0.00
6.01	0.31	0.00	0.00	110.01	3.83	2.14	0.00
8.01	0.46	0.00	0.02	112.01	3.83	2.14	0.00
10.01	0.69	0.03	0.20	114.01	3.83	2.14	0.00
12.01	2.55	1.09	18.19	116.01	3.83	2.14	0.00
14.01	3.14	1.56	0.71	118.01	3.83	2.14	0.00
16.01	3.37	1.75	0.45				
18.01	3.53	1.88	0.35				
20.01	3.65	1.98	0.26				
22.01	3.74	2.06	0.23				
24.01	3.83	2.14	0.22				
26.01	3.83	2.14	0.00				
28.01	3.83	2.14	0.00				
30.01	3.83	2.14	0.00				
32.01	3.83	2.14	0.00				
34.01	3.83	2.14	0.00				
36.01	3.83	2.14	0.00				
38.01	3.83	2.14	0.00				
40.01	3.83	2.14	0.00				
42.01	3.83	2.14	0.00				
44.01	3.83	2.14	0.00				
46.01	3.83	2.14	0.00				
48.01	3.83	2.14	0.00				
50.01	3.83	2.14	0.00				
52.01	3.83	2.14	0.00				
54.01	3.83	2.14	0.00				
56.01	3.83	2.14	0.00				
58.01	3.83	2.14	0.00				
60.01	3.83	2.14	0.00				
62.01	3.83	2.14	0.00				
64.01	3.83	2.14	0.00				
66.01	3.83	2.14	0.00				
68.01	3.83	2.14	0.00				
70.01	3.83	2.14	0.00				
72.01	3.83	2.14	0.00				
74.01	3.83	2.14	0.00				
76.01	3.83	2.14	0.00				
78.01	3.83	2.14	0.00				
80.01	3.83	2.14	0.00				
82.01	3.83	2.14	0.00				
84.01	3.83	2.14	0.00				
86.01	3.83	2.14	0.00				
88.01	3.83	2.14	0.00				
90.01	3.83	2.14	0.00				
92.01	3.83	2.14	0.00				
94.01	3.83	2.14	0.00				
96.01	3.83	2.14	0.00				
98.01	3.83	2.14	0.00				
100.01	3.83	2.14	0.00				
102.01	3.83	2.14	0.00				

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Type II 24-hr Type 2 - 10-Year Rainfall=3.83"

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Summary for Subcatchment 500A: 500A

Runoff = 72.94 cfs @ 11.96 hrs, Volume= 3.322 af, Depth= 2.22"
Routed to Pond 500 : 500

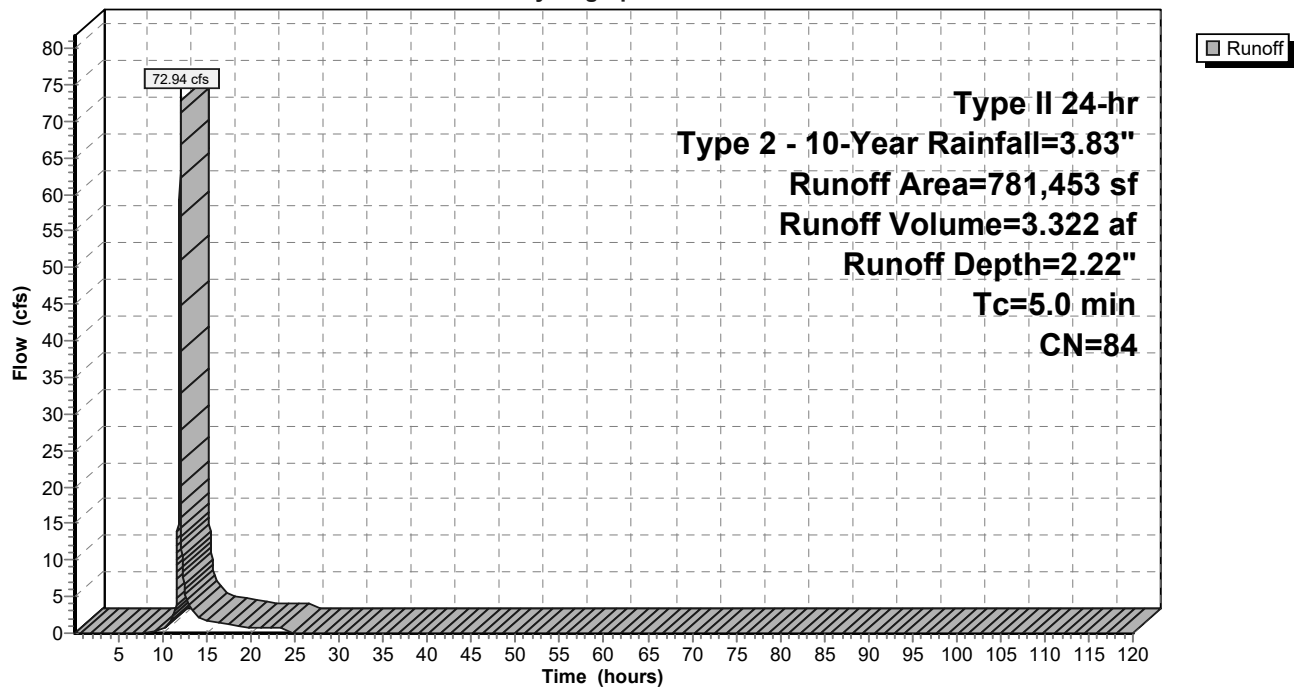
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs
Type II 24-hr Type 2 - 10-Year Rainfall=3.83"

Area (sf)	CN	Description
57,355	98	Water Surface, HSG C
724,098	83	1/4 acre lots, 38% imp, HSG C
781,453	84	Weighted Average
448,941		57.45% Pervious Area
332,512		42.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, Direct

Subcatchment 500A: 500A

Hydrograph



Proposed Conditions

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Type II 24-hr Type 2 - 10-Year Rainfall=3.83"

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Hydrograph for Subcatchment 500A: 500A

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.01	0.00	0.00	0.00	104.01	3.83	2.22	0.00
2.01	0.08	0.00	0.00	106.01	3.83	2.22	0.00
4.01	0.18	0.00	0.00	108.01	3.83	2.22	0.00
6.01	0.31	0.00	0.00	110.01	3.83	2.22	0.00
8.01	0.46	0.00	0.11	112.01	3.83	2.22	0.00
10.01	0.69	0.04	0.69	114.01	3.83	2.22	0.00
12.01	2.55	1.15	56.93	116.01	3.83	2.22	0.00
14.01	3.14	1.63	2.21	118.01	3.83	2.22	0.00
16.01	3.37	1.83	1.38				
18.01	3.53	1.96	1.08				
20.01	3.65	2.06	0.79				
22.01	3.74	2.15	0.72				
24.01	3.83	2.22	0.67				
26.01	3.83	2.22	0.00				
28.01	3.83	2.22	0.00				
30.01	3.83	2.22	0.00				
32.01	3.83	2.22	0.00				
34.01	3.83	2.22	0.00				
36.01	3.83	2.22	0.00				
38.01	3.83	2.22	0.00				
40.01	3.83	2.22	0.00				
42.01	3.83	2.22	0.00				
44.01	3.83	2.22	0.00				
46.01	3.83	2.22	0.00				
48.01	3.83	2.22	0.00				
50.01	3.83	2.22	0.00				
52.01	3.83	2.22	0.00				
54.01	3.83	2.22	0.00				
56.01	3.83	2.22	0.00				
58.01	3.83	2.22	0.00				
60.01	3.83	2.22	0.00				
62.01	3.83	2.22	0.00				
64.01	3.83	2.22	0.00				
66.01	3.83	2.22	0.00				
68.01	3.83	2.22	0.00				
70.01	3.83	2.22	0.00				
72.01	3.83	2.22	0.00				
74.01	3.83	2.22	0.00				
76.01	3.83	2.22	0.00				
78.01	3.83	2.22	0.00				
80.01	3.83	2.22	0.00				
82.01	3.83	2.22	0.00				
84.01	3.83	2.22	0.00				
86.01	3.83	2.22	0.00				
88.01	3.83	2.22	0.00				
90.01	3.83	2.22	0.00				
92.01	3.83	2.22	0.00				
94.01	3.83	2.22	0.00				
96.01	3.83	2.22	0.00				
98.01	3.83	2.22	0.00				
100.01	3.83	2.22	0.00				
102.01	3.83	2.22	0.00				

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Type II 24-hr Type 2 - 10-Year Rainfall=3.83"

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Summary for Pond 100: 100

Inflow Area = 24.665 ac, 42.06% Impervious, Inflow Depth = 2.22" for Type 2 - 10-Year event
 Inflow = 100.29 cfs @ 11.96 hrs, Volume= 4.567 af
 Outflow = 1.05 cfs @ 20.74 hrs, Volume= 3.577 af, Atten= 99%, Lag= 526.7 min
 Primary = 1.05 cfs @ 20.74 hrs, Volume= 3.577 af
 Routed to Link 1 : OFFSITE
 Secondary = 0.00 cfs @ 0.01 hrs, Volume= 0.000 af
 Routed to Link 1 : OFFSITE

Routing by Stor-Ind method, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs

Starting Elev= 879.00' Surf.Area= 70,439 sf Storage= 207,488 cf

Peak Elev= 880.97' @ 20.74 hrs Surf.Area= 87,716 sf Storage= 363,404 cf (155,916 cf above start)

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)

Center-of-Mass det. time= 1,502.9 min (2,320.5 - 817.5)

Volume	Invert	Avail.Storage	Storage Description
#1	874.00'	670,255 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
874.00	24,774	0	0
875.00	30,784	27,779	27,779
876.00	36,863	33,824	61,603
877.00	43,009	39,936	101,539
878.00	49,225	46,117	147,656
879.00	70,439	59,832	207,488
880.00	79,139	74,789	282,277
881.00	87,959	83,549	365,826
882.00	96,903	92,431	458,257
883.00	105,969	101,436	559,693
884.00	115,156	110,563	670,255

Device	Routing	Invert	Outlet Devices
#1	Primary	879.00'	24.0" Round RCP_Round 24" L= 70.0' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 879.00' / 878.00' S= 0.0143 '/' Cc= 0.900 n= 0.011 Concrete pipe, finished, Flow Area= 3.14 sf
#2	Device 1	879.50'	6.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Secondary	883.00'	25.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=1.05 cfs @ 20.74 hrs HW=880.97' (Free Discharge)↑ **1=RCP_Round 24"** (Passes 1.05 cfs of 13.22 cfs potential flow)↑ **2=Orifice/Grate** (Orifice Controls 1.05 cfs @ 5.32 fps)**Secondary OutFlow** Max=0.00 cfs @ 0.01 hrs HW=879.00' (Free Discharge)↑ **3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Proposed Conditions

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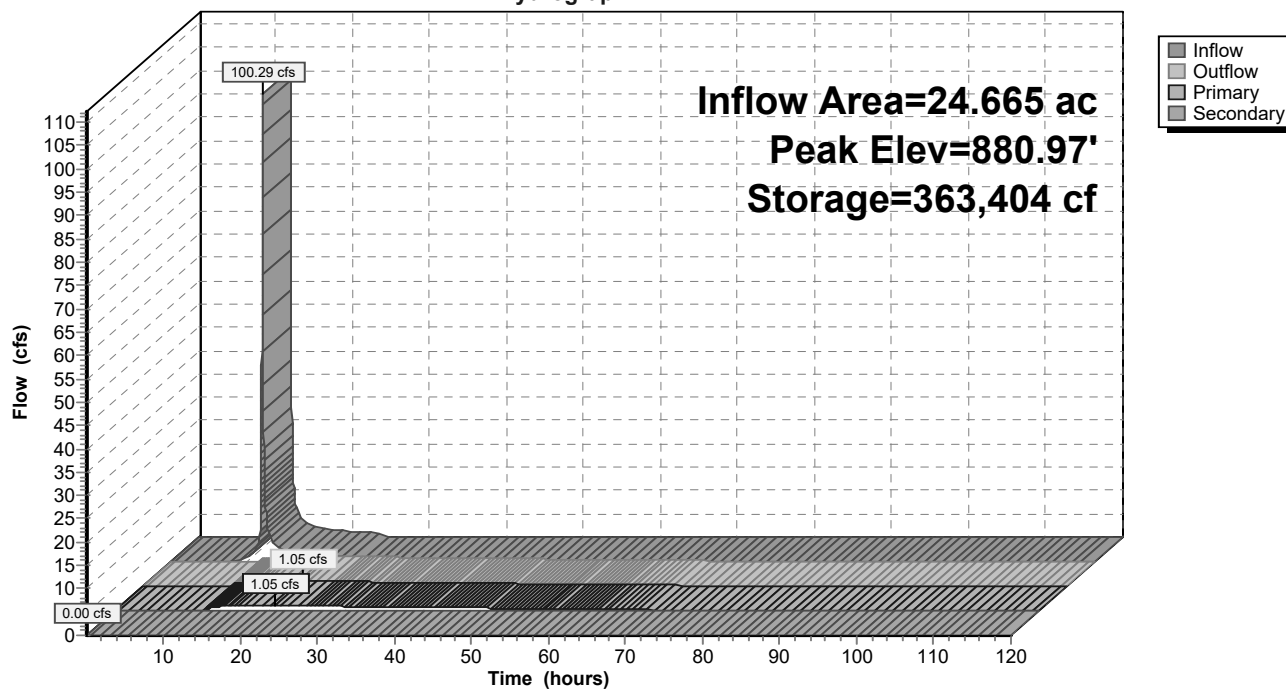
Type II 24-hr Type 2 - 10-Year Rainfall=3.83"

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Pond 100: 100

Hydrograph



Proposed Conditions*Type II 24-hr Type 2 - 10-Year Rainfall=3.83"*

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Hydrograph for Pond 100: 100

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.01	0.00	207,488	879.00	0.00	0.00	0.00
5.01	0.00	207,488	879.00	0.00	0.00	0.00
10.01	0.95	211,192	879.05	0.00	0.00	0.00
15.01	2.44	352,713	880.85	0.99	0.99	0.00
20.01	1.08	363,374	880.97	1.04	1.04	0.00
25.01	0.00	359,183	880.92	1.02	1.02	0.00
30.01	0.00	341,582	880.72	0.93	0.93	0.00
35.01	0.00	325,675	880.53	0.84	0.84	0.00
40.01	0.00	311,496	880.36	0.74	0.74	0.00
45.01	0.00	299,078	880.21	0.64	0.64	0.00
50.01	0.00	288,450	880.08	0.54	0.54	0.00
55.01	0.00	279,648	879.97	0.44	0.44	0.00
60.01	0.00	272,724	879.88	0.33	0.33	0.00
65.01	0.00	267,552	879.81	0.25	0.25	0.00
70.01	0.00	263,717	879.76	0.18	0.18	0.00
75.01	0.00	260,807	879.72	0.14	0.14	0.00
80.01	0.00	258,595	879.70	0.11	0.11	0.00
85.01	0.00	256,825	879.67	0.09	0.09	0.00
90.01	0.00	255,366	879.65	0.07	0.07	0.00
95.01	0.00	254,162	879.64	0.06	0.06	0.00
100.01	0.00	253,170	879.62	0.05	0.05	0.00
105.01	0.00	252,352	879.61	0.04	0.04	0.00
110.01	0.00	251,678	879.60	0.03	0.03	0.00
115.01	0.00	251,117	879.60	0.03	0.03	0.00

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Type II 24-hr Type 2 - 10-Year Rainfall=3.83"

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Summary for Pond 200: 200

Inflow Area = 5.171 ac, 68.37% Impervious, Inflow Depth = 2.85" for Type 2 - 10-Year event
 Inflow = 25.72 cfs @ 11.96 hrs, Volume= 1.230 af
 Outflow = 0.82 cfs @ 13.74 hrs, Volume= 0.971 af, Atten= 97%, Lag= 106.8 min
 Primary = 0.82 cfs @ 13.74 hrs, Volume= 0.971 af
 Routed to Link 1 : OFFSITE
 Secondary = 0.00 cfs @ 0.01 hrs, Volume= 0.000 af
 Routed to Link 1 : OFFSITE

Routing by Stor-Ind method, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs

Starting Elev= 875.00' Surf.Area= 21,699 sf Storage= 70,918 cf

Peak Elev= 876.50' @ 13.74 hrs Surf.Area= 25,476 sf Storage= 106,228 cf (35,310 cf above start)

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)

Center-of-Mass det. time= 567.2 min (1,359.1 - 791.8)

Volume	Invert	Avail.Storage	Storage Description
#1	870.00'	177,226 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
870.00	10,192	0	0
871.00	11,543	10,868	10,868
872.00	12,964	12,254	23,121
873.00	14,453	13,709	36,830
874.00	16,012	15,233	52,062
875.00	21,699	18,856	70,918
876.00	24,181	22,940	93,858
877.00	26,780	25,481	119,338
878.00	29,498	28,139	147,477
879.00	30,000	29,749	177,226

Device	Routing	Invert	Outlet Devices
#1	Primary	875.00'	12.0" Round RCP_Round 12" L= 70.0' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 875.00' / 874.00' S= 0.0143 '/' Cc= 0.900 n= 0.011 Concrete pipe, finished, Flow Area= 0.79 sf
#2	Device 1	875.50'	6.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	878.00'	60.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#4	Secondary	878.00'	25.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Proposed Conditions

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Type II 24-hr Type 2 - 10-Year Rainfall=3.83"

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Primary OutFlow Max=0.82 cfs @ 13.74 hrs HW=876.50' (Free Discharge)

↑ **1=RCP_Round 12"** (Passes 0.82 cfs of 3.33 cfs potential flow)

↑ **2=Orifice/Grate** (Orifice Controls 0.82 cfs @ 4.16 fps)

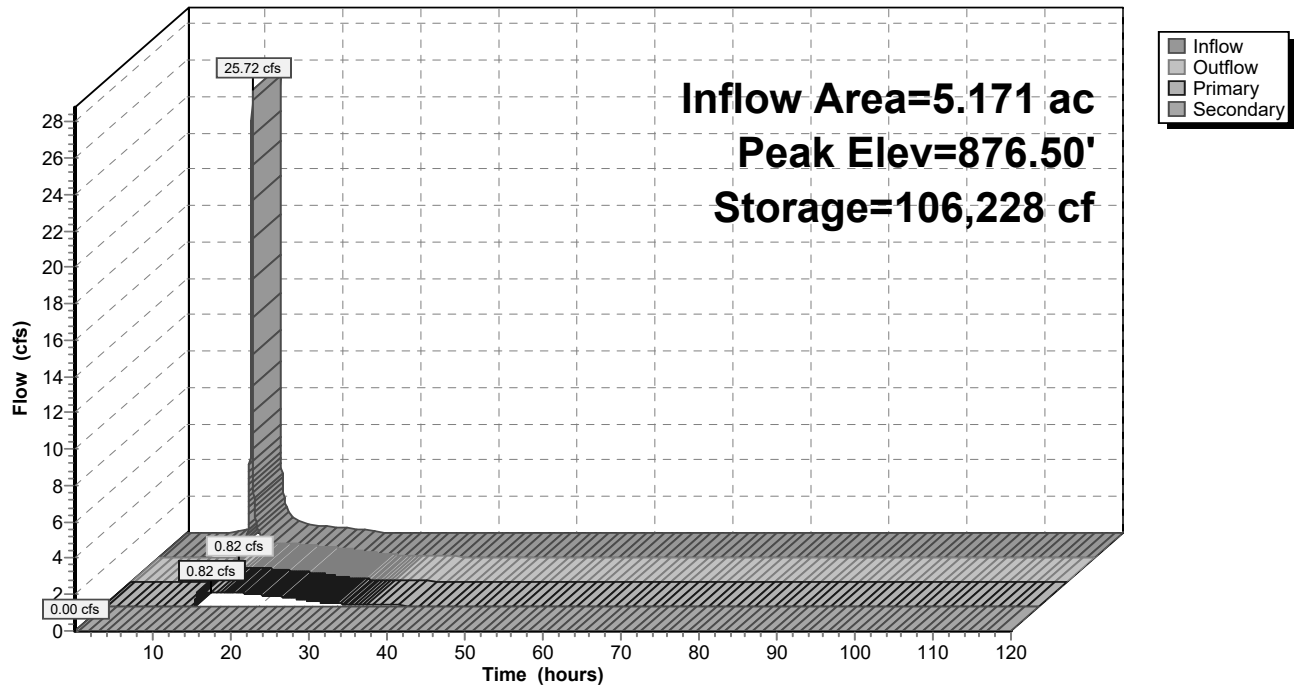
↑ **3=Orifice/Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.01 hrs HW=875.00' (Free Discharge)

↑ **4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 200: 200

Hydrograph



Proposed Conditions*Type II 24-hr Type 2 - 10-Year Rainfall=3.83"*

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Hydrograph for Pond 200: 200

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.01	0.00	70,918	875.00	0.00	0.00	0.00
5.01	0.02	70,946	875.00	0.00	0.00	0.00
10.01	0.43	73,916	875.14	0.00	0.00	0.00
15.01	0.57	105,557	876.47	0.80	0.80	0.00
20.01	0.25	99,159	876.22	0.65	0.65	0.00
25.01	0.00	92,702	875.95	0.43	0.43	0.00
30.01	0.00	87,782	875.75	0.16	0.16	0.00
35.01	0.00	85,771	875.66	0.08	0.08	0.00
40.01	0.00	84,724	875.61	0.04	0.04	0.00
45.01	0.00	84,116	875.59	0.03	0.03	0.00
50.01	0.00	83,749	875.57	0.02	0.02	0.00
55.01	0.00	83,458	875.56	0.01	0.01	0.00
60.01	0.00	83,219	875.55	0.01	0.01	0.00
65.01	0.00	83,020	875.54	0.01	0.01	0.00
70.01	0.00	82,857	875.53	0.01	0.01	0.00
75.01	0.00	82,721	875.53	0.01	0.01	0.00
80.01	0.00	82,610	875.52	0.01	0.01	0.00
85.01	0.00	82,517	875.52	0.00	0.00	0.00
90.01	0.00	82,441	875.52	0.00	0.00	0.00
95.01	0.00	82,378	875.51	0.00	0.00	0.00
100.01	0.00	82,325	875.51	0.00	0.00	0.00
105.01	0.00	82,282	875.51	0.00	0.00	0.00
110.01	0.00	82,247	875.51	0.00	0.00	0.00
115.01	0.00	82,217	875.51	0.00	0.00	0.00

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Type II 24-hr Type 2 - 10-Year Rainfall=3.83"

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Summary for Pond 300: 300

Inflow Area = 24.576 ac, 51.36% Impervious, Inflow Depth = 2.20" for Type 2 - 10-Year event
 Inflow = 84.01 cfs @ 11.96 hrs, Volume= 4.516 af
 Outflow = 0.82 cfs @ 24.05 hrs, Volume= 2.867 af, Atten= 99%, Lag= 725.7 min
 Primary = 0.82 cfs @ 24.05 hrs, Volume= 2.867 af
 Routed to Link 1 : OFFSITE
 Secondary = 0.00 cfs @ 0.01 hrs, Volume= 0.000 af
 Routed to Link 1 : OFFSITE

Routing by Stor-Ind method, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs

Starting Elev= 875.00' Surf.Area= 110,262 sf Storage= 389,084 cf

Peak Elev= 876.33' @ 24.05 hrs Surf.Area= 125,196 sf Storage= 545,207 cf (156,123 cf above start)

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)

Center-of-Mass det. time= 1,741.3 min (2,676.3 - 935.1)

Volume	Invert	Avail.Storage	Storage Description
#1	870.00'	920,841 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
870.00	61,061	0	0
871.00	66,666	63,864	63,864
872.00	72,581	69,624	133,487
873.00	78,813	75,697	209,184
874.00	85,362	82,088	291,272
875.00	110,262	97,812	389,084
876.00	121,491	115,877	504,960
877.00	132,845	127,168	632,128
878.00	144,325	138,585	770,713
879.00	155,931	150,128	920,841

Device	Routing	Invert	Outlet Devices
#1	Primary	875.00'	24.0" Round RCP_Round 24" L= 100.0' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 875.00' / 874.00' S= 0.0100 '/' Cc= 0.900 n= 0.011 Concrete pipe, finished, Flow Area= 3.14 sf
#2	Device 1	875.50'	6.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	876.30'	4.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s)
#4	Device 1	878.00'	48.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#5	Secondary	878.00'	25.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Proposed Conditions

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Type II 24-hr Type 2 - 10-Year Rainfall=3.83"

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Primary OutFlow Max=0.77 cfs @ 24.05 hrs HW=876.33' (Free Discharge)

1=RCP_Round 24" (Passes 0.77 cfs of 7.65 cfs potential flow)

2=Orifice/Grate (Orifice Controls 0.72 cfs @ 3.66 fps)

3=Sharp-Crested Rectangular Weir (Weir Controls 0.06 cfs @ 0.53 fps)

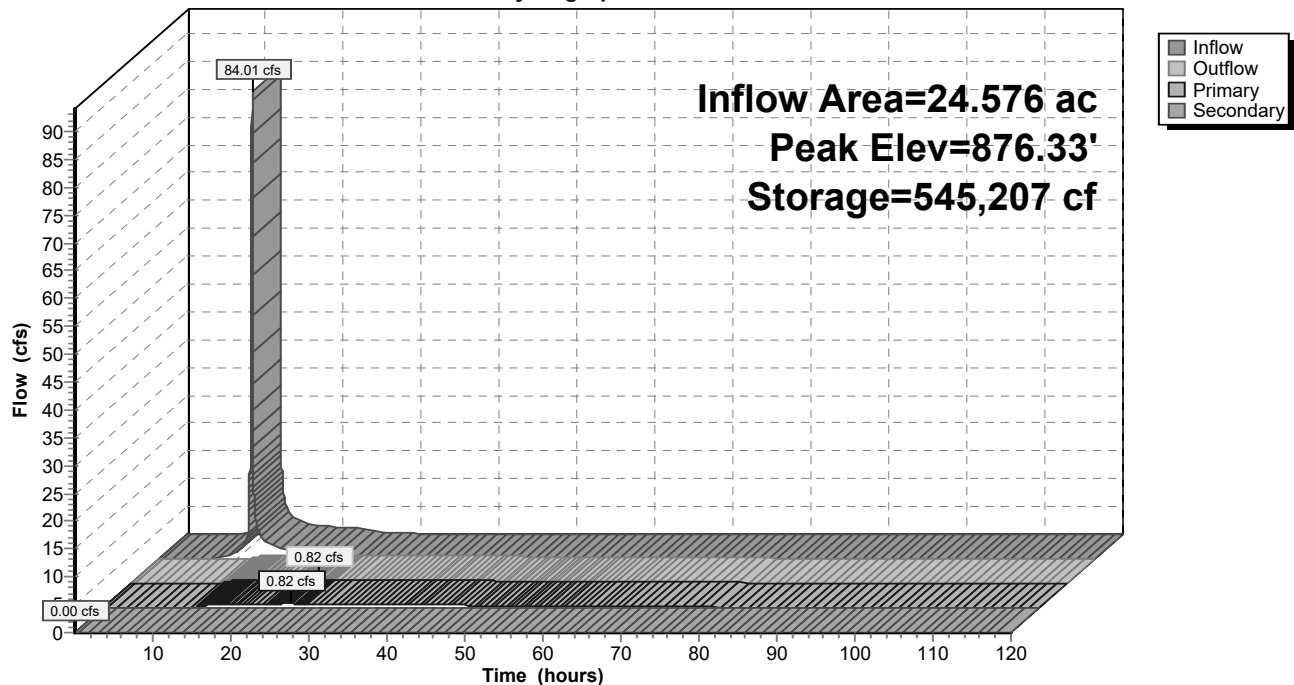
4=Orifice/Grate (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.01 hrs HW=875.00' (Free Discharge)

5=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 300: 300

Hydrograph



Proposed Conditions

Type II 24-hr Type 2 - 10-Year Rainfall=3.83"

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Hydrograph for Pond 300: 300

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.01	0.00	389,084	875.00	0.00	0.00	0.00
5.01	0.01	389,088	875.00	0.00	0.00	0.00
10.01	1.08	394,983	875.05	0.00	0.00	0.00
15.01	2.30	521,765	876.14	0.59	0.59	0.00
20.01	1.21	539,825	876.28	0.69	0.69	0.00
25.01	0.27	543,558	876.31	0.76	0.76	0.00
30.01	0.15	534,799	876.24	0.66	0.66	0.00
35.01	0.09	525,484	876.17	0.61	0.61	0.00
40.01	0.06	516,387	876.09	0.55	0.55	0.00
45.01	0.04	507,915	876.02	0.50	0.50	0.00
50.01	0.03	500,219	875.96	0.43	0.43	0.00
55.01	0.03	493,485	875.91	0.37	0.37	0.00
60.01	0.02	487,857	875.86	0.31	0.31	0.00
65.01	0.02	483,167	875.82	0.26	0.26	0.00
70.01	0.02	479,260	875.79	0.21	0.21	0.00
75.01	0.01	476,003	875.76	0.18	0.18	0.00
80.01	0.01	473,242	875.74	0.15	0.15	0.00
85.01	0.01	470,865	875.72	0.13	0.13	0.00
90.01	0.01	468,821	875.70	0.11	0.11	0.00
95.01	0.01	467,062	875.68	0.10	0.10	0.00
100.01	0.01	465,549	875.67	0.08	0.08	0.00
105.01	0.00	464,217	875.66	0.08	0.08	0.00
110.01	0.00	463,007	875.65	0.07	0.07	0.00
115.01	0.00	461,909	875.64	0.06	0.06	0.00

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Type II 24-hr Type 2 - 10-Year Rainfall=3.83"

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Summary for Pond 400: 400

Inflow Area = 5.909 ac, 39.66% Impervious, Inflow Depth = 2.14" for Type 2 - 10-Year event
 Inflow = 23.23 cfs @ 11.96 hrs, Volume= 1.053 af
 Outflow = 0.37 cfs @ 17.63 hrs, Volume= 0.611 af, Atten= 98%, Lag= 340.0 min
 Primary = 0.37 cfs @ 17.63 hrs, Volume= 0.611 af
 Routed to Pond 300 : 300
 Secondary = 0.00 cfs @ 0.01 hrs, Volume= 0.000 af
 Routed to Pond 300 : 300

Routing by Stor-Ind method, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs

Starting Elev= 877.00' Surf.Area= 35,903 sf Storage= 129,985 cf

Peak Elev= 877.90' @ 17.63 hrs Surf.Area= 38,836 sf Storage= 163,756 cf (33,771 cf above start)

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)

Center-of-Mass det. time= 940.8 min (1,761.5 - 820.7)

Volume	Invert	Avail.Storage	Storage Description
#1	872.00'	252,651 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
872.00	20,703	0	0
873.00	22,504	21,604	21,604
874.00	24,391	23,448	45,051
875.00	26,364	25,378	70,429
876.00	28,423	27,394	97,822
877.00	35,903	32,163	129,985
878.00	39,148	37,526	167,511
879.00	42,535	40,842	208,352
880.00	46,063	44,299	252,651

Device	Routing	Invert	Outlet Devices
#1	Primary	877.00'	24.0" Round RCP_Round 24" L= 90.0' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 877.00' / 876.50' S= 0.0056 '/' Cc= 0.900 n= 0.011 Concrete pipe, finished, Flow Area= 3.14 sf
#2	Device 1	877.50'	6.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Secondary	879.00'	25.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.37 cfs @ 17.63 hrs HW=877.90' TW=876.30' (Fixed TW Elev= 876.30')

1=RCP_Round 24" (Passes 0.37 cfs of 3.79 cfs potential flow)

2=Orifice/Grate (Orifice Controls 0.37 cfs @ 2.16 fps)

Secondary OutFlow Max=0.00 cfs @ 0.01 hrs HW=877.00' (Free Discharge)

3=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Proposed Conditions

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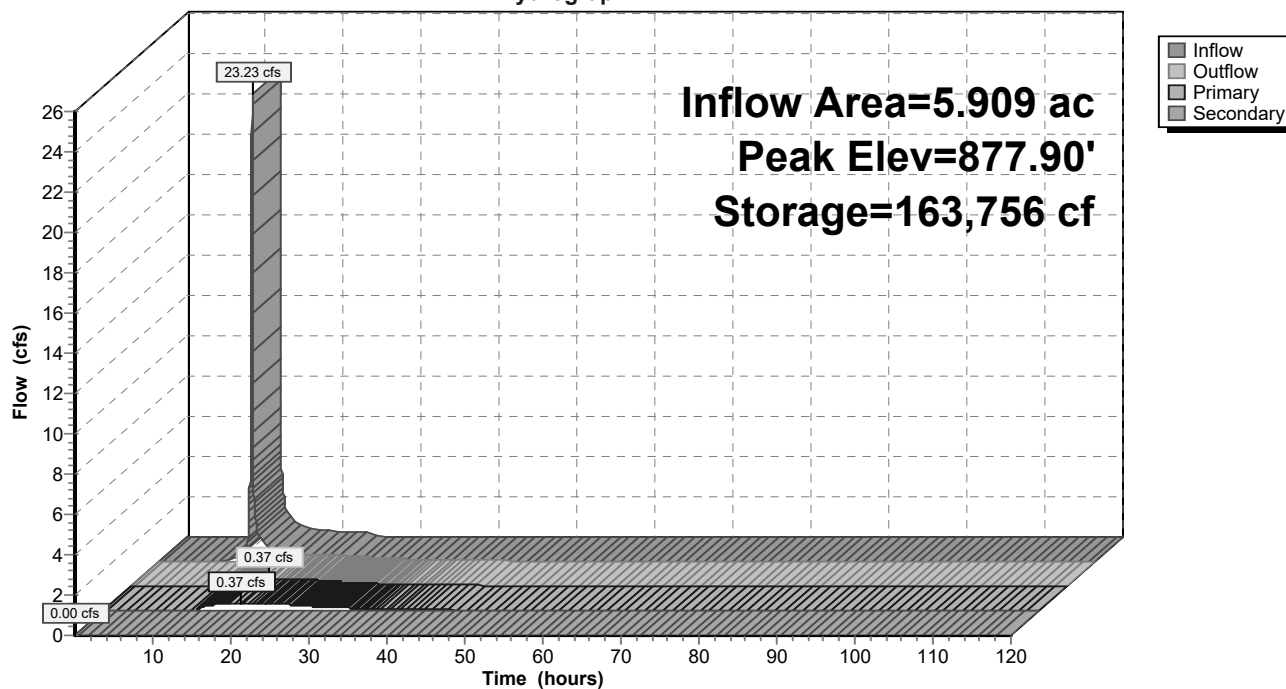
Type II 24-hr Type 2 - 10-Year Rainfall=3.83"

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Pond 400: 400

Hydrograph



Proposed Conditions

Type II 24-hr Type 2 - 10-Year Rainfall=3.83"

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Hydrograph for Pond 400: 400

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.01	0.00	129,985	877.00	0.00	0.00	0.00
5.01	0.00	129,985	877.00	0.00	0.00	0.00
10.01	0.20	130,676	877.02	0.00	0.00	0.00
15.01	0.57	162,954	877.88	0.34	0.34	0.00
20.01	0.26	163,326	877.89	0.35	0.35	0.00
25.01	0.00	160,985	877.83	0.27	0.27	0.00
30.01	0.00	157,295	877.74	0.15	0.15	0.00
35.01	0.00	155,139	877.68	0.09	0.09	0.00
40.01	0.00	153,757	877.64	0.06	0.06	0.00
45.01	0.00	152,798	877.62	0.04	0.04	0.00
50.01	0.00	152,134	877.60	0.03	0.03	0.00
55.01	0.00	151,632	877.59	0.03	0.03	0.00
60.01	0.00	151,210	877.58	0.02	0.02	0.00
65.01	0.00	150,855	877.57	0.02	0.02	0.00
70.01	0.00	150,556	877.56	0.02	0.02	0.00
75.01	0.00	150,304	877.55	0.01	0.01	0.00
80.01	0.00	150,091	877.55	0.01	0.01	0.00
85.01	0.00	149,913	877.54	0.01	0.01	0.00
90.01	0.00	149,762	877.54	0.01	0.01	0.00
95.01	0.00	149,636	877.53	0.01	0.01	0.00
100.01	0.00	149,529	877.53	0.01	0.01	0.00
105.01	0.00	149,439	877.53	0.00	0.00	0.00
110.01	0.00	149,363	877.53	0.00	0.00	0.00
115.01	0.00	149,300	877.53	0.00	0.00	0.00

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Type II 24-hr Type 2 - 10-Year Rainfall=3.83"

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Summary for Pond 500: 500

Inflow Area = 17.940 ac, 42.55% Impervious, Inflow Depth = 2.22" for Type 2 - 10-Year event
 Inflow = 72.94 cfs @ 11.96 hrs, Volume= 3.322 af
 Outflow = 0.94 cfs @ 18.96 hrs, Volume= 2.566 af, Atten= 99%, Lag= 420.2 min
 Primary = 0.94 cfs @ 18.96 hrs, Volume= 2.566 af
 Routed to Link 1 : OFFSITE
 Secondary = 0.00 cfs @ 0.01 hrs, Volume= 0.000 af
 Routed to Link 1 : OFFSITE

Routing by Stor-Ind method, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs

Starting Elev= 899.00' Surf.Area= 57,355 sf Storage= 196,414 cf

Peak Elev= 900.74' @ 18.96 hrs Surf.Area= 67,241 sf Storage= 304,891 cf (108,478 cf above start)

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)

Center-of-Mass det. time= 1,222.3 min (2,039.8 - 817.5)

Volume	Invert	Avail.Storage	Storage Description
#1	894.00'	555,429 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
894.00	29,616	0	0
895.00	32,756	31,186	31,186
896.00	36,239	34,498	65,684
897.00	40,030	38,135	103,818
898.00	43,903	41,967	145,785
899.00	57,355	50,629	196,414
900.00	62,973	60,164	256,578
901.00	68,725	65,849	322,427
902.00	74,612	71,669	394,095
903.00	80,633	77,623	471,718
904.00	86,790	83,712	555,429

Device	Routing	Invert	Outlet Devices
#1	Primary	899.00'	24.0" Round RCP_Round 24" L= 80.0' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 899.00' / 898.00' S= 0.0125 ' / Cc= 0.900 n= 0.011 Concrete pipe, finished, Flow Area= 3.14 sf
#2	Device 1	899.50'	6.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Secondary	903.00'	25.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.94 cfs @ 18.96 hrs HW=900.74' (Free Discharge)

1=RCP_Round 24" (Passes 0.94 cfs of 11.52 cfs potential flow)

2=Orifice/Grate (Orifice Controls 0.94 cfs @ 4.80 fps)

Secondary OutFlow Max=0.00 cfs @ 0.01 hrs HW=899.00' (Free Discharge)

3=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

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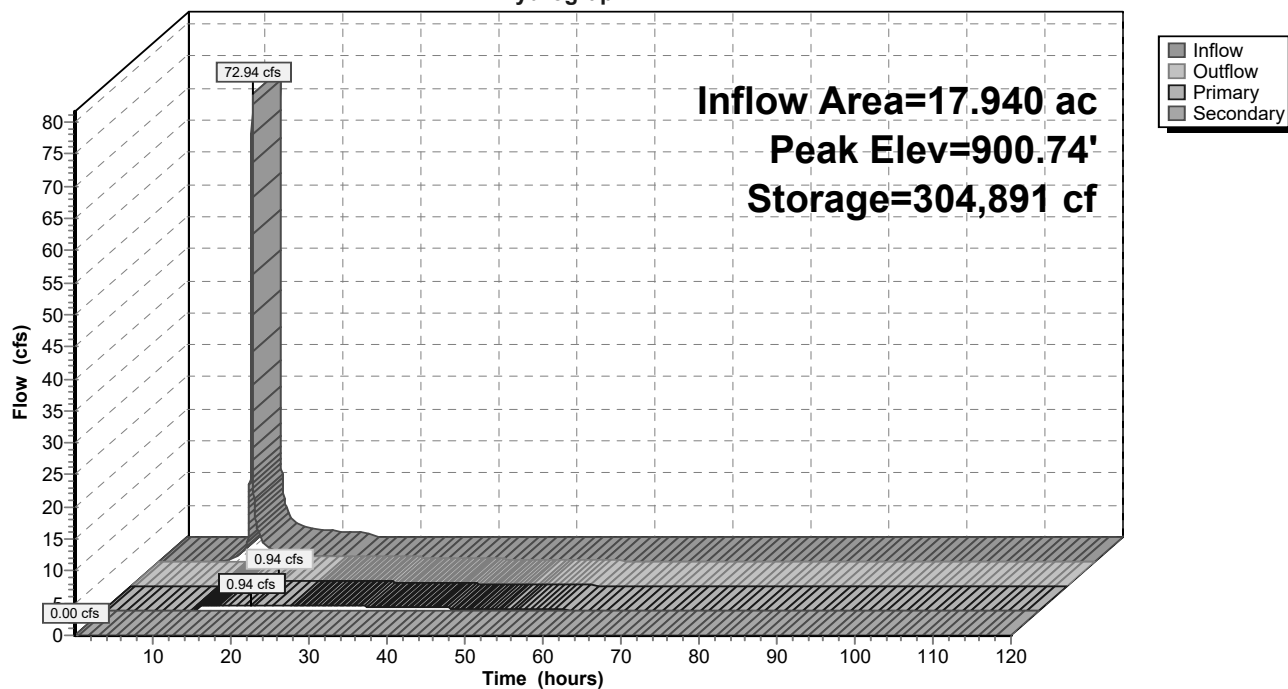
Type II 24-hr Type 2 - 10-Year Rainfall=3.83"

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Pond 500: 500

Hydrograph



Proposed Conditions*Type II 24-hr Type 2 - 10-Year Rainfall=3.83"*

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Hydrograph for Pond 500: 500

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.01	0.00	196,414	899.00	0.00	0.00	0.00
5.01	0.00	196,414	899.00	0.00	0.00	0.00
10.01	0.69	199,108	899.05	0.00	0.00	0.00
15.01	1.78	300,204	900.67	0.91	0.91	0.00
20.01	0.79	304,613	900.74	0.94	0.94	0.00
25.01	0.00	298,552	900.65	0.90	0.90	0.00
30.01	0.00	283,529	900.42	0.77	0.77	0.00
35.01	0.00	270,723	900.22	0.65	0.65	0.00
40.01	0.00	260,174	900.06	0.52	0.52	0.00
45.01	0.00	251,942	899.93	0.39	0.39	0.00
50.01	0.00	246,014	899.83	0.27	0.27	0.00
55.01	0.00	241,949	899.77	0.19	0.19	0.00
60.01	0.00	239,081	899.72	0.13	0.13	0.00
65.01	0.00	237,025	899.69	0.10	0.10	0.00
70.01	0.00	235,434	899.66	0.08	0.08	0.00
75.01	0.00	234,183	899.64	0.06	0.06	0.00
80.01	0.00	233,200	899.62	0.05	0.05	0.00
85.01	0.00	232,427	899.61	0.04	0.04	0.00
90.01	0.00	231,820	899.60	0.03	0.03	0.00
95.01	0.00	231,303	899.59	0.03	0.03	0.00
100.01	0.00	230,830	899.58	0.03	0.03	0.00
105.01	0.00	230,399	899.58	0.02	0.02	0.00
110.01	0.00	230,004	899.57	0.02	0.02	0.00
115.01	0.00	229,643	899.56	0.02	0.02	0.00

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Type II 24-hr Type 2 - 10-Year Rainfall=3.83"

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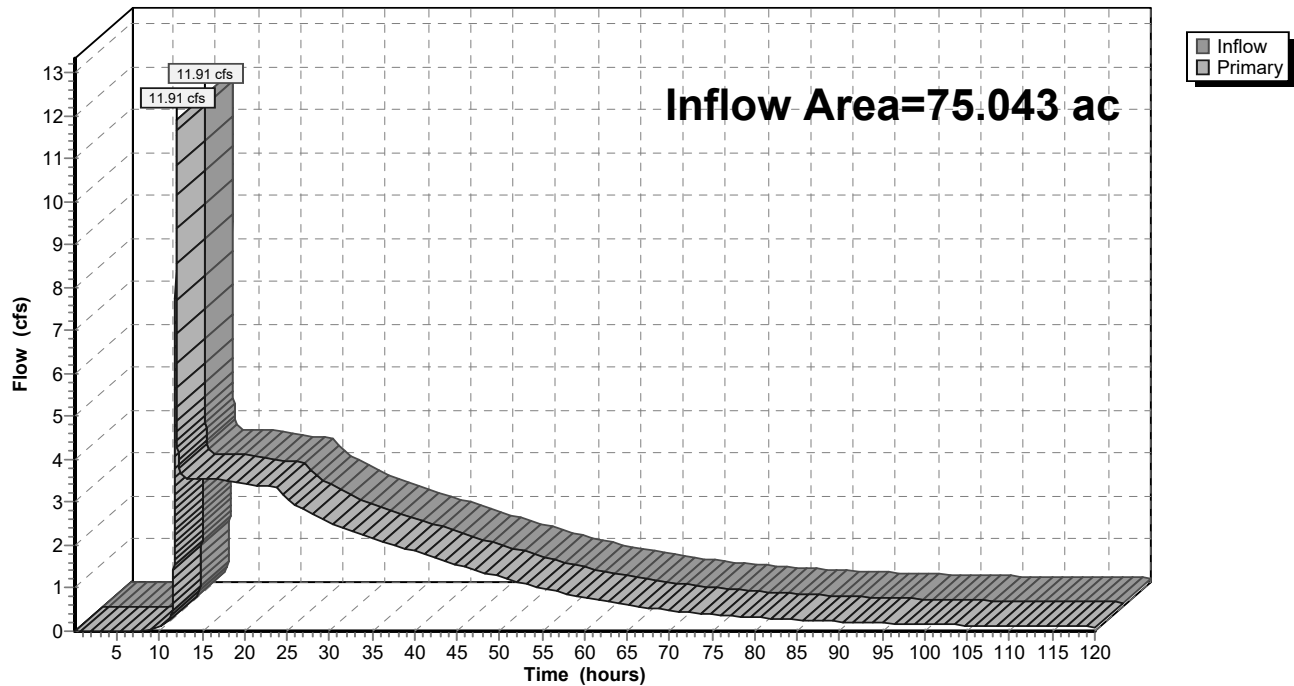
Summary for Link 1: OFFSITE

Inflow Area = 75.043 ac, 46.89% Impervious, Inflow Depth > 1.67" for Type 2 - 10-Year event
Inflow = 11.91 cfs @ 11.97 hrs, Volume= 10.462 af
Primary = 11.91 cfs @ 11.97 hrs, Volume= 10.462 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs

Link 1: OFFSITE

Hydrograph



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Type II 24-hr Type 2 - 10-Year Rainfall=3.83"

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Hydrograph for Link 1: OFFSITE

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.01	0.00	0.00	0.00	104.01	0.15	0.00	0.15
2.01	0.00	0.00	0.00	106.01	0.14	0.00	0.14
4.01	0.00	0.00	0.00	108.01	0.13	0.00	0.13
6.01	0.00	0.00	0.00	110.01	0.12	0.00	0.12
8.01	0.01	0.00	0.01	112.01	0.12	0.00	0.12
10.01	0.09	0.00	0.09	114.01	0.11	0.00	0.11
12.01	10.16	0.00	10.16	116.01	0.11	0.00	0.11
14.01	3.52	0.00	3.52	118.01	0.11	0.00	0.11
16.01	3.54	0.00	3.54				
18.01	3.52	0.00	3.52				
20.01	3.44	0.00	3.44				
22.01	3.39	0.00	3.39				
24.01	3.37	0.00	3.37				
26.01	2.93	0.00	2.93				
28.01	2.71	0.00	2.71				
30.01	2.53	0.00	2.53				
32.01	2.38	0.00	2.38				
34.01	2.23	0.00	2.23				
36.01	2.11	0.00	2.11				
38.01	1.98	0.00	1.98				
40.01	1.86	0.00	1.86				
42.01	1.74	0.00	1.74				
44.01	1.61	0.00	1.61				
46.01	1.49	0.00	1.49				
48.01	1.37	0.00	1.37				
50.01	1.26	0.00	1.26				
52.01	1.16	0.00	1.16				
54.01	1.06	0.00	1.06				
56.01	0.96	0.00	0.96				
58.01	0.87	0.00	0.87				
60.01	0.79	0.00	0.79				
62.01	0.71	0.00	0.71				
64.01	0.64	0.00	0.64				
66.01	0.58	0.00	0.58				
68.01	0.53	0.00	0.53				
70.01	0.48	0.00	0.48				
72.01	0.44	0.00	0.44				
74.01	0.40	0.00	0.40				
76.01	0.37	0.00	0.37				
78.01	0.34	0.00	0.34				
80.01	0.32	0.00	0.32				
82.01	0.29	0.00	0.29				
84.01	0.27	0.00	0.27				
86.01	0.25	0.00	0.25				
88.01	0.24	0.00	0.24				
90.01	0.22	0.00	0.22				
92.01	0.21	0.00	0.21				
94.01	0.19	0.00	0.19				
96.01	0.18	0.00	0.18				
98.01	0.17	0.00	0.17				
100.01	0.16	0.00	0.16				
102.01	0.15	0.00	0.15				

Proposed Conditions

Type II 24-hr Type 2 - 25-Year Rainfall=4.71"

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Time span=0.01-120.00 hrs, dt=0.01 hrs, 12000 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1A: 1A Runoff Area=110,816 sf 38.00% Impervious Runoff Depth=2.91"
Tc=5.0 min CN=83 Runoff=13.44 cfs 0.618 af

Subcatchment2A: 2A Runoff Area=6,401 sf 38.00% Impervious Runoff Depth=2.91"
Tc=5.0 min CN=83 Runoff=0.78 cfs 0.036 af

Subcatchment100A: 100A Runoff Area=1,074,428 sf 42.06% Impervious Runoff Depth=3.01"
Tc=5.0 min CN=84 Runoff=133.85 cfs 6.179 af

Subcatchment200A: 200A Runoff Area=225,239 sf 68.37% Impervious Runoff Depth=3.70"
Tc=5.0 min CN=91 Runoff=32.77 cfs 1.595 af

Subcatchment300A: 300A Runoff Area=260,648 sf 65.00% Impervious Runoff Depth=3.60"
Tc=5.0 min CN=90 Runoff=37.22 cfs 1.794 af

Subcatchment300B: 300B Runoff Area=552,525 sf 50.37% Impervious Runoff Depth=3.20"
Tc=5.0 min CN=86 Runoff=72.35 cfs 3.380 af

Subcatchment400A: 400A Runoff Area=257,377 sf 39.66% Impervious Runoff Depth=2.91"
Tc=5.0 min CN=83 Runoff=31.23 cfs 1.434 af

Subcatchment500A: 500A Runoff Area=781,453 sf 42.55% Impervious Runoff Depth=3.01"
Tc=5.0 min CN=84 Runoff=97.35 cfs 4.494 af

Pond 100: 100 Peak Elev=881.62' Storage=422,396 cf Inflow=133.85 cfs 6.179 af
Primary=1.29 cfs 5.152 af Secondary=0.00 cfs 0.000 af Outflow=1.29 cfs 5.152 af

Pond 200: 200 Peak Elev=876.92' Storage=117,281 cf Inflow=32.77 cfs 1.595 af
Primary=1.02 cfs 1.336 af Secondary=0.00 cfs 0.000 af Outflow=1.02 cfs 1.336 af

Pond 300: 300 Peak Elev=876.51' Storage=568,818 cf Inflow=109.63 cfs 6.164 af
Primary=2.12 cfs 4.491 af Secondary=0.00 cfs 0.000 af Outflow=2.12 cfs 4.491 af

Pond 400: 400 Peak Elev=878.15' Storage=173,617 cf Inflow=31.23 cfs 1.434 af
Primary=0.60 cfs 0.991 af Secondary=0.00 cfs 0.000 af Outflow=0.60 cfs 0.991 af

Pond 500: 500 Peak Elev=901.33' Storage=345,662 cf Inflow=97.35 cfs 4.494 af
Primary=1.19 cfs 3.722 af Secondary=0.00 cfs 0.000 af Outflow=1.19 cfs 3.722 af

Link 1: OFFSITE Inflow=16.62 cfs 15.354 af
Primary=16.62 cfs 15.354 af

Total Runoff Area = 75.043 ac Runoff Volume = 19.529 af Average Runoff Depth = 3.12"
53.11% Pervious = 39.854 ac 46.89% Impervious = 35.189 ac

Proposed Conditions

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Type II 24-hr Type 2 - 25-Year Rainfall=4.71"

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Summary for Subcatchment 1A: 1A

Runoff = 13.44 cfs @ 11.96 hrs, Volume= 0.618 af, Depth= 2.91"
Routed to Link 1 : OFFSITE

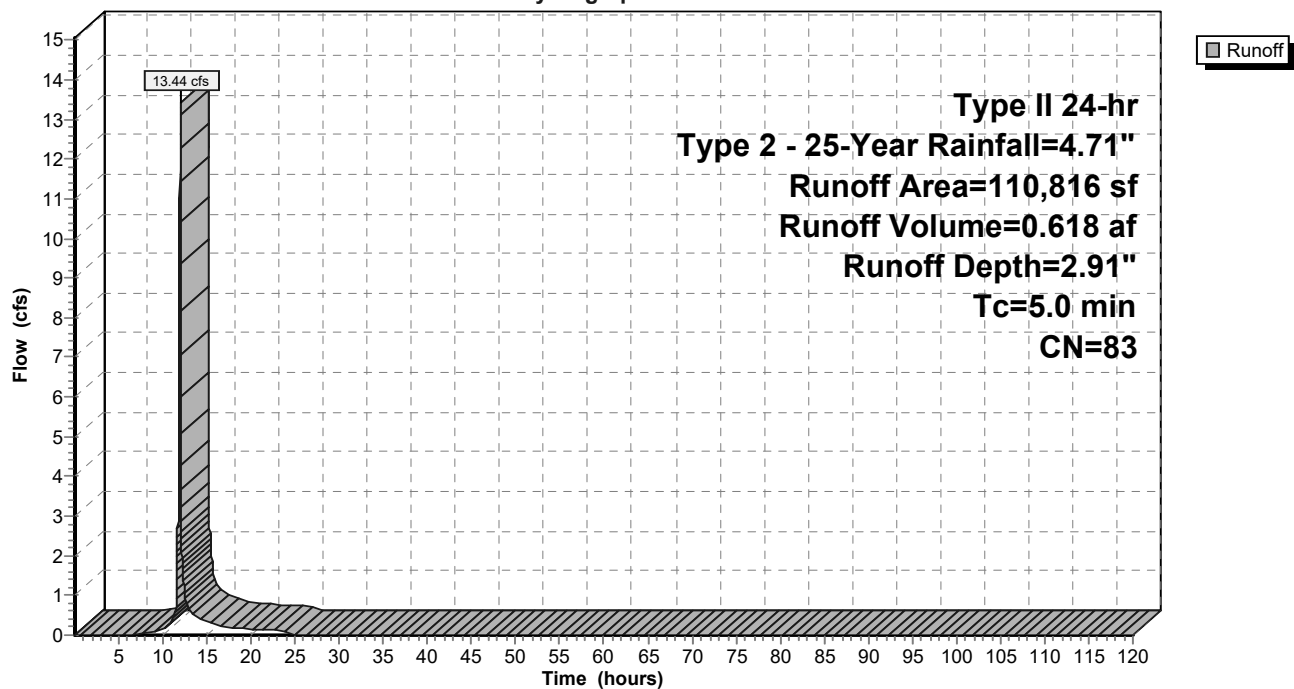
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs
Type II 24-hr Type 2 - 25-Year Rainfall=4.71"

Area (sf)	CN	Description
110,816	83	1/4 acre lots, 38% imp, HSG C
68,706		62.00% Pervious Area
42,110		38.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, Direct

Subcatchment 1A: 1A

Hydrograph



Proposed Conditions

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Type II 24-hr Type 2 - 25-Year Rainfall=4.71"

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Hydrograph for Subcatchment 1A: 1A

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.01	0.00	0.00	0.00	104.01	4.71	2.91	0.00
2.01	0.10	0.00	0.00	106.01	4.71	2.91	0.00
4.01	0.23	0.00	0.00	108.01	4.71	2.91	0.00
6.01	0.38	0.00	0.00	110.01	4.71	2.91	0.00
8.01	0.57	0.01	0.03	112.01	4.71	2.91	0.00
10.01	0.85	0.08	0.15	114.01	4.71	2.91	0.00
12.01	3.13	1.55	10.43	116.01	4.71	2.91	0.00
14.01	3.86	2.17	0.40	118.01	4.71	2.91	0.00
16.01	4.15	2.41	0.25				
18.01	4.34	2.58	0.19				
20.01	4.48	2.71	0.14				
22.01	4.60	2.82	0.13				
24.01	4.71	2.91	0.12				
26.01	4.71	2.91	0.00				
28.01	4.71	2.91	0.00				
30.01	4.71	2.91	0.00				
32.01	4.71	2.91	0.00				
34.01	4.71	2.91	0.00				
36.01	4.71	2.91	0.00				
38.01	4.71	2.91	0.00				
40.01	4.71	2.91	0.00				
42.01	4.71	2.91	0.00				
44.01	4.71	2.91	0.00				
46.01	4.71	2.91	0.00				
48.01	4.71	2.91	0.00				
50.01	4.71	2.91	0.00				
52.01	4.71	2.91	0.00				
54.01	4.71	2.91	0.00				
56.01	4.71	2.91	0.00				
58.01	4.71	2.91	0.00				
60.01	4.71	2.91	0.00				
62.01	4.71	2.91	0.00				
64.01	4.71	2.91	0.00				
66.01	4.71	2.91	0.00				
68.01	4.71	2.91	0.00				
70.01	4.71	2.91	0.00				
72.01	4.71	2.91	0.00				
74.01	4.71	2.91	0.00				
76.01	4.71	2.91	0.00				
78.01	4.71	2.91	0.00				
80.01	4.71	2.91	0.00				
82.01	4.71	2.91	0.00				
84.01	4.71	2.91	0.00				
86.01	4.71	2.91	0.00				
88.01	4.71	2.91	0.00				
90.01	4.71	2.91	0.00				
92.01	4.71	2.91	0.00				
94.01	4.71	2.91	0.00				
96.01	4.71	2.91	0.00				
98.01	4.71	2.91	0.00				
100.01	4.71	2.91	0.00				
102.01	4.71	2.91	0.00				

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Type II 24-hr Type 2 - 25-Year Rainfall=4.71"

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Summary for Subcatchment 2A: 2A

Runoff = 0.78 cfs @ 11.96 hrs, Volume= 0.036 af, Depth= 2.91"
Routed to Link 1 : OFFSITE

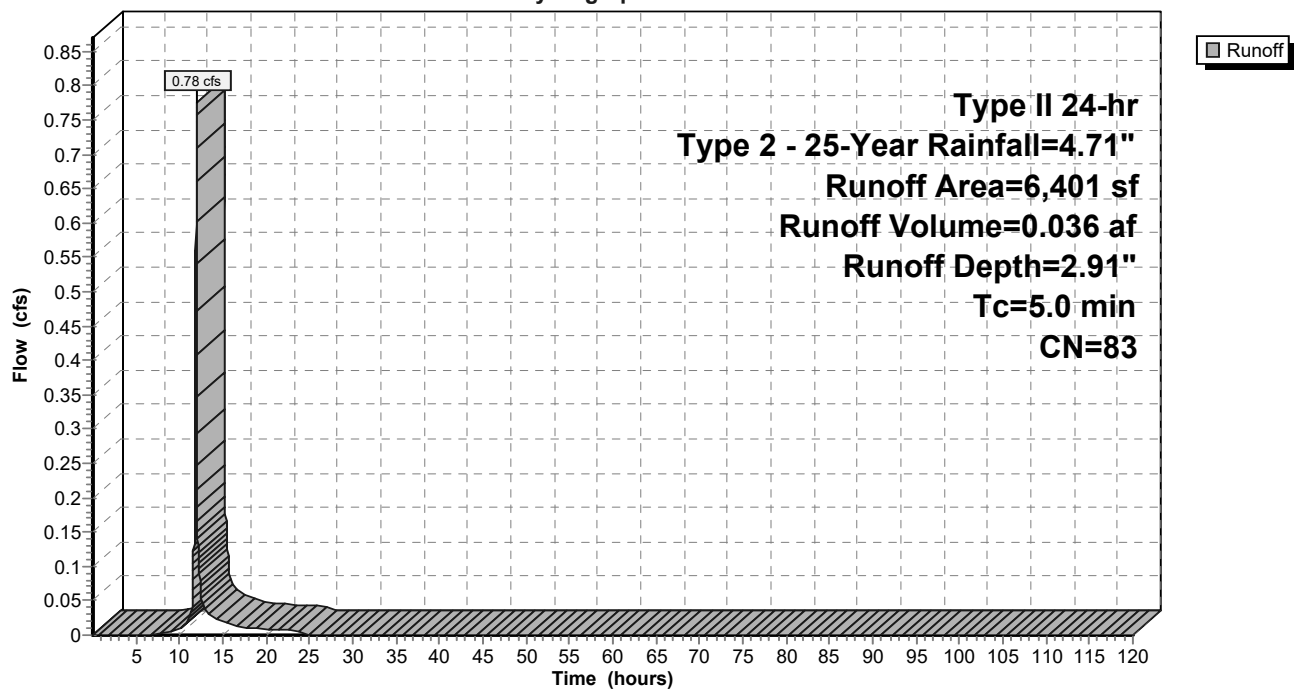
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs
Type II 24-hr Type 2 - 25-Year Rainfall=4.71"

Area (sf)	CN	Description
6,401	83	1/4 acre lots, 38% imp, HSG C
3,969		62.00% Pervious Area
2,432		38.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, Direct

Subcatchment 2A: 2A

Hydrograph



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Type II 24-hr Type 2 - 25-Year Rainfall=4.71"

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Hydrograph for Subcatchment 2A: 2A

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.01	0.00	0.00	0.00	104.01	4.71	2.91	0.00
2.01	0.10	0.00	0.00	106.01	4.71	2.91	0.00
4.01	0.23	0.00	0.00	108.01	4.71	2.91	0.00
6.01	0.38	0.00	0.00	110.01	4.71	2.91	0.00
8.01	0.57	0.01	0.00	112.01	4.71	2.91	0.00
10.01	0.85	0.08	0.01	114.01	4.71	2.91	0.00
12.01	3.13	1.55	0.60	116.01	4.71	2.91	0.00
14.01	3.86	2.17	0.02	118.01	4.71	2.91	0.00
16.01	4.15	2.41	0.01				
18.01	4.34	2.58	0.01				
20.01	4.48	2.71	0.01				
22.01	4.60	2.82	0.01				
24.01	4.71	2.91	0.01				
26.01	4.71	2.91	0.00				
28.01	4.71	2.91	0.00				
30.01	4.71	2.91	0.00				
32.01	4.71	2.91	0.00				
34.01	4.71	2.91	0.00				
36.01	4.71	2.91	0.00				
38.01	4.71	2.91	0.00				
40.01	4.71	2.91	0.00				
42.01	4.71	2.91	0.00				
44.01	4.71	2.91	0.00				
46.01	4.71	2.91	0.00				
48.01	4.71	2.91	0.00				
50.01	4.71	2.91	0.00				
52.01	4.71	2.91	0.00				
54.01	4.71	2.91	0.00				
56.01	4.71	2.91	0.00				
58.01	4.71	2.91	0.00				
60.01	4.71	2.91	0.00				
62.01	4.71	2.91	0.00				
64.01	4.71	2.91	0.00				
66.01	4.71	2.91	0.00				
68.01	4.71	2.91	0.00				
70.01	4.71	2.91	0.00				
72.01	4.71	2.91	0.00				
74.01	4.71	2.91	0.00				
76.01	4.71	2.91	0.00				
78.01	4.71	2.91	0.00				
80.01	4.71	2.91	0.00				
82.01	4.71	2.91	0.00				
84.01	4.71	2.91	0.00				
86.01	4.71	2.91	0.00				
88.01	4.71	2.91	0.00				
90.01	4.71	2.91	0.00				
92.01	4.71	2.91	0.00				
94.01	4.71	2.91	0.00				
96.01	4.71	2.91	0.00				
98.01	4.71	2.91	0.00				
100.01	4.71	2.91	0.00				
102.01	4.71	2.91	0.00				

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Type II 24-hr Type 2 - 25-Year Rainfall=4.71"

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Summary for Subcatchment 100A: 100A

Runoff = 133.85 cfs @ 11.96 hrs, Volume= 6.179 af, Depth= 3.01"
Routed to Pond 100 : 100

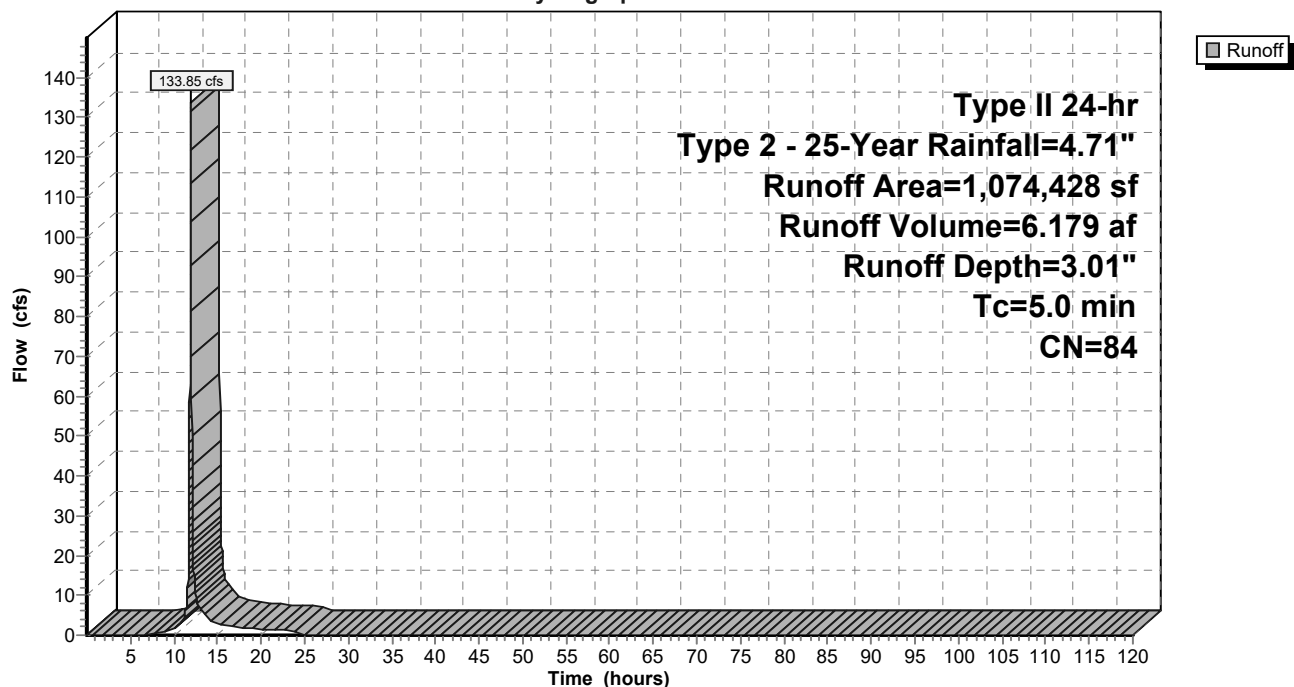
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs
Type II 24-hr Type 2 - 25-Year Rainfall=4.71"

Area (sf)	CN	Description
70,439	98	Water Surface, HSG C
1,003,989	83	1/4 acre lots, 38% imp, HSG C
1,074,428	84	Weighted Average
622,473		57.94% Pervious Area
451,955		42.06% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, Direct

Subcatchment 100A: 100A

Hydrograph



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Type II 24-hr Type 2 - 25-Year Rainfall=4.71"

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Hydrograph for Subcatchment 100A: 100A

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.01	0.00	0.00	0.00	104.01	4.71	3.01	0.00
2.01	0.10	0.00	0.00	106.01	4.71	3.01	0.00
4.01	0.23	0.00	0.00	108.01	4.71	3.01	0.00
6.01	0.38	0.00	0.00	110.01	4.71	3.01	0.00
8.01	0.57	0.02	0.42	112.01	4.71	3.01	0.00
10.01	0.85	0.09	1.60	114.01	4.71	3.01	0.00
12.01	3.13	1.63	103.59	116.01	4.71	3.01	0.00
14.01	3.86	2.25	3.93	118.01	4.71	3.01	0.00
16.01	4.15	2.50	2.44				
18.01	4.34	2.67	1.90				
20.01	4.48	2.80	1.39				
22.01	4.60	2.91	1.27				
24.01	4.71	3.01	1.17				
26.01	4.71	3.01	0.00				
28.01	4.71	3.01	0.00				
30.01	4.71	3.01	0.00				
32.01	4.71	3.01	0.00				
34.01	4.71	3.01	0.00				
36.01	4.71	3.01	0.00				
38.01	4.71	3.01	0.00				
40.01	4.71	3.01	0.00				
42.01	4.71	3.01	0.00				
44.01	4.71	3.01	0.00				
46.01	4.71	3.01	0.00				
48.01	4.71	3.01	0.00				
50.01	4.71	3.01	0.00				
52.01	4.71	3.01	0.00				
54.01	4.71	3.01	0.00				
56.01	4.71	3.01	0.00				
58.01	4.71	3.01	0.00				
60.01	4.71	3.01	0.00				
62.01	4.71	3.01	0.00				
64.01	4.71	3.01	0.00				
66.01	4.71	3.01	0.00				
68.01	4.71	3.01	0.00				
70.01	4.71	3.01	0.00				
72.01	4.71	3.01	0.00				
74.01	4.71	3.01	0.00				
76.01	4.71	3.01	0.00				
78.01	4.71	3.01	0.00				
80.01	4.71	3.01	0.00				
82.01	4.71	3.01	0.00				
84.01	4.71	3.01	0.00				
86.01	4.71	3.01	0.00				
88.01	4.71	3.01	0.00				
90.01	4.71	3.01	0.00				
92.01	4.71	3.01	0.00				
94.01	4.71	3.01	0.00				
96.01	4.71	3.01	0.00				
98.01	4.71	3.01	0.00				
100.01	4.71	3.01	0.00				
102.01	4.71	3.01	0.00				

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Type II 24-hr Type 2 - 25-Year Rainfall=4.71"

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Summary for Subcatchment 200A: 200A

Runoff = 32.77 cfs @ 11.96 hrs, Volume= 1.595 af, Depth= 3.70"
Routed to Pond 200 : 200

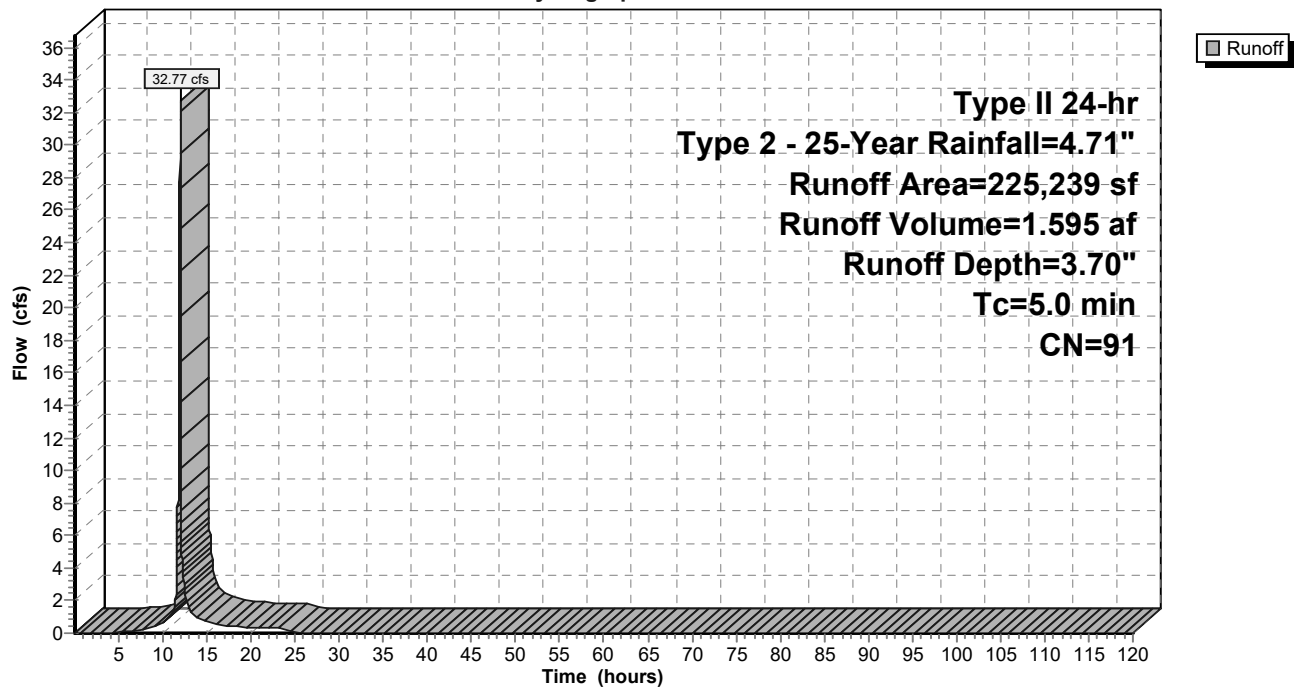
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs
Type II 24-hr Type 2 - 25-Year Rainfall=4.71"

Area (sf)	CN	Description
21,699	98	Water Surface, HSG C
203,540	90	1/8 acre lots, 65% imp, HSG C
225,239	91	Weighted Average
71,239		31.63% Pervious Area
154,000		68.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, Direct

Subcatchment 200A: 200A

Hydrograph



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Type II 24-hr Type 2 - 25-Year Rainfall=4.71"

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Hydrograph for Subcatchment 200A: 200A

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.01	0.00	0.00	0.00	104.01	4.71	3.70	0.00
2.01	0.10	0.00	0.00	106.01	4.71	3.70	0.00
4.01	0.23	0.00	0.02	108.01	4.71	3.70	0.00
6.01	0.38	0.03	0.12	110.01	4.71	3.70	0.00
8.01	0.57	0.10	0.25	112.01	4.71	3.70	0.00
10.01	0.85	0.26	0.60	114.01	4.71	3.70	0.00
12.01	3.13	2.19	24.90	116.01	4.71	3.70	0.00
14.01	3.86	2.89	0.90	118.01	4.71	3.70	0.00
16.01	4.15	3.16	0.55				
18.01	4.34	3.34	0.43				
20.01	4.48	3.48	0.31				
22.01	4.60	3.60	0.29				
24.01	4.71	3.70	0.26				
26.01	4.71	3.70	0.00				
28.01	4.71	3.70	0.00				
30.01	4.71	3.70	0.00				
32.01	4.71	3.70	0.00				
34.01	4.71	3.70	0.00				
36.01	4.71	3.70	0.00				
38.01	4.71	3.70	0.00				
40.01	4.71	3.70	0.00				
42.01	4.71	3.70	0.00				
44.01	4.71	3.70	0.00				
46.01	4.71	3.70	0.00				
48.01	4.71	3.70	0.00				
50.01	4.71	3.70	0.00				
52.01	4.71	3.70	0.00				
54.01	4.71	3.70	0.00				
56.01	4.71	3.70	0.00				
58.01	4.71	3.70	0.00				
60.01	4.71	3.70	0.00				
62.01	4.71	3.70	0.00				
64.01	4.71	3.70	0.00				
66.01	4.71	3.70	0.00				
68.01	4.71	3.70	0.00				
70.01	4.71	3.70	0.00				
72.01	4.71	3.70	0.00				
74.01	4.71	3.70	0.00				
76.01	4.71	3.70	0.00				
78.01	4.71	3.70	0.00				
80.01	4.71	3.70	0.00				
82.01	4.71	3.70	0.00				
84.01	4.71	3.70	0.00				
86.01	4.71	3.70	0.00				
88.01	4.71	3.70	0.00				
90.01	4.71	3.70	0.00				
92.01	4.71	3.70	0.00				
94.01	4.71	3.70	0.00				
96.01	4.71	3.70	0.00				
98.01	4.71	3.70	0.00				
100.01	4.71	3.70	0.00				
102.01	4.71	3.70	0.00				

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Type II 24-hr Type 2 - 25-Year Rainfall=4.71"

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Summary for Subcatchment 300A: 300A

Runoff = 37.22 cfs @ 11.96 hrs, Volume= 1.794 af, Depth= 3.60"
Routed to Pond 300 : 300

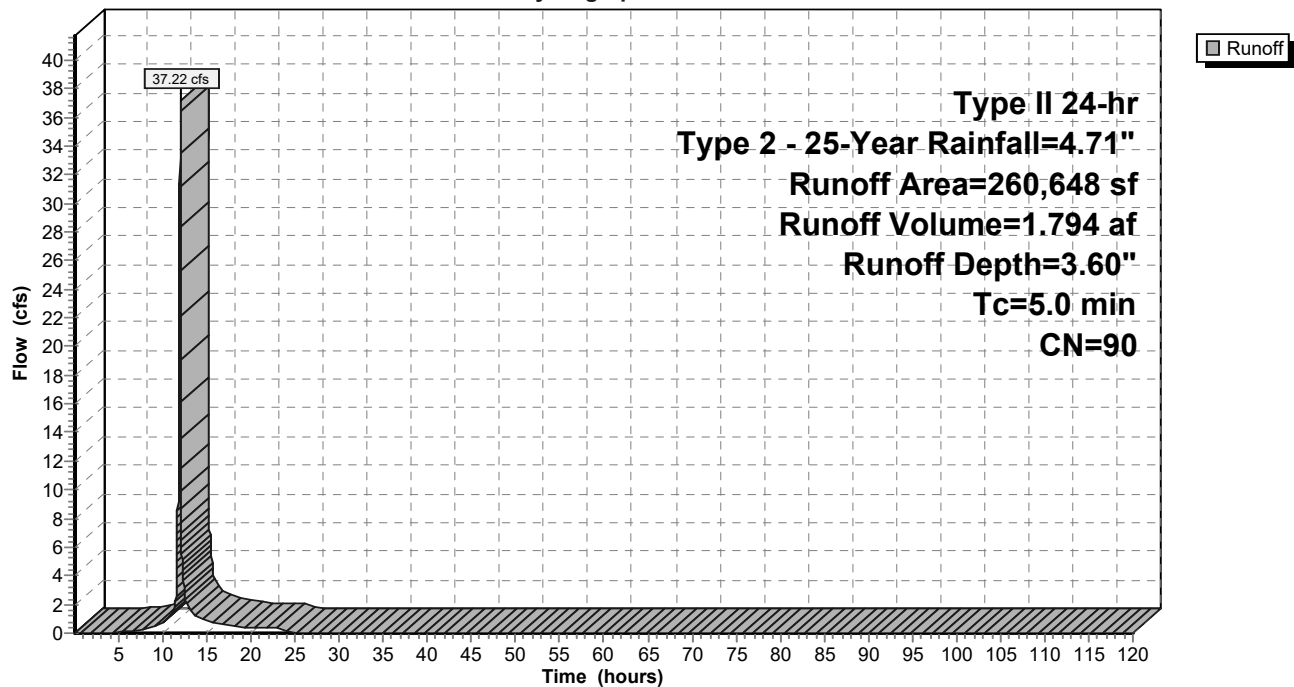
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs
Type II 24-hr Type 2 - 25-Year Rainfall=4.71"

Area (sf)	CN	Description
260,648	90	1/8 acre lots, 65% imp, HSG C
91,227		35.00% Pervious Area
169,421		65.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, Direct

Subcatchment 300A: 300A

Hydrograph



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Type II 24-hr Type 2 - 25-Year Rainfall=4.71"

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Hydrograph for Subcatchment 300A: 300A

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.01	0.00	0.00	0.00	104.01	4.71	3.60	0.00
2.01	0.10	0.00	0.00	106.01	4.71	3.60	0.00
4.01	0.23	0.00	0.00	108.01	4.71	3.60	0.00
6.01	0.38	0.02	0.11	110.01	4.71	3.60	0.00
8.01	0.57	0.08	0.26	112.01	4.71	3.60	0.00
10.01	0.85	0.23	0.65	114.01	4.71	3.60	0.00
12.01	3.13	2.11	28.35	116.01	4.71	3.60	0.00
14.01	3.86	2.79	1.03	118.01	4.71	3.60	0.00
16.01	4.15	3.06	0.63				
18.01	4.34	3.24	0.49				
20.01	4.48	3.38	0.36				
22.01	4.60	3.49	0.33				
24.01	4.71	3.60	0.30				
26.01	4.71	3.60	0.00				
28.01	4.71	3.60	0.00				
30.01	4.71	3.60	0.00				
32.01	4.71	3.60	0.00				
34.01	4.71	3.60	0.00				
36.01	4.71	3.60	0.00				
38.01	4.71	3.60	0.00				
40.01	4.71	3.60	0.00				
42.01	4.71	3.60	0.00				
44.01	4.71	3.60	0.00				
46.01	4.71	3.60	0.00				
48.01	4.71	3.60	0.00				
50.01	4.71	3.60	0.00				
52.01	4.71	3.60	0.00				
54.01	4.71	3.60	0.00				
56.01	4.71	3.60	0.00				
58.01	4.71	3.60	0.00				
60.01	4.71	3.60	0.00				
62.01	4.71	3.60	0.00				
64.01	4.71	3.60	0.00				
66.01	4.71	3.60	0.00				
68.01	4.71	3.60	0.00				
70.01	4.71	3.60	0.00				
72.01	4.71	3.60	0.00				
74.01	4.71	3.60	0.00				
76.01	4.71	3.60	0.00				
78.01	4.71	3.60	0.00				
80.01	4.71	3.60	0.00				
82.01	4.71	3.60	0.00				
84.01	4.71	3.60	0.00				
86.01	4.71	3.60	0.00				
88.01	4.71	3.60	0.00				
90.01	4.71	3.60	0.00				
92.01	4.71	3.60	0.00				
94.01	4.71	3.60	0.00				
96.01	4.71	3.60	0.00				
98.01	4.71	3.60	0.00				
100.01	4.71	3.60	0.00				
102.01	4.71	3.60	0.00				

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Type II 24-hr Type 2 - 25-Year Rainfall=4.71"

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Summary for Subcatchment 300B: 300B

Runoff = 72.35 cfs @ 11.96 hrs, Volume= 3.380 af, Depth= 3.20"
Routed to Pond 300 : 300

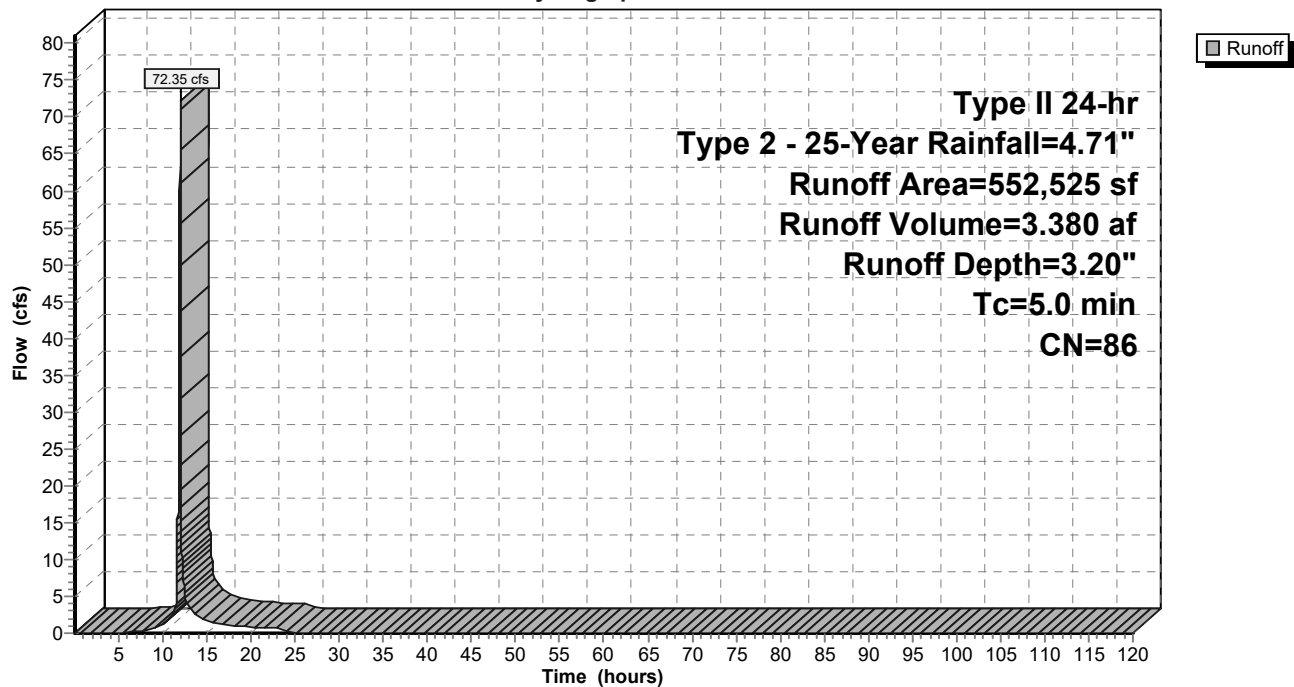
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs
Type II 24-hr Type 2 - 25-Year Rainfall=4.71"

Area (sf)	CN	Description
442,263	83	1/4 acre lots, 38% imp, HSG C
110,262	98	Water Surface, HSG C
552,525	86	Weighted Average
274,203		49.63% Pervious Area
278,322		50.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, Direct

Subcatchment 300B: 300B

Hydrograph



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Type II 24-hr Type 2 - 25-Year Rainfall=4.71"

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Hydrograph for Subcatchment 300B: 300B

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.01	0.00	0.00	0.00	104.01	4.71	3.20	0.00
2.01	0.10	0.00	0.00	106.01	4.71	3.20	0.00
4.01	0.23	0.00	0.00	108.01	4.71	3.20	0.00
6.01	0.38	0.00	0.06	110.01	4.71	3.20	0.00
8.01	0.57	0.03	0.31	112.01	4.71	3.20	0.00
10.01	0.85	0.13	0.99	114.01	4.71	3.20	0.00
12.01	3.13	1.78	55.68	116.01	4.71	3.20	0.00
14.01	3.86	2.42	2.08	118.01	4.71	3.20	0.00
16.01	4.15	2.68	1.29				
18.01	4.34	2.86	1.00				
20.01	4.48	2.99	0.73				
22.01	4.60	3.10	0.67				
24.01	4.71	3.20	0.62				
26.01	4.71	3.20	0.00				
28.01	4.71	3.20	0.00				
30.01	4.71	3.20	0.00				
32.01	4.71	3.20	0.00				
34.01	4.71	3.20	0.00				
36.01	4.71	3.20	0.00				
38.01	4.71	3.20	0.00				
40.01	4.71	3.20	0.00				
42.01	4.71	3.20	0.00				
44.01	4.71	3.20	0.00				
46.01	4.71	3.20	0.00				
48.01	4.71	3.20	0.00				
50.01	4.71	3.20	0.00				
52.01	4.71	3.20	0.00				
54.01	4.71	3.20	0.00				
56.01	4.71	3.20	0.00				
58.01	4.71	3.20	0.00				
60.01	4.71	3.20	0.00				
62.01	4.71	3.20	0.00				
64.01	4.71	3.20	0.00				
66.01	4.71	3.20	0.00				
68.01	4.71	3.20	0.00				
70.01	4.71	3.20	0.00				
72.01	4.71	3.20	0.00				
74.01	4.71	3.20	0.00				
76.01	4.71	3.20	0.00				
78.01	4.71	3.20	0.00				
80.01	4.71	3.20	0.00				
82.01	4.71	3.20	0.00				
84.01	4.71	3.20	0.00				
86.01	4.71	3.20	0.00				
88.01	4.71	3.20	0.00				
90.01	4.71	3.20	0.00				
92.01	4.71	3.20	0.00				
94.01	4.71	3.20	0.00				
96.01	4.71	3.20	0.00				
98.01	4.71	3.20	0.00				
100.01	4.71	3.20	0.00				
102.01	4.71	3.20	0.00				

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Type II 24-hr Type 2 - 25-Year Rainfall=4.71"

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Summary for Subcatchment 400A: 400A

Runoff = 31.23 cfs @ 11.96 hrs, Volume= 1.434 af, Depth= 2.91"
Routed to Pond 400 : 400

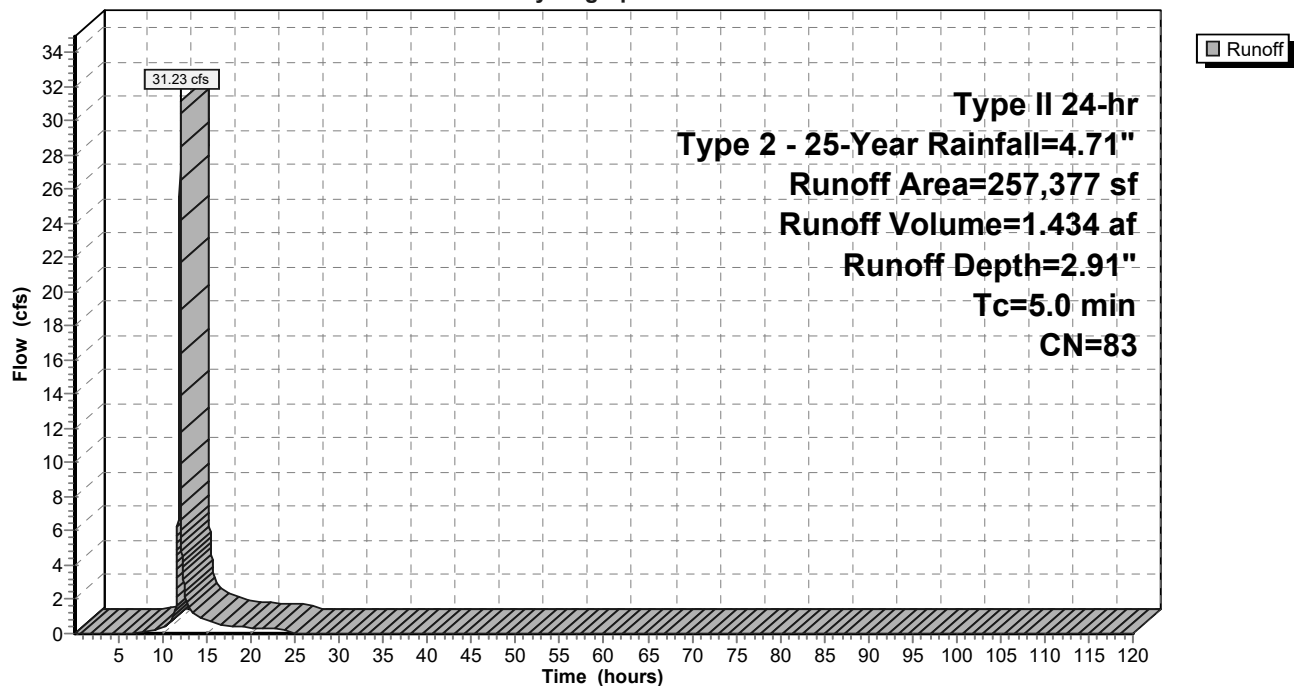
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs
Type II 24-hr Type 2 - 25-Year Rainfall=4.71"

Area (sf)	CN	Description
47,305	70	Woods, Good, HSG C
35,903	98	Water Surface, HSG C
174,169	83	1/4 acre lots, 38% imp, HSG C
257,377	83	Weighted Average
155,290		60.34% Pervious Area
102,087		39.66% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, Direct

Subcatchment 400A: 400A

Hydrograph



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Type II 24-hr Type 2 - 25-Year Rainfall=4.71"

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Hydrograph for Subcatchment 400A: 400A

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.01	0.00	0.00	0.00	104.01	4.71	2.91	0.00
2.01	0.10	0.00	0.00	106.01	4.71	2.91	0.00
4.01	0.23	0.00	0.00	108.01	4.71	2.91	0.00
6.01	0.38	0.00	0.00	110.01	4.71	2.91	0.00
8.01	0.57	0.01	0.08	112.01	4.71	2.91	0.00
10.01	0.85	0.08	0.35	114.01	4.71	2.91	0.00
12.01	3.13	1.55	24.23	116.01	4.71	2.91	0.00
14.01	3.86	2.17	0.93	118.01	4.71	2.91	0.00
16.01	4.15	2.41	0.58				
18.01	4.34	2.58	0.45				
20.01	4.48	2.71	0.33				
22.01	4.60	2.82	0.30				
24.01	4.71	2.91	0.28				
26.01	4.71	2.91	0.00				
28.01	4.71	2.91	0.00				
30.01	4.71	2.91	0.00				
32.01	4.71	2.91	0.00				
34.01	4.71	2.91	0.00				
36.01	4.71	2.91	0.00				
38.01	4.71	2.91	0.00				
40.01	4.71	2.91	0.00				
42.01	4.71	2.91	0.00				
44.01	4.71	2.91	0.00				
46.01	4.71	2.91	0.00				
48.01	4.71	2.91	0.00				
50.01	4.71	2.91	0.00				
52.01	4.71	2.91	0.00				
54.01	4.71	2.91	0.00				
56.01	4.71	2.91	0.00				
58.01	4.71	2.91	0.00				
60.01	4.71	2.91	0.00				
62.01	4.71	2.91	0.00				
64.01	4.71	2.91	0.00				
66.01	4.71	2.91	0.00				
68.01	4.71	2.91	0.00				
70.01	4.71	2.91	0.00				
72.01	4.71	2.91	0.00				
74.01	4.71	2.91	0.00				
76.01	4.71	2.91	0.00				
78.01	4.71	2.91	0.00				
80.01	4.71	2.91	0.00				
82.01	4.71	2.91	0.00				
84.01	4.71	2.91	0.00				
86.01	4.71	2.91	0.00				
88.01	4.71	2.91	0.00				
90.01	4.71	2.91	0.00				
92.01	4.71	2.91	0.00				
94.01	4.71	2.91	0.00				
96.01	4.71	2.91	0.00				
98.01	4.71	2.91	0.00				
100.01	4.71	2.91	0.00				
102.01	4.71	2.91	0.00				

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Type II 24-hr Type 2 - 25-Year Rainfall=4.71"

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Summary for Subcatchment 500A: 500A

Runoff = 97.35 cfs @ 11.96 hrs, Volume= 4.494 af, Depth= 3.01"
Routed to Pond 500 : 500

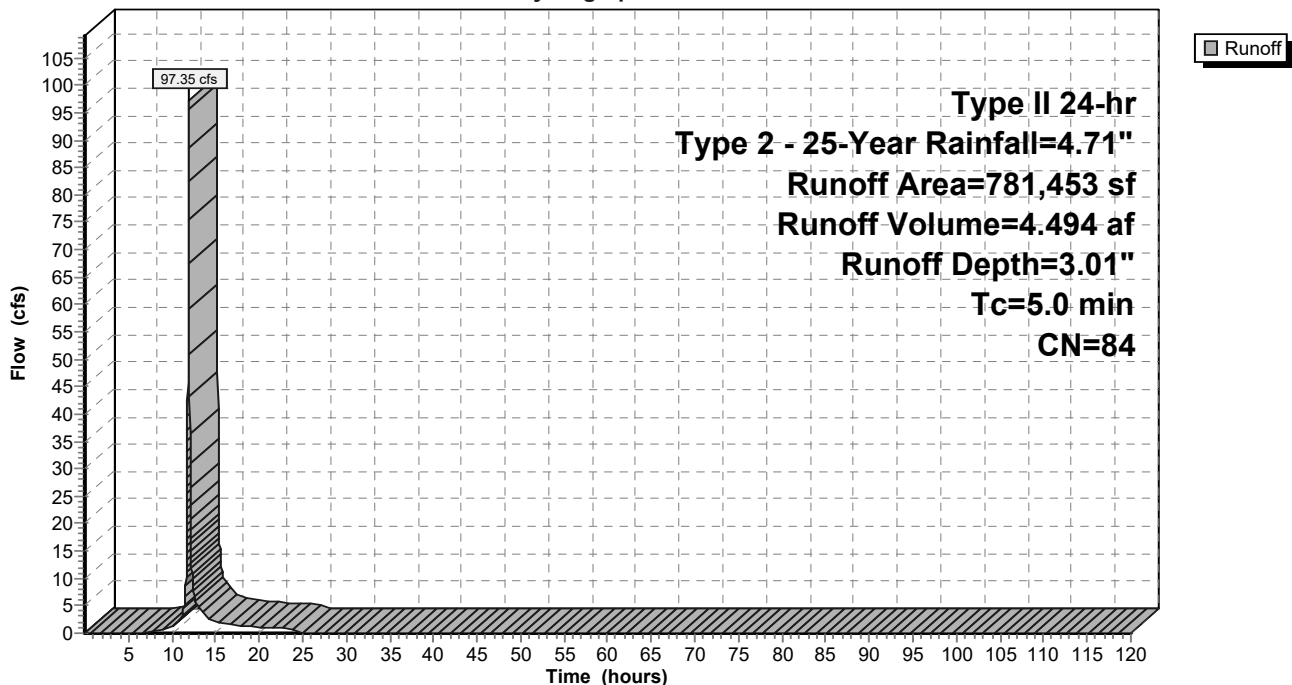
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs
Type II 24-hr Type 2 - 25-Year Rainfall=4.71"

Area (sf)	CN	Description
57,355	98	Water Surface, HSG C
724,098	83	1/4 acre lots, 38% imp, HSG C
781,453	84	Weighted Average
448,941		57.45% Pervious Area
332,512		42.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, Direct

Subcatchment 500A: 500A

Hydrograph



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Type II 24-hr Type 2 - 25-Year Rainfall=4.71"

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Hydrograph for Subcatchment 500A: 500A

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.01	0.00	0.00	0.00	104.01	4.71	3.01	0.00
2.01	0.10	0.00	0.00	106.01	4.71	3.01	0.00
4.01	0.23	0.00	0.00	108.01	4.71	3.01	0.00
6.01	0.38	0.00	0.00	110.01	4.71	3.01	0.00
8.01	0.57	0.02	0.30	112.01	4.71	3.01	0.00
10.01	0.85	0.09	1.16	114.01	4.71	3.01	0.00
12.01	3.13	1.63	75.34	116.01	4.71	3.01	0.00
14.01	3.86	2.25	2.86	118.01	4.71	3.01	0.00
16.01	4.15	2.50	1.77				
18.01	4.34	2.67	1.38				
20.01	4.48	2.80	1.01				
22.01	4.60	2.91	0.93				
24.01	4.71	3.01	0.85				
26.01	4.71	3.01	0.00				
28.01	4.71	3.01	0.00				
30.01	4.71	3.01	0.00				
32.01	4.71	3.01	0.00				
34.01	4.71	3.01	0.00				
36.01	4.71	3.01	0.00				
38.01	4.71	3.01	0.00				
40.01	4.71	3.01	0.00				
42.01	4.71	3.01	0.00				
44.01	4.71	3.01	0.00				
46.01	4.71	3.01	0.00				
48.01	4.71	3.01	0.00				
50.01	4.71	3.01	0.00				
52.01	4.71	3.01	0.00				
54.01	4.71	3.01	0.00				
56.01	4.71	3.01	0.00				
58.01	4.71	3.01	0.00				
60.01	4.71	3.01	0.00				
62.01	4.71	3.01	0.00				
64.01	4.71	3.01	0.00				
66.01	4.71	3.01	0.00				
68.01	4.71	3.01	0.00				
70.01	4.71	3.01	0.00				
72.01	4.71	3.01	0.00				
74.01	4.71	3.01	0.00				
76.01	4.71	3.01	0.00				
78.01	4.71	3.01	0.00				
80.01	4.71	3.01	0.00				
82.01	4.71	3.01	0.00				
84.01	4.71	3.01	0.00				
86.01	4.71	3.01	0.00				
88.01	4.71	3.01	0.00				
90.01	4.71	3.01	0.00				
92.01	4.71	3.01	0.00				
94.01	4.71	3.01	0.00				
96.01	4.71	3.01	0.00				
98.01	4.71	3.01	0.00				
100.01	4.71	3.01	0.00				
102.01	4.71	3.01	0.00				

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Type II 24-hr Type 2 - 25-Year Rainfall=4.71"

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Summary for Pond 100: 100

Inflow Area = 24.665 ac, 42.06% Impervious, Inflow Depth = 3.01" for Type 2 - 25-Year event
 Inflow = 133.85 cfs @ 11.96 hrs, Volume= 6.179 af
 Outflow = 1.29 cfs @ 21.60 hrs, Volume= 5.152 af, Atten= 99%, Lag= 578.1 min
 Primary = 1.29 cfs @ 21.60 hrs, Volume= 5.152 af
 Routed to Link 1 : OFFSITE
 Secondary = 0.00 cfs @ 0.01 hrs, Volume= 0.000 af
 Routed to Link 1 : OFFSITE

Routing by Stor-Ind method, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs

Starting Elev= 879.00' Surf.Area= 70,439 sf Storage= 207,488 cf

Peak Elev= 881.62' @ 21.60 hrs Surf.Area= 93,535 sf Storage= 422,396 cf (214,909 cf above start)

Plug-Flow detention time= 4,941.3 min calculated for 0.389 af (6% of inflow)

Center-of-Mass det. time= 1,710.6 min (2,519.6 - 808.9)

Volume	Invert	Avail.Storage	Storage Description
#1	874.00'	670,255 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
874.00	24,774	0	0
875.00	30,784	27,779	27,779
876.00	36,863	33,824	61,603
877.00	43,009	39,936	101,539
878.00	49,225	46,117	147,656
879.00	70,439	59,832	207,488
880.00	79,139	74,789	282,277
881.00	87,959	83,549	365,826
882.00	96,903	92,431	458,257
883.00	105,969	101,436	559,693
884.00	115,156	110,563	670,255

Device	Routing	Invert	Outlet Devices
#1	Primary	879.00'	24.0" Round RCP_Round 24" L= 70.0' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 879.00' / 878.00' S= 0.0143 '/' Cc= 0.900 n= 0.011 Concrete pipe, finished, Flow Area= 3.14 sf
#2	Device 1	879.50'	6.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Secondary	883.00'	25.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=1.29 cfs @ 21.60 hrs HW=881.62' (Free Discharge)

1=RCP_Round 24" (Passes 1.29 cfs of 17.01 cfs potential flow)

2=Orifice/Grate (Orifice Controls 1.29 cfs @ 6.59 fps)

Secondary OutFlow Max=0.00 cfs @ 0.01 hrs HW=879.00' (Free Discharge)

3=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

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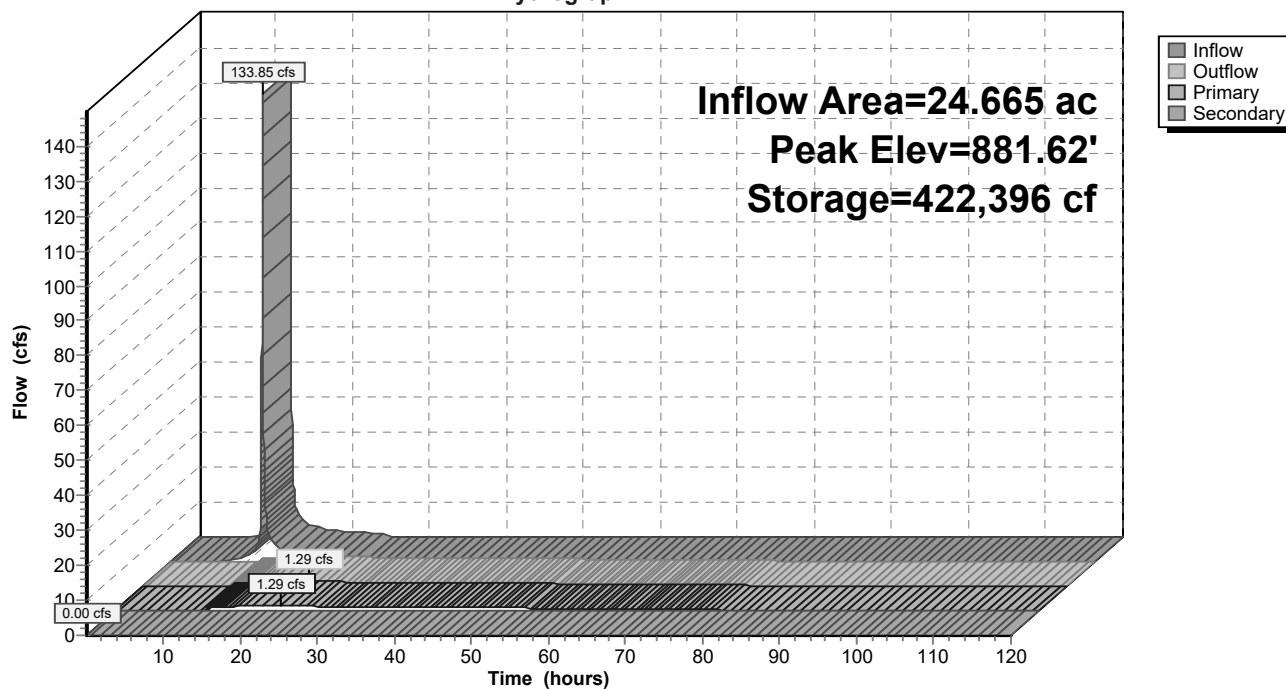
Type II 24-hr Type 2 - 25-Year Rainfall=4.71"

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Pond 100: 100

Hydrograph



Proposed Conditions

Type II 24-hr Type 2 - 25-Year Rainfall=4.71"

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Hydrograph for Pond 100: 100

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.01	0.00	207,488	879.00	0.00	0.00	0.00
5.01	0.00	207,488	879.00	0.00	0.00	0.00
10.01	1.60	215,472	879.11	0.00	0.00	0.00
15.01	3.15	407,683	881.46	1.24	1.24	0.00
20.01	1.39	422,173	881.62	1.29	1.29	0.00
25.01	0.00	417,540	881.57	1.28	1.28	0.00
30.01	0.00	395,360	881.33	1.19	1.19	0.00
35.01	0.00	374,772	881.10	1.10	1.10	0.00
40.01	0.00	355,815	880.89	1.01	1.01	0.00
45.01	0.00	338,523	880.68	0.91	0.91	0.00
50.01	0.00	322,932	880.50	0.82	0.82	0.00
55.01	0.00	309,076	880.33	0.72	0.72	0.00
60.01	0.00	296,984	880.18	0.62	0.62	0.00
65.01	0.00	286,692	880.06	0.52	0.52	0.00
70.01	0.00	278,235	879.95	0.42	0.42	0.00
75.01	0.00	271,648	879.86	0.32	0.32	0.00
80.01	0.00	266,762	879.80	0.23	0.23	0.00
85.01	0.00	263,119	879.75	0.18	0.18	0.00
90.01	0.00	260,353	879.72	0.13	0.13	0.00
95.01	0.00	258,243	879.69	0.10	0.10	0.00
100.01	0.00	256,534	879.67	0.09	0.09	0.00
105.01	0.00	255,126	879.65	0.07	0.07	0.00
110.01	0.00	253,965	879.63	0.06	0.06	0.00
115.01	0.00	253,008	879.62	0.05	0.05	0.00

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Summary for Pond 200: 200

Inflow Area = 5.171 ac, 68.37% Impervious, Inflow Depth = 3.70" for Type 2 - 25-Year event
 Inflow = 32.77 cfs @ 11.96 hrs, Volume= 1.595 af
 Outflow = 1.02 cfs @ 13.74 hrs, Volume= 1.336 af, Atten= 97%, Lag= 107.0 min
 Primary = 1.02 cfs @ 13.74 hrs, Volume= 1.336 af
 Routed to Link 1 : OFFSITE
 Secondary = 0.00 cfs @ 0.01 hrs, Volume= 0.000 af
 Routed to Link 1 : OFFSITE

Routing by Stor-Ind method, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs

Starting Elev= 875.00' Surf.Area= 21,699 sf Storage= 70,918 cf

Peak Elev= 876.92' @ 13.74 hrs Surf.Area= 26,580 sf Storage= 117,281 cf (46,364 cf above start)

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)

Center-of-Mass det. time= 585.9 min (1,370.5 - 784.6)

Volume	Invert	Avail.Storage	Storage Description
#1	870.00'	177,226 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
870.00	10,192	0	0
871.00	11,543	10,868	10,868
872.00	12,964	12,254	23,121
873.00	14,453	13,709	36,830
874.00	16,012	15,233	52,062
875.00	21,699	18,856	70,918
876.00	24,181	22,940	93,858
877.00	26,780	25,481	119,338
878.00	29,498	28,139	147,477
879.00	30,000	29,749	177,226

Device	Routing	Invert	Outlet Devices
#1	Primary	875.00'	12.0" Round RCP_Round 12" L= 70.0' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 875.00' / 874.00' S= 0.0143 '/' Cc= 0.900 n= 0.011 Concrete pipe, finished, Flow Area= 0.79 sf
#2	Device 1	875.50'	6.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	878.00'	60.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#4	Secondary	878.00'	25.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

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Primary OutFlow Max=1.02 cfs @ 13.74 hrs HW=876.92' (Free Discharge)

1=RCP_Round 12" (Passes 1.02 cfs of 3.98 cfs potential flow)

2=Orifice/Grate (Orifice Controls 1.02 cfs @ 5.21 fps)

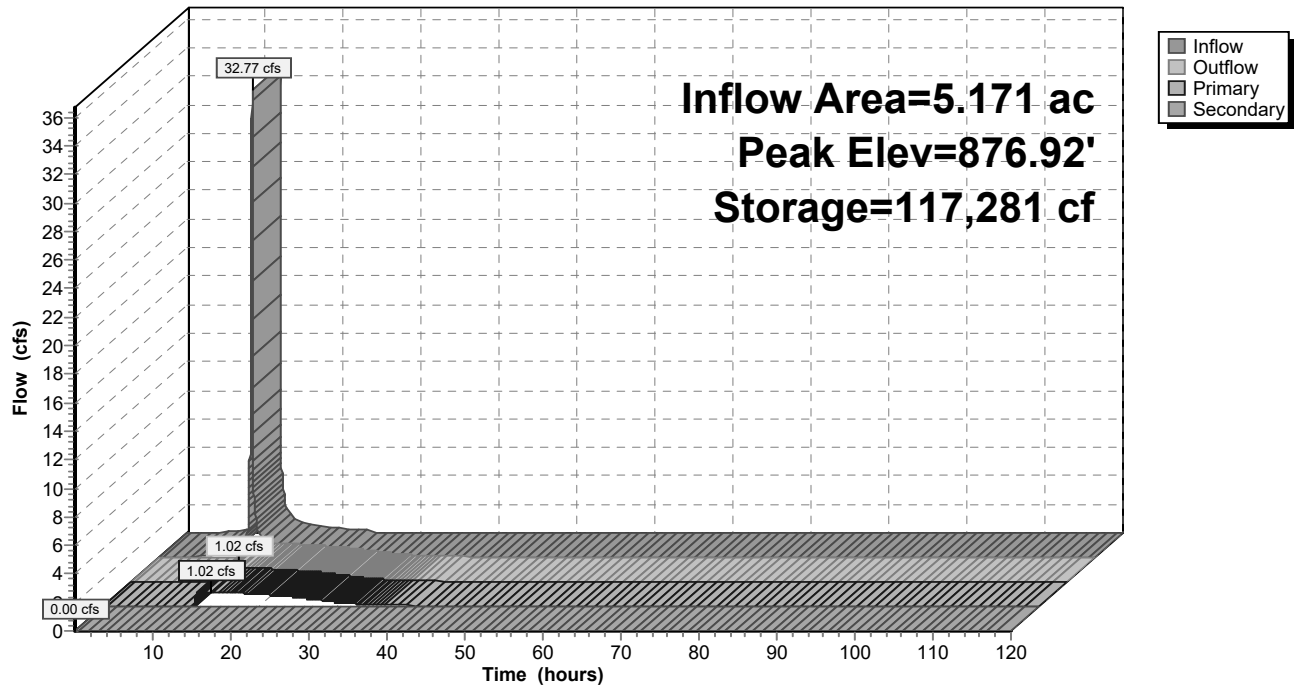
3=Orifice/Grate (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.01 hrs HW=875.00' (Free Discharge)

4=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Pond 200: 200

Hydrograph



Proposed Conditions

Type II 24-hr Type 2 - 25-Year Rainfall=4.71"

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Hydrograph for Pond 200: 200

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.01	0.00	70,918	875.00	0.00	0.00	0.00
5.01	0.06	71,070	875.01	0.00	0.00	0.00
10.01	0.60	75,664	875.22	0.00	0.00	0.00
15.01	0.72	116,435	876.89	1.01	1.01	0.00
20.01	0.31	107,986	876.57	0.85	0.85	0.00
25.01	0.00	98,630	876.20	0.63	0.63	0.00
30.01	0.00	90,275	875.85	0.30	0.30	0.00
35.01	0.00	86,831	875.70	0.12	0.12	0.00
40.01	0.00	85,310	875.64	0.06	0.06	0.00
45.01	0.00	84,456	875.60	0.04	0.04	0.00
50.01	0.00	83,961	875.58	0.02	0.02	0.00
55.01	0.00	83,633	875.57	0.02	0.02	0.00
60.01	0.00	83,363	875.56	0.01	0.01	0.00
65.01	0.00	83,140	875.55	0.01	0.01	0.00
70.01	0.00	82,955	875.54	0.01	0.01	0.00
75.01	0.00	82,803	875.53	0.01	0.01	0.00
80.01	0.00	82,677	875.53	0.01	0.01	0.00
85.01	0.00	82,573	875.52	0.01	0.01	0.00
90.01	0.00	82,487	875.52	0.00	0.00	0.00
95.01	0.00	82,416	875.51	0.00	0.00	0.00
100.01	0.00	82,357	875.51	0.00	0.00	0.00
105.01	0.00	82,308	875.51	0.00	0.00	0.00
110.01	0.00	82,268	875.51	0.00	0.00	0.00
115.01	0.00	82,235	875.51	0.00	0.00	0.00

Proposed Conditions

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Type II 24-hr Type 2 - 25-Year Rainfall=4.71"

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Summary for Pond 300: 300

Inflow Area = 24.576 ac, 51.36% Impervious, Inflow Depth = 3.01" for Type 2 - 25-Year event
 Inflow = 109.63 cfs @ 11.96 hrs, Volume= 6.164 af
 Outflow = 2.12 cfs @ 17.85 hrs, Volume= 4.491 af, Atten= 98%, Lag= 353.4 min
 Primary = 2.12 cfs @ 17.85 hrs, Volume= 4.491 af
 Routed to Link 1 : OFFSITE
 Secondary = 0.00 cfs @ 0.01 hrs, Volume= 0.000 af
 Routed to Link 1 : OFFSITE

Routing by Stor-Ind method, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs

Starting Elev= 875.00' Surf.Area= 110,262 sf Storage= 389,084 cf

Peak Elev= 876.51' @ 17.85 hrs Surf.Area= 127,319 sf Storage= 568,818 cf (179,735 cf above start)

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)

Center-of-Mass det. time= 1,362.6 min (2,295.3 - 932.7)

Volume	Invert	Avail.Storage	Storage Description
#1	870.00'	920,841 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
870.00	61,061	0	0
871.00	66,666	63,864	63,864
872.00	72,581	69,624	133,487
873.00	78,813	75,697	209,184
874.00	85,362	82,088	291,272
875.00	110,262	97,812	389,084
876.00	121,491	115,877	504,960
877.00	132,845	127,168	632,128
878.00	144,325	138,585	770,713
879.00	155,931	150,128	920,841

Device	Routing	Invert	Outlet Devices
#1	Primary	875.00'	24.0" Round RCP_Round 24" L= 100.0' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 875.00' / 874.00' S= 0.0100 '/' Cc= 0.900 n= 0.011 Concrete pipe, finished, Flow Area= 3.14 sf
#2	Device 1	875.50'	6.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	876.30'	4.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s)
#4	Device 1	878.00'	48.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#5	Secondary	878.00'	25.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

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Type II 24-hr Type 2 - 25-Year Rainfall=4.71"

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Primary OutFlow Max=2.10 cfs @ 17.85 hrs HW=876.51' (Free Discharge)

1=RCP_Round 24" (Passes 2.10 cfs of 9.43 cfs potential flow)

2=Orifice/Grate (Orifice Controls 0.83 cfs @ 4.21 fps)

3=Sharp-Crested Rectangular Weir (Weir Controls 1.27 cfs @ 1.51 fps)

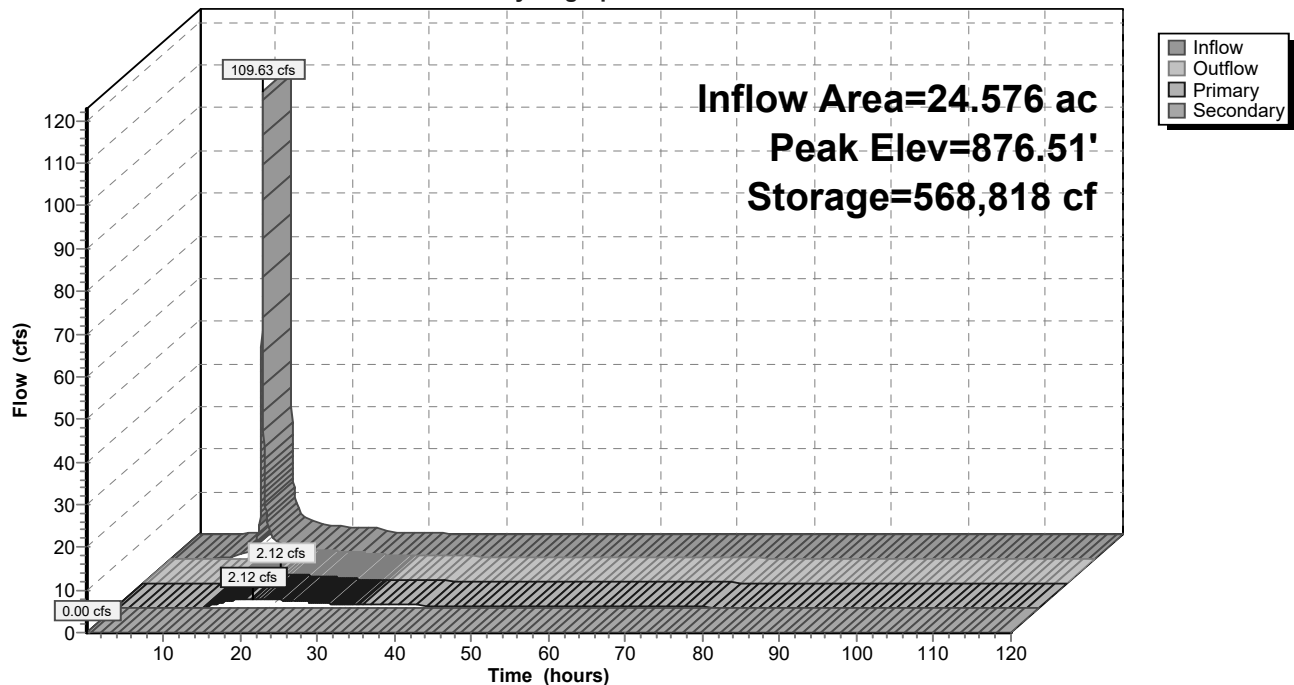
4=Orifice/Grate (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.01 hrs HW=875.00' (Free Discharge)

5=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 300: 300

Hydrograph



Proposed Conditions

Type II 24-hr Type 2 - 25-Year Rainfall=4.71"

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Hydrograph for Pond 300: 300

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.01	0.00	389,084	875.00	0.00	0.00	0.00
5.01	0.05	389,172	875.00	0.00	0.00	0.00
10.01	1.64	399,568	875.09	0.00	0.00	0.00
15.01	3.08	564,064	876.48	1.77	1.77	0.00
20.01	1.65	567,329	876.50	2.01	2.01	0.00
25.01	0.45	559,100	876.44	1.47	1.47	0.00
30.01	0.25	545,822	876.33	0.84	0.84	0.00
35.01	0.14	536,334	876.26	0.67	0.67	0.00
40.01	0.09	526,760	876.18	0.62	0.62	0.00
45.01	0.06	517,477	876.10	0.56	0.56	0.00
50.01	0.04	508,844	876.03	0.50	0.50	0.00
55.01	0.03	501,000	875.97	0.44	0.44	0.00
60.01	0.03	494,132	875.91	0.37	0.37	0.00
65.01	0.02	488,381	875.86	0.31	0.31	0.00
70.01	0.02	483,593	875.82	0.26	0.26	0.00
75.01	0.01	479,605	875.79	0.22	0.22	0.00
80.01	0.01	476,282	875.76	0.18	0.18	0.00
85.01	0.01	473,475	875.74	0.16	0.16	0.00
90.01	0.01	471,061	875.72	0.13	0.13	0.00
95.01	0.01	468,984	875.70	0.11	0.11	0.00
100.01	0.01	467,199	875.68	0.10	0.10	0.00
105.01	0.01	465,664	875.67	0.08	0.08	0.00
110.01	0.00	464,317	875.66	0.08	0.08	0.00
115.01	0.00	463,096	875.65	0.07	0.07	0.00

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Type II 24-hr Type 2 - 25-Year Rainfall=4.71"

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Summary for Pond 400: 400

Inflow Area = 5.909 ac, 39.66% Impervious, Inflow Depth = 2.91" for Type 2 - 25-Year event
 Inflow = 31.23 cfs @ 11.96 hrs, Volume= 1.434 af
 Outflow = 0.60 cfs @ 15.86 hrs, Volume= 0.991 af, Atten= 98%, Lag= 233.9 min
 Primary = 0.60 cfs @ 15.86 hrs, Volume= 0.991 af
 Routed to Pond 300 : 300
 Secondary = 0.00 cfs @ 0.01 hrs, Volume= 0.000 af
 Routed to Pond 300 : 300

Routing by Stor-Ind method, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs

Starting Elev= 877.00' Surf.Area= 35,903 sf Storage= 129,985 cf

Peak Elev= 878.15' @ 15.86 hrs Surf.Area= 39,673 sf Storage= 173,617 cf (43,632 cf above start)

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)

Center-of-Mass det. time= 824.8 min (1,636.7 - 811.9)

Volume	Invert	Avail.Storage	Storage Description
#1	872.00'	252,651 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
872.00	20,703	0	0
873.00	22,504	21,604	21,604
874.00	24,391	23,448	45,051
875.00	26,364	25,378	70,429
876.00	28,423	27,394	97,822
877.00	35,903	32,163	129,985
878.00	39,148	37,526	167,511
879.00	42,535	40,842	208,352
880.00	46,063	44,299	252,651

Device	Routing	Invert	Outlet Devices
#1	Primary	877.00'	24.0" Round RCP_Round 24" L= 90.0' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 877.00' / 876.50' S= 0.0056 '/' Cc= 0.900 n= 0.011 Concrete pipe, finished, Flow Area= 3.14 sf
#2	Device 1	877.50'	6.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Secondary	879.00'	25.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.60 cfs @ 15.86 hrs HW=878.15' TW=876.30' (Fixed TW Elev= 876.30')↑ **1=RCP_Round 24"** (Passes 0.60 cfs of 5.75 cfs potential flow)↑ **2=Orifice/Grate** (Orifice Controls 0.60 cfs @ 3.06 fps)**Secondary OutFlow** Max=0.00 cfs @ 0.01 hrs HW=877.00' (Free Discharge)↑ **3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

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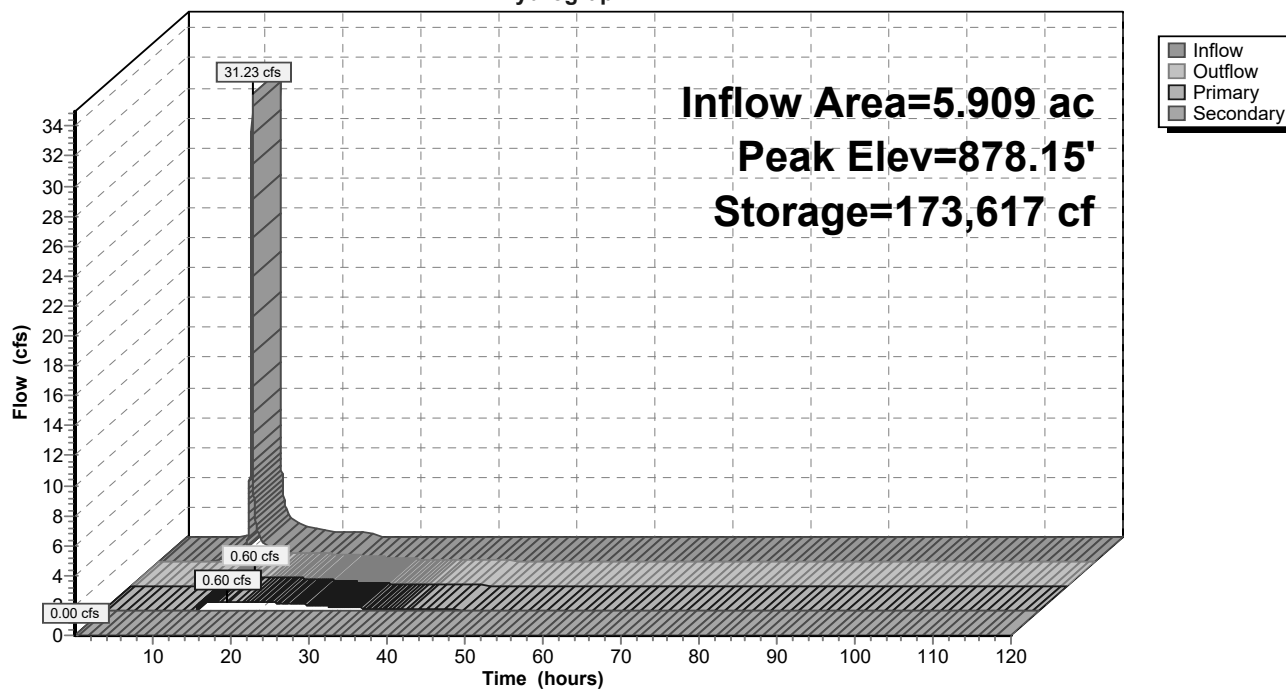
Type II 24-hr Type 2 - 25-Year Rainfall=4.71"

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Pond 400: 400

Hydrograph



Proposed Conditions*Type II 24-hr Type 2 - 25-Year Rainfall=4.71"*

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Hydrograph for Pond 400: 400

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.01	0.00	129,985	877.00	0.00	0.00	0.00
5.01	0.00	129,985	877.00	0.00	0.00	0.00
10.01	0.35	131,588	877.04	0.00	0.00	0.00
15.01	0.74	173,397	878.15	0.60	0.60	0.00
20.01	0.33	171,635	878.10	0.56	0.56	0.00
25.01	0.00	166,738	877.98	0.45	0.45	0.00
30.01	0.00	160,464	877.82	0.25	0.25	0.00
35.01	0.00	157,000	877.73	0.14	0.14	0.00
40.01	0.00	154,961	877.68	0.09	0.09	0.00
45.01	0.00	153,633	877.64	0.06	0.06	0.00
50.01	0.00	152,713	877.62	0.04	0.04	0.00
55.01	0.00	152,074	877.60	0.03	0.03	0.00
60.01	0.00	151,582	877.59	0.03	0.03	0.00
65.01	0.00	151,168	877.58	0.02	0.02	0.00
70.01	0.00	150,819	877.57	0.02	0.02	0.00
75.01	0.00	150,526	877.56	0.01	0.01	0.00
80.01	0.00	150,278	877.55	0.01	0.01	0.00
85.01	0.00	150,070	877.55	0.01	0.01	0.00
90.01	0.00	149,895	877.54	0.01	0.01	0.00
95.01	0.00	149,747	877.54	0.01	0.01	0.00
100.01	0.00	149,623	877.53	0.01	0.01	0.00
105.01	0.00	149,518	877.53	0.01	0.01	0.00
110.01	0.00	149,430	877.53	0.00	0.00	0.00
115.01	0.00	149,356	877.53	0.00	0.00	0.00

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Type II 24-hr Type 2 - 25-Year Rainfall=4.71"

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Summary for Pond 500: 500

Inflow Area = 17.940 ac, 42.55% Impervious, Inflow Depth = 3.01" for Type 2 - 25-Year event
Inflow = 97.35 cfs @ 11.96 hrs, Volume= 4.494 af
Outflow = 1.19 cfs @ 19.05 hrs, Volume= 3.722 af, Atten= 99%, Lag= 425.6 min
Primary = 1.19 cfs @ 19.05 hrs, Volume= 3.722 af
Routed to Link 1 : OFFSITE
Secondary = 0.00 cfs @ 0.01 hrs, Volume= 0.000 af
Routed to Link 1 : OFFSITE

Routing by Stor-Ind method, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs

Starting Elev= 899.00' Surf.Area= 57,355 sf Storage= 196,414 cf

Peak Elev= 901.33' @ 19.05 hrs Surf.Area= 70,687 sf Storage= 345,662 cf (149,248 cf above start)

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)

Center-of-Mass det. time= 1,354.1 min (2,163.0 - 808.9)

Volume	Invert	Avail.Storage	Storage Description
#1	894.00'	555,429 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
894.00	29,616	0	0
895.00	32,756	31,186	31,186
896.00	36,239	34,498	65,684
897.00	40,030	38,135	103,818
898.00	43,903	41,967	145,785
899.00	57,355	50,629	196,414
900.00	62,973	60,164	256,578
901.00	68,725	65,849	322,427
902.00	74,612	71,669	394,095
903.00	80,633	77,623	471,718
904.00	86,790	83,712	555,429

Device	Routing	Invert	Outlet Devices
#1	Primary	899.00'	24.0" Round RCP_Round 24" L= 80.0' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 899.00' / 898.00' S= 0.0125 '/' Cc= 0.900 n= 0.011 Concrete pipe, finished, Flow Area= 3.14 sf
#2	Device 1	899.50'	6.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Secondary	903.00'	25.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=1.19 cfs @ 19.05 hrs HW=901.33' (Free Discharge)

↑ **1=RCP_Round 24"** (Passes 1.19 cfs of 15.41 cfs potential flow)

↑ **2=Orifice/Grate** (Orifice Controls 1.19 cfs @ 6.06 fps)

Secondary OutFlow Max=0.00 cfs @ 0.01 hrs HW=899.00' (Free Discharge)

↑ **3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

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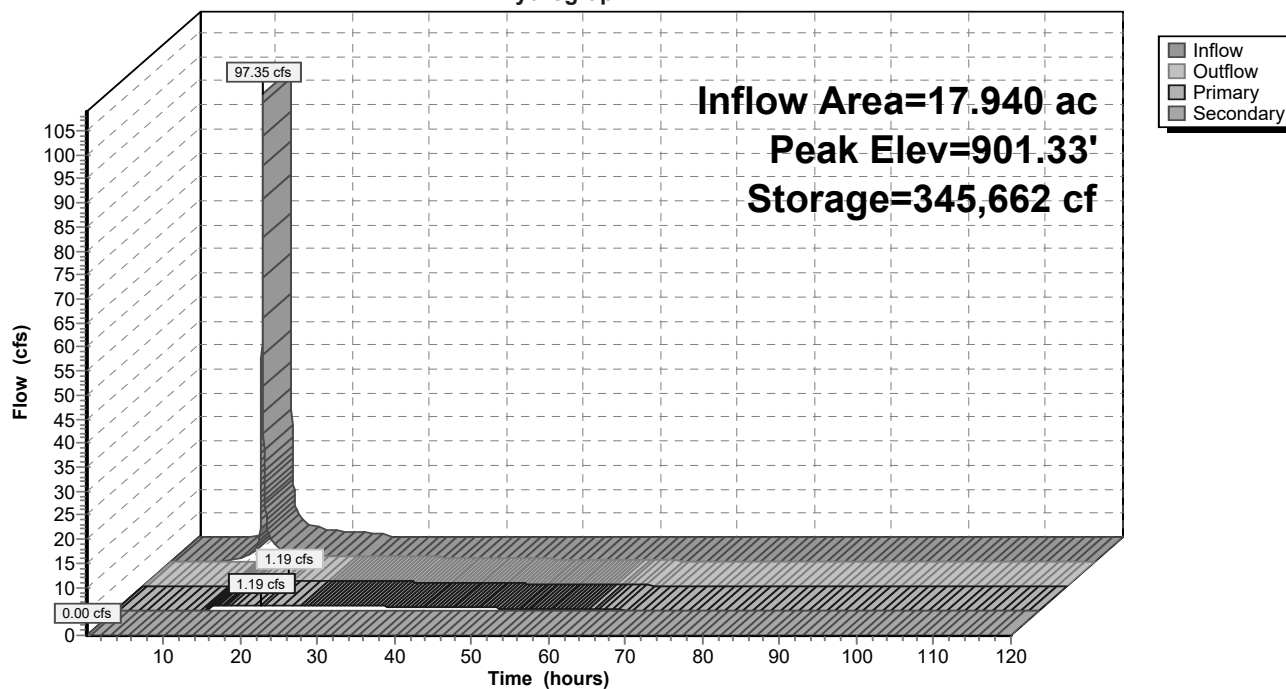
Type II 24-hr Type 2 - 25-Year Rainfall=4.71"

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Pond 500: 500

Hydrograph



Proposed Conditions

Type II 24-hr Type 2 - 25-Year Rainfall=4.71"

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Hydrograph for Pond 500: 500

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.01	0.00	196,414	899.00	0.00	0.00	0.00
5.01	0.00	196,414	899.00	0.00	0.00	0.00
10.01	1.16	202,221	899.10	0.00	0.00	0.00
15.01	2.29	339,390	901.24	1.16	1.16	0.00
20.01	1.01	345,359	901.33	1.19	1.19	0.00
25.01	0.00	337,753	901.22	1.15	1.15	0.00
30.01	0.00	318,159	900.94	1.03	1.03	0.00
35.01	0.00	300,683	900.68	0.91	0.91	0.00
40.01	0.00	285,374	900.45	0.79	0.79	0.00
45.01	0.00	272,274	900.25	0.67	0.67	0.00
50.01	0.00	261,426	900.08	0.54	0.54	0.00
55.01	0.00	252,885	899.94	0.41	0.41	0.00
60.01	0.00	246,668	899.84	0.28	0.28	0.00
65.01	0.00	242,404	899.77	0.20	0.20	0.00
70.01	0.00	239,403	899.72	0.14	0.14	0.00
75.01	0.00	237,264	899.69	0.10	0.10	0.00
80.01	0.00	235,622	899.66	0.08	0.08	0.00
85.01	0.00	234,331	899.64	0.06	0.06	0.00
90.01	0.00	233,316	899.62	0.05	0.05	0.00
95.01	0.00	232,518	899.61	0.04	0.04	0.00
100.01	0.00	231,891	899.60	0.03	0.03	0.00
105.01	0.00	231,368	899.59	0.03	0.03	0.00
110.01	0.00	230,890	899.58	0.03	0.03	0.00
115.01	0.00	230,453	899.58	0.02	0.02	0.00

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Type II 24-hr Type 2 - 25-Year Rainfall=4.71"

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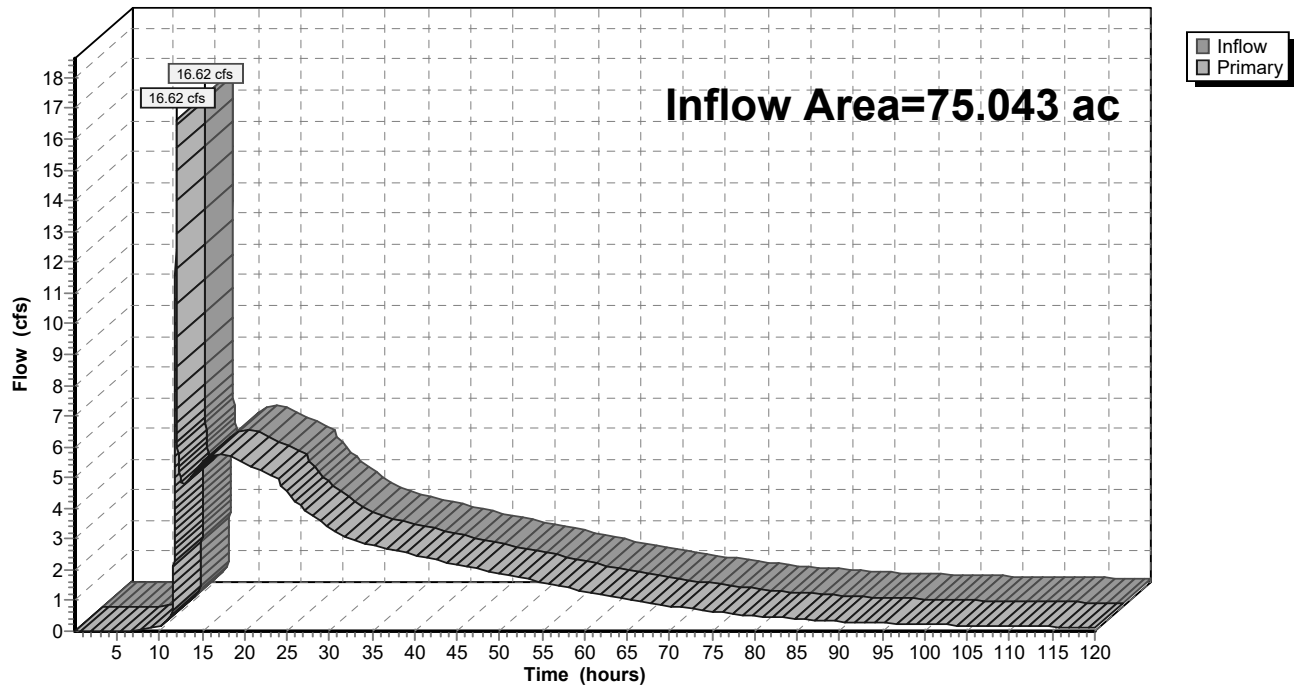
Summary for Link 1: OFFSITE

Inflow Area = 75.043 ac, 46.89% Impervious, Inflow Depth > 2.46" for Type 2 - 25-Year event
Inflow = 16.62 cfs @ 11.96 hrs, Volume= 15.354 af
Primary = 16.62 cfs @ 11.96 hrs, Volume= 15.354 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs

Link 1: OFFSITE

Hydrograph



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Type II 24-hr Type 2 - 25-Year Rainfall=4.71"

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Hydrograph for Link 1: OFFSITE

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.01	0.00	0.00	0.00	104.01	0.19	0.00	0.19
2.01	0.00	0.00	0.00	106.01	0.18	0.00	0.18
4.01	0.00	0.00	0.00	108.01	0.17	0.00	0.17
6.01	0.00	0.00	0.00	110.01	0.16	0.00	0.16
8.01	0.04	0.00	0.04	112.01	0.15	0.00	0.15
10.01	0.16	0.00	0.16	114.01	0.15	0.00	0.15
12.01	14.00	0.00	14.00	116.01	0.14	0.00	0.14
14.01	5.16	0.00	5.16	118.01	0.13	0.00	0.13
16.01	5.69	0.00	5.69				
18.01	5.72	0.00	5.72				
20.01	5.49	0.00	5.49				
22.01	5.21	0.00	5.21				
24.01	4.97	0.00	4.97				
26.01	4.21	0.00	4.21				
28.01	3.74	0.00	3.74				
30.01	3.36	0.00	3.36				
32.01	3.04	0.00	3.04				
34.01	2.87	0.00	2.87				
36.01	2.73	0.00	2.73				
38.01	2.60	0.00	2.60				
40.01	2.48	0.00	2.48				
42.01	2.35	0.00	2.35				
44.01	2.24	0.00	2.24				
46.01	2.12	0.00	2.12				
48.01	2.00	0.00	2.00				
50.01	1.88	0.00	1.88				
52.01	1.76	0.00	1.76				
54.01	1.64	0.00	1.64				
56.01	1.53	0.00	1.53				
58.01	1.41	0.00	1.41				
60.01	1.29	0.00	1.29				
62.01	1.19	0.00	1.19				
64.01	1.09	0.00	1.09				
66.01	1.00	0.00	1.00				
68.01	0.91	0.00	0.91				
70.01	0.83	0.00	0.83				
72.01	0.75	0.00	0.75				
74.01	0.68	0.00	0.68				
76.01	0.61	0.00	0.61				
78.01	0.55	0.00	0.55				
80.01	0.50	0.00	0.50				
82.01	0.46	0.00	0.46				
84.01	0.42	0.00	0.42				
86.01	0.38	0.00	0.38				
88.01	0.35	0.00	0.35				
90.01	0.32	0.00	0.32				
92.01	0.29	0.00	0.29				
94.01	0.27	0.00	0.27				
96.01	0.25	0.00	0.25				
98.01	0.23	0.00	0.23				
100.01	0.22	0.00	0.22				
102.01	0.20	0.00	0.20				

Proposed Conditions

Type II 24-hr Type 2 - 50-Year Rainfall=5.49"

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Time span=0.01-120.00 hrs, dt=0.01 hrs, 12000 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1A: 1A Runoff Area=110,816 sf 38.00% Impervious Runoff Depth=3.62"
Tc=5.0 min CN=83 Runoff=16.53 cfs 0.768 af

Subcatchment2A: 2A Runoff Area=6,401 sf 38.00% Impervious Runoff Depth=3.62"
Tc=5.0 min CN=83 Runoff=0.95 cfs 0.044 af

Subcatchment100A: 100A Runoff Area=1,074,428 sf 42.06% Impervious Runoff Depth=3.72"
Tc=5.0 min CN=84 Runoff=163.82 cfs 7.650 af

Subcatchment200A: 200A Runoff Area=225,239 sf 68.37% Impervious Runoff Depth=4.46"
Tc=5.0 min CN=91 Runoff=38.98 cfs 1.921 af

Subcatchment300A: 300A Runoff Area=260,648 sf 65.00% Impervious Runoff Depth=4.35"
Tc=5.0 min CN=90 Runoff=44.44 cfs 2.169 af

Subcatchment300B: 300B Runoff Area=552,525 sf 50.37% Impervious Runoff Depth=3.93"
Tc=5.0 min CN=86 Runoff=87.78 cfs 4.151 af

Subcatchment400A: 400A Runoff Area=257,377 sf 39.66% Impervious Runoff Depth=3.62"
Tc=5.0 min CN=83 Runoff=38.39 cfs 1.783 af

Subcatchment500A: 500A Runoff Area=781,453 sf 42.55% Impervious Runoff Depth=3.72"
Tc=5.0 min CN=84 Runoff=119.15 cfs 5.564 af

Pond 100: 100 Peak Elev=882.20' Storage=477,887 cf Inflow=163.82 cfs 7.650 af
Primary=1.48 cfs 6.577 af Secondary=0.00 cfs 0.000 af Outflow=1.48 cfs 6.577 af

Pond 200: 200 Peak Elev=877.30' Storage=127,376 cf Inflow=38.98 cfs 1.921 af
Primary=1.18 cfs 1.662 af Secondary=0.00 cfs 0.000 af Outflow=1.18 cfs 1.662 af

Pond 300: 300 Peak Elev=876.66' Storage=587,825 cf Inflow=132.47 cfs 7.658 af
Primary=3.70 cfs 5.970 af Secondary=0.00 cfs 0.000 af Outflow=3.70 cfs 5.970 af

Pond 400: 400 Peak Elev=878.41' Storage=184,027 cf Inflow=38.39 cfs 1.783 af
Primary=0.77 cfs 1.338 af Secondary=0.00 cfs 0.000 af Outflow=0.77 cfs 1.338 af

Pond 500: 500 Peak Elev=901.86' Storage=384,055 cf Inflow=119.15 cfs 5.564 af
Primary=1.37 cfs 4.775 af Secondary=0.00 cfs 0.000 af Outflow=1.37 cfs 4.775 af

Link 1: OFFSITE Inflow=20.65 cfs 19.796 af
Primary=20.65 cfs 19.796 af

Total Runoff Area = 75.043 ac Runoff Volume = 24.049 af Average Runoff Depth = 3.85"
53.11% Pervious = 39.854 ac 46.89% Impervious = 35.189 ac

Proposed Conditions

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Type II 24-hr Type 2 - 50-Year Rainfall=5.49"

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Summary for Subcatchment 1A: 1A

Runoff = 16.53 cfs @ 11.96 hrs, Volume= 0.768 af, Depth= 3.62"
Routed to Link 1 : OFFSITE

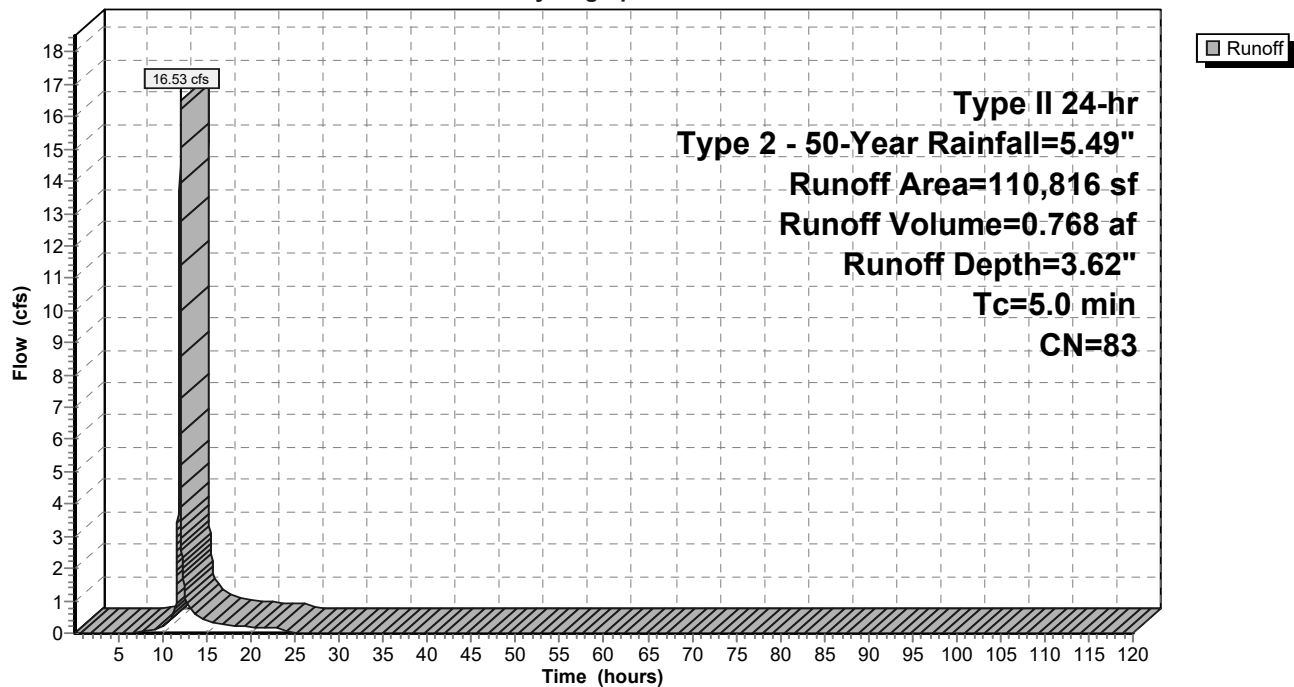
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs
Type II 24-hr Type 2 - 50-Year Rainfall=5.49"

Area (sf)	CN	Description
110,816	83	1/4 acre lots, 38% imp, HSG C
68,706		62.00% Pervious Area
42,110		38.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, Direct

Subcatchment 1A: 1A

Hydrograph



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Type II 24-hr Type 2 - 50-Year Rainfall=5.49"

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Hydrograph for Subcatchment 1A: 1A

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.01	0.00	0.00	0.00	104.01	5.49	3.62	0.00
2.01	0.12	0.00	0.00	106.01	5.49	3.62	0.00
4.01	0.26	0.00	0.00	108.01	5.49	3.62	0.00
6.01	0.44	0.00	0.01	110.01	5.49	3.62	0.00
8.01	0.66	0.03	0.06	112.01	5.49	3.62	0.00
10.01	1.00	0.13	0.21	114.01	5.49	3.62	0.00
12.01	3.65	1.99	12.75	116.01	5.49	3.62	0.00
14.01	4.50	2.73	0.48	118.01	5.49	3.62	0.00
16.01	4.83	3.02	0.30				
18.01	5.06	3.23	0.23				
20.01	5.23	3.38	0.17				
22.01	5.36	3.51	0.15				
24.01	5.49	3.62	0.14				
26.01	5.49	3.62	0.00				
28.01	5.49	3.62	0.00				
30.01	5.49	3.62	0.00				
32.01	5.49	3.62	0.00				
34.01	5.49	3.62	0.00				
36.01	5.49	3.62	0.00				
38.01	5.49	3.62	0.00				
40.01	5.49	3.62	0.00				
42.01	5.49	3.62	0.00				
44.01	5.49	3.62	0.00				
46.01	5.49	3.62	0.00				
48.01	5.49	3.62	0.00				
50.01	5.49	3.62	0.00				
52.01	5.49	3.62	0.00				
54.01	5.49	3.62	0.00				
56.01	5.49	3.62	0.00				
58.01	5.49	3.62	0.00				
60.01	5.49	3.62	0.00				
62.01	5.49	3.62	0.00				
64.01	5.49	3.62	0.00				
66.01	5.49	3.62	0.00				
68.01	5.49	3.62	0.00				
70.01	5.49	3.62	0.00				
72.01	5.49	3.62	0.00				
74.01	5.49	3.62	0.00				
76.01	5.49	3.62	0.00				
78.01	5.49	3.62	0.00				
80.01	5.49	3.62	0.00				
82.01	5.49	3.62	0.00				
84.01	5.49	3.62	0.00				
86.01	5.49	3.62	0.00				
88.01	5.49	3.62	0.00				
90.01	5.49	3.62	0.00				
92.01	5.49	3.62	0.00				
94.01	5.49	3.62	0.00				
96.01	5.49	3.62	0.00				
98.01	5.49	3.62	0.00				
100.01	5.49	3.62	0.00				
102.01	5.49	3.62	0.00				

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Type II 24-hr Type 2 - 50-Year Rainfall=5.49"

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Summary for Subcatchment 2A: 2A

Runoff = 0.95 cfs @ 11.96 hrs, Volume= 0.044 af, Depth= 3.62"
Routed to Link 1 : OFFSITE

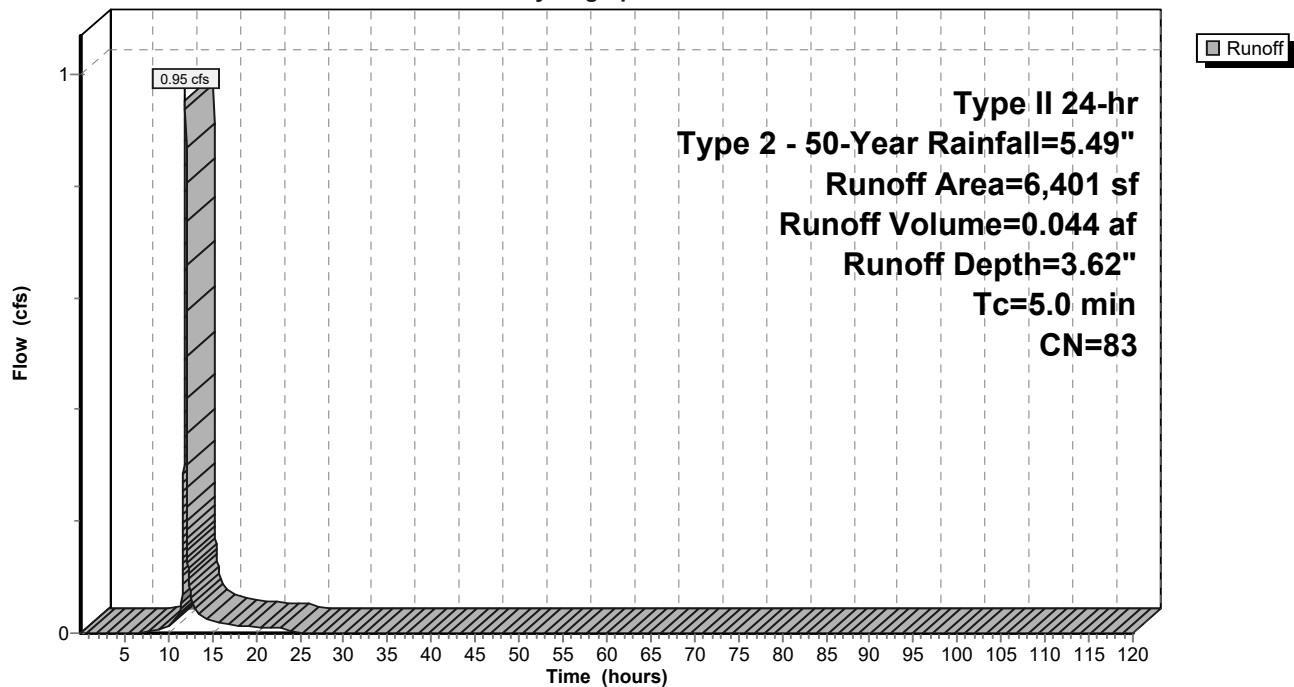
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs
Type II 24-hr Type 2 - 50-Year Rainfall=5.49"

Area (sf)	CN	Description
6,401	83	1/4 acre lots, 38% imp, HSG C
3,969		62.00% Pervious Area
2,432		38.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, Direct

Subcatchment 2A: 2A

Hydrograph



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Type II 24-hr Type 2 - 50-Year Rainfall=5.49"

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Hydrograph for Subcatchment 2A: 2A

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.01	0.00	0.00	0.00	104.01	5.49	3.62	0.00
2.01	0.12	0.00	0.00	106.01	5.49	3.62	0.00
4.01	0.26	0.00	0.00	108.01	5.49	3.62	0.00
6.01	0.44	0.00	0.00	110.01	5.49	3.62	0.00
8.01	0.66	0.03	0.00	112.01	5.49	3.62	0.00
10.01	1.00	0.13	0.01	114.01	5.49	3.62	0.00
12.01	3.65	1.99	0.74	116.01	5.49	3.62	0.00
14.01	4.50	2.73	0.03	118.01	5.49	3.62	0.00
16.01	4.83	3.02	0.02				
18.01	5.06	3.23	0.01				
20.01	5.23	3.38	0.01				
22.01	5.36	3.51	0.01				
24.01	5.49	3.62	0.01				
26.01	5.49	3.62	0.00				
28.01	5.49	3.62	0.00				
30.01	5.49	3.62	0.00				
32.01	5.49	3.62	0.00				
34.01	5.49	3.62	0.00				
36.01	5.49	3.62	0.00				
38.01	5.49	3.62	0.00				
40.01	5.49	3.62	0.00				
42.01	5.49	3.62	0.00				
44.01	5.49	3.62	0.00				
46.01	5.49	3.62	0.00				
48.01	5.49	3.62	0.00				
50.01	5.49	3.62	0.00				
52.01	5.49	3.62	0.00				
54.01	5.49	3.62	0.00				
56.01	5.49	3.62	0.00				
58.01	5.49	3.62	0.00				
60.01	5.49	3.62	0.00				
62.01	5.49	3.62	0.00				
64.01	5.49	3.62	0.00				
66.01	5.49	3.62	0.00				
68.01	5.49	3.62	0.00				
70.01	5.49	3.62	0.00				
72.01	5.49	3.62	0.00				
74.01	5.49	3.62	0.00				
76.01	5.49	3.62	0.00				
78.01	5.49	3.62	0.00				
80.01	5.49	3.62	0.00				
82.01	5.49	3.62	0.00				
84.01	5.49	3.62	0.00				
86.01	5.49	3.62	0.00				
88.01	5.49	3.62	0.00				
90.01	5.49	3.62	0.00				
92.01	5.49	3.62	0.00				
94.01	5.49	3.62	0.00				
96.01	5.49	3.62	0.00				
98.01	5.49	3.62	0.00				
100.01	5.49	3.62	0.00				
102.01	5.49	3.62	0.00				

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Type II 24-hr Type 2 - 50-Year Rainfall=5.49"

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Summary for Subcatchment 100A: 100A

Runoff = 163.82 cfs @ 11.96 hrs, Volume= 7.650 af, Depth= 3.72"
Routed to Pond 100 : 100

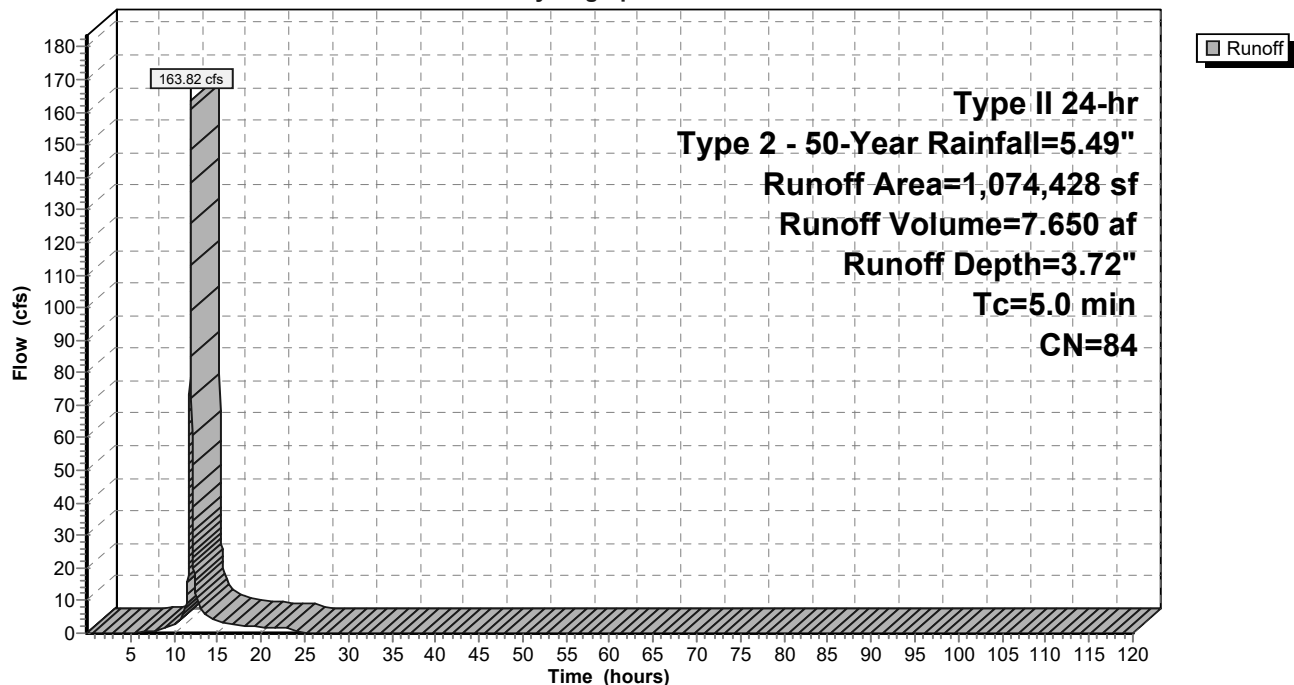
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs
Type II 24-hr Type 2 - 50-Year Rainfall=5.49"

Area (sf)	CN	Description
70,439	98	Water Surface, HSG C
1,003,989	83	1/4 acre lots, 38% imp, HSG C
1,074,428	84	Weighted Average
622,473		57.94% Pervious Area
451,955		42.06% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, Direct

Subcatchment 100A: 100A

Hydrograph



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Type II 24-hr Type 2 - 50-Year Rainfall=5.49"

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Hydrograph for Subcatchment 100A: 100A

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.01	0.00	0.00	0.00	104.01	5.49	3.72	0.00
2.01	0.12	0.00	0.00	106.01	5.49	3.72	0.00
4.01	0.26	0.00	0.00	108.01	5.49	3.72	0.00
6.01	0.44	0.00	0.13	110.01	5.49	3.72	0.00
8.01	0.66	0.04	0.69	112.01	5.49	3.72	0.00
10.01	1.00	0.15	2.24	114.01	5.49	3.72	0.00
12.01	3.65	2.07	126.09	116.01	5.49	3.72	0.00
14.01	4.50	2.82	4.71	118.01	5.49	3.72	0.00
16.01	4.83	3.12	2.92				
18.01	5.06	3.32	2.27				
20.01	5.23	3.48	1.65				
22.01	5.36	3.61	1.52				
24.01	5.49	3.72	1.39				
26.01	5.49	3.72	0.00				
28.01	5.49	3.72	0.00				
30.01	5.49	3.72	0.00				
32.01	5.49	3.72	0.00				
34.01	5.49	3.72	0.00				
36.01	5.49	3.72	0.00				
38.01	5.49	3.72	0.00				
40.01	5.49	3.72	0.00				
42.01	5.49	3.72	0.00				
44.01	5.49	3.72	0.00				
46.01	5.49	3.72	0.00				
48.01	5.49	3.72	0.00				
50.01	5.49	3.72	0.00				
52.01	5.49	3.72	0.00				
54.01	5.49	3.72	0.00				
56.01	5.49	3.72	0.00				
58.01	5.49	3.72	0.00				
60.01	5.49	3.72	0.00				
62.01	5.49	3.72	0.00				
64.01	5.49	3.72	0.00				
66.01	5.49	3.72	0.00				
68.01	5.49	3.72	0.00				
70.01	5.49	3.72	0.00				
72.01	5.49	3.72	0.00				
74.01	5.49	3.72	0.00				
76.01	5.49	3.72	0.00				
78.01	5.49	3.72	0.00				
80.01	5.49	3.72	0.00				
82.01	5.49	3.72	0.00				
84.01	5.49	3.72	0.00				
86.01	5.49	3.72	0.00				
88.01	5.49	3.72	0.00				
90.01	5.49	3.72	0.00				
92.01	5.49	3.72	0.00				
94.01	5.49	3.72	0.00				
96.01	5.49	3.72	0.00				
98.01	5.49	3.72	0.00				
100.01	5.49	3.72	0.00				
102.01	5.49	3.72	0.00				

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Type II 24-hr Type 2 - 50-Year Rainfall=5.49"

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Summary for Subcatchment 200A: 200A

Runoff = 38.98 cfs @ 11.96 hrs, Volume= 1.921 af, Depth= 4.46"
Routed to Pond 200 : 200

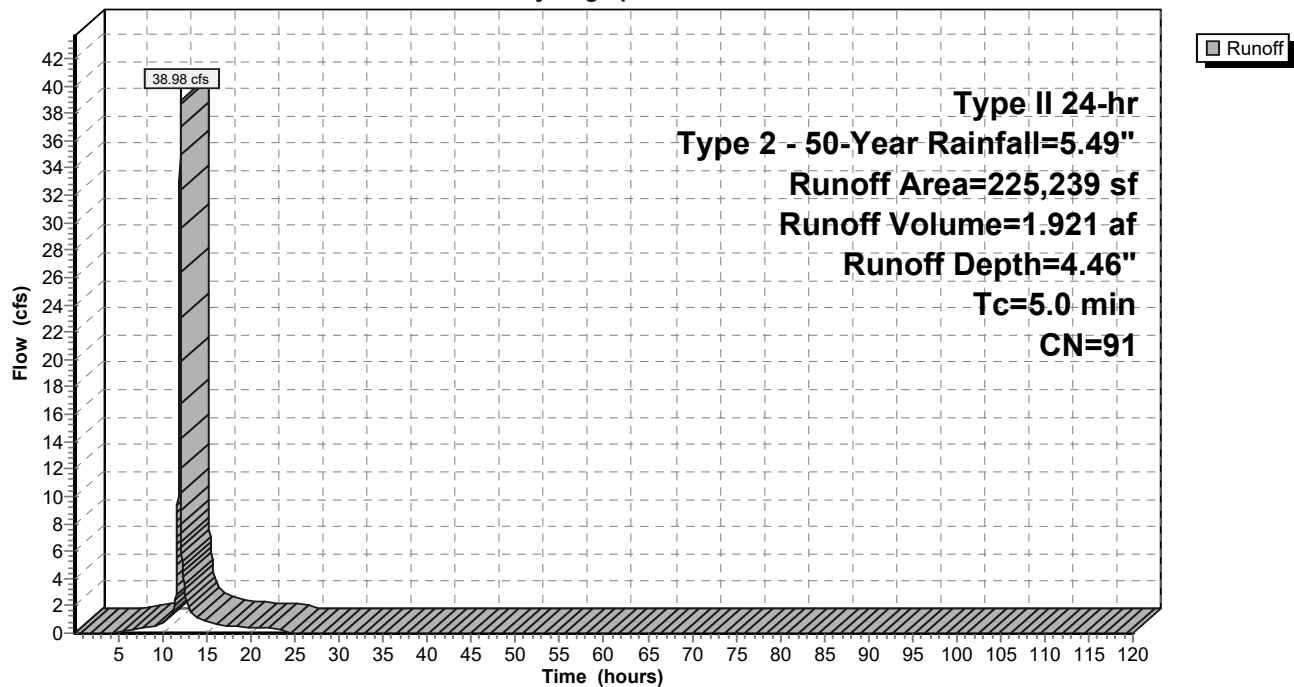
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs
Type II 24-hr Type 2 - 50-Year Rainfall=5.49"

Area (sf)	CN	Description
21,699	98	Water Surface, HSG C
203,540	90	1/8 acre lots, 65% imp, HSG C
225,239	91	Weighted Average
71,239		31.63% Pervious Area
154,000		68.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, Direct

Subcatchment 200A: 200A

Hydrograph



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Type II 24-hr Type 2 - 50-Year Rainfall=5.49"

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Hydrograph for Subcatchment 200A: 200A

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.01	0.00	0.00	0.00	104.01	5.49	4.46	0.00
2.01	0.12	0.00	0.00	106.01	5.49	4.46	0.00
4.01	0.26	0.00	0.04	108.01	5.49	4.46	0.00
6.01	0.44	0.05	0.18	110.01	5.49	4.46	0.00
8.01	0.66	0.15	0.33	112.01	5.49	4.46	0.00
10.01	1.00	0.36	0.77	114.01	5.49	4.46	0.00
12.01	3.65	2.68	29.54	116.01	5.49	4.46	0.00
14.01	4.50	3.50	1.06	118.01	5.49	4.46	0.00
16.01	4.83	3.82	0.65				
18.01	5.06	4.04	0.51				
20.01	5.23	4.20	0.37				
22.01	5.36	4.34	0.34				
24.01	5.49	4.46	0.31				
26.01	5.49	4.46	0.00				
28.01	5.49	4.46	0.00				
30.01	5.49	4.46	0.00				
32.01	5.49	4.46	0.00				
34.01	5.49	4.46	0.00				
36.01	5.49	4.46	0.00				
38.01	5.49	4.46	0.00				
40.01	5.49	4.46	0.00				
42.01	5.49	4.46	0.00				
44.01	5.49	4.46	0.00				
46.01	5.49	4.46	0.00				
48.01	5.49	4.46	0.00				
50.01	5.49	4.46	0.00				
52.01	5.49	4.46	0.00				
54.01	5.49	4.46	0.00				
56.01	5.49	4.46	0.00				
58.01	5.49	4.46	0.00				
60.01	5.49	4.46	0.00				
62.01	5.49	4.46	0.00				
64.01	5.49	4.46	0.00				
66.01	5.49	4.46	0.00				
68.01	5.49	4.46	0.00				
70.01	5.49	4.46	0.00				
72.01	5.49	4.46	0.00				
74.01	5.49	4.46	0.00				
76.01	5.49	4.46	0.00				
78.01	5.49	4.46	0.00				
80.01	5.49	4.46	0.00				
82.01	5.49	4.46	0.00				
84.01	5.49	4.46	0.00				
86.01	5.49	4.46	0.00				
88.01	5.49	4.46	0.00				
90.01	5.49	4.46	0.00				
92.01	5.49	4.46	0.00				
94.01	5.49	4.46	0.00				
96.01	5.49	4.46	0.00				
98.01	5.49	4.46	0.00				
100.01	5.49	4.46	0.00				
102.01	5.49	4.46	0.00				

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Type II 24-hr Type 2 - 50-Year Rainfall=5.49"

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Summary for Subcatchment 300A: 300A

Runoff = 44.44 cfs @ 11.96 hrs, Volume= 2.169 af, Depth= 4.35"
Routed to Pond 300 : 300

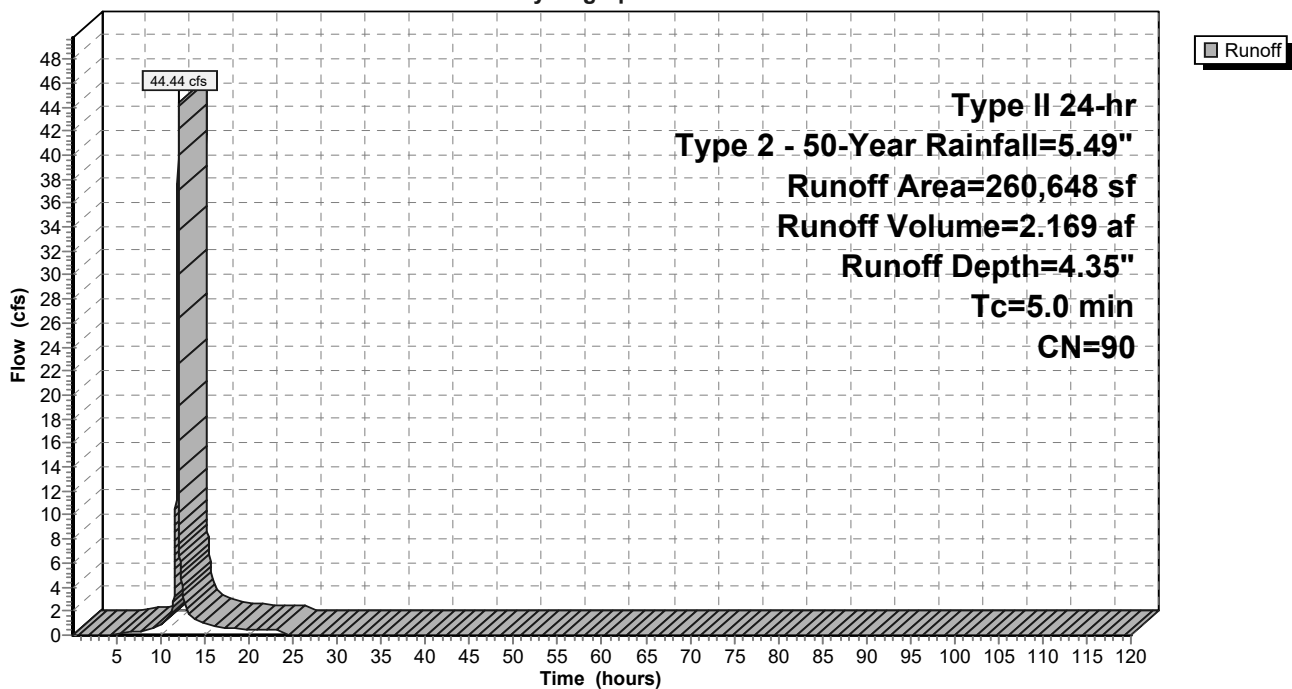
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs
Type II 24-hr Type 2 - 50-Year Rainfall=5.49"

Area (sf)	CN	Description
260,648	90	1/8 acre lots, 65% imp, HSG C
91,227		35.00% Pervious Area
169,421		65.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, Direct

Subcatchment 300A: 300A

Hydrograph



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Type II 24-hr Type 2 - 50-Year Rainfall=5.49"

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Hydrograph for Subcatchment 300A: 300A

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.01	0.00	0.00	0.00	104.01	5.49	4.35	0.00
2.01	0.12	0.00	0.00	106.01	5.49	4.35	0.00
4.01	0.26	0.00	0.03	108.01	5.49	4.35	0.00
6.01	0.44	0.04	0.17	110.01	5.49	4.35	0.00
8.01	0.66	0.12	0.35	112.01	5.49	4.35	0.00
10.01	1.00	0.32	0.83	114.01	5.49	4.35	0.00
12.01	3.65	2.59	33.74	116.01	5.49	4.35	0.00
14.01	4.50	3.40	1.22	118.01	5.49	4.35	0.00
16.01	4.83	3.71	0.75				
18.01	5.06	3.93	0.58				
20.01	5.23	4.10	0.42				
22.01	5.36	4.23	0.39				
24.01	5.49	4.35	0.35				
26.01	5.49	4.35	0.00				
28.01	5.49	4.35	0.00				
30.01	5.49	4.35	0.00				
32.01	5.49	4.35	0.00				
34.01	5.49	4.35	0.00				
36.01	5.49	4.35	0.00				
38.01	5.49	4.35	0.00				
40.01	5.49	4.35	0.00				
42.01	5.49	4.35	0.00				
44.01	5.49	4.35	0.00				
46.01	5.49	4.35	0.00				
48.01	5.49	4.35	0.00				
50.01	5.49	4.35	0.00				
52.01	5.49	4.35	0.00				
54.01	5.49	4.35	0.00				
56.01	5.49	4.35	0.00				
58.01	5.49	4.35	0.00				
60.01	5.49	4.35	0.00				
62.01	5.49	4.35	0.00				
64.01	5.49	4.35	0.00				
66.01	5.49	4.35	0.00				
68.01	5.49	4.35	0.00				
70.01	5.49	4.35	0.00				
72.01	5.49	4.35	0.00				
74.01	5.49	4.35	0.00				
76.01	5.49	4.35	0.00				
78.01	5.49	4.35	0.00				
80.01	5.49	4.35	0.00				
82.01	5.49	4.35	0.00				
84.01	5.49	4.35	0.00				
86.01	5.49	4.35	0.00				
88.01	5.49	4.35	0.00				
90.01	5.49	4.35	0.00				
92.01	5.49	4.35	0.00				
94.01	5.49	4.35	0.00				
96.01	5.49	4.35	0.00				
98.01	5.49	4.35	0.00				
100.01	5.49	4.35	0.00				
102.01	5.49	4.35	0.00				

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Type II 24-hr Type 2 - 50-Year Rainfall=5.49"

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Summary for Subcatchment 300B: 300B

Runoff = 87.78 cfs @ 11.96 hrs, Volume= 4.151 af, Depth= 3.93"
Routed to Pond 300 : 300

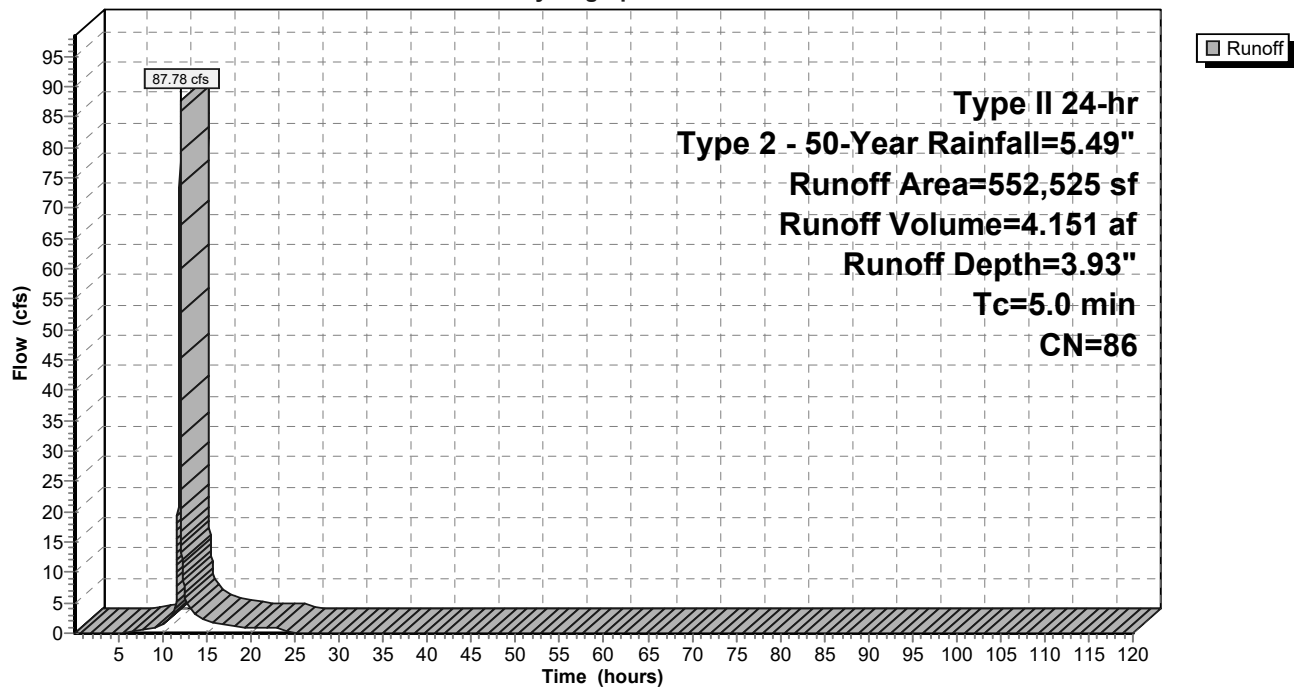
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs
Type II 24-hr Type 2 - 50-Year Rainfall=5.49"

Area (sf)	CN	Description
442,263	83	1/4 acre lots, 38% imp, HSG C
110,262	98	Water Surface, HSG C
552,525	86	Weighted Average
274,203		49.63% Pervious Area
278,322		50.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, Direct

Subcatchment 300B: 300B

Hydrograph



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Type II 24-hr Type 2 - 50-Year Rainfall=5.49"

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Hydrograph for Subcatchment 300B: 300B

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.01	0.00	0.00	0.00	104.01	5.49	3.93	0.00
2.01	0.12	0.00	0.00	106.01	5.49	3.93	0.00
4.01	0.26	0.00	0.00	108.01	5.49	3.93	0.00
6.01	0.44	0.01	0.15	110.01	5.49	3.93	0.00
8.01	0.66	0.06	0.47	112.01	5.49	3.93	0.00
10.01	1.00	0.20	1.34	114.01	5.49	3.93	0.00
12.01	3.65	2.23	67.24	116.01	5.49	3.93	0.00
14.01	4.50	3.01	2.48	118.01	5.49	3.93	0.00
16.01	4.83	3.31	1.53				
18.01	5.06	3.52	1.19				
20.01	5.23	3.68	0.87				
22.01	5.36	3.81	0.79				
24.01	5.49	3.93	0.73				
26.01	5.49	3.93	0.00				
28.01	5.49	3.93	0.00				
30.01	5.49	3.93	0.00				
32.01	5.49	3.93	0.00				
34.01	5.49	3.93	0.00				
36.01	5.49	3.93	0.00				
38.01	5.49	3.93	0.00				
40.01	5.49	3.93	0.00				
42.01	5.49	3.93	0.00				
44.01	5.49	3.93	0.00				
46.01	5.49	3.93	0.00				
48.01	5.49	3.93	0.00				
50.01	5.49	3.93	0.00				
52.01	5.49	3.93	0.00				
54.01	5.49	3.93	0.00				
56.01	5.49	3.93	0.00				
58.01	5.49	3.93	0.00				
60.01	5.49	3.93	0.00				
62.01	5.49	3.93	0.00				
64.01	5.49	3.93	0.00				
66.01	5.49	3.93	0.00				
68.01	5.49	3.93	0.00				
70.01	5.49	3.93	0.00				
72.01	5.49	3.93	0.00				
74.01	5.49	3.93	0.00				
76.01	5.49	3.93	0.00				
78.01	5.49	3.93	0.00				
80.01	5.49	3.93	0.00				
82.01	5.49	3.93	0.00				
84.01	5.49	3.93	0.00				
86.01	5.49	3.93	0.00				
88.01	5.49	3.93	0.00				
90.01	5.49	3.93	0.00				
92.01	5.49	3.93	0.00				
94.01	5.49	3.93	0.00				
96.01	5.49	3.93	0.00				
98.01	5.49	3.93	0.00				
100.01	5.49	3.93	0.00				
102.01	5.49	3.93	0.00				

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Type II 24-hr Type 2 - 50-Year Rainfall=5.49"

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Summary for Subcatchment 400A: 400A

Runoff = 38.39 cfs @ 11.96 hrs, Volume= 1.783 af, Depth= 3.62"
Routed to Pond 400 : 400

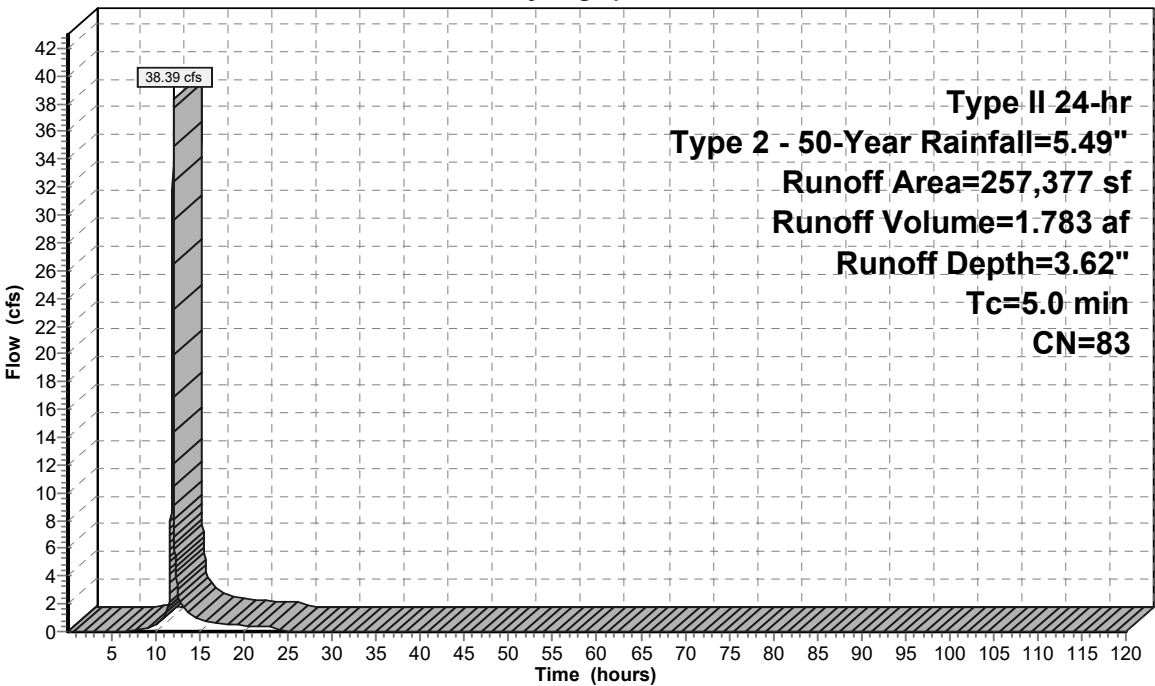
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs
Type II 24-hr Type 2 - 50-Year Rainfall=5.49"

Area (sf)	CN	Description
47,305	70	Woods, Good, HSG C
35,903	98	Water Surface, HSG C
174,169	83	1/4 acre lots, 38% imp, HSG C
257,377	83	Weighted Average
155,290		60.34% Pervious Area
102,087		39.66% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, Direct

Subcatchment 400A: 400A

Hydrograph



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Type II 24-hr Type 2 - 50-Year Rainfall=5.49"

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Hydrograph for Subcatchment 400A: 400A

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.01	0.00	0.00	0.00	104.01	5.49	3.62	0.00
2.01	0.12	0.00	0.00	106.01	5.49	3.62	0.00
4.01	0.26	0.00	0.00	108.01	5.49	3.62	0.00
6.01	0.44	0.00	0.01	110.01	5.49	3.62	0.00
8.01	0.66	0.03	0.14	112.01	5.49	3.62	0.00
10.01	1.00	0.13	0.49	114.01	5.49	3.62	0.00
12.01	3.65	1.99	29.62	116.01	5.49	3.62	0.00
14.01	4.50	2.73	1.11	118.01	5.49	3.62	0.00
16.01	4.83	3.02	0.69				
18.01	5.06	3.23	0.54				
20.01	5.23	3.38	0.39				
22.01	5.36	3.51	0.36				
24.01	5.49	3.62	0.33				
26.01	5.49	3.62	0.00				
28.01	5.49	3.62	0.00				
30.01	5.49	3.62	0.00				
32.01	5.49	3.62	0.00				
34.01	5.49	3.62	0.00				
36.01	5.49	3.62	0.00				
38.01	5.49	3.62	0.00				
40.01	5.49	3.62	0.00				
42.01	5.49	3.62	0.00				
44.01	5.49	3.62	0.00				
46.01	5.49	3.62	0.00				
48.01	5.49	3.62	0.00				
50.01	5.49	3.62	0.00				
52.01	5.49	3.62	0.00				
54.01	5.49	3.62	0.00				
56.01	5.49	3.62	0.00				
58.01	5.49	3.62	0.00				
60.01	5.49	3.62	0.00				
62.01	5.49	3.62	0.00				
64.01	5.49	3.62	0.00				
66.01	5.49	3.62	0.00				
68.01	5.49	3.62	0.00				
70.01	5.49	3.62	0.00				
72.01	5.49	3.62	0.00				
74.01	5.49	3.62	0.00				
76.01	5.49	3.62	0.00				
78.01	5.49	3.62	0.00				
80.01	5.49	3.62	0.00				
82.01	5.49	3.62	0.00				
84.01	5.49	3.62	0.00				
86.01	5.49	3.62	0.00				
88.01	5.49	3.62	0.00				
90.01	5.49	3.62	0.00				
92.01	5.49	3.62	0.00				
94.01	5.49	3.62	0.00				
96.01	5.49	3.62	0.00				
98.01	5.49	3.62	0.00				
100.01	5.49	3.62	0.00				
102.01	5.49	3.62	0.00				

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Type II 24-hr Type 2 - 50-Year Rainfall=5.49"

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Summary for Subcatchment 500A: 500A

Runoff = 119.15 cfs @ 11.96 hrs, Volume= 5.564 af, Depth= 3.72"
Routed to Pond 500 : 500

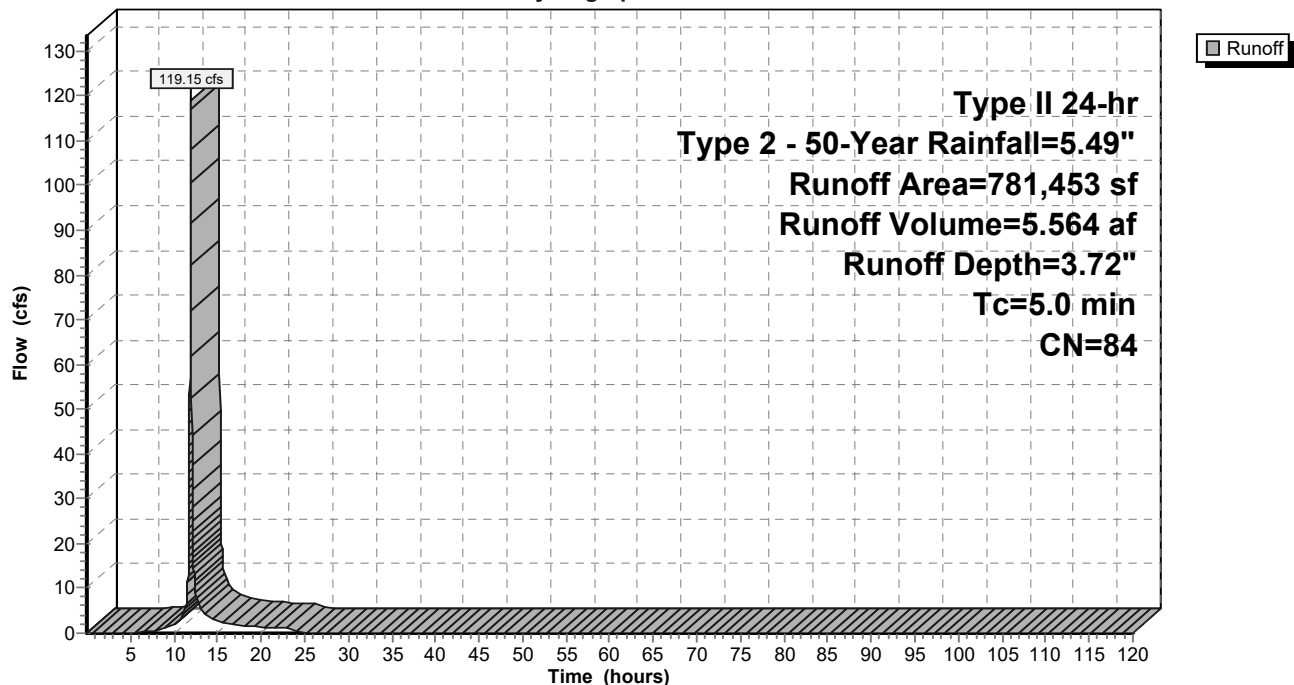
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs
Type II 24-hr Type 2 - 50-Year Rainfall=5.49"

Area (sf)	CN	Description
57,355	98	Water Surface, HSG C
724,098	83	1/4 acre lots, 38% imp, HSG C
781,453	84	Weighted Average
448,941		57.45% Pervious Area
332,512		42.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, Direct

Subcatchment 500A: 500A

Hydrograph



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Type II 24-hr Type 2 - 50-Year Rainfall=5.49"

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Hydrograph for Subcatchment 500A: 500A

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.01	0.00	0.00	0.00	104.01	5.49	3.72	0.00
2.01	0.12	0.00	0.00	106.01	5.49	3.72	0.00
4.01	0.26	0.00	0.00	108.01	5.49	3.72	0.00
6.01	0.44	0.00	0.09	110.01	5.49	3.72	0.00
8.01	0.66	0.04	0.51	112.01	5.49	3.72	0.00
10.01	1.00	0.15	1.63	114.01	5.49	3.72	0.00
12.01	3.65	2.07	91.71	116.01	5.49	3.72	0.00
14.01	4.50	2.82	3.43	118.01	5.49	3.72	0.00
16.01	4.83	3.12	2.12				
18.01	5.06	3.32	1.65				
20.01	5.23	3.48	1.20				
22.01	5.36	3.61	1.10				
24.01	5.49	3.72	1.01				
26.01	5.49	3.72	0.00				
28.01	5.49	3.72	0.00				
30.01	5.49	3.72	0.00				
32.01	5.49	3.72	0.00				
34.01	5.49	3.72	0.00				
36.01	5.49	3.72	0.00				
38.01	5.49	3.72	0.00				
40.01	5.49	3.72	0.00				
42.01	5.49	3.72	0.00				
44.01	5.49	3.72	0.00				
46.01	5.49	3.72	0.00				
48.01	5.49	3.72	0.00				
50.01	5.49	3.72	0.00				
52.01	5.49	3.72	0.00				
54.01	5.49	3.72	0.00				
56.01	5.49	3.72	0.00				
58.01	5.49	3.72	0.00				
60.01	5.49	3.72	0.00				
62.01	5.49	3.72	0.00				
64.01	5.49	3.72	0.00				
66.01	5.49	3.72	0.00				
68.01	5.49	3.72	0.00				
70.01	5.49	3.72	0.00				
72.01	5.49	3.72	0.00				
74.01	5.49	3.72	0.00				
76.01	5.49	3.72	0.00				
78.01	5.49	3.72	0.00				
80.01	5.49	3.72	0.00				
82.01	5.49	3.72	0.00				
84.01	5.49	3.72	0.00				
86.01	5.49	3.72	0.00				
88.01	5.49	3.72	0.00				
90.01	5.49	3.72	0.00				
92.01	5.49	3.72	0.00				
94.01	5.49	3.72	0.00				
96.01	5.49	3.72	0.00				
98.01	5.49	3.72	0.00				
100.01	5.49	3.72	0.00				
102.01	5.49	3.72	0.00				

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Type II 24-hr Type 2 - 50-Year Rainfall=5.49"

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Summary for Pond 100: 100

Inflow Area = 24.665 ac, 42.06% Impervious, Inflow Depth = 3.72" for Type 2 - 50-Year event
 Inflow = 163.82 cfs @ 11.96 hrs, Volume= 7.650 af
 Outflow = 1.48 cfs @ 22.62 hrs, Volume= 6.577 af, Atten= 99%, Lag= 639.8 min
 Primary = 1.48 cfs @ 22.62 hrs, Volume= 6.577 af
 Routed to Link 1 : OFFSITE
 Secondary = 0.00 cfs @ 0.01 hrs, Volume= 0.000 af
 Routed to Link 1 : OFFSITE

Routing by Stor-Ind method, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs

Starting Elev= 879.00' Surf.Area= 70,439 sf Storage= 207,488 cf

Peak Elev= 882.20' @ 22.62 hrs Surf.Area= 98,722 sf Storage= 477,887 cf (270,400 cf above start)

Plug-Flow detention time= 3,907.9 min calculated for 1.813 af (24% of inflow)

Center-of-Mass det. time= 1,891.9 min (2,694.8 - 802.9)

Volume	Invert	Avail.Storage	Storage Description
#1	874.00'	670,255 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
874.00	24,774	0	0
875.00	30,784	27,779	27,779
876.00	36,863	33,824	61,603
877.00	43,009	39,936	101,539
878.00	49,225	46,117	147,656
879.00	70,439	59,832	207,488
880.00	79,139	74,789	282,277
881.00	87,959	83,549	365,826
882.00	96,903	92,431	458,257
883.00	105,969	101,436	559,693
884.00	115,156	110,563	670,255

Device	Routing	Invert	Outlet Devices
#1	Primary	879.00'	24.0" Round RCP_Round 24" L= 70.0' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 879.00' / 878.00' S= 0.0143 '/' Cc= 0.900 n= 0.011 Concrete pipe, finished, Flow Area= 3.14 sf
#2	Device 1	879.50'	6.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Secondary	883.00'	25.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=1.48 cfs @ 22.62 hrs HW=882.20' (Free Discharge)

1=RCP_Round 24" (Passes 1.48 cfs of 19.80 cfs potential flow)


2=Orifice/Grate (Orifice Controls 1.48 cfs @ 7.54 fps)
Secondary OutFlow Max=0.00 cfs @ 0.01 hrs HW=879.00' (Free Discharge)

3=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

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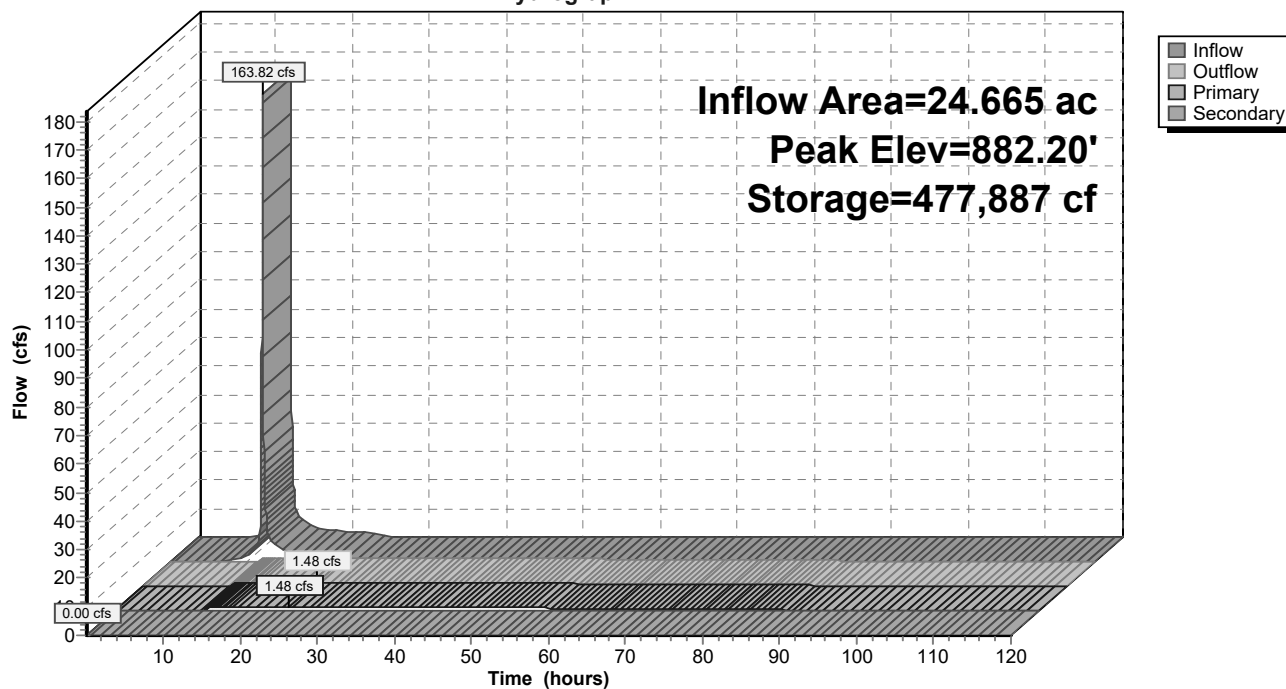
Type II 24-hr Type 2 - 50-Year Rainfall=5.49"

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Pond 100: 100

Hydrograph



Proposed Conditions*Type II 24-hr Type 2 - 50-Year Rainfall=5.49"*

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Hydrograph for Pond 100: 100

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.01	0.00	207,488	879.00	0.00	0.00	0.00
5.01	0.00	207,488	879.00	0.00	0.00	0.00
10.01	2.24	220,290	879.18	0.00	0.00	0.00
15.01	3.77	458,637	882.00	1.42	1.42	0.00
20.01	1.65	477,133	882.19	1.48	1.48	0.00
25.01	0.00	472,715	882.15	1.46	1.46	0.00
30.01	0.00	447,106	881.88	1.38	1.38	0.00
35.01	0.00	423,008	881.63	1.30	1.30	0.00
40.01	0.00	400,456	881.39	1.21	1.21	0.00
45.01	0.00	379,490	881.15	1.12	1.12	0.00
50.01	0.00	360,144	880.94	1.03	1.03	0.00
55.01	0.00	342,456	880.73	0.94	0.94	0.00
60.01	0.00	326,460	880.54	0.84	0.84	0.00
65.01	0.00	312,190	880.37	0.74	0.74	0.00
70.01	0.00	299,681	880.22	0.65	0.65	0.00
75.01	0.00	288,958	880.08	0.55	0.55	0.00
80.01	0.00	280,059	879.97	0.44	0.44	0.00
85.01	0.00	273,039	879.88	0.34	0.34	0.00
90.01	0.00	267,784	879.81	0.25	0.25	0.00
95.01	0.00	263,891	879.76	0.19	0.19	0.00
100.01	0.00	260,939	879.73	0.14	0.14	0.00
105.01	0.00	258,696	879.70	0.11	0.11	0.00
110.01	0.00	256,909	879.67	0.09	0.09	0.00
115.01	0.00	255,435	879.65	0.07	0.07	0.00

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Type II 24-hr Type 2 - 50-Year Rainfall=5.49"

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Summary for Pond 200: 200

Inflow Area = 5.171 ac, 68.37% Impervious, Inflow Depth = 4.46" for Type 2 - 50-Year event
 Inflow = 38.98 cfs @ 11.96 hrs, Volume= 1.921 af
 Outflow = 1.18 cfs @ 13.80 hrs, Volume= 1.662 af, Atten= 97%, Lag= 110.4 min
 Primary = 1.18 cfs @ 13.80 hrs, Volume= 1.662 af
 Routed to Link 1 : OFFSITE
 Secondary = 0.00 cfs @ 0.01 hrs, Volume= 0.000 af
 Routed to Link 1 : OFFSITE

Routing by Stor-Ind method, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs

Starting Elev= 875.00' Surf.Area= 21,699 sf Storage= 70,918 cf

Peak Elev= 877.30' @ 13.80 hrs Surf.Area= 27,584 sf Storage= 127,376 cf (56,458 cf above start)

Plug-Flow detention time= 4,254.6 min calculated for 0.034 af (2% of inflow)

Center-of-Mass det. time= 614.5 min (1,394.0 - 779.6)

Volume	Invert	Avail.Storage	Storage Description
#1	870.00'	177,226 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
870.00	10,192	0	0
871.00	11,543	10,868	10,868
872.00	12,964	12,254	23,121
873.00	14,453	13,709	36,830
874.00	16,012	15,233	52,062
875.00	21,699	18,856	70,918
876.00	24,181	22,940	93,858
877.00	26,780	25,481	119,338
878.00	29,498	28,139	147,477
879.00	30,000	29,749	177,226

Device	Routing	Invert	Outlet Devices
#1	Primary	875.00'	12.0" Round RCP_Round 12" L= 70.0' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 875.00' / 874.00' S= 0.0143 '/' Cc= 0.900 n= 0.011 Concrete pipe, finished, Flow Area= 0.79 sf
#2	Device 1	875.50'	6.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	878.00'	60.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#4	Secondary	878.00'	25.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Proposed Conditions

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Type II 24-hr Type 2 - 50-Year Rainfall=5.49"

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Primary OutFlow Max=1.18 cfs @ 13.80 hrs HW=877.30' (Free Discharge)

1=RCP_Round 12" (Passes 1.18 cfs of 4.47 cfs potential flow)

2=Orifice/Grate (Orifice Controls 1.18 cfs @ 5.99 fps)

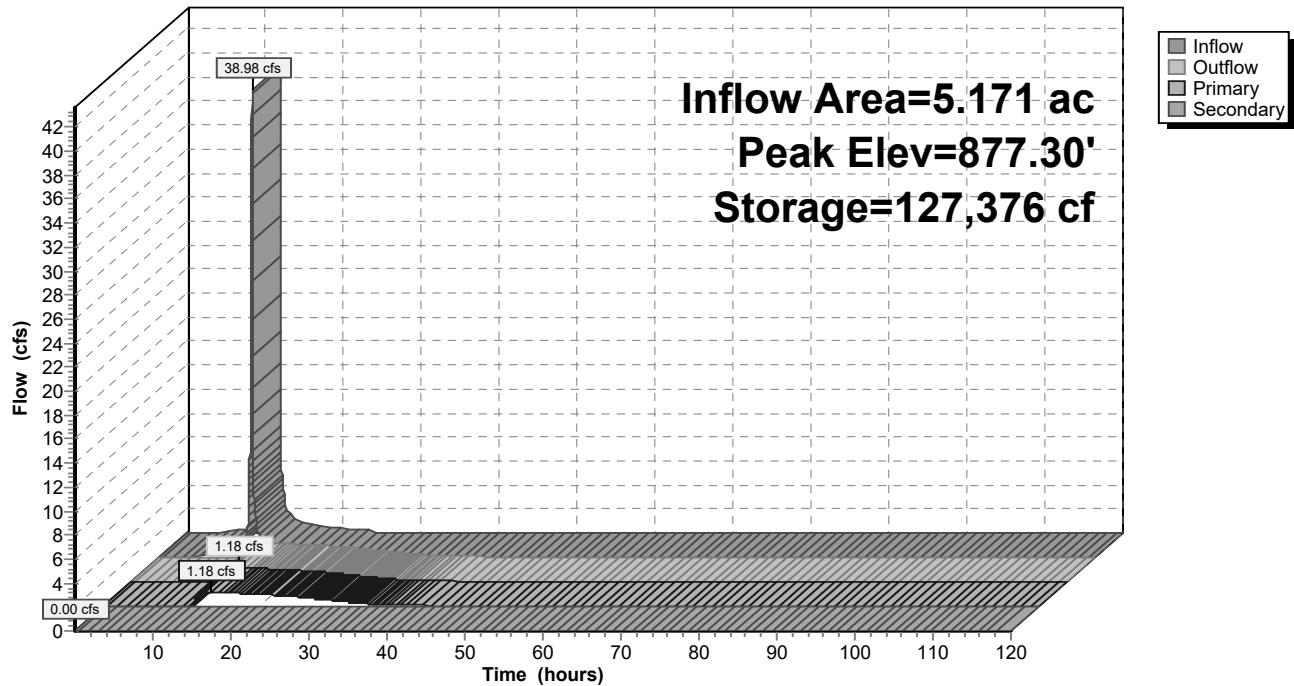
3=Orifice/Grate (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.01 hrs HW=875.00' (Free Discharge)

4=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Pond 200: 200

Hydrograph



Proposed Conditions

Type II 24-hr Type 2 - 50-Year Rainfall=5.49"

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Hydrograph for Pond 200: 200

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.01	0.00	70,918	875.00	0.00	0.00	0.00
5.01	0.11	71,253	875.02	0.00	0.00	0.00
10.01	0.77	77,391	875.29	0.00	0.00	0.00
15.01	0.84	126,506	877.26	1.16	1.16	0.00
20.01	0.37	116,723	876.90	1.01	1.01	0.00
25.01	0.00	105,181	876.46	0.79	0.79	0.00
30.01	0.00	93,784	876.00	0.47	0.47	0.00
35.01	0.00	88,201	875.76	0.18	0.18	0.00
40.01	0.00	85,960	875.67	0.08	0.08	0.00
45.01	0.00	84,834	875.62	0.05	0.05	0.00
50.01	0.00	84,180	875.59	0.03	0.03	0.00
55.01	0.00	83,792	875.57	0.02	0.02	0.00
60.01	0.00	83,494	875.56	0.02	0.02	0.00
65.01	0.00	83,248	875.55	0.01	0.01	0.00
70.01	0.00	83,045	875.54	0.01	0.01	0.00
75.01	0.00	82,877	875.53	0.01	0.01	0.00
80.01	0.00	82,738	875.53	0.01	0.01	0.00
85.01	0.00	82,623	875.52	0.01	0.01	0.00
90.01	0.00	82,529	875.52	0.00	0.00	0.00
95.01	0.00	82,450	875.52	0.00	0.00	0.00
100.01	0.00	82,385	875.51	0.00	0.00	0.00
105.01	0.00	82,332	875.51	0.00	0.00	0.00
110.01	0.00	82,288	875.51	0.00	0.00	0.00
115.01	0.00	82,251	875.51	0.00	0.00	0.00

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Type II 24-hr Type 2 - 50-Year Rainfall=5.49"

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Summary for Pond 300: 300

Inflow Area = 24.576 ac, 51.36% Impervious, Inflow Depth = 3.74" for Type 2 - 50-Year event
 Inflow = 132.47 cfs @ 11.96 hrs, Volume= 7.658 af
 Outflow = 3.70 cfs @ 15.04 hrs, Volume= 5.970 af, Atten= 97%, Lag= 185.1 min
 Primary = 3.70 cfs @ 15.04 hrs, Volume= 5.970 af
 Routed to Link 1 : OFFSITE
 Secondary = 0.00 cfs @ 0.01 hrs, Volume= 0.000 af
 Routed to Link 1 : OFFSITE

Routing by Stor-Ind method, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs

Starting Elev= 875.00' Surf.Area= 110,262 sf Storage= 389,084 cf

Peak Elev= 876.66' @ 15.04 hrs Surf.Area= 129,003 sf Storage= 587,825 cf (198,741 cf above start)

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)

Center-of-Mass det. time= 1,122.9 min (2,060.4 - 937.5)

Volume	Invert	Avail.Storage	Storage Description
#1	870.00'	920,841 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
870.00	61,061	0	0
871.00	66,666	63,864	63,864
872.00	72,581	69,624	133,487
873.00	78,813	75,697	209,184
874.00	85,362	82,088	291,272
875.00	110,262	97,812	389,084
876.00	121,491	115,877	504,960
877.00	132,845	127,168	632,128
878.00	144,325	138,585	770,713
879.00	155,931	150,128	920,841

Device	Routing	Invert	Outlet Devices
#1	Primary	875.00'	24.0" Round RCP_Round 24" L= 100.0' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 875.00' / 874.00' S= 0.0100 ' S= 0.0100 ' Cc= 0.900 n= 0.011 Concrete pipe, finished, Flow Area= 3.14 sf
#2	Device 1	875.50'	6.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	876.30'	4.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s)
#4	Device 1	878.00'	48.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#5	Secondary	878.00'	25.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

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Type II 24-hr Type 2 - 50-Year Rainfall=5.49"

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Primary OutFlow Max=3.70 cfs @ 15.04 hrs HW=876.66' (Free Discharge)

1=RCP_Round 24" (Passes 3.70 cfs of 10.80 cfs potential flow)

2=Orifice/Grate (Orifice Controls 0.90 cfs @ 4.60 fps)

3=Sharp-Crested Rectangular Weir (Weir Controls 2.79 cfs @ 1.97 fps)

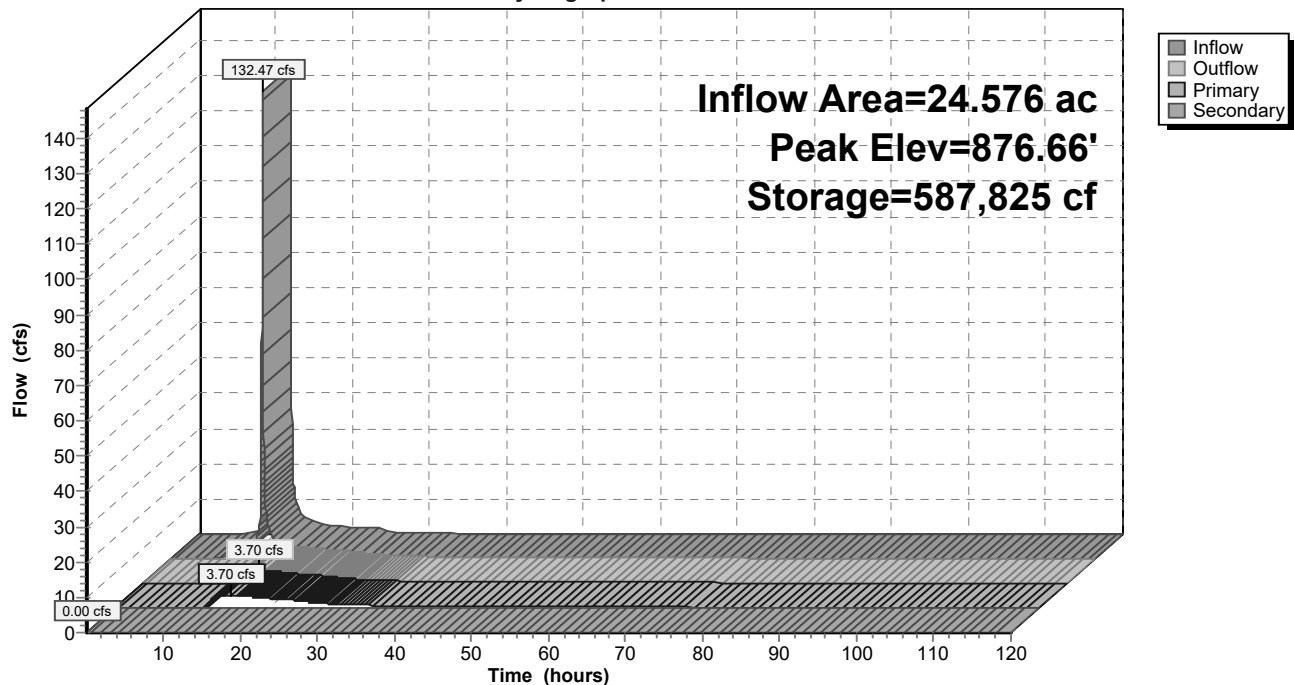
4=Orifice/Grate (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.01 hrs HW=875.00' (Free Discharge)

5=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 300: 300

Hydrograph



Proposed Conditions*Type II 24-hr Type 2 - 50-Year Rainfall=5.49"*

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Hydrograph for Pond 300: 300

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.01	0.00	389,084	875.00	0.00	0.00	0.00
5.01	0.12	389,335	875.00	0.00	0.00	0.00
10.01	2.17	404,368	875.14	0.00	0.00	0.00
15.01	3.72	587,824	876.66	3.70	3.70	0.00
20.01	2.01	577,095	876.58	2.76	2.76	0.00
25.01	0.61	564,600	876.48	1.80	1.80	0.00
30.01	0.40	550,054	876.36	0.99	0.99	0.00
35.01	0.22	540,730	876.29	0.69	0.69	0.00
40.01	0.13	531,684	876.22	0.65	0.65	0.00
45.01	0.08	522,357	876.14	0.59	0.59	0.00
50.01	0.06	513,445	876.07	0.53	0.53	0.00
55.01	0.04	505,214	876.00	0.47	0.47	0.00
60.01	0.03	497,813	875.94	0.41	0.41	0.00
65.01	0.02	491,461	875.89	0.35	0.35	0.00
70.01	0.02	486,170	875.84	0.29	0.29	0.00
75.01	0.02	481,762	875.81	0.24	0.24	0.00
80.01	0.01	478,088	875.78	0.20	0.20	0.00
85.01	0.01	475,019	875.75	0.17	0.17	0.00
90.01	0.01	472,395	875.73	0.15	0.15	0.00
95.01	0.01	470,136	875.71	0.12	0.12	0.00
100.01	0.01	468,193	875.69	0.11	0.11	0.00
105.01	0.01	466,522	875.68	0.09	0.09	0.00
110.01	0.01	465,082	875.67	0.08	0.08	0.00
115.01	0.00	463,792	875.66	0.07	0.07	0.00

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Type II 24-hr Type 2 - 50-Year Rainfall=5.49"

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Summary for Pond 400: 400

Inflow Area = 5.909 ac, 39.66% Impervious, Inflow Depth = 3.62" for Type 2 - 50-Year event
 Inflow = 38.39 cfs @ 11.96 hrs, Volume= 1.783 af
 Outflow = 0.77 cfs @ 15.61 hrs, Volume= 1.338 af, Atten= 98%, Lag= 219.3 min
 Primary = 0.77 cfs @ 15.61 hrs, Volume= 1.338 af
 Routed to Pond 300 : 300
 Secondary = 0.00 cfs @ 0.01 hrs, Volume= 0.000 af
 Routed to Pond 300 : 300

Routing by Stor-Ind method, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs

Starting Elev= 877.00' Surf.Area= 35,903 sf Storage= 129,985 cf

Peak Elev= 878.41' @ 15.61 hrs Surf.Area= 40,552 sf Storage= 184,027 cf (54,042 cf above start)

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)

Center-of-Mass det. time= 817.7 min (1,623.4 - 805.7)

Volume	Invert	Avail.Storage	Storage Description
#1	872.00'	252,651 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
872.00	20,703	0	0
873.00	22,504	21,604	21,604
874.00	24,391	23,448	45,051
875.00	26,364	25,378	70,429
876.00	28,423	27,394	97,822
877.00	35,903	32,163	129,985
878.00	39,148	37,526	167,511
879.00	42,535	40,842	208,352
880.00	46,063	44,299	252,651

Device	Routing	Invert	Outlet Devices
#1	Primary	877.00'	24.0" Round RCP_Round 24" L= 90.0' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 877.00' / 876.50' S= 0.0056 '/' Cc= 0.900 n= 0.011 Concrete pipe, finished, Flow Area= 3.14 sf
#2	Device 1	877.50'	6.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Secondary	879.00'	25.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.77 cfs @ 15.61 hrs HW=878.41' TW=876.30' (Fixed TW Elev= 876.30')

1=RCP_Round 24" (Passes 0.77 cfs of 7.99 cfs potential flow)

2=Orifice/Grate (Orifice Controls 0.77 cfs @ 3.92 fps)

Secondary OutFlow Max=0.00 cfs @ 0.01 hrs HW=877.00' (Free Discharge)

3=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

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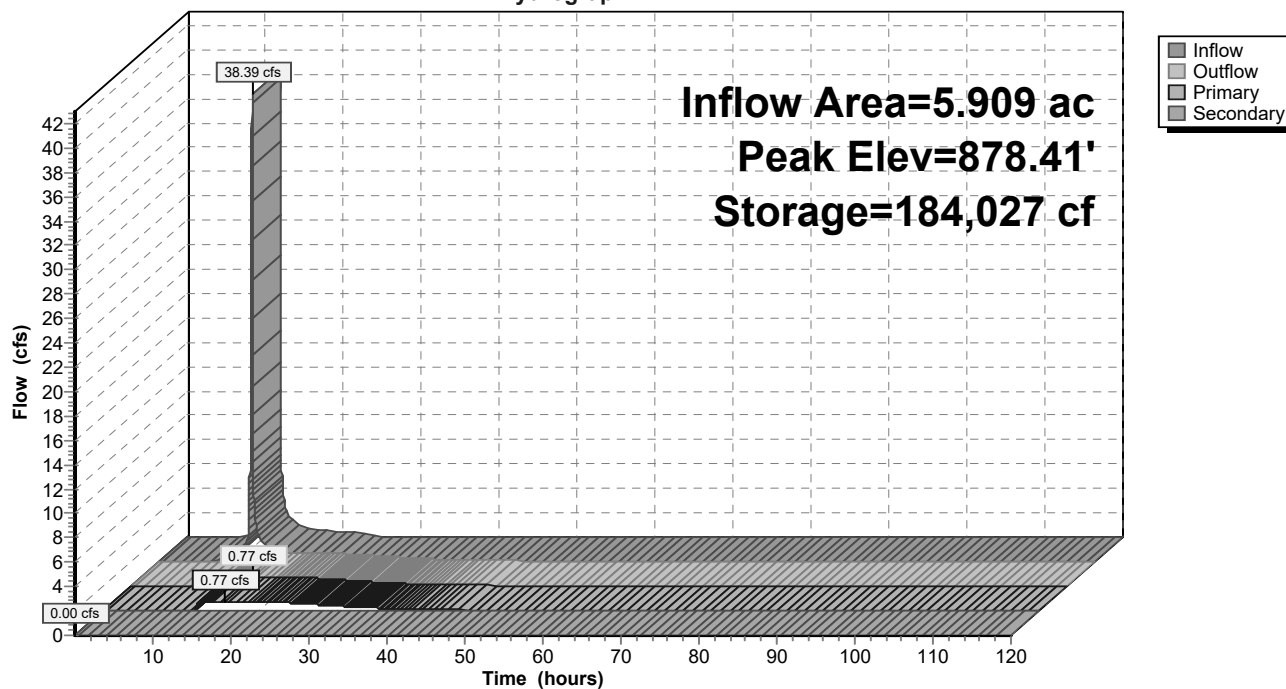
Type II 24-hr Type 2 - 50-Year Rainfall=5.49"

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Pond 400: 400

Hydrograph



Proposed Conditions*Type II 24-hr Type 2 - 50-Year Rainfall=5.49"*

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Hydrograph for Pond 400: 400

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.01	0.00	129,985	877.00	0.00	0.00	0.00
5.01	0.00	129,985	877.00	0.00	0.00	0.00
10.01	0.49	132,643	877.07	0.00	0.00	0.00
15.01	0.89	183,895	878.41	0.77	0.77	0.00
20.01	0.39	180,900	878.34	0.72	0.72	0.00
25.01	0.00	174,016	878.16	0.61	0.61	0.00
30.01	0.00	164,908	877.93	0.40	0.40	0.00
35.01	0.00	159,446	877.79	0.22	0.22	0.00
40.01	0.00	156,416	877.71	0.13	0.13	0.00
45.01	0.00	154,599	877.67	0.08	0.08	0.00
50.01	0.00	153,383	877.63	0.06	0.06	0.00
55.01	0.00	152,539	877.61	0.04	0.04	0.00
60.01	0.00	151,949	877.60	0.03	0.03	0.00
65.01	0.00	151,477	877.58	0.02	0.02	0.00
70.01	0.00	151,079	877.57	0.02	0.02	0.00
75.01	0.00	150,745	877.56	0.02	0.02	0.00
80.01	0.00	150,463	877.56	0.01	0.01	0.00
85.01	0.00	150,225	877.55	0.01	0.01	0.00
90.01	0.00	150,026	877.54	0.01	0.01	0.00
95.01	0.00	149,857	877.54	0.01	0.01	0.00
100.01	0.00	149,716	877.54	0.01	0.01	0.00
105.01	0.00	149,596	877.53	0.01	0.01	0.00
110.01	0.00	149,496	877.53	0.01	0.01	0.00
115.01	0.00	149,411	877.53	0.00	0.00	0.00

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Type II 24-hr Type 2 - 50-Year Rainfall=5.49"

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Summary for Pond 500: 500

Inflow Area = 17.940 ac, 42.55% Impervious, Inflow Depth = 3.72" for Type 2 - 50-Year event
 Inflow = 119.15 cfs @ 11.96 hrs, Volume= 5.564 af
 Outflow = 1.37 cfs @ 19.25 hrs, Volume= 4.775 af, Atten= 99%, Lag= 437.5 min
 Primary = 1.37 cfs @ 19.25 hrs, Volume= 4.775 af
 Routed to Link 1 : OFFSITE
 Secondary = 0.00 cfs @ 0.01 hrs, Volume= 0.000 af
 Routed to Link 1 : OFFSITE

Routing by Stor-Ind method, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs

Starting Elev= 899.00' Surf.Area= 57,355 sf Storage= 196,414 cf

Peak Elev= 901.86' @ 19.25 hrs Surf.Area= 73,816 sf Storage= 384,055 cf (187,642 cf above start)

Plug-Flow detention time= 4,780.7 min calculated for 0.266 af (5% of inflow)

Center-of-Mass det. time= 1,483.7 min (2,286.6 - 802.9)

Volume	Invert	Avail.Storage	Storage Description
#1	894.00'	555,429 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
894.00	29,616	0	0
895.00	32,756	31,186	31,186
896.00	36,239	34,498	65,684
897.00	40,030	38,135	103,818
898.00	43,903	41,967	145,785
899.00	57,355	50,629	196,414
900.00	62,973	60,164	256,578
901.00	68,725	65,849	322,427
902.00	74,612	71,669	394,095
903.00	80,633	77,623	471,718
904.00	86,790	83,712	555,429

Device	Routing	Invert	Outlet Devices
#1	Primary	899.00'	24.0" Round RCP_Round 24" L= 80.0' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 899.00' / 898.00' S= 0.0125 '/' Cc= 0.900 n= 0.011 Concrete pipe, finished, Flow Area= 3.14 sf
#2	Device 1	899.50'	6.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Secondary	903.00'	25.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=1.37 cfs @ 19.25 hrs HW=901.86' (Free Discharge)↑ **1=RCP_Round 24"** (Passes 1.37 cfs of 18.23 cfs potential flow)↑ **2=Orifice/Grate** (Orifice Controls 1.37 cfs @ 7.00 fps)**Secondary OutFlow** Max=0.00 cfs @ 0.01 hrs HW=899.00' (Free Discharge)↑ **3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

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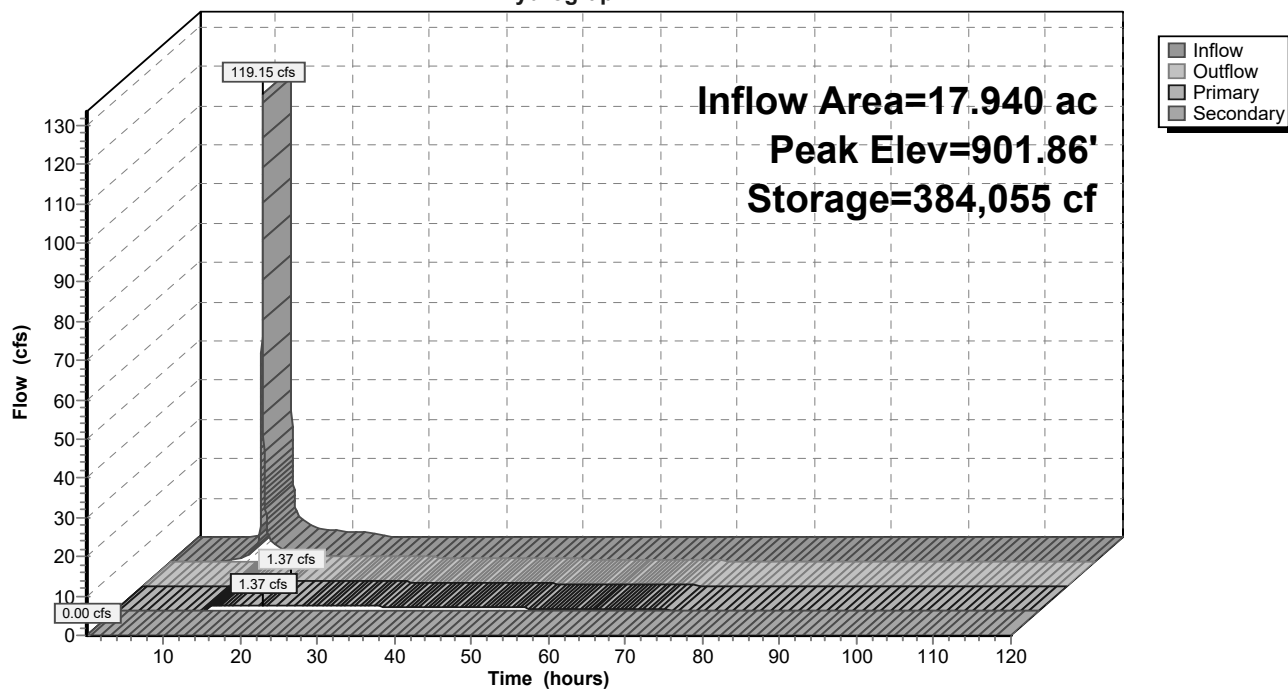
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Pond 500: 500

Hydrograph



Proposed Conditions*Type II 24-hr Type 2 - 50-Year Rainfall=5.49"*

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Hydrograph for Pond 500: 500

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.01	0.00	196,414	899.00	0.00	0.00	0.00
5.01	0.00	196,414	899.00	0.00	0.00	0.00
10.01	1.63	205,725	899.16	0.00	0.00	0.00
15.01	2.74	375,866	901.75	1.34	1.34	0.00
20.01	1.20	383,829	901.86	1.37	1.37	0.00
25.01	0.00	375,443	901.75	1.34	1.34	0.00
30.01	0.00	352,392	901.43	1.22	1.22	0.00
35.01	0.00	331,374	901.13	1.11	1.11	0.00
40.01	0.00	312,440	900.85	0.99	0.99	0.00
45.01	0.00	295,639	900.60	0.87	0.87	0.00
50.01	0.00	281,019	900.38	0.75	0.75	0.00
55.01	0.00	268,622	900.19	0.63	0.63	0.00
60.01	0.00	258,493	900.03	0.50	0.50	0.00
65.01	0.00	250,690	899.91	0.37	0.37	0.00
70.01	0.00	245,153	899.82	0.25	0.25	0.00
75.01	0.00	241,348	899.76	0.18	0.18	0.00
80.01	0.00	238,654	899.71	0.13	0.13	0.00
85.01	0.00	236,705	899.68	0.10	0.10	0.00
90.01	0.00	235,182	899.65	0.07	0.07	0.00
95.01	0.00	233,985	899.64	0.06	0.06	0.00
100.01	0.00	233,044	899.62	0.05	0.05	0.00
105.01	0.00	232,305	899.61	0.04	0.04	0.00
110.01	0.00	231,721	899.60	0.03	0.03	0.00
115.01	0.00	231,213	899.59	0.03	0.03	0.00

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Type II 24-hr Type 2 - 50-Year Rainfall=5.49"

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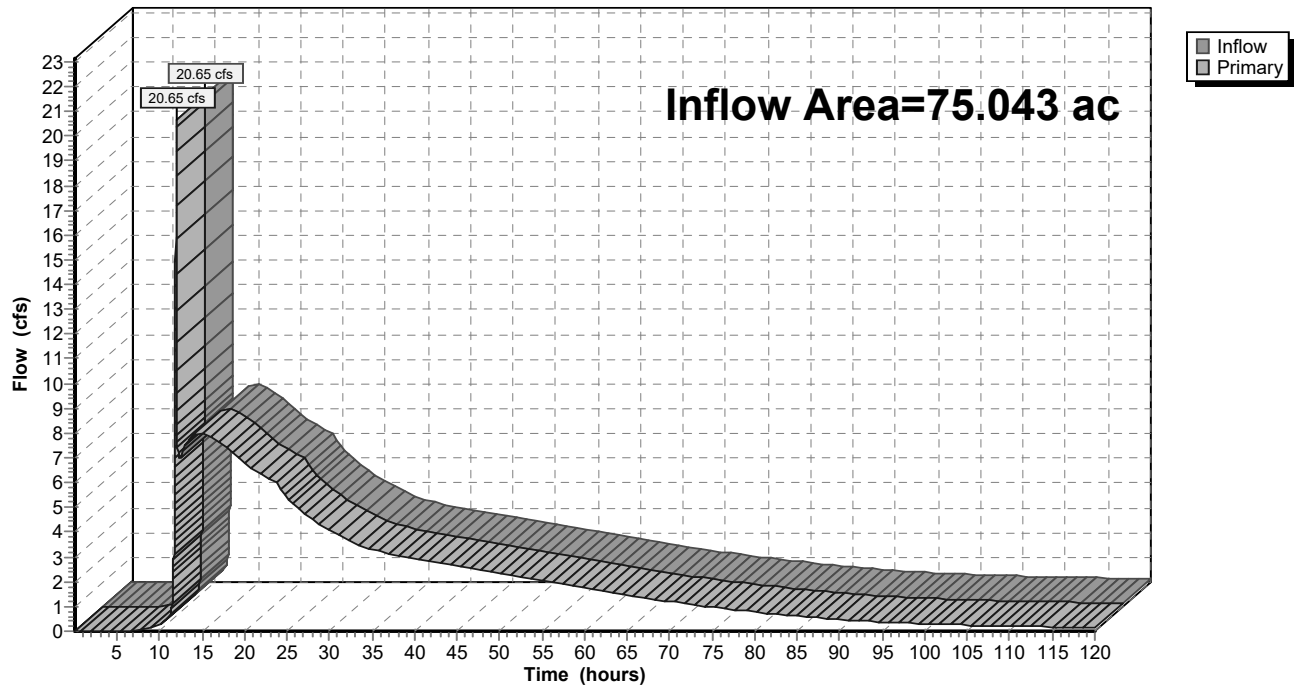
Summary for Link 1: OFFSITE

Inflow Area = 75.043 ac, 46.89% Impervious, Inflow Depth > 3.17" for Type 2 - 50-Year event
Inflow = 20.65 cfs @ 11.96 hrs, Volume= 19.796 af
Primary = 20.65 cfs @ 11.96 hrs, Volume= 19.796 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs

Link 1: OFFSITE

Hydrograph



Proposed Conditions

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Type II 24-hr Type 2 - 50-Year Rainfall=5.49"

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Hydrograph for Link 1: OFFSITE

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.01	0.00	0.00	0.00	104.01	0.25	0.00	0.25
2.01	0.00	0.00	0.00	106.01	0.23	0.00	0.23
4.01	0.00	0.00	0.00	108.01	0.22	0.00	0.22
6.01	0.01	0.00	0.01	110.01	0.20	0.00	0.20
8.01	0.06	0.00	0.06	112.01	0.19	0.00	0.19
10.01	0.22	0.00	0.22	114.01	0.18	0.00	0.18
12.01	17.18	0.00	17.18	116.01	0.17	0.00	0.17
14.01	7.95	0.00	7.95	118.01	0.16	0.00	0.16
16.01	7.86	0.00	7.86				
18.01	7.38	0.00	7.38				
20.01	6.80	0.00	6.80				
22.01	6.35	0.00	6.35				
24.01	5.99	0.00	5.99				
26.01	5.05	0.00	5.05				
28.01	4.48	0.00	4.48				
30.01	4.07	0.00	4.07				
32.01	3.71	0.00	3.71				
34.01	3.39	0.00	3.39				
36.01	3.21	0.00	3.21				
38.01	3.06	0.00	3.06				
40.01	2.93	0.00	2.93				
42.01	2.81	0.00	2.81				
44.01	2.69	0.00	2.69				
46.01	2.57	0.00	2.57				
48.01	2.46	0.00	2.46				
50.01	2.34	0.00	2.34				
52.01	2.23	0.00	2.23				
54.01	2.11	0.00	2.11				
56.01	2.00	0.00	2.00				
58.01	1.88	0.00	1.88				
60.01	1.77	0.00	1.77				
62.01	1.65	0.00	1.65				
64.01	1.53	0.00	1.53				
66.01	1.41	0.00	1.41				
68.01	1.30	0.00	1.30				
70.01	1.20	0.00	1.20				
72.01	1.10	0.00	1.10				
74.01	1.01	0.00	1.01				
76.01	0.93	0.00	0.93				
78.01	0.85	0.00	0.85				
80.01	0.77	0.00	0.77				
82.01	0.70	0.00	0.70				
84.01	0.64	0.00	0.64				
86.01	0.58	0.00	0.58				
88.01	0.52	0.00	0.52				
90.01	0.47	0.00	0.47				
92.01	0.43	0.00	0.43				
94.01	0.39	0.00	0.39				
96.01	0.36	0.00	0.36				
98.01	0.33	0.00	0.33				
100.01	0.30	0.00	0.30				
102.01	0.27	0.00	0.27				

Proposed Conditions*Type II 24-hr Type 2 - 100-Year Rainfall=6.34"*

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Time span=0.01-120.00 hrs, dt=0.01 hrs, 12000 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1A: 1A Runoff Area=110,816 sf 38.00% Impervious Runoff Depth=4.41"
Tc=5.0 min CN=83 Runoff=19.90 cfs 0.934 af

Subcatchment2A: 2A Runoff Area=6,401 sf 38.00% Impervious Runoff Depth=4.41"
Tc=5.0 min CN=83 Runoff=1.15 cfs 0.054 af

Subcatchment100A: 100A Runoff Area=1,074,428 sf 42.06% Impervious Runoff Depth=4.52"
Tc=5.0 min CN=84 Runoff=196.51 cfs 9.282 af

Subcatchment200A: 200A Runoff Area=225,239 sf 68.37% Impervious Runoff Depth=5.29"
Tc=5.0 min CN=91 Runoff=45.71 cfs 2.280 af

Subcatchment300A: 300A Runoff Area=260,648 sf 65.00% Impervious Runoff Depth=5.18"
Tc=5.0 min CN=90 Runoff=52.26 cfs 2.582 af

Subcatchment300B: 300B Runoff Area=552,525 sf 50.37% Impervious Runoff Depth=4.73"
Tc=5.0 min CN=86 Runoff=104.56 cfs 5.003 af

Subcatchment400A: 400A Runoff Area=257,377 sf 39.66% Impervious Runoff Depth=4.41"
Tc=5.0 min CN=83 Runoff=46.22 cfs 2.170 af

Subcatchment500A: 500A Runoff Area=781,453 sf 42.55% Impervious Runoff Depth=4.52"
Tc=5.0 min CN=84 Runoff=142.93 cfs 6.751 af

Pond 100: 100 Peak Elev=882.82' Storage=540,850 cf Inflow=196.51 cfs 9.282 af
Primary=1.66 cfs 8.138 af Secondary=0.00 cfs 0.000 af Outflow=1.66 cfs 8.138 af

Pond 200: 200 Peak Elev=877.69' Storage=138,507 cf Inflow=45.71 cfs 2.280 af
Primary=1.32 cfs 2.020 af Secondary=0.00 cfs 0.000 af Outflow=1.32 cfs 2.020 af

Pond 300: 300 Peak Elev=876.85' Storage=611,984 cf Inflow=157.31 cfs 9.310 af
Primary=6.15 cfs 7.605 af Secondary=0.00 cfs 0.000 af Outflow=6.15 cfs 7.605 af

Pond 400: 400 Peak Elev=878.71' Storage=196,219 cf Inflow=46.22 cfs 2.170 af
Primary=0.93 cfs 1.725 af Secondary=0.00 cfs 0.000 af Outflow=0.93 cfs 1.725 af

Pond 500: 500 Peak Elev=902.44' Storage=427,534 cf Inflow=142.93 cfs 6.751 af
Primary=1.55 cfs 5.944 af Secondary=0.00 cfs 0.000 af Outflow=1.55 cfs 5.944 af

Link 1: OFFSITE Inflow=24.87 cfs 24.696 af
Primary=24.87 cfs 24.696 af

Total Runoff Area = 75.043 ac Runoff Volume = 29.056 af Average Runoff Depth = 4.65"
53.11% Pervious = 39.854 ac 46.89% Impervious = 35.189 ac

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Type II 24-hr Type 2 - 100-Year Rainfall=6.34"

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Summary for Subcatchment 1A: 1A

Runoff = 19.90 cfs @ 11.96 hrs, Volume= 0.934 af, Depth= 4.41"
Routed to Link 1 : OFFSITE

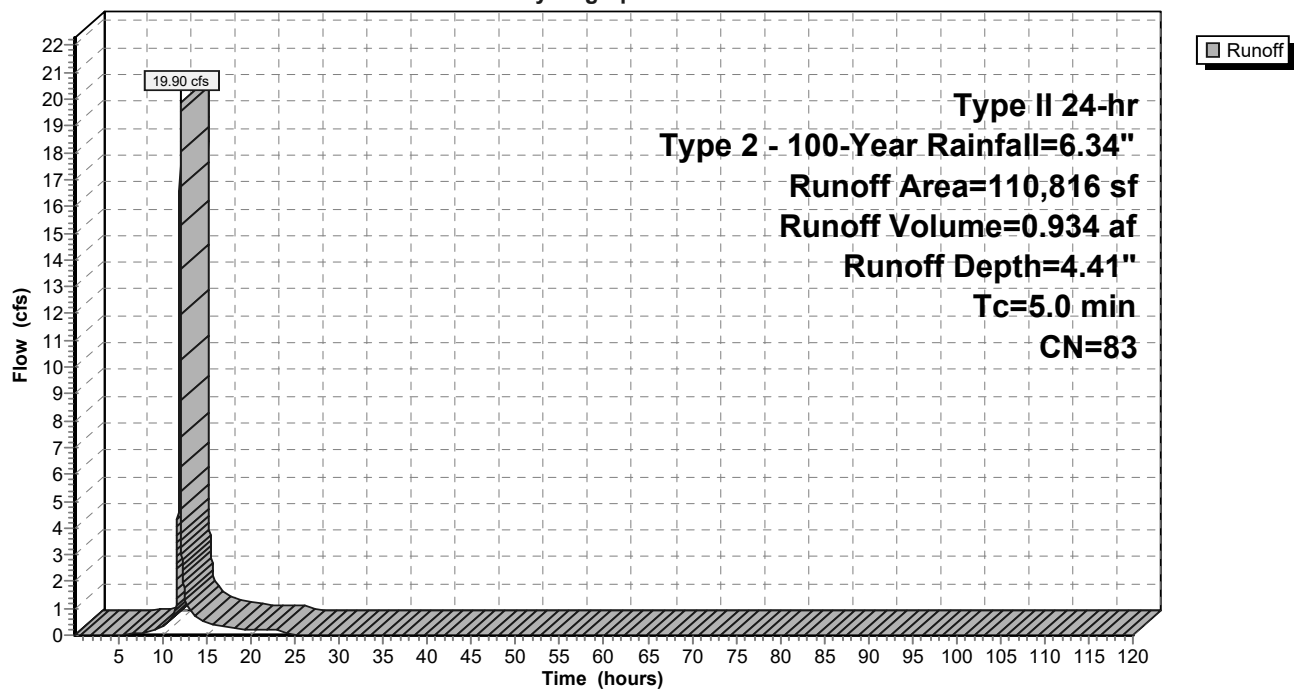
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs
Type II 24-hr Type 2 - 100-Year Rainfall=6.34"

Area (sf)	CN	Description
110,816	83	1/4 acre lots, 38% imp, HSG C
68,706		62.00% Pervious Area
42,110		38.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, Direct

Subcatchment 1A: 1A

Hydrograph



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Type II 24-hr Type 2 - 100-Year Rainfall=6.34"

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Hydrograph for Subcatchment 1A: 1A

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.01	0.00	0.00	0.00	104.01	6.34	4.41	0.00
2.01	0.14	0.00	0.00	106.01	6.34	4.41	0.00
4.01	0.31	0.00	0.00	108.01	6.34	4.41	0.00
6.01	0.51	0.00	0.02	110.01	6.34	4.41	0.00
8.01	0.76	0.05	0.09	112.01	6.34	4.41	0.00
10.01	1.15	0.20	0.29	114.01	6.34	4.41	0.00
12.01	4.22	2.47	15.28	116.01	6.34	4.41	0.00
14.01	5.20	3.36	0.57	118.01	6.34	4.41	0.00
16.01	5.58	3.70	0.35				
18.01	5.84	3.94	0.27				
20.01	6.04	4.13	0.20				
22.01	6.19	4.27	0.18				
24.01	6.34	4.41	0.17				
26.01	6.34	4.41	0.00				
28.01	6.34	4.41	0.00				
30.01	6.34	4.41	0.00				
32.01	6.34	4.41	0.00				
34.01	6.34	4.41	0.00				
36.01	6.34	4.41	0.00				
38.01	6.34	4.41	0.00				
40.01	6.34	4.41	0.00				
42.01	6.34	4.41	0.00				
44.01	6.34	4.41	0.00				
46.01	6.34	4.41	0.00				
48.01	6.34	4.41	0.00				
50.01	6.34	4.41	0.00				
52.01	6.34	4.41	0.00				
54.01	6.34	4.41	0.00				
56.01	6.34	4.41	0.00				
58.01	6.34	4.41	0.00				
60.01	6.34	4.41	0.00				
62.01	6.34	4.41	0.00				
64.01	6.34	4.41	0.00				
66.01	6.34	4.41	0.00				
68.01	6.34	4.41	0.00				
70.01	6.34	4.41	0.00				
72.01	6.34	4.41	0.00				
74.01	6.34	4.41	0.00				
76.01	6.34	4.41	0.00				
78.01	6.34	4.41	0.00				
80.01	6.34	4.41	0.00				
82.01	6.34	4.41	0.00				
84.01	6.34	4.41	0.00				
86.01	6.34	4.41	0.00				
88.01	6.34	4.41	0.00				
90.01	6.34	4.41	0.00				
92.01	6.34	4.41	0.00				
94.01	6.34	4.41	0.00				
96.01	6.34	4.41	0.00				
98.01	6.34	4.41	0.00				
100.01	6.34	4.41	0.00				
102.01	6.34	4.41	0.00				

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Type II 24-hr Type 2 - 100-Year Rainfall=6.34"

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Summary for Subcatchment 2A: 2A

Runoff = 1.15 cfs @ 11.96 hrs, Volume= 0.054 af, Depth= 4.41"
Routed to Link 1 : OFFSITE

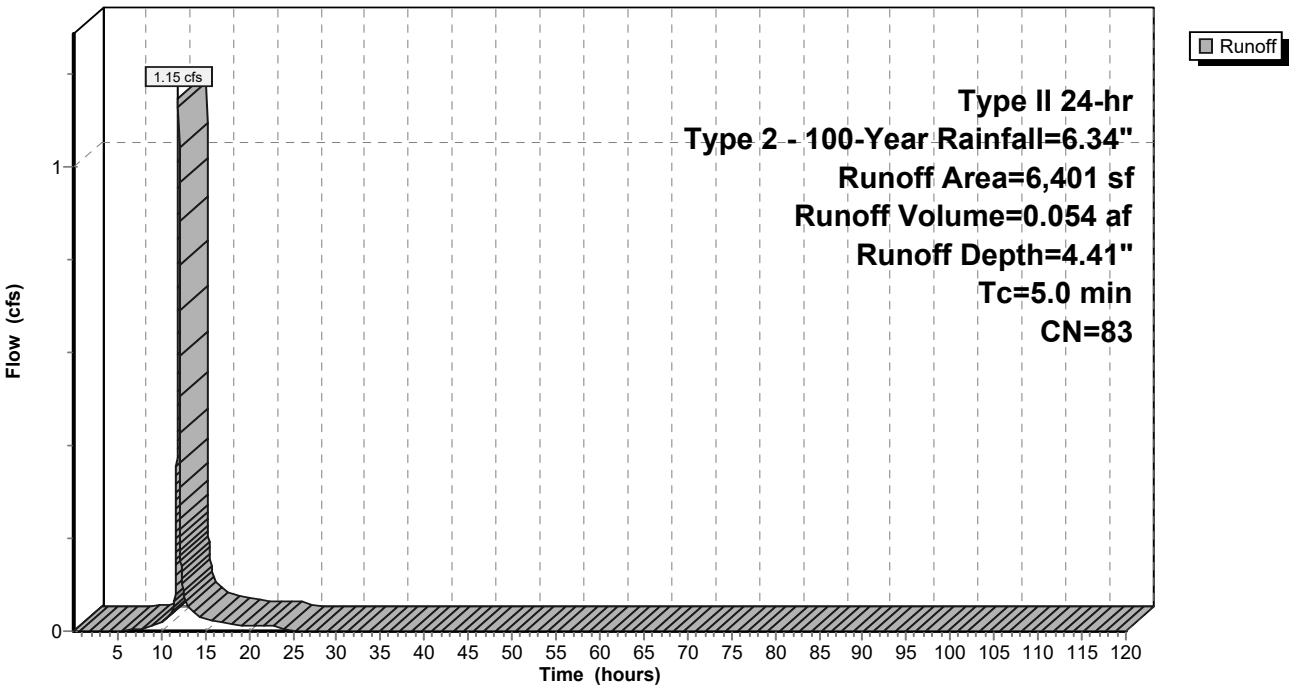
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs
Type II 24-hr Type 2 - 100-Year Rainfall=6.34"

Area (sf)	CN	Description
6,401	83	1/4 acre lots, 38% imp, HSG C
3,969		62.00% Pervious Area
2,432		38.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, Direct

Subcatchment 2A: 2A

Hydrograph



Proposed Conditions

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Type II 24-hr Type 2 - 100-Year Rainfall=6.34"

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Hydrograph for Subcatchment 2A: 2A

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.01	0.00	0.00	0.00	104.01	6.34	4.41	0.00
2.01	0.14	0.00	0.00	106.01	6.34	4.41	0.00
4.01	0.31	0.00	0.00	108.01	6.34	4.41	0.00
6.01	0.51	0.00	0.00	110.01	6.34	4.41	0.00
8.01	0.76	0.05	0.01	112.01	6.34	4.41	0.00
10.01	1.15	0.20	0.02	114.01	6.34	4.41	0.00
12.01	4.22	2.47	0.88	116.01	6.34	4.41	0.00
14.01	5.20	3.36	0.03	118.01	6.34	4.41	0.00
16.01	5.58	3.70	0.02				
18.01	5.84	3.94	0.02				
20.01	6.04	4.13	0.01				
22.01	6.19	4.27	0.01				
24.01	6.34	4.41	0.01				
26.01	6.34	4.41	0.00				
28.01	6.34	4.41	0.00				
30.01	6.34	4.41	0.00				
32.01	6.34	4.41	0.00				
34.01	6.34	4.41	0.00				
36.01	6.34	4.41	0.00				
38.01	6.34	4.41	0.00				
40.01	6.34	4.41	0.00				
42.01	6.34	4.41	0.00				
44.01	6.34	4.41	0.00				
46.01	6.34	4.41	0.00				
48.01	6.34	4.41	0.00				
50.01	6.34	4.41	0.00				
52.01	6.34	4.41	0.00				
54.01	6.34	4.41	0.00				
56.01	6.34	4.41	0.00				
58.01	6.34	4.41	0.00				
60.01	6.34	4.41	0.00				
62.01	6.34	4.41	0.00				
64.01	6.34	4.41	0.00				
66.01	6.34	4.41	0.00				
68.01	6.34	4.41	0.00				
70.01	6.34	4.41	0.00				
72.01	6.34	4.41	0.00				
74.01	6.34	4.41	0.00				
76.01	6.34	4.41	0.00				
78.01	6.34	4.41	0.00				
80.01	6.34	4.41	0.00				
82.01	6.34	4.41	0.00				
84.01	6.34	4.41	0.00				
86.01	6.34	4.41	0.00				
88.01	6.34	4.41	0.00				
90.01	6.34	4.41	0.00				
92.01	6.34	4.41	0.00				
94.01	6.34	4.41	0.00				
96.01	6.34	4.41	0.00				
98.01	6.34	4.41	0.00				
100.01	6.34	4.41	0.00				
102.01	6.34	4.41	0.00				

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Type II 24-hr Type 2 - 100-Year Rainfall=6.34"

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Summary for Subcatchment 100A: 100A

Runoff = 196.51 cfs @ 11.96 hrs, Volume= 9.282 af, Depth= 4.52"
Routed to Pond 100 : 100

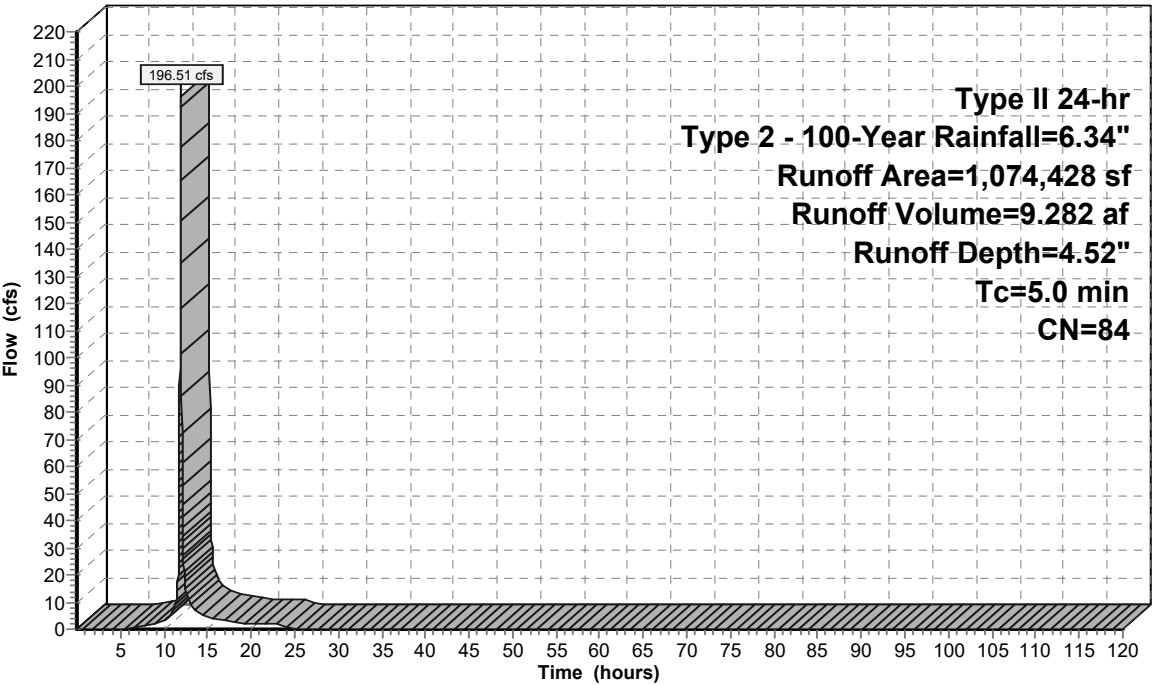
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs
Type II 24-hr Type 2 - 100-Year Rainfall=6.34"

Area (sf)	CN	Description
70,439	98	Water Surface, HSG C
1,003,989	83	1/4 acre lots, 38% imp, HSG C
1,074,428	84	Weighted Average
622,473		57.94% Pervious Area
451,955		42.06% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, Direct

Subcatchment 100A: 100A

Hydrograph



Runoff

Proposed Conditions

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Type II 24-hr Type 2 - 100-Year Rainfall=6.34"

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Hydrograph for Subcatchment 100A: 100A

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.01	0.00	0.00	0.00	104.01	6.34	4.52	0.00
2.01	0.14	0.00	0.00	106.01	6.34	4.52	0.00
4.01	0.31	0.00	0.00	108.01	6.34	4.52	0.00
6.01	0.51	0.01	0.32	110.01	6.34	4.52	0.00
8.01	0.76	0.06	1.03	112.01	6.34	4.52	0.00
10.01	1.15	0.22	2.98	114.01	6.34	4.52	0.00
12.01	4.22	2.56	150.59	116.01	6.34	4.52	0.00
14.01	5.20	3.45	5.56	118.01	6.34	4.52	0.00
16.01	5.58	3.81	3.43				
18.01	5.84	4.05	2.67				
20.01	6.04	4.23	1.94				
22.01	6.19	4.38	1.78				
24.01	6.34	4.52	1.64				
26.01	6.34	4.52	0.00				
28.01	6.34	4.52	0.00				
30.01	6.34	4.52	0.00				
32.01	6.34	4.52	0.00				
34.01	6.34	4.52	0.00				
36.01	6.34	4.52	0.00				
38.01	6.34	4.52	0.00				
40.01	6.34	4.52	0.00				
42.01	6.34	4.52	0.00				
44.01	6.34	4.52	0.00				
46.01	6.34	4.52	0.00				
48.01	6.34	4.52	0.00				
50.01	6.34	4.52	0.00				
52.01	6.34	4.52	0.00				
54.01	6.34	4.52	0.00				
56.01	6.34	4.52	0.00				
58.01	6.34	4.52	0.00				
60.01	6.34	4.52	0.00				
62.01	6.34	4.52	0.00				
64.01	6.34	4.52	0.00				
66.01	6.34	4.52	0.00				
68.01	6.34	4.52	0.00				
70.01	6.34	4.52	0.00				
72.01	6.34	4.52	0.00				
74.01	6.34	4.52	0.00				
76.01	6.34	4.52	0.00				
78.01	6.34	4.52	0.00				
80.01	6.34	4.52	0.00				
82.01	6.34	4.52	0.00				
84.01	6.34	4.52	0.00				
86.01	6.34	4.52	0.00				
88.01	6.34	4.52	0.00				
90.01	6.34	4.52	0.00				
92.01	6.34	4.52	0.00				
94.01	6.34	4.52	0.00				
96.01	6.34	4.52	0.00				
98.01	6.34	4.52	0.00				
100.01	6.34	4.52	0.00				
102.01	6.34	4.52	0.00				

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Type II 24-hr Type 2 - 100-Year Rainfall=6.34"

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Summary for Subcatchment 200A: 200A

Runoff = 45.71 cfs @ 11.96 hrs, Volume= 2.280 af, Depth= 5.29"
Routed to Pond 200 : 200

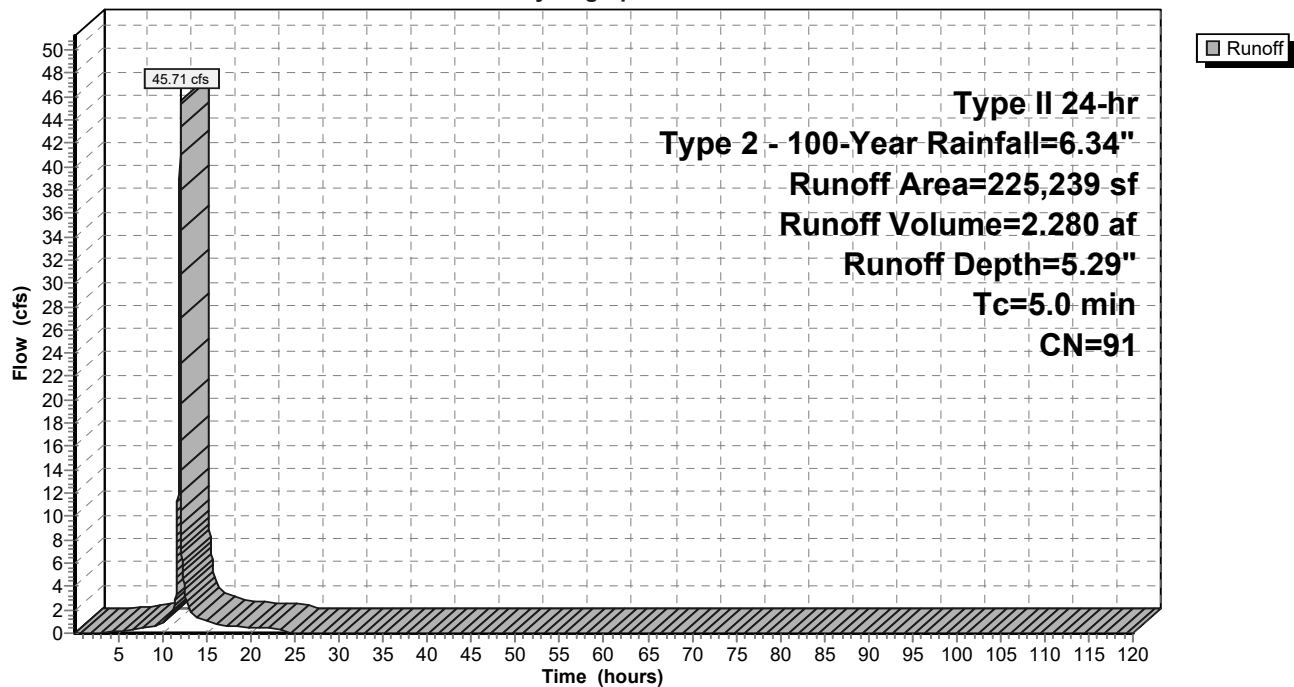
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs
Type II 24-hr Type 2 - 100-Year Rainfall=6.34"

Area (sf)	CN	Description
21,699	98	Water Surface, HSG C
203,540	90	1/8 acre lots, 65% imp, HSG C
225,239	91	Weighted Average
71,239		31.63% Pervious Area
154,000		68.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, Direct

Subcatchment 200A: 200A

Hydrograph



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Type II 24-hr Type 2 - 100-Year Rainfall=6.34"

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Hydrograph for Subcatchment 200A: 200A

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.01	0.00	0.00	0.00	104.01	6.34	5.29	0.00
2.01	0.14	0.00	0.00	106.01	6.34	5.29	0.00
4.01	0.31	0.01	0.08	108.01	6.34	5.29	0.00
6.01	0.51	0.07	0.24	110.01	6.34	5.29	0.00
8.01	0.76	0.21	0.43	112.01	6.34	5.29	0.00
10.01	1.15	0.47	0.95	114.01	6.34	5.29	0.00
12.01	4.22	3.22	34.56	116.01	6.34	5.29	0.00
14.01	5.20	4.18	1.23	118.01	6.34	5.29	0.00
16.01	5.58	4.55	0.76				
18.01	5.84	4.80	0.59				
20.01	6.04	4.99	0.43				
22.01	6.19	5.15	0.39				
24.01	6.34	5.29	0.36				
26.01	6.34	5.29	0.00				
28.01	6.34	5.29	0.00				
30.01	6.34	5.29	0.00				
32.01	6.34	5.29	0.00				
34.01	6.34	5.29	0.00				
36.01	6.34	5.29	0.00				
38.01	6.34	5.29	0.00				
40.01	6.34	5.29	0.00				
42.01	6.34	5.29	0.00				
44.01	6.34	5.29	0.00				
46.01	6.34	5.29	0.00				
48.01	6.34	5.29	0.00				
50.01	6.34	5.29	0.00				
52.01	6.34	5.29	0.00				
54.01	6.34	5.29	0.00				
56.01	6.34	5.29	0.00				
58.01	6.34	5.29	0.00				
60.01	6.34	5.29	0.00				
62.01	6.34	5.29	0.00				
64.01	6.34	5.29	0.00				
66.01	6.34	5.29	0.00				
68.01	6.34	5.29	0.00				
70.01	6.34	5.29	0.00				
72.01	6.34	5.29	0.00				
74.01	6.34	5.29	0.00				
76.01	6.34	5.29	0.00				
78.01	6.34	5.29	0.00				
80.01	6.34	5.29	0.00				
82.01	6.34	5.29	0.00				
84.01	6.34	5.29	0.00				
86.01	6.34	5.29	0.00				
88.01	6.34	5.29	0.00				
90.01	6.34	5.29	0.00				
92.01	6.34	5.29	0.00				
94.01	6.34	5.29	0.00				
96.01	6.34	5.29	0.00				
98.01	6.34	5.29	0.00				
100.01	6.34	5.29	0.00				
102.01	6.34	5.29	0.00				

Proposed Conditions

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Type II 24-hr Type 2 - 100-Year Rainfall=6.34"

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Summary for Subcatchment 300A: 300A

Runoff = 52.26 cfs @ 11.96 hrs, Volume= 2.582 af, Depth= 5.18"
Routed to Pond 300 : 300

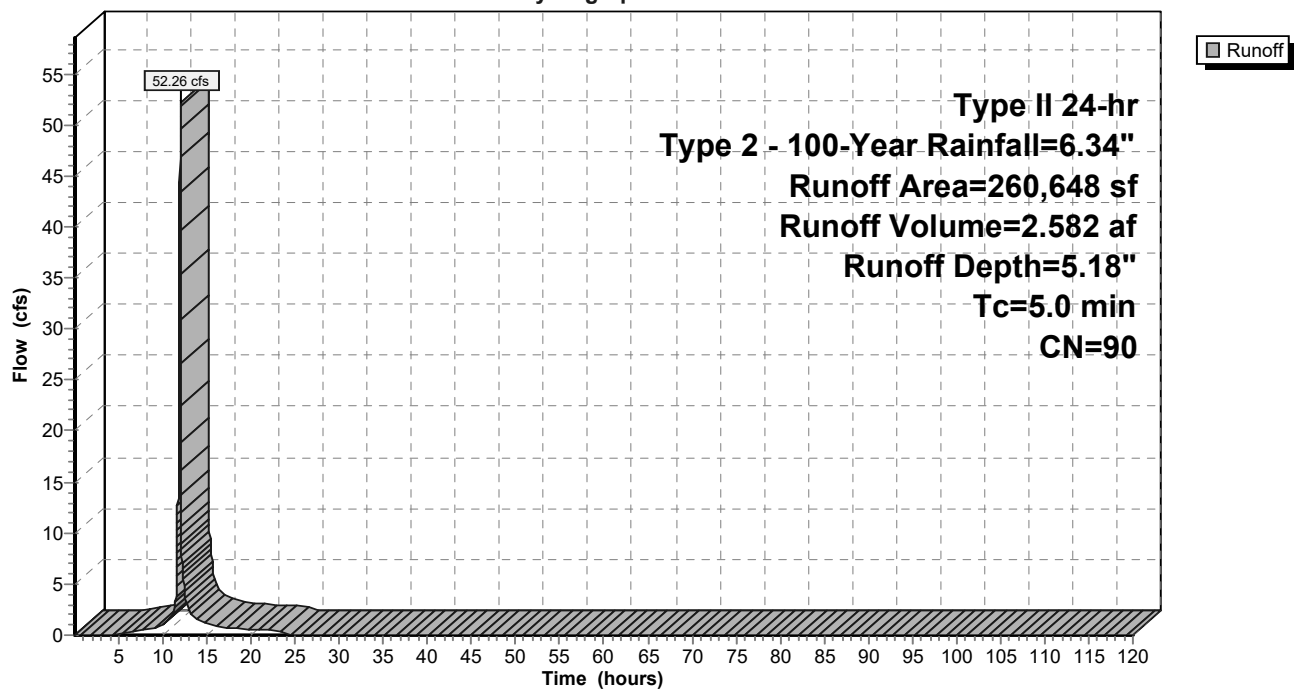
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs
Type II 24-hr Type 2 - 100-Year Rainfall=6.34"

Area (sf)	CN	Description
260,648	90	1/8 acre lots, 65% imp, HSG C
91,227		35.00% Pervious Area
169,421		65.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, Direct

Subcatchment 300A: 300A

Hydrograph



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Type II 24-hr Type 2 - 100-Year Rainfall=6.34"

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Hydrograph for Subcatchment 300A: 300A

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.01	0.00	0.00	0.00	104.01	6.34	5.18	0.00
2.01	0.14	0.00	0.00	106.01	6.34	5.18	0.00
4.01	0.31	0.01	0.07	108.01	6.34	5.18	0.00
6.01	0.51	0.06	0.25	110.01	6.34	5.18	0.00
8.01	0.76	0.18	0.45	112.01	6.34	5.18	0.00
10.01	1.15	0.42	1.04	114.01	6.34	5.18	0.00
12.01	4.22	3.12	39.58	116.01	6.34	5.18	0.00
14.01	5.20	4.07	1.42	118.01	6.34	5.18	0.00
16.01	5.58	4.44	0.87				
18.01	5.84	4.69	0.68				
20.01	6.04	4.88	0.49				
22.01	6.19	5.04	0.45				
24.01	6.34	5.18	0.41				
26.01	6.34	5.18	0.00				
28.01	6.34	5.18	0.00				
30.01	6.34	5.18	0.00				
32.01	6.34	5.18	0.00				
34.01	6.34	5.18	0.00				
36.01	6.34	5.18	0.00				
38.01	6.34	5.18	0.00				
40.01	6.34	5.18	0.00				
42.01	6.34	5.18	0.00				
44.01	6.34	5.18	0.00				
46.01	6.34	5.18	0.00				
48.01	6.34	5.18	0.00				
50.01	6.34	5.18	0.00				
52.01	6.34	5.18	0.00				
54.01	6.34	5.18	0.00				
56.01	6.34	5.18	0.00				
58.01	6.34	5.18	0.00				
60.01	6.34	5.18	0.00				
62.01	6.34	5.18	0.00				
64.01	6.34	5.18	0.00				
66.01	6.34	5.18	0.00				
68.01	6.34	5.18	0.00				
70.01	6.34	5.18	0.00				
72.01	6.34	5.18	0.00				
74.01	6.34	5.18	0.00				
76.01	6.34	5.18	0.00				
78.01	6.34	5.18	0.00				
80.01	6.34	5.18	0.00				
82.01	6.34	5.18	0.00				
84.01	6.34	5.18	0.00				
86.01	6.34	5.18	0.00				
88.01	6.34	5.18	0.00				
90.01	6.34	5.18	0.00				
92.01	6.34	5.18	0.00				
94.01	6.34	5.18	0.00				
96.01	6.34	5.18	0.00				
98.01	6.34	5.18	0.00				
100.01	6.34	5.18	0.00				
102.01	6.34	5.18	0.00				

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Type II 24-hr Type 2 - 100-Year Rainfall=6.34"

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Summary for Subcatchment 300B: 300B

Runoff = 104.56 cfs @ 11.96 hrs, Volume= 5.003 af, Depth= 4.73"
Routed to Pond 300 : 300

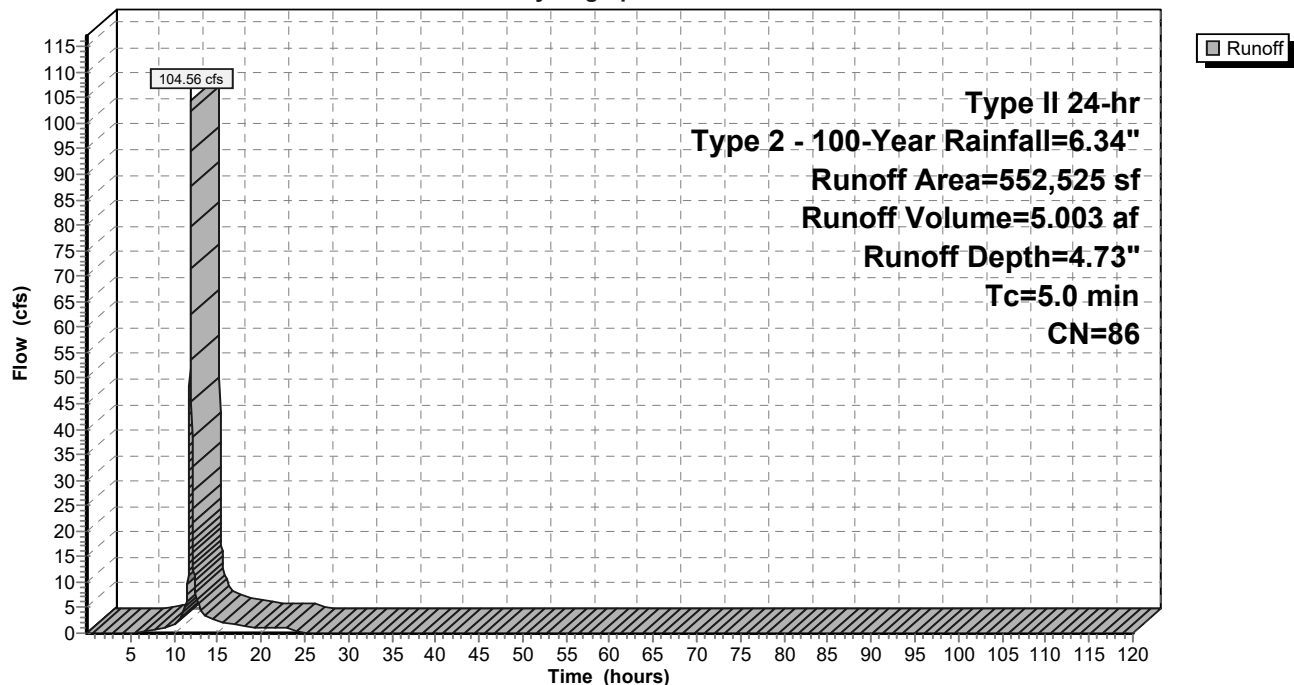
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs
Type II 24-hr Type 2 - 100-Year Rainfall=6.34"

Area (sf)	CN	Description
442,263	83	1/4 acre lots, 38% imp, HSG C
110,262	98	Water Surface, HSG C
552,525	86	Weighted Average
274,203		49.63% Pervious Area
278,322		50.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, Direct

Subcatchment 300B: 300B

Hydrograph



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Type II 24-hr Type 2 - 100-Year Rainfall=6.34"

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Hydrograph for Subcatchment 300B: 300B

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.01	0.00	0.00	0.00	104.01	6.34	4.73	0.00
2.01	0.14	0.00	0.00	106.01	6.34	4.73	0.00
4.01	0.31	0.00	0.00	108.01	6.34	4.73	0.00
6.01	0.51	0.02	0.27	110.01	6.34	4.73	0.00
8.01	0.76	0.09	0.66	112.01	6.34	4.73	0.00
10.01	1.15	0.28	1.74	114.01	6.34	4.73	0.00
12.01	4.22	2.74	79.79	116.01	6.34	4.73	0.00
14.01	5.20	3.66	2.91	118.01	6.34	4.73	0.00
16.01	5.58	4.01	1.80				
18.01	5.84	4.26	1.40				
20.01	6.04	4.44	1.02				
22.01	6.19	4.59	0.93				
24.01	6.34	4.73	0.85				
26.01	6.34	4.73	0.00				
28.01	6.34	4.73	0.00				
30.01	6.34	4.73	0.00				
32.01	6.34	4.73	0.00				
34.01	6.34	4.73	0.00				
36.01	6.34	4.73	0.00				
38.01	6.34	4.73	0.00				
40.01	6.34	4.73	0.00				
42.01	6.34	4.73	0.00				
44.01	6.34	4.73	0.00				
46.01	6.34	4.73	0.00				
48.01	6.34	4.73	0.00				
50.01	6.34	4.73	0.00				
52.01	6.34	4.73	0.00				
54.01	6.34	4.73	0.00				
56.01	6.34	4.73	0.00				
58.01	6.34	4.73	0.00				
60.01	6.34	4.73	0.00				
62.01	6.34	4.73	0.00				
64.01	6.34	4.73	0.00				
66.01	6.34	4.73	0.00				
68.01	6.34	4.73	0.00				
70.01	6.34	4.73	0.00				
72.01	6.34	4.73	0.00				
74.01	6.34	4.73	0.00				
76.01	6.34	4.73	0.00				
78.01	6.34	4.73	0.00				
80.01	6.34	4.73	0.00				
82.01	6.34	4.73	0.00				
84.01	6.34	4.73	0.00				
86.01	6.34	4.73	0.00				
88.01	6.34	4.73	0.00				
90.01	6.34	4.73	0.00				
92.01	6.34	4.73	0.00				
94.01	6.34	4.73	0.00				
96.01	6.34	4.73	0.00				
98.01	6.34	4.73	0.00				
100.01	6.34	4.73	0.00				
102.01	6.34	4.73	0.00				

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Type II 24-hr Type 2 - 100-Year Rainfall=6.34"

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Summary for Subcatchment 400A: 400A

Runoff = 46.22 cfs @ 11.96 hrs, Volume= 2.170 af, Depth= 4.41"
Routed to Pond 400 : 400

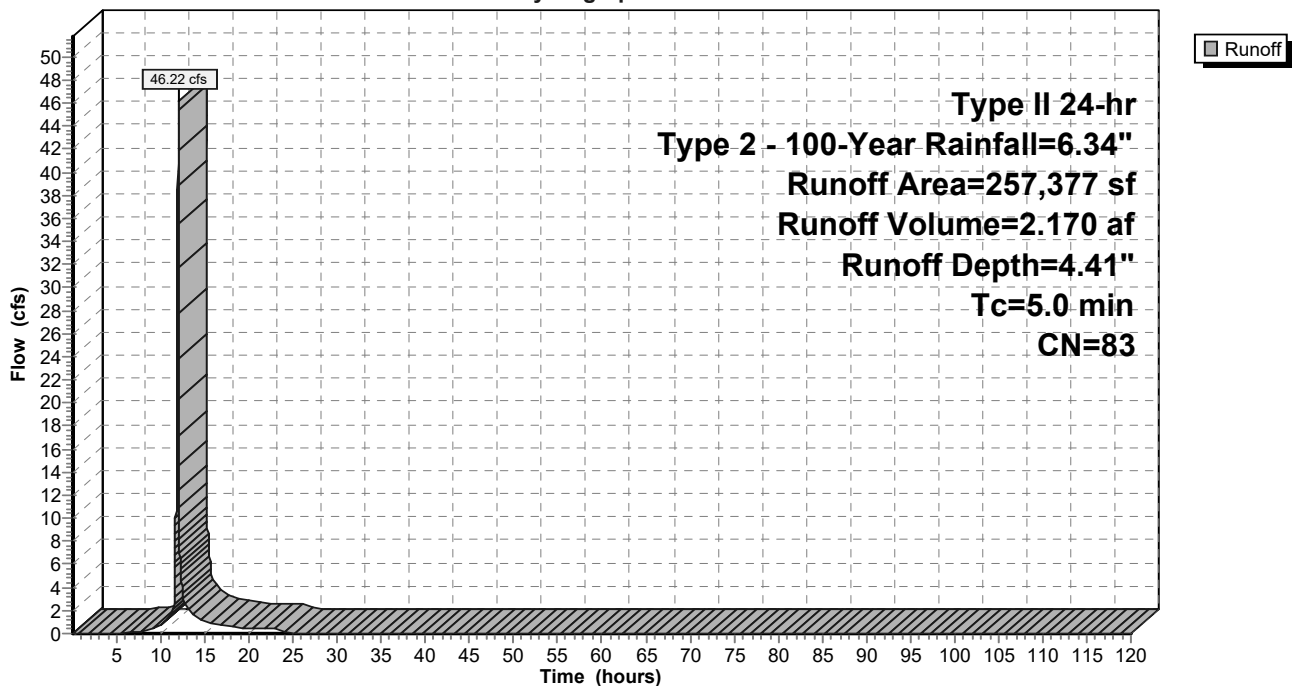
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs
Type II 24-hr Type 2 - 100-Year Rainfall=6.34"

Area (sf)	CN	Description
47,305	70	Woods, Good, HSG C
35,903	98	Water Surface, HSG C
174,169	83	1/4 acre lots, 38% imp, HSG C
257,377	83	Weighted Average
155,290		60.34% Pervious Area
102,087		39.66% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, Direct

Subcatchment 400A: 400A

Hydrograph



Proposed Conditions

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Type II 24-hr Type 2 - 100-Year Rainfall=6.34"

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Hydrograph for Subcatchment 400A: 400A

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.01	0.00	0.00	0.00	104.01	6.34	4.41	0.00
2.01	0.14	0.00	0.00	106.01	6.34	4.41	0.00
4.01	0.31	0.00	0.00	108.01	6.34	4.41	0.00
6.01	0.51	0.00	0.06	110.01	6.34	4.41	0.00
8.01	0.76	0.05	0.22	112.01	6.34	4.41	0.00
10.01	1.15	0.20	0.67	114.01	6.34	4.41	0.00
12.01	4.22	2.47	35.50	116.01	6.34	4.41	0.00
14.01	5.20	3.36	1.32	118.01	6.34	4.41	0.00
16.01	5.58	3.70	0.81				
18.01	5.84	3.94	0.63				
20.01	6.04	4.13	0.46				
22.01	6.19	4.27	0.42				
24.01	6.34	4.41	0.39				
26.01	6.34	4.41	0.00				
28.01	6.34	4.41	0.00				
30.01	6.34	4.41	0.00				
32.01	6.34	4.41	0.00				
34.01	6.34	4.41	0.00				
36.01	6.34	4.41	0.00				
38.01	6.34	4.41	0.00				
40.01	6.34	4.41	0.00				
42.01	6.34	4.41	0.00				
44.01	6.34	4.41	0.00				
46.01	6.34	4.41	0.00				
48.01	6.34	4.41	0.00				
50.01	6.34	4.41	0.00				
52.01	6.34	4.41	0.00				
54.01	6.34	4.41	0.00				
56.01	6.34	4.41	0.00				
58.01	6.34	4.41	0.00				
60.01	6.34	4.41	0.00				
62.01	6.34	4.41	0.00				
64.01	6.34	4.41	0.00				
66.01	6.34	4.41	0.00				
68.01	6.34	4.41	0.00				
70.01	6.34	4.41	0.00				
72.01	6.34	4.41	0.00				
74.01	6.34	4.41	0.00				
76.01	6.34	4.41	0.00				
78.01	6.34	4.41	0.00				
80.01	6.34	4.41	0.00				
82.01	6.34	4.41	0.00				
84.01	6.34	4.41	0.00				
86.01	6.34	4.41	0.00				
88.01	6.34	4.41	0.00				
90.01	6.34	4.41	0.00				
92.01	6.34	4.41	0.00				
94.01	6.34	4.41	0.00				
96.01	6.34	4.41	0.00				
98.01	6.34	4.41	0.00				
100.01	6.34	4.41	0.00				
102.01	6.34	4.41	0.00				

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Type II 24-hr Type 2 - 100-Year Rainfall=6.34"

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Summary for Subcatchment 500A: 500A

Runoff = 142.93 cfs @ 11.96 hrs, Volume= 6.751 af, Depth= 4.52"
Routed to Pond 500 : 500

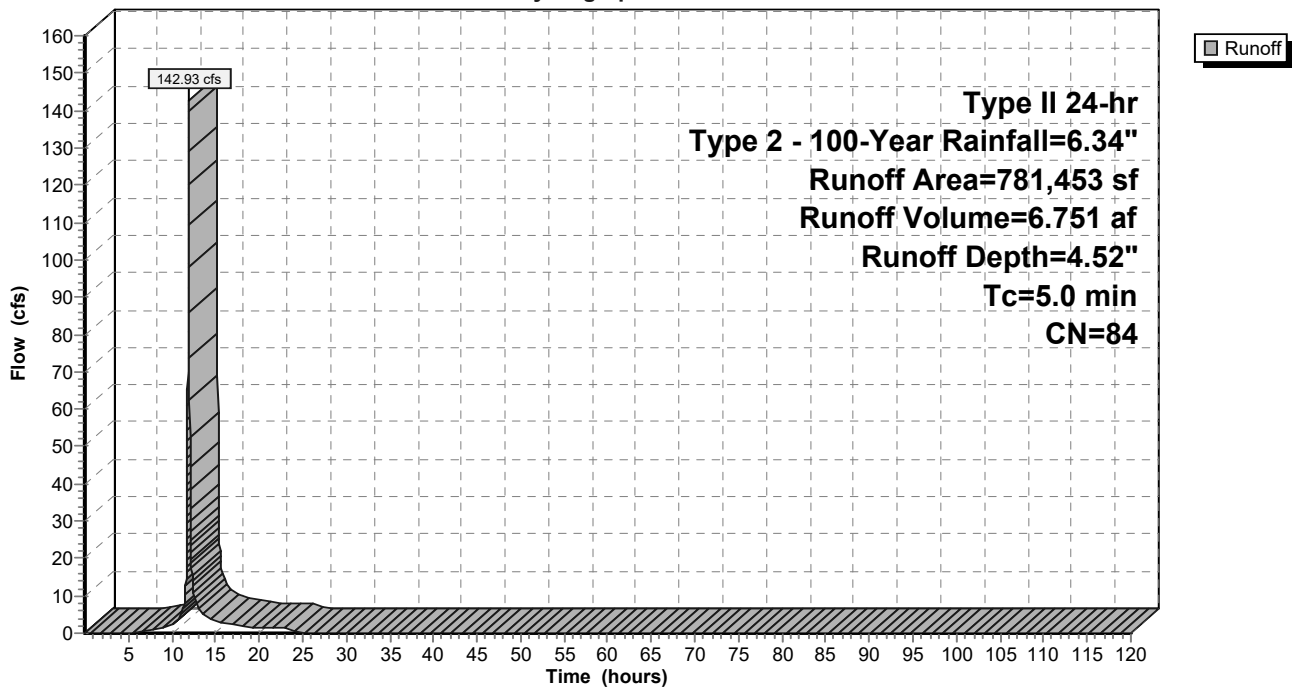
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs
Type II 24-hr Type 2 - 100-Year Rainfall=6.34"

Area (sf)	CN	Description
57,355	98	Water Surface, HSG C
724,098	83	1/4 acre lots, 38% imp, HSG C
781,453	84	Weighted Average
448,941		57.45% Pervious Area
332,512		42.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, Direct

Subcatchment 500A: 500A

Hydrograph



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Type II 24-hr Type 2 - 100-Year Rainfall=6.34"

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Hydrograph for Subcatchment 500A: 500A

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.01	0.00	0.00	0.00	104.01	6.34	4.52	0.00
2.01	0.14	0.00	0.00	106.01	6.34	4.52	0.00
4.01	0.31	0.00	0.00	108.01	6.34	4.52	0.00
6.01	0.51	0.01	0.23	110.01	6.34	4.52	0.00
8.01	0.76	0.06	0.75	112.01	6.34	4.52	0.00
10.01	1.15	0.22	2.17	114.01	6.34	4.52	0.00
12.01	4.22	2.56	109.53	116.01	6.34	4.52	0.00
14.01	5.20	3.45	4.04	118.01	6.34	4.52	0.00
16.01	5.58	3.81	2.50				
18.01	5.84	4.05	1.94				
20.01	6.04	4.23	1.41				
22.01	6.19	4.38	1.30				
24.01	6.34	4.52	1.19				
26.01	6.34	4.52	0.00				
28.01	6.34	4.52	0.00				
30.01	6.34	4.52	0.00				
32.01	6.34	4.52	0.00				
34.01	6.34	4.52	0.00				
36.01	6.34	4.52	0.00				
38.01	6.34	4.52	0.00				
40.01	6.34	4.52	0.00				
42.01	6.34	4.52	0.00				
44.01	6.34	4.52	0.00				
46.01	6.34	4.52	0.00				
48.01	6.34	4.52	0.00				
50.01	6.34	4.52	0.00				
52.01	6.34	4.52	0.00				
54.01	6.34	4.52	0.00				
56.01	6.34	4.52	0.00				
58.01	6.34	4.52	0.00				
60.01	6.34	4.52	0.00				
62.01	6.34	4.52	0.00				
64.01	6.34	4.52	0.00				
66.01	6.34	4.52	0.00				
68.01	6.34	4.52	0.00				
70.01	6.34	4.52	0.00				
72.01	6.34	4.52	0.00				
74.01	6.34	4.52	0.00				
76.01	6.34	4.52	0.00				
78.01	6.34	4.52	0.00				
80.01	6.34	4.52	0.00				
82.01	6.34	4.52	0.00				
84.01	6.34	4.52	0.00				
86.01	6.34	4.52	0.00				
88.01	6.34	4.52	0.00				
90.01	6.34	4.52	0.00				
92.01	6.34	4.52	0.00				
94.01	6.34	4.52	0.00				
96.01	6.34	4.52	0.00				
98.01	6.34	4.52	0.00				
100.01	6.34	4.52	0.00				
102.01	6.34	4.52	0.00				

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Type II 24-hr Type 2 - 100-Year Rainfall=6.34"

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Summary for Pond 100: 100

Inflow Area = 24.665 ac, 42.06% Impervious, Inflow Depth = 4.52" for Type 2 - 100-Year event
 Inflow = 196.51 cfs @ 11.96 hrs, Volume= 9.282 af
 Outflow = 1.66 cfs @ 23.75 hrs, Volume= 8.138 af, Atten= 99%, Lag= 707.4 min
 Primary = 1.66 cfs @ 23.75 hrs, Volume= 8.138 af
 Routed to Link 1 : OFFSITE
 Secondary = 0.00 cfs @ 0.01 hrs, Volume= 0.000 af
 Routed to Link 1 : OFFSITE

Routing by Stor-Ind method, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs

Starting Elev= 879.00' Surf.Area= 70,439 sf Storage= 207,488 cf

Peak Elev= 882.82' @ 23.75 hrs Surf.Area= 104,345 sf Storage= 540,850 cf (333,363 cf above start)

Plug-Flow detention time= 3,702.7 min calculated for 3.375 af (36% of inflow)

Center-of-Mass det. time= 2,078.1 min (2,875.5 - 797.4)

Volume	Invert	Avail.Storage	Storage Description
#1	874.00'	670,255 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
874.00	24,774	0	0
875.00	30,784	27,779	27,779
876.00	36,863	33,824	61,603
877.00	43,009	39,936	101,539
878.00	49,225	46,117	147,656
879.00	70,439	59,832	207,488
880.00	79,139	74,789	282,277
881.00	87,959	83,549	365,826
882.00	96,903	92,431	458,257
883.00	105,969	101,436	559,693
884.00	115,156	110,563	670,255

Device	Routing	Invert	Outlet Devices
#1	Primary	879.00'	24.0" Round RCP_Round 24" L= 70.0' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 879.00' / 878.00' S= 0.0143 '/' Cc= 0.900 n= 0.011 Concrete pipe, finished, Flow Area= 3.14 sf
#2	Device 1	879.50'	6.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Secondary	883.00'	25.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=1.66 cfs @ 23.75 hrs HW=882.82' (Free Discharge)↑ **1=RCP_Round 24"** (Passes 1.66 cfs of 22.42 cfs potential flow)↑ **2=Orifice/Grate** (Orifice Controls 1.66 cfs @ 8.44 fps)**Secondary OutFlow** Max=0.00 cfs @ 0.01 hrs HW=879.00' (Free Discharge)↑ **3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Proposed Conditions

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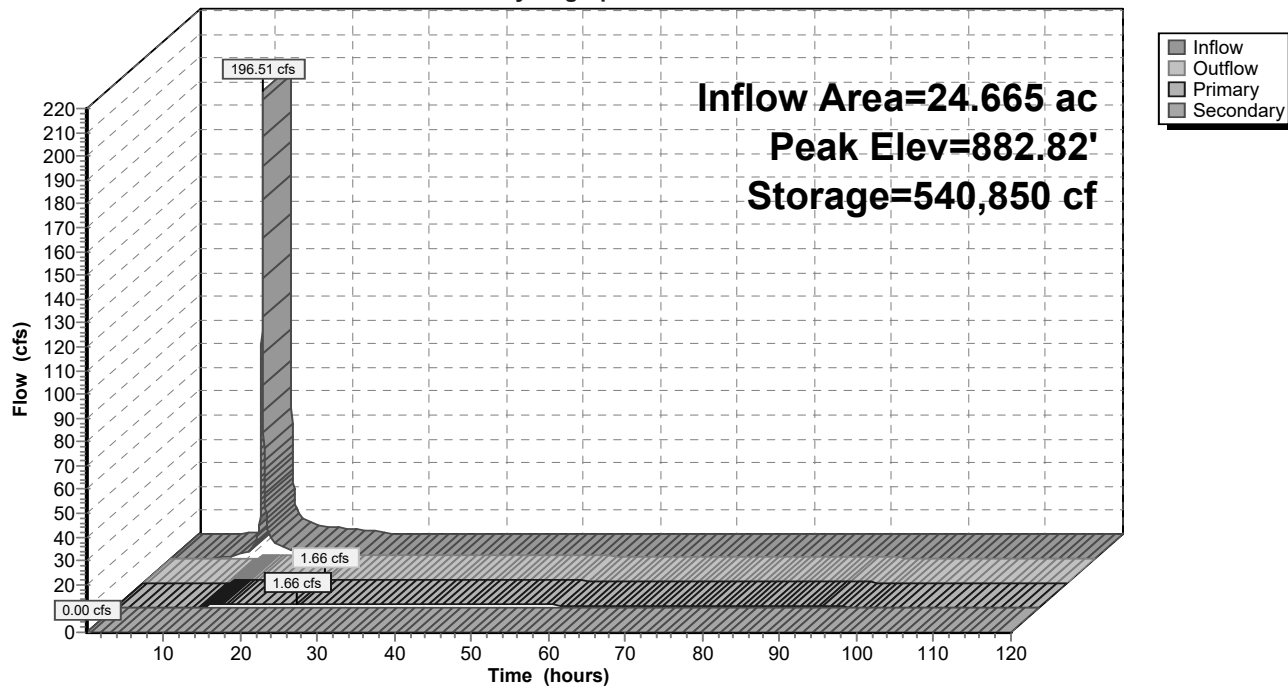
Type II 24-hr Type 2 - 100-Year Rainfall=6.34"

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Pond 100: 100

Hydrograph



Proposed Conditions*Type II 24-hr Type 2 - 100-Year Rainfall=6.34"*

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Hydrograph for Pond 100: 100

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.01	0.00	207,488	879.00	0.00	0.00	0.00
5.01	0.03	207,495	879.00	0.00	0.00	0.00
10.01	2.98	226,453	879.26	0.00	0.00	0.00
15.01	4.44	515,723	882.58	1.59	1.59	0.00
20.01	1.94	539,027	882.80	1.65	1.65	0.00
25.01	0.00	535,305	882.77	1.64	1.64	0.00
30.01	0.00	506,448	882.49	1.56	1.56	0.00
35.01	0.00	479,020	882.21	1.48	1.48	0.00
40.01	0.00	453,057	881.95	1.40	1.40	0.00
45.01	0.00	428,596	881.69	1.32	1.32	0.00
50.01	0.00	405,674	881.44	1.23	1.23	0.00
55.01	0.00	384,328	881.21	1.14	1.14	0.00
60.01	0.00	364,593	880.99	1.05	1.05	0.00
65.01	0.00	346,507	880.78	0.96	0.96	0.00
70.01	0.00	330,106	880.59	0.86	0.86	0.00
75.01	0.00	315,424	880.41	0.77	0.77	0.00
80.01	0.00	302,492	880.25	0.67	0.67	0.00
85.01	0.00	291,345	880.11	0.57	0.57	0.00
90.01	0.00	282,006	880.00	0.47	0.47	0.00
95.01	0.00	274,544	879.90	0.36	0.36	0.00
100.01	0.00	268,890	879.83	0.27	0.27	0.00
105.01	0.00	264,721	879.78	0.20	0.20	0.00
110.01	0.00	261,569	879.73	0.15	0.15	0.00
115.01	0.00	259,176	879.70	0.12	0.12	0.00

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Type II 24-hr Type 2 - 100-Year Rainfall=6.34"

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Summary for Pond 200: 200

Inflow Area = 5.171 ac, 68.37% Impervious, Inflow Depth = 5.29" for Type 2 - 100-Year event
 Inflow = 45.71 cfs @ 11.96 hrs, Volume= 2.280 af
 Outflow = 1.32 cfs @ 13.88 hrs, Volume= 2.020 af, Atten= 97%, Lag= 115.3 min
 Primary = 1.32 cfs @ 13.88 hrs, Volume= 2.020 af
 Routed to Link 1 : OFFSITE
 Secondary = 0.00 cfs @ 0.01 hrs, Volume= 0.000 af
 Routed to Link 1 : OFFSITE

Routing by Stor-Ind method, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs

Starting Elev= 875.00' Surf.Area= 21,699 sf Storage= 70,918 cf

Peak Elev= 877.69' @ 13.88 hrs Surf.Area= 28,660 sf Storage= 138,507 cf (67,590 cf above start)

Plug-Flow detention time= 1,824.9 min calculated for 0.392 af (17% of inflow)

Center-of-Mass det. time= 649.3 min (1,424.3 - 775.0)

Volume	Invert	Avail.Storage	Storage Description
#1	870.00'	177,226 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
870.00	10,192	0	0
871.00	11,543	10,868	10,868
872.00	12,964	12,254	23,121
873.00	14,453	13,709	36,830
874.00	16,012	15,233	52,062
875.00	21,699	18,856	70,918
876.00	24,181	22,940	93,858
877.00	26,780	25,481	119,338
878.00	29,498	28,139	147,477
879.00	30,000	29,749	177,226

Device	Routing	Invert	Outlet Devices
#1	Primary	875.00'	12.0" Round RCP_Round 12" L= 70.0' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 875.00' / 874.00' S= 0.0143 '/' Cc= 0.900 n= 0.011 Concrete pipe, finished, Flow Area= 0.79 sf
#2	Device 1	875.50'	6.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	878.00'	60.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#4	Secondary	878.00'	25.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

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Type II 24-hr Type 2 - 100-Year Rainfall=6.34"

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Primary OutFlow Max=1.32 cfs @ 13.88 hrs HW=877.69' (Free Discharge)

1=RCP_Round 12" (Passes 1.32 cfs of 4.94 cfs potential flow)

2=Orifice/Grate (Orifice Controls 1.32 cfs @ 6.71 fps)

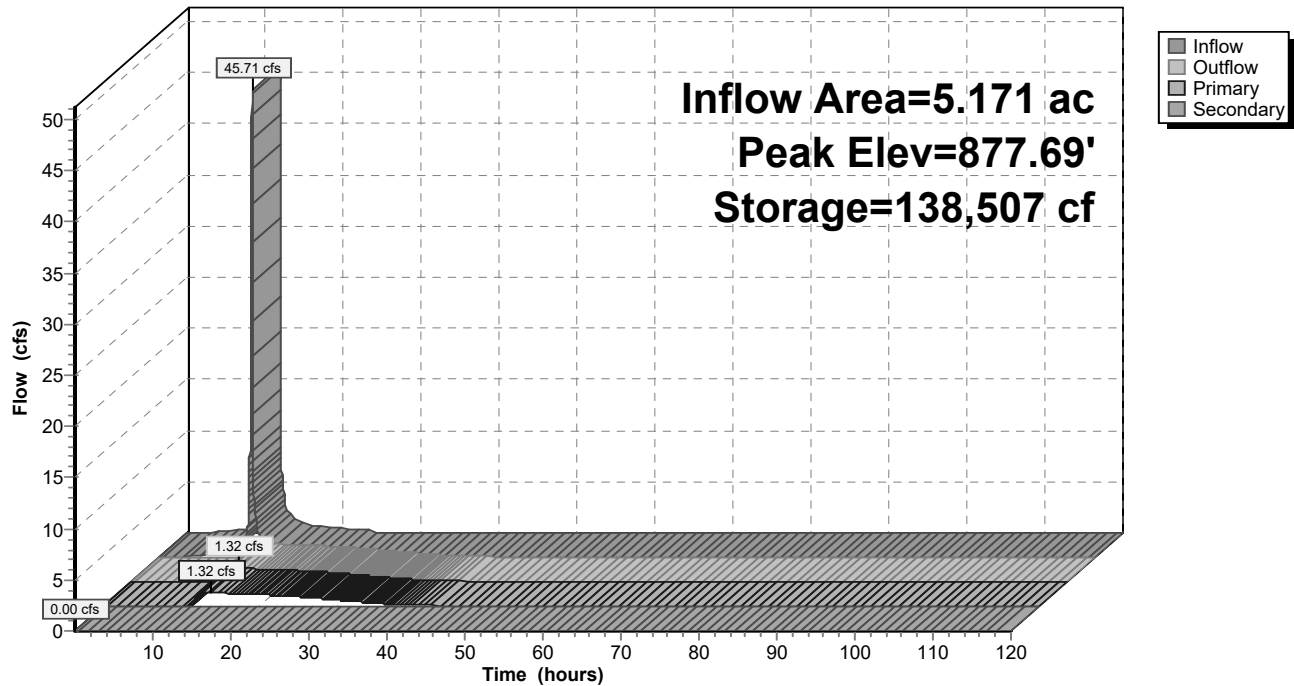
3=Orifice/Grate (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.01 hrs HW=875.00' (Free Discharge)

4=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 200: 200

Hydrograph



Proposed Conditions*Type II 24-hr Type 2 - 100-Year Rainfall=6.34"*

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Hydrograph for Pond 200: 200

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.01	0.00	70,918	875.00	0.00	0.00	0.00
5.01	0.16	71,519	875.03	0.00	0.00	0.00
10.01	0.95	79,418	875.38	0.00	0.00	0.00
15.01	0.98	137,703	877.66	1.31	1.31	0.00
20.01	0.43	126,855	877.28	1.17	1.17	0.00
25.01	0.00	113,280	876.77	0.96	0.96	0.00
30.01	0.00	98,910	876.21	0.64	0.64	0.00
35.01	0.00	90,407	875.86	0.30	0.30	0.00
40.01	0.00	86,884	875.71	0.12	0.12	0.00
45.01	0.00	85,337	875.64	0.06	0.06	0.00
50.01	0.00	84,472	875.60	0.04	0.04	0.00
55.01	0.00	83,970	875.58	0.02	0.02	0.00
60.01	0.00	83,640	875.57	0.02	0.02	0.00
65.01	0.00	83,369	875.56	0.01	0.01	0.00
70.01	0.00	83,145	875.55	0.01	0.01	0.00
75.01	0.00	82,959	875.54	0.01	0.01	0.00
80.01	0.00	82,806	875.53	0.01	0.01	0.00
85.01	0.00	82,680	875.53	0.01	0.01	0.00
90.01	0.00	82,575	875.52	0.01	0.01	0.00
95.01	0.00	82,489	875.52	0.00	0.00	0.00
100.01	0.00	82,417	875.51	0.00	0.00	0.00
105.01	0.00	82,358	875.51	0.00	0.00	0.00
110.01	0.00	82,309	875.51	0.00	0.00	0.00
115.01	0.00	82,269	875.51	0.00	0.00	0.00

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Type II 24-hr Type 2 - 100-Year Rainfall=6.34"

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Summary for Pond 300: 300

Inflow Area = 24.576 ac, 51.36% Impervious, Inflow Depth = 4.55" for Type 2 - 100-Year event
 Inflow = 157.31 cfs @ 11.96 hrs, Volume= 9.310 af
 Outflow = 6.15 cfs @ 13.61 hrs, Volume= 7.605 af, Atten= 96%, Lag= 98.8 min
 Primary = 6.15 cfs @ 13.61 hrs, Volume= 7.605 af
 Routed to Link 1 : OFFSITE
 Secondary = 0.00 cfs @ 0.01 hrs, Volume= 0.000 af
 Routed to Link 1 : OFFSITE

Routing by Stor-Ind method, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs

Starting Elev= 875.00' Surf.Area= 110,262 sf Storage= 389,084 cf

Peak Elev= 876.85' @ 13.61 hrs Surf.Area= 131,112 sf Storage= 611,984 cf (222,900 cf above start)

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)

Center-of-Mass det. time= 956.2 min (1,901.7 - 945.5)

Volume	Invert	Avail.Storage	Storage Description
#1	870.00'	920,841 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
870.00	61,061	0	0
871.00	66,666	63,864	63,864
872.00	72,581	69,624	133,487
873.00	78,813	75,697	209,184
874.00	85,362	82,088	291,272
875.00	110,262	97,812	389,084
876.00	121,491	115,877	504,960
877.00	132,845	127,168	632,128
878.00	144,325	138,585	770,713
879.00	155,931	150,128	920,841

Device	Routing	Invert	Outlet Devices
#1	Primary	875.00'	24.0" Round RCP_Round 24" L= 100.0' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 875.00' / 874.00' S= 0.0100 '/' Cc= 0.900 n= 0.011 Concrete pipe, finished, Flow Area= 3.14 sf
#2	Device 1	875.50'	6.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	876.30'	4.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s)
#4	Device 1	878.00'	48.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#5	Secondary	878.00'	25.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

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Primary OutFlow Max=6.14 cfs @ 13.61 hrs HW=876.85' (Free Discharge)

1=RCP_Round 24" (Passes 6.14 cfs of 12.38 cfs potential flow)

2=Orifice/Grate (Orifice Controls 0.99 cfs @ 5.04 fps)

3=Sharp-Crested Rectangular Weir (Weir Controls 5.15 cfs @ 2.42 fps)

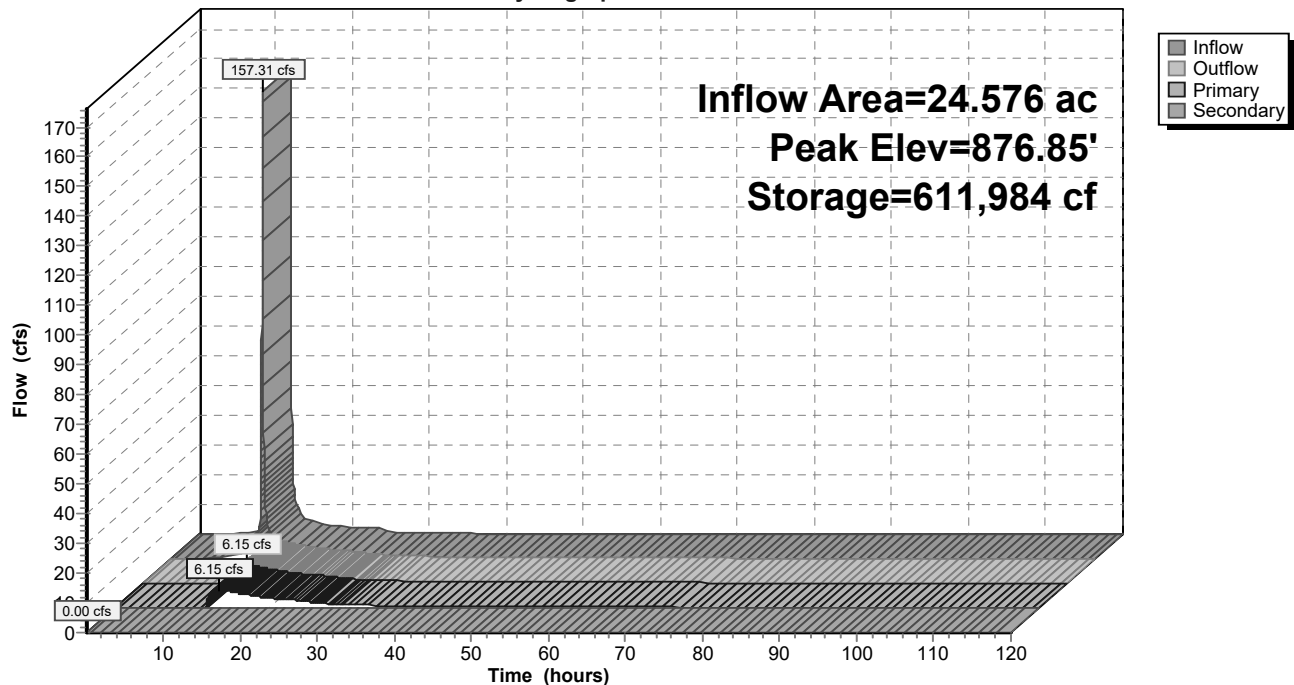
4=Orifice/Grate (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.01 hrs HW=875.00' (Free Discharge)

5=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 300: 300

Hydrograph



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Type II 24-hr Type 2 - 100-Year Rainfall=6.34"

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Hydrograph for Pond 300: 300

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.01	0.00	389,084	875.00	0.00	0.00	0.00
5.01	0.25	389,698	875.01	0.00	0.00	0.00
10.01	2.78	410,231	875.19	0.00	0.00	0.00
15.01	4.38	607,379	876.81	5.66	5.66	0.00
20.01	2.38	584,771	876.64	3.43	3.43	0.00
25.01	0.76	569,236	876.52	2.15	2.15	0.00
30.01	0.56	553,462	876.39	1.12	1.12	0.00
35.01	0.35	544,579	876.32	0.80	0.80	0.00
40.01	0.19	536,570	876.26	0.67	0.67	0.00
45.01	0.11	527,573	876.18	0.62	0.62	0.00
50.01	0.07	518,494	876.11	0.57	0.57	0.00
55.01	0.05	509,927	876.04	0.51	0.51	0.00
60.01	0.04	502,069	875.98	0.45	0.45	0.00
65.01	0.03	495,087	875.92	0.39	0.39	0.00
70.01	0.02	489,203	875.87	0.32	0.32	0.00
75.01	0.02	484,298	875.83	0.27	0.27	0.00
80.01	0.02	480,210	875.79	0.22	0.22	0.00
85.01	0.01	476,802	875.77	0.19	0.19	0.00
90.01	0.01	473,933	875.74	0.16	0.16	0.00
95.01	0.01	471,465	875.72	0.14	0.14	0.00
100.01	0.01	469,340	875.70	0.12	0.12	0.00
105.01	0.01	467,512	875.69	0.10	0.10	0.00
110.01	0.01	465,939	875.67	0.09	0.09	0.00
115.01	0.00	464,569	875.66	0.08	0.08	0.00

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Type II 24-hr Type 2 - 100-Year Rainfall=6.34"

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Summary for Pond 400: 400

Inflow Area = 5.909 ac, 39.66% Impervious, Inflow Depth = 4.41" for Type 2 - 100-Year event
 Inflow = 46.22 cfs @ 11.96 hrs, Volume= 2.170 af
 Outflow = 0.93 cfs @ 15.54 hrs, Volume= 1.725 af, Atten= 98%, Lag= 215.0 min
 Primary = 0.93 cfs @ 15.54 hrs, Volume= 1.725 af
 Routed to Pond 300 : 300
 Secondary = 0.00 cfs @ 0.01 hrs, Volume= 0.000 af
 Routed to Pond 300 : 300

Routing by Stor-Ind method, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs

Starting Elev= 877.00' Surf.Area= 35,903 sf Storage= 129,985 cf

Peak Elev= 878.71' @ 15.54 hrs Surf.Area= 41,558 sf Storage= 196,219 cf (66,234 cf above start)

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)

Center-of-Mass det. time= 841.6 min (1,641.7 - 800.1)

Volume	Invert	Avail.Storage	Storage Description
#1	872.00'	252,651 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
872.00	20,703	0	0
873.00	22,504	21,604	21,604
874.00	24,391	23,448	45,051
875.00	26,364	25,378	70,429
876.00	28,423	27,394	97,822
877.00	35,903	32,163	129,985
878.00	39,148	37,526	167,511
879.00	42,535	40,842	208,352
880.00	46,063	44,299	252,651

Device	Routing	Invert	Outlet Devices
#1	Primary	877.00'	24.0" Round RCP_Round 24" L= 90.0' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 877.00' / 876.50' S= 0.0056 '/' Cc= 0.900 n= 0.011 Concrete pipe, finished, Flow Area= 3.14 sf
#2	Device 1	877.50'	6.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Secondary	879.00'	25.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.93 cfs @ 15.54 hrs HW=878.71' TW=876.30' (Fixed TW Elev= 876.30')

1=RCP_Round 24" (Passes 0.93 cfs of 10.70 cfs potential flow)

2=Orifice/Grate (Orifice Controls 0.93 cfs @ 4.72 fps)

Secondary OutFlow Max=0.00 cfs @ 0.01 hrs HW=877.00' (Free Discharge)

3=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

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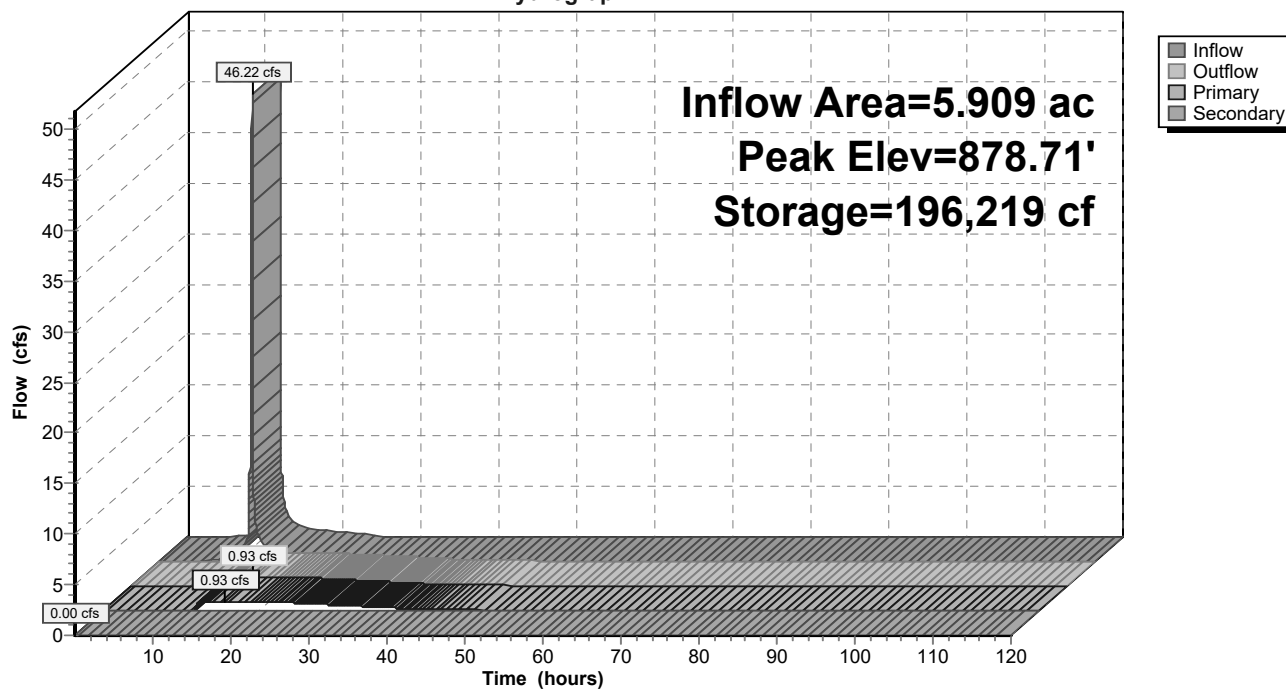
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Pond 400: 400

Hydrograph



Proposed Conditions

Type II 24-hr Type 2 - 100-Year Rainfall=6.34"

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Hydrograph for Pond 400: 400

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.01	0.00	129,985	877.00	0.00	0.00	0.00
5.01	0.00	129,985	877.00	0.00	0.00	0.00
10.01	0.67	134,013	877.11	0.00	0.00	0.00
15.01	1.05	196,098	878.71	0.93	0.93	0.00
20.01	0.46	192,203	878.61	0.88	0.88	0.00
25.01	0.00	183,477	878.40	0.76	0.76	0.00
30.01	0.00	171,558	878.10	0.56	0.56	0.00
35.01	0.00	163,320	877.89	0.35	0.35	0.00
40.01	0.00	158,581	877.77	0.19	0.19	0.00
45.01	0.00	155,908	877.70	0.11	0.11	0.00
50.01	0.00	154,274	877.66	0.07	0.07	0.00
55.01	0.00	153,157	877.63	0.05	0.05	0.00
60.01	0.00	152,383	877.61	0.04	0.04	0.00
65.01	0.00	151,832	877.59	0.03	0.03	0.00
70.01	0.00	151,378	877.58	0.02	0.02	0.00
75.01	0.00	150,996	877.57	0.02	0.02	0.00
80.01	0.00	150,674	877.56	0.02	0.02	0.00
85.01	0.00	150,404	877.55	0.01	0.01	0.00
90.01	0.00	150,176	877.55	0.01	0.01	0.00
95.01	0.00	149,984	877.54	0.01	0.01	0.00
100.01	0.00	149,822	877.54	0.01	0.01	0.00
105.01	0.00	149,686	877.54	0.01	0.01	0.00
110.01	0.00	149,571	877.53	0.01	0.01	0.00
115.01	0.00	149,475	877.53	0.00	0.00	0.00

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Type II 24-hr Type 2 - 100-Year Rainfall=6.34"

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Summary for Pond 500: 500

Inflow Area = 17.940 ac, 42.55% Impervious, Inflow Depth = 4.52" for Type 2 - 100-Year event
 Inflow = 142.93 cfs @ 11.96 hrs, Volume= 6.751 af
 Outflow = 1.55 cfs @ 19.50 hrs, Volume= 5.944 af, Atten= 99%, Lag= 452.3 min
 Primary = 1.55 cfs @ 19.50 hrs, Volume= 5.944 af
 Routed to Link 1 : OFFSITE
 Secondary = 0.00 cfs @ 0.01 hrs, Volume= 0.000 af
 Routed to Link 1 : OFFSITE

Routing by Stor-Ind method, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs

Starting Elev= 899.00' Surf.Area= 57,355 sf Storage= 196,414 cf

Peak Elev= 902.44' @ 19.50 hrs Surf.Area= 77,263 sf Storage= 427,534 cf (231,120 cf above start)

Plug-Flow detention time= 3,557.1 min calculated for 1.435 af (21% of inflow)

Center-of-Mass det. time= 1,625.9 min (2,423.3 - 797.4)

Volume	Invert	Avail.Storage	Storage Description
#1	894.00'	555,429 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
894.00	29,616	0	0
895.00	32,756	31,186	31,186
896.00	36,239	34,498	65,684
897.00	40,030	38,135	103,818
898.00	43,903	41,967	145,785
899.00	57,355	50,629	196,414
900.00	62,973	60,164	256,578
901.00	68,725	65,849	322,427
902.00	74,612	71,669	394,095
903.00	80,633	77,623	471,718
904.00	86,790	83,712	555,429

Device	Routing	Invert	Outlet Devices
#1	Primary	899.00'	24.0" Round RCP_Round 24" L= 80.0' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 899.00' / 898.00' S= 0.0125 '/' Cc= 0.900 n= 0.011 Concrete pipe, finished, Flow Area= 3.14 sf
#2	Device 1	899.50'	6.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Secondary	903.00'	25.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=1.55 cfs @ 19.50 hrs HW=902.44' (Free Discharge)↑ **1=RCP_Round 24"** (Passes 1.55 cfs of 20.85 cfs potential flow)↑ **2=Orifice/Grate** (Orifice Controls 1.55 cfs @ 7.90 fps)**Secondary OutFlow** Max=0.00 cfs @ 0.01 hrs HW=899.00' (Free Discharge)↑ **3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Proposed Conditions

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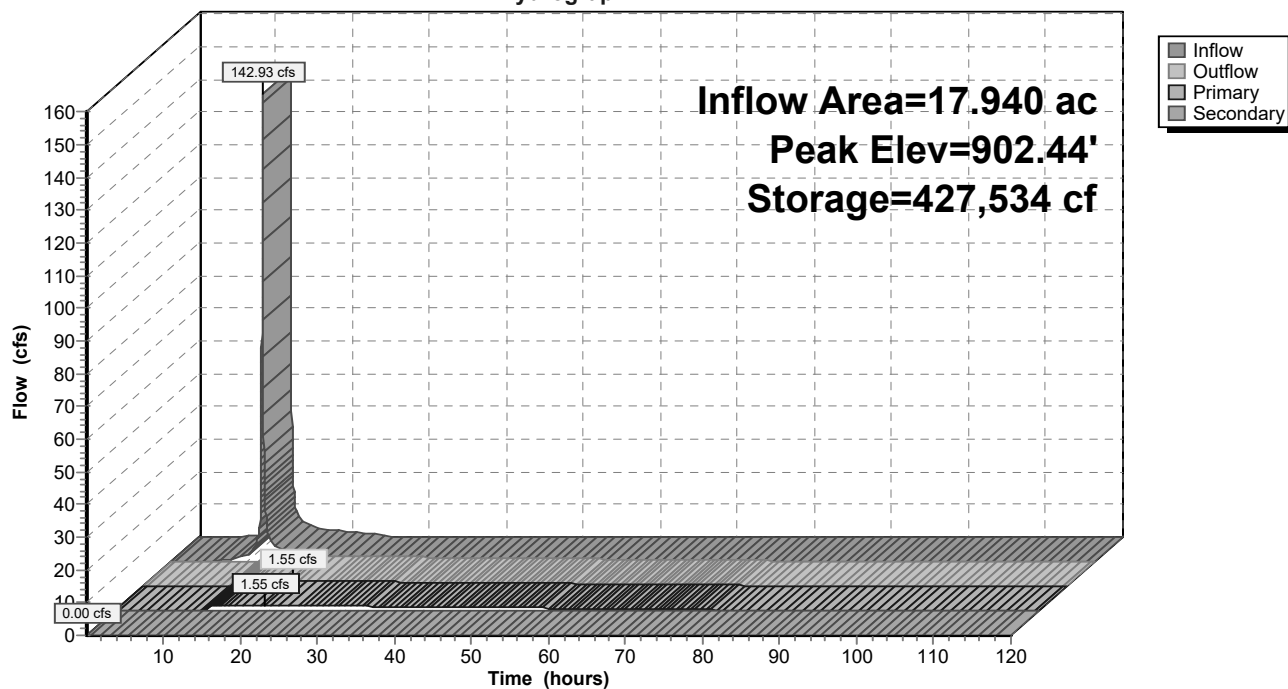
Type II 24-hr Type 2 - 100-Year Rainfall=6.34"

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Pond 500: 500

Hydrograph



Proposed Conditions*Type II 24-hr Type 2 - 100-Year Rainfall=6.34"*

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Hydrograph for Pond 500: 500

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.01	0.00	196,414	899.00	0.00	0.00	0.00
5.01	0.02	196,419	899.00	0.00	0.00	0.00
10.01	2.17	210,207	899.24	0.00	0.00	0.00
15.01	3.23	416,835	902.30	1.51	1.51	0.00
20.01	1.41	427,416	902.44	1.55	1.55	0.00
25.01	0.00	418,627	902.32	1.52	1.52	0.00
30.01	0.00	392,278	901.98	1.41	1.41	0.00
35.01	0.00	367,872	901.64	1.30	1.30	0.00
40.01	0.00	345,464	901.33	1.19	1.19	0.00
45.01	0.00	325,106	901.04	1.07	1.07	0.00
50.01	0.00	306,847	900.77	0.96	0.96	0.00
55.01	0.00	290,737	900.53	0.83	0.83	0.00
60.01	0.00	276,822	900.32	0.71	0.71	0.00
65.01	0.00	265,144	900.14	0.59	0.59	0.00
70.01	0.00	255,741	899.99	0.46	0.46	0.00
75.01	0.00	248,688	899.87	0.33	0.33	0.00
80.01	0.00	243,791	899.80	0.22	0.22	0.00
85.01	0.00	240,386	899.74	0.16	0.16	0.00
90.01	0.00	237,973	899.70	0.11	0.11	0.00
95.01	0.00	236,179	899.67	0.09	0.09	0.00
100.01	0.00	234,769	899.65	0.07	0.07	0.00
105.01	0.00	233,660	899.63	0.05	0.05	0.00
110.01	0.00	232,789	899.62	0.04	0.04	0.00
115.01	0.00	232,104	899.60	0.03	0.03	0.00

Proposed Conditions

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Type II 24-hr Type 2 - 100-Year Rainfall=6.34"

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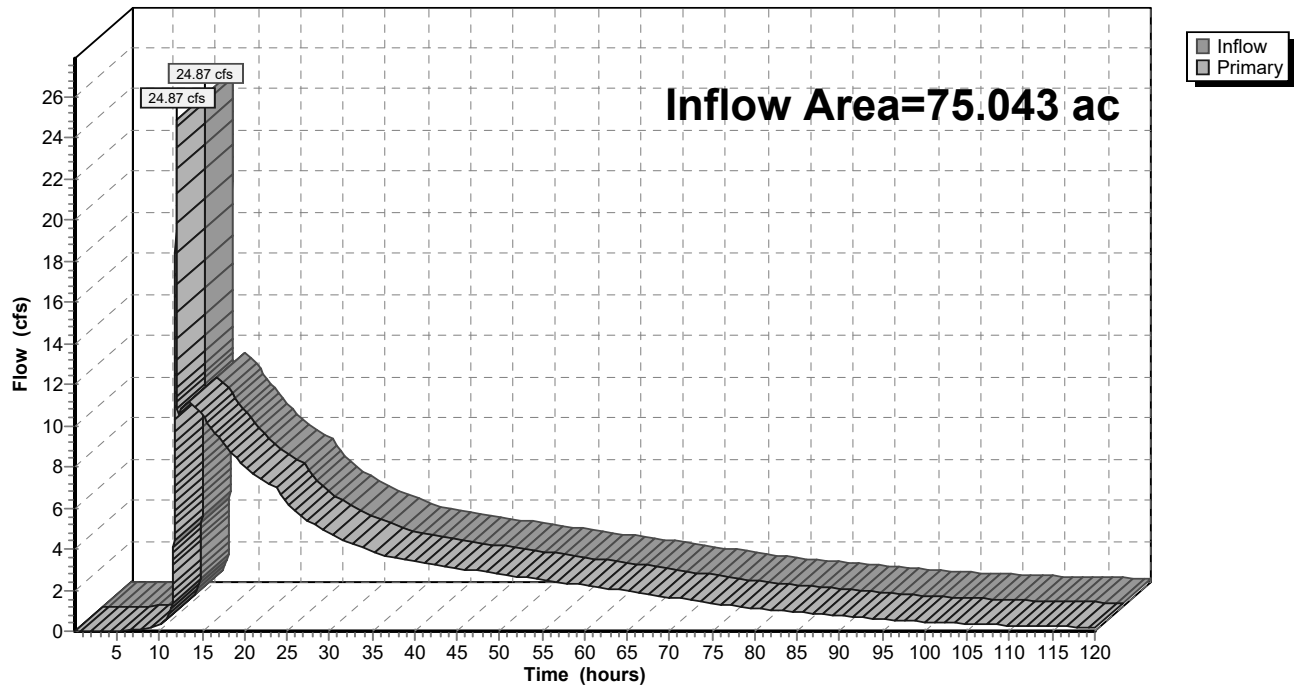
Summary for Link 1: OFFSITE

Inflow Area = 75.043 ac, 46.89% Impervious, Inflow Depth > 3.95" for Type 2 - 100-Year event
Inflow = 24.87 cfs @ 11.96 hrs, Volume= 24.696 af
Primary = 24.87 cfs @ 11.96 hrs, Volume= 24.696 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.01-120.00 hrs, dt= 0.01 hrs

Link 1: OFFSITE

Hydrograph



Proposed Conditions

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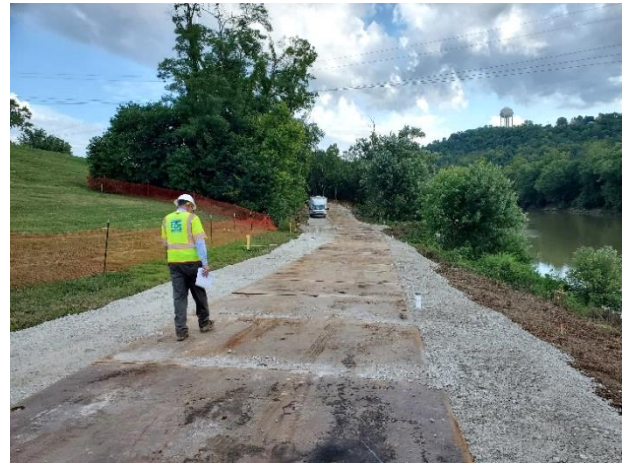
Type II 24-hr Type 2 - 100-Year Rainfall=6.34"

Printed 3/24/2025

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Hydrograph for Link 1: OFFSITE

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.01	0.00	0.00	0.00	104.01	0.38	0.00	0.38
2.01	0.00	0.00	0.00	106.01	0.34	0.00	0.34
4.01	0.00	0.00	0.00	108.01	0.31	0.00	0.31
6.01	0.03	0.00	0.03	110.01	0.28	0.00	0.28
8.01	0.10	0.00	0.10	112.01	0.26	0.00	0.26
10.01	0.30	0.00	0.30	114.01	0.24	0.00	0.24
12.01	21.27	0.00	21.27	116.01	0.22	0.00	0.22
14.01	11.03	0.00	11.03	118.01	0.21	0.00	0.21
16.01	9.92	0.00	9.92				
18.01	8.87	0.00	8.87				
20.01	8.01	0.00	8.01				
22.01	7.38	0.00	7.38				
24.01	6.94	0.00	6.94				
26.01	5.83	0.00	5.83				
28.01	5.23	0.00	5.23				
30.01	4.74	0.00	4.74				
32.01	4.39	0.00	4.39				
34.01	4.05	0.00	4.05				
36.01	3.74	0.00	3.74				
38.01	3.53	0.00	3.53				
40.01	3.38	0.00	3.38				
42.01	3.25	0.00	3.25				
44.01	3.13	0.00	3.13				
46.01	3.02	0.00	3.02				
48.01	2.90	0.00	2.90				
50.01	2.79	0.00	2.79				
52.01	2.67	0.00	2.67				
54.01	2.56	0.00	2.56				
56.01	2.45	0.00	2.45				
58.01	2.34	0.00	2.34				
60.01	2.23	0.00	2.23				
62.01	2.12	0.00	2.12				
64.01	2.00	0.00	2.00				
66.01	1.89	0.00	1.89				
68.01	1.77	0.00	1.77				
70.01	1.65	0.00	1.65				
72.01	1.54	0.00	1.54				
74.01	1.43	0.00	1.43				
76.01	1.32	0.00	1.32				
78.01	1.22	0.00	1.22				
80.01	1.12	0.00	1.12				
82.01	1.04	0.00	1.04				
84.01	0.96	0.00	0.96				
86.01	0.88	0.00	0.88				
88.01	0.81	0.00	0.81				
90.01	0.75	0.00	0.75				
92.01	0.68	0.00	0.68				
94.01	0.62	0.00	0.62				
96.01	0.56	0.00	0.56				
98.01	0.51	0.00	0.51				
100.01	0.46	0.00	0.46				
102.01	0.41	0.00	0.41				



ECS Midwest, LLC

Geotechnical Engineering Report

Mohrhusen Farm

County Line Road & Lannon Road
Germantown, Washington County, Wisconsin

ECS Project Number 42:2684

February 4, 2025





February 4, 2025

Mr. Widdy Gentil
Home Path Financial
5116 N 126th Street
Butler, Wisconsin 53007

ECS Project No. 42:2684

Reference: Geotechnical Engineering Report
Mohrhusen Farm
County Line Road & Lannon Road
Germantown, Washington County, Wisconsin

Dear Mr. Gentil:

ECS Midwest, LLC (ECS) has completed the subsurface exploration, field and laboratory testing, and geotechnical engineering analyses for the above-referenced project. Our services were performed in general accordance with our agreed scope of services. This report presents our understanding of the geotechnical aspects of the project, the results of the field exploration and laboratory testing conducted, and our design and construction recommendations.

It has been our pleasure to be of service to you on this project. ECS would like to continue its services during design and provide our services during construction to check the assumptions of subsurface conditions made for this report. Please contact us should you have questions about the information contained in this report, or if ECS can be of further assistance to you.

Respectfully submitted,

ECS Midwest, LLC

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DN: cn=Darin Maciolek, o=ECS Midwest,
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date=2025.02.04 14:47:09 -0800

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APPENDICES

Appendix A – Drawings & Reports

- Site Location Diagram
- Boring Location Diagram
- Subsurface Cross Section(s)
- Soil Survey Map
- Geologic Map

Appendix B – Field Operations

- USDA Classification System
- Reference Notes for Boring Logs
- Subsurface Exploration Procedures: SPT
- Boring Logs

Appendix C – Laboratory Testing

- Laboratory Testing Procedures: Index Testing

-
- AASHTO Soil Classification System

Appendix D – Supplemental Report Documents

- Boring Overlay Plan
- Summary of Generalized Pavement Design Parameters
- Soil Evaluation – Storm Form (SBD10793)

Appendix E – Other Information

- Important Information about This Geotechnical-Engineering Report

EXECUTIVE SUMMARY

This Executive Summary is intended as a very brief overview of the primary geotechnical conditions expected to affect design and construction. Information gleaned from this Executive Summary should not be utilized in lieu of reading the entire geotechnical report.

- The main site development challenges are expected to include moisture control of the site soils, presence of lower strength soils near surface, and potential excavation difficulties associated with cobbles/boulders and areas of shallow bedrock.
- Undercut and/or subgrade repair is expected to be needed in areas due to the presence of clayey soils with low blow counts and/or high moisture.
- The site soils encountered at the borings located within the proposed stormwater management (SWM) area are anticipated to have low infiltration rates. Shallow bedrock is expected to be a limitation for portions of the eastern SWM basin.
- It is recommended ECS review the design documents to evaluate consistency with our recommendations.
- We recommended ECS be retained for the construction materials testing to help facilitate proper implementation of our recommendations.

1.0 INTRODUCTION

The purpose of this study was to provide geotechnical information for the design of pavements and stormwater management basins for the proposed residential development. The recommendations developed for this report are based on project information supplied by Home Path Financial.

Our services were provided in accordance with ECS Proposal No. 42:3986-GP, dated December 27, 2024, as authorized by William Gentil of Home Path Financial on December 31, 2024, which includes the Terms and Conditions of Service included therein.

This report contains the procedures and results of the subsurface exploration and laboratory testing programs, a description of existing site conditions, engineering analyses, and geotechnical recommendations for the design and construction.

The report includes the following items:

- A brief description of the field and laboratory test procedures and results.
- A description of the observed surface topographical features and site conditions.
- A description of area and site geologic conditions.
- A description of the interpreted subsurface soil stratigraphy with pertinent available physical properties.
- Records of the subsurface explorations (test boring logs).
- General recommendations for pavement design, including a recommended design CBR value.
- Evaluation and recommendations for wet detention pond design in accordance with the Wisconsin Department of Natural Resources Conservation Practice Standard 1001 and NRCS.
- Evaluation of infiltration in accordance with the Wisconsin Department of Natural Resources Conservation Practice Standard 1002 and NRCS.
- Recommendations for site preparation and construction of engineered fills, including an evaluation of on-site soils for use as engineered fills, and delineation of potentially unsuitable soils and/or soils exhibiting excessive moisture at the time of sampling.
- General considerations relative to groundwater.

2.0 PROJECT INFORMATION

2.1 PROJECT LOCATION/CURRENT SITE USE/PAST SITE USE

The project site is located northeast of the County Line Road & Lannon Road intersection in Germantown, Washington County, Wisconsin. The subject property is bounded to the north by a residence and farmland, to the south by County Line Road, to the east by farmland and a substation, and to the west by Lannon Road. The site location is shown in Figure 2.1.1 below, and on the Site Location Diagram in Appendix A.



Figure 2.1.1 Site Location (approximate site outlined in red)

The site is currently undeveloped farmland and woodland. Based on the Boring Overlay plan, the approximate site surface elevations range from EL. 874 to EL. 913 feet.

ECS performed a cursory review of aerial photographs of the subject site, dated 1941, 1950, 1963, 1970, 1980, 1985, 1990, 1995, 2000, 2005, 2010, 2013, 2015, 2017, 2020, available on the Washington County GIS Viewer website. In the earliest available aerial, the site appeared to be vacant farmland with some wooded areas and a residence at the south end of the site. The site remained relatively the same, with the growth of woods between parcels and in other areas through the 2022 aerial. The 2022 aerial shows numerous test pits were dug and backfilled with excavated soils throughout the site. The site remains relatively unchanged through the 2024 aerial.

2.2 PROPOSED CONSTRUCTION

We understand the proposed project will include the construction of pavement for the roadways of a new residential development along with three stormwater management (SWM) basins. It is understood the confirmation of potential bedrock depth in the roadways and a subsurface soil profile are desired. The information in the table below summarizes our understanding of the project.

DESIGN INFORMATION			
Subject		Expectation	
Pavement	Type	Hot mix asphalt	B
	Traffic	Unknown – Expected to be relatively light	B
	Design Service Life	20 years	B
SWM Device	Type	Detention Basin	B
	Bottom Depth/Elevation	4 to 6 feet below site grade	B
Grading	Cut	Less than 4 feet	B
	Fill	Less than 4 feet	B

R: Reported by client and/or design team

B: Based on ECS estimates in absence of information from client and/or design team

If ECS' understanding of the project is not correct or the design changes, please contact ECS so that we may review these changes and revise our recommendations, as appropriate.

3.0 FIELD EXPLORATION AND LABORATORY TESTING

3.1 FIELD EXPLORATION

The exploration procedures are described in greater detail in Appendix B in the insert titled Subsurface Exploration Procedures: SPT.

3.1.1 Borings

ECS used a handheld GPS unit to field locate the borings prior to mobilization of the drilling equipment. The approximate as-drilled boring locations are shown on the Boring Location Diagram in Appendix A. Ground surface elevations at the boring locations were interpolated from the Boring Overlay plan provided to us by Home Path Financial. Ground surface elevations and boring locations determined without professional survey are approximate and may not be appropriate for final design and construction.

Our scope of services included drilling 26 borings at the site on January 23 and 24, 2025 by a subcontracted driller. Borings B-01 through B-20 located in the proposed roadways were each advanced to an approximate depth of 10 feet below existing site grade. Borings B-21 through B-26 located in proposed stormwater management areas were each advanced to an approximate depth of 15 feet. The drill crew utilized a GeoProbe 7822DT track-mounted rotary drilling rig equipped with continuous flight, hollow stem augers to drill the borings.

The drill crew backfilled the boreholes at completion of drilling. Settlement or expansion of borehole backfill can occur over time resulting in a trip hazard. Monitoring the boreholes after initial drilling activities is not within our scope but should be done by the client or property owner.

3.1.2 Explorations by Others

In addition to our borings, a plan that showed exploration locations by others were provided by Home Path Financial for our use. The plan showed the exploration location along with the ground surface elevation and bedrock elevation at those locations. No further details, such as soil encountered, were provided. A few of the locations did not note the ground surface elevation or bedrock elevation. A copy of the plan is included in Appendix B.

It is understood ECS may use and rely on the information provided to us for our analysis in lieu of performing a more complete drilling scope for the proposed development. Client agrees ECS shall not be responsible for the validity or accuracy of information prepared by others.

3.2 SUBSURFACE CHARACTERIZATION

The observed subsurface conditions were generally consistent with published geological mapping. Information regarding the site geology (Soil Survey Mapping and Bedrock Mapping) is included in Appendix A. Below is a generalized characterization of the subsurface materials observed at the boring locations. Please refer to the Boring Logs in Appendix B.

GENERALIZED SUBSURFACE STRATIGRAPHY					
Approx. Depth to Stratum Bottom (feet)	Strata	Description	SPT ⁽¹⁾ N-value Range (bpf)	Calibrated Penetrometer Resistance (tsf)	Moisture Content (%)
Surface	--	Topsoil (1 to 5 inches ±)	--	--	--
2½ - 10	I	(CL) SANDY LEAN CLAY / LEAN CLAY and (CL/ML) SANDY SILTY CLAY, firm to hard	4 – 82/11"	0.5 - 4.5+	9 - 30
3 to 11½	II	(SM) SILTY SAND, (SC) CLAYEY SAND and (SC/SM) CLAYEY/SILTY SAND, loose to very dense	6 - 57	--	--
8 to 15	III	(ML/CL) CLAYEY SILT and (ML) SILT, firm to very stiff [B-11, B-22, B-24, B-25, B-26]	14 - 24	0.5 – 3.0	13 - 17
10 to 15	IV	(CL) LEAN CLAY and (CL/ML) SILTY CLAY, stiff to hard	9 – 61/8"	1.0 – 4.0	10 - 16

1. Standard Penetration Test.

A graphical presentation of the subsurface conditions is shown on the Subsurface Cross Section Diagram(s) included in Appendix A. A heat map of bedrock depth, based on the refusal depths of our borings and the bedrock elevation noted on the plan showing explorations previously done by others, is also included in Appendix A.

An exception to the generalized profile is Stratum I, II, and III may be interbedded at some of the boring locations.

The drill crew noted the near surface soils contained frost at the time of drilling. Therefore, the Standard Penetration Test N-values of the near surface soils may not be representative.

The soil stratification shown on the boring logs represents the interpreted soil conditions at the boring locations. Variations in the stratification can occur between sample intervals and between boring locations. The subsurface conditions at other times and locations on the site may differ from those

found at the boring locations. If different site conditions are encountered during construction, ECS should be contacted to review our recommendations relative to the new information.

Because the split-spoon sampler has a 1½-inch inside diameter, the soil classifications noted on the boring logs may not be representative of the entire soil matrix. Material larger than the 1½-inch inside diameter of the split-spoon sampler cannot be collected and observed directly.

3.3 GROUNDWATER OBSERVATIONS

The drillers observed the boreholes for the presence of measurable free water during drilling and at the completion of drilling. Based on the boring data, ECS estimates the static groundwater level to be at a depth greater than the depths explored at the boring locations. Because the borings encountered mostly poorly draining soils the static groundwater level may take days or weeks to stabilize.

Variations in the long-term water table elevation may result because of changes in precipitation, evaporation, surface water runoff, construction activities, and other factors. Perched water conditions may also develop and/or exist at shallower or variable depths seasonally, particularly within more permeable soil underlain by less permeable soil or bedrock, within existing utility and structure backfill, and within fissured soil.

3.4 LABORATORY TESTING

The laboratory services performed by ECS for this project included classification and index property tests on select representative soil samples.

Each soil sample was visually classified based on texture and plasticity using ASTM D2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedures) as a general guideline. After classification, the samples were grouped into the major zones noted on the boring logs in Appendix B. The USCS group symbols for each soil type are indicated in parentheses along with the soil descriptions. The stratification lines between strata on the boring logs are approximate; in-situ, the transitions may be gradual.

The soils retained from the infiltration basin borings were also classified using the U.S. Department of Agriculture (USDA) Soil Classification System. The USDA classification system is briefly described in Appendix C. The USDA classifications can be found on the "Soil and Site Evaluation – Storm" form (SBD10793) included in Appendix D of this report.

The results of the laboratory tests are included on the boring logs in Appendix B or separate test sheets in Appendix C. These tests included:

- Moisture content (ASTM D2216)
- Calibrated Penetrometer Resistance

The laboratory procedures are described in greater detail in Appendix C including the insert titled Laboratory Procedures.

The soil samples will be retained in our laboratory for a period of 60 days, after which, the samples will be discarded, unless other instructions are received as to their disposal.

4.0 DESIGN RECOMMENDATIONS

The following sections contain geotechnical design recommendations for pavements and stormwater management devices.

4.1 PAVEMENT DESIGN CONSIDERATIONS

The following sections provide recommendations for pavements. Pavement materials and construction should be in accordance with the AASHTO Guide for Design of Pavement Structures, and the WisDOT Standard Specifications for Highway and Structure Construction.

Subgrade Characteristics: The subgrade soils are expected to mostly consist of existing clay fill with areas of silty sand or clayey sand. The recommended pavement design parameters listed below are based on the encountered subsurface conditions.

The recommended pavement design parameters listed in the table below are based on the boring information, and the primary pedological units described in the Web Soil Survey and the WisDOT Geotechnical Manual. Because the soil conditions encountered are variable, a pavement section design based on these parameters may be over-designed in some areas and under-designed in others. In lieu of the design parameters in the table below, the design parameters presented in Appendix D, based on the general soil conditions encountered at the individual boring locations, could be used to refine the pavement design based on location.

PAVEMENT DESIGN PARAMETERS	
Parameter	(CL) Sandy Lean Clay
AASHTO Classification	A-6
Design Group Index	16
Soil Support Value, SSV	3.7
Frost Index, FI	F-3
Modulus of Subgrade Reaction	75 psi/in
Resilient Modulus	6,000 psi
California Bearing Ratio (CBR)	4

The pavement subgrade soil will impact the design and performance of the pavements. The project alignment falls within the area identified for inclusion of select materials in the pavement subgrade per Chapter 11-5, Attachment 15.1 of the WisDOT Facilities Development Manual (FDM). Considering the soils encountered, select material could be considered below the pavement to improve long-term pavement performance, such as the use of at least 16 inches of breaker run aggregate (Section 311 of the WisDOT Standard Specifications) as the select material. The values in the Table below have been modified to account for the use of 16 inches of breaker run aggregate as the select material.

PAVEMENT DESIGN PARAMETERS WITH SELECT MATERIAL	
Parameter	Properties
AASHTO Classification	A-6
Design Group Index	16
Soil Support Value, SSV	4.2
Frost Index, FI	F-3
Modulus of Subgrade Reaction	125 psi/in
Resilient Modulus	7,900 psi
California Bearing Ratio (CBR)	5.8

The design parameters assume the grading and subgrade preparation will be performed in accordance with the appropriate specifications included in the State of Wisconsin Department of Transportation Standard Specification, current Edition. These values are recommended with the assumption the subgrade will be closely observed and tested; the subgrade will be properly compacted; wet zones will be dried, drained or removed; zones of dissimilar material will be removed, replaced or mixed to achieve a homogeneous subgrade; and adequate subgrade drainage will be provided.

For earthwork, the soil volume shrinkage is estimated to be in the range of approximately 10 to 20 percent for the encountered sand, and approximately 20 to 30 percent for the encountered clay soil. These values correlate to estimated soil volume expansion factors of approximately 11 to 25 percent for the encountered sand, and approximately 25 to 43 percent for the encountered clay soil. For preliminary estimation purposes we recommend an average soil volume shrinkage factor of 20 percent (25 percent expansion factor).

Excavation Below Subgrade (EBS): The estimated EBS is based on the subsurface conditions encountered at the boring locations at the time of drilling. Approximately 12 to 24 inches of EBS may be needed because of native subgrade soils, which had low blow counts, lower shear strength and/or high moisture. The estimate of EBS at each boring locations is listed in the Summary of Pavement Design Parameters table in Appendix D. The estimated EBS may vary outside the boring locations.

EBS will also depend on the conditions just prior to and at the time of construction and appropriate precautions taken to protect the subgrade during construction from weather and construction traffic related effects. During construction the subgrade soil is often adversely impacted by construction equipment (i.e., traffic disturbance) and/or unfavorable weather (i.e., ponding of water or freeze-thaw). The degree of impact is generally a function of the soil type, presence of groundwater, weather conditions prior to and during construction, and the construction methods and equipment used. For these reasons, some additional EBS could be required during construction. We recommend an undistributed quantity of EBS be included to help account for these potential impacts during construction. Where EBS is needed, an additional foot of lateral excavation (from edge of shoulder) is recommended for each vertical foot of EBS to help provide adequate lateral confinement of the backfill fill below the roadway.

The EBS could be reduced with the use of a geogrid. The amount of reduction will depend on the geogrid properties. The geogrid should be placed in accordance with the manufacturer's recommendations. The seams between geogrid strips should be overlapped a minimum of 1 foot or the amount recommended by the manufacturer, whichever is greater, or attached per the manufacturer's recommendations.

Drainage: An important consideration with the design and construction of pavements is surface and subsurface drainage. Water which infiltrates the pavement and remains trapped within the pavement components during traffic loading is one of the leading causes of premature pavement failure. Based on the estimated groundwater level, surface water infiltration and seasonal perched water are expected to be the main sources of water for pavement design.

Areas of shallow apparent bedrock are present. The apparent shallow bedrock should be taken into consideration in establishing the site grades. The bedrock will have a low permeability, which means where a bedrock subgrade is present will not drain well and water may easily become trapped within the base course. Therefore, where rock will be present within approximately 2 feet of the pavement subgrade, a pavement underdrain may be critical for pavement performance. The installation of an underdrain will aid in improving long-term performance of the pavement sections, as well as helping reduce maintenance costs.

The permeability of the clay subgrade is expected to be low, which can cause water to remain within the base material for longer periods and reduce the base material support characteristics. The pavement surface is recommended to be shaped or crowned to properly direct surface water to suitable on or off-site stormwater drainage infrastructure. The pavement subgrade should be properly sloped or crowned to avoid dips or pockets where water may become trapped. Dips in the subgrade can result in a “bathtub” effect, which may trap water. This trapped water can soften the subgrade and potentially heave the pavement during freezing weather. The subgrade in areas requiring undercut and backfill with granular soils are recommended to be graded to drain toward a drainpipe. The drainpipe should be sloped a minimum of $\frac{1}{2}$ to 1 percent to discharge to nearby storm sewers, drainage ditches or other appropriate drainage facilities. Edge drains should be installed where site grades slope toward the pavement edge to reduce the potential for water to enter the base course layer. Edge drains should be sloped to the nearest appropriate drainage facility. Water that ponds on the subgrade surface can lead to deterioration of the subgrade soils, reduction of the base course support characteristics, and result in pavement heave during freezing conditions. Good drainage should help reduce the possibility of the subgrade materials being wet over a long period of time. Water should not be allowed to pond behind curbs and saturate the pavement base course and subgrade. In downgrade areas, the base course should extend through the slope face to allow water to drain from the base course layer.

Maintenance: A sound maintenance program should be implemented to help maintain and enhance pavement performance and help attain the design service life. A preventative maintenance program should be started early in the pavement life to be effective. The “standard in the industry” supported by research indicates that preventative maintenance should typically begin within 2 to 5 years of the placement of pavement. However, maintenance of pavement on undocumented fill sites may require more maintenance and sooner. Failure to perform preventative maintenance will reduce the service life of the pavement and increase the costs for corrective maintenance and full pavement rehabilitation. Seal joints and cracks with elastomeric caulk in a timely manner to help reduce water infiltration through the pavement section into the base course layer, which may result in softening of the subgrade and deterioration of the pavement. Pavements should be observed for distresses, such as cracks, depressions and poor drainage, at least twice a year, typically once in the spring and once in the fall.

Shrinkage cracking is common with asphalt and occurs with age. Development of cracks should be expected with normal exposure to weather, wear and age. These cracks may become larger when exposed to such things as weather and vegetation growth and should be treated promptly.

Pavement Sections: The recommended minimum pavement sections listed in the table below are based on the anticipated usage of the project site and a 20-year design service life, but were not developed based on specific traffic patterns, loading and resiliency factors, as those parameters were not provided by the design team. ***ECS should be contacted for potential revision of the pavement design recommendations once the traffic is known; otherwise, increased pavement maintenance and a shortened pavement life could result.*** The preliminary pavement sections below are guidelines that may or may not comply with local jurisdictional minimums.

RECOMMENDED MINIMUM PAVEMENT SECTIONS		
Pavement Material	Compacted Material Thicknesses (Inches)	
	Flexible Pavement	Rigid Pavement
Portland Cement Concrete ⁽¹⁾	--	6
Hot Mix Asphalt ⁽²⁾ Surface Course	1½	--
Hot Mix Asphalt ⁽²⁾ Binder Course	2½	--
Dense Graded Crushed Stone Base ⁽³⁾	10	6

1. Section 415 of WisDOT Standard Specification for Highway and Structure Construction (WisDOT Standard Specs).
2. Section 460 of WisDOT Standard Specs.
3. Section 305 of WisDOT Standard Specs. ECS recommends dense graded crushed stone base. If crushed gravel or some other material is used in lieu of crushed stone, the material may have a lower structural coefficient and a thicker base may be required.

In frequent and higher stress traffic areas, such as where trucks frequently turn and points of ingress or egress, heavy duty rigid (concrete) pavement is recommended.

Pavement materials and construction should be in accordance with the AASHTO Guide for Design of Pavement Structures, and the WisDOT Standard Specifications for Highway and Structure Construction.

If the pavements will be constructed early during site development to accommodate construction traffic, consideration should be given to the construction of designated haul roads, where thickened pavement sections are provided to accommodate the construction traffic, as well as the future in-service traffic.

Rigid Pavements: ECS recommends an air-entrained concrete mix (compressive strength of at least 4,000 pounds per square inch at 28 days) for rigid pavement. Adequate construction joints, contraction joints and isolation joints should be provided in the areas of rigid pavement to reduce the impacts of cracking and shrinkage. Please refer to ACI 325.12R-02 *Guide for Design and Construction of Jointed Concrete Pavements for Streets and Local Roads*. The ACI Guide recommends an appropriate spacing strategy for the anticipated loads and pavement thickness. It has been our experience that joint spacing closer to the recommended values in ACI results in a pavement with less cracks outside the joints and better long-term performance. Control joint spacing should be determined in accordance with the current ACI code. Separation joints should be provided where the pavement abuts fixed objects, such as the buildings and light poles.

Drainage: An important consideration with the design and construction of pavements is surface and subsurface drainage. Water which infiltrates the pavement and remains trapped within the pavement components during traffic loading is one of the leading causes of premature pavement failure. Based on the estimated groundwater level, surface water infiltration and seasonal perched water are expected to be the main sources of water for pavement design.

The permeability of the clay subgrade is expected to be low, which can cause water to remain within the base material for longer periods and reduce the base material support characteristics. The pavement surface is recommended to be shaped or crowned to properly direct surface water to suitable on or off-site stormwater drainage infrastructure. The pavement subgrade should be properly sloped or crowned to avoid dips or pockets where water may become trapped. Dips in the subgrade can result in a "bathtub" effect, which may trap water. This trapped water can soften the subgrade and potentially heave the pavement during freezing weather. The subgrade in areas requiring undercut and backfill with granular soils are recommended to be graded to drain toward a drainpipe. The drainpipe should be sloped a minimum of ½ to 1 percent to discharge to nearby storm sewers, drainage ditches or other

appropriate drainage facilities. Edge drains should be installed where site grades slope toward the pavement edge to reduce the potential for water to enter the base course layer. Edge drains should be sloped to the nearest appropriate drainage facility. Water that ponds on the subgrade surface can lead to deterioration of the subgrade soils, reduction of the base course support characteristics, and result in pavement heave during freezing conditions. Good drainage should help reduce the possibility of the subgrade materials being wet over a long period of time.

Installation of “stub” or “finger” drains around catch basins and in other low-lying pavement areas should be considered to help reduce the accumulation of water above and within the subgrade soils and aggregate base. As an alternative to stub or finger drains, existing manholes and storm sewer inlets could be perforated with 1-inch diameter holes at 2-foot centers at the subgrade level. The holes are recommended to be covered with a wire mesh and the manhole/inlet wrapped with a non-woven geotextile to reduce migration of material into the manhole/inlet. The excavation around the manhole is recommended to be backfilled with free draining granular materials. Consider installation of pavement edge drains or trench drains to reduce the accumulation of water within the base course and on the subgrade soils.

Water should not be allowed to pond behind curbs and saturate the pavement base course and subgrade. In downgrade areas, the base course should extend through the slope face to allow water to drain from the base course layer.

Sheet drainage across large pavement areas allows more water to enter the pavement through openings, cracks and weak points which can adversely affect the base course and subgrade. This can increase the potential risk of premature pavement deterioration, distress and long-term pavement maintenance issues. Intermediate drains should be installed at adequate intervals to reduce the length of sheet flow across the pavement surface.

Maintenance: A sound maintenance program should be implemented to help maintain and enhance pavement performance and help attain the design service life. A preventative maintenance program should be started early in the pavement life to be effective. The “standard in the industry” supported by research indicates that preventative maintenance should typically begin within 2 to 5 years of the placement of pavement. However, maintenance of pavement on undocumented fill sites may require more maintenance and sooner. Failure to perform preventative maintenance will reduce the service life of the pavement and increase the costs for corrective maintenance and full pavement rehabilitation. Seal joints and cracks with elastomeric caulk in a timely manner to help reduce water infiltration through the pavement section into the base course layer, which may result in softening of the subgrade and deterioration of the pavement. Pavements should be observed for distresses, such as cracks, depressions and poor drainage, at least twice a year, typically once in the spring and once in the fall.

Shrinkage cracking is common with asphalt and occurs with age. Development of cracks should be expected with normal exposure to weather, wear and age. These cracks may become larger when exposed to such things as weather and vegetation growth and should be treated promptly.

4.2 INFILTRATION CONSIDERATIONS

The recommendations presented in this section are limited to stormwater infiltration considerations, which follows the general guidelines of WDNR Conservation Practice Standard 1002, Site Evaluation for Stormwater Infiltration. The recommendations in this section are based on the soil and groundwater conditions observed at Borings B-21 through B-26 anticipated to be within the area of the proposed stormwater management (SWM) devices.

Specific details of the proposed infiltration device and its location were not available at the time of this report preparation; it is recommended ECS be provided the infiltration device plans, when available, to check that the recommendations provided herein are applicable. ECS should be retained to provide observation and testing during infiltration device construction.

Our scope of services is not inclusive of each step involved in the initial site screening (Part A) of the WDNR Technical Standard 1002. Therefore, other conditions may exist at, or near the site that could exclude or exempt the site, or portions of the site from the infiltration requirements.

Infiltration Rates: Estimated soil infiltration rates based on the textural classification of the soils encountered and the guidelines provided in the WDNR Conservation Practice Standard 1002 ranged from 0.03 to 0.13 inches/hour and are listed on the Soil and Site Evaluation - Storm form (SBD10793) included in Appendix D. Infiltration rates based on soil textural classification and the guidelines provided in Table 2 of the WDNR Conservation Practice Standard 1002 should be adjusted for the least permeable soil layer within 5 feet of each of the listed intervals. These infiltration rates are estimates only. If better estimates of infiltration are required, ECS recommends field double ring infiltrometer tests be conducted.

Estimation of the final design infiltration rate should consider the effects of engineered fill placed, surface vegetation, erosion control devices, and potential groundwater mounding. Prior to and during construction, the design infiltration rate of the soil at the SWM device bottom should be verified. Compaction of the basin bottom subgrade during and following construction should be prevented as this may reduce the infiltration rate of the soil. This may require exclusion of construction traffic from the infiltration bottom, or loosening of the subgrade soil, such as by raking or discing. Sediment allowed to accumulate at the basin bottom will reduce infiltration. Measures should be taken to reduce accumulation of sediment. Periodic removal of sediment should be expected.

Seasonal High Water Table: Intermittent wet and dry periods may lead to soil mottling. The NRCS considers soil matrix or mottle colors of chroma 2 or lower (gray colors) as a potential indication of horizons that may be saturated for at least part of the year. The upper limits of this matrix or mottle coloration have been used to estimate the seasonal high water table. The presence of low chroma or gray soil colors or mottles in the observed soils suggest the estimated seasonal high water level may be at the approximate depths/elevations noted in the table below.

ESTIMATED SEASONAL HIGH WATER LEVEL		
Boring	Estimated Water Level	
	Approximate Depth (feet)	Approximate Elevation
B-21	Below 4	Below 880.5
B-22	Below 11.9	Below 869.6
B-23	Below 14.2	Below 874.3
B-24	11.5	868.5
B-25	Below 15	Below 885
B-26	Below 13	Below 8887

Estimation of the seasonal high water level based on colors (redoximorphic features) may not be reliable. Redox features can be difficult to distinguish in sandy soils. Also, we often don't know how often or long the soil is saturated at a given depth from color alone. A better estimate of the seasonal high groundwater table would require installation of groundwater observation wells along with observing the wells over a long time period.

Bedrock: Bedrock is estimated to be at an approximate depth of 4 feet to deeper than 15 feet at the stormwater management area borings.

4.3 WET DETENTION POND DESIGN CONSIDERATIONS

The recommendations presented in this section are limited to a wet detention pond, which follows the general guidelines of Wisconsin Department of Natural Resources (WDNR) Conservation Practice Standard 1001, Wet Detention Ponds.

The predominant site lean clay soils are considered to have relatively low infiltration rates. The sands are considered to have moderate rates. The construction and use of a wet detention basin is considered to be feasible at this site provided sands and silts are lined with clay.

Construction of a liner is recommended to reduce lateral and/or vertical movement of water through the basin walls and bottom, particularly if a stable pool elevation is desired. Based on the boring information and laboratory test results the lean clay excavated to construct the pond is expected to be adequate for use as a clay liner. Testing of compacted samples of the soil to be used as liner material is recommended to check its suitability for use as a wet detention basin liner. Scarification and recompaction of the basin sidewalls and bottom, to help disrupt fissures or more permeable soil seams or lenses, is recommended before basin liner construction. A minimum 2-feet-thick, compacted clay liner is recommended at the basin sides and bottom. Moisture content adjustment of the existing lean clay soils prior to placement and compaction is expected to be needed. Scarification and recompaction of basin walls and bottom, and construction of the clay liner are recommended to be observed and tested by ECS.

Liner material is recommended to conform to WDNR Conservation Practice Standard 1001, Type A or Type B Liner requirements, as appropriate, which include the properties listed below.

RECOMMENDED CLAY LINER MATERIAL PROPERTIES		
Material Characteristic	Material Values	
	Type A Liner	Type B Liner
USCS Classification	CL or CH	CL or CH
Percentage Passing a No. 200 Sieve	50% minimum	50% minimum
In-Place Hydraulic Conductivity (cm/sec)	1×10^{-7} or less	1×10^{-6} or less
Liquid Limit (%)	25 or greater average, no value less than 20	16 or greater average, no value less than 14
Plasticity Index (%)	12 or greater average, no value less than 10	7 or greater average, no value less than 5
Organic Content per ASTM D2487	Less than 3% loss on ignition	Less than 3% loss on ignition

Clay liner material is recommended to be compacted at a moisture content 0 to 4 percent above the optimum moisture content and to a minimum of 90 percent of the maximum dry density determined by Modified Proctor (ASTM D1557) or to a minimum of 95 percent of the maximum dry density determined by Standard Proctor (ASTM D698). Compact with a footed compactor weighing at least 25,000 pounds, operated continuously, in loose lift thicknesses not to exceed the smaller of 6 inches or the length of the teeth on the footed compactor used. The liner material must not contain deleterious materials. Materials considered deleterious include but are not limited to miscellaneous construction material, rubble fragments, wood fragments, material greater than 3 inches in nominal diameter, and hazardous materials.

A higher density than the minimum required by Natural Resources Conservation Practice Standard 1001 may be required depending on permeability requirements and should be determined based on laboratory testing of compacted samples of the liner material to be used. USDA-NRCS Wisconsin Construction Specification 300 Clay Liner gives additional information pertaining to selection and compaction of engineered fill for the clay liner. In addition to the USDA-NRCS Wisconsin Construction Specification 300 Clay Liner requirement that the water content of fill material be above the optimum moisture content, it is recommended the water content of fill material be no more than 4 percent above the optimum moisture content. The clay is recommended to be mechanically processed, such as with discing, prior to compaction to break up clods of clay to no more than half the loose lift thickness in size. The clay liner, once placed, should be protected from desiccation caused by drying of the soil. The formation of desiccation cracks will increase the risk of water loss through the clay liner.

As an alternative to a compacted clay liner, Appendix D of the WDNR Conservation Practice Standard 1001 outlines other acceptable liner materials, which include high density polyethylene (HDPE) and Geosynthetic Clay (GCL) liners.

Water control measures may be needed during excavation activities to remove runoff and perched water. If water control measures require a dewatering system, then it should be installed outside of the perimeter of the pond to avoid liner penetrations that could compromise the integrity of the liner system. Remove water that accumulates in excavations and other construction areas, along with unstable soil as soon as possible.

Take measures to reduce seepage along conduits where inlet and outlet pipes are constructed. Typically accepted measures may include the use of granular filters, anti-seepage collars or bentonite.

Provide erosion protection to protect the pond side slopes and embankments. The placement of a granular riprap and/or establishment of vegetation can be considered for erosion control within the pond and surrounding areas. The interior slopes of the ponds should be constructed at an inclination of 3:1 (Horizontal: Vertical) or flatter to help reduce the potential for instability related problems. If steeper slopes are required, then slope stability analysis is recommended to be conducted.

5.0 SITE CONSTRUCTION CONSIDERATIONS

5.1 SUBGRADE PREPARATION

The method of site preparation will be influenced by factors unknown at the time this report was prepared, which may include weather before and during construction, the possibility of subsurface conditions not revealed by the boring(s), and the final project details.

5.1.1 Stripping and Grubbing

The subgrade preparation should include stripping pavement, vegetation, rootmat, topsoil, and other soft or otherwise unsuitable materials from the 10-foot expanded building limits, 5-foot expanded pavement limits, and 5 feet beyond the toe of engineered fills, where feasible. Topsoil deposits (approximately 1 to 5 inches thick) were observed at the boring locations. Deeper topsoil or organic laden soils may be present, particularly in wet, low-lying, and poorly drained areas. In wooded areas, root masses may extend deeper and require additional localized excavation depth to completely remove the organics (root mass). The project team should be prepared to remove unsuitable material in its entirety within the limits noted above. Because topsoil depths can vary greatly across a site the contractor should verify topsoil depths as part of their bidding process. Note topsoil removal should not be based on soil coloration alone. After removal of the rootmat, it may be possible to leave some darker

soils in place provided the soil contains no more than 5 percent organic matter, by dry weight, as determined by Loss on Ignition ASTM D2974, has the recommended strength characteristics and is stable under proofroll. ECS should be retained to observe and document that topsoil and other unsuitable surficial materials have been removed prior to the placement of engineered fill or construction of structures.

The subgrade should not be left exposed to the elements or construction traffic for a prolonged time as the subgrade may become disturbed and/or softened. If pavement or other protective coverings are not placed within a few days after exposing the final design subgrade, consideration should be given to leaving the subgrade approximately 1 foot above the final design subgrade, where feasible, to help reduce softening of the design subgrade soil.

5.1.2 Proofrolling

Prior to fill placement or other construction on subgrades, the subgrades should be evaluated by ECS. The exposed subgrade is recommended to be thoroughly proofrolled with construction equipment having a minimum axle load of 10 tons (e.g., fully loaded tandem-axle dump truck for clayey soils or a large vibratory smooth drum roller for sandy soils). The subgrade should be traversed with the proofroll equipment in two perpendicular (orthogonal) directions with overlapping passes of the vehicle. This procedure is intended to assist identification of yielding subgrade materials.

Unstable or pumping subgrade areas identified during the proofroll should be repaired prior to the placement of subsequent engineered fill or other construction materials. Unstable subgrade repair methods, such as undercutting, or moisture conditioning and recompaction, or chemical stabilization, should be discussed with ECS to evaluate appropriate procedures to repair the existing conditions causing the instability. Test pits may be excavated in unstable areas to explore the shallow subsurface materials and to help determine the appropriate remedial action to stabilize the subgrade.

Seasonal reduction of the near surface soil strength can occur during wet times of the year (such as during the spring and fall months) or immediately following extended periods of rain. This may result in additional unstable or pumping subgrade areas. ***The high moisture content and/or low blow count soils present near surface at most of the boring locations, may not pass a proofroll, and may need to be undercut or repaired.*** Some undercutting or repair of unstable subgrade soils should be anticipated during subgrade preparation. Dependent on the results of proofroll observations, undercuts of approximately 1 to 2 feet are estimated to be necessary to help develop a stable subgrade. The method of subgrade repair or improvement chosen may be influenced by several factors such as weather and schedule, area, depth, and nature of the unstable subgrade soils. Depending on these and other factors the actual depth of subgrade undercut and/or stabilization method should be determined at the time of construction. Some common subgrade repair methods include the following or a combination of the following:

- Scarification, aeration, and recompaction;
- Undercut and replacement with engineered fill;
- Placement of a geogrid on the subgrade along with granular engineered fill; or,
- Chemical stabilization/modification techniques. Alterations to the pavement sections to include additional drainage, such as an open-graded aggregate subdrainage layer, may be needed if a chemically modified subgrade is used.

5.1.3 Site Temporary Dewatering

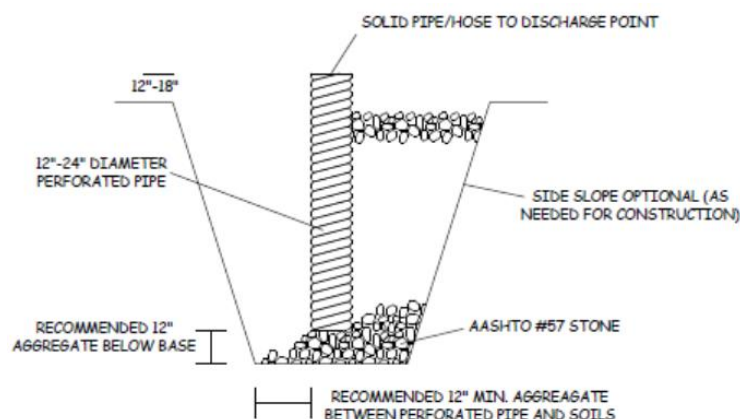
The contractor shall make their own assessment of temporary dewatering needs based upon the limited subsurface groundwater information presented in this report. Soil and groundwater conditions may vary between sampling intervals. If the contractor believes additional subsurface information is needed to assess dewatering needs, the contractor should obtain such information at their own expense. ECS makes no warranties or guarantees regarding the adequacy of the provided information to determine dewatering requirements; such recommendations are beyond our scope of services.

Dewatering systems are a critical component of many construction projects. Dewatering systems must be selected, designed, and maintained by a qualified and experienced (specialty or other) contractor familiar with the geotechnical and other aspects of the project. The failure to properly design and maintain a dewatering system for a given project can result in delayed construction, unnecessary undercuts, detrimental phenomena such as 'running sand' conditions, heaved subgrades, internal erosion (i.e., 'piping'), the migration of 'fines' down-gradient towards the dewatering system, localized settlement of nearby infrastructure, foundations, slabs-on-grade and pavements, etc. Water discharged from site dewatering systems are recommended to be discharged in accordance with local, state and federal requirements.

Surface Water: The surface of the site should be kept properly graded to enhance drainage of the surface water to appropriate discharge or storage areas during construction. Effort should be made to enhance the natural drainage without interrupting its pattern.

Subsurface Water: Groundwater observations are described in the **Groundwater Observations** section of this report. Based upon the results of the subsurface exploration and proposed construction, ECS' opinion is that construction dewatering at this site will be mainly to remove accumulated runoff water and perched water. Strategies for addressing groundwater are discussed below.

Strategies for Addressing Perched Groundwater: The typical strategy for addressing perched groundwater seepage into excavations and where excavations extend typically less than 1 to 2 feet below the water level, especially in areas containing primarily clay soils, is pumping from trench (or French) drains and sump pits with sump pumps which are backfilled with drainage aggregate such as AASHTO Size No. 57 Stone or open-graded bedding material. A typical sump pump drain (found in a sump pit or along a French drain) is depicted below. The inlet of the sump pump is placed at the bottom of the corrugated pipe and the discharge end of the sump is directed to an appropriate stormwater drain.



Sump Pit/Pump Conceptual Sketch

A typical French drain consists of an 18 to 24-inch wide by 18- to 24-inch-deep bed of AASHTO No. 57 aggregate (or similar open graded aggregate) wrapped in a medium duty, non-woven geotextile and (sometimes) containing a 6-inch diameter, Schedule 40 PVC perforated or slotted pipe. Actual dimensions should be determined during construction. After installation, the geotextile should be wrapped over the top of the aggregate and pipe followed by placement of backfill. The top of the drain should be positioned at least 3½ feet below the design subgrade elevation. Drains should not be routed within the expanded building limits.

Pumping wells or a vacuum system could also be used to address perched groundwater. These techniques often are only effective during the initial depletion of the perched water quantity and may quickly be ineffective at addressing accumulation of water from rain, snow, etc.

Strategies for Addressing Long-Term Groundwater Levels: Where water control cannot be maintained with sump pumps, or where excavations extend more than 2 feet below the groundwater level, dewatering likely will require installation of a more specialized dewatering system, possibly in conjunction with tight sheeting to help cut off water bearing seams/layers. However, depending on location, driving of sheeting may not be possible due to shallow rock. Where needed, ECS recommends the groundwater level be lowered to at least 3 feet below planned subgrades to help reduce the potential development of an unstable subgrade. Techniques for lowering groundwater commonly include pumping from deep wells with down-hole submersible pumps, vacuum system dewatering (i.e., well points) and possibly eductor wells. These techniques are more complex than pumping from sumps or drains and require engineered design. Lowering the static groundwater level can adversely affect nearby structures, utilities and other construction. ECS recommends a delegated design for dewatering and hiring a contractor specialized in design, installation and management of dewatering systems. ECS should be retained to review the delegated design before it is implemented. Dewatering should continue until earthwork operations and backfilling have extended sufficiently above the water table.

The stabilized pumping rate for the temporary dewatering system is recommended to be established by calculation submitted in the delegated design. The actual dewatering flow rates should be measured during construction to confirm the adequacy of the delegated design.

As is often the case, a saturated subgrade can exist even after the implementation of the strategies mentioned above. In these instances, adding supplemental dewatering such as French drains and sump pumping (described in the **Strategies for Addressing Perched Groundwater** subsection above) are often required.

5.2 EARTHWORK OPERATIONS

The following sections describe soil reusability and recommendations for engineered fill.

5.2.1 Engineered Fill

Product Submittals: Prior to placement of engineered fill, representative bulk samples (typically at least 50 to 100 pounds) of on-site and off-site borrow per material type should be submitted to ECS for laboratory testing, which may include natural moisture content, organic content, grain-size distribution, Atterberg limits, and moisture-density relationships for compaction. Import material should be tested prior to being hauled to the site to determine if it complies with project specifications. Alternatively, Proctor data from other accredited laboratories can be submitted if the test results are within the last 90 days.

Satisfactory Engineered Fill Materials: Engineered fills should consist of materials free of debris with the following engineering properties.

ENGINEERED FILL INDEX PROPERTIES		
Subject		Property
Plasticity	Upper 2 feet in Pavement Areas	$LL \leq 40, PI \leq 15$
	Below 2 feet in Pavement Areas	$LL \leq 50, PI \leq 20$
Max. Particle Size		3 inches
Max. Organic Content (by dry weight)		5 percent

Open-graded materials, such as coarser sands, and gravels (SP and GP), which contain increased void space in their mass may need to be encapsulated within a filter geotextile. If the engineered fill is to provide low-frost susceptible characteristics, the engineered fill must be classified as a clean GP or GW (or clean coarser SW or SP) per Unified Soil Classification System (ASTM D-2487) and must be properly drained.

Unsatisfactory Materials: Unsatisfactory fill materials, which do not satisfy the requirements for suitable materials, include topsoil and organic materials (PT, OH, OL), silt (ML) within the frost zone, and high plasticity soils elastic silt (MH) and fat clay (CH).

Pea gravel is not recommended to be used as engineered fill. Pea gravel has round/smooth characteristics, no fines and does not interlock when compacted, which makes it more susceptible to future movement and instability resulting in excessive and variable settlement.

On-Site Borrow Suitability: Natural soil deposits that meet the definition of Satisfactory Engineered Fill Materials are expected to be present at the site. Site soil used as engineered fill must not contain more than 5 percent organic matter as determined by ASTM D2974, and must be free of frozen matter, deleterious materials, over-sized material (maximum 3-inch particle diameter), or chemicals that may result in the material being classified as "contaminated." The on-site soil may be feasible to use as engineered fill with proper moisture conditioning during favorable conditions, with an exception being the silt soil which is generally difficult to moisture condition properly and compact even under favorable condition. Additionally, the silt soil is not recommended to be reused within the frost zone due to its high frost susceptibility. Site soil considered for use as engineered fill should be further evaluated by ECS prior to its use.

Several soil samples had relatively high moisture contents so some drying of site soil prior to reuse as engineered fill is expected to be needed. This may involve spreading and discing to aerate, chemical modification or other methods to reduce the soil moisture to within a narrow range of the soil's optimum moisture content to facilitate placement and compaction. Reuse of soils having elevated moisture content is often a point of contention and a source of delays and change orders. From a technical standpoint, soils with moisture contents wet of optimum can be reused provided the moisture is properly adjusted to within a workable range of the material optimum moisture content. From a practical standpoint, wet soils can be difficult to dry, particularly within small or congested areas or during unfavorable weather, and such difficulties should be considered during planning and budgeting. A clear understanding by the general contractor and grading subcontractor regarding the reuse of excavated soils will be important to reduce delays and unexpected cost overruns. It is important to establish as part of the contract whether soils having elevated moisture content will be considered suitable for reuse. Some conditions at the time of construction, such as wet or freezing weather, may

preclude the use of on-site soil, and use of an imported less moisture sensitive and/or less frost susceptible granular material may be needed. Some sorting to remove over-sized material (i.e., cobbles and/or boulders) may be needed prior to re-use of on-site soil as engineered fill.

5.2.2 Compaction

Subgrade Benching: Fill material should be placed in horizontal lifts. Where fill materials will be placed to widen existing embankment fills, or placed up against sloping ground, the soil subgrade should be scarified, and the new fill benched and keyed into the existing material. Placement and compaction of fill is recommended to be on a 5 (H):1 (V) or flatter slope, or stepped or benched as required to flatten.

Engineered Fill Compaction: Engineered fill is recommended to be placed and compacted in appropriate thickness loose lifts as recommended below. Give as much importance to the moisture content requirements of the material as the density requirements during placement and compaction considering the moisture sensitivity of the soil.

ENGINEERED FILL COMPACTION RECOMMENDATIONS		
Subject		Recommendation
Compaction Standard		Modified Proctor, ASTM D1557
Recommended Compaction	Structural Areas	≥ 95 percent of Maximum Dry Density
	Landscape/Greenspace Areas	≥ 88 percent of Maximum Dry Density
Moisture Content	Fine-grained	-1 to +3 % points of the material's optimum value
	Coarse-grained	-3 to +3 % points of the material's optimum value
Maximum Loose Thickness		8 inches prior to compaction ⁽¹⁾

1. The maximum loose lift thickness depends upon the type of compaction equipment used and material being compacted. Density testing during fill placement is important to check and document that the specified compaction is being achieved. In some cases, thinner lifts than noted above and/or more compaction energy may be needed to achieve the required degree of compaction.

Compaction equipment appropriate for the material type being compacted should be used. Sheepsfoot compaction equipment is typically used for the fine-grained soils (clays). A vibratory steel drum roller is typically used for compaction of coarse-grained soils (sands and gravels) as well as to help seal compacted surfaces. Vibratory compaction methods should be done with caution near the water table because an unstable subgrade condition could develop. Static compaction and thinner lifts may be needed near the water table.

5.3 GENERAL CONSIDERATIONS

Fill Placement Considerations: Fill materials should not be placed on frozen soils, on frost-heaved soils, on excessively wet soils, or soils that are otherwise unstable. Borrow fill materials should not contain frozen materials at the time of placement, and frozen or frost-heaved soils should be removed prior to placement of engineered fill or other fill soils and aggregates. Excessively wet soils or aggregates should be scarified, aerated, and moisture conditioned.

Excavation Safety: Excavations and slopes should be maintained in accordance with OSHA excavation safety standards. The Contractor is solely responsible for designing and constructing stable, temporary excavations and slopes and should shore, slope, or bench the sides of the excavations and slopes as required to maintain stability of both the excavation sides and bottom. The Contractor's responsible person, as defined in 29 CFR Part 1926, should evaluate the soil exposed in the excavations as part of the contractor's safety procedures. In no case should slope height, slope inclination, or excavation

depth, including utility trench excavation depth, exceed those specified in local, state, and federal safety regulations. In some cases, the use of shoring, bracing, or trench boxes may be required. ECS is providing this information solely as a service to our client. ECS is not assuming responsibility for construction site safety or the contractor's activities; such responsibility is not being implied and should not be inferred.

Drain Tile: Drain tile may exist at the site from past use of the property. Drain tile may drain large adjacent areas so care should be taken not to plug or damage existing drain tile. Drain tiles that are damaged should be repaired and relocated away from the proposed building area, as needed. Drain tile are recommended to be relocated around the proposed development and discharged to suitable drainage facilities.

Crop Tillage: The upper soil profile may be disturbed due to crop tillage. Therefore, some undercut and/or repair of the subgrade soil should be expected.

Bidding/Estimating Considerations: Contractors bidding or undertaking work at the site should examine the results of the subsurface exploration, satisfy themselves as to the adequacy of the information for bidding and construction, make their own interpretation of the data, and consider the effect it may have on their cost proposal, construction techniques, schedule, and equipment capabilities. Furthermore, it is recommended contractors complete additional fieldwork and exploration they deem necessary to properly prepare a cost proposal for the site work. Soil borings do not provide the same wide-scale view of the subsurface conditions that is obtained during site grading, excavation or other aspects of earthwork construction. Additional scope may be required to obtain more detailed subsurface information needed for earthwork bid preparation, which could include test pits to better understand the lateral and vertical extents of subsurface materials of concern, particularly topsoil and existing undocumented fill, which may not be as easily identifiable from disturbed auguring and/or with spilt-spoon samples. Even with this additional information, budget contingencies should be carried in construction to help cover potential variations in subsurface conditions.

5.4 DIFFICULT EXCAVATION

Excavation and site grading difficulties may occur due to cobbles, boulders and/or shallow bedrock, but will depend on the final site grades.

The degree of excavation difficulty generally depends upon the depth of excavation and capabilities of the excavation equipment. The rip-ability of extremely dense material and bedrock depends on several factors, including the nature of the soils/rock, moisture content, strength, degree of weathering, and the type of excavation equipment. Based on historical data and conversations with excavation contractors, it is our opinion that standard penetration test (SPT) N-values provide only a preliminary general indicator of the rip-ability of extremely dense soil/weathered rock. Soils having SPT N-values less than 50 bpf can usually be excavated with standard construction techniques. Soils with N-values above 50 bpf, and where auger refusal has not yet been met, can usually be excavated with larger machinery equipped for ripping rock. Some of the likely attachments would include heavy shanks (ripping teeth), shank protectors, and narrow track shoes. Extremely dense soils and rock where auger refusal has been met will likely need blasting to remove the rock. Excavatability of bedrock material will be greatly controlled by in-situ jointing and bedding and may vary from location to location.

Excavation contractors should expect special excavation equipment to be necessary and excavation rates will be slow where bedrock is shallow relative to the planned grades. The boundary between soil and rock may not be sharply defined due to variations in weathering and potential presence of cobbles and/or boulders in the till above the bedrock. Consider test pits to better evaluate the most cost-effective excavation methods, and to confirm the material types and depth of bedrock. Test pits

performed are recommended to be backfilled with engineered fill properly benched out into the surrounding soil.

The approximate depth and elevation of difficult excavation anticipated at the test boring locations is indicated in the table below. The depth/elevation of difficult excavation should be preliminarily considered in establishing the site grades. The depth is expected to be variable based on the test borings. Therefore, the depth and elevation of difficult excavation outside the test boring locations may be shallower or deeper than interpolated from the table.

APPROXIMATE DEPTH/ELEVATION OF ANTICIPATED DIFFICULT EXCAVATION		
Test Boring	Depth Below Ground Surface (Feet)	Elevation
B-01	9	897
B-02	8½	893.5
B-03	8½	896.5
B-04	8½	897
B-05	9½	899.5
B-06	8½	889
B-07	> 10	< 880
B-08	8	895
B-09	> 10	< 895
B-10	> 10	< 887
B-11	> 10	< 892
B-12	9	889
B-13	9	874
B-14	3½	891.5
B-15	9½	877.5
B-16	> 10	< 892
B-17	> 10	< 900
B-18	7	914
B-19	6½	885.5
B-20	7	881
B-21	1½	883
B-22	11½	870
B-23	14	874.5
B-24	> 15	< 865
B-25	> 15	< 885
B-26	13	887

Excavation and removal problems may occur and should be expected and budgeted for this project. Geophysical testing could be done to help estimate the ripability of the bedrock for a given piece of equipment. The anticipated depths and elevations of difficult excavation should be taken into consideration when establishing site grades. To help reduce excavation difficulties, site grades should be kept as high as practical.

If blasting is performed, it should be done so carefully by a qualified specialty contractor so that nearby construction is not damaged. Pre- and post-blast video surveys of the surrounding properties are recommended to be performed in the presence of the adjacent property owners or representatives to help reduce the potential for fraudulent post-blast liability claims. A maximum peak particle velocity of less than 2 inches per second is typically considered the threshold for building damage, but the human annoyance threshold is less. Therefore, control of blasting vibrations and vibration monitoring is

recommended. Additionally, blasting of bedrock has a potential to cause carbon monoxide gas to develop and migrate through utility trenches or fractures in the bedrock. Appropriate precautions should be taken to prevent migration of gases and nearby property owners should be notified.

Blasting frequently results in over-break (rock breakage exceeding that required for excavation to design grade), or fractures and disturbance to a greater depth than desired. If it is necessary to blast, over-break should be removed and replaced with structural compacted fill. Disturbed or loosened rock that is left in-place could cause excessive structural settlement. The distinction between soil and rock excavation should be clearly delineated in the construction documents; otherwise, costly contract disputes and change orders could result.

The specifications should call out excavation as being either classified or unclassified. Unclassified excavation means it is left up to the contractor to determine his own means and methods to excavate material and one unit price is used for excavation regardless of the material that is present on the site. Classified excavation is typically used on sites where excavation problems are expected either due to difficult excavation from shallow bedrock or granular (caving) soil. On sites with shallow bedrock, such as this site, specifications typically read that material that can be excavated with a given piece of equipment with a given amount of torque (foot-pounds) will be considered "normal" excavation and excavation requiring equipment with a greater amount of torque (foot-pounds) will be considered "special" excavation. Contractors are then required to provide unit rates for "normal" excavation and a separate rate for "special" excavation.

5.5 UTILITY INSTALLATIONS

Utility construction should follow *The Standard Specifications for Sewer and Water Line Construction in Wisconsin*.

Utility Subgrades: The soils encountered at the boring locations are expected to generally be adequate for support of utility pipes. It is recommended ECS be retained to observe and test the subgrade materials encountered at the time of construction for stability. Soft, very loose or otherwise unsuitable materials encountered at the subgrade should be removed and replaced with appropriate engineered fill or pipe bedding material.

Utility Backfilling: The granular bedding material (often AASHTO No. 57 stone) should be at least 4 inches thick, but not less than that specified by the civil engineer's project drawings and specifications. We recommend that the bedding materials be placed up to the springline of the pipe. Fill placed for support of the utilities, as well as backfill over the utilities, should satisfy the recommendations for engineered fill and fill placement.

6.0 CLOSING

ECS has prepared this report to guide geotechnical-related design and construction aspects of the project. We performed these services in accordance with the standard of care expected of professionals in the industry performing similar services on projects of like size and complexity at this time in the region. No other representation, express or implied, and no warranty or guarantee is included or intended in this report.

The description of the proposed project is based on information provided to ECS. If this information is inaccurate, either because of our interpretation of the documents provided, or site or design changes

that may occur later, ECS should be contacted so that we can review our recommendations and provide additional or alternate recommendations as may be required to reflect the proposed construction.

We recommend ECS review the project's plans and specifications so that we may evaluate consistency of those plans/specifications with the intent of the geotechnical report recommendations.

Field observations and quality assurance testing during earthwork and foundation installation are an extension of, and integral to, the geotechnical design recommendations. We recommend that ECS be retained to apply our expertise throughout the geotechnical phases of construction, and to provide consultation and recommendations should issues arise.

ECS is not responsible for the conclusions, opinions, or recommendations of others based on the data in this report.

Appendix A - Drawings and Reports

Site Location Diagram

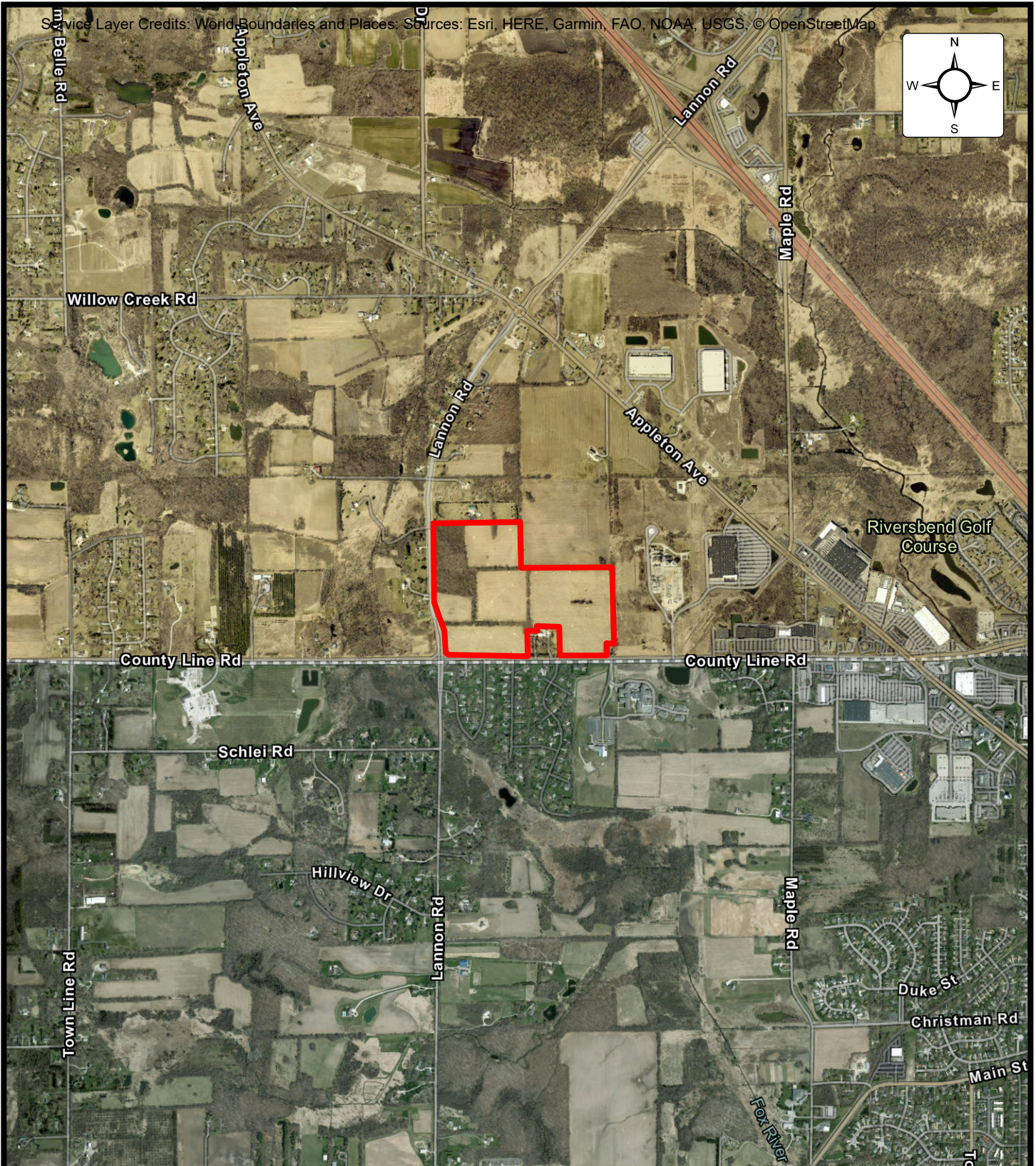
Boring Location Diagram(s)

Subsurface Cross-Section(s)

Soil Survey Map

Geologic Survey Map

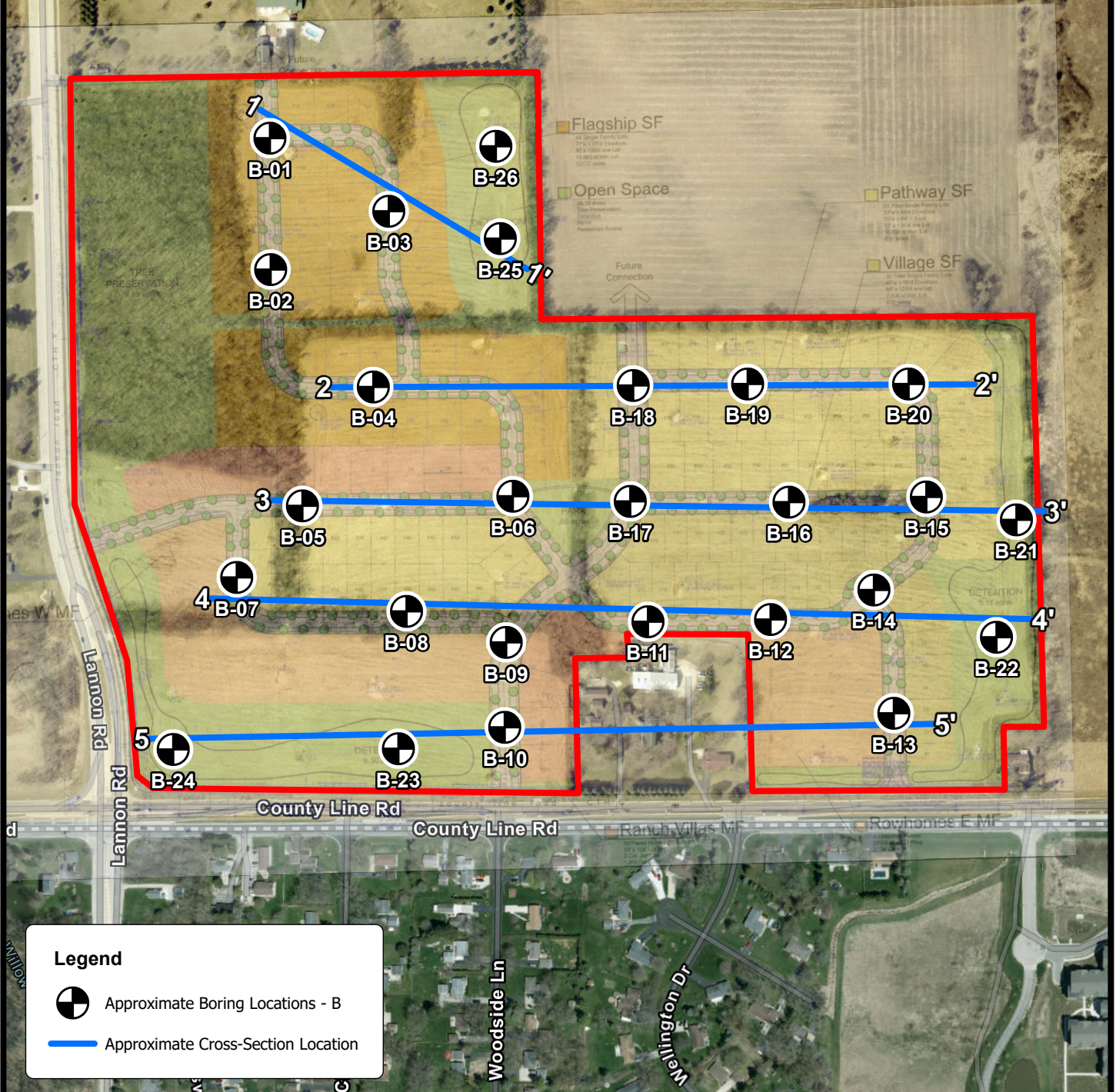
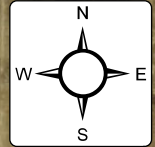
Limestone/Rock Contour Diagram(s)



SITE LOCATION DIAGRAM **Mohrhusen Farm**

**County Line Road & Lannon Road, Germantown,
 Wisconsin
 Home Path Financial**

ENGINEER DM1
SCALE 1" = 2000'
PROJECT NO. 42:2684
SHEET SLD
DATE 1/21/2025



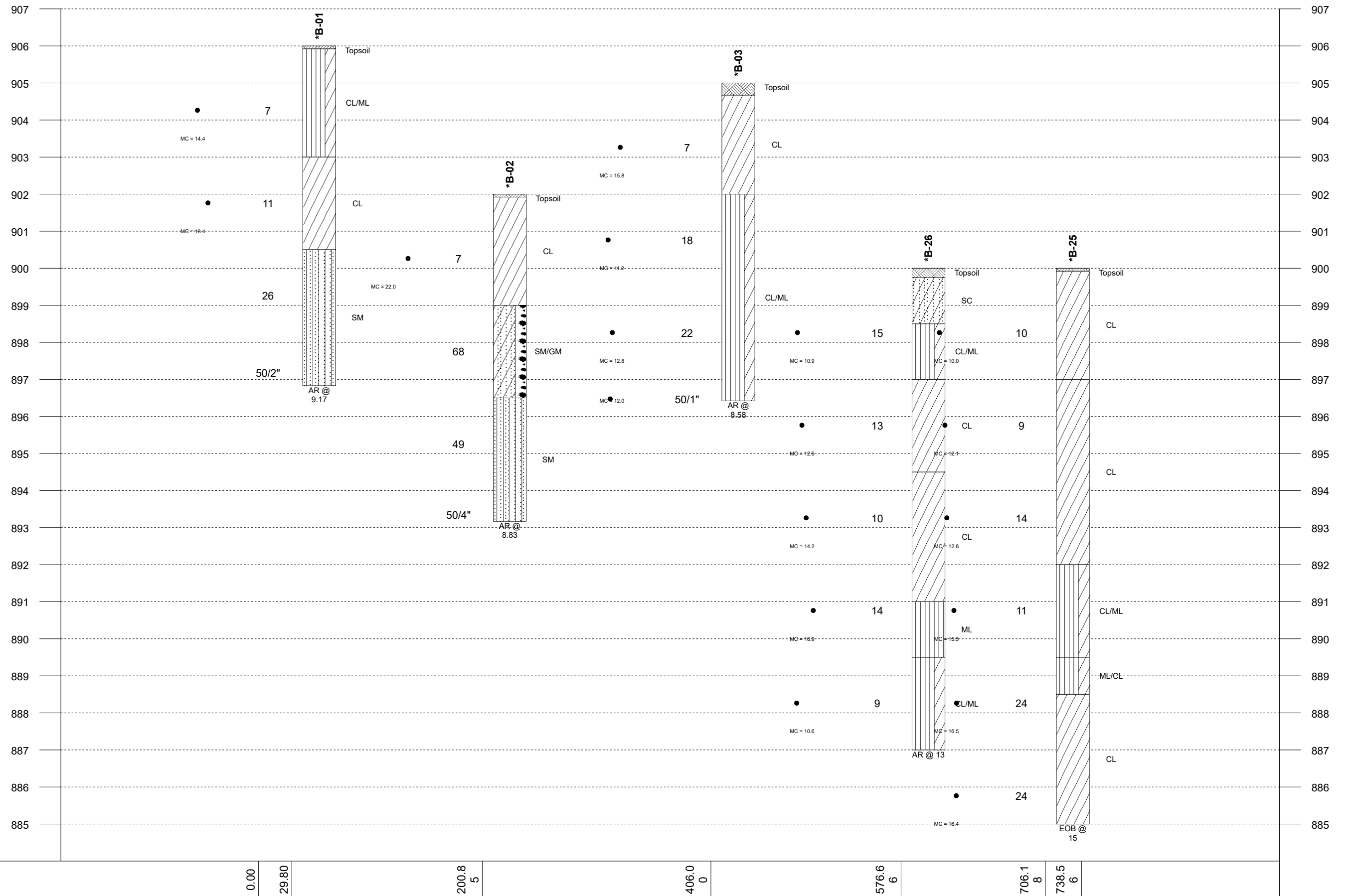
BORING LOCATION DIAGRAM Mohrhussen Farm

County Line Road & Lannon Road, Germantown,
Wisconsin
Home Path Financial

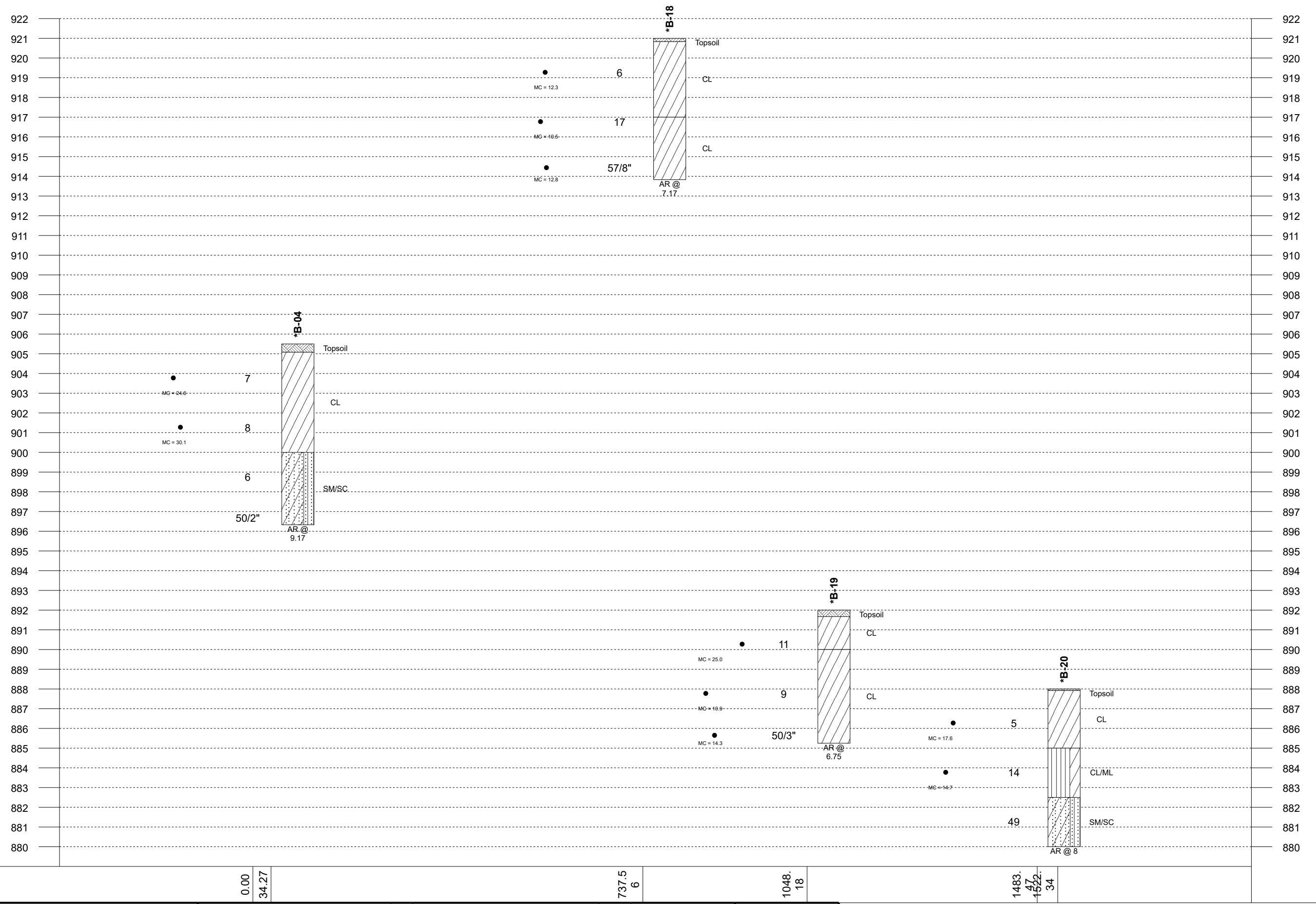
ENGINEER DM1
SCALE 1" = 400'
PROJECT NO. 42:2684
SHEET BLD
DATE 1/27/2025

Legend Key

	Topsoil
	SILTY CLAY
	Lean CLAY
	SILTY SAND
	CLAYEY SAND
	Silty sand and gravel
	SILT
	Clayey Silt



Notes: 1- EOB: END OF BORING AR: AUGER REFUSAL SR: SAMPLER REFUSAL. 2- THE NUMBER BELOW THE STRIPS IS THE DISTANCE ALONG THE BASELINE. 3- SEE INDIVIDUAL BORING LOG AND GEOTECHNICAL INFORMATION. 4- STANDARD PENETRATION TEST RESISTANCE (LEFT OF BORING) IN BLOWS PER FOOT (ASTM D1586).	Plastic Limit	Water Content	Liquid Limit	▽ WL (First Encountered)	Fill
	X	●	△	▼ WL (Completion)	Possible Fill
	[FINES CONTENT %]			▼ WL (Estimated Seasonal High Water)	Probable Fill
	■ BOTTOM OF CASING	LOSS OF CIRCULATION	○ CALIBRATED PENETROMETER	▽ WL (Stabilized)	Rock
GENERALIZED SUBSURFACE SOIL PROFILE					
Section line 1					
Mohrhusen Farm					
Home Path Financial					
County Line Road & Lannon Road, Germantown, Wisconsin, 53022					
Project No:		42:2684		Date:	
				02/04/2025	



Legend Key

Topsoil

Lean CLAY

Poorly graded clayey silty...

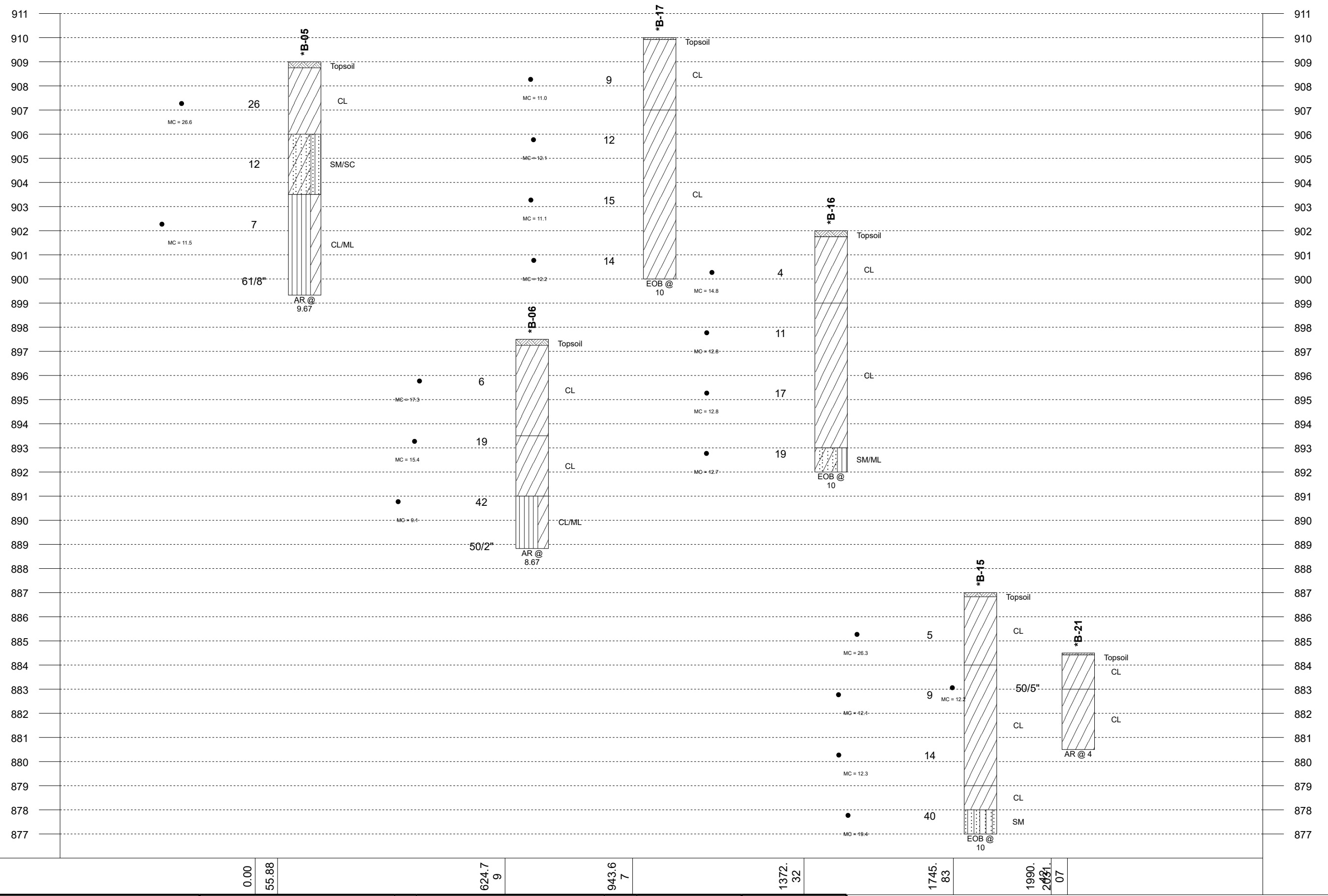
SILTY CLAY

Notes:
1- EOB: END OF BORING AR: AUGER REFUSAL SR: SAMPLER REFUSAL.
2- THE NUMBER BELOW THE STRIPS IS THE DISTANCE ALONG THE BASELINE.
3- SEE INDIVIDUAL BORING LOG AND GEOTECHNICAL INFORMATION.
4- STANDARD PENETRATION TEST RESISTANCE (LEFT OF BORING) IN BLOWS PER FOOT (ASTM D1586).

Plastic Limit	Water Content	Liquid Limit	▽	WL (First Encountered)	Fill
X	●	△	▼	WL (Completion)	Possible Fill
[FINES CONTENT %]			▼	WL (Estimated Seasonal High Water)	Probable Fill
■	BOTTOM OF CASING		▽	WL (Stabilized)	Rock
⌋	LOSS OF CIRCULATION				
○	CALIBRATED PENETROMETER				



GENERALIZED SUBSURFACE SOIL PROFILE			
Section line 2			
Mohrhusen Farm			
Home Path Financial			
County Line Road & Lannon Road, Germantown, Wisconsin, 53022			
Project No:	42:2684	Date:	02/04/2025



Legend Key

- Topsoil
- Lean CLAY
- Poorly graded clayey silty...
- SILTY CLAY
- Poorly graded silty fine sand
- SILTY SAND

Notes:
1- EOB: END OF BORING AR: AUGER REFUSAL SR: SAMPLER REFUSAL.
2- THE NUMBER BELOW THE STRIPS IS THE DISTANCE ALONG THE BASELINE.
3- SEE INDIVIDUAL BORING LOG AND GEOTECHNICAL INFORMATION.
4- STANDARD PENETRATION TEST RESISTANCE (LEFT OF BORING) IN BLOWS PER FOOT (ASTM D1586).

Plastic Limit	Water Content	Liquid Limit	WL (First Encountered)	Fill
X	●	△	WL (Completion)	Possible Fill
[FINES CONTENT %]			WL (Estimated Seasonal High Water)	Probable Fill
BOTTOM OF CASING			WL (Stabilized)	Rock
LOSS OF CIRCULATION				
CALIBRATED PENETROMETER				



GENERALIZED SUBSURFACE SOIL PROFILE

Section line 3

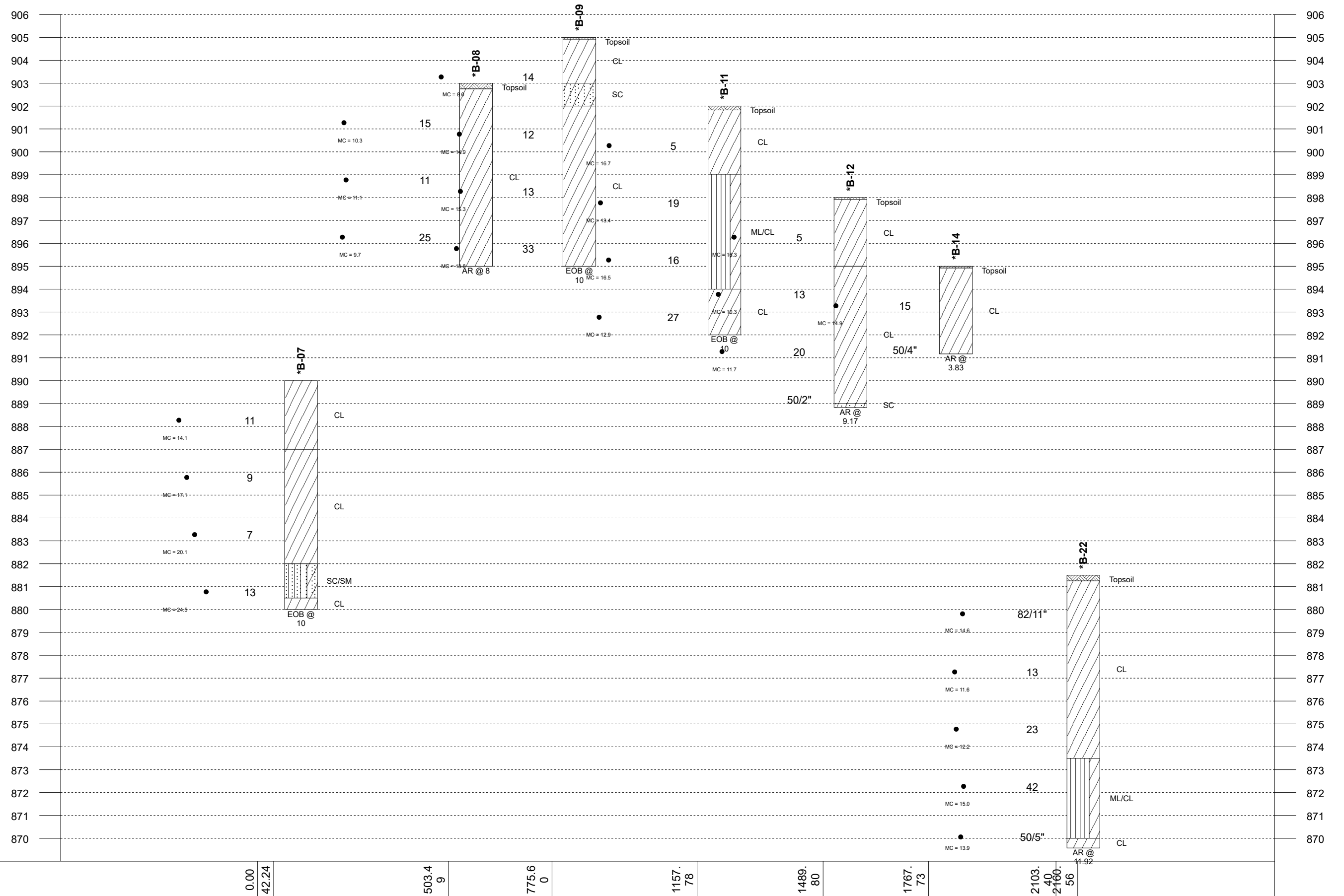
Mohrhusen Farm

Home Path Financial

County Line Road & Lannon Road, Germantown, Wisconsin, 53022

Project No: 42:2684

Date: 02/04/2025



Legend Key

- Topsoil
- Lean CLAY
- CLAYEY SAND
- Clayey Silt
- SILT, CLAYEY SAND

Notes:
1- EOB: END OF BORING AR: AUGER REFUSAL SR: SAMPLER REFUSAL.
2- THE NUMBER BELOW THE STRIPS IS THE DISTANCE ALONG THE BASELINE.
3- SEE INDIVIDUAL BORING LOG AND GEOTECHNICAL INFORMATION.
4- STANDARD PENETRATION TEST RESISTANCE (LEFT OF BORING) IN BLOWS PER FOOT (ASTM D1586).

Plastic Limit	Water Content	Liquid Limit
X	●	△
[FINES CONTENT %]		
■	BOTTOM OF CASING	
▬	LOSS OF CIRCULATION	
○	CALIBRATED PENETROMETER	

▽	WL (First Encountered)
▼	WL (Completion)
▽	WL (Estimated Seasonal High Water)
▽	WL (Stabilized)

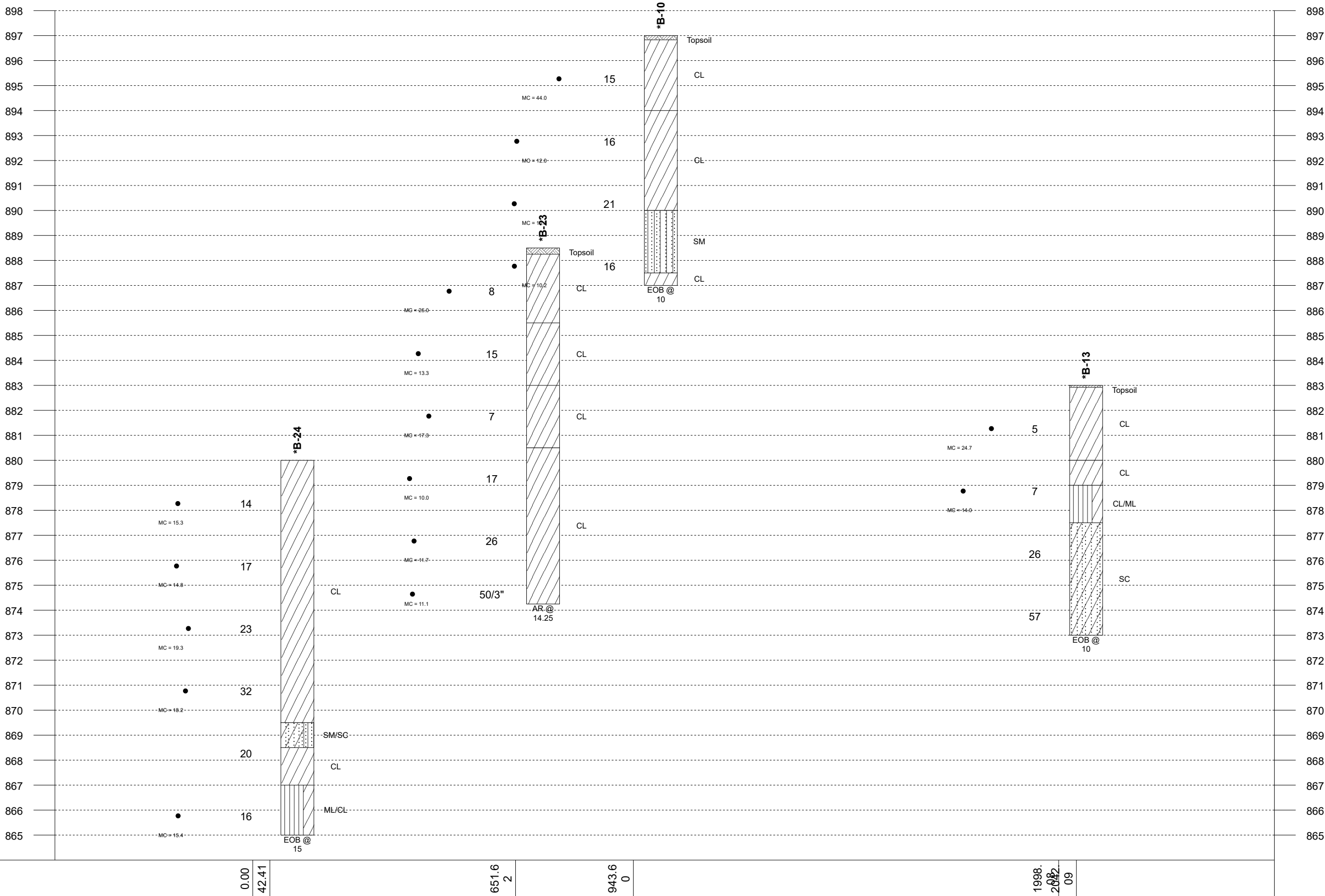
■	Fill
■	Possible Fill
■	Probable Fill
■	Rock



GENERALIZED SUBSURFACE SOIL PROFILE			
Section line 4			
Mohrhusen Farm			
Home Path Financial			
County Line Road & Lannon Road, Germantown, Wisconsin, 53022			
Project No:	42:2684	Date:	02/04/2025

Legend Key

-  Topsoil
-  Lean CLAY
-  SILTY SAND
-  SILTY CLAY
-  CLAYEY SAND
-  Poorly graded clayey silty...
-  Clayey Silt



Notes:
1- EOB: END OF BORING AR: AUGER REFUSAL SR: SAMPLER REFUSAL.
2- THE NUMBER BELOW THE STRIPS IS THE DISTANCE ALONG THE BASELINE.
3- SEE INDIVIDUAL BORING LOG AND GEOTECHNICAL INFORMATION.
4- STANDARD PENETRATION TEST RESISTANCE (LEFT OF BORING) IN BLOWS PER FOOT (ASTM D1586).

Plastic Limit	Water Content	Liquid Limit
X	●	△
[FINES CONTENT %]		
BOTTOM OF CASING		
LOSS OF CIRCULATION		
○ CALIBRATED PENETROMETER		

▽ WL (First Encountered)	Fill
▼ WL (Completion)	Possible Fill
▽ WL (Estimated Seasonal High Water)	Probable Fill
▽ WL (Stabilized)	Rock



GENERALIZED SUBSURFACE SOIL PROFILE		
Section line 5		
Mohrhusen Farm		
Home Path Financial		
County Line Road & Lannon Road, Germantown, Wisconsin, 53022		
Project No:	42:2684	Date: 02/04/2025

Custom Soil Resource Report
Soil Map



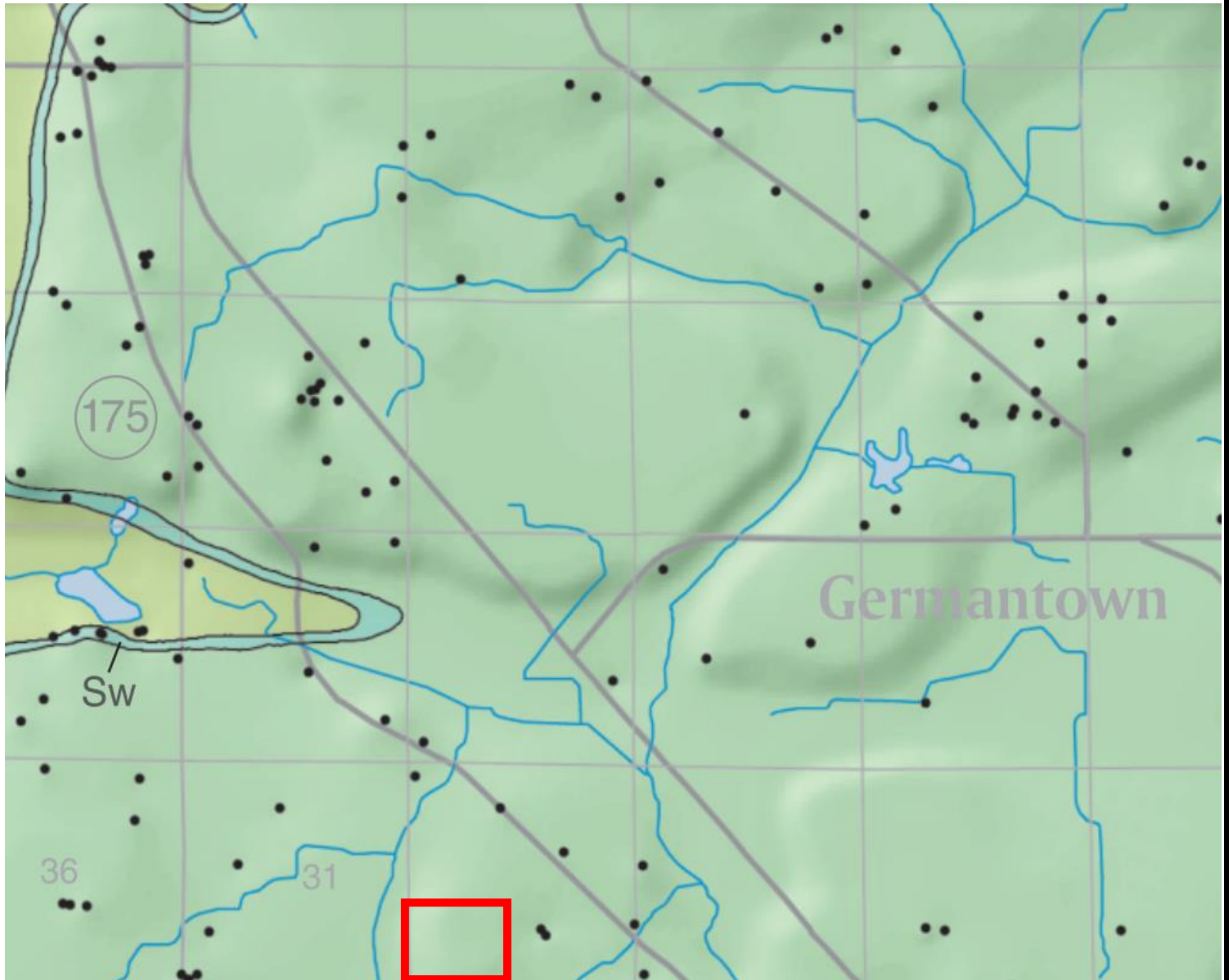
SOIL SURVEY MAPPING
Mohrhusen Farm

County Line Road & Lannon Road, Germantown, Washington County, Wisconsin
Home Path Financial

Engineer	DM
Scale	AS SHOWN
Project No.	42:2684
Figure	1 of 1
Date	1/21/2025

SUMMARY OF SOIL SURVEY MAP UNIT CHARACTERISTICS					
Item	Map Unit				
Symbol	KIA	KwB	KwC2	MoB	OuB
Name	Kendall silt loam	Knowles silt loam	Knowles silt loam	Mayville silt loam	Ozaukee silt loam
Percent of Project Site	1	15	2	1	29
Landforms	Drainageways	Ground moraines	Ground moraines	Drumlins	Ground moraines, end moraines
Parent Material	Loess over outwash and/or loamy till	Loess over loamy till over dolomite	Loess over loamy till over dolomite	Loess over loamy till	Thin mantle of loess over silty and clayey till
Typical Soil Profile	silt loam, silty clay loam, loam	silt loam, silty clay loam, clay loam, bedrock	silt loam, silty clay loam, clay loam, bedrock	silt loam, silty clay loam, clay loam, gravelly sandy loam	silt loam, silty clay loam, silty clay, silty clay loam
Shrink-Swell Potential	Low	Moderate	Moderate	Low	Low
Potential for Frost Action	High	High	High	High	Moderate
Corrosion Risk—Uncoated Steel	High	Low	Low	High	High
Corrosion Risk—Concrete	Moderate	Moderate	Low	Moderate	Low
Drainage	Poorly drained	Well drained	Well drained	Moderately well drained	Moderately well drained
Hydrologic Group	B/D	C	C	C	C
Hydric Soil	No	No	No	No	No
Ksat (in/hr)	0.57 to 1.98	0.20 to 0.60	0.20 to 0.61	0.20 to 0.57	0.06 to 0.20
Depth to Water Table (inches)	About 0 to 24	More than 80	More than 80	About 12 to 40	About 24 to 42

SUMMARY OF SOIL SURVEY MAP UNIT CHARACTERISTICS					
Item	Map Unit				
Symbol	OuB2	OuC2	RaA	RkC2	ThB
Name	Ozaukee silt loam	Ozaukee silt loam	Radford silt loam	Ritchey silt loam	Theresa silt loam
Percent of Project Site	33	11	1	3	1
Landforms	Ground moraines, end moraines	Ground moraines, end moraines	Drainageways and flood plains	Bluffs	Drumlins
Parent Material	Thin mantle of loess over silty and clayey till	Thin mantle of loess over silty and clayey till	Silty alluvium	Fine-loamy loess over till over dolomite	Loess over loamy till and/or calcareous, dense loamy till
Typical Soil Profile	silt loam, silty clay loam, silty clay, silty clay loam	silt loam, silty clay loam, silty clay, silty clay loam	silt loam	silt loam, clay loam, bedrock	silt loam, silty clay loam, clay loam, loam
Shrink-Swell Potential	Low	Low	Moderate	Moderate	Low
Potential for Frost Action	Moderate	Moderate	High	Moderate	Moderate
Corrosion Risk–Uncoated Steel	High	High	High	Low	Low
Corrosion Risk – Concrete	Low	Low	Low	Low	Low
Drainage	Moderately well drained	Moderately well drained	Somewhat poorly drained	Well drained	Well drained
Hydrologic Group	C	C	B/D	D	C
Hydric Soil	No	No	No	No	No
Ksat	0.06 to 0.20	0.06 to 0.20	0.43 to 1.98	0.20 to 1.98	0.06 to 0.20
Depth to Water Table (inches)	About 24 to 42	About 24 to 42	About 15 to 30	About 60 to 80	More than 80



Source: Wisconsin Geological and Natural History Survey Open-File Report (WOFR) 2004-15A Preliminary Bedrock Geologic Map of Washington County, Wisconsin, WOFR 2004-15B Preliminary Elevation of Bedrock Map of Washington County, Wisconsin, and WOFR 2004-15C Preliminary Depth to Bedrock Map of Washington County, Wisconsin

Description: Silurian aged Racine Formation (Sr) underlies the site. The bedrock is reported to consist of dolomite, which is medium to coarse grained, thin to thickly bedded, very light to light gray and fossiliferous.

Depth: Less than 50 feet

Elevation: Greater than EL. 850



BEDROCK MAPPING **Mohrhusen Farm**

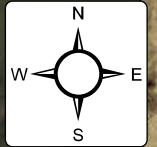
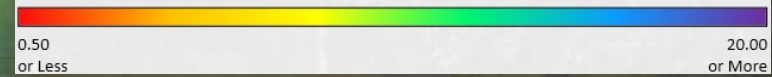
County Line Road & Lannon Road, Germantown, Wisconsin
Home Path Financial

Engineer	DM
Scale	NTS
Project No.	42:2684
Figure	BM
Date	1/30/2025

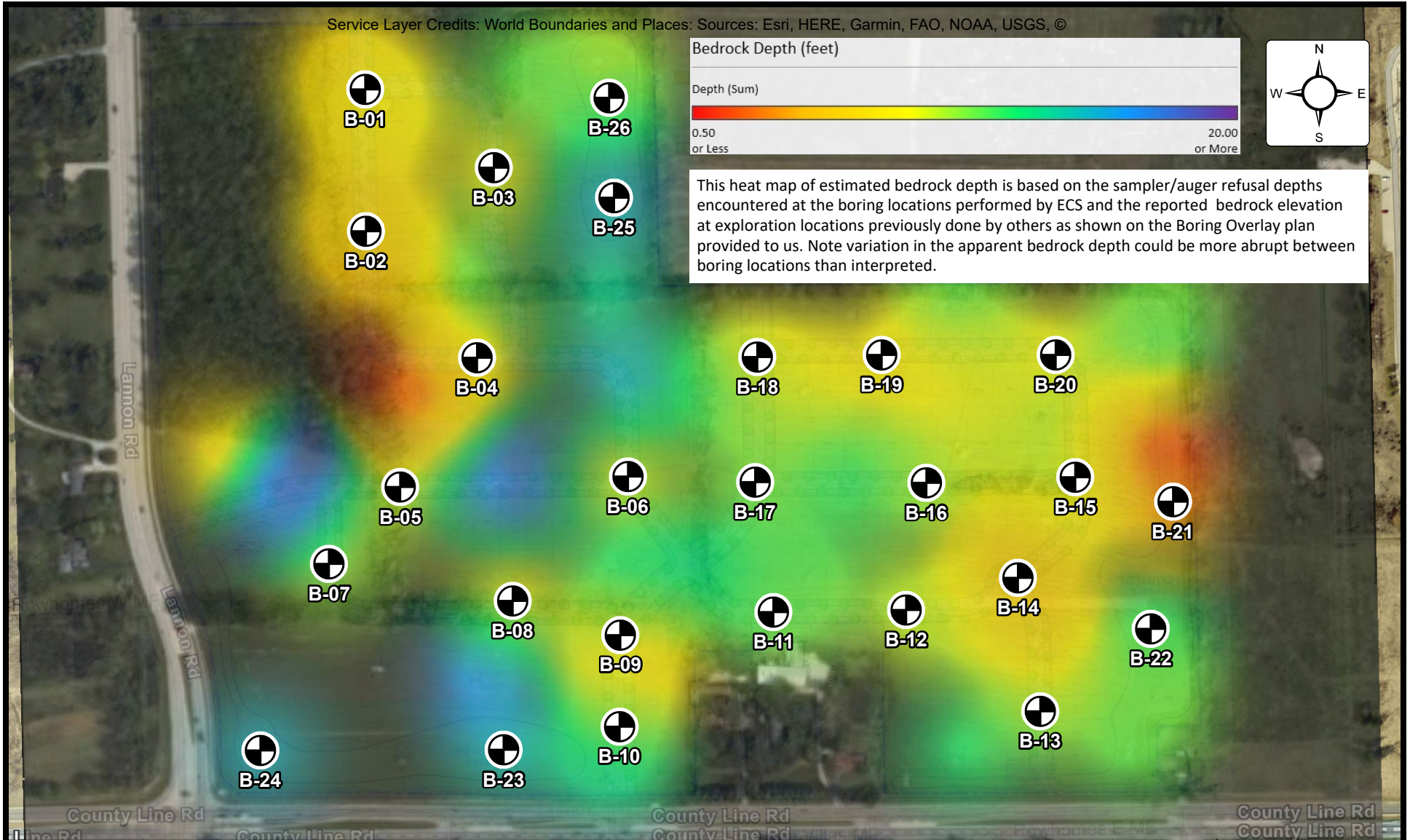
Service Layer Credits: World Boundaries and Places: Sources: Esri, HERE, Garmin, FAO, NOAA, USGS, ©

Bedrock Depth (feet)

Depth (Sum)



This heat map of estimated bedrock depth is based on the sampler/auger refusal depths encountered at the boring locations performed by ECS and the reported bedrock elevation at exploration locations previously done by others as shown on the Boring Overlay plan provided to us. Note variation in the apparent bedrock depth could be more abrupt between boring locations than interpreted.



APPARENT BEDROCK DEPTH HEAT MAP

Mohrhusen Farm

County Line Road & Lannon Road, Germantown, Wisconsin
Home Path Financial

ENGINEER DM1
SCALE 1" = 350'
PROJECT NO. 42:2684
SHEET BRHM
DATE 1/31/2025

Appendix B – Field Operations

Reference Notes

Exploration Procedures

Boring Logs



REFERENCE NOTES FOR BORING LOGS

MATERIAL^{1,2}

	ASPHALT
	CONCRETE
	GRAVEL
	TOPSOIL
	VOID
	BRICK
	AGGREGATE BASE COURSE
	GW WELL-GRADED GRAVEL gravel-sand mixtures, little or no fines
	GP POORLY-GRADED GRAVEL gravel-sand mixtures, little or no fines
	GM SILTY GRAVEL gravel-sand-silt mixtures
	GC CLAYEY GRAVEL gravel-sand-clay mixtures
	SW WELL-GRADED SAND gravelly sand, little or no fines
	SP POORLY-GRADED SAND gravelly sand, little or no fines
	SM SILTY SAND sand-silt mixtures
	SC CLAYEY SAND sand-clay mixtures
	ML SILT non-plastic to medium plasticity
	MH ELASTIC SILT high plasticity
	CL LEAN CLAY low to medium plasticity
	CH FAT CLAY high plasticity
	OL ORGANIC SILT or CLAY non-plastic to low plasticity
	OH ORGANIC SILT or CLAY high plasticity
	PT PEAT highly organic soils

DRILLING SAMPLING SYMBOLS & ABBREVIATIONS

SS	Split Spoon Sampler	PM	Pressuremeter Test
ST	Shelby Tube Sampler	RD	Rock Bit Drilling
WS	Wash Sample	RC	Rock Core, NX, BX, AX
BS	Bulk Sample of Cuttings	REC	Rock Sample Recovery %
PA	Power Auger (no sample)	RQD	Rock Quality Designation %
HSA	Hollow Stem Auger		

PARTICLE SIZE IDENTIFICATION

DESIGNATION	PARTICLE SIZES
Boulders	12 inches (300 mm) or larger
Cobbles	3 inches to 12 inches (75 mm to 300 mm)
Gravel: Coarse	¾ inch to 3 inches (19 mm to 75 mm)
Fine	4.75 mm to 19 mm (No. 4 sieve to ¾ inch)
Sand: Coarse	2.00 mm to 4.75 mm (No. 10 to No. 4 sieve)
Medium	0.425 mm to 2.00 mm (No. 40 to No. 10 sieve)
Fine	0.074 mm to 0.425 mm (No. 200 to No. 40 sieve)
Silt & Clay ("Fines")	<0.074 mm (smaller than a No. 200 sieve)

COHESIVE SILTS & CLAYS

UNCONFINED COMPRESSION STRENGTH, QP ⁴	SPT ⁵ (BPF)	CONSISTENCY ⁷ (COHESIVE)
<0.25	<2	Very Soft
0.25 - <0.50	2 - 4	Soft
0.50 - <1.00	5 - 8	Firm
1.00 - <2.00	9 - 15	Stiff
2.00 - <4.00	16 - 30	Very Stiff
4.00 - 8.00	31 - 50	Hard
>8.00	>50	Very Hard

RELATIVE AMOUNT ⁷	COARSE GRAINED (%) ⁸	FINE GRAINED (%) ⁸
Trace	≤5	≤5
With	10 - 20	10 - 25
Adjective (ex: "Silty")	25 - 45	30 - 45

GRAVELS, SANDS & NON-COHESIVE SILTS

SPT ⁵	DENSITY
<5	Very Loose
5 - 10	Loose
11 - 30	Medium Dense
31 - 50	Dense
>50	Very Dense

WATER LEVELS⁶

	WL (First Encountered)
	WL (Completion)
	WL (Seasonal High Water)
	WL (Stabilized)

FILL AND ROCK

FILL	POSSIBLE FILL	PROBABLE FILL	ROCK

¹Classifications and symbols per ASTM D 2488-17 (Visual-Manual Procedure) unless noted otherwise.

²To be consistent with general practice, "POORLY GRADED" has been removed from GP, GP-GM, GP-GC, SP, SP-SM, SP-SC soil types on the boring logs.

³Non-ASTM designations are included in soil descriptions and symbols along with ASTM symbol [Ex: (SM-FILL)].

⁴Typically estimated via pocket penetrometer or Torvane shear test and expressed in tons per square foot (tsf).

⁵Standard Penetration Test (SPT) refers to the number of hammer blows (blow count) of a 140 lb. hammer falling 30 inches on a 2 inch OD split spoon sampler required to drive the sampler 12 inches (ASTM D 1586). "N-value" is another term for "blow count" and is expressed in blows per foot (bpf). SPT correlations per 7.4.2 Method B and need to be corrected if using an auto hammer.

⁶The water levels are those levels actually measured in the borehole at the times indicated by the symbol. The measurements are relatively reliable when augering, without adding fluids, in granular soils. In clay and cohesive silts, the determination of water levels may require several days for the water level to stabilize. In such cases, additional methods of measurement are generally employed.

⁷Minor deviation from ASTM D 2488-17 Note 14.

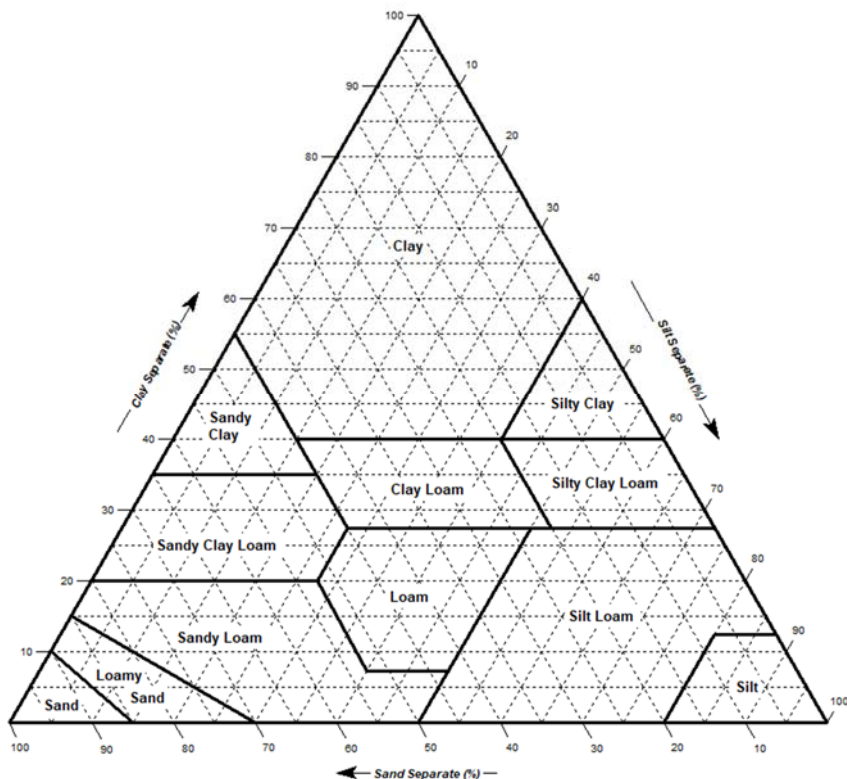
⁸Percentages are estimated to the nearest 5% per ASTM D 2488-17.



U.S. Department of Agriculture (USDA) Soil Classification System

Texture Triangle

Fine Earth Texture Classes (—)



Texture Class

Texture Class or Subclass	Code	
	Conv.	NASIS
Coarse Sand	cos	COS
Sand	s	S
Fine Sand	fs	FS
Very Fine Sand	vfs	VFS
Loamy Coarse Sand	lcos	LCOS
Loamy Sand	ls	LS
Loamy Fine Sand	lfs	LFS
Loamy Very Fine Sand	lvfs	LVFS
Coarse Sandy Loam	cosl	COSL
Sandy Loam	sl	SL
Fine Sandy Loam	fsl	FSL
Very Fine Sandy Loam	vfsl	VFSL
Loam	l	L
Silt Loam	sil	SIL
Silt	si	SI
Sandy Clay Loam	scl	SCL
Clay Loam	cl	CL
Silty Clay Loam	sicl	SICL
Sandy Clay	sc	SC
Silty Clay	sic	SIC
Clay	c	C

Texture Modifiers – Conventions for using “Rock Fragment Texture Modifiers” and for using textural adjectives that convey the “% volume” ranges for **Rock Fragments – Size and Quantity**.

Fragment Content % By Volume	Rock Fragment Modifier Usage
< 15	No texture adjective is used (noun only; e.g., <i>loam</i>).
15 to < 35	Use adjective for appropriate size; e.g., <i>gravelly</i> .
35 to < 60	Use “very” with the appropriate size adjective; e.g., <i>very gravelly</i> .
60 to < 90	Use “extremely” with the appropriate size adjective; e.g., <i>extremely gravelly</i> .
≥ 90	No adjective modifier. If ≤ 10% fine earth, use the appropriate noun for the dominant size class; e.g., <i>gravel</i> . Use terms in lieu of texture.

Texture Modifiers – (Adjectives)

Rock Fragments: Size and Quantity	Code		Criteria: Percent (by volume) of total rock fragments and dominated by (<i>name size</i>):
	Conv.	PDP/ NASIS	
<i>Rock Fragments (> 2mm; ≥ Strongly Cemented)</i>			
Gravelly	GR	GR	≥ 15% but < 35% gravel
Fine Gravelly	FGR	GRF	≥ 15% but < 35% fine gravel
Medium Gravelly	MGR	GRM	≥ 15% but < 35% med. gravel
Coarse Gravelly	CGR	GRC	≥ 15% but <35% coarse gravel
Very Gravelly	VGR	GRV	≥ 35% but < 60% gravel
Extremely Gravelly	XGR	GRX	≥ 60% but < 90% gravel
Cobbly	CB	CB	≥ 15% but < 35% cobbles
Very Cobbly	VCB	CBV	≥ 35% but < 60% cobbles
Extremely Cobbly	XCB	CBX	≥ 60% but < 90% cobbles
Stony	ST	ST	≥ 15% but < 35% stones
Very Stony	VST	STV	≥ 35% but < 60% stones
Extremely Stony	XST	STX	≥ 60% but < 90% stones
Bouldery	BY	BY	≥ 15% but < 35% boulders
Very Bouldery	VBY	BYV	≥ 35% but < 60% boulders
Extremely Bouldery	XBY	BYX	≥ 60% but < 90% boulders
Channery	CN	CN	≥ 15% but < 35% channers
Very Channery	VCN	CNV	≥ 35% but < 60% channers
Extremely Channery	XCN	CNX	≥ 60% but < 90% channers
Flaggy	FL	FL	≥ 15% but < 35% flagstones
Very Flaggy	VFL	FLV	≥ 35% but < 60% flagstones
Extremely Flaggy	XFL	FLX	≥ 60% but < 90% flagstones



SUBSURFACE EXPLORATION PROCEDURE: STANDARD PENETRATION TESTING (SPT) ASTM D 1586 Split-Barrel Sampling

Standard Penetration Testing, or **SPT**, is the most frequently used subsurface exploration test performed worldwide. This test provides samples for identification purposes, as well as a measure of penetration resistance, or N-value. The N-Value, or blow counts, when corrected and correlated, can approximate engineering properties of soils used for geotechnical design and engineering purposes.

SPT Procedure:

- Involves driving a hollow tube (split-spoon) into the ground by dropping a 140-lb hammer a height of 30-inches at desired depth
- Recording the number of hammer blows required to drive split-spoon a distance of 18-24 inches (in 3 or 4 Increments of 6 inches each)
- Auger is advanced* and an additional SPT is performed
- One SPT typically performed for every two to five feet. An approximate 1.5 inch diameter soil sample is recovered.



**Drilling Methods May Vary—* The predominant drilling methods used for SPT are open hole fluid rotary drilling and hollow-stem auger drilling.

CLIENT: Home Path Financial				PROJECT NO.: 42:2684		BORING NO.: B-01		SHEET: 1 of 1		
PROJECT NAME: Mohrhusen Farm				DRILLER/CONTRACTOR: Drill Point, Inc.						
SITE LOCATION: County Line Road & Lannon Road, Germantown, Wisconsin, 53022								LOSS OF CIRCULATION 100		
LATITUDE: 43.197327		LONGITUDE: -88.160237		STATION:		SURFACE ELEVATION: 906.0		BOTTOM OF CASING 100		

DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6" (TCP/MC/SPT-N value) *	STANDARD PENETRATION BLOWS/FT		ROCK QUALITY DESIGNATION & RECOVERY		LIQUID LIMIT / PLASTIC LIMIT		CALIBRATED PENETROMETER TSF		WATER CONTENT % [FINES CONTENT] %			
									10	20	30	40	50	10	20	30	40	50	1	2
					Topsoil Thickness[1±"]															
	S-1	SS	18	11	(CL/ML) SANDY SILTY CLAY, brown, moist, very stiff, [A-6]			3-3-4 (7)												
5	S-2	SS	18	18	(CL) LEAN CLAY, trace sand, trace gravel, light brown, moist, very stiff, contains thin CLAYEY SILT seams, [A-6]		901	4-5-6 (11)												
	S-3	SS	18	14	(SM) SILTY SAND WITH GRAVEL, brown, moist, medium dense to very dense, contains CLAYEY SILT seams, probable bedrock at 9± feet, [A-1/A-2]			9-10-16 (26)												
10	S-4	SS	8	5				39-50/2" (50/2")												
					AUGER REFUSAL AT 9.17 FT		896													
15							891													
20							886													
25							881													
30							876													

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL

☒ WL (First Encountered) ☒ WL (Completion) ☒ WL (Seasonal High Water) ☒ WL (Stabilized) Dry	BORING STARTED: Jan 23 2025 BORING COMPLETED: Jan 23 2025 EQUIPMENT: Geoprobe 7822DT CAVE IN DEPTH: HAMMER TYPE: Auto LOGGED BY: LEM1	DRILLING METHOD: Hollow Stem Auger
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GEOTECHNICAL BOREHOLE LOG

CLIENT: Home Path Financial				PROJECT NO.: 42:2684		BORING NO.: B-02		SHEET: 1 of 1		
PROJECT NAME: Mohrhusen Farm				DRILLER/CONTRACTOR: Drill Point, Inc.						
SITE LOCATION: County Line Road & Lannon Road, Germantown, Wisconsin, 53022								LOSS OF CIRCULATION 		
LATITUDE: 43.196351		LONGITUDE: -88.160262		STATION:		SURFACE ELEVATION: 902.0		BOTTOM OF CASING 		

DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6" (TCP/MC/SPT-N value) *	STANDARD PENETRATION BLOWS/FT		ROCK QUALITY DESIGNATION & RECOVERY		LIQUID LIMIT X PLASTIC LIMIT		CALIBRATED PENETROMETER TSF		WATER CONTENT % [FINES CONTENT] %			
									10	20	30	40	50	100	10	20	30	40	50	1
					Topsoil Thickness[1±"]															
	S-1	SS	18	4	(CL) SANDY LEAN CLAY WITH GRAVEL, contains slight roots, brown, moist, stiff, contains tan SILTY SAND lenses, crop tillage, driller encountered frost, [A-6]			4-4-3 (7)												
5	S-2	SS	18	7	(SM/GM) SILTY SAND WITH GRAVEL/ GRAVEL WITH SAND, trace clay, light brown, moist, very dense, contains cobbles/boulders, [A-1/A-2]		897	9-31-37 (68)												
	S-3	SS	18	4	(SM) SILTY SAND WITH GRAVEL, trace clay, light brown, moist, very dense, contains cobbles/boulders, probable bedrock at 8.5± feet, [A-1/A-2]			11-19-30 (49)												
10	S-4	SS	4	5	AUGER REFUSAL AT 8.83 FT		892	50/4" (50/4")												
15							887													
20							882													
25							877													
30							872													

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL

WL (First Encountered) Dry	BORING STARTED: Jan 23 2025	CAVE IN DEPTH:
WL (Completion) 	BORING COMPLETED: Jan 23 2025	HAMMER TYPE: Auto
WL (Seasonal High Water) 	EQUIPMENT: Geoprobe 7822DT	LOGGED BY: LEM1
WL (Stabilized) 		DRILLING METHOD: Hollow Stem Auger

GEOTECHNICAL BOREHOLE LOG

CLIENT: Home Path Financial				PROJECT NO.: 42:2684		BORING NO.: B-03		SHEET: 1 of 1		
PROJECT NAME: Mohrhussen Farm				DRILLER/CONTRACTOR: Drill Point, Inc.						
SITE LOCATION: County Line Road & Lannon Road, Germantown, Wisconsin, 53022								LOSS OF CIRCULATION 100		
LATITUDE: 43.196769		LONGITUDE: -88.159048		STATION:		SURFACE ELEVATION: 905.0		BOTTOM OF CASING 		

DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6" (TCP/MC/SPT-N value) *	STANDARD PENETRATION BLOWS/FT		ROCK QUALITY DESIGNATION & RECOVERY		LIQUID LIMIT / PLASTIC LIMIT		CALIBRATED PENETROMETER TSF		WATER CONTENT % [FINES CONTENT] %		
									10	20	30	40	50	100	RQD	REC	1	2	3
					Topsoil Thickness[4±"]														
	S-1	SS	18	6	(CL) SANDY LEAN CLAY WITH GRAVEL, contains slight roots, dark brown, moist, stiff, crop tillage, [A-6]			2-3-4 (7)											
5	S-2	SS	18	5	(CL/ML) SANDY SILTY CLAY WITH GRAVEL, brown to light brown, moist, very stiff, may contain cobbles/ boulders, probable bedrock at 8.5± feet, [A-6]		900	4-8-10 (18)											
	S-3	SS	18	15				8-9-13 (22)											
10	S-4	SS	1	1				50/1" (50/1")											
					AUGER REFUSAL AT 8.58 FT														
15																			
20																			
25																			
30																			

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL

☒ WL (First Encountered) Dry	BORING STARTED: Jan 23 2025	CAVE IN DEPTH:
▼ WL (Completion) 	BORING COMPLETED: Jan 23 2025	HAMMER TYPE: Auto
☒ WL (Seasonal High Water) 	EQUIPMENT: Geoprobe 7822DT	DRILLING METHOD: Hollow Stem Auger
☒ WL (Stabilized) 	LOGGED BY: LEM1	

GEOTECHNICAL BOREHOLE LOG

CLIENT: Home Path Financial				PROJECT NO.: 42:2684		BORING NO.: B-04		SHEET: 1 of 1		
PROJECT NAME: Mohrhusen Farm				DRILLER/CONTRACTOR: Drill Point, Inc.						
SITE LOCATION: County Line Road & Lannon Road, Germantown, Wisconsin, 53022								LOSS OF CIRCULATION 100		
LATITUDE: 43.195466		LONGITUDE: -88.159246		STATION:		SURFACE ELEVATION: 905.5		BOTTOM OF CASING 		

DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6" (TCP/MC/SPT-N value) *	STANDARD PENETRATION BLOWS/FT		ROCK QUALITY DESIGNATION & RECOVERY		CALIBRATED PENETROMETER TSF		WATER CONTENT % [FINES CONTENT] %	
									10	20	30	40	50	10	20	30
					Topsoil Thickness[5±"]											
	S-1	SS	18	6	(CL) LEAN CLAY WITH SAND, contains slight roots, brown, moist, very stiff, driller encountered frost, [A-6]			3-3-4 (7)								
5	S-2	SS	18	4			901	6-4-4 (8)								
	S-3	SS	18	18	(SM/SC) SILTY/CLAYEY SAND WITH GRAVEL, light brown, moist, loose to very dense, contains thin SILTY CLAY seams, contains cobbles/boulders and/or weathered bedrock, probable bedrock at 4± feet, [A-1/A-2]			2-3-3 (6)								
10	S-4	SS	8	6			896	5-50/2" (50/2")								
					AUGER REFUSAL AT 9.17 FT											
15							891									
20							886									
25							881									
30							876									

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL

☒ WL (First Encountered) ☒ WL (Completion) ☒ WL (Seasonal High Water) ☒ WL (Stabilized)	Dry	BORING STARTED: Jan 23 2025	CAVE IN DEPTH:
		BORING COMPLETED: Jan 23 2025	HAMMER TYPE: Auto
		EQUIPMENT: Geoprobe 7822DT	LOGGED BY: LEM1
		DRILLING METHOD: Hollow Stem Auger	

GEOTECHNICAL BOREHOLE LOG

CLIENT: Home Path Financial				PROJECT NO.: 42:2684		BORING NO.: B-05		SHEET: 1 of 1		
PROJECT NAME: Mohrhusen Farm				DRILLER/CONTRACTOR: Drill Point, Inc.						
SITE LOCATION: County Line Road & Lannon Road, Germantown, Wisconsin, 53022								LOSS OF CIRCULATION 		
LATITUDE: 43.194589		LONGITUDE: -88.159990		STATION:		SURFACE ELEVATION: 909.0		BOTTOM OF CASING 		

DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6" (TCP/MC/SPT-N value) *	STANDARD PENETRATION BLOWS/FT		ROCK QUALITY DESIGNATION & RECOVERY		LIQUID LIMIT △ PLASTIC LIMIT		CALIBRATED PENETROMETER TSF		WATER CONTENT % [FINES CONTENT] %		
									10	20	30	40	50	10	20	30	40	50	1
					Topsoil Thickness[3±"] (CL) LEAN CLAY, trace sand, trace gravel, dark brown, moist, stiff, contains tan SILTY SAND lenses, crop tillage, driller encountered frost, [A-6]														
5	S-1	SS	18	4				4-13-13 (26)											
	S-2	SS	18	4	(SM/SC) SILTY/CLAYEY VERY FINE SAND, light brown, moist, medium dense, contains CLAY seams, [A-4]		904	6-6-6 (12)											
	S-3	SS	18	7	(CL/ML) SANDY SILTY CLAY WITH GRAVEL, light brown, moist, stiff to very stiff, contains CLAYEY SAND seams, probable bedrock at 9.5± feet, [A-6]			6-2-5 (7)											
10	S-4	SS	14	10				3-11-50/2" (61/8")											
					AUGER REFUSAL AT 9.67 FT		899												
15							894												
20							889												
25							884												
30							879												

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL

☒ WL (First Encountered) Dry	BORING STARTED: Jan 22 2025	CAVE IN DEPTH:
▼ WL (Completion)	BORING COMPLETED: Jan 22 2025	HAMMER TYPE: Auto
☒ WL (Seasonal High Water)	EQUIPMENT: Geoprobe 7822DT	LOGGED BY: LEM1
☒ WL (Stabilized)		DRILLING METHOD: Hollow Stem Auger

GEOTECHNICAL BOREHOLE LOG

CLIENT: Home Path Financial				PROJECT NO.: 42:2684		BORING NO.: B-06		SHEET: 1 of 1		
PROJECT NAME: Mohrhusen Farm				DRILLER/CONTRACTOR: Drill Point, Inc.						
SITE LOCATION: County Line Road & Lannon Road, Germantown, Wisconsin, 53022								LOSS OF CIRCULATION 100		
LATITUDE: 43.194627		LONGITUDE: -88.157854		STATION:		SURFACE ELEVATION: 897.5		BOTTOM OF CASING 		

DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6" (TCP/MC/SPT-N value) *	STANDARD PENETRATION BLOWS/FT		ROCK QUALITY DESIGNATION & RECOVERY		LIQUID LIMIT PLASTIC LIMIT		CALIBRATED PENETROMETER TSF		WATER CONTENT % [FINES CONTENT] %		
									10	20	30	40	50	100	RQD	REC	1	2	3
					Topsoil Thickness[3±"]														
	S-1	SS	18	12	(CL) SANDY LEAN CLAY, contains slight roots, brown, moist, stiff, crop tillage, [A-6]			1-1-5 (6)											
5	S-2	SS	18	3	(CL) SANDY LEAN CLAY WITH GRAVEL, light brown, moist, stiff, [A-6]		893	3-9-10 (19)											
	S-3	SS	18	15	(CL/ML) SANDY SILTY CLAY WITH GRAVEL, light brown, moist, hard, probable bedrock at 8.5± feet, [A-6]			11-27-15 (42)											
10	S-4	SS	2	0	AUGER REFUSAL AT 8.67 FT		888	50/2" (50/2")											
15							883												
20							878												
25							873												
30							868												

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL

☒ WL (First Encountered)	Dry	BORING STARTED: Jan 22 2025	CAVE IN DEPTH:
☒ WL (Completion)		BORING COMPLETED: Jan 22 2025	HAMMER TYPE: Auto
☒ WL (Seasonal High Water)		EQUIPMENT: Geoprobe 7822DT	DRILLING METHOD: Hollow Stem Auger
☒ WL (Stabilized)		LOGGED BY: LEM1	

GEOTECHNICAL BOREHOLE LOG

CLIENT: Home Path Financial				PROJECT NO.: 42:2684		BORING NO.: B-07		SHEET: 1 of 1		
PROJECT NAME: Mohrhusen Farm				DRILLER/CONTRACTOR: Drill Point, Inc.						
SITE LOCATION: County Line Road & Lannon Road, Germantown, Wisconsin, 53022								LOSS OF CIRCULATION 100		
LATITUDE: 43.194073		LONGITUDE: -88.160674		STATION:		SURFACE ELEVATION: 890.0		BOTTOM OF CASING 		

DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6" (TCP/MC/SPT-N value) *	STANDARD PENETRATION BLOWS/FT		ROCK QUALITY DESIGNATION & RECOVERY		WATER CONTENT % [FINES CONTENT] %	
									10 20 30 40 50		10 20 30 40 50		10 20 30 40 50	
									RQD		REC		MC SAMPLER BLOWS/FT	
									TEXAS CONE PENETRATION BLOWS/FT		TEXAS CONE PENETRATION BLOWS/FT			
5	S-1	SS	18	8	(CL) SANDY LEAN CLAY WITH GRAVEL, contains slight roots, brown, moist, stiff, contains tan SILTY SAND lenses, crop tillage, [A-6]		885	3-4-7 (11)	11				1.00	14.1
	S-2	SS	18	18	(CL) LEAN CLAY, trace gravel, trace sand, light brown, moist, very stiff to stiff, contains thin SILTY CLAY and SANDY SILT seams, [A-6]		885	3-4-5 (9)	9				3.00	17.1
	S-3	SS	18	15			880	3-2-5 (7)	7				1.00	20.1
	S-4	SS	18	18	(SC/SM) CLAYEY/SILTY SAND WITH GRAVEL, trace gravel, trace sand, light brown, moist, medium dense, [A-1/A-2] (CL) LEAN CLAY, brown, moist, very stiff, [A-6]		880	3-5-8 (13)	13				2.50	24.5
END OF BORING AT 10 FT														
10														
15														
20														
25														
30														

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL			
☒ WL (First Encountered)	Dry	BORING STARTED: Jan 22 2025	CAVE IN DEPTH:
☒ WL (Completion)		BORING COMPLETED: Jan 22 2025	HAMMER TYPE: Auto
☒ WL (Seasonal High Water)		EQUIPMENT: Geoprobe 7822DT	LOGGED BY: LEM1
☒ WL (Stabilized)		DRILLING METHOD: Hollow Stem Auger	

GEOTECHNICAL BOREHOLE LOG

CLIENT: Home Path Financial				PROJECT NO.: 42:2684		BORING NO.: B-08		SHEET: 1 of 1		
PROJECT NAME: Mohrhusen Farm				DRILLER/CONTRACTOR: Drill Point, Inc.						
SITE LOCATION: County Line Road & Lannon Road, Germantown, Wisconsin, 53022								LOSS OF CIRCULATION 100		
LATITUDE: 43.193791		LONGITUDE: -88.158960		STATION:		SURFACE ELEVATION: 903.0		BOTTOM OF CASING 		

DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6" (TCP/MC/SPT-N value) *	STANDARD PENETRATION BLOWS/FT		ROCK QUALITY DESIGNATION & RECOVERY		WATER CONTENT % [FINES CONTENT] %	
									10 20 30 40 50		10 20 30 40 50		10 20 30 40 50	
									RQD		REC		MC SAMPLER BLOWS/FT	
									TEXAS CONE PENETRATION BLOWS/FT		TEXAS CONE PENETRATION BLOWS/FT			
					Topsoil Thickness[3±"]									
5	S-1	SS	18	18	(CL) SANDY LEAN CLAY WITH GRAVEL, dark brown to 1.5± feet, light brown, moist, stiff to very stiff, contains thin CLAYEY SAND seams below 5.5± feet, probable bedrock at 8± feet, [A-6]		898	3-4-11 (15)						
	S-2	SS	18	18			898	4-5-6 (11)						
	S-3	SS	18	18			898	7-9-16 (25)						
10					AUGER REFUSAL AT 8 FT		893							
15							888							
20							883							
25							878							
30							873							

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL

☒ WL (First Encountered) ☒ WL (Completion) ☒ WL (Seasonal High Water) ☒ WL (Stabilized)	Dry	BORING STARTED: Jan 22 2025	CAVE IN DEPTH:
		BORING COMPLETED: Jan 22 2025	HAMMER TYPE: Auto
		EQUIPMENT: Geoprobe 7822DT	LOGGED BY: LEM1
		DRILLING METHOD: Hollow Stem Auger	

CLIENT: Home Path Financial				PROJECT NO.: 42:2684		BORING NO.: B-09		SHEET: 1 of 1		
PROJECT NAME: Mohrhusen Farm				DRILLER/CONTRACTOR: Drill Point, Inc.						
SITE LOCATION: County Line Road & Lannon Road, Germantown, Wisconsin, 53022								LOSS OF CIRCULATION 100		
LATITUDE: 43.193542		LONGITUDE: -88.157954		STATION:		SURFACE ELEVATION: 905.0		BOTTOM OF CASING 100		

DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6" (TCP/MC/SPT-N value) *	STANDARD PENETRATION BLOWS/FT		ROCK QUALITY DESIGNATION & RECOVERY		WATER CONTENT % [FINES CONTENT] %	
									10	20	30	40	50	10
					Topsoil Thickness[1±"]									
5	S-1	SS	18	9	(CL) SANDY LEAN CLAY WITH GRAVEL, contains contains slight, brown, moist, stiff, crop tillage, [A-6]		900	4-4-10 (14)						1.00
	S-2	SS	18	11	(SC) CLAYEY SAND WITH GRAVEL, brown, moist, medium dense, [A-1/A-2]			7-6-6 (12)						1.00
	S-3	SS	18	18	(CL) SANDY LEAN CLAY WITH GRAVEL, brown and light brown, light brown below 4± feet, moist, stiff, contains CLAYEY SAND seams above 5.5±feet, may contain cobbles/boulders below 8± feet, [A-6]			4-4-9 (13)						0.50
10	S-4	SS	18	3				10-12-21 (33)						1.00
					END OF BORING AT 10 FT		895							13.8
15							890							
20							885							
25							880							
30							875							

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL

☒ WL (First Encountered) ☒ WL (Completion) ☒ WL (Seasonal High Water) ☒ WL (Stabilized)	Dry	BORING STARTED: Jan 23 2025	CAVE IN DEPTH:
		BORING COMPLETED: Jan 23 2025	HAMMER TYPE: Auto
		EQUIPMENT: Geoprobe 7822DT	LOGGED BY: LEM1
		DRILLING METHOD: Hollow Stem Auger	

GEOTECHNICAL BOREHOLE LOG

CLIENT: Home Path Financial				PROJECT NO.: 42:2684		BORING NO.: B-10		SHEET: 1 of 1		
PROJECT NAME: Mohrhusen Farm				DRILLER/CONTRACTOR: Drill Point, Inc.						
SITE LOCATION: County Line Road & Lannon Road, Germantown, Wisconsin, 53022								LOSS OF CIRCULATION 100		
LATITUDE: 43.192913		LONGITUDE: -88.157984		STATION:		SURFACE ELEVATION: 897.0		BOTTOM OF CASING 		

DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6" (TCP/MC/SPT-N value) *	STANDARD PENETRATION BLOWS/FT		ROCK QUALITY DESIGNATION & RECOVERY		WATER CONTENT % [FINES CONTENT] %	
									10	20	30	40	50	10
					Topsoil Thickness[2±"]									
	S-1	SS	18	8	(CL) SANDY LEAN CLAY WITH GRAVEL, contains slight roots, dark brown, moist, very stiff, contains tan SILTY SAND lenses, crop tillage, [A-6]			3-6-9 (15)						2.50
5	S-2	SS	18	18	(CL) SANDY LEAN CLAY WITH GRAVEL, light brown, moist, stiff to very stiff, [A-6]		892	4-9-7 (16)						1.75
	S-3	SS	18	14	(SM) SILTY SAND WITH GRAVEL, trace clay, light brown, wet, medium dense, [A-1/A-2]			6-8-13 (21)						2.00
10	S-4	SS	18	5	(CL) SANDY LEAN CLAY WITH GRAVEL, brown, moist, very stiff, [A-6]		887	6-8-8 (16)						2.00
					END OF BORING AT 10 FT									
15							882							
20							877							
25							872							
30							867							

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL

☒ WL (First Encountered) ☒ WL (Completion) ☒ WL (Seasonal High Water) ☒ WL (Stabilized) Dry	BORING STARTED: Jan 23 2025 BORING COMPLETED: Jan 23 2025 EQUIPMENT: Geoprobe 7822DT CAVE IN DEPTH: HAMMER TYPE: Auto DRILLING METHOD: Hollow Stem Auger
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GEOTECHNICAL BOREHOLE LOG

CLIENT: Home Path Financial				PROJECT NO.: 42:2684		BORING NO.: B-11		SHEET: 1 of 1		
PROJECT NAME: Mohrhussen Farm				DRILLER/CONTRACTOR: Drill Point, Inc.						
SITE LOCATION: County Line Road & Lannon Road, Germantown, Wisconsin, 53022								LOSS OF CIRCULATION 100		
LATITUDE: 43.193676		LONGITUDE: -88.156511		STATION:		SURFACE ELEVATION: 902.0		BOTTOM OF CASING 		

DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6" (TCP/MC/SPT-N value) *	STANDARD PENETRATION BLOWS/FT		ROCK QUALITY DESIGNATION & RECOVERY		LIQUID LIMIT X PLASTIC LIMIT		CALIBRATED PENETROMETER TSF		WATER CONTENT % [FINES CONTENT] %		
									10	20	30	40	50	10	20	30	40	50	1
					Topsoil Thickness[2±"]														
5	S-1	SS	18	12	(CL) SANDY LEAN CLAY WITH GRAVEL, brown, moist, stiff, contains tan SILTY SAND seams, crop tillage		897	3-2-3 (5)	5									1.50	16.7
	S-2	SS	18	18	(ML/CL) CLAYEY SILT, light brown and light gray mottled, moist, stiff, contains seams of light brown and light gray mottled, contains thin CLAY seams			8-9-10 (19)	19									1.50	13.4
	S-3	SS	18	18				3-7-9 (16)	16									0.50	16.5
10	S-4	SS	18	15	(CL) SANDY LEAN CLAY WITH GRAVEL, light brown, moist, stiff		892	3-5-22 (27)	27									1.50	12.9
					END OF BORING AT 10 FT														
15							887												
20							882												
25							877												
30							872												

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL

☒ WL (First Encountered) Dry	BORING STARTED: Jan 22 2025	CAVE IN DEPTH:
▼ WL (Completion)	BORING COMPLETED: Jan 22 2025	HAMMER TYPE: Auto
☒ WL (Seasonal High Water)	EQUIPMENT: Geoprobe 7822DT	LOGGED BY: LEM1
☒ WL (Stabilized)		DRILLING METHOD: Hollow Stem Auger

GEOTECHNICAL BOREHOLE LOG

CLIENT: Home Path Financial				PROJECT NO.: 42:2684		BORING NO.: B-12		SHEET: 1 of 1		
PROJECT NAME: Mohrhusen Farm				DRILLER/CONTRACTOR: Drill Point, Inc.						
SITE LOCATION: County Line Road & Lannon Road, Germantown, Wisconsin, 53022								LOSS OF CIRCULATION 100		
LATITUDE: 43.193670		LONGITUDE: -88.155265		STATION:		SURFACE ELEVATION: 898.0		BOTTOM OF CASING 		

DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6" (TCP/MC/SPT-N value) *	STANDARD PENETRATION BLOWS/FT		ROCK QUALITY DESIGNATION & RECOVERY		WATER CONTENT % [FINES CONTENT] %	
									10	20	30	40	50	10
					Topsoil Thickness[1±"]									
	S-1	SS	18	7	(CL) SANDY LEAN CLAY WITH GRAVEL, contains slight roots, brown and light brown, moist, stiff, crop tillage, [A-6]			2-1-4 (5)						1.25
5	S-2	SS	18	18	(CL) SANDY LEAN CLAY WITH GRAVEL, light brown, moist, very stiff to hard, may contain cobbles/boulders, [A-6]		893	6-5-8 (13)						16.3
	S-3	SS	18	14				4-8-12 (20)						10.3
	S-4	SS	8	5				7-50/2" (50/2")						11.7
10					(SC) CLAYEY SAND WITH GRAVEL, light brown, moist, very dense, probable bedrock at 9± feet, [A-1/A-2]		888							4.00
					AUGER REFUSAL AT 9.17 FT									3.00
15							883							
20							878							
25							873							
30							868							

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL

☒ WL (First Encountered) Dry	BORING STARTED: Jan 22 2025	CAVE IN DEPTH:
☒ WL (Completion) 	BORING COMPLETED: Jan 22 2025	HAMMER TYPE: Auto
☒ WL (Seasonal High Water) 	EQUIPMENT: Geoprobe 7822DT	LOGGED BY: LEM1
☒ WL (Stabilized) 	DRILLING METHOD: Hollow Stem Auger	

GEOTECHNICAL BOREHOLE LOG

CLIENT: Home Path Financial				PROJECT NO.: 42:2684		BORING NO.: B-13		SHEET: 1 of 1		
PROJECT NAME: Mohrhusen Farm				DRILLER/CONTRACTOR: Drill Point, Inc.						
SITE LOCATION: County Line Road & Lannon Road, Germantown, Wisconsin, 53022								LOSS OF CIRCULATION 		
LATITUDE: 43.192953		LONGITUDE: -88.154030		STATION:		SURFACE ELEVATION: 883.0		BOTTOM OF CASING 		

DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6" (TCP/MC/SPT-N value) *	STANDARD PENETRATION BLOWS/FT		ROCK QUALITY DESIGNATION & RECOVERY		WATER CONTENT % [FINES CONTENT] %	
									10	20	30	40	50	100
					Topsoil Thickness[1±"]									
5	S-1	SS	18	9	(CL) LEAN CLAY, trace sand, contains slight roots, dark brown and brown, moist, very stiff, crop tillage, [A-6]		878	3-2-3 (5)	5				2.50	24.7
	S-2	SS	18	10	(CL) LEAN CLAY, light brown, moist, very stiff, [A-6]			4-2-5 (7)	7				2.00	14.0
	S-3	SS	18	18	(CL/ML) SANDY SILTY CLAY WITH GRAVEL, light brown and light gray mottled, moist, very stiff, [A-6]			5-10-16 (26)	26					
10	S-4	SS	18	18	(SC) CLAYEY SAND WITH GRAVEL, light brown, moist, medium dense to very dense, contains fine SANDY CLAY seams, may contain cobbles/boulders and/or weathered bedrock, [A-1/A-2]		873	21-30-27 (57)	57					
					END OF BORING AT 10 FT									
15							868							
20							863							
25							858							
30							853							

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL

☒ WL (First Encountered)	Dry	BORING STARTED: Jan 22 2025	CAVE IN DEPTH:
☒ WL (Completion)		BORING COMPLETED: Jan 22 2025	HAMMER TYPE: Auto
☒ WL (Seasonal High Water)		EQUIPMENT: Geoprobe 7822DT	LOGGED BY: LEM1
☒ WL (Stabilized)		DRILLING METHOD: Hollow Stem Auger	

GEOTECHNICAL BOREHOLE LOG

CLIENT: Home Path Financial				PROJECT NO.: 42:2684		BORING NO.: B-14		SHEET: 1 of 1		
PROJECT NAME: Mohrhussen Farm				DRILLER/CONTRACTOR: Drill Point, Inc.						
SITE LOCATION: County Line Road & Lannon Road, Germantown, Wisconsin, 53022								LOSS OF CIRCULATION 100		
LATITUDE: 43.193874		LONGITUDE: -88.154209		STATION:		SURFACE ELEVATION: 895.0		BOTTOM OF CASING 		

DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6" (TCP/MC/SPT-N value) *	STANDARD PENETRATION BLOWS/FT		ROCK QUALITY DESIGNATION & RECOVERY		LIQUID LIMIT PLASTIC LIMIT		CALIBRATED PENETROMETER TSF		WATER CONTENT % [FINES CONTENT] %								
									10	20	30	40	50	RQD	REC	1	2	3	4	5	1	2	3	4	5
														☒ MC SAMPLER BLOWS/FT											
														10 20 30 40 50											
					Topsoil Thickness[1±"]																				
	S-1	SS	18	5	(CL) SANDY LEAN CLAY WITH GRAVEL, brown, moist, stiff, may contain cobbles/boulders, possible bedrock at 3.5± feet, [A-6]			3-3-12 (15)																	
	S-2	SS	4	0				50/4" (50/4")																	
5					AUGER REFUSAL AT 3.83 FT		890																		
10																									
15																									
20																									
25																									
30																									

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL

☒ WL (First Encountered) Dry	BORING STARTED: Jan 22 2025	CAVE IN DEPTH:
☒ WL (Completion)	BORING COMPLETED: Jan 22 2025	HAMMER TYPE: Auto
☒ WL (Seasonal High Water)	EQUIPMENT: Geoprobe 7822DT	LOGGED BY: LEM1
☒ WL (Stabilized)		DRILLING METHOD: Hollow Stem Auger

GEOTECHNICAL BOREHOLE LOG

CLIENT: Home Path Financial				PROJECT NO.: 42:2684		BORING NO.: B-15		SHEET: 1 of 1		
PROJECT NAME: Mohrhusen Farm				DRILLER/CONTRACTOR: Drill Point, Inc.						
SITE LOCATION: County Line Road & Lannon Road, Germantown, Wisconsin, 53022								LOSS OF CIRCULATION 100		
LATITUDE: 43.194556		LONGITUDE: -88.153651		STATION:		SURFACE ELEVATION: 887.0		BOTTOM OF CASING 		

DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6" (TCP/MC/SPT-N value) *	STANDARD PENETRATION BLOWS/FT		ROCK QUALITY DESIGNATION & RECOVERY		LIQUID LIMIT PLASTIC LIMIT		CALIBRATED PENETROMETER TSF		WATER CONTENT % [FINES CONTENT] %			
									10	20	30	40	50	100	10	20	30	40	50	1
					Topsoil Thickness[2±"]															
	S-1	SS	18	10	(CL) LEAN CLAY, trace sand, contains slight roots, brown, moist, very stiff, crop tillage, [A-6]			3-2-3 (5)												
5	S-2	SS	18	10	(CL) SANDY LEAN CLAY WITH GRAVEL, light brown, moist, stiff, [A-6]		882	6-6-3 (9)												
	S-3	SS	18	17				5-6-8 (14)												
10	S-4	SS	18	16	(CL) SANDY LEAN CLAY WITH GRAVEL, brown, moist, very stiff, [A-6] (SM) SILTY SAND WITH GRAVEL, trace clay, brown, moist, dense, may contain cobbles/boulders and/or weathered bedrock, [A-1/A-2] END OF BORING AT 10 FT		877	3-7-33 (40)												
15							872													
20							867													
25							862													
30							857													

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL

☒ WL (First Encountered) Dry	BORING STARTED: Jan 22 2025	CAVE IN DEPTH:
▼ WL (Completion)	BORING COMPLETED: Jan 22 2025	HAMMER TYPE: Auto
☒ WL (Seasonal High Water)	EQUIPMENT: Geoprobe 7822DT	DRILLING METHOD: Hollow Stem Auger
☒ WL (Stabilized)	LOGGED BY: LEM1	

GEOTECHNICAL BOREHOLE LOG

CLIENT: Home Path Financial				PROJECT NO.: 42:2684		BORING NO.: B-16		SHEET: 1 of 1		
PROJECT NAME: Mohrhussen Farm				DRILLER/CONTRACTOR: Drill Point, Inc.						
SITE LOCATION: County Line Road & Lannon Road, Germantown, Wisconsin, 53022								LOSS OF CIRCULATION 100		
LATITUDE: 43.194540		LONGITUDE: -88.155053		STATION:		SURFACE ELEVATION: 902.0		BOTTOM OF CASING 		

DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6" (TCP/MC/SPT-N value) *	STANDARD PENETRATION BLOWS/FT		ROCK QUALITY DESIGNATION & RECOVERY		WATER CONTENT % [FINES CONTENT] %	
									10	20	30	40	50	10
					Topsoil Thickness[3±"]									
	S-1	SS	18	13	(CL) SANDY LEAN CLAY WITH GRAVEL, contains slight roots, dark brown and brown, moist, stiff, crop tillage, [A-6]			2-1-3 (4)						1.50
5	S-2	SS	18	6	(CL) SANDY LEAN CLAY WITH GRAVEL, brown, moist, very stiff, [A-6]		897	6-5-6 (11)						12.8
	S-3	SS	18	5				3-7-10 (17)						12.8
10	S-4	SS	18	10	(SM/ML) SILTY SAND/SANDY SILT WITH GRAVEL, brown, moist, medium dense, contains SILT seams, [A-4] END OF BORING AT 10 FT		892	6-8-11 (19)						12.7
15							887							
20							882							
25							877							
30							872							

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL

☒ WL (First Encountered) Dry ☒ WL (Completion) ☒ WL (Seasonal High Water) ☒ WL (Stabilized)	BORING STARTED: Jan 22 2025		CAVE IN DEPTH:
	BORING COMPLETED: Jan 22 2025		HAMMER TYPE: Auto
	EQUIPMENT: Geoprobe 7822DT	LOGGED BY: LEM1	DRILLING METHOD: Hollow Stem Auger
	GEOTECHNICAL BOREHOLE LOG		

CLIENT: Home Path Financial				PROJECT NO.: 42:2684		BORING NO.: B-17		SHEET: 1 of 1		
PROJECT NAME: Mohrhusen Farm				DRILLER/CONTRACTOR: Drill Point, Inc.						
SITE LOCATION: County Line Road & Lannon Road, Germantown, Wisconsin, 53022								LOSS OF CIRCULATION 		
LATITUDE: 43.194570		LONGITUDE: -88.156660		STATION:		SURFACE ELEVATION: 910.0		BOTTOM OF CASING 		

DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6" (TCP/MC/SPT-N value) *	STANDARD PENETRATION BLOWS/FT		ROCK QUALITY DESIGNATION & RECOVERY		CALIBRATED PENETROMETER TSF		WATER CONTENT % [FINES CONTENT] %	
									10	20	30	40	50	10	20	30
					Topsoil Thickness[1±"]											
5	S-1	SS	18	18	(CL) SANDY LEAN CLAY WITH GRAVEL, brown, moist, very stiff, contains some dark orangish brown SILTY SAND lenses, [A-6]		905	2-3-6 (9)								
	S-2	SS	18	15	(CL) SANDY LEAN CLAY WITH GRAVEL, light brown, moist, very stiff, [A-6]			4-5-7 (12)								
	S-3	SS	18	16				5-6-9 (15)								
10	S-4	SS	18	18				6-7-7 (14)								
					END OF BORING AT 10 FT		900									
15							895									
20							890									
25							885									
30							880									

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL			
☒ WL (First Encountered)	Dry	BORING STARTED: Jan 22 2025	CAVE IN DEPTH:
☒ WL (Completion)		BORING COMPLETED: Jan 22 2025	HAMMER TYPE: Auto
☒ WL (Seasonal High Water)		EQUIPMENT: Geoprobe 7822DT	DRILLING METHOD: Hollow Stem Auger
☒ WL (Stabilized)		LOGGED BY: LEM1	

GEOTECHNICAL BOREHOLE LOG

CLIENT: Home Path Financial				PROJECT NO.: 42:2684		BORING NO.: B-18		SHEET: 1 of 1		
PROJECT NAME: Mohrhusen Farm				DRILLER/CONTRACTOR: Drill Point, Inc.						
SITE LOCATION: County Line Road & Lannon Road, Germantown, Wisconsin, 53022								LOSS OF CIRCULATION 100		
LATITUDE: 43.195430		LONGITUDE: -88.156609		STATION:		SURFACE ELEVATION: 921.0		BOTTOM OF CASING 		

DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6" (TCP/MC/SPT-N value) *	STANDARD PENETRATION BLOWS/FT		ROCK QUALITY DESIGNATION & RECOVERY		LIQUID LIMIT PLASTIC LIMIT		CALIBRATED PENETROMETER TSF		WATER CONTENT % [FINES CONTENT] %		
									10	20	30	40	50	10	20	30	40	50	1
					Topsoil Thickness[2±"]														
	S-1	SS	18	10	(CL) SANDY LEAN CLAY WITH GRAVEL, contains slight roots, dark brown and brown, moist, stiff to very stiff, crop tillage, [A-6]			2-2-4 (6)											
5	S-2	SS	18	18	(CL) SANDY LEAN CLAY WITH GRAVEL, light brown, moist, very stiff, probable bedrock at 7± feet, [A-6]		916	3-5-12 (17)											
	S-3	SS	14	15				9-7-50/2" (57/8")											
					AUGER REFUSAL AT 7.17 FT														
10																			
15																			
20																			
25																			
30																			

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL

☒ WL (First Encountered) Dry	BORING STARTED: Jan 22 2025	CAVE IN DEPTH:
☒ WL (Completion)	BORING COMPLETED: Jan 22 2025	HAMMER TYPE: Auto
☒ WL (Seasonal High Water)	EQUIPMENT: Geoprobe 7822DT	LOGGED BY: LEM1
☒ WL (Stabilized)	DRILLING METHOD: Hollow Stem Auger	

GEOTECHNICAL BOREHOLE LOG

CLIENT: Home Path Financial				PROJECT NO.: 42:2684		BORING NO.: B-19		SHEET: 1 of 1		
PROJECT NAME: Mohrhusen Farm				DRILLER/CONTRACTOR: Drill Point, Inc.						
SITE LOCATION: County Line Road & Lannon Road, Germantown, Wisconsin, 53022								LOSS OF CIRCULATION 100		
LATITUDE: 43.195426		LONGITUDE: -88.155444		STATION:		SURFACE ELEVATION: 892.0		BOTTOM OF CASING 		

DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6" (TCP/MC/SPT-N value) *	STANDARD PENETRATION BLOWS/FT		ROCK QUALITY DESIGNATION & RECOVERY		TEXAS CONE PENETRATION BLOWS/FT															
									10	20	30	40	50	10	20	30	40	50	10	20	30	40	50					
									RQD REC MC SAMPLER BLOWS/FT										LIQUID LIMIT PLASTIC LIMIT CALIBRATED PENETROMETER TSF WATER CONTENT % [FINES CONTENT] %									
									10	20	30	40	50	10	20	30	40	50	10	20	30	40	50					
					Topsoil Thickness[4±"]																							
	S-1	SS	18	8	(CL) SANDY LEAN CLAY WITH GRAVEL, contains slight roots, dark brown, moist, stiff, crop tillage, [A-6]			3-3-8 (11)																				
5	S-2	SS	18	18	(CL) SANDY LEAN CLAY WITH GRAVEL, light brown, moist, stiff, probable bedrock at 6.5± feet, [A-6]		887	3-4-5 (9)																				
	S-3	SS	9	4				2-50/3" (50/3")																				
					AUGER REFUSAL AT 6.75 FT																							
10							882																					
15							877																					
20							872																					
25							867																					
30							862																					

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL

☒ WL (First Encountered) Dry	BORING STARTED: Jan 22 2025	CAVE IN DEPTH:
☒ WL (Completion)	BORING COMPLETED: Jan 22 2025	HAMMER TYPE: Auto
☒ WL (Seasonal High Water)	EQUIPMENT: Geoprobe 7822DT	LOGGED BY: LEM1
☒ WL (Stabilized)	DRILLING METHOD: Hollow Stem Auger	

GEOTECHNICAL BOREHOLE LOG

CLIENT: Home Path Financial				PROJECT NO.: 42:2684		BORING NO.: B-20		SHEET: 1 of 1		
PROJECT NAME: Mohrhusen Farm				DRILLER/CONTRACTOR: Drill Point, Inc.						
SITE LOCATION: County Line Road & Lannon Road, Germantown, Wisconsin, 53022								LOSS OF CIRCULATION 100		
LATITUDE: 43.195400		LONGITUDE: -88.153812		STATION:		SURFACE ELEVATION: 888.0		BOTTOM OF CASING 100		

DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6" (TCP/MC/SPT-N value) *	STANDARD PENETRATION BLOWS/FT		ROCK QUALITY DESIGNATION & RECOVERY		TEXAS CONE PENETRATION BLOWS/FT		LIQUID LIMIT X PLASTIC LIMIT		CALIBRATED PENETROMETER TSF		WATER CONTENT % [FINES CONTENT] %		
									10	20	30	40	50	10	20	30	40	50	1	2	3
					Topsoil Thickness[1±"]																
	S-1	SS	18	8	(CL) SANDY LEAN CLAY WITH GRAVEL, contains slight roots, light brown, moist, stiff, some crop tillage, [A-6]			3-2-3 (5)													
5	S-2	SS	18	13	(CL/ML) SANDY SILTY CLAY WITH GRAVEL, light brown, moist, stiff, [A-6]		883	5-4-10 (14)													
	S-3	SS	18	10	(SM/SC) SILTY/CLAYEY SAND WITH GRAVEL, light brown, moist, dense, may contain cobbles/boulders and/or weathered bedrock, probable bedrock at 8± feet, [A-1/A-2]			9-18-31 (49)													
10					AUGER REFUSAL AT 8 FT		878														
15							873														
20							868														
25							863														
30							858														

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL

☐ WL (First Encountered) ☐ WL (Completion) ☐ WL (Seasonal High Water) ☐ WL (Stabilized)	Dry	BORING STARTED: Jan 22 2025		CAVE IN DEPTH:	
		BORING COMPLETED: Jan 22 2025		HAMMER TYPE: Auto	
		EQUIPMENT: Geoprobe 7822DT	LOGGED BY: LEM1	DRILLING METHOD: Hollow Stem Auger	

GEOTECHNICAL BOREHOLE LOG

CLIENT: Home Path Financial				PROJECT NO.: 42:2684		BORING NO.: B-21		SHEET: 1 of 1		
PROJECT NAME: Mohrhusen Farm				DRILLER/CONTRACTOR: Drill Point, Inc.						
SITE LOCATION: County Line Road & Lannon Road, Germantown, Wisconsin, 53022								LOSS OF CIRCULATION 		
LATITUDE: 43.194372		LONGITUDE: -88.152741		STATION:		SURFACE ELEVATION: 884.5		BOTTOM OF CASING 		

DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6" (TCP/MC/SPT-N value) *	STANDARD PENETRATION BLOWS/FT					ROCK QUALITY DESIGNATION & RECOVERY					WATER CONTENT % [FINES CONTENT] %				
	S-1	SS	11	9	Topsoil Thickness[1±"] (CL) SANDY LEAN CLAY, contains slight roots, dark brown and dark yellowish brown, moist, very stiff, crop tillage (CL) SANDY LEAN CLAY WITH GRAVEL, dark yellowish brown, moist, very stiff, probable bedrock at 4± feet AUGER REFUSAL AT 4 FT			3-50/5" (50/5")	⊕ 50/5"					○ 2.00 ● 12.2									
5																							
10																							
15																							
20																							
25																							
30																							

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL

☒ WL (First Encountered) Dry	BORING STARTED: Jan 22 2025	CAVE IN DEPTH:
☒ WL (Completion)	BORING COMPLETED: Jan 22 2025	HAMMER TYPE: Auto
☒ WL (Seasonal High Water)	EQUIPMENT: Geoprobe 7822DT	LOGGED BY: LEM1
☒ WL (Stabilized)	DRILLING METHOD: Hollow Stem Auger	

GEOTECHNICAL BOREHOLE LOG

CLIENT: Home Path Financial				PROJECT NO.: 42:2684		BORING NO.: B-22		SHEET: 1 of 1		
PROJECT NAME: Mohrhusen Farm				DRILLER/CONTRACTOR: Drill Point, Inc.						
SITE LOCATION: County Line Road & Lannon Road, Germantown, Wisconsin, 53022								LOSS OF CIRCULATION 100		
LATITUDE: 43.193503		LONGITUDE: -88.152972		STATION:		SURFACE ELEVATION: 881.5		BOTTOM OF CASING 		

DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6" (TCP/MC/SPT-N value) *	STANDARD PENETRATION BLOWS/FT		ROCK QUALITY DESIGNATION & RECOVERY		LIQUID LIMIT PLASTIC LIMIT		CALIBRATED PENETROMETER TSF		WATER CONTENT % [FINES CONTENT] %			
									10	20	30	40	50	10	20	30	40	50	1	2
					Topsoil Thickness[3±"]															
5	S-1	SS	17	6	(CL) SANDY LEAN CLAY WITH GRAVEL, contains slight roots, yellowish brown with few medium size strong brown spots below 3± feet, moist, very stiff to hard, contains thin SANDY SILT seams, contains cobbles/boulders		877	4-32-50/5" (82/11")												
	S-2	SS	18	14					4-5-8 (13)											
	S-3	SS	18	18					6-11-12 (23)											
10	S-4	SS	18	18	(ML/CL) SANDY CLAYEY SILT, brownish yellow, moist, stiff, contains few thin CLAY seams, may contain cobbles/ boulders and/or weathered bedrock		872	9-21-21 (42)												
	S-5	SS	11	11	(CL) LEAN CLAY WITH GRAVEL, trace sand, brown, moist, hard, probable bedrock at 11.5± feet			12-50/5" (50/5")												
15					AUGER REFUSAL AT 11.92 FT		867													
20							862													
25							857													
30							852													

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL

☒ WL (First Encountered) ☒ WL (Completion) ☒ WL (Seasonal High Water) ☒ WL (Stabilized)	Dry	BORING STARTED: Jan 22 2025	CAVE IN DEPTH:
		BORING COMPLETED: Jan 22 2025	HAMMER TYPE: Auto
		EQUIPMENT: Geoprobe 7822DT	LOGGED BY: LEM1
		DRILLING METHOD: Hollow Stem Auger	

GEOTECHNICAL BOREHOLE LOG

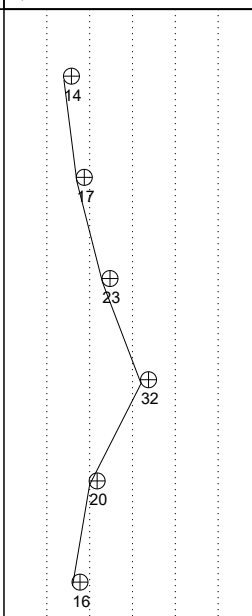
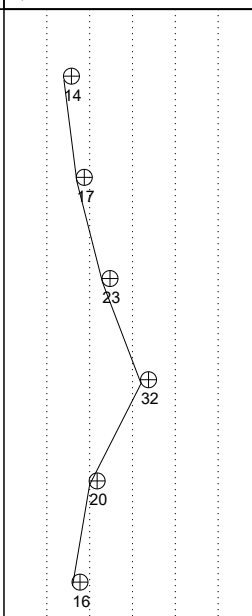
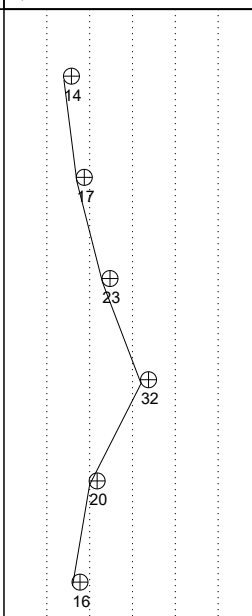
CLIENT: Home Path Financial				PROJECT NO.: 42:2684		BORING NO.: B-23		SHEET: 1 of 1		
PROJECT NAME: Mohrhusen Farm				DRILLER/CONTRACTOR: Drill Point, Inc.						
SITE LOCATION: County Line Road & Lannon Road, Germantown, Wisconsin, 53022								LOSS OF CIRCULATION 100		
LATITUDE: 43.192769		LONGITUDE: -88.159075		STATION:		SURFACE ELEVATION: 888.5		BOTTOM OF CASING 		

DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6" (TCP/MC/SPT-N value) *	STANDARD PENETRATION BLOWS/FT		ROCK QUALITY DESIGNATION & RECOVERY		WATER CONTENT % [FINES CONTENT] %	
									10	20	30	40	50	100
					Topsoil Thickness[3±"]									
5	S-1	SS	18	3	(CL) LEAN CLAY, trace sand, contains slight roots, dark brown and strong brown, moist, stiff, crop tillage		884	5-4-4 (8)	8				1.75	25.0
	S-2	SS	18	15	(CL) LEAN CLAY, trace sand, yellowish brown and light gray mottled, moist, hard, contains thin SILT seams			3-6-9 (15)	15				13.3	4.50
	S-3	SS	18	18	(CL) LEAN CLAY, trace sand, light yellowish brown and brownish yellow mottled, moist, hard, contains thin SILT seams			3-3-4 (7)	7				1.25	17.3
10	S-4	SS	18	9	(CL) SANDY LEAN CLAY WITH GRAVEL, yellowish brown, moist, stiff to hard, probable bedrock at 14± feet		879	7-8-9 (17)	17				1.25	10.0
	S-5	SS	18	18				4-11-15 (26)	26				1.00	11.7
15	S-6	SS	9	13			874	6-50/3" (50/3")	50/3"				11.1	4.00
					AUGER REFUSAL AT 14.25 FT									
20							869							
25							864							
30							859							

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL

☒ WL (First Encountered) Dry	BORING STARTED: Jan 23 2025	CAVE IN DEPTH:
▼ WL (Completion) 	BORING COMPLETED: Jan 23 2025	HAMMER TYPE: Auto
☒ WL (Seasonal High Water) 	EQUIPMENT: Geoprobe 7822DT	LOGGED BY: LEM1
☒ WL (Stabilized) 	DRILLING METHOD: Hollow Stem Auger	

GEOTECHNICAL BOREHOLE LOG

CLIENT: Home Path Financial				PROJECT NO.: 42:2684		BORING NO.: B-24		SHEET: 1 of 1																																																																																																																																																																																																																												
PROJECT NAME: Mohrhussen Farm				DRILLER/CONTRACTOR: Drill Point, Inc.																																																																																																																																																																																																																																
SITE LOCATION: County Line Road & Lannon Road, Germantown, Wisconsin, 53022								LOSS OF CIRCULATION																																																																																																																																																																																																																												
LATITUDE: 43.192802		LONGITUDE: -88.161361		STATION:		SURFACE ELEVATION: 880.0		BOTTOM OF CASING																																																																																																																																																																																																																												
<table><tr><td rowspan="4">DEPTH (FT)</td><td rowspan="4">SAMPLE NUMBER</td><td rowspan="4">SAMPLE TYPE</td><td rowspan="4">SAMPLE DIST. (IN)</td><td rowspan="4">RECOVERY (IN)</td><td rowspan="4">DESCRIPTION OF MATERIAL</td><td rowspan="4">WATER LEVELS</td><td rowspan="4">ELEVATION (FT)</td><td rowspan="4">BLOWS/6" (TCP/MC/SPT-N value) *</td><td colspan="2">STANDARD PENETRATION BLOWS/FT</td><td colspan="2">LIQUID LIMIT</td></tr><tr><td colspan="2">ROCK QUALITY DESIGNATION & RECOVERY</td><td colspan="2">X PLASTIC LIMIT</td></tr><tr><td colspan="2">RQD</td><td colspan="2">CALIBRATED PENETROMETER</td></tr><tr><td colspan="2">REC</td><td colspan="2">TSF</td></tr><tr><td colspan="2">MC SAMPLER BLOWS/FT</td><td colspan="2">WATER CONTENT %</td></tr><tr><td colspan="2">10 20 30 40 50</td><td colspan="2">[FINES CONTENT] %</td></tr><tr><td colspan="2">10 20 30 40 50</td><td colspan="2">10 20 30 40 50</td></tr><tr><td colspan="2">TEXAS CONE PENETRATION BLOWS/FT</td><td colspan="2"></td></tr></table>												DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6" (TCP/MC/SPT-N value) *	STANDARD PENETRATION BLOWS/FT		LIQUID LIMIT		ROCK QUALITY DESIGNATION & RECOVERY		X PLASTIC LIMIT		RQD		CALIBRATED PENETROMETER		REC		TSF		MC SAMPLER BLOWS/FT		WATER CONTENT %		10 20 30 40 50		[FINES CONTENT] %		10 20 30 40 50		10 20 30 40 50		TEXAS CONE PENETRATION BLOWS/FT																																																																																																																																																																																			
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<table><tr><td rowspan="6">5</td><td>S-1</td><td>SS</td><td>18</td><td>13</td><td rowspan="6">(CL) LEAN CLAY, trace sand, light yellowish brown and dark yellowish brown mottled, moist, hard, contains SANDY SILT seams and SILTY FINE SAND seams below 5.5± feet, may contain cobbles/boulders below 8.5± feet</td><td rowspan="6"></td><td rowspan="6">875</td><td rowspan="6">6-6-8 (14)</td><td rowspan="6"></td><td rowspan="6">15.3</td><td rowspan="6">4.50</td></tr><tr><td>S-2</td><td>SS</td><td>18</td><td>18</td><td>6-8-9 (17)</td><td>14.8</td><td>4.50</td></tr><tr><td>S-3</td><td>SS</td><td>18</td><td>18</td><td>9-10-13 (23)</td><td>19.3</td><td>1.50</td></tr><tr><td>S-4</td><td>SS</td><td>18</td><td>18</td><td>7-16-16 (32)</td><td>18.2</td><td>4.00</td></tr><tr><td>S-5</td><td>SS</td><td>18</td><td>18</td><td>12-9-11 (20)</td><td>1.00</td><td></td></tr><tr><td>S-6</td><td>SS</td><td>18</td><td>18</td><td>7-8-8 (16)</td><td>15.4</td><td>3.00</td></tr><tr><td rowspan="3">10</td><td colspan="5"></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td colspan="5"></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td colspan="5"></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td rowspan="3">15</td><td colspan="5"></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td colspan="5"></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td colspan="5"></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td rowspan="3">20</td><td colspan="5"></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td colspan="5"></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td colspan="5"></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td rowspan="3">25</td><td colspan="5"></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td colspan="5"></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td colspan="5"></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td rowspan="3">30</td><td colspan="5"></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td colspan="5"></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td colspan="5"></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>												5	S-1	SS	18	13	(CL) LEAN CLAY, trace sand, light yellowish brown and dark yellowish brown mottled, moist, hard, contains SANDY SILT seams and SILTY FINE SAND seams below 5.5± feet, may contain cobbles/boulders below 8.5± feet		875	6-6-8 (14)		15.3	4.50	S-2	SS	18	18	6-8-9 (17)	14.8	4.50	S-3	SS	18	18	9-10-13 (23)	19.3	1.50	S-4	SS	18	18	7-16-16 (32)	18.2	4.00	S-5	SS	18	18	12-9-11 (20)	1.00		S-6	SS	18	18	7-8-8 (16)	15.4	3.00	10																																		15																																		20																																		25																																		30																																	
5	S-1	SS	18	13	(CL) LEAN CLAY, trace sand, light yellowish brown and dark yellowish brown mottled, moist, hard, contains SANDY SILT seams and SILTY FINE SAND seams below 5.5± feet, may contain cobbles/boulders below 8.5± feet		875	6-6-8 (14)		15.3	4.50																																																																																																																																																																																																																									
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CLIENT: Home Path Financial				PROJECT NO.: 42:2684		BORING NO.: B-25		SHEET: 1 of 1		
PROJECT NAME: Mohrhusen Farm				DRILLER/CONTRACTOR: Drill Point, Inc.						
SITE LOCATION: County Line Road & Lannon Road, Germantown, Wisconsin, 53022								LOSS OF CIRCULATION 		
LATITUDE: 43.196545		LONGITUDE: -88.157926		STATION:		SURFACE ELEVATION: 900.0		BOTTOM OF CASING 		

DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6" (TCP/MC/SPT-N value) *	STANDARD PENETRATION BLOWS/FT		ROCK QUALITY DESIGNATION & RECOVERY		CALIBRATED PENETROMETER TSF		WATER CONTENT % [FINES CONTENT] %		
									10	20	30	40	50	100	10	20	30
					Topsoil Thickness[1±"]												
5	S-1	SS	18	7	(CL) SANDY LEAN CLAY WITH GRAVEL, yellowish brown with few medium size dark yellowish brown spots, moist, very stiff		895	4-4-6 (10)	10							10.0	2.50
	S-2	SS	18	13	(CL) SANDY LEAN CLAY, trace gravel, light yellowish brown with few medium size yellowish brown spots, moist, very stiff			3-4-5 (9)	9							12.1	2.00
	S-3	SS	18	18				9-6-8 (14)	14							12.8	2.50
10	S-4	SS	18	18	(CL/ML) SANDY SILTY CLAY, light yellowish brown, moist, stiff		890	4-6-5 (11)	11							15.5	1.50
	S-5	SS	18	10	(ML/CL) SANDY CLAYEY SILT, light yellowish brown, moist, medium dense, contains SILTY SAND seams			6-9-15 (24)	24							16.5	
15	S-6	SS	18	13	(CL) SANDY LEAN CLAY WITH GRAVEL, light yellowish brown with few medium size strong brown spots, moist, very stiff, contains CLAYEY SAND seams		885	3-8-16 (24)	24							16.4	2.00
					END OF BORING AT 15 FT												
20							880										
25							875										
30							870										

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL			
☒ WL (First Encountered)	Dry	BORING STARTED: Jan 23 2025	CAVE IN DEPTH:
☒ WL (Completion)		BORING COMPLETED: Jan 23 2025	HAMMER TYPE: Auto
☒ WL (Seasonal High Water)		EQUIPMENT: Geoprobe 7822DT	LOGGED BY: LEM1
☒ WL (Stabilized)		DRILLING METHOD: Hollow Stem Auger	

GEOTECHNICAL BOREHOLE LOG

CLIENT: Home Path Financial				PROJECT NO.: 42:2684		BORING NO.: B-26		SHEET: 1 of 1		
PROJECT NAME: Mohrhussen Farm				DRILLER/CONTRACTOR: Drill Point, Inc.						
SITE LOCATION: County Line Road & Lannon Road, Germantown, Wisconsin, 53022								LOSS OF CIRCULATION 100		
LATITUDE: 43.197233		LONGITUDE: -88.157947		STATION:		SURFACE ELEVATION: 900.0		BOTTOM OF CASING 		

DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6" (TCP/MC/SPT-N value) *	STANDARD PENETRATION BLOWS/FT		ROCK QUALITY DESIGNATION & RECOVERY		LIQUID LIMIT / PLASTIC LIMIT		CALIBRATED PENETROMETER TSF		WATER CONTENT % [FINES CONTENT] %					
									10	20	30	40	50	10	20	30	40	50	1	2	3	4
					Topsoil Thickness[3±"]																	
	S-1	SS	18	8	(SC) CLAYEY SAND WITH GRAVEL, dark yellowish brown, moist, medium dense, crop tillage, contains SANDY SILTY CLAY seams			4-7-8 (15)														
5	S-2	SS	18	9	(CL/ML) SANDY SILTY CLAY WITH GRAVEL, yellowish brown, moist, hard, contains SILTY SAND lenses		895	4-6-7 (13)														
	S-3	SS	18	18	(CL) SANDY LEAN CLAY WITH GRAVEL, yellowish brown, moist, very stiff			3-4-6 (10)														
10	S-4	SS	18	17	(CL) SANDY LEAN CLAY, yellowish brown with few medium size strong brown spots, moist, stiff		890	5-5-9 (14)														
	S-5	SS	18	18	(ML) SANDY SILT, trace clay, light yellowish brown, moist, very stiff, contains CLAYEY SILT seams			2-4-5 (9)														
15					(CL/ML) SANDY SILTY CLAY WITH GRAVEL, light yellowish brown and brownish yellow mottled, moist, stiff, contains SANDY LEAN CLAY seams, probable bedrock at 13± feet		885															
					AUGER REFUSAL AT 13 FT																	
20							880															
25							875															
30							870															

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL

☒ WL (First Encountered) ☒ WL (Completion) ☒ WL (Seasonal High Water) ☒ WL (Stabilized)	Dry	BORING STARTED: Jan 23 2025	CAVE IN DEPTH:
		BORING COMPLETED: Jan 23 2025	HAMMER TYPE: Auto
		EQUIPMENT: Geoprobe 7822DT	LOGGED BY: LEM1
		DRILLING METHOD: Hollow Stem Auger	

GEOTECHNICAL BOREHOLE LOG

Appendix C – Laboratory Testing

Other Laboratory Test Results



LABORATORY PROCEDURES:

Index Testing

Moisture content determination was performed on select fine-grained soil samples in accordance with ASTM D 2216.

Calibrated hand penetrometer tests (Qp) were performed on select cohesive soil samples. In the hand penetrometer test, the unconfined compressive strength of a soil sample is estimated, to a maximum of 4.5 or 6 tons per square foot (tsf), depending on the penetrometer model, by measuring the resistance of a soil sample to penetration by a small, calibrated, spring-loaded cylinder.

Atterberg limits determination was performed on select fine-grained soil samples in accordance with ASTM D 4319. The Atterberg limits are a basic measure of the critical water contents of a fine-grained soil: its **liquid limit**, **plastic limit**, and **shrinkage limit**. Depending on its water content, a soil may appear in one of four states: solid, semi-solid, plastic and liquid. In each state, the consistency and behavior of a soil is different and consequently so are its engineering properties. Atterberg limits can also be used to help distinguish between silt and clay, and to distinguish between different types of silts and clays.

Particle size distribution, also referred to as gradation or sieve analysis, refers to the proportions by dry mass of a soil particles distributed over specified particle-size ranges. The particle size distribution is used to help classify soils for engineering purposes. Particle size distribution determination was performed on select fine-grained soil samples in accordance with ASTM D 421, D 422 and/or D 1140.

A **loss on ignition (LOI)** test is used to estimate the organic content of the soil. In the LOI test a dry sample is heated to 440° C to burn off organic matter within the sample. The lost weight is compared to the initial dry weight to estimate the percentage of organics in the material. LOI determination was performed in accordance with ASTM D 2974.



**AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION
OFFICIALS (AASHTO)
SOIL CLASSIFICATION SYSTEM - AASHTO M145**

The AASHTO system of soil classification is based upon the observed field performance of subgrade soils under highway pavements and is widely used by highway engineers. According to this system, soils having approximately the same general load-carrying abilities are grouped together to form seven basic groups which are designated as A-1, A-2, A-3, A-4, A-5, A-6, and A-7. In general, A-1 soils would be the best soils for a highway subgrade support and then each succeeding group being progressively poorer with A-7 soils having the poorest subgrade support. The one exception is the A-3 group which has better drainage characteristics and provides better subgrade support than the A-2 group. The classification system is shown in the table below:

AASHTO Soil Classification System

General Classification	Granular Materials (35% or less passing #200 Sieve)							Silt-Clay Materials (More than 35% passing #200 sieve)			
Group Classification	A-1		A-3	A-2				A-4	A-5	A-6	A-7
	A-1-a	A-1-b		A-2-4	A-2-5	A-2-6	A-2-7				A-7-5 A-7-6
Sieve Analysis, Percent Passing											
#10	50 max	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
#40	30 max	50 max	51 max	-----	-----	-----	-----	-----	-----	-----	-----
#200	15 max	25 max	10 max	35 max	35 max	35 max	35 max	36 min	36 min	36 min	36 min
Characteristics of Fraction Passing #40											
Liquid Limit	-----		-----	40 max	41 min	40 max	41 min	40 max	41 min	40 max	41 min
Plasticity Index	6 max		N.P.	10 max	10 max	11 min	11 min	10 max	10 max	11 min	11 min ^{[1][2]}
Usual Types of Significant Constituent Materials	Stone Fragments Gravel and Sand		Fine Sand	Silty or Clayey Gravel and Sand				Silty Soils		Clayey Soils	
General Rating as Subgrade	Excellent to Good							Fair to Poor			

Notes: [1] – Plasticity Index of A-7-5 subgroup is equal to or less than Liquid Limit minus 30.
[2] – Plasticity Index of A-7-6 subgroup is greater than Liquid Limit minus 30.

Appendix D – Supplemental Documents

Other Supplemental Documents



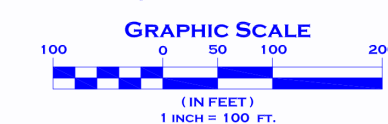
Site Illustrative Plan

TO: CENTRAL LAND COMPANY III, LLC, A WISCONSIN LIMITED LIABILITY COMPANY; KRISTI E. LEWING, SUCCESSOR TRUSTEE OF THE CLARENCE A. MOHRHUSEN FAMILY TRUST FOR THE BENEFIT OF BONITA MOHRHUSEN PURSUANT TO THE CLARENCE A. MOHRHUSEN 1972 TRUST, AND UNDIVIDED 1/3 INTEREST AND KRISTI E. LEWING, SUCCESSOR TRUSTEE OF THE CLARENCE A. MOHRHUSEN FAMILY TRUST FOR THE BENEFIT OF MARY M. DITTMAR PURSUANT TO THE CLARENCE A. MOHRHUSEN 1972 TRUST, AN UNDIVIDED 1/3 INTEREST AND CARRIE DOINE, AN UNDIVIDED 1/3 INTEREST; AMERICAN LAND TITLE ASSOCIATION, ITS SUCCESSORS AND ASSIGNS;

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE "MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/NSPS LAND TITLE SURVEYS", JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS IN 2016, AND INCLUDES ITEMS 1, 2, 3, 4, 5, 6, 7g, 7b1, 7c, 8, 9, 11, 13, 16, 17, AND 18 OF TABLE A THEREOF. PURSUANT TO THE ACCURACY STANDARDS AS ADOPTED BY ALTA AND NSPS AND IN EFFECT TO THE DATE OF THIS CERTIFICATION, UNDERSIGNED HEREBY CERTIFIES THAT, IN MY PROFESSIONAL OPINION, AS A LAND SURVEYOR REGISTERED IN THE STATE OF WISCONSIN, THE RELATIVE POSITIONAL ACCURACY OF THIS SURVEY DOES NOT EXCEED THAT WHICH IS SPECIFIED THEREIN.

FEB. 16, 2022
DATE

MJB
MICHAEL J. BERRY, R.L.S.
REGISTERED LAND SURVEYOR S-2545



MISCELLANEOUS NOTES

1. THIS SURVEY WAS MADE IN ACCORDANCE WITH THE STANDARDS OF THE STATE OF TEXAS.

2. THE PROPERTY DESCRIBED IN THIS INSTRUMENT IS DESCRIBED IN AMERICAN STANDARD MAP NO. 10,000, WITH A COMMITMENT DATE OF 1/1/1980. EASEMENTS, COVENANTS, COMMITMENT OR APPROPRIATION OR OTHERWISE KNOWN OR NOTED AS TO THEIR EFFECTS.

HOTLINE AND THE LOCAL
TO BE RELIABLE, ITS A
NOR CERTIFIED TO.

4. NO ZONING INFORMAT

8. THE ABOVE DESCRIB
3,845,903 SQUARE FEET

9. THE SURVEYOR COUL
SUBJECT PROPERTY NOR
THE TIME OF THE SURV

10. ALL UTILITIES SERV

STREETS AND FOR EASE

12. THE TOTAL NUMBER OF WHICH 0 ARE REQUIRED SPACES, AND TO THE E

13. SUBJECT PROPERTY DESIGNATION X: AREAS FLOOD PLAIN PER INFORMATION (FEMA), ON FL DATE OF IDENTIFICATION 55131C0359D, WITH A D NO. 550472, THE VILLA THE SUBJECT PROPERTY

15. THERE IS NO INFORMATION REGARDING PROPOSED CONSTRUCTION OF PROPERTY AT THE TIME OF SURVEY.

16. THERE IS NO OBSERVATION OF CONSTRUCTION OR REPAIRS TO PROPERTY AT THE TIME OF SURVEY.

17. THERE IS NO OBSERVATION OF WASTE DUMP, SUMP OR OTHER UNDESIRABLE DEPOSIT AT THE PROPERTY AT THE TIME OF SURVEY.

18. THERE IS NO OBSERVATION OF ANY OTHER UNDESIRABLE ACTIVITY AT THE SUBJECT PROPERTY AT THE TIME OF SURVEY.

20. ALL BEARINGS ARE
SECTION 32-9-20, WHI

21. SURVEY DATUM:
COORDINATES ARE BASE
(WCCS), WASHINGTON C
ADJUSTMENT (NAD83/20

6. PROJECT BENCHMARK

7. SITE BENCHMARK -
8. ELEVATIONS BASED ON
D.A.T.U.M.
9. DUE TO SNOW AND
IMPROVEMENTS AND/OR

[illegible]

RIC TRANSFORMER	RV	HY
RIC METER	W	W
RIC PEDESTAL	GH	GH
RIC BOX AT GRADE	MH	MH
PHONE BOX AT GRADE	ST	ST
PHONE PEDESTAL	CB	CB
PEDESTAL	CP	CP
METER	CS	CS
CONDITIONER	CP	CP
Y POLE	CS	CS
SIGN	CS	CS
SIGN	CS	CS

The logo for BSI Design, featuring the letters 'BSI' in a large, bold, blue font, with 'DESIGN' in a smaller, blue, sans-serif font below it. The logo is partially cut off on the right side.

BSBDESIGN.CO

SUMMARY OF GENERALIZED PAVEMENT DESIGN PARAMETERS ¹														
Boring	Existing GS Elev	Anticipated Pvmnt Elev	Approx. Topsoil Thickness (inches)	Pedological Name ²	Anticipated Subgrade Material	USCS Symbol	AASHTO Classification	Estimated Potential EBS ³ (inches)	Design Group Index (DGI)	Frost Index	Subgrade Modulus (psi/in)	Soil Support Value (SSV)	California Bearing Ratio ⁴ (CBR)	Resilient Modulus ⁵ (psi)
B-01	906.0	905.0	1	(OuB2) Ozaukee silt loam	Sandy Silty Clay, very stiff	CL/ML	A-6	15	16	F-4	75	3.7	4.3	6430
B-02	902.0	901	1	(OuB2) Ozaukee silt loam	Sandy Lean Clay with Gravel, stiff	CL	A-6	15	16	F-4	75	3.7	4.3	6430
B-03	905.0	904	4	(OuB2) Ozaukee silt loam	Sandy Lean Clay with Gravel, stiff	CL	A-6	15	16	F-4	75	3.7	4.3	6430
B-04	905.5	904.5	5	(OuB) Ozaukee silt loam	Lean Clay with Sand, very stiff	CL	A-6	15	16	F-4	75	3.7	4.3	6430
B-05	909.0	908	3	(OuB) Ozaukee silt loam	Lean Clay, stiff	CL	A-6	12	16	F-4	75	3.7	4.3	6430
B-06	897.5	896.5	3	(OuB2) Ozaukee silt loam	Sandy Lean Clay, stiff	CL	A-6	18	16	F-4	75	3.7	4.3	6430
B-07	890.0	889	--	(KwB) Knowles silt loam	Sandy Lean Clay with Gravel, stiff	CL	A-6	12	16	F-4	75	3.7	4.3	6430
B-08	903.0	902	3	(OuB2) Ozaukee silt loam	Sandy Lean Clay with Gravel, stiff to very stiff	CL	A-6	12	16	F-4	75	3.7	4.3	6430
B-09	905.0	904	1	(OuB2) Ozaukee silt loam	Sandy Lean Clay with Gravel, stiff	CL	A-6	12	16	F-4	75	3.7	4.3	6430
B-10	897.0	896	2	(OuB2) Ozaukee silt loam	Sandy Lean Clay with Gravel, very stiff	CL	A-6	12	16	F-4	75	3.7	4.3	6430
B-11	902.0	901	2	(OuC2) Ozaukee silt loam	Sandy Lean Clay with Gravel, stiff	CL	A-6	21	16	F-4	75	3.7	4.3	6430
B-12	898.0	897	1	(OuB2) Ozaukee silt loam	Sandy Lean Clay with Gravel, stiff	CL	A-6	21	16	F-4	75	3.7	4.3	6430
B-13	883.0	882	1	(OuB) Ozaukee silt loam	Lean Clay, very stiff	CL	A-6	21	16	F-4	75	3.7	4.3	6430
B-14	895.0	894	1	(OuB) Ozaukee silt loam	Sandy Lean Clay with Gravel, stiff	CL	A-6	12	16	F-4	75	3.7	4.3	6430
B-15	887.0	886	2	(OuB) Ozaukee silt loam	Lean Clay, very stiff	CL	A-6	21	16	F-4	75	3.7	4.3	6430
B-16	902.0	901	3	(OuC2) Ozaukee silt loam	Sandy Lean Clay with Gravel, stiff	CL	A-6	24	16	F-4	75	3.7	4.3	6430
B-17	910.0	909	1	(OuB2) Ozaukee silt loam	Sandy Lean Clay with Gravel, very stiff	CL	A-6	12	16	F-4	75	3.7	4.3	6430
B-18	921.0	920	2	(OuC2) Ozaukee silt loam	Sandy Lean Clay with Gravel, stiff to very stiff	CL	A-6	18	16	F-4	75	3.7	4.3	6430
B-19	892.0	891	4	(OuC2) Ozaukee silt loam	Sandy Lean Clay with Gravel, stiff	CL	A-6	12	16	F-4	75	3.7	4.3	6430
B-20	888.0	887	1	(KwB) Knowles silt loam	Sandy Lean Clay with Gravel, stiff	CL	A-6	21	16	F-4	75	3.7	4.3	6430

1. Roadway design parameters were modified as needed to account for existing fill where present.

2. Pedological name based on the USDA - Natural Resources Conservation Service Web Soil Survey (websoilsurvey.nrcs.usda.gov).

3. Excavation below subgrade. The estimated EBS will be a function of the conditions at the time of construction. **Deeper EBS may be needed if construction occurs during unfavorable weather and/or the subgrade is subject to excessive construction disturbance. EBS is recommended to be based on a proofroll of the subgrade.** Engineered fill placed after undercutting is assumed to consist of soil with a similar or better soil support value than the undercut subgrade soil at the test boring location. EBS could be reduced with placement of a geogrid.

4. Estimated based on the relationship between SSV and CBR presented in the AASHTO Interim Guide for Design of Pavement Structures 1972 (Chapter III Revised 1981).

5. Estimated based on the relationship M_R (psi) = $2555 \times CBR^{0.64}$ for CBR > 5 developed by the Transportation and Road Research Laboratory (TRRL), and M_R (psi) = CBR x 1500 for CBR ≤ 5.



Soil and Site Evaluation – Stormwater Infiltration

In accordance with SPS 382.365, 385, Wis. Adm. Code, and WDNR Standard 1002

Personal information you provide may be used for secondary purposes [Privacy Law, s. 15.04(1)(m)]

Page 1 of

Attach a complete site plan on paper not less than 8 ½ x 11 inches in size. Plan must include, but is not limited to: vertical and horizontal reference point (BM); direction and percent of slope; scale or dimensions; north arrow; and BM referenced to nearest road.		COUNTY Washington
PLEASE PRINT ALL INFORMATION		PARCEL ID 323987, 323986, 323995
PROPERTY OWNER Carrie J Ramos Liv Tr and Kristie Leswing	PROPERTY LOCATION Govt. Lot <u> </u> , <u> </u> ¼, <u>SW</u> ¼, S <u>32</u> , T <u>9</u> N, R <u>20</u> E Lot #, Block #, Subd. Name or CSM #: <u> </u>	
PROPERTY OWNER'S MAILING ADDRESS 833 E MICHIGAN ST STE 1800	Municipality: <u> </u> ☐ City ☒ Village ☐ Town	
CITY, STATE, ZIP CODE Milwaukee, WI, 53202	Nearest Road: <u> </u>	
Drainage area <u> </u> ☐ sq. ft. ☐ acres Test site suitable for (check all that apply): ☐ Site not suitable ☐ Bioretention ☐ Reuse ☐ Subsurface Dispersal System ☐ Irrigation ☐ Other <u> </u>	HYDRAULIC APPLICATION TEST METHOD ☒ Morphological Evaluation ☐ Double Ring Infiltrometer ☐ Other: (specify) <u> </u>	SOIL MOISTURE Date of soil borings: <u>1/22/2025 - 1/23/2025</u> USDA-NRCS WETS VALUE: ☐ Dry = 1 ☒ Normal = 2 ☐ Wet = 3

B-21 #OBS. ☐ Pit ☒ Boring Ground Surface Elevation 884.5 ft. Elevation of Limiting Factor 880.5 ft.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frags.	% Fines	Hydraulic App. Rate Inches/Hr.
A	1	--	--	Topsoil	--	--	--	--	--	--
AC	18	10YR 3/3	no redox features	c	1 vf sbk	mfi	G	0-5	65-70	0.07
C	48	10YR 4/6	no redox features	c	1 vf-f sbk	mfi	G	5-15	65-70	0.07

Comments:
Probable bedrock at 4 feet.

B-22 #OBS. ☐ Pit ☒ Boring Ground Surface Elevation 881.5 ft. Elevation of Limiting Factor 869.58 ft.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frags.	% Fines	Hydraulic App. Rate Inches/Hr.
A	3	--	--	Topsoil	--	--	--	--	--	--
B	96	10YR 5/4	no redox features	c	1 vf-f sbk	mfi	G	5-10	65-70	0.07
C	138	10YR 6/6	no redox features	cl	1 vf sbk	mfi	G	0-5	65-70	0.03
C	143	7.5YR 5/4	no redox features	c	1 vf-f sbk	mfi	G	5-10	85-95	0.07

Comments:

Probable bedrock at 11.92 feet.

B-23 #OBS. ☐ Pit ☒ Boring Ground Surface Elevation 888.5 ft. Elevation of Limiting Factor 874.25 ft.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frags.	% Fines	Hydraulic App. Rate Inches/Hr.
A	3	--	--	Topsoil	--	--	--	--	--	--
AB	36	7.5YR 3/4	no redox features	c	1 vf sbk	mfi	G	0-5	85-95	0.07
C	66	10YR 5/4	f,1, d, 10YR 7/2	c	1 vf sbk	mvfi	G	0-5	85-95	0.07
C	96	10YR 6/4	no redox features	c	1 vf sbk	mfi	G	0-5	85-95	0.07
C	171	10YR 5/4	no redox features	c	1 vf-f sbk	mfi	G	5-15	65-70	0.07

Comments:

Probable bedrock at 14.25 feet.

B-24 #OBS. ☐ Pit ☒ Boring Ground Surface Elevation 880 ft. Elevation of Limiting Factor -- ft.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frags.	% Fines	Hydraulic App. Rate Inches/Hr.
B	126	10YR 6/4	no redox features	c	1 vf sbk	mfi	G	0-5	85-95	--
C	138	10YR 6/4	no redox features	scl	1 vf-f gr	mfr	G	0-5	40-50	0.11
C	156	10YR 6/2	no redox features	c	1 vf sbk	mfi	G	0-5	85-95	0.07
C	180	10YR 6/2	no redox features	cl	1 vf sbk	mfi	G	0-5	65-70	0.03

Comments:

Niether water nor bedrock were encountered during drilling.

B-25 #OBS. ☐ Pit ☐ Boring Ground Surface Elevation 900 ft. Elevation of Limiting Factor -- ft.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frags.	% Fines	Hydraulic App. Rate Inches/Hr.
A	1	--	--	Topsoil	--	--	--	--	--	--
B	36	10YR 5/4	no redox features	c	1 vf sbk	mfi	G	5-10	65-70	0.07
C	96	10YR 6/4	no redox features	c	1 vf sbk	mfi	G	0-5	65-70	0.07
C	126	10YR 6/4	no redox features	c	1 vf sbk	mfi	G	0-5	65-70	0.07
C	138	10YR 6/4	no redox features	cl	1 vf sbk	mfi	G	0-5	65-70	0.03
C	180	10YR 6/4	no redox features	c	1 vf sbk	mfi	G	5-10	65-70	0.07

Comments:

Niether water nor bedrock were encountered during drilling.

B-26 #OBS. ☐ Pit ☐ Boring Ground Surface Elevation 900 ft. Elevation of Limiting Factor 887 ft.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frags.	% Fines	Hydraulic App. Rate Inches/Hr.
A	3	--	--	Topsoil	--	--	--	--	--	--
AB	24	10YR 4/4	no redox features	scl	1 vf-f gr	mfr	G	5-10	40-50	0.11
B	36	10YR 5/6	no redox features	c	1 vf sbk	mfi	G	5-10	65-70	0.07
C	66	10YR 5/6	no redox features	c	1 vf sbk	mfi	G	0-5	65-70	0.07
C	108	10YR 6/4	no redox features	sil	1 vf gr	mfr	G	0-5	65-70	0.13
C	156	10YR 6/4	no redox features	c	1 vf sbk	mfi	G	5-10	65-70	0.07

Comments:

Probable bedrock at 13 feet.

Overall Site Comments:

Matthew Meyer

Name (Please Print)



Signature

1053414 (SP-110700001)

Credential Number

1060 Breezewood Ln, Suite 102 Neenah, WI 54956

Address

1/31/2025

Date Evaluation Conducted

920.886.1406

Phone Number

Appendix E – Other Information

GBA - Geotechnical Engineering Report Information Sheet

Important Information about This Geotechnical-Engineering Report

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.

While you cannot eliminate all such risks, you can manage them. The following information is provided to help.

The Geoprofessional Business Association (GBA) has prepared this advisory to help you – assumedly a client representative – interpret and apply this geotechnical-engineering report as effectively as possible. In that way, you can benefit from a lowered exposure to problems associated with subsurface conditions at project sites and development of them that, for decades, have been a principal cause of construction delays, cost overruns, claims, and disputes. If you have questions or want more information about any of the issues discussed herein, contact your GBA-member geotechnical engineer. Active engagement in GBA exposes geotechnical engineers to a wide array of risk-confrontation techniques that can be of genuine benefit for everyone involved with a construction project.

Understand the Geotechnical-Engineering Services Provided for this Report

Geotechnical-engineering services typically include the planning, collection, interpretation, and analysis of exploratory data from widely spaced borings and/or test pits. Field data are combined with results from laboratory tests of soil and rock samples obtained from field exploration (if applicable), observations made during site reconnaissance, and historical information to form one or more models of the expected subsurface conditions beneath the site. Local geology and alterations of the site surface and subsurface by previous and proposed construction are also important considerations. Geotechnical engineers apply their engineering training, experience, and judgment to adapt the requirements of the prospective project to the subsurface model(s). Estimates are made of the subsurface conditions that will likely be exposed during construction as well as the expected performance of foundations and other structures being planned and/or affected by construction activities.

The culmination of these geotechnical-engineering services is typically a geotechnical-engineering report providing the data obtained, a discussion of the subsurface model(s), the engineering and geologic engineering assessments and analyses made, and the recommendations developed to satisfy the given requirements of the project. These reports may be titled investigations, explorations, studies, assessments, or evaluations. Regardless of the title used, the geotechnical-engineering report is an engineering interpretation of the subsurface conditions within the context of the project and does not represent a close examination, systematic inquiry, or thorough investigation of all site and subsurface conditions.

Geotechnical-Engineering Services are Performed for Specific Purposes, Persons, and Projects, and At Specific Times

Geotechnical engineers structure their services to meet the specific needs, goals, and risk management preferences of their clients. A geotechnical-engineering study conducted for a given civil engineer

will not likely meet the needs of a civil-works constructor or even a different civil engineer. Because each geotechnical-engineering study is unique, each geotechnical-engineering report is unique, prepared *solely* for the client.

Likewise, geotechnical-engineering services are performed for a specific project and purpose. For example, it is unlikely that a geotechnical-engineering study for a refrigerated warehouse will be the same as one prepared for a parking garage; and a few borings drilled during a preliminary study to evaluate site feasibility will not be adequate to develop geotechnical design recommendations for the project.

Do not rely on this report if your geotechnical engineer prepared it:

- for a different client;
- for a different project or purpose;
- for a different site (that may or may not include all or a portion of the original site); or
- before important events occurred at the site or adjacent to it; e.g., man-made events like construction or environmental remediation, or natural events like floods, droughts, earthquakes, or groundwater fluctuations.

Note, too, the reliability of a geotechnical-engineering report can be affected by the passage of time, because of factors like changed subsurface conditions; new or modified codes, standards, or regulations; or new techniques or tools. *If you are the least bit uncertain about the continued reliability of this report, contact your geotechnical engineer before applying the recommendations in it. A minor amount of additional testing or analysis after the passage of time – if any is required at all – could prevent major problems.*

Read this Report in Full

Costly problems have occurred because those relying on a geotechnical-engineering report did not read the report in its entirety. Do not rely on an executive summary. Do not read selective elements only. *Read and refer to the report in full.*

You Need to Inform Your Geotechnical Engineer About Change

Your geotechnical engineer considered unique, project-specific factors when developing the scope of study behind this report and developing the confirmation-dependent recommendations the report conveys. Typical changes that could erode the reliability of this report include those that affect:

- the site's size or shape;
- the elevation, configuration, location, orientation, function or weight of the proposed structure and the desired performance criteria;
- the composition of the design team; or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project or site changes – even minor ones – and request an assessment of their impact. *The geotechnical engineer who prepared this report cannot accept*

responsibility or liability for problems that arise because the geotechnical engineer was not informed about developments the engineer otherwise would have considered.

Most of the “Findings” Related in This Report Are Professional Opinions

Before construction begins, geotechnical engineers explore a site’s subsurface using various sampling and testing procedures. *Geotechnical engineers can observe actual subsurface conditions only at those specific locations where sampling and testing is performed.* The data derived from that sampling and testing were reviewed by your geotechnical engineer, who then applied professional judgement to form opinions about subsurface conditions throughout the site. Actual site-wide subsurface conditions may differ – maybe significantly – from those indicated in this report. Confront that risk by retaining your geotechnical engineer to serve on the design team through project completion to obtain informed guidance quickly, whenever needed.

This Report’s Recommendations Are Confirmation-Dependent

The recommendations included in this report – including any options or alternatives – are confirmation-dependent. In other words, they are not final, because the geotechnical engineer who developed them relied heavily on judgement and opinion to do so. Your geotechnical engineer can finalize the recommendations *only after observing actual subsurface conditions* exposed during construction. If through observation your geotechnical engineer confirms that the conditions assumed to exist actually do exist, the recommendations can be relied upon, assuming no other changes have occurred. *The geotechnical engineer who prepared this report cannot assume responsibility or liability for confirmation-dependent recommendations if you fail to retain that engineer to perform construction observation.*

This Report Could Be Misinterpreted

Other design professionals’ misinterpretation of geotechnical-engineering reports has resulted in costly problems. Confront that risk by having your geotechnical engineer serve as a continuing member of the design team, to:

- confer with other design-team members;
- help develop specifications;
- review pertinent elements of other design professionals’ plans and specifications; and
- be available whenever geotechnical-engineering guidance is needed.

You should also confront the risk of constructors misinterpreting this report. Do so by retaining your geotechnical engineer to participate in prebid and preconstruction conferences and to perform construction-phase observations.

Give Constructors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can shift unanticipated-subsurface-conditions liability to constructors by limiting the information they provide for bid preparation. To help prevent the costly, contentious problems this practice has caused, include the complete geotechnical-engineering report, along with any attachments or appendices, with your contract documents, *but be certain to note*

conspicuously that you’ve included the material for information purposes only. To avoid misunderstanding, you may also want to note that “informational purposes” means constructors have no right to rely on the interpretations, opinions, conclusions, or recommendations in the report. Be certain that constructors know they may learn about specific project requirements, including options selected from the report, *only* from the design drawings and specifications. Remind constructors that they may perform their own studies if they want to, and *be sure to allow enough time* to permit them to do so. Only then might you be in a position to give constructors the information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions. Conducting prebid and preconstruction conferences can also be valuable in this respect.

Read Responsibility Provisions Closely

Some client representatives, design professionals, and constructors do not realize that geotechnical engineering is far less exact than other engineering disciplines. This happens in part because soil and rock on project sites are typically heterogeneous and not manufactured materials with well-defined engineering properties like steel and concrete. That lack of understanding has nurtured unrealistic expectations that have resulted in disappointments, delays, cost overruns, claims, and disputes. To confront that risk, geotechnical engineers commonly include explanatory provisions in their reports. Sometimes labeled “limitations,” many of these provisions indicate where geotechnical engineers’ responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

Geoenvironmental Concerns Are Not Covered

The personnel, equipment, and techniques used to perform an environmental study – e.g., a “phase-one” or “phase-two” environmental site assessment – differ significantly from those used to perform a geotechnical-engineering study. For that reason, a geotechnical-engineering report does not usually provide environmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated subsurface environmental problems have led to project failures.* If you have not obtained your own environmental information about the project site, ask your geotechnical consultant for a recommendation on how to find environmental risk-management guidance.

Obtain Professional Assistance to Deal with Moisture Infiltration and Mold

While your geotechnical engineer may have addressed groundwater, water infiltration, or similar issues in this report, the engineer’s services were not designed, conducted, or intended to prevent migration of moisture – including water vapor – from the soil through building slabs and walls and into the building interior, where it can cause mold growth and material-performance deficiencies. Accordingly, *proper implementation of the geotechnical engineer’s recommendations will not of itself be sufficient to prevent moisture infiltration.* Confront the risk of moisture infiltration by including building-envelope or mold specialists on the design team. *Geotechnical engineers are not building-envelope or mold specialists.*



**GEOPROFESSIONAL
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ASSOCIATION**

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TIA TECHNICAL MEMORANDUM

Date: May 6, 2025

For: Widdy Gentil
Home Path Financial, LP

By: Tammi Czewski, P.E., PTOE
Traffic Analysis & Design, Inc.

Subject: **Traffic Impact Analysis**
Home Path Financial CTH Q Residential Development
Germantown, Wisconsin

INTRODUCTION

A 283-unit residential development is proposed on 88.3 acres in the northeast quadrant of the Lannon Road (CTH Y) intersection with County Line Road (CTH Q) in the Village of Germantown, Washington County, Wisconsin. Access is proposed at both CTH Y (Washington County jurisdiction) and CTH Q (Waukesha County jurisdiction). This traffic impact study (TIA) report was prepared to evaluate the traffic impacts from the new development at study intersections and proposed site driveways along CTH Y & CTH Q. [Exhibit 1](#) shows the location of the development site and proposed study intersections.

PROPOSED DEVELOPMENT

The conceptual site plan for the proposed development is on [Exhibit 2](#). Development of the site includes 136 single-family attached housing units (108 rowhomes and 28 paired ranch villas) and 147 single-family detached housing units. The site access to CTH Y is proposed to be located approximately 740 feet north of the center of CTH Q and would operate with full-access turning movements. The western site access to CTH Q is proposed to be located directly opposite Woodside Lane, and would also operate with full-access turning movements due to the median opening on CTH Q. The eastern site access to CTH Q is proposed to be located about 440 feet east of Wellington Drive. There is no median opening on CTH Q at this location, so the eastern site driveway would operate with right-in/right-out only movements.

STUDY AREA

The study intersections are identified on [Exhibit 1](#) and listed below:

- Appleton Avenue (STH 175) & CTH Y (roundabout)
- CTH Q & CTH Y (traffic signal)

- CTH Q & Club Circle Drive (northbound stop)
- CTH Q & Woodside Lane (northbound stop)
- CTH Q & Wellington Drive (northbound stop)
- CTH Q & Cross View Way
- STH 175 & CTH Q (traffic signal)

The study intersections also include proposed site access roads to CTH Y and CTH Q. The existing geometrics, traffic control, speed limits, and distances between the intersections and roadways are shown on [Exhibit 3](#).

EXISTING TRAFFIC VOLUMES

TADI collected weekday morning (6:00-9:00 a.m.) and weekday afternoon (3:00-6:00 p.m.) turning movement traffic counts at the study intersections in January and February 2025. All traffic count data collected for this study is in [Appendix A](#). Based on the traffic counts, the common weekday peak hours were calculated as:

- Weekday AM peak hour: 7:00-8:00 a.m.
- Weekday PM peak hour: 4:15-5:15 p.m.

The traffic volumes were compiled for these peak hours as shown on [Exhibit 4A](#). These volumes were balanced between intersections on CTH Y, between CTH Q and STH 175 and on CTH Q, between CTH Y and Cross View Way. The balanced traffic volumes are on [Exhibit 4B](#).

DEVELOPMENT TRAFFIC VOLUMES

Trips for the proposed residential development were calculated using fitted curve equations (FCE) from the Institute of Transportation Engineer's (ITE) *Trip Generation Manual, 11th Edition*. As shown on [Table 1](#), ITE equations for the 283 residential units result in 2,430 new trips on a typical weekday, with 170 new trips in the weekday AM peak hour and 225 new trips in the weekday PM peak hour.

Table 1. Full Buildout Trip Generation

Land Use	ITE Code	Proposed Size	Weekday Daily	AM Peak			PM Peak		
				In	Out	Total	In	Out	Total
Single-Family Detached Housing	210	147 Units	1,440 FCE	25 (26%)	80 (74%)	105 FCE	90 (63%)	55 (37%)	145 FCE
Single-Family Attached Housing	215	136 Units	990 FCE	15 (25%)	50 (75%)	65 FCE	45 (59%)	35 (41%)	80 FCE
Total New Trips		283 Units	2,430	40	130	170	135	90	225

Trip distributions for the proposed residential development were based on existing traffic patterns with adjustments made based on the location of population centers and proximity to I-41 interchange ramps (present to the northeast along CTH Y and the east along CTH Q).

The trip distributions are listed below and also shown graphically on [Exhibit 5](#).

- 30% to/from the east on CTH Q
- 10% to/from the west on CTH Q
- 30% to/from the northeast on CTH Y

- 10% to/from the south on CTH Y
- 5% to/from the northwest on STH 175
- 15% to/from the southeast on STH 175

The new residential trips were assigned to the study intersections based on the above trip distribution. The new trips are shown on [Exhibit 6](#). The new trips were added to the existing balanced traffic volumes on Exhibit 4B to generate the Build traffic volumes, as shown on [Exhibit 7](#).

INTERSECTION SIGHT DISTANCE

Intersection sight distance was evaluated at the proposed site access roads to CTH Y and CTH Q. Sight distances were calculated in accordance with the latest edition of the American Association of State Highway Transportation Officials (AASHTO) *A Policy on Geometric Design of Highways and Streets* and with the latest WisDOT FDM design guidelines (Procedure 11-10-5). Sight distance compliance was evaluated using on-line aerial and street-view photography, as well as road profiles from Google Earth. All sight distances should be verified during the design phase of the site access roadways.

Sight distance requirements were calculated based on the roadway design speeds (five mph over the posted speed limits), geometry (widths of through lanes, medians, turn lanes, and shoulders), and design vehicle (passenger car and single-unit truck). Using Google Earth, street view and profile view (as needed) evaluations of sight distance were completed.

The sight distance calculation worksheets and evaluation exhibits for proposed Site Access “A”, Site Access “B”, and Site Access “C” are in [Appendix B](#). The AASHTO minimum ISD controlling distances for left and right-turns exiting the site access roads, along with Google Earth photo evaluation to determine visibility extents are on [Exhibit 8](#).

At the Site Access “A” approach to CTH Y, a crest vertical curve on CTH Y north of the driveway obstructs views of southbound oncoming traffic. Google Earth profiles were used to determine that the AASHTO ISD distance for passenger cars making a left-turn onto CTH Y (looking right toward the crest vertical curve) is positioned near the top of the curve/hill, where clear visibility from turning vehicle to object (oncoming vehicle) can be seen. The AASHTO ISD distance for single-unit trucks making a left-turn onto CTH Y is positioned further north as the pavement drops from view. The Google Earth profiles were used to determine that with the taller eye height for single-unit trucks, clear visibility from truck turning vehicle to object can be seen. Even with the roadway curvature to the south of the Site Access “A”, unobstructed views to oncoming traffic for vehicles making a right turn (looking left) exceed AASHTO ISD requirements for both design vehicle types.

At the Site Access “B” and Site Access “C” approaches to CTH Q, Google Earth photos show unobstructed views to oncoming traffic both left and right of the site access locations at distances that exceed the AASHTO ISD requirements for all turning movement and design vehicle types.

PEAK HOUR TRAFFIC OPERATIONS & QUEUES

Definition of LOS

The study intersections were analyzed using the Synchro 12 traffic analysis model (outputs based on the Highway Capacity Manual, 7th Edition) and the peak hour turning movement volumes

developed for each intersection. The existing conditions analysis was completed with the existing lane geometrics, traffic control types, and traffic signal timings for the study intersections. The build conditions analysis was completed with the additional residential development roadways: Site Access “A”, Site Access “B”, and Site Access “C” as follows:

- Site Access “A” – evaluated with a single lane westbound approach and a southbound left-turn lane striped within the two-way center left-turn lane on CTH Y.
- Site Access “B” – evaluated with a single lane southbound approach and an eastbound left-turn lane constructed within the median (to oppose the existing westbound left-turn lane) on CTH Q.
- Site Access “C” – evaluated as a right-in/right-out only intersection.

Intersection operation is defined by “level of service.” Level of Service (LOS) is a quantitative measure that refers to the overall quality of flow at an intersection ranging from very good, represented by LOS ‘A,’ to very poor, represented by LOS ‘F’. For the purposes of this study, LOS D or better was used to define acceptable peak hour operating conditions. The descriptions of each LOS are in [Table 2](#).

Table 2. LOS Descriptions

LOS	Signalized Intersections Control Delay/Vehicle (sec/veh)	Unsignalized Intersections Avg. Control Delay (sec/veh)	Relative Delay
A	≤10	≤10	Short Delays
	Free-flow traffic operations at average travel speeds. Vehicles completely unimpeded in ability to maneuver. Minimal delay at signalized intersections.		
B	> 10 - 20	> 10 - 15	
	Reasonably unimpeded traffic operations at average travel speeds. Vehicle maneuverability slightly restricted. Low traffic delays.		
C	> 20 - 35	> 15 - 25	
	Stable traffic operations. Lane changes becoming more restricted. Travel speeds reduced to half of average free flow travel speeds. Longer intersection delays.		
D	> 35 - 55	> 25 - 35	Moderate Delays
	Small increases in traffic flow can cause increased delays. Delays likely attributable to increased traffic, reduced signal progression, and adverse timing.		
E	> 55 - 80	> 35 - 50	
	Significant delays. Travel speeds reduced to one-third of average free flow travel speed.		
F	> 80	> 50	Long Delays
	Extremely low speeds. Intersection congestion. Long delays. Extensive traffic queues at intersections		

Source: Highway Capacity Manual, Transportation Research Board, Washington, D.C., 2010

Traffic Operations

The peak hour traffic operations with the existing and build traffic volumes are listed below. The list also indicates the Appendix location for the corresponding Synchro analysis files.

- [Exhibit 9 \(Appendix C\)](#): Existing Traffic Capacity/LOS Analysis
- [Exhibit 10 \(Appendix D\)](#): Build Traffic Capacity/LOS Analysis

With the existing (no development) and build (proposed residential redevelopment) traffic volumes, all movements at the study intersections operate acceptably at LOS D or better during the weekday AM and PM peak hour time periods.

RECOMMENDATIONS

The recommended geometric and traffic control for the site access roads are listed below and shown graphically on [Exhibit 10](#). No changes are required or recommended at other existing intersections in the study area.

Site Access “A”

Position Site Access “A” at CTH Y north of CTH Q as shown on the site plan. Provide a single left-turn/right-turn lane and stop sign control on the westbound approach of Site Access “A.” Stripe a southbound left-turn lane within the two-way left-turn lane on CTH Y.

Site Access “B”

Position Site Access “B” at CTH Q across from Woodside Lane as shown on the site plan. Provide a single left-turn/right-turn lane and stop sign control on the southbound approach of Site Access “B.” Construct an eastbound left-turn lane within the median of CTH Q, opposite the westbound left-turn lane for Woodside Lane.

Site Access “C”

Position Site Access “C” at CTH Q between Wellington Drive and Cross View Way as shown on the site plan. Due to the median on CTH Q, the access will be restricted to right-in/right-out only movements. Provide a single right-turn lane and stop sign control on the southbound approach of Site Access “C.”

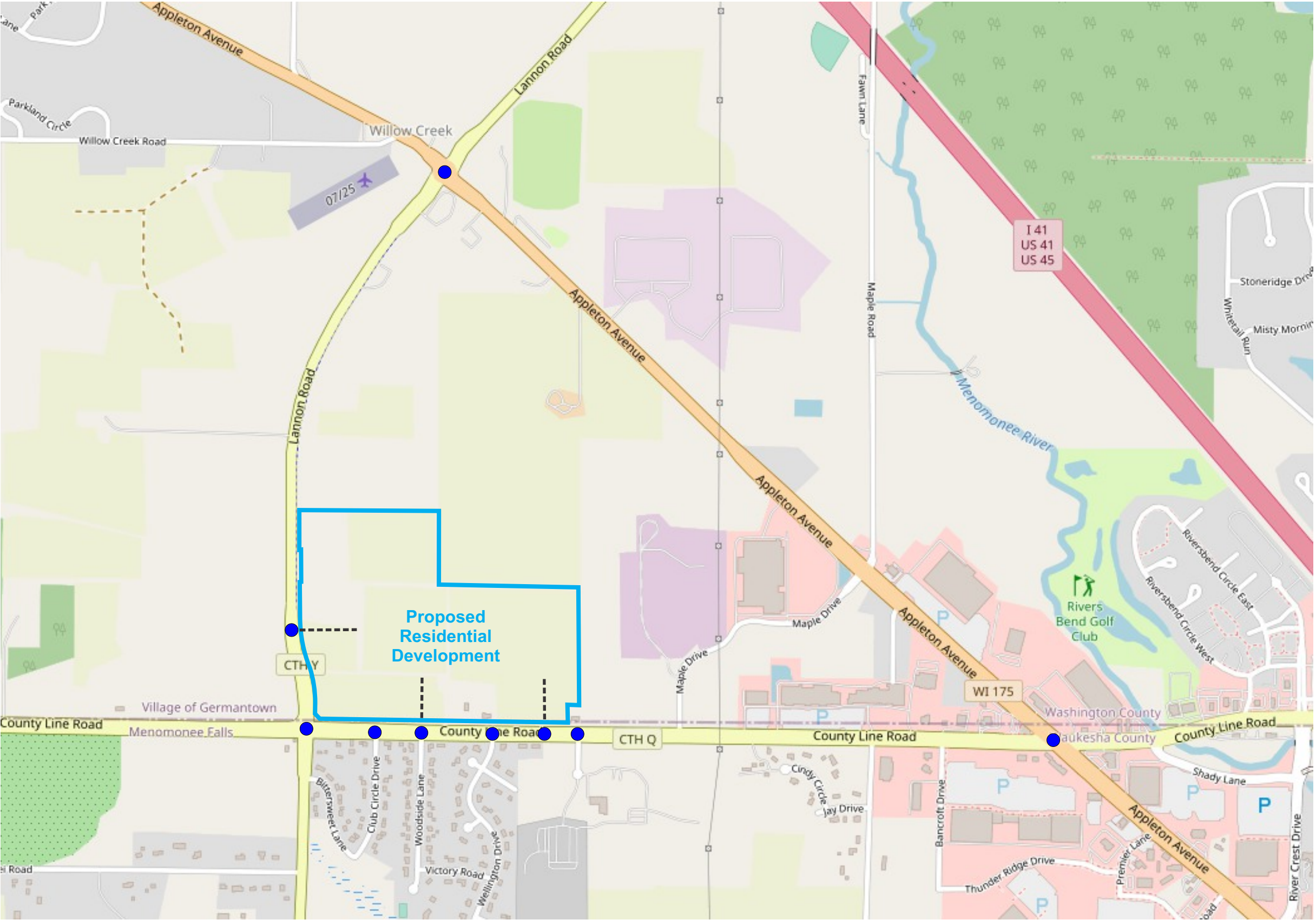
CONCLUSION

With the recommendations listed above, acceptable peak hour traffic operations are expected with buildout of the proposed residential development and site access roadways to CTH Q and CTH Y.

LEGEND

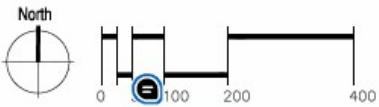
● Study Intersection

--- Proposed Site Access



SITE DATA			
Gross Site Area	88.3 acres		
Gross DU/ Acre	3.2 du/acre		
Gross Sq Ft per unit	13,591 sf/unit		
Total Density 283 units			
Rowhomes	108		
Paired Ranch Villas	28		
Pathway Ltd. Homes	47		
Pathway + Homes	56		
Flagship Homes	44		
Total Homes	283		
Proposed ROW	13.2 Ac.	14.9%	
Open Space	28.2	32.0%	
Total Net Site Area	46.9 Ac.		
Net DU/Acre	5.3 du/ac		

LOT DATA			
Single Family & Paired Setbacks:			
Front:Single Family & Paired	30'		
Front: Row Home	25'		
Side: Flagship	12'		
Side: Pathway	6'		
Side: Paired	6'		
Side @ Corner	25'		
Rear: Flagship/Pathway	30'		
Rear: Paired	25'		
Rear: Row Home	20'		
Flagship Single Family 44 units			
Average Footprint	69'w x 65'd		
Typical Lot	93'w x 135'd		
Pathway + SF 56 units			
Average Footprint	53'-65'w x 65'd		
Typical Lot	65'-77'w x 130'd		
Pathway Ltd. SF 47 units			
Average Footprint	43'-45'w x 65'd		
Typical Lot	55'-57'w x 130'd		
Paired Homes 28 units			
Average Footprint	87'w x 70'd		
Typical Lot	99'w x 125'd		
Row Homes 28 units			
Average Unit	24'w x 38'd		
Typical Lot	24'w x 80'd		



The drawings presented are illustrative of character and design intent only, and are subject to change based upon final design considerations (i.e. applicable codes, structural, and MEP design requirements, unit plan / floor plan changes, etc.) © 2024 BSB Design, Inc.

Lannon & County Line Neighborhood
Germantown, Wisconsin

Date: December 30, 2024



LEGEND

Traffic Signal

Stop Sign

Two-Way Left-Turn Lane

Lane Configuration

XX'

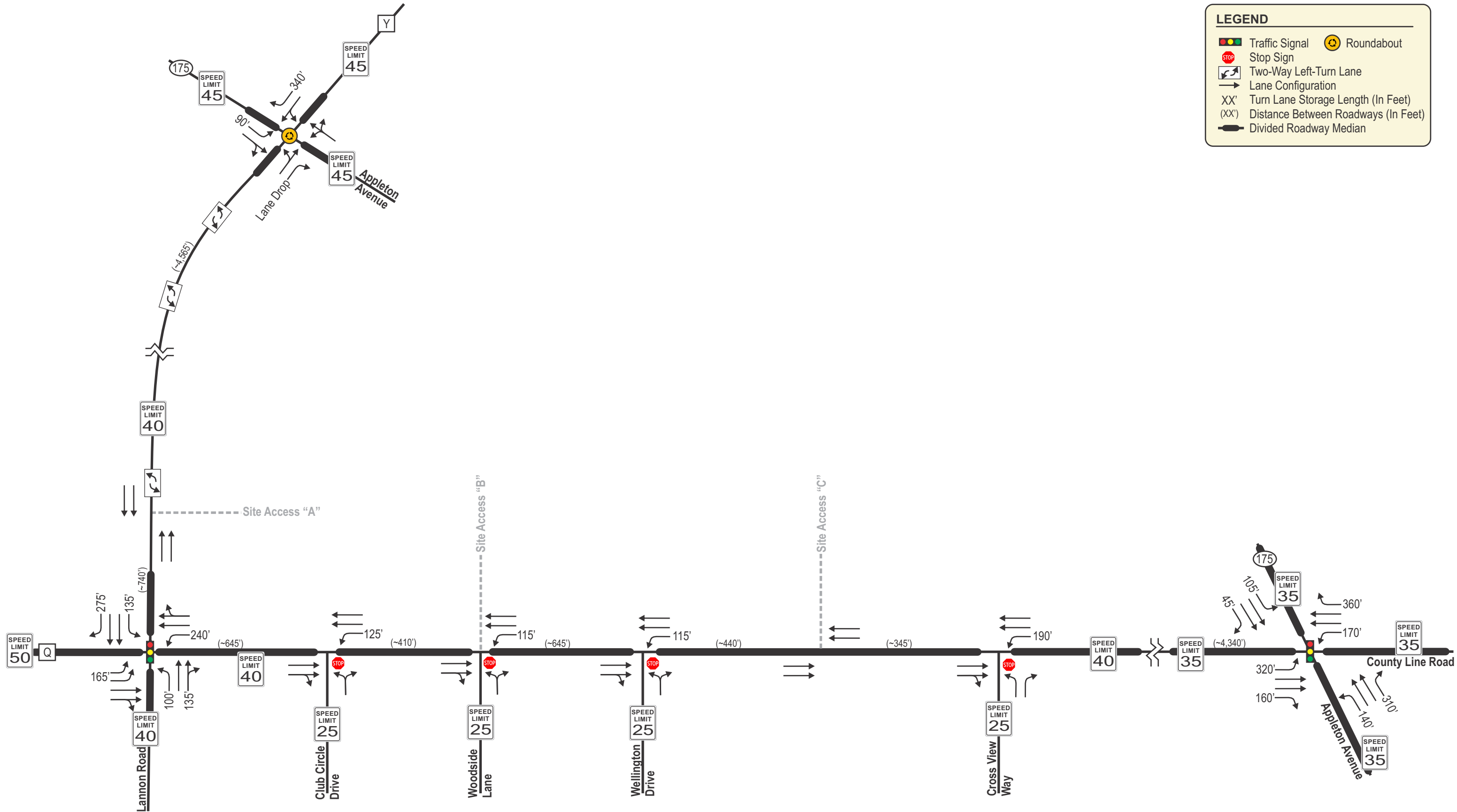
Turn Lane Storage Length (In Feet)

(XX')

Distance Between Roadways (In Feet)

Divided Roadway Median

Roundabout



LEGEND

XX

AM Peak Hour Volumes (7:00-8:00 AM)

(XX)

PM Peak Hour Volumes (4:15-5:15 PM)

-

Negligible Traffic Volumes (Fewer than 3 vph)

X,XXX

2023 Annual Average Daily Traffic (AADT)

X,XXX

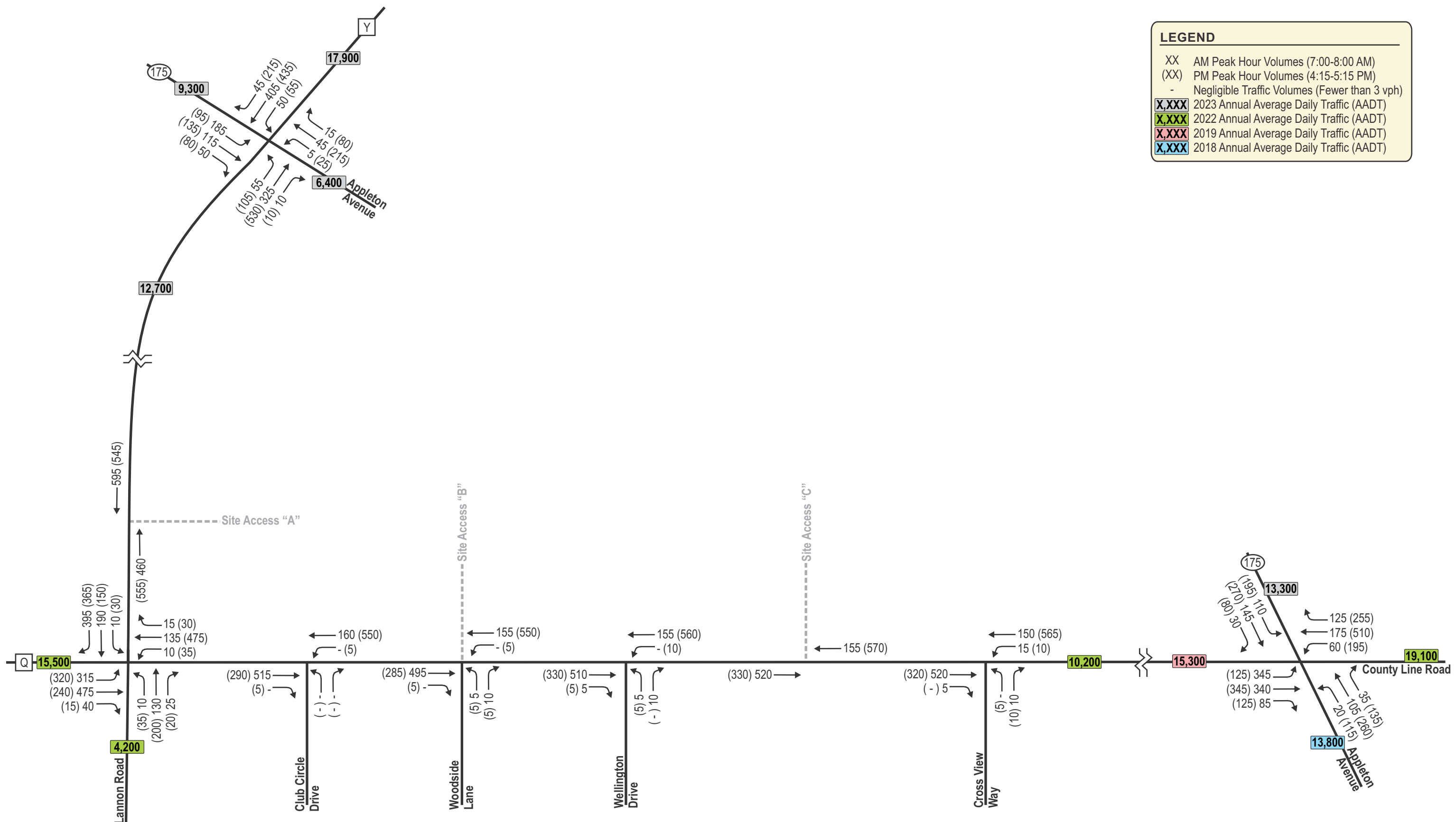
2022 Annual Average Daily Traffic (AADT)

X,XXX

2019 Annual Average Daily Traffic (AADT)

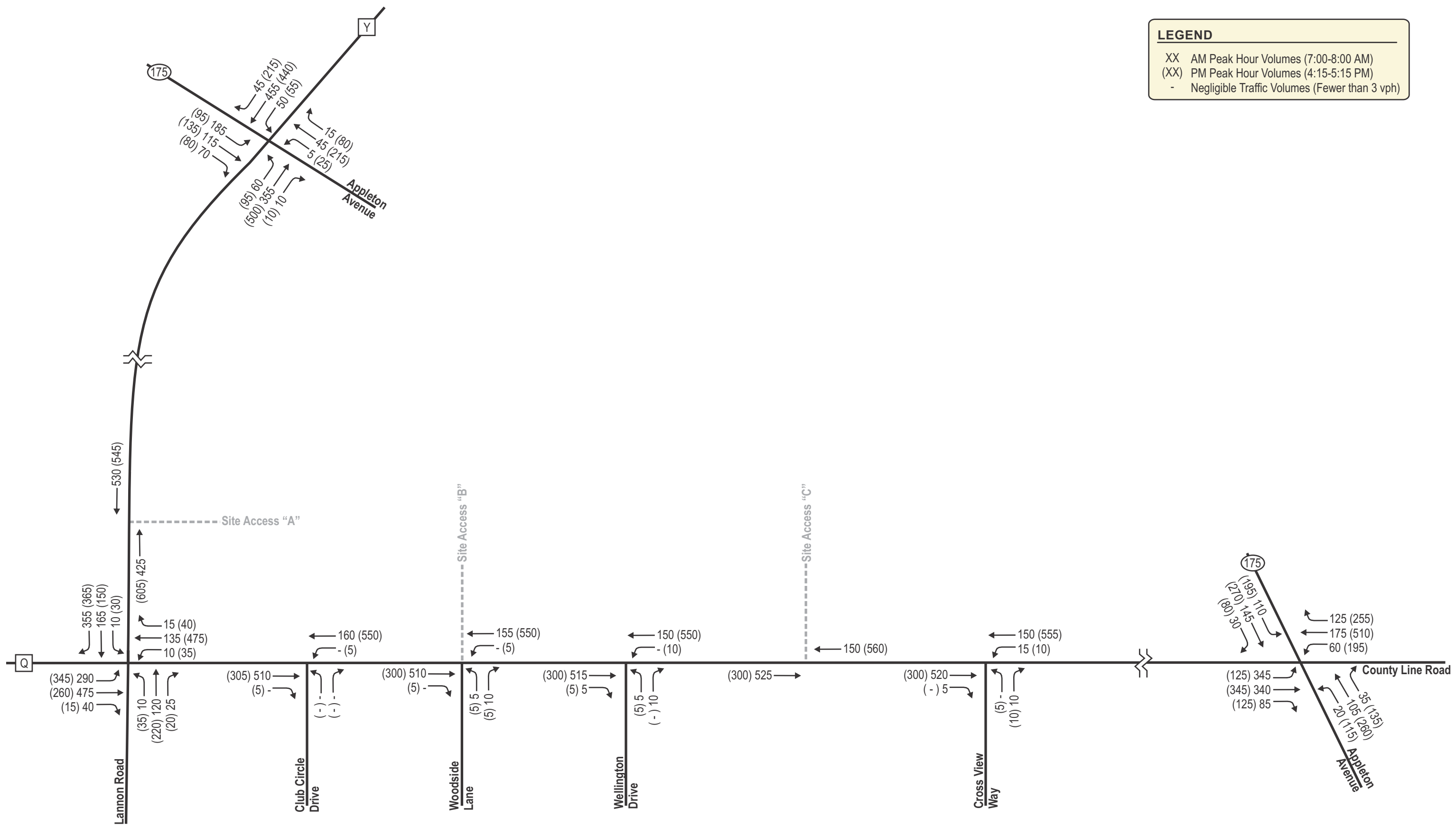
X,XXX

2018 Annual Average Daily Traffic (AADT)



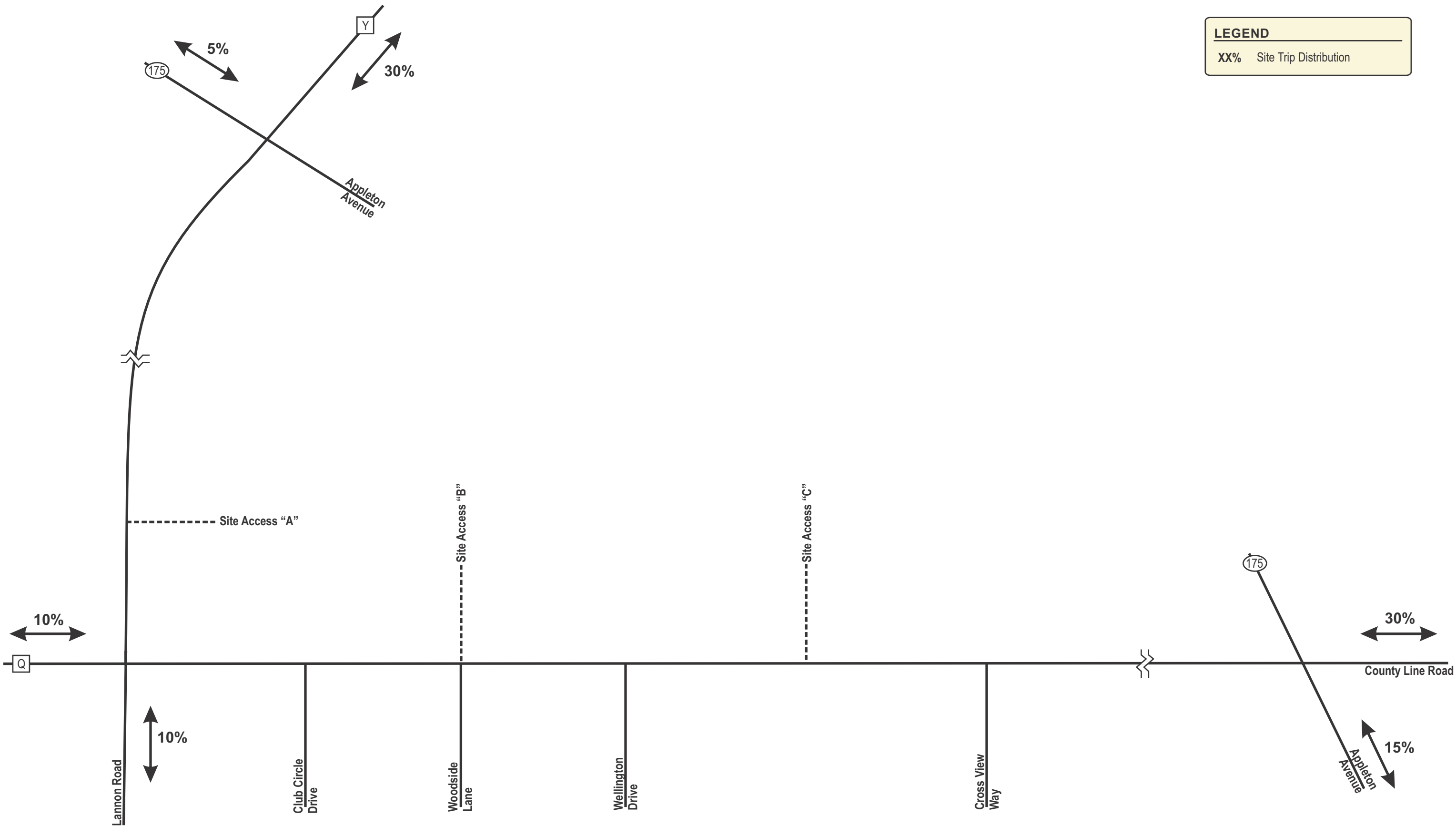
LEGEND

- XX AM Peak Hour Volumes (7:00-8:00 AM)
- (XX) PM Peak Hour Volumes (4:15-5:15 PM)
- Negligible Traffic Volumes (Fewer than 3 vph)



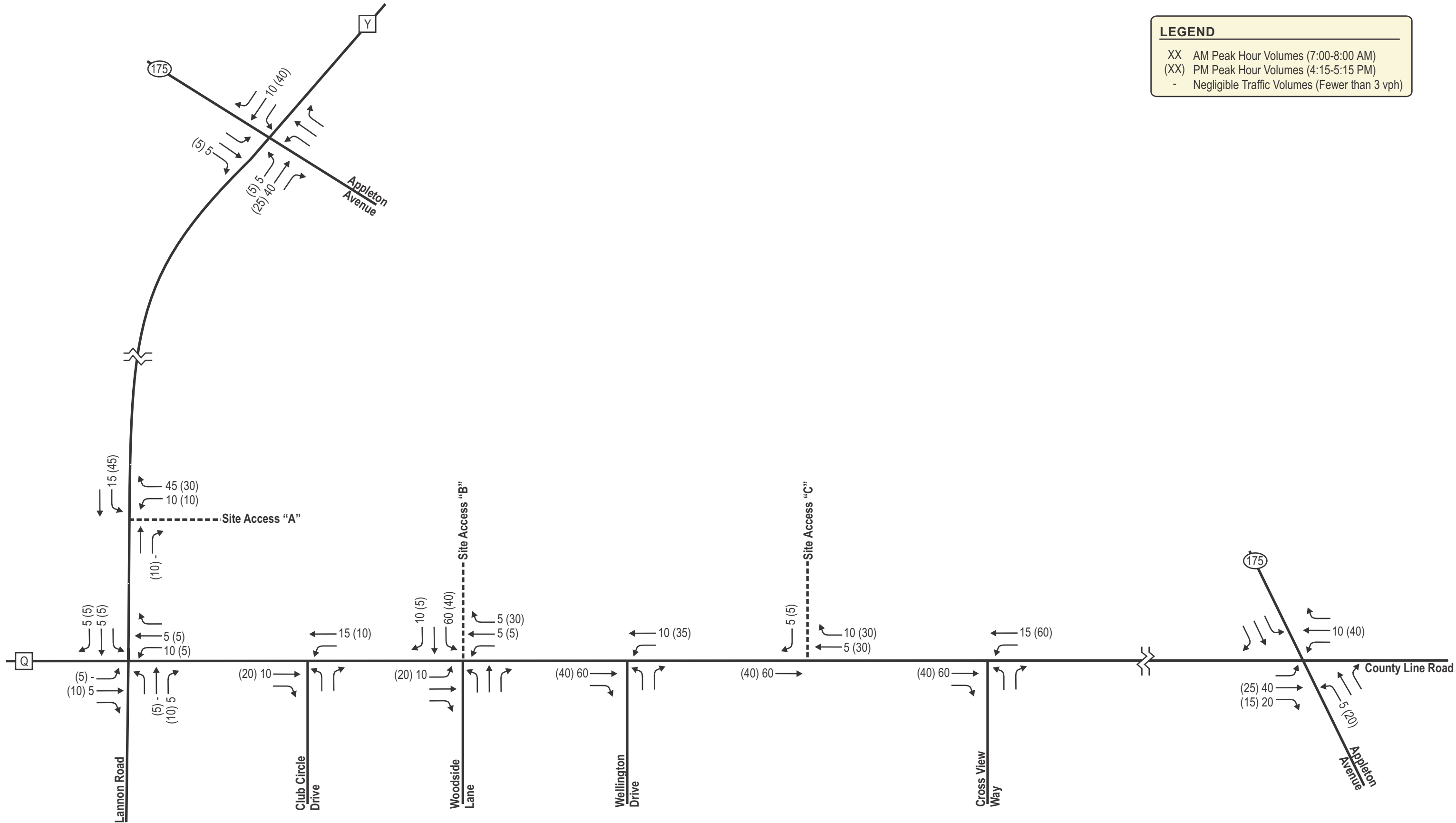
LEGEND

XX% Site Trip Distribution



LEGEND

- XX AM Peak Hour Volumes (7:00-8:00 AM)
- (XX) PM Peak Hour Volumes (4:15-5:15 PM)
- Negligible Traffic Volumes (Fewer than 3 vph)



LEGEND

XX

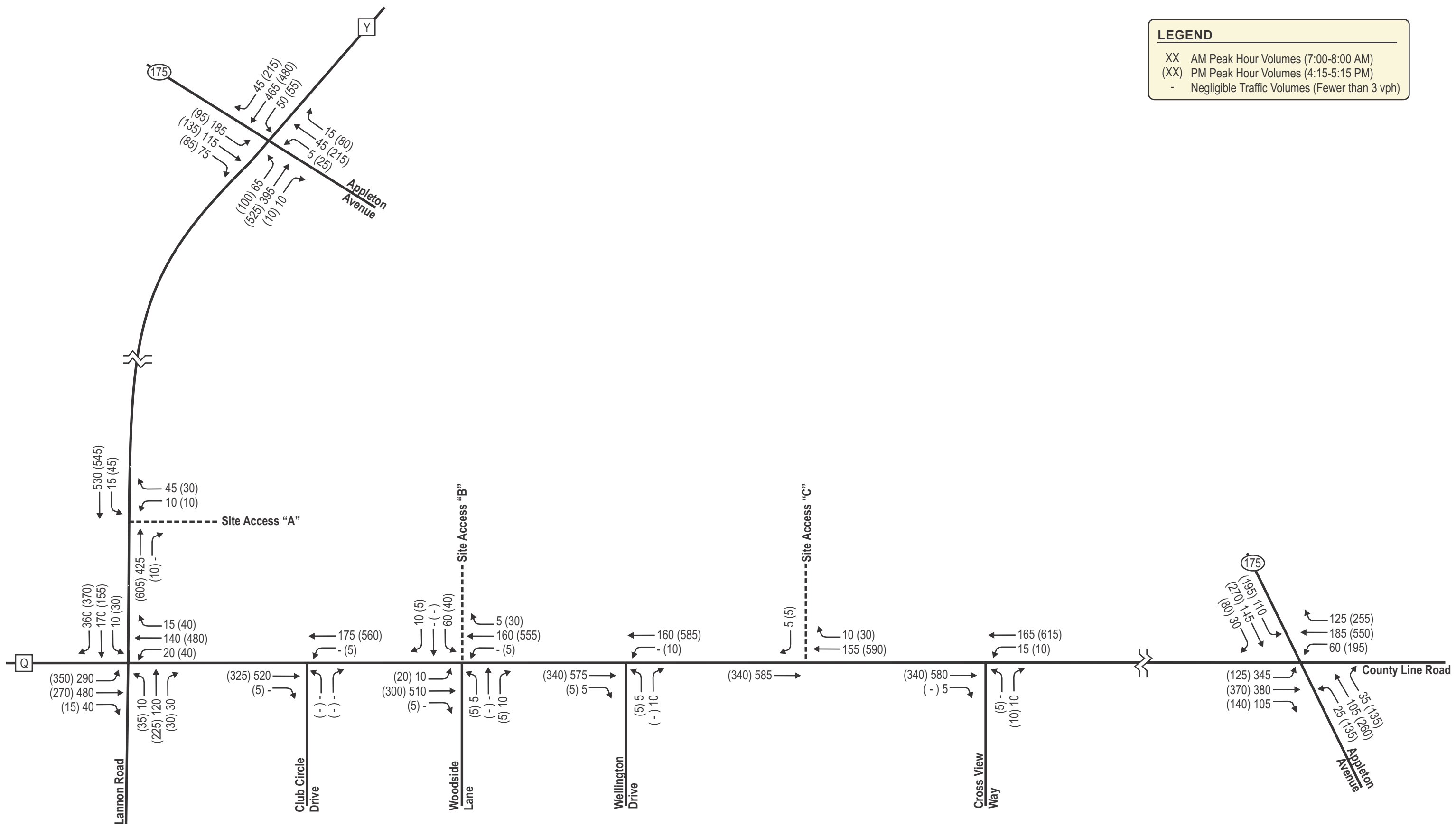
AM Peak Hour Volumes (7:00-8:00 AM)

(XX)

PM Peak Hour Volumes (4:15-5:15 PM)

-

Negligible Traffic Volumes (Fewer than 3 vph)



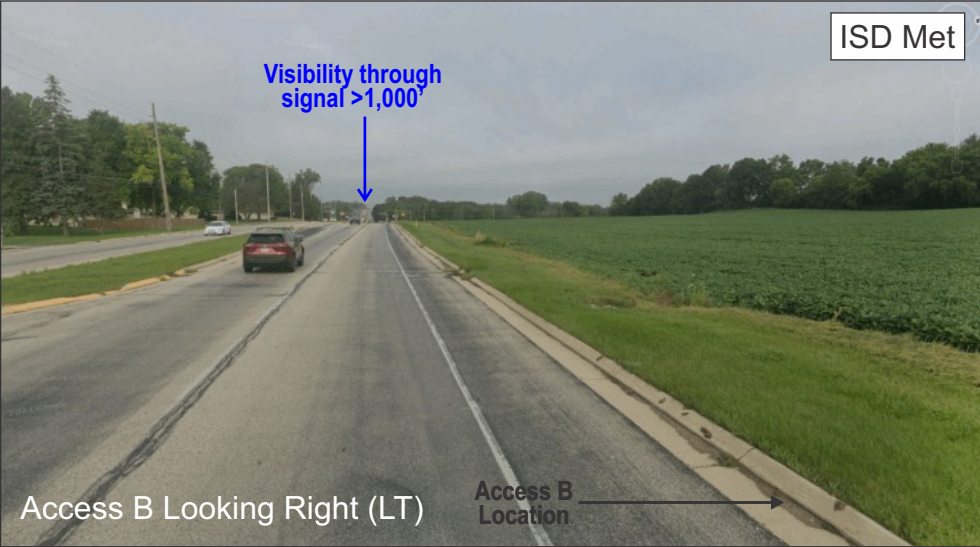
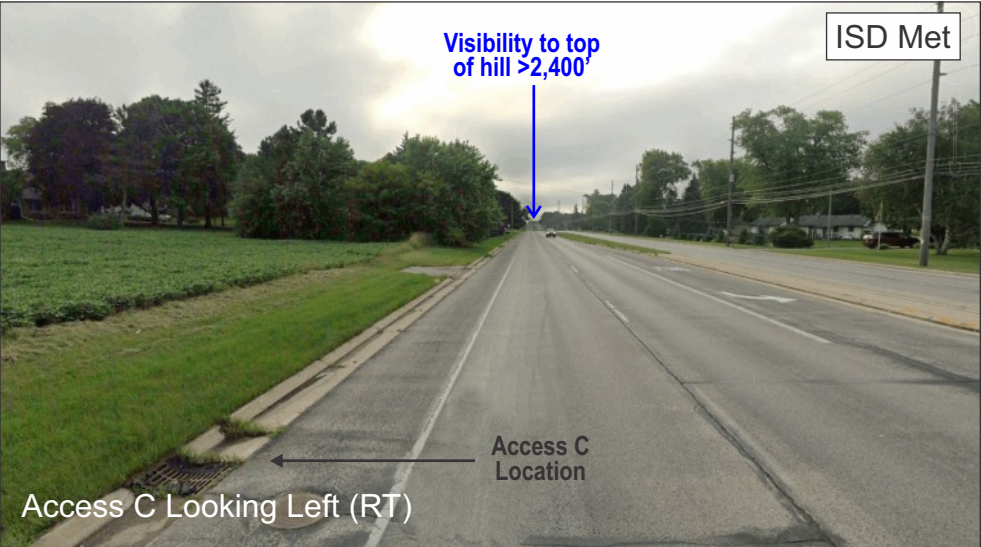
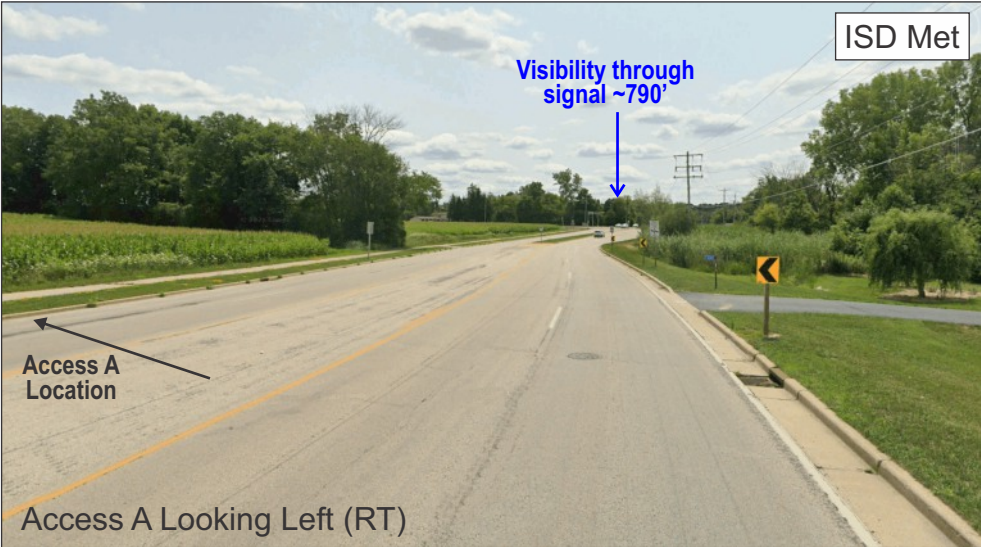
Existing Traffic Peak Hour Operating Conditions
Existing Transportation System

Intersection	Peak Hour	Metric	Level of Service (LOS) per Movement by Approach												I/S				
			Eastbound				Westbound				Northbound				Southbound				LOS & Delay
			LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT					
County Line Road (CTH Q) & Lannon Road (CTH Y) Traffic Signal Control		Lanes->	2	2>		1	2>		1	2>		1	2		1				
	AM	LOS	C	B		C	B		B	B		B	B		C	B			
		Delay	25.0	14.3		30.1	17.0		18.1	19.8		18.1	19.8		24.1	19.3			
		Queue	120'	180'		20'	65'		15'	55'		15'	65'		185'				
	PM	LOS	C	B		C	C		B	C		B	C		C	C			
		Delay	27.3	14.6		30.0	22.3		19.3	22.7		19.5	22.1		26.9	22.7			
Queue		165'	95'		55'	215'		40'	110'		35'	70'		230'					
County Line Road (CTH Q) & Club Circle Drive Stop Sign Control (NB)		Lanes->	-	2>		1	2		-	<1>		-							
	AM	LOS	-	*		A	*		-	B		-				A			
		Delay	-	*		9.0	*		-	12.4		-				0.1			
		Queue	-	*		0'	*		-	0'		-							
	PM	LOS	-	*		A	*		-	B		-				A			
		Delay	-	*		7.9	*		-	11.6		-				0.1			
Queue		-	*		0'	*		-	0'		-								
County Line Road (CTH Q) & Woodside Lane Stop Sign Control (NB)		Lanes->	-	2>		1	2		-	<1>		-							
	AM	LOS	-	*		A	*		-	B		-				A			
		Delay	-	*		9.0	*		-	12.0		-				0.3			
		Queue	-	*		0'	*		-	5'		-							
	PM	LOS	-	*		A	*		-	B		-				A			
		Delay	-	*		7.9	*		-	11.6		-				0.2			
Queue		-	*		0'	*		-	5'		-								
County Line Road (CTH Q) & Wellington Drive Stop Sign Control (NB)		Lanes->	-	2>		1	2		-	<1>		-							
	AM	LOS	-	*		A	*		-	B		-				A			
		Delay	-	*		9.1	*		-	11.9		-				0.3			
		Queue	-	*		0'	*		-	5'		-							
	PM	LOS	-	*		A	*		-	B		-				A			
		Delay	-	*		7.9	*		-	13.0		-				0.2			
Queue		-	*		0'	*		-	0'		-								
County Line Road (CTH Q) & Crossview Way Stop Sign Control (NB)		Lanes->	-	2>		1	2		-	1	1		-						
	AM	LOS	-	*		A	*		-	C	B		-				A		
		Delay	-	*		9.2	*		-	16.7	10.7		-				0.4		
		Queue	-	*		5'	*		-	0'	5'		-						
	PM	LOS	-	*		A	*		-	B	A		-				A		
		Delay	-	*		7.9	*		-	13.9	9.2		-				0.3		
Queue		-	*		0'	*		-	0'	0'		-							
County Line Road (CTH Q) & Appleton Avenue (STH 175) Traffic Signal Control		Lanes->	1	2	1	1	2	1	1	2	1	1	2	1					
	AM	LOS	B	B	B	B	B	B	C	D	D	C	C	C	B				
		Delay	13.0	13.5	12.5	12.5	15.0	15.2	34.7	38.0	37.2	31.9	34.6	33.3	19.7				
		Queue	155'	95'	40'	30'	65'	70'	30'	60'	35'	105'	75'	35'					
	PM	LOS	B	B	B	B	B	B	D	D	D	D	D	D	C				
		Delay	13.6	17.1	16.2	12.9	16.8	16.1	41.8	53.9	53.4	40.7	47.4	44.5	28.8				
Queue		80'	145'	80'	120'	200'	140'	105'	140'	105'	170'	140'	70'						
Lannon Road (CTH Y) N/S & Appleton Avenue (STH 175) E/W Roundabout Control		Lanes->	1	1>		<1>				<1>		1	<1>		1				
	AM	LOS	A	A		A				B		A	A		A	A			
		Delay	7.8	7.3		6.9				11.2		4.0	8.5		3.4	8.8			
		Queue	30'	30'		10'				85'		0'	75'		5'				
	PM	LOS	A	A		B				B		A	B		A	A			
		Delay	5.5	6.8		12.4				11.4		3.5	10.0		5.6	9.7			
Queue		10'	25'		65'				105'		0'	80'		20'					

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

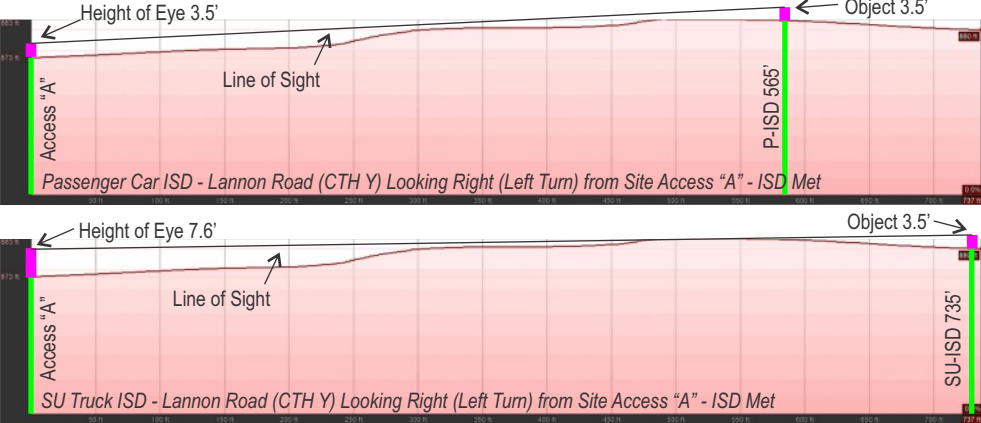
Build Traffic Peak Hour Operating Conditions
Build Transportation System

Intersection	Peak Hour	Metric	Level of Service (LOS) per Movement by Approach												I/S LOS & Delay		
			Eastbound			Westbound			Northbound			Southbound					
			LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT			
County Line Road (CTH Q) & Lannon Road (CTH Y) <i>Traffic Signal Control</i>	Lanes->		2	2>		1	2>		1	2>		1	2		1		
	AM	LOS	C	B		C	B		B	B		B	B		C	B	
		Delay	25.1	15.2		28.7	17.1		18.1	19.8		18.1	19.8		24.1	19.7	
		Queue	125'	185'		35'	65'		15'	60'		15'	65'		190'		
	PM	LOS	C	B		C	C		B	C		B	C		C	C	
		Delay	27.5	15.0		30.1	22.5		19.4	23.0		19.7	22.3		27.1	23.0	
		Queue	165'	100'		60'	215'		40'	115'		35'	75'		235'		
County Line Road (CTH Q) & Club Circle Drive <i>Stop Sign Control (NB)</i>	Lanes->		-	2>		1	2		-	<1>		-					
	AM	LOS	-	*		A	*		-	B		-				A	
		Delay	-	*		9.0	*		-	12.6		-				0.0	
		Queue	-	*		0'	*		-	0'		-					
	PM	LOS	-	*		A	*		-	B		-				A	
		Delay	-	*		8.0	*		-	11.8		-				0.1	
		Queue	-	*		0'	*		-	0'		-					
County Line Road (CTH Q) & Woodside Lane/Site Access "B" <i>Stop Sign Control (NB/SB)</i>	Lanes->		1	2>		1	2>		<1>		<1>						
	AM	LOS	A	*		A	*		B		B				A		
		Delay	7.7	*		9.0	*		12.7		14.3				1.7		
		Queue	0'	*		0'	*		5'		15'						
	PM	LOS	A	*		A	*		B		C				A		
		Delay	9.0	*		7.9	*		12.8		21.3				1.3		
		Queue	5'	*		0'	*		5'		15'						
County Line Road (CTH Q) & Wellington Drive <i>Stop Sign Control (NB)</i>	Lanes->		-	2>		1	2		-	<1>		-					
	AM	LOS	-	*		A	*		-	B		-				A	
		Delay	-	*		9.3	*		-	12.5		-				0.3	
		Queue	-	*		0'	*		-	5'		-					
	PM	LOS	-	*		A	*		-	B		-				A	
		Delay	-	*		8.0	*		-	13.7		-				0.2	
		Queue	-	*		0'	*		-	0'		-					
County Line Road (CTH Q) & Crossview Way <i>Stop Sign Control (NB)</i>	Lanes->		-	2>		1	2		-	1	-	1	-				
	AM	LOS	-	*		A	*		-	C	-	B	-			A	
		Delay	-	*		9.5	*		-	18.2	-	11.1	-			0.3	
		Queue	-	*		5'	*		-	0'	-	5'	-				
	PM	LOS	-	*		A	*		-	C	-	A	-			A	
		Delay	-	*		8.0	*		-	15.0	-	9.4	-			0.3	
		Queue	-	*		0'	*		-	0'	-	0'	-				
County Line Road (CTH Q) & Appleton Avenue (STH 175) <i>Traffic Signal Control</i>	Lanes->		1	2	1	1	2	1	1	2	1	1	2	1			
	AM	LOS	B	B	B	B	B	B	C	D	D	C	D	C	C	B	
		Delay	13.1	13.7	12.6	12.5	15.1	15.2	34.5	38.0	37.2	32.2	35.0	33.7		19.6	
		Queue	155'	105'	45'	30'	70'	70'	35'	60'	35'	105'	75'	35'			
	PM	LOS	B	B	B	B	B	B	D	D	D	D	D	D	C	C	
		Delay	13.7	17.3	16.4	13.0	17.1	16.2	41.3	53.9	53.4	41.2	48.9	45.7		28.9	
		Queue	80'	155'	85'	120'	215'	140'	120'	140'	105'	170'	140'	70'			
Lannon Road (CTH Y) N/S & Appleton Avenue (STH 175) E/W <i>Roundabout Control</i>	Lanes->		1	1>		<1>			<1>		1	<1>		1			
	AM	LOS	A	A		A			B		A	A		A	A		
		Delay	8.0	7.5		7.3			12.6		4.0	8.8		3.4	9.5		
		Queue	30'	30'		10'			105'		0'	80'		5'			
	PM	LOS	A	A		B			B		A	B		A	B		
		Delay	5.7	7.2		13			12.2		3.5	11.0		5.6	10.4		
		Queue	10'	30'		70'			115'		0'	90'		20'			
Lannon Road (CTH Y) & Site Access "A" <i>Stop Sign Control (WB)</i>	Lanes->		-	-		<1>			-	2>		1	2		-		
	AM	LOS	-	-		B			-	*		A	*		-	A	
		Delay	-	-		11.3			-	*		8.4	*		-	0.7	
		Queue	-	-		10'			-	*		0'	*		-		
	PM	LOS	-	-		B			-	*		A	*		-	A	
		Delay	-	-		14			-	*		9.1	*		-	0.8	
		Queue	-	-		10'			-	*		5'	*		-		
County Line Road (CTH Q) & Site Access "C" <i>Stop Sign Control (SB)</i>	Lanes->		-	2	-	-	2>		-		-		1				
	AM	LOS	-	*	-	-	*		-		-		A		A		
		Delay	-	*	-	-	*		-		-		8.9		0.1		
		Queue	-	*	-	-	*		-		-		0'				
	PM	LOS	-	*	-	-	*		-		-		B		A		
		Delay	-	*	-	-	*		-		-		10.4		0.1		
		Queue	-	*	-	-	*		-		-		0'				



ISD CONTROLLING DISTANCES:

AASHTO MINIMUM ISD			
	P	SU	700
To Left of Access:	450'	585'	720'
To Right of Access:	0'	0'	0'
Left-Turn from Mainline:	0'	0'	0'

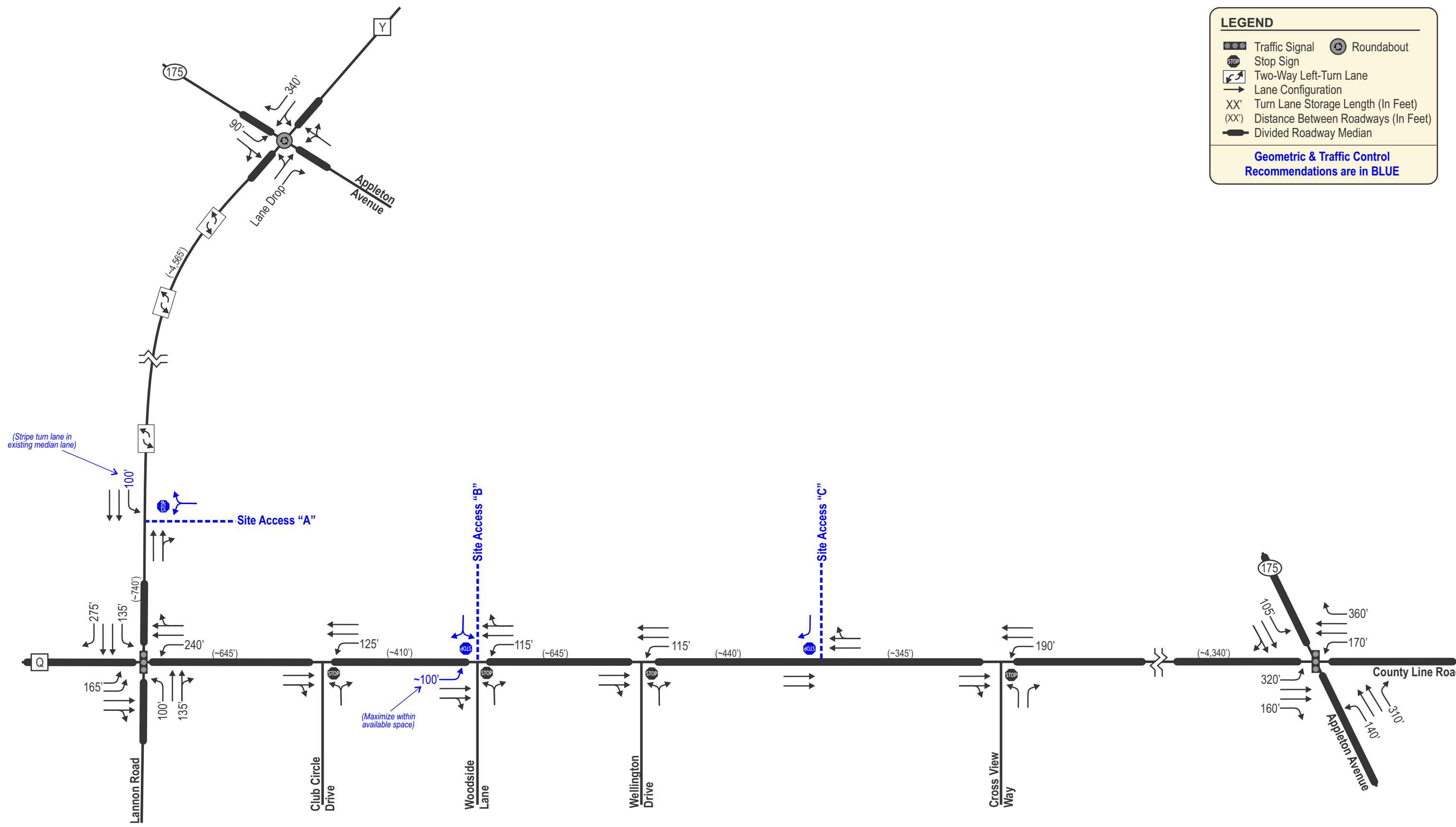


ISD CONTROLLING DISTANCES:

AASHTO MINIMUM ISD			
	P	SU	700
To Left of Access:	430'	565'	695'
To Right of Access:	575'	735'	870'
Left-Turn from Mainline:	395'	470'	535'

ISD CONTROLLING DISTANCES:

AASHTO MINIMUM ISD			
	P	SU	700
To Left of Access:	450'	585'	720'
To Right of Access:	545'	800'	935'
Left-Turn from Mainline:	415'	500'	565'



LEGEND

Traffic Signal

Stop Sign

Two-Way Left-Turn Lane

Lane Configuration

XX'

Turn Lane Storage Length (In Feet)

(XX')

Distance Between Roadways (In Feet)

Divided Roadway Median

Roundabout

Geometric & Traffic Control

Recommendations are in BLUE

APPENDIX A

**TURNING MOVEMENT TRAFFIC
COUNTS**

**3414 Germantown
Peak Hour Calculations**

Weekday AM Peak Hour

Time	CTH Q Lannon Rd	CTH Q Club Circle	CTH Q Woodside	CTH Q Wellington	CTH Q Cross View Way	CTH Q Appleton Ave	Lannon Rd Appleton Ave	Sums
	1/30/2025	1/30/2025	1/28/2025	1/28/2025	1/28/2025	2/7/2025	2/7/2025	
6:00 AM	210	75	85	86	88	141	148	
6:15 AM	250	98	98	100	102	161	224	
6:30 AM	351	120	131	131	141	192	261	
6:45 AM	333	121	135	136	133	255	316	4622
7:00 AM	377	143	145	155	164	288	282	5343
7:15 AM	463	199	148	153	142	314	378	6107
7:30 AM	460	174	195	202	208	334	322	6675
7:45 AM	445	164	179	175	188	324	331	7052
8:00 AM	357	133	136	138	146	365	280	7053
8:15 AM	301	118	122	120	135	345	258	6655
8:30 AM	244	113	141	143	132	367	275	6175
8:45 AM	288	143	138	136	150	381	288	5893

AM Peak Hour: 7:00-8:00 a.m.

Weekday PM Peak Hour

Time	CTH Q Lannon Rd	CTH Q Club Circle	CTH Q Woodside	CTH Q Wellington	CTH Q Cross View Way	CTH Q Appleton Ave	Lannon Rd Appleton Ave	Sums
	1/27/2025	1/27/2025	1/27/2025	1/29/2025	1/29/2025	2/6/2025	2/6/2025	
3:00 PM	372	171	170	186	202	638	419	
3:15 PM	394	198	199	184	190	619	432	
3:30 PM	420	203	204	200	207	572	432	
3:45 PM	401	188	193	231	235	658	456	8974
4:00 PM	446	222	222	206	212	646	458	9228
4:15 PM	494	208	212	239	242	618	482	9507
4:30 PM	505	206	203	210	213	646	518	9770
4:45 PM	443	207	208	236	238	675	510	9925
5:00 PM	475	231	231	228	221	662	470	10031
5:15 PM	410	189	195	237	244	708	471	9990
5:30 PM	425	191	202	186	199	608	380	9680
5:45 PM	320	162	157	150	162	587	337	9038

PM Peak Hour: 4:15-5:15 p.m.

Intersection Traffic Volume Report

Count Basics		Version 2024.10	Page 1 of 13
Start Date:	Monday, January 27, 2025	#VALUE!	Schools in Session
Total Number of Hours Counted:	6	Non-Holiday	No Special Events

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

Major St: CTH Q
Minor St: Lannon Road
Intersection of: CTH Q & Lannon Road



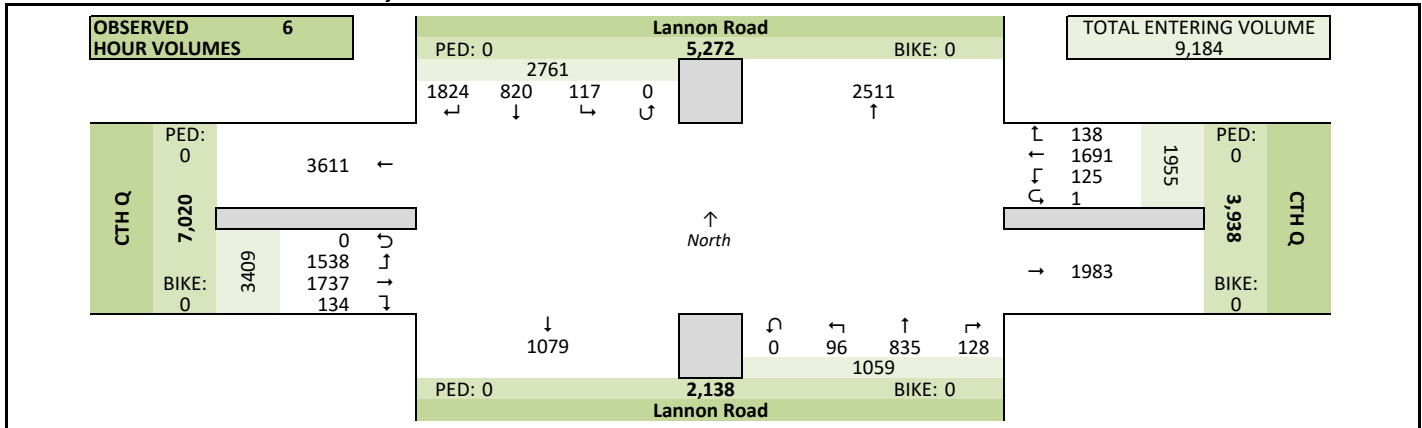
Site Information

Municipality	Village of Germantown
County	66 - Washington
WisDOT Region	SE
Traffic Control	Traffic Signal
Roadway Names	North Direction
North Leg	Lannon Road
East Leg	CTH Q
South Leg	Lannon Road
West Leg	CTH Q
Special Considerations	
Schools	In Session
Holidays	None
Special Events	None
Special Pedestrians Observed	
Pre-school children	None
Elementary school age children	None
Visually impaired (white cane/helper dog)	None
Elderly/disabled (except wheelchairs)	None
Wheelchairs/electric scooters	None
Other (describe)	None

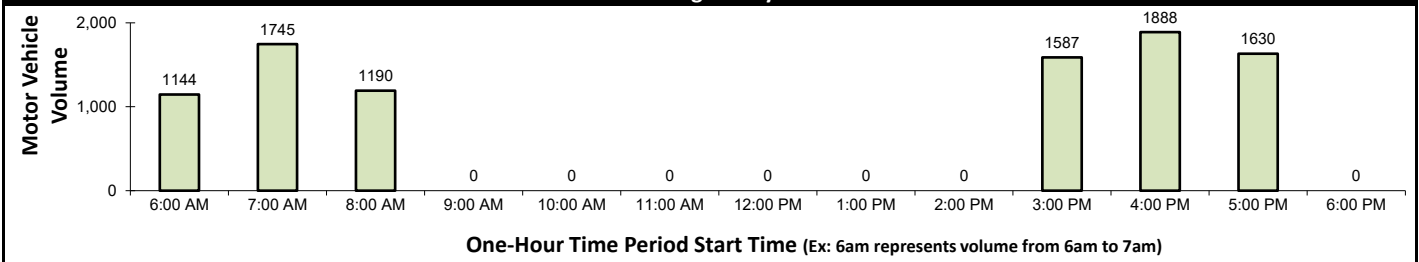
Count Information

Hrs Counted:	06:00 AM-09:00 AM and 03:00 PM-06:00 PM
1st Day of Count	Monday, January 27, 2025
Weather	Clear & Dry
AM Peak Period	Thursday, January 30, 2025
Midday Peak Period	None
PM Peak Period	Monday, January 27, 2025
Calculated Peak Hours	
AM	7:00-8:00am
MD	
PM	4:15-5:15pm
Peak Hours Selected for Analysis	
AM	7:00-8:00am
MD	
PM	4:15-5:15pm
Daily/Seasonal Adjustment Group	(1) Non-Interstate Low Truck %
Count Expansion Group	(1) Non-Interstate Low Truck %
Daily/Seasonal Adjustment Factor	1.145
Count Expansion Factor	2.410
Company Name	TADI
Manual Adj.	1.000
Observers	AM Peak Period: Amy Scheuerlein Midday Peak Period: None PM Peak Period: Amy Scheuerlein
Comments	Wis DOT Daily & Seasonal Factors are final for 2012 through 2023, and 2024 uses 2023 final factors.

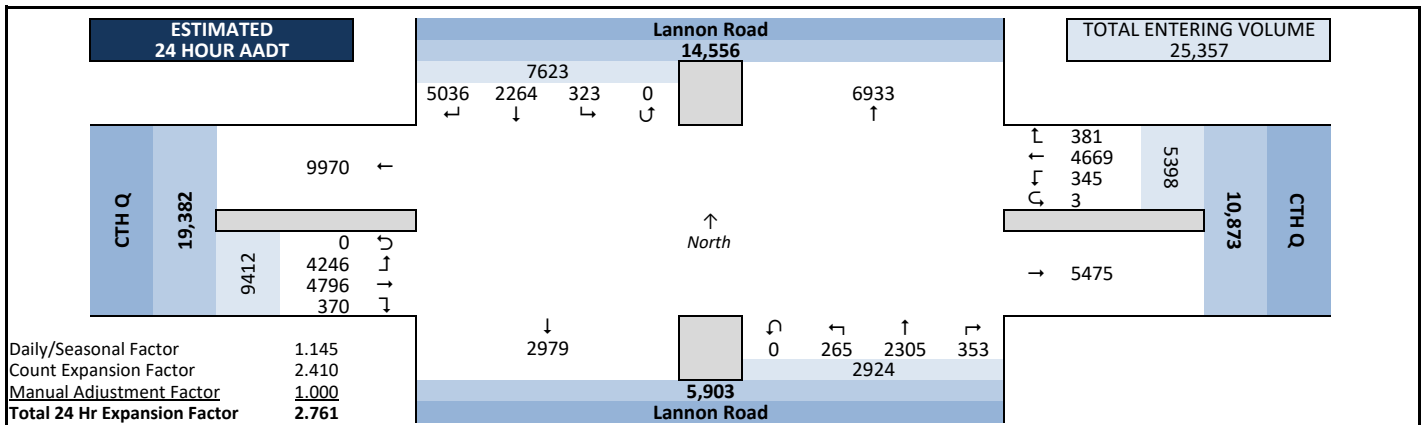
Observed 6 Hour Volume Summary



Total Entering Hourly Volume



Estimated 24 Hour AADT

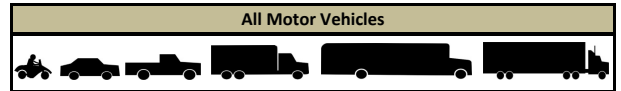


Intersection Traffic Volume Report

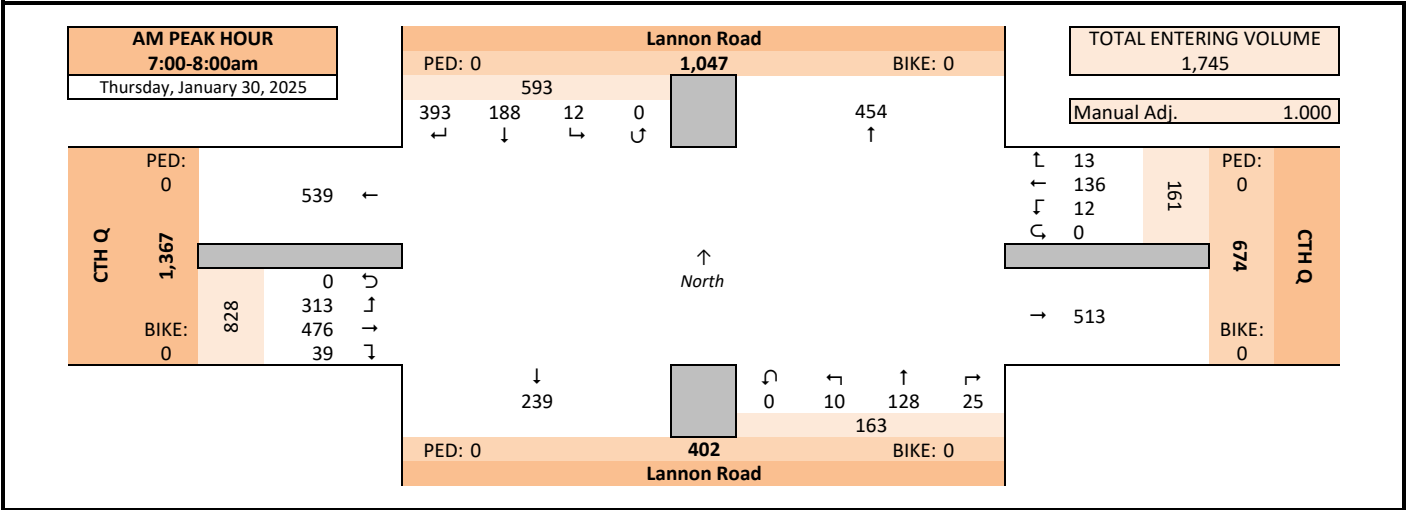
Peak Hour Volume Graphical Summary

Count Basics		Page 2 of 13	
Start Date:	Monday, January 27, 2025	#VALUE!	Schools in Session
Total Number of Hours Counted:	6	Non-Holiday	No Special Events

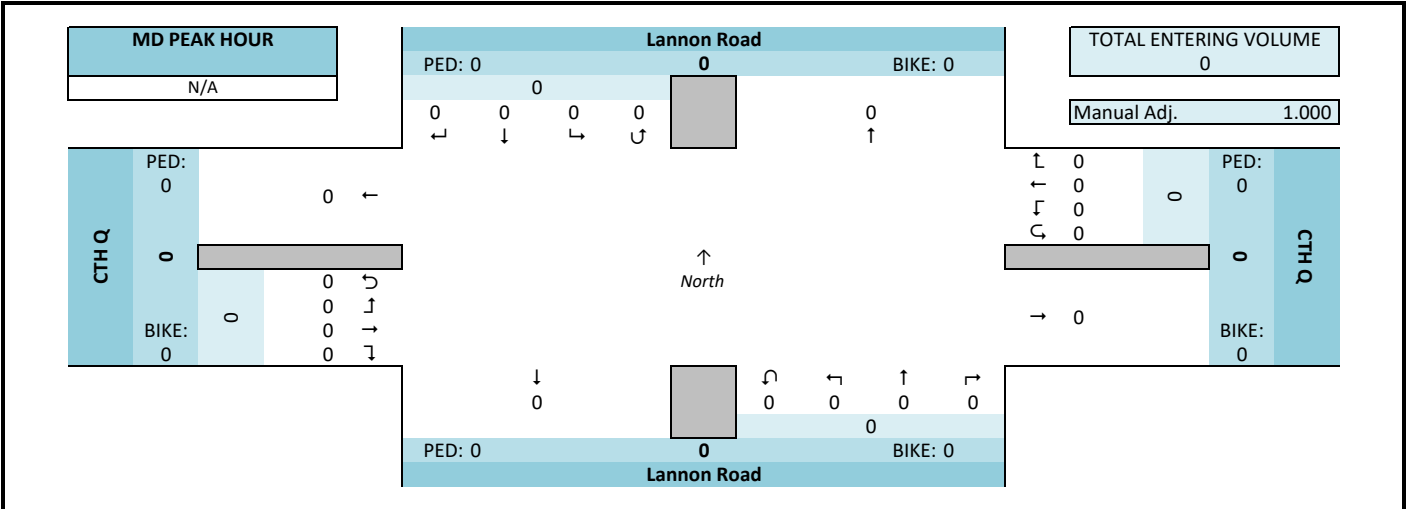
CTH Q & Lannon Road



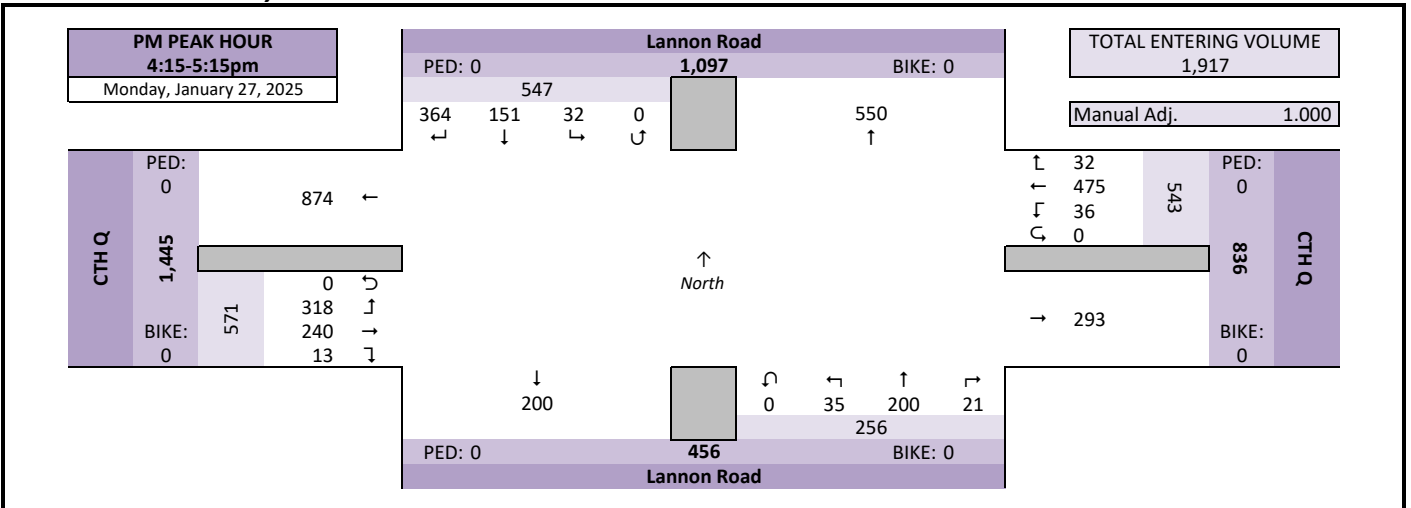
AM Peak Hour Summary



Midday (MD) Peak Hour Summary



PM Peak Hour Summary

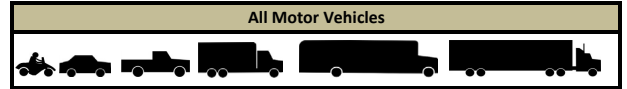


Intersection Traffic Volume Report

Peak Hour Volume Summary

CTH Q & Lannon Road

Count Basics			Page 3 of 13
Start Date:	Monday, January 27, 2025	#VALUE!	Schools in Session
Total Number of Hours Counted:	6	Non-Holiday	No Special Events



Peak Hour Volumes, Truck Percentages, and PHFs

Thursday, January 30, 2025		↓					←					↑					→					
		From North					From East					From South					From West					
		Lannon Road					CTH Q					Lannon Road					CTH Q					
AM Peak Hour	Start Time	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Totals
	7:00 AM	105	40	4	0	149	6	29	1	0	36	3	17	1	0	21	7	100	64	0	171	377
	7:15 AM	103	41	4	0	148	0	36	5	0	41	8	27	2	0	37	8	145	84	0	237	463
	7:30 AM	91	57	4	0	152	1	41	1	0	43	8	43	4	0	55	11	114	85	0	210	460
	7:45 AM	94	50	0	0	144	6	30	5	0	41	6	41	3	0	50	13	117	80	0	210	445
	Peak Hour Volume	393	188	12	0	593	13	136	12	0	161	25	128	10	0	163	39	476	313	0	828	1745
	Rounded Hourly Volume	395	190	10	0	595	15	135	10	0	160	25	130	10	0	165	40	475	315	0	830	1750
	% Single Unit Trucks	6.4	5.3	0.0	0.0	5.9	7.7	5.9	0.0	0.0	5.6	24.0	3.1	0.0	0.0	6.1	10.3	3.4	5.4	0.0	4.5	5.2
	% Heavy Trucks	2.0	2.7	0.0	0.0	2.2	0.0	5.1	0.0	0.0	4.3	0.0	1.6	0.0	0.0	1.2	0.0	1.1	2.2	0.0	1.4	1.9
	% Trucks (Total)	8.4	8.0	0.0	0.0	8.1	7.7	11.0	0.0	0.0	9.9	24.0	4.7	0.0	0.0	7.4	10.3	4.4	7.7	0.0	5.9	7.2
Peak Hour Factor (PHF)	0.94	0.82	0.75	0.00	0.98	0.54	0.83	0.60	0.00	0.94	0.78	0.74	0.62	0.00	0.74	0.75	0.82	0.92	0.00	0.87	0.94	

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

Monday, January 27, 2025		↓					←					↑					→					
		From North					From East					From South					From West					
PM Peak Hour		Lannon Road					CTH Q					Lannon Road					CTH Q					
Start Time		Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Totals
4:15 PM		110	36	3	0	149	9	127	7	0	143	2	50	7	0	59	8	56	79	0	143	494
4:30 PM		93	36	10	0	139	9	108	8	0	125	3	65	8	0	76	2	64	99	0	165	505
4:45 PM		78	34	9	0	121	6	116	10	0	132	9	44	12	0	65	2	52	71	0	125	443
5:00 PM		83	45	10	0	138	8	124	11	0	143	7	41	8	0	56	1	68	69	0	138	475
Peak Hour Volume		364	151	32	0	547	32	475	36	0	543	21	200	35	0	256	13	240	318	0	571	1917
Rounded Hourly Volume		365	150	30	0	545	30	475	35	0	540	20	200	35	0	255	15	240	320	0	575	1915
% Single Unit Trucks		1.9	3.3	0.0	0.0	2.2	0.0	0.8	0.0	0.0	0.7	14.3	1.0	2.9	0.0	2.3	0.0	4.6	2.8	0.0	3.5	2.2
% Heavy Trucks		0.3	0.0	0.0	0.0	0.2	0.0	0.2	0.0	0.0	0.2	0.0	1.0	0.0	0.0	0.8	0.0	0.4	0.3	0.0	0.4	0.3
% Trucks (Total)		2.2	3.3	0.0	0.0	2.4	0.0	1.1	0.0	0.0	0.9	14.3	2.0	2.9	0.0	3.1	0.0	5.0	3.1	0.0	3.9	2.5
Peak Hour Factor (PHF)		0.83	0.84	0.80	0.00	0.92	0.89	0.94	0.82	0.00	0.95	0.58	0.77	0.73	0.00	0.84	0.41	0.88	0.80	0.00	0.87	0.95

Peak Hour Pedestrian and Bicyclist Volumes

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

Intersection Traffic Volume Report

15-Minute Motor Vehicle Data

CTH Q & Lannon Road

Count Basics			Page 5 of 13	
Start Date:	Monday, January 27, 2025	#VALUE!	Schools in Session	
Total Number of Hours Counted:	6	Non-Holiday	No Special Events	

All Motor Vehicles					
					

15-Minute Motor Vehicle Data

15-Minute Time Period Start Time	From North					From East					From South					From West					15-Min Totals	Hourly Sum	PHF	
	Lannon Road					CTH Q					Lannon Road					CTH Q								
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total				
AM Peak Period	6:00 AM	51	22	0	0	73	1	21	0	0	22	2	17	2	0	21	7	48	39	0	94	210	1144	0.81
	6:15 AM	58	24	0	0	82	4	16	1	0	21	2	15	2	0	19	4	74	50	0	128	250	1311	0.87
	6:30 AM	80	42	3	0	125	3	22	2	0	27	4	27	3	0	34	6	84	75	0	165	351	1524	0.82
	6:45 AM	57	43	4	0	104	1	21	1	0	23	7	30	2	0	39	10	86	71	0	167	333	1633	0.88
	7:00 AM	105	40	4	0	149	6	29	1	0	36	3	17	1	0	21	7	100	64	0	171	377	1745	0.94
	7:15 AM	103	41	4	0	148	0	36	5	0	41	8	27	2	0	37	8	145	84	0	237	463	1725	0.93
	7:30 AM	91	57	4	0	152	1	41	1	0	43	8	43	4	0	55	11	114	85	0	210	460	1563	0.85
	7:45 AM	94	50	0	0	144	6	30	5	0	41	6	41	3	0	50	13	117	80	0	210	445	1347	0.76
	8:00 AM	63	40	1	0	104	1	42	1	0	44	4	38	0	0	42	6	81	80	0	167	357	1190	0.83
	8:15 AM	59	27	2	0	88	4	36	2	0	42	3	28	3	0	34	6	69	62	0	137	301		
	8:30 AM	43	18	5	0	66	1	26	3	0	30	5	14	1	0	20	7	72	49	0	128	244		
	8:45 AM	49	28	5	0	82	3	58	1	0	62	8	18	2	0	28	4	68	44	0	116	288		
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Midday Peak Period	10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
PM Peak Period	2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	3:00 PM	95	24	8	0	127	10	99	7	0	116	9	25	4	0	38	4	48	39	0	91	372	1587	0.94
	3:15 PM	69	32	3	0	104	11	103	10	0	124	5	35	4	0	44	4	61	57	0	122	394	1661	0.93
	3:30 PM	80	27	4	0	111	13	108	14	0	135	6	36	5	0	47	4	64	59	0	127	420	1761	0.89
	3:45 PM	84	27	13	0	124	8	102	5	0	115	4	38	4	0	46	3	48	65	0	116	401	1846	0.91
	4:00 PM	78	33	7	0	118	8	126	8	0	142	6	52	5	0	63	2	63	58	0	123	446	1888	0.93
	4:15 PM	110	36	3	0	149	9	127	7	0	143	2	50	7	0	59	8	56	79	0	143	494	1917	0.95
	4:30 PM	93	36	10	0	139	9	108	8	0	125	3	65	8	0	76	2	64	99	0	165	505	1833	0.91
	4:45 PM	78	34	9	0	121	6	116	10	0	132	9	44	12	0	65	2	52	71	0	125	443	1753	0.92
	5:00 PM	83	45	10	0	138	8	124	11	0	143	7	41	8	0	56	1	68	69	0	138	475	1630	0.86
	5:15 PM	89	30	7	0	126	12	99	8	0	119	7	41	5	0	53	1	55	56	0	112	410		
	5:30 PM	68	43	4	0	115	8	113	9	1	131	4	49	4	0	57	3	52	67	0	122	425		
	5:45 PM	44	21	7	0	72	5	88	5	0	98	6	44	5	0	55	11	48	36	0	95	320		
	6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Totals	1824	820	117	0	2761	138	1691	125	1	1955	128	835	96	0	1059	134	1737	1538	0	3409	9184			

Peak Hour All Vehicle Volume Summary

Hourly Time Period	From North					From East			
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Intersection Traffic Volume Report

15-Minute Heavy Vehicle Data

CTH Q & Lannon Road

Count Basics			Page 9 of 13	
Start Date:	Monday, January 27, 2025	#VALUE!	Schools in Session	
Total Number of Hours Counted:	6	Non-Holiday	No Special Events	



15-Minute Heavy Vehicle Data

15-Minute Time Period	Start Time	From North Lannon Road					From East CTH Q					From South Lannon Road					From West CTH Q					15-Min Totals	Hourly Sum
		Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total		
AM Peak Period	6:00 AM	2	2	0	0	4	0	2	0	0	2	0	1	1	0	2	1	0	2	0	3	11	69
	6:15 AM	6	1	0	0	7	1	3	0	0	4	0	0	0	0	0	0	1	8	0	9	20	86
	6:30 AM	4	2	0	0	6	0	1	0	0	1	0	0	0	0	0	0	2	5	0	7	14	98
	6:45 AM	4	8	0	0	12	0	1	0	0	1	0	3	0	0	3	0	4	4	0	8	24	115
	7:00 AM	8	3	0	0	11	0	8	0	0	8	0	1	0	0	1	1	1	6	0	8	28	125
	7:15 AM	9	6	0	0	15	0	3	0	0	3	2	0	0	0	2	0	6	6	0	12	32	130
	7:30 AM	6	3	0	0	9	0	4	0	0	4	3	2	0	0	5	0	8	5	0	13	31	118
	7:45 AM	10	3	0	0	13	1	0	0	0	1	1	3	0	0	4	3	6	7	0	16	34	113
	8:00 AM	5	2	0	0	7	0	2	0	0	2	0	9	0	0	9	1	4	10	0	15	33	133
	8:15 AM	6	1	0	0	7	0	3	0	0	3	0	4	0	0	4	1	0	5	0	6	20	
Midday Peak Period	8:30 AM	8	1	0	0	9	0	4	0	0	4	2	2	0	0	4	1	4	4	0	9	26	
	8:45 AM	9	3	0	0	12	0	21	0	0	21	2	3	1	0	6	1	8	6	0	15	54	
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
PM Peak Period	11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	3:00 PM	6	0	0	0	6	1	1	0	0	2	0	2	0	0	2	0	3	3	0	6	16	78
	3:15 PM	4	3	0	0	7	0	2	0	0	2	0	2	0	0	2	0	11	5	0	16	27	75
	3:30 PM	5	1	0	0	6	0	0	2	0	2	1	4	0	0	5	0	1	1	0	2	15	61
	3:45 PM	1	1	3	0	5	0	5	0	0	5	0	3	0	0	3	0	2	5	0	7	20	61
	4:00 PM	4	2	1	0	7	0	0	0	0	0	0	2	1	0	3	0	0	3	0	3	13	53
	4:15 PM	3	1	0	0	4	0	2	0	0	2	0	0	0	0	0	0	4	3	0	7	13	48
	4:30 PM	1	1	0	0	2	0	1	0	0	1	0	2	0	0	2	0	6	4	0	10	15	44
	4:45 PM	2	3	0	0	5	0	1	0	0	1	2	0	1	0	3	0	1	2	0	3	12	31
	5:00 PM	2	0	0	0	2	0	1	0	0	1	1	2	0	0	3	0	1	1	0	2	8	20
	5:15 PM	3	1	0	0	4	0	2	0	0	2	0	1	0	0	1	0	2	0	0	2	9	
	5:30 PM	0	0	0	0	0	0	0	1	0	1	0	1	0	0	1	0	0	0	0	0	2	
	5:45 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
	6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Totals		108	49	4	0	161	3	67	3	0	73	14	47	4	0	65	9	75	95	0	179	478	

Peak Hour Heavy Vehicle Volume Summary

Hourly Time Period	Start Time	From North Lannon Road					From East CTH Q					From South Lannon Road					From West CTH Q					Total Hourly Volume
		Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	
AM	7:00 AM	33	15	0	0	48	1	15	0	0	16	6	6	0	0	12	4	21	24	0	49	125
MD	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:15 PM	8	5	0	0	13	0	5	0	0	5	3	4	1	0	8	0	12	10	0	22	48

Count Basics		Version 2024.10	Page 1 of 13
Start Date:	Monday, January 27, 2025	#VALUE!	Schools in Session
Total Number of Hours Counted: 6		Non-Holiday	No Special Events

Major St: CTH Q
Minor St: Club Circle Drive
Intersection of: CTH Q & Club Circle Drive

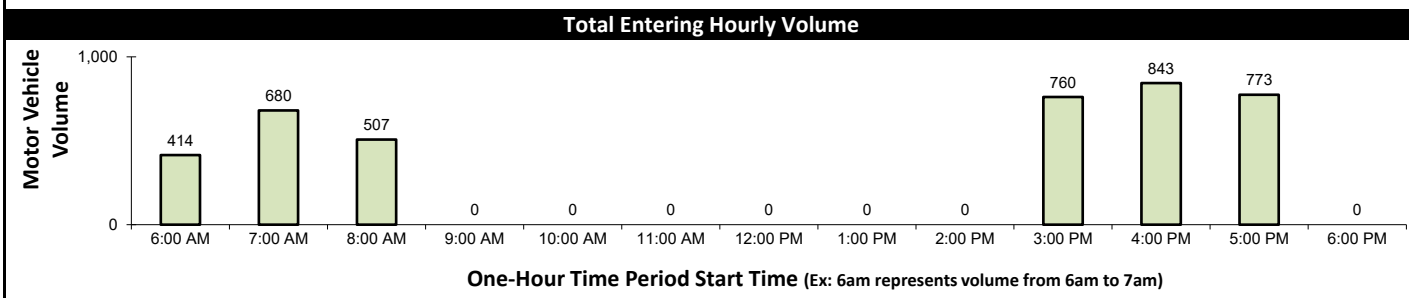


Municipality	Village of Germantown		
County	66 - Washington	WisDOT Region	SE
Traffic Control	Partial Stop Control		
Roadway Names	North Direction		↑
North Leg	0		
East Leg	CTH Q		
South Leg	Club Circle Drive		
West Leg	CTH Q		
Special Considerations			
Schools	In Session		
Holidays	None		
Special Events	None		
Special Pedestrians Observed			
	Pre-school children	None	
	Elementary school age children	None	
	Visually impaired (white cane/helper dog)	None	
	Elderly/disabled (except wheelchairs)	None	
	Wheelchairs/electric scooters	None	
	Other (describe)	None	

Hrs Counted: 06:00 AM-09:00 AM and 03:00 PM-06:00 PM					
1st Day of Count		Monday, January 27, 2025			Weather
AM Peak Period		Thursday, January 30, 2025			Clear & Dry
Midday Peak Period		None			None
PM Peak Period		Monday, January 27, 2025			Clear & Dry
Calculated Peak Hours					
	AM	7:00-8:00am	MD		PM 4:15-5:15pm
Peak Hours Selected for Analysis					
	AM	7:00-8:00am	MD		PM 4:15-5:15pm
Daily/Seasonal Adjustment Group			(1) Non-Interstate Low Truck %		
Count Expansion Group			(1) Non-Interstate Low Truck %		
Daily/Seasonal Adjustment Factor			1.145	Count Expansion Factor 2.410	
Company Name TADI				Manual Adj. 1.000	
Observers	AM Peak Period		Jane Falt		
	Midday Peak Period		None		
	PM Peak Period		Jane Falt		
Comments	Wis DOT Daily & Seasonal Factors are final for 2012 through 2023, and 2024 uses 2023 final factors.				

The diagram illustrates the traffic flow at the intersection of Club Circle Drive and CTH Q. The intersection is a four-way stop with a central north-south road (Club Circle Drive) and an east-west road (CTH Q). The diagram shows the following data:

- Observed Hour Volumes:** 6 (top left).
- Total Entering Volume:** 3,977 (top right).
- CTH Q Northbound (Left to Right):**
 - PED: 0
 - 3,948
 - BIKE: 0
- CTH Q Southbound (Left to Right):**
 - PED: 0
 - 3,958
 - BIKE: 0
- Club Circle Drive Northbound (Bottom to Top):**
 - PED: 0
 - 48
 - BIKE: 0
- Club Circle Drive Southbound (Top to Bottom):**
 - PED: 0
 - 0
 - BIKE: 0
- Pedestrian and Bike Counts (Center):**
 - Northbound: 1959 (left), 1989 (right), 1979 (right), 9 (right).
 - Southbound: 1948 (left), 16 (left), 1 (left), 1993 (left).
- Other Counts (Center):**
 - 25 (left), 10 (left), 0 (left), 23 (left), 0 (left), 13 (left).



ESTIMATED 24 HOUR AADT

TOTAL ENTERING VOLUME 10,980

CTH Q 10,900

5409 ↑

3 ↓

0 ↓

5464 ↓

25 ↓

5492

CTH Q 10,928

5503 ↓

5425

0 ↓

5378 ↓

44 ↓

3 ↓

North

69 ↓

0 ↓

28 ↓

0 ↓

64 ↓

36 ↓

133

Club Circle Drive

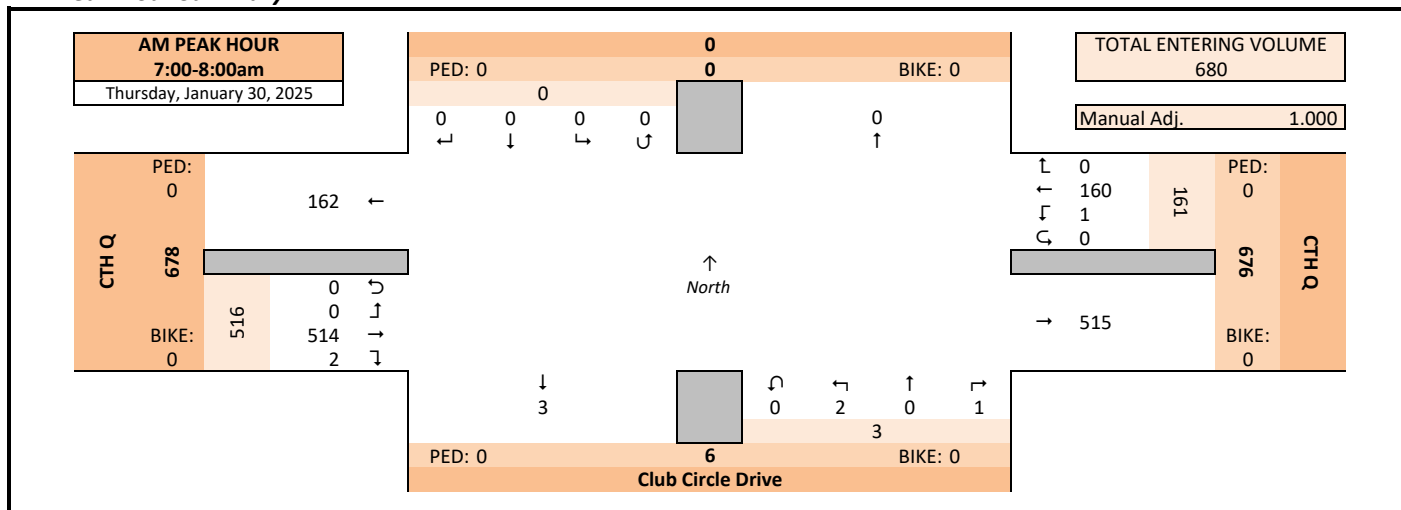
Daily/Seasonal Factor	1.145
Count Expansion Factor	2.410
Manual Adjustment Factor	1.000
Total 24 Hr Expansion Factor	2.761

Peak Hour Volume Graphical Summary

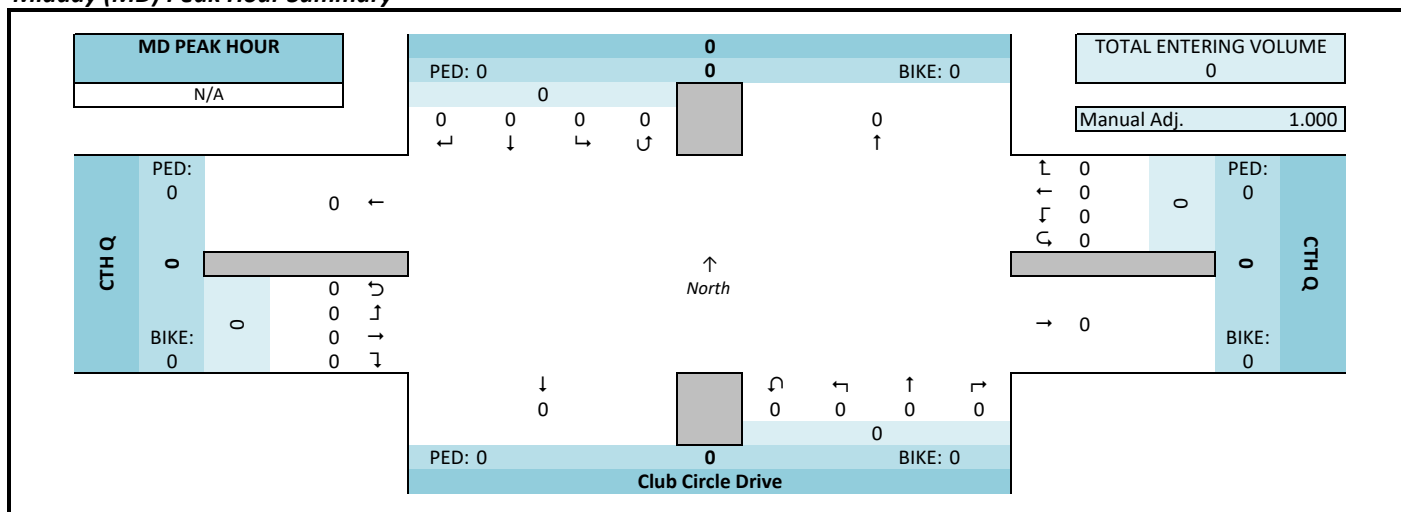
Count Basics			Page 2 of 13
Start Date:	Monday, January 27, 2025	#VALUE!	Schools in Session
Total Number of Hours Counted: 6		Non-Holiday	No Special Events

CTH Q & Club Circle Drive

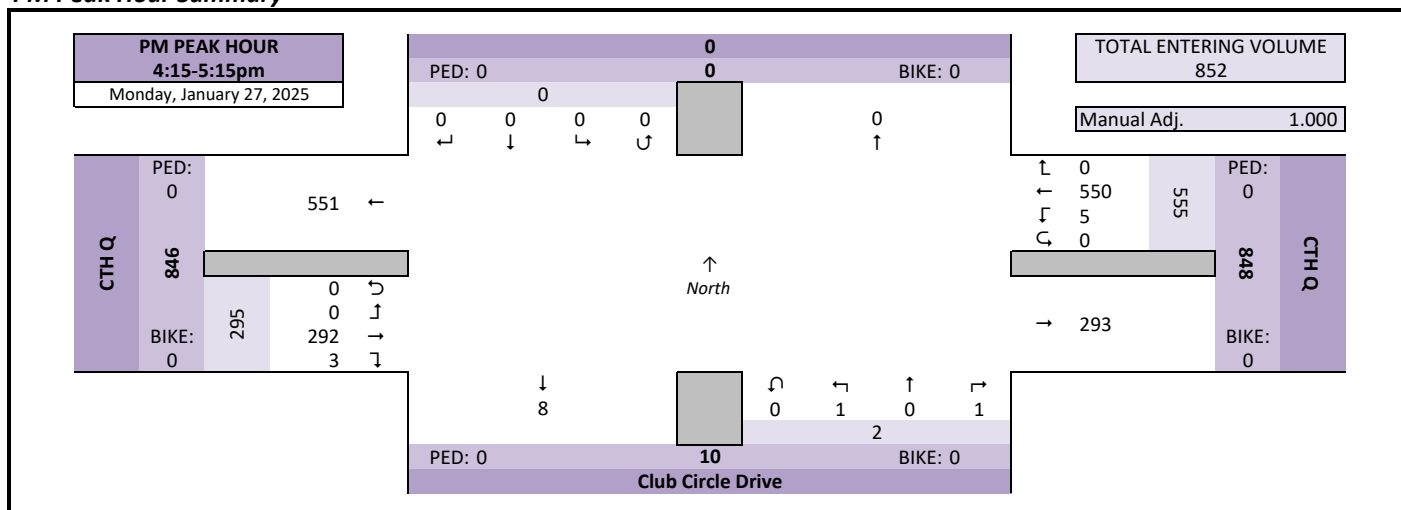
AM Peak Hour Summary



Midday (MD) Peak Hour Summary



PM Peak Hour Summary

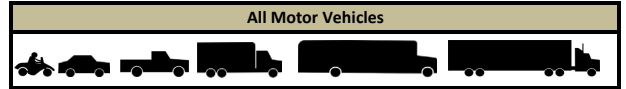


Intersection Traffic Volume Report

Peak Hour Volume Summary

CTH Q & Club Circle Drive

Count Basics			Page 3 of 13
Start Date:	Monday, January 27, 2025	#VALUE!	Schools in Session
Total Number of Hours Counted:	6	Non-Holiday	No Special Events



Peak Hour Volumes, Truck Percentages, and PHFs

Thursday, January 30, 2025		↓ From North					← From East					↑ From South					→ From West					
AM Peak Hour	AM Peak Hour	0					CTH Q					Club Circle Drive					CTH Q					
	Start Time	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Totals
	7:00 AM	0	0	0	0	0	0	35	0	0	35	0	0	1	0	1	0	107	0	0	107	143
	7:15 AM	0	0	0	0	0	0	41	0	0	41	0	0	0	0	0	2	156	0	0	158	199
	7:30 AM	0	0	0	0	0	0	47	1	0	48	0	0	0	0	0	0	126	0	0	126	174
	7:45 AM	0	0	0	0	0	0	37	0	0	37	1	0	1	0	2	0	125	0	0	125	164
	Peak Hour Volume	0	0	0	0	0	0	160	1	0	161	1	0	2	0	3	2	514	0	0	516	680
	Rounded Hourly Volume	0	0	0	0	0	0	160	0	0	160	0	0	0	0	0	0	515	0	0	515	675
	% Single Unit Trucks	0.0	0.0	0.0	0.0	0.0	0.0	6.9	100.0	0.0	7.5	0.0	0.0	0.0	0.0	0.0	50.0	3.9	0.0	0.0	4.1	4.9
	% Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	4.4	0.0	0.0	4.3	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	1.8
% Trucks (Total)	0.0	0.0	0.0	0.0	0.0	0.0	11.2	100.0	0.0	11.8	0.0	0.0	0.0	0.0	0.0	50.0	4.9	0.0	0.0	5.0	6.6	
Peak Hour Factor (PHF)	0.00	0.00	0.00	0.00	0.00	0.00	0.85	0.25	0.00	0.84	0.25	0.00	0.50	0.00	0.37	0.25	0.82	0.00	0.00	0.82	0.85	

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

Monday, January 27, 2025		↓ From North					← From East					↑ From South					→ From West					Totals
PM Peak Hour	PM Peak Hour	0					CTH Q					Club Circle Drive					CTH Q					
	Start Time	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	
	4:15 PM	0	0	0	0	0	0	145	1	0	146	1	0	0	0	1	0	61	0	0	61	
	4:30 PM	0	0	0	0	0	0	127	2	0	129	0	0	0	0	0	1	76	0	0	77	206
	4:45 PM	0	0	0	0	0	0	133	1	0	134	0	0	1	0	1	2	70	0	0	72	207
	5:00 PM	0	0	0	0	0	0	145	1	0	146	0	0	0	0	0	0	85	0	0	85	231
	Peak Hour Volume	0	0	0	0	0	0	550	5	0	555	1	0	1	0	2	3	292	0	0	295	852
	Rounded Hourly Volume	0	0	0	0	0	0	550	5	0	555	0	0	0	0	0	5	290	0	0	295	850
	% Single Unit Trucks	0.0	0.0	0.0	0.0	0.0	0.0	1.1	0.0	0.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	4.5	0.0	0.0	4.4	2.2
	% Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.3	0.2
	% Trucks (Total)	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.0	0.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	4.8	0.0	0.0	4.7	2.5
	Peak Hour Factor (PHF)	0.00	0.00	0.00	0.00	0.00	0.00	0.95	0.62	0.00	0.95	0.25	0.00	0.25	0.00	0.50	0.37	0.86	0.00	0.00	0.87	0.92

Peak Hour Pedestrian and Bicyclist Volumes

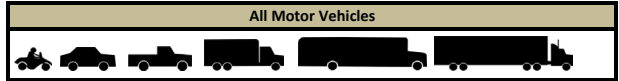
Pedestrians and Bicyclists		Crossing 			Crossing 			Crossing 			Crossing 			Total Ped & Bike Volume
		North Approach			East Approach			South Approach			West Approach			
		0			CTH Q			Club Circle Drive			CTH Q			
15-Minute Start Time		Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	
	Total	0	0	0	0	0	0	0	0	0	0	0	0	
MD	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	
	12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	
	12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	
	12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	
	Total	0	0	0	0	0	0	0	0	0	0	0	0	
PM	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	
	Total	0	0	0	0	0	0	0	0	0	0	0	0	

Intersection Traffic Volume Report

15-Minute Motor Vehicle Data

CTH Q & Club Circle Drive

Count Basics		Page 5 of 13	
Start Date:	Monday, January 27, 2025	#VALUE!	Schools in Session
Total Number of Hours Counted:	6	Non-Holiday	No Special Events



15-Minute Motor Vehicle Data

15-Minute Time Period Start Time	From North					From East					From South					From West					15-Min Totals	Hourly Sum	PHF		
	0					CTH Q					Club Circle Drive					CTH Q									
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total					
AM Peak Period	6:00 AM	0	0	0	0	0	0	23	0	0	23	1	0	0	0	1	0	51	0	0	51	75	414	0.86	
	6:15 AM	0	0	0	0	0	0	22	1	0	23	0	0	0	0	0	0	75	0	0	75	98	482	0.84	
	6:30 AM	0	0	0	0	0	0	25	0	0	25	1	0	2	0	3	1	91	0	0	92	120	583	0.73	
	6:45 AM	0	0	0	0	0	0	22	0	0	22	1	0	1	0	2	0	97	0	0	97	121	637	0.80	
	7:00 AM	0	0	0	0	0	0	35	0	0	35	0	0	1	0	1	0	107	0	0	107	143	680	0.85	
	7:15 AM	0	0	0	0	0	0	41	0	0	41	0	0	0	0	0	2	156	0	0	158	199	670	0.84	
	7:30 AM	0	0	0	0	0	0	47	1	0	48	0	0	0	0	0	0	126	0	0	126	174	589	0.85	
	7:45 AM	0	0	0	0	0	0	37	0	0	37	1	0	1	0	2	0	125	0	0	125	164	528	0.80	
	8:00 AM	0	0	0	0	0	0	44	0	0	44	1	0	0	0	1	0	88	0	0	88	133	507	0.89	
	8:15 AM	0	0	0	0	0	0	41	1	0	42	3	0	0	0	3	0	73	0	0	73	118			
	8:30 AM	0	0	0	0	0	0	29	1	0	30	0	0	1	0	1	1	81	0	0	82	113			
	8:45 AM	0	0	0	0	0	0	62	0	0	62	0	0	0	0	0	0	81	0	0	81	143			
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Midday Peak Period	10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
PM Peak Period	2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	3:00 PM	0	0	0	0	0	0	108	0	0	108	0	0	0	0	0	0	63	0	0	63	171	760	0.94	
	3:15 PM	0	0	0	0	0	0	127	2	0	129	0	0	1	0	1	0	68	0	0	68	198	811	0.91	
	3:30 PM	0	0	0	0	0	0	127	1	0	128	1	0	1	0	2	0	73	0	0	73	203	821	0.92	
	3:45 PM	0	0	0	0	0	0	121	1	0	122	1	0	0	0	1	1	64	0	0	65	188	824	0.93	
	4:00 PM	0	0	0	0	0	0	139	2	1	142	0	0	1	0	1	0	78	0	1	79	222	843	0.95	
	4:15 PM	0	0	0	0	0	0	145	1	0	146	1	0	0	0	1	0	61	0	0	61	208	852	0.92	
	4:30 PM	0	0	0	0	0	0	127	2	0	129	0	0	0	0	0	1	76	0	0	77	206	833	0.90	
	4:45 PM	0	0	0	0	0	0	133	1	0	134	0	0	1	0	1	2	70	0	0	72	207	818	0.89	
	5:00 PM	0	0	0	0	0	0	145	1	0	146	0	0	0	0	0	0	85	0	0	85	231	773	0.84	
	5:15 PM	0	0	0	0	0	0	121	1	0	122	0	0	0	0	0	0	67	0	0	67	189			
	5:30 PM	0	0	0	0	0	0	129	0	0	129	1	0	0	0	1	0	61	0	0	61	191			
	5:45 PM	0	0	0	0	0	0	98	0	0	98	1	0	0	0	1	1	62	0	0	63	162			
	6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Totals		0	0	0	0	0	0	1948	16	1	1965	13	0	10	0	23	9	1979	0	1	1989	3977			

Peak Hour All Vehicle Volume Summary

Hourly Time Period Start Time	↓ From North					← From East					↑ From South					→ From West					Total Hourly Volume	PHF
	0					CTH Q					Club Circle Drive					CTH Q						
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total		
AM 7:00 AM	0	0	0	0	0	0	160	1	0	161	1	0	2	0	3	2	514	0	0	516	680	0.85
MD 12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM 4:15 PM	0	0	0	0	0	0	550	5	0	555	1	0	1	0	2	3	292	0	0	295	852	0.92

Intersection Traffic Volume Report

15-Minute Heavy Vehicle Data

CTH Q & Club Circle Drive

Count Basics			Page 9 of 13
Start Date:	Monday, January 27, 2025	#VALUE!	Schools in Session
Total Number of Hours Counted:	6	Non-Holiday	No Special Events



15-Minute Heavy Vehicle Data

15-Minute Time Period Start Time	From North					From East					From South					From West					15-Min Totals	Hourly Sum			
	0					CTH Q					Club Circle Drive					CTH Q									
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total					
AM Peak Period	6:00 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	1	0	0	0	1	3	16	
	6:15 AM	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	1	0	0	0	1	5	22	
	6:30 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	2	0	0	0	2	3	29	
	6:45 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	4	0	0	0	4	5	43	
	7:00 AM	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	0	1	0	0	0	1	9	45	
	7:15 AM	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	1	7	0	0	8	12	42	
	7:30 AM	0	0	0	0	0	0	5	1	0	6	0	0	0	0	0	0	11	0	0	0	11	17	34	
	7:45 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	6	0	0	0	6	7	27	
	8:00 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	4	0	0	0	4	6	52	
	8:15 AM	0	0	0	0	0	0	3	0	0	3	1	0	0	0	0	1	0	0	0	0	0	4		
8:30 AM	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	1	5	0	0	6	10			
8:45 AM	0	0	0	0	0	0	22	0	0	22	0	0	0	0	0	0	0	10	0	0	0	10	32		
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Midday Peak Period	10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
PM Peak Period	2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	3:00 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	4	0	0	0	4	6	33	
	3:15 PM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	9	0	0	0	9	12	28	
	3:30 PM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	2	0	0	0	2	5	22	
	3:45 PM	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	5	0	0	0	5	10	24	
	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	18	
	4:15 PM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	3	0	0	0	3	6	21	
	4:30 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	5	0	0	0	5	7	19	
	4:45 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	3	0	0	0	3	4	14	
	5:00 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	3	0	0	0	3	4	10	
	5:15 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	2	0	0	0	2	4		
	5:30 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2		
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Totals	0	0	0	0	0	0	81	1	0	82	1	0	0	0	1	2	89	0	0	0	91	174			

Peak Hour Heavy Vehicle Volume Summary

Hourly Time Period Start Time	From North					From East					From South					From West					Total Hourly Volume	
	0					CTH Q					Club Circle Drive					CTH Q						
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total		
AM 7:00 AM	0	0	0	0	0	0	18	1	0	19	0	Thru	0	0	0	0	1	25	0	0	26	45
MD 12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM 4:15 PM	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	0	0	14	0	0	14	27

Intersection Traffic Volume Report

Count Basics		Version 2024.10	Page 1 of 13
Start Date:	Monday, January 27, 2025	#VALUE!	Schools in Session
Total Number of Hours Counted:	6	Non-Holiday	No Special Events

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

Major St: CTH Q
Minor St: Woodside Lane
Intersection of: CTH Q & Woodside Lane



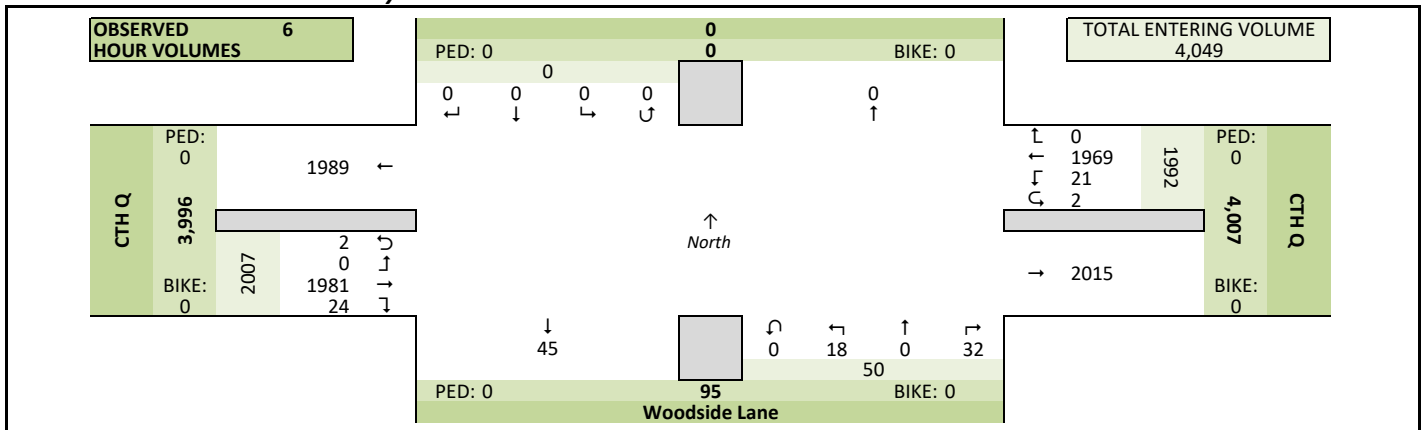
Site Information

Municipality	Village of Germantown
County	66 - Washington
WisDOT Region	SE
Traffic Control	Partial Stop Control
Roadway Names	North Direction
North Leg	0
East Leg	CTH Q
South Leg	Woodside Lane
West Leg	CTH Q
Special Considerations	
Schools	In Session
Holidays	None
Special Events	None
Special Pedestrians Observed	
Pre-school children	None
Elementary school age children	None
Visually impaired (white cane/helper dog)	None
Elderly/disabled (except wheelchairs)	None
Wheelchairs/electric scooters	None
Other (describe)	None

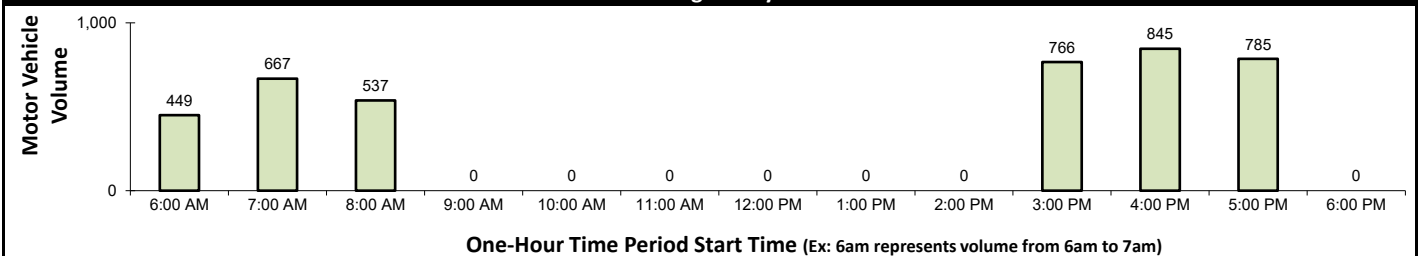
Count Information

Hrs Counted:	06:00 AM-09:00 AM and 03:00 PM-06:00 PM
1st Day of Count	Monday, January 27, 2025
Weather	Clear & Dry
AM Peak Period	Tuesday, January 28, 2025
Midday Peak Period	None
PM Peak Period	Monday, January 27, 2025
Calculated Peak Hours	
AM	7:00-8:00am
MD	
PM	4:15-5:15pm
Peak Hours Selected for Analysis	
AM	7:00-8:00am
MD	
PM	4:15-5:15pm
Daily/Seasonal Adjustment Group	(1) Non-Interstate Low Truck %
Count Expansion Group	(1) Non-Interstate Low Truck %
Daily/Seasonal Adjustment Factor	1.145
Count Expansion Factor	2.410
Company Name	TADI
Manual Adj.	1.000
Observers	
AM Peak Period	Jane Fait
Midday Peak Period	None
PM Peak Period	Wendy Picard
Comments	Wis DOT Daily & Seasonal Factors are final for 2012 through 2023, and 2024 uses 2023 final factors.

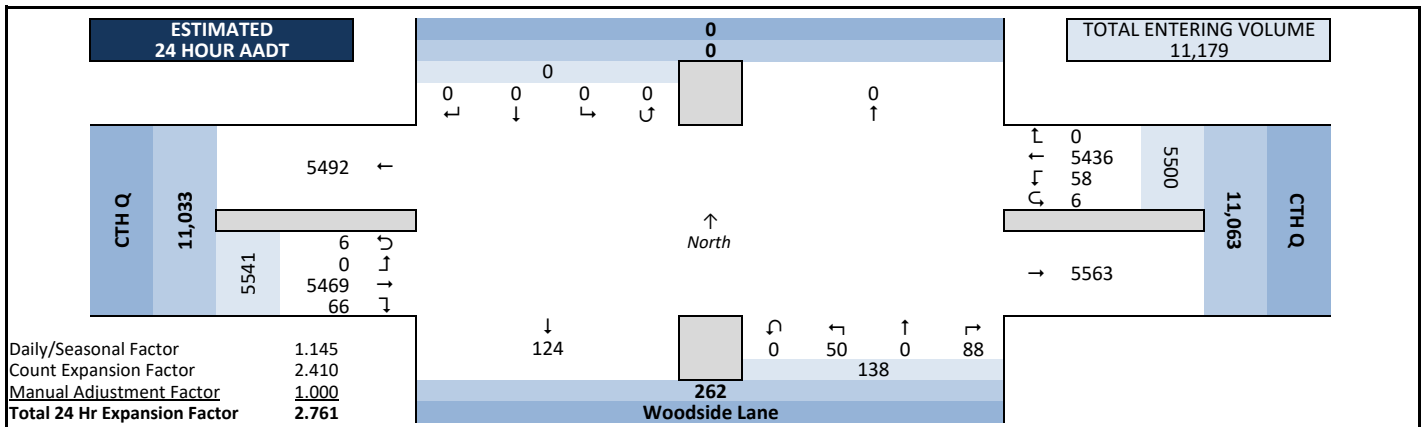
Observed 6 Hour Volume Summary



Total Entering Hourly Volume



Estimated 24 Hour AADT

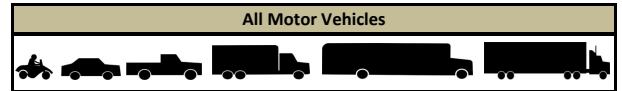


Intersection Traffic Volume Report

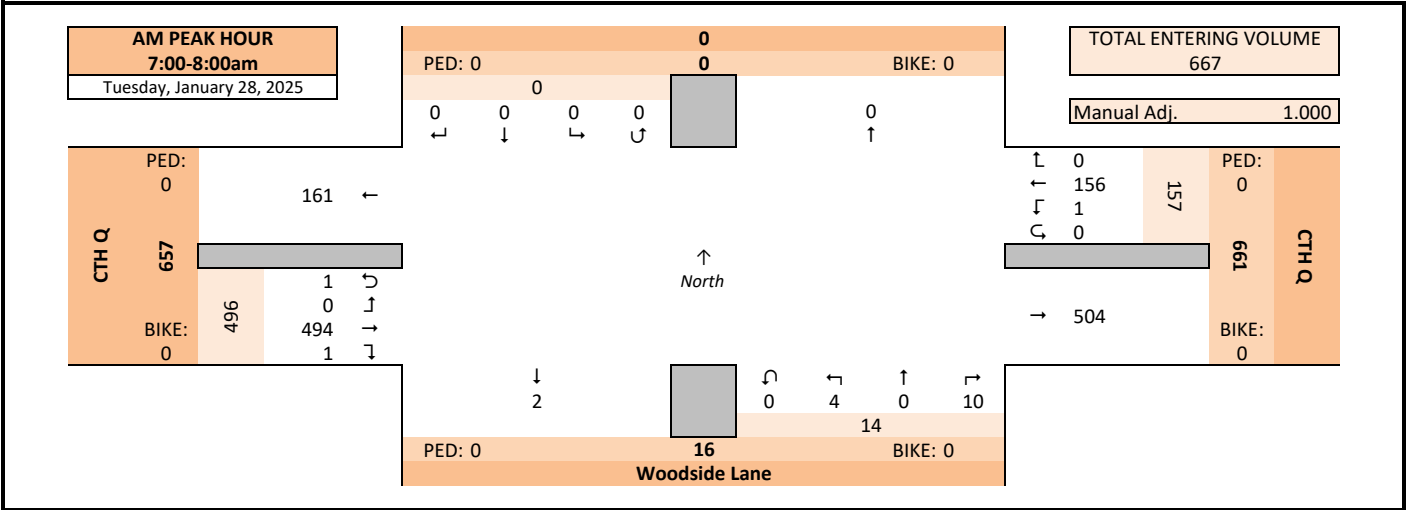
Peak Hour Volume Graphical Summary

Count Basics		Page 2 of 13	
Start Date:	Monday, January 27, 2025	#VALUE!	Schools in Session
Total Number of Hours Counted:	6	Non-Holiday	No Special Events

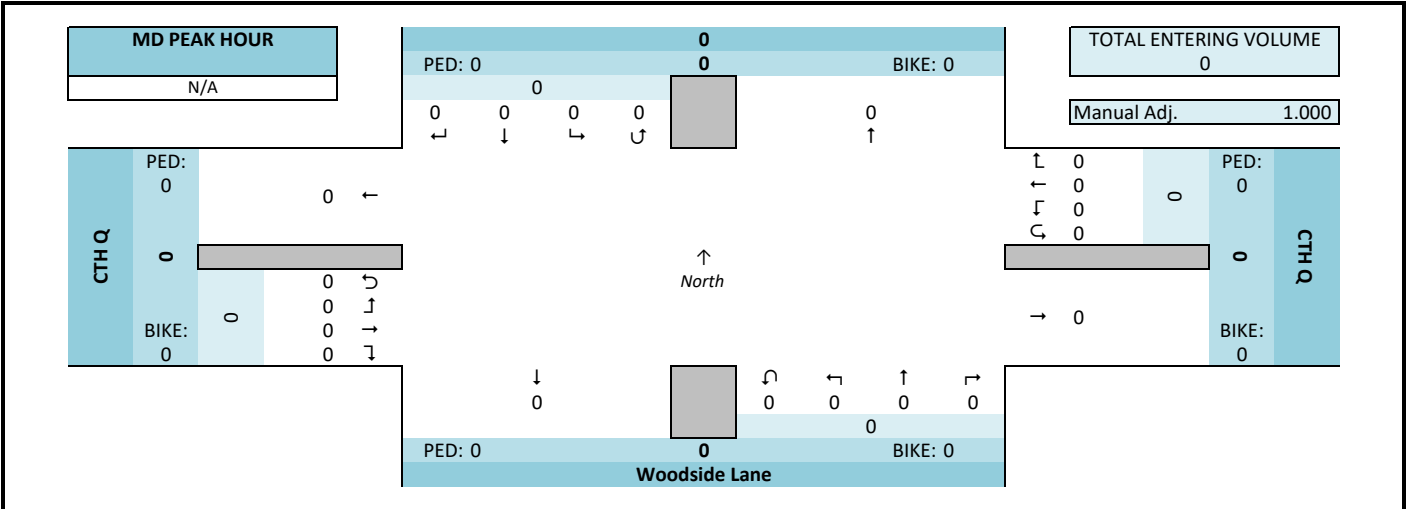
CTH Q & Woodside Lane



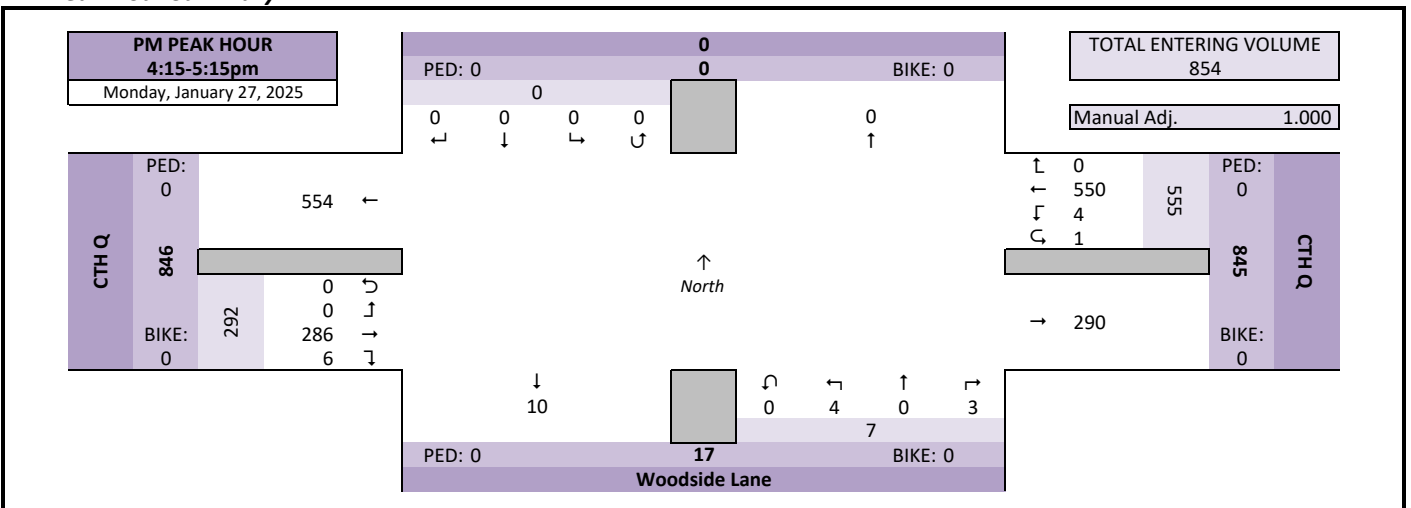
AM Peak Hour Summary



Midday (MD) Peak Hour Summary



PM Peak Hour Summary

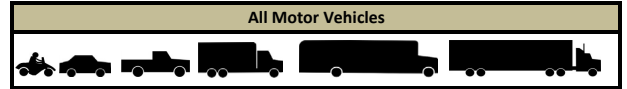


Intersection Traffic Volume Report

Peak Hour Volume Summary

CTH Q & Woodside Lane

Count Basics			Page 3 of 13
Start Date:	Monday, January 27, 2025	#VALUE!	Schools in Session
Total Number of Hours Counted:	6	Non-Holiday	No Special Events



Peak Hour Volumes, Truck Percentages, and PHFs

Tuesday, January 28, 2025		↴					↶					↴					↷						
		From North					From East					From South					From West						
		0					CTH Q					Woodside Lane					CTH Q						
		Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total		Totals
		Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total		Totals
AM Peak Hour	AM Peak Hour																						
	Start Time	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Totals	
	7:00 AM	0	0	0	0	0	0	36	0	0	36	2	0	2	0	4	0	105	0	0	105	145	
	7:15 AM	0	0	0	0	0	0	40	1	0	41	2	0	0	0	2	0	105	0	0	105	148	
	7:30 AM	0	0	0	0	0	0	34	0	0	34	2	0	1	0	3	1	157	0	0	158	195	
	7:45 AM	0	0	0	0	0	0	46	0	0	46	4	0	1	0	5	0	127	0	1	128	179	
	Peak Hour Volume	0	0	0	0	0	0	156	1	0	157	10	0	4	0	14	1	494	0	1	496	667	
	Rounded Hourly Volume	0	0	0	0	0	0	155	0	0	155	10	0	5	0	15	0	495	0	0	495	665	
% Single Unit Trucks	0.0	0.0	0.0	0.0	0.0	0.0	8.3	0.0	0.0	8.3	10.0	0.0	0.0	0.0	7.1	0.0	3.8	0.0	0.0	3.8	4.9		
% Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	4.5	0.0	0.0	4.5	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	1.8		
% Trucks (Total)	0.0	0.0	0.0	0.0	0.0	0.0	12.8	0.0	0.0	12.7	10.0	0.0	0.0	0.0	7.1	0.0	4.9	0.0	0.0	4.8	6.7		
Peak Hour Factor (PHF)	0.00	0.00	0.00	0.00	0.00	0.00	0.85	0.25	0.00	0.85	0.62	0.00	0.50	0.00	0.70	0.25	0.79	0.00	0.25	0.78	0.86		

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

Monday, January 27, 2025		From North					From East					From South					From West					Totals	
PM Peak Hour		0					CTH Q					Woodside Lane					CTH Q						
Start Time		Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total		
4:15 PM		0	0	0	0	0	0	145	2	0	147	1	0	1	0	2	0	63	0	0	63		212
4:30 PM		0	0	0	0	0	0	125	1	0	126	0	0	2	0	2	1	74	0	0	75		203
4:45 PM		0	0	0	0	0	0	135	1	0	136	1	0	1	0	2	4	66	0	0	70	208	
5:00 PM		0	0	0	0	0	0	145	0	1	146	1	0	0	0	1	1	83	0	0	84	231	
Peak Hour Volume		0	0	0	0	0	0	550	4	1	555	3	0	4	0	7	6	286	0	0	292	854	
Rounded Hourly Volume		0	0	0	0	0	0	550	5	0	555	5	0	5	0	10	5	285	0	0	290	855	
% Single Unit Trucks		0.0	0.0	0.0	0.0	0.0	0.0	1.1	0.0	0.0	1.1	0.0	0.0	0.0	0.0	33.3	4.9	0.0	0.0	5.5	2.6		
% Heavy Trucks		0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.3	0.2		
% Trucks (Total)		0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.0	0.0	1.3	0.0	0.0	0.0	0.0	33.3	5.2	0.0	0.0	5.8	2.8		
Peak Hour Factor (PHF)		0.00	0.00	0.00	0.00	0.00	0.00	0.95	0.50	0.25	0.94	0.75	0.00	0.50	0.00	0.87	0.37	0.86	0.00	0.00	0.87	0.92	

Peak Hour Pedestrian and Bicyclist Volumes

Pedestrians and Bicyclists		Crossing 			Crossing 			Crossing 			Crossing 			Total Ped & Bike Volume
		North Approach			East Approach			South Approach			West Approach			
15-Minute Start Time		0			CTH Q			Woodside Lane			CTH Q			
		Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	0	0	0	0	0
MD	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	0	0	0	0	0

Intersection Traffic Volume Report

15-Minute Motor Vehicle Data

CTH Q & Woodside Lane

Count Basics			Page 5 of 13
Start Date:	Monday, January 27, 2025	#VALUE!	Schools in Session
Total Number of Hours Counted:	6	Non-Holiday	No Special Events

All Motor Vehicles					
					

15-Minute Motor Vehicle Data

15-Minute Time Period Start Time	From North					From East					From South					From West					15-Min Totals	Hourly Sum	PHF		
	0					CTH Q					Woodside Lane					CTH Q									
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total					
AM Peak Period	6:00 AM	0	0	0	0	0	0	17	0	0	17	2	0	1	0	3	0	65	0	0	65	85	449	0.83	
	6:15 AM	0	0	0	0	0	0	21	1	0	22	0	0	2	0	2	0	74	0	0	74	98	509	0.88	
	6:30 AM	0	0	0	0	0	0	34	0	0	34	1	0	1	0	2	0	95	0	0	95	131	559	0.94	
	6:45 AM	0	0	0	0	0	0	26	1	0	27	3	0	1	0	4	1	103	0	0	104	135	623	0.80	
	7:00 AM	0	0	0	0	0	0	36	0	0	36	2	0	2	0	4	0	105	0	0	105	145	667	0.86	
	7:15 AM	0	0	0	0	0	0	40	1	0	41	2	0	0	0	2	0	105	0	0	105	148	658	0.84	
	7:30 AM	0	0	0	0	0	0	34	0	0	34	2	0	1	0	3	1	157	0	0	158	195	632	0.81	
	7:45 AM	0	0	0	0	0	0	46	0	0	46	4	0	1	0	5	0	127	0	1	128	179	578	0.81	
	8:00 AM	0	0	0	0	0	0	50	0	0	50	0	0	0	0	0	0	86	0	0	86	136	537	0.95	
	8:15 AM	0	0	0	0	0	0	31	1	0	32	1	0	1	0	2	2	86	0	0	88	122			
	8:30 AM	0	0	0	0	0	0	53	1	0	54	2	0	1	0	3	2	82	0	0	84	141			
	8:45 AM	0	0	0	0	0	0	50	0	1	51	2	0	1	0	3	2	82	0	0	84	138			
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Midday Peak Period	10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
PM Peak Period	2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	3:00 PM	0	0	0	0	0	0	107	1	0	108	0	0	0	0	0	1	60	0	1	62	170	766	0.94	
	3:15 PM	0	0	0	0	0	0	130	2	0	132	0	0	0	0	0	3	64	0	0	67	199	818	0.92	
	3:30 PM	0	0	0	0	0	0	126	1	0	127	0	0	1	0	1	0	76	0	0	76	204	831	0.94	
	3:45 PM	0	0	0	0	0	0	125	2	0	127	1	0	0	0	1	2	63	0	0	65	193	830	0.93	
	4:00 PM	0	0	0	0	0	0	139	1	0	140	2	0	0	0	2	1	79	0	0	80	222	845	0.95	
	4:15 PM	0	0	0	0	0	0	145	2	0	147	1	0	1	0	2	0	63	0	0	63	212	854	0.92	
	4:30 PM	0	0	0	0	0	0	125	1	0	126	0	0	2	0	2	1	74	0	0	75	203	837	0.91	
	4:45 PM	0	0	0	0	0	0	135	1	0	136	1	0	1	0	2	4	66	0	0	70	208	836	0.90	
	5:00 PM	0	0	0	0	0	0	145	0	1	146	1	0	0	0	1	1	83	0	0	84	231	785	0.85	
	5:15 PM	0	0	0	0	0	0	122	3	0	125	2	0	0	0	2	3	65	0	0	68	195			
	5:30 PM	0	0	0	0	0	0	134	1	0	135	3	0	1	0	4	0	63	0	0	63	202			
	5:45 PM	0	0	0	0	0	0	98	1	0	99	0	0	0	0	0	0	58	0	0	58	157			
	6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Totals		0	0	0	0	0	0	1969	21	2	1992	32	0	18	0	50	24	1981	0	2	2007	4049			

Peak Hour All Vehicle Volume Summary

Hourly Time Period Start Time	From North					From East					From South					From West					Total Hourly Volume	PHF
	0					CTH Q					Woodside Lane					CTH Q						
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total		
AM 7:00 AM	0	0	0	0	0	0	156	1	0	157	10	0	4	0	14	1	494	0	1	496	667	0.86
MD 12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM 4:15 PM	0	0	0	0	0	0	550	4	1	555	3	0	4	0	7	6	286	0	0	292	854	0.92

Intersection Traffic Volume Report

15-Minute Heavy Vehicle Data

CTH Q & Woodside Lane

Count Basics			Page 9 of 13
Start Date:	Monday, January 27, 2025	#VALUE!	Schools in Session
Total Number of Hours Counted:	6	Non-Holiday	No Special Events



15-Minute Heavy Vehicle Data

15-Minute Time Period Start Time	From North					From East					From South					From West					15-Min Totals	Hourly Sum	
	0					CTH Q					Woodside Lane					CTH Q							
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total			
AM Peak Period	6:00 AM	0	0	0	0	0	0	1	0	0	1	1	0	0	0	0	0	1	0	0	1	2	21
	6:15 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	5	0	0	5	7	31
	6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2	34
	6:45 AM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	1	6	0	0	7	10	46
	7:00 AM	0	0	0	0	0	0	8	0	0	8	1	0	0	0	1	0	3	0	0	3	12	45
	7:15 AM	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	5	0	0	5	10	45
	7:30 AM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	11	0	0	11	14	40
	7:45 AM	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	5	0	0	5	9	41
	8:00 AM	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	6	0	0	6	12	51
	8:15 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1	3	0	0	4	5	
	8:30 AM	0	0	0	0	0	0	10	0	0	10	0	0	0	0	0	0	5	0	0	5	15	
	8:45 AM	0	0	0	0	0	0	17	0	0	17	0	0	0	0	0	0	2	0	0	2	19	
Midday Peak Period	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	11:45 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	
PM Peak Period	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:00 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	4	0	0	4	6	34	
3:15 PM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	9	0	0	9	12	31	
3:30 PM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	3	0	0	3	6	25	
3:45 PM	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	5	0	0	5	10	29	
4:00 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	3	23	
4:15 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	4	0	0	4	6	24	
4:30 PM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	7	0	0	7	10	24	
4:45 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	2	0	3	4	16	
5:00 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	2	0	3	4	12	
5:15 PM	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	2	0	0	2	6		
5:30 PM	0	0	0	0	0	0	1	0	0	1	0	0	1	0	1	0	0	0	0	0	2		
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Totals		0	0	0	0	0	0	87	0	0	87	1	0	1	0	2	4	93	0	0	97	186	

Peak Hour Heavy Vehicle Volume Summary

Hourly Time Period Start Time	↓ From North					← From East					↑ From South					→ From West					Total Hourly Volume
	0					CTH Q					Woodside Lane					CTH Q					
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	
	AM 7:00 AM	0	0	0	0	0	0	20	0	0	20	1	0	0	0	1	0	24	0	0	
MD 12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM 4:15 PM	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	2	15	0	0	17	24

Intersection Traffic Volume Report

Count Basics		Version 2024.10	Page 1 of 13
Start Date:	Tuesday, January 28, 2025	#VALUE!	Schools in Session
Total Number of Hours Counted:	6	Non-Holiday	No Special Events

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

Major St: CTH Q
Minor St: Wellington Drive
Intersection of: CTH Q & Wellington Drive



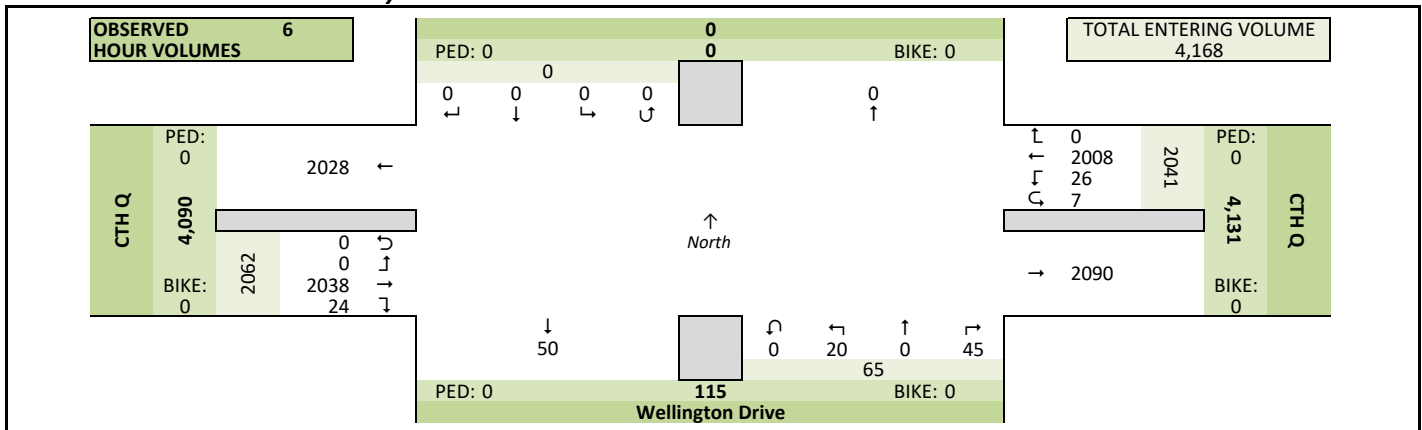
Site Information

Municipality	Village of Germantown
County	66 - Washington
WisDOT Region	SE
Traffic Control	Partial Stop Control
Roadway Names	North Direction
North Leg	0
East Leg	CTH Q
South Leg	Wellington Drive
West Leg	CTH Q
Special Considerations	
Schools	In Session
Holidays	None
Special Events	None
Special Pedestrians Observed	
Pre-school children	None
Elementary school age children	None
Visually impaired (white cane/helper dog)	None
Elderly/disabled (except wheelchairs)	None
Wheelchairs/electric scooters	None
Other (describe)	None

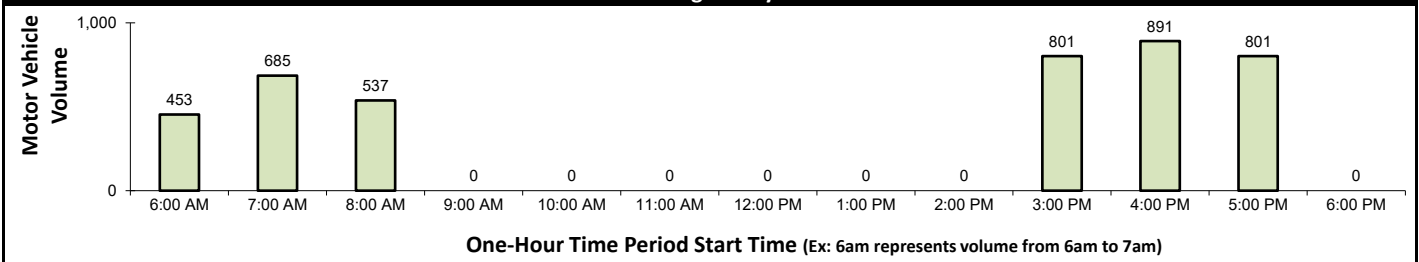
Count Information

Hrs Counted:	06:00 AM-09:00 AM and 03:00 PM-06:00 PM
1st Day of Count	Tuesday, January 28, 2025
Weather	Clear & Dry
AM Peak Period	Tuesday, January 28, 2025
Midday Peak Period	None
PM Peak Period	Wednesday, January 29, 2025
Calculated Peak Hours	
AM	7:00-8:00am
MD	
PM	4:15-5:15pm
Peak Hours Selected for Analysis	
AM	7:00-8:00am
MD	
PM	4:15-5:15pm
Daily/Seasonal Adjustment Group	(1) Non-Interstate Low Truck %
Count Expansion Group	(1) Non-Interstate Low Truck %
Daily/Seasonal Adjustment Factor	1.053
Count Expansion Factor	2.410
Company Name	TADI
Manual Adj.	1.000
Observers	
AM Peak Period	Amy Scheuerlein
Midday Peak Period	None
PM Peak Period	Jane Fait
Comments	Wis DOT Daily & Seasonal Factors are final for 2012 through 2023, and 2024 uses 2023 final factors.

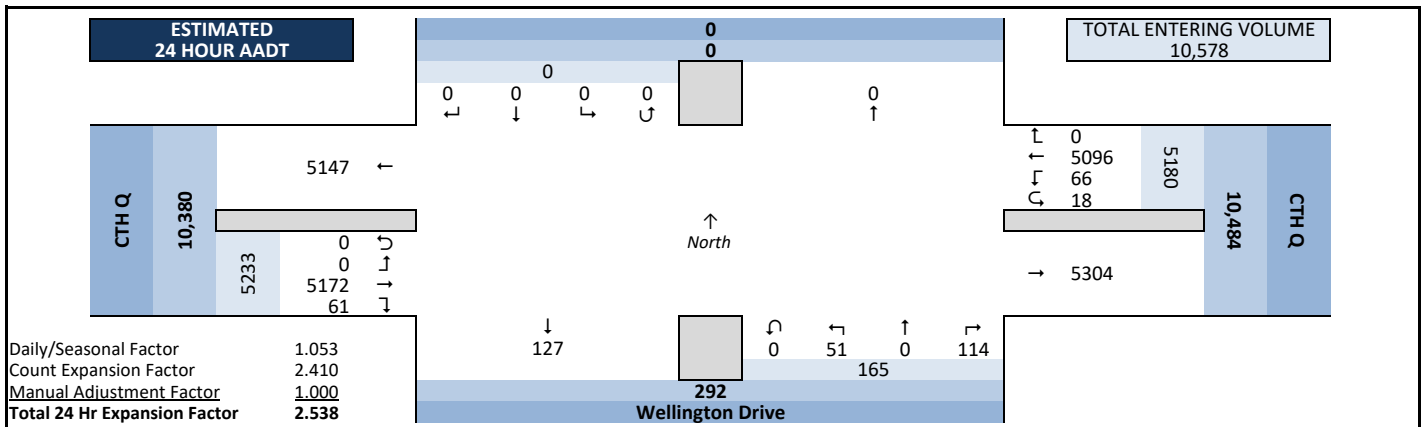
Observed 6 Hour Volume Summary



Total Entering Hourly Volume



Estimated 24 Hour AADT

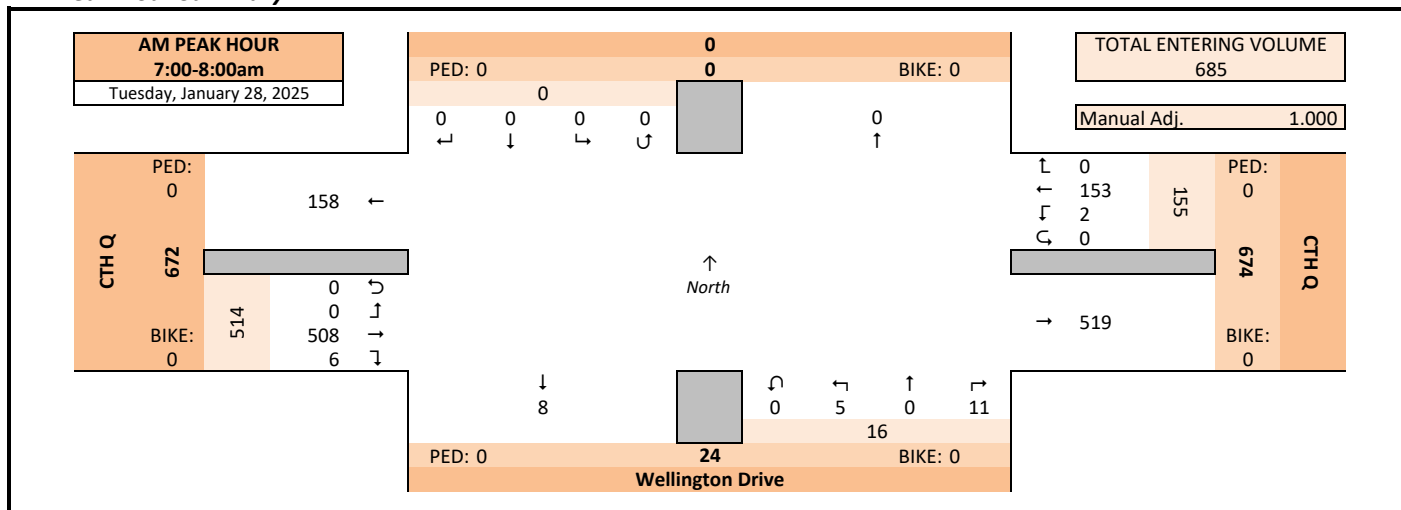


Peak Hour Volume Graphical Summary

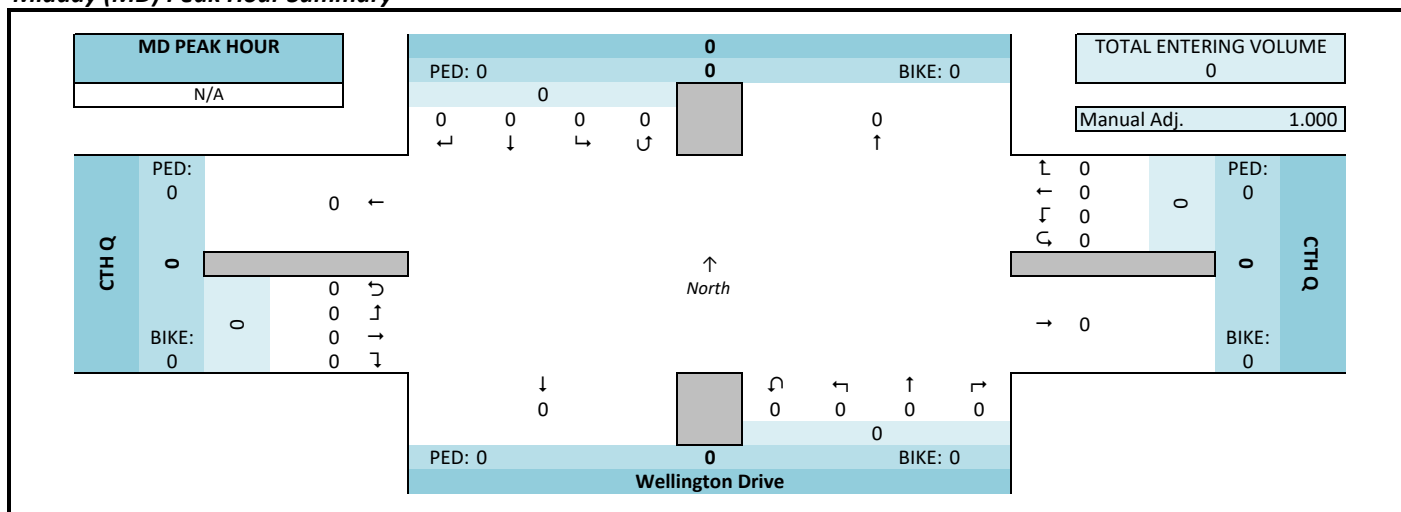
CTH Q & Wellington Drive

AM Peak Hour Summary

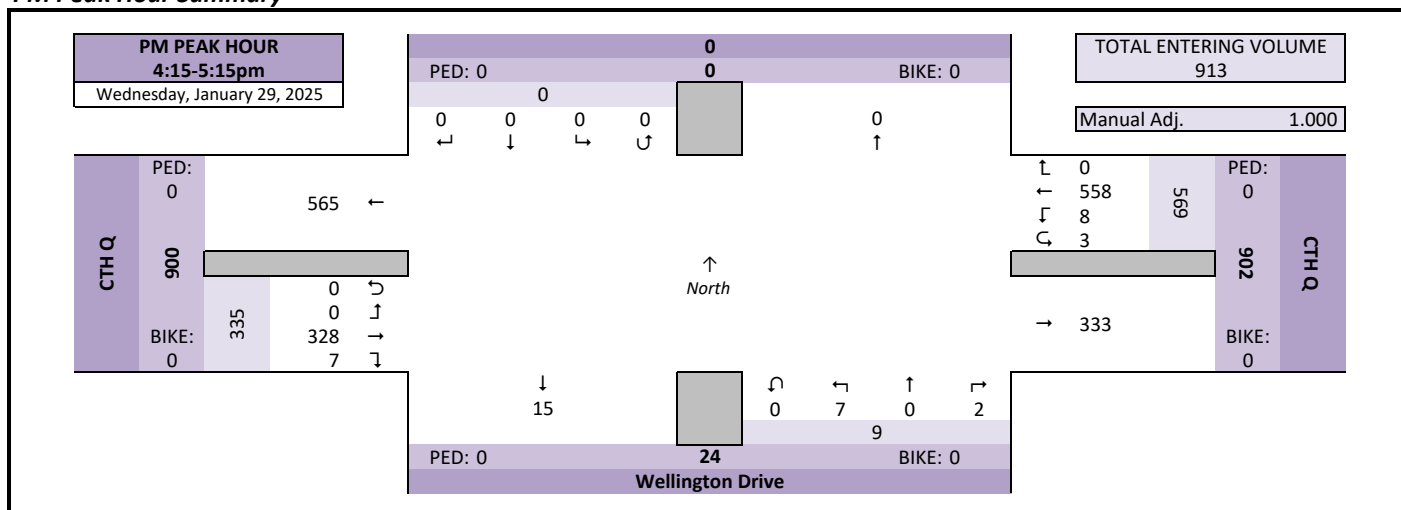
Count Basics			Page 2 of 13
Start Date:	Tuesday, January 28, 2025	#VALUE!	Schools in Session
Total Number of Hours Counted: 6		Non-Holiday	No Special Events



Midday (MD) Peak Hour Summary



PM Peak Hour Summary

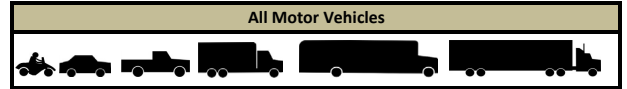


Intersection Traffic Volume Report

Peak Hour Volume Summary

CTH Q & Wellington Drive

Count Basics			Page 3 of 13
Start Date:	Tuesday, January 28, 2025	#VALUE!	Schools in Session
Total Number of Hours Counted:	6	Non-Holiday	No Special Events



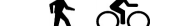
Peak Hour Volumes, Truck Percentages, and PHFs

Tuesday, January 28, 2025		↴					↶					↴					↷					Totals
		From North					From East					From South					From West					
		0					CTH Q					Wellington Drive					CTH Q					
		Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	
AM Peak Hour	AM Peak Hour																					
	Start Time	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Totals
	7:00 AM	0	0	0	0	0	0	36	0	0	36	4	0	2	0	6	0	113	0	0	113	155
	7:15 AM	0	0	0	0	0	0	40	0	0	40	4	0	1	0	5	1	107	0	0	108	153
	7:30 AM	0	0	0	0	0	0	35	1	0	36	2	0	2	0	4	4	158	0	0	162	202
	7:45 AM	0	0	0	0	0	0	42	1	0	43	1	0	0	0	1	1	130	0	0	131	175
	Peak Hour Volume	0	0	0	0	0	0	153	2	0	155	11	0	5	0	16	6	508	0	0	514	685
	Rounded Hourly Volume	0	0	0	0	0	0	155	0	0	155	10	0	5	0	15	5	510	0	0	515	685
	% Single Unit Trucks	0.0	0.0	0.0	0.0	0.0	0.0	10.5	50.0	0.0	11.0	0.0	0.0	0.0	0.0	0.0	33.3	3.7	0.0	0.0	4.1	5.5
	% Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	3.3	0.0	0.0	3.2	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	1.5
% Trucks (Total)	0.0	0.0	0.0	0.0	0.0	0.0	13.7	50.0	0.0	14.2	0.0	0.0	0.0	0.0	0.0	33.3	4.7	0.0	0.0	5.1	7.0	
Peak Hour Factor (PHF)		0.00	0.00	0.00	0.00	0.00	0.00	0.91	0.50	0.00	0.90	0.69	0.00	0.62	0.00	0.67	0.37	0.80	0.00	0.00	0.79	0.85

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

Wednesday, January 29, 2025		↴					↶					↴					↷					
PM Peak Hour	PM Peak Hour	From North					From East					From South					From West					
		0					CTH Q					Wellington Drive					CTH Q					
	Start Time	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Totals
	4:15 PM	0	0	0	0	0	0	147	1	1	149	0	0	2	0	2	3	85	0	0	88	239
	4:30 PM	0	0	0	0	0	0	123	2	0	125	0	0	2	0	2	1	82	0	0	83	210
	4:45 PM	0	0	0	0	0	0	147	3	1	151	1	0	3	0	4	1	80	0	0	81	236
	5:00 PM	0	0	0	0	0	0	141	2	1	144	1	0	0	0	1	2	81	0	0	83	228
	Peak Hour Volume	0	0	0	0	0	0	558	8	3	569	2	0	7	0	9	7	328	0	0	335	913
	Rounded Hourly Volume	0	0	0	0	0	0	560	10	5	575	0	0	5	0	5	5	330	0	0	335	915
% Single Unit Trucks	0.0	0.0	0.0	0.0	0.0	0.0	1.4	12.5	0.0	1.6	0.0	0.0	0.0	0.0	0.0	0.0	2.1	0.0	0.0	2.1	1.8	
% Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.0	0.0	0.9	0.3	
% Trucks (Total)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	12.5	0.0	1.6	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	2.1	
Peak Hour Factor (PHF)	0.00	0.00	0.00	0.00	0.00	0.00	0.95	0.67	0.75	0.94	0.50	0.00	0.58	0.00	0.56	0.58	0.96	0.00	0.00	0.95	0.96	

Peak Hour Pedestrian and Bicyclist Volumes

Pedestrians and Bicyclists		Crossing 			Crossing 			Crossing 			Crossing 			Total Ped & Bike Volume
		North Approach			East Approach			South Approach			West Approach			
15-Minute Start Time		0			CTH Q			Wellington Drive			CTH Q			
		Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	0	0	0	0	0
MD	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	0	0	0	0	0

Intersection Traffic Volume Report

15-Minute Motor Vehicle Data

CTH Q & Wellington Drive

Count Basics		Page 5 of 13	
Start Date:	Tuesday, January 28, 2025	#VALUE!	Schools in Session
Total Number of Hours Counted:	6	Non-Holiday	No Special Events

All Motor Vehicles					
					

15-Minute Motor Vehicle Data

15-Minute Time Period Start Time	From North					From East					From South					From West					15-Min Totals	Hourly Sum	PHF	
	0					CTH Q					Wellington Drive					CTH Q								
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total				
AM Peak Period	6:00 AM	0	0	0	0	0	0	17	0	0	17	1	0	0	0	1	0	68	0	0	68	86	453	0.83
	6:15 AM	0	0	0	0	0	0	22	0	0	22	5	0	0	0	5	0	73	0	0	73	100	522	0.84
	6:30 AM	0	0	0	0	0	0	33	0	0	33	1	0	1	0	2	0	96	0	0	96	131	575	0.93
	6:45 AM	0	0	0	0	0	0	25	0	0	25	7	0	2	0	9	1	101	0	0	102	136	646	0.80
	7:00 AM	0	0	0	0	0	0	36	0	0	36	4	0	2	0	6	0	113	0	0	113	155	685	0.85
	7:15 AM	0	0	0	0	0	0	40	0	0	40	4	0	1	0	5	1	107	0	0	108	153	668	0.83
	7:30 AM	0	0	0	0	0	0	35	1	0	36	2	0	2	0	4	4	158	0	0	162	202	635	0.79
	7:45 AM	0	0	0	0	0	0	42	1	0	43	1	0	0	0	1	1	130	0	0	131	175	576	0.82
	8:00 AM	0	0	0	0	0	0	49	0	1	50	3	0	0	0	3	1	84	0	0	85	138	537	0.94
	8:15 AM	0	0	0	0	0	0	32	0	0	32	2	0	0	0	2	1	85	0	0	86	120		
	8:30 AM	0	0	0	0	0	0	54	1	0	55	2	0	1	0	3	0	85	0	0	85	143		
	8:45 AM	0	0	0	0	0	0	49	2	1	52	1	0	0	0	1	0	83	0	0	83	136		
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Midday Peak Period	10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
PM Peak Period	2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	3:00 PM	0	0	0	0	0	0	116	2	0	118	2	0	1	0	3	2	63	0	0	65	186	801	0.87
	3:15 PM	0	0	0	0	0	0	124	1	0	125	1	0	0	0	1	0	58	0	0	58	184	821	0.89
	3:30 PM	0	0	0	0	0	0	133	1	1	135	0	0	1	0	1	2	62	0	0	64	200	876	0.92
	3:45 PM	0	0	0	0	0	0	151	2	1	154	1	0	0	0	1	2	74	0	0	76	231	886	0.93
	4:00 PM	0	0	0	0	0	0	135	1	0	136	1	0	1	0	2	1	67	0	0	68	206	891	0.93
	4:15 PM	0	0	0	0	0	0	147	1	1	149	0	0	2	0	2	3	85	0	0	88	239	913	0.96
	4:30 PM	0	0	0	0	0	0	123	2	0	125	0	0	2	0	2	1	82	0	0	83	210	911	0.96
	4:45 PM	0	0	0	0	0	0	147	3	1	151	1	0	3	0	4	1	80	0	0	81	236	887	0.94
	5:00 PM	0	0	0	0	0	0	141	2	1	144	1	0	0	0	1	2	81	0	0	83	228	801	0.84
	5:15 PM	0	0	0	0	0	0	144	3	0	147	4	0	1	0	5	1	84	0	0	85	237		
	5:30 PM	0	0	0	0	0	0	118	1	0	119	1	0	0	0	1	0	66	0	0	66	186		
	5:45 PM	0	0	0	0	0	0	95	2	0	97	0	0	0	0	0	0	53	0	0	53	150		
	6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Totals		0	0	0	0	0	0	2008	26	7	2041	45	0	20	0	65	24	2038	0	0	2062	4168		

Peak Hour All Vehicle Volume Summary

Hourly Time Period Start Time	From North					From East					From South					From West					Total Hourly Volume
	0					CTH Q					Wellington Drive					CTH Q					
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	
AM 7:00 AM	0	0	0	0	0	0	153	2	0	155	11	0	5	0	16	6	508	0	0	514	685
MD 12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM 4:15 PM	0	0	0	0	0	0	558	8	3	569	2	0	7	0	9	7	328	0	0	335	913

Intersection Traffic Volume Report

15-Minute Heavy Vehicle Data

CTH Q & Wellington Drive

Count Basics			Page 9 of 13
Start Date:	Tuesday, January 28, 2025	#VALUE!	Schools in Session
Total Number of Hours Counted:	6	Non-Holiday	No Special Events



15-Minute Heavy Vehicle Data

15-Minute Time Period Start Time	From North					From East					From South					From West					15-Min Totals	Hourly Sum	
	0					CTH Q					Wellington Drive					CTH Q							
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total			
AM Peak Period	6:00 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	18
	6:15 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	3	0	0	3	5	29
	6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2	35
	6:45 AM	0	0	0	0	0	0	3	0	0	3	1	0	0	0	1	0	6	0	0	6	10	49
	7:00 AM	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	0	4	0	0	4	12	48
	7:15 AM	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	5	0	0	5	11	48
	7:30 AM	0	0	0	0	0	0	3	1	0	4	0	0	0	0	0	2	10	0	0	12	16	42
	7:45 AM	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	5	0	0	5	9	39
	8:00 AM	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	6	0	0	6	12	49
	8:15 AM	0	0	0	0	0	0	1	0	0	1	1	0	0	0	1	0	3	0	0	3	5	
	8:30 AM	0	0	0	0	0	0	9	0	0	9	0	0	0	0	0	0	4	0	0	4	13	
	8:45 AM	0	0	0	0	0	0	17	0	0	17	0	0	0	0	0	0	2	0	0	2	19	
Midday Peak Period	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
PM Peak Period	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:00 PM	0	0	0	0	0	0	2	0	0	2	1	0	0	0	1	0	3	0	0	3	6	24	
3:15 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	3	26	
3:30 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	6	0	0	6	8	31	
3:45 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	6	0	0	6	7	27	
4:00 PM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	5	0	0	5	8	24	
4:15 PM	0	0	0	0	0	0	4	1	0	5	0	0	0	0	0	0	3	0	0	3	8	19	
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	4	4	13	
4:45 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	4	10	
5:00 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	3	6	
5:15 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	2		
5:30 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1		
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Totals	0	0	0	0	0	0	80	2	0	82	3	0	0	0	3	2	82	0	0	84	169		

Peak Hour Heavy Vehicle Volume Summary

Hourly Time Period Start Time	From North					From East					From South					From West					Total Hourly Volume
	0					CTH Q					Wellington Drive					CTH Q					
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	
AM 7:00 AM	0	0	0	0	0	0	21	1	0	22	0	0	0	0	0	2	24	0	0	26	48
MD 12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM 4:15 PM	0	0	0	0	0	0	8	1	0	9	0	0	0	0	0	0	10	0	0	10	19

Intersection Traffic Volume Report

Count Basics		Version 2024.10	Page 1 of 13
Start Date:	Tuesday, January 28, 2025	#VALUE!	Schools in Session
Total Number of Hours Counted:	6	Non-Holiday	No Special Events

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

Major St: CTH Q
Minor St: Cross View Way
Intersection of: CTH Q & Cross View Way



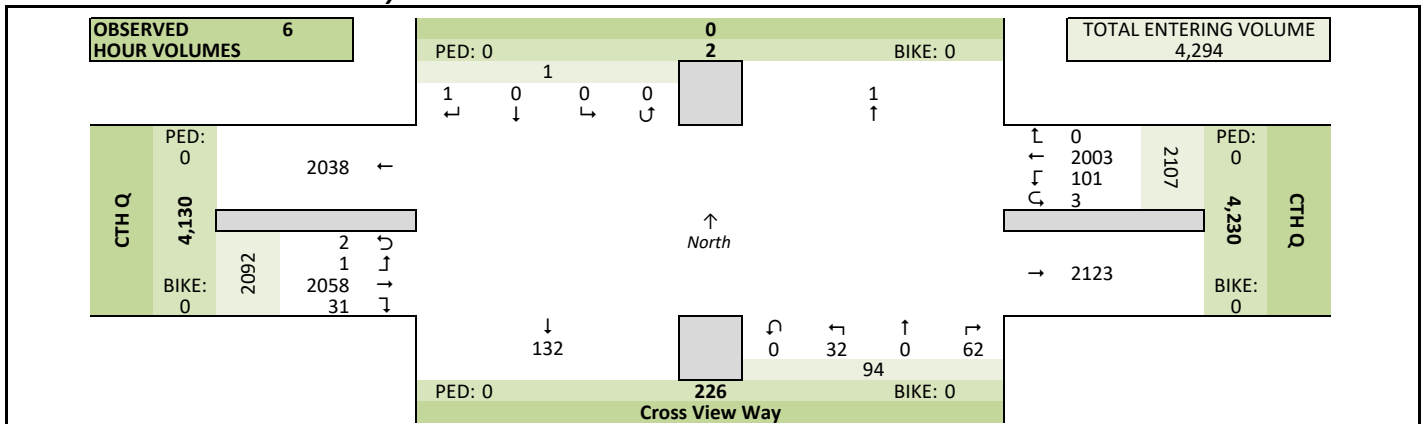
Site Information

Municipality	Village of Germantown
County	66 - Washington
WisDOT Region	SE
Traffic Control	Partial Stop Control
Roadway Names	North Direction
North Leg	0
East Leg	CTH Q
South Leg	Cross View Way
West Leg	CTH Q
Special Considerations	
Schools	In Session
Holidays	None
Special Events	None
Special Pedestrians Observed	
Pre-school children	None
Elementary school age children	None
Visually impaired (white cane/helper dog)	None
Elderly/disabled (except wheelchairs)	None
Wheelchairs/electric scooters	None
Other (describe)	None

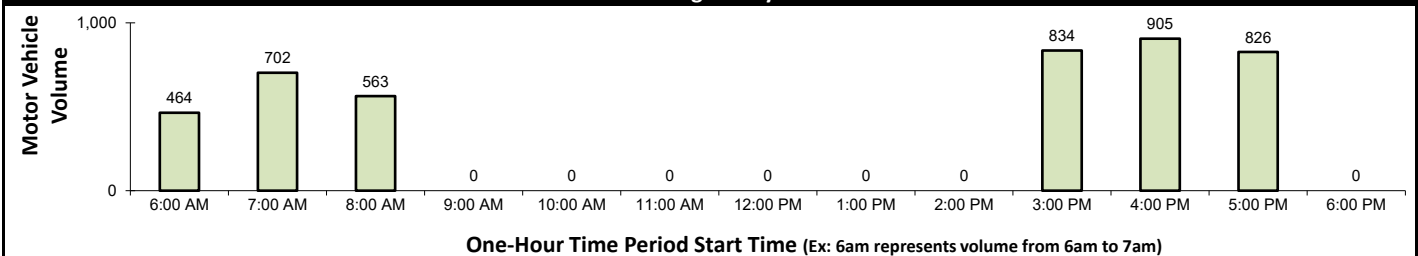
Count Information

Hrs Counted:	06:00 AM-09:00 AM and 03:00 PM-06:00 PM
1st Day of Count	Tuesday, January 28, 2025
Weather	Clear & Dry
AM Peak Period	Tuesday, January 28, 2025
Midday Peak Period	None
PM Peak Period	Wednesday, January 29, 2025
Calculated Peak Hours	
AM	7:00-8:00am
MD	
PM	4:30-5:30pm
Peak Hours Selected for Analysis	
AM	7:00-8:00am
MD	
PM	4:15-5:15pm
Daily/Seasonal Adjustment Group	(1) Non-Interstate Low Truck %
Count Expansion Group	(1) Non-Interstate Low Truck %
Daily/Seasonal Adjustment Factor	1.053
Count Expansion Factor	2.410
Company Name	TADI
Manual Adj.	1.000
Observers	
AM Peak Period	Amy Scheuerlein
Midday Peak Period	None
PM Peak Period	LuAnn Gaertner
Comments	Wis DOT Daily & Seasonal Factors are final for 2012 through 2023, and 2024 uses 2023 final factors.

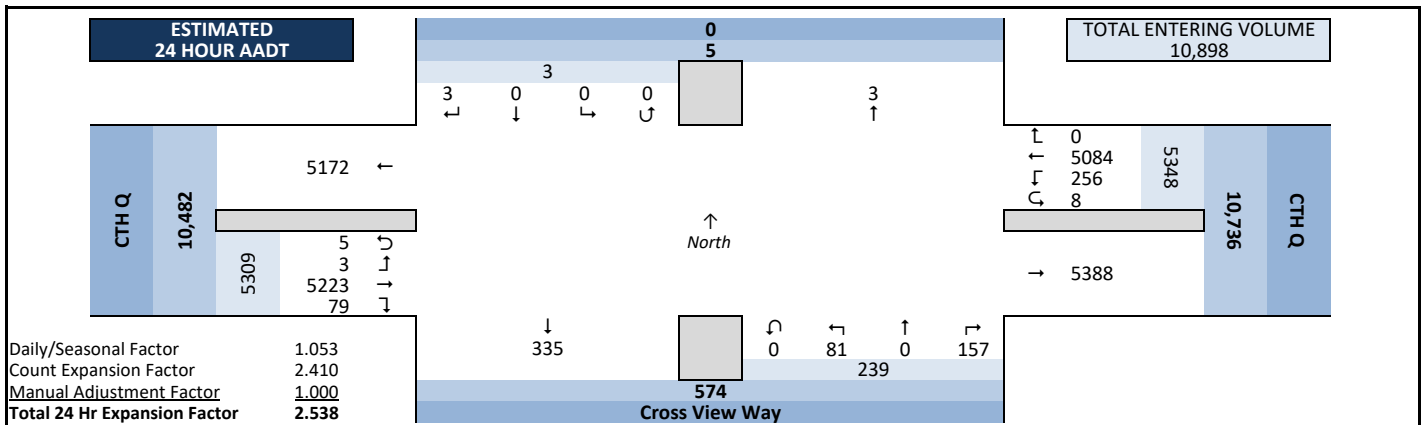
Observed 6 Hour Volume Summary



Total Entering Hourly Volume



Estimated 24 Hour AADT

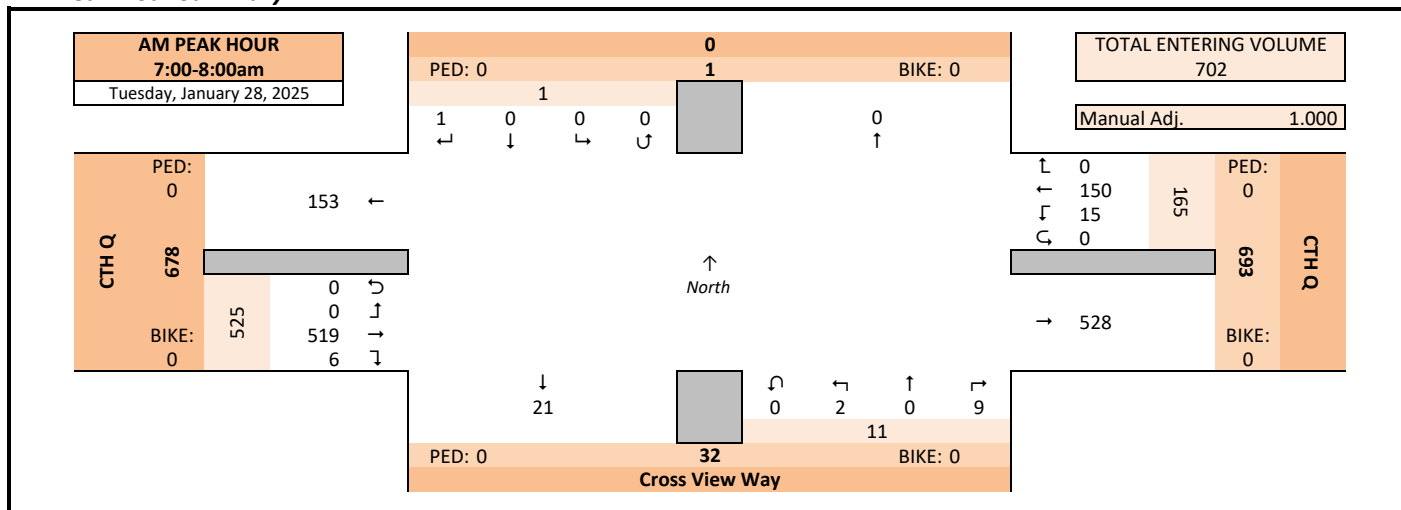


Peak Hour Volume Graphical Summary

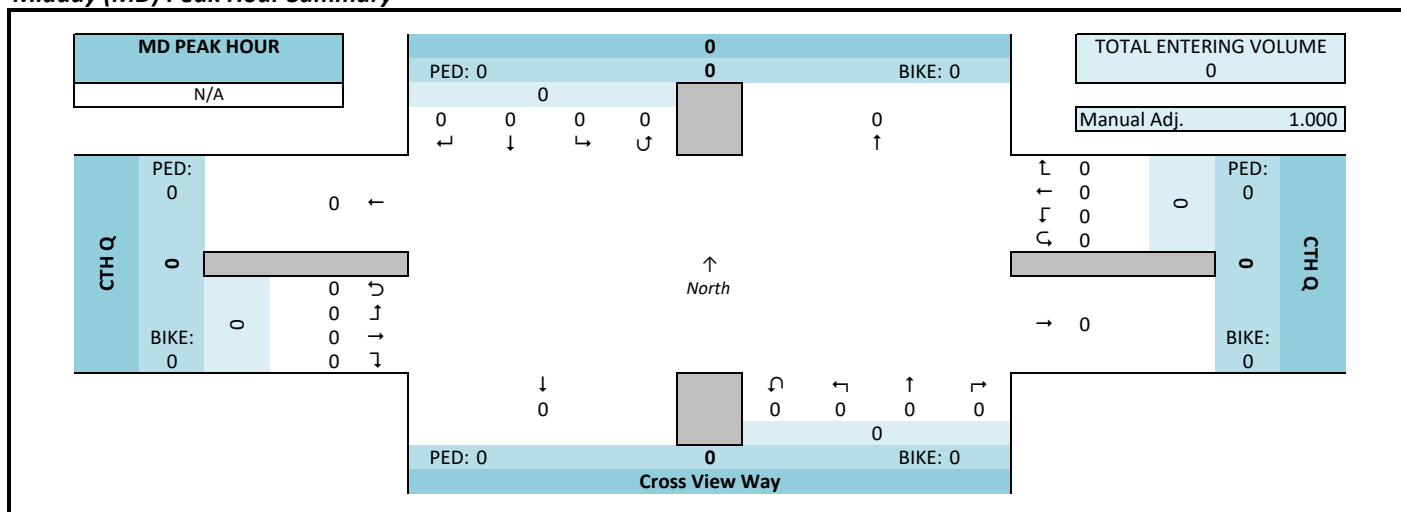
Count Basics			Page 2 of 13
Start Date:	Tuesday, January 28, 2025	#VALUE!	Schools in Session
Total Number of Hours Counted: 6		Non-Holiday	No Special Events

CTH Q & Cross View Way

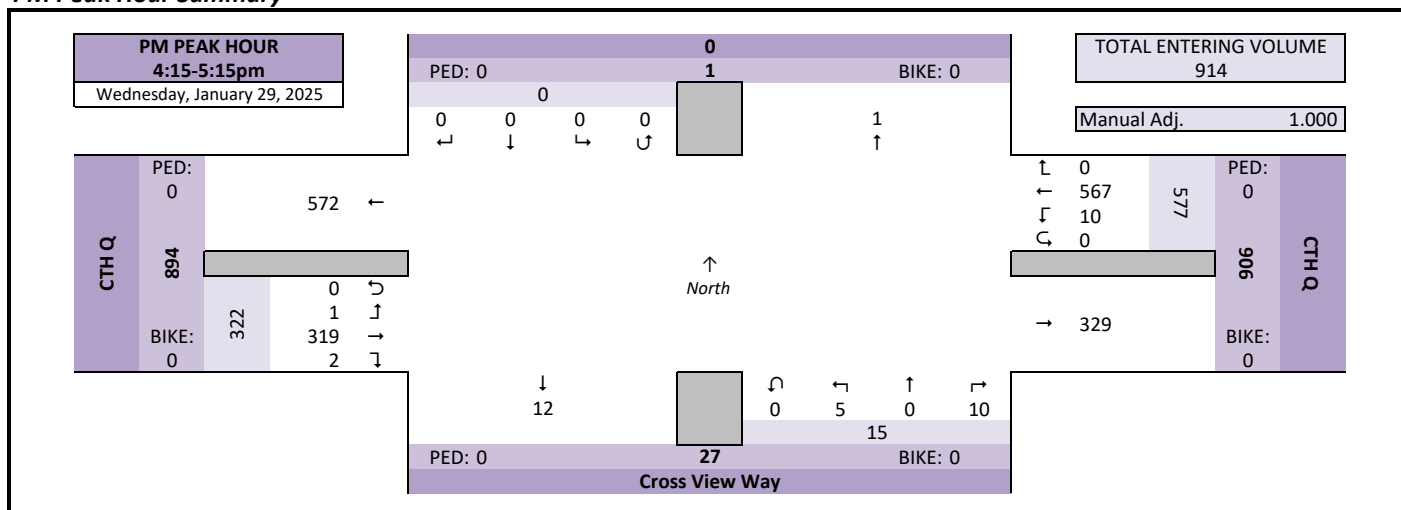
AM Peak Hour Summary



Midday (MD) Peak Hour Summary



PM Peak Hour Summary

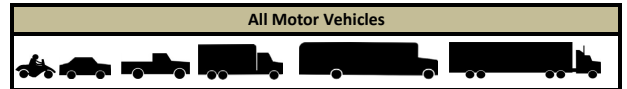


Intersection Traffic Volume Report

Peak Hour Volume Summary

CTH Q & Cross View Way

Count Basics			Page 3 of 13
Start Date:	Tuesday, January 28, 2025	#VALUE!	Schools in Session
Total Number of Hours Counted:	6	Non-Holiday	No Special Events



Peak Hour Volumes, Truck Percentages, and PHFs

Tuesday, January 28, 2025		↴					↶					↴					↷					
		From North					From East					From South					From West					
		0					CTH Q					Cross View Way					CTH Q					
AM Peak Hour	Start Time	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Totals
	7:00 AM	0	0	0	0	0	0	33	3	0	36	3	0	1	0	4	3	121	0	0	124	164
	7:15 AM	0	0	0	0	0	0	42	0	0	42	0	0	0	0	0	0	100	0	0	100	142
	7:30 AM	0	0	0	0	0	0	32	2	0	34	4	0	0	0	4	1	169	0	0	170	208
	7:45 AM	1	0	0	0	1	0	43	10	0	53	2	0	1	0	3	2	129	0	0	131	188
	Peak Hour Volume	1	0	0	0	1	0	150	15	0	165	9	0	2	0	11	6	519	0	0	525	702
	Rounded Hourly Volume	0	0	0	0	0	0	150	15	0	165	10	0	0	0	10	5	520	0	0	525	700
	% Single Unit Trucks	0.0	0.0	0.0	0.0	0.0	0.0	10.0	6.7	0.0	9.7	11.1	0.0	0.0	0.0	9.1	0.0	3.1	0.0	0.0	3.0	4.7
	% Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	4.0	6.7	0.0	4.2	11.1	0.0	0.0	0.0	9.1	0.0	1.2	0.0	0.0	1.1	2.0
	% Trucks (Total)	0.0	0.0	0.0	0.0	0.0	0.0	14.0	13.3	0.0	13.9	22.2	0.0	0.0	0.0	18.2	0.0	4.2	0.0	0.0	4.2	6.7
Peak Hour Factor (PHF)	0.25	0.00	0.00	0.00	0.25	0.00	0.87	0.37	0.00	0.78	0.56	0.00	0.50	0.00	0.69	0.50	0.77	0.00	0.00	0.77	0.84	

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

Wednesday, January 29, 2025		↴ From North					↶ From East					↴ From South					↷ From West					
PM Peak Hour	PM Peak Hour	0					CTH Q					Cross View Way					CTH Q					
	Start Time	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Totals
	4:15 PM	0	0	0	0	0	0	149	5	0	154	2	0	1	0	3	1	83	1	0	85	242
	4:30 PM	0	0	0	0	0	0	123	2	0	125	4	0	1	0	5	0	83	0	0	83	213
	4:45 PM	0	0	0	0	0	0	151	2	0	153	3	0	1	0	4	1	80	0	0	81	238
	5:00 PM	0	0	0	0	0	0	144	1	0	145	1	0	2	0	3	0	73	0	0	73	221
	Peak Hour Volume	0	0	0	0	0	0	567	10	0	577	10	0	5	0	15	2	319	1	0	322	914
	Rounded Hourly Volume	0	0	0	0	0	0	565	10	0	575	10	0	5	0	15	0	320	0	0	320	910
	% Single Unit Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.7	10.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0	1.6	0.0	0.0	1.6	1.1
	% Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.0	0.0	0.9	0.3
% Trucks (Total)	0.0	0.0	0.0	0.0	0.0	0.0	0.7	10.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0	2.5	0.0	0.0	2.5	1.4	
Peak Hour Factor (PHF)	0.00	0.00	0.00	0.00	0.00	0.00	0.94	0.50	0.00	0.94	0.62	0.00	0.62	0.00	0.75	0.50	0.96	0.25	0.00	0.95	0.94	

Peak Hour Pedestrian and Bicyclist Volumes

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

15-Minute Motor Vehicle Data

All Motor Vehicles

15-Minute Motor Vehicle Data

Peak Hour All Vehicle Volume Summary

Hourly Time Period Start Time	From North					From East					From South					From West					Total Hourly Volume	PHF
	0					CTH Q					Cross View Way					CTH Q						
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total		
AM 7:00 AM	1	0	0	0	1	0	150	15	0	165	9	0	2	0	11	6	519	0	0	525	702	0.84
MD 12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.94
PM 4:15 PM	0	0	0	0	0	0	567	10	0	577	10	0	5	0	15	2	319	1	0	322	914	0.94

15-Minute Heavy Vehicle Data

Heavy Vehicles (Single-Unit Trucks, Buses & Semi-Trucks)

CTH Q & Cross View Way

15-Minute Heavy Vehicle Data

[illegible]

Peak Hour Heavy Vehicle Volume Summary

Hourly Time Period Start Time	Peak Hour Heavy Vehicle Volume Summary																				Total Hourly Volume
	From North					From East					From South					From West					
	0					CTH Q					Cross View Way					CTH Q					
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	
AM 7:00 AM	0	0	0	0	0	0	21	2	0	23	2	0	0	0	2	0	22	0	0	22	47
PM 12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MD 4:15 PM	0	0	0	0	0	0	4	1	0	5	0	0	0	0	0	0	8	0	0	8	13

Intersection Traffic Volume Report

Count Basics		Version 2024.10	Page 1 of 13
Start Date:	Thursday, February 6, 2025	Weekday	Schools in Session
Total Number of Hours Counted:	6	Non-Holiday	No Special Events

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

Major St: STH 175-Appleton Avenue

Minor St: CTH Q - County Line Rd

Intersection of: STH 175-Appleton Avenue & CTH Q - County Line Rd IX_ID: 0

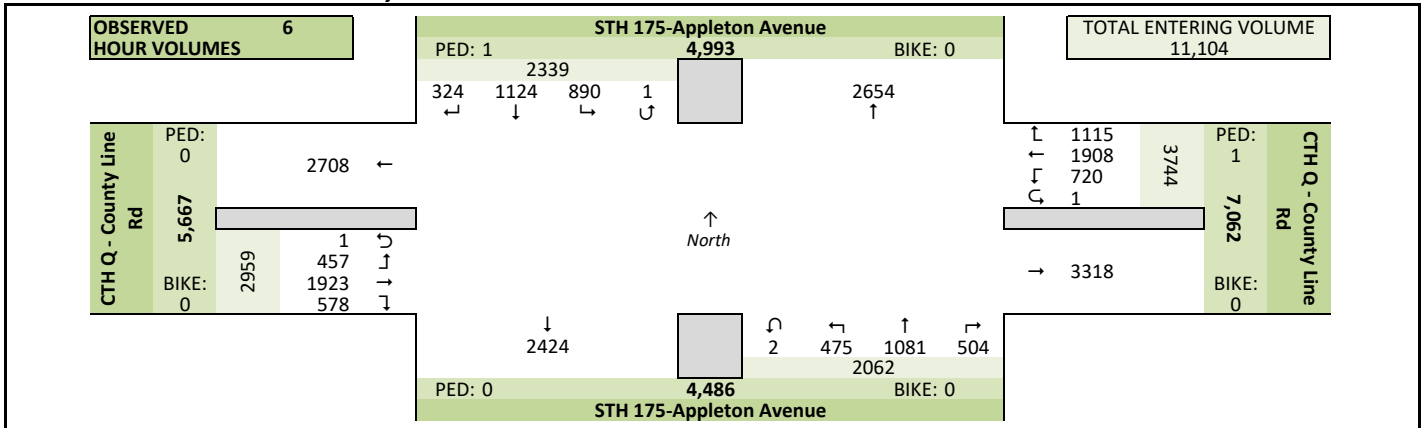
Site Information

Municipality	Village of Germantown
County	66 - Washington
WisDOT Region	SE
Traffic Control	Traffic Signal
Roadway Names	North Direction
North Leg	STH 175-Appleton Avenue
East Leg	CTH Q - County Line Rd
South Leg	STH 175-Appleton Avenue
West Leg	CTH Q - County Line Rd
Special Considerations	
Schools	In Session
Holidays	None
Special Events	None
Special Pedestrians Observed	
Pre-school children	None
Elementary school age children	None
Visually impaired (white cane/helper dog)	None
Elderly/disabled (except wheelchairs)	None
Wheelchairs/electric scooters	None
Other (describe)	None

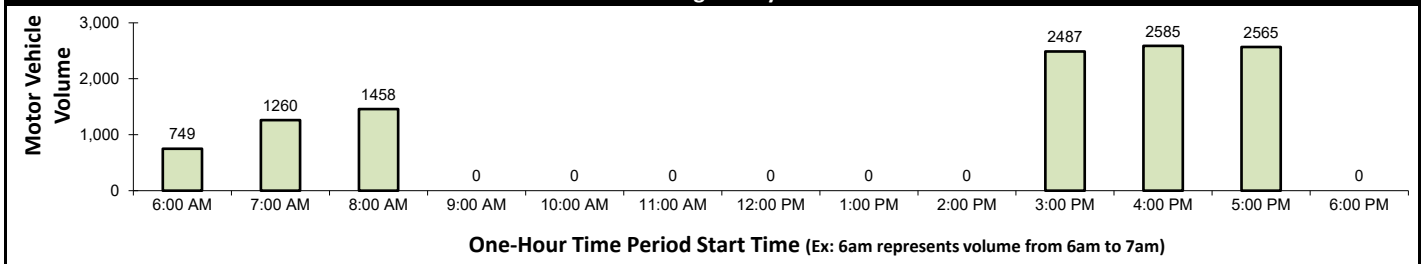
Count Information

Hrs Counted:	06:00 AM-09:00 AM and 03:00 PM-06:00 PM
1st Day of Count	Thursday, February 6, 2025
Weather	Clear and Dry
AM Peak Period	Friday, February 7, 2025
Midday Peak Period	Thursday, February 6, 2025
PM Peak Period	Thursday, February 6, 2025
Calculated Peak Hours	
AM	8:00-9:00am
MD	
PM	4:30-5:30pm
Peak Hours Selected for Analysis	
AM	7:00-8:00am
MD	
PM	4:15-5:15pm
Daily/Seasonal Adjustment Group	(1) Non-Interstate Low Truck %
Count Expansion Group	(1) Non-Interstate Low Truck %
Daily/Seasonal Adjustment Factor	1.062
Count Expansion Factor	2.410
Company Name	TADI
Manual Adj.	1.000
Observers	AM Peak Period: Miovision Midday Peak Period: Miovision PM Peak Period: Miovision
Comments	Wis DOT Daily & Seasonal Factors are final for 2012 through 2023, and 2024 uses 2023 final factors.

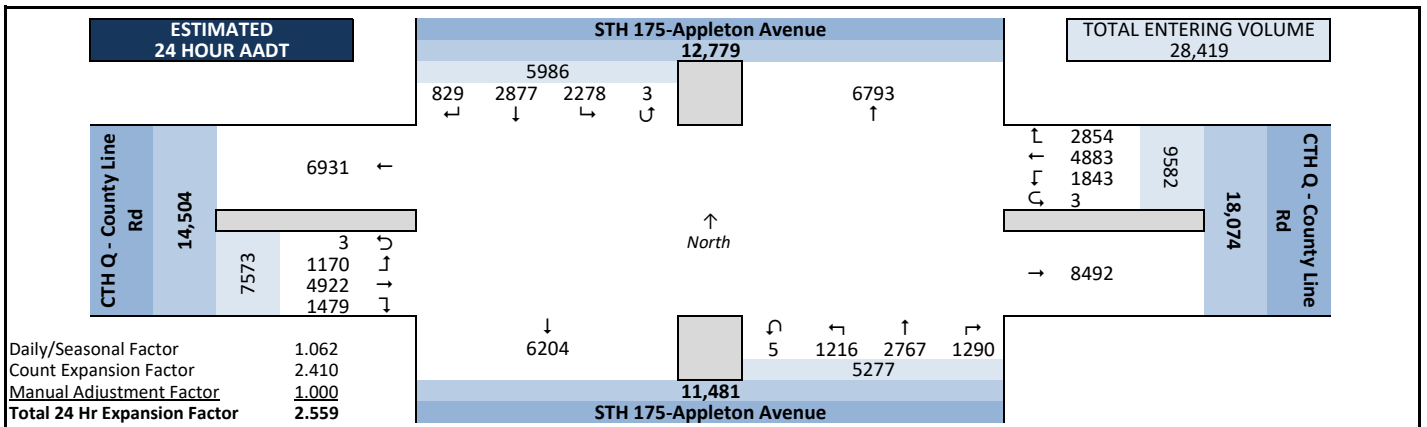
Observed 6 Hour Volume Summary



Total Entering Hourly Volume



Estimated 24 Hour AADT

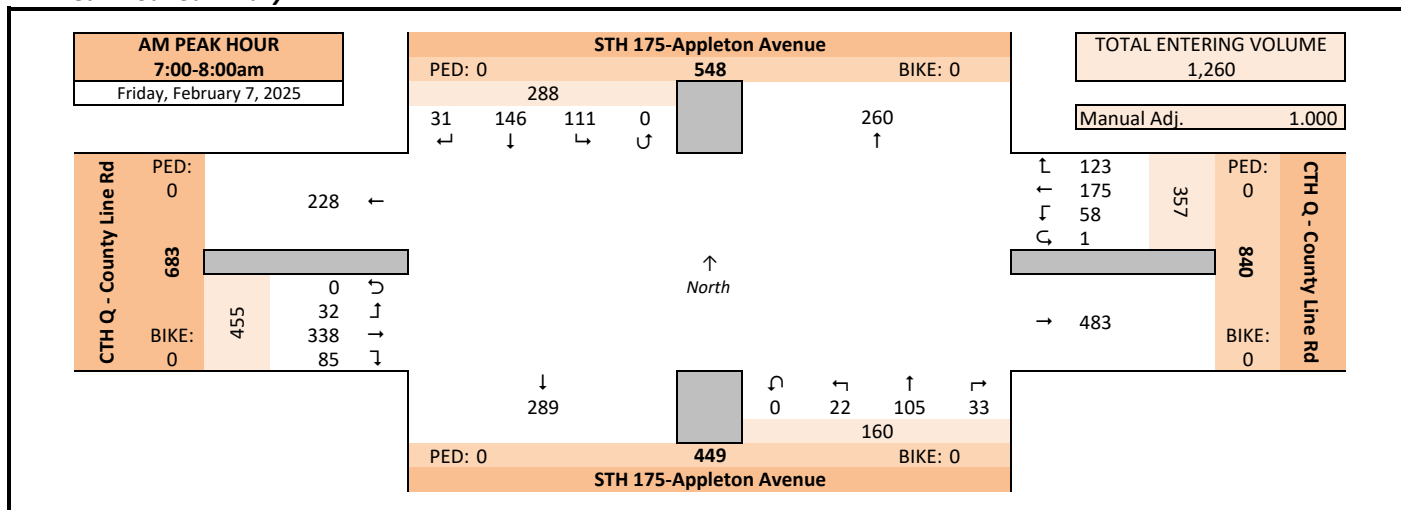


Peak Hour Volume Graphical Summary

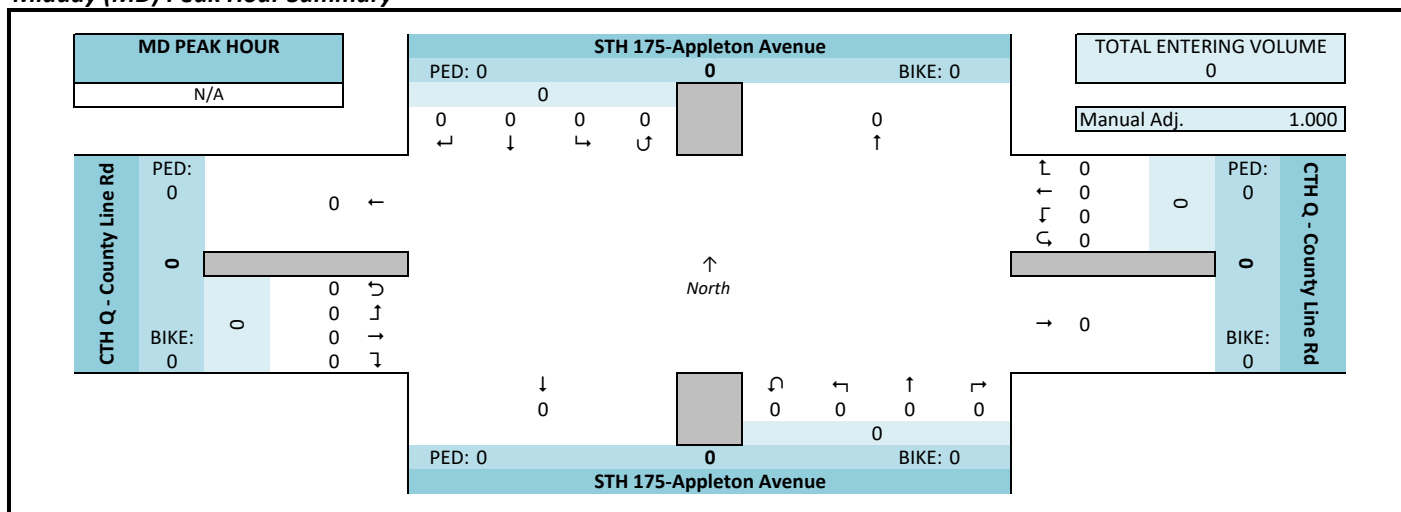
STH 175-Appleton Avenue & CTH Q - County Line Rd

Count Basics		Page 2 of 13	
Start Date:	Thursday, February 6, 2025	Weekday	Schools in Session
Total Number of Hours Counted: 6		Non-Holiday	No Special Events

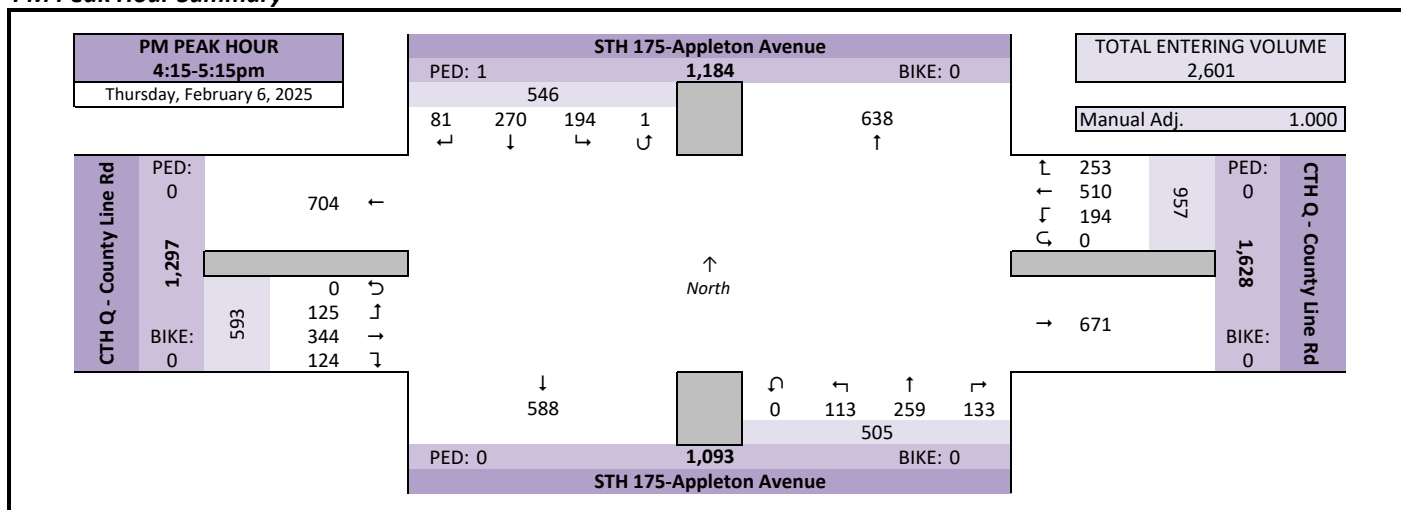
AM Peak Hour Summary



Midday (MD) Peak Hour Summary



PM Peak Hour Summary

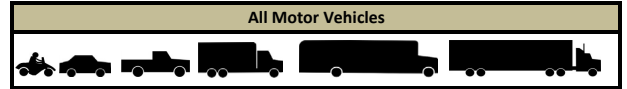


Intersection Traffic Volume Report

Peak Hour Volume Summary

STH 175-Appleton Avenue & CTH Q - County Line Rd

Count Basics			Page 3 of 13
Start Date:	Thursday, February 6, 2025	Weekday	Schools in Session
Total Number of Hours Counted:	6	Non-Holiday	No Special Events



Peak Hour Volumes, Truck Percentages, and PHFs

Friday, February 7, 2025		↴					↶					↴					↷					
		From North					From East					From South					From West					
		STH 175-Appleton Avenue					CTH Q - County Line Rd					STH 175-Appleton Avenue					CTH Q - County Line Rd					
AM Peak Hour	Start Time	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Totals
	7:00 AM	6	31	35	0	72	32	45	5	0	82	7	19	5	0	31	13	84	6	0	103	288
	7:15 AM	9	37	30	0	76	31	39	18	1	89	4	21	3	0	28	22	92	7	0	121	314
	7:30 AM	8	48	27	0	83	32	56	12	0	100	11	22	5	0	38	26	79	8	0	113	334
	7:45 AM	8	30	19	0	57	28	35	23	0	86	11	43	9	0	63	24	83	11	0	118	324
	Peak Hour Volume	31	146	111	0	288	123	175	58	1	357	33	105	22	0	160	85	338	32	0	455	1260
	Rounded Hourly Volume	30	145	110	0	285	125	175	60	0	360	35	105	20	0	160	85	340	30	0	455	1260
	% Single Unit Trucks	0.0	3.4	3.6	0.0	3.1	1.6	5.1	0.0	0.0	3.1	6.1	2.9	0.0	0.0	3.1	1.2	3.3	6.2	0.0	3.1	3.1
	% Heavy Trucks	0.0	0.0	0.9	0.0	0.3	1.6	1.1	1.7	0.0	1.4	0.0	0.0	0.0	0.0	0.0	1.2	0.9	0.0	0.0	0.9	0.8
	% Trucks (Total)	0.0	3.4	4.5	0.0	3.5	3.3	6.3	1.7	0.0	4.5	6.1	2.9	0.0	0.0	3.1	2.4	4.1	6.2	0.0	4.0	3.9
Peak Hour Factor (PHF)	0.86	0.76	0.79	0.00	0.87	0.96	0.78	0.63	0.25	0.89	0.75	0.61	0.61	0.00	0.63	0.82	0.92	0.73	0.00	0.94	0.94	

N/A		From North					From East					From South					From West					
		STH 175-Appleton Avenue					CTH Q - County Line Rd					STH 175-Appleton Avenue					CTH Q - County Line Rd					
Midday (MD) Peak Hour	MD Peak Hour	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Totals
	Start Time																					
	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Peak Hour Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Rounded Hourly Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	% Single Unit Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	% Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
% Trucks (Total)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Peak Hour Factor (PHF)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Thursday, February 6, 2025		From North					From East					From South					From West					
PM Peak Hour	PM Peak Hour	STH 175-Appleton Avenue					CTH Q - County Line Rd					STH 175-Appleton Avenue					CTH Q - County Line Rd					
	Start Time	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Totals
	4:15 PM	23	65	42	0	130	65	124	48	0	237	33	35	27	0	95	34	95	27	0	156	618
	4:30 PM	13	70	48	0	131	56	123	54	0	233	31	76	33	0	140	29	75	38	0	142	646
	4:45 PM	28	66	56	1	151	57	127	36	0	220	38	94	22	0	154	28	85	37	0	150	675
	5:00 PM	17	69	48	0	134	75	136	56	0	267	31	54	31	0	116	33	89	23	0	145	662
	Peak Hour Volume	81	270	194	1	546	253	510	194	0	957	133	259	113	0	505	124	344	125	0	593	2601
	Rounded Hourly Volume	80	270	195	0	545	255	510	195	0	960	135	260	115	0	510	125	345	125	0	595	2610
	% Single Unit Trucks	2.5	0.4	1.0	0.0	0.9	0.0	0.8	0.5	0.0	0.5	0.0	0.8	0.0	0.0	0.4	0.0	1.2	0.0	0.0	0.7	0.6
	% Heavy Trucks	0.0	0.0	1.5	0.0	0.5	1.6	1.0	0.0	0.0	0.9	0.0	0.4	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.5
% Trucks (Total)	2.5	0.4	2.6	0.0	1.5	1.6	1.8	0.5	0.0	1.5	0.0	1.2	0.0	0.0	0.6	0.0	1.2	0.0	0.0	0.7	1.1	
Peak Hour Factor (PHF)	0.72	0.96	0.87	0.25	0.90	0.84	0.94	0.87	0.00	0.90	0.87	0.69	0.86	0.00	0.82	0.91	0.91	0.82	0.00	0.95	0.96	

Peak Hour Pedestrian and Bicyclist Volumes

Pedestrians and Bicyclists		Crossing 			Crossing 			Crossing 			Crossing 			Total Ped & Bike Volume
		North Approach			East Approach			South Approach			West Approach			
15-Minute Start Time		STH 175-Appleton Avenue			CTH Q - County Line Rd			STH 175-Appleton Avenue			CTH Q - County Line Rd			
		Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	0	0	0	0	0
MD	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	1	0	1	0	0	0	0	0	0	0	0	0	1
	Total	1	0	1	0	0	0	0	0	0	0	0	0	1

Intersection Traffic Volume Report

15-Minute Motor Vehicle Data

STH 175-Appleton Avenue & CTH Q - County Line Rd

Count Basics			Page 5 of 13	
Start Date:	Thursday, February 6, 2025	Weekday	Schools in Session	
Total Number of Hours Counted:	6	Non-Holiday	No Special Events	

All Motor Vehicles					
					

15-Minute Motor Vehicle Data

15-Minute Time Period Start Time	From North					From East					From South					From West					15-Min Totals	Hourly Sum	PHF	
	STH 175-Appleton Avenue					CTH Q - County Line Rd					STH 175-Appleton Avenue					CTH Q - County Line Rd								
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total				
AM Peak Period	6:00 AM	1	12	9	0	22	17	14	10	0	41	2	8	4	0	14	6	55	3	0	64	141	749	0.73
	6:15 AM	3	13	12	0	28	12	32	6	0	50	3	13	2	0	18	9	54	2	0	65	161	896	0.78
	6:30 AM	4	8	10	0	22	19	34	4	0	57	6	23	4	0	33	6	69	5	0	80	192	1049	0.84
	6:45 AM	6	18	20	0	44	27	28	11	0	66	6	31	4	0	41	11	82	11	0	104	255	1191	0.89
	7:00 AM	6	31	35	0	72	32	45	5	0	82	7	19	5	0	31	13	84	6	0	103	288	1260	0.94
	7:15 AM	9	37	30	0	76	31	39	18	1	89	4	21	3	0	28	22	92	7	0	121	314	1337	0.92
	7:30 AM	8	48	27	0	83	32	56	12	0	100	11	22	5	0	38	26	79	8	0	113	334	1368	0.94
	7:45 AM	8	30	19	0	57	28	35	23	0	86	11	43	9	0	63	24	83	11	0	118	324	1401	0.95
	8:00 AM	7	46	34	0	87	30	48	36	0	114	16	35	10	0	61	17	71	15	0	103	365	1458	0.96
	8:15 AM	2	36	33	0	71	45	42	23	0	110	16	31	12	0	59	15	82	8	0	105	345		
	8:30 AM	5	39	31	0	75	43	49	21	0	113	21	39	8	0	68	20	76	15	0	111	367		
	8:45 AM	6	37	35	0	78	35	63	21	0	119	18	34	16	0	68	29	73	14	0	116	381		
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Midday Peak Period	10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
PM Peak Period	2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	3:00 PM	23	82	53	0	158	57	97	46	0	200	33	67	37	1	138	36	78	27	1	142	638	2487	0.94
	3:15 PM	18	66	65	0	149	55	115	40	0	210	28	59	41	0	128	31	78	23	0	132	619	2495	0.95
	3:30 PM	13	55	35	0	103	80	105	34	0	219	25	66	25	0	116	16	85	33	0	134	572	2494	0.95
	3:45 PM	16	69	44	0	129	56	119	50	0	225	31	66	37	0	134	36	99	35	0	170	658	2568	0.98
	4:00 PM	24	59	54	0	137	64	127	45	0	236	33	74	29	0	136	30	79	28	0	137	646	2585	0.96
	4:15 PM	23	65	42	0	130	65	124	48	0	237	33	35	27	0	95	34	95	27	0	156	618	2601	0.96
	4:30 PM	13	70	48	0	131	56	123	54	0	233	31	76	33	0	140	29	75	38	0	142	646	2691	0.95
	4:45 PM	28	66	56	1	151	57	127	36	0	220	38	94	22	0	154	28	85	37	0	150	675	2653	0.94
	5:00 PM	17	69	48	0	134	75	136	56	0	267	31	54	31	0	116	33	89	23	0	145	662	2565	0.91
	5:15 PM	30	71	58	0	159	64	130	48	0	242	44	75	40	0	159	31	94	23	0	148	708		
	5:30 PM	34	46	37	0	117	65	112	31	0	208	31	44	37	1	113	40	94	36	0	170	608		
	5:45 PM	20	51	55	0	126	70	108	42	0	220	25	52	34	0	111	36	72	22	0	130	587		
	6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Totals	324	1124	890	1	2339	1115	1908	720	1	3744	504	1081	475	2	2062	578	1923	457	1	2959	11104			

Peak Hour All Vehicle Volume Summary

Hourly Time Period Start Time	↓ From North STH 175-Appleton Avenue					← From East CTH Q - County Line Rd					↑ From South STH 175-Appleton Avenue					→ From West CTH Q - County Line Rd					Total Hourly Volume	PHF
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total		
AM 7:00 AM	31	146	111	0	288	123	175	58	1	357	33	105	22	0	160	85	338	32	0	455	1260	0.94
PM 12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MD 4:15 PM	81	270	194	1	546	253	510	194	0	957	133	259	113	0	505	124	344	125	0	593	2601	0.96

Intersection Traffic Volume Report

15-Minute Heavy Vehicle Data

STH 175-Appleton Avenue & CTH Q - County Line Rd

Count Basics			Page 9 of 13
Start Date:	Thursday, February 6, 2025	Weekday	Schools in Session
Total Number of Hours Counted:	6	Non-Holiday	No Special Events



15-Minute Heavy Vehicle Data

15-Minute Time Period Start Time	From North					From East					From South					From West					15-Min Totals	Hourly Sum		
	STH 175-Appleton Avenue					CTH Q - County Line Rd					STH 175-Appleton Avenue					CTH Q - County Line Rd								
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total				
AM Peak Period	6:00 AM	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	3	0	0	0	3	4	19
	6:15 AM	1	0	1	0	2	1	2	0	0	3	0	0	0	0	0	1	0	0	0	0	1	6	22
	6:30 AM	0	0	0	0	0	1	2	0	0	3	0	0	0	0	0	0	3	0	0	0	3	6	30
	6:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	2	0	0	0	2	3	35
	7:00 AM	0	0	0	0	0	0	3	1	0	4	0	0	0	0	0	1	2	0	0	0	3	7	49
	7:15 AM	0	1	1	0	2	1	4	0	0	5	0	1	0	0	1	0	6	0	0	0	6	14	51
	7:30 AM	0	2	1	0	3	1	3	0	0	4	0	0	0	0	0	0	3	1	0	4	11	48	
	7:45 AM	0	2	3	0	5	2	1	0	0	3	2	2	0	0	4	1	3	1	0	5	17	58	
	8:00 AM	0	1	1	0	2	1	3	0	0	4	0	0	0	0	0	0	1	2	0	0	3	9	68
	8:15 AM	0	1	0	0	1	0	3	0	0	3	0	2	0	0	2	0	5	0	0	0	5	11	
	8:30 AM	0	0	3	0	3	2	8	1	0	11	1	0	0	0	1	0	5	1	0	0	6	21	
	8:45 AM	1	1	0	0	2	1	15	1	0	17	1	1	1	0	3	1	3	1	0	0	5	27	
Midday Peak Period	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
PM Peak Period	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:00 PM	1	0	2	0	3	0	2	0	0	2	0	0	0	0	0	0	2	0	0	0	2	7	25	
3:15 PM	0	0	0	0	0	3	0	1	0	4	0	0	0	0	0	0	4	1	0	0	5	9	28	
3:30 PM	0	1	1	0	2	2	1	1	0	4	0	0	0	0	0	0	1	0	0	0	1	7	25	
3:45 PM	0	0	0	0	0	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0	0	2	22	
4:00 PM	0	0	2	0	2	1	1	0	0	2	1	1	0	0	2	1	3	0	0	0	4	10	29	
4:15 PM	0	1	2	0	3	0	2	1	0	3	0	0	0	0	0	0	0	0	0	0	6	29	29	
4:30 PM	0	0	0	0	0	1	1	0	0	2	0	0	0	0	0	0	2	0	0	0	2	4	29	
4:45 PM	2	0	0	0	2	3	2	0	0	5	0	1	0	0	1	0	1	0	0	1	9	29	29	
5:00 PM	0	0	3	0	3	0	4	0	0	4	0	2	0	0	2	0	1	0	0	1	10	21	21	
5:15 PM	1	0	1	0	2	1	2	0	0	3	0	0	0	0	0	0	0	1	0	0	1	6		
5:30 PM	0	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	4		
5:45 PM	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1		
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Totals	6	11	22	0	39	23	60	6	0	89	6	11	1	0	18	5	52	8	0	65	211			

Peak Hour Heavy Vehicle Volume Summary

Hourly Time Period Start Time	From North					From East					From South					From West					Total Hourly Volume
	STH 175-Appleton Avenue					CTH Q - County Line Rd					STH 175-Appleton Avenue					CTH Q - County Line Rd					
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	
AM 7:00 AM	0	5	5	0	10	4	11	1	0	16	2	3	0	0	5	2	14	2	0	18	49
MD 12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM 4:15 PM	2	1	5	0	8	4	9	1	0	14	0	3	0	0	3	0	4	0	0	4	29

Intersection Traffic Volume Report

Count Basics		Version 2024.10	Page 1 of 13
Start Date:	Thursday, February 6, 2025	Weekday	Schools in Session
Total Number of Hours Counted:	6	Non-Holiday	No Special Events

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

Major St: STH 175-Appleton Avenue

Minor St: STH 167 - Lannon Road

Intersection of: STH 175-Appleton Avenue & STH 167 - LannonIX_ID: 0

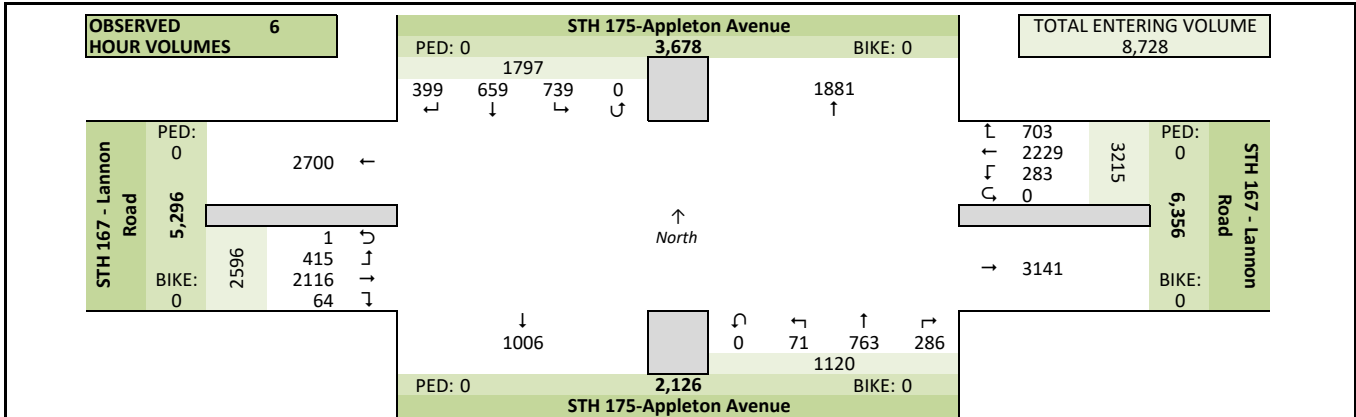
Site Information

Municipality	Village of Germantown		
County	66 - Washington	WisDOT Region	SE
Traffic Control	Roundabout		
Roadway Names	North Direction		↑
North Leg	STH 175-Appleton Avenue		
East Leg	STH 167 - Lannon Road		
South Leg	STH 175-Appleton Avenue		
West Leg	STH 167 - Lannon Road		
Special Considerations			
Schools	In Session		
Holidays	None		
Special Events	None		
Special Pedestrians Observed			
	Pre-school children	None	
	Elementary school age children	None	
	Visually impaired (white cane/helper dog)	None	
	Elderly/disabled (except wheelchairs)	None	
	Wheelchairs/electric scooters	None	
	Other (describe)	None	None

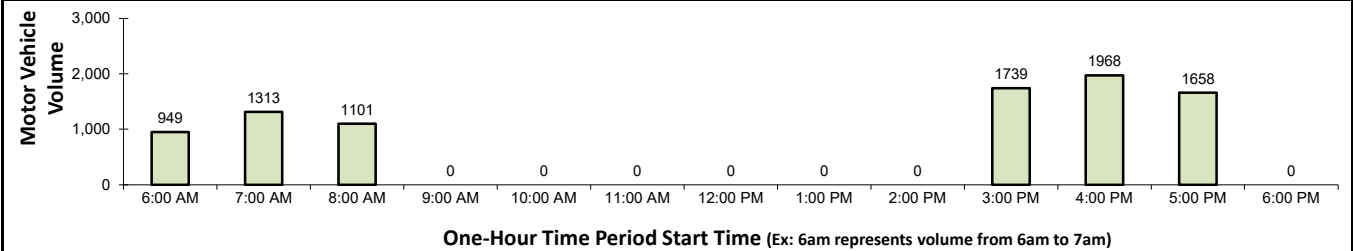
Count Information

Hrs Counted: 06:00 AM-09:00 AM and 03:00 PM-06:00 PM				
1st Day of Count		Thursday, February 6, 2025		Weather
AM Peak Period		Friday, February 7, 2025		Clear and Dry
Midday Peak Period		Thursday, February 6, 2025		Clear and Dry
PM Peak Period		Thursday, February 6, 2025		Clear and Dry
Calculated Peak Hours				
	AM	7:00-8:00am	MD	PM 4:15-5:15pm
Peak Hours Selected for Analysis				
	AM	7:00-8:00am	MD	PM 4:15-5:15pm
Daily/Seasonal Adjustment Group		(1) Non-Interstate Low Truck %		
Count Expansion Group		(1) Non-Interstate Low Truck %		
Daily/Seasonal Adjustment Factor		1.062	Count Expansion Factor 2.410	
Company Name TADI			Manual Adj. 1.000	
Observers	AM Peak Period		Miovision	
	Midday Peak Period		Miovision	
	PM Peak Period		Miovision	
Comments		Wis DOT Daily & Seasonal Factors are final for 2012 through 2023, and 2024 uses 2023 final factors.		

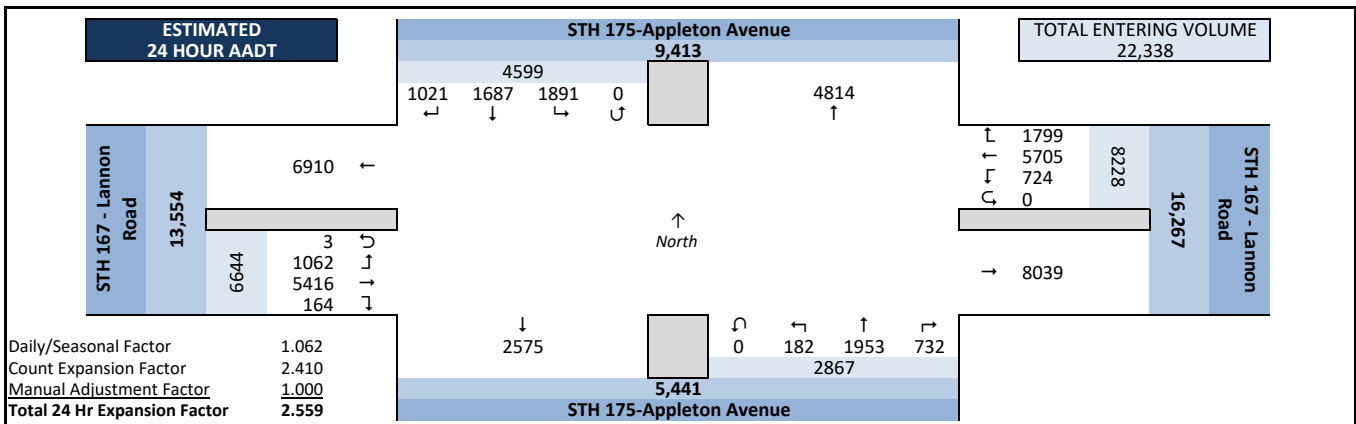
Observed 6 Hour Volume Summary



Total Entering Hourly Volume



Estimated 24 Hour AADT

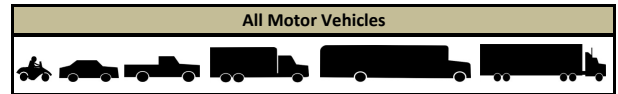


Intersection Traffic Volume Report

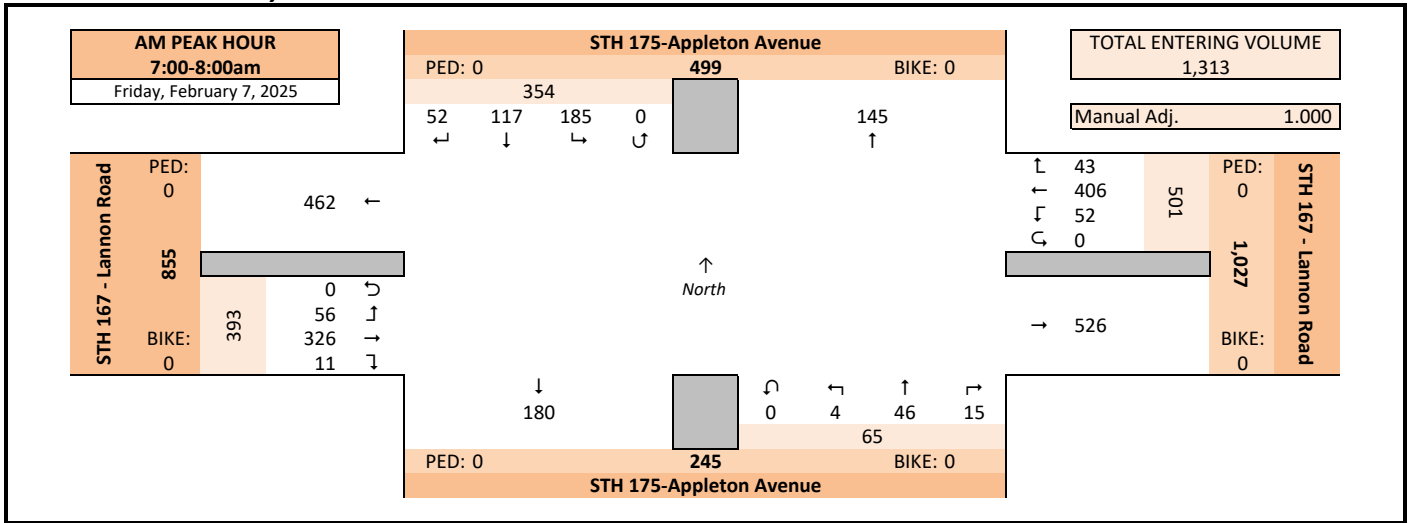
Peak Hour Volume Graphical Summary

STH 175-Appleton Avenue & STH 167 - Lannon Road

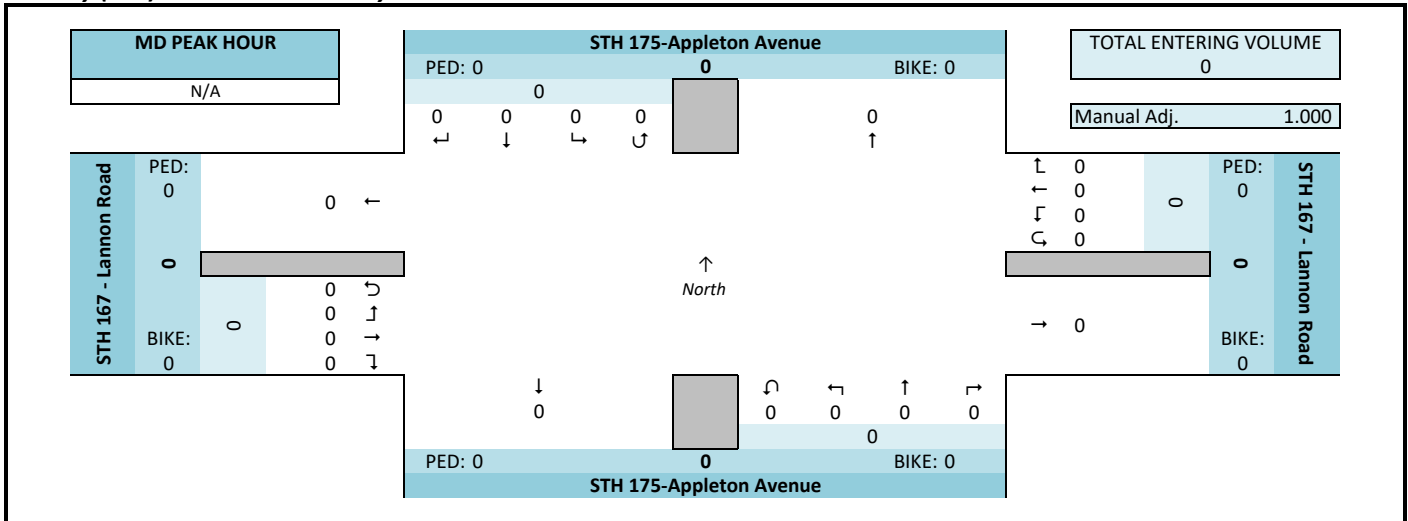
Count Basics		Page 2 of 13	
Start Date:	Thursday, February 6, 2025	Weekday	Schools in Session
Total Number of Hours Counted:	6	Non-Holiday	No Special Events



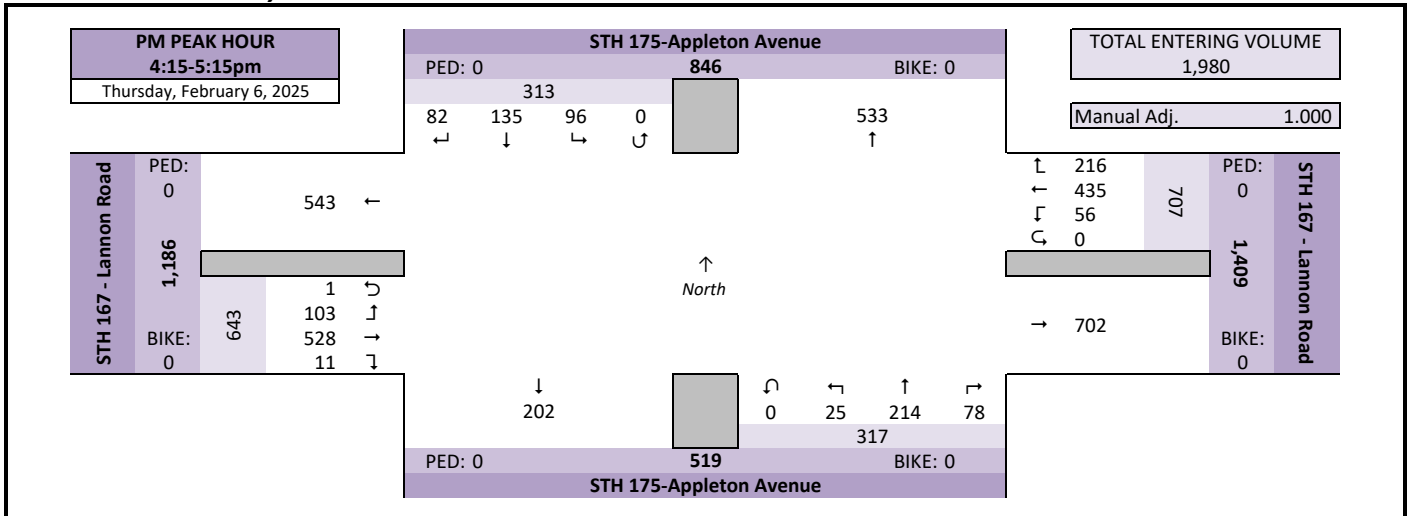
AM Peak Hour Summary



Midday (MD) Peak Hour Summary



PM Peak Hour Summary

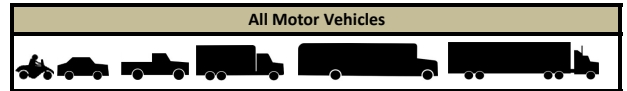


Intersection Traffic Volume Report

Peak Hour Volume Summary

STH 175-Appleton Avenue & STH 167 - Lannon Road

Count Basics			Page 3 of 13
Start Date:	Thursday, February 6, 2025	Weekday	Schools in Session
Total Number of Hours Counted:	6	Non-Holiday	No Special Events



Peak Hour Volumes, Truck Percentages, and PHFs

Friday, February 7, 2025		↴					↶					↴					↷					
		From North					From East					From South					From West					
		STH 175-Appleton Avenue					STH 167 - Lannon Road					STH 175-Appleton Avenue					STH 167 - Lannon Road					
AM Peak Hour	AM Peak Hour	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Totals
	Start Time	15	23	44	0	82	14	97	7	0	118	2	8	1	0	11	2	59	10	0	71	282
	7:00 AM	14	29	46	0	89	14	137	18	0	169	2	14	1	0	17	4	89	10	0	103	378
	7:15 AM	14	36	51	0	101	4	93	15	0	112	8	13	1	0	22	2	73	12	0	87	322
	7:30 AM	9	29	44	0	82	11	79	12	0	102	3	11	1	0	15	3	105	24	0	132	331
	7:45 AM	52	117	185	0	354	43	406	52	0	501	15	46	4	0	65	11	326	56	0	393	1313
	Peak Hour Volume	50	115	185	0	350	45	405	50	0	500	15	45	5	0	65	10	325	55	0	390	1305
	Rounded Hourly Volume	1.9	2.6	1.1	0.0	1.7	7.0	4.7	1.9	0.0	4.6	20.0	2.2	0.0	0.0	6.2	0.0	3.4	1.8	0.0	3.1	3.4
	% Single Unit Trucks	1.9	0.0	0.0	0.0	0.3	0.0	3.4	1.9	0.0	3.0	6.7	0.0	0.0	0.0	1.5	9.1	3.7	0.0	0.0	3.3	2.3
	% Heavy Trucks	3.8	2.6	1.1	0.0	2.0	7.0	8.1	3.8	0.0	7.6	26.7	2.2	0.0	0.0	7.7	9.1	7.1	1.8	0.0	6.4	5.7
	% Trucks (Total)	0.87	0.81	0.91	0.00	0.88	0.77	0.74	0.72	0.00	0.74	0.47	0.82	1.00	0.00	0.74	0.69	0.78	0.58	0.00	0.74	0.87
	Peak Hour Factor (PHF)																					

N/A		From North					From East					From South					From West					
Midday (MD) Peak Hour	MD Peak Hour	STH 175-Appleton Avenue					STH 167 - Lannon Road					STH 175-Appleton Avenue					STH 167 - Lannon Road					
	Start Time	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Totals
	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Peak Hour Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Rounded Hourly Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	% Single Unit Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	% Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	% Trucks (Total)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Peak Hour Factor (PHF)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Thursday, February 6, 2025		↴					↶					↴					↷					
		From North					From East					From South					From West					
PM Peak Hour	PM Peak Hour	STH 175-Appleton Avenue					STH 167 - Lannon Road					STH 175-Appleton Avenue					STH 167 - Lannon Road					
	Start Time	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Totals
	4:15 PM	15	38	26	0	79	47	111	13	0	171	18	45	7	0	70	6	132	23	1	162	482
	4:30 PM	34	40	28	0	102	44	107	15	0	166	25	43	7	0	75	2	144	29	0	175	518
	4:45 PM	12	28	18	0	58	75	96	13	0	184	15	77	5	0	97	0	136	35	0	171	510
	5:00 PM	21	29	24	0	74	50	121	15	0	186	20	49	6	0	75	3	116	16	0	135	470
	Peak Hour Volume	82	135	96	0	313	216	435	56	0	707	78	214	25	0	317	11	528	103	1	643	1980
	Rounded Hourly Volume	80	135	95	0	310	215	435	55	0	705	80	215	25	0	320	10	530	105	0	645	1980
	% Single Unit Trucks	0.0	0.7	1.0	0.0	0.6	1.9	2.3	3.6	0.0	2.3	1.3	0.5	4.0	0.0	0.9	0.0	0.6	0.0	0.0	0.5	1.2
	% Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.0	0.0	0.6	1.3	0.0	0.0	0.0	0.3	0.0	0.8	0.0	0.0	0.6	0.5
% Trucks (Total)	0.0	0.7	1.0	0.0	0.6	1.9	3.2	3.6	0.0	2.8	2.6	0.5	4.0	0.0	1.3	0.0	1.3	0.0	0.0	1.1	1.7	
Peak Hour Factor (PHF)	0.60	0.84	0.86	0.00	0.77	0.72	0.90	0.93	0.00	0.95	0.78	0.69	0.89	0.00	0.82	0.46	0.92	0.74	0.25	0.92	0.96	

Peak Hour Pedestrian and Bicyclist Volumes

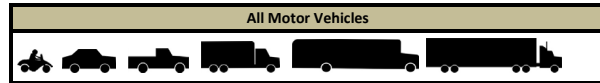
Pedestrians and Bicyclists		Crossing 			Crossing 			Crossing 			Crossing 			Total Ped & Bike Volume
		North Approach			East Approach			South Approach			West Approach			
15-Minute Start Time		STH 175-Appleton Avenue			STH 167 - Lannon Road			STH 175-Appleton Avenue			STH 167 - Lannon Road			
		Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	0	0	0	0	0
MD	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	0	0	0	0	0

Intersection Traffic Volume Report

15-Minute Motor Vehicle Data

STH 175-Appleton Avenue & STH 167 - Lannon Road

Count Basics			Page 5 of 13
Start Date:	Thursday, February 6, 2025	Weekday	Schools in Session
Total Number of Hours Counted:	6	Non-Holiday	No Special Events



15-Minute Motor Vehicle Data

15-Minute Time Period Start Time	From North					From East					From South					From West					15-Min Totals	Hourly Sum	PHF	
	STH 175-Appleton Avenue					STH 167 - Lannon Road					STH 167 -Appleton Avenue					STH 167 - Lannon Road								
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total				
AM Peak Period	6:00 AM	4	4	24	0	32	2	53	7	0	62	1	3	1	0	5	1	39	9	0	49	148	949	0.75
	6:15 AM	16	14	29	0	59	2	85	13	0	100	1	6	1	0	8	3	48	6	0	57	224	1083	0.86
	6:30 AM	16	8	34	0	58	6	91	6	0	103	1	5	0	0	6	2	77	15	0	94	261	1237	0.82
	6:45 AM	16	22	42	0	80	11	92	17	0	120	2	9	0	0	11	2	83	20	0	105	316	1298	0.86
	7:00 AM	15	23	44	0	82	14	97	7	0	118	2	8	1	0	11	2	59	10	0	71	282	1313	0.87
	7:15 AM	14	29	46	0	89	14	137	18	0	169	2	14	1	0	17	4	89	10	0	103	378	1311	0.87
	7:30 AM	14	36	51	0	101	4	93	15	0	112	8	13	1	0	22	2	73	12	0	87	322	1191	0.90
	7:45 AM	9	29	44	0	82	11	79	12	0	102	3	11	1	0	15	3	105	24	0	132	331	1144	0.86
	8:00 AM	16	27	27	0	70	15	70	13	0	98	3	24	1	0	28	4	72	8	0	84	280	1101	0.96
	8:15 AM	16	38	27	0	81	14	50	12	0	76	4	20	0	0	24	6	62	9	0	77	258		
8:30 AM	13	27	36	0	76	22	64	11	0	97	8	22	1	0	31	4	58	9	0	71	275			
8:45 AM	8	43	34	0	85	27	67	10	0	104	6	18	0	0	24	0	67	8	0	75	288			
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Midday Peak Period	10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
PM Peak Period	2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	3:00 PM	26	32	22	0	80	39	98	20	0	157	25	59	2	0	86	3	79	14	0	96	419	1739	0.95
	3:15 PM	19	26	27	0	72	46	111	4	0	161	20	60	2	0	82	0	98	19	0	117	432	1778	0.97
	3:30 PM	20	40	22	0	82	35	102	12	0	149	24	50	4	0	78	2	96	25	0	123	432	1828	0.95
	3:45 PM	23	35	29	0	87	44	99	10	0	153	31	57	6	0	94	3	96	23	0	122	456	1914	0.92
	4:00 PM	31	30	18	0	79	54	117	16	0	187	16	32	7	0	55	3	107	27	0	137	458	1968	0.95
	4:15 PM	15	38	26	0	79	47	111	13	0	171	18	45	7	0	70	6	132	23	1	162	482	1980	0.96
	4:30 PM	34	40	28	0	102	44	107	15	0	166	25	43	7	0	75	2	144	29	0	175	518	1969	0.95
	4:45 PM	12	28	18	0	58	75	96	13	0	184	15	77	5	0	97	0	136	35	0	171	510	1831	0.90
	5:00 PM	21	29	24	0	74	50	121	15	0	186	20	49	6	0	75	3	116	16	0	135	470	1658	0.88
	5:15 PM	17	32	22	0	71	46	107	9	0	162	21	56	7	0	84	6	119	29	0	154	471		
	5:30 PM	15	13	40	0	68	47	101	4	0	152	12	39	3	0	54	1	85	20	0	106	380		
	5:45 PM	9	16	25	0	50	34	81	11	0	126	18	43	7	0	68	2	76	15	0	93	337		
	6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Totals		399	659	739	0	1797	703	2229	283	0	3215	286	763	71	0	1120	64	2116	415	1	2596	8728		

Peak Hour All Vehicle Volume Summary

Hourly Time Period Start Time	From North					From East					From South					From West					Total Hourly Volume	PHF
	STH 175-Appleton Avenue					STH 167 - Lannon Road					STH 175-Appleton Avenue					STH 167 - Lannon Road						
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total		
AM 7:00 AM	52	117	185	0	354	43	406	52	0	501	15	46	4	0	65	11	326	56	0	393	1313	0.87
MD 12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM 4:15 PM	82	135	96	0	313	216	435	56	0	707	78	214	25	0	317	11	528	103	1	643	1980	0.96

Intersection Traffic Volume Report

15-Minute Heavy Vehicle Data

STH 175-Appleton Avenue & STH 167 - Lannon Road

Count Basics		Page 9 of 13	
Start Date:	Thursday, February 6, 2025	Weekday	Schools in Session
Total Number of Hours Counted:	6	Non-Holiday	No Special Events



15-Minute Heavy Vehicle Data

15-Minute Time Period Start Time		From North					From East					From South					From West					15-Min Totals	Hourly Sum	
		STH 175-Appleton Avenue					STH 167 - Lannon Road					STH 175-Appleton Avenue					STH 167 - Lannon Road							
		Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total			
AM Peak Period	6:00 AM	0	0	0	0	0	0	2	0	0	2	0	0	1	0	1	0	1	1	0	0	2	5	39
	6:15 AM	2	0	0	0	2	0	4	1	0	5	0	1	1	0	2	0	5	0	0	0	5	14	53
	6:30 AM	0	0	0	0	0	1	8	1	0	10	0	0	0	0	0	0	1	0	0	0	1	11	58
	6:45 AM	0	0	0	0	0	1	3	0	0	4	0	1	0	0	1	0	4	0	0	0	4	9	61
	7:00 AM	1	1	1	0	3	1	12	0	0	13	0	0	0	0	0	0	3	0	0	0	3	19	75
	7:15 AM	0	0	0	0	0	0	10	1	0	11	1	0	0	0	1	0	7	0	0	0	7	19	77
	7:30 AM	0	0	1	0	1	0	8	1	0	9	1	0	0	0	1	0	2	1	0	0	3	14	78
	7:45 AM	1	2	0	0	3	2	3	0	0	5	2	1	0	0	3	1	11	0	0	0	12	23	87
	8:00 AM	0	1	0	0	1	2	6	0	0	8	1	0	1	0	2	0	10	0	0	0	10	21	86
	8:15 AM	2	3	1	0	6	0	3	1	0	4	1	1	0	0	2	1	7	0	0	0	8	20	
	8:30 AM	1	0	1	0	2	1	11	2	0	14	0	0	0	0	0	0	6	1	0	0	7	23	
	8:45 AM	0	0	1	0	1	0	7	2	0	9	1	1	0	0	2	0	9	1	0	0	10	22	
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Midday Peak Period	10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
PM Peak Period	2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	3:00 PM	0	0	0	0	0	2	6	2	0	10	1	0	0	0	1	1	4	0	0	0	5	16	66
	3:15 PM	1	1	1	0	3	1	7	0	0	8	0	3	0	0	3	0	9	1	0	0	10	24	65
	3:30 PM	0	0	0	0	0	0	4	1	0	5	2	1	1	0	4	0	5	0	0	0	5	14	49
	3:45 PM	0	0	0	0	0	1	3	2	0	6	2	0	0	0	2	0	4	0	0	0	4	12	43
	4:00 PM	0	1	1	0	2	0	5	0	0	5	1	0	0	0	1	0	6	1	0	0	7	15	42
	4:15 PM	0	1	1	0	2	0	3	0	0	3	1	0	0	0	1	0	2	0	0	0	2	8	33
	4:30 PM	0	0	0	0	0	1	3	1	0	5	0	0	1	0	1	0	2	0	0	0	2	8	31
	4:45 PM	0	0	0	0	0	2	6	1	0	9	1	0	0	0	1	0	1	0	0	0	1	11	30
	5:00 PM	0	0	0	0	0	1	2	0	0	3	0	1	0	0	1	0	2	0	0	0	2	6	23
	5:15 PM	0	0	1	0	1	0	2	0	0	2	2	0	0	0	2	0	1	0	0	0	1	6	
	5:30 PM	0	0	1	0	1	0	2	2	0	4	0	0	0	0	0	0	2	0	0	0	2	7	
	5:45 PM	0	0	0	0	0	1	2	0	0	3	0	0	0	0	0	0	1	0	0	0	1	4	
	6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Totals		8	10	10	0	28	17	122	18	0	157	17	10	5	0	32	3	105	6	0	0	114	331	

Peak Hour Heavy Vehicle Volume Summary

Peak Hour Heavy Vehicle Volume Summary																					
Hourly Time Period	From North					From East					From South					From West					Total Hourly Volume
	STH 175-Appleton Avenue					STH 167 - Lannon Road					STH 175-Appleton Avenue					STH 167 - Lannon Road					
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	
AM 7:00 AM	2	3	2	0	7	3	33	2	0	38	4	1	0	0	5	1	23	1	0	25	
MD 12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
PM 4:15 PM	0	1	1	0	2	4	14	2	0	20	2	1	1	0	4	0	7	0	0	7	

APPENDIX B

INTERSECTION SIGHT DISTANCE CALCULATION WORKSHEETS

ISD CALCULATIONS (TWSC)

Performed by: TADI - TSC Date: 5/2/2025
 Intersection: Lannon Road (CTH Y) & Site Access "A"
 Community: Germantown, Wisconsin

Mainline Name: Lannon Road (CTH Y)
 Sidestreet Name: Site Access "A"

Left-In Allowed?	Yes	P-vehicle Design Length:	19.0	feet (P = 19.0. Overwrite if other design veh)
Left-Out Allowed?	Yes	SU-vehicle Design Length:	39.5	feet (SU-40 = 39.5. Overwrite if other design veh)
Right-In Allowed?	Yes	WB-vehicle Design Length:	73.5	feet (WB-67 = 73.5. Overwrite if other design veh)
Right-Out Allowed?	Yes			
Through-Out Allowed?	No			
Design Speed from Left:	45	mph	P	SU
Design Speed from Right:	45	mph	WB	
Median Width:	18	feet	x	x
Minor Street Approach Grade:	0.0%	Design Vehicles: (place an "X")		
Number of Near Side Right & Bike:	0.00	If a minor street vehicle approaches the major street at greater than 3%, enter grade.		
Number of Near Side Thru:	1.83	equivalent 12-ft lanes. Include tapers, auxiliary lanes, parking lanes, and bicycle accommodations.		
Number of Far Side Thru:	1.83	equivalent 12-ft lanes.		
Number of Far Side Right & Bike:	0.00	equivalent 12-ft lanes. Include tapers, auxiliary lanes, parking lanes, and bicycle accommodations.		
AASHTO or WisDOT:	AASHTO			

ISD CASE B1: Left Turn from Minor Street or Median (driver looking right)

AASHTO MINIMUM ISD				WISDOT UPPER MINIMUM ISD		
	P	SU	WB	P	SU	WB
Base Time Gap, sec:	7.50	9.50	11.50	10.00	12.00	13.00
Additional Time Gap 1, sec:	1.17	1.63	1.63	1.17	1.63	1.63
Additional Time Gap 2, sec:	0.00	0.00	0.00	0.00	0.00	0.00
Total Time Gap, sec:	8.67	11.13	13.13	11.17	13.63	14.63
Case B1 ISD, feet:	572.0	734.8	866.8	737.0	899.8	965.8
Rounded Case B1 ISD, feet:	575	735	870	740	900	970

ISD CASE B2: Right Turn from Minor Street (driver looking left)

AASHTO MINIMUM ISD				WISDOT UPPER MINIMUM ISD		
	P	SU	WB	P	SU	WB
Base Time Gap, sec:	6.50	8.50	10.50	8.00	10.00	12.00
Additional Time Gap 1, sec:	0.00	0.00	0.00	0.42	0.00	0.00
Additional Time Gap 2, sec:	0.00	0.00	0.00	0.00	0.00	0.00
Total Time Gap, sec:	6.50	8.50	10.50	8.42	10.00	12.00
Case B2 ISD, feet:	429.0	561.0	693.0	555.5	660.0	792.0
Rounded Case B2 ISD, feet:	430	565	695	560	665	795

ISD CASE B3a: Crossing from Minor Street Traffic from Left (driver looking left)

AASHTO MINIMUM ISD				WISDOT UPPER MINIMUM ISD		
	P	SU	WB	P	SU	WB
Base Time Gap, sec:	6.50	8.50	10.50	7.00	10.00	13.00
Additional Time Gap 1, sec:	0.00	0.00	0.00	0.00	0.00	0.00
Additional Time Gap 2, sec:	0.00	0.00	0.00	0.00	0.00	0.00
Total Time Gap, sec:	6.50	8.50	10.50	7.00	10.00	13.00
Case B3a ISD, feet:	429.0	561.0	693.0	462.0	660.0	858.0
Rounded Case B3a ISD, feet:	430	565	695	465	665	860

ISD CASE B3b: Crossing from Minor Street or Median (driver looking right)

AASHTO MINIMUM ISD				WISDOT UPPER MINIMUM ISD		
	P	SU	WB	P	SU	WB
Base Time Gap, sec:	6.50	8.50	10.50	7.00	10.00	13.00
Additional Time Gap 1, sec:	-6.50	-8.50	-10.50	-7.00	-10.00	-13.00
Additional Time Gap 2, sec:	0.00	0.00	0.00	0.00	0.00	0.00
Total Time Gap, sec:	0.00	0.00	0.00	0.00	0.00	0.00
Case B3b ISD, feet:	0.0	0.0	0.0	0.0	0.0	0.0
Rounded Case B3b ISD, feet:	0	0	0	0	0	0

ISD CASE F: Left from Major to Minor (driver looking to left of access towards oncoming traffic)

AASHTO MINIMUM ISD				WISDOT UPPER MINIMUM ISD		
	P	SU	WB	P	SU	WB
Base Time Gap, sec:	5.50	6.50	7.50	8.00	8.00	8.00
Additional Time Gap 1, sec:	0.42	0.58	0.58	0.42	0.58	0.58
Additional Time Gap 2, sec:	N/A	N/A	N/A	N/A	N/A	N/A
Total Time Gap, sec:	5.92	7.08	8.08	8.42	8.58	8.58
Case F ISD, feet:	390.5	467.5	533.5	555.5	566.5	566.5
Rounded Case F ISD, feet:	395	470	535	560	570	570

ISD CONTROLLING DISTANCES:

AASHTO MINIMUM ISD				WISDOT UPPER MINIMUM ISD		
	P	SU	WB	P	SU	WB
To Left of Access:	430'	565'	695'	560'	665'	860'
To Right of Access:	575'	735'	870'	740'	900'	970'
Left-Turn from Mainline:	395'	470'	535'	560'	570'	570'

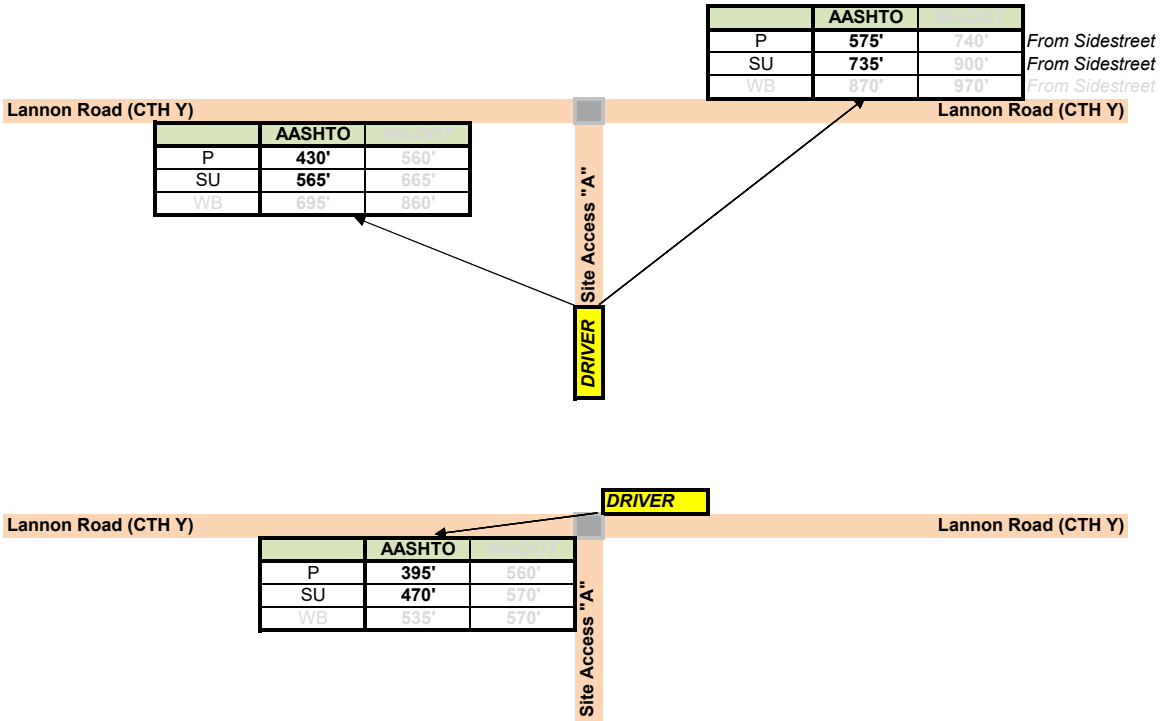
ISD CALCULATIONS (TWSC)

Performed by: TADI - TSC Date: 5/2/2025
 Intersection: Lannon Road (CTH Y) & Site Access "A"
 Community: Germantown, Wisconsin

Eye Height (start of Arrows): 3.5-ft for P, 7.6-ft for SU & WB
 Object Height (head of Arrows): 3.5-ft
 Eye Location: 14.5-ft from edge of traveled way



Special Instructions



SSD CALCULATIONS

	EB	WB	NB	SB	
Design Speed:	45	45	45	45	
Deceleration (ft/s ²):	11.2	11.2	11.2	11.2	Default rate is 11.2 ft/s ² per AASHTO GDHS
Estimated Grade (%):	0.0%	0.0%	0.0%	0.0%	Positive is uphill, negative is downhill
Brake Reaction Time (s):	2.5	2.5	2.5	2.5	Default rate is 2.5s per AASHTO GDHS
Brake Reaction (ft):	0.0	0.0	165.0	165.0	
Braking Distance (ft):	0.0	0.0	194.1	194.1	
Calculated SSD (ft):	0.0	0.0	359.1	359.1	
Rounded SSD (ft):	0	0	360	360	

Eye Height (upstream of object to be seen): 3.5-ft
 Object Height (downstream of motorist): 2.0-ft

Special Instructions

ISD CALCULATIONS (TWSC)

Performed by: TADI - TSC Date: 5/2/2025
 Intersection: County Line Road (CTH Q) & Site Access "B"
 Community: Germantown, Wisconsin

Mainline Name: County Line Road (CTH Q)
 Sidestreet Name: Site Access "B"

Left-In Allowed?	Yes	P-vehicle Design Length:	19.0	feet (P = 19.0. Overwrite if other design veh)
Left-Out Allowed?	Yes	SU-vehicle Design Length:	39.5	feet (SU-40 = 39.5. Overwrite if other design veh)
Right-In Allowed?	Yes	WB-vehicle Design Length:	73.5	feet (WB-67 = 73.5. Overwrite if other design veh)
Right-Out Allowed?	Yes			
Through-Out Allowed?	Yes			
Design Speed from Left:	45	mph	P	SU
Design Speed from Right:	45	mph	Design Vehicles:	WB
Median Width:	26	feet	x	x
Minor Street Approach Grade:	0.0%	(place an "X")		
Number of Near Side Right & Bike:	0.50	If a minor street vehicle approaches the major street at greater than 3%, enter grade.		
Number of Near Side Thru:	2.00	equivalent 12-ft lanes. Include tapers, auxiliary lanes, parking lanes, and bicycle accommodations.		
Number of Far Side Thru:	2.00	equivalent 12-ft lanes.		
Number of Far Side Right & Bike:	0.50	equivalent 12-ft lanes. Include tapers, auxiliary lanes, parking lanes, and bicycle accommodations.		
AASHTO or WisDOT:	AASHTO			

ISD CASE B1: Left Turn from Minor Street or Median (driver looking right)

AASHTO MINIMUM ISD			WISDOT UPPER MINIMUM ISD		
P	SU	WB	P	SU	WB
Base Time Gap, sec:	7.50	9.50	11.50	10.00	12.00
Additional Time Gap 1, sec:	0.75	2.57	2.57	0.75	2.57
Additional Time Gap 2, sec:	0.00	0.00	0.00	0.00	0.00
Total Time Gap, sec:	8.25	12.07	14.07	10.75	14.57
Case B1 ISD, feet:	544.5	796.4	928.4	709.5	961.4
Rounded Case B1 ISD, feet:	545	800	930	710	965

ISD CASE B2: Right Turn from Minor Street (driver looking left)

AASHTO MINIMUM ISD			WISDOT UPPER MINIMUM ISD		
P	SU	WB	P	SU	WB
Base Time Gap, sec:	6.50	8.50	10.50	8.00	10.00
Additional Time Gap 1, sec:	0.25	0.35	0.35	0.75	0.35
Additional Time Gap 2, sec:	0.00	0.00	0.00	0.00	0.00
Total Time Gap, sec:	6.75	8.85	10.85	8.75	10.35
Case B2 ISD, feet:	445.5	584.1	716.1	577.5	683.1
Rounded Case B2 ISD, feet:	450	585	720	580	685

ISD CASE B3a: Crossing from Minor Street Traffic from Left (driver looking left)

AASHTO MINIMUM ISD			WISDOT UPPER MINIMUM ISD		
P	SU	WB	P	SU	WB
Base Time Gap, sec:	6.50	8.50	10.50	7.00	10.00
Additional Time Gap 1, sec:	0.25	0.35	0.35	0.25	0.35
Additional Time Gap 2, sec:	0.00	0.00	0.00	0.00	0.00
Total Time Gap, sec:	6.75	8.85	10.85	7.25	10.35
Case B3a ISD, feet:	445.5	584.1	716.1	478.5	683.1
Rounded Case B3a ISD, feet:	450	585	720	480	685

ISD CASE B3b: Crossing from Minor Street or Median (driver looking right)

AASHTO MINIMUM ISD			WISDOT UPPER MINIMUM ISD		
P	SU	WB	P	SU	WB
Base Time Gap, sec:	6.50	8.50	10.50	7.00	10.00
Additional Time Gap 1, sec:	1.50	3.62	3.62	1.50	3.62
Additional Time Gap 2, sec:	0.00	0.00	0.00	0.00	0.00
Total Time Gap, sec:	8.00	12.12	14.12	8.50	13.62
Case B3b ISD, feet:	528.0	799.7	931.7	561.0	898.7
Rounded Case B3b ISD, feet:	530	800	935	565	900

ISD CASE F: Left from Major to Minor (driver looking to left of access towards oncoming traffic)

AASHTO MINIMUM ISD			WISDOT UPPER MINIMUM ISD		
P	SU	WB	P	SU	WB
Base Time Gap, sec:	5.50	6.50	7.50	8.00	8.00
Additional Time Gap 1, sec:	0.75	1.05	1.05	0.75	1.05
Additional Time Gap 2, sec:	N/A	N/A	N/A	N/A	N/A
Total Time Gap, sec:	6.25	7.55	8.55	8.75	9.05
Case F ISD, feet:	412.5	498.3	564.3	577.5	597.3
Rounded Case F ISD, feet:	415	500	565	580	600

ISD CONTROLLING DISTANCES:

AASHTO MINIMUM ISD			WISDOT UPPER MINIMUM ISD		
	P	SU		P	SU
To Left of Access:	450'	585'	720'	580'	685'
To Right of Access:	545'	800'	935'	710'	965'
Left-Turn from Mainline:	415'	500'	565'	580'	600'

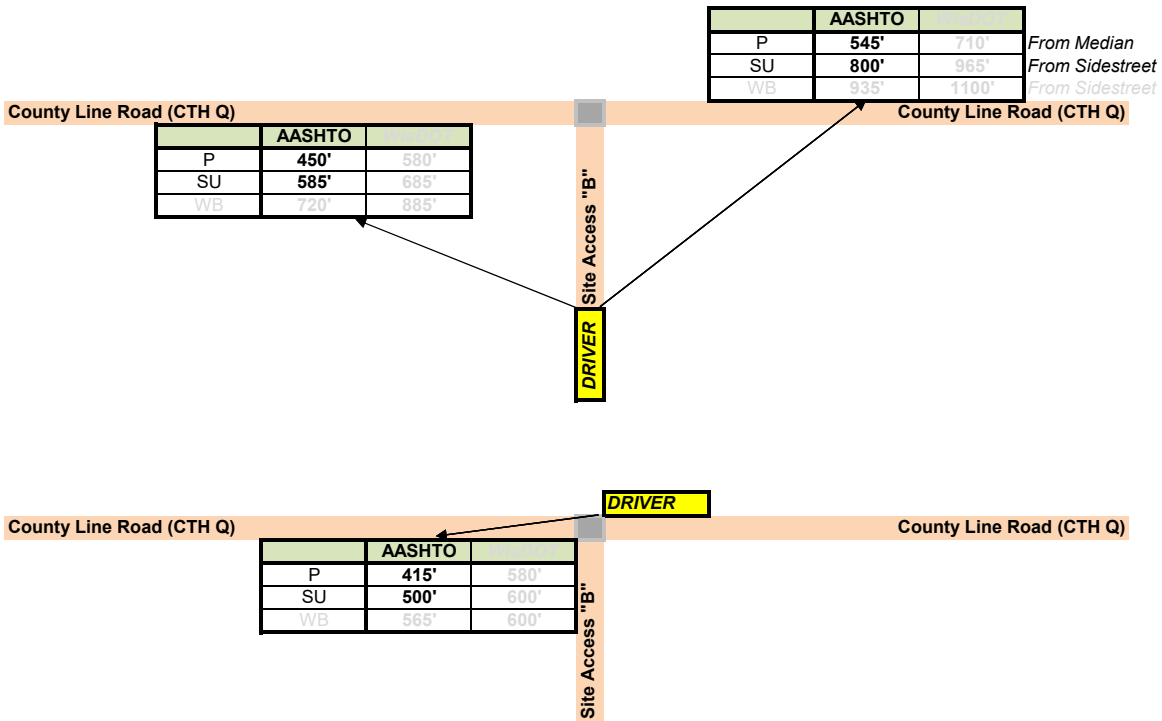
ISD CALCULATIONS (TWSC)

Performed by: TADI - TSC Date: 5/2/2025
 Intersection: County Line Road (CTH Q) & Site Access "B"
 Community: Germantown, Wisconsin

Eye Height (start of Arrows): 3.5-ft for P, 7.6-ft for SU & WB
 Object Height (head of Arrows): 3.5-ft
 Eye Location: 14.5-ft from edge of traveled way



Special Instructions



SSD CALCULATIONS

	EB	WB	NB	SB	
Design Speed:	45	45			
Deceleration (ft/s ²):	11.2	11.2	11.2	11.2	Default rate is 11.2 ft/s ² per AASHTO GDHS
Estimated Grade (%):	0.0%	0.0%	0.0%	0.0%	Positive is uphill, negative is downhill
Brake Reaction Time (s):	2.5	2.5	2.5	2.5	Default rate is 2.5s per AASHTO GDHS
Brake Reaction (ft):	165.0	165.0	0.0	0.0	
Braking Distance (ft):	194.1	194.1	0.0	0.0	
Calculated SSD (ft):	359.1	359.1	0.0	0.0	
Rounded SSD (ft):	360	360	0	0	

Eye Height (upstream of object to be seen): 3.5-ft
 Object Height (downstream of motorist): 2.0-ft

Special Instructions

ISD CALCULATIONS (TWSC)

Performed by: TADI - TSC Date: 5/2/2025
 Intersection: County Line Road (CTH Q) & Site Access "C"
 Community: Germantown, Wisconsin

Mainline Name: County Line Road (CTH Q)
 Sidestreet Name: Site Access "C"

Left-In Allowed?	No	P-vehicle Design Length:	19.0	feet (P = 19.0. Overwrite if other design veh)
Left-Out Allowed?	No	SU-vehicle Design Length:	39.5	feet (SU-40 = 39.5. Overwrite if other design veh)
Right-In Allowed?	Yes	WB-vehicle Design Length:	73.5	feet (WB-67 = 73.5. Overwrite if other design veh)
Right-Out Allowed?	Yes			
Through-Out Allowed?	No			
Design Speed from Left:	45	mph	P	SU
Design Speed from Right:	45	mph	Design Vehicles:	x
Median Width:	26	feet		WB
Minor Street Approach Grade:	0.0%	If a minor street vehicle approaches the major street at greater than 3%, enter grade.		
Number of Near Side Right & Bike:	0.50	equivalent 12-ft lanes. Include tapers, auxiliary lanes, parking lanes, and bicycle accommodations.		
Number of Near Side Thru:	2.00	equivalent 12-ft lanes.		
Number of Far Side Thru:	2.00	equivalent 12-ft lanes.		
Number of Far Side Right & Bike:	0.50	equivalent 12-ft lanes. Include tapers, auxiliary lanes, parking lanes, and bicycle accommodations.		
AASHTO or WisDOT:	AASHTO			

ISD CASE B1: Left Turn from Minor Street or Median (driver looking right)

AASHTO MINIMUM ISD				WISDOT UPPER MINIMUM ISD		
	P	SU	WB	P	SU	WB
Base Time Gap, sec:	7.50	9.50	11.50	10.00	12.00	13.00
Additional Time Gap 1, sec:	-7.50	-9.50	-11.50	-10.00	-12.00	-13.00
Additional Time Gap 2, sec:	0.00	0.00	0.00	0.00	0.00	0.00
Total Time Gap, sec:	0.00	0.00	0.00	0.00	0.00	0.00
Case B1 ISD, feet:	0.0	0.0	0.0	0.0	0.0	0.0
Rounded Case B1 ISD, feet:	0	0	0	0	0	0

ISD CASE B2: Right Turn from Minor Street (driver looking left)

AASHTO MINIMUM ISD				WISDOT UPPER MINIMUM ISD		
	P	SU	WB	P	SU	WB
Base Time Gap, sec:	6.50	8.50	10.50	8.00	10.00	12.00
Additional Time Gap 1, sec:	0.25	0.35	0.35	0.75	0.35	0.35
Additional Time Gap 2, sec:	0.00	0.00	0.00	0.00	0.00	0.00
Total Time Gap, sec:	6.75	8.85	10.85	8.75	10.35	12.35
Case B2 ISD, feet:	445.5	584.1	716.1	577.5	683.1	815.1
Rounded Case B2 ISD, feet:	450	585	720	580	685	820

ISD CASE B3a: Crossing from Minor Street Traffic from Left (driver looking left)

AASHTO MINIMUM ISD				WISDOT UPPER MINIMUM ISD		
	P	SU	WB	P	SU	WB
Base Time Gap, sec:	6.50	8.50	10.50	7.00	10.00	13.00
Additional Time Gap 1, sec:	-6.50	-8.50	-10.50	-7.00	-10.00	-13.00
Additional Time Gap 2, sec:	0.00	0.00	0.00	0.00	0.00	0.00
Total Time Gap, sec:	0.00	0.00	0.00	0.00	0.00	0.00
Case B3a ISD, feet:	0.0	0.0	0.0	0.0	0.0	0.0
Rounded Case B3a ISD, feet:	0	0	0	0	0	0

ISD CASE B3b: Crossing from Minor Street or Median (driver looking right)

AASHTO MINIMUM ISD				WISDOT UPPER MINIMUM ISD		
	P	SU	WB	P	SU	WB
Base Time Gap, sec:	6.50	8.50	10.50	7.00	10.00	13.00
Additional Time Gap 1, sec:	-6.50	-8.50	-10.50	-7.00	-10.00	-13.00
Additional Time Gap 2, sec:	0.00	0.00	0.00	0.00	0.00	0.00
Total Time Gap, sec:	0.00	0.00	0.00	0.00	0.00	0.00
Case B3b ISD, feet:	0.0	0.0	0.0	0.0	0.0	0.0
Rounded Case B3b ISD, feet:	0	0	0	0	0	0

ISD CASE F: Left from Major to Minor (driver looking to left of access towards oncoming traffic)

AASHTO MINIMUM ISD				WISDOT UPPER MINIMUM ISD		
	P	SU	WB	P	SU	WB
Base Time Gap, sec:	5.50	6.50	7.50	8.00	8.00	8.00
Additional Time Gap 1, sec:	-5.50	-6.50	-7.50	-8.00	-8.00	-8.00
Additional Time Gap 2, sec:	N/A	N/A	N/A	N/A	N/A	N/A
Total Time Gap, sec:	0.00	0.00	0.00	0.00	0.00	0.00
Case F ISD, feet:	0.0	0.0	0.0	0.0	0.0	0.0
Rounded Case F ISD, feet:	0	0	0	0	0	0

ISD CONTROLLING DISTANCES:

AASHTO MINIMUM ISD				WISDOT UPPER MINIMUM ISD		
	P	SU	WB	P	SU	WB
To Left of Access:	450'	585'	720'	580'	685'	820'
To Right of Access:	0'	0'	0'	0'	0'	0'
Left-Turn from Mainline:	0'	0'	0'	0'	0'	0'

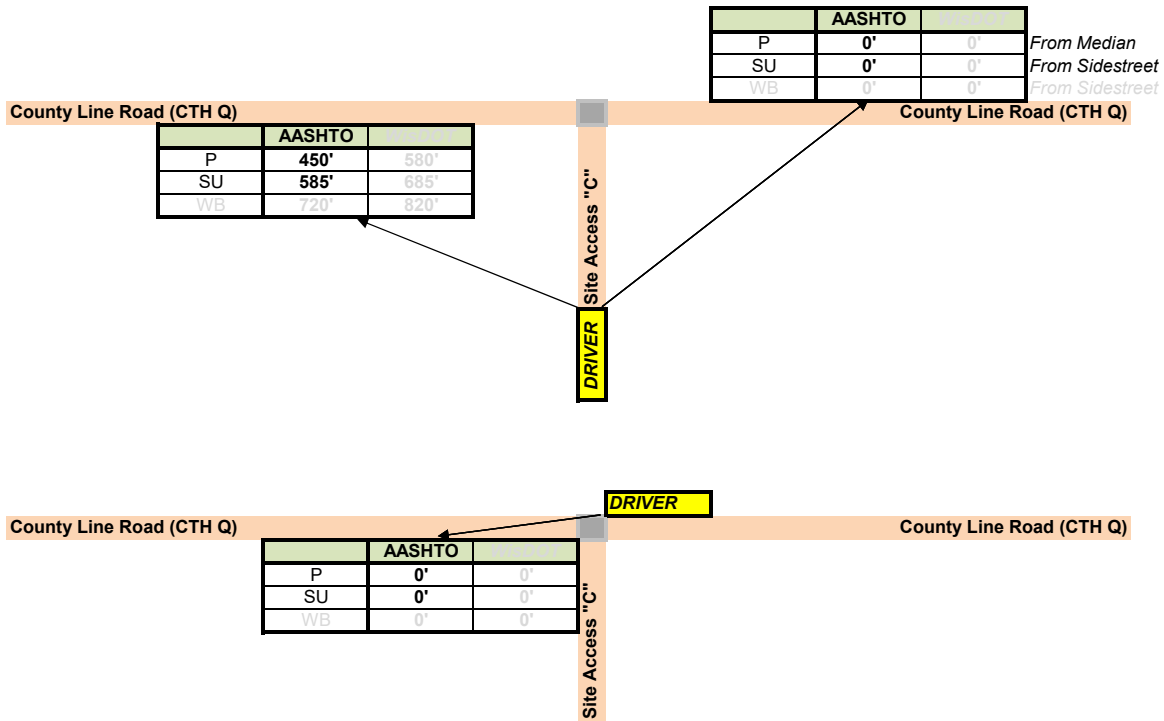
ISD CALCULATIONS (TWSC)

Performed by: TADI - TSC Date: 5/2/2025
 Intersection: County Line Road (CTH Q) & Site Access "C"
 Community: Germantown, Wisconsin

Eye Height (start of Arrows): 3.5-ft for P, 7.6-ft for SU & WB
 Object Height (head of Arrows): 3.5-ft
 Eye Location: 14.5-ft from edge of traveled way



Special Instructions



SSD CALCULATIONS

	EB	WB	NB	SB	
Design Speed:	45	45			
Deceleration (ft/s ²):	11.2	11.2	11.2	11.2	Default rate is 11.2 ft/s ² per AASHTO GDHS
Estimated Grade (%):	0.0%	0.0%	0.0%	0.0%	Positive is uphill, negative is downhill
Brake Reaction Time (s):	2.5	2.5	2.5	2.5	Default rate is 2.5s per AASHTO GDHS
Brake Reaction (ft):	165.0	165.0	0.0	0.0	
Braking Distance (ft):	194.1	194.1	0.0	0.0	
Calculated SSD (ft):	359.1	359.1	0.0	0.0	
Rounded SSD (ft):	360	360	0	0	

Eye Height (upstream of object to be seen): 3.5-ft
 Object Height (downstream of motorist): 2.0-ft

Special Instructions

APPENDIX C

SYNCHRO TRAFFIC/CAPACITY ANALYSIS WORKSHEETS

EXISTING TRAFFIC VOLUMES

Lanes, Volumes, Timings
100: Lannon Road (CTH Y) & County Line Rd (CTH Q)

Existing Traffic
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	290	475	40	10	135	15	10	120	25	10	165	355
Future Volume (vph)	290	475	40	10	135	15	10	120	25	10	165	355
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	165		0	240		0	100		0	135		275
Storage Lanes	2		0	1		0	1		0	1		1
Taper Length (ft)	100			100			100			100		
Right Turn on Red			No			No			No			No
Link Speed (mph)		50			40			40			40	
Link Distance (ft)		849			643			305			759	
Travel Time (s)		11.6			11.0			5.2			12.9	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	62%
Heavy Vehicles (%)	6%	6%	6%	10%	10%	10%	7%	7%	7%	8%	8%	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)	309	548	0	11	160	0	11	155	0	11	176	234
Turn Type	Prot	NA		Prot	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases							8			4		4
Detector Phase	1	6		5	2		3	8		7	4	4
Switch Phase												
Minimum Initial (s)	7.0	15.0		7.0	15.0		6.0	8.0		6.0	8.0	8.0
Minimum Split (s)	12.2	21.7		11.9	21.2		10.7	14.2		10.7	14.5	14.5
Total Split (s)	25.2	50.7		19.9	51.2		19.7	31.2		19.7	31.5	31.5
Total Split (%)	19.7%	39.7%		15.6%	40.1%		15.4%	24.5%		15.4%	24.7%	24.7%
Maximum Green (s)	20.0	44.0		15.0	45.0		15.0	25.0		15.0	25.0	25.0
Yellow Time (s)	3.5	4.7		3.5	3.9		3.5	3.9		3.5	3.6	3.6
All-Red Time (s)	1.7	2.0		1.4	2.3		1.2	2.3		1.2	2.9	2.9
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)	5.2	6.7		4.9	6.2		4.7	6.2		4.7	6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	1.5	5.0		1.5	5.0		1.5	1.5		1.5	1.5	1.5
Minimum Gap (s)	1.5	2.0		1.5	2.0		1.5	1.5		1.5	1.5	1.5
Time Before Reduce (s)	20.0	28.0		15.0	33.0		15.0	25.0		15.0	25.0	25.0
Time To Reduce (s)	0.0	17.0		0.0	12.0		0.0	0.0		0.0	0.0	0.0
Recall Mode	None	Min		None	Min		None	None		None	None	None
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.56	0.34		0.06	0.19		0.03	0.19		0.03	0.21	0.64
Control Delay (s/veh)	29.5	13.6		31.8	21.7		15.1	19.8		15.1	20.1	30.5

3414 Germantown CTH Q Residential TIA
TADI - TSC

Synchro 12 Report
Page 1

Lanes, Volumes, Timings

100: Lannon Road (CTH Y) & County Line Rd (CTH Q)

Existing Traffic

AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	29.5	13.6		31.8	21.7		15.1	19.8		15.1	20.1	30.5
Queue Length 50th (ft)	50	52		3	22		3	22		3	25	71
Queue Length 95th (ft)	122	181		22	66		13	57		13	64	186
Internal Link Dist (ft)		769			563			225			679	
Turn Bay Length (ft)	165			240			100			135		275
Base Capacity (vph)	1108	2806		413	2442		502	1395		499	1403	627
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	0.28	0.20		0.03	0.07		0.02	0.11		0.02	0.13	0.37

Intersection Summary

Area Type: Other

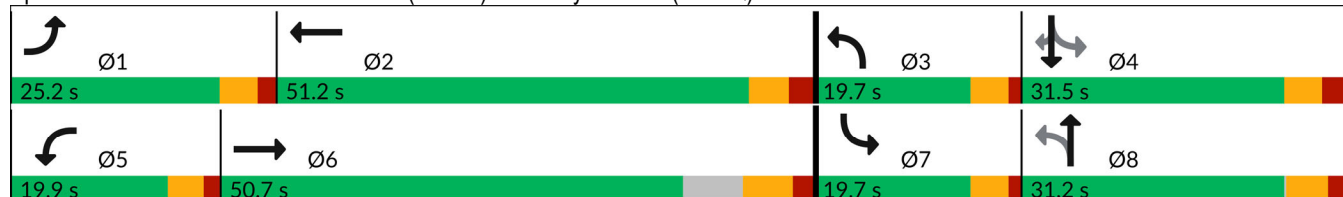
Cycle Length: 127.6

Actuated Cycle Length: 62

Natural Cycle: 65

Control Type: Actuated-Uncoordinated

Splits and Phases: 100: Lannon Road (CTH Y) & County Line Rd (CTH Q)



HCM 7th Signalized Intersection Summary 100: Lannon Road (CTH Y) & County Line Rd (CTH Q)

Existing Traffic
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	290	475	40	10	135	15	10	120	25	10	165	355
Future Volume (veh/h)	290	475	40	10	135	15	10	120	25	10	165	355
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1811	1811	1811	1752	1752	1752	1796	1796	1796	1781	1781	1781
Adj Flow Rate, veh/h	309	505	43	11	144	16	11	128	27	11	176	234
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	6	6	6	10	10	10	7	7	7	8	8	8
Cap, veh/h	427	1200	102	33	788	86	328	547	112	335	657	293
Arrive On Green	0.13	0.37	0.37	0.02	0.26	0.26	0.02	0.19	0.19	0.02	0.19	0.19
Sat Flow, veh/h	3346	3210	273	1668	3025	332	1711	2819	580	1697	3385	1510
Grp Volume(v), veh/h	309	270	278	11	78	82	11	76	79	11	176	234
Grp Sat Flow(s),veh/h/ln	1673	1721	1762	1668	1664	1692	1711	1706	1692	1697	1692	1510
Q Serve(g_s), s	5.1	6.7	6.8	0.4	2.1	2.2	0.3	2.2	2.3	0.3	2.5	8.5
Cycle Q Clear(g_c), s	5.1	6.7	6.8	0.4	2.1	2.2	0.3	2.2	2.3	0.3	2.5	8.5
Prop In Lane	1.00		0.15	1.00		0.20	1.00		0.34	1.00		1.00
Lane Grp Cap(c), veh/h	427	643	658	33	433	441	328	331	328	335	657	293
V/C Ratio(X)	0.72	0.42	0.42	0.34	0.18	0.19	0.03	0.23	0.24	0.03	0.27	0.80
Avail Cap(c_a), veh/h	1162	1314	1346	435	1300	1322	744	741	734	748	1469	655
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.1	13.4	13.4	27.9	16.5	16.5	18.1	19.6	19.6	18.1	19.7	22.1
Incr Delay (d2), s/veh	0.9	0.9	0.9	2.2	0.4	0.4	0.0	0.1	0.1	0.0	0.1	1.9
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	2.2	2.2	0.2	0.7	0.8	0.1	0.8	0.8	0.1	0.9	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	25.0	14.3	14.3	30.1	17.0	17.0	18.1	19.7	19.8	18.1	19.8	24.1
LnGrp LOS	C	B	B	C	B	B	B	B	B	B	B	C
Approach Vol, veh/h	857			171			166			421		
Approach Delay, s/veh	18.2			17.8			19.6			22.1		
Approach LOS	B			B			B			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.6	21.7	5.7	17.7	6.0	28.2	5.7	17.7				
Change Period (Y+Rc), s	5.2	* 6.7	4.7	6.5	4.9	6.7	4.7	* 6.5				
Max Green Setting (Gmax), s	20.0	* 45	15.0	25.0	15.0	44.0	15.0	* 25				
Max Q Clear Time (g_c+l1), s	7.1	4.2	2.3	10.5	2.4	8.8	2.3	4.3				
Green Ext Time (p_c), s	0.3	1.8	0.0	0.7	0.0	6.5	0.0	0.3				
Intersection Summary												
HCM 7th Control Delay, s/veh	19.3											
HCM 7th LOS	B											
Notes												
* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.												

Lanes, Volumes, Timings
200: Club Circle Drive & County Line Rd (CTH Q)

Existing Traffic
AM Peak Hour

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↘	↑↑	↖	
Traffic Volume (vph)	510	1	1	160	1	1
Future Volume (vph)	510	1	1	160	1	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	125		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			100		100	
Link Speed (mph)	40			40	25	
Link Distance (ft)	643			420	561	
Travel Time (s)	11.0			7.2	15.3	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	5%	5%	12%	12%	1%	1%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	601	0	1	188	2	0
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

HCM 7th TWSC
200: Club Circle Drive & County Line Rd (CTH Q)

Existing Traffic
AM Peak Hour

Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↓	↑↑	↓	
Traffic Vol, veh/h	510	1	1	160	1	1
Future Vol, veh/h	510	1	1	160	1	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	125	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	5	5	12	12	1	1
Mvmt Flow	600	1	1	188	1	1
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	601	0	697	301
Stage 1	-	-	-	-	601	-
Stage 2	-	-	-	-	96	-
Critical Hdwy	-	-	4.34	-	6.82	6.92
Critical Hdwy Stg 1	-	-	-	-	5.82	-
Critical Hdwy Stg 2	-	-	-	-	5.82	-
Follow-up Hdwy	-	-	2.32	-	3.51	3.31
Pot Cap-1 Maneuver	-	-	907	-	377	699
Stage 1	-	-	-	-	513	-
Stage 2	-	-	-	-	919	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	907	-	377	699
Mov Cap-2 Maneuver	-	-	-	-	377	-
Stage 1	-	-	-	-	513	-
Stage 2	-	-	-	-	918	-
Approach	EB		WB		NB	
HCM Ctrl Dly, s/v	0		0.06		12.39	
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	490	-	-	907	-	
HCM Lane V/C Ratio	0.005	-	-	0.001	-	
HCM Ctrl Dly (s/v)	12.4	-	-	9	-	
HCM Lane LOS	B	-	-	A	-	
HCM 95th %tile Q(veh)	0	-	-	0	-	

Lanes, Volumes, Timings
300: Woodside Lane & County Line Rd (CTH Q)

Existing Traffic
AM Peak Hour

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↘	↑↑	↖	
Traffic Volume (vph)	510	1	1	155	5	10
Future Volume (vph)	510	1	1	155	5	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	115		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			100		100	
Link Speed (mph)	40			40	25	
Link Distance (ft)	420			640	536	
Travel Time (s)	7.2			10.9	14.6	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	5%	5%	13%	13%	7%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	594	0	1	180	18	0
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

HCM 7th TWSC
300: Woodside Lane & County Line Rd (CTH Q)

Existing Traffic
AM Peak Hour

Intersection						
Int Delay, s/veh	0.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↑	↑↑	↑	
Traffic Vol, veh/h	510	1	1	155	5	10
Future Vol, veh/h	510	1	1	155	5	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	115	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	5	5	13	13	7	7
Mvmt Flow	593	1	1	180	6	12

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	594	0	686	297
Stage 1	-	-	-	-	594	-
Stage 2	-	-	-	-	92	-
Critical Hdwy	-	-	4.36	-	6.94	7.04
Critical Hdwy Stg 1	-	-	-	-	5.94	-
Critical Hdwy Stg 2	-	-	-	-	5.94	-
Follow-up Hdwy	-	-	2.33	-	3.57	3.37
Pot Cap-1 Maneuver	-	-	906	-	370	684
Stage 1	-	-	-	-	501	-
Stage 2	-	-	-	-	906	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	906	-	370	684
Mov Cap-2 Maneuver	-	-	-	-	370	-
Stage 1	-	-	-	-	501	-
Stage 2	-	-	-	-	905	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.06	11.98
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	533	-	-	906	-
HCM Lane V/C Ratio	0.033	-	-	0.001	-
HCM Ctrl Dly (s/v)	12	-	-	9	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Lanes, Volumes, Timings
400: Wellington Drive & County Line Rd (CTH Q)

Existing Traffic
AM Peak Hour

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↘	↑↑	↘	
Traffic Volume (vph)	515	5	1	150	5	10
Future Volume (vph)	515	5	1	150	5	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	115		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			100		100	
Link Speed (mph)	40			40	30	
Link Distance (ft)	640			450	557	
Travel Time (s)	10.9			7.7	12.7	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	5%	5%	14%	14%	1%	1%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	612	0	1	176	18	0
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

HCM 7th TWSC
400: Wellington Drive & County Line Rd (CTH Q)

Existing Traffic
AM Peak Hour

Intersection						
Int Delay, s/veh	0.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↑	↑↑	↑	
Traffic Vol, veh/h	515	5	1	150	5	10
Future Vol, veh/h	515	5	1	150	5	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	115	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	5	5	14	14	1	1
Mvmt Flow	606	6	1	176	6	12

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	612	0	699	306
Stage 1	-	-	-	-	609	-
Stage 2	-	-	-	-	91	-
Critical Hdwy	-	-	4.38	-	6.82	6.92
Critical Hdwy Stg 1	-	-	-	-	5.82	-
Critical Hdwy Stg 2	-	-	-	-	5.82	-
Follow-up Hdwy	-	-	2.34	-	3.51	3.31
Pot Cap-1 Maneuver	-	-	886	-	376	693
Stage 1	-	-	-	-	508	-
Stage 2	-	-	-	-	926	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	886	-	376	693
Mov Cap-2 Maneuver	-	-	-	-	376	-
Stage 1	-	-	-	-	508	-
Stage 2	-	-	-	-	924	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.06	11.88
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	541	-	-	886	-
HCM Lane V/C Ratio	0.033	-	-	0.001	-
HCM Ctrl Dly (s/v)	11.9	-	-	9.1	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Lanes, Volumes, Timings
500: Crossview Way & County Line Rd (CTH Q)

Existing Traffic
AM Peak Hour

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↘	↑↑	↘	↗
Traffic Volume (vph)	520	5	15	150	1	10
Future Volume (vph)	520	5	15	150	1	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	190		0	0
Storage Lanes		0	1		1	1
Taper Length (ft)			100		100	
Link Speed (mph)	40			40	25	
Link Distance (ft)	330			1511	365	
Travel Time (s)	5.6			25.8	10.0	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	4%	4%	14%	14%	18%	18%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	625	0	18	179	1	12
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

HCM 7th TWSC
500: Crossview Way & County Line Rd (CTH Q)

Existing Traffic
AM Peak Hour

Intersection						
Int Delay, s/veh	0.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↑	↑↑	↑	↑
Traffic Vol, veh/h	520	5	15	150	1	10
Future Vol, veh/h	520	5	15	150	1	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	190	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	4	4	14	14	18	18
Mvmt Flow	619	6	18	179	1	12

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	625
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.38
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.34
Pot Cap-1 Maneuver	-	-	875
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	875
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.84	11.28
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	310	638	-	-	875	-
HCM Lane V/C Ratio	0.004	0.019	-	-	0.02	-
HCM Ctrl Dly (s/v)	16.7	10.7	-	-	9.2	-
HCM Lane LOS	C	B	-	-	A	-
HCM 95th %tile Q(veh)	0	0.1	-	-	0.1	-

Lanes, Volumes, Timings
600: Appleton Ave (STH 175) & County Line Rd (CTH Q)

Existing Traffic
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 			 	
Traffic Volume (vph)	345	340	85	60	175	125	20	105	35	110	145	30
Future Volume (vph)	345	340	85	60	175	125	20	105	35	110	145	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)	0%				0%				0%			
Storage Length (ft)	320			160	170			360	140			310
Storage Lanes	1			1	1			1	1			1
Taper Length (ft)	100			100				100				100
Right Turn on Red			No				No				No	
Link Speed (mph)	35				35				35			
Link Distance (ft)	1686				842				858			
Travel Time (s)	32.8				16.4				16.7			
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Growth Factor	100%	100%	62%	100%	100%	62%	100%	100%	62%	100%	100%	62%
Heavy Vehicles (%)	4%	4%	4%	5%	5%	5%	3%	3%	3%	4%	4%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)	0%				0%				0%			
Shared Lane Traffic (%)												
Lane Group Flow (vph)	367	362	56	64	186	82	21	112	23	117	154	20
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases	4		4	8		8	6		6	2		2
Detector Phase	7	4	4	3	8	8	1	6	6	5	2	2
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	15.0	15.0	5.0	15.0	15.0
Minimum Split (s)	11.0	18.0	18.0	11.0	18.0	18.0	11.0	24.0	24.0	11.0	24.0	24.0
Total Split (s)	13.0	37.0	37.0	13.0	37.0	37.0	14.0	39.0	39.0	11.0	36.0	36.0
Total Split (%)	13.0%	37.0%	37.0%	13.0%	37.0%	37.0%	14.0%	39.0%	39.0%	11.0%	36.0%	36.0%
Maximum Green (s)	8.5	30.0	30.0	8.5	30.0	30.0	9.5	31.9	31.9	6.5	28.9	28.9
Yellow Time (s)	3.5	5.5	5.5	3.5	5.5	5.5	3.5	5.5	5.5	3.5	5.5	5.5
All-Red Time (s)	1.0	1.5	1.5	1.0	1.5	1.5	1.0	1.6	1.6	1.0	1.6	1.6
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)	4.5	7.0	7.0	4.5	7.0	7.0	4.5	7.1	7.1	4.5	7.1	7.1
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	1.5	1.5	1.5	1.5	2.0	2.0	1.5	5.8	5.8	1.5	5.8	5.8
Minimum Gap (s)	1.5	1.5	1.5	1.5	2.0	2.0	1.5	4.8	4.8	1.5	4.8	4.8
Time Before Reduce (s)	20.0	40.0	40.0	20.0	40.0	40.0	20.0	40.0	40.0	20.0	40.0	40.0
Time To Reduce (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
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	None
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.49	0.20	0.07	0.12	0.13	0.13	0.07	0.21	0.10	0.37	0.20	0.06
Control Delay (s/veh)	11.4	14.0	13.8	9.2	19.6	20.5	26.7	38.5	38.0	31.7	34.6	35.0

3414 Germantown CTH Q Residential TIA
TADI - TSC

Synchro 12 Report
Page 12

Lanes, Volumes, Timings

600: Appleton Ave (STH 175) & County Line Rd (CTH Q)

Existing Traffic

AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
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 (s/veh)	11.4	14.0	13.8	9.2	19.6	20.5	26.7	38.5	38.0	31.7	34.6	35.0
Queue Length 50th (ft)	102	65	18	15	37	32	10	33	13	57	40	10
Queue Length 95th (ft)	154	95	40	31	67	69	28	59	36	104	76	33
Internal Link Dist (ft)	1606			762			778			905		
Turn Bay Length (ft)	320		160	170		360	140		310	105		45
Base Capacity (vph)	748	1798	804	571	1420	635	378	1118	500	319	1003	448
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	0.49	0.20	0.07	0.11	0.13	0.13	0.06	0.10	0.05	0.37	0.15	0.04

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 23 (23%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green

Natural Cycle: 65

Control Type: Actuated-Coordinated

Splits and Phases: 600: Appleton Ave (STH 175) & County Line Rd (CTH Q)



HCM 7th Signalized Intersection Summary
600: Appleton Ave (STH 175) & County Line Rd (CTH Q)

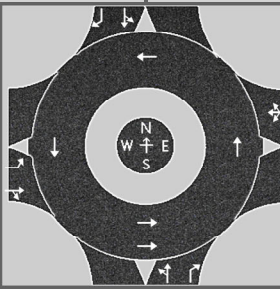
Existing Traffic
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 			 	
Traffic Volume (veh/h)	345	340	85	60	175	125	20	105	35	110	145	30
Future Volume (veh/h)	345	340	85	60	175	125	20	105	35	110	145	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1841	1841	1841	1826	1826	1826	1856	1856	1856	1841	1841	1841
Adj Flow Rate, veh/h	367	362	56	64	186	82	21	112	23	117	154	20
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	4	4	4	5	5	5	3	3	3	4	4	4
Cap, veh/h	701	1792	799	576	1627	726	291	529	236	337	675	301
Arrive On Green	0.09	0.51	0.51	0.04	0.47	0.47	0.02	0.15	0.15	0.06	0.19	0.19
Sat Flow, veh/h	1753	3497	1560	1739	3469	1547	1767	3526	1572	1753	3497	1560
Grp Volume(v), veh/h	367	362	56	64	186	82	21	112	23	117	154	20
Grp Sat Flow(s),veh/h/ln	1753	1749	1560	1739	1735	1547	1767	1763	1572	1753	1749	1560
Q Serve(g_s), s	8.5	5.6	1.8	1.9	3.0	3.0	1.0	2.8	1.3	5.5	3.7	1.0
Cycle Q Clear(g_c), s	8.5	5.6	1.8	1.9	3.0	3.0	1.0	2.8	1.3	5.5	3.7	1.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	701	1792	799	576	1627	726	291	529	236	337	675	301
V/C Ratio(X)	0.52	0.20	0.07	0.11	0.11	0.11	0.07	0.21	0.10	0.35	0.23	0.07
Avail Cap(c_a), veh/h	701	1792	799	651	1627	726	420	1125	502	337	1011	451
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.7	13.3	12.3	12.4	14.9	14.9	34.7	37.3	36.7	31.6	34.1	33.0
Incr Delay (d2), s/veh	0.3	0.3	0.2	0.0	0.1	0.3	0.0	0.6	0.6	0.2	0.6	0.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	2.2	0.6	0.7	1.2	1.1	0.4	1.2	0.5	2.3	1.6	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	13.0	13.5	12.5	12.5	15.0	15.2	34.7	38.0	37.2	31.9	34.6	33.3
LnGrp LOS	B	B	B	B	B	B	C	D	D	C	C	C
Approach Vol, veh/h	785			332			156			291		
Approach Delay, s/veh	13.2			14.6			37.4			33.4		
Approach LOS	B			B			D			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.7	26.4	8.7	58.2	11.0	22.1	13.0	53.9				
Change Period (Y+Rc), s	4.5	7.1	4.5	7.0	4.5	7.1	4.5	7.0				
Max Green Setting (Gmax), s	9.5	28.9	8.5	30.0	6.5	31.9	8.5	30.0				
Max Q Clear Time (g_c+l1), s	3.0	5.7	3.9	7.6	7.5	4.8	10.5	5.0				
Green Ext Time (p_c), s	0.0	2.1	0.0	1.2	0.0	1.6	0.0	0.8				
Intersection Summary												
HCM 7th Control Delay, s/veh	19.7											
HCM 7th LOS	B											

HCS Roundabouts Report

General Information

Analyst	TSC
Agency or Co.	TADI
Date Performed	5/1/2025
Analysis Year	2025
Time Analyzed	Existing AM
Project Description	3414 Germantown Residential TIA



Site Information

Intersection	Lannon Road (CTH Y) & App...
E/W Street Name	Appleton Avenue (STH 175)
N/S Street Name	Lannon Road (CTH Y)
Analysis Time Period, hrs	0.25
Peak Hour Factor	0.87
Jurisdiction	Germantown

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	1	1	0	0	0	1	0	0	0	1	1	0	0	1	1
Lane Assignment	L		TR				LTR		LT		R		LT		R	
Volume (V), veh/h	0	185	115	70	0	5	45	15	0	60	355	10	0	50	455	45
Percent Heavy Vehicles, %	2	2	2	2	8	8	8	8	6	6	6	6	8	8	8	8
Flow Rate (v _{PCE}), pc/h	0	217	135	82	0	6	56	19	0	73	433	12	0	62	565	56
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				2				1			
Pedestrians Crossing, p/h	0				0				0				0			
Proportion of CAVs, %	0															

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway, s	4.7000	4.4000			4.7000		4.6000	4.3000		4.7000	4.4000	
Follow-Up Headway, s	2.5000	2.5000			2.6000		2.6000	2.6000		2.5000	2.5000	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h	217	217			81		506	12		627	56	
Entry Volume, veh/h	213	213			75		477	11		581	52	
Circulating Flow (v_c), pc/h	633			723			414			135		
Exiting Flow (v_{ex}), pc/h	209			185			669			653		
Capacity (C_{pce}), pc/h	785	828			699		947	981		1265	1280	
Capacity (c), veh/h	770	811			648		894	925		1172	1185	
v/c Ratio (x)	0.28	0.26			0.12		0.53	0.01		0.50	0.04	

Delay and Level of Service

Approach	EB			WB			NB			SB						
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass				
Lane Control Delay (d), s/veh	7.8	7.3			6.9		11.2	4.0		8.5	3.4					
Lane LOS	A	A			A		B	A		A	A					
95% Queue Length, Q ₉₅ (veh)	1.1	1.1			0.4		3.2	0.0		2.8	0.1					
95% Queue Length, Q ₉₅ (ft)	27.9	27.9			10.6		83.8	0.0		74.5	2.7					
Approach Delay, s/veh LOS	7.6		A		6.9		A		11.1		B		8.1		A	
Intersection Delay, s/veh LOS	8.8						A									

Lanes, Volumes, Timings
100: Lannon Road (CTH Y) & County Line Rd (CTH Q)

Existing Traffic
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	345	260	15	35	475	40	35	220	20	30	150	365
Future Volume (vph)	345	260	15	35	475	40	35	220	20	30	150	365
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	165		0	240		0	100		0	135		275
Storage Lanes	2		0	1		0	1		0	1		1
Taper Length (ft)	100			100			100			100		
Right Turn on Red			No			No			No			No
Link Speed (mph)		50			40			40			40	
Link Distance (ft)		849			643			305			759	
Travel Time (s)		11.6			11.0			5.2			12.9	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	62%
Heavy Vehicles (%)	4%	4%	4%	1%	1%	1%	3%	3%	3%	2%	2%	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)	363	290	0	37	542	0	37	253	0	32	158	238
Turn Type	Prot	NA		Prot	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases							8			4		4
Detector Phase	1	6		5	2		3	8		7	4	4
Switch Phase												
Minimum Initial (s)	7.0	15.0		7.0	15.0		6.0	8.0		6.0	8.0	8.0
Minimum Split (s)	12.2	21.7		11.9	21.2		10.7	14.2		10.7	14.5	14.5
Total Split (s)	25.2	50.7		19.9	51.2		19.7	31.2		19.7	31.5	31.5
Total Split (%)	19.7%	39.7%		15.6%	40.1%		15.4%	24.5%		15.4%	24.7%	24.7%
Maximum Green (s)	20.0	44.0		15.0	45.0		15.0	25.0		15.0	25.0	25.0
Yellow Time (s)	3.5	4.7		3.5	3.9		3.5	3.9		3.5	3.6	3.6
All-Red Time (s)	1.7	2.0		1.4	2.3		1.2	2.3		1.2	2.9	2.9
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)	5.2	6.7		4.9	6.2		4.7	6.2		4.7	6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	1.5	5.0		1.5	5.0		1.5	1.5		1.5	1.5	1.5
Minimum Gap (s)	1.5	2.0		1.5	2.0		1.5	1.5		1.5	1.5	1.5
Time Before Reduce (s)	20.0	28.0		15.0	33.0		15.0	25.0		15.0	25.0	25.0
Time To Reduce (s)	0.0	17.0		0.0	12.0		0.0	0.0		0.0	0.0	0.0
Recall Mode	None	Min		None	Min		None	None		None	None	None
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.63	0.19		0.21	0.53		0.10	0.33		0.09	0.20	0.69
Control Delay (s/veh)	37.9	17.3		43.5	27.4		20.2	28.7		20.2	28.2	41.7

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TADI - TSC

Synchro 12 Report
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Lanes, Volumes, Timings

100: Lannon Road (CTH Y) & County Line Rd (CTH Q)

Existing Traffic

PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	37.9	17.3		43.5	27.4		20.2	28.7		20.2	28.2	41.7
Queue Length 50th (ft)	91	55		18	125		12	57		10	35	114
Queue Length 95th (ft)	163	97		57	213		38	109		34	72	228
Internal Link Dist (ft)		769			563			225			679	
Turn Bay Length (ft)	165			240			100			135		275
Base Capacity (vph)	940	2393		373	2217		514	1224		507	1234	552
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	0.39	0.12		0.10	0.24		0.07	0.21		0.06	0.13	0.43

Intersection Summary

Area Type: Other

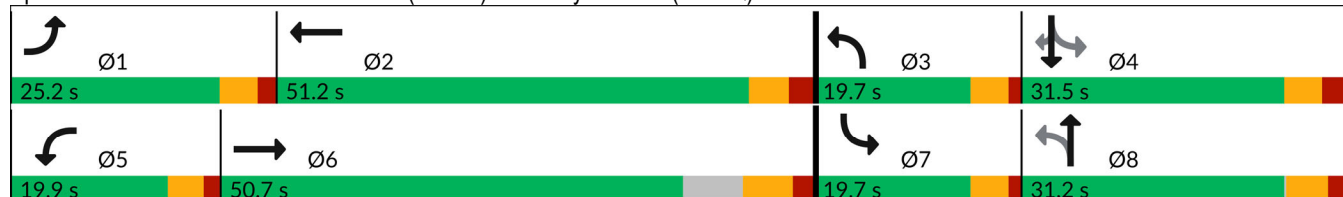
Cycle Length: 127.6

Actuated Cycle Length: 77.4

Natural Cycle: 65

Control Type: Actuated-Uncoordinated

Splits and Phases: 100: Lannon Road (CTH Y) & County Line Rd (CTH Q)



HCM 7th Signalized Intersection Summary 100: Lannon Road (CTH Y) & County Line Rd (CTH Q)

Existing Traffic
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 			 			 			 	
Traffic Volume (veh/h)	345	260	15	35	475	40	35	220	20	30	150	365
Future Volume (veh/h)	345	260	15	35	475	40	35	220	20	30	150	365
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1841	1841	1841	1885	1885	1885	1856	1856	1856	1870	1870	1870
Adj Flow Rate, veh/h	363	274	16	37	500	42	37	232	21	32	158	238
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	4	4	4	1	1	1	3	3	3	2	2	2
Cap, veh/h	474	1202	70	95	891	75	373	620	56	329	657	293
Arrive On Green	0.14	0.36	0.36	0.05	0.27	0.27	0.05	0.19	0.19	0.04	0.18	0.18
Sat Flow, veh/h	3401	3359	195	1795	3345	280	1767	3272	294	1781	3554	1585
Grp Volume(v), veh/h	363	142	148	37	267	275	37	124	129	32	158	238
Grp Sat Flow(s),veh/h/ln	1700	1749	1806	1795	1791	1835	1767	1763	1803	1781	1777	1585
Q Serve(g_s), s	6.5	3.6	3.6	1.3	8.2	8.2	1.0	3.9	4.0	0.9	2.4	9.1
Cycle Q Clear(g_c), s	6.5	3.6	3.6	1.3	8.2	8.2	1.0	3.9	4.0	0.9	2.4	9.1
Prop In Lane	1.00		0.11	1.00		0.15	1.00		0.16	1.00		1.00
Lane Grp Cap(c), veh/h	474	626	646	95	477	489	373	334	342	329	657	293
V/C Ratio(X)	0.77	0.23	0.23	0.39	0.56	0.56	0.10	0.37	0.38	0.10	0.24	0.81
Avail Cap(c_a), veh/h	1071	1212	1251	424	1269	1300	710	694	710	677	1399	624
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.3	14.2	14.3	29.1	20.1	20.1	19.3	22.4	22.5	19.5	22.1	24.8
Incr Delay (d2), s/veh	1.0	0.4	0.4	1.0	2.2	2.2	0.0	0.3	0.3	0.0	0.1	2.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	1.2	1.3	0.5	3.3	3.4	0.4	1.5	1.5	0.3	0.9	3.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	27.3	14.6	14.6	30.0	22.3	22.3	19.3	22.7	22.7	19.5	22.1	26.9
LnGrp LOS	C	B	B	C	C	C	B	C	C	B	C	C
Approach Vol, veh/h	653			579			290			428		
Approach Delay, s/veh	21.7			22.8			22.3			24.6		
Approach LOS	C			C			C			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.1	23.6	7.6	18.2	8.3	29.4	7.3	18.5				
Change Period (Y+Rc), s	5.2	* 6.7	4.7	6.5	4.9	6.7	4.7	* 6.5				
Max Green Setting (Gmax), s	20.0	* 45	15.0	25.0	15.0	44.0	15.0	* 25				
Max Q Clear Time (g_c+l1), s	8.5	10.2	3.0	11.1	3.3	5.6	2.9	6.0				
Green Ext Time (p_c), s	0.3	6.7	0.0	0.6	0.0	3.1	0.0	0.6				

Intersection Summary

HCM 7th Control Delay, s/veh	22.7
HCM 7th LOS	C

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Lanes, Volumes, Timings
200: Club Circle Drive & County Line Rd (CTH Q)

Existing Traffic
PM Peak Hour

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↘	↑↑	↘	
Traffic Volume (vph)	305	5	5	550	1	1
Future Volume (vph)	305	5	5	550	1	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	125		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			100		100	
Link Speed (mph)	40			40	25	
Link Distance (ft)	643			420	561	
Travel Time (s)	11.0			7.2	15.3	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	5%	5%	1%	1%	1%	1%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	337	0	5	598	2	0
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

HCM 7th TWSC
200: Club Circle Drive & County Line Rd (CTH Q)

Existing Traffic
PM Peak Hour

Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↑	↑↑	↑	
Traffic Vol, veh/h	305	5	5	550	1	1
Future Vol, veh/h	305	5	5	550	1	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	125	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	5	1	1	1	1
Mvmt Flow	332	5	5	598	1	1

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	337	0	644	168
Stage 1	-	-	-	-	334	-
Stage 2	-	-	-	-	310	-
Critical Hdwy	-	-	4.12	-	6.82	6.92
Critical Hdwy Stg 1	-	-	-	-	5.82	-
Critical Hdwy Stg 2	-	-	-	-	5.82	-
Follow-up Hdwy	-	-	2.21	-	3.51	3.31
Pot Cap-1 Maneuver	-	-	1226	-	408	849
Stage 1	-	-	-	-	700	-
Stage 2	-	-	-	-	720	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1226	-	406	849
Mov Cap-2 Maneuver	-	-	-	-	406	-
Stage 1	-	-	-	-	700	-
Stage 2	-	-	-	-	717	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.07	11.58
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	549	-	-	1226	-
HCM Lane V/C Ratio	0.004	-	-	0.004	-
HCM Ctrl Dly (s/v)	11.6	-	-	7.9	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Lanes, Volumes, Timings
300: Woodside Lane & County Line Rd (CTH Q)

Existing Traffic
PM Peak Hour

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↘	↑↑	↖	
Traffic Volume (vph)	300	5	5	550	5	5
Future Volume (vph)	300	5	5	550	5	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	115		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			100		100	
Link Speed (mph)	40			40	25	
Link Distance (ft)	420			640	536	
Travel Time (s)	7.2			10.9	14.6	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	6%	6%	1%	1%	1%	1%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	331	0	5	598	10	0
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

HCM 7th TWSC
300: Woodside Lane & County Line Rd (CTH Q)

Existing Traffic
PM Peak Hour

Intersection						
Int Delay, s/veh	0.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↑	↑↑	↑	
Traffic Vol, veh/h	300	5	5	550	5	5
Future Vol, veh/h	300	5	5	550	5	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	115	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	6	6	1	1	1	1
Mvmt Flow	326	5	5	598	5	5

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	332	0	639	166
Stage 1	-	-	-	-	329	-
Stage 2	-	-	-	-	310	-
Critical Hdwy	-	-	4.12	-	6.82	6.92
Critical Hdwy Stg 1	-	-	-	-	5.82	-
Critical Hdwy Stg 2	-	-	-	-	5.82	-
Follow-up Hdwy	-	-	2.21	-	3.51	3.31
Pot Cap-1 Maneuver	-	-	1232	-	411	853
Stage 1	-	-	-	-	705	-
Stage 2	-	-	-	-	720	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1232	-	409	853
Mov Cap-2 Maneuver	-	-	-	-	409	-
Stage 1	-	-	-	-	705	-
Stage 2	-	-	-	-	717	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.07	11.64
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	553	-	-	1232	-
HCM Lane V/C Ratio	0.02	-	-	0.004	-
HCM Ctrl Dly (s/v)	11.6	-	-	7.9	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Lanes, Volumes, Timings
400: Wellington Drive & County Line Rd (CTH Q)

Existing Traffic
PM Peak Hour

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↘	↑↑	↘	
Traffic Volume (vph)	300	5	10	550	5	1
Future Volume (vph)	300	5	10	550	5	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	115		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			100		100	
Link Speed (mph)	40			40	30	
Link Distance (ft)	640			450	557	
Travel Time (s)	10.9			7.7	12.7	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	3%	2%	2%	1%	1%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	318	0	10	573	6	0
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

HCM 7th TWSC
400: Wellington Drive & County Line Rd (CTH Q)

Existing Traffic
PM Peak Hour

Intersection						
Int Delay, s/veh	0.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↑	↑↑	↑	
Traffic Vol, veh/h	300	5	10	550	5	1
Future Vol, veh/h	300	5	10	550	5	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	115	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	3	3	2	2	1	1
Mvmt Flow	313	5	10	573	5	1

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	318	0	622	159
Stage 1	-	-	-	-	315	-
Stage 2	-	-	-	-	307	-
Critical Hdwy	-	-	4.14	-	6.82	6.92
Critical Hdwy Stg 1	-	-	-	-	5.82	-
Critical Hdwy Stg 2	-	-	-	-	5.82	-
Follow-up Hdwy	-	-	2.22	-	3.51	3.31
Pot Cap-1 Maneuver	-	-	1239	-	421	861
Stage 1	-	-	-	-	716	-
Stage 2	-	-	-	-	722	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1239	-	417	861
Mov Cap-2 Maneuver	-	-	-	-	417	-
Stage 1	-	-	-	-	716	-
Stage 2	-	-	-	-	716	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.14	13
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	456	-	-	1239	-
HCM Lane V/C Ratio	0.014	-	-	0.008	-
HCM Ctrl Dly (s/v)	13	-	-	7.9	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Lanes, Volumes, Timings
500: Crossview Way & County Line Rd (CTH Q)

Existing Traffic
PM Peak Hour

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↘	↑↑	↘	↗
Traffic Volume (vph)	300	1	10	555	5	10
Future Volume (vph)	300	1	10	555	5	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	190		0	0
Storage Lanes		0	1		1	1
Taper Length (ft)			100		100	
Link Speed (mph)	40			40	25	
Link Distance (ft)	330			1511	365	
Travel Time (s)	5.6			25.8	10.0	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	3%	1%	1%	1%	1%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	320	0	11	590	5	11
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

HCM 7th TWSC
500: Crossview Way & County Line Rd (CTH Q)

Existing Traffic
PM Peak Hour

Intersection						
Int Delay, s/veh	0.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↱	↑↑	↱	↗
Traffic Vol, veh/h	300	1	10	555	5	10
Future Vol, veh/h	300	1	10	555	5	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	190	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	3	3	1	1	1	1
Mvmt Flow	319	1	11	590	5	11
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	320	0	636	160
Stage 1	-	-	-	-	320	-
Stage 2	-	-	-	-	316	-
Critical Hdwy	-	-	4.12	-	6.82	6.92
Critical Hdwy Stg 1	-	-	-	-	5.82	-
Critical Hdwy Stg 2	-	-	-	-	5.82	-
Follow-up Hdwy	-	-	2.21	-	3.51	3.31
Pot Cap-1 Maneuver	-	-	1244	-	412	860
Stage 1	-	-	-	-	712	-
Stage 2	-	-	-	-	715	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1244	-	409	860
Mov Cap-2 Maneuver	-	-	-	-	409	-
Stage 1	-	-	-	-	712	-
Stage 2	-	-	-	-	708	-
Approach	EB		WB		NB	
HCM Ctrl Dly, s/v	0		0.14		10.8	
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	409	860	-	-	1244	-
HCM Lane V/C Ratio	0.013	0.012	-	-	0.009	-
HCM Ctrl Dly (s/v)	13.9	9.2	-	-	7.9	-
HCM Lane LOS	B	A	-	-	A	-
HCM 95th %tile Q(veh)	0	0	-	-	0	-

Lanes, Volumes, Timings

600: Appleton Ave (STH 175) & County Line Rd (CTH Q)

Existing Traffic

PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	125	345	125	195	510	255	115	260	135	195	270	80
Future Volume (vph)	125	345	125	195	510	255	115	260	135	195	270	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)	0%			0%			0%			0%		
Storage Length (ft)	320		160	170		360	140		310	105		45
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	100			100			100			100		
Right Turn on Red	No			No			No			No		
Link Speed (mph)	35			35			35			35		
Link Distance (ft)	1686			842			858			985		
Travel Time (s)	32.8			16.4			16.7			19.2		
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%	62%	100%	100%	62%	100%	100%	62%	100%	100%	62%
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	1%	1%	1%	2%	2%	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)	130	359	81	203	531	165	120	271	87	203	281	52
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases	4		4	8		8	6		6	2		2
Detector Phase	7	4	4	3	8	8	1	6	6	5	2	2
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	15.0	15.0	5.0	15.0	15.0
Minimum Split (s)	11.0	18.0	18.0	11.0	18.0	18.0	11.0	24.0	24.0	11.0	24.0	24.0
Total Split (s)	19.0	48.0	48.0	19.0	48.0	48.0	18.0	33.0	33.0	20.0	35.0	35.0
Total Split (%)	15.8%	40.0%	40.0%	15.8%	40.0%	40.0%	15.0%	27.5%	27.5%	16.7%	29.2%	29.2%
Maximum Green (s)	14.5	41.0	41.0	14.5	41.0	41.0	13.5	25.9	25.9	15.5	27.9	27.9
Yellow Time (s)	3.5	5.5	5.5	3.5	5.5	5.5	3.5	5.5	5.5	3.5	5.5	5.5
All-Red Time (s)	1.0	1.5	1.5	1.0	1.5	1.5	1.0	1.6	1.6	1.0	1.6	1.6
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)	4.5	7.0	7.0	4.5	7.0	7.0	4.5	7.1	7.1	4.5	7.1	7.1
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	1.5	1.5	1.5	1.5	2.0	2.0	1.5	5.8	5.8	1.5	5.8	5.8
Minimum Gap (s)	1.5	1.5	1.5	1.5	2.0	2.0	1.5	4.8	4.8	1.5	4.8	4.8
Time Before Reduce (s)	20.0	40.0	40.0	20.0	40.0	40.0	20.0	40.0	40.0	20.0	40.0	40.0
Time To Reduce (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
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	None
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.26	0.22	0.11	0.33	0.32	0.22	0.36	0.50	0.36	0.55	0.43	0.18
Control Delay (s/veh)	13.2	22.2	22.5	13.5	21.6	21.6	31.3	49.2	48.8	35.7	44.8	41.5

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Synchro 12 Report
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Lanes, Volumes, Timings

600: Appleton Ave (STH 175) & County Line Rd (CTH Q)

Existing Traffic

PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
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 (s/veh)	13.2	22.2	22.5	13.5	21.6	21.6	31.3	49.2	48.8	35.7	44.8	41.5
Queue Length 50th (ft)	42	87	36	68	132	74	66	103	61	118	101	34
Queue Length 95th (ft)	81	143	79	122	201	141	105	140	107	170	141	69
Internal Link Dist (ft)	1606			762			778			905		
Turn Bay Length (ft)	320		160	170		360	140		310	105		45
Base Capacity (vph)	597	1616	723	665	1676	749	391	771	345	386	822	368
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	0.22	0.22	0.11	0.31	0.32	0.22	0.31	0.35	0.25	0.53	0.34	0.14

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 113 (94%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green

Natural Cycle: 65

Control Type: Actuated-Coordinated

Splits and Phases: 600: Appleton Ave (STH 175) & County Line Rd (CTH Q)

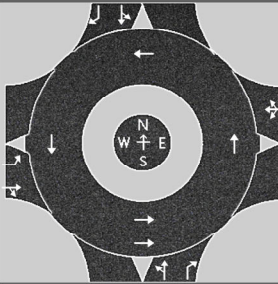
 Ø1	 Ø2	 Ø3	 Ø4 (R)
18 s	35 s	19 s	48 s
 Ø5	 Ø6	 Ø7	 Ø8 (R)
20 s	33 s	19 s	48 s

HCM 7th Signalized Intersection Summary
600: Appleton Ave (STH 175) & County Line Rd (CTH Q)

Existing Traffic
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	125	345	125	195	510	255	115	260	135	195	270	80
Future Volume (veh/h)	125	345	125	195	510	255	115	260	135	195	270	80
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1885	1885	1885	1870	1870	1870	1885	1885	1885	1870	1870	1870
Adj Flow Rate, veh/h	130	359	81	203	531	165	120	271	87	203	281	52
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
Percent Heavy Veh, %	1	1	1	2	2	2	1	1	1	2	2	2
Cap, veh/h	480	1781	794	608	1841	821	289	448	200	315	585	261
Arrive On Green	0.05	0.50	0.50	0.07	0.52	0.52	0.07	0.12	0.12	0.11	0.16	0.16
Sat Flow, veh/h	1795	3582	1598	1781	3554	1585	1795	3582	1598	1781	3554	1585
Grp Volume(v), veh/h	130	359	81	203	531	165	120	271	87	203	281	52
Grp Sat Flow(s),veh/h/ln	1795	1791	1598	1781	1777	1585	1795	1791	1598	1781	1777	1585
Q Serve(g_s), s	4.2	6.7	3.2	6.6	10.2	6.7	6.9	8.6	6.0	11.5	8.6	3.4
Cycle Q Clear(g_c), s	4.2	6.7	3.2	6.6	10.2	6.7	6.9	8.6	6.0	11.5	8.6	3.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	480	1781	794	608	1841	821	289	448	200	315	585	261
V/C Ratio(X)	0.27	0.20	0.10	0.33	0.29	0.20	0.41	0.61	0.44	0.64	0.48	0.20
Avail Cap(c_a), veh/h	604	1781	794	694	1841	821	360	773	345	345	826	369
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.5	16.9	16.0	12.8	16.4	15.6	41.4	49.7	48.6	38.2	45.5	43.3
Incr Delay (d2), s/veh	0.1	0.3	0.3	0.1	0.4	0.6	0.4	4.2	4.8	2.5	2.0	1.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	2.8	1.2	2.6	4.2	2.5	3.1	4.1	2.7	5.2	3.9	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	13.6	17.1	16.2	12.9	16.8	16.1	41.8	53.9	53.4	40.7	47.4	44.5
LnGrp LOS	B	B	B	B	B	B	D	D	D	D	D	D
Approach Vol, veh/h	570			899			478			536		
Approach Delay, s/veh	16.2			15.8			50.8			44.6		
Approach LOS	B			B			D			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.3	26.9	13.2	66.7	18.0	22.1	10.7	69.2				
Change Period (Y+Rc), s	4.5	7.1	4.5	7.0	4.5	7.1	4.5	7.0				
Max Green Setting (Gmax), s	13.5	27.9	14.5	41.0	15.5	25.9	14.5	41.0				
Max Q Clear Time (g_c+l1), s	8.9	10.6	8.6	8.7	13.5	10.6	6.2	12.2				
Green Ext Time (p_c), s	0.0	3.7	0.1	1.2	0.0	3.6	0.1	2.6				
Intersection Summary												
HCM 7th Control Delay, s/veh	28.8											
HCM 7th LOS	C											

HCS Roundabouts Report

General Information			Site Information		
Analyst	TSC		Intersection	Lannon Road (CTH Y) & App...	
Agency or Co.	TADI		E/W Street Name	Appleton Avenue (STH 175)	
Date Performed	5/1/2025		N/S Street Name	Lannon Road (CTH Y)	
Analysis Year	2025		Analysis Time Period, hrs	0.25	
Time Analyzed	Existing PM		Peak Hour Factor	0.96	
Project Description	3414 Germantown Residential TIA		Jurisdiction	Germantown	

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	1	1	0	0	0	1	0	0	0	1	1	0	0	1	1
Lane Assignment	L		TR				LTR		LT		R		LT		R	
Volume (V), veh/h	0	95	135	80	0	25	215	80	0	95	500	10	0	55	440	215
Percent Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1	3	3	3	3
Flow Rate (v_{PCE}), pc/h	0	100	142	84	0	26	226	84	0	100	526	11	0	59	472	231
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				2				1			
Pedestrians Crossing, p/h	0				0				0				0			
Proportion of CAVs, %	0															

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway, s	4.7000	4.4000			4.7000		4.6000	4.3000		4.7000	4.4000	
Follow-Up Headway, s	2.5000	2.5000			2.6000		2.6000	2.6000		2.5000	2.5000	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h	100	226			336		626	11		531	231	
Entry Volume, veh/h	99	224			333		620	11		516	224	
Circulating Flow (v_c), pc/h	557			726			301			352		
Exiting Flow (v_{ex}), pc/h	212			557			710			582		
Capacity (C_{pce}), pc/h	844	885			698		1051	1077		1028	1058	
Capacity (c), veh/h	836	876			691		1040	1067		998	1027	
v/c Ratio (x)	0.12	0.26			0.48		0.60	0.01		0.52	0.22	

Delay and Level of Service

Approach	EB			WB			NB			SB						
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass				
Lane Control Delay (d), s/veh	5.5	6.8			12.4		11.4	3.5		10.0	5.6					
Lane LOS	A	A			B		B	A		A	A					
95% Queue Length, Q ₉₅ (veh)	0.4	1.0			2.6		4.1	0.0		3.1	0.8					
95% Queue Length, Q ₉₅ (ft)	10.1	25.2			65.5		103.3	0.0		79.4	20.5					
Approach Delay, s/veh LOS	6.4		A		12.4		B		11.3		B		8.6		A	
Intersection Delay, s/veh LOS	9.7						A									

APPENDIX D

SYNCHRO TRAFFIC/CAPACITY ANALYSIS WORKSHEETS

BUILD TRAFFIC VOLUMES

Lanes, Volumes, Timings
100: Lannon Road (CTH Y) & County Line Rd (CTH Q)

Build Traffic
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	290	480	40	20	140	15	10	120	30	10	170	360
Future Volume (vph)	290	480	40	20	140	15	10	120	30	10	170	360
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	165		0	240		0	100		0	135		275
Storage Lanes	2		0	1		0	1		0	1		1
Taper Length (ft)	100			100			100			100		
Right Turn on Red			No			No			No			No
Link Speed (mph)		50			40			40			40	
Link Distance (ft)		849			643			305			759	
Travel Time (s)		11.6			11.0			5.2			12.9	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	62%
Heavy Vehicles (%)	6%	6%	6%	10%	10%	10%	7%	7%	7%	8%	8%	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)	309	554	0	21	165	0	11	160	0	11	181	237
Turn Type	Prot	NA		Prot	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases							8			4		4
Detector Phase	1	6		5	2		3	8		7	4	4
Switch Phase												
Minimum Initial (s)	7.0	15.0		7.0	15.0		6.0	8.0		6.0	8.0	8.0
Minimum Split (s)	12.2	21.7		11.9	21.2		10.7	14.2		10.7	14.5	14.5
Total Split (s)	25.2	50.7		19.9	51.2		19.7	31.2		19.7	31.5	31.5
Total Split (%)	19.7%	39.7%		15.6%	40.1%		15.4%	24.5%		15.4%	24.7%	24.7%
Maximum Green (s)	20.0	44.0		15.0	45.0		15.0	25.0		15.0	25.0	25.0
Yellow Time (s)	3.5	4.7		3.5	3.9		3.5	3.9		3.5	3.6	3.6
All-Red Time (s)	1.7	2.0		1.4	2.3		1.2	2.3		1.2	2.9	2.9
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)	5.2	6.7		4.9	6.2		4.7	6.2		4.7	6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	1.5	5.0		1.5	5.0		1.5	1.5		1.5	1.5	1.5
Minimum Gap (s)	1.5	2.0		1.5	2.0		1.5	1.5		1.5	1.5	1.5
Time Before Reduce (s)	20.0	28.0		15.0	33.0		15.0	25.0		15.0	25.0	25.0
Time To Reduce (s)	0.0	17.0		0.0	12.0		0.0	0.0		0.0	0.0	0.0
Recall Mode	None	Min		None	Min		None	None		None	None	None
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.56	0.34		0.11	0.20		0.03	0.19		0.03	0.22	0.63
Control Delay (s/veh)	29.7	13.8		32.6	22.0		15.1	19.8		15.1	20.2	30.4

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Synchro 12 Report
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Lanes, Volumes, Timings

100: Lannon Road (CTH Y) & County Line Rd (CTH Q)

Build Traffic

AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	29.7	13.8		32.6	22.0		15.1	19.8		15.1	20.2	30.4
Queue Length 50th (ft)	51	53		7	23		3	22		3	25	73
Queue Length 95th (ft)	123	183		34	67		13	60		13	66	189
Internal Link Dist (ft)		769			563			225			679	
Turn Bay Length (ft)	165			240			100			135		275
Base Capacity (vph)	1097	2780		409	2417		502	1376		499	1388	621
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	0.28	0.20		0.05	0.07		0.02	0.12		0.02	0.13	0.38

Intersection Summary

Area Type: Other

Cycle Length: 127.6

Actuated Cycle Length: 62.6

Natural Cycle: 65

Control Type: Actuated-Uncoordinated

Splits and Phases: 100: Lannon Road (CTH Y) & County Line Rd (CTH Q)

 Ø1	 Ø2	 Ø3	 Ø4
25.2 s	51.2 s	19.7 s	31.5 s
 Ø5	 Ø6	 Ø7	 Ø8
19.9 s	50.7 s	19.7 s	31.2 s

HCM 7th Signalized Intersection Summary
100: Lannon Road (CTH Y) & County Line Rd (CTH Q)

Build Traffic
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	290	480	40	20	140	15	10	120	30	10	170	360
Future Volume (veh/h)	290	480	40	20	140	15	10	120	30	10	170	360
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1811	1811	1811	1752	1752	1752	1796	1796	1796	1781	1781	1781
Adj Flow Rate, veh/h	309	511	43	21	149	16	11	128	32	11	181	237
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	6	6	6	10	10	10	7	7	7	8	8	8
Cap, veh/h	427	1150	96	58	788	84	327	534	130	334	663	296
Arrive On Green	0.13	0.36	0.36	0.03	0.26	0.26	0.02	0.20	0.20	0.02	0.20	0.20
Sat Flow, veh/h	3346	3213	270	1668	3036	322	1711	2723	661	1697	3385	1510
Grp Volume(v), veh/h	309	273	281	21	81	84	11	79	81	11	181	237
Grp Sat Flow(s),veh/h/ln	1673	1721	1763	1668	1664	1694	1711	1706	1677	1697	1692	1510
Q Serve(g_s), s	5.1	7.0	7.0	0.7	2.2	2.2	0.3	2.2	2.4	0.3	2.6	8.6
Cycle Q Clear(g_c), s	5.1	7.0	7.0	0.7	2.2	2.2	0.3	2.2	2.4	0.3	2.6	8.6
Prop In Lane	1.00		0.15	1.00		0.19	1.00		0.39	1.00		1.00
Lane Grp Cap(c), veh/h	427	616	631	58	432	440	327	335	329	334	663	296
V/C Ratio(X)	0.72	0.44	0.45	0.36	0.19	0.19	0.03	0.24	0.25	0.03	0.27	0.80
Avail Cap(c_a), veh/h	1159	1311	1343	433	1297	1320	743	739	726	746	1465	653
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.2	14.2	14.2	27.3	16.6	16.7	18.1	19.6	19.6	18.1	19.7	22.1
Incr Delay (d2), s/veh	0.9	1.1	1.1	1.4	0.4	0.4	0.0	0.1	0.1	0.0	0.1	1.9
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	2.3	2.4	0.3	0.8	0.8	0.1	0.8	0.8	0.1	0.9	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	25.1	15.2	15.2	28.7	17.1	17.1	18.1	19.7	19.8	18.1	19.8	24.1
LnGrp LOS	C	B	B	C	B	B	B	B	B	B	B	C
Approach Vol, veh/h	863			186			171			429		
Approach Delay, s/veh	18.8			18.4			19.6			22.1		
Approach LOS	B			B			B			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.6	21.7	5.7	17.8	6.9	27.4	5.7	17.8				
Change Period (Y+Rc), s	5.2	* 6.7	4.7	6.5	4.9	6.7	4.7	* 6.5				
Max Green Setting (Gmax), s	20.0	* 45	15.0	25.0	15.0	44.0	15.0	* 25				
Max Q Clear Time (g_c+l1), s	7.1	4.2	2.3	10.6	2.7	9.0	2.3	4.4				
Green Ext Time (p_c), s	0.3	1.8	0.0	0.7	0.0	6.5	0.0	0.3				

Intersection Summary

HCM 7th Control Delay, s/veh	19.7
HCM 7th LOS	B

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Lanes, Volumes, Timings
200: Club Circle Drive & County Line Rd (CTH Q)

Build Traffic
AM Peak Hour

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↘	↑↑	↖	
Traffic Volume (vph)	520	1	1	175	1	1
Future Volume (vph)	520	1	1	175	1	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	125		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			100		100	
Link Speed (mph)	40			40	25	
Link Distance (ft)	643			420	561	
Travel Time (s)	11.0			7.2	15.3	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	5%	5%	12%	12%	1%	1%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	613	0	1	206	2	0
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

HCM 7th TWSC
200: Club Circle Drive & County Line Rd (CTH Q)

Build Traffic
AM Peak Hour

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↑	↑↑	↑	
Traffic Vol, veh/h	520	1	1	175	1	1
Future Vol, veh/h	520	1	1	175	1	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	125	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	5	5	12	12	1	1
Mvmt Flow	612	1	1	206	1	1

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	613	0	718
Stage 1	-	-	-	-	612
Stage 2	-	-	-	-	105
Critical Hdwy	-	-	4.34	-	6.82
Critical Hdwy Stg 1	-	-	-	-	5.82
Critical Hdwy Stg 2	-	-	-	-	5.82
Follow-up Hdwy	-	-	2.32	-	3.51
Pot Cap-1 Maneuver	-	-	897	-	366
Stage 1	-	-	-	-	506
Stage 2	-	-	-	-	910
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	897	-	366
Mov Cap-2 Maneuver	-	-	-	-	366
Stage 1	-	-	-	-	506
Stage 2	-	-	-	-	909

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.05	12.56
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	479	-	-	897	-
HCM Lane V/C Ratio	0.005	-	-	0.001	-
HCM Ctrl Dly (s/v)	12.6	-	-	9	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Lanes, Volumes, Timings

300: Woodside Lane/Site Access "B" & County Line Rd (CTH Q)

Build Traffic

AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	510	1	1	160	5	5	0	10	60	0	10
Future Volume (vph)	10	510	1	1	160	5	5	0	10	60	0	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	100		0	115		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	100			100			100			100		
Link Speed (mph)		40			40			25			25	
Link Distance (ft)		420			640			536			489	
Travel Time (s)		7.2			10.9			14.6			13.3	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	5%	5%	5%	13%	13%	13%	7%	7%	7%	2%	2%	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)	12	594	0	1	192	0	0	18	0	0	82	0
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											

HCM 7th TWSC
300: Woodside Lane/Site Access "B" & County Line Rd (CTH Q)

Build Traffic
AM Peak Hour

Intersection												
Int Delay, s/veh	1.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	510	1	1	160	5	5	0	10	60	0	10
Future Vol, veh/h	10	510	1	1	160	5	5	0	10	60	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	115	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	5	5	5	13	13	13	7	7	7	2	2	2
Mvmt Flow	12	593	1	1	186	6	6	0	12	70	0	12

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	192	0	0	594	0	0	712	811	297	511	809	96
Stage 1	-	-	-	-	-	-	617	617	-	191	191	-
Stage 2	-	-	-	-	-	-	95	194	-	320	617	-
Critical Hdwy	4.2	-	-	4.36	-	-	7.64	6.64	7.04	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.64	5.64	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.64	5.64	-	6.54	5.54	-
Follow-up Hdwy	2.25	-	-	2.33	-	-	3.57	4.07	3.37	3.52	4.02	3.32
Pot Cap-1 Maneuver	1357	-	-	906	-	-	310	303	684	446	313	942
Stage 1	-	-	-	-	-	-	432	467	-	792	741	-
Stage 2	-	-	-	-	-	-	886	727	-	666	479	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1357	-	-	906	-	-	303	300	684	434	310	942
Mov Cap-2 Maneuver	-	-	-	-	-	-	303	300	-	434	310	-
Stage 1	-	-	-	-	-	-	428	463	-	791	740	-
Stage 2	-	-	-	-	-	-	874	726	-	649	475	-

Approach	EB		WB		NB		SB	
HCM Ctrl Dly, s/v	0.15		0.05		12.74		14.26	
HCM LOS					B		B	

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	482	1357	-	-	906	-	-	470
HCM Lane V/C Ratio	0.036	0.009	-	-	0.001	-	-	0.173
HCM Ctrl Dly (s/v)	12.7	7.7	-	-	9	-	-	14.3
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.6

Lanes, Volumes, Timings
400: Wellington Drive & County Line Rd (CTH Q)

Build Traffic
AM Peak Hour

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↘	↑↑	↘	
Traffic Volume (vph)	575	5	1	160	5	10
Future Volume (vph)	575	5	1	160	5	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	115		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			100		100	
Link Speed (mph)	40			40	30	
Link Distance (ft)	640			450	557	
Travel Time (s)	10.9			7.7	12.7	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	5%	5%	14%	14%	1%	1%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	682	0	1	188	18	0
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

HCM 7th TWSC
400: Wellington Drive & County Line Rd (CTH Q)

Build Traffic
AM Peak Hour

Intersection						
Int Delay, s/veh	0.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↑	↑↑	↑	
Traffic Vol, veh/h	575	5	1	160	5	10
Future Vol, veh/h	575	5	1	160	5	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	115	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	5	5	14	14	1	1
Mvmt Flow	676	6	1	188	6	12

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	682	0	776	341
Stage 1	-	-	-	-	679	-
Stage 2	-	-	-	-	96	-
Critical Hdwy	-	-	4.38	-	6.82	6.92
Critical Hdwy Stg 1	-	-	-	-	5.82	-
Critical Hdwy Stg 2	-	-	-	-	5.82	-
Follow-up Hdwy	-	-	2.34	-	3.51	3.31
Pot Cap-1 Maneuver	-	-	830	-	336	658
Stage 1	-	-	-	-	468	-
Stage 2	-	-	-	-	919	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	830	-	336	658
Mov Cap-2 Maneuver	-	-	-	-	336	-
Stage 1	-	-	-	-	468	-
Stage 2	-	-	-	-	918	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.06	12.49
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	498	-	-	830	-
HCM Lane V/C Ratio	0.035	-	-	0.001	-
HCM Ctrl Dly (s/v)	12.5	-	-	9.3	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Lanes, Volumes, Timings
500: Crossview Way & County Line Rd (CTH Q)

Build Traffic
AM Peak Hour

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↘	↑↑	↘	↗
Traffic Volume (vph)	580	5	15	165	1	10
Future Volume (vph)	580	5	15	165	1	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	190		0	0
Storage Lanes		0	1		1	1
Taper Length (ft)			100		100	
Link Speed (mph)	40			40	25	
Link Distance (ft)	330			1511	365	
Travel Time (s)	5.6			25.8	10.0	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	4%	4%	14%	14%	18%	18%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	696	0	18	196	1	12
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

Intersection						
Int Delay, s/veh	0.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↑	↑↑	↑	↑
Traffic Vol, veh/h	580	5	15	165	1	10
Future Vol, veh/h	580	5	15	165	1	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	190	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	4	4	14	14	18	18
Mvmt Flow	690	6	18	196	1	12

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	696
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.38
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.34
Pot Cap-1 Maneuver	-	-	820
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	820
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.79	11.73
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	274	604	-	-	820	-
HCM Lane V/C Ratio	0.004	0.02	-	-	0.022	-
HCM Ctrl Dly (s/v)	18.2	11.1	-	-	9.5	-
HCM Lane LOS	C	B	-	-	A	-
HCM 95th %tile Q(veh)	0	0.1	-	-	0.1	-

Lanes, Volumes, Timings
600: Appleton Ave (STH 175) & County Line Rd (CTH Q)

Build Traffic
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 			 	
Traffic Volume (vph)	345	380	105	60	185	125	25	105	35	110	145	30
Future Volume (vph)	345	380	105	60	185	125	25	105	35	110	145	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)	0%				0%				0%			
Storage Length (ft)	320			160	170			360	140			310
Storage Lanes	1			1	1			1	1			1
Taper Length (ft)	100			100				100				100
Right Turn on Red			No				No				No	
Link Speed (mph)	35				35				35			
Link Distance (ft)	1686				842				858			
Travel Time (s)	32.8				16.4				16.7			
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Growth Factor	100%	100%	62%	100%	100%	62%	100%	100%	62%	100%	100%	62%
Heavy Vehicles (%)	4%	4%	4%	5%	5%	5%	3%	3%	3%	4%	4%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)	0%				0%				0%			
Shared Lane Traffic (%)												
Lane Group Flow (vph)	367	404	69	64	197	82	27	112	23	117	154	20
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases	4		4	8		8	6		6	2		2
Detector Phase	7	4	4	3	8	8	1	6	6	5	2	2
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	15.0	15.0	5.0	15.0	15.0
Minimum Split (s)	11.0	18.0	18.0	11.0	18.0	18.0	11.0	24.0	24.0	11.0	24.0	24.0
Total Split (s)	13.0	37.0	37.0	13.0	37.0	37.0	14.0	39.0	39.0	11.0	36.0	36.0
Total Split (%)	13.0%	37.0%	37.0%	13.0%	37.0%	37.0%	14.0%	39.0%	39.0%	11.0%	36.0%	36.0%
Maximum Green (s)	8.5	30.0	30.0	8.5	30.0	30.0	9.5	31.9	31.9	6.5	28.9	28.9
Yellow Time (s)	3.5	5.5	5.5	3.5	5.5	5.5	3.5	5.5	5.5	3.5	5.5	5.5
All-Red Time (s)	1.0	1.5	1.5	1.0	1.5	1.5	1.0	1.6	1.6	1.0	1.6	1.6
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)	4.5	7.0	7.0	4.5	7.0	7.0	4.5	7.1	7.1	4.5	7.1	7.1
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	1.5	1.5	1.5	1.5	2.0	2.0	1.5	5.8	5.8	1.5	5.8	5.8
Minimum Gap (s)	1.5	1.5	1.5	1.5	2.0	2.0	1.5	4.8	4.8	1.5	4.8	4.8
Time Before Reduce (s)	20.0	40.0	40.0	20.0	40.0	40.0	20.0	40.0	40.0	20.0	40.0	40.0
Time To Reduce (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
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	None
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.49	0.22	0.09	0.13	0.14	0.13	0.09	0.21	0.10	0.36	0.23	0.07
Control Delay (s/veh)	11.5	14.3	13.9	9.3	19.7	20.6	26.8	38.4	37.9	31.6	36.5	36.6

3414 Germantown CTH Q Residential TIA
TADI - TSC

Synchro 12 Report
Page 12

Lanes, Volumes, Timings

600: Appleton Ave (STH 175) & County Line Rd (CTH Q)

Build Traffic

AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
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 (s/veh)	11.5	14.3	13.9	9.3	19.7	20.6	26.8	38.4	37.9	31.6	36.5	36.6
Queue Length 50th (ft)	102	73	22	15	40	32	12	33	13	57	45	11
Queue Length 95th (ft)	156	107	47	31	71	70	33	58	36	103	77	33
Internal Link Dist (ft)	1606			762			778			905		
Turn Bay Length (ft)	320		160	170		360	140		310	105		45
Base Capacity (vph)	744	1796	803	552	1417	634	379	1118	500	322	1003	448
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	0.49	0.22	0.09	0.12	0.14	0.13	0.07	0.10	0.05	0.36	0.15	0.04

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 23 (23%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green

Natural Cycle: 65

Control Type: Actuated-Coordinated

Splits and Phases: 600: Appleton Ave (STH 175) & County Line Rd (CTH Q)



HCM 7th Signalized Intersection Summary
600: Appleton Ave (STH 175) & County Line Rd (CTH Q)

Build Traffic
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 			 	
Traffic Volume (veh/h)	345	380	105	60	185	125	25	105	35	110	145	30
Future Volume (veh/h)	345	380	105	60	185	125	25	105	35	110	145	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1841	1841	1841	1826	1826	1826	1856	1856	1856	1841	1841	1841
Adj Flow Rate, veh/h	367	404	69	64	197	82	27	112	23	117	154	20
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	4	4	4	5	5	5	3	3	3	4	4	4
Cap, veh/h	694	1792	799	548	1627	726	299	529	236	337	660	294
Arrive On Green	0.09	0.51	0.51	0.04	0.47	0.47	0.03	0.15	0.15	0.06	0.19	0.19
Sat Flow, veh/h	1753	3497	1560	1739	3469	1547	1767	3526	1572	1753	3497	1560
Grp Volume(v), veh/h	367	404	69	64	197	82	27	112	23	117	154	20
Grp Sat Flow(s),veh/h/ln	1753	1749	1560	1739	1735	1547	1767	1763	1572	1753	1749	1560
Q Serve(g_s), s	8.5	6.4	2.3	1.9	3.2	3.0	1.3	2.8	1.3	5.5	3.7	1.1
Cycle Q Clear(g_c), s	8.5	6.4	2.3	1.9	3.2	3.0	1.3	2.8	1.3	5.5	3.7	1.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	694	1792	799	548	1627	726	299	529	236	337	660	294
V/C Ratio(X)	0.53	0.23	0.09	0.12	0.12	0.11	0.09	0.21	0.10	0.35	0.23	0.07
Avail Cap(c_a), veh/h	694	1792	799	623	1627	726	420	1125	502	337	1011	451
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.7	13.4	12.4	12.5	14.9	14.9	34.4	37.3	36.7	32.0	34.4	33.3
Incr Delay (d2), s/veh	0.4	0.3	0.2	0.0	0.2	0.3	0.0	0.6	0.6	0.2	0.6	0.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	2.5	0.8	0.7	1.2	1.1	0.5	1.2	0.5	2.3	1.6	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	13.1	13.7	12.6	12.5	15.1	15.2	34.5	38.0	37.2	32.2	35.0	33.7
LnGrp LOS	B	B	B	B	B	B	C	D	D	C	D	C
Approach Vol, veh/h	840			343			162			291		
Approach Delay, s/veh	13.4			14.6			37.3			33.8		
Approach LOS	B			B			D			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.1	26.0	8.7	58.2	11.0	22.1	13.0	53.9				
Change Period (Y+Rc), s	4.5	7.1	4.5	7.0	4.5	7.1	4.5	7.0				
Max Green Setting (Gmax), s	9.5	28.9	8.5	30.0	6.5	31.9	8.5	30.0				
Max Q Clear Time (g_c+l1), s	3.3	5.7	3.9	8.4	7.5	4.8	10.5	5.2				
Green Ext Time (p_c), s	0.0	2.1	0.0	1.3	0.0	1.6	0.0	0.9				
Intersection Summary												
HCM 7th Control Delay, s/veh	19.6											
HCM 7th LOS	B											

Lanes, Volumes, Timings
800: Lannon Road (CTH Y) & Site Access "A"

Build Traffic
AM Peak Hour

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	10	45	425	0	15	530
Future Volume (vph)	10	45	425	0	15	530
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		0	300	
Storage Lanes	1	0		0	1	
Taper Length (ft)	100				100	
Link Speed (mph)	25		40			40
Link Distance (ft)	647		759			662
Travel Time (s)	17.6		12.9			11.3
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	7%	7%	8%	8%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	59	0	452	0	16	564
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

HCM 7th TWSC
800: Lannon Road (CTH Y) & Site Access "A"

Build Traffic
AM Peak Hour

Intersection						
Int Delay, s/veh	0.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	10	45	425	0	15	530
Future Vol, veh/h	10	45	425	0	15	530
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	-	-	-	300	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	7	7	8	8
Mvmt Flow	11	48	452	0	16	564

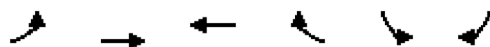
Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	766	226	0	0	452
Stage 1	452	-	-	-	-
Stage 2	314	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.26
Critical Hdwy Stg 1	5.84	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.28
Pot Cap-1 Maneuver	339	777	-	-	1063
Stage 1	608	-	-	-	-
Stage 2	714	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	334	777	-	-	1063
Mov Cap-2 Maneuver	334	-	-	-	-
Stage 1	608	-	-	-	-
Stage 2	703	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	11.34	0	0.23
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	626	1063
HCM Lane V/C Ratio	-	-	0.093	0.015
HCM Ctrl Dly (s/v)	-	-	11.3	8.4
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.3	0

Lanes, Volumes, Timings
900: County Line Rd (CTH Q) & Site Access "C"

Build Traffic
AM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑			↑
Traffic Volume (vph)	0	585	155	10	0	5
Future Volume (vph)	0	585	155	10	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	0	1
Taper Length (ft)	100				100	
Link Speed (mph)		40	40		25	
Link Distance (ft)		450	330		465	
Travel Time (s)		7.7	5.6		12.7	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	4%	4%	14%	14%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	688	194	0	0	6
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑			↑
Traffic Vol, veh/h	0	585	155	10	0	5
Future Vol, veh/h	0	585	155	10	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	4	4	14	14	2	2
Mvmt Flow	0	688	182	12	0	6

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	-	0	- 0 - 97
Stage 1	-	-	- - -
Stage 2	-	-	- - -
Critical Hdwy	-	-	- - 6.94
Critical Hdwy Stg 1	-	-	- - -
Critical Hdwy Stg 2	-	-	- - -
Follow-up Hdwy	-	-	- - 3.32
Pot Cap-1 Maneuver	0	-	- - 0 940
Stage 1	0	-	- - 0 -
Stage 2	0	-	- - 0 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	- - 940
Mov Cap-2 Maneuver	-	-	- - -
Stage 1	-	-	- - -
Stage 2	-	-	- - -

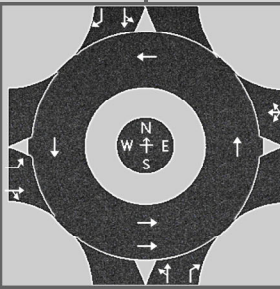
Approach	EB	WB	SB
HCM Ctrl Dly, s/v	0	0	8.85
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	940
HCM Lane V/C Ratio	-	-	-	0.006
HCM Ctrl Dly (s/v)	-	-	-	8.9
HCM Lane LOS	-	-	-	A
HCM 95th %tile Q(veh)	-	-	-	0

HCS Roundabouts Report

General Information

Analyst	TSC
Agency or Co.	TADI
Date Performed	5/1/2025
Analysis Year	2025
Time Analyzed	Build AM
Project Description	3414 Germantown Residential TIA



Site Information

Intersection	Lannon Road (CTH Y) & App...
E/W Street Name	Appleton Avenue (STH 175)
N/S Street Name	Lannon Road (CTH Y)
Analysis Time Period, hrs	0.25
Peak Hour Factor	0.87
Jurisdiction	Germantown

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	1	1	0	0	0	1	0	0	0	1	1	0	0	1	1
Lane Assignment	L		TR				LTR		LT		R		LT		R	
Volume (V), veh/h	0	185	115	75	0	5	45	15	0	65	395	10	0	50	465	45
Percent Heavy Vehicles, %	2	2	2	2	8	8	8	8	6	6	6	6	8	8	8	8
Flow Rate (v _{PCE}), pc/h	0	217	135	88	0	6	56	19	0	79	481	12	0	62	577	56
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				2				1			
Pedestrians Crossing, p/h	0				0				0				0			
Proportion of CAVs, %	0															

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway, s	4.7000	4.4000			4.7000		4.6000	4.3000		4.7000	4.4000	
Follow-Up Headway, s	2.5000	2.5000			2.6000		2.6000	2.6000		2.5000	2.5000	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h	217	223			81		560	12		639	56	
Entry Volume, veh/h	213	219			75		528	11		592	52	
Circulating Flow (v_c), pc/h	645			777			414			141		
Exiting Flow (v_{ex}), pc/h	209			191			717			671		
Capacity (C_{pce}), pc/h	776	819			665		947	981		1258	1273	
Capacity (c), veh/h	761	803			615		894	925		1165	1179	
v/c Ratio (x)	0.28	0.27			0.12		0.59	0.01		0.51	0.04	

Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh	8.0	7.5			7.3		12.6	4.0		8.8	3.4	
Lane LOS	A	A			A		B	A		A	A	
95% Queue Length, Q ₉₅ (veh)	1.1	1.1			0.4		4.0	0.0		3.0	0.1	
95% Queue Length, Q ₉₅ (ft)	27.9	27.9			10.6		104.8	0.0		79.8	2.7	
Approach Delay, s/veh LOS	7.7	A		7.3	A		12.5	B		8.3	A	
Intersection Delay, s/veh LOS	9.5						A					

Lanes, Volumes, Timings
100: Lannon Road (CTH Y) & County Line Rd (CTH Q)

Build Traffic
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	350	270	15	40	480	40	35	225	30	30	155	370
Future Volume (vph)	350	270	15	40	480	40	35	225	30	30	155	370
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	165		0	240		0	100		0	135		275
Storage Lanes	2		0	1		0	1		0	1		1
Taper Length (ft)	100			100			100			100		
Right Turn on Red			No			No			No			No
Link Speed (mph)		50			40			40			40	
Link Distance (ft)		849			643			305			759	
Travel Time (s)		11.6			11.0			5.2			12.9	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	62%
Heavy Vehicles (%)	4%	4%	4%	1%	1%	1%	3%	3%	3%	2%	2%	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)	368	300	0	42	547	0	37	269	0	32	163	241
Turn Type	Prot	NA		Prot	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases							8			4		4
Detector Phase	1	6		5	2		3	8		7	4	4
Switch Phase												
Minimum Initial (s)	7.0	15.0		7.0	15.0		6.0	8.0		6.0	8.0	8.0
Minimum Split (s)	12.2	21.7		11.9	21.2		10.7	14.2		10.7	14.5	14.5
Total Split (s)	25.2	50.7		19.9	51.2		19.7	31.2		19.7	31.5	31.5
Total Split (%)	19.7%	39.7%		15.6%	40.1%		15.4%	24.5%		15.4%	24.7%	24.7%
Maximum Green (s)	20.0	44.0		15.0	45.0		15.0	25.0		15.0	25.0	25.0
Yellow Time (s)	3.5	4.7		3.5	3.9		3.5	3.9		3.5	3.6	3.6
All-Red Time (s)	1.7	2.0		1.4	2.3		1.2	2.3		1.2	2.9	2.9
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)	5.2	6.7		4.9	6.2		4.7	6.2		4.7	6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	1.5	5.0		1.5	5.0		1.5	1.5		1.5	1.5	1.5
Minimum Gap (s)	1.5	2.0		1.5	2.0		1.5	1.5		1.5	1.5	1.5
Time Before Reduce (s)	20.0	28.0		15.0	33.0		15.0	25.0		15.0	25.0	25.0
Time To Reduce (s)	0.0	17.0		0.0	12.0		0.0	0.0		0.0	0.0	0.0
Recall Mode	None	Min		None	Min		None	None		None	None	None
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.64	0.20		0.23	0.54		0.10	0.35		0.09	0.21	0.69
Control Delay (s/veh)	38.2	17.5		43.9	27.7		20.4	29.0		20.3	28.4	42.0

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TADI - TSC

Synchro 12 Report
Page 1

Lanes, Volumes, Timings

100: Lannon Road (CTH Y) & County Line Rd (CTH Q)

Build Traffic

PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	38.2	17.5		43.9	27.7		20.4	29.0		20.3	28.4	42.0
Queue Length 50th (ft)	93	57		21	128		12	62		11	36	116
Queue Length 95th (ft)	165	101		62	215		38	116		34	74	233
Internal Link Dist (ft)		769			563			225			679	
Turn Bay Length (ft)	165			240			100			135		275
Base Capacity (vph)	932	2373		370	2199		511	1206		503	1224	547
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	0.39	0.13		0.11	0.25		0.07	0.22		0.06	0.13	0.44

Intersection Summary

Area Type: Other

Cycle Length: 127.6

Actuated Cycle Length: 78

Natural Cycle: 65

Control Type: Actuated-Uncoordinated

Splits and Phases: 100: Lannon Road (CTH Y) & County Line Rd (CTH Q)

	Ø1		Ø2		Ø3		Ø4
25.2 s		51.2 s		19.7 s		31.5 s	
	Ø5		Ø6		Ø7		Ø8
19.9 s		50.7 s		19.7 s		31.2 s	

HCM 7th Signalized Intersection Summary

100: Lannon Road (CTH Y) & County Line Rd (CTH Q)

Build Traffic
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 			 			 			 	
Traffic Volume (veh/h)	350	270	15	40	480	40	35	225	30	30	155	370
Future Volume (veh/h)	350	270	15	40	480	40	35	225	30	30	155	370
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1841	1841	1841	1885	1885	1885	1856	1856	1856	1870	1870	1870
Adj Flow Rate, veh/h	368	284	16	42	505	42	37	237	32	32	163	241
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	4	4	4	1	1	1	3	3	3	2	2	2
Cap, veh/h	478	1196	67	103	895	74	371	597	80	322	663	296
Arrive On Green	0.14	0.36	0.36	0.06	0.27	0.27	0.05	0.19	0.19	0.04	0.19	0.19
Sat Flow, veh/h	3401	3367	189	1795	3348	278	1767	3126	417	1781	3554	1585
Grp Volume(v), veh/h	368	147	153	42	269	278	37	132	137	32	163	241
Grp Sat Flow(s),veh/h/ln	1700	1749	1807	1795	1791	1835	1767	1763	1780	1781	1777	1585
Q Serve(g_s), s	6.7	3.8	3.8	1.4	8.3	8.4	1.1	4.2	4.3	0.9	2.5	9.4
Cycle Q Clear(g_c), s	6.7	3.8	3.8	1.4	8.3	8.4	1.1	4.2	4.3	0.9	2.5	9.4
Prop In Lane	1.00		0.10	1.00		0.15	1.00		0.23	1.00		1.00
Lane Grp Cap(c), veh/h	478	621	642	103	479	491	371	337	340	322	663	296
V/C Ratio(X)	0.77	0.24	0.24	0.41	0.56	0.57	0.10	0.39	0.40	0.10	0.25	0.81
Avail Cap(c_a), veh/h	1061	1200	1240	420	1257	1288	705	687	694	667	1386	618
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.6	14.6	14.6	29.2	20.3	20.3	19.4	22.7	22.7	19.6	22.2	25.0
Incr Delay (d2), s/veh	1.0	0.4	0.4	1.0	2.2	2.2	0.0	0.3	0.3	0.0	0.1	2.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	1.3	1.4	0.6	3.4	3.5	0.4	1.6	1.7	0.3	1.0	3.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	27.5	15.0	15.0	30.1	22.5	22.5	19.4	23.0	23.0	19.7	22.3	27.1
LnGrp LOS	C	B	B	C	C	C	B	C	C	B	C	C
Approach Vol, veh/h	668			589			306			436		
Approach Delay, s/veh	21.9			23.0			22.6			24.8		
Approach LOS	C			C			C			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.2	23.8	7.6	18.5	8.6	29.5	7.3	18.8				
Change Period (Y+Rc), s	5.2	* 6.7	4.7	6.5	4.9	6.7	4.7	* 6.5				
Max Green Setting (Gmax), s	20.0	* 45	15.0	25.0	15.0	44.0	15.0	* 25				
Max Q Clear Time (g_c+I1), s	8.7	10.4	3.1	11.4	3.4	5.8	2.9	6.3				
Green Ext Time (p_c), s	0.3	6.8	0.0	0.6	0.0	3.3	0.0	0.6				

Intersection Summary

HCM 7th Control Delay, s/veh	23.0
HCM 7th LOS	C

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Lanes, Volumes, Timings
200: Club Circle Drive & County Line Rd (CTH Q)

Build Traffic
PM Peak Hour

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↘	↑↑	↘	
Traffic Volume (vph)	325	5	5	560	1	1
Future Volume (vph)	325	5	5	560	1	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	125		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			100		100	
Link Speed (mph)	40			40	25	
Link Distance (ft)	643			420	561	
Travel Time (s)	11.0			7.2	15.3	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	5%	5%	1%	1%	1%	1%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	358	0	5	609	2	0
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

HCM 7th TWSC
200: Club Circle Drive & County Line Rd (CTH Q)

Build Traffic
PM Peak Hour

Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↑	↑↑	↑	
Traffic Vol, veh/h	325	5	5	560	1	1
Future Vol, veh/h	325	5	5	560	1	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	125	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	5	1	1	1	1
Mvmt Flow	353	5	5	609	1	1

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	359	0	671	179
Stage 1	-	-	-	-	356	-
Stage 2	-	-	-	-	315	-
Critical Hdwy	-	-	4.12	-	6.82	6.92
Critical Hdwy Stg 1	-	-	-	-	5.82	-
Critical Hdwy Stg 2	-	-	-	-	5.82	-
Follow-up Hdwy	-	-	2.21	-	3.51	3.31
Pot Cap-1 Maneuver	-	-	1204	-	392	836
Stage 1	-	-	-	-	683	-
Stage 2	-	-	-	-	716	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1204	-	390	836
Mov Cap-2 Maneuver	-	-	-	-	390	-
Stage 1	-	-	-	-	683	-
Stage 2	-	-	-	-	712	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.07	11.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	532	-	-	1204	-
HCM Lane V/C Ratio	0.004	-	-	0.005	-
HCM Ctrl Dly (s/v)	11.8	-	-	8	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Lanes, Volumes, Timings

300: Woodside Lane/Site Access "B" & County Line Rd (CTH Q)

Build Traffic

PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	300	5	5	555	30	5	0	5	40	0	5
Future Volume (vph)	20	300	5	5	555	30	5	0	5	40	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	100		0	115		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	100			100			100			100		
Link Speed (mph)		40			40			25			25	
Link Distance (ft)		420			640			536			489	
Travel Time (s)		7.2			10.9			14.6			13.3	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	6%	6%	6%	1%	1%	1%	1%	1%	1%	2%	2%	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)	22	331	0	5	636	0	0	10	0	0	48	0
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											

HCM 7th TWSC
300: Woodside Lane/Site Access "B" & County Line Rd (CTH Q)

Build Traffic
PM Peak Hour

Intersection												
Int Delay, s/veh	1.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	300	5	5	555	30	5	0	5	40	0	5
Future Vol, veh/h	20	300	5	5	555	30	5	0	5	40	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	115	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	6	6	6	1	1	1	1	1	1	2	2	2
Mvmt Flow	22	326	5	5	603	33	5	0	5	43	0	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	636	0	0	332	0	0	685	1019	166	837	1005	318
Stage 1	-	-	-	-	-	-	372	372	-	630	630	-
Stage 2	-	-	-	-	-	-	313	647	-	207	375	-
Critical Hdwy	4.22	-	-	4.12	-	-	7.52	6.52	6.92	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.52	5.52	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.52	5.52	-	6.54	5.54	-
Follow-up Hdwy	2.26	-	-	2.21	-	-	3.51	4.01	3.31	3.52	4.02	3.32
Pot Cap-1 Maneuver	917	-	-	1232	-	-	336	237	853	259	240	678
Stage 1	-	-	-	-	-	-	623	620	-	436	473	-
Stage 2	-	-	-	-	-	-	676	467	-	776	615	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	917	-	-	1232	-	-	324	231	853	251	233	678
Mov Cap-2 Maneuver	-	-	-	-	-	-	324	231	-	251	233	-
Stage 1	-	-	-	-	-	-	608	605	-	434	471	-
Stage 2	-	-	-	-	-	-	667	465	-	753	601	-

Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	0.56			0.07			12.84			21.3		
HCM LOS							B			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	470	917	-	-	1232	-	-	269
HCM Lane V/C Ratio	0.023	0.024	-	-	0.004	-	-	0.182
HCM Ctrl Dly (s/v)	12.8	9	-	-	7.9	-	-	21.3
HCM Lane LOS	B	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	0.6

Lanes, Volumes, Timings
400: Wellington Drive & County Line Rd (CTH Q)

Build Traffic
PM Peak Hour

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↘	↑↑	↘	
Traffic Volume (vph)	340	5	10	585	5	1
Future Volume (vph)	340	5	10	585	5	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	115		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			100		100	
Link Speed (mph)	40			40	30	
Link Distance (ft)	640			450	557	
Travel Time (s)	10.9			7.7	12.7	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	3%	2%	2%	1%	1%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	359	0	10	609	6	0
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

HCM 7th TWSC
400: Wellington Drive & County Line Rd (CTH Q)

Build Traffic
PM Peak Hour

Intersection						
Int Delay, s/veh	0.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↑	↑↑	↑	
Traffic Vol, veh/h	340	5	10	585	5	1
Future Vol, veh/h	340	5	10	585	5	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	115	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	3	3	2	2	1	1
Mvmt Flow	354	5	10	609	5	1

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	359	0	682	180
Stage 1	-	-	-	-	357	-
Stage 2	-	-	-	-	326	-
Critical Hdwy	-	-	4.14	-	6.82	6.92
Critical Hdwy Stg 1	-	-	-	-	5.82	-
Critical Hdwy Stg 2	-	-	-	-	5.82	-
Follow-up Hdwy	-	-	2.22	-	3.51	3.31
Pot Cap-1 Maneuver	-	-	1196	-	386	835
Stage 1	-	-	-	-	682	-
Stage 2	-	-	-	-	707	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1196	-	382	835
Mov Cap-2 Maneuver	-	-	-	-	382	-
Stage 1	-	-	-	-	682	-
Stage 2	-	-	-	-	701	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.14	13.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	420	-	-	1196	-
HCM Lane V/C Ratio	0.015	-	-	0.009	-
HCM Ctrl Dly (s/v)	13.7	-	-	8	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Lanes, Volumes, Timings
500: Crossview Way & County Line Rd (CTH Q)

Build Traffic
PM Peak Hour

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↘	↑↑	↘	↗
Traffic Volume (vph)	340	1	10	615	5	10
Future Volume (vph)	340	1	10	615	5	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	190		0	0
Storage Lanes		0	1		1	1
Taper Length (ft)			100		100	
Link Speed (mph)	40			40	25	
Link Distance (ft)	330			1511	365	
Travel Time (s)	5.6			25.8	10.0	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	3%	1%	1%	1%	1%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	363	0	11	654	5	11
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

HCM 7th TWSC
500: Crossview Way & County Line Rd (CTH Q)

Build Traffic
PM Peak Hour

Intersection						
Int Delay, s/veh	0.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↑	↑↑	↑	↑
Traffic Vol, veh/h	340	1	10	615	5	10
Future Vol, veh/h	340	1	10	615	5	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	190	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	3	3	1	1	1	1
Mvmt Flow	362	1	11	654	5	11

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	363	0	711	181
Stage 1	-	-	-	-	362	-
Stage 2	-	-	-	-	348	-
Critical Hdwy	-	-	4.12	-	6.82	6.92
Critical Hdwy Stg 1	-	-	-	-	5.82	-
Critical Hdwy Stg 2	-	-	-	-	5.82	-
Follow-up Hdwy	-	-	2.21	-	3.51	3.31
Pot Cap-1 Maneuver	-	-	1200	-	370	833
Stage 1	-	-	-	-	678	-
Stage 2	-	-	-	-	689	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1200	-	367	833
Mov Cap-2 Maneuver	-	-	-	-	367	-
Stage 1	-	-	-	-	678	-
Stage 2	-	-	-	-	683	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.13	11.24
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	367	833	-	-	1200	-
HCM Lane V/C Ratio	0.015	0.013	-	-	0.009	-
HCM Ctrl Dly (s/v)	15	9.4	-	-	8	-
HCM Lane LOS	B	A	-	-	A	-
HCM 95th %tile Q(veh)	0	0	-	-	0	-

Lanes, Volumes, Timings

600: Appleton Ave (STH 175) & County Line Rd (CTH Q)

Build Traffic

PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 			 	
Traffic Volume (vph)	125	370	140	195	550	255	135	260	135	195	270	80
Future Volume (vph)	125	370	140	195	550	255	135	260	135	195	270	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)	0%				0%				0%			
Storage Length (ft)	320			160	170			360	140			310
Storage Lanes	1			1	1			1	1			1
Taper Length (ft)	100			100				100				100
Right Turn on Red			No				No				No	
Link Speed (mph)	35				35				35			
Link Distance (ft)	1686				842				858			
Travel Time (s)	32.8				16.4				16.7			
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%	62%	100%	100%	62%	100%	100%	62%	100%	100%	62%
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	1%	1%	1%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)	0%				0%				0%			
Shared Lane Traffic (%)												
Lane Group Flow (vph)	130	385	90	203	573	165	141	271	87	203	281	52
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases	4		4	8		8	6		6	2		2
Detector Phase	7	4	4	3	8	8	1	6	6	5	2	2
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	15.0	15.0	5.0	15.0	15.0
Minimum Split (s)	11.0	18.0	18.0	11.0	18.0	18.0	11.0	24.0	24.0	11.0	24.0	24.0
Total Split (s)	19.0	48.0	48.0	19.0	48.0	48.0	18.0	33.0	33.0	20.0	35.0	35.0
Total Split (%)	15.8%	40.0%	40.0%	15.8%	40.0%	40.0%	15.0%	27.5%	27.5%	16.7%	29.2%	29.2%
Maximum Green (s)	14.5	41.0	41.0	14.5	41.0	41.0	13.5	25.9	25.9	15.5	27.9	27.9
Yellow Time (s)	3.5	5.5	5.5	3.5	5.5	5.5	3.5	5.5	5.5	3.5	5.5	5.5
All-Red Time (s)	1.0	1.5	1.5	1.0	1.5	1.5	1.0	1.6	1.6	1.0	1.6	1.6
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)	4.5	7.0	7.0	4.5	7.0	7.0	4.5	7.1	7.1	4.5	7.1	7.1
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	1.5	1.5	1.5	1.5	2.0	2.0	1.5	5.8	5.8	1.5	5.8	5.8
Minimum Gap (s)	1.5	1.5	1.5	1.5	2.0	2.0	1.5	4.8	4.8	1.5	4.8	4.8
Time Before Reduce (s)	20.0	40.0	40.0	20.0	40.0	40.0	20.0	40.0	40.0	20.0	40.0	40.0
Time To Reduce (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
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	None
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.27	0.24	0.12	0.33	0.34	0.22	0.40	0.50	0.36	0.55	0.45	0.19
Control Delay (s/veh)	13.3	22.3	22.5	13.6	21.9	21.5	32.2	49.2	48.8	35.6	45.9	42.4

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TADI - TSCSynchro 12 Report
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Lanes, Volumes, Timings

600: Appleton Ave (STH 175) & County Line Rd (CTH Q)

Build Traffic

PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
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 (s/veh)	13.3	22.3	22.5	13.6	21.9	21.5	32.2	49.2	48.8	35.6	45.9	42.4
Queue Length 50th (ft)	42	94	40	68	144	74	79	103	61	118	103	35
Queue Length 95th (ft)	81	153	87	122	217	141	121	140	107	170	141	69
Internal Link Dist (ft)	1606			762			778			905		
Turn Bay Length (ft)	320		160	170		360	140		310	105		45
Base Capacity (vph)	575	1618	724	649	1678	750	391	771	345	391	822	368
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	0.23	0.24	0.12	0.31	0.34	0.22	0.36	0.35	0.25	0.52	0.34	0.14

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 113 (94%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green

Natural Cycle: 65

Control Type: Actuated-Coordinated

Splits and Phases: 600: Appleton Ave (STH 175) & County Line Rd (CTH Q)

 Ø1	 Ø2	 Ø3	 Ø4 (R)
18 s	35 s	19 s	48 s
 Ø5	 Ø6	 Ø7	 Ø8 (R)
20 s	33 s	19 s	48 s

HCM 7th Signalized Intersection Summary
600: Appleton Ave (STH 175) & County Line Rd (CTH Q)

Build Traffic
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	125	370	140	195	550	255	135	260	135	195	270	80
Future Volume (veh/h)	125	370	140	195	550	255	135	260	135	195	270	80
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1885	1885	1885	1870	1870	1870	1885	1885	1885	1870	1870	1870
Adj Flow Rate, veh/h	130	385	90	203	573	165	141	271	87	203	281	52
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
Percent Heavy Veh, %	1	1	1	2	2	2	1	1	1	2	2	2
Cap, veh/h	461	1777	793	590	1838	820	297	448	200	317	551	246
Arrive On Green	0.05	0.50	0.50	0.07	0.52	0.52	0.08	0.13	0.13	0.11	0.15	0.15
Sat Flow, veh/h	1795	3582	1598	1781	3554	1585	1795	3582	1598	1781	3554	1585
Grp Volume(v), veh/h	130	385	90	203	573	165	141	271	87	203	281	52
Grp Sat Flow(s),veh/h/ln	1795	1791	1598	1781	1777	1585	1795	1791	1598	1781	1777	1585
Q Serve(g_s), s	4.2	7.3	3.6	6.7	11.1	6.7	8.1	8.6	6.0	11.6	8.7	3.4
Cycle Q Clear(g_c), s	4.2	7.3	3.6	6.7	11.1	6.7	8.1	8.6	6.0	11.6	8.7	3.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	461	1777	793	590	1838	820	297	448	200	317	551	246
V/C Ratio(X)	0.28	0.22	0.11	0.34	0.31	0.20	0.47	0.61	0.44	0.64	0.51	0.21
Avail Cap(c_a), veh/h	585	1777	793	675	1838	820	349	773	345	345	826	369
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.6	17.1	16.1	12.9	16.7	15.6	40.9	49.7	48.6	38.8	46.5	44.3
Incr Delay (d2), s/veh	0.1	0.3	0.3	0.1	0.4	0.6	0.4	4.2	4.8	2.4	2.4	1.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	3.0	1.4	2.6	4.5	2.5	3.6	4.1	2.7	5.2	4.0	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	13.7	17.3	16.4	13.0	17.1	16.2	41.3	53.9	53.4	41.2	48.9	45.7
LnGrp LOS	B	B	B	B	B	B	D	D	D	D	D	D
Approach Vol, veh/h	605			941			499			536		
Approach Delay, s/veh	16.4			16.1			50.3			45.7		
Approach LOS	B			B			D			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.5	25.7	13.2	66.5	18.1	22.1	10.7	69.1				
Change Period (Y+Rc), s	4.5	7.1	4.5	7.0	4.5	7.1	4.5	7.0				
Max Green Setting (Gmax), s	13.5	27.9	14.5	41.0	15.5	25.9	14.5	41.0				
Max Q Clear Time (g_c+l1), s	10.1	10.7	8.7	9.3	13.6	10.6	6.2	13.1				
Green Ext Time (p_c), s	0.0	3.7	0.1	1.3	0.0	3.6	0.1	2.8				
Intersection Summary												
HCM 7th Control Delay, s/veh	28.9											
HCM 7th LOS	C											

Lanes, Volumes, Timings
800: Lannon Road (CTH Y) & Site Access "A"

Build Traffic
PM Peak Hour

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	10	30	605	10	45	545
Future Volume (vph)	10	30	605	10	45	545
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		0	300	
Storage Lanes	1	0		0	1	
Taper Length (ft)	100				100	
Link Speed (mph)	30		40			40
Link Distance (ft)	647		759			662
Travel Time (s)	14.7		12.9			11.3
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	3%	3%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	43	0	648	0	47	574
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

HCM 7th TWSC
800: Lannon Road (CTH Y) & Site Access "A"

Build Traffic
PM Peak Hour

Intersection						
Int Delay, s/veh	0.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	10	30	605	10	45	545
Future Vol, veh/h	10	30	605	10	45	545
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	-	-	-	300	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	3	3	2	2
Mvmt Flow	11	32	637	11	47	574

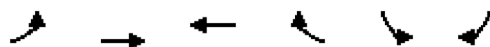
Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1024	324	0	0	647
Stage 1	642	-	-	-	-
Stage 2	382	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14
Critical Hdwy Stg 1	5.84	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22
Pot Cap-1 Maneuver	231	672	-	-	934
Stage 1	486	-	-	-	-
Stage 2	660	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	220	672	-	-	934
Mov Cap-2 Maneuver	220	-	-	-	-
Stage 1	486	-	-	-	-
Stage 2	626	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	13.96	0	0.69
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	444	934
HCM Lane V/C Ratio	-	-	0.095	0.051
HCM Ctrl Dly (s/v)	-	-	14	9.1
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.3	0.2

Lanes, Volumes, Timings
900: County Line Rd (CTH Q) & Site Access "C"

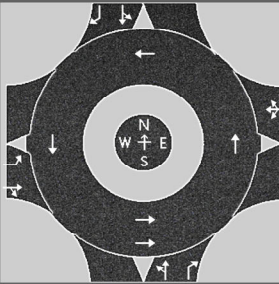
Build Traffic
PM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑			↑
Traffic Volume (vph)	0	340	590	30	0	5
Future Volume (vph)	0	340	590	30	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	0	1
Taper Length (ft)	100				100	
Link Speed (mph)		40	40		25	
Link Distance (ft)		450	330		464	
Travel Time (s)		7.7	5.6		12.7	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	3%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	354	646	0	0	5
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑			↗
Traffic Vol, veh/h	0	340	590	30	0	5
Future Vol, veh/h	0	340	590	30	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	3	3	2	2	2	2
Mvmt Flow	0	354	615	31	0	5
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	-	0	-	0	-	323
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	-	0	673
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	673
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	WB		SB		
HCM Ctrl Dly, s/v	0	0		10.39		
HCM LOS	B					
Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1		
Capacity (veh/h)	-	-	-	673		
HCM Lane V/C Ratio	-	-	-	0.008		
HCM Ctrl Dly (s/v)	-	-	-	10.4		
HCM Lane LOS	-	-	-	B		
HCM 95th %tile Q(veh)	-	-	-	0		

HCS Roundabouts Report

General Information			Site Information		
Analyst	TSC		Intersection	Lannon Road (CTH Y) & App...	
Agency or Co.	TADI		E/W Street Name	Appleton Avenue (STH 175)	
Date Performed	5/1/2025		N/S Street Name	Lannon Road (CTH Y)	
Analysis Year	2025		Analysis Time Period, hrs	0.25	
Time Analyzed	Build PM		Peak Hour Factor	0.96	
Project Description	3414 Germantown Residential TIA		Jurisdiction	Germantown	

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	1	1	0	0	0	1	0	0	0	1	1	0	0	1	1
Lane Assignment	L		TR				LTR		LT		R		LT		R	
Volume (V), veh/h	0	95	135	85	0	25	215	80	0	100	525	10	0	55	480	215
Percent Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1	3	3	3	3
Flow Rate (v _{PCE}), pc/h	0	100	142	89	0	26	226	84	0	105	552	11	0	59	515	231
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				2				1			
Pedestrians Crossing, p/h	0				0				0				0			
Proportion of CAVs, %	0															

Critical and Follow-Up Headway Adjustment

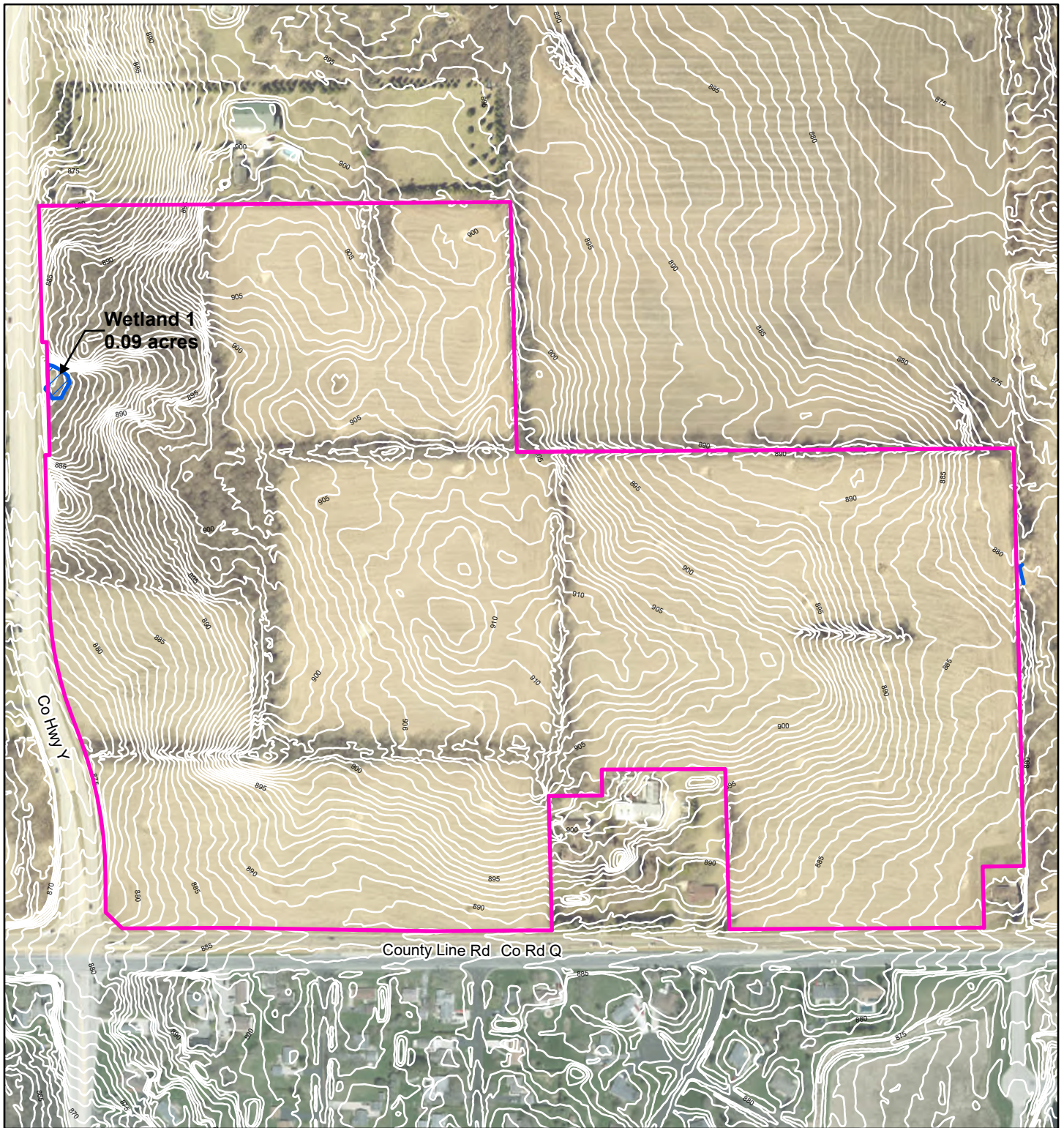
Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway, s	4.7000	4.4000			4.7000		4.6000	4.3000		4.7000	4.4000	
Follow-Up Headway, s	2.5000	2.5000			2.6000		2.6000	2.6000		2.5000	2.5000	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h	100	231			336		657	11		574	231	
Entry Volume, veh/h	99	229			333		650	11		557	224	
Circulating Flow (v_c), pc/h	600			757			301			357		
Exiting Flow (v_{ex}), pc/h	212			562			736			630		
Capacity (C_{pce}), pc/h	810	852			677		1051	1077		1023	1054	
Capacity (c), veh/h	802	843			671		1040	1067		993	1023	
v/c Ratio (x)	0.12	0.27			0.50		0.63	0.01		0.56	0.22	

Delay and Level of Service

Approach	EB			WB			NB			SB						
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass				
Lane Control Delay (d), s/veh	5.7	7.2			13.0		12.2	3.5		11.0	5.6					
Lane LOS	A	A			B		B	A		B	A					
95% Queue Length, Q ₉₅ (veh)	0.4	1.1			2.8		4.6	0.0		3.6	0.8					
95% Queue Length, Q ₉₅ (ft)	10.1	27.7			70.6		115.9	0.0		92.2	20.5					
Approach Delay, s/veh LOS	6.8		A		13.0		B		12.0		B		9.4		A	
Intersection Delay, s/veh LOS	10.4						B									



Scale:

0 375
Feet

Project Number: 24-0337

Prepared by:

Orientation:



Date: 10/24/2024

Legend:

- Project Boundary
- Surveyed Wetland Boundary
- Off-site Surveyed Wetland

Project Name:

County Line Road - Germantown

Prepared for:

Home Path Financial

Aerial Date:

2022

Exhibit Title:

Surveyed Wetland Boundaries

Exhibit:

7

ARTICLE V

HOMEOWNERS' ASSOCIATION AND ASSESSMENTS

1. **Establishment of Association.** An association (herein referred to as the “*Association*”) of the Residential Owners of Lots in the Subdivision is hereby created for the purposes of:

- a. Managing and controlling the common affairs of the Subdivision;
- b. Creating, owning, managing, controlling, maintain, granting easements to or selling any common areas in the Subdivision, if applicable;
- c. Maintaining Common Areas and Outlot 1 and working in conjunction with Bain Station Crossing Home Owners Association, Inc. as described in Exhibit E Memorandum Of Understanding relating to Outlot 4, private lot landscaping (cutting, trimming, and fertilizing). Street lighting and sidewalk maintenance and repair, and snow removal from the driveways and sidewalks of each Lot and common sidewalks, after snowfalls of two (2) inches or more;
- d. Enforcing compliance of the Residential Owners with the applicable provisions of the Declaration;
- e. Performing other duties as set forth herein for the common benefit of the Residential Owners; and
- f. Obtaining insurance for the Common Areas (defined below).

The Association shall be known as _____ and shall be incorporated as a nonstock corporation under Chapter 181 of the Wisconsin Statutes. The affairs of the Association shall be governed by bylaws to be enacted by the Declarant as incorporator of the Association.

2. **Common Areas.** Declarant shall have the right to designate and improve such portions of any undeveloped Lot or any other portion of the Plat as a common area unless or until such undeveloped Lot or other portion of the Plat has been sold to a Residential Owner (all portions of the Plat not designated as a Lot or otherwise dedicated to the Village, including without limitation Outlot 1, Outlot 4 retention pond of the Bain Station Crossing subdivision plat, and all retaining walls within the lots and Outlot 1 abutting Lots 11-15 shall constitute the “*Common Areas*”). All Common Areas and related facilities as developed per the approved Final Plat shall be used for the common benefit of all the Residential Owners in the Subdivision and each Residential Owner will own an undivided fractional interest in such Common Area which shall be appurtenant to the Lot. Such Common Areas may only be used for recreational or other activities by Residential Owners in accordance with the terms, conditions and restrictions contained herein or as are later adopted or approved by the Declarant or the Association. The Declarant shall have the right to erect signs in the common areas to promote the sale of Lots or Residences in the Subdivision. Any signs, monuments, structures or other common facilities constructed by Declarant or the Association on any Common Areas shall be operated and properly maintained and repaired by Declarant or Association (as the case may be) so as to be neat and attractive in appearance. The Association shall properly maintain the Common Areas so that they are neat and

attractive in appearance (including, without limitation, proper care and cutting of grass and other vegetation).

3. **Mandatory Membership.** Every Residential Owner, upon acquiring title to a Lot, or upon entering into a land contract for the purchase of a Lot, shall automatically become a member of the Association and shall remain a member thereof until such time as the ownership of such Lot ceases for any reason, at which time membership in the Association shall automatically cease. In the event a Lot is owned by more than one (1) person or entity, the person or entity who shall be entitled to vote for the Lot shall be the person or entity named on a certificate executed by all of the co-owners of the Lot and filed with the Secretary of the Association.

4. **Board of Directors.** The Association shall initially be governed by a Board of Directors, hereinafter referred to as the “**Board of Directors**” or “**Board**,” which shall be solely responsible for the activities of the Association. The initial members of the Board will be appointed by the Declarant and shall not exceed three (3) in number (the “**Initial Directors**”). After the term of the Initial Directors, the Board shall consist of not more than five (5) directors, to be elected pursuant to the Bylaws of the Association. Notwithstanding the foregoing, so long as the Declarant owns any Lots or any Expansion Area, the Board shall consist of directors appointed solely by the Declarant.

5. **Qualification of Directors.** To qualify as a member of the Board, a person must be either a Residential Owner or a duly designated officer, agent or representative of a Residential Owner or the Declarant.

6. **Initial Term of Office of Directors.** The term of office of the Initial Directors (which have been appointed by the Declarant) shall commence upon the date of recording of this Declaration and shall continue until two (2) calendar years after the year in which Declarant no longer owns any of the Lots then subject to this Declaration (including any Expansion Areas added hereto), or upon such earlier time as may be designated by Declarant (the “**Initial Term**”). During such Initial Term, Declarant shall have the right to appoint, remove or replace all three Directors. Declarant may relinquish or reassert all or any part of the rights provided to the Board or the Association at any time or times during such Initial Term.

7. **Duties of the Board.** In addition to any duties set forth in the Bylaws of the Association, the Board shall have the following duties:

- a. To provide for the maintenance of improvements in any common areas;
- b. To establish dates and procedures for the election of members to the Board;
- c. To promulgate operating procedures for the conduct of the Association’s and the Board’s affairs;

d. To enforce the terms, conditions and restrictions contained in this Declaration according to the terms thereof; and

e. To establish the Committee.

Notwithstanding anything to the contrary, Declarant shall have the right to retain the power to appoint the members of the Committee. Once control of the Committee has ceded to the Association by the Declarant, such Committee shall consist of three (3) persons appointed by the Board.

8. **Board Powers.** In addition to any powers of the Board set forth in the Bylaws of the Association, the Board shall have the following powers:

a. To take such actions as may be necessary to cause any common areas to be maintained, repaired, landscaped (where appropriate) and kept in good, clean and attractive condition;

b. To enter into contracts and to employ agents, attorneys or other for purposes of discharging its duties and responsibilities hereunder;

c. To levy and collect assessments in accordance with the provisions of Article VI, Section 8 below; and

d. To do anything or take any other action which is incidental to or necessary for the Board to perform its duties and discharge its obligations under and enforce this Declaration.

9. **Assessments.** The Board shall levy and collect assessments in accordance with the following and in accordance with the Bylaws of the Association:

a. The Board shall establish an annual budget in advance of each calendar year of all Association expenses for such year that may be required for the proper operation and management of the Association. Such budgeted amount shall be collected from the Residential Owners on a prorata basis through a general assessment (the “**General Assessment**”). The prorata share of a Residential Owner of a Lot shall be a fraction, the numerator of which shall be one and the denominator shall be the total number of Lots subject to this Declaration at the time of the General Assessment. Said costs shall include, but not be limited to, taxes, insurance, repair, replacement and additions to any improvements made to any common areas; repairs, replacements, and additions to any storm water improvements to the extent the Association is required to contribute thereto; equipment; materials; labor, management and supervision thereof; and, all costs of the Association reasonably incurred in conducting its affairs and enforcing the terms, conditions and restrictions contained in this Declaration. The Board shall also have the power to levy a special assessment (“**Special Assessment**”) against any individual

Residential Owner for failure of such Residential Owner to: maintain said Residential Owner's Lot in accordance with reasonable standard of the Subdivision; or otherwise fail to comply with the terms, conditions and restrictions contained in this Declaration. General Assessments and Special Assessments may be referred to collectively as "**Assessments**."

b. There shall be an established reserve account to be used by Residential Owners for the repair and replacement of foundations, structural components, roof of any Residences, windows, siding, chimneys, retaining walls, and other exterior elements. In the event it is determined a repair or replacement of such component is necessary, the Residential Owner shall submit two (2) bids for the work to be performed to the Association. The Association shall then disburse directly to the contractor amounts owed for such repair or replacement. Such components, to the extent they are shared by Residences, shall be replaced at the same by the same contractor, e.g., if the roof of one Residence is in need of replacement, the roof of the attached Residence shall be replaced at the same time by the same contractor.

c. Declarant shall not be required to pay any Assessment on any Lots owned by Declarant.

d. Assessments shall be approved by the Declarant or at a duly convened meeting of the Board.

e. Upon the initial sale of any Lot by Declarant to a third party, the purchaser shall pay an initial assessment of \$500 or such other amount reasonably acceptable to Declarant, to be used to initially capitalize the Association.

f. Written notice of an Assessment shall be personally delivered to each Residential Owner subject to the Assessment or delivered by regular mail addressed to the last known address of such Residential Owner.

g. Assessments shall be due and payable on or before thirty (30) days after the mailing or personal delivery of the notice, as the case may be.

h. Any assessment, or installment thereof, not paid when due shall bear interest, at the rate of twelve percent (12%) per annum from the date when due until paid. Each Residential Owner shall be personally liable to pay any assessment including interest thereon and costs of collection which shall include reasonable attorneys' fees. The Association may bring an action against the Residential Owner for the collection of any unpaid assessment.

i. The Board may record a document with the Register of Deeds in Kenosha County, Wisconsin, giving notice of a lien for any such unpaid Assessment and upon payment or satisfaction of the amount due record a document cancelling or releasing any

such lien. The failure to file any such notice shall not impair the validity of the lien. All recording and attorneys' fees relating to any such document or the collection of an Assessment shall be borne by the affected Residential Owner. Enforcement of such lien by the Association shall be in conformity with the provisions of section 779.70, Wis. Stats. In the event Declarant or the Association incurs attorneys' fees or other costs in connection with the enforcement of this Declaration, the Residential Owner shall be obligated to reimburse Declarant or the Association for its actual attorneys' fees and other enforcement costs.

j. In the event any member whose fees and assessments are paid in full, shall, during the year in which such fees and assessments are paid, terminate his or her membership by sale of his or her Lot, he or she shall be entitled to assign to the buyer the benefit of the paid fees and assessment.

[THE FOLLOWING CAN BE MODIFIED TO APPLY TO THE PRIVATE LIFT STATION AND PRIVATE ROADS]

To the extent that the Village performs any such above ground work or related maintenance activities, in the dedicated storm water drainage easement, storm sewer, access and maintenance areas, the Homeowners Association, collectively the lot 1 through 18 owners, shall be liable for any costs which may be incurred by the Village, which the Village may recover from such owners as special assessment or special charges under section 66.60 (or successors or similar provisions) of the Wisconsin statutes or otherwise according to law. This covenant shall run with the land, shall be binding upon the Homeowners Association, and its lot 1 through 18 owners, their successors, assigns and successors-in-title of the lots, in their capacity as owners of lots 1 through 18 and shall benefit and be enforceable by the village.

Home Product Offering-Flagship



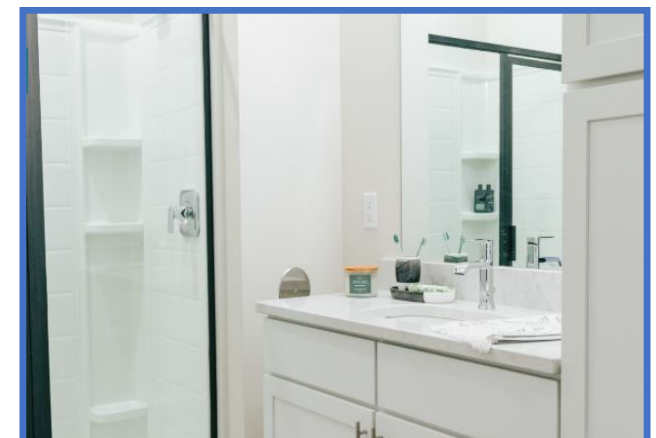
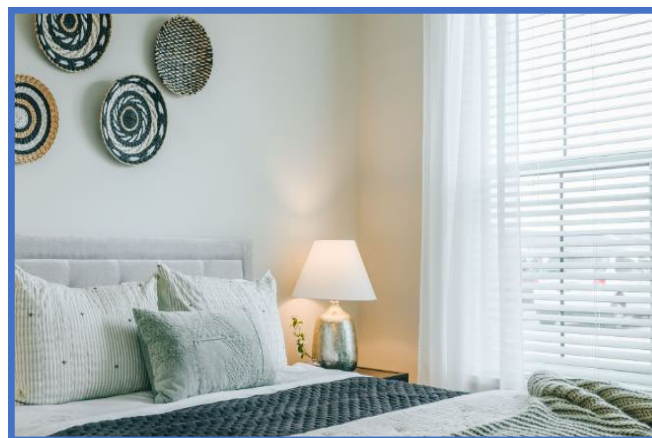
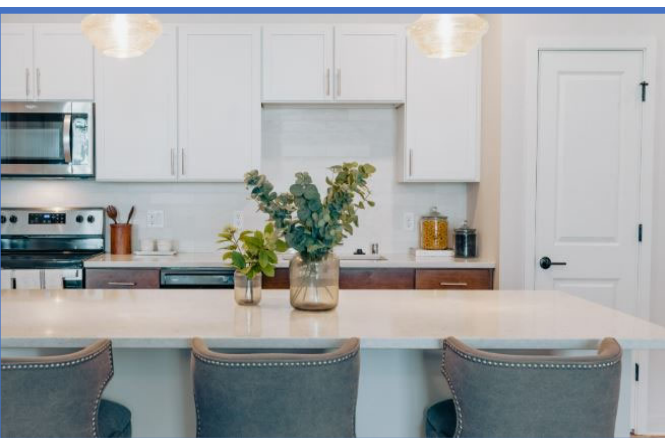
Home Product Offering-Pathway



Home Product Offering-Ranch Villas



Home Product Offering-Attached Single Family





Engineering Department Memorandum

To: Jeff Retzlaff, AICP - Director of Community Development

From: Kevin Driscoll, PE - Village Engineer

Date: 5/16/2025

Re: Site Plan Review - Sutton Farm (GTNV_323986, GTNV_323995, GTNV_323987)

Items Reviewed:

1. Site Plan Review Application: March 2025 - Mohrhussen Farm Subdivision, Homepath Financial
2. Civil Plan Set – March 25, 2025
3. Storm Water Management Plan – March 2025

General Comments:

1. Please respond to each item below. **A written response addressing each item shall be included in your submittal.**
2. The submitted plans have been reviewed for general conformance with State and Village design guidelines. Additional comments could arise as a result of the plan completion and modifications. The items listed below will need to be fully resolved before the Engineering Dept. can recommend a formal approval of the plans and permit for construction.
3. This project will require a WRAPP/NOI from the DNR. Please submit a copy of the approved permit prior to final approval.
4. Provide copies of approved artificial wetland exemptions.
5. As-builts prepared to Village standards shall be prepared and provided to the Village post-construction (for all applicable items).
6. A professional engineer's original seal is to be affixed, signed and dated on the final set of construction plans.
7. Utility permits and permits for work within the ROW are required. Contact the Village Engineering division to obtain permits.
8. Provide documentation for WisDOT approval of the work shown in the ROW.
9. Provide documentation for County approval of the work shown in the ROW.
10. As a guide to the review response: Items in *italics* are resolved or acknowledged, items in regular font are to be addressed yet, items in **Bold** are additional feedback to remaining original comment.
11. Developer to enter into a Development Agreement and provide a letter of credit prior to construction activity.
12. Village DPW Staff does not recommend private roads and private sanitary mains and lift station due to future maintenance and replacement obligations.
13. Add Construction Phasing Plan.
14. Details On cover page reference use of NAD83 and NAVD88 the Wisconsin State Plane Coordinate System – South Zone.

15. Add parcels IDS to cover page in lieu of Address: GTNV_323986, GTNV_323995, GTNV_323987
16. Provide drawings as outlined in the Village of Germantown Development Handbook: Section 1 – Construction Plan Requirements

Typical Section

- G3.00 - Private Residential Street identified in typical section. List streets that are proposed as private. (A-J?)
- Identify where utility easements would be required. (Streets F, I & J ?)
- G3.00 - List streets that are proposed as public. (A-J?)

Grading

- Lots 54-61 have very steep back yards 10 ft elevation change, plus another 10 feet for pond grading. Great sledding!
- Lots 96-106 are steep back yards & side yards 5 ft elevation change.
- C1.04 - Outlot between Lots 103-104 & 121-119 are very steep (910-890=20 ft elevation change). Is a retaining wall proposed ? If so, provide example covenant for HOA maintenance responsibility (and when HOA dissolves who covers the costs).
- Identify drainage easements through private property. The Village staff receives complaints about owners not being aware of drainage easements and wanting to fill them in.

C1.08

1. Add elevations to the berm details.
2. Provide cross sections of the basins showing depth, safety shelf, clay liner, etc.
3. Show bedrock elevations on the cross sections.
4. Provide erosion control plans.

Drainage Pond Details

- Sheets C1.08 & C1.09 missing elevation, details, for berms, spillways, piping

Sanitary Sewer Utility

- All sewer shall be designed in accordance with Germantown Development Handbook.
- Design Public facilities to serve area identified in 2050 facilities plan. Complete analysis of Section 31 with 2.2 units per acres in area bounded by Will Creek Road to the north,

County Line Road to the south, Lannon Road to the east, and Amy Bell Road (extended) to the south. Anticipate extension of 18-inch diameter sanitary interceptor from County Line Rd as interceptor to Lannon Road.

- All sanitary sewer to be public and designed along the centerline.
- Manholes 12,57,56,55 will be epoxy sprayed after construction with Raven 405 or HDPE manhole liners cast in.
- private lift stations are not recommended by staff. Developer to Provide examples of responsibilities and outcomes for 68+/- homes on a private lift station
- Identify where utility easements would be required.
- Sanitary Building Sewer Laterals missing. Provide table with footing clearances.
- C1.11 – show offset clearances from sanitary to water main
- C2.01 – Sanitary depth 27 ft. Exceeds standard equipment. Conventional depth is 10-ft of cover. Some sections extend to ~20 however additional training, equipment, crews may be required.
- C2.03 - Add SMH as Street D along avoid secant/tangent alignment outside of roadway. No storm in centerline.
- C2.04 – Sanitary slope 4%. That is steep. Clarify what is design velocity.
- C2.04 – Show vertical clearance in profile between sanitary and water near Street L and Street E.
- C2.05 – 5ft of cover is not accepted per the Development Handbook: 3.1.1.2.9 Minimum sewer depth shall be 8 feet from finished grade to top of pipe, except under exceptional circumstances and approval of Village Engineer. Sewer depths shall provide gravity flow for basement floor drains and plumbing fixtures.
- C2.08 – Show vertical clearance in profile between sanitary and water near Street D and Street G.
- C2.08 – Show vertical clearance in profile between sanitary and water near Street E and Street H.

Water Utility

- Coordinate siting a well and upsize the water main

- Water main layout has connection from CTH Q through A” street west, but no connection is shown on CTH Y (Lannon Rd). Design for looped system.
- Identify land for Water Utility future well site.
- Identify where utility easements would be required.
- C1.11&C1.12 – show offset clearances from water main to sanitary to adhere with NR811 (Street L near Street A) (Street D near Street B) (Street F near Private Parking)(street
- C1.13&C1.14 – show offset clearances from water main to sanitary to adhere with NR811 (Street H near Street L)
- C1.11&C1.12 – show offset clearances from water main to storm sewer to adhere with NR811
- C2.03 – show offset clearances from water main to sanitary sewer to adhere with NR811 near intersection of Street D and Street C.
- Show minimum horizontal clearances on all plan sheets.
- Water profile missing. Show vertical clearances of water and sanitary and storm crossing on all profile sheets.
- Driveway locations missing and Curb Stop locations missing. Show driveways and curb stops. Avoid curb stops in driveways.

Streets / Highways

- County Line Road (CTH Q) connection requires Washington County approval.

Any change in use or subdivision of land requires a permit. Securing a County permit is required as a provision of this subdivision approval, and applicants to work with County staff as early in the process as possible.

Review of sight distance was part of their overall study. Washington County has jurisdiction on Lannon Rd, Waukesha County has authority on this portion of County Line Rd. and they have been involved in the process. The County does not anticipate needing any additional RW at this point.

- STH 167 / Lannon Road connection requires Wisconsin Department of Transportation approval. Complete form DT1504 and DT1248 and transmit to Village staff for transmittal to WisDOT, SE Region contact <https://wisconsindot.gov/Pages/doing-bus/real-estate/permits/apply.aspx> - 141 NW Barstow St PO Box 798 Waukesha, WI 531884

Kevin Koehnke kevin.koehnke@dot.wi.gov (262) 548-5891

- C1.12 – Private Parking Lot. Provide HOA Covenant for maintenance, repair, reconstruction of parking lot outside of proposed right of way between Street B and Street F. Address snow plowing.
- Developer to explain rational for both public and private roadways within the development and maintenance expectations for the parking lot.
- Driveway locations missing. Show driveways and curb stops. Avoid curb stops in driveways.

Traffic

- TIA provided. 283 single family units.
- Has state been contacted regarding Signal requirements STH167/Lannon Rd at New Site Access? (full access designed)
- Has county been contacted regarding Signal requirement for CTH Q at New Site Access? (west bound only designed, keep existing median)
- Has county been contacted regarding Signal requirement for CTH Q at Woodside Lane? (west bound only designed, keep existing median)

Trees

- Landscape plan missing. Identify spacing for small, medium, large plantings per Village of Germantown Tree Plan.
- County Line Road (CTH Q) connection requires Washington County approval. After Village Highway Potential overcrowding of street trees.

Sidewalk and Paths

- Address Sidewalk system within residential area as it relates to current ordinance language regarding maintenance.
- Provide sidewalk connectivity at Lannon and extend along County Line Road frontage.
- G3.00 – typical section shows sidewalk on one side within subdivision. Clarify for consistency with G1.03.

- C1.03 – overview shows sidewalk on both sides within subdivision. Clarify for consistency with G3.00.

Park / Outlot

- Clarify “park” as outlot responsibility of Homeowners Association, where a Developers Agreement is written and addresses maintenance by the HOA. Refer to outlot 1 on plat.

Stormwater

- Provide storm water management plan with a Storm Water Maintenance Agreement.
- Closer review of storm water system and materials.

C1.04

1. Show storm sewer and rim elevations on the grading plan.
2. Provide spot elevations at all lot corners and high and low points
3. Show overland flow path through the site with large bold arrows.
4. Show basin outlet locations and method of erosion control.

Stormwater Management Plan

1. Provide soil boring logs for review
2. Rainfall shall be MSE distribution, not Type II
3. Provide information on the amount of impervious area that was assumed for each lot. Impervious area shall match the max allowed by zoning code.
4. Adjust Tc times for the proposed conditions to use actual computed Tc times and not just 5.0 minutes.
5. Provide water quality calculations.

Easements

- Identify where utility easements would be required.

Plat

- Identify parcel number corresponding with storm water management facilities and Storm Water Maintenance Agreement.

Development Agreement

- Address garbage collection (public v. proposed-private).
- Sidewalk areas.



Engineering Department Memorandum

To: Jeff Retzlaff, AICP - Director of Community Development

From: Kevin Driscoll, PE - Village Engineer

Date: 6/6/2025

Re: Sutton Farm Comments (GTNV_323986, GTNV_323995, GTNV_323987)

Item Reviewed:

1. Homepath Financial responded on 5/30/2025 to address Village staff comments in a memo dated 5/16/2025. The memo dated 5/16/2025 was Staff's response to the Developer's March 2025 Re-Zoning Application of Mohrhussen Farm

Staff Comments:

Village staff had their first meeting with the Developer and indicated that all sewers to be designed in accordance with Germantown Development Handbook.

The Developer responded that they cannot meet standard depth and go deeper because of bedrock (due to cost). *Note that the Village has a permit process for blasting bedrock, when necessary, and sanitary sewer has been built through bedrock in Germantown.* In lieu of designing to standard depth, the Developer proposes to construct a private lift station.

Staff commented to the Developer that private lift stations are not recommended by staff, and requested that the Developer provide examples of responsibilities and outcomes for 68+/- homes on a private lift station. Staff met again with the Developer following this comment and requested they share an example of a successful private lift station that they've installed.

The Developer responded that they have lift stations on a smaller project and that they can provide examples. The Developer indicated that the maintenance and management of a private lift station can be absorbed by the new 102+/- units, and that the condo budget will have a maintenance and capital reserve account included for their improvements (private lift station and forcemain). In addition, the Developer indicated that their Declarations are to have provisions for the Village to assess liens against properties in the event the Village is forced to maintain and/or repair the private facilities constructed by the Developer.

Staff has identified the following conditions, prior to approval of the development agreement:

1. Developer to provide examples of successful private lift stations they've installed/operated/maintained.
2. Developer to provide clarification on the financial guarantee for private repair, maintenance, and replacement of the proposed private lift station. Specifically, the Village would like to see a life cycle analysis that identifies an appropriate funding level to cover operations, maintenance and repair, and eventual replacement. This analysis should cover all components of the private lift station including plumbing, repair and replacement of mechanicals (pumps), electrical (controls), and structures (wet well and dry well), along with any required site/civil work.
3. Developer to provide clarification on the financial guarantee for private repair, maintenance, and replacement of the proposed private road. Specifically, the Village would like to see a life cycle analysis that identifies an appropriate funding level to cover operations (snow removal), maintenance and repair (crack filling, sealcoating, etc), and eventual replacement.
4. Developer to establish a provision in the Declarations that allows the Village to assess liens against properties in the event special assessment is needed to properly maintain private facilities.

Public Works/Engineering Staff Comment: The Developer suggested this remedy. It acknowledges the Village may ultimately become responsible for the private lift station. While this is what the above conditions are looking to avoid, should this development proceed, this potential future responsibility should be understood by the Plan Commission and the Village Board.

To: Kevin Driscoll, Village Engineer

CC: Jeff Retzlaff Village Planner

From: Bob Beilfuss, PLS

Date: April 14, 2025

Re: Mohrhusen Family Farm Preliminary Plat Review

Kevin,

Here is my review comments for the preliminary subdivision plat received 4/9/2025.

Preliminary Subdivision Plat

Applicant or Owner: Mohrhusen Family Farm, LLC

Address: Vacant Farm Land

Tax Key No. GTNV_323995, GTNV_323986 and GTNV323987

Land Surveyor/Firm: Andrew J. Miazga, PLS (S-2826)– FOTH INFRASTRUCTURE & ENVIRONMENT, LLC

18.04 - PRELIMINARY PLAT.

1. GENERAL. A preliminary plat shall be required for all subdivisions and shall be based upon a survey by a registered (Professional) land surveyor and the plat shall be prepared on tracing cloth, reproducible drafting film or paper of good quality at a map scale not larger than 100 feet to the inch and shall show correctly on its face the following information:

Map scale is larger than 1" = 100' and needs to be revised

(a) Title or name under which the proposed subdivision is to be recorded. **Complete**

(b) Proper location of proposed subdivision by government lot, quarter section, town, range, county and state. **Complete**

(c) General location sketch showing the location of the subdivision within the U. S. Public Land Survey section. **Complete**

(d) Date, graphic scale and north point. **Complete**

(e) Names and addresses of the owner, subdivider and (Professional) land surveyor preparing the plat. **Complete**

(f) The entire area contiguous to the proposed plat owned or controlled by the subdivider shall be included on the preliminary plat even though only a portion of said area is proposed for immediate development. The Plan Commission may waive this requirement where it is unnecessary to fulfill the purposes and intent of this chapter and severe hardship would result from strict application thereof. **Complete**

2. PLAT DATA: All preliminary plats shall show the following:

(a) Exact length and bearing of the exterior boundaries of the proposed subdivision referenced to a corner established in U. S. Public Land Survey and the total acreage encompassed thereby. **Complete**

(b) Existing and proposed contours at vertical intervals of not more than 2 feet where the slope of the ground surface is less than 10% and of not more than 4 feet where the slope of the ground surface is 10% or more. Elevations shall be marked on such contours based on National Geodetic Datum of 1929 (mean sea level). **Complete**

(c) Water elevations of adjoining lakes and streams at the date of the survey and approximate high and low water elevations, all referred to mean sea level (1929) datum. **Not Applicable**

(d) Limits and elevation of the 100-year recurrence interval flood as shown on the floodland maps supplemental to the Village Zoning District Maps, or where such data is not available, a line 5 feet above the maximum flood of record. **Not Applicable**

(e) Location, right-of-way width and names of all existing streets, alleys or other public ways, easements, railroad and utilities rights-of-way and all U. S. Public Land Survey section and quarter section lines within the exterior boundaries of the plat or immediately adjacent thereto. **Complete**

(f) Type, width and elevation of any existing street pavements within the exterior boundaries of the plat or immediately adjacent thereto together with any legally established centerline elevations, all to mean sea level (1929) datum. **Complete**

(g) Location and names of any adjacent subdivision, parks and cemeteries and owners of record of abutting unplatted lands. **Complete**

(h) Location, size and invert elevation of any existing sanitary or storm sewers, culverts, and drain pipes, the location of manholes, catch basins, hydrants, power and telephone poles and the location and size of any existing water and gas mains within the exterior boundaries of the plat or immediately adjacent thereto. If no sanitary or storm sewers or water mains are located on or immediately adjacent to the lands being platted, the nearest such sewers or mains which might be extended to serve such lands shall be indicated by their direction and distance from the nearest exterior boundary of the plat and their size and invert elevations noted on the plat.

No adjoining water main, sanitary pipe size, type or elevation are shown on plat. Existing storm sewer on County Line and Lannon Roads is shown graphically but no pipe size, type or invert elevations are shown on the plat.

(i) Locations of all existing property boundary lines, structures, drives, streams and watercourses, marshes rock outcrops, wooded areas, railroad tracks and other similar significant natural or manmade features within the tract being subdivided or immediately adjacent thereto. **Complete**

(j) Location, width and names of all proposed streets and public rights-of-way such as alleys and easements. **Incomplete. No proposed public utility easements shown on Lot 158 and 159, and the NE corner of the plat in Outlot 4.**

(k) Approximate dimensions of all proposed building lots together with proposed lot and block numbers. **Complete**

(l) Location and approximate dimensions and size of any sites to be reserved or dedicated for parks, playgrounds, drainage ways, schools or other public use or sites which are to be used for group housing, shopping centers, church sites or other private uses not requiring lotting.

Not Applicable

(m) Approximate radii of all curves. **Complete – see curve table**

(n) Existing zoning on and adjacent to the proposed plat. **No zoning shown for adjoining lands**

(o) Any proposed lake and stream access. **Not Applicable**

(p) Any proposed lake and stream improvement or relocation. **Not Applicable**

(q) Soil type, slope and boundaries as shown on the detailed operational soil survey maps prepared by the U. S. Soil Conservation Service. **Incomplete**

(r) Location of soil boring tests, where required by Wis. Adm. Code H 65.06(2), made to a depth of 6 feet, unless bedrock is at a lesser depth. The number of such tests shall be adequate to portray the character of the soil and the depths of bedrock and ground water from the natural undisturbed surface. To accommodate this purpose, a minimum of one test per 3 acres shall be made. Two copies of all test results shall accompany the preliminary plat.

Complete

(s) Location of soil percolation tests, as required by and conducted in accordance with Wis. Adm. Code H 65.06(3), taken at the location and depth in which on-site soil absorption sanitary sewerage disposal systems are to be installed. The number of such tests shall not be less than one test per 3 acres or one test per lot, whichever is greater. Two copies of all test results shall accompany the preliminary plat. **Not Applicable**

3. STREET PLANS AND PROFILES. The Village Engineer may require that the subdivider provide street plans and profiles showing existing ground surface, proposed and established street grades, including extensions for a reasonable distance beyond the limits of the proposed subdivision when requested. All elevations shall be based upon mean sea level (1929) datum, and plans and profiles shall meet the approval of the Village Engineer.

Provided under separate documentation, not shown on the preliminary plat

4. TESTING. The Village Engineer may require that borings and soundings be made in specified areas to ascertain subsurface soil, rock and water conditions, including depth to bedrock and depth to ground water table. Where the proposed land division will not be served by public sanitary sewer service, the provisions of Wis. Adm. Code H 65 shall be complied with, and the appropriate data submitted with the preliminary plat.

Complete. Soil Borings shown on the plat.

5. SOIL AND WATER CONSERVATION. The Village Engineer, upon determining from a review of the preliminary plat that the soil, slope, vegetation and drainage characteristics of the clearing, grading, filling and other earth moving operations in the development of the land division or otherwise entail a severe erosion and sedimentation hazard, may require the subdivider to provide an erosion control plan as provided in [section 17.44](#) of this Code.

Not Applicable

6. COVENANTS. The Plan Commission may require submission of a draft of protective covenants whereby the subdivider intends to regulate land use in the proposed subdivision and otherwise protect the proposed development. **Unknown at the time of review.**

7. AFFIDAVIT. The survey (**Professional Land Surveyor**) preparing the preliminary plat shall certify on the face of the plat that it is a correct representation of all existing land divisions and features and that he has fully complied with the provisions of this chapter. **Complete**

State law reference—Preliminary plat, Wis. Stats. § 236.11.

8. Monumentation. The monumentation symbols in the legend do not indicate the size or type of existing and proposed monumentation set or found.

9. There is no scale or north arrow shown for the vicinity or location map.

10. Should this subdivision be developed in phases, then phase lines need to be added to the preliminary plat.

Document Approval and Recording

For this plat to be approved by the Village Board and recorded at the Washington County Register of Deeds, the document must be provided to the Village Clerk's office in a completed format including all original signatures of the owner and lending institution, original seals of the professional land surveyor on the recordable media the Wednesday prior to the scheduled Village Board meeting.

This includes the CADD file.

Any documents or digital files not submitted by the due date or contain outstanding technical review comments that have not be addressed, will be moved to the next scheduled Village Board meeting agenda.

Document Submittals and Data Conversion

As of October 2005, the Village of Germantown requires a digital copy of all Certified Survey Maps, Condominium Plats and Subdivision Plats in addition to the documents as required by Wisconsin Statute and Village Ordinances as part of the land division approval.

The digital mapping should be prepared using the NAD83 Datum (2011 Adjustment)

Prior to Recording the Certified Survey Map or Subdivision Plat

The professional land surveyor is responsible for submitting a copy of the AutoCAD drawing file (.dwg) of the document in version 2024 via email to the Village Surveyor for mapping purposes.

All digital professional land surveyor seals and signatures will be purged from the digital copy prior to submittal.

Sincerely,
Point Land Surveying & Mapping

Bob Beilfuss

Bob Beilfuss, P.L.S.
Principle



Rear Elevation

TYPE 1 - REAR ELEVATION

Character Elevation



TYPE 1 - FRONT ELEVATION
Character Elevation



Front Elevation
Scale: 3/16" = 1'-0"

TYPE 3 - FRONT ELEVATION
Character Elevation



Rear Elevation
Scale: 3/16" = 1'-0"

TYPE 3 - REAR ELEVATION



TYPE 2 - FRONT ELEVATION
Character Elevation

March 14, 2025

RECEIVED

MAR 14 2025

DONNA OTT, VILLAGE CLERK

VILLAGE OF GERMANTOWN
N112 W17001 MEQUON ROAD
GERMANTOWN, WI 53022

VILLAGE OF GERMANTOWN
CLERK'S OFFICE

KM 10:21 am

Dear Ms. Ott,

Enclosed are the protest petitions pertaining to the property at the Northeast corner of County Line Rd (Hwy Q) and Lannon Rd (Hwy Y), Parcels GTNV_323986, 323995 & 323987. These are protesting the zoning change from A-1 to RS-7 and RM-1.

The requirements of the Germantown Municipal Code Section 17.51(7), have been met, such that the favorable vote of $\frac{3}{4}$ of the full Village Board, will be required for this rezoning to become effective.

If have pieced together a map of all the parcels that could protest this rezoning, for both Germantown and Menomonee Falls. The parcels in yellow are the 3 that require rezoning. Any parcel in blue is one that signed the protest petitions, which are included in this packet.

Please contact me at 414-588-2928, if there are any questions about this.

Sincerely,



Tamara schneider



0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99

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0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99

PROTEST AGAINST ZONING CHANGE

Pursuant to Village of Germantown Municipal Code Section 17.51(7), I protest the rezoning of the NEC (Northeast corner) of County Line Road (Hwy Q) and Lannon Road (Hwy Y), Parcels GTNV_323986, 323995 & 323987, from A-1 (agriculture) to RS-7 (residential single family) and RM-1 (residential multi-family).

Print Name: MARK BARELMANN

Print Name: NANCY BARELMANN

Date: 3/13/2025

Tax Key No. GTNV 323989

Print Address: N96 W19958 COUNTY LINE RD

Colgate (Germantown)

County of Washington

State of Wisconsin

Signature of property owner: Mark Barelmann

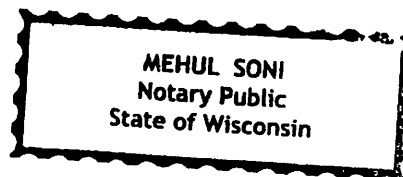
Signature of property owner: Nancy Barelmann

This document was signed before me on this 13th day of March, 2025 by the named person.

MEHUL SONI
(Signature, Notary Public, State of Wisconsin)

MEHUL SONI
(Print or Type Name, Notary Public, State of Wisconsin)

09-06-2027
(Date Commission Expires)



INOS JHPIW
CJHPIW 17510
25125 01 WISCONSIN

PROTEST AGAINST ZONING CHANGE

Pursuant to Village of Germantown Municipal Code Section 17.51(7), I protest the rezoning of the NEC (Northeast corner) of County Line Road (Hwy Q) and Lannon Road (Hwy Y), Parcels GTNV_323986, 323995 & 323987, from A-1 (agriculture) to RS-7 (residential single family) and RM-1 (residential multi-family).

Print Name: Darcel E Ehley

Print Name: _____

Date: 3-13-2025

Tax Key No. GTNV 323 988

Print Address: N96W19866 County Line Rd

Colgate (Germantown)

County of Washington

State of Wisconsin

Signature of property owner:

Darcel E Ehley

Signature of property owner: _____

This document was signed before me on this 13th day of March, 2025 by the named person.

Julie L. Reno

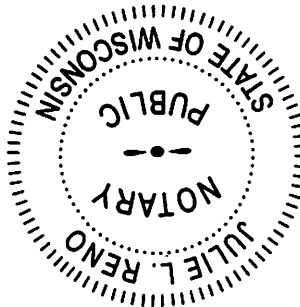
(Signature, Notary Public, State of Wisconsin)

Julie L. Reno

(Print or Type Name, Notary Public, State of Wisconsin)

10-14-2028

(Date Commission Expires)



PROTEST AGAINST ZONING CHANGE

Pursuant to Village of Germantown Municipal Code Section 17.51(7), I protest the rezoning of the NEC (Northeast corner) of County Line Road (Hwy Q) and Lannon Road (Hwy Y), Parcels GTNV_323986, 323995 & 323987, from A-1 (agriculture) to RS-7 (residential single family) and RM-1 (residential multi-family).

Print Name: Scott A Schroeder Print Name: _____

Date: 3/12/2025 Tax Key No. GTNV 323990

Print Address: N96 W19602 County Line Rd

Colgate (Germantown)

County of Washington

State of Wisconsin

Signature of property owner: Scott A. Schroeder

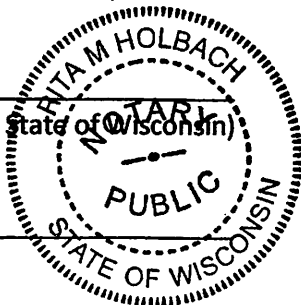
Signature of property owner: _____

This document was signed before me on this 12th day of March, 2025 by the named person.

Rita M. Holbach
(Signature, Notary Public, State of Wisconsin)

Rita M. Holbach
(Print or Type Name, Notary Public, State of Wisconsin)

12-14-2028
(Date Commission Expires)



PROTEST AGAINST ZONING CHANGE

Pursuant to Village of Germantown Municipal Code Section 17.51(7), I protest the rezoning of the NEC (Northeast corner) of County Line Road (Hwy Q) and Lannon Road (Hwy Y), Parcels GTNV_323986, 323995 & 323987, from A-1 (agriculture) to RS-7 (residential single family) and RM-1 (residential multi-family).

Print Name: Eugene P. Schuster

Print Name: Carlene F. Schuster

Date: 3-14-25

Tax Key No. GTNV 323992

Print Address: W194 N10009 Appleton Ave.

Colgate (Germantown)

County of Washington

State of Wisconsin

Signature of property owner: Eugene Schuster

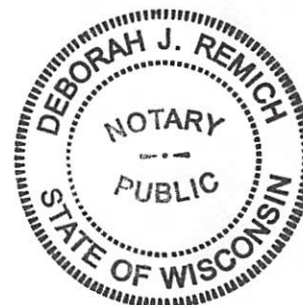
Signature of property owner: Carlene F. Schuster

This document was signed before me on this 14th day of March, 2025 by the named person.

Deborah J. Remich
(Signature, Notary Public, State of Wisconsin)

Deborah J. Remich
(Print or Type Name, Notary Public, State of Wisconsin)

11/7/27
(Date Commission Expires)



PROTEST AGAINST ZONING CHANGE

Pursuant to Village of Germantown Municipal Code Section 17.51(7), I protest the rezoning of the NEC (Northeast corner) of County Line Road (Hwy Q) and Lannon Road (Hwy Y), Parcels GTNV_323986, 323995 & 323987, from A-1 (agriculture) to RS-7 (residential single family) and RM-1 (residential multi-family).

Print Name: William C Schubert Print Name: CARLA SCHUBERT

Date: MARCH 12, 2025 Tax Key No. GTNV 323985

Print Address: W204N9886 LANNON ROAD

Colgate (Germantown)

County of Washington

State of Wisconsin

Signature of property owner: William C Schubert

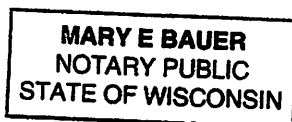
Signature of property owner: Carla Schubert

This document was signed before me on this 12 day of March, 2025 by the named person.

Mary E. Bauer
(Signature, Notary Public, State of Wisconsin)

Mary E. Bauer
(Print or Type Name, Notary Public, State of Wisconsin)

9/20/2027
(Date Commission Expires)



PROTEST AGAINST ZONING CHANGE

Pursuant to Village of Germantown Municipal Code Section 17.51(7), I protest the rezoning of the NEC (Northeast corner) of County Line Road (Hwy Q) and Lannon Road (Hwy Y), Parcels GTNV_323986, 323995 & 323987, from A-1 (agriculture) to RS-7 (residential single family) and RM-1 (residential multi-family).

Print Name: TAMARA SCHNEIDER Print Name: _____

Date: 3/11/25 Tax Key No. GTNV 314998

Print Address: W204 N9699 LANNON RD

Colgate (Germantown)

County of Washington

State of Wisconsin

Signature of property owner: Tamara Schneider

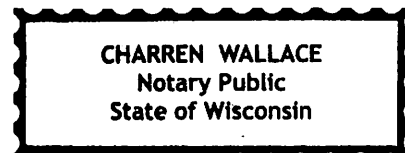
Signature of property owner: _____

This document was signed before me on this 11th day of March, 2025 by the named person.

Charren Wallace
(Signature, Notary Public, State of Wisconsin)

Charren Wallace
(Print or Type Name, Notary Public, State of Wisconsin)

12-19-2027
(Date Commission Expires)



PROTEST AGAINST ZONING CHANGE

Pursuant to Village of Germantown Municipal Code Section 17.51(7), I protest the rezoning of the NEC (Northeast corner) of County Line Road (Hwy Q) and Lannon Road (Hwy Y), Parcels GTNV_323986, 323995 & 323987, from A-1 (agriculture) to RS-7 (residential single family) and RM-1 (residential multi-family).

Print Name: Gidget Stroik Print Name: _____

Date: 3-10-2025 Tax Key No. GTNV 314997

Print Address: W204N 9713 Lannon Rd Colgate WI
Colgate (Germantown) 53017
County of Washington
State of Wisconsin

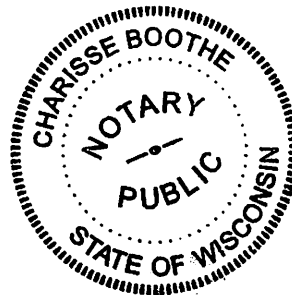
Signature of property owner: Gidget Stroik
Signature of property owner: _____

This document was signed before me on this 10th day of March, 2025 by the named person.

Charisse Boothe
(Signature, Notary Public, State of Wisconsin)

Charisse Boothe
(Print or Type Name, Notary Public, State of Wisconsin)

2-1-2026
(Date Commission Expires)



PROTEST AGAINST ZONING CHANGE

Pursuant to Village of Germantown Municipal Code Section 17.51(7), I protest the rezoning of the NEC (Northeast corner) of County Line Road (Hwy Q) and Lannon Road (Hwy Y), Parcels GTNV_323986, 323995 & 323987, from A-1 (agriculture) to RS-7 (residential single family) and RM-1 (residential multi-family).

Print Name: Ronald Schneider Print Name: _____

Date: Mar 10, 2025 Tax Key No. GTNV 314987

Print Address: W204 N9767 Lannon Rd

Colgate (Germantown)

County of Washington

State of Wisconsin

Signature of property owner: Ronald Schneider

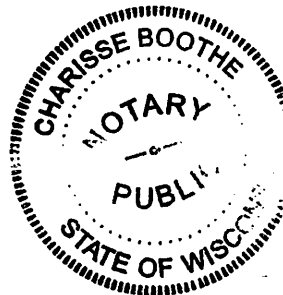
Signature of property owner: _____

This document was signed before me on this 10th day of March, 2025 by the named person.

Charisse Boothe
(Signature, Notary Public, State of Wisconsin)

Charisse Boothe
(Print or Type Name, Notary Public, State of Wisconsin)

2.1.2026
(Date Commission Expires)



PROTEST AGAINST ZONING CHANGE

Pursuant to Village of Germantown Municipal Code Section 17.51(7), I protest the rezoning of the NEC (Northeast corner) of County Line Road (Hwy Q) and Lannon Road (Hwy Y), Parcels GTNV_323986, 323995 & 323987, from A-1 (agriculture) to RS-7 (residential single family) and RM-1 (residential multi-family).

Print Name: DENNIS W SCHNEIDER Print Name: _____

Date: 3-11-25 Tax Key No. GTNV 314986

Print Address: W204 N 9814 LANNON ROAD COLGATE WI

Colgate (Germantown)

County of Washington

State of Wisconsin

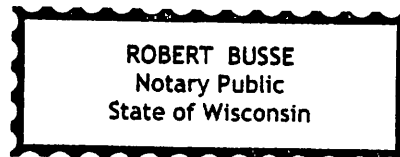
Signature of property owner: Dennis W Schneider

Signature of property owner: _____

This document was signed before me on this 11th day of March, 2025 by the named person.

Robert Busse
(Signature, Notary Public, State of Wisconsin)

Robert Busse
(Print or Type Name, Notary Public, State of Wisconsin)



08/03/2025
(Date Commission Expires)

PROTEST AGAINST ZONING CHANGE

Pursuant to Village of Germantown Municipal Code Section 17.51(7), I protest the rezoning of the NEC (Northeast corner) of County Line Road (Hwy Q) and Lannon Road (Hwy Y), Parcels GTNV_323986, 323995 & 323987, from A-1 (agriculture) to RS-7 (residential single family) and RM-1 (residential multi-family).

Print Name: Calvin Martner Print Name: _____

Date: _____ Tax Key No. GTNV 314984

Print Address: 12004 H9901 Lanner Rd 53017

Colgate (Germantown)

County of Washington

State of Wisconsin

Signature of property owner: [Signature]

Signature of property owner: _____

This document was signed before me on this 14 day of March, 2025 by the named person.

[Signature]
(Signature, Notary Public, State of Wisconsin)

Jennifer Guss
(Print or Type Name, Notary Public, State of Wisconsin)

JENNIFER GROSS
Notary Public
State of Wisconsin

February 24, 2029
(Date Commission Expires)

PROTEST AGAINST ZONING CHANGE

Pursuant to Village of Germantown Municipal Code Section 17.51(7), I protest the rezoning of the NEC (Northeast corner) of County Line Road (Hwy Q) and Lannon Road (Hwy Y), Parcels GTNV_323986, 323995 & 323987, from A-1 (agriculture) to RS-7 (residential single family) and RM-1 (residential multi-family).

Print Name: Calvin Martinez Print Name: _____

Date: _____ Tax Key No. GTNV 314 985

Print Address: 6204 N 9901 Lannon Rd 53017

Colgate (Germantown) _____

County of Washington _____

State of Wisconsin WI

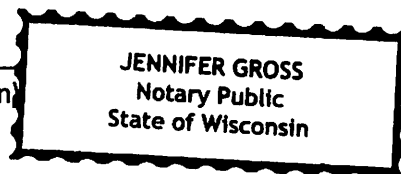
Signature of property owner: Calvin Martinez

Signature of property owner: _____

This document was signed before me on this 14 day of March, 2025 by the named person.

[Signature]
(Signature Notary Public, State of Wisconsin)

Jennifer Gross
(Print or Type Name, Notary Public, State of Wisconsin)



February 24, 2029
(Date Commission Expires)

PROTEST AGAINST ZONING CHANGE

Pursuant to Village of Germantown Municipal Code Section 17.51(7), I protest the rezoning of the NEC (Northeast corner) of County Line Road (Hwy Q) and Lannon Road (Hwy Y), Parcels GTNV_323986, 323995 & 323987, from A-1 (agriculture) to RS-7 (residential single family) and RM-1 (residential multi-family).

Print Name: Danielle L. Schwarz Print Name: Danielle L. Schwarz

Date: 03/12/2025 Tax Key Number: MNFV0021009001

Print Address: N96W20447 County Line Rd.

Menomonee Falls

State of Wisconsin,

County of Waukesha

Signature of property owner: Danielle L. Schwarz

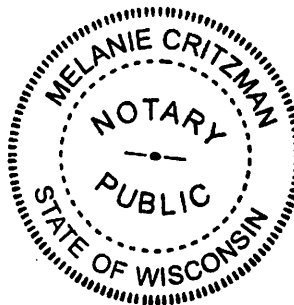
Signature of property owner: —

This document was signed before me on this 12th day of March, 2025 by the named person.

M. Critzman
(Signature, Notary Public, State of Wisconsin)

Melanie Critzman
(Print or Type Name, Notary Public, State of Wisconsin)

MC
~~03/12/25~~ 06/17/2028
(Date Commission Expires)



PROTEST AGAINST ZONING CHANGE

Pursuant to Village of Germantown Municipal Code Section 17.51(7), I protest the rezoning of the NEC (Northeast corner) of County Line Road (Hwy Q) and Lannon Road (Hwy Y), Parcels GTNV_323986, 323995 & 323987, from A-1 (agriculture) to RS-7 (residential single family) and RM-1 (residential multi-family).

Print Name: Mark Boettchen Print Name: Lorri Boettchen

Date: 3-13-2025 Tax Key Number: MNFV 0018 083

Print Address: N96 W20235 County Line Rd

Menomonee Falls

State of Wisconsin,

County of Waukesha

Signature of property owner: Mark Boettchen

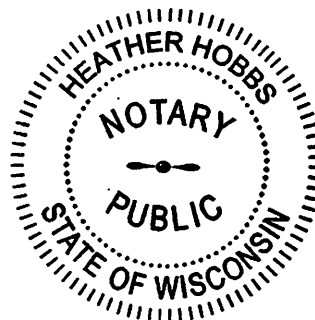
Signature of property owner: Lorri Boettchen

This document was signed before me on this 13 day of MARCH, 2025 by the named person.

Heather Hobbs
(Signature, Notary Public, State of Wisconsin)

HEATHER HOBBS
(Print or Type Name, Notary Public, State of Wisconsin)

11/03/2026
(Date Commission Expires)



PROTEST AGAINST ZONING CHANGE

Pursuant to Village of Germantown Municipal Code Section 17.51(7), I protest the rezoning of the NEC (Northeast corner) of County Line Road (Hwy Q) and Lannon Road (Hwy Y), Parcels GTNV_323986, 323995 & 323987, from A-1 (agriculture) to RS-7 (residential single family) and RM-1 (residential multi-family).

Print Name: DANIEL KIESNER Print Name: _____

Date: 3/11/25 Tax Key Number: MAUFV 0018 995

Print Address: N96W20015 COUNTY LINE RD.

Menomonee Falls

State of Wisconsin,

County of Waukesha

Signature of property owner: Daniel R Kiesner

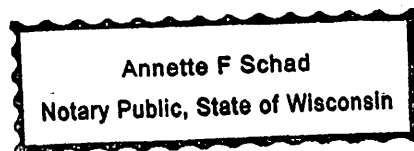
Signature of property owner: _____

This document was signed before me on this 11 day of March, 2025 by the named person.

Annette F. Schad
(Signature, Notary Public, State of Wisconsin)

Annette F. Schad
(Print or Type Name, Notary Public, State of Wisconsin)

3/31/2028
(Date Commission Expires)



PROTEST AGAINST ZONING CHANGE

Pursuant to Village of Germantown Municipal Code Section 17.51(7), I protest the rezoning of the NEC (Northeast corner) of County Line Road (Hwy Q) and Lannon Road (Hwy Y), Parcels GTNV_323986, 323995 & 323987, from A-1 (agriculture) to RS-7 (residential single family) and RM-1 (residential multi-family).

Print Name: Roger H. Buck Print Name: _____

Date: 3/11/25 Tax Key Number: MNFV0018022

Print Address: N96 W19827 County Line Rd.

Menomonee Falls

State of Wisconsin,

County of Waukesha

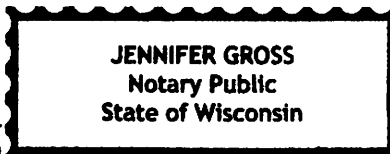
Signature of property owner: Roger H. Buck

Signature of property owner: _____

This document was signed before me on this 11 day of MARCH, 2025 by the named person.

[Signature]
(Signature, Notary Public, State of Wisconsin)

Jennifer Gross
(Print or Type Name, Notary Public, State of Wisconsin)

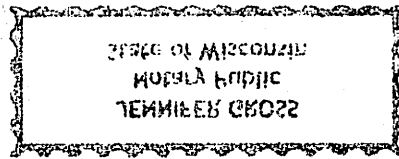


February 24, 2029
(Date Commission Expires)

STATE OF MISSOURI
JANUARY 1902

IN SENATE
JANUARY 1902

SENATE JOURNAL



REPORT OF THE COMMISSIONER OF THE LAND OFFICE

TO THE SENATE OF THE STATE OF MISSOURI
JANUARY 1902

BY THE COMMISSIONER OF THE LAND OFFICE

JOHN W. HARRIS, COMMISSIONER

STATE OF MISSOURI

REPORT OF THE COMMISSIONER OF THE LAND OFFICE

TO THE SENATE OF THE STATE OF MISSOURI
JANUARY 1902

BY THE COMMISSIONER OF THE LAND OFFICE

JOHN W. HARRIS, COMMISSIONER

PROTEST AGAINST ZONING CHANGE

Pursuant to Village of Germantown Municipal Code Section 17.51(7), I protest the rezoning of the NEC (Northeast corner) of County Line Road (Hwy Q) and Lannon Road (Hwy Y), Parcels GTNV_323986, 323995 & 323987, from A-1 (agriculture) to RS-7 (residential single family) and RM-1 (residential multi-family).

Print Name: James T. Witzli Print Name: _____

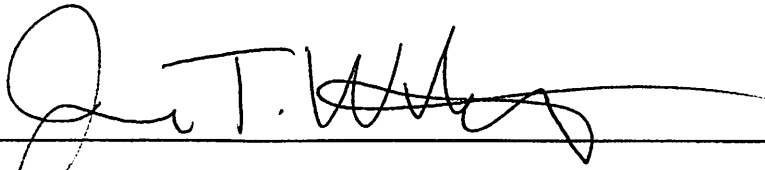
Date: 3-11-25 Tax Key Number: MNFV 0018 992

Print Address: N96W20137 County Line Rd.

Menomonee Falls

State of Wisconsin,

County of Waukesha

Signature of property owner: 

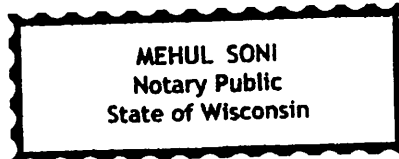
Signature of property owner: _____

This document was signed before me on this 11th day of March, 2025 by the named person.


(Signature, Notary Public, State of Wisconsin)

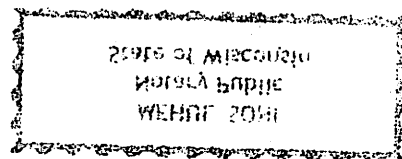
MEHUL SONI
(Print or Type Name, Notary Public, State of Wisconsin)

09-06-2027
(Date Commission Expires)



03-1-1942

WENT 2011



WENT 2011

WENT 2011

WENT 2011

PROTEST AGAINST ZONING CHANGE

Pursuant to Village of Germantown Municipal Code Section 17.51(7), I protest the rezoning of the NEC (Northeast corner) of County Line Road (Hwy Q) and Lannon Road (Hwy Y), Parcels GTNV_323986, 323995 & 323987, from A-1 (agriculture) to RS-7 (residential single family) and RM-1 (residential multi-family).

Print Name: Linda A. Gehring Print Name: _____

Date: 3-11-25 Tax Key Number: MNFV 0018 994

Print Address: N 96 W 20035 County Line Rd. Menomonee Falls, WI 53051

Menomonee Falls

State of Wisconsin,

County of Waukesha

Signature of property owner: Linda A. Gehring

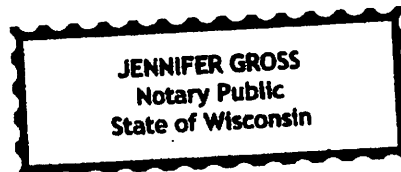
Signature of property owner: _____

This document was signed before me on this 11 day of MARCH, 2025 by the named person.

[Signature]
(Signature, Notary Public, State of Wisconsin)

Jennifer Gross
(Print or Type Name, Notary Public, State of Wisconsin)

February 24, 2029
(Date Commission Expires)



PROTEST AGAINST ZONING CHANGE

Pursuant to Village of Germantown Municipal Code Section 17.51(7), I protest the rezoning of the NEC (Northeast corner) of County Line Road (Hwy Q) and Lannon Road (Hwy Y), Parcels GTNV_323986, 323995 & 323987, from A-1 (agriculture) to RS-7 (residential single family) and RM-1 (residential multi-family).

Print Name: NICHOLAS ANDRONCZYK Print Name: Christina Andronczyk

Date: 3-11-2025 Tax Key Number: MNFV 0018 993

Print Address: 1296W20109 COUNTY LINE RD.

Menomonee Falls

State of Wisconsin,

County of Waukesha

Signature of property owner: [Signature]

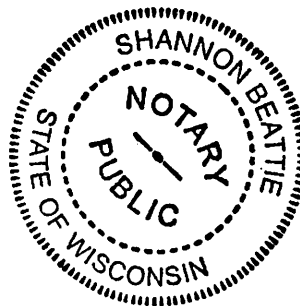
Signature of property owner: [Signature]

This document was signed before me on this 11th day of March, 2025 by the named person.

[Signature]
(Signature, Notary Public, State of Wisconsin)

Shannon Beattie
(Print or Type Name, Notary Public, State of Wisconsin)

June 7, 2027
(Date Commission Expires)



PROTEST AGAINST ZONING CHANGE

Pursuant to Village of Germantown Municipal Code Section 17.51(7), I protest the rezoning of the NEC (Northeast corner) of County Line Road (Hwy Q) and Lannon Road (Hwy Y), Parcels GTNV_323986, 323995 & 323987, from A-1 (agriculture) to RS-7 (residential single family) and RM-1 (residential multi-family).

Print Name: Brian Ebert Print Name: _____

Date: 3-12-25 Tax Key Number: MN FV0018063

Print Address: N96 W20173 County Line Rd

Menomonee Falls

State of Wisconsin,

County of Waukesha

Signature of property owner: [Signature]

Signature of property owner: _____

This document was signed before me on this 12th day of March, 2025 by the named person.

[Signature]
(Signature, Notary Public, State of Wisconsin)

Steven Moeller - State of Wisconsin
(Print or Type Name, Notary Public, State of Wisconsin) County of Waukesha

08/27/2027
(Date Commission Expires)



PROTEST AGAINST ZONING CHANGE

Pursuant to Village of Germantown Municipal Code Section 17.51(7), I protest the rezoning of the NEC (Northeast corner) of County Line Road (Hwy Q) and Lannon Road (Hwy Y), Parcels GTNV_323986, 323995 & 323987, from A-1 (agriculture) to RS-7 (residential single family) and RM-1 (residential multi-family).

Print Name: Shirley A Smith Print Name: Edward E Smith

Date: 03-13-2025 Tax Key Number: MNFV0018801

Print Address: N95W19914 MARSON CT.

Menomonee Falls

State of Wisconsin,

County of Waukesha

Signature of property owner: Shirley A Smith

Signature of property owner: Edward E Smith

This document was signed before me on this 13th day of March, 2025 by the named person.

Melanie Critzman
(Signature, Notary Public, State of Wisconsin)

Melanie Critzman
(Print or Type Name, Notary Public, State of Wisconsin)

06/17/2028
(Date Commission Expires)



ZONING CODE TEXT AMENDMENTS

6/9/25 Plan Commission Meeting

Germantown Community Development Department

Village Staff Report & Recommendation

Germantown, Wisconsin

Summary

The Community Development Department (Planning & Zoning Services) is proposing a series of text amendments to Section 17 (Zoning Code) in the Germantown Municipal Code.

The following proposed text amendments to the various sections in the Zoning Code correspond to the attached draft ordinance. These proposed amendments are relatively minor in nature and are proposed to reflect current procedures in our Site Plan review process and address specific sign and fence-related issues Building Inspection and Zoning staff have been dealing with over the last year:

Amendment #1 (see Section I; page 1-2)

This proposed amendment revises the Site Plan application submittal requirements under Section 17.43(4) to clarify current procedures for Plan Commission review, approval and denial of Site Plan applications. It also clearly specifies the standards and criteria used by the Plan Commission for their review and basis for their action and ability to require changes to Site Plans, site and public facility improvements, and any other conditions of approval deemed necessary by the Plan Commission to ensure development pursuant to a particular Site Plan approval is consistent with applicable Village development codes and plans.

Amendment #2 (see Section I; page 2)

This proposed amendment revises the Site Plan review procedures under Section 17.43(7) revises similar provisions already in the Zoning Code for outdoor accessory structures installed on 1 and 2-family residential properties intended for private, personal use on a seasonal or year-round basis.

Amendment #3 (see Section II; page 2)

This proposed amendment revises the residential sign provisions under Section 17.46(6) to remove the allowance for installing monument signs in Village right-of-way.

Amendment #4 (see Section III; page 3)

This proposed amendment revises the on-site traffic control and “wayfinding” sign provisions under Section 17.46(7) to be more flexible with respect to different types of signage commonly installed within a business parking lot.

Amendment #5 (see Section IV; page 3)

This proposed amendment revises the agricultural fence provisions under Section 17.50(2)(h) to clarify the standards that apply to “partition” fences, i.e. fences used to mark property lines between other agricultural land and rights-of-way, and for fences installed on agricultural property when such land abuts residential or commercial, industrial, or institutional property.

A recommendation from the Plan Commission is necessary to move the proposed code amendments to the Village Board for consideration and action.

VILLAGE STAFF RECOMMENDATION

The recommendation is to **APPROVE** the proposed text amendments as presented in the draft ordinance (see copy attached) as summarized herein.

ORDINANCE NO. xx-2025

AN ORDINANCE AMENDING SECTION 17 (ZONING CODE)
OF THE VILLAGE OF GERMANTOWN MUNICIPAL CODE

WHEREAS, the Village Board previously adopted Chapter 17 of the Germantown Municipal Code pursuant to the authority granted in Wis. Stat. 62.23 to broadly regulate the zoning of property within the Village; and

WHEREAS, the regulation of properties in the Village through zoning promotes the health, safety and welfare of the Community;

WHEREAS, the Village Board has determined it necessary to continually review and revise these zoning regulations as necessary to avoid inconsistencies with Wisconsin statutes and bring these regulations up-to-date to reflect current practice, procedures, and prevailing conditions in the Village; and

WHEREAS, the Plan Commission held a public hearing of the code revisions set forth below on June 9, 2025, and has made a recommendation to the Village Board to approve said revisions; and

NOW, THEREFORE, the Village Board of the Village of Germantown, Wisconsin, do ordain as follows:

SECTION I

Section 17.43 (SITE PLAN APPROVAL REQUIREMENTS) is revised as follows where words that are ~~stricken~~ are deleted and words that are underlined are to be added:

17.43(4) OFFICIAL SUBMITTAL REQUIRED.

One (1) set of all required site development and building plan information including plan sets, application forms, color renderings, photos, and other supporting documents shall be submitted in digital PDF (Portable Document Format) along with two (2) Ten paper copies of the same information site plan, and accompanied by a dated letter of submittal requesting action, shall be submitted to the Community Development Department for Plan Commission ~~for its~~ review and action. A schedule of submittal fees, application forms, minimum standards, review procedure requirements and application checklist, meeting dates and submittal deadlines is available from the Community Development Department and should be discussed with Department staff prior to submittal. ~~The site plans shall be submitted to the Plan Commission at least 10 days prior to the Plan Commission meeting at which the site plan will be considered for approval unless an extension of time is mutually agreed upon.~~

17.43(7) REVIEW PROCEDURE.

Upon receipt of the site plan, Community Development Department staff will ~~Plan Commission shall~~ review it to determine whether it is in proper form, contains all of the required information, and, once deemed to be complete, shall schedule the site plan application for review by the Plan Commission. The Plan Commission shall determine shows compliance and/or consistency with the Comprehensive Plan, the Zoning Code, this and other ordinances and plans of the Village, and demonstrates if adequate levels of service and capacity the adequacy of public facilities and utility services necessary to support the proposed development. ~~Upon demand by the applicant of the site plan, t~~ The Plan Commission shall, within 30 days of its initial submittal, approve it, conditionally approve it or deny approval of the site plan application. Reasons for D denial of approval may include but not be limited shall be limited to any defect in form or required information, or any violation of the general purpose and intent or any provision of the Zoning Code (including the Architectural Review Board provisions under Section 17.49), inconsistency with the Comprehensive Plan, this chapter or any other ordinance, or the inadequacy of any public facility or utility service. The Plan Commission may adopt specific conditions of approval, including but not limited to additional or revised site improvements, architectural and building improvements, landscaping improvements, lighting improvements, signage improvements, public facility improvements, business operations, it deems necessary for the proposed development to comply with these requirements and ensure ongoing compliance with the Village's adopted development codes, ordinances, standards, and the general purpose and intent provisions of the Zoning Code. The Plan Commission's action shall be summarized issued in writing by the Community Development Department and include Plan Commission Secretary stating, in detail, the reasons for the Plan Commission's actions.

SECTION II

Section 17.46(6) is revised as follows where words that are ~~stricken~~ are deleted and words that are underlined are to be added:

17.46(6) SIGNS PERMITTED IN RESIDENTIAL DISTRICTS WITH A SIGN PERMIT.

The following signs are permitted in all residential districts with a sign permit, subject to the following regulations:

- a) Permanent real estate development signs located on private property ~~or within the public right-of-way~~ at entrances or along streets or highways which designate a particular development and which only include the name of the development. ~~If located on private property, s~~ Such signs shall be at least 5 feet from the ~~outer~~ edge of the street right-of-way. Such signs shall be constructed and properly maintained so as to be aesthetically pleasing to the surrounding development. ~~Prior to the issuance of a sign to be located within the public right-of-way, a written agreement shall be provided which places all maintenance responsibility on the developer(s) or owner(s) and exempts the Village from all maintenance responsibilities.~~ Drawings showing the size, location and design of such signs shall be submitted to the Plan Commission for review and approval prior to the issuance of a sign permit.

SECTION III

Section 17.46(7) is revised as follows where words that are ~~stricken~~ are deleted and words that are underlined are to be added:

17.46(7)(f) ON-SITE TRAFFIC CONTROL AND DIRECTIONAL SIGNS. SIGNS.

One or more directional signs such as those used to identify parking lot entrances and exits, direct customers to drive-through windows, direct delivery vehicles to loading/drop-off areas, etc. may be installed on a property ~~as needed and in locations on a property~~ or building within the property ~~necessary to serve and in the number placed adjacent to driveways~~ provided that:

1. No sign shall be placed in the street right-of-way, within a vision corner or otherwise designed or installed in a manner that obstructs vehicle sight lines or vision;
- ~~2. No sign shall exceed 4 feet in height;~~
3. No sign shall contain more than 6 square feet of sign area per side;
4. Signs shall be designed and constructed of materials that either match or are complimentary to the architecture and materials of the primary building(s) and other permanent signs already installed on or proposed for the site;
5. Signs may be attached to or installed on decorative pylons, posts or a masonry base provided they are comprised of materials and/or covered painted to match or be complimentary to the primary building;
- ~~6. Wall mounted directional signs above 4 feet in height are prohibited;~~
7. Signs should ~~shall~~ not include any graphics, marketing or advertising messages except that the sign may include the business name, logo and directional arrows as necessary to simplify the message and assist vehicles getting to, in and around a facility or property.
8. Temporary banners less than 4 square feet in area and mounted on light poles located within a parking lot are allowed.

SECTION IV

Section 17.50(2)(h) is created as follows where words that are ~~stricken~~ are to be deleted and words that are underlined are to be added:

17.50(2)(h) Fences, Retaining Walls and Berms in Agricultural Districts.

1. Agricultural Fences.
 - i. Except as provided in subsection ii and iii below, partition fences are permitted in all agricultural zoning districts provided they meet the requirements under ~~pursuant to~~ Chapter 90, Wis. Stats.
 - ii. Fences meeting the residential fence requirements under Section 17.50(2)(f) may be installed on property in an agricultural district along a property line that abuts a residential district or when installed for privacy and/or security purposes for a farm dwelling or accessory buildings. Fences under this section may be up to 6 feet in height in any yard. A minimum setback of ~~twenty-five (25) feet or the minimum~~ distance necessary to provide adequate sight vision along a public street, ~~whichever is greater,~~ shall be maintained from the a public street right-of-way.

- iii. Fences meeting the fence requirements under Section 17.50(2)(g) may be installed on property in an agricultural district along a property line that abuts a commercial, industrial, or institutional district. A minimum setback of ~~twenty-five (25) feet or the minimum~~ distance necessary to provide adequate sight vision along a public street, ~~whichever is greater~~, shall be maintained from the a public street right-of-way.
2. It is the property owner's responsibility for any lawn maintenance of lands that lie between a fence and the property line.
3. Fences and Easements. See Section 17.50(2)(f)6. above.
4. Retaining Walls. See Section 17.41(6).
5. Berms. See Section 17.57.

SECTION V

The terms and provisions of this ordinance are severable. Should any term or provision of this ordinance be found to be invalid by a court of competent jurisdiction, the remaining terms and provisions shall remain in full force and effect.

SECTION VI

All ordinances or parts of ordinances contravening the terms of this ordinance are hereby to that extent repealed.

SECTION VII

This ordinance shall take effect and be in full force the day after its passage and publication, as provided by law.

Adopted: June ____, 2025

Robert A. Soderberg, Village President

ATTEST:

Donna Ott, Village Clerk

APPROVED AS TO FORM:

Brian Sajdak, Attorney

Published:

SIGN REVIEW APPLICATION

06/09/25 Plan Commission Meeting

Elevated Identity, Inc. / Exeter Holy Hill, LP / Generac

Village Staff Report & Recommendation

Germantown, Wisconsin

SUMMARY

Elevated Identity, Inc., Agent for Exeter Holy Hill, LP, Property Owner. Sign Review Application for Generac located at W210 N12800 Holy Hill Road in the Holy Hill Gateway District.

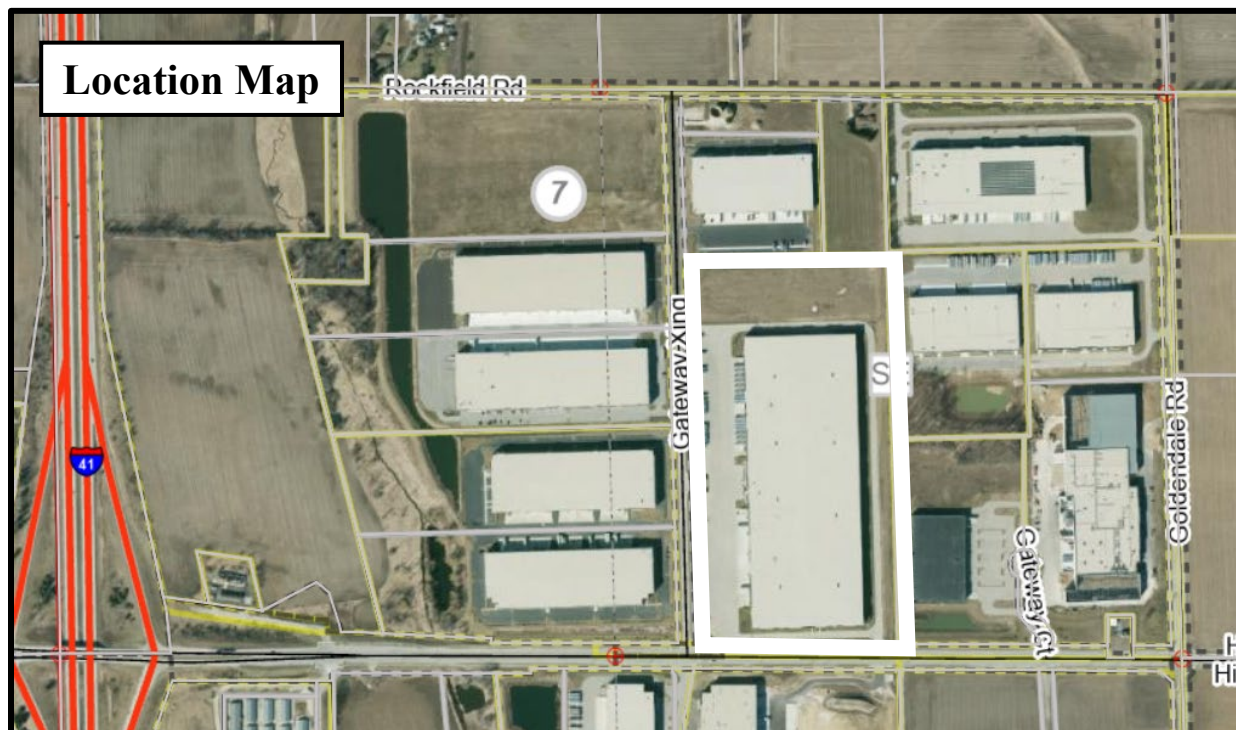
Location: W210 N12800 Holy Hill Road

Applicants/

Owner:	Elevated Identity, Inc. 12425 Knoll Road, Suite 200 Elm Grove, WI 53122	Exeter Holy Hill, LP 100 Matsonford Road, Suite 250 Radnor, PA 19087
---------------	---	--

Zoning: M-1: Limited Industrial

Adjacent Land Uses		Zoning
North	Industrial/Residential	M-1/Rs-1
South	Industrial	M-1
East	Industrial	M-1
West	Industrial	PDD-46



Background/Proposal

Elevated Identity, Inc., Agent for Exeter Holy Hill, LP, Property Owner. Sign Review Application for Generac located at W210 N12800 Holy Hill Road in the Holy Hill Gateway District.

In 2023, Generac received zoning permit approval to occupy approximately 416,000 square feet of an existing industrial building at the subject location. The overall size of the building is approximately 700,000 square feet with Hultafors Group occupying the other space. The building was originally owned/occupied by Briggs & Stratton prior to the company closing its facility at the location. At this time, Generac is seeking approval of signage for the site. Details of the proposed signs are listed as follows:

- (1) Wall Sign – (Western façade/building front)
108 square feet, single-sided channel letter/logo sign mounted on façade.
The proposed sign is non-illuminated per application.
- (3) Monument Signs/Inserts – (Sign inserts for existing monument signage)
 - (1) Single-sided monument sign insert – 32 square feet vinyl graphics with logo, non-illuminated.
 - (2) Two-sided monument sign inserts – 24 square feet vinyl graphics with logo, non-illuminated.

Staff Comments

The proposed signs comply with applicable standards per the Village's Sign Code.

VILLAGE STAFF RECOMMENDATION

APPROVE the proposed sign package for Generac for property located at W210 N12800 Holy Hill Road.



Village of

Germantown
...Willkommen

Fee must accompany application

\$275 Sign Review Fee

\$75 Sign Face Replacement

Paid ☒ Date 05/09/25
54

SIGN REVIEW APPLICATION

Pursuant to Section 17.46 of the Municipal Code

Please read and complete this application carefully. All applications must be signed and dated.

1 **APPLICANT OR AGENT**
Elevated Identity Inc.
12425 Knoll Rd.
suite 200
Elm Grove, WI 53122
Phone (414) 255-6179
Fax ()
E-Mail vito@elevatedidentity.com

PROPERTY OWNER
EXETER HOLY HILL, L.P.
FIVE RADNOR CORP. CENTER
100 MATSONFORD Rd., SUITE 250
RADNOR, PA 19087
Phone (847) 867-4937
JASON DEFILIPPIS

2 **PROPERTY ADDRESS OR GENERAL LOCATION**
W 210 N 12800 Gateway Crossing
Richfield, WI 53076

3 **SIGN INFORMATION**
Sign Dimensions 5' height x 21' 7 1/8" width Single Multi Tenant (circle one)
Number of Sides 1 Building Frontage SF 1846 15,120'
Total Square Footage of Sign (include all sides) 107' 92"
Total height of the Sign 5'
Is the Sign to be illuminated yes X no
Type of Sign Construction Materials 1/4" Aluminum
Distance to Closest Property Line 251'

Are there any existing signs on the property Yes - 1 wall sign, 3 monuments
If yes, what is the total Square Footage of existing signs 220'

What are the intentions for the existing signs. Take down Remain X

4 **SIGNATURES - ALL APPLICATIONS MUST BE SIGNED BY OWNER!**

Vito Paul 5.7.25
Applicant Date

Paul Schultz 5/7/2025
Owner Date

Property Manager





PROPOSED EXTERIOR SIGNAGE

Richfield, WI

Project # 5735 rev.00

Created 03.14.25

FLAT CUT-OUT LETTERS

① - FCO LETTERS

Material: 1/4" Aluminum

Color: Paint: White, Satin Finish — 

Installation: Stud Mount Flush

② - FCO LETTERS

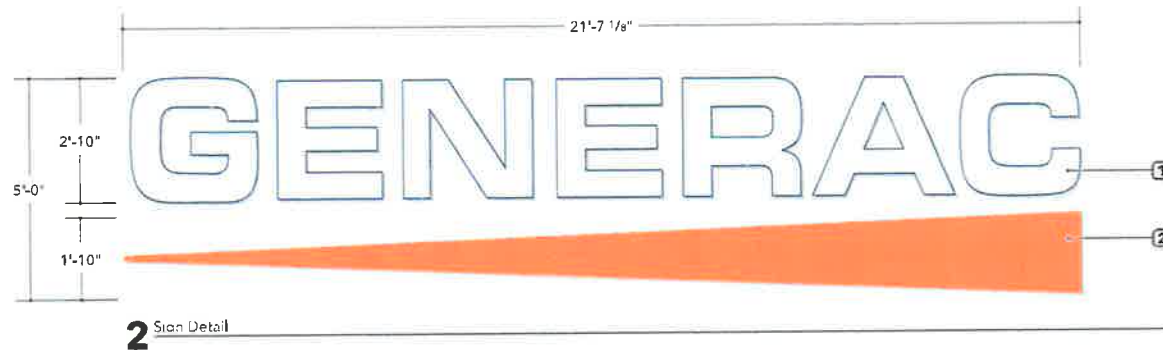
Material: 1/4" Aluminum

Color: Paint to Match PMS 1505c
Orange, Satin Finish — 

Installation: Stud Mount Flush



1 Proposed Layout
DAY VIEW



elevated identity
Brand Forward | Experience Driven



CLIENT: Generac

ADDRESS: W210N12800 Gateway Crossing

CITY/STATE: Keshikfield, WI 53076

PROJECT #: 5735

DATE: 03/14/25

SCALE: 3/8"=1'

Client Approval:

REV 01
REV 02
REV 03
REV 04
REV 05
REV 06
REV 07
REV 08

DATE
DATE
DATE
DATE
DATE
DATE
DATE
DATE

REP: Mike Kinsella

PH: 262.422.9339

DESIGNER: MH

SIGN TYPE:

NL.1

SHEET: 1.01

D/F FACE CHANGE

1 - FACE CHANGE

Material: 3/16" Lexan

Colors: White — □

2 - GRAPHICS

Material: Vinyl, Graphics Reversed Out

Colors: 3M 3630-22 Black — ■



1 Existing D/F Monument



2 Proposed Layout
OPPOSITE FACE IS IDENTICAL



3 Sign Detail

elevated identity
Brand Forward. Experience Driven.

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CLIENT: **Generac**

ADDRESS: W210N12800 Gateway Crossing

CITY/STATE: Richfield, WI 53076

PROJECT #: **5735**

DATE: 02/14/25

SCALE: 3/8"=1'

Client Approval:

REV 01
REV 02
REV 03
REV 04
REV 05
REV 06
REV 07
REV 08

DATE
DATE
DATE
DATE
DATE
DATE
DATE
DATE

REP: Mike Kinsella

PH: 262.422.9339

DESIGNER: MH

SIGN TYPE:

FC.1

SHEET: 2.00

S/F FACE CHANGE

① - FACE CHANGE

Material: 3/16" Lexan

Color: White — □

② - GRAPHICS

Material: Vinyl, Graphics Reversed Out

Color: 3M 3630-22 Black — ■



1 Existing D/F Monument



2 Proposed Layout
OPPOSITE FACE IS IDENTICAL



3 Sign Detail

elevated identity
Brand Forward. Experience Driven.



CLIENT: **Generac**

ADDRESS: W210N12800 Gateway Crossing

CITY/STATE: Richfield, WI 53076

PROJECT #: **5735**

DATE: 03.14.25

SCALE: 3/8"=1'

Client Approval:

REV 01
REV 02
REV 03
REV 04
REV 05
REV 06
REV 07
REV 08

DATE
DATE
DATE
DATE
DATE
DATE
DATE
DATE

REP: Mike Kinsella

PH: 262.422.9339

DESIGNER: MH

SIGN TYPE:
FC.2
SHEET: 3.00

D/F FACE CHANGE

① - FACE CHANGE

Material: 3/16" Lexan

Color: White — □

② - GRAPHICS

Material: Vinyl Graphics Reversed Out

Color: 3M 3630-22 Black — ■



1 Existing D/F Monument



2 Proposed Layout
OPPOSITE FACE IS IDENTICAL



3 Sign Detail

elevated identity
Brand Forward. Experience Different.

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CLIENT: **Generac**

ADDRESS: W210N12800 Gateway Crossing

CITY/STATE: Kesheno, WI 53076

PROJECT #: **5735**

DATE: 03/14/25

SCALE: 3/8"=1'

Client Approval:

REV 01
REV 02
REV 03
REV 04
REV 05
REV 06
REV 07
REV 08

DRAWN
DATE
DATE
DATE
DATE
DATE
DATE

REP: Mike Kinsella

PH: 262.422.9339

DESIGNER: MH

SIGN TYPE:
FC.3
SHEET: 4.00