

**VILLAGE OF GERMANTOWN
N112 W17001 MEQUON ROAD
GERMANTOWN, WI 53022**

MEETING: REGULAR MEETING OF THE VILLAGE BOARD

DATE AND TIME: MONDAY, August 16, 2021 7:00 p.m.

**LOCATION: Germantown Village Hall Board Room
N112 W17001 Mequon Road**

NOTICE: Pursuant to the recommendations of the Centers for Disease Control and Prevention concerning the prevention of COVID-19 infections, any member of the body and/or citizen may also attend the meeting virtually through the WebEx platform, Meeting #: 182 136 1369 Password: JYeY4mf3pp2 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=m1f812ac4a3ab7e4e0a414510f2cca56a> Citizens not wishing to attend the meeting personally or virtually may submit any public comments by sending an email to comments@village.germantown.wi.us 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. Citizens may also view the meeting by live broadcast on Spectrum Cable Channel 25.

Previously recorded Village Board Meeting Videos can be viewed at
https://www.youtube.com/channel/UCOYp0EgELzTCa9X_iCohyhQ.

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. **PLEDGE OF ALLEGIANCE:**
- IV. **PRESIDENT'S REPORT:**
- V. **ANNOUNCEMENTS OF FORTHCOMING EVENTS OF PUBLIC INTEREST**
 COMMITTEE AND DEPARTMENT REPORTS:
 - A. The following individuals will be given the opportunity to make announcements of future municipal activities: Village President, Village Board Members, Village Administrator, Village Attorney, Village Clerk, And Department Heads, to include:
- VI. **CITIZEN INPUT/PUBLIC APPEARANCE on items not subject to a public hearing:**
Please be advised per §19.84(2), information will be received from the public. It is the policy of this municipality that there be a three (3) minute time period, per person, with time extension per the Chief Presiding Officer's discretion; be further advised that there may be limited discussion on the information received, however, no action will be taken under public comments. (15 minutes) Written Public Comments should be directed to comments@village.germantown.wi.us, by 4 p.m. on Monday, August 16.

VII. CONSENT AGENDA:

- A. Approval of Minutes August 2, 2021 Regular Village Board Meeting.
- B. Accounts payable/payroll:
 - 1. August 6, 2021 Accounts Payable \$ 1,138,550.83
 - 2. August 17, 2021 Payroll (Hourly) \$ 265,522.23
 - 3. August 15, 2021 Payroll (Salary) \$ 107,589.27

The following items were forwarded from **Public Works** with a unanimous recommendation:

- C. Myers Masonry – EMC Sign Invoice.
- D. 2021 Sealcoat Projects Award of Contract.
- E. Award of Contract for Sanitary Sewer and Water Main Extension – Holy Hill Road.

VIII. UNFINISHED BUSINESS

- A. Update on Domain Name to germantownwi.gov. (previously approved December 21, 2020 Village Board).

IX. PUBLIC HEARINGS:

- A. None.

X. NEW BUSINESS:

- A. **Ordinance 08-2021**, Rezoning from A-1: Agricultural Zoning District to the M-1: Limited Industrial Zoning District, and **2-Lot Certified Survey Map (CSM)** Application; and **Conditional Use Permit (CUP) 06-2021**, to Allow an encroachment into a 25' Wetland and 75' Navigable Waterway Setback, for Capstone Quadrangle Development Company, agent for MLG/RMS Ltd. Partnership, property owner – 52.5 acres at N128 W20943 Holy Hill Road
- B. **Certified Survey Map** for Home Path Financial LP, property owner of 2.33-Acres on Bittersweet Trail, Outlot CSM 4988. 4- Lot Certified Survey Map (CSM) to create four single-family lots as part of the Heritage Park North Subdivision.
- C. Water Rate Increase – Vicki Hellenbrand, Baker Tilley.
- D. Report from Village Administrator on COVID – 19.
- E. Redistricting Update and Timeline.
- F. Meridian Germantown LLC / Wal-Mart Stores, Inc claim of excessive real estate tax settlement. The Village Board may convene into closed session per Wis. Stats. §19.85(1)(g) for the purpose of conferring with Legal Counsel who is rendering advice concerning strategy to be adopted by the Village with respect to litigation in which it is involved or is likely to become involved and then may reconvene into open session to take such action as it deems appropriate; and,

- G. Potential Tax Increment Development Incentive for the Potential Tenant for the Property Located at the Northwest Corner of Goldendale and Holy Hill Roads (Dickman Development Property Owner). The Village Board May Enter into Closed Session per Wis. Stat. § 19.85(1)(e) for the purpose of deliberating or negotiating the purchasing of public properties, the investing of public funds, or conducting other specified public business, whenever competitive or bargaining reasons require a closed session, and then may reconvene into open session to take such action as it deems appropriate.

XI. ADJOURNMENT.

**The next regular meeting of the Village Board will be on Monday, September 20, 2021, at 7:00 p.m. Tentative Joint Village Board and School Board Meeting August 30th
There will not be a Village Board Meeting on September 6, 2021.**

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)250-4740 at least 2 days prior to the meeting.

**VILLAGE OF GERMANTOWN
VILLAGE BOARD MEETING MINUTES
August 2, 2021**

CALL TO ORDER: The meeting was called to order at 7:00 p.m. by President Wolter.

ROLL CALL: Present: President Wolter, Trustees Baum, Kaminski, J. Miller, R. Miller, Myers, Neureuther, and Pieper. Absent Excused: Hudson. Also present: Administrator Kreklow, Clerk Braunschweig, Attorney Sajdak, Director Schroeder, Superintendent Anderson, Director Ratayczak, and Manager Hirn. Clerk's Note: This was a partial Virtual Webex Meeting.

PLEDGE OF ALLEGIANCE:

PRESIDENT'S REPORT:

Nothing to Report.

**ANNOUNCEMENTS OF FORTHCOMING EVENTS OF PUBLIC
INTEREST/DEPARTMENT AND COMMITTEE REPORTS:**

The following individuals will be given the opportunity to make announcements of future municipal activities: Village President, Village Board Members, Village Administrator, Village Attorney, Village Clerk, And Department Heads, to include:

CITIZEN INPUT/PUBLIC APPEARANCE on items not subject to a public hearing:

President Wolter read an email from Richard and Kathleen Bremmer of Freistadt Road. The communication was in regard to the fireworks. Their concern is the fireworks was aimed toward their home and exploded over their house. A few years ago there was a fireworks problem. They requested a solution with the fireworks contractor.

President Wolter read an email from Mike Rodriguez of Germantown. The email was in regard to the water bill increase, new public works building, and addition to the library. President Wolter read his comments.

President Wolter read an email from Tasha Bagley. The email was in regard to the rezoning and requested the rezoning to be denied because of the noise of the business. Attached video of wood chopper.

President Wolter read an email from Sara Bojarski of Oak Lane. The email was to request a denial of the conditional use and rezoning for TR Capital.

President Wolter read an email from Mark and Mary Timm of Lovers Lane. The email was comments in regard to the rezoning and ordinance and Conditional Use permit. They requested the rezoning for John and Brenda Perry.

Bill Tait of Freistadt Road emailed comments of letter of reference for John East and his rezoning application. President Wolter read his comments in favor of Mr. East and the rezoning.

Arthur Zabel of Burr Road come to the podium. He commented about the Public Fire Protection amount as approved by the Village Board. He requested the board to reconsider the previous action. He also commented on the Pilot that the Village pays to the Water Utility. He commented on the increase in the fee.

Jolitta Kerpan, from Hurbertus came to the podium as a representative of the Kiwanis from the Taste of Germantown Event. She thanked the Village for the support of the event. She thanked the Park and Recreation Department, Library, and DPW Department.

CONSENT AGENDA:

- A. Approval of Minutes July 19, 2021 Regular Village Board Meeting.
- B. Accounts payable/payroll:
 - 1. July 23, 2021 Accounts Payable \$ 442,248.04
 - 2. July 30, 2021 Payroll (Salary) \$ 106,839.27
 - 3. August 3, 2021 Payroll (Hourly) \$ 272,734.45
 - 4. July 30, 2021 Accounts Payable \$ 140,815.60

The following items were forwarded from **General Government and Finance** with a unanimous recommendation.

- C. Resolution 22-2021, Resolution Amending the Village's Section 457 Deferred Compensation Plan to Add North Shore Bank as an Additional Contribution Option.

Motion (Myers/Baum) to approve Consent Agenda. Roll call vote carried unanimously.

UNFINISHED BUSINESS:

- A. None.

PUBLIC HEARING:

- A. None.

NEW BUSINESS:

- A. Denial of Operator's License – Crystal McCoy.

Motion (Myers/Pieper) to approve the Operator's License – Crystal McCoy. Motion carried. J. Miller, Neureuther, and President Wolter voted no. Motion carried.

- B. Report on Board Room Audio Visual Equipment.

Clerk Braunschweig reported on the status of the Audio Visual Equipment. The Village is currently working with Global Sight and Sound. They are here to assist us with the equipment. The equipment has been recently tested as well.

- C. Update from Library Director Smith on Germantown Community Library Strategic Planning Efforts.

Director Smith read a report on the Library Strategic Planning Efforts. Other Libraries have went through a planning process. The Wisconsin Library Services (WiLS) is instrumental in the planning process. Looking at the possibility of expanding the building. There has been an increase in noise level. Data will be gathered to be utilized for planning purposes. The building

was originally meant to have a second floor. The preplanning is in the very beginning of the process. Washington County funding has contributed to building expansion. The debt of the building was paid off in March of 2021 of this year. Library impact fees are available. Looking at fundraising. Looking to exploring options to better meet the needs of the community. There is an existing shaft for an elevator to the left of the circulation desk. There is space allocated for a stairwell as well.

- D. **Ordinance 05-2021**, Land Use Plan Map Amendment from Commercial to Industrial/Office and **Ordinance 06-2021**, Rezoning from B-1: Neighborhood Business Zoning District to M-1: Limited Industrial Zoning District pursuant to Section 17.33 of the Zoning Code, and **Conditional Use Permit (CUP) 04-2021** for commercial self-storage, for TR Capital, LLC and Agent for Bruce J. Miller, Property Owner - W219 N11588 Appleton Avenue.

Assistant Planner Zandt came to the podium. The application was reviewed. The site location map was shown. The existing zoning was reviewed. The purposed of the application is to change the zoning. There is a cap by the DNR due to past asphalt. The cap is in place for 30 years to prevent additional contamination. The concept plan was shown. Prior to grading or construction the site plan will need to be approved by the Plan Commission. The proposed use is required to be screened and buffered. The Rezoning is from B-1 to M-1. The previous owner did operate under plant sales. Plan Commission did recommend approval subject to five conditions.

The outside storage would be fenced and screened from view. The DNR Cap area was shown. The asphalt cap has to be maintained without buildings. The outside area is partially over the DNR Cap. They can not build on the cap. The applicant came forward and pointed out the DNR Cap area and fenced area. The site plan will change based on the most recent survey. The land fill was commented on. They have been cleaning the property. The outside storage is for boats and RVs. The building will be a metal building with no doors facing the neighbors or road. Access hours will be only daylight hours. Outside storage is at the back of the lot, may be 50 working vehicles. Property has been sold to them. Mr. Miller has 28 days left to vacate the property.

Motion (Myers/Baum) to approve Ordinance 05-2021, Land Use Plan Map Amendment from Commercial to Industrial/Office, TR Capital, LLC and Agent for Bruce J. Miller, Property Owner - W219 N11588 Appleton Avenue. Director Retzlaff commented that staff has been working to have this site cleaned up. Motion Carried Unanimously.

Motion (Myers/R. Miller) to approve Ordinance 06-2021, Rezoning from B-1: Neighborhood Business Zoning District to M-1: Limited Industrial Zoning District pursuant to Section 17.33 of the Zoning Code, for TR Capital, LLC and Agent for Bruce J. Miller, Property Owner - W219 N11588 Appleton Avenue. Motion Carried Unanimously.

Motion (Myers/R. Miller) to approve Conditional Use Permit (CUP) 04-2021 for commercial self-storage, for TR Capital, LLC and Agent for Bruce J. Miller, Property Owner - W219 N11588 Appleton Avenue. Motion Carried Unanimously.

- E. **Ordinance 07-2021**, Rezoning from A-2: Agricultural and Rs-2: Single-Family Zoning Districts into the A-2: Agricultural and Rs:3 Single Family Residential Districts pursuant to Section 17.13 and Section 17.16 of the Village Zoning Code for John E. & Brenda L. Perry, Property Owners - N124 W14106 Lovers Lane, and, 3-Lot **Certified Survey Map (CSM) Application**.

Director Retzlaff came to the podium. The application was reviewed. The site location map was shown. The existing zoning was reviewed. The purposed of the application is to change the zoning. The size of the lot(s) were reviewed. The 2020 land use plan map was shown. The lot size based on this plan was shown. Director Retzlaff commented on the lot sizes that have been created in other subdivisions that are a 1-2 acre size that could be developed into one acre lots. The plan commission recommendation is to approve subject to conditions.

Motion (Myers/Baum) to approve Ordinance 07-2021, Rezoning from A-2: Agricultural and Rs-2: Single-Family Zoning Districts into the A-2: Agricultural and Rs:3 Single Family Residential Districts pursuant to Section 17.13 and Section 17.16 of the Village Zoning Code for John E. & Brenda L. Perry, Property Owners - N124 W14106 Lovers Lane. Discussion ensued of the residential opposition that was shown at the Plan Commission. Discussion ensued of the rural preservation heritage area is in the north part of the Village. Discussion ensued that most of the lots on the 2020 land use map are already divided to the size that they can be at 1-acre parcels. Discussion ensued of the density and save larger tracks of open land. May develop for a mother in law suite. Discussion ensued of those that came forward from Plan Commission and comments of anything north of Freistadt as five acre lots. R. Miller, J. Miller, Neureuther voted no.

Motion (Baum/Pieper) to approve 3-Lot Certified Survey Map (CSM) Application for John E. & Brenda L. Perry, Property Owners - N124 W14106 Lovers Lane. Motion carried unanimously.

Conditional Use Permit 05-2021, John D. East, Applicant and Property Owner - W164 N11974 Fond du Lac Avenue. Conditional Use Permit for a Major Home Occupation for East Outdoor Services.

Motion (Myers/Baum) to approve Conditional Use Permit 05-2021, John D. East, Applicant and Property Owner - W164 N11974 Fond du Lac Avenue. Conditional Use Permit for a Major Home Occupation for East Outdoor Services.

President Wolter read an email from Bill Tait of Freistadt Road emailed comments of letter of reference for John East and his rezoning application. The comments were in favor of Mr. East and the rezoning.

Director Retzlaff came to the podium. The site location was shown. This is a tree trimming service. This is not a typical landscape business or hardscape construction. Staff supports the proposal with conditions. Plan Commission recommended subject to eight conditions. Discussion ensued of squealing tires, could be from Fond du Lac Avenue. Mr. East is performing work on neighbor's property. The business has been in place four – five years. Discussion ensued that the turn around for traffic storage, is close to play area. The play area may be moved in the future.

President Wolter read a complaint on a wood chipper. Mr. East commented he is not chipping wood on a regular basis. He took down neighbor's tree and wood chips belong to the neighbors. Wood chips and cut wood is not stored on property. There is wood by play set.

Motion carried unanimously.

G. Presentation by Samuel Dickman – TID #8 Prospects.

Administrator Kreklow reported that Sam Dickman of Dickman Development will present on the Northwest Corner in TID 8 near Illing Corporation. The company he is working with produces freeze dried pet food.

Dominick Flaunte came to the podium.

It is a new business and looking to expand. The building would be 172,488 square feet. 157,00 square feet would be manufacturing area. The lower portion would be the office and top area would be the manufacturing area.

The concept site plan for the proposal was shown.

This is the beginning of the process and no action is required by the Village Board.

The building material is mostly pre-cast with accents. There are insulated metal panels due to the freezers.

Discussion ensued of a ground mounted system. This is a FDA facility. There will be approximately 150 total employees, including 30 as management.

Discussion ensued of the 100 feet on the south for expansion purposes.

Discussion ensued of the hours of operation as 24 hours and 3rd shift for cleaning purposes. No trucks on 3rd shift.

Discussion ensued of the 2050 plan and the color palate. The plan would go before the Plan Commission. Discussion of the front doors and dressing up of the doors, with canopy of entryway.

There will not be livestock on site. The product comes frozen. There is no smell. The noise equipment is inside. There is an ammonia system. Medium water usage.

This is a corporate office.

Motion (Baum/R. Miller) to convene into closed session for H., item and to include the Village Board, Administrator Kreklow, Attorney Sajdak, Attorney Gehring, Manager Hirn, and Clerk Treasurer Braunschweig. Roll call vote carried unanimously.

Motion (J. Miller/Pieper) to Reconsider Resolution 18-2021, Authorizing the Municipal Direct Charge of the Public Fire Protection Fee.

Discussion ensued of where the additional information would come from. Administrator Kreklow reported on the water utility PILOT payment, the public fire protection fee does not cover the cost of responding to fires but is calculated by the Public Service Commission. Some communities choose to recover thru the tax levy other communities thru the utility bills. \$537,000 will remain on the Village tax levy and the increase above 537,000 will be placed on the water bills. This is \$2-3 on each bill per quarter.

Motion to reconsider failed. J. Miller and Pieper voted yes.

Motion (Baum/Pieper) to convene into closed session for I., item and to include the Village Board, Administrator Kreklow, Manager Hirn, and Clerk Treasurer Braunschweig. Roll call vote carried unanimously.

Motion (Baum/Pieper) to convene into closed session for J., item and to include the Village Board, Administrator Kreklow, Manager Hirn, and Clerk Treasurer Braunschweig. Roll call vote carried unanimously.

Motion (Baum/Pieper) to convene into closed session for K., item and to include the Village Board, Administrator Kreklow, Attorney Sajdak, Superintendent Hogan, Superintendent Zimmerman, Director Ratayczak, Manager Hirn, Director Retzlaff, and Clerk Treasurer Braunschweig. Roll call vote carried unanimously.

Motion (Baum/Pieper) to take the closed session items in the order of H, K, I, and J. Motion carried unanimously.

- H. Meridian Germantown LLC / Wal-Mart Stores, Inc claim of excessive real estate tax. The Village Board may convene into closed session per Wis. Stats. §19.85(1)(g) for the purpose of conferring with Legal Counsel who is rendering advice concerning strategy to be adopted by the Village with respect to litigation in which it is involved or is likely to become involved and then may reconvene into open session to take such action as it deems appropriate; and,
- I. Intergovernmental Agreement with Germantown School District for School Resource Officers. The Village Board May Enter into Closed Session per Wis. Stat. § 19.85(1)(e) for the purpose of deliberating or negotiating the purchasing of public properties, the investing of public funds, or conducting other specified public business, whenever competitive or bargaining reasons require a closed session, and then may reconvene into open session to take such action as it deems appropriate; and,
- J. Germantown Professional Police Association Local 306 Collective Bargaining Contract and International Association of Fire Fighters Local 4854. The Village Board may Convene into closed session per Wis. Stats. §19.85(1)(e) For the Purpose of Deliberating or negotiating the contract, or conducting other specified public business, whenever competitive or bargaining reasons require a closed session and may convene into open session to take such action as it deems appropriate; and,

- K. Village of Richfield Potential Water / Sewer Service Agreement. The Village Board May Enter into Closed Session per Wis. Stat. § 19.85(1)(e) for the purpose of deliberating or negotiating the purchasing of public properties, the investing of public funds, or conducting other specified public business, whenever competitive or bargaining reasons require a closed session, and then may reconvene into open session to take such action as it deems appropriate.

ADJOURNMENT.

ADJOURNMENT: There being no further business, the meeting adjourned at 10:47 p.m.

The next regular meeting of the Village Board will be on Monday, August 16, 2021, at 7:00 p.m.

Respectfully Submitted,

Deanna Braunschweig

Deanna B. Braunschweig, WCMC/CMC
Village Clerk

**BUSINESS OF THE PUBLIC WORKS & HIGHWAYS COMMITTEE
GERMANTOWN, WI**

MEETING DATE: August 16, 2021

AGENDA ITEM: New Business

ITEM TITLE: Consideration of Invoice for Myers Masonry Inc.

SUBMITTED BY: Lawrence Ratayczak, P.E.- Director of Public Works

SUMMARY EXPLANATION:

Staff solicited and received one response for the Masonry/Tile work for the new Electronic Sign located at the Village Hall/Library Campus. The one response was from Myers Masonry with a proposal of \$15,000.00. The work has been satisfactorily completed and accepted with a final invoiced cost of \$15,250.00. Since the amount is over the \$15,000.00 limit of staff approval the invoice needs approval of the PWHC and Village Board.

ATTACHMENT: ORDINANCE____ RESOLUTION____ OTHER_XX__

- Myers Masonry Invoice

RECOMMENDATION:

Staff recommends Public Works and Highway Committee accept the work completed and approve payment of invoice from Myers Masonry, Inc in the amount of \$15,250.00 and forward with a positive recommendation for payment to the Village Board.

Myers Masonry Inc.

1310 E. Devonshire
Delafield, WI 53018

Invoice

Date	Invoice #
8/6/2021	2771

Phone # 262-370-4625 MYERS.MASONRY@YAHOO.COM
Fax # 262-646-8555

Bill To

Village of Germantown

P.O. No.**Terms****Project**

Library sign

Quantity	Description	Rate	Amount
	BASE FOR NEW LIBRARY SIGN 1) Install split face block base 2) Install 6" thick limestone caps 3) Anchor stone caps to block base 4) Install block backing for tile column 5) Install finished tile on column Block and tile selection made by village of Germantown	15,250.00	15,250.00
Thank you for your business. If you have any questions please call Shawn @ (262) 370-4625		Total	\$15,250.00

**BUSINESS OF THE PUBLIC WORKS & HIGHWAYS COMMITTEE
GERMANTOWN, WI**

MEETING DATE: August 16, 2021
AGENDA ITEM: New Business
ITEM TITLE: 2021 Annual Seal Coating Project
SUBMITTED BY: Lawrence Ratayczak, P.E.- Director of Public Works

SUMMARY EXPLANATION:

Staff advertised and received one (1) proposal for the 2021 Annual Seal Coating Project.

The one (1) proposal was received from:

1) Fahrner Asphalt Sealers, LLC = \$495,920.00

Fahrner Asphalt Sealers, LLC has performed and successfully completed the annual seal coating projects for the past several years.

Funding will be by account # 10-542-530-3505

ATTACHMENT: ORDINANCE____ RESOLUTION____ OTHER XX

■ Bid Summary

RECOMMENDATION:

Staff recommends Public Works and Highway Committee approve awarding the 2021 Annual Seal Coating project to Fahrner Asphalt Sealers, LLC in the amount of \$495,920.00 and forward with a positive recommendation for award to Village Board.

Village of Germantown 2021 Seal Coating Program (#7930898)

Owner: Village of Germantown

Solicitor: Graef Inc - Milwaukee

07/30/2021 10:00 AM CDT

						Engineer Estimate		Fahrner Asphalt Sealers, LLC	
Section Titl	Line Item	Item Code	Item Descr	UofM	Quantity	Unit Price	Extension	Unit Price	Extension
1- Primary Bid							\$0.00		\$495,920.00
	1	1	Micro Surf	Sq Yd	51000			\$2.92	\$148,920.00
	2	2	Flex Patchi	Ln Ft	35000			\$6.85	\$239,750.00
	3	3	GSB-88	Sq Yd	75000			\$1.35	\$101,250.00
	4	4	Infrared Pa	Ea	40			\$150.00	\$6,000.00
Base Bid Total:							\$0.00		\$495,920.00

**BUSINESS OF THE PUBLIC WORKS & HIGHWAYS COMMITTEE
GERMANTOWN, WI**

MEETING DATE: August 16, 2021

AGENDA ITEM: New Business

ITEM TITLE: Holy Hill Road Water and Sewer Extension

SUBMITTED BY: Lawrence Ratayczak, P.E.- Director of Public Works

SUMMARY EXPLANATION:

Staff advertised and received seven (7) proposals for the construction of the proposed extension of water and sanitary sewer from Gateway Crossing to a point just west of "B" Street. The extension of water and sanitary sewer needs to be completed prior to the reconstruction of Holy Hill Road.

The seven (7) proposals were received from:

- | | |
|------------------------------|------------------|
| 1) Kruczek Construction, Inc | = \$1,555,555.55 |
| 2) American Sewer Services | = \$1,561,720.00 |
| 3) Super Excavators, Inc | = \$1,665,843.00 |
| 4) PTS Contractors, Inc | = \$1,830,000.00 |
| 5) Globe Contractors, Inc | = \$1,893,020.00 |
| 6) MJ Construction, Inc | = \$2,330,275.00 |
| 7) Mid-City Corporation | = \$2,330,275.00 |

All bidding contractors were reviewed resulting with the determination that all could perform the work required to complete this project. Kruczek Construction has completed several projects with the Village of Germantown, including Goldendale Rd Sanitary Phase #2 and Phase #3 and Park Avenue Reconstruction.

Funding will be through TID #8

ATTACHMENT: ORDINANCE_____ RESOLUTION_____ OTHER XX

- Bid Summary

RECOMMENDATION:

Staff recommends Public Works and Highway Committee approve awarding the project to Kruczek Construction, Inc in the amount of \$1,555,555.55 plus a contingency of 5% or \$77,777.00 for a total approved project amount of \$1,633,332.55 and forward with a positive recommendation for award to Village Board.

Holy Hill Road Water and Sewer Extension (#7933099)
Owner: Village of Germantown
Solicitor: raSmith (PN 1200627)
Bid opening: 08/05/2021 10:00 AM CDT

				Kruczek Construction Inc.		American Sewer Services, Inc.		Super Excavators, Inc.		PTS Contractors, Inc		Globe Contractors, Inc.		MJ Construction, Inc.		Mid City Corporation	
Item #	Item Description	UofM	Quantity	Unit Price	Extension	Unit Price	Extension	Unit Price	Extension	Unit Price	Extension	Unit Price	Extension	Unit Price	Extension	Unit Price	Extension
Section 1 - Sanitary Sewer																	
1	18" Sanitary Sewer (Open Cut with granular backfill)	LF	1760	\$450.00	\$792,000.00	\$369.00	\$649,440.00	\$405.00	\$712,800.00	\$540.00	\$950,400.00	\$508.00	\$894,080.00	\$575.00	\$1,012,000.00	\$925.00	\$1,628,000.00
2	48" Sanitary Manhole (4)	VF	69	\$740.00	\$51,060.00	\$500.00	\$34,500.00	\$800.00	\$55,200.00	\$780.00	\$53,820.00	\$1,500.00	\$103,500.00	\$670.00	\$46,230.00	\$750.00	\$51,750.00
Subtotal Section 1:					\$843,060.00		\$683,940.00		\$768,000.00		\$1,004,220.00		\$997,580.00		\$1,058,230.00		\$1,679,750.00
Section 2 - Water Main																	
3	16" C-900 Water Main	LF	1997	\$170.00	\$339,490.00	\$240.00	\$479,280.00	\$246.00	\$491,262.00	\$246.00	\$491,262.00	\$220.00	\$439,340.00	\$255.00	\$509,235.00	\$375.00	\$748,875.00
4	12" C-900 Water Service	LF	129	\$200.00	\$25,800.00	\$330.00	\$42,570.00	\$389.00	\$50,181.00	\$215.00	\$27,735.00	\$210.00	\$27,090.00	\$330.00	\$42,570.00	\$500.00	\$64,500.00
5	16" Butterfly Vavles	EA	4	\$5,500.00	\$22,000.00	\$4,750.00	\$19,000.00	\$5,500.00	\$22,000.00	\$4,160.00	\$16,640.00	\$5,000.00	\$20,000.00	\$5,300.00	\$21,200.00	\$7,500.00	\$30,000.00
6	12" Tapping Valve with 16" x 12" Sleeve	EA	2	\$10,000.00	\$20,000.00	\$6,250.00	\$12,500.00	\$7,500.00	\$15,000.00	\$8,150.00	\$16,300.00	\$9,000.00	\$18,000.00	\$13,500.00	\$27,000.00	\$10,000.00	\$20,000.00
7	12" Gate Valve	EA	1	\$3,900.00	\$3,900.00	\$3,750.00	\$3,750.00	\$4,000.00	\$4,000.00	\$3,400.00	\$3,400.00	\$5,000.00	\$5,000.00	\$4,200.00	\$4,200.00	\$5,000.00	\$5,000.00
8	Hydrant Assembly	EA	4	\$6,000.00	\$24,000.00	\$6,000.00	\$24,000.00	\$11,000.00	\$44,000.00	\$8,400.00	\$33,600.00	\$9,500.00	\$38,000.00	\$7,400.00	\$29,600.00	\$17,500.00	\$70,000.00
9	Relocate Hydrant	EA	1	\$1,200.00	\$1,200.00	\$5,500.00	\$5,500.00	\$2,900.00	\$2,900.00	\$2,000.00	\$2,000.00	\$4,000.00	\$4,000.00	\$1,500.00	\$1,500.00	\$750.00	\$750.00
Subtotal Section 2:					\$436,390.00		\$586,600.00		\$629,343.00		\$590,937.00		\$551,430.00		\$635,305.00		\$939,125.00
Section 3 - Road and Storm Sewer																	
10	3" HMA Binder Pavement (3 MT 58-28 S) (Sewer Trench)	TON	170	\$170.00	\$28,900.00	\$210.00	\$35,700.00	\$160.00	\$27,200.00	\$140.00	\$23,800.00	\$161.00	\$27,370.00	\$280.00	\$47,600.00	\$175.00	\$29,750.00
11	Bedrock Excavation (Estimate)	CY	500	\$1.00	\$500.00	\$10.00	\$5,000.00	\$65.00	\$32,500.00	\$0.01	\$5.00	\$105.00	\$52,500.00	\$150.00	\$75,000.00	\$125.00	\$62,500.00
12	Erosion Control including Cofferdam	LS	1	\$70,155.55	\$70,155.55	\$75,000.00	\$75,000.00	\$12,000.00	\$12,000.00	\$15,000.00	\$15,000.00	\$20,000.00	\$20,000.00	\$318,000.00	\$318,000.00	\$50,000.00	\$50,000.00
13	Medium Rip Rap	CY	22	\$125.00	\$2,750.00	\$150.00	\$3,300.00	\$100.00	\$2,200.00	\$129.00	\$2,838.00	\$370.00	\$8,140.00	\$620.00	\$13,640.00	\$250.00	\$5,500.00
14	58" x 91" HECF	LF	136	\$1,050.00	\$142,800.00	\$1,130.00	\$153,680.00	\$1,200.00	\$163,200.00	\$1,200.00	\$163,200.00	\$1,500.00	\$204,000.00	\$1,150.00	\$156,400.00	\$2,000.00	\$272,000.00
15	58" x 91" Concrete End Sections	EA	2	\$8,000.00	\$16,000.00	\$5,500.00	\$11,000.00	\$9,700.00	\$19,400.00	\$9,000.00	\$18,000.00	\$13,000.00	\$26,000.00	\$7,000.00	\$14,000.00	\$25,000.00	\$50,000.00
16	Concrete Support Columns for Culvert: Bidder shall enter a bid price for EITHER Item 16 OR 16A, not both. Enter a zero (0.00) price for the item not chosen.	EA	1	\$0.00	\$0.00	\$7,500.00	\$7,500.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$30,000.00	\$30,000.00
Subtotal Section 3:					\$261,105.55		\$291,180.00		\$256,500.00		\$222,843.00		\$338,010.00		\$624,640.00		\$499,750.00
Optional Alternate																	
16A	30" Steel Casing: Bidder shall enter a bid price for EITHER Item 16 OR 16A, not both. Enter a zero (0.00) price for the item not chosen.	LS	1	\$15,000.00	\$15,000.00	\$0.00	\$0.00	\$12,000.00	\$12,000.00	\$12,000.00	\$12,000.00	\$6,000.00	\$6,000.00	\$12,100.00	\$12,100.00	\$0.00	\$0.00
Optional Alternate Subtotal:					\$15,000.00		\$0.00		\$12,000.00		\$12,000.00		\$6,000.00		\$12,100.00		\$0.00
Base Bid Total:					\$1,555,555.55		\$1,561,720.00		\$1,665,843.00		\$1,830,000.00		\$1,893,020.00		\$2,330,275.00		\$3,118,625.00

BUSINESS OF THE VILLAGE BOARD GERMANTOWN, WI

MEETING DATE: August 16, 2021

AGENDA ITEM: New Business [REZONING ORDINANCE, CONDITIONAL USE
PERMIT & CERTIFIED SURVEY MAP]

ITEM TITLE: Mike Faber, Agent for Capstone Quadrangle and MLG/RMS
Partnership, Property Owner – N128 W20943 Holy Hill Road;
Application to Rezone 52.5 acres from A-1: Agricultural to M-1: Limited
Industrial; Conditional Use Permit to Allow a Development
Encroachment into a 25' Wetland & 75' Navigable Waterway Setback;
and a 2-Lot Certified Survey Map (CSM)

SUBMITTED BY: Jeffrey W. Retzlaff, Director, Community Development Department

SUMMARY EXPLANATION:

Mike Faber, Capstone Quadrangle Development Company, is requesting approval of a Rezoning, Conditional Use Permit (CUP) and 2-lot Certified Survey Map (CSM) for the development of the 52.5-acre Capstone 41 Business Park with an initial 203,580 sqft industrial building located on the Holy Hill Road "gateway corridor" east of US41 and within Tax Increment District No. 7.

In addition to the following recommendations, the Plan Commission took action to conditionally approve the Site Development & Building Plans for Phase 1 development subject to (11) conditions.

PLAN COMMISSION RECOMMENDATIONS:

APPROVE rezoning 52.5 acres from A-1: Agricultural to M-1: Limited Industrial as proposed.

APPROVE the 2-lot Certified Survey Map (CSM) for the 28.1-acre property subject to one (1) condition.

APPROVE a Conditional Use Permit to allow the encroachment of development into portions of the 25' wetland and 75' navigable waterway setbacks and proposed compensation as presented in the Wetland Mitigation Plan Narrative dated July 16, 2021 pursuant to Section 24.04 of the Shoreland-Wetland Zoning Code and subject to three (3) conditions.

APPLICATION, PLANS & RELATED DOCUMENTS:

All relevant documents, including the rezoning ordinance, CUP resolution, applications, plans, supporting information, the staff report & recommendation, and Plan Commission meeting minutes (when available) are included in the PDF digital file distributed by the Village Clerk.

ORDINANCE NO. 08 -2021

**AN ORDINANCE TO AMEND THE OFFICIAL ZONING MAP
OF THE VILLAGE OF GERMANTOWN ZONING CODE**

Capstone Quadrangle Development Company, Property Owner

THE VILLAGE BOARD OF THE VILLAGE OF GERMANTOWN, WASHINGTON
COUNTY, WISCONSIN, ORDAINS AS FOLLOWS:

SECTION 1. That the zoning map of the Village of Germantown is amended by rezoning from the A-1: Agricultural Zoning District to the M-1 Limited Industrial District for the following described property:

PT of the W ½ of the NE CSM 6506 Lot 3 totaling 52.48-Acres, Section 18, Township 9 North, Range 20 East, Village of Germantown, Washington County, Wisconsin.

Said lands containing 52.5 acres, more or less.

SECTION 2. This ordinance shall take effect and be in full force the day after its passage and publication, as provided by law.

Introduced by Trustee: _____

Adopted: _____, 2021

Vote: Ayes: _____
 Nays: _____

Dean Wolter, Village President

ATTEST:

Deanna B. Braunschweig, WCMC/CMC Village Clerk

APPROVED AS TO FORM:

Brian Sajdak, Attorney

Published:

CUP # 06 – 21

Document No.

CONDITIONAL USE PERMIT

Document Title

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

Whereas the Applicant:

**Capstone Quadrangle Development Company, d/b/a CQ WI
2021 LLC, Property Owner**

agree to comply with applicable Codes and Ordinances of the Village of Germantown, Wisconsin, and further agrees that all work done pursuant to the permission granted herewith will conform with the applications and drawings filed with and approvals granted by officials of the Village for the purpose of obtaining this permit.

Now, therefore, this permit is issued to the Applicant and Property Owner to allow development within the 25' wetland and 75' navigable waterway setback areas as presented on the Site Development Plans dated July 30, 2021 and exhibits contained in the Wetland Mitigation Plan Narrative dated July 16, 2021 pursuant to Section 24.04 of the Shoreland-Wetland Zoning Code.

Name & Return Address:

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

Parcel Identification No:

GTNV 181-987**On the following described property located in the Village of Germantown, Washington County, Wisconsin:**

Lot 2 of Certified Survey Map No. 6824, in the Southwest ¼ and Northwest ¼ of the Southeast ¼ of Section 7 and the Northeast ¼, Southeast ¼, Southwest ¼ and Northwest ¼ of the Southwest ¼ of Section 7, Township 9 North, Range 20 East, Village of Germantown, Washington County, Wisconsin, containing 101.73 acres. The development site is located on the south side of the parcel abutting Holy Hill Road immediately across from the Briggs & Stratton building currently under construction.

Tax Key No: GTNV 181-987

Address: N128 W20943 Holy Hill Road (address to change pending construction)

Pursuant to the following condition(s):

1. 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.
2. The Property Owner shall implement the wetland setback compensation measures as set forth in the Wetland Mitigation Plan Narrative (dated July 16, 2021) 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.

3. The Property Owner shall prepare and submit an annual monitoring report to the Village concerning the management activities proposed in the Wetland Mitigation plan Narrative including the planting/restoration of native vegetation. Said report shall, at a minimum, detail the type and number of plantings, all activities carried out in the previous year and the observed success of all previous activities, recommendations for new or different activities needed to ensure success of the mitigation measures and management activities carried out, and the planned activities for the coming year. Said report shall be submitted to the Community Development Department annually at the end of each year beginning in 2022 for a period of three (3) years.

Granted by the Village Board of the Village of Germantown, Washington County, Wisconsin on the _____ day of _____, 2021.

ATTEST:

Dean Wolter, Village President

_____, Village Clerk

STATE OF WISCONSIN) SS
WASHINGTON COUNTY)

Personally came before me this _____ day of _____, 2021, the above named Dean Wolter, Village President, and Deanna Braunschweig, Village Clerk, to me known to be the persons 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: _____

ACCEPTANCE OF TERMS AND CONDITIONS BY PROPERTY OWNER

The following named person, who is authorized to represent CQ WI 2021 LLC, Property Owner, hereby accepts the terms and conditions set forth in this Permit and realize that non-adherence to the terms and conditions as stated hereon may result in the revocation of this Permit by the Village of Germantown.

Dated this ____ day of _____, 2021

{type or print name on this line}

{signature on this line}
Agent for CQ WI 2021 LLC

STATE OF WISCONSIN) SS
_____) COUNTY)

Personally came before me this ____ day of _____, 2021, being the above named _____, 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

ACCEPTANCE OF TERMS AND CONDITIONS BY PROPERTY OWNER

The following named person, who is authorized to represent CQ WI 2021 LLC, Property Owner, hereby accepts the terms and conditions set forth in this Permit and realize that non-adherence to the terms and conditions as stated hereon may result in the revocation of this Permit by the Village of Germantown.

Dated this ____ day of _____, 2021

{type or print name on this line}

{signature on this line}
Agent for CQ WI 2021 LLC

STATE OF WISCONSIN) SS
_____ COUNTY)

Personally came before me this ____ day of _____, 2021, being the above named _____, 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: _____

This instrument was drafted by:
Jeffrey W. Retzlaff, AICP
Community Development Director/Zoning Administrator
Village of Germantown, Wisconsin

REZONING, CERTIFIED SURVEY MAP (CSM), CONDITIONAL USE PERMIT & SITE PLAN APPLICATIONS

8/9/21 Plan Commission Meeting

Capstone Development Company / MLG/RMS Ltd. Partnership

Village Planner Report

Germantown, Wisconsin

Summary

Mike Faber, agent for Capstone Quadrangle Development Company and MLG/RMS Ltd. Partnership, property owner, is requesting approval of a Rezoning, 2-lot Certified Survey Map (CSM), Conditional Use Permit (CUP) and Site Development and Building Plans for the development of a 52.5-acre business park with an initial 203,580 sqft industrial building located within the Holy Hill Road "gateway corridor" east of US41 and Tax Increment District No. 7.

Property Location: Holy Hill Road (TID#7 Expansion)

Applicant/

Property Owner: Mike Faber
Capstone Quadrangle MLG/RMS Ltd. Partnership
W24222 Riverwood Drive 19000 W. Bluemound Road
Waukesha, WI Brookfield, WI

Current Zoning: A-1: Agricultural **Proposed Zoning:** M-1: Limited Industrial

Adjacent Land Uses		Zoning
North	Business/Industrial	M-1
South	Agricultural/Environmental	A-1
East	Business/Industrial	M-1
West	Business/Agricultural	B-3/A-1



Background/Proposal

In March 2021, the Village Board approved an amendment to the boundary and list of improvement projects for the Village's Tax Incremental Financing District No. 7 (TID#7). TID#7 was expended to include 170 additional acres including the 52.5-acre parcel intended for the Capstone 41 Business Park.

As discussed with the PC in July, Capstone proposes to develop the 52.5-acre site into a Class "A" business park comprised of up to three (3) multi-tenant buildings totaling approximately 785,400 sqft for light manufacturing, assembly, warehouse, distribution, or e-commerce uses consistent with the "industrial" classification in the Village's 2020 Land Use Plan and proposed M-1: Limited Industrial Zoning District.

At this time, Capstone is requesting approval of the following applications as a prerequisite for infrastructure improvements and "Phase 1" development within the overall 52.5-acre site located south of the Germantown Gateway Corporate Park on the south side Holy Hill Road:

1. Rezoning application to change the zoning for the 52.5-acre parcel from A-1: Agricultural to M-1: Limited Industrial;
2. Certified Survey Map (CSM) to divide the 52.5-acre parcel into (2) parcels and outlots for storm water facilities and the internal driveway;
3. Conditional Use Permit (CUP) to allow encroachment into portions of the 25' wetland and 75' navigable waterway setbacks on the site; and
4. Site development and building plans for development of proposed Lot 1 (13.5 acres), including a 203,580 sqft industrial/distribution facility, parking, driveway and internal circulation, storm water management, and water & sanitary sewer utilities into the site

Rezoning Application

The following Zoning Code map amendment (i.e. rezoning) is proposed:

- Change 52.5 acres from A-1: Agricultural to M-1: Limited Industrial

As indicated in the rezoning application, the Applicant is requesting this change to facilitate the development of this parcel with industrial uses and the immediate construction of a 203,580 sqft industrial facility on 13.5 acres and future industrial development on the remaining 33.7 acres in Lot 2.

Certified Survey Map (CSM)

The proposed 2-lot CSM divides the 52.5-acre site into the following to facilitate future development:

- Lot 1: a 13.5-acre parcel to be developed with the 203,580 sqft industrial building;
- Lot 2: a 33.7 acre "placeholder" parcel available for future development and/or division; and
- Outlot 1 for a storm water management basin and Outlot 2 for the internal driveway into the property that will eventually be a private roadway serving all the developed lots in the Capstone 41 Business Park

Conditional Use Permit (CUP)

As shown on Sheet 3 of the CSM, there are two small unnamed navigable waterways abutting the 52.5-acre site: one in the northwest corner located on the MMSD-owned property to the west that is tributary to the Cedar Creek watershed; and another in the southeast corner located on the Wetterau property to the east that is tributary to the Menomonee River watershed. Both waterways also have associated wetlands that extend into the Capstone site. Both the 25' wetland and 75' waterway setback boundaries are shown on the CSM.

As discussed in the Wetland Setback Mitigation Plan Narrative (dated July 16) and shown in the Impact & Mitigation exhibits, no actual development is proposed (nor allowed) in any part of these navigable waterways or wetlands. However, grading & filling for the two storm basins and driveways/parking areas along the west side of the site will encroach into approximately 29,450 sqft (.676 acres) of 25' wetland setback and approximately 9,365 sqft (.215 acres) of 75' navigable waterway setback. All the disturbed area totaling .891 acres will be subject to filling and/or grading necessary to raise the elevation for the storm water basins and parking areas.

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 and/or other compensation for the affected area is provided somewhere on the property. The ratio of compensation required is based on a 1:1 ratio for any "horizontal" development (grading with <3' of elevation change) or a 2:1 ratio for "vertical" development (any structural improvements or grading with >3' of elevation change).

As detailed in the applicant's Mitigation Narrative, all the setback impact is "vertical" development requiring a 2:1 ratio compensation ratio. While the minimum amount of on-site compensation required is 1.782 acres, a total of 2.232 acres of wetland buffer restoration with native plantings and turf will be installed as presented in the Mitigation Narrative (see Exhibit B in the Mitigation Plan Narrative).

Site Development & Building Plans

Detailed site development and building plans have been prepared for an initial phase of development that includes the proposed 203,580 sqft building to be developed on the 13.5-acre proposed Lot 1. As detailed in the plans, the site and building will have the following characteristics:

Site Improvements

- Construct a new access driveway from Holy Hill Road south into the site;
- Extend & install water (from Holy Hill Road) & sanitary sewer facilities (to east side of property);
- Construct curb & gutter internal access/circulation driveways and parking with a total of 170 passenger vehicle parking stalls (76 future stalls south of the building to be constructed as needed) and 110 truck/trailer parking stalls;
- Construct three (3) storm water management wet detention basins w/ associated swales and on-site storm sewer;
- Install perimeter and internal landscaping around the building, parking areas storm basins and street trees along Holy Hill Road adjacent to Lot 1.

Building Improvements (see attached renderings & elevations; Sheets A1.1, A3.1 & A4.1)

- 203,580 sqft single-story “spec” building
- Painted, insulated pre-cast concrete wall panels w/ smooth finish and multi-gray color scheme (36’ pre-cast panel wall height w/ 38’ & 42’ parapet wall height)
- aluminum storefront windows
- twenty (20) shipping & receiving loading dock bays (w/ room for an additional 31 dock bays) & four (4) overhead drive-in door bays

Storm Water Management. A total of 437,962 sqft (10.1 acres) of impervious surfaces are proposed as part of Lot 1 development or 74.4% of the total 13.5-acre site leaving 25.6% in open/green space. Future development of the parking area south of the building would increase the impervious area to 464,520 sqft (10.7 acres) or 78.9% of the site leaving 21.1% open/green space. A total of 45,201 sqft (1.0 acres) of impervious road surfaces are proposed for Outlot 2 or 79.4% of the total 1.31-acre outlot leaving 20.6% in open/green space. (See Sheet C-3).

Lot 1 storm water facilities include storm sewer, roof drains and grading swales to convey run-off from the building and parking on Lot 1 to a small, undetained grass basin located at the south end of Lot 1 and the large west detention basin located in Outlot 1 to the west. As part of this initial phase of development, the large, wet detention basin located in the southeast corner of the site (on proposed Lot 2) will be constructed along with interim grading and site stabilization measures for the remaining developable area. (See Sheets C-4 through C-6).

Landscaping & Buffering. Landscaping is proposed along Holy Hill Road (street trees) and the east side of the building and within the parking areas. Plantings include a variety of deciduous street and shade trees, ornamental trees, evergreen trees, deciduous and evergreen shrubs, perennial plantings, and ornamental grasses. (see Sheets L-1 through L-5).

Lighting. Exterior lighting of the site and building includes:

- (18) 133W LED cut-off building-mounted fixtures at a height of 25’ (north & south elevation) and 32’ west and east elevations;
- (6) 133W LED cut-off style pole-mounted fixtures mounted on a 22’ pole and 3’ base (25’ total fixture height) in the west truck parking area;
- (6) 25W under canopy entrance lighting.

Signage. A monument sign “placeholder” is shown in the northeast corner of Lot 1 at the driveway intersection @ Holy Hill Road. Details for the monument and any wall-mounted signs for future tenants will be provided as part of separate and future sign permit applications.

Staff Comments**Community Development: Planning & Zoning**

At this time, Capstone Quadrangle is only requesting approval for an initial “phase” of development as overall presented on Sheets C-4 and C-10:

- 203,580 sqft building, parking & internal drives and landscaping on Lot 1;
- storm water basin on Outlot 1;
- driveway and Holy Hill road intersection improvements on Outlot 2;
- grading, stabilization & storm water basin on Lot 2 (including the removal of all existing farm buildings & structures and temporary restoration)

Site development and building plans for all future development and possible land division of Lot 2 will require Plan Commission review and approval.

As discussed with the Plan Commission in July, there is insufficient area between the north side of the building and the Holy Hill Road property line within which to install any significant berm and/or landscaping. The grading plan indicates a straight and continuous berm (vs. undulating and serpentine) approximately 400' in length and a height of up to 918' will be installed along the north side of the building. Two small areas at either end have an increased height up to 920'. However, with a finished floor elevation of 915' for the building and a tentative road height of approximately 915' for a re-constructed Holy Hill Road in this vicinity, the proposed berm will have minimal impact (a 2'-3' net increase in height). The location of the internal driveway along the north side of the building reduces the area available for an adequate berm and landscaping to less than 30 feet. The amount of landscaping and berm height & design proposed needs to be supplemented with additional berm height and deciduous and evergreen landscaping. Since the proposal is to install “no mow” turf in the berm/landscaped area along the north and west sides of the building, the grade of those areas could be steeper allowing for more height and variability of the berm.

Additional landscaping (preferably a mix of evergreen and deciduous trees) should also be installed along the west side of the truck parking/staging area west of the building to provide a better (future) visual screen of the truck activity. While currently shielded from view by the overgrowth on the adjoining parcel to the west, the area to the west is also available for future development; likely commercial, high-density residential or a mixed-use development. A revised landscape & berm plan should be prepared and submitted to the Plan Commission for review and approval prior to occupancy of the building.

No roof plan has been provided at this time given the speculative nature of the building shell being constructed. Depending on future tenants, roof-mounted HVAC mechanicals may be installed in the future; While there is a 1-3' high parapet proposed along the roof line, no roof plan showing the actual location and possible sight lines has been provided. No screening is proposed at this time either. Future tenants should be required to provide a roof plan with RTU location and sightline diagrams as part of any building “build out” plans. RTU's should be screened from view by line of sight at 5' above grade from all property lines around the building and the centerline of the adjacent roadways (Holy Hill Road and driveway). If RTU's cannot be hidden from view, screen walls or other mutually acceptable features intended to shield the view of said RTU's should be submitted to the Village Planner (or Plan Commission if determined

necessary by the Village Planner) for review and approval prior to build out construction and tenant occupancy.

No details regarding the size, location and materials for any dumpster enclosure(s) has been provided. Dumpster enclosures should be designed to meet the Village's dumpster enclosure guidelines. Future tenants should be required to provide proposed dumpster enclosure plans to be reviewed by staff prior to occupancy.

The proposed exterior lighting includes building-mounted fixtures at a height of 32 feet; exceeding the maximum 25 feet recommended by the Village. The height of all exterior lighting fixtures should not exceed a mounted height of 25 feet above the surrounding finished grade elevation. Also, no tilting of the fixtures should be permitted. The building renderings show pole-mounted fixtures in the vehicles parking area on the east side of the building but the photometric plan does not. If pole-mounted fixtures at a height of 25' is necessary (vs. building mounted), a revised photometric plan should be submitted to staff for review and approval.

As discussed with the Plan Commission in July, the building architecture is somewhat bland. Additional reveals and/or articulation should be included in the design. The gray color gray scheme is acceptable but should be enhanced to ensure the colors or tone differences are not too evenly matched and indistinguishable.

Community Development: Inspection Services

Inspection Services has indicated that the submission of state-approved plans will be required prior to issuing a building permit along with the required \$20,000 occupancy bond.

Public Works/ Village Engineer/Village Surveyor

The Village Engineer and Public Works Department staff have identified several technical issues (primarily grading and storm water management) and plan revisions that need to be resolved or otherwise addressed by the Developer prior to commencing construction activities and issuance of building permits. Nonetheless, Staff is recommending conditional approval of the site development and building plans subject to all the outstanding items and issues identified in the following review memos being resolved and reflected in additional information and/or revised plans submitted to Staff for further review, comment and approval prior to commencing any site construction or issuance of building permits (excluding early start site preparation and footing and foundation installation):

- July 30, 2021 memo from Larry Ratayczak, Public Works Director (Engineering)
- July 23, 2021 memo from Burt Naumann, GRAEF (CSM)

It should be noted that the developer, Capstone Quadrangle, and the Village are working cooperatively to design the storm water management system for this site to accommodate run-off from re-construction of Holy Hill Road. Construction plans for the 4-lane re-construction project from US41 to east of Goldendale Road currently scheduled for 2022 are being prepared (but not yet completed) by the Village at this time.

Fire & Police Departments

The Fire Department is recommending approval subject to the following requirements:

1. Approved water supply with fire hydrants is required with intervals at approximately 400' apart.
2. Knox Box and the FDC shall be installed at a location to be determined by GFD.
3. Fire sprinkler and alarms are required by IBC based on occupancy class.
4. All exterior doors (except primary entrance) shall be clearly marked with reflective 5" or larger letters/numbers to aid emergency personnel access.

VILLAGE STAFF RECOMMENDATIONS

APPROVE rezoning approximately 52.5 acres from A-1: Agricultural to M-1: Limited Industrial as proposed.

APPROVE the 2-lot Certified Survey Map (CSM) for the 52.5-acre property subject to the following conditions:

1. The CSM shall be revised to reflect the Village Surveyor comments contained in the July 23, 2021 review memo prior to recording the CSM.

APPROVE a Conditional Use Permit to allow the encroachment of development into portions of the 25' wetland and 75' navigable waterway setbacks and proposed compensation as presented in the Wetland Mitigation Plan Narrative (dated July 16, 2021) pursuant to Section 24.04 of the Shoreland-Wetland Zoning Code and subject to the following conditions:

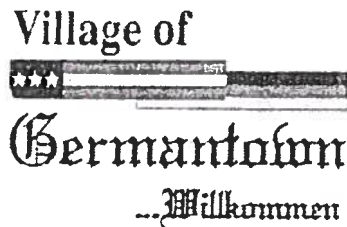
1. If the use, activities and/or operation subject of this permit falls out of conformity with the conditions herein, or, where there is a change in the nature, character, intensity or extent of the activities or uses which causes problems or harmful effects that were not anticipated at the time of approval 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.
2. The Property Owner shall implement the wetland setback compensation measures as set forth in the Wetland Mitigation Plan Narrative (dated July 16, 2021) 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.
3. The Property Owner shall prepare and submit an annual monitoring report to the Village concerning the management activities proposed in the Wetland Mitigation plan Narrative including the planting/restoration of native vegetation. Said report shall, at a minimum, detail the type and number of plantings, all activities carried out in the previous year and the observed success of all previous activities, recommendations for new or different activities needed to ensure success of the mitigation measures and management activities carried out, and the planned activities for the coming year. Said report shall be submitted to the Community Development Department annually at the end of each year beginning in 2022 for a period of three (3) years.

APPROVE the site development and building plans for development proposed by Capstone Quadrangle for proposed Lot 1 (13.5 acres) of the Capstone 41 Business Park on Holy Hill Road, including a 203,580 sqft industrial/distribution building and associated parking, internal driveways, storm water management, and water & sanitary sewer improvements 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 superseded by subsequent plan sheets approved by Village Staff pursuant to revisions required herein and/or by the Plan Commission:
 - a. *Architectural plans dated July 1, 2021;*
 - b. *Civil Engineering plans dated July 30, 2021 (bid set);*
 - c. *Landscaping plans dated July 30, 2021 (bid set);*
 - d. *Lighting plans (photometric plan) dated August 5, 2021*
2. All landscaping, screening, grading, and paving improvements 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 for the shell building.
3. 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.
4. All outstanding items and issues identified by Village Staff in the following review memos shall be resolved and reflected in additional information and/or revised plans submitted to Staff for further review, comment and approval prior to commencing construction or issuance of building permits (excluding "early start" site clearing and footing/foundation work approved by the Village and/or WI DSPS). The initial storm water management plan and report dated July 16, 2021 is incomplete and requires additional information as discussed in the following:
 - a. July 30, 2021 memo from Larry Ratayczak, Public Works Director
5. State agency (DSPS) approved plans and a \$20,000 occupancy bond are required by Inspection Services at the time of building permit application. The Village of Germantown is an authorized delegated agent of DSPS to provide all commercial plan review and inspection services through SAFEBuilt of WI and the Village of Germantown.
6. Dumpster enclosures shall be designed to meet the Village's dumpster enclosure guidelines. Future tenants shall be required to provide proposed dumpster enclosure plans for review and approval by the Village Planner prior to issuance of an occupancy permit for the tenant.
7. The height of all exterior lighting fixtures shall not exceed a mounted height of 25 feet above the surrounding finished grade elevation. Also, no tilting of the fixtures shall be permitted. The building renderings show pole-mounted fixtures in the vehicles parking area on the east side of the building but the photometric

plan does not. If pole-mounted fixtures at a height of 25' are necessary in the parking area east of the building (vs. building mounted), a revised photometric plan shall be submitted to the Village Planner for review and approval prior to installation.

8. Additional reveals and/or articulation should be included in the design. The gray color gray scheme is acceptable but should be enhanced to ensure the colors or tone differences are not too evenly matched and indistinguishable.
9. Future tenants shall provide a roof plan with the location of all roof-mounted HVAC units and any other roof-mounted equipment along with sightline diagrams as part of all future building "build out" plans. RTU's shall be screened from view by line of sight at 5' above grade from all property lines around the building and the centerline of the adjacent roadways (Holy Hill Road and driveway). If RTU's cannot be hidden from view, screen walls or other mutually acceptable features intended to shield the view of said RTU's shall be submitted to the Village Planner (or Plan Commission if determined necessary by the Village Planner) for review and approval prior to build out construction and tenant occupancy.
10. The amount of landscaping and berm height & design for the area along the north elevation of the building abutting Holy Hill Road shall be supplemented with additional berming and landscaping. Additional landscaping including a mix of evergreen and deciduous trees shall be installed along the west side of the truck parking/staging area west of the building to provide a better (future) visual screen of the truck activity. A revised landscape & berm plan shall be prepared and submitted to the Plan Commission for review and approval prior to issuance of an initial occupancy permit for the 203,580 sqft building.
11. Right-of-way permits are required for any/all construction conducted in the Holy Hill Road right-of-way. Contact the Public Works Department/Highway Superintendent for permit submittal requirements.



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 7-12-21

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

CAPSTONE DEVELOPMENT COMPANY
N17W24222 RIVERWOOD DRIVE
SUITE 160
WAUKESHA WI 53188-1134

PROPERTY OWNER

MLG/RMS Ltd. Partnership
19000 W. BLUEMOUND ROAD
BROOKFIELD, WI 53045

Phone (262) 523-1122

E-Mail mike@capstonequadrangle.com

Phone (262) 938-4448

E-Mail phinkfuss@gmail.com

2

PROPERTY ADDRESS

N128 W20943 HOLY HILL ROAD, GERMANTOWN WI 53076

3

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

North <u>INDUSTRIAL</u> <u>(Gateway Corporate Park)</u>	South <u>VACANT</u> <u>(MMSD)</u>	East <u>AGRICULTURAL</u> <u>(WETTERAU)</u>	West <u>VACANT</u> <u>(MMSD)</u>
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4

READ AND INITIAL THE FOLLOWING:

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

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

MM 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

[Signature]
Applicant its: Principal

Date 7/2/21

[Signature] MLG/RMS Limited Partnership
Owner

Date 7/8/2021



Community Development Department

Jeffrey W. Retzlaff, AICP, Director

Village Planner & Zoning Administrator

N112 W17001 Mequon Road P.O. Box 337

Germantown, WI 53022-0337

Telephone: (262) 250-4735

FAX: (262) 253-8255

Website: www.village.germantown.wi.us

E-mail: jretzlaff@village.germantown.wi.us

July 30, 2021 M Faber response Comments in Red below 8/4/2021

Mike Faber
Capstone Quadrangle
N17 W24222 Riverwood Drive Suite 160
Waukesha, WI 53188-1134

RE: Capstone 41; Rezoning, Site Plan, & CSM Applications;
Staff Review Comments

Mike:

Village Staff has reviewed the applications, plan set and supporting materials submitted for the proposed Capstone 41 development on Holy Hill Road. The following outstanding items/issues need to be addressed before this item can be placed on the Plan Commission Agenda for review/approval. Please provide the requested information, corrections and/or revisions as soon as possible. If necessary, Village staff would be happy to meet with you to discuss or clarify any of these items.

As discussed, it is understood that approval is only being requested for "Phase 1" which includes all site development on Lot 1, including the 203,580 sqft building and required utilities, the road in Outlot 2, preliminary grading & site stabilization of Lot 2 and the storm water basins in both Outlot 1 and Lot 2. **Correct. In the near future, we intend to further subdivide Lot 2 to separate the storm pond as an additional Outlot.**

Community Development Department

1. Please confirm that all the existing farm buildings and any "farm dumps" will be razed and underlying areas restored/stabilized. **Confirmed; the method of dealing with the "farm dump" will be determined according to a final decision by the WDNR.**
2. What are the areas (sqft and acres) for Lot 1 and Outlot 1 as shown on the CSM? **As noted in the upper right corner of Page 3 of the draft CSM, Lot 1 is 589,092 SF or 13.5237 ac, and Outlot 1 is 168,185 SF or 3.8610 ac.**
3. Please provide a copy of the wetland delineation report. **We will provide as soon as it is made available to us by Heartland, the Assured Delineator. Last week they indicated most likely by 8/4/2021.**

4. What is the ROW width for the public road? *As agreed with Administrator Kreklow, it is not a public road, and the land will not be dedicated as Right of Way. It will be a drive on land to be conveyed to the Village (for tax purposes regarding effectiveness of the TIF) but not mapped as a public street. A permanent maintenance agreement for that parcel (including seasonal maintenance and repair maintenance) will be executed and recorded simultaneously with conveying the land in that Outlot 2 to the Village, as previously agreed to. The typical minimum width requirement for a public street is 60', but often 80' for areas serving industrial development... including Gateway Crossing north of Holy Hill Road.*
5. Sheet 3 of the CSM indicates a navigable stream on the property. Is there a separate report and/or DNR-approved letter confirming navigability? *Although I personally do not agree with the man-made ditch being considered a navigable body of water with an ordinary high water mark, the Assured Delineator made that determination. We are informed that an Assured Delineator is an agent of the WDNR on these matters and thus is the equivalent of a WDNR determination.*
6. Has an assessment been done to determine if there is any 100-yr floodplain on the property? *Pinnacle confirms there is not a 100 year floodplain on the property according to the WDNR/FEMA maps*
7. Exhibit A to the Wetland Setback Mitigation Plan contains notes that refer to "Wetland per CSM 5606-Graphic Plotting Only". Are we to assume that the wetland boundary shown on this sheet is taken from a previous delineation done as part of CSM 5606? Or is it the same boundary shown on the sheets in the site plan package that refer to a delineation done in May 2021? *This note was incorrect and is modified, the wetland boundary note is now corrected to reference the Heartland current delineation.*
8. Please provide a site statistic table indicating existing, proposed and totals for site area, impervious and open/green space area calculations. You can include this on a revised sheet in the site plan set or on a separate sheet. We need to confirm that the maximum impervious are allowance of 80% in the M-1 District is not exceeded. *We will include a site statistic table in the next submission of drawings and it will confirm the max impervious not exceeding 80%.*
9. Page 6 in App 3 to the storm water management plan report indicates that the analysis is based on 10.131 acres of pervious area (19.31%) and 42.338 acres of impervious area (80.69%). Which exceeds the maximum 80% allowance. Please explain. *This will be corrected to confirm not in excess of the 80% allowance.*
10. If current discussions with MMSD regarding the construction of public trails across the MMSD land to the west are not fruitful and, as a result the Village pursues your offer to discuss installing/accommodating a trail across the Capstone 41 Business Park land, where do you envision that trail being installed? *We would probably suggest coming north along one side or the other of the west storm pond on Outlot 1, but another possibility might be along one side or the other of our main incoming park drive. The benefits of the pond choices would be less traffic close to the trail, so probably more of a landscaped and tranquil experience for the trail user, but the park main drive extends the full distance. The pros and cons of those will likely be clearer if the best MMSD route take priority, and then that result would suggest the best location on our site, rather than letting the "tail wag the dog" of aiming the path to a specific spot on our site. I would think you want the*

MMSD trail route to be the primo benefit, and once that has a tentative path, investigate how it works on ours. If the MMSD to the west becomes unworkable due to wet or cost challenges, I suspect that will be closer to our Pond possible routes than the main drive.....

11. Please supplement the site plan submittal with details of any new proposed dumpster enclosure(s), if applicable. At this time, since we do not know the tenant(s), we don't know their waste needs or scale. Many industrial tenants needs are frequent and intense enough that they prefer to have a dumpster or compactor in one of the loading dock positions. We would request dealing with that question during tenant improvement approvals.
12. As discussed with the Plan Commission during the consultation on July 12, there is insufficient Area between the north side of the building and the Holy Hill Road property line within which to install any significant berming and landscaping. We do not agree with that initial comment about insufficient area, and the revised grading and landscape plans now show a berm of approximately 5 feet in height for most of that frontage, and significant landscaping that exceeds the comparable landscaping on the north side of Holy Hill in essentially the same context. We are providing renderings in a drive-type sequence along Holy Hill, including at installation and at 5 -6 year maturity. The addition of the internal driveway along the north side of the building (not shown in previous concept plans) reduces the area available for berming and/or landscaping even further. The Fire Department indicates that this internal access drive is not needed for fire safety purposes. Can that driveway be eliminated? Why/why not? We very strongly prefer not to eliminate the one-way drive lane for semi truck entrance into the north end of the truck court. As I discussed with you (I think after your comments were written) it is of critical importance to enable semi trucks to have the preferred "back over the left shoulder" maneuver, rather than a blind back (using mirrors, significantly less effective and usually with much jockeying back and forth). New state of the art industrial buildings need to be fully encircled so that they are efficient, and efficiency is a significant factor in tenants evaluation and decision making process.
13. The landscaping and "possible 2-3' berm" shown on the landscaping sheets is insufficient in light of the minimal amount of area available. As noted above, we don't believe the landscaping is insufficient nor that the north-south space is insufficient to accomplish both a decent berm and good landscaping, both of which exceed the established amount and density along Holy Hill Road. Please see the newly revised Landscape and Grading plans. I am happy to review this with you in detail. With a planned first floor height of 915' equal to and higher than the landscaped area along the north side of the building and storm basin, the amount of landscaping proposed needs to be supplemented in some way. The landscape plan that was submitted for the Plan Commission approval had some modest improvements (more quantity) in that zone, compared to the landscape plan that we had for the Consult meeting, but the Landscape Architect did not provide a revision date, my apologies. Subsequently, we have further modified and improved the berm and landscape plan. I would like to discuss this with you in detail prior to the PC meeting on Aug 9th.
14. There needs to be street trees installed along the public road through the development. As noted above, this is not a public road. It is an internal

- business park drive lane. Our conception is that the landscaping of the individual building sites will be suitable for the vicinity.
15. At what point will the “future parking” area south of the building be installed? This is a “land banked area” that is available for a variety of needs, most probably additional auto parking if and when we land a tenant with employees exceeding the proposed parking spaces. Will the landscaping along the perimeter of this parking area be installed in Phase 1? Yes, all the landscaping shown on the current Landscape Plan will be installed in Phase I as part of the Speculative building, the drive, and storm ponds.
 16. It’s difficult to measure given the scale, but the parking stall size for cars appears to be 8’ x 20’ or 160 sqft. The minim parking stall size required is 180 sqft. The spaces are 9’ x 16’.
 17. The lighting plan/photometric detail sheet indicates all wall-mounted and free-standing light fixtures will be mounted at a height of 28 feet. The maximum fixture height is 25 feet. That was a mistake, it has been corrected.
 18. I do not know when or if it important to do, but the “public street” running through the property will need to have site lighting installed according to Village requirements. I assume that such lighting will need to be installed along with the road construction in Outlot 2 during Phase 1. No, as noted above, this is not a public street. However, we have internally discussed making sure we have sufficient lighting in the drive lane from the parking lot lighting locations/fixtures etc.
 19. Please provide any information about the use of the building addition and any expected operational changes, e.g. increase in employees, truck traffic, etc. Sorry, Jeff, I do not understand the question. Since we do not currently have any tenants, we don’t know their density of operations etc....?
 20. What traffic control measures are proposed to ensure the “enter only” driveway around the north side of the building will functions as such? We intend to have a sign, exact wording to be determined, so semi truck drivers know that drive is for their access to the Phase I truck court. Since the signage will direct semi trucks that way, perhaps to “dock access”, auto traffic will know its not for them. Typically the cars prefer to avoid going by the docks. But if someone (for example, me) wants to enter the same as a semi truck, that is not a problem. Our main emphasis is about preventing the reverse. From the north end of the truck court, there will be standard **One Way / Do Not Enter** type signs (similar to a public one-way street to prevent vehicles from going the wrong way) flanking both sides of the connection point of that one-way drive lane to the truck court, so that semi trucks know they leave from the south end of the truck court. As we discussed, using the main drive northbound to access Holy Hill Road (intended signalized at some point when traffic warrants justify installing the signals) will be the exit for all semi trucks as we currently see it.
 21. Do you expect to install roof-top HVAC mechanicals and/or other equipment that will have more than 3’ of vertical height above the roof elevation? If so, please indicate potential RTU locations on the roof plan (there is no roof plan). If RTU’s are proposed, a site vision analysis/diagram showing visibility of the RTU’s from Holy Hill Road is required. For the Shell Building construction, the building will be heated with

internal gas unit heaters, not RTU's, and no cooling is intended for the shell building. Should future RTU's be proposed, they will be placed so they are not visible from Holy Hill Road and suitable vision sideline diagrams will be provided, most likely in conjunction with tenant improvements.

Fire Department

17. No review comments provided (other than confirmation that the internal access road north of the building is NOT needed for fire safety purposes).

Public Works/Utilities/Village Engineer

18. Please refer to the separate review memo from the Director of Public Works dated July 29, 2021 for additional comments regarding engineering, erosion control, storm water and public utilities. **Our responses on the DPW memo.**
19. Please refer to the separate review memo from GRAEF dated July 25, 2021 for additional comments regarding the certified survey map (CSM). **Our responses provided on the GRAEF memo.**

When submitting revised plans or additional information, please submit (1) digital set and three (3) full-size, hard-copy sets set to the Community Development Department. **Our digital and hard-copy sets will be delivered to your office.** Complete responses and/or information, plan revisions, etc. to the items/issues listed above will help avoid delay in the review and processing of your application.

Respectfully,

Jeffrey W. Retzlaff, AICP
Village Planner & Zoning Administrator



SITE PLAN REVIEW CHECKLIST

Pursuant to Section 17.43 of the Municipal Code

This checklist provides a summary of requirements found in the Municipal Code. It is intended purely as a guide for developers and should not substitute for a full review of the Code and applicable regulations. (Revised 3/07)

GENERAL INFORMATION

- ☒ Provide Completed Checklist with submittal
- ☒ Names and Contact Information for Agent/Applicant, Property Owner, Developer (if different), and all engineers, architects, planners, or other individuals responsible for preparing one or more plans included in application submittal
- ☒ Legal Description of the Property (electronic Microsoft WORD format; metes and bounds description preferred)
- ☒ Graphic scale and North Arrow
- ☒ General Location Map (within village)
- ☒ Size of site (gross and net acreage)
- ☒ Existing zoning
- ☒ Adjacent zoning and land uses
- ☒ Current date(s) each plan sheet prepared or revised

EXISTING SITE INFORMATION

- ☒ Dimensions of site and lot lines (pipes found, pipes set, monuments)
- ☒ Existing grades (2' contours minimum)
- ☒ Adjacent property grades (within 10' minimum of property lines)
- ☒ Adjacent structures (within 20' minimum of property lines)
- ☒ Drainage systems and structures
- ☒ Natural features (wooded areas, streams, lakes, ponds, rock outcroppings)
- ☒ Wetland boundaries (provide date of delineation; include report and DNR concurrence letter)
- ☒ Floodplain elevation and boundaries
- ☒ Environmental concerns (underground tanks, etc) **Not Applicable**
- ☒ Primary Environmental Corridor boundary
- ☒ Roads, curbs, parking lots, pavement areas
- ☒ Structures (location, size) **Not Applicable**
- ☒ Rights-of-Way (existing/ultimate)
- ☒ Easements (drainage, utility)
- ☒ Existing utilities (sanitary, water, electric, gas, telephone)
- ☒ Benchmark locations and elevations
- ☒ Location of fences, wells, borings, etc.
- ☒ Lot coverage (Existing)
 - Total parcel area by square footage and acreage
 - Impervious area (sqft) and percentage of total by type (e.g. building, parking, etc.)
 - Open space area (sqft) and percentage of total by type (landscaped, wetland, floodplain, etc.)
 - Comparison of maximum impervious area allowed under zoning district(s) vs. existing and proposed

ARCHITECTURAL PLANS

- ☒ Existing building location
- ☐ Existing building elevations materials (photos can be provided) Not Applicable, Existing to be Demolished
- ☒ Proposed use(s) of building
- ☒ Statement of design intent (narrative)
- ☒ Proposed floor plans (with area and dimensions)
- ☒ Square footage (total and individual rooms/stores)
- ☒ Proposed exterior elevations (with heights and dimensions)
- ☒ Colored Rendering (3-D preferred) or Colored elevations
- ☒ Proposed materials and colors
 - ☒ narrative description
 - ☒ material sample board (required for new construction)
- ☐ Details of any special features, e.g. clock towers, cupolas, overhangs, canopies, drive-through windows, etc. Not Applicable

PROPOSED SITE PLAN

- ☒ Grading and spot elevations
- ☒ Erosion control measures (silt fencing, hay bales, rip-rap, tracking mat, stockpile locations)
- ☒ Stormwater management
 - ☐ stormwater management design report
 - ☐ general drainage pattern
 - ☐ swales w/ arrows for direction of flow
 - ☐ pond design with outfalls
 - ☐ culverts (location/size)
- ☒ Utilities (size, invert elevations, length, slope, etc.)
 - ☐ sanitary
 - ☐ water
 - ☐ stormsewer
- ☒ Building location (dimension)
- ☒ Building elevation (finished grade)
- ☒ Location of proposed signage
- ☒ Details of outside storage (including trash receptacles) Trash management at docks
- ☒ Setbacks (clearly marked and dimensioned)
 - ☐ building setbacks as set in PDD Resolution
 - ☐ wetland, floodplain and shoreland setbacks
- ☒ Vehicular entrances (dimension to centerline of nearest intersection)
- ☒ Streets (dimension and direction for one-ways)
- ☒ Curve radii
- ☒ Sidewalks (dimension)
- ☒ Parking areas (show striping/spot elevations)
- ☒ Parking setback from property line
- ☒ Loading areas (dimension)
- ☐ Intersection Improvements (if any; consistent with Traffic Study Recommendations) Not applicable
- ☒ Lot coverage (Proposed)
- ☒ Total parcel area by Square footage and acreage
 - ☐ Impervious area total sqft. by type and percentage of total by type (e.g. building, pavement, etc.)
 - ☐ Open space area total sqft. by type and percentage of total by type (landscaped, wetland, floodplain, etc.)
 - ☐ Comparison of impervious area permitted under zoning district(s) vs. proposed

- ☒ Municipal utility connections & locations
 - Sanitary sewer (pipe size/elevations)
 - Water (size, valve location, elevations)
 - Location of hydrants
 - Easements for public water mains

LIGHTING PLAN

- ☒ Show major features and proposed improvements for context (use proposed site plan as base)
- ☒ Location and type of existing lighting features and fixtures (No existing fixtures)
- ☒ Location and type of all proposed lighting features and fixtures, including: access driveways or intersections, internal roads, driveways and parking areas, building-mounted and entryways
- ☒ Photometric statistical analysis and graphic report (shown to scale on proposed site plan)
- ☒ Provide manufacturer specification "cut-sheets" for all proposed poles and/or fixtures
- ☒ Lighting schedule
 - keyed to plan
 - number and type of fixtures and lamp
 - lamp output (lumens and wattage)
 - Installation details as appropriate (include detail for light poles and pedestals)

LANDSCAPE PLAN

- ☒ Major improvements for context (property lines, building, drives, walks)
- ☒ Proposed outdoor amenities (benches, paths, landscaping beds, etc)
- ☒ Existing vegetation
 - Species
 - Size
- ☒ Approximate canopy in plan
- ☐ Vegetation to be destroyed
 - list and show location Not applicable, existing fallow farm field.
- ☒ Proposed method of saving existing vegetation during construction
- ☒ Proposed landscape features (berms, fountains)
- ☐ Existing and proposed landscape lighting Not applicable
- ☐ Irrigation/watering systems (locate outlets) Hose bibs shown.
- ☒ Plant lists or schedules
 - Keyed to plan
 - Number of each species
 - Size when planted (caliper)
- ☒ Installation details/staking
- ☒ Street Trees

SIGNAGE PLAN

- ☐ Proposed signage (elevations, color, square footage, height, construction material, lighting)
- ☐ This is a speculative building development, so no tenant signage known at this time.
Proposed park monument sign location shown. Sign to meet Village ordinances and be comparable to neighboring industrial developments.

MODEL SUBMITTAL INCLUDES THE FOLLOWING PLANS:

- ☒ Cover / Title Page
- ☒ Existing Site Information Plan
- ☒ Proposed Site Plan
- ☒ Grading, Paving & Erosion Control Plan
- ☒ Utility Plan
- ☒ Landscape Plan
- ☒ Lighting Plan
- ☒ Architectural Plans
- ☐ Signage Plans Proposed park monument sign location shown. Sign to meet Village ordinances and be comparable to neighboring industrial developments.

In addition to the items on this list, Village staff and/or the Plan Commission may require additional drawings and data to be submitted for approval. If any public improvements or work is to be done in the Public Right-of-Way the Village will require that a **Developer's Agreement** be submitted and approved by the Village Board.



July 9, 2021

Mr. Jeffrey W. Retzlaff, AICP
Community Development Director
Village of Germantown
N112W17001 Mequon Road
Germantown, Wisconsin 53022-0337

RE: **Capstone 41** Site Plan Request: GTVN 181987
N128W20943 Holy Hill Road, Germantown Wisconsin
Overall Development Description

Dear Jeff,

In conjunction with our Site Plan application and a preliminary consultation with the Plan Commission, this letter is a description summarizing the overall 52.5 acre site that you and your Plan Commissioners may find helpful.

We are commercial developers focused on industrial, office, and healthcare projects and have developed business parks and buildings with a total value of about \$800 million in our careers. However, we are a small firm, because as partners we prefer to develop projects rather than manage people. This gives us more personal satisfaction and we like to think it results in better buildings in the long run. More information is available at www.capstonequadrangle.com.

Our plan is to develop this parcel as a Class A business park, to be known as "Capstone 41", with industrial uses generally as described in the M-1 Limited Industrial District zoning category of your zoning ordinance. This vision is consistent with the Tax Increment Financing recently approved by the Village Board and is also consistent with the Germantown Comprehensive Plan.

In addition to constructing the park infrastructure such as the main entrance drive coming off Holy Hill Road and two stormwater ponds, we are gearing up to develop a speculative building as Phase I, beginning late this summer and being complete by late next spring (June 2022). See our attached Master Plan for the site. The initial speculative building will be on the west end of the site, and will be about 203,000 square feet in size, with 32 foot clear height inside. This size and features is aimed at being "state of the art", and we hope to appeal to what seems to be robust activity in the market.

Capstone Quadrangle
Chicago Milwaukee Kansas City San Francisco
N17 W24222 Riverwood Drive, Suite 160, Waukesha WI 53188-1134
(262) 523-1122 www.capstonequadrangle.com

For the Phase I building, although some prospects have expressed interest even though we have not yet begun marketing, due to the speculative nature it is difficult to know which kinds of users we will end up with. The typical categories would be light manufacturing, assembly, warehouse, distribution, or e-commerce. Each of those uses has different priorities and characteristics of course. The building is designed to be flexible regarding the size of tenants. We hope to have one or two tenants fill the building, but due to multiple drive-in (grade) doors, we can go as low as 50,000 SF tenant size if necessary. As you may know, most industrial tenants want very rectangular space, so jogs in the walls tend to cause problems or wasted space. The sophisticated national credit tenants are very much about efficiency and they are focused on the docks and loading.

A particular challenge we face right now is economic feasibility. Construction costs, especially steel and precast concrete, have risen incredibly rapidly in the past 6 to 9 months. Our Phase I building has seen structural steel costs alone rise about \$1.2 million in that time frame, and other costs such as roofing, paving, doors, windows, and HVAC equipment have risen over \$600,000 in the past 3 months. We are aware of market rents that we must compete with, so it is a struggle to balance costs against that market rent.

Despite those challenges, we believe we have crafted an attractive and thoughtful Class A building, consistent with those in the vicinity, that we and Germantown can be proud of, and we look forward to our time next week with you and the Plan Commission.

Regards,

A handwritten signature in blue ink, appearing to read "Michael Faber", with a stylized flourish at the end.

Michael Faber
Principal

Engineering Department Memorandum

To : Jeffrey W. Retzlaff, AICP, Planning Director/Zoning Administrator

From : Lawrence Ratayczak, P.E., Director of Public Works

Date : July 29, 2021

Re : Capstone 41

Items Reviewed:

- | | |
|-------------------------------|-----------------|
| 1. Civil Plan Set | Dated: 06-01-21 |
| 2. Stormwater Management Plan | Dated: 07-30-21 |

General Comments:

1. Please respond to each item below. **A written response addressing each item shall be included in your submittal.**
✦ *Understood*
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.
✦ *Understood*
3. This project will require a WRAPP/NOI from the DNR. Please submit a copy of the approved permit prior to final approval.
✦ *Understood*
4. The project will require DSPS plumbing system review and approval. Please provide a copy of the DSPS approval prior to engineering approval
✦ *Understood*
5. As-builts prepared to Village standards shall be prepared and provided to the Village post-construction (for all applicable items).
✦ *Understood*
6. A professional engineer's original seal is to be affixed, signed and dated on the final set of construction plans.
✦ *Understood*
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.
✦ *Understood*

Water Utility Comments

1. All private hydrants will be painted yellow
↳ *Confirmed, a note has been added to the plans.*
2. Indicate on the plan set If hydrants are through a water meter in the building and they will need to be added as “private hydrants” on our GIS.

- † *The plan set will be modified to indicate that the hydrants are fed through the water meter in the building. This finalized information CAD will be provided once fully approved for use in your GIS.*

C-3 Site Dimensional and Paving Plan

1. Is there any curb and gutter proposed? Plan is not clear.
 - † *Yes, except possibly at west of truck court if sheet drain to flumes is acceptable.*
2. Add dimensions between parking lot and property boundaries.
 - † *Additional Dimensions have been added.*
3. Show truck turn movements
 - † *Supplemental Exhibits showing Truck Turning Movements are provided.*

C-5 Grading Plan

1. Label all contours. Many of the contours in the parking lot are not labeled.
 - † *Additional contours labels have been added.*
2. Are spot elevations top of curb or edge of pavement? It's not clear from the plans.
 - † *All spot grades reference finish grade of pavement/slab, not top of curb, unless denoted otherwise.*
3. Show overland flow route through the site. Its not clear how overland flow is being routed to the basin. Specifically, on the south end of the site.
 - † *Additional explanation will be noted/provided on the drawings (to be submitted once finalized).*
4. Provide at least 6" of freeboard between overland flow elevations and the building FFE.
 - † *6" is now provided.*
5. Many of the parking and drive areas have over 1' of ponding prior to overtopping. Revise design to a max of 1' of ponding.
 - Our design is based on feedback from the owner and normal practice for this type of building. Please advise if an ordinance requires this. We will also investigate whether the ponding can be eliminated in the truck court by sheet draining to flumes; this would provide a better performance and vehicle experience.*

C-9 Utility Plan

1. Show grading on the all utility plans or show storm sewer on the grading plan.
 - † *Storm sewer is shown on grading plans.*
2. Revise storm sewer manholes to have at least 0.10' drop across the manhole.
 - † *Plans will be changed to conform to this, and accommodate this.*

C-11 Site Stabilization Plan

1. Silt fence is not an approved erosion control method at concentrated flow area. (storm sewer outlets, swales, etc). Revise to an approved method.
 - † *The pond outlets discharge into a level spreader and the silt fencing has been removed at all outlets.*
2. Erosion control matting is shown outside of the silt fence in many areas. Revise matting or silt fence.
 - † *Erosion controls are updated to final configurations.*
3. Temporary swales are likely needed to route runoff to the sediment basins during construction. Show the locations of the swales on the plans.
 - † *Construction phase interim controls have been added to the plans.*
4. Show permanent erosion control methods at pipe outlets. Provide calcs showing the proposed measures are appropriate for the flow.
 - † *All storm sewer outfalls include rip rap. Calculations are provided.*
5. Show inlet protection at all inlets.

‣ *Inlet protection has been added.*

6. Provide level spreaders at pond outlets.

‣ *Level spreaders have been added.*

C-15 Construction Details

1. Revise basins to have a minimum of 1' of freeboard between the top of the berm and the overflow elevation.

‣ *The detail has been revised to show a 1' of freeboard between the top of berm and the overflow.*

C-16 Construction Details

2. Add labels, dimensions, spot elevations, etc to the ADA parking details.

‣ *Additional detailing has been provided.*

Stormwater Management

1. Site appears to be a mix of B and C soil. Revise curve numbers to reflect soil types. Use the WDNR max curve numbers for cropland for the existing conditions.

‣ *Geotechnical reporting and experience on the large development to the north have not revealed soils conducive to infiltration. It is our engineering judgement that HSG of C is appropriate.*

2. Revise Tc times to a max of 100' for sheet per the NRCS engineering handbook.

‣ *This preference has been included.*

3. It appears that this site is split between the Milwaukee River watershed and Menomonee River watershed. Please revise the calcs to split the site into the two separate watersheds and show the that volumetric requirements are being met for each watershed.

‣ *Per Jeff Retzlaff email dated 7/30/2021, the Village contacted MMSD to determine if the site does truly drain to two different watersheds. At the time of the email, the Village has not received confirmation from MMSD. Once confirmation on whether the site drains to one or two watersheds we will update the report accordingly. We do not have a preference and the differences between the watershed requirements are almost nonexistent and should have exceedingly minor impacts to our technical details..*

4. Provide information within the report about the amount of impervious area included in the stormwater management plan and a breakdown of what is being proposed currently. The summary shall be broken down by impervious type (parking, sidewalk, rooftop). This will allow for easier review and approval of future phases.

‣ *This information has been added to the report.*

5. Pond outlet pipes are proposed as flat. Revise to have at least some positive slope.

‣ *The outlet pipes were revised to show positive slope.*

6. Proposed Hydrology exhibit is difficult to follow. Please clearly delineate and label drainage boundaries. Show TC paths.

‣ *The hydrology exhibit was revised to show TC paths and more detail in drainage paths and basin delineations were added/clarified.*

7. Please add a table to the report that shows the pre-development verse post development volumes.

‣ *We will add a table to compare the pre-development vs post development volumes.*

8. The existing site has two different watersheds (east and west) Please add information to the report that shows pre – post flows for the two different watersheds to confirm pre development drainage patterns are maintained.

‣ *See response to Stormwater Management Comment 3.*

9. Revise SLAMM calcs to use the appropriate winter season dates.

‣ *The SLAMM model was updated.*

10. Hydrocad calcs are based on 84% impervious, but SLAMM calcs show 88% impervious. Please revise to be consistent.

‣ *The report and model was updated to be consistent.*

11. Please provide a screenshot of the SLAMM routing diagram.

‣ *A screenshot of the SLAMM routing diagram has been added to the report.*

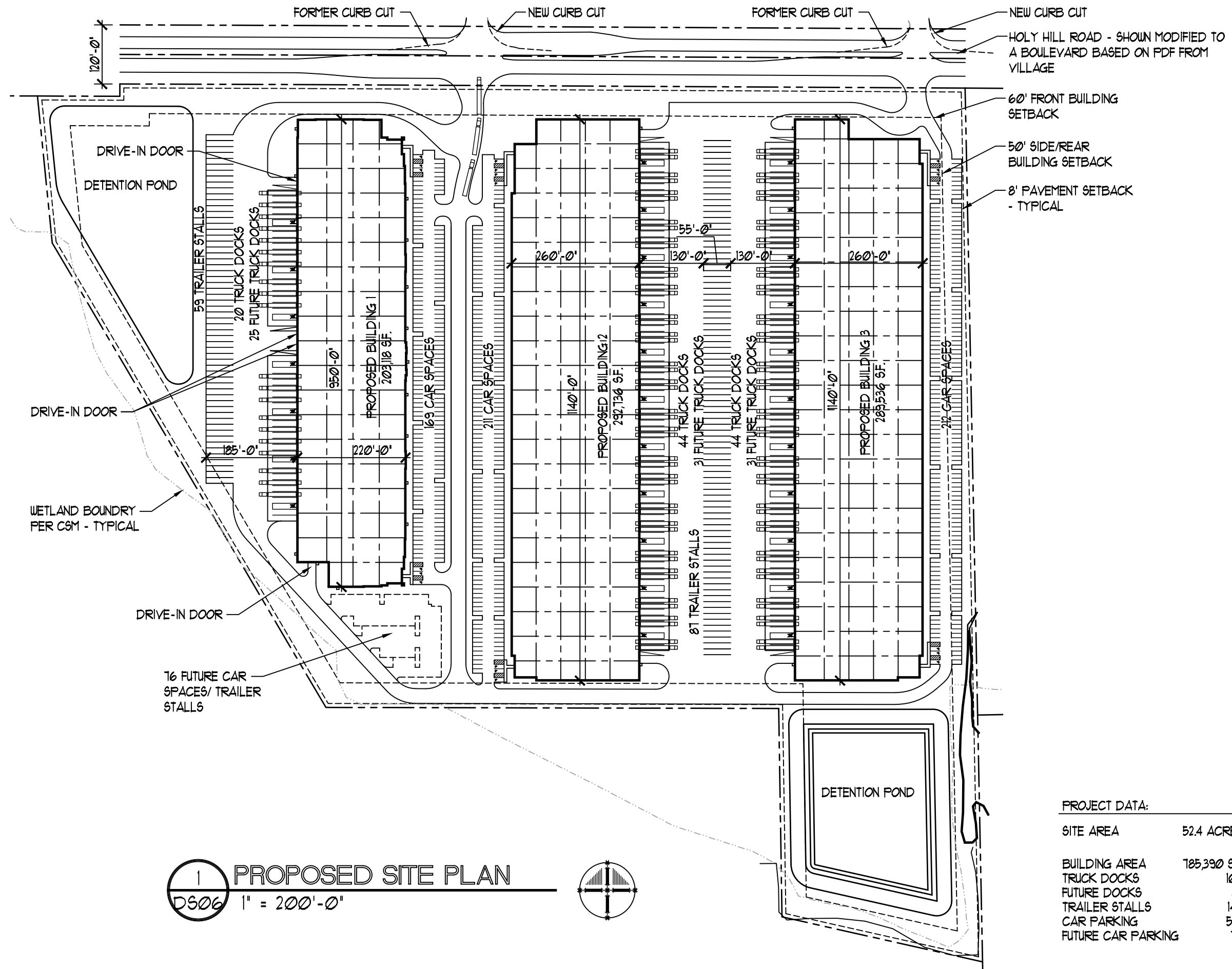
12. Storm sewer calcs list a storm duration of 10 mins and intensity of 5.36 in/hr at the top of the page,

but the notes list a Tc of 6 mins. Which one was used for the calcs?

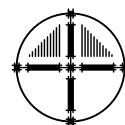
- ✦ *In past project within the Village, after coordinating with the Village stormwater engineer, when the drainage basin was comprised of only impervious surface a time of concentration of 6 minutes was used. If the basin had a mix between pervious and impervious surfaces, a time of concentration of 10 minutes was used.*

13. Provide a storm sewer drainage map that clearly delineates watershed boundaries for storm sewer.

- ✦ *A storm sewer drainage map has been added to the SWMP.*



1 PROPOSED SITE PLAN
DS06 1" = 200'-0"



PROJECT DATA:

SITE AREA	52.4 ACRES
BUILDING AREA	785,390 SF.
TRUCK DOCKS	108
FUTURE DOCKS	81
TRAILER STALLS	146
CAR PARKING	592
FUTURE CAR PARKING	16

N128 W20943 HOLY HILL ROAD
GERMANTOWN, WI
PROPOSED SITE PLAN

2610 Lake Cook Road
Suite 280
Riverwoods, IL 60015
Ph.: (847) 940-0300
www.pdarchitects.com

Partners in Design
ARCHITECTS



PROJECT NO.: 079.21.064
DRAWN BY: CTG CHECKED BY: WHB
DATE: 05.27.21
SHEET NO.:

DS06



Village of

Germantown
...Willkommen

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

CAPSTONE DEVELOPMENT COMPANY
N17W24222 RIVERWOOD DRIVE
SUITE 160
WAUKESHA WI 53188-1134
Phone (262) 523-1122

E-Mail mike@capstonequadrangle.com

PROPERTY OWNER

MLG/RMS Ltd. Partnership
19000 W. Bluemound Road
BROOKFIELD, WI 53045

Phone (262) 938-4448

E-Mail phinkfuss@gmail.com

2

PROPERTY ADDRESS OR GENERAL LOCATION

TAX KEY NUMBER

N128W20943 HOLY HILL ROAD GERMANTOWN
53076 GTVN 181987

3

REZONING REQUEST

FROM A-1 Partial Highway Interchange Overlay	TO M-1
---	-----------

4

METES AND BOUNDS LEGAL DESCRIPTION OF PROPERTY - REQUIRED

Attach pages as necessary

SEE ATTACHED LEGAL DESCRIP

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.

SEE ATTACHED LETTER DESCRIBING PURPOSE.

6

SUPPORTING DOCUMENTATION:

- ☒ Plat of Survey (1:100)
- ☒ Site Plan and elevations for new construction (can be conceptual)

7

READ AND INITIAL THE FOLLOWING:

MS 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.

MS 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.

MS 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

MS 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!

Robert Farn 7/8/21
Applicant Date

MLG/RMS Limited Partnership
By: Shirley 7/12/2021
Owner Date

CAPSTONE QUADRANGLE



July 8, 2021

Mr. Jeffrey W. Retzlaff, AICP
Zoning Administrator
Village of Germantown
N112W17001 Mequon Road
Germantown, Wisconsin 53022-0337

RE: Capstone 41 Rezoning Request: GTVN 181987
N128W20943 Holy Hill Road, Germantown Wisconsin
Item 5: **Purpose for Rezoning**

Dear Jeff,

In conjunction with our rezoning application, please consider this letter as Item 5 of the application to describe the purpose of the rezoning request.

It is our intent to develop this 52.4697 acre parcel as a Class A business park with industrial uses generally as described in the M-1 Limited Industrial District zoning category of your zoning ordinance. This request is consistent with the Tax Increment Financing recently approved by the Village Board and is also consistent with the Germantown Comprehensive Plan.

Please let me know if you have any questions.

Regards,

Michael Faber
Principal



July 8, 2021

Mr. Jeffrey W. Retzlaff, AICP
Zoning Administrator
Village of Germantown
N112W17001 Mequon Road
Germantown, Wisconsin 53022-0337

RE: Capstone 41 Rezoning Request
Item 5: **Legal Description of Property for Rezoning**

Legal Description

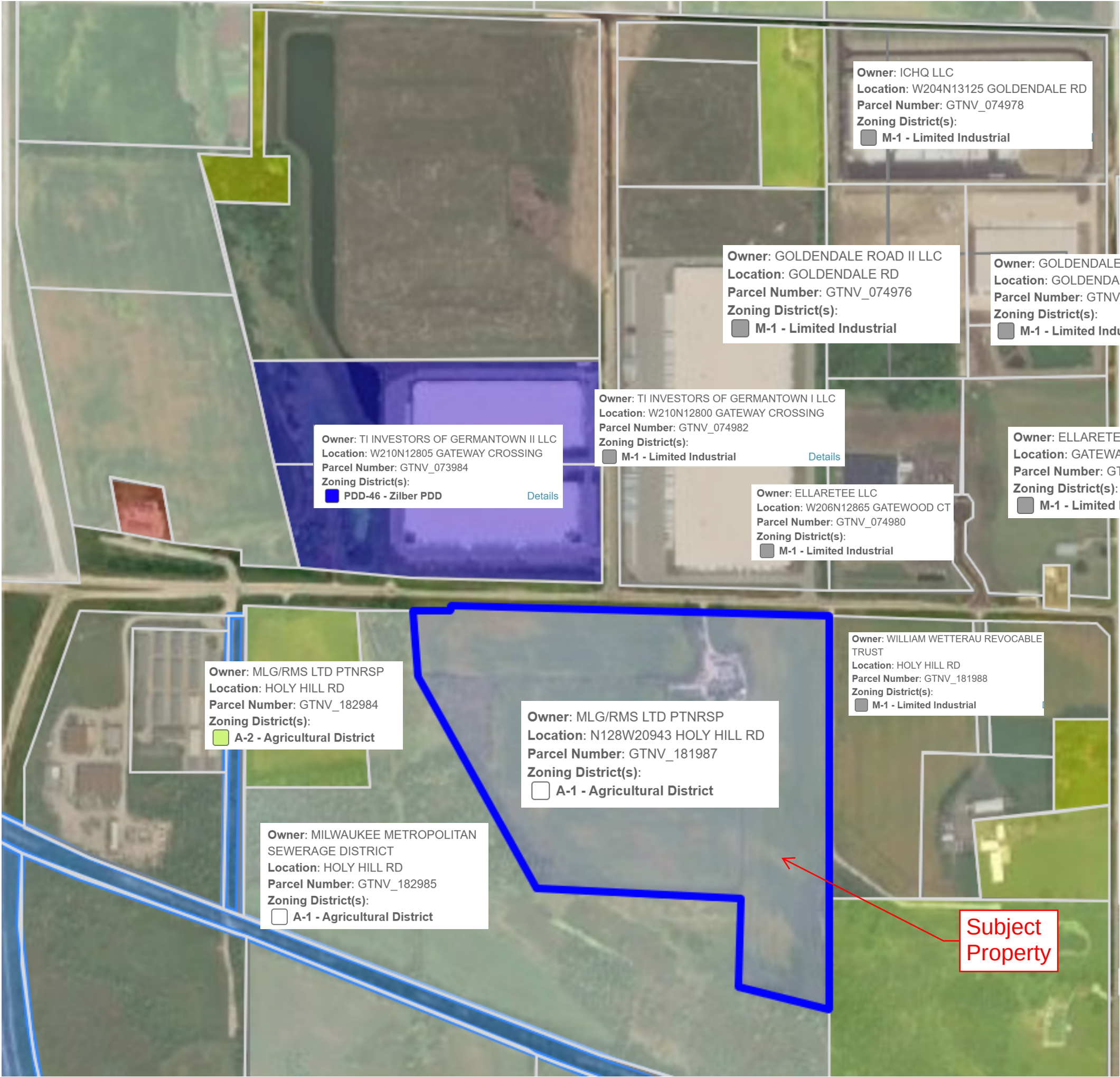
All of Lot 3 of Certified Survey Map No. 6506, as recorded in the Register of Deeds office for Washington County as Document No. 1335168, located in the Northwest 1/4 and Southwest 1/4 of the Northeast 1/4 and the Northeast 1/4 of the Northwest 1/4 of Section 18, Township 9 North, Range 20 East, Village of Germantown, Washington County, Wisconsin, bounded and described as follows:

Commencing at the northwest corner of the Northeast 1/4 of said Section 18; Thence South 89°41'38" East along the north line of said Northeast 1/4, 1321.344 feet; Thence South 01°08'40" East, 60.02 feet to the south right of way line of Holy Hill Road and the Point of Beginning;

Thence continuing South 01°08'40" East along the west line of Lot 1 of Certified Survey Map No. 6385 and then along the west line of Lot 1 of Certified Survey Map No. 6825, 1774.61 feet to a northerly line of Lot 2 of Certified Survey Map No. 6506; Thence the following courses along said northerly line: North 77°21'35" West, 417.31 feet; North 00°54'00" West, 423.24 feet; North 89°51'42" West, 918.79 feet; North 30°31'13" West, 1094.82 feet; North 05°44'25" West, 299.89 feet to the aforesaid south right of way line of Holy Hill Road; Thence the following courses along said south right of way line: South 89°48'14" East, 167.22 feet; North 00°11'42" East, 25.00 feet; South 89°48'14" East, 393.09 feet; South 89°41'38" East, 1322.81 feet to the Point of Beginning.

Zoning Map

7/16/21





Village of
★★★
Germantown
...Willkommen

Fee must accompany application

☐ \$1460 Paid _____ Date _____

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

CAPSTONE DEVELOPMENT COMPANY
N17W24222 RIVERWOOD DRIVE
SUITE 160
WAVKESSHA, WI 53188-1134

Phone (262) 523-1122

Fax ()

E-Mail mike@capstonequadrangle.com

PROPERTY OWNER

MLG/RMS Ltd. Partnership
19000 W. Bluemound Road
BROOKFIELD, WI 53045

Phone (262) 938-4448

phinkfuss@gmail.com

2 TO WHOM SHOULD THE PERMIT BE ISSUED?

CQ WI 2021, LLC

3 PROPERTY ADDRESS

TAX KEY NUMBER

N128 W 20943 HOLY HILL ROAD, GERMANTOWN WI 53076 GTVN 181987

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.

Agricultural, old farm compound of buildings no longer in use.

5 DESCRIPTION OF PROPOSED OPERATION

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

24.04(3)(c)(5) Development within the minimum required wetland and navigable water setback areas

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

Per submitted Site and Civil plans, request CUP for minor intrusions of grading and paving into 25' setback from wetlands. Mitigations proposed per landscape plan and details.

6

METES AND BOUNDS LEGAL DESCRIPTION OF PROPERTY – REQUIRED

Attach pages as necessary

please see attached legal description.

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:

MJ 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.

MJ 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.

MJ 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.

MJ 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!

Mickel J. Am 7/23/2021
Applicant Date

M2G/BMS Ltd. Partnership
[Signature] 7/27/2021
By: Owner Date



July 23, 2021

Mr. Jeffrey W. Retzlaff, AICP
Zoning Administrator
Village of Germantown
N112W17001 Mequon Road
Germantown, Wisconsin 53022-0337

RE: Capstone 41 CUP Request
Item 5: **Legal Description of Property for Conditional Use Permit**

Legal Description

All of Lot 3 of Certified Survey Map No. 6506, as recorded in the Register of Deeds office for Washington County as Document No. 1335168, located in the Northwest 1/4 and Southwest 1/4 of the Northeast 1/4 and the Northeast 1/4 of the Northwest 1/4 of Section 18, Township 9 North, Range 20 East, Village of Germantown, Washington County, Wisconsin, bounded and described as follows:

Commencing at the northwest corner of the Northeast 1/4 of said Section 18; Thence South 89°41'38" East along the north line of said Northeast 1/4, 1321.344 feet; Thence South 01°08'40" East, 60.02 feet to the south right of way line of Holy Hill Road and the Point of Beginning;

Thence continuing South 01°08'40" East along the west line of Lot 1 of Certified Survey Map No. 6385 and then along the west line of Lot 1 of Certified Survey Map No. 6825, 1774.61 feet to a northerly line of Lot 2 of Certified Survey Map No. 6506; Thence the following courses along said northerly line: North 77°21'35" West, 417.31 feet; North 00°54'00" West, 423.24 feet; North 89°51'42" West, 918.79 feet; North 30°31'13" West, 1094.82 feet; North 05°44'25" West, 299.89 feet to the aforesaid south right of way line of Holy Hill Road; Thence the following courses along said south right of way line: South 89°48'14" East, 167.22 feet; North 00°11'42" East, 25.00 feet; South 89°48'14" East, 393.09 feet; South 89°41'38" East, 1322.81 feet to the Point of Beginning.



August 9, 2021

Mr. Michael Faber
CQ WI 2021, LLC
N17 W24222 Riverwood Dr. Ste. 160
Waukesha, MWI 53188
Via Electronic Mail Only to mike@capstonequadrangle.com

Subject: Liability Clarification and "No Action Required" Determination Letter
Holy Hill Farm, N128 W20943 Holy Hill Road, Germantown, Wisconsin 53076
Parcel #: GTNV-181987
BRRTS Activity Name: Holy Hill Farm
BRRTS #: 07-67-588127 and 09-67-588132

Dear Mr. Faber:

The Wisconsin Department of Natural Resources (DNR) received a request for a liability clarification and a "No Action Required" determination request from Cory Katzban of The Sigma Group, Inc. (Sigma) on behalf of CQ WI 2021, LLC on May 3rd, 2021 (Request). The Request was submitted with the appropriate review fee for the site location (Property) identified above. The purpose of this letter is to provide you clarification as to environmental liabilities and current environmental conditions at the Property. Wisconsin Statutes (Wis. Stat.) § 292.55(1)(d)1 authorizes the DNR to issue a letter to a person seeking assistance concerning the liability of a person owning or leasing a property for environmental pollution at a property, the type and extent of environmental pollution at a property, the adequacy of an environmental investigation, or any other matter related to a request for assistance.

This type of letter contains a DNR determination as to whether response actions are needed under Wisconsin Administrative Code (Wis. Admin. Code) chs. NR 700 to 799 based on the discharge of one or more hazardous substances, or the presence of environmental pollution at the Property. The DNR based this letter on review of environmental reports that were provided in the Request:

- Liability clarification letter request, completed Form 4400-237, May 27, 2021;
- Notification for Hazardous Substance Discharge, received May 27, 2021;
- *Phase I Environmental Site Assessment Report*, May 2020 by Sigma;
- *Phase II Environmental Site Assessment Report*, April 23, 2021 by Sigma.

PROPERTY USE

The Property consists of a 52-acre parcel of land. The Property was an agricultural farm property and is now planned for redevelopment as an industrial park by the requester. Refer to the attached figures for a map of the Property and sampling locations.

BACKGROUND AND ENVIRONMENTAL SUMMARY

The Property is in the Village of Germantown. It is bounded by agricultural fields and uncultivated areas to the east, west and south, with an industrial park to the north across Holy Hill Road. The Property was reportedly a farm since the 1880s and primarily agricultural land. The Property contains eight buildings including a residence, barns, sheds and other outbuildings or silos. An Environmental Repair Program case (BRRTS 02-67-271950) associated with a 2,000-gallon underground storage tank and oil storage shed was closed in 2003 with no continuing obligations. The Property is now used as a material storage area for a construction company.

According to the No Action Required Request, a Phase I ESA (Environmental Site Assessment) was performed by Sigma in 2019 to evaluate subsurface conditions associated with historical property use. Environmental concerns listed in the Phase I included a historical waste debris pile in the southwest corner of the property, staining in a building previously used to store drums of oil, a small orchard with a potential for historic pesticide use, and possible fill material around some of the farm buildings.

A Phase II ESA was performed to identify environmental concerns noted in the Phase I. The Phase II completed in June 2020 included ten soil borings and eight test pits near the areas of concern, ranging in depth from 5 to 12 feet below ground surface (bgs). Three small-diameter monitoring wells were installed in selected borings. Subsurface materials reported in the soil borings were identified as yellow to brown sandy to silty clay with varying amounts of gravel. Material from the debris pile included plastic, glass and metal waste within soil. Groundwater was approximately 5 feet bgs. Soil samples from each PHII sample location and groundwater samples from the monitoring wells were submitted for laboratory analysis of one or more of the following constituents: volatile organic compounds (VOCs), polycyclic aromatic hydrocarbons (PAHs), RCRA metals, Polychlorinated biphenyls (PCBs), herbicides and pesticides.

Analytical results summary:

- No VOCs, PCBs, or pesticides were present above laboratory detection limits or respective residual contaminant levels (RCLs) in the soil or groundwater samples.
- Numerous PAHs were detected in several soil samples however none were detected above their respective groundwater pathway RCLs in analyzed soil samples. PAHs detected in two of the three groundwater samples were below quantitation limits and Enforcement Standards (ES).
- Dalapon was the only herbicide detected in soil in two samples but was below the RCL and was not detected in groundwater samples.
- The metals arsenic, barium, cadmium, chromium, lead and mercury were detected in several soil samples, however only arsenic in the area of the former orchard and lead and chromium in the area of the debris pile were slightly above respective background threshold values (BTVs) in shallow soil. Confirmed groundwater samples indicated no metals above respective ES.

The volume or concentrations of detected compounds appear to be insignificant based on the data presented. The areas of the Property investigated are shown on the attached figures.

DETERMINATIONS

Wis. Stat. ch. 292 and Wis. Admin. Code chs. NR 700 to 799 require those who are responsible for a hazardous substance discharge or environmental pollution to take actions necessary to restore the environment to the extent practicable and minimize the harmful effects from the discharge to the air, lands or waters of the state. Wis. Stat. § 292.55 authorizes the department to issue clarification letters concerning liability for environmental pollution.

The data summarized above indicates that one or more hazardous substance discharges or environmental pollution has been discovered on the Property. However, based on the information provided at this time and the criteria in Wis. Admin. Code § NR 716.05(2)(a) and Wis. Admin. Code §§ NR 708.09(1) and (2), the DNR has determined that no response actions, including further site investigation activities, are required under Wis. Admin. Code chs. NR 700 to 799 to respond to the identified discharges or environmental pollution.

General Fill Sites

The Property being evaluated in this letter meets the statutory definition of a site or facility in Wis. Stats. § 292.01. This means that prior to any redevelopment on the Property, the property owner must submit an application to develop on a historic fill site or licensed landfill (visit dnr.wi.gov, search "Form 4400-226") and receive DNR approval prior to completing any work (as required by Wis. Admin. Code § NR 506.08). Any impacted soil or fill material graded or excavated from the subsurface will need to be disposed of in accordance with local, state and federal regulations. Please refer to the following guidance documents regarding development at historic fill sites or licensed landfills for further information. They can be found online at dnr.wi.gov, search "historic fill."

- *Development at Historic Fill Sites and Licensed Landfills: What You Need to Know* (RR-683)
- *Development at Historic Fill Sites and Licensed Landfills: Guidance for Investigation* (RR-684)
- *Development at Historic Fill Sites and Licensed Landfills: Considerations and Potential Problems* (RR-685)

Soil Management

As described above, there is likely low-level contamination present in the soil in the vicinity of the debris pile and the farm buildings. This soil may require management as a solid waste if it is excavated in the future. The property owner at the time of excavation must determine whether the material is considered solid or hazardous waste and ensure that any storage, grading, excavation or disposal is in compliance with applicable regulations. Soil that meets the criteria to be considered "exempt soil" may be managed without department approval. See Exempt Soil Management: A Self-Implementing Option for Soil Excavated During a Response Action under Wis. Admin. Code chs. NR 700 through NR 750 Applicability (RR-103) for more information (visit dnr.wi.gov, search "RR-103"). Contaminated soil may be managed in accordance with Wis. Admin. Code ch. NR 718 with prior DNR approval.

As with any environmental assessment, some areas of the Property were not assessed, the number of samples collected were limited based on professional judgment and financial considerations, and environmental samples were not analyzed for all parameters. This letter relates and refers only to those conditions described above and to information and data you submitted to the DNR in your request for this letter. The DNR makes no determination concerning the presence or absence of hazardous substances or environmental pollution on the Property other than those identified in the documents and reports listed above, which you submitted to the DNR. In the future, if the DNR becomes aware of new information concerning the contaminants referenced above or the presence of any other contaminants on the Property, the DNR will evaluate that data at that time to determine if any response actions are required.

CLOSING

This letter, site and case-related information and DNR contacts can be found online in the Bureau for Remediation and Redevelopment Tracking System (BRRTS) on the Web (BOTW); go to www.dnr.wi.gov and search "BOTW." Use the BRRTS ID # found at the top of this letter. The site can

also be found on the map view, Remediation and Redevelopment Sites Map (RRSM) by searching "RRSM."

If you have any questions regarding this letter, please contact me at (414) 207-2179, or adam.mcilheran@wisconsin.gov.

Sincerely,



Adam S. McIlheran
Hydrogeologist
Remediation & Redevelopment Program

Attachments: Figure 4, Farmstead Borehole and Test Pit Location Map, July 2020, Sigma
Figure 5, Debris Pile Area Test Pit Location Map, June 2020, Sigma

cc:

Cory Katzban, Sigma – ckatzban@thesigmagroup.com
Margaret Brunette, DNR, Remediation and Redevelopment Program –
Margaret.Brunette@wisconsin.gov
Michael Prager, DNR, Remediation and Redevelopment Program –
Michael.Prager@wisconsin.gov
SER File



Village of

Germantown
...Willkommen

Fee must accompany application
\$2,900 with public improvements
X \$1,960 no public improvements

Paid _____ Date _____

CERTIFIED SURVEY MAP APPLICATION

Pursuant to Section 18.06 of the Municipal Code

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

1	APPLICANT OR AGENT CAPSTONE DEVELOPMENT COMPANY N17 W24222 RIVERWOOD DRIVE SUITE 160 WAUKESHA, WI 53188-1134 Phone (262) 523-1122 Fax () E-Mail mike@capstonequadrangle.com	PROPERTY OWNER MLG/RMS Ltd. Partnership 19000 W. Bluemound Road Brookfield, WI 53045 Phone (262) 938-4448 pinkfuss@gmail.com
----------	--	--

2	PROPERTY ADDRESS OR GENERAL LOCATION N128 W20943 Holy Hill Road, Germantown WI 53076	TAX KEY NUMBER GTVN 181987
----------	--	--------------------------------------

3	PURPOSE OF LAND SPLIT SUBDIVIDE TO CREATE BUSINESS PARK FOR INDUSTRIAL DEVELOPMENT INCLUDING OUT LOTS	Will the land split require rezoning? NOT DUE TO LAND SPLIT BUT WE ARE REQUESTING IT. From AGRICULT A-1 To INDUST M-1
----------	---	--

4 READ AND INITIAL THE FOLLOWING:

MS I understand that the Certified Survey Map 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.

MS I understand that the Map will not be placed on the Village Board agenda until all the technical corrections to the CSM are made, the payment of any outstanding impact fees are paid to the Village Clerk's Department, and the original signed and stamped copy of the Map is submitted on the proper paper.

MS 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.

MS I understand all delinquent property taxes on any of the properties involved shall be paid prior to recording.

5 SIGNATURES -- ALL APPLICATIONS MUST BE SIGNED BY OWNER!

Applicant its: Principal Date 7/23/2021 By MLG/RMS Limited Partnership Date 7/27/2021



The Avenue
275 West Wisconsin Avenue, Suite 300
Milwaukee, WI 53203
414 / 259 1500
414 / 259 0037 fax
www.graef-usa.com

collaborāte / formulāte / innovāte

July 23, 2021

Jeff Retzlaff, Village Planner
Village of Germantown
N112 W17001 Mequon Road
Germantown, WI 53022

SUBJECT: CQ WI 2021, LLC CSM Review

Certified Survey Map

Applicant or Owner: CQ WI 2021, LLC

Land Surveyor/Firm: John Konopacki / Pinnacle Engineering Group

1. Building setback lines are to be mapped and dimensioned. **Setback lines added on Sheet 3 of 7.**
2. Existing structures, well and/or septic cover or vent are to be shown. **Information added on Sheet 3 of 7.**
3. All existing utility and drainage easements with recording information will be shown and dimensioned, if applicable. **N/A.**
4. In the legal description the dimension after commencing needs to be corrected. **The dimension has been corrected to 1321.345 feet on Sheet 5 of 7.**
5. All wetland mapping will be done by a Professional Land Surveyor registered in the State of Wisconsin. **Wetlands graphically shown on this proposed CSM are mapped by a WI Professional Land Surveyor.**
6. The last paragraph in the Surveyor's Certificate should include Chapter 18 of the Village of Germantown Subdivision Control Ordinance. **Corrected on Sheet 5 of 7.**
7. Should stream and wetland setback lines be shown on the Certified Survey Map document, the following note will be added:

"Development within these setback areas is prohibited unless otherwise allowed pursuant to the provisions of Chapter 24 (Shoreland-Wetland Zoning Code) in the Germantown Municipal Code."

Note added to "NOTES" on Sheet 1 of 7.
8. Label the right of way width of Gateway Crossing. **Label added on Sheet 2, 3, 4 of 7.**
9. Identify the document used to previously dedicate the Holy Hill right of way for roadway purposes. **Identification added to "NOTES" on Sheet 1 of 7.**

10. On sheet 7 change “Plan Commission” to “Planning Commission”.

Revised on Sheet 7 of 7.

No further review comments.

Document Approval and Recording

For this CSM 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.

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.

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 2019 on compact disk (CD) or 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.

Note: In 2020, the Village will be upgrading its municipal code to recognize the NAD83 Datum, 2011 adjustment for horizontal control and NAVD88 for vertical control for mapping all land division documents and plan submittals for review.

There are new dossier sheets for all the Public Land Survey System monuments that contain the new coordinate positions and elevations available currently on the State Cartographer's website by using the Survey Control Finder application

Prior to Recording the Certified Survey Map or Final Subdivision Plat, the Village Engineering Department will verify that the boundary markers have been installed as described on the submitted map. All boundary corners are to be clearly marked in the field by the professional land surveyor of record.



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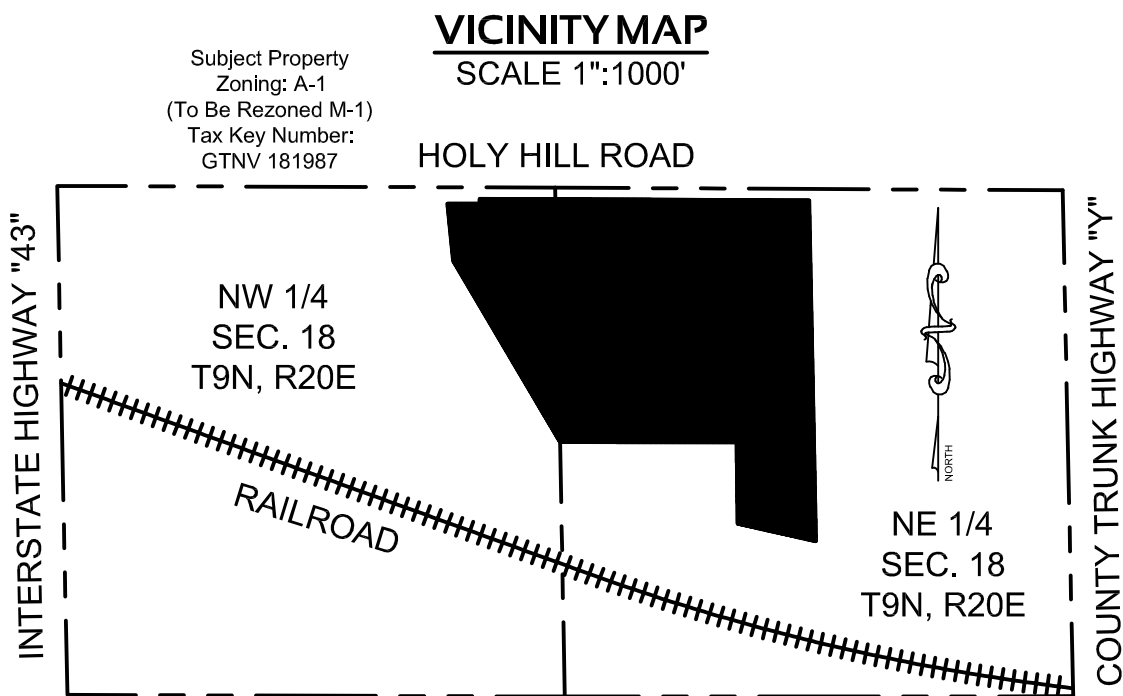
Sincerely,

A handwritten signature in blue ink, reading "Burt J. Naumann". The signature is fluid and cursive, with a long horizontal stroke at the end.

Burt J. Naumann, PLS
Senior Vice President

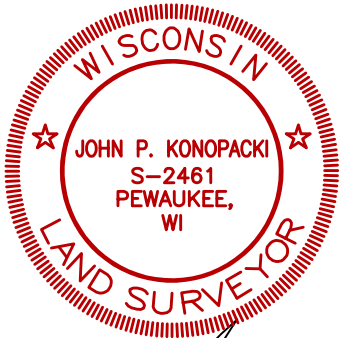
CERTIFIED SURVEY MAP
NO. _____

Being all of Lot 3 of Certified Survey Map No. 6506,
located in the Northwest 1/4 and Southwest 1/4 of the
Northeast 1/4 and the Northeast 1/4 of the Northwest 1/4
of Section 18, Township 9 North, Range 20 East, Village
of Germantown, Washington County, Wisconsin



NOTES:

- All measurements have been made to the nearest one-hundredth of a foot.
- All angular measurements have been made to the nearest one second.
- All existing buildings on this Certified Survey Map to be razed.
- 40' Wide Public Utility Easement and 25' Wide Access Easement per Certified Survey Map No. 6506 to be released prior to the recording of this Certified Survey Map.
- Flood Zone Classification: The property lies with in Zone "X" of the Flood Insurance Rate Map Community Panel No. 5513IC0268D with an effective date of NOVEMBER 20, 2013 AND 5513IC0356E with an effective date of OCTOBER 16, 2015. Zone "X" areas are determined to be outside the 0.2% annual chance floodplain.
- This survey is based on the Wisconsin State Plane Coordinate System, South Zone, based on the North American Datum 1983/2011 adjustment, with north line of the NW 1/4 of Section 18, T9N, R20E bearing S89°48'14"E.
- Wetlands delineated by Heartland Ecological Group, Inc. in MAY, 2021.
- Development within the Wetland Setback or Ordinary High Water Mark Setback areas are prohibited unless otherwise allowed pursuant to the provisions of Chapter 24 (Shoreland-Wetland Zoning Code) in the Germantown Municipal Code.
- Right of way of Holy Hill Road based on Certified Survey Map No. 6506 recorded as Document No. 1335168



AUGUST 5, 2021



Prepared By:

PINNACLE ENGINEERING GROUP

20725 WATERTOWN ROAD I SUITE 100

BROOKFIELD, WI 53186

OFFICE: (262) 754-8888

Prepared For:

CQ WI 2021, LLC

NI7 W24222 Riverwood - Suite 160

Waukesha, WI 53188

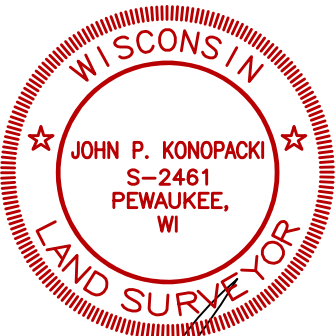
This instrument drafted by John P. Konopacki, PLS-License No. S-2461

PEG JOB#1262.00A

SHEET 1 OF 7

CERTIFIED SURVEY MAP NO. _____

Being all of Lot 3 of Certified Survey Map No. 6506, located in the Northwest 1/4 and Southwest 1/4 of the Northeast 1/4 and the Northeast 1/4 of the Northwest 1/4 of Section 18, Township 9 North, Range 20 East, Village of Germantown, Washington County, Wisconsin

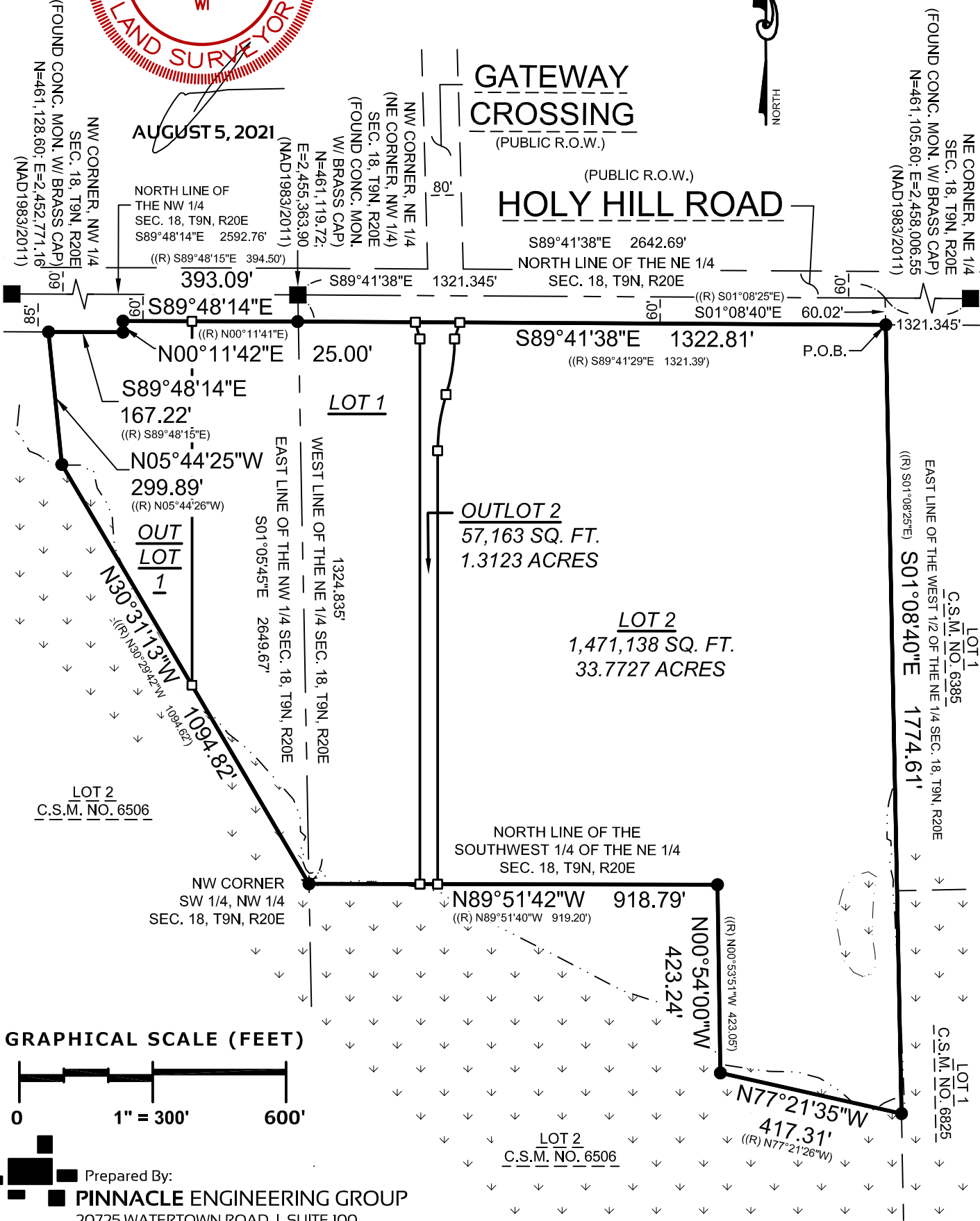


- LEGEND:
- - Denotes Found 3/4" Iron Rod
 - - Denotes Set 3/4" X 18" Iron Rebar, 1.5 LBS./FT.
 - (R) - Denotes "Recorded As"



GATEWAY CROSSING
(PUBLIC R.O.W.)

HOLY HILL ROAD



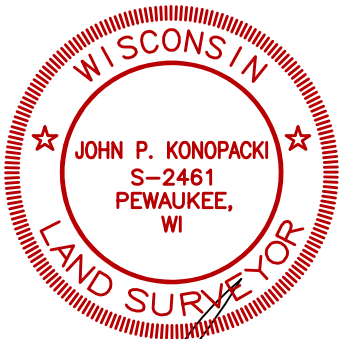
Prepared By:
PINNACLE ENGINEERING GROUP
20725 WATERTOWN ROAD | SUITE 100
BROOKFIELD, WI 53186
OFFICE: (262) 754-8888

This instrument drafted by John P. Konopacki, PLS-License No. S-2461

PEG JOB#1262.00A
SHEET 2 OF 7

CERTIFIED SURVEY MAP NO. _____

Being all of Lot 3 of Certified Survey Map No. 6506, located in the Northwest 1/4 and Southwest 1/4 of the Northeast 1/4 and the Northeast 1/4 of the Northwest 1/4 of Section 18, Township 9 North, Range 20 East, Village of Germantown, Washington County, Wisconsin



AUGUST 5, 2021

BUILDING SETBACKS:
FRONT YARD=30 FEET
SIDE YARD=10 FEET
REAR YARD=25 FEET

LEGEND:

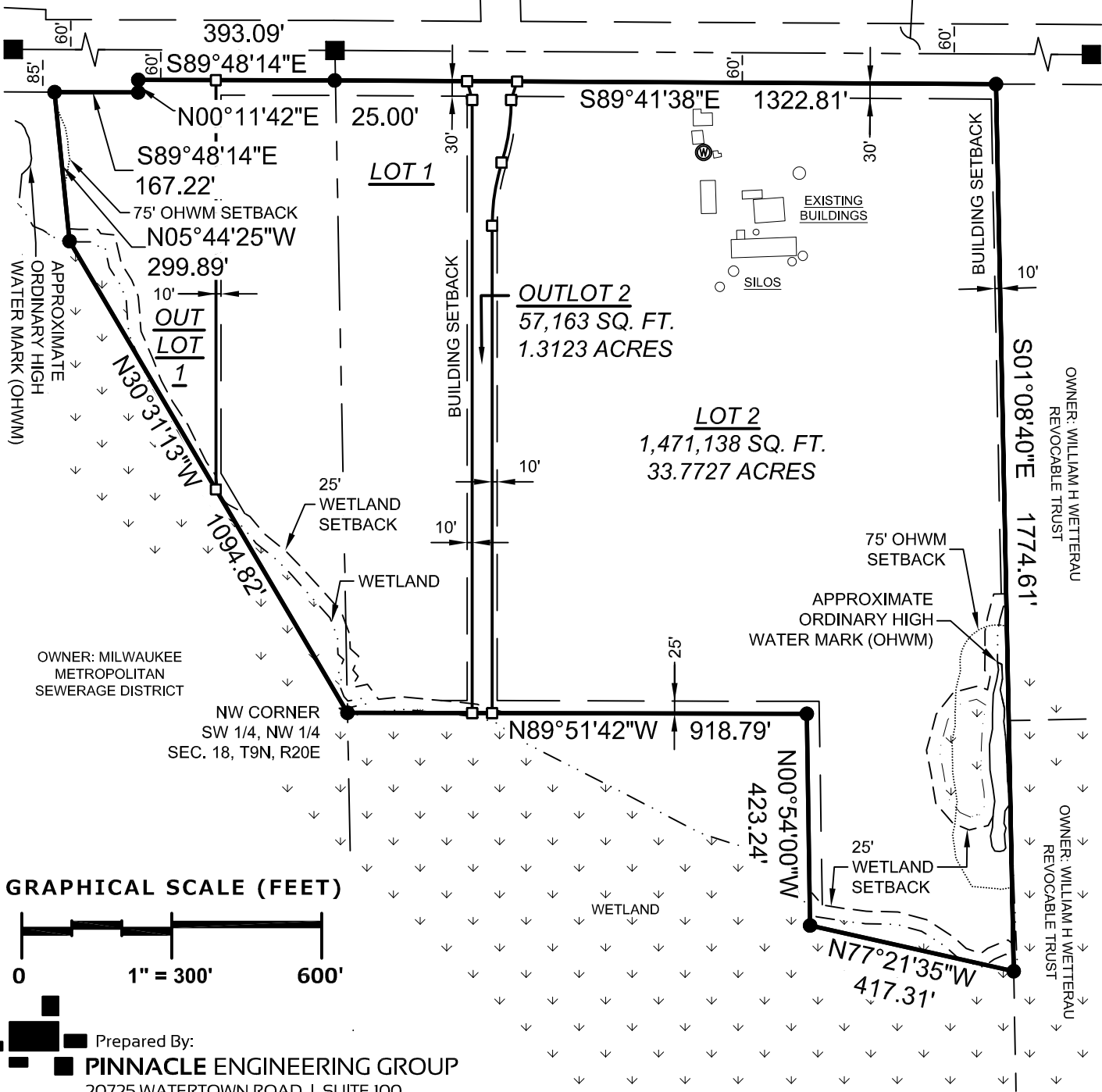
- Denotes Found 3/4" Iron Rod
- Denotes Set 3/4" X 18" Iron Rebar, 1.5 LBS./FT.
- Well

OUTLOT 1
168,185 SQ. FT.
3.8610 ACRES

LOT 1
589,092 SQ. FT.
13.5237 ACRES

GATEWAY
CROSSING
(PUBLIC R.O.W.)

HOLY HILL ROAD



Prepared By:
PINNACLE ENGINEERING GROUP
20725 WATERTOWN ROAD | SUITE 100
BROOKFIELD, WI 53186
OFFICE: (262) 754-8888

This instrument drafted by John P. Konopacki, PLS-License No. S-2461

PEG JOB#1262.00A
SHEET 3 OF 7

CERTIFIED SURVEY MAP NO. _____

Being all of Lot 3 of Certified Survey Map No. 6506, located in the Northwest 1/4 and Southwest 1/4 of the Northeast 1/4 and the Northeast 1/4 of the Northwest 1/4 of Section 18, Township 9 North, Range 20 East, Village of Germantown, Washington County, Wisconsin



AUGUST 5, 2021

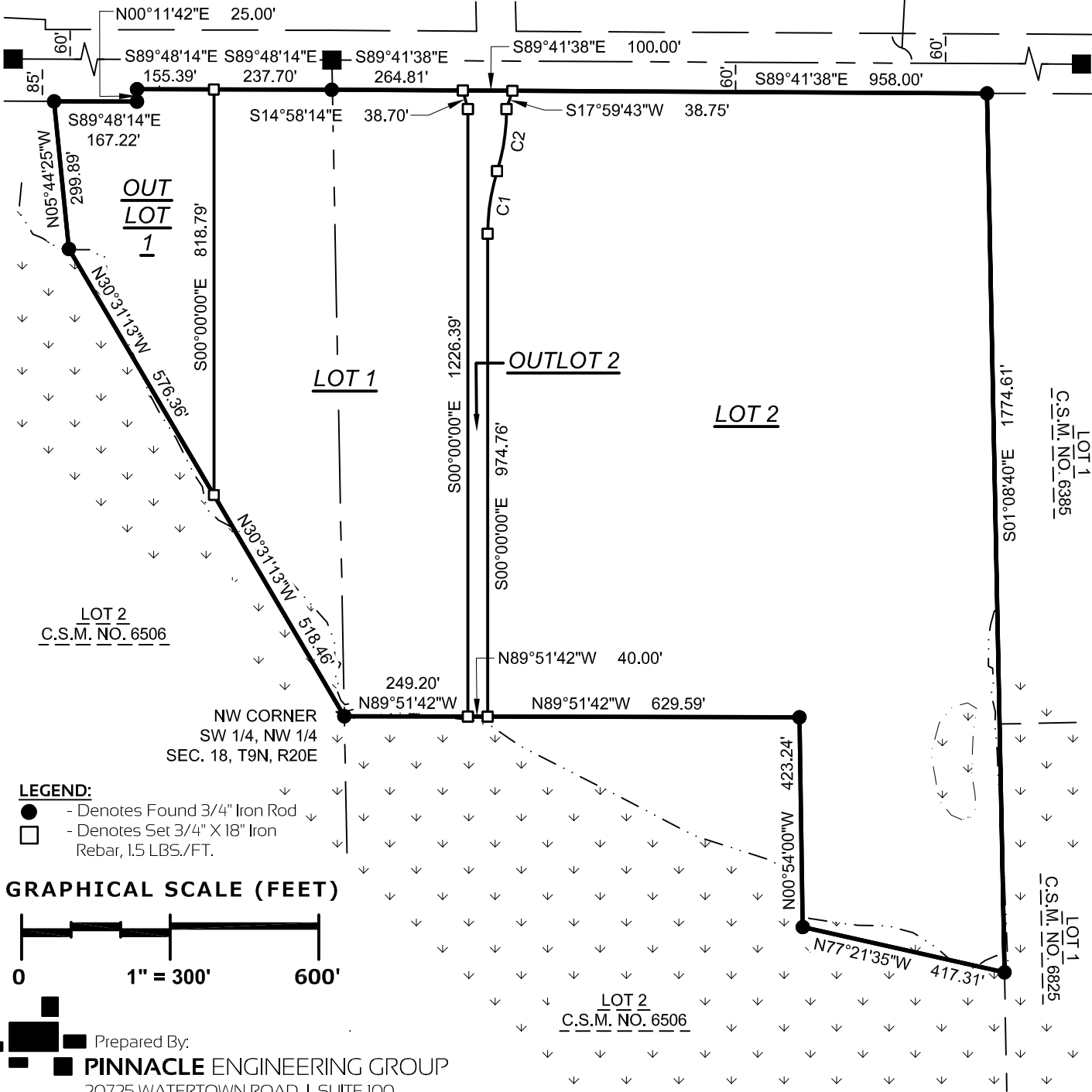


CURVE TABLE				
CURVE NO.	LENGTH	RADIUS	CHORD BEARING	CHORD LENGTH
C1	128.23'	425.00'	N08°38'36"E	127.74'
C2	127.34'	417.00'	N08°32'17"E	126.85'

GATEWAY
CROSSING
(PUBLIC R.O.W.)

(PUBLIC R.O.W.)

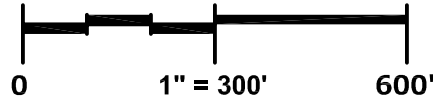
HOLY HILL ROAD



LEGEND:

- - Denotes Found 3/4" Iron Rod
- - Denotes Set 3/4" X 18" Iron Rebar, 1.5 LBS./FT.

GRAPHICAL SCALE (FEET)



Prepared By:

PINNACLE ENGINEERING GROUP

20725 WATERTOWN ROAD | SUITE 100

BROOKFIELD, WI 53186

OFFICE: (262) 754-8888

This instrument drafted by John P. Konopacki, PLS-License No. S-2461

PEG JOB#1262.00A

SHEET 4 OF 7

CERTIFIED SURVEY MAP NO. _____

Being all of Lot 3 of Certified Survey Map No. 6506, located in the Northwest 1/4 and Southwest 1/4 of the Northeast 1/4 and the Northeast 1/4 of the Northwest 1/4 of Section 18, Township 9 North, Range 20 East, Village of Germantown, Washington County, Wisconsin

SURVEYOR'S CERTIFICATE

STATE OF WISCONSIN)
WAUKESHA COUNTY) SS

I, John P. Konopacki, Professional Land Surveyor, do hereby certify:

That I have surveyed, mapped and divided all of Lot 3 of Certified Survey Map No. 6506, as recorded in the Register of Deeds office for Washington County as Document No. 1335168, located in the Northwest 1/4 and Southwest 1/4 of the Northeast 1/4 and the Northeast 1/4 of the Northwest 1/4 of Section 18, Township 9 North, Range 20 East, Village of Germantown, Washington County, Wisconsin, bounded and described as follows:

Commencing at the northwest corner of the Northeast 1/4 of said Section 18;
Thence South 89°41'38" East along the north line of said Northeast 1/4, 1321.345 feet;
Thence South 01°08'40" East, 60.02 feet to the south right of way line of Holy Hill Road and the Point of Beginning;

Thence continuing South 01°08'40" East along the west line of Lot 1 of Certified Survey Map No. 6385 and then along the west line of Lot 1 of Certified Survey Map No. 6825, 1774.61 feet to a northerly line of Lot 2 of Certified Survey Map No. 6506;
Thence the following courses along said northerly line:

North 77°21'35" West, 417.31 feet; North 00°54'00" West, 423.24 feet; North 89°51'42" West, 918.79 feet; North 30°31'13" West, 1094.82 feet; North 05°44'25" West, 299.89 feet to the aforesaid south right of way line of Holy Hill Road;

Thence the following courses along said south right of way line:

South 89°48'14" East, 167.22 feet; North 00°11'42" East, 25.00 feet; South 89°48'14" East, 393.09 feet; South 89°41'38" East, 1322.81 feet to the Point of Beginning.

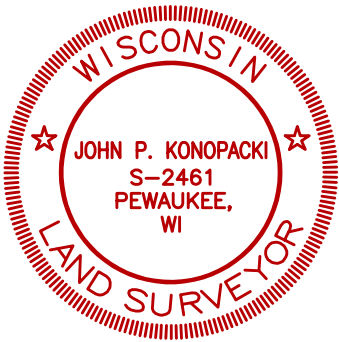
Containing 2,285,578 square feet (52.4697 acres) of land, more or less.

That I have made such survey, land division and map by the direction of CQ WI 2021, LLC, owner of said land.

That such map is a correct representation of all the exterior boundaries of the land surveyed and the land division thereof made.

That I have fully complied with the requirements of Chapter 236 of the Wisconsin State Statutes and Chapter 18 of the Village of Germantown Subdivision Control Ordinance in surveying, mapping and dividing the land with in this certified survey map.

Date: AUGUST 5, 2021





John P. Konopacki
Professional Land Surveyor S-2461

CERTIFIED SURVEY MAP NO. _____

Being all of Lot 3 of Certified Survey Map No. 6506, located in the Northwest 1/4 and Southwest 1/4 of the Northeast 1/4 and the Northeast 1/4 of the Northwest 1/4 of Section 18, Township 9 North, Range 20 East, Village of Germantown, Washington County, Wisconsin

OWNER'S CERTIFICATE

CQ WI 2021, LLC, a limited liability company duly organized and existing under and by virtue of the laws of the State of Delaware, as owner, does hereby certify that said limited liability company caused the land described on this certified survey map to be surveyed, divided and mapped as represented on this certified survey map.

CQ WI 2021, LLC, as owner, does further certify that this certified survey map is required by Chapter 236 of the Wisconsin State Statutes to be submitted to the following for approval or objection:

1. Village of Germantown

IN WITNESS WHEREOF, the said CQ WI 2021, LLC, has caused these presents to be signed by Michael Faber, Manager, at (city) _____, _____ County, State of _____, on this _____ day of _____, 2021.

In the presence of: Capstone Development Company

Michael Faber, Manager (signature)

STATE OF _____)
_____) COUNTY) SS

Personally came before me this _____ day of _____, 2021, Michael Faber, Manager, of the above named limited liability company, to me known to be the person who executed the foregoing instrument, and to me known to be such Manager of said limited liability company and acknowledged that they executed the foregoing instrument as such officer as the deed of said limited liability company, by its authority.

Notary Public

Name: _____

State of

My Commission Expires:

CONSENT OF CORPORATE MORTGAGEE

_____, a corporation duly organized and existing under and by virtue of the laws of the State of Wisconsin, mortgagee of the above described land, does hereby consent to the surveying, dividing and mapping of the land described in the forgoing affidavit of John P. Konopacki, surveyor, and does hereby consent to the above certification of owners.

IN WITNESS WHEREOF, the said _____, has caused these presents to be signed by _____, its President, and its corporate seal to be hereunto affixed this _____ day of _____, 2021.

Date _____

President

STATE OF WISCONSIN)
_____ COUNTY) SS

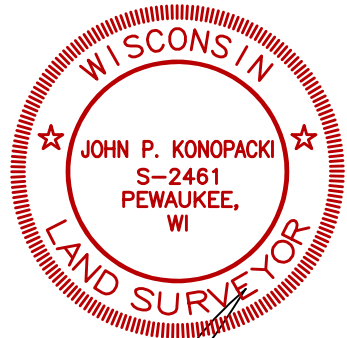
Personally came before me this _____ day of _____, 2021, _____, to me known to be the person who executed the foregoing instrument and to me known to be such officer of said corporation and acknowledged the same.

Notary Public

Name:

State of

My Commission Expires: _____



~~AUGUST 5, 2021~~

Prepared By:

PINNACLE ENGINEERING GROUP

20725 WATERTOWN ROAD | SUITE 100

BROOKFIELD, WI 53186

OFFICE: (262) 754-8888

This instrument drafted by John P. Konopacki, PLS-License No. S-2461

PEG JOB#1262.00A

SHEET 6 OF 7

CERTIFIED SURVEY MAP NO. _____

Being all of Lot 3 of Certified Survey Map No. 6506, located in the Northwest 1/4 and Southwest 1/4 of the Northeast 1/4 and the Northeast 1/4 of the Northwest 1/4 of Section 18, Township 9 North, Range 20 East, Village of Germantown, Washington County, Wisconsin

PLANNING COMMISSION APPROVAL

This Certified Survey Map is hereby approved by the Planning Commission of the, Village of Germantown, on this _____ day of _____, 2021.

Date Dean Wolter, Chairman

Date Laura A. Johnson, Secretary

STATE OF WISCONSIN)
MILWAUKEE COUNTY) SS

Personally came before me this _____ day of _____, 2021,
(names) _____, to me known to be the persons who executed the foregoing instrument and acknowledged the same.

Notary Public
Name: _____
State of Wisconsin
My Commission Expires: _____

VILLAGE OF GERMANTOWN BOARD APPROVAL

This Certified Survey Map, being a part of the Southwest 1/4 of the Southeast 1/4 and the Southeast 1/4 of the Southwest 1/4 of Section 7, Township 9 North, Range 20 East, Village of Germantown, Washington County, Wisconsin, having been approved by the Planning Commission being the same, is hereby approved and accepted by the Village Board of Trustees of the Village of Germantown on this _____ day of _____, 2021.

Date Dean Wolter, Village President

Date Deanna Braunschweig, Village Clerk

STATE OF WISCONSIN)
MILWAUKEE COUNTY) SS

Personally came before me this _____ day of _____, 2021,
(names) _____, to me known to be the persons who executed the foregoing instrument and acknowledged the same.

Notary Public
Name: _____
State of Wisconsin
My Commission Expires: _____



AUGUST 5, 2021

- † *Upon approval of plans for construction, this finalized information will be provided.*

C-3 Site Dimensional and Paving Plan

1. Is there any curb and gutter proposed? Plan is not clear.
 - † *No*
2. Add dimensions between parking lot and property boundaries.
 - † *Additional Dimensions have been added.*
3. Show truck turn movements
 - † *Supplemental Exhibits showing Truck Turning Movements are provided.*

C-5 Grading Plan

1. Label all contours. Many of the contours in the parking lot are not labeled.
 - † *Additional contours labels have been added.*
2. Are spot elevations top of curb or edge of pavement? It's not clear from the plans.
 - † *All spot grades reference finish grade of pavement/slab unless denoted otherwise.*
3. Show overland flow route through the site. It's not clear how overland flow is being routed to the basin. Specifically, on the south end of the site.
 - † *Additional explanation is provided.*
4. Provide at least 6" of freeboard between overland flow elevations and the building FFE.
 - † *6" is provided.*
5. Many of the parking and drive areas have over 1' of ponding prior to overtopping. Revise design to a max of 1' of ponding.
 - † *Our design is based on feedback from the owner and normal practice for this type of building. The owner has requested to leave the design as-is.*

C-9 Utility Plan

1. Show grading on the all utility plans or show storm sewer on the grading plan.
 - † *Storm sewer is shown on grading plans.*
2. Revise storm sewer manholes to have at least 0.10' drop across the manhole.
 - † *This has been accommodated.*

C-11 Site Stabilization Plan

1. Silt fence is not an approved erosion control method at concentrated flow area. (storm sewer outlets, swales, etc). Revise to an approved method.
 - † *The pond outlets discharge into a level spreader and the silt fencing has been removed at all outlets.*
2. Erosion control matting is shown outside of the silt fence in many areas. Revise matting or silt fence.
 - † *Erosion controls are updated to final configurations.*
3. Temporary swales are likely needed to route runoff to the sediment basins during construction. Show the locations of the swales on the plans.
 - † *Construction phase interim controls have been added to the plans.*
4. Show permanent erosion control methods at pipe outlets. Provide calcs showing the proposed measures are appropriate for the flow.
 - † *All storm sewer outfalls include rip rap. Calculations are provided.*
5. Show inlet protection at all inlets.
 - † *Inlet protection has been added.*
6. Provide level spreaders at pond outlets.
 - † *Level spreaders have been added.*

C-15 Construction Details

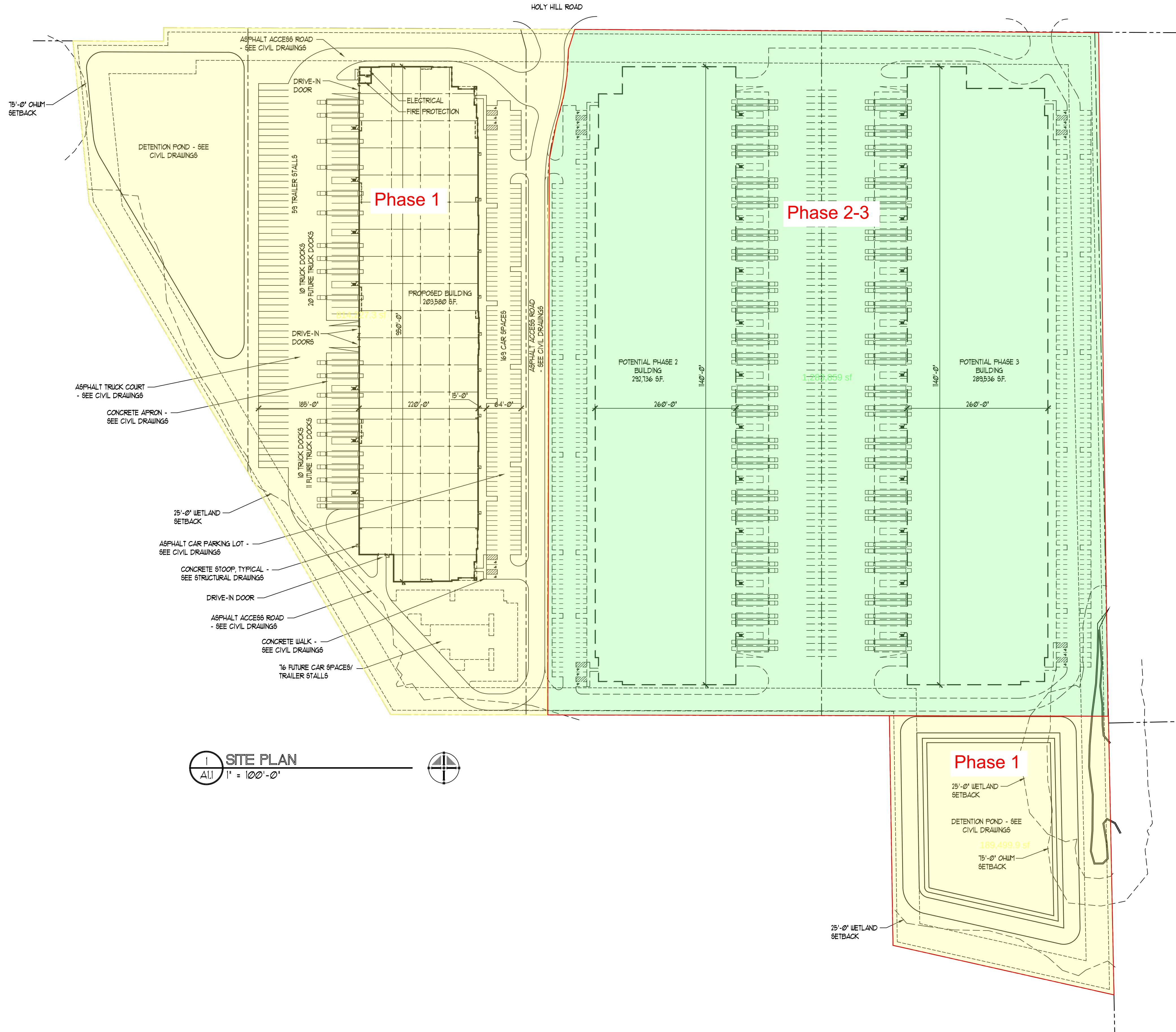
1. Revise basins to have a minimum of 1' of freeboard between the top of the berm and the overflow elevation.
 - † *The detail has been revised to show a 1' of freeboard between the top of berm and the overflow.*

C-16 Construction Details

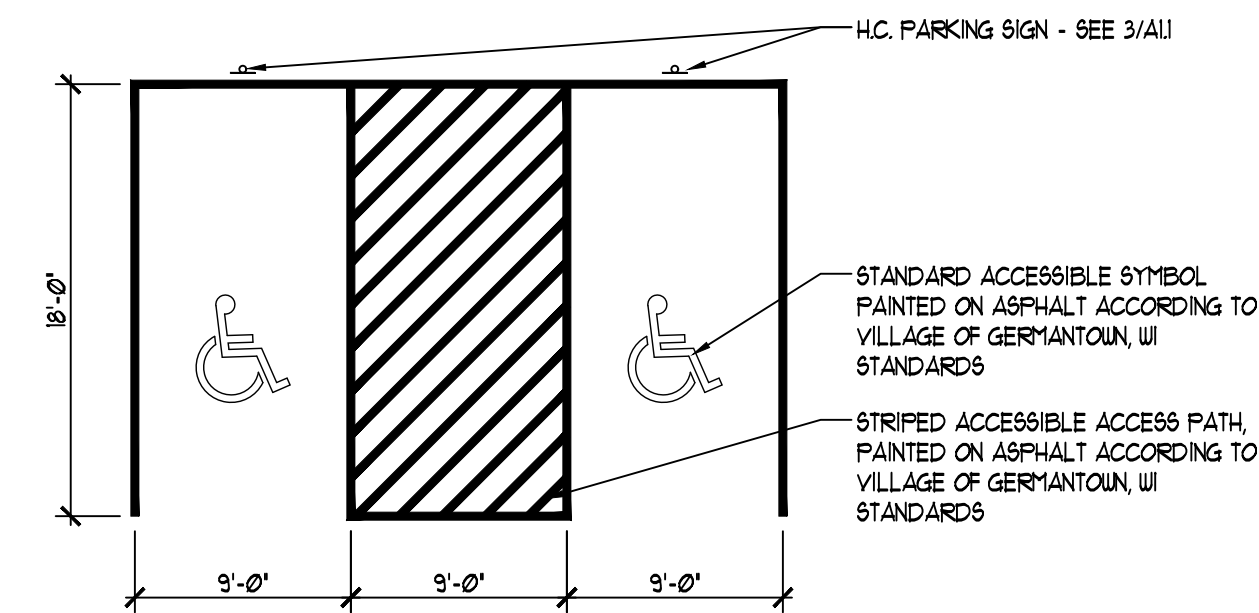
2. Add labels, dimensions, spot elevations, etc to the ADA parking details.
 - † *Additional detailing has been provided.*

Stormwater Management

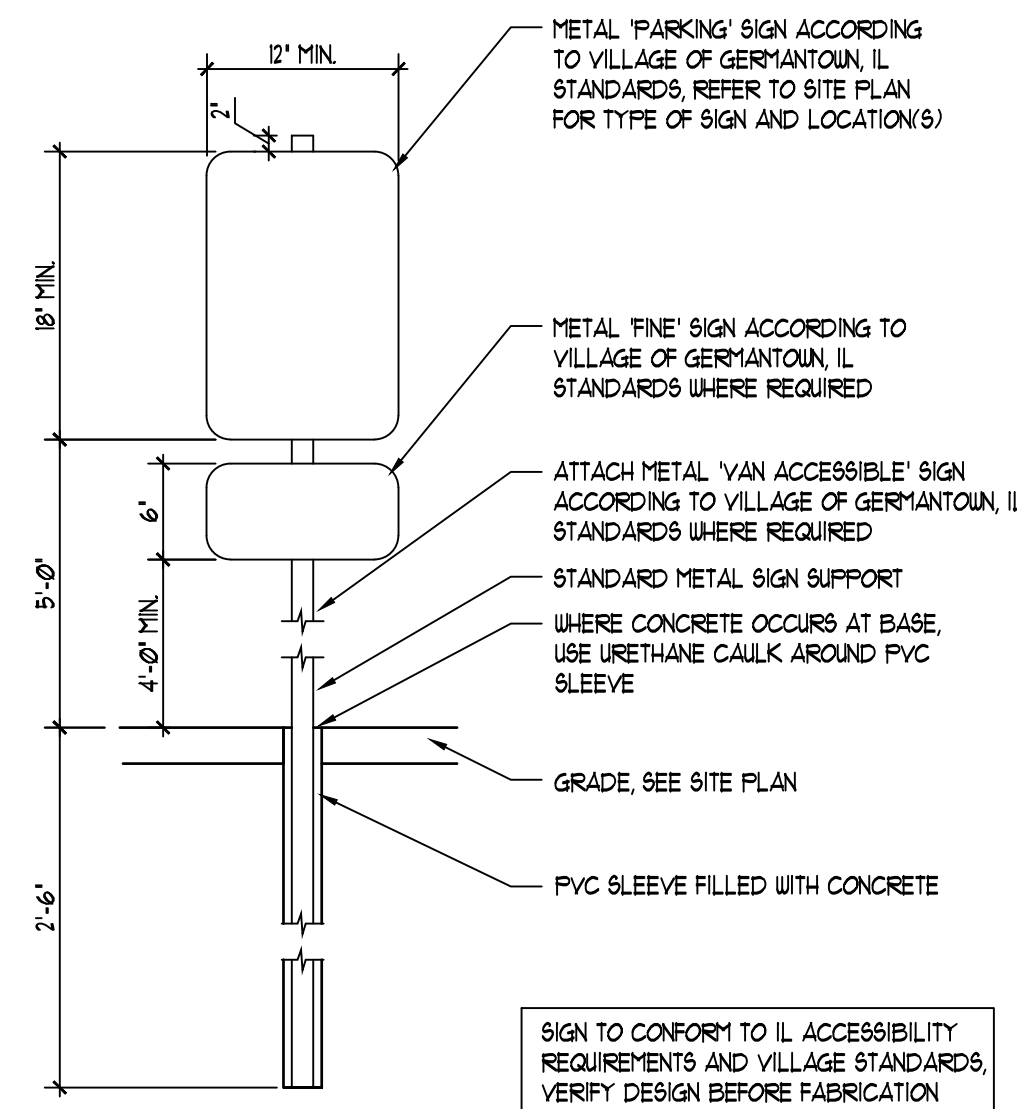
1. Site appears to be a mix of B and C soil. Revise curve numbers to reflect soil types. Use the WDNR max curve numbers for cropland for the existing conditions.
 - † *Geotechnical reporting and experience on the large development to the north have not revealed soils conducive to infiltration. It is our engineering judgement that HSG of C is appropriate.*
2. Revise Tc times to a max of 100' for sheet per the NRCS engineering handbook.
 - † *This preference has been included.*
3. It appears that this site is split between the Milwaukee River watershed and Menomonee River watershed. Please revise the calcs to split the site into the two separate watersheds and show the that volumetric requirements are being met for each watershed.
 - † *Per Jeff Retzlaff email dated 7/30/2021, the Village contacted MMSD to determine if the site does truly drain to two different watersheds. At the time of the email, the Village has not received confirmation from MMSD. Once confirmation on whether the site drains to one or two watersheds we will update the report accordingly.*
4. Provide information within the report about the amount of impervious area included in the stormwater management plan and a breakdown of what is being proposed currently. The summary shall be broken down by impervious type (parking, sidewalk, rooftop). This will allow for easier review and approval of future phases.
 - † *This information has been added to the report.*
5. Pond outlet pipes are proposed as flat. Revise to have at least some positive slope.
 - † *The outlet pipes were revised to show positive slope.*
6. Proposed Hydrology exhibit is difficult to follow. Please clearly delineate and label drainage boundaries. Show TC paths.
 - † *The hydrology exhibit was revised to show TC paths and more detail in drainage paths and basin delineations were added/clarified.*
7. Please add a table to the report that shows the pre-development verse post development volumes.
 - † *We will add a table to compare the pre-development vs post development volumes.*
8. The existing site has two different watersheds (east and west) Please add information to the report that shows pre – post flows for the two different watersheds to confirm pre development drainage patterns are maintained.
 - † *See response to Stormwater Management Comment 3.*
9. Revise SLAMM calcs to use the appropriate winter season dates.
 - † *The SLAMM model was updated.*
10. Hydrocad calcs are based on 84% impervious, but SLAMM calcs show 88% impervious. Please revise to be consistent.
 - † *The report and model was updated to be consistent.*
11. Please provide a screenshot of the SLAMM routing diagram.
 - † *A screenshot of the SLAMM routing diagram has been added to the report.*
12. Storm sewer calcs list a storm duration of 10 mins and intensity of 5.36 in/hr at the top of the page, but the notes list a Tc of 6 mins. Which one was used for the calcs?
 - † *In past project within the Village, after coordinating with the Village stormwater engineer, when the drainage basin was comprised of only impervious surface a time of concentration of 6 minutes was used. If the basin had a mix between pervious and impervious surfaces, a time of concentration of 10 minutes was used.*
13. Provide a storm sewer drainage map that clearly delineates watershed boundaries for storm sewer.
 - † *A storm sewer drainage map has been added to the SWMP.*



1 SITE PLAN
1" = 100'-0"



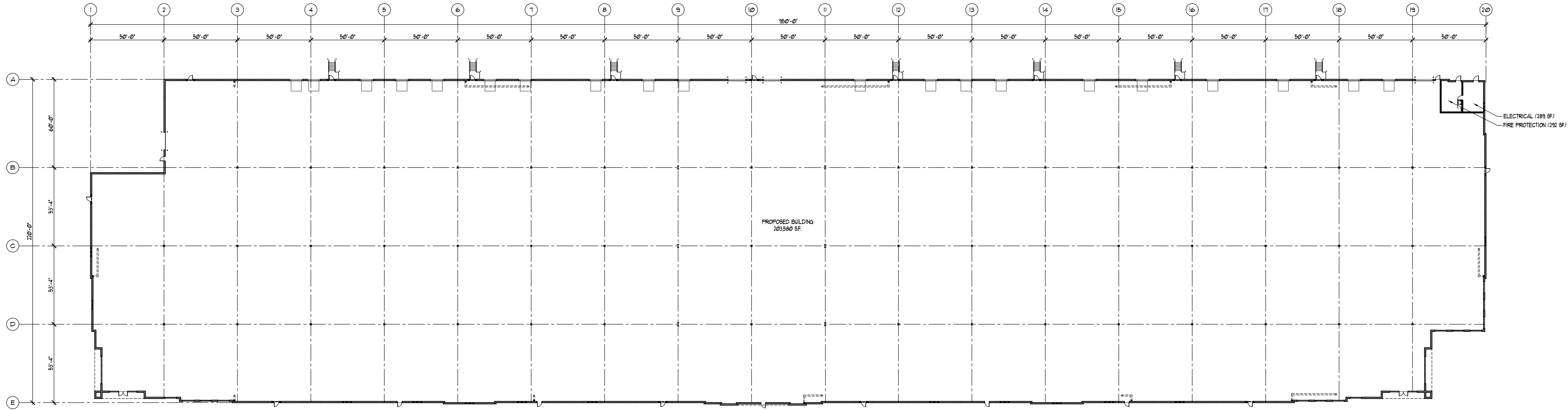
2 TYP. H.C. PARKING STALL
1/8" = 1'-0"



3 SIGN MOUNTING DETAIL
1" = 1'-0"

PROPOSED USE/DESIGN INTENT/MATERIAL DESCRIPTION:

THE PROPOSED USE IS A MULTI-TENANT INDUSTRIAL BUILDING WITH A QUALITY OF ARCHITECTURE CONSISTENT WITH BUILDINGS OF THIS USE AND IN KEEPING WITH THE NEIGHBORING INDUSTRIAL BUILDINGS. THE MASS AND SCALE OF THE BUILDING HAS BEEN ARTICULATED BY PROVIDING CORNER & CENTER ENTRY ELEMENTS, ADDING REVEAL PATTERNS AND COLORS, VARYING THE TOP OF THE PRECAST WALLS AND PROVIDING PENETRATION.



1 OVERALL BUILDING PLAN
A3.1 1" = 30'-0"



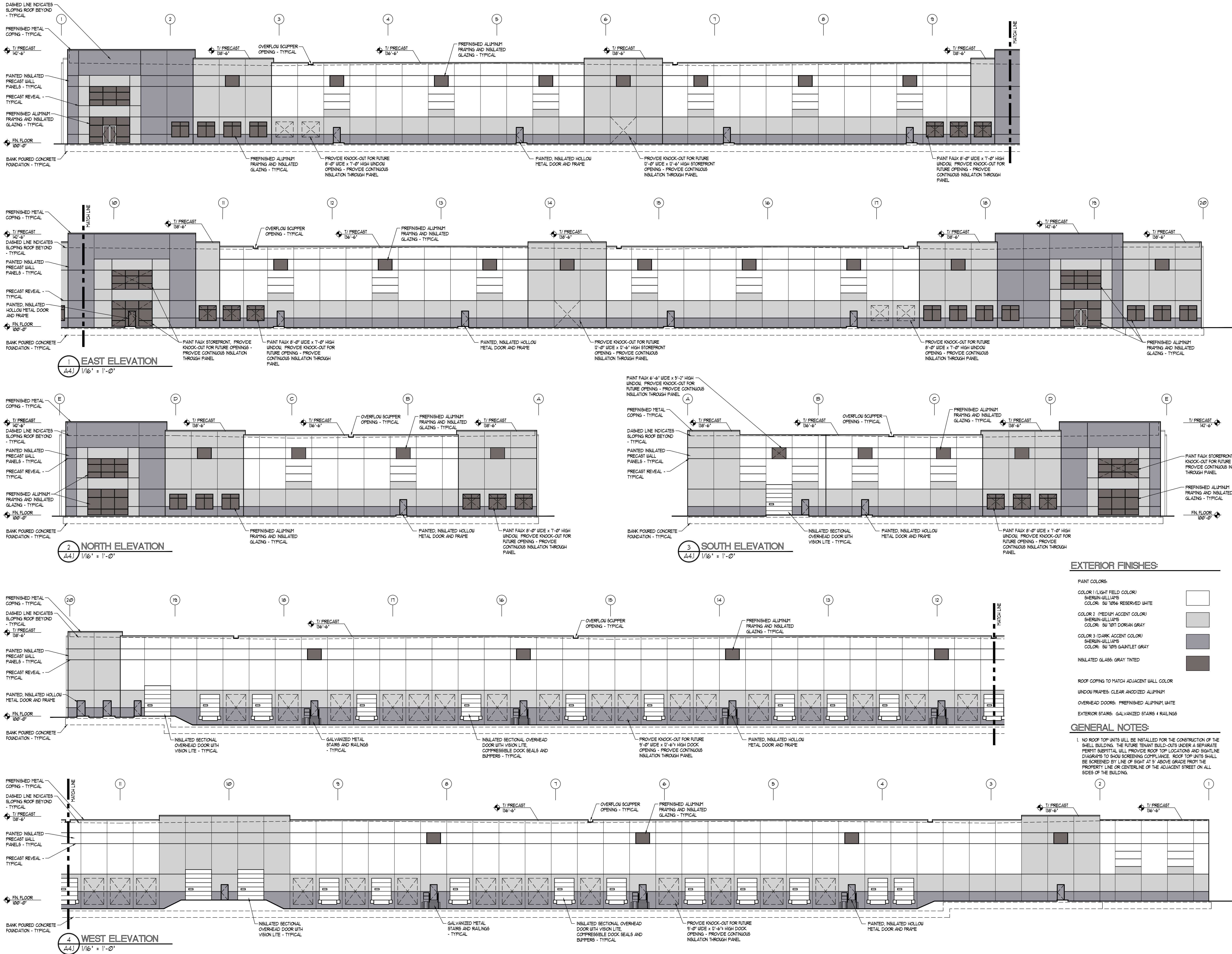
CAPSTONE 41
N128 W20943 Holy Hill Road, Germantown, WI
OVERALL BUILDING PLAN

2610 Lake Cook Road
Suite 280
Riverside, IL 60015
PH: (847) 940-0300
www.pdarchitects.com



PROJECT NO.: 07921064
DRAWN BY: CTS CHECKED BY: WJB
DATE: 07.14.21
SHEET NO.:

A3.1



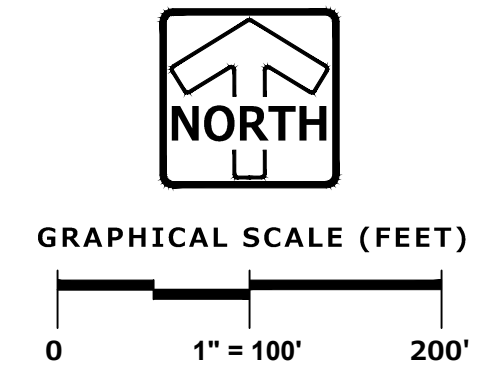
EXTERIOR FINISHES:

PAINT COLORS:	
COLOR 1 (LIGHT FIELD COLOR)	
SHERWIN-WILLIAMS	
COLOR: SW 1056 RESERVED WHITE	
COLOR 2 (MEDIUM ACCENT COLOR)	
SHERWIN-WILLIAMS	
COLOR: SW 1011 DORIAN GRAY	
COLOR 3 (DARK ACCENT COLOR)	
SHERWIN-WILLIAMS	
COLOR: SW 1019 GAUNTLET GRAY	
INSULATED GLASS: GRAY TINTED	

ROOF COPING TO MATCH ADJACENT WALL COLOR
WINDOW FRAMES: CLEAR ANODIZED ALUMINUM
OVERHEAD DOORS: PREFINISHED ALUMINUM WHITE
EXTERIOR STAIRS: GALVANIZED STAIRS & RAILINGS

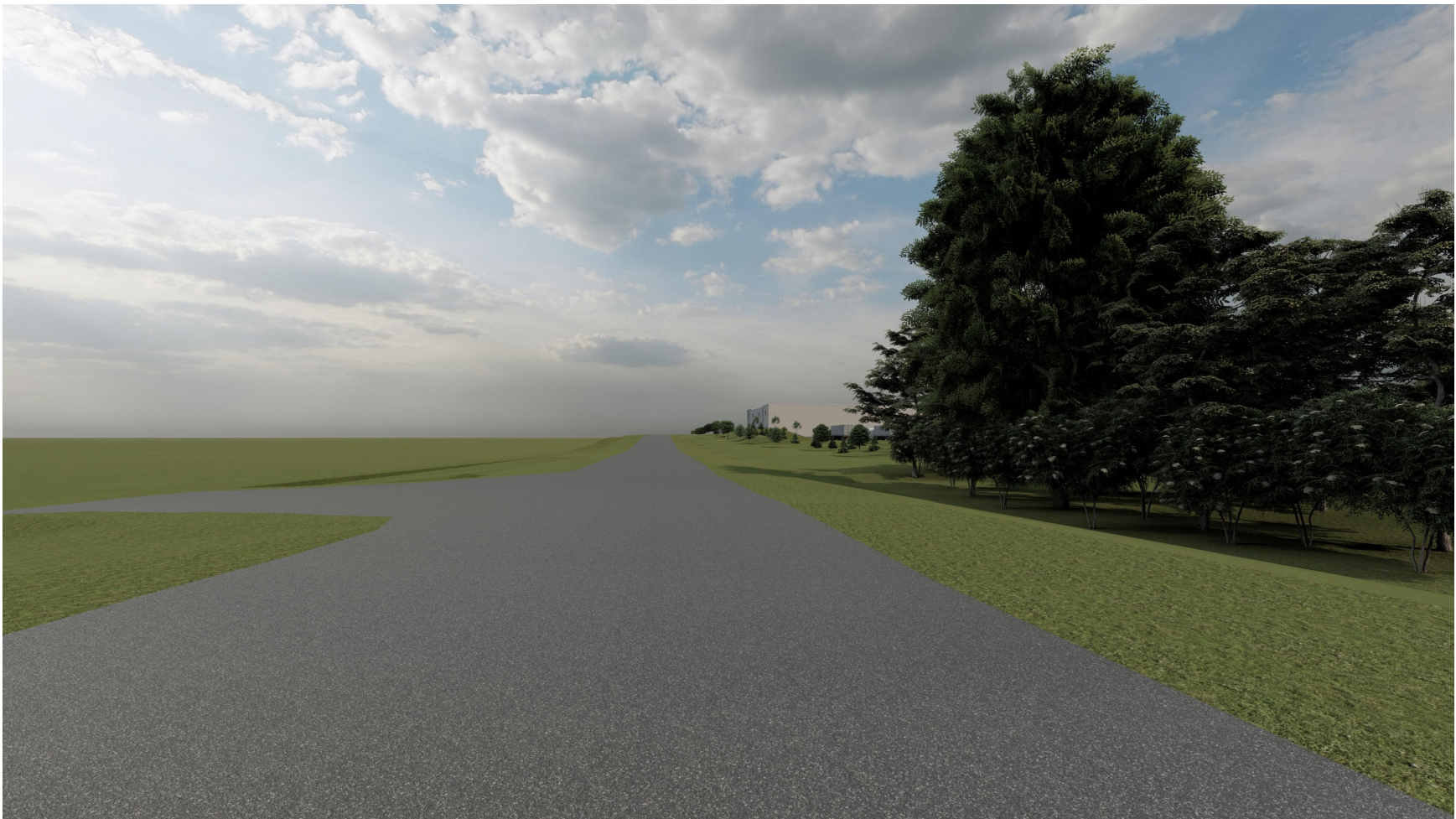
GENERAL NOTES:

1. NO ROOF TOP UNITS WILL BE INSTALLED FOR THE CONSTRUCTION OF THE SHELL BUILDING. THE FUTURE TENANT BUILD-OUTS UNDER A SEPARATE PERMIT SUBMITTAL WILL PROVIDE ROOF TOP LOCATIONS AND SIGNATURE DIAGRAM TO SHOW SCREENING COMPLIANCE. ROOF TOP UNITS SHALL BE SCREENED BY LINE OF SIGHT AT 5' ABOVE GRADE FROM THE PROPERTY LINE OR CENTERLINE OF THE ADJACENT STREET ON ALL SIDES OF THE BUILDING.



LOT #2				
TOTAL LOT SIZE			57,157 SF	1.31 AC
GREEN SPACE	1,291 SF			
	1,777 SF			
	397 SF			
	8,492 SF			
TOTAL GREEN SPACE	11,956 SF		11,956 SF	0.27 AC
TOTAL IMPERVIOUS			45,201 SF	1.04 AC
% GREEN SPACE			20.92	

Capstone 41
Village of Germantown, Wisconsin



View 1 (At Time of Planting)



View 1 (5 - 6 Years of Growth)

Capstone 41
Village of Germantown, Wisconsin



View 2 (At Time of Planting)



View 2 (5 - 6 Years of Growth)

Capstone 41
Village of Germantown, Wisconsin

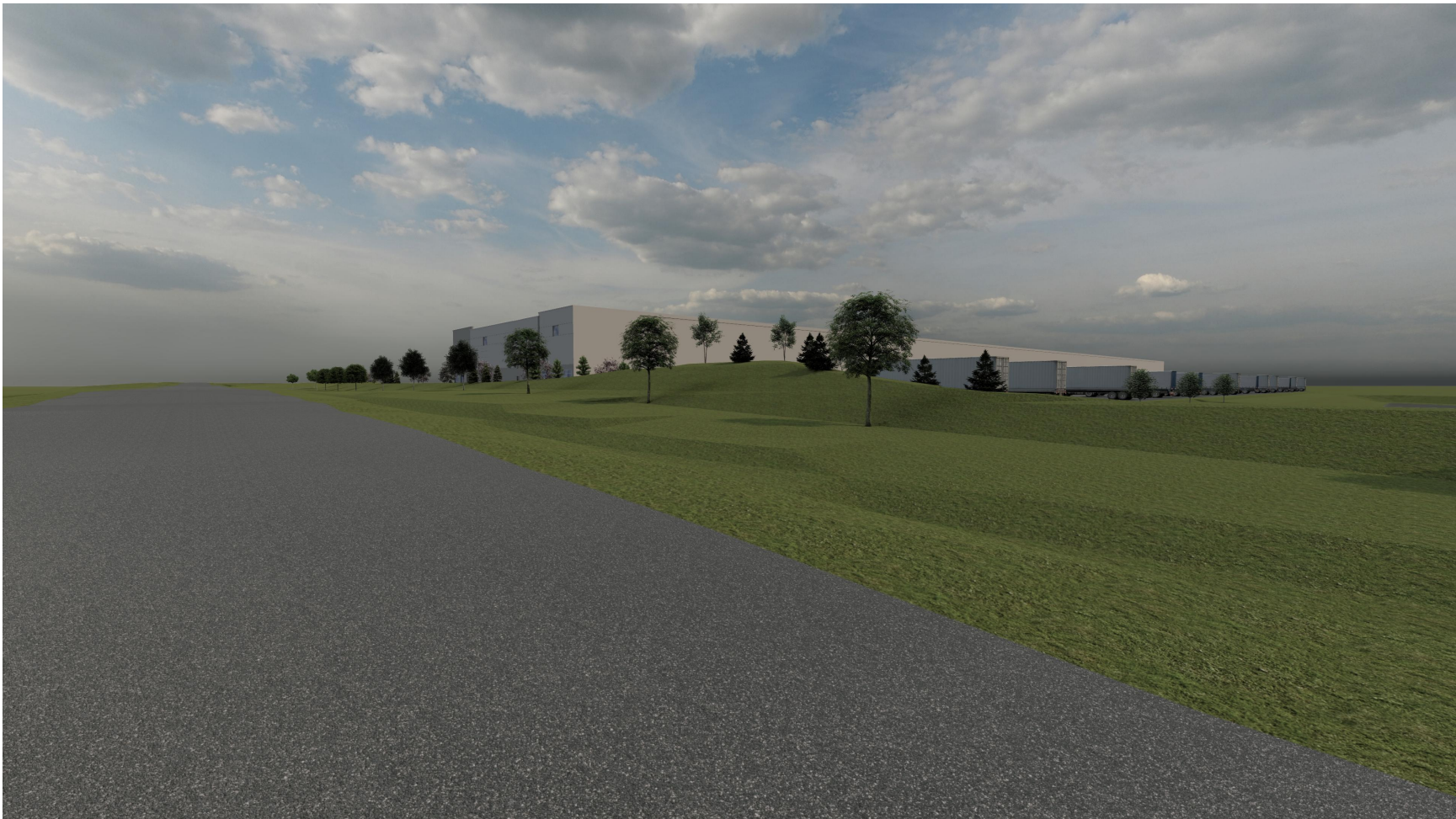


View 3 (At Time of Planting)



View 3 (5 - 6 Years of Growth)

Capstone 41
Village of Germantown, Wisconsin

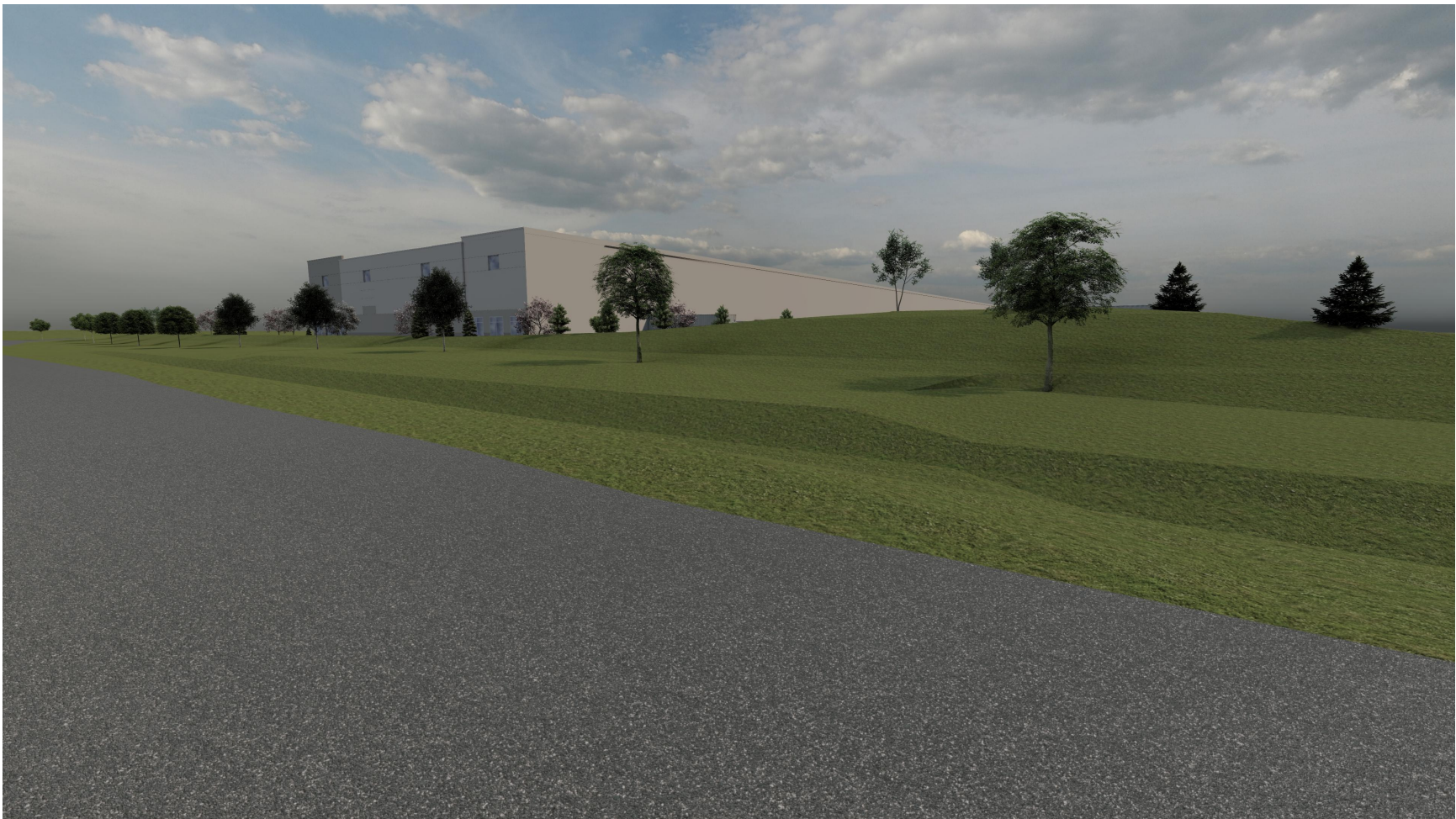


View 4 (At Time of Planting)

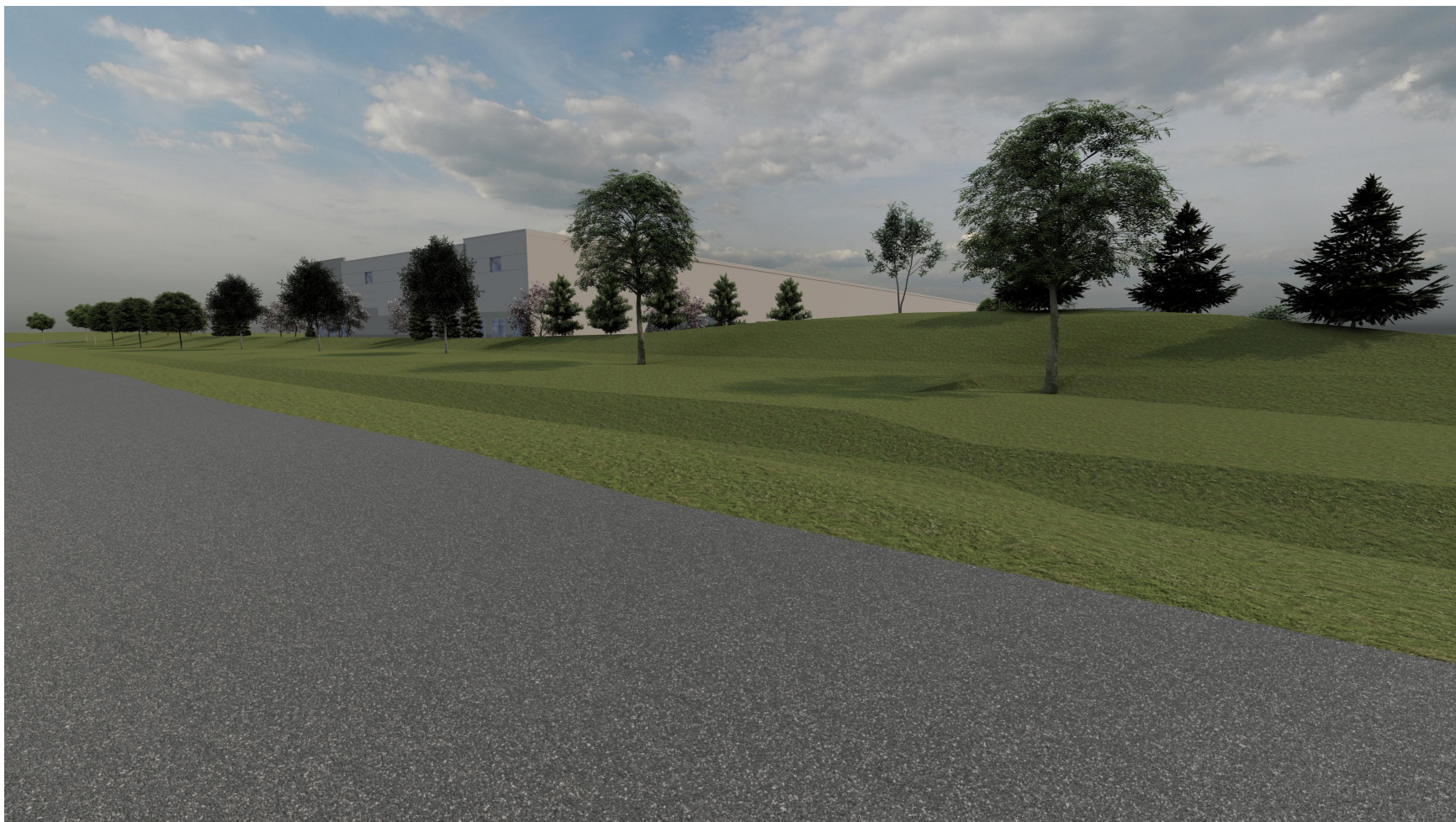


View 4 (5 - 6 Years of Growth)

Capstone 41
Village of Germantown, Wisconsin

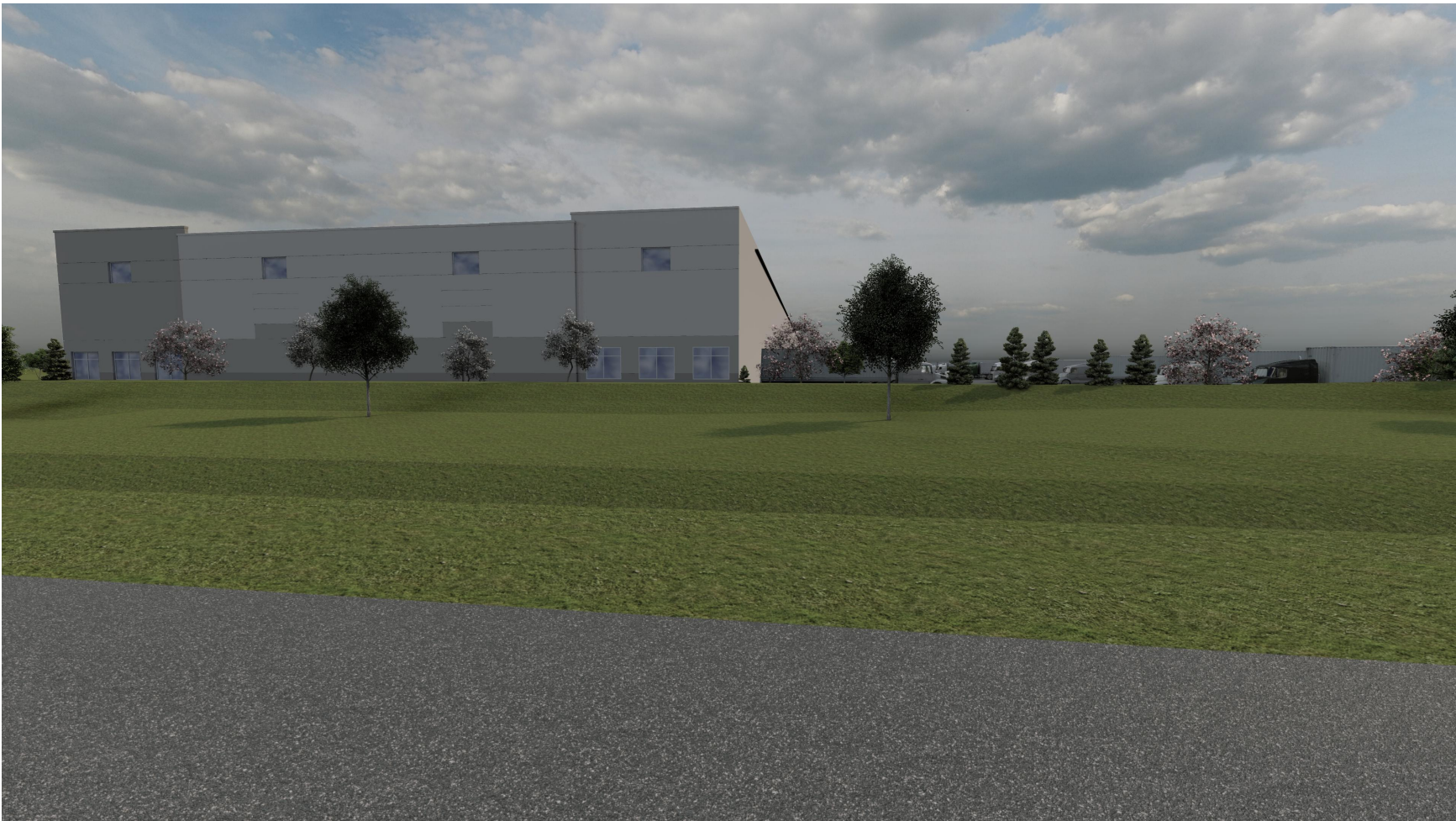


View 5 (At Time of Planting)

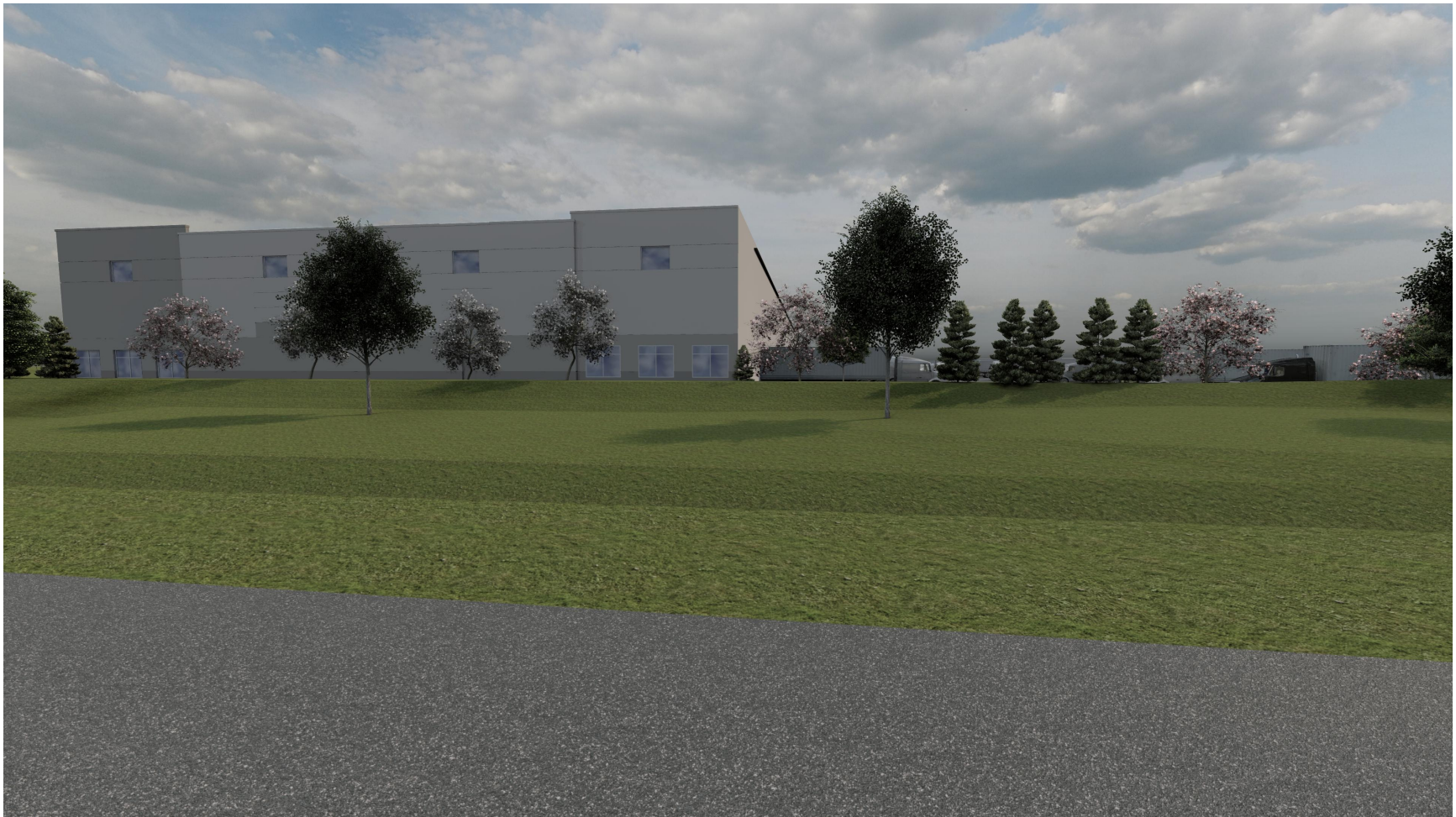


View 5 (5 - 6 Years of Growth)

Capstone 41
Village of Germantown, Wisconsin



View 6 (At Time of Planting)



View 6 (5 - 6 Years of Growth)

Capstone 41
Village of Germantown, Wisconsin

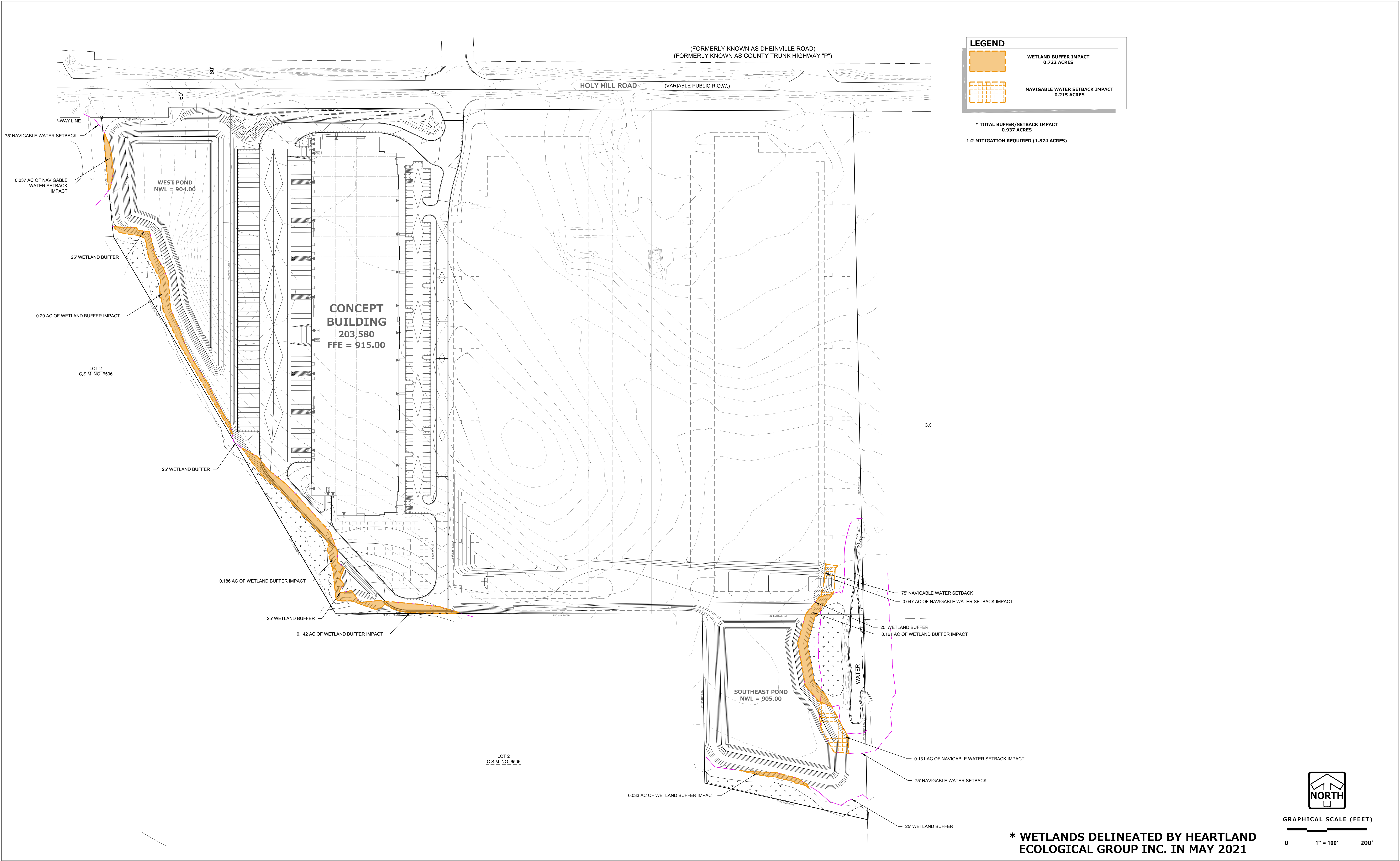


View 7 (At Time of Planting)

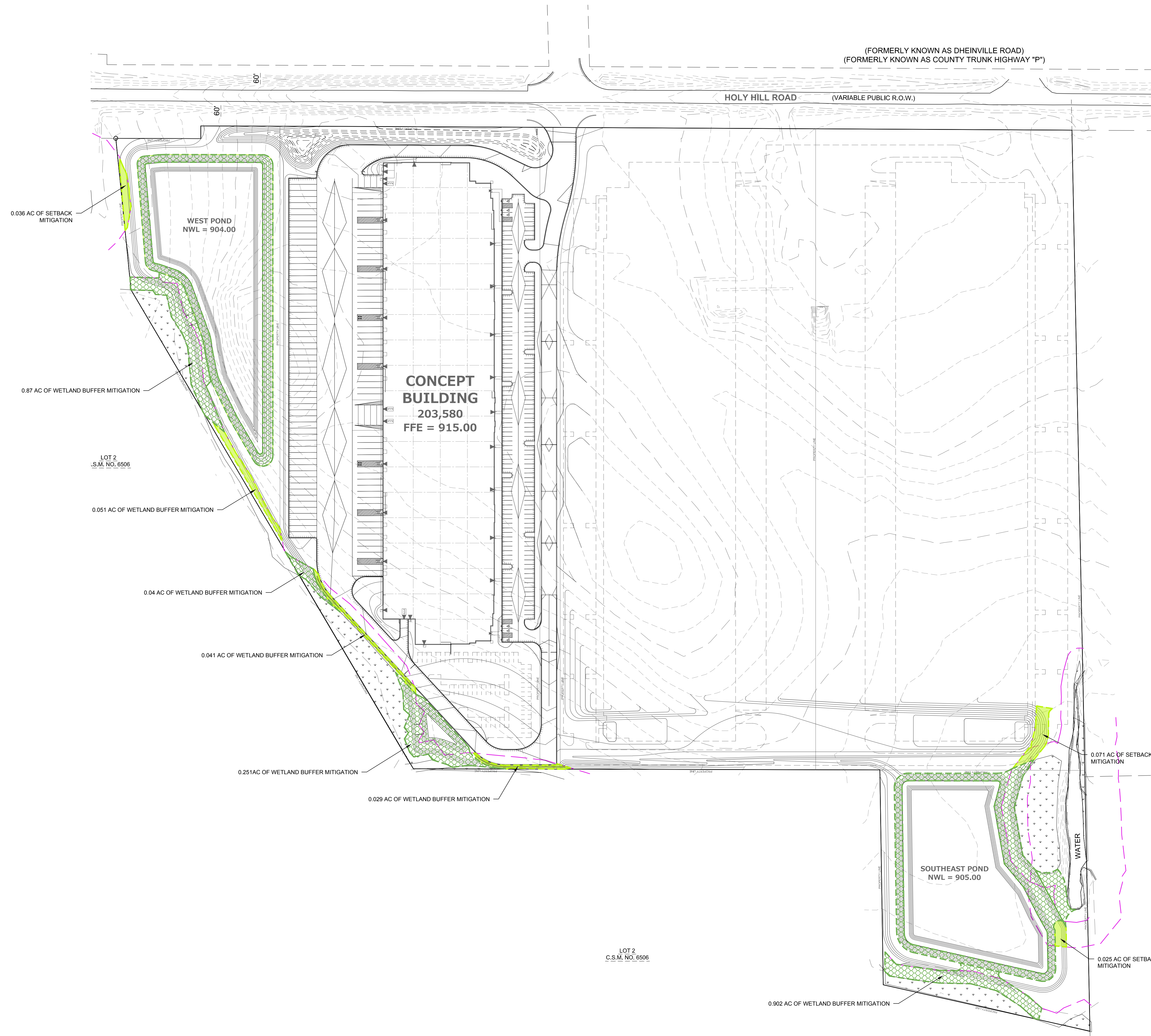


View 7 (5 - 6 Years of Growth)

Z:\PROJECTS\2018\1262.00A-W\CAD\EXHIBITS\1262.00A-W\ WETLAND SETBACK EXHIBIT.DWG 7/16/2021 3:37 PM



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LEGEND

	BUFFER IMPACT MITIGATION - TURF AND LANDSCAPE 0.253 ACRES
	BUFFER IMPACT MITIGATION - NATIVE PLANTINGS 2.063 ACRES

* TOTAL MITIGATION PLANTINGS
2.316 ACRES
MITIGATION RATIO (2.47)

* WETLANDS DELINEATED BY HEARTLAND
ECOLOGICAL GROUP INC. IN MAY 2021

NORTH

GRAPHICAL SCALE (FEET)
0 1" = 100' 200'

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DESIGNED: SRB

DRAWN: SRB

REVIEWED: SRB

NOTES

- ALL DIMENSIONS ARE FACE OF CURB TO FACE OF CURB OR BUILDING UNLESS NOTED OTHERWISE. ALL UTILITY LOCATIONS ARE TO CENTER OF STRUCTURE UNLESS OTHERWISE NOTED. ALL PAVING DIMENSIONS ARE TO FACE OF CURB OR TO EDGE OF PAVEMENT, EXCEPT FOR THE SETBACK FROM PARKING LOTS, MANEUVERING LANES AND FIRE ACCESS LANES, WHERE THE SETBACK IS MEASURED FROM THE BACK OF CURB TO THE PROPERTY LINE.
- ALL CURB AND GUTTER RADII ARE MEASURED TO FACE OF CURB UNLESS NOTED OTHERWISE.
- ALL "NON-SEMI TRAILER PARKING" CURB AND GUTTER SHALL BE 18" STANDARD CURB AND GUTTER (SEE DETAIL). UNLESS OTHERWISE NOTED, CURB AND GUTTER DRAINING AWAY FROM THE FACE OF CURB IS NOTED AS REVERSE CURB AND GUTTER.
- BUILDING DIMENSIONS AND ADJACENT PARKING AND UTILITY LAYOUT HAVE BEEN PREPARED BASED UPON ARCHITECTURAL INFORMATION CURRENT AT THE DATE OF THIS DRAWING. SUBSEQUENT ARCHITECTURAL CHANGES MAY EXIST. THEREFORE CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS FOR PRECISE BUILDING DIMENSIONS AND EXACT UTILITY ENTRANCE LOCATIONS AND NOTIFY THE ARCHITECT AND ENGINEER OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION.
- THE CONTRACTOR SHALL CONTACT DIGGERS HOTLINE (1-800-242-8511) PRIOR TO ANY WORK TO LOCATE UTILITIES AND SHALL CONTACT THE OWNER SHOULD UTILITIES APPEAR TO BE IN CONFLICT WITH THE PROPOSED IMPROVEMENT.
- IMPROVEMENTS ADJACENT TO BUILDING IF SHOWN SUCH AS TRUCK DOCK, RETAINING WALLS, SIDEWALKS, CURBING, FENCES, CANOPIES, RAMPS, HANDICAP ACCESS, PLANTERS, DUMPSTERS, AND TRANSFORMERS ETC. HAVE BEEN SHOWN FOR APPROXIMATE LOCATION ONLY. REFER TO ARCHITECTURAL & STRUCTURAL PLANS FOR EXACT LOCATIONS, SPECIFICATIONS, AND DETAILS.
- REFER TO ELECTRICAL PLANS FOR LIGHTING LOCATIONS, SPECIFICATIONS, AND DETAILS.
- SEE ADDITIONAL NOTES AND DETAILS ON SITE DIMENSIONAL PLANS AND CONSTRUCTION DETAILS.
- CONTRACTOR SHALL CONFIRM STRIPING COLOR WITH OWNER PRIOR TO CONSTRUCTION.
- FOR ON-SITE IMPROVEMENTS, PROVIDE CONTRACTOR GRADE ACRYLIC STRIPING PAINT FOR NEW ASPHALT OR COATED ASPHALT. APPLY 2 COATS OF MARKING PAINT AT A RATE OF ONE (1) GALLON PER THREE TO FOUR HUNDRED (300-400) LINEAL FEET OF FOUR (4) INCH WIDE STRIPES OR TO MANUFACTURER'S SPECIFICATION, WHICHEVER IS GREATER. PAVEMENT MARKING WITHIN VILLAGE RIGHTS-OF-WAY SHALL BE EPOXY PER WISDOT SPECIFICATIONS.
- THOROUGHLY CLEAN SURFACES FREE OF DIRT, SAND, GRAVEL, OIL AND OTHER FOREIGN MATTER. CONTRACTOR RESPONSIBLE TO INSPECT EXISTING PAVEMENT SURFACES FOR CONDITIONS AND DEFECTS THAT WILL ADVERSELY AFFECT QUALITY OF WORK, AND WHICH CANNOT BE PUT INTO AN ACCEPTABLE CONDITION THROUGH NORMAL PREPARATORY WORK AS SPECIFIED.
- DO NOT PLACE MARKING OVER UNSOUND PAVEMENTS. IF THESE CONDITIONS EXIST, NOTIFY OWNER. STARTING INSTALLATION CONSTITUTES CONTRACTOR'S ACCEPTANCE OF SURFACE AS SUITABLE FOR INSTALLATION.
- LAYOUT MARKINGS USING GUIDE LINES, TEMPLATES AND FORMS. STENCILS AND TEMPLATES SHALL BE TO INDUSTRY STANDARDS. "FREE HAND" PAINTING OF ARROWS, SYMBOLS, OR WORDING SHALL NOT BE ALLOWED. APPLY STRIPES STRAIGHT AND EVEN.
- PROTECT ADJACENT CURBS, WALKS, FENCES, AND OTHER ITEMS FROM RECEIVING PAINT.
- BARRICADE MARKED AREAS DURING INSTALLATION AND UNTIL THE MARKING PAINT IS DRIED AND READY FOR TRAFFIC.
- ALL PAVING SHALL CONFORM TO STATE OF WISCONSIN STANDARD SPECIFICATIONS FOR HIGHWAY & STRUCTURE CONSTRUCTION AND APPLICABLE VILLAGE OF GERMANTOWN ORDINANCES, AND SPECIFICATIONS CONTAINED WITHIN THIS PLAN SET.
- ASPHALTIC CONCRETE PAVING SPECIFICATIONS-

WEATHER LIMITATIONS: APPLY TACK COATS WHEN AMBIENT TEMPERATURE IS ABOVE 50° F (10° C) AND WHEN TEMPERATURE HAS NOT BEEN BELOW 35° F (1° C) FOR 12 HOURS IMMEDIATELY PRIOR TO APPLICATION. DO NOT APPLY WHEN BASE IS WET OR CONTAINS EXCESS OF MOISTURE. CONSTRUCT ASPHALTIC CONCRETE SURFACE COURSE WHEN ATMOSPHERIC TEMPERATURE IS ABOVE 40° F (4° C) AND WHEN BASE IS DRY AND WHEN WEATHER IS NOT RAINY. BASE COURSE MAY BE PLACED WHEN AIR TEMPERATURE IS ABOVE 30° F (-1° C).

GRADE CONTROL: ESTABLISH AND MAINTAIN REQUIRED LINES AND ELEVATIONS FOR EACH COURSE DURING CONSTRUCTION.

CRUSHED AGGREGATE BASE COURSE: THE TOP LAYER OF BASE COURSE SHALL CONFORM TO SECTIONS 301 AND 305, STATE HIGHWAY SPECIFICATIONS.

BINDER COURSE AGGREGATE: THE AGGREGATE FOR THE BINDER COURSE SHALL CONFORM TO SECTIONS 460.2.7 AND 315, STATE HIGHWAY SPECIFICATIONS.

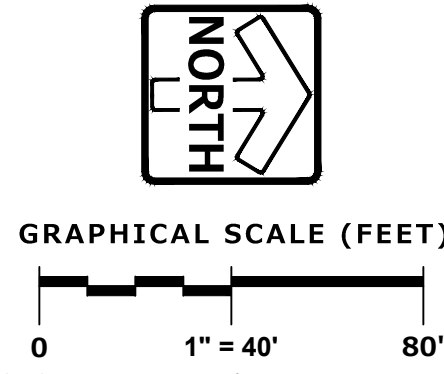
SURFACE COURSE AGGREGATE: THE AGGREGATE FOR THE SURFACE COURSE SHALL CONFORM TO SECTIONS 460.2.7 AND 465, STATE HIGHWAY SPECIFICATIONS.

ASPHALTIC MATERIALS: THE ASPHALTIC MATERIALS SHALL CONFORM TO SECTION 455 AND 460, STATE HIGHWAY SPECIFICATIONS.

SURFACE PREPARATION: NOTIFY CONTRACTOR OF UNSATISFACTORY CONDITIONS. DO NOT BEGIN PAVING WORK UNTIL DEFICIENT SUBBASE AREAS HAVE BEEN CORRECTED AND ARE READY TO RECEIVE PAVING.

LEGEND

- | | | | |
|--|--|--|-----------------------|
| | LIGHT DUTY PAVEMENT
- 1" CRUSHED AGGREGATE BASE COURSE
(1-1/4" DENSE GRADED LESTONE)
- 3/4" ASPHALTIC CONC. (2 LIFTS)
LOWER LAYER (3-MT-58-28-H)
UPPER LAYER (3-MT-58-28-H) | | MAN DOOR |
| | HEAVY DUTY PAVEMENT
- 12" CRUSHED AGGREGATE BASE COURSE
(1-1/4" DENSE GRADED LESTONE)
- 5/8" ASPHALTIC CONC. (2 LIFTS)
LOWER LAYER (3-MT-58-28-H)
UPPER LAYER (3-MT-58-28-H) | | DRIVE IN DOOR |
| | CONCRETE PAVEMENT (TRUCK DOCK AREA)
- 6" CRUSHED AGGREGATE BASE COURSE
(1-1/2" DENSE GRADED LESTONE)
- 7" PPC (4000 PSI AIR ENTRAINED CONCRETE WITH 6x6x6 GAUGE STEEL MESH) | | PROPOSED STREET LIGHT |
| | CONCRETE SIDEWALK
- 6" CRUSHED AGGREGATE BASE COURSE
(1-1/2" DENSE GRADED LESTONE)
- 5" PPC (6x6 WELDED WIRE FABRIC PER ACI 315-92) | | PROPOSED SIGN |
| | 4" SOLID STRIPE | | |
| | 4" DIAGONAL AT 45° SPACED 2' O.C. | | |
| | R7-8 HANDICAP PARKING SIGN | | |
| | 18" VERTICAL FACE CURB & GUTTER (SEE DETAIL ON SHEET C-15) | | |
| | 18" REVERSE VERTICAL FACE CURB & GUTTER (SEE DETAIL ON SHEET C-15) | | |
| | 30" CURB & GUTTER (SEE DETAIL ON SHEET C-15) | | |
| | CAST RETAINING WALL (SEE ARCHITECTURAL & STRUCTURAL PLANS) | | |
| | BUILDING DOOR SLAB (2.0% MAX SLOPE 5' WITHIN DRIVE IN OR MAN DOOR) | | |
| | PARKING COUNT (FOR INFORMATION ONLY, NOT TO BE PAINTED) | | |



SITE DATA CSM LOT #1

SITE AREA = 588,662 SQ. FT. / 13.51 AC
BUILDING FOOTPRINT = 203,580 SQ. FT. / 4.67 AC / 34.6%
IMPERVIOUS AREA = 437,962 SQ. FT. / 10.05 AC / 74.4%
(FUTURE IMPERVIOUS AREA) = 464,520 SQ. FT. / 10.66 AC / 78.9%
GREEN SPACE = 150,700 SQ. FT. / 3.46 AC / 25.6%
(FUTURE GREEN SPACE) = 124,142 SQ. FT. / 2.85 AC / 21.1%

PARKING PROVIDED (9'x20'): 170 (6 ADA)
ADA REQUIREMENTS: 5 SPACES (1 VAN ACCESSIBLE)
ADA PROVIDED: 6 SPACES (4 VAN ACCESSIBLE)
PARKING RATIO TO FLOOR AREA: 0.84 SPACES PER 1000 S.F.

SITE DATA CSM OUTLOT #2

SITE AREA = 57,157 SQ. FT. / 1.31 AC
IMPERVIOUS AREA = 45,201 SQ. FT. / 1.04 AC / 79.4%
GREEN SPACE = 11,956 SQ. FT. / 0.27 AC / 20.6%

CONCEPT BUILDING 203,580 | FFE = 915.00

HOLY HILL ROAD

REVISIONS

1	BID SET	7/20/21			

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DESIGNED: SRB

REVIEWED: SRB

DRAWN: SRB

DATE: 06/07/21

ONSITE CIVIL ENGINEERING INFRASTRUCTURE PLANS

FOR

CAPSTONE 41

GERMANTOWN, WI

PLANS PREPARED
FOR

CAPSTONE QUADRANGLE

N17 W24222 RIVERWOOD DR., SUITE 160

WAUKESHA, WI 53188

Note:

We need prices broken out per:

- 1.) Building One Sitework
- 2.) Roadway & Pond Sitework

See C4 for the Limit of Building One site.
Apply this boundary to all plans.

This is for accounting purposes only. Award
based on the total project.

www.pinnacle-engr.com

FOR REVIEW

COVER SHEET

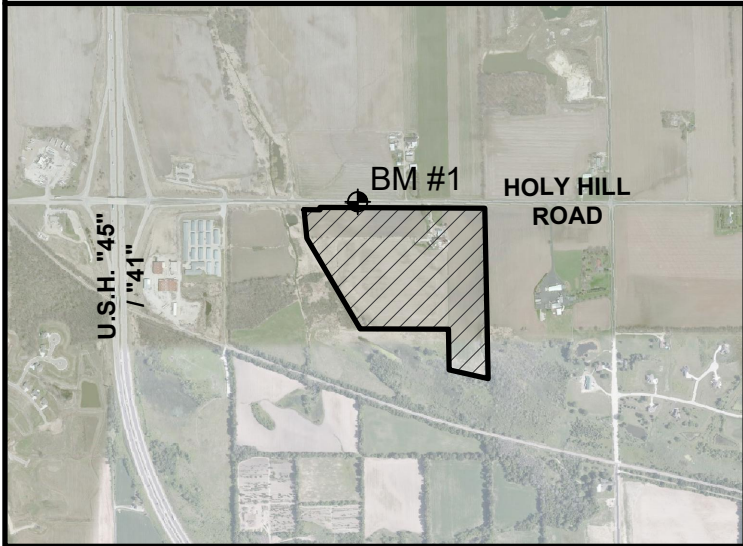
LEGEND

	EXISTING	PROPOSED
SANITARY SEWER MANHOLE	⊙	⊙
STORM SEWER MANHOLE	⊙	⊙
STORM SEWER CATCH BASIN (ROUND CASTING)	○	●
STORM SEWER CATCH BASIN (RECTANGULAR CASTING)	□	■
PRECAST FLARED END SECTION	△	▶
CONCRETE HEADWALL	—	—
AIR RELEASE ASSEMBLY	⊗	⊗
VALVE BOX	⊞	⊞
FIRE HYDRANT	⊕	⊕
BUFFALO BOX	⊖	⊖
CLEANOUT	⊟	⊟
SANITARY SEWER	—	—
FORCE MAIN	—	—
STORM SEWER	—	—
DRAIN TILE	—	—
WATER MAIN	—	—
FIRE PROTECTION	—	—
UTILITY CROSSING	—	—
GRANULAR TRENCH BACKFILL	—	—
LIGHTING	—	—
ELECTRICAL CABLE	—	—
OVERHEAD WIRES	—	—
CAUTION EXISTING UTILITIES NEARBY	—	—
ELECTRICAL TRANSFORMER OR PEDESTAL	—	—
POWER POLE	—	—
POWER POLE WITH LIGHT	—	—
GUY WIRE	—	—
STREET SIGN	—	—
GAS MAIN	—	—
TELEPHONE LINE	—	—
CONTOUR	—	—
SPOT ELEVATION	—	—
WETLANDS	—	—
PRIMARY ENVIRONMENTAL CORRIDOR	—	—
FLOODWAY	—	—
FLOODPLAIN	—	—
HIGH WATER LEVEL (HWL)	—	—
NORMAL WATER LEVEL (NWL)	—	—
DIRECTION OF SURFACE FLOW	—	—
DITCH OR SWALE	—	—
DIVERSION SWALE	—	—
OVERFLOW RELIEF ROUTING	—	—
TREE WITH TRUNK SIZE	—	—
SOIL BORING	—	—
TOPSOIL PROBE	—	—
FENCE LINE, TEMPORARY SILT	—	—
FENCE LINE, WIRE	—	—
FENCE LINE, CHAIN LINK OR IRON	—	—
FENCE LINE, WOOD OR PLASTIC	—	—
CONCRETE SIDEWALK	—	—
CURB AND GUTTER	—	—
DEPRESSED CURB	—	—
REVERSE PITCH CURB & GUTTER	—	—
EASEMENT LINE	—	—

ABBREVIATIONS

BL	BASE LINE	NWL	NORMAL WATER LEVEL
C	LONG CHORD OF CURVE	PC	POINT OF CURVATURE
C & G	CURB AND GUTTER	PT	POINT OF TANGENCY
CB	CATCH BASIN	PVI	POINT OF VERTICAL INTERSECTION
CL	CENTERLINE	R	RADIUS
D	DEGREE OF CURVE	ROW	RIGHT-OF-WAY
EP	EDGE OF PAVEMENT	SAN	SANITARY SEWER
FF	FINISHED FLOOR	ST	STORM SEWER
FG	FINISHED GRADE	T	TANGENCY OF CURVE
FL	FLOW LINE	TB	TOP OF BANK
FP	FLOODPLAIN	TC	TOP OF CURB
FR	FRAME	TF	TOP OF FOUNDATION
FW	FLOODWAY	TP	TOP OF PIPE
HWL	HIGH WATER LEVEL	TW	TOP OF SIDEWALK
INV	INVERT	WM	WATER MAIN
L	LENGTH OF CURVE	Δ	INTERSECTION ANGLE
MH	MANHOLE		

BENCHMARKS



REFERENCE BENCHMARK 1:
NW CORNER, NE 1/4 (NE CORNER, NW 1/4)
SEC. 18, T9N, R20E - P.O.C.
(FOUND CONC. MON. W/ BRASS CAP)
N=461.118 72; E=2,455.363 90
(NORTH AMERICAN DATUM OF 1983/2011)
REFERENCE BENCHMARK EL.=916.61 (NAVOD88)

PROJECT TEAM CONTACTS

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(262) 523-1122

SURVEYOR:
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PINNACLE ENGINEERING GROUP
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BROOKFIELD, WI 53186
(262) 754-8888

LANDSCAPING:
DALE BUNDERSON, P.L.A.
PINNACLE ENGINEERING GROUP
20725 WATERTOWN ROAD, SUITE 100
BROOKFIELD, WI 53186
(262) 754-8888

GENERAL NOTES

1. THE INTENTION OF THE PLANS AND SPECIFICATIONS IS TO SET FORTH PERFORMANCE AND CONSTRUCTION MATERIAL STANDARDS FOR THE PROPER EXECUTION OF WORK. ALL WORKS CONTAINED WITHIN THE PLANS AND SPECIFICATIONS SHALL BE COMPLETED IN ACCORDANCE WITH ALL REQUIREMENTS FROM LOCAL, STATE, FEDERAL OR OTHER GOVERNING AGENCY'S LAWS, REGULATIONS, JURISDICTIONAL ORDINANCES/CODES/RULES/ETC., AND THE OWNER'S DIRECTION.
2. A PRELIMINARY GEOTECHNICAL REPORT HAS BEEN PREPARED BY PROFESSIONAL SERVICE INDUSTRIES, INC. DATED MAY 26, 2020. THE DATA ON SUB-SURFACE SOIL CONDITIONS IS NOT INTENDED AS A REPRESENTATION OR WARRANTY OF THE CONTINUITY OF SUCH CONDITIONS BETWEEN BORINGS OR INDICATED SAMPLING LOCATIONS. IT SHALL BE EXPRESSLY UNDERSTOOD THAT OWNER WILL NOT BE RESPONSIBLE FOR ANY INTERPRETATIONS OR CONCLUSIONS DRAWN THERE FROM BY THE CONTRACTOR. DATA IS MADE AVAILABLE FOR THE CONVENIENCE OF THE CONTRACTOR. THE CONTRACTOR IS RESPONSIBLE FOR PERFORMING ANY ADDITIONAL SOILS INVESTIGATIONS THEY FEEL IS NECESSARY FOR THE PROPER EVALUATION OF THE SITE FOR PURPOSES OF PLANNING, BIDDING, OR CONSTRUCTING THE PROJECT AT NO ADDITIONAL COST TO THE OWNER.
3. THE CONTRACTOR IS RESPONSIBLE TO REVIEW AND UNDERSTAND ALL COMPONENTS OF THE PLANS AND SPECIFICATIONS, INCLUDING FIELD VERIFYING SOIL CONDITIONS, PRIOR TO SUBMISSION OF A BID PROPOSAL.
4. THE CONTRACTOR SHALL PROMPTLY REPORT ANY ERRORS OR AMBIGUITIES LEARNED AS PART OF THEIR REVIEW OF PLANS, SPECIFICATIONS, REPORTS AND FIELD INVESTIGATIONS.
5. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE COMPUTATION OF QUANTITIES AND WORK REQUIRED TO COMPLETE THIS PROJECT. THE CONTRACTOR'S BID SHALL BE BASED ON ITS OWN COMPUTATIONS AND IN NO SUCH INSTANCE RELY ON THE ENGINEER'S ESTIMATE.
6. QUESTIONS/CLARIFICATIONS WILL BE INTERPRETED BY ENGINEER/OWNER PRIOR TO THE AWARD OF CONTRACT. ENGINEER/OWNER WILL SUBMIT OFFICIAL RESPONSES IN WRITING. INTERPRETATIONS PRESENTED IN OFFICIAL RESPONSES SHALL BE BINDING ON ALL PARTIES ASSOCIATED WITH THE CONTRACT. IN NO WAY SHALL WORD-OF-MOUTH DIALOG CONSTITUTE AN OFFICIAL RESPONSE.
7. PRIOR TO START OF WORK, CONTRACTOR SHALL BE COMPLETELY FAMILIAR WITH ALL CONDITIONS OF THE SITE, AND SHALL ACCOUNT FOR CONDITIONS THAT AFFECT, OR MAY AFFECT CONSTRUCTION INCLUDING, BUT NOT LIMITED TO, LIMITATIONS OF WORK ACCESS, SPACE LIMITATIONS, OVERHEAD OBSTRUCTIONS, TRAFFIC PATTERNS, LOCAL REQUIREMENTS, ADJACENT ACTIVITIES, ETC. FAILURE TO CONSIDER SITE CONDITIONS SHALL NOT BE CAUSE FOR CLAIM OF JOB EXTRAS.
8. COMMENCEMENT OF CONSTRUCTION SHALL EXPLICITLY CONFIRM THAT THE CONTRACTOR HAS REVIEWED THE PLANS AND SPECIFICATIONS IN ENTIRETY AND CERTIFIES THAT THEIR SUBMITTED BID PROPOSAL CONTAINS PROVISIONS TO COMPLETE THE PROJECT, WITH THE EXCEPTION OF UNFORESEEN FIELD CONDITIONS. ALL APPLICABLE PERMITS HAVE BEEN OBTAINED; AND CONTRACTOR UNDERSTANDS ALL OF THE REQUIREMENTS OF THE PROJECT.
9. SHOULD ANY DISCREPANCIES OR CONFLICTS IN THE PLANS OR SPECIFICATIONS BE DISCOVERED AFTER THE AWARD OF CONTRACT, ENGINEER SHALL BE NOTIFIED IN WRITING IMMEDIATELY AND CONSTRUCTION OF ITEMS AFFECTED BY THE DISCREPANCIES/CONFLICTS SHALL NOT COMMENCE, OR CONTINUE, UNTIL A WRITTEN RESPONSE FROM ENGINEER/OWNER IS DISTRIBUTED. IN THE EVENT OF A CONFLICT BETWEEN REFERENCED CODES, STANDARDS, SPECIFICATIONS AND PLANS, THE ONE ESTABLISHING THE MOST STRINGENT REQUIREMENTS SHALL BE FOLLOWED.
10. THE CONTRACTOR SHALL, AT ITS OWN EXPENSE, OBTAIN ALL NECESSARY PERMITS AND LICENSES TO COMPLETE THE PROJECT. OBTAINING PERMITS, OR DELAYS, IS NOT CAUSE FOR DELAY OF THE CONTRACT OR SCHEDULE. CONTRACTOR SHALL COMPLY WITH ALL PERMIT REQUIREMENTS.
11. THE CONTRACTOR SHALL NOTIFY ALL INTERESTED GOVERNING AGENCIES, UTILITY COMPANIES AFFECTED BY THIS CONSTRUCTION PROJECT, AND DIGGER'S HOTLINE IN ADVANCE OF CONSTRUCTION TO COMPLY WITH ALL JURISDICTIONAL ORDINANCES/CODES/RULES/ETC., PERMIT STIPULATIONS, AND OTHER APPLICABLE STANDARDS.
12. SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE TO INITIATE, INSTITUTE, ENFORCE, MAINTAIN, AND SUPERVISE ALL SAFETY PRECAUTIONS AND JOB SITE SAFETY PROGRAMS IN CONNECTION WITH THE WORK.
13. CONTRACTOR SHALL KEEP THE JOBSITE CLEAN AND ORDERLY AT ALL TIMES. ALL LOCATIONS OF THE SITE SHALL BE KEPT IN A WORKING MANNER SUCH THAT DEBRIS IS REMOVED CONTINUOUSLY AND ALL RESPECTIVE CONTRACTORS OPERATE UNDER GENERAL "GOOD HOUSEKEEPING."
14. THE CONTRACTOR SHALL INDEMNIFY THE OWNER, ENGINEER, AND THEIR AGENTS FROM ALL LIABILITY INVOLVED WITH THE CONSTRUCTION, INSTALLATION, AND TESTING OF THE WORK ON THIS PROJECT.
15. PRIOR TO CONSTRUCTION, A PRECONSTRUCTION MEETING MUST BE HELD AT THE VILLAGE HALL. THE PRECONSTRUCTION MEETING SHALL BE SCHEDULED AND MODERATED BY THE DESIGN ENGINEER OF RECORD.

INDEX OF SHEETS

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C-2	EXISTING CONDITIONS PLAN
C-3	SITE DIMENSIONAL & PAVING PLAN
C-4 - C-6	GRADING PLAN
C-7 - C-9	UTILITY PLAN
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REQUIRED SUBMITTALS FOR APPROVAL

1. HOT MIX ASPHALT - MIX DESIGN
2. CONCRETE PAVEMENTS (EXTERIOR) - MIX DESIGN & JOINT PLAN
3. PAVEMENT STONE BASE COURSE - GRADATION
4. PIPE BEDDING & TRENCH BACKFILL - GRADATION
5. MANHOLE BACKFILL - GRADATION
6. PAVEMENT MARKING PAINT

REQUIRED SUBMITTALS FOR RECORDS

1. WATER MAIN PIPES, VALVES, HYDRANTS & FITTINGS
2. SANITARY SEWER PIPE & FITTINGS
3. STORM SEWER PIPE, STRUCTURES, & FITTINGS
4. TRACER WIRE
5. UNDERGROUND UTILITY LOCATION RECORD DRAWINGS
6. ADA SIGN & TRUNCATED DOMES, PAINT & STENCILS
7. CHEMICAL SOIL STABILIZATION MIX DESIGN (IF APPLICABLE)



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EXPIRATION DATE: JULY 31, 2022

PINNACLE ENGINEERING GROUP, LLC
ENGINEER'S LIMITATION

PINNACLE ENGINEERING GROUP, LLC AND THEIR CONSULTANTS DO NOT WARRANT OR GUARANTEE THE ACCURACY AND COMPLETENESS OF THE DELIVERABLES HEREIN BEYOND A REASONABLE DILIGENCE. IF ANY MISTAKES, OMISSIONS, OR DISCREPANCIES ARE FOUND TO EXIST WITHIN THE DELIVERABLES, THE ENGINEER SHALL BE PROMPTLY NOTIFIED PRIOR TO BID SO THAT HE MAY HAVE THE OPPORTUNITY TO TAKE WHATEVER STEPS NECESSARY TO RESOLVE THEM. FAILURE TO PROMPTLY NOTIFY THE ENGINEER OF SUCH CONDITIONS SHALL ABSOLVE THE ENGINEER FROM ANY RESPONSIBILITY FOR THE CONSEQUENCES OF SUCH FAILURE. ACTIONS TAKEN WITHOUT THE KNOWLEDGE AND CONSENT TO THE ENGINEER, OR IN CONTRADICTION TO THE ENGINEER'S DELIVERABLES OR RECOMMENDATIONS, SHALL BECOME THE RESPONSIBILITY NOT OF THE ENGINEER BUT OF THE PARTIES RESPONSIBLE FOR TAKING SUCH ACTION.

FURTHERMORE, PINNACLE ENGINEERING GROUP, LLC IS NOT RESPONSIBLE FOR CONSTRUCTION SAFETY OR THE MEANS AND METHODS OF CONSTRUCTION.

REVISIONS

1	BID SET	7/30/21			

REG. NO. M362.00A-WI
REG. NO. M362.00A-WI
START DATE 06/07/21
SCALE N.T.S.
SHEET C-1 of C-16



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CHICAGO (ILL) WAREHOUSE: NATIONWIDE

CAPSTONE 41

GERMANTOWN, WI

COVER SHEET



FOR REVIEW

EXISTING CONDITIONS PLAN

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DESIGNED: SRB

DRAWN: SRB

REVIEWED: SRB

NOTES

- ALL DIMENSIONS ARE FACE OF CURB TO FACE OF CURB OR BUILDING UNLESS NOTED OTHERWISE. ALL UTILITY LOCATIONS ARE TO THE CENTER OF STRUCTURE UNLESS OTHERWISE NOTED. ALL PAVING DIMENSIONS ARE TO FACE OF CURB OR TO EDGE OF PAVEMENT, EXCEPT FOR THE SETBACK FROM PARKING LOTS, MANEUVERING LANES AND FIRE ACCESS LANES, WHERE THE SETBACK IS MEASURED FROM THE BACK OF CURB TO THE PROPERTY LINE.
- ALL CURB AND GUTTER RADII ARE MEASURED TO FACE OF CURB UNLESS NOTED OTHERWISE.
- ALL "NON-SEMI TRAILER PARKING" CURB AND GUTTER SHALL BE 18" STANDARD CURB AND GUTTER (SEE DETAIL). UNLESS OTHERWISE NOTED, CURB AND GUTTER DRAINING AWAY FROM THE FACE OF CURB IS NOTED AS REVERSE CURB AND GUTTER.
- BUILDING DIMENSIONS AND ADJACENT PARKING AND UTILITY LAYOUT HAVE BEEN PREPARED BASED UPON ARCHITECTURAL INFORMATION CURRENT AT THE DATE OF THIS DRAWING. SUBSEQUENT ARCHITECTURAL CHANGES MAY EXIST. THEREFORE CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS FOR PRECISE BUILDING DIMENSIONS AND EXACT UTILITY ENTRANCE LOCATIONS AND NOTIFY THE ARCHITECT AND ENGINEER OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION.
- THE CONTRACTOR SHALL CONTACT DIGGERS HOTLINE (1-800-242-8511) PRIOR TO ANY WORK TO LOCATE UTILITIES AND SHALL CONTACT THE OWNER SHOULD UTILITIES APPEAR TO BE IN CONFLICT WITH THE PROPOSED IMPROVEMENT.
- IMPROVEMENTS ADJACENT TO BUILDING IF SHOWN SUCH AS TRUCK DOCK, RETAINING WALLS, SIDEWALKS, CURBING, FENCES, CANOPIES, RAMPS, HANDICAP ACCESS, PLANTERS, DUMPSTERS, AND TRANSFORMERS ETC. HAVE BEEN SHOWN FOR APPROXIMATE LOCATION ONLY. REFER TO ARCHITECTURAL & STRUCTURAL PLANS FOR EXACT LOCATIONS, SPECIFICATIONS, AND DETAILS.
- REFER TO ELECTRICAL PLANS FOR LIGHTING LOCATIONS, SPECIFICATIONS, AND DETAILS.
- SEE ADDITIONAL NOTES AND DETAILS ON SITE DIMENSIONAL PLANS AND CONSTRUCTION DETAILS.
- CONTRACTOR SHALL CONFIRM STRIPING COLOR WITH OWNER PRIOR TO CONSTRUCTION.
- FOR ON-SITE IMPROVEMENTS, PROVIDE CONTRACTOR GRADE ACRYLIC STRIPING PAINT FOR NEW ASPHALT OR COATED ASPHALT. APPLY 2 COATS OF MARKING PAINT AT A RATE OF ONE (1) GALLON PER THREE TO FOUR HUNDRED (300-400) LINEAL FEET OF FOUR (4) INCH WIDE STRIPES OR TO MANUFACTURER'S SPECIFICATION, WHICHEVER IS GREATER. PAVEMENT MARKING WITHIN VILLAGE RIGHTS-OF-WAY SHALL BE EPOXY PER WISDOT SPECIFICATIONS.
- THOROUGHLY CLEAN SURFACES FREE OF DIRT, SAND, GRAVEL, OIL AND OTHER FOREIGN MATTER. CONTRACTOR RESPONSIBLE TO INSPECT EXISTING PAVEMENT SURFACES FOR CONDITIONS AND DEFECTS THAT WILL ADVERSELY AFFECT QUALITY OF WORK, AND WHICH CANNOT BE PUT INTO AN ACCEPTABLE CONDITION THROUGH NORMAL PREPARATORY WORK AS SPECIFIED.
- DO NOT PLACE MARKING OVER UNSOUND PAVEMENTS. IF THESE CONDITIONS EXIST, NOTIFY OWNER. STARTING INSTALLATION CONSTITUTES CONTRACTOR'S ACCEPTANCE OF SURFACE AS SUITABLE FOR INSTALLATION.
- LAYOUT MARKINGS USING GUIDE LINES, TEMPLATES AND FORMS. STENCILS AND TEMPLATES SHALL BE APPLIED MANUALLY TO MEET INDUSTRY STANDARDS. "FREE HAND" PAINTING OF ARROWS, SYMBOLS, OR WORDING SHALL NOT BE ALLOWED. APPLY STRIPES STRAIGHT AND EVEN.
- PROTECT ADJACENT CURBS, WALKS, FENCES, AND OTHER ITEMS FROM RECEIVING PAINT.
- BARRICADE MARKED AREAS DURING INSTALLATION AND UNTIL THE MARKING PAINT IS DRIED AND READY FOR TRAFFIC.
- ALL PAVING SHALL CONFORM TO STATE OF WISCONSIN STANDARD SPECIFICATIONS FOR HIGHWAY & STRUCTURE CONSTRUCTION AND APPLICABLE VILLAGE OF GERMANTOWN ORDINANCES, AND SPECIFICATIONS CONTAINED WITHIN THIS PLAN SET.
- ASPHALTIC CONCRETE PAVING SPECIFICATIONS-

CODES AND STANDARDS: THE PLACING, CONSTRUCTION AND COMPOSITION OF THE ASPHALTIC BASE COURSE AND ASPHALTIC CONCRETE SURFACING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF SECTIONS 450, 455, 460 AND 465 OF THE STATE OF WISCONSIN STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION, EDITION OF 2015, HEREAFTER, THIS PUBLICATION WILL BE REFERRED TO AS THE STATE HIGHWAY SPECIFICATIONS.

WEATHER LIMITATIONS: APPLY TACK COATS WHEN AMBIENT TEMPERATURE IS ABOVE 50° F (10° C) AND WHEN TEMPERATURE HAS NOT BEEN BELOW 35° F (1° C) FOR 12 HOURS IMMEDIATELY PRIOR TO APPLICATION. DO NOT APPLY WHEN BASE IS WET OR CONTAINS EXCESS OF MOISTURE. CONSTRUCT ASPHALTIC CONCRETE SURFACE COURSE WHEN ATMOSPHERIC TEMPERATURE IS ABOVE 40° F (4° C) AND WHEN BASE IS DRY AND WHEN WEATHER IS NOT RAINY. BASE COURSE MAY BE PLACED WHEN AIR TEMPERATURE IS ABOVE 30° F (-1° C).

GRADE CONTROL: ESTABLISH AND MAINTAIN REQUIRED LINES AND ELEVATIONS FOR EACH COURSE DURING CONSTRUCTION.

CRUSHED AGGREGATE BASE COURSE: THE TOP LAYER OF BASE COURSE SHALL CONFORM TO SECTIONS 301 AND 305, STATE HIGHWAY SPECIFICATIONS.

BINDER COURSE AGGREGATE: THE AGGREGATE FOR THE BINDER COURSE SHALL CONFORM TO SECTIONS 460.2.7 AND 315, STATE HIGHWAY SPECIFICATIONS.

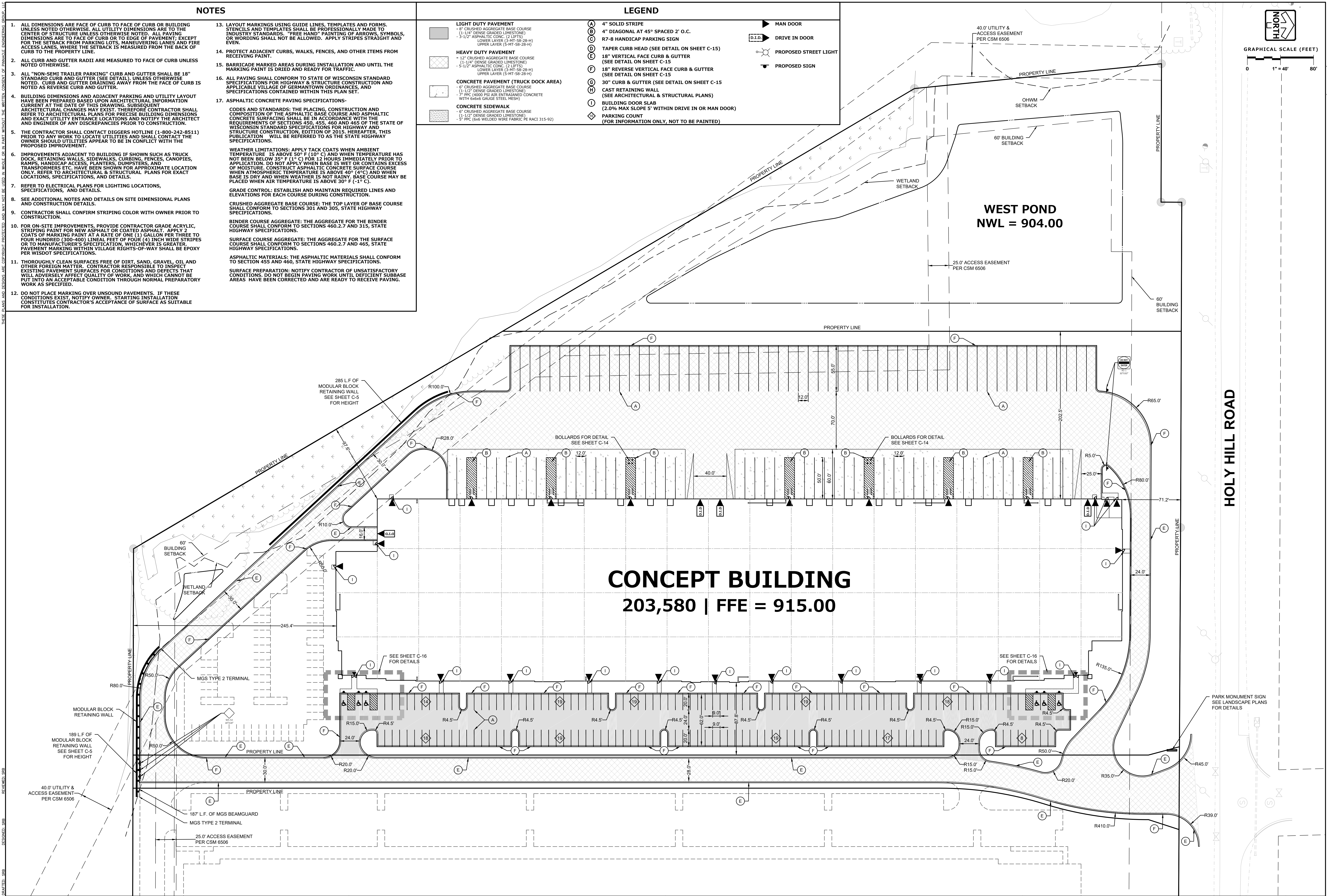
SURFACE COURSE AGGREGATE: THE AGGREGATE FOR THE SURFACE COURSE SHALL CONFORM TO SECTIONS 460.2.7 AND 465, STATE HIGHWAY SPECIFICATIONS.

ASPHALTIC MATERIALS: THE ASPHALTIC MATERIALS SHALL CONFORM TO SECTION 455 AND 460, STATE HIGHWAY SPECIFICATIONS.

SURFACE PREPARATION: NOTIFY CONTRACTOR OF UNSATISFACTORY CONDITIONS. DO NOT BEGIN PAVING WORK UNTIL DEFICIENT SUBBASE AREAS HAVE BEEN CORRECTED AND ARE READY TO RECEIVE PAVING.

LEGEND

- LIGHT DUTY PAVEMENT**
- 1" CRUSHED AGGREGATE BASE COURSE (1-1/4" DENSE GRADED LESTONE)
- 3/4" ASPHALTIC CONC. (2 LIFTS)
LOWER LAYER (3-MT-58-28-H)
UPPER LAYER (3-MT-58-28-H)
- HEAVY DUTY PAVEMENT**
- 1 1/2" CRUSHED AGGREGATE BASE COURSE (1-1/4" DENSE GRADED LESTONE)
- 5/8" ASPHALTIC CONC. (2 LIFTS)
LOWER LAYER (3-MT-58-28-H)
UPPER LAYER (3-MT-58-28-H)
- CONCRETE PAVEMENT (TRUCK DOCK AREA)**
- 6" CRUSHED AGGREGATE BASE COURSE (1-1/2" DENSE GRADED LESTONE)
- 7" PPC (4000 PSI AIR ENTRAINED CONCRETE WITH 6x6x6 GAUGE STEEL MESH)
- CONCRETE SIDEWALK**
- 6" CRUSHED AGGREGATE BASE COURSE (1-1/2" DENSE GRADED LESTONE)
- 5" PPC (6x6 WELDED WIRE FABRIC PER RAC1 315-92)
- MAN DOOR**
DRIVE IN DOOR
PROPOSED STREET LIGHT
PROPOSED SIGN
- 4" SOLID STRIPE**
4" DIAGONAL AT 45° SPACED 2' O.C.
R7-8 HANDICAP PARKING SIGN
TAPER CURB HEAD (SEE DETAIL ON SHEET C-15)
18" VERTICAL FACE CURB & GUTTER (SEE DETAIL ON SHEET C-15)
18" REVERSE VERTICAL FACE CURB & GUTTER (SEE DETAIL ON SHEET C-15)
30" CURB & GUTTER (SEE DETAIL ON SHEET C-15)
CAST RETAINING WALL (SEE ARCHITECTURAL & STRUCTURAL PLANS)
BUILDING DOOR SLAB (2.0% MAX SLOPE 5' WITHIN DRIVE IN OR MAN DOOR)
PARKING COUNT (FOR INFORMATION ONLY, NOT TO BE PAINTED)

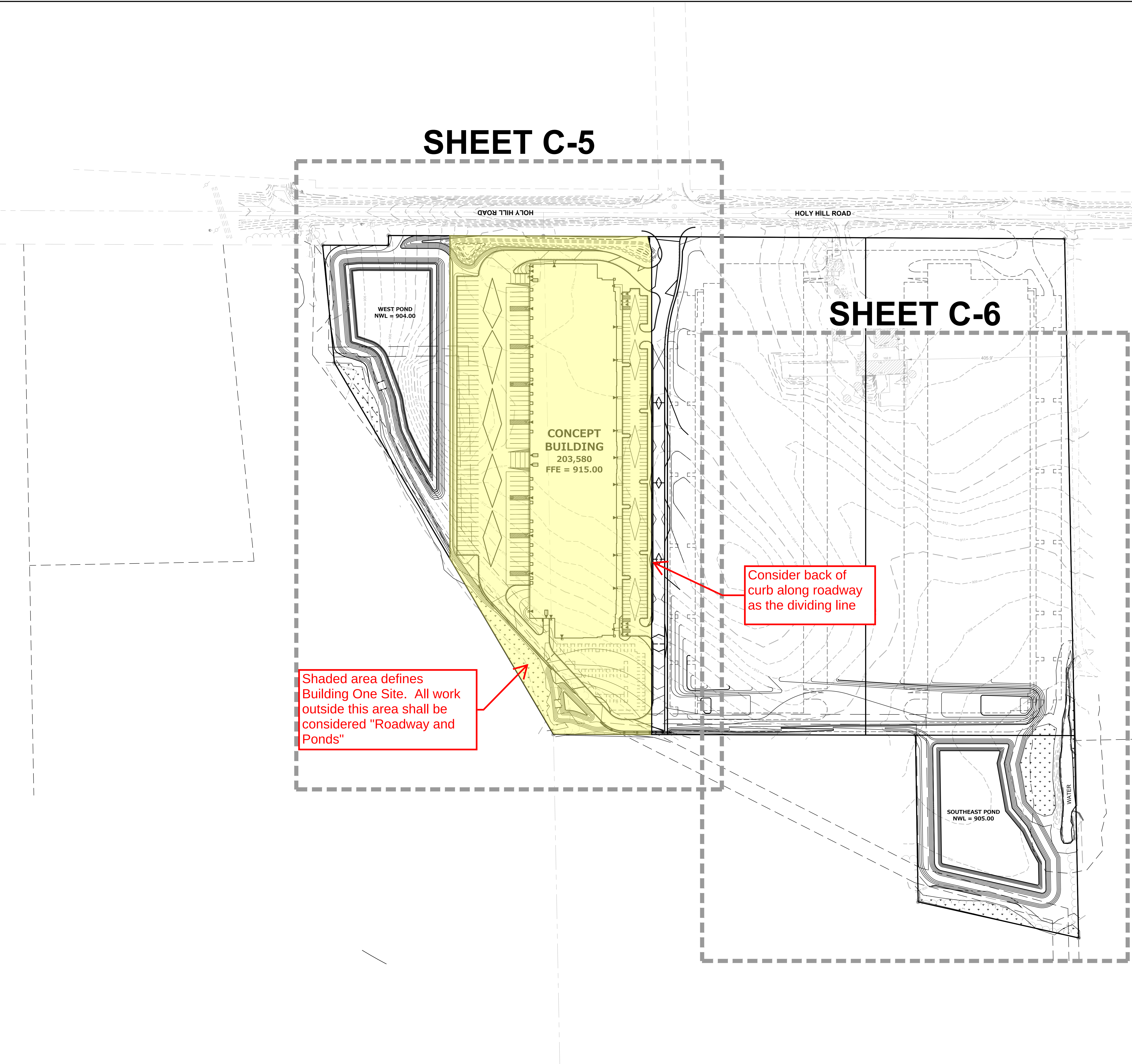


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DESIGNED: SRB

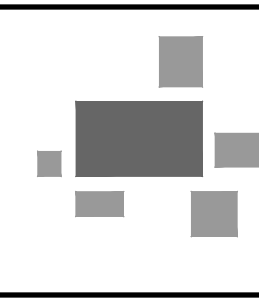
REVIEWED: SRB



GRADING NOTES	
1. CONTRACTOR SHALL VERIFY ALL GRADES, ENSURE ALL AREAS DRAIN PROPERLY AND REPORT ANY DISCREPANCIES TO PINNACLE ENGINEERING GROUP PRIOR TO THE START OF ANY CONSTRUCTION ACTIVITIES.	9. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY ENGINEER/OWNER IF GROUNDWATER IS ENCOUNTERED DURING EXCAVATION.
2. ALL EXISTING CONTOURS REPRESENT EXISTING SURFACE GRADES UNLESS OTHERWISE NOTED. ALL PROPOSED GRADES SHOWN ARE FINISH SURFACE GRADES UNLESS OTHERWISE NOTED.	10. CONTRACTOR IS SOLELY RESPONSIBLE FOR THE DESIGN AND CONSTRUCTION OF ADEQUATE AND SAFE TEMPORARY SHORING, BRACING, RETENTION STRUCTURES, AND EXCAVATIONS.
3. SPOT ELEVATIONS REPRESENT THE GRADE ALONG THE CURB AND GUTTER FLOWLINE UNLESS OTHERWISE NOTED.	11. THE SITE SHALL BE COMPLETED TO WITHIN 0.10-FT (+/-) OF THE PROPOSED GRADES AS INDICATED WITHIN THE PLANS PRIOR TO PLACEMENT OF TOPSOIL OR STONE. CONTRACTOR IS ENCOURAGED TO SEQUENCE CONSTRUCTION SUCH THAT THE SITE IS DIVIDED INTO SMALLER AREAS TO ALLOW STABILIZATION OF DISTURBED SOILS IMMEDIATELY UPON COMPLETION OF INDIVIDUAL SMALLER AREAS.
4. ALL EXCAVATIONS AND MATERIAL PLACEMENT SHALL BE COMPLETED TO DESIGN ELEVATIONS AS DEPICTED IN THE PLANS.	12. CONTRACTOR SHALL CONTACT "DIGGER'S HOTLINE" FOR LOCATIONS OF ALL EXISTING UTILITIES PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION ACTIVITIES AND SHALL BE RESPONSIBLE FOR PROTECTING SAID UTILITIES FROM ANY DAMAGE DURING CONSTRUCTION.
CONTRACTOR SHALL ASSUME SOLE RESPONSIBILITY FOR THE COMPUTATION(S) OF ALL GRADING QUANTITIES. WHILE PEG ATTEMPTS TO PROVIDE A COST EFFECTIVE APPROACH TO BALANCE EARTHWORK, GRADING DESIGN IS BASED ON MANY FACTORS, INCLUDING SAFETY, AESTHETICS, AND COMMON ENGINEERING STANDARD OF CARE, THEREFORE NO GUARANTEE CAN BE MADE FOR A BALANCED SITE.	
THE CONTRACTOR MAY SOLICIT APPROVAL FROM ENGINEER/OWNER TO ADJUST FINAL GRADES FROM DESIGN GRADES TO PROVIDE AN OVERALL SITE BALANCE AS A RESULT OF FIELD CONDITIONS.	
5. GRADING ACTIVITIES SHALL BE IN A MANNER TO ALLOW POSITIVE DRAINAGE ACROSS DISTURBED SOILS, WHICH MAY INCLUDE EXCAVATION OF TEMPORARY DITCHES TO PREVENT PONDING, AND IF NECESSARY PUMPING TO ALLEVIATE PONDING. CONTRACTOR SHALL PREVENT SURFACE WATER FROM ENTERING INTO EXCAVATIONS. IN NO WAY SHALL OWNER BE RESPONSIBLE FOR REMEDIATION OF UNSUITABLE SOILS CREATED/ORIGINATED AS A RESULT OF IMPROPER SITE GRADING OR SEQUENCING. CONTRACTOR SHALL SEQUENCE GRADING ACTIVITIES TO LIMIT EXPOSURE OF DISTURBED SOILS DUE TO WEATHER.	13. CONTRACTOR SHALL PROTECT INLETS AND ADJACENT PROPERTIES WITH SILT FENCING OR APPROVED EROSION CONTROL METHODS UNTIL CONSTRUCTION IS COMPLETED. CONTRACTOR SHALL PLACE SILT FENCING AT DOWN SLOPE SIDE OF GRADING LIMITS.
6. THE CONTRACTOR IS RESPONSIBLE FOR MEETING MINIMUM COMPACTION STANDARDS. THE CONTRACTOR SHALL NOTIFY ENGINEER/OWNER IF PROPER COMPACTION CANNOT BE OBTAINED. THE PROJECT'S GEOTECHNICAL CONSULTANT SHALL DETERMINE WHICH IN-SITU SOILS ARE TO BE CONSIDERED UNSUITABLE SOILS. THE ENGINEER/OWNER AND GEOTECHNICAL TESTING CONSULTANT WILL DETERMINE IF REMEDIAL MEASURES WILL BE NECESSARY.	14. CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGE TO ANY EXISTING FACILITIES OR UTILITIES. ANY DAMAGE SHALL BE REPAIRED TO THE OWNER'S SATISFACTION AT THE EXPENSE OF THE CONTRACTOR.
7. IN THE EVENT THAT ANY MOISTURE-DENSITY TEST(S) FAIL TO MEET SPECIFICATION REQUIREMENTS, THE CONTRACTOR SHALL PERFORM CORRECTIVE WORK AS NECESSARY TO BRING THE MATERIAL INTO COMPLIANCE AND RETEST THE FAILED AREA AT NO COST TO THE OWNER.	15. WORK WITHIN ANY ROADWAY RIGHT-OF-WAY SHALL BE COORDINATED WITH THE APPROPRIATE MUNICIPAL OFFICIAL PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION ACTIVITIES. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND FEES. GRADING WITHIN RIGHT-OF-WAY IS SUBJECT TO APPROVAL BY SAID OFFICIALS. RESTORATION OF RIGHT-OF-WAY IS CONSIDERED INCIDENTAL AND SHALL BE INCLUDED IN THE COST OF GRADING. RESTORATION SHALL INCLUDE ALL ITEMS NECESSARY TO RESTORE RIGHT-OF-WAY IN-KIND INCLUDING LANDSCAPING.
8. WITH THE AUTHORIZATION OF THE ENGINEER/OWNER, MATERIAL THAT IS TOO WET TO PERMIT PROPER COMPACTION MAY BE SPREAD ON FILL AREAS IN AN EFFORT TO DRY. CONTRACTOR SHALL CLEARLY FIELD MARK THE EXTERIOR LIMITS OF SPREAD MATERIAL WITH PAINTED LATH AND SUBMIT A PLAN TO THE ENGINEER/OWNER THAT IDENTIFIES THE LIMITS. UNDER NO CONDITION SHALL THE SPREAD MATERIAL DEPTH EXCEED THE MOST RESTRICTIVE OF: THE EFFECTIVE TREATMENT DEPTH OF MACHINERY THAT WILL BE USED TO TURNOVER THE SPREAD MATERIAL; OR THE MAXIMUM COMPACTION LIFT DEPTH.	16. CONTRACTOR SHALL COMPLY WITH ALL VILLAGE OF GERMANTOWN CONSTRUCTION STANDARDS/ORDINANCES.
	17. LANDSCAPE AND TURF AREAS SHALL HAVE A MINIMUM OF 4-INCH TOPSOIL REPLACEMENT.
	18. TOPSOIL BERMING SHALL ACHIEVE 90% STANDARD PROCTOR DENSITY AT 3% (+) OPTIMUM MOISTURE CONTENT.
	19. SURVEY BENCHMARKS AND MAPPING HAS BEEN PROVIDED BY PINNACLE ENGINEERING GROUP. IN NO WAY DOES PEG WARRANT THE BASEMAP IS ALL INCLUSIVE OR REPRESENTATIVE OF ACTUAL CONDITIONS. CONTRACTOR SHALL PROVIDE CHECKS AS NECESSARY TO VERIFY THE BASEMAP CONTENT AND ACCURACY.

ALL WORK WITHIN PUBLIC R.O.W. SHALL CONFORM TO VILLAGE OF GERMANTOWN STANDARDS.

LEGEND	
	SANITARY MANHOLE
	STORM CATCH BASIN
	CURB CATCH BASIN
	CONTOUR
	SPOT ELEVATION
	DIRECTION OF SURFACE FLOW
	DITCH OR SWALE
	FLOODPLAIN
	OVERFLOW RELIEF ROUTING
	TOP OF WALL
	BOTTOM OF WALL
	TOP OF CLAY



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GERMANTOWN, WI

GRADING PLAN OVERVIEW

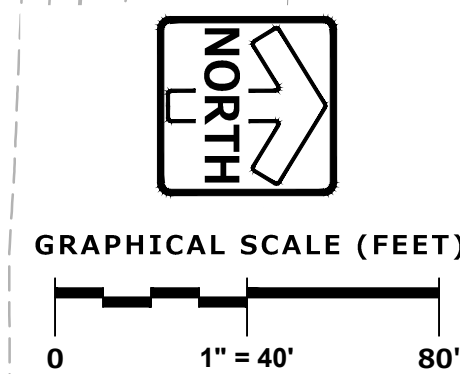
REVISIONS	
1. BID SET	7/20/21

PEG: X08 1262.00A-WI	ALJ
PEG: PM	ALJ
START DATE	06/07/21
SCALE	1"=100'

SHEET	C-4
OF	8
SHEET	C-16

**ALL WORK WITHIN
PUBLIC R.O.W. SHALL
CONFORM TO VILLAGE
OF GERMANTOWN
STANDARDS.**

HOLY HILL ROAD

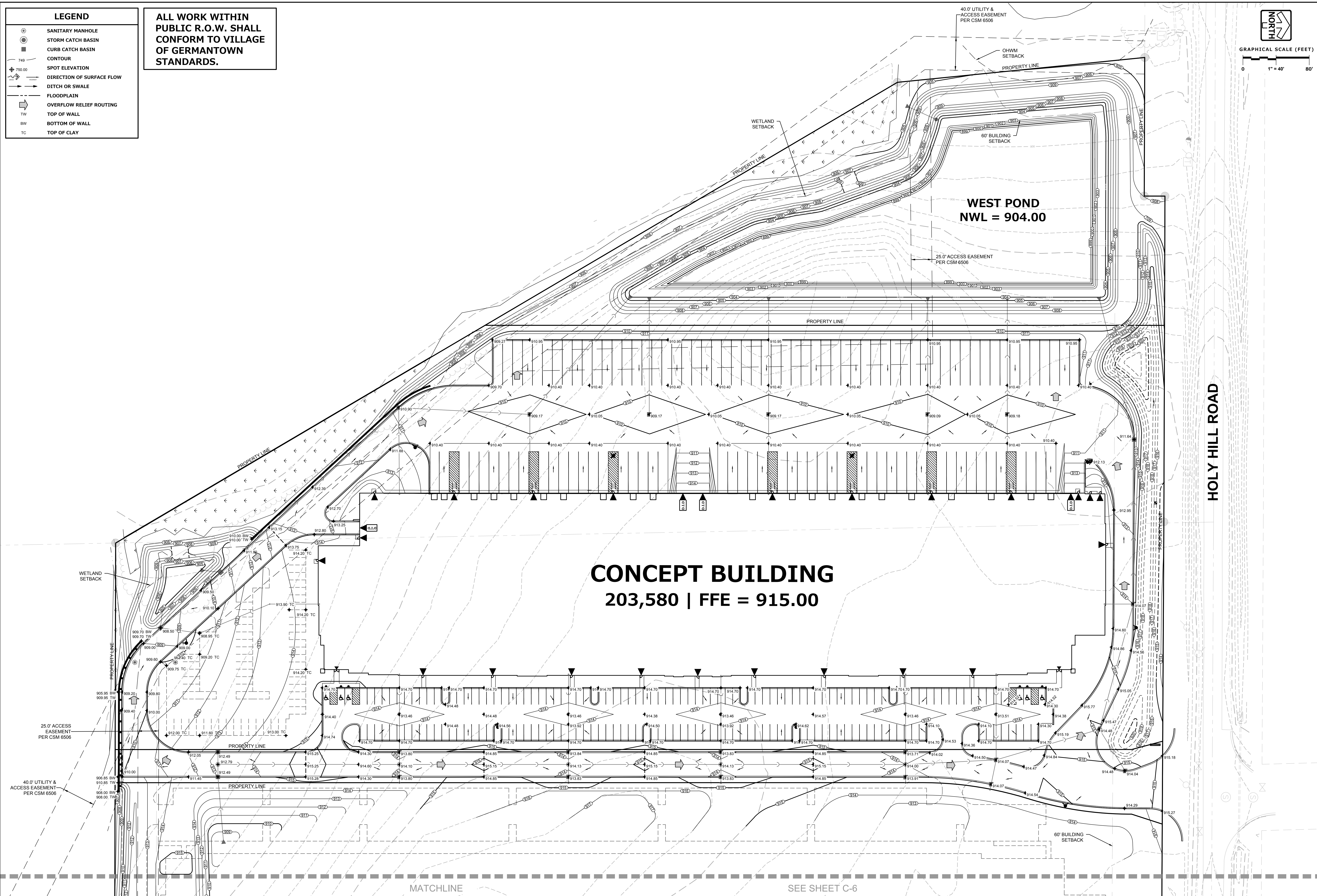


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GRADING PLAN



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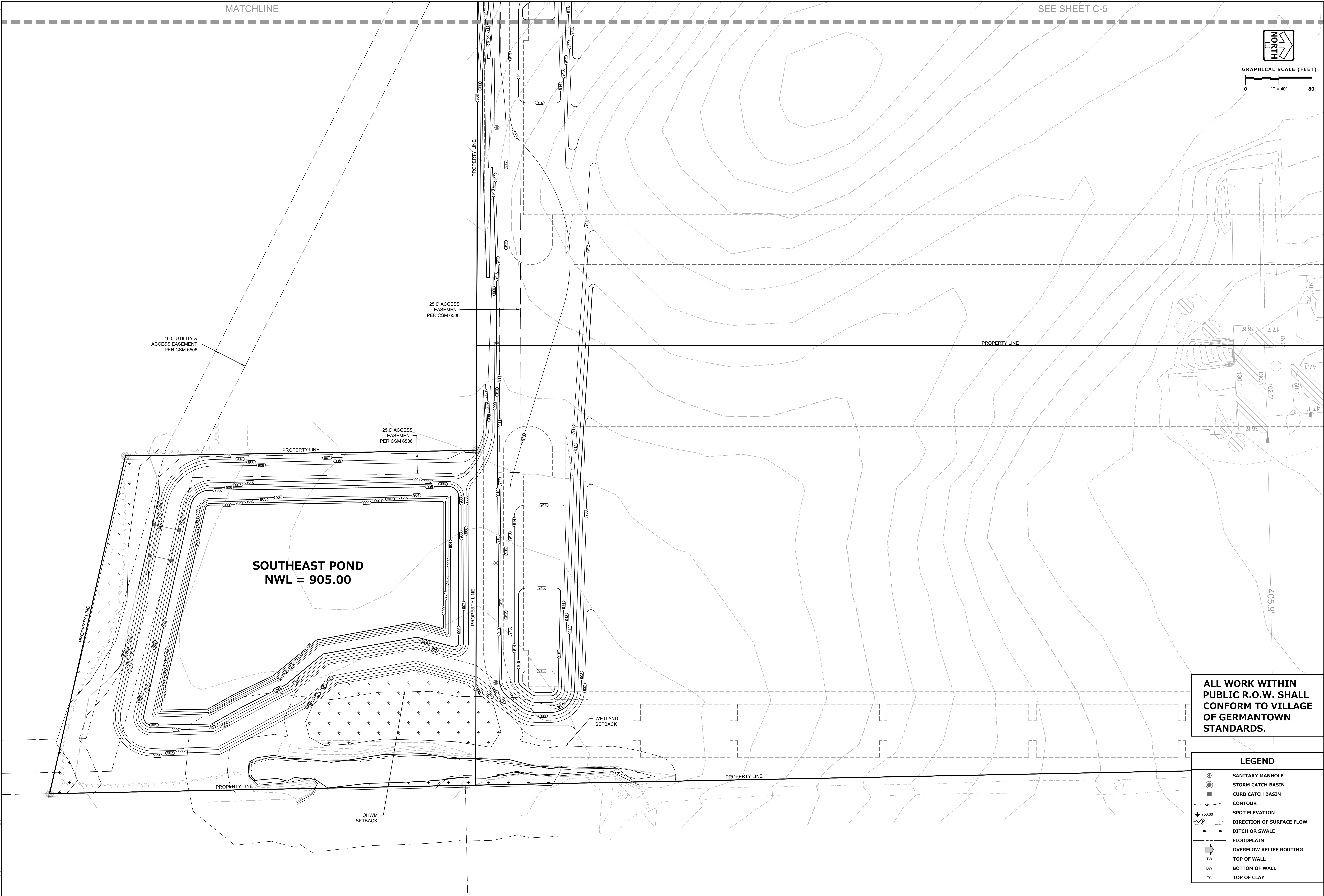
GRADING PLAN

REVISONS			
1	BID SET	7/30/21	

SHEET
C-5
OF
C-16

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DESIGNED: SRB
DRAFTED: SRB
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GRADING PLAN

REVISIONS	
1. BID SET	7/30/21

REG. NO. M262.00A-WI
AUS
SCALE
1" = 40'

SHEET
C-6
of
C-16

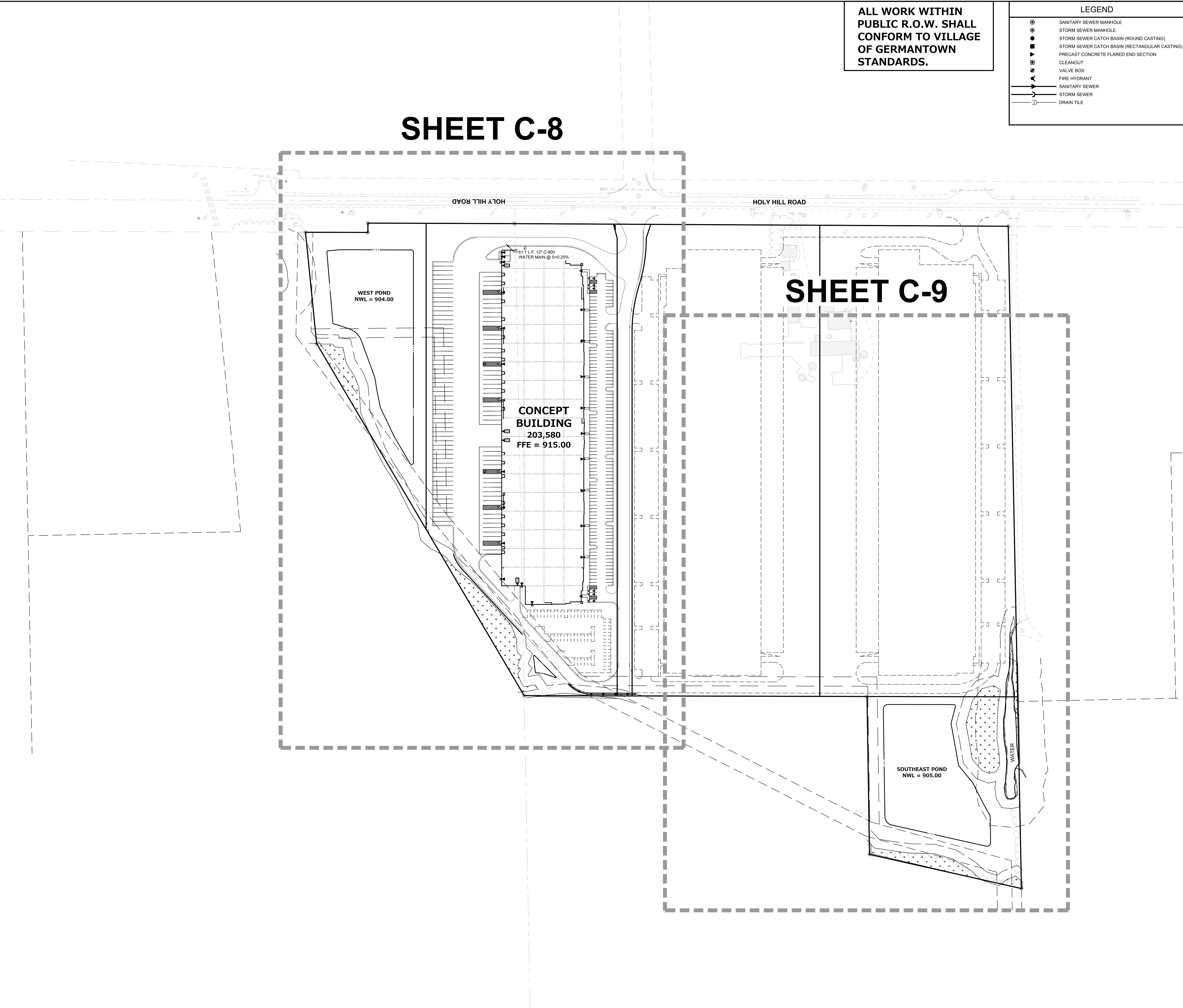
GRADING PLAN

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DESIGNED: SRB

REVIEWED: SRB

DRAWN: SRB



ALL WORK WITHIN
PUBLIC R.O.W. SHALL
CONFORM TO VILLAGE
OF GERMANTOWN
STANDARDS.

LEGEND	
	SANITARY SEWER MANHOLE
	STORM SEWER MANHOLE
	STORM SEWER CATCH BASIN (ROUND CASTING)
	STORM SEWER CATCH BASIN (RECTANGULAR CASTING)
	PRECAST CONCRETE FLARED END SECTION
	CLEANOUT
	VALVE BOX
	FIRE HYDRANT
	SANITARY SEWER
	STORM SEWER
	DRAIN TILE



GRAPHICAL SCALE (FEET)

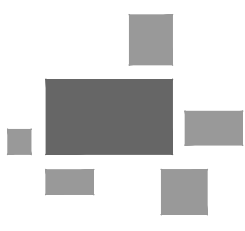
0 1" = 100' 200'

UTILITY NOTES

- EXISTING UTILITIES ARE SHOWN FOR INFORMATIONAL PURPOSES ONLY AND ARE NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE. CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE TYPE, LOCATION, SIZE AND ELEVATION OF UNDERGROUND UTILITIES AS THEY DEEM NECESSARY FOR PROPOSED UTILITY CONNECTIONS AND/OR TO AVOID DAMAGE THERETO. CONTRACTOR SHALL CALL "DIGGER'S HOTLINE" PRIOR TO ANY CONSTRUCTION.
- ALL UTILITY WORK SHALL BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN (LATEST EDITION AND ADDENDUM) AND ALL STATE AND LOCAL CODES AND SPECIFICATIONS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE WHICH SPECIFICATIONS AND CODES APPLY, AND TO COORDINATE ALL CONSTRUCTION ACTIVITIES WITH THE APPROPRIATE LOCAL AND STATE AUTHORITIES.
- UTILITY CONSTRUCTION AND SPECIFICATIONS SHALL COMPLY WITH THE VILLAGE OF GERMANTOWN SPECIAL PROVISIONS AND WISCONSIN DEPARTMENT OF SAFETY AND PROFESSIONAL SERVICES COMM 82.
- LENGTHS OF PROPOSED UTILITIES ARE TO CENTER OF STRUCTURES OR FITTINGS AND MAY VARY SLIGHTLY FROM PLAN. LENGTHS ARE SHOWN FOR CONTRACTOR CONVENIENCE ONLY. CONTRACTOR IS SOLELY RESPONSIBLE FOR COMPUTATIONS OF MATERIALS REQUIRED TO COMPLETE WORK. LENGTHS SHALL BE FIELD VERIFIED DURING CONSTRUCTION.
- CONTRACTOR SHALL ADJUST AND/OR RECONSTRUCT EXISTING UTILITY COVERS (SUCH AS MANHOLE COVERS, VALVE BOX COVERS, ETC.) TO MATCH FINISHED GRADES OF THE AREAS DISTURBED DURING CONSTRUCTION.
- CONTRACTOR SHALL FIELD VERIFY LOCATIONS, ELEVATIONS, AND SIZES OF PROPOSED UTILITIES AND CHECK ALL UTILITY CROSSINGS FOR CONFLICTS PRIOR TO ATTEMPTING CONNECTIONS AND BEGINNING UTILITY CONSTRUCTION AND NOTIFY THE OWNER OF ANY DISCREPANCIES OR CONFLICTS.
- ALL NEW ON-SITE SANITARY, STORM AND WATER UTILITIES SHALL BE PRIVATELY OWNED AND MAINTAINED BY THE PROPERTY OWNER.
- THE CONTRACTOR SHALL CONTACT THE VILLAGE OF GERMANTOWN PUBLIC WORKS DEPARTMENT 48-HOURS IN ADVANCE OF SANITARY, WATER AND STORM CONNECTIONS TO THE VILLAGE-OWNED SYSTEM TO SCHEDULE INSPECTIONS.
- ROUTING OF GAS, ELECTRIC AND TELEPHONE SERVICES ARE SHOWN ON THE ARCHITECTURAL PLANS AND SUBJECT TO CHANGE BASED UPON FINAL REVIEW AND APPROVAL BY RESPECTIVE UTILITY COMPANIES AND OWNER. CONTRACTOR SHALL CONTACT EACH UTILITY COMPANY AND COORDINATE FINAL LOCATIONS FOR ALL UTILITY SERVICES PRIOR TO START OF CONSTRUCTION.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE WITH THE PROPER AUTHORITIES FOR ANY REQUIRED PERMITS, AUTHORIZATIONS, TRAFFIC CONTROL AND ANY PERMIT FEES REQUIRED.
- FIELD TILE CONNECTION - ALL FIELD TILE ENCOUNTERED DURING CONSTRUCTION SHALL BE INCLUDED IN THE UNIT PRICES FOR STORM SEWER. TILE LINES CROSSED BY THE TRENCH SHALL BE REPLACED WITH THE SAME MATERIAL AS THE STORM SEWER.
- THE CONTRACTOR IS RESPONSIBLE FOR THE SIZE, TYPE AND NUMBER OF WATER MAIN BENDS, HORIZONTAL AND VERTICAL, REQUIRED TO COMPLETE CONSTRUCTION. COST FOR BENDS, HORIZONTAL AND VERTICAL, SHALL BE INCIDENTAL AND INCLUDED IN THE OVERALL COST OF THE CONTRACT.
- STORM SEWER SPECIFICATIONS -
PIPE - REINFORCED CONCRETE PIPE (RCP) SHALL MEET THE REQUIREMENTS OF ASTM CLASS C-76 WITH RUBBER GASKET JOINTS CONFORMING TO ASTM C-443. STRENGTH CLASSIFICATIONS SHALL BE IN ACCORDANCE WITH THE FOLLOWING:

HEIGHT OF COVER (FEET):	0-2	2-3	3-6	6-15	15-25	25+
MINIMUM CONCRETE PIPE CLASSIFICATION:	II	III	II	III	IV	ENGINEER TO SPECIFY

HIGH DENSITY DUAL-WALL POLYETHYLENE N-12 CORRUGATED PIPE (HDPE) SHALL BE AS MANUFACTURED BY ADS OR EQUAL WITH WATER TIGHT JOINTS, AND SHALL MEET THE REQUIREMENTS OF AASHTO DESIGNATION M-254 TYPE "ST" OR POLYVINYL CHLORIDE (PVC) - CLASS PS8E MEETING AASHTO M278, AS NOTED. IF HDPE PIPE IS USED FOR POND OUTFALLS, A MINIMUM OF THREE (3) SECTIONS (2 STRAPS) SHALL BE STRAPPED TOGETHER.
INLETS/CATCH BASINS - INLETS/CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH FILE NO. 25 OF THE "STANDARD SPECIFICATIONS" WITH A 18" X 24" MAXIMUM OPENING. FRAME & GRATE SHALL BE NEENAH R-2502 WITH TYPE D GRATE, OR EQUAL. CURB FRAME & GRATE SHALL BE NEENAH R-3067, OR EQUAL. THE SUMP DEPTH (VERTICAL DISTANCE FROM THE BASE OF THE STRUCTURE TO OUTFALL INVERT OF THE PIPE) SHALL BE 18" MIN. STRUCTURE SHOP DRAWINGS SHALL BE SUBMITTED TO PINNACLE ENGINEERING GROUP FOR REVIEW AND APPROVAL PRIOR TO MANUFACTURING AND INSTALLATION.
BACKFILL AND BEDDING - STORM SEWER SHALL BE CONSTRUCTED WITH GRAVEL BACKFILL AND CLASS "B" BEDDING IN ALL PAVED AREAS AND TO A POINT 5 FEET BEYOND THE EDGE OF PAVEMENT. TRENCHES RUNNING PARALLEL TO AND LESS THAN 5 FEET FROM THE EDGE OF PAVEMENT SHALL ALSO REQUIRE GRAVEL BACKFILL. SLURRY BACK FILL UNDER PUBLIC ROAD PAVEMENT. SLURRY LIMITS: FROM TOP OF COVER STONE TO PAVEMENT. SLURRY TO BE 1-BAG PORTLAND MIX. LANDSCAPED AREAS MAY BE BACKFILLED WITH EXCAVATED MATERIAL IN CONFORMANCE WITH SECTION 8.43.5 OF THE "STANDARD SPECIFICATIONS". MANHOLE FRAMES AND COVERS SHALL BE NEENAH R-1661 W/ NEENAH R-1660-0003 ROCKING COVER W/ 2 PICK HOLES AND 8 VENT HOLES
- WATER MAIN SPECIFICATIONS -
PIPE - WATER MAIN SHALL BE POLYVINYL CHLORIDE (PVC) PIPE MEETING THE REQUIREMENTS OF AWWA STANDARD C-900, CLASS 235, DR-18, WITH CAST IRON O.D. AND INTEGRAL ELASTOMERIC BELL AND SPIGOT JOINTS. VALVES AND VALVE BOXES - GATE VALVES SHALL BE AWWA GATE VALVES MEETING THE REQUIREMENTS OF AWWA C-500 AND CHAPTER 8.27.0 OF THE "STANDARD SPECIFICATIONS". GATE VALVES AND VALVE BOXES SHALL CONFORM TO LOCAL PLUMBING ORDINANCES.
HYDRANTS - HYDRANTS SHALL CONFORM TO THE SPECIFICATIONS OF THE AND IN ACCORDANCE WITH FILE NO. 38 OF THE "STANDARD SPECIFICATIONS". THE DISTANCE FROM THE GROUND LINE TO THE CENTERLINE OF THE LOWEST NOSE CONNECTION OF THE FIRE DEPARTMENT SHALL BE NO LESS THAN 18-INCHES AND NO GREATER THAN 24-INCHES. HYDRANT MANUFACTURE: KENNEDY GUARDIAN. HYDRANT AND TAP VALVES: TRAFFIC MODEL W/ BREAKAWAY FLANGES, TWO 2-1/2" HOSE NOZZLES (7-12" NSTD AND ONE 5-1/4" STEAMER NOZZLE (4 NSTD), A 1-1/2" PENTAGON OPERATING NUT AND CCW OPENING, 6" MECHANICAL JOINT INLET CONNECTION.
BEDDING AND COVER MATERIAL - PIPE BEDDING AND COVER MATERIAL SHALL BE SAND, CRUSHED STONE CHIPS OR CRUSHED STONE SCREENINGS CONFORMING TO CHAPTER 8.43.2 OF THE "STANDARD SPECIFICATIONS".
BACKFILL - BACKFILL MATERIAL AND INSTALLATION SHALL BE IN ACCORDANCE WITH CHAPTER 2.6.0 OF THE "STANDARD SPECIFICATIONS". GRAVEL BACKFILL IS REQUIRED IN ALL PAVED AREAS AND TO A POINT 5 FEET BEYOND THE EDGE OF PAVEMENT. TRENCHES RUNNING PARALLEL TO AND LESS THAN 5 FEET FROM THE EDGE OF PAVEMENT SHALL ALSO REQUIRE GRAVEL BACKFILL. SLURRY BACK FILL UNDER PUBLIC ROAD PAVEMENT. SLURRY LIMITS: FROM TOP OF COVER STONE TO PAVEMENT. SLURRY TO BE 1-BAG PORTLAND MIX. LANDSCAPED AREAS MAY BE BACKFILLED WITH EXCAVATED MATERIAL IN CONFORMANCE WITH SECTION 8.43.5 OF THE "STANDARD SPECIFICATIONS".
- SANITARY SEWER SPECIFICATIONS -
PIPE - SANITARY SEWER PIPE MATERIAL SHALL BE POLYVINYL CHLORIDE (PVC) MEETING REQUIREMENTS OF ASTM D 3034, SDR-35, WITH INTEGRAL BELL TYPE FLEXIBLE ELASTOMERIC JOINTS, MEETING THE REQUIREMENTS OF ASTM D-3212.
BEDDING AND COVER MATERIAL - BEDDING AND COVER MATERIAL SHALL CONFORM TO THE APPROPRIATE SECTIONS OF THE "STANDARD SPECIFICATION" WITH THE FOLLOWING MODIFICATION: "COVER MATERIAL SHALL BE THE SAME AS USED FOR BEDDING AND SHALL CONFORM TO SECTION 8.43.2 (A). BEDDING AND COVER MATERIAL SHALL BE PLACED IN A MINIMUM OF THREE SEPARATE LIFTS, OR AS REQUIRED TO INSURE ADEQUATE COMPACTING OF THESE MATERIALS, WITH ONE LIFT OF BEDDING MATERIAL ENDING AT OR NEAR THE SPRINGLINE OF THE PIPE. THE CONTRACTOR SHALL TAKE CARE TO COMPLETELY WORK BEDDING MATERIAL UNDER THE HAUNCH OF THE PIPE TO PROVIDE ADEQUATE SIDE SUPPORT."
BACKFILL - BACKFILL MATERIAL AND INSTALLATION SHALL BE IN ACCORDANCE CHAPTER 2.6.0 OF THE "STANDARD SPECIFICATIONS". SLURRY BACK FILL UNDER PUBLIC ROAD PAVEMENT. SLURRY LIMITS: FROM TOP OF COVER STONE TO PAVEMENT. SLURRY TO BE 1-BAG PORTLAND MIX. GRAVEL BACKFILL IS REQUIRED IN ALL PAVED AREAS AND TO A POINT 5 FEET BEYOND THE EDGE OF PAVEMENT. TRENCHES RUNNING PARALLEL TO AND LESS THAN 5 FEET FROM THE EDGE OF PAVEMENT SHALL ALSO REQUIRE GRAVEL BACKFILL. LANDSCAPED AREAS MAY BE BACKFILLED WITH EXCAVATED MATERIAL IN CONFORMANCE WITH SECTION 8.43.5 OF THE "STANDARD SPECIFICATIONS."
MANHOLES - MANHOLES SHALL BE CONSTRUCTED IN ACCORDANCE WITH FILE NOS. 12, 13 AND 15 OF THE "STANDARD SPECIFICATIONS" AND ALL SPECIAL PROVISIONS OF THE VILLAGE OF GERMANTOWN. STRUCTURE SHOP DRAWINGS SHALL BE SUBMITTED TO PINNACLE ENGINEERING GROUP FOR REVIEW AND APPROVAL PRIOR TO MANUFACTURING AND INSTALLATION.
MANHOLE FRAMES AND COVERS - NEENAH R-1661 FRAME W/ SOLID GASKETED LID AND 2 CONCEALED PICK HOLES. CONFORM TO STANDARD SPECIFICATIONS CH. 3.5.0
- WATER MAIN AND SANITARY SEWER SHALL BE INSULATED WHEREVER THE DEPTH OF COVER IS LESS THAN 6 FEET. INSULATION AND PLACING OF INSULATION SHALL CONFORM TO CHAPTER 4.17.0 "INSULATION" OF THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN 6TH EDITION. UPDATED WITH ITS LATEST ADDENDUM (TYP.).
- TRACER WIRE SHALL BE INSTALLED IN ACCORDANCE WITH THE PROVISIONS OF THESE CODE SECTIONS AS PER 182.0715(2R) OF THE STATUTES. TRACER WIRE: COPPERHEAD TRACERWIRE #10 SOLID CCS SUPERFLEX (BLUE). WIRE CONNECTORS SHALL BE SHAKBRITE (BLUE) MADE BY COPPERHEAD INDUSTRIES, LLC. THE TRACER WIRE FOR THE SANITARY SEWER LATERAL SHALL BE CONTINUOUS AND SHALL BE EXTENDED ABOVE GRADE VIA A 4-INCH PVC PIPE WITH SCREW-ON CAP ADJACENT TO THE PROPOSED TERMINATION POINT OF THE LATERAL FOR THE PROPOSED BUILDING.
- SEE UTILITY PLANS AND CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.



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CAPSTONE 41

GERMANTOWN, WI

UTILITY PLAN OVERVIEW

REVISIONS		DATE	BY	SCALE	SHEET
1.	BID SET				
1	BID SET	7/20/21	AJS	1"=100'	C-7
2					C-16
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					

**ALL WORK WITHIN
PUBLIC R.O.W. SHALL
CONFORM TO VILLAGE
OF GERMANTOWN
STANDARDS.**



FOR REVIEW

CAPSTONE 41

GERMANTOWN, WI

GRADING PLAN

REVISIONS			
1	RID SET	7/30/21	

REG JOB # **3262.00A-WI**
 REG PM **AJS**
 START DATE **06/01/21**
 SCALE **1" = 40'**

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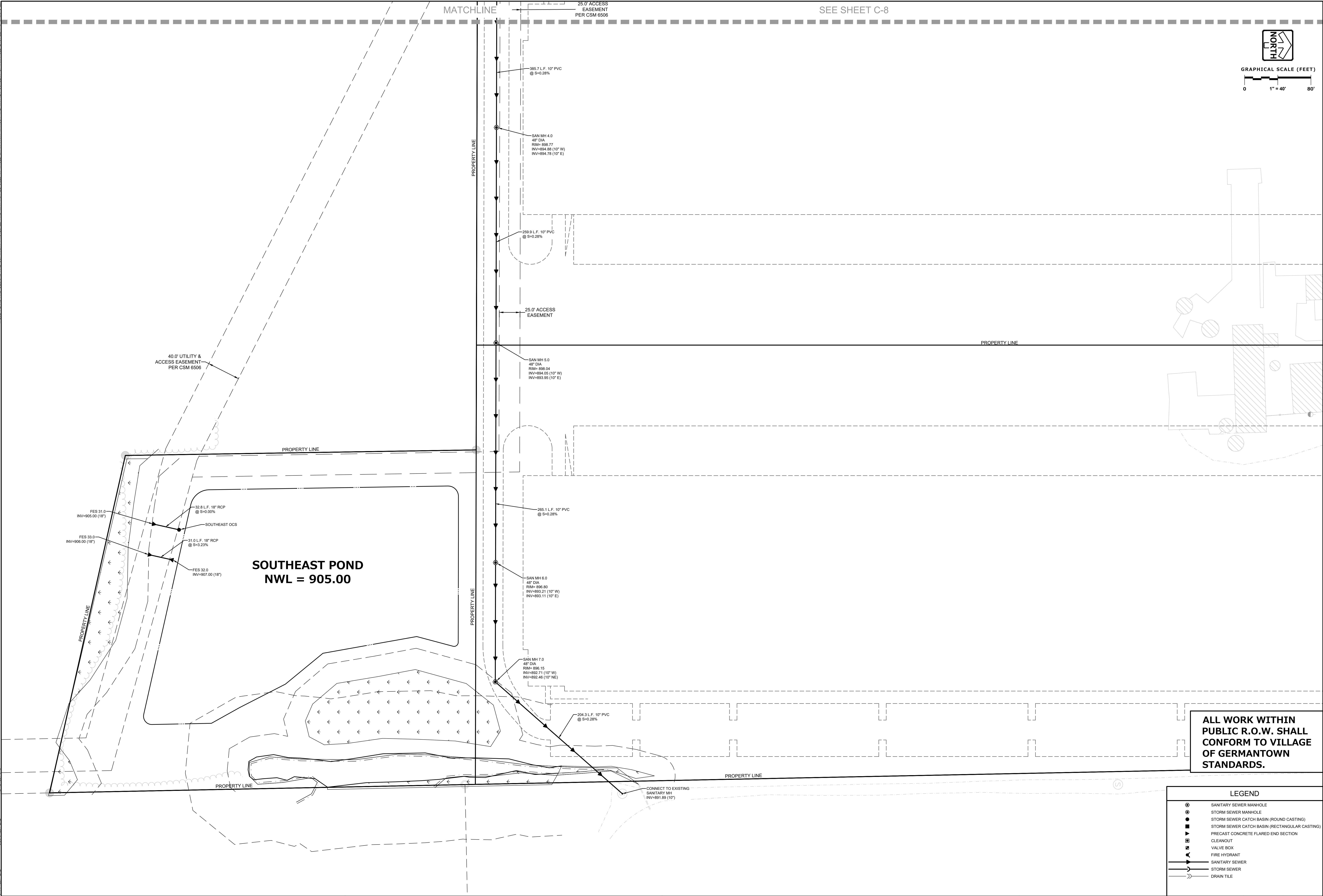
GRADING PLAN

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REVIEWED: SRB

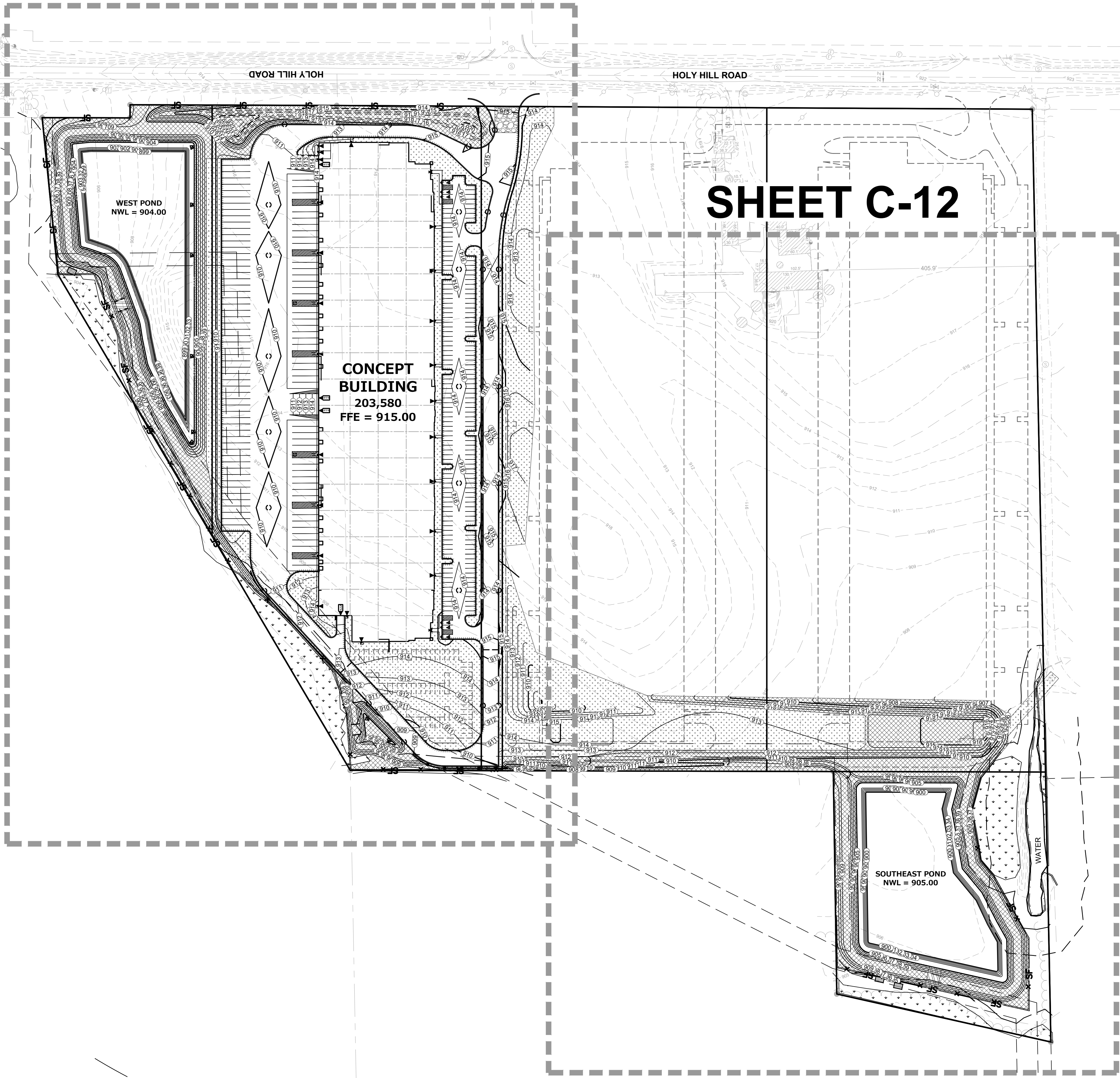
DESIGNED: SRB

DRAWN: SRB



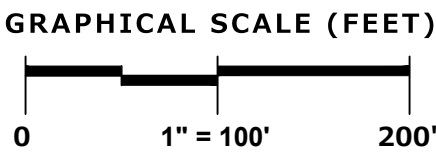
SHEET C-11

SHEET C-12



LEGEND

- SANITARY SEWER MANHOLE
- STORM SEWER MANHOLE
- STORM STORM CATCH BASIN (ROUND CASTING)
- STORM SEWER CATCH BASIN (RECTANGULAR CASTING)
- RISER
- PRECAST FLARED END SECTION
- CLEANOUT
- VALVE BOX
- FIRE HYDRANT
- PROPOSED SPOT ELEVATION
- WETLANDS
- HIGH WATER LEVEL (HWL)
- NORMAL WATER LEVEL (NWL)
- DIRECTION OF SURFACE FLOW
- DIVERSION SWALE
- DIVERSION DITCH
- OVERFLOW RELIEF ROUTING
- SILT FENCE
- ORANGE SAFETY FENCE
- INLET PROTECTION
- CONSTRUCTION ENTRANCE
- TURF REINFORCEMENT MAT (TRF)
- HYDROSEED (PER MANUFACTURER SPECIFICATIONS)
- EROSION CONTROL BLANKET (NORTH AMERICAN GREEN S75 OR EQUAL)



EXISTING CONDITIONS SURVEY:

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ALL WORK WITHIN PUBLIC R.O.W. SHALL CONFORM TO VILLAGE OF GERMANTOWN STANDARDS.

GENERAL EROSION AND SEDIMENT CONTROL NOTES

- ALL CONSTRUCTION SHALL ADHERE TO THE REQUIREMENTS SET FORTH IN EPA'S NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) STORMWATER GENERAL PERMIT FOR CONSTRUCTION SITE LAND DISTURBANCE ACTIVITIES. ALL EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL TECHNICAL STANDARDS IN EFFECT AT THE TIME OF CONSTRUCTION. THESE PROCEDURES AND STANDARDS SHALL BE REFERRED TO AS BEST MANAGEMENT PRACTICES (BMP'S). IT IS THE RESPONSIBILITY OF ALL CONTRACTORS ASSOCIATED WITH THE PROJECT TO OBTAIN A COPY OF, AND UNDERSTAND, THE BMP'S PRIOR TO THE START OF CONSTRUCTION ACTIVITIES.
- THE EROSION CONTROL MEASURES INDICATED ON THE PLANS ARE THE MINIMUM REQUIREMENTS. ADDITIONAL CONTROL MEASURES AS DIRECTED BY OWNER/ENGINEER OR GOVERNING AGENCIES SHALL BE INSTALLED WITHIN 24 HOURS OF REQUEST.
- MODIFICATIONS TO THE APPROVED SWPPP IN ORDER TO MEET UNFORESEEN FIELD CONDITIONS ARE ALLOWED IF MODIFICATIONS CONFORM TO BMP'S. ALL MODIFICATIONS MUST BE APPROVED BY OWNER/ENGINEER/GOVERNING AGENCY PRIOR TO DEVIATION OF THE APPROVED PLAN.
- INSTALL PERIMETER EROSION CONTROL MEASURES (SUCH AS CONSTRUCTION ENTRANCES, SILT FENCE AND EXISTING INLET PROTECTION) PRIOR TO ANY SITE WORK, INCLUDING GRADING OR DISTURBANCE OF EXISTING SURFACE COVER, AS SHOWN ON PLAN IN ORDER TO PROTECT ADJACENT PROPERTIES/STORM SEWER SYSTEMS FROM SEDIMENT TRANSPORT.
- CONSTRUCTION ENTRANCES SHALL BE INSTALLED AT ALL LOCATIONS OF VEHICLE INGRESS/EGRESS POINTS. CONTRACTOR IS RESPONSIBLE TO COORDINATE LOCATION(S) WITH THE PROPER AUTHORITIES, PROVIDE NECESSARY FEES AND OBTAIN ALL REQUIRED APPROVALS OR PERMITS. ADDITIONAL CONSTRUCTION ENTRANCES OTHER THAN AS SHOWN ON THE PLANS MUST BE APPROVED BY THE APPLICABLE GOVERNING AGENCIES PRIOR TO INSTALLATION.
- PAVED SURFACES ADJACENT TO CONSTRUCTION ENTRANCES SHALL BE SWEEPED AND/OR SCRAPPED TO REMOVE ACCUMULATED SOIL, DIRT AND/OR DUST IMMEDIATELY AND AS REQUESTED BY THE GOVERNING AGENCIES.
- ALL EXISTING STORM SEWER FACILITIES THAT WILL COLLECT RUNOFF FROM DISTURBED AREAS SHALL BE PROTECTED TO TO PREVENT SEDIMENT DEPOSITION WITHIN STORM SEWER SYSTEMS. INLET PROTECTION SHALL BE IMMEDIATELY FITTED AT THE INLET OF ALL INSTALLED STORM SEWER AND SILT FENCE SHALL BE IMMEDIATELY FITTED AT ALL INSTALLED CULVERT INLETS. ALL INLETS, STRUCTURES, PIPES, AND SWALES SHALL BE KEPT CLEAN AND FREE OF SEDIMENTATION AND DEBRIS.
- EROSION CONTROL FOR UTILITY CONSTRUCTION (STORM SEWER, WATER MAIN, ETC.) OUTSIDE OF THE PERIMETER CONTROLS SHALL INCORPORATE THE FOLLOWING:
 - PLACE EXCAVATED TRENCH MATERIAL ON THE HIGH SIDE OF THE TRENCH.
 - BACKFILL, COMPACT AND STABILIZE THE TRENCH IMMEDIATELY AFTER PIPE CONSTRUCTION.
 - DISCHARGE TRENCH WATER INTO A SEDIMENTATION BASIN OR FILTERING TANK IN ACCORDANCE WITH BMP'S PRIOR TO RELEASE INTO STORM SEWER OR DITCHES.
- AT A MINIMUM, SEDIMENT BASINS AND NECESSARY TEMPORARY DRAINAGE PROVISIONS SHALL BE CONSTRUCTED AND OPERATIONAL BEFORE BEGINNING OF SIGNIFICANT MASS GRADING OPERATIONS TO PREVENT OFFSITE DISCHARGE OF UNTREATED RUNOFF.
- ALL WATERCOURSES AND WETLANDS SHALL BE PROTECTED WITH SILT FENCE TO PREVENT ANY DIRECT DISCHARGE FROM DISTURBED SOILS.
- ALL TEMPORARY AND PERMANENT EROSION CONTROL MEASURES MUST BE MAINTAINED AND REPAIRED AS NEEDED. THE GENERAL CONTRACTOR WILL BE RESPONSIBLE FOR INSPECTION AND REPAIR DURING CONSTRUCTION. THE OWNER WILL BE RESPONSIBLE IF EROSION CONTROL IS REQUIRED AFTER THE CONTRACTOR HAS COMPLETED THE PROJECT.
- TOPSOIL STOCKPILES SHALL HAVE A BERM OR TRENCH AROUND THE CIRCUMFERENCE AND PERIMETER SILT FENCE TO CONTROL SILT. IF TOPSOIL STOCKPILE REMAINS UNDISTURBED FOR MORE THAN SEVEN (7) DAYS, TEMPORARY SEEDING AND STABILIZATION IS REQUIRED.
- EROSION CONTROL MEASURES TEMPORARILY REMOVED FOR UNAVOIDABLE CONSTRUCTION ACTIVITIES SHALL BE IN WORKING ORDER IMMEDIATELY FOLLOWING COMPLETION OF SUCH ACTIVITIES OR PRIOR TO THE COMPLETION OF EACH WORK DAY, WHICH EVER OCCURS FIRST.
- MAINTAIN SOIL EROSION CONTROL DEVICES THROUGH THE DURATION OF THIS PROJECT. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN THIRTY (30) DAYS AFTER FINAL SITE STABILIZATION IS ACHIEVED OR AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED. DISTURBANCES ASSOCIATED WITH EROSION CONTROL REMOVAL SHALL BE IMMEDIATELY STABILIZED.
- PUMPS MAY BE USED AS BYPASS DEVICES. IN NO CASE SHALL PUMPED WATER BE DIVERTED OUTSIDE THE PROJECT LIMITS. PUMP DISCHARGE SHALL BE DIRECTED INTO AN APPROVED FILTER BAG OR APPROVED SETTLING DEVICE.
- GRADING EFFORTS SHALL BE CONDUCTED IN SUCH A MANNER AS TO MINIMIZE EROSION. EROSION AND SEDIMENT CONTROL MEASURES SHALL CONSIDER THE TIME OF YEAR, SITE CONDITIONS, AND THE USE OF TEMPORARY OR PERMANENT MEASURES. ALL DISTURBED AREAS THAT WILL NOT BE WORKED FOR A PERIOD OF FOURTEEN (14) DAYS REQUIRE TEMPORARY SEEDING FOR EROSION CONTROL. SEEDING FOR EROSION CONTROL SHALL BE IN ACCORDANCE WITH TECHNICAL STANDARDS.
- ALL DISTURBED SLOPES EXCEEDING 4:1, SHALL BE STABILIZED WITH NORTH AMERICAN GREEN S75BN EROSION MATTING (OR APPROVED EQUAL) AND ALL CHANNELS SHALL BE STABILIZED WITH CLASS I TYPE B (SEE WISCONSIN DOT PRODUCT ACCEPTABILITY LISTS) OR APPLICATION OF AN APPROVED POLYMER SOIL STABILIZATION TREATMENT OR A COMBINATION THEREOF, AS REQUIRED. EROSION MATTING AND/OR NETTING USED ONSITE SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S GUIDELINES.
- DURING PERIODS OF EXTENDED DRY WEATHER, THE CONTRACTOR SHALL KEEP A WATER TRUCK ON SITE FOR THE PURPOSE OF WATERING DOWN SOILS WHICH MAY OTHERWISE BECOME AIRBORNE. THE CONTRACTOR IS RESPONSIBLE FOR CONTROLLING WIND EROSION (DUST) DURING CONSTRUCTION AT HIS/HER EXPENSE.
- DISTURBED AREAS AND AREAS USED FOR STORAGE OF MATERIALS THAT ARE EXPOSED TO PRECIPITATION SHALL BE VISUALLY INSPECTED FOR EVIDENCE OF, OR THE POTENTIAL FOR, POLLUTANTS ENTERING THE DRAINAGE SYSTEM ON A DAILY BASIS.
- QUALIFIED PERSONNEL (PROVIDED BY THE GENERAL/PRIME CONTRACTOR) SHALL INSPECT DISTURBED AREAS OF THE CONSTRUCTION SITE THAT HAVE NOT BEEN FINALLY STABILIZED AND EROSION AND SEDIMENT CONTROLS WITHIN 24 HOURS OF ALL 0.5-INCH, OR MORE, PRECIPITATION EVENTS WITH A MINIMUM INSPECTION INTERVAL OF ONCE EVERY SEVEN (7) CALENDAR DAYS IN THE ABSENCE OF A QUALIFYING RAIN OR SNOWFALL EVENT. REPORTING SHALL BE IN ACCORDANCE WITH OF THE GENERAL PERMIT. CONTRACTOR SHALL IMMEDIATELY ARRANGE TO HAVE ANY DEFICIENT ITEMS REVEALED DURING INSPECTIONS REPAIRED/REPLACED.
- SEE ADDITIONAL DETAILS AND NOTES ON SITE STABILIZATION AND CONSTRUCTION DETAILS.

REVISIONS

1.	BID SET	7/20/21			

PEG JOB #1262.00A-WI
 AUG
 START DATE 06/07/21
 SCALE 1"=100'

SHEET
 C-10
 of
 C-16

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CAPSTONE 41
GERMANTOWN, WI

**SITE STABILIZATION PLAN
 OVERVIEW**

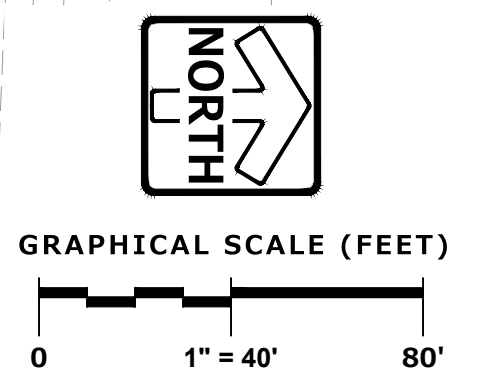
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SITE STABILIZATION PLAN OVERVIEW

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DESIGNED: SRB
DRAWN: SRB
REVIEWED: SRB



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CAPSTONE 41
GERMANTOWN, WI

SITE STABILIZATION PLAN

REVISIONS	
1. BID SET	7/30/21

REG. NO. M32.00A-WI
AUS
START DATE 06/01/21
SCALE 1" = 40'

SHEET
C-12
OF
C-16

LEGEND

- SANITARY SEWER MANHOLE
- STORM SEWER MANHOLE
- STORM STORM CATCH BASIN (ROUND CASTING)
- STORM SEWER CATCH BASIN (RECTANGULAR CASTING)
- RISER
- PRECAST FLARED END SECTION
- CLEANOUT
- VALVE BOX
- FIRE HYDRANT
- PROPOSED CONTOUR
- PROPOSED SPOT ELEVATION
- WETLANDS
- HIGH WATER LEVEL (HWL)
- NORMAL WATER LEVEL (NWL)
- DIRECTION OF SURFACE FLOW
- DIVERSION SWALE
- DIVERSION DITCH
- OVERFLOW RELIEF ROUTING
- SILT FENCE
- ORANGE SAFETY FENCE
- INLET PROTECTION
- CONSTRUCTION ENTRANCE
- TURF REINFORCEMENT MAT (TRF)
- HYDROSEED (PER MANUFACTURER SPECIFICATIONS)
- EROSION CONTROL BLANKET (NORTH AMERICAN GREEN S75 OR EQUAL)

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ALL WORK WITHIN PUBLIC R.O.W. SHALL CONFORM TO VILLAGE OF GERMANTOWN STANDARDS.

SOUTHEAST POND
NWL = 905.00

WATER

PROPERTY LINE

40' UTILITY & ACCESS EASEMENT PER CSM 6506

25' ACCESS EASEMENT PER CSM 6506

ORANGE SAFETY FENCE (TYP.)

STRAW WATTLE DITCH DITCH (TYP.) (SEE SHEET C-13 FOR DETAIL)

LEVEL SPREADER SEE SHEET C-13

SILT FENCE (TYP.)

OHWM SETBACK

WETLAND SETBACK

MATCHLINE

SEE SHEET C-11

GRAPHICAL SCALE (FEET)
0 1" = 40' 80'

NORTH

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FOR REVIEW

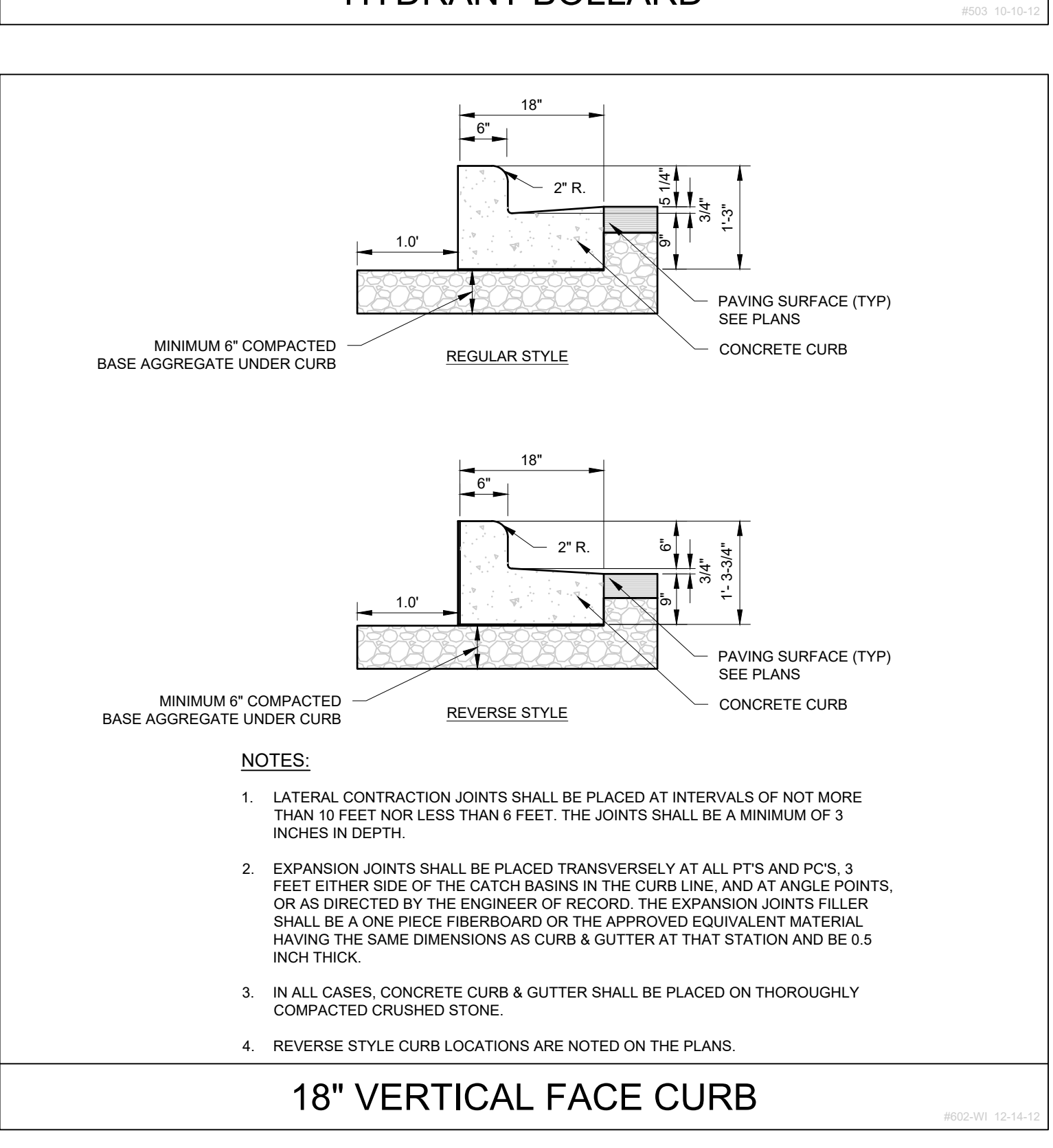
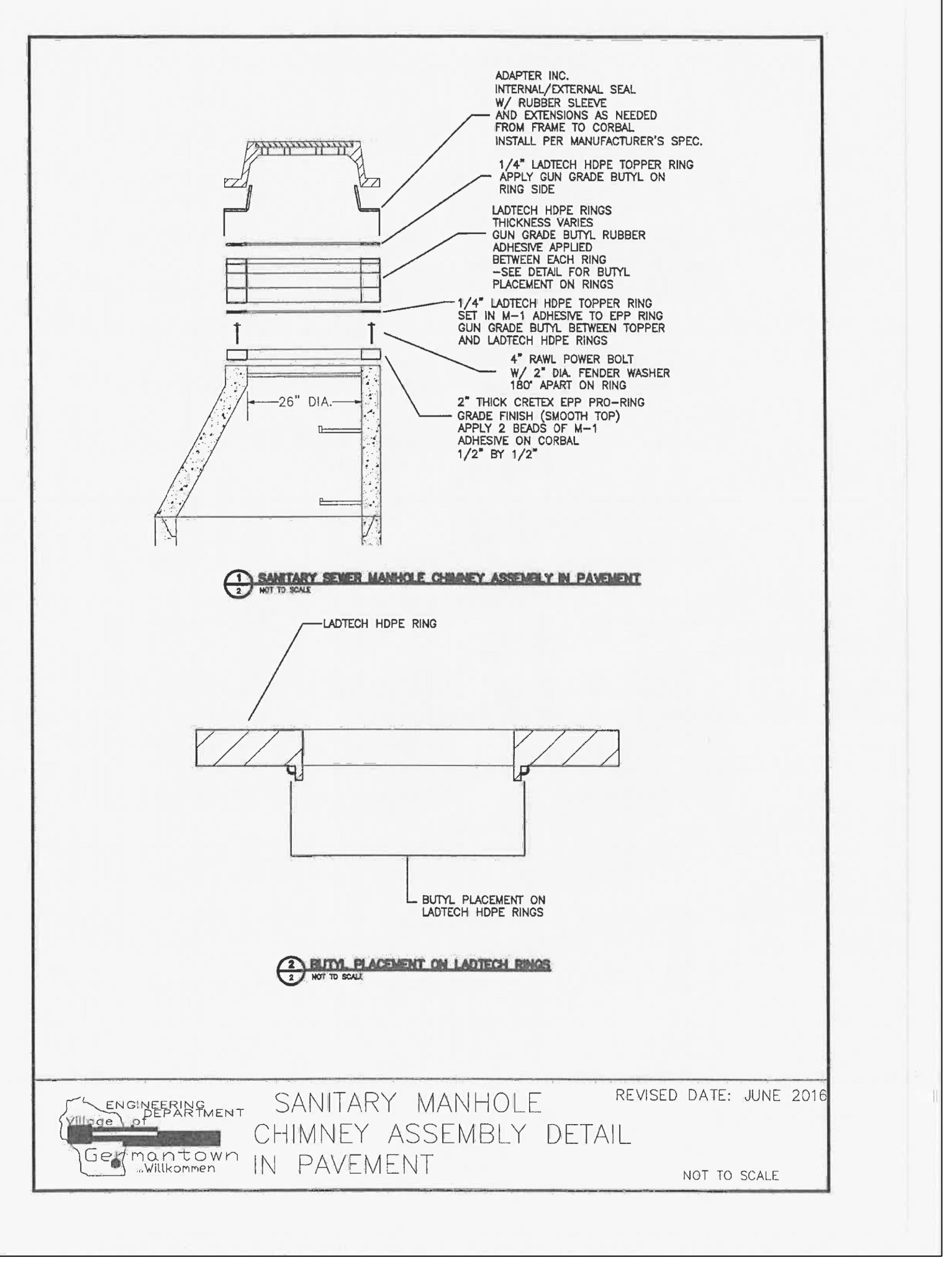
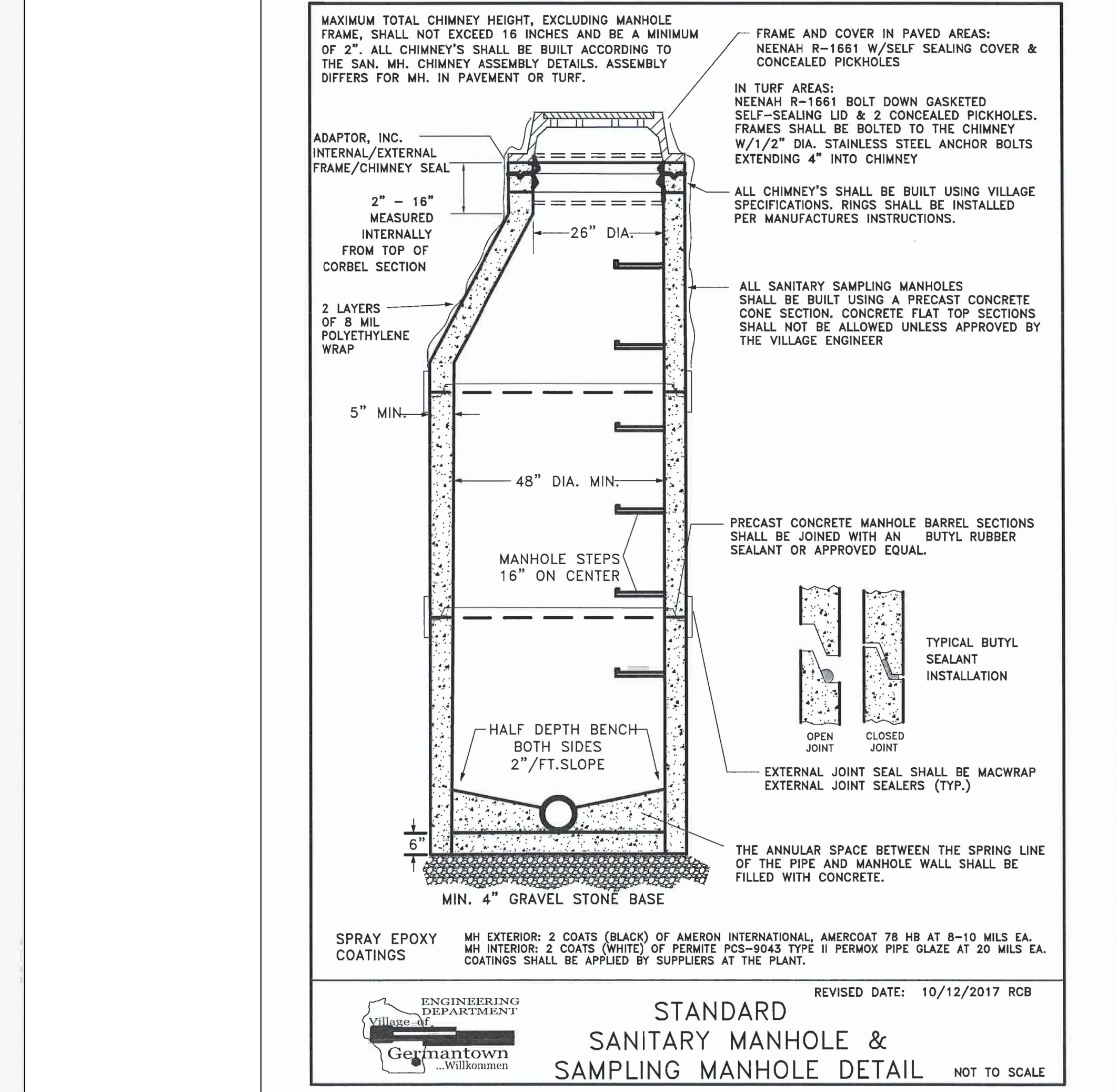
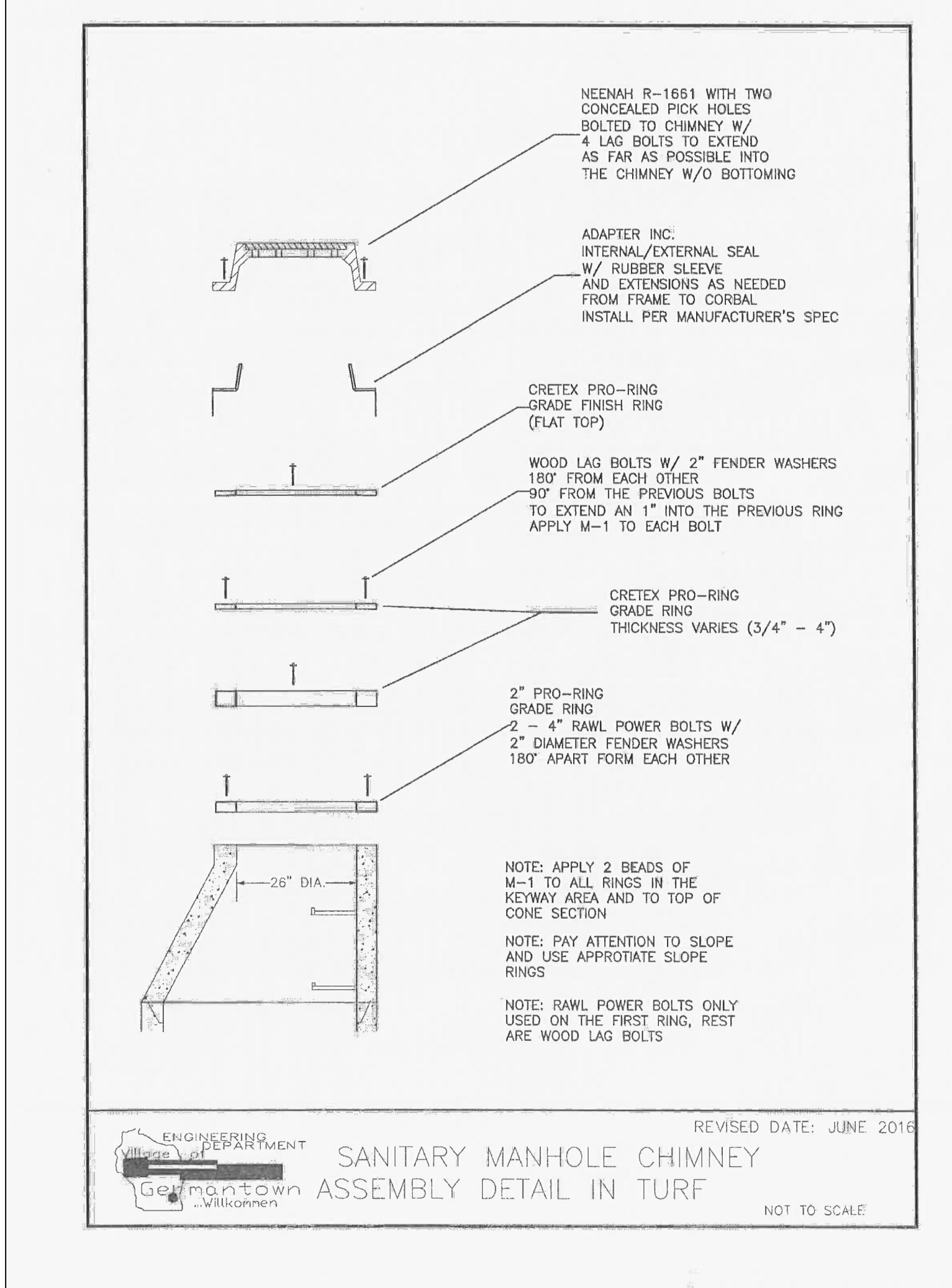
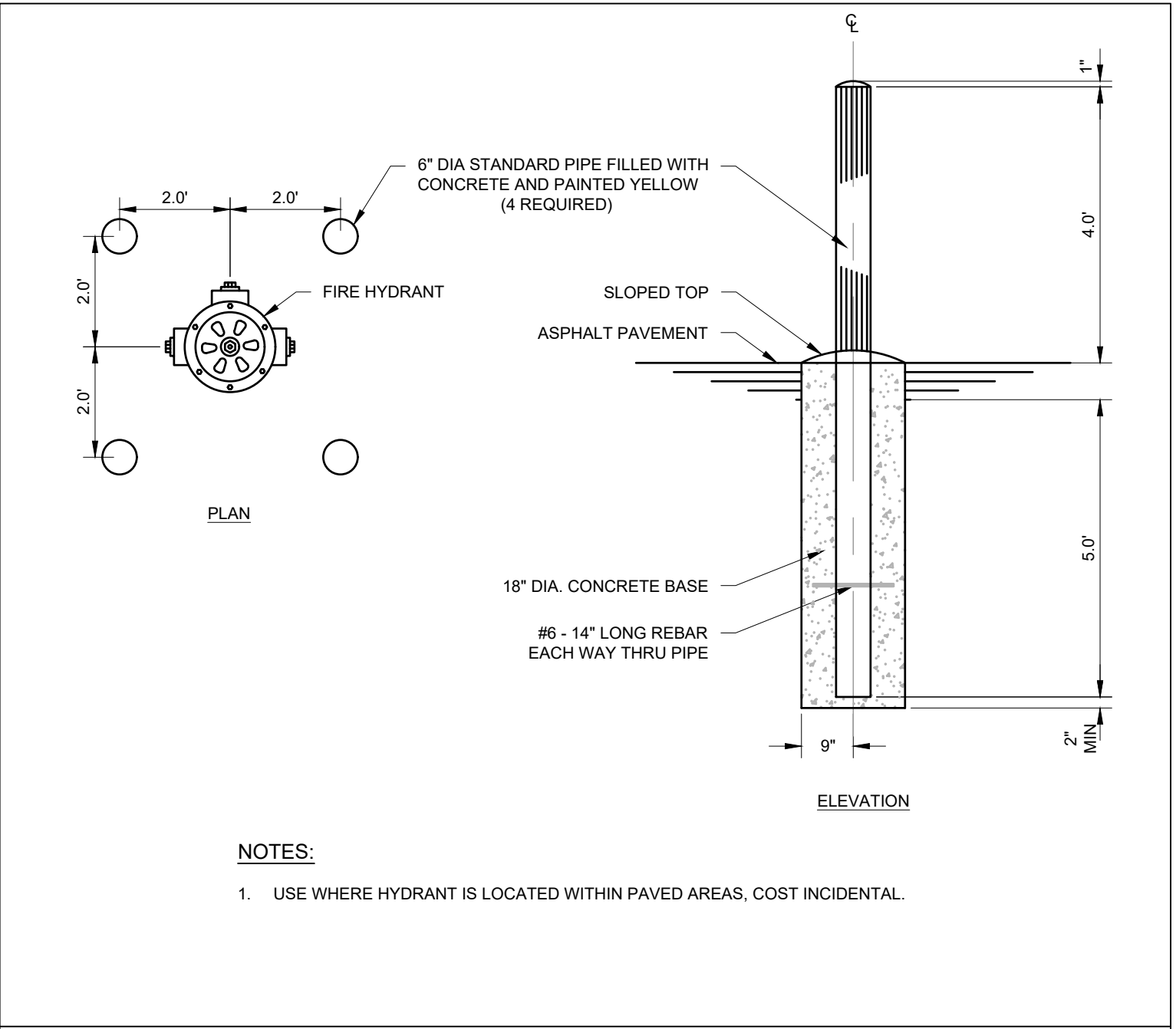
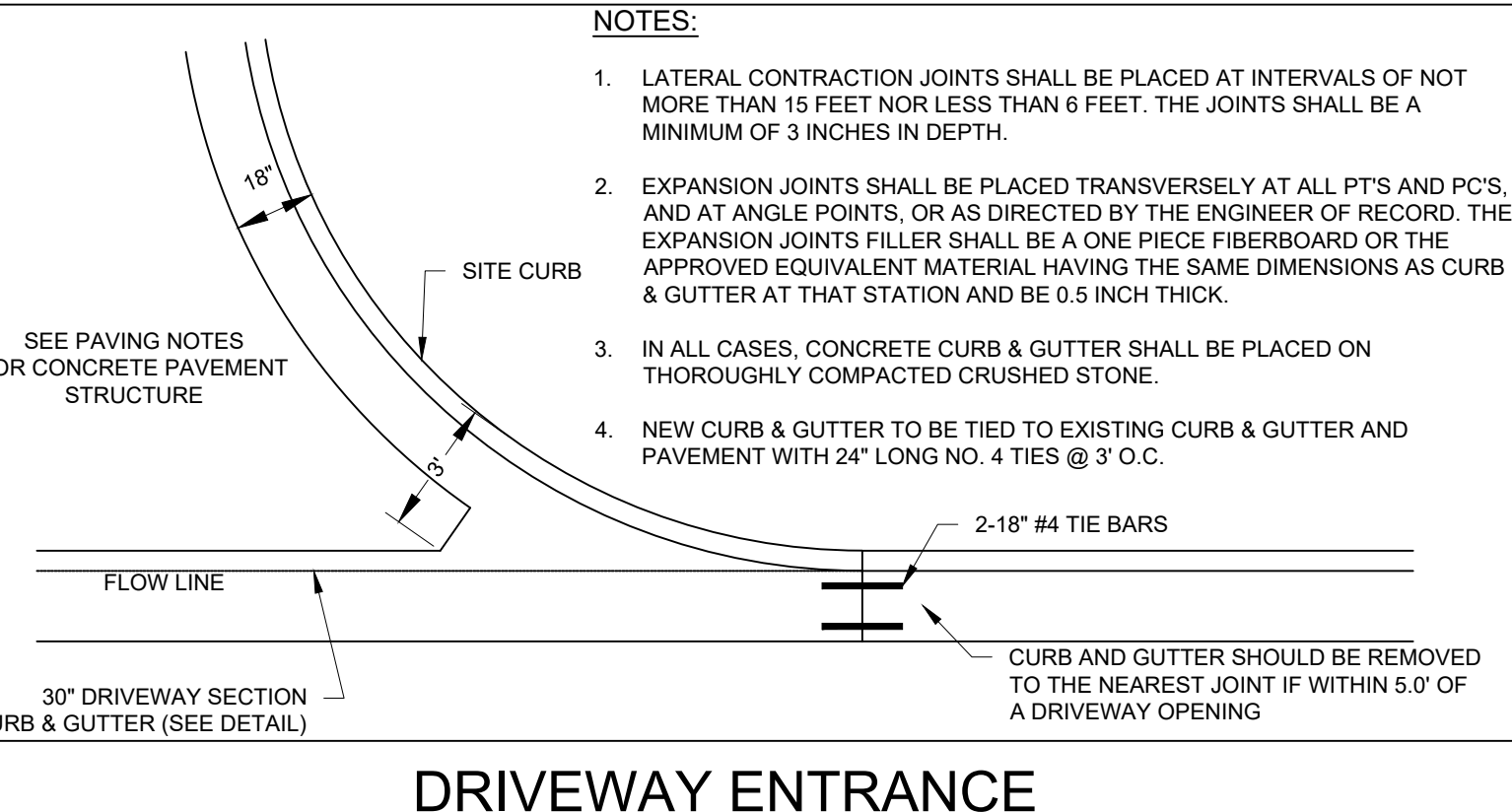
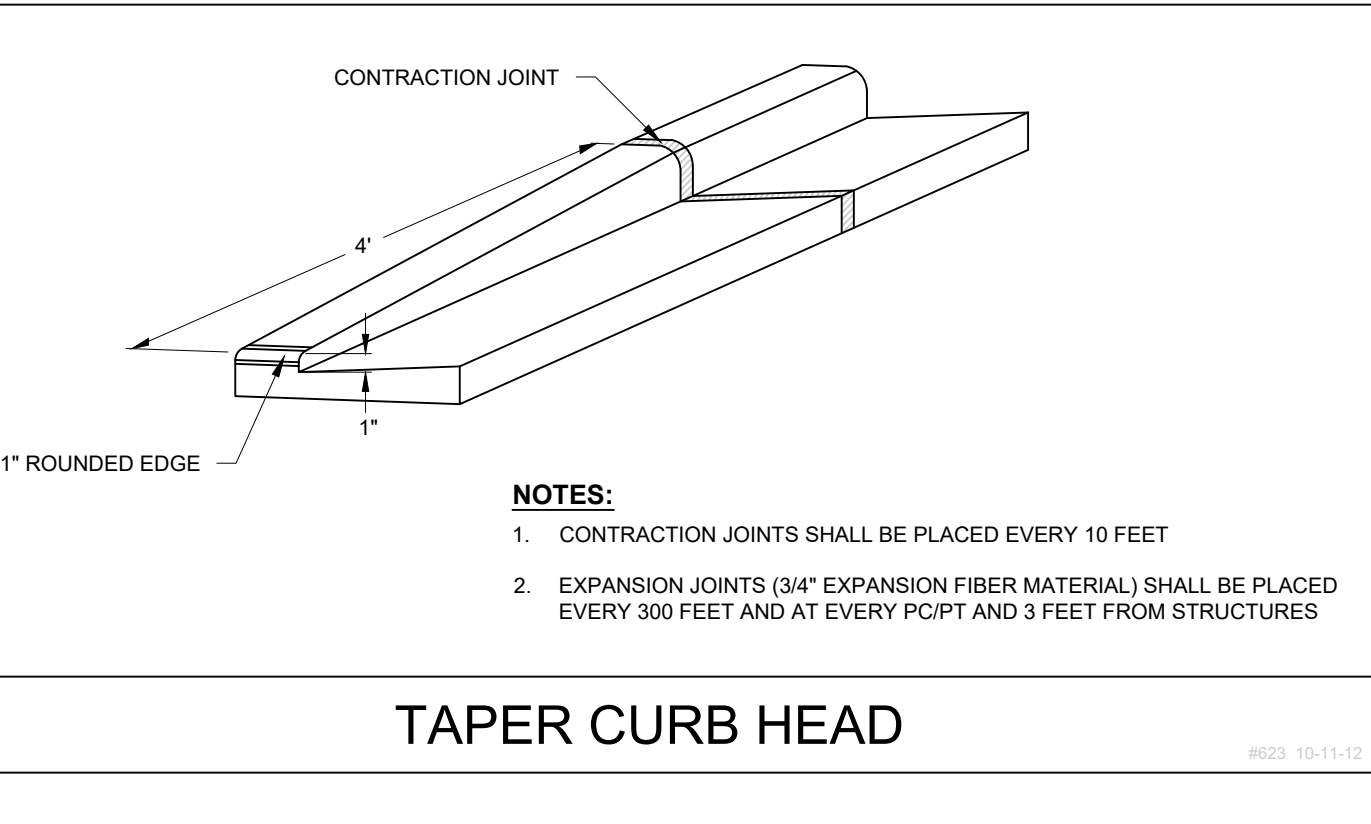
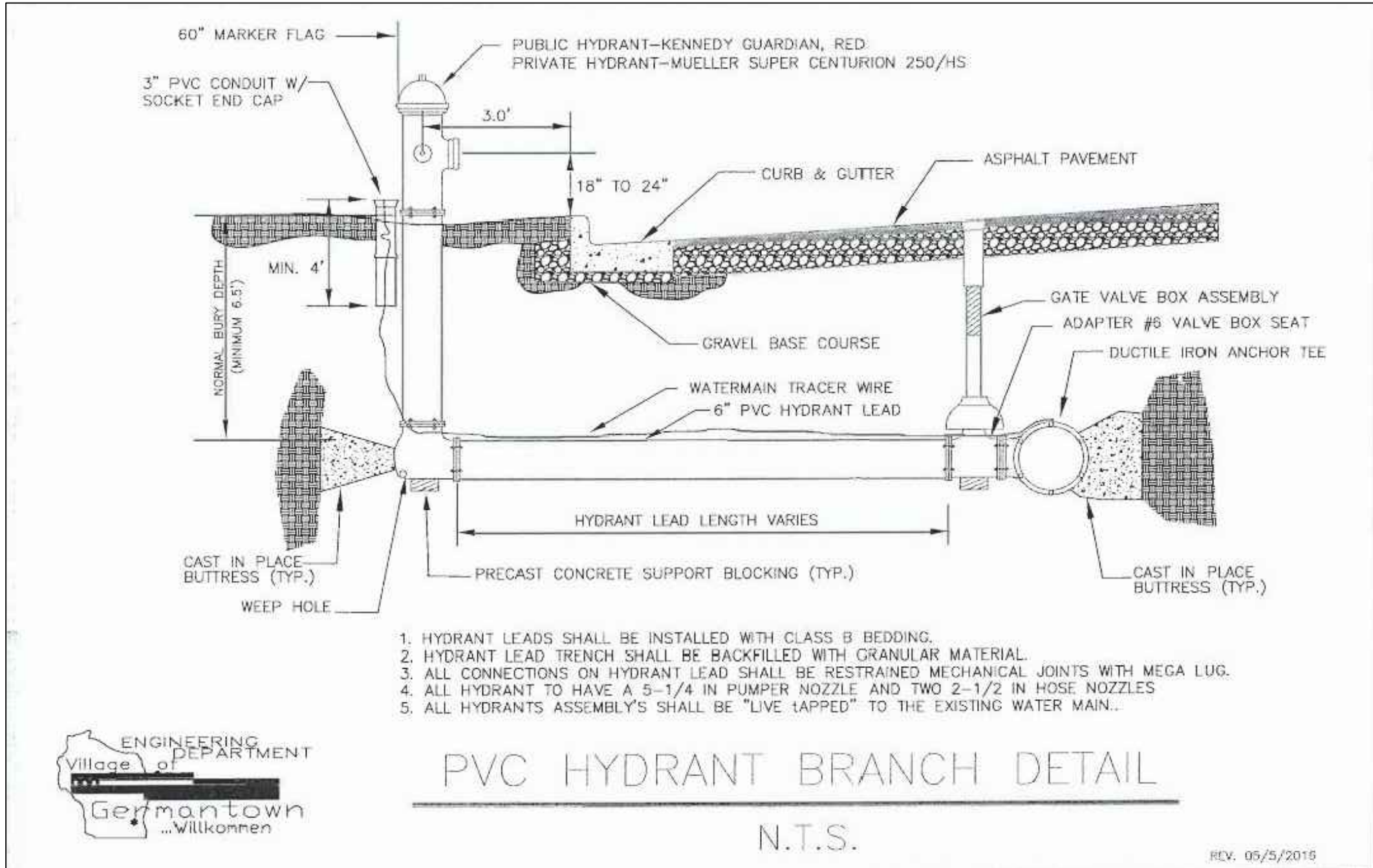
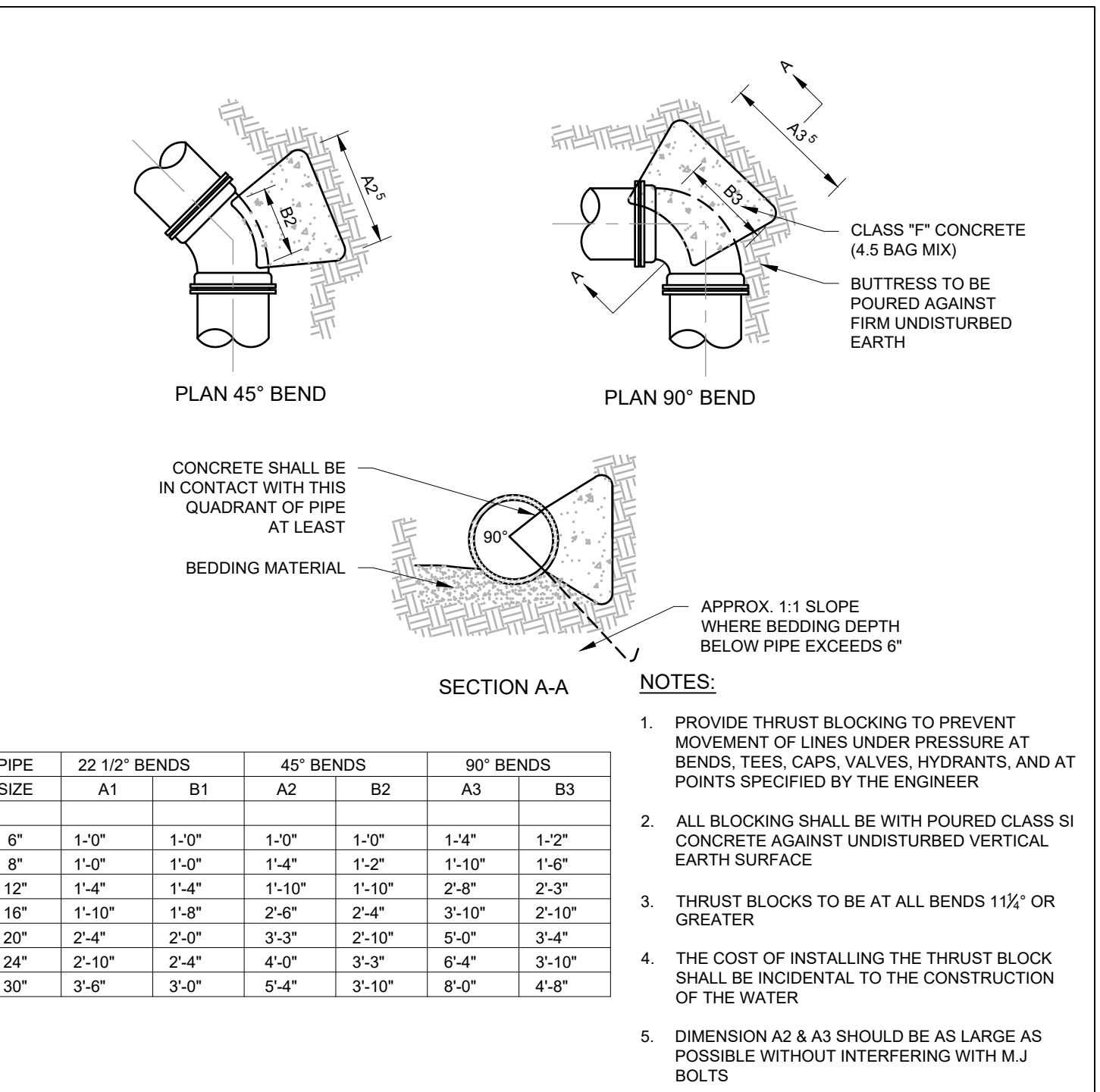
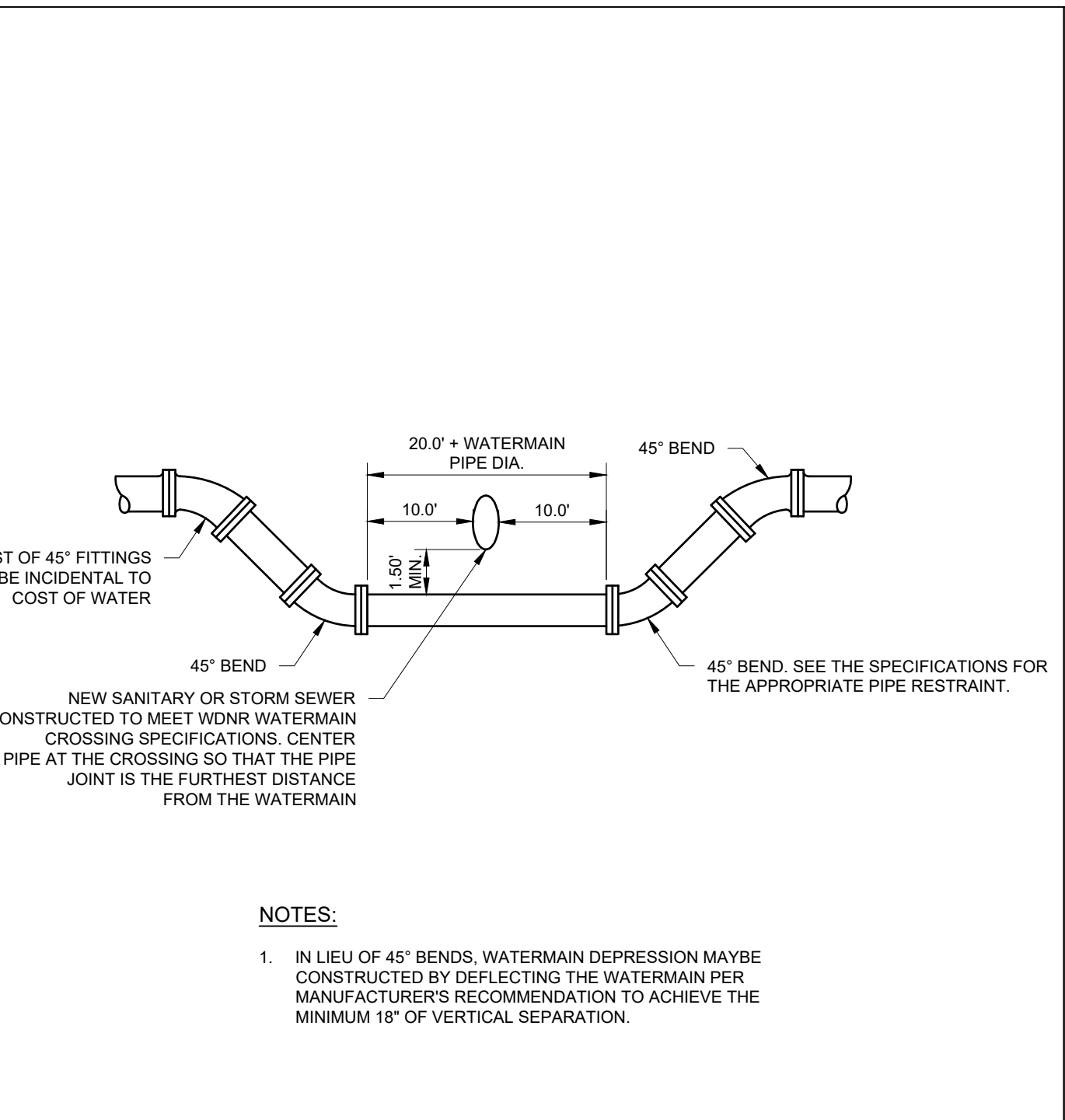
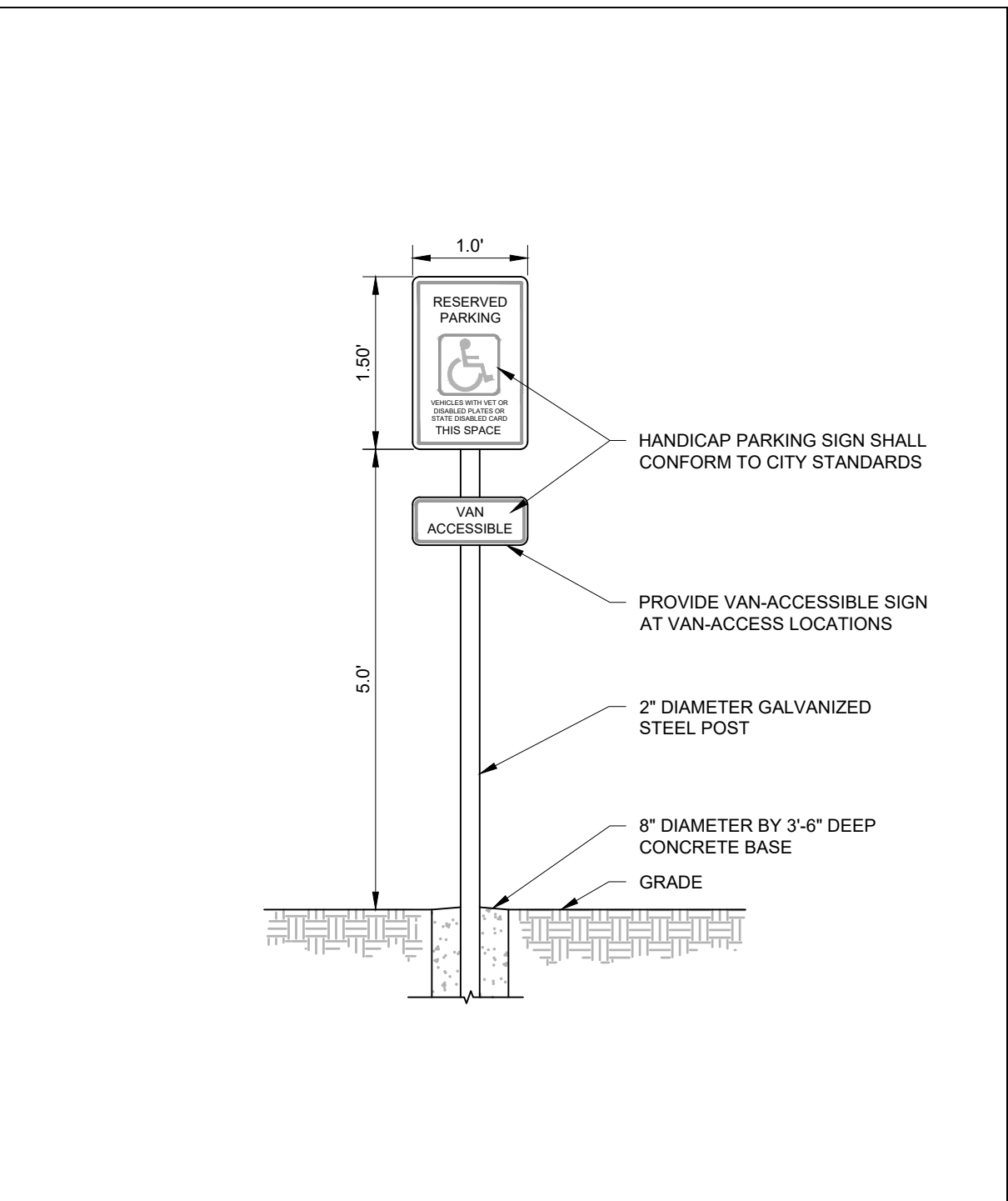
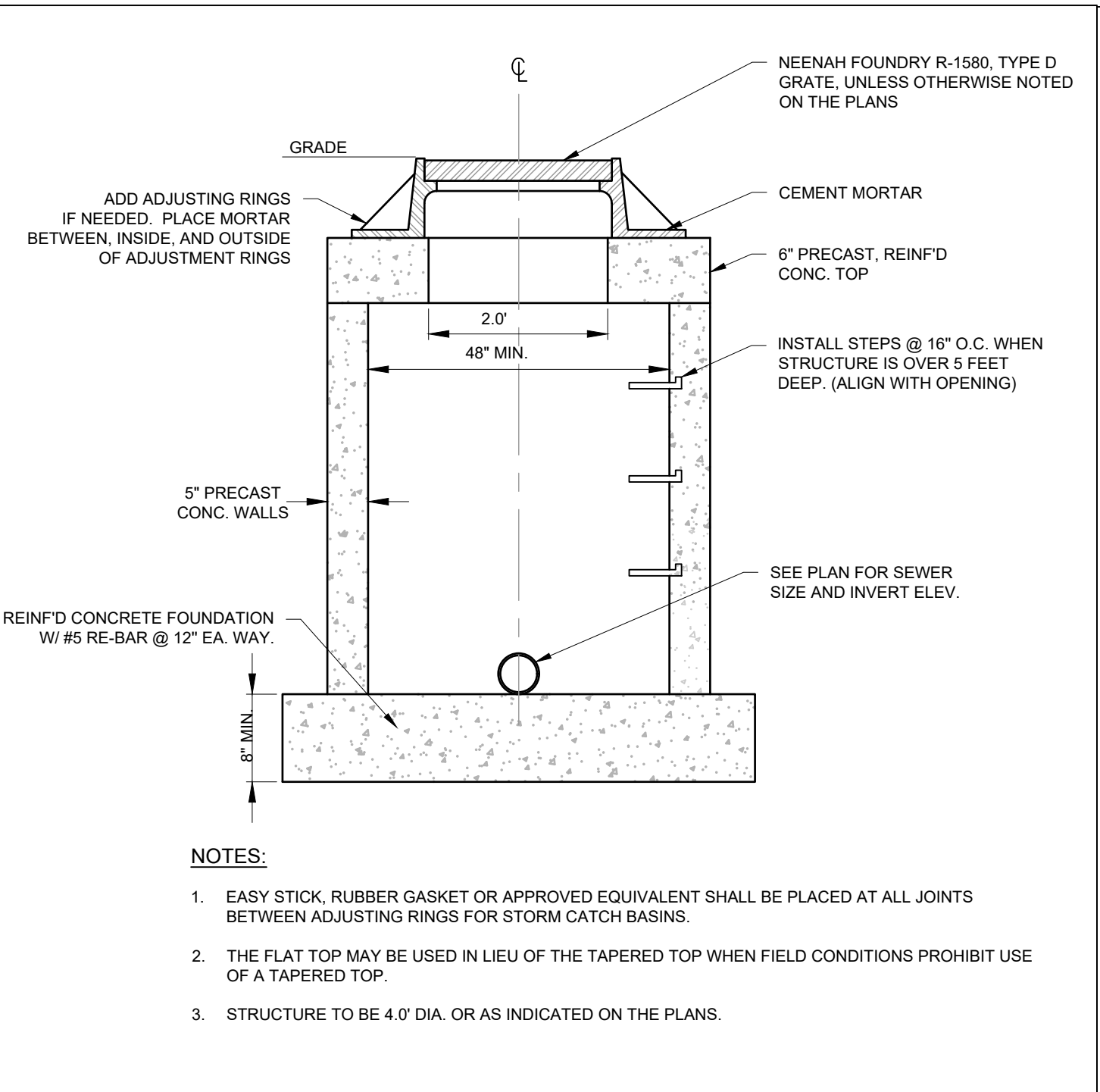
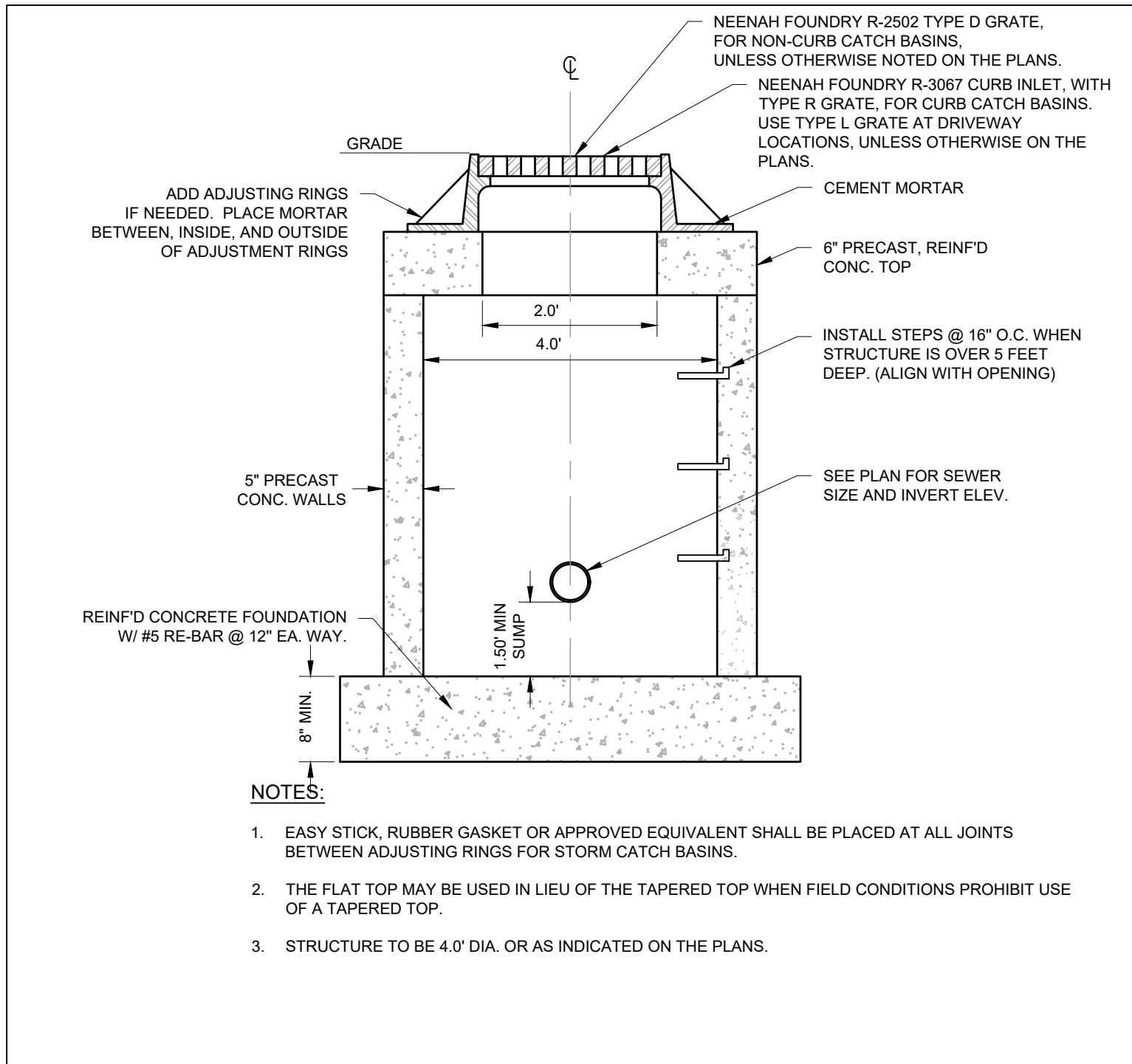
SITE STABILIZATION PLAN

THESE PLANS AND DESIGNS ARE COPYRIGHT PROTECTED AND MAY NOT BE USED IN WHOLE OR IN PART WITHOUT THE WRITTEN CONSENT OF PINNACLE ENGINEERING GROUP, LLC

DESIGNED: SRB

REVIEWED: SRB

DRAWN: SRB



18" CURB ADJACENT TO SIDEWALK

NOTES:

1. LATERAL CONTRACTION JOINTS SHALL BE PLACED AT INTERVALS OF NOT MORE THAN 10 FEET NOR LESS THAN 6 FEET. THE JOINTS SHALL BE A MINIMUM OF 3 INCHES IN DEPTH.
2. EXPANSION JOINTS SHALL BE PLACED TRANSVERSELY AT ALL PTS AND PCS, AND AT ALL CORNER POINTS, OR AS DIRECTED BY THE ENGINEER OF RECORD. THE EXPANSION JOINTS FILLER SHALL BE A ONE PIECE FIBERBOARD OR THE APPROVED EQUIVALENT MATERIAL HAVING THE SAME DIMENSIONS AS CURB & GUTTER AT THAT STATATION AND BE 0.5 INCH THICK.
3. IN ALL CASES, CONCRETE CURB & GUTTER SHALL BE PLACED ON THOROUGHLY COMPACTED CRUSHED STONE.
4. REVERSE STYLE CURB LOCATIONS ARE NOTED ON THE PLANS.

NOTES:

1. THE WATER QUALITY BASIN WILL HAVE A 100-YR WSEL LOWER THAN THE SPILLWAY
2. THE CONTRACTOR SHALL MAINTAIN THE SEDIMENT BASIN UNTIL SUCH TIME AS THERE ARE NO UNDISTURBED AREAS ON THE REMAINDER OF THE SITE. MAINTENANCE SHALL INCLUDE REMOVING EXCESS DEPOSITS OF SEDIMENTS AS NECESSARY AND BERM REBUILDING AS NECESSARY.
3. TOP OF BERM & SPILLWAY TO BE TREATED WITH EROSION CONTROL MATTING & SEED.
4. FINAL BOTTOM ELEVATIONS OF POND 1 SHALL NOT EXCEED ____ AFTER FINAL STABILIZATION OF THE AREA DRAINING TO THE POND IS ACHIEVED.
5. EXTEND RIP RAP R2 BELOW THE ELEVATION OF THE EMERGENCY SPILLWAY ON THE INSIDE OF THE POND. EXTEND RIP RAP R1 TO TOP OF SLOPE ON THE OUTSIDE OF THE POND.

WEST POND OUTLET STRUCTURE

SOUTHEAST POND OUTLET STRUCTURE

CURB AND GUTTER BUMP OUT

SOUTHEAST POND

GENERAL NOTES:

1. ALL CONSTRUCTION SHALL MEET THE SPECIFICATIONS OF "WDMR WET DETENTION BASIN TECHNICAL STANDARD 1001".
2. ALL WORK TO BE CONDUCTED IN CONFORMANCE WITH THE STORM WATER MANAGEMENT PLAN FOR THE PROJECT SITE AS APPROVED BY THE REGULATORY ENGINEER OF RECORD.
3. RCP PIPING & INSTALLATION WITHIN THE BASIN SHALL BE IN ACCORDANCE WITH (ASTM C-76/C443) WITH RUBBER GASKETS.
4. OWNER OR CONTRACTOR MUST CONSULT LANDSCAPE ARCHITECT OR ECOLOGICAL PLANNING AGENCY FOR APPROPRIATE PLANTS AND PLANTING CONFIGURATIONS.

NOTES:

1. RETAINING WALL DETAIL IS CONCEPTUAL AND SCHEMATIC ONLY. THE CONTRACTOR MUST SUBMIT INFORMATION ON THE PRODUCT CHOSEN (I.E. "KEYSTONE" OR EQUIVALENT) INCLUDING A STATEMENT FROM THE MANUFACTURER THAT THE PRODUCT IS SUITABLE FOR THE PROPOSED APPLICATION. THIS INFORMATION SHALL BE SUBMITTED TO THE OWNER, THE ENGINEER AND THE VILLAGE ENGINEER FOR REVIEW, PRIOR TO CONSTRUCTION. THIS REVIEW DOES NOT RELIEVE THE CONTRACTOR AND MANUFACTURER OF RESPONSIBILITY FOR THE WALL. THE CONTRACTOR SHALL ADHERE STRICTLY TO THE MANUFACTURER'S SPECIFICATIONS AND DESIGN REQUIREMENTS DURING CONSTRUCTION.
2. WALL TO BE SET WITH BOTTOM OF FIRST BLOCK 8" BELOW GRADE AT FACE OF WALL.

KEYSTONE RETAINING WALL

NOTES:

1. GRATING DETAILS SHOWN ARE INTENDED USE WITH PARTICULAR SIZES OF PRECAST REINFORCED CONCRETE FLEAD END SECTION AS SHOWN ON WISDOT STANDARDS.
2. STRUCTURAL STEEL SHAPES AND PLATES SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
3. GALVANIZED STEEL PIPE SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.
4. BOLTS, NUTS AND WASHERS SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.
5. ALL FABRICATION SHALL BE COMPLETED AND READY FOR ASSEMBLY BEFORE GALVANIZING.
6. THE CORED HOLES IN THE PRECAST CONCRETE FLEAD END SECTIONS SHALL BE TO THE DIAMETERS NOTED; IF CONE-OUT ON THE OTHER END OF THE HOLE OCCURS, THE HOLE SHALL BE FILLED WITH GROUT TO CORRECT DIAMETER OF THE HOLE.
7. APPROXIMATE WEIGHT OF STEEL SHOWN INCLUDES TOTAL WEIGHT OF GRATING, BOLTS, WASHERS, NUTS, AND STEEL PIPE.
8. THE CONTRACT UNIT PRICE 'EACH' FOR GRATING FOR CONCRETE FLEAD END SECTION OF THE SIZE INDICATED SHALL INCLUDE FABRICATION AND INSTALLATION OF THE GRATING AS DETAILED HEREON, INCLUDING FABRICATION OF THE NECESSARY MOUNTING HOLES IN THE FLEAD END SECTION. THIS PRICE DOES NOT INCLUDE THE COST OF THE PRECAST CONCRETE FLEAD END SECTION.

WEST POND

GENERAL NOTES:

1. ALL CONSTRUCTION SHALL MEET THE SPECIFICATIONS OF "WDRW DETENTION BASIN STANDARD 1000".
2. ALL WORK TO BE CONDUCTED IN CONFORMANCE WITH THE STORM WATER MANAGEMENT PLAN FOR THE PROJECT SITE AS APPROVED BY THE REGULATORY ENGINEER OF RECORD.
3. RCP PIPING & INSTALLATION WITHIN THE BASIN SHALL BE IN ACCORDANCE WITH (ASTM C-76/C43) WITH RUBBER GASKETS.
4. OWNER OR CONTRACTOR MUST CONSULT LANDSCAPE ARCHITECT OR ECOLOGICAL PLANNING AGENCY FOR APPROPRIATE PLANTS AND PLANTING CONFIGURATIONS.
5. CLAY LINER SHALL BE A MINIMUM OF 2-FEET THICK. CLAY SHALL BE COMPACTED AT 12.0% OPTIMAL MOISTURE CONTENT TO 80% MODIFIED PROCTOR. MEDIUM STIFF TO STIFF CLAYS PRESENT IN THE POND SIDE SLOPES OR OTHER ONSITE MEDIUM STIFF TO STIFF CLAYS MAY BE USED AT THE DISCRETION OF THE GEOTECHNICAL ENGINEER OF RECORD.
6. FOR CONSTRUCTED EMBANKMENTS WHERE THE PERMANENT POOL IS PONDING 3-FOOT OR MORE AGAINST THE EMBANKMENT, THERE SHALL BE A CORE TRENCH OR KEYWAY ALONG THE CENTERLINE OF THE EMBANKMENT UP TO THE PERMANENT POOL ELEVATION. THE CORE TRENCH OR KEYWAY SHALL BE A MINIMUM OF 2-FEET DEEP AND 8-FEET WIDE WITH A SIDE SLOPE OF 1:1 OR FLATTER.

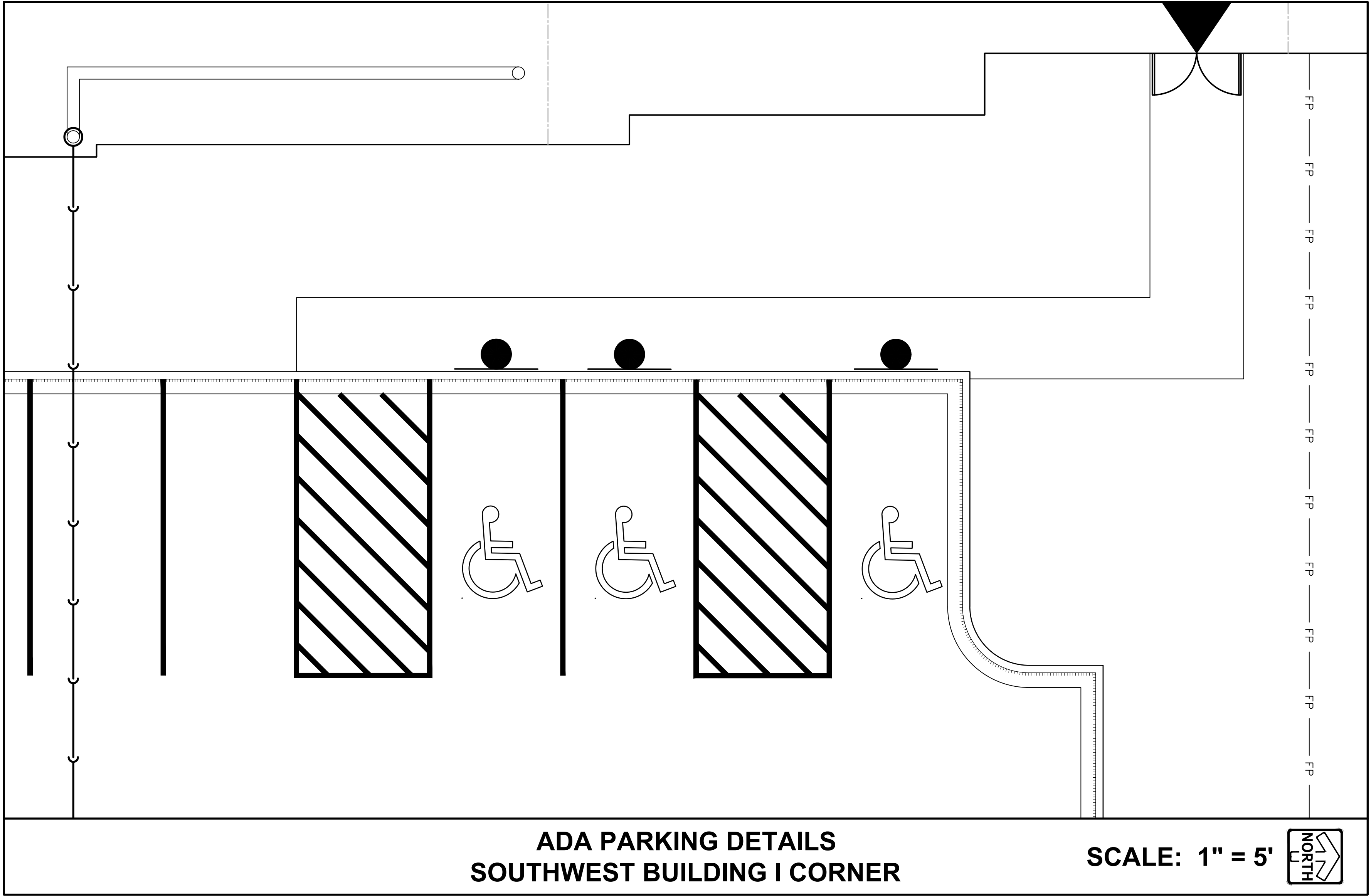
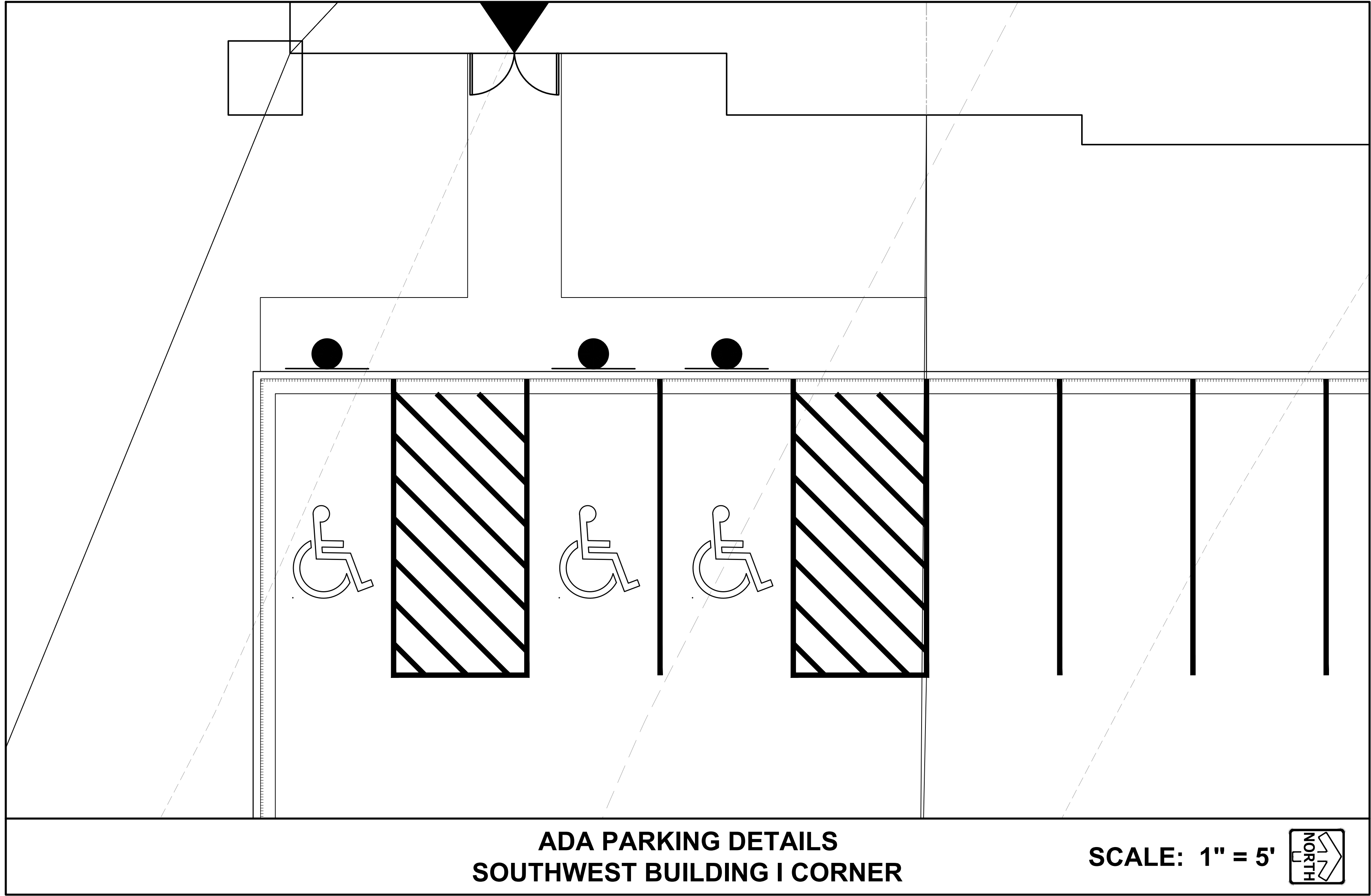
WEST POND CROSS SECTION

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DRAFTED: SRB

DESIGNED: SRB

REVIEWED: SRB



REVISIONS	
1. BID SET	7/30/21

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DESIGNED: JSH
DRAWN: JSH



Note:

We need prices broken out per:

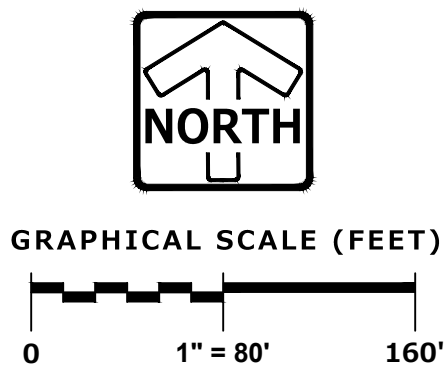
- 1.) Building One Sitework**
- 2.) Roadway & Pond Sitework**

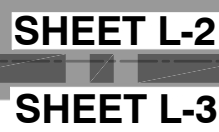
See C4 for the Limit of Building One site.

Apply this boundary to all plans.

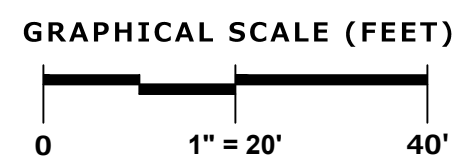
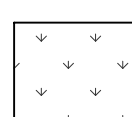
This is for accounting purposes only. Award based on the total project.

PLANT SCHEDULE			
TREES	QTY	BOTANICAL / COMMON NAME	SIZE
ASM	4	Acer saccharum / Sugar Maple 60' T x 45' W	2.5" Cal.
ASM2	6	Acer saccharum / Sugar Maple 60' T x 45' W	3" Cal.
AAB	9	Amelanchier x grandiflora 'Autumn Brilliance' / Autumn Brilliance Serviceberry 20' T x 20' W	8' Ht.
CNC2	3	Catalpa speciosa / Northern Catalpa 55' T x 35' W	3" Cal.
GTS	9	Gleditsia triacanthos inermis 'Shademaster' / Shademaster Locust 60' T x 50' W	2.5" Cal.
GTS2	3	Gleditsia triacanthos inermis 'Shademaster' / Shademaster Locust 60' T x 50' W	3" Cal.
GDK	5	Gymnocladus dioica / Kentucky Coffee Tree 60' T x 45' W	2.5" Cal.
MPM	6	Malus x 'Prairie Maid' / Prairie Maid Crabapple 20' T x 25' W	1.5" Cal.
MR2	3	Malus x 'Royal Raindrops' / Royal Raindrops Crabapple - Multi-Stem 20' T x 15' W	8' Ht.
OXS	3	Quercus x schuetti / Swamp Bur Oak 70' T x 65' W	2.5" Cal.
OXS2	3	Quercus x schuetti / Swamp Bur Oak 70' T x 65' W	3" Cal.
TTS	11	Tilia tomentosa 'Sterling' / Sterling Silver Linden 60' T x 35' W	2.5" Cal.
TTS2	3	Tilia tomentosa 'Sterling' / Sterling Silver Linden 60' T x 35' W	3" Cal.
EVERGREEN TREES	QTY	BOTANICAL / COMMON NAME	SIZE
ACF	11	Abies concolor / White Fir 25' T x 25' W	5' Ht.
PGB	10	Picea glauca 'Densata' / Black Hills Spruce 30' T x 15' W	5' Ht.
PSW	8	Pinus strobus / Eastern White Pine 60' T x 30' W	5' Ht.
SHRUBS	QTY	BOTANICAL / COMMON NAME	SIZE
DKO	6	Diervilla lonicera 'Kodiak Orange' / Kodiak Orange Diervilla 4' T x 4' W	2' Ht.
HAN	6	Hydrangea arborescens 'Annabelle' / Annabelle Smooth Hydrangea 5' T x 5' W	2' Ht.
HBO	14	Hydrangea paniculata 'Bobo' / Bobo Hydrangea 3' T x 3' W	2' Ht.
HVS	27	Hydrangea paniculata 'Vanilla Strawberry' / Vanilla Strawberry Panicked Hydrangea 6' T x 5' W	2' Ht.
IVH	10	Itea virginica 'Little Henry' / Little Henry Sweetspire 3' T x 3' W	2' Ht.
RPP	18	Rosa rugosa 'Purple Pavement' / Purple Pavement Rugosa Rose 5' T x 5' W	2' Ht.
SBE	13	Sambucus nigra 'Black Lace' / Black Lace Elderberry 7' T x 7' W	2' Ht.
SMC	6	Spiraea japonica 'Magic Carpet' / Magic Carpet Spirea 2' T x 3' W	2' Ht.
SMP	8	Syringa meyeri 'Palibin' / Dwarf Korean Lilac 5' T x 6' W	2' Ht.
EVERGREEN SHRUBS	QTY	BOTANICAL / COMMON NAME	SIZE
JSG	12	Juniperus chinensis 'Sea Green' / Sea Green Juniper 5' T x 6' W	2' Ht.
JBO	4	Juniperus sabina 'Buffalo' / Buffalo Juniper 1' T x 6' W	24" W
JSP	12	Juniperus x 'J.N Select Blue' / Star Power Juniper 15' T x 8' W	4' Ht.
PPS	12	Picea abies 'Pumila' / Pumila Spruce 3' T x 4' W	24" W
PMS	8	Pinus mugo 'Slowmound' / Slowmound Mugo Pine 3' T x 3' W	24" W
TMD	6	Taxus x media 'Densiformis' / Densiform Yew 5' T x 5' W	2' Ht.
TTI	10	Taxus x media 'Tauntonii' / Taunton Yew 4' T x 5' W	2' Ht.
THH	6	Thuja occidentalis 'Holmstrup' / Holmstrup Cedar 14' T x 4' W	4' Ht.
ORNAMENTAL GRASSES	QTY	BOTANICAL / COMMON NAME	SIZE
CFO	6	Calamagrostis x a 'Overdam' / Overdam Reed Grass 24" T x 24" W	1 gal.
CK3	22	Calamagrostis x acutiflora 'Karl Foerster' / Feather Reed Grass 36" T x 30" W	1 gal.
MSO	12	Miscanthus sinensis 'Oktoberfest' / Oktoberfest Miscanthus 48" T x 36" W	1 gal.
PN3	26	Panicum virgatum 'Northwind' / Switch Grass 48" T x 30" W	1 gal.
SB4	24	Schizachyrium scoparium 'Blue Heaven' / Blue Heaven Little Bluestem 36" T x 30" W	1 gal.
STD	12	Sporobolus heterolepis 'Tara' / Prairie Dropseed 15" T x 20" W	1 gal.
PERENNIALS	QTY	BOTANICAL / COMMON NAME	SIZE
AS2	12	Allium x 'Summer Beauty' / Summer Beauty Allium 18" T x 18" W	4.5" cont.
AVR	10	Astilbe chinensis 'Vision in Red' / Vision in Red Astilbe 15" T x 18" W	4.5" cont.
CAL	42	Calamintha nepeta / Calamint 12" T x 18" W	4.5" cont.
CVZ	5	Coreopsis verticillata 'Zagreb' / Zagreb Coreopsis 20" T x 16" W	4.5" cont.
EMS	16	Echinacea purpurea 'Magnus Superior' / Magnus Superior Coneflower 20" T x 16" W	4.5" cont.
HSO	10	Hemerocallis 'Stella De Oro' / Stella De Oro Daylily 12" T x 20" W	4.5" Cont.
HPP	28	Heuchera m 'Palace Purple' / Palace Purple Coral Bells 18" T x 18" W	4.5" Cont.
HGS	5	Hosta x 'Gold Standard' / Gold Standard Hosta 20" T x 50" W	4.5" cont.
HPA	7	Hosta x 'Patriot' / Patriot Hosta 20" T x 38" W	4.5" cont.
LBS	13	Leucanthemum x 'Becky' / Becky Shasta Daisy 15" T x 15" W	4.5" Cont.
NWL	14	Nepeta x 'Walker's Low' / Walker's Low Catmint 20" T x 28" W	4.5" Cont.
SMN	40	Salvia nemorosa 'May Night' / May Night Sage 18" T x 18" W	4.5" Cont.
GROUND COVERS	QTY	BOTANICAL / COMMON NAME	
	63,192 sf	Native Plantings / AGRECOL RAINWATER RENEWAL MIX	
	26,447 sf	SHORTGRASS PRAIRIE- MESIC / AGRECOL SHORTGRASS PRAIRIE MESIC MIX	
	103,462 sf	Turf Hydroseed / Reinders - Cadet 70/30 Fescue/Blue Mix	
	300,638 sf	Turf Hydroseed Low Grow / Reinders No Mow/Low Grow Mix	
NOTES			
• REFER TO INDIVIDUAL SHEETS FOR PLANTING KEY AND SPECIES CALLOUTS			





GROUND COVERS



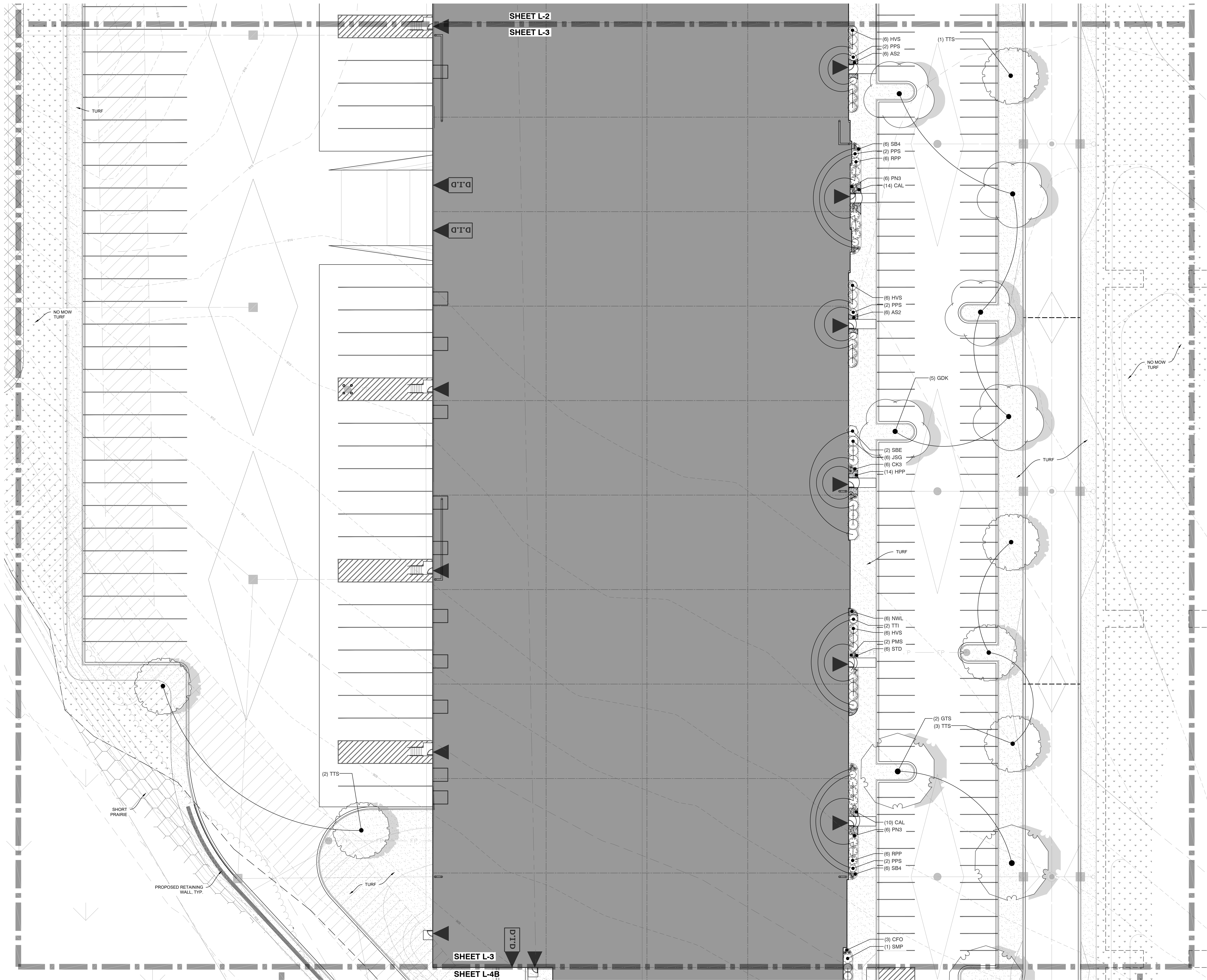
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			REG PW _____	
			REG START DATE <u>06/01/21</u>	
			SCALE <u>1" = 20'</u>	
<u>1</u>	<u>BID SET</u>	<u>7/30/21</u>		

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PRINTED: JSA

DESIGNED: JSA

REVIEWED: DUB



PLANT KEY

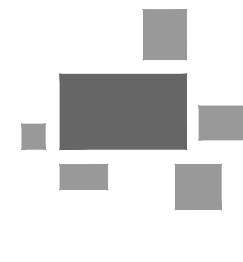
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QXS	Gymnocladus dioica Kentucky Coffee Tree
QXS2	Malus x 'Prairie Maid'
TTS	Malus x 'Prairie Maid'
TTS2	Malus x 'Prairie Maid'
EVERGREEN TREES	
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IVH	Bobo Hydrangea
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SBE	Vanilla Strawberry Panicle Hydrangea
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SMP	Little Henry Sweetgum
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PMS	Black Lace Elderberry
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TTI	Magic Carpet Spiraea
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MSO	Sea Green Juniper
PN3	Juniperus x 'J.N. Select Blue'
SB4	Star Power Juniper
STD	Picea abies 'Pumila'
PERENNIALS	
AS2	Pumila Spruce
AVR	Pinus mugo 'Slowmound'
CAL	Slowmound Mugo Pine
EMS	Taxus x media 'Densiflora'
HPP	Densiflora Yew
HGS	Taxus x media 'Tauntoni'
HPA	Taunton Yew
LBS	Thuja occidentalis 'Holmstrup'
NWL	Holmstrup Cedar
SMN	

GROUND COVERS	BOTANICAL / COMMON NAME
	Native Plantings
	AGRECOL RAINWATER RENEWAL MIX
	SHORTGRASS PRAIRIE- MESIC
	AGRECOL SHORTGRASS PRAIRIE MESIC MIX
	Turf Hydroseed
	Reinders - Cadet 70/30 Fescue/Blue Mix
	Turf Hydroseed Low Grow
	Reinders No Mow/Low Grow Mix



GRAPHICAL SCALE (FEET)

0 1" = 20' 40'



PINNACLE ENGINEERING GROUP

ENGINEERING | NATURAL RESOURCES | SURVEYING

PLAN | DESIGN | DELIVER

www.pinnacle-engr.com

WISCONSIN OFFICE:

20725 WATERTOWN ROAD, SUITE 100

BROOKFIELD, WI 53186

(262) 754-8888

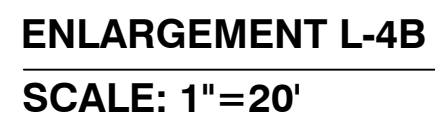
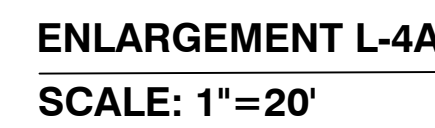
CHICAGO | MILWAUKEE | NATIONWIDE

CAPSTONE 41

GERMANTOWN, WI

LANDSCAPE ENLARGEMENT

REVISIONS	SHEET
1. BID SET 7/30/21	L-3
	OF
	L-5



PROJECTIONS

REG. NO. **M462.00A-WJ**

REG. PM
 START DATE

AJS
06/01/21

SCALE

1" = 20'



GRAPHICAL SCALE (FEET)

0

40

1" = 20'

SHEET

L-4

OF

L-5

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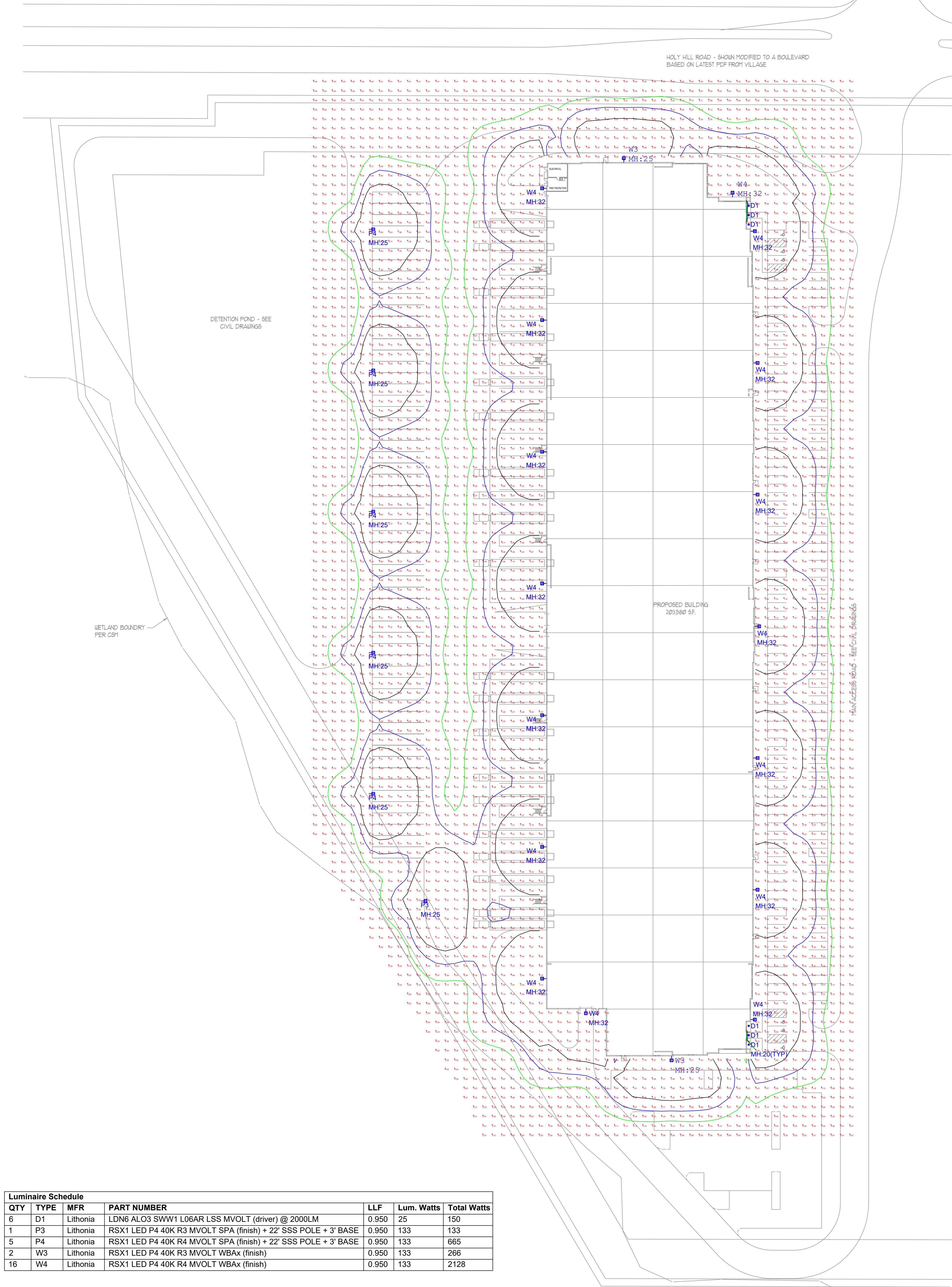
WISCONSIN OFFICE:
20725 WATERTOWN ROAD, SUITE 100
BROOKFIELD, WI 53186
(262) 754-8888

CHICAGO, ILLINOIS OFFICE: NATIONWIDE

CAPSTONE 41
GERMANTOWN, WI

7 TRENCHED BED EDGE
3/4" = 1'-0" 3293-03

REVISIONS		SHEET	
DATE	DESCRIPTION	BY	NO.
7/30/21			L-5
			OF
			L-5



CAPSTONE 41-ONE

GERMANTOWN, WI

LED SITE LIGHTING PLAN

DRAWN BY: JS

DATE: 8 / 5 / 2021

SCALE: 1" = 50'-0"

REVISIONS	#	DATE	COMMENTS

 **ENTERPRISE**
Lighting & Control



RSX1 LED Area Luminaire

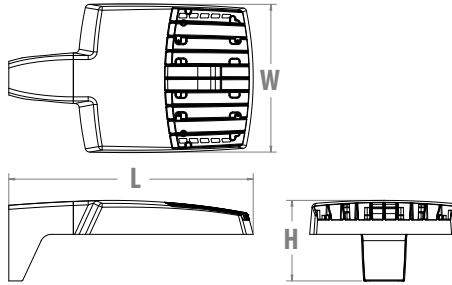


Catalog Number
Notes
Type

Hit the Tab key or mouse over the page to see all interactive elements.

Specifications

EPA (ft²@0°):	0.57 ft² (0.05 m²)
Length:	21.8" (55.4 cm) (SPA mount)
Width:	13.3" (33.8 cm)
Height:	3.0" (7.6 cm) Main Body 7.2" (18.4 cm) Arm
Weight: (SPA mount):	22.0 lbs (10.0 kg)



Introduction

The new RSX LED Area family delivers maximum value by providing significant energy savings, long life and outstanding photometric performance at an affordable price. The RSX1 delivers 7,000 to 17,000 lumens allowing it to replace 70W to 400W HID luminaires.

The RSX features an integral universal mounting mechanism that allows the luminaire to be mounted on most existing drill hole patterns. This "no-drill" solution provides significant labor savings. An easy-access door on the bottom of mounting arm allows for wiring without opening the electrical compartment. A mast arm adaptor, adjustable integral slipfitter and other mounting configurations are available.

Ordering Information

EXAMPLE: RSX1 LED P4 40K R3 MVOLT SPA DDBXD

RSX1 LED					
Series	Performance Package	Color Temperature	Distribution	Voltage	Mounting
RSX1 LED	P1	30K 3000K	R2 Type 2 Wide	MVOLT (120V-277V) ²	SPA Square pole mounting (3.0" min. SQ pole for 1 at 90°, 3.5" min. SQ pole for 2, 3, 4 at 90°)
	P2	40K 4000K	R3 Type 3 Wide	HVOLT (347V-480V) ³	RPA Round pole mounting (3.2" min. dia. RND pole for 2, 3, 4 at 90°, 3.0" min. dia. RND pole for 1 at 90°, 2 at 180°, 3 at 120°)
	P3	50K 5000K	R3S Type 3 Short	XVOLT (277V-480V) ⁴	MA Mast arm adaptor (fits 2-3/8" OD horizontal tenon)
	P4		R4 Type 4 Wide	(use specific voltage for options as noted)	IS Adjustable slipfitter (fits 2-3/8" OD tenon) ⁶
			R4S Type 4 Short	120 ³ 277 ⁵	WBA Wall bracket ¹
			R5 Type 5 Wide ¹	208 ³ 347 ⁵	WBASC Wall bracket with surface conduit box
			R5S Type 5 Short ¹	240 ³ 480 ⁵	AASP Adjustable tilt arm square pole mounting ⁶
			AFR Automotive Front Row		AARP Adjustable tilt arm round pole mounting ⁶
			AFRR90 Automotive Front Row Right Rotated		AAWB Adjustable tilt arm with wall bracket ⁶
			AFRL90 Automotive Front Row Left Rotated		AAWSC Adjustable tilt arm wall bracket and surface conduit box ⁶

Options			Finish
Shipped Installed HS House-side shield ⁷ PE Photocontrol, button style ^{8,9} PEX Photocontrol external threaded, adjustable ^{9,10} PER7 Seven-wire twist-lock receptacle only (no controls) ^{9,11,12,13} CE34 Conduit entry 3/4" NPT (Qty 2) SF Single fuse (120, 277, 347) ⁵ DF Double fuse (208, 240, 480) ⁵ SPD20KV 20KV Surge pack (10KV standard) FAO Field adjustable output ^{9,13} DMG 0-10V dimming extend out back of housing for external control (control ordered separate) ^{9,13}			DDBXD Dark Bronze DBLXD Black DNAXD Natural Aluminum DWHXD White DDBTXD Textured Dark Bronze DBLBXD Textured Black DNATXD Textured Natural Aluminum DWHGXD Textured White
Shipped Installed *Standalone and Networked Sensors/Controls (factory default settings, see table page 9) NLTAIR2 nLight AIR generation 2 ^{13,14,15} PIRHN Networked, Bi-Level motion/ambient sensor (for use with NLTAIR2) ^{13,15,16} *Note: PIRHN with nLight Air can be used as a standalone or networked solution. Sensor coverage pattern is affected when luminaire is tilted. Shipped Separately (requires some field assembly) EGS External glare shield ⁷ EGFV External glare full visor (360° around light aperture) ⁷ BS Bird spikes ¹⁷			



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Ordering Information

Accessories

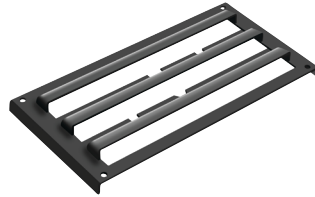
Ordered and shipped separately.

RSX1HS	RSX1 House side shield (includes 1 shield)
RSX1HSAFRR U	RSX1 House side shield for AFR rotated optics (includes 1 shield)
RSX1EGS (FINISH) U	External glare shield (specify finish)
RSX1EGFV (FINISH) U	External glare full visor (specify finish)
RSXRPA (FINISH) U	RSX Universal round pole adaptor plate (specify finish)
RSXWBA (FINISH) U	RSX WBA wall bracket (specify finish) ¹
RSXSCB (FINISH) U	RSX Surface conduit box (specify finish, for use with WBA, WBA not included)
DLL127F 1.5 JU	Photocell -SSL twist-lock (120-277V) ¹⁸
DLL347F 1.5 CUL JU	Photocell -SSL twist-lock (347V) ¹⁸
DLL480F 1.5 CUL JU	Photocell -SSL twist-lock (480V) ¹⁸
DSHORT SBK U	Shorting cap ¹⁸

NOTES

- Any Type 5 distribution, is not available with WBA.
- MVOLT driver operates on any line voltage from 120-277V (50/60 Hz).
- HVOLT driver operates on any line voltage from 347-480V (50/60 Hz).
- XVOLT driver not available with P1 or P2. XVOLT driver operates on any line voltage from 277V-480V (50/60 Hz). XVOLT not available with fusing (SF or DF) and not available with PE or PEX.
- Single fuse (SF) requires 120V, 277V or 347V. Double fuse (DF) requires 208V, 240V or 480V.
- Maximum tilt is 90° above horizontal.
- It may be ordered as an accessory.
- Requires MVOLT or 347V.
- Not available in combination with other light sensing control options (following options cannot be combined: PE, PEX, PER7, FAO, DMG, PIRHN).
- Requires 120V, 208V, 240V or 277V.
- Twistlock photocell ordered and shipped as a separate line item from Acuity Brands Controls. See accessories. Shorting Cap included. Dimming leads capped for future use.
- For units with option PER7, the mounting must be restricted to +/- 45° from horizontal aim per ANSI C136.10-2010.
- Two or more of the following options cannot be combined including DMG, PER7, FAO and PIRHN.
- Must be ordered with PIRHN.
- Requires MVOLT or HVOLT.
- Must be ordered with NLTAR2. For additional information on PIRHN visit [here](#).
- Must be ordered with fixture for factory pre-drilling.
- Requires luminaire to be specified with PER7 option. Ordered and shipped as a separate line item from Acuity Brands Controls.

External Shields



House Side Shield



External Glare Shield

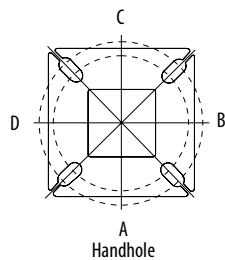


External 360 Full Visor

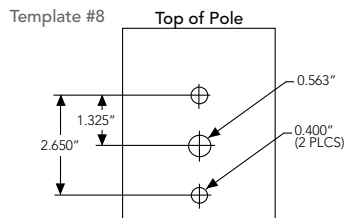
Pole/Mounting Information

Accessories including bullhorns, cross arms and other adapters are available under the accessories tab at Lithonia's Outdoor Poles and Arms product page. Click here to visit [Accessories](#).

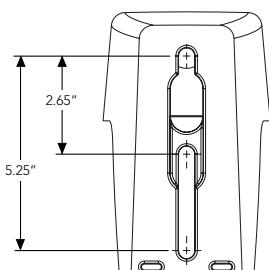
HANDHOLE ORIENTATION



RSX POLE DRILLING



RSX STANDARD ARM & ADJUSTABLE ARM



Round Tenon Mount - Pole Top Slipfitters

Tenon O.D.	RSX Mounting	Single	2 @ 180°	2 @ 90°	3 @ 120°	3 @ 90°	4 @ 90°
2 - 3/8"	RPA, AARP	AS3-5 190	AS3-5 280	AS3-5 290	AS3-5 320	AS3-5 390	AS3-5 490
2 - 7/8"	RPA, AARP	AST25-190	AST25-280	AST25-290	AST25-320	AST25-390	AST25-490
4"	RPA, AARP	AST35-190	AST35-280	AST35-290	AST35-320	AST35-390	AST35-490

Drill/Side Location by Configuration Type

Drilling Template	Mounting Option	Single	2 @ 180	2 @ 90	3 @ 120	3 @ 90	4 @ 90
	Head Location	Side B	Side B & D	Side B & C	Round Pole Only	Side B, C & D	Side A, B, C & D
#8	Drill Nomenclature	DM19AS	DM28AS	DM29AS	DM32AS	DM39AS	DM49AS

RSX1 - Luminaire EPA

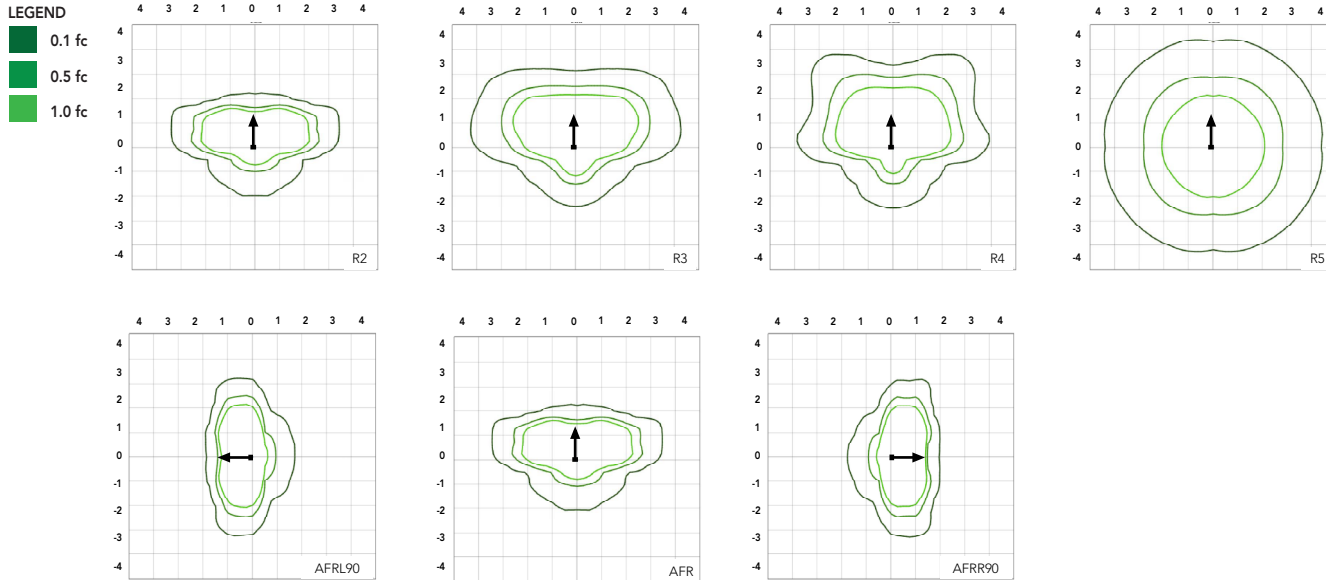
*Includes luminaire and integral mounting arm. Other tenons, arms, brackets or other accessories are not included in this EPA data.

Fixture Quantity & Mounting Configuration	Single	2 @ 90	2 @ 180	3 @ 90	3 @ 120	4 @ 90	2 Side by Side	3 Side by Side	4 Side by Side
Mounting Type	Tilt								
SPA - Square Pole Adaptor	0°	0.57	1.03	1.05	1.52	1.36	2.03	1.31	2.26
RPA - Round Pole Adaptor		0.62	1.08	1.15	1.62	1.46	2.13	1.36	2.36
MA - Mast Arm Adaptor		0.49	0.95	0.89	1.36	1.2	1.87	1.23	2.1
IS - Integral Slipfitter AASP/AARP - Adjustable Arm Square/Round Pole	0°	0.57	1.03	1.05	1.52	1.36	2.03	1.31	2.26
	10°	0.68	1.34	1.33	2	1.74	2.64	1.35	2.71
	20°	0.87	1.71	1.73	2.56	2.26	3.42	1.75	3.49
	30°	1.24	2.19	2.3	3.21	2.87	4.36	2.49	4.97
	40°	1.81	2.68	2.98	3.85	3.68	5.30	3.62	7.24
	45°	2.11	2.92	3.44	4.2	4.08	5.77	4.22	8.44
	50°	2.31	3.17	3.72	4.52	4.44	6.26	4.62	9.25
	60°	2.71	3.66	4.38	5.21	5.15	7.24	5.43	10.86
	70°	2.78	3.98	4.54	5.67	5.47	7.91	5.52	11.03
	80°	2.76	4.18	4.62	5.97	5.76	8.31	5.51	11.03
	90°	2.73	4.25	4.64	6.11	5.91	8.47	5.45	10.97

Photometric Diagrams

To see complete photometric reports or download .ies files for this product, visit Lithonia Lighting's [RSX Area homepage](#).

Isofootcandle plots for the RSX1 LED P4 40K. Distances are in units of mounting height (20').



Performance Data

Lumen Ambient Temperature (LAT) Multipliers

Use these factors to determine relative lumen output for average ambient temperatures from 0-50°C (32-122°F).

Ambient	Ambient	Lumen Multiplier
0°C	32°F	1.05
5°C	41°F	1.04
10°C	50°F	1.03
15°C	59°F	1.02
20°C	68°F	1.01
25°C	77°F	1.00
30°C	86°F	0.99
35°C	95°F	0.98
40°C	104°F	0.97
45°C	113°F	0.96
50°C	122°F	0.95

Electrical Load

Performance Package	System Watts (W)	Current (A)					
		120V	208V	240V	277V	347V	480V
P1	51W	0.42	0.25	0.21	0.19	0.14	0.11
P2	72W	0.60	0.35	0.30	0.26	0.21	0.15
P3	109W	0.91	0.52	0.45	0.39	0.31	0.23
P4	133W	1.11	0.64	0.55	0.48	0.38	0.27

Projected LED Lumen Maintenance

Operating Hours	50,000	75,000	100,000
Lumen Maintenance Factor	>0.97	>0.95	>0.92

Values calculated according to IESNA TM-21-11 methodology and valid up to 40°C.



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Performance Data

Lumen Output

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown, within the tolerances allowed by Lighting Facts. Contact factory for performance data on any configurations not shown here.

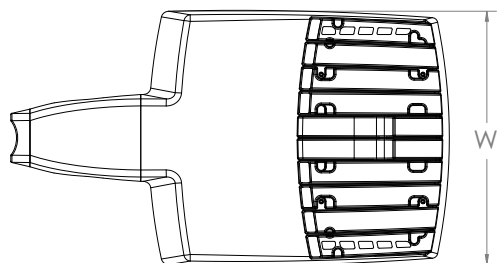
Performance Package	System Watts	Distribution Type	30K (3000K, 70 CRI)					40K (4000K, 70 CRI)					50K (5000K, 70 CRI)				
			Lumens	B	U	G	LPW	Lumens	B	U	G	LPW	Lumens	B	U	G	LPW
P1	51W	R2	6,482	1	0	1	126	7,121	1	0	1	139	7,121	1	0	1	139
		R3	6,459	1	0	2	127	7,096	1	0	2	139	7,096	1	0	2	139
		R3S	6,631	1	0	1	129	7,286	1	0	2	142	7,286	1	0	2	142
		R4	6,543	1	0	2	128	7,189	1	0	2	141	7,189	1	0	2	141
		R4S	6,313	1	0	1	124	6,936	1	0	1	136	6,936	1	0	1	136
		R5	6,631	3	0	2	130	7,286	3	0	2	143	7,286	3	0	2	143
		R5S	6,807	3	0	1	133	7,479	3	0	1	147	7,479	3	0	1	147
		AFR	6,473	1	0	1	127	7,112	1	0	1	139	7,112	1	0	1	139
		AFRR90	6,535	2	0	2	127	7,179	2	0	2	140	7,179	2	0	2	140
		AFRL90	6,562	2	0	1	128	7,210	2	0	2	140	7,210	2	0	2	140
P2	72W	R2	8,991	2	0	1	123	9,878	2	0	1	135	9,878	2	0	1	135
		R3	8,959	2	0	2	124	9,843	2	0	2	137	9,843	2	0	2	137
		R3S	9,198	2	0	2	126	10,106	2	0	2	139	10,106	2	0	2	139
		R4	9,077	2	0	2	126	9,972	2	0	2	139	9,972	2	0	2	139
		R4S	8,757	1	0	2	122	9,622	2	0	2	134	9,622	2	0	2	134
		R5	9,198	4	0	2	128	10,106	4	0	2	140	10,106	4	0	2	140
		R5S	9,443	3	0	1	131	10,374	3	0	1	144	10,374	3	0	1	144
		AFR	8,979	2	0	1	125	9,865	2	0	1	137	9,865	2	0	1	137
		AFRR90	9,064	3	0	2	124	9,959	3	0	2	137	9,959	3	0	2	137
		AFRL90	9,102	3	0	2	125	10,001	3	0	2	137	10,001	3	0	2	137
P3	109W	R2	12,808	2	0	1	117	14,072	2	0	2	129	14,072	2	0	2	129
		R3	12,763	2	0	2	117	14,023	2	0	2	129	14,023	2	0	2	129
		R3S	13,104	2	0	2	120	14,397	2	0	2	132	14,397	2	0	2	132
		R4	12,930	2	0	2	119	14,206	2	0	2	130	14,206	2	0	2	130
		R4S	12,475	2	0	2	114	13,707	2	0	2	126	13,707	2	0	2	126
		R5	13,104	4	0	2	120	14,397	4	0	2	132	14,397	4	0	2	132
		R5S	13,452	3	0	2	123	14,779	3	0	2	136	14,779	3	0	2	136
		AFR	12,791	2	0	1	117	14,053	2	0	2	129	14,053	2	0	2	129
		AFRR90	12,913	3	0	3	118	14,187	3	0	3	130	14,187	3	0	3	130
		AFRL90	12,967	3	0	2	118	14,247	3	0	3	130	14,247	3	0	3	130
P4	133W	R2	14,943	2	0	2	112	16,417	2	0	2	123	16,417	2	0	2	123
		R3	14,890	2	0	3	112	16,360	2	0	3	123	16,360	2	0	3	123
		R3S	15,287	2	0	2	115	16,796	2	0	2	126	16,796	2	0	2	126
		R4	15,085	2	0	3	113	16,574	2	0	3	125	16,574	2	0	3	125
		R4S	14,554	2	0	2	109	15,991	2	0	2	120	15,991	2	0	2	120
		R5	15,287	4	0	2	115	16,796	4	0	2	126	16,796	4	0	2	126
		R5S	15,693	4	0	2	118	17,242	4	0	2	130	17,242	4	0	2	130
		AFR	14,923	2	0	2	112	16,395	2	0	2	123	16,395	2	0	2	123
		AFRR90	15,065	3	0	3	113	16,551	3	0	3	124	16,551	3	0	3	124
		AFRL90	15,128	3	0	3	114	16,621	3	0	3	125	16,621	3	0	3	125

Dimensions & Weights

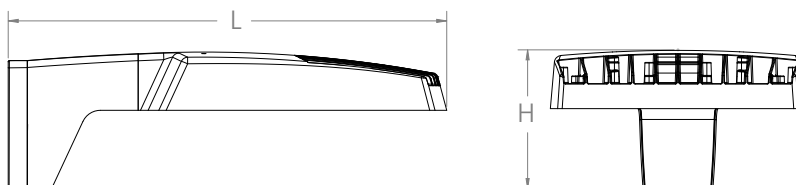
Luminaire Weight by Mounting Type

Mounting Configuration	Total Luminaire Weight
SPA	22 lbs
RPA	24 lbs
MA	22 lbs
WBA	25 lbs
WBASC	28 lbs
IS	25 lbs
AASP	25 lbs
AARP	27 lbs
AAWB	28 lbs
AAWSC	31 lbs

RSX1 with Round Pole Adapter (RPA)



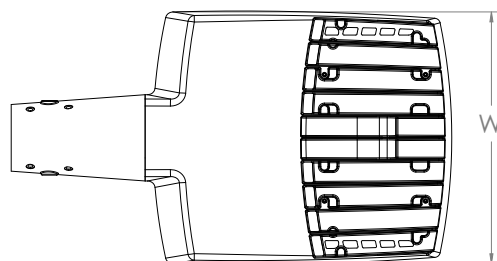
Length: 22.8" (57.9 cm)
 Width: 13.3" (33.8 cm)
 Height: 3.0" (7.6 cm) Main Body
 7.2" (18.4 cm) Arm



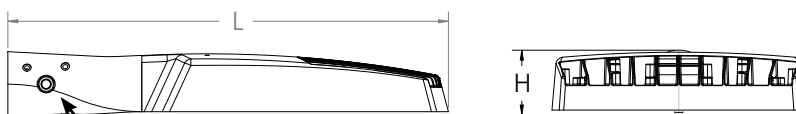
Note: RPA — Round Pole mount can also be used to mount on square poles by omitting the round pole adapter plate shown here.



RSX1 with Mast Arm Adapter (MA)

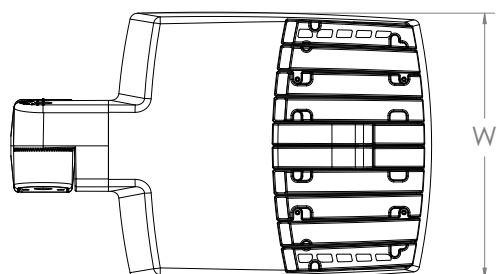


Length: 23.2" (59.1 cm)
 Width: 13.3" (33.8 cm)
 Height: 3.0" (7.6 cm) Main Body
 3.5" (8.9 cm) Arm

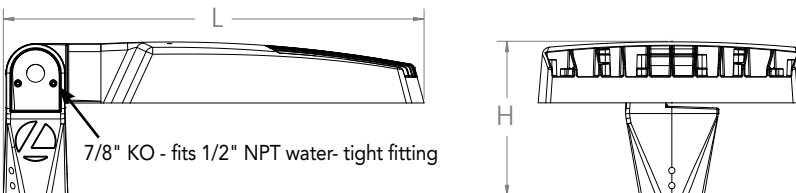


7/16" locking thru bolt/nut provided

RSX1 with Adjustable Slipfitter (IS)



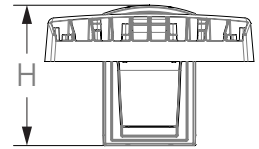
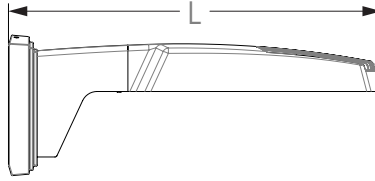
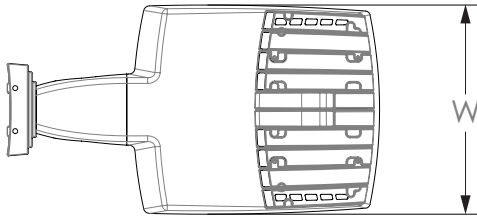
Length: 20.7" (52.7 cm)
 Width: 13.3" (33.8 cm)
 Height: 3.0" (7.6 cm) Main Body
 7.6" (19.3 cm) Arm



7/8" KO - fits 1/2" NPT water-tight fitting

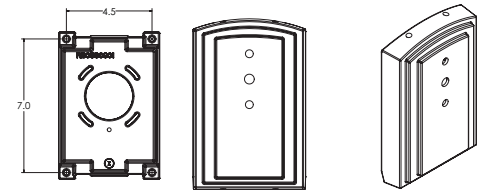
Dimensions

RSX1 with Wall Bracket (WBA)

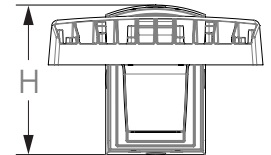
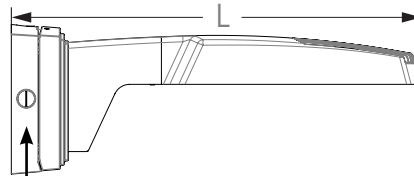
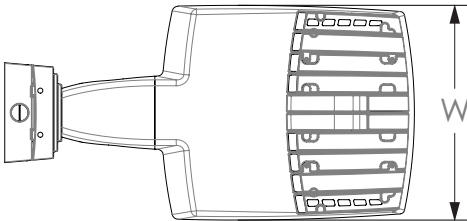


Length: 23.6" (59.9 cm)
 Width: 13.3" (33.8 cm)
 Height: 3.0" (7.6 cm) Main Body
 8.9" (22.6 cm) Arm

Wall Bracket (WBA) Mounting Detail



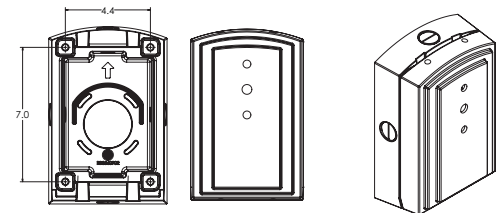
RSX1 with Wall Bracket with Surface Conduit Box (WBASC)



3/4" NPT taps with plugs - Qty (4) provided

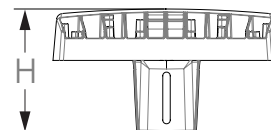
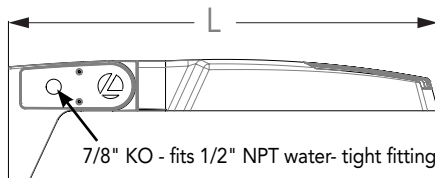
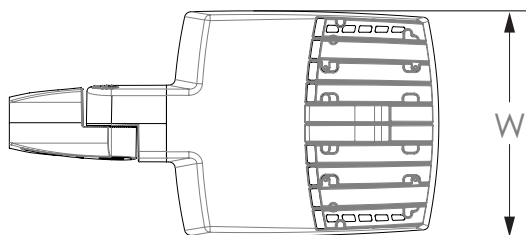
Length: 25.3" (64.3 cm)
 Width: 13.3" (33.8 cm)
 Height: 3.0" (7.6 cm) Main Body
 9.2" (23.4 cm) Arm

Surface Conduit Box (SCB) Mounting Detail

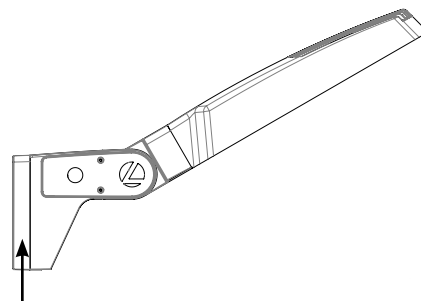


Dimensions

RSX1 with Adjustable Tilt Arm - Square or Round Pole (AASP or AARP)



Length: 25.3" (65.3 cm) **AASP**
 26.3" (66.8 cm) **AARP**
 Width: 13.3" (33.8 cm)
 Height: 3.0" (7.6 cm) Main Body
 7.2" (18.2 cm) Arm



NOTE:
 RPA - Round Pole mount can also be used to mount on square poles by omitting the round pole adapter plate shown here.

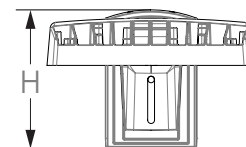
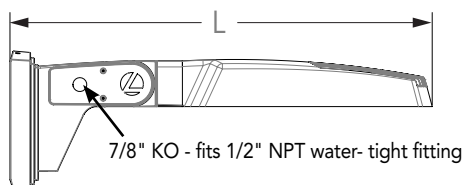
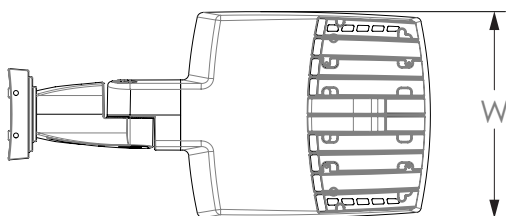


Notes

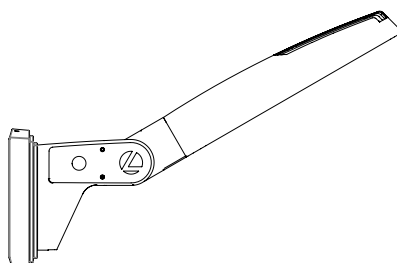
AASP: Requires 3.0" min. square pole for 1 at 90°. Requires 3.5" min. square pole for mounting 2, 3, 4 at 90°.

AARP: Requires 3.2" min. dia. round pole for 2, 3, 4 at 90°. Requires 3.0" min. dia. round pole for mounting 1 at 90°, 2 at 180°, 3 at 120°.

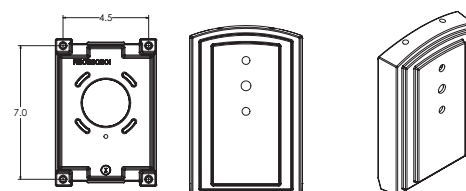
RSX1 with Adjustable Tilt Arm with Wall Bracket (AAWB)



Length: 27.1" (68.8 cm)
 Width: 13.3" (33.8 cm)
 Height: 3.0" (7.6 cm) Main Body
 8.9" (22.6 cm) Arm

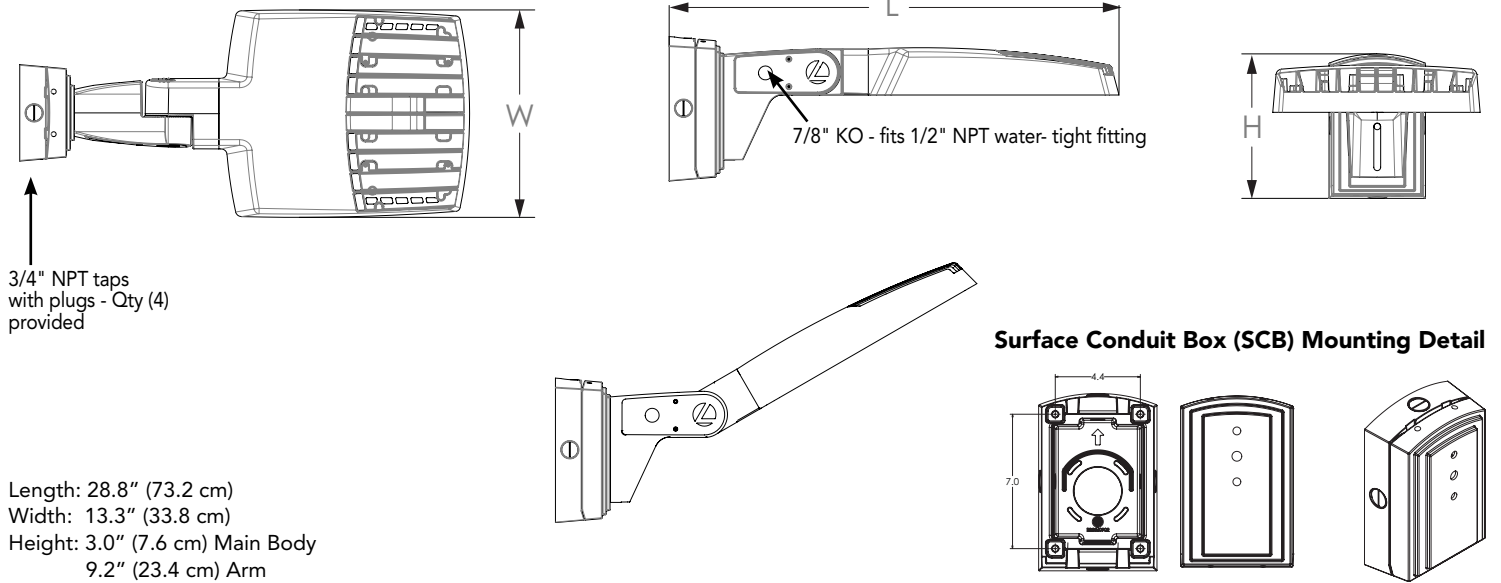


Wall Bracket (WBA) Mounting Detail

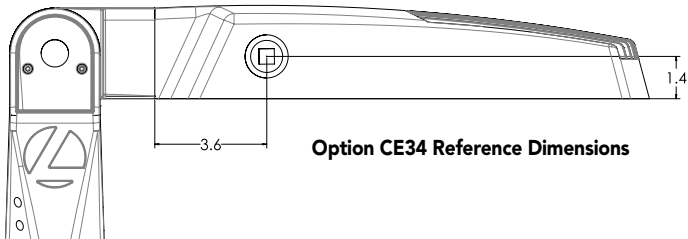


Dimensions

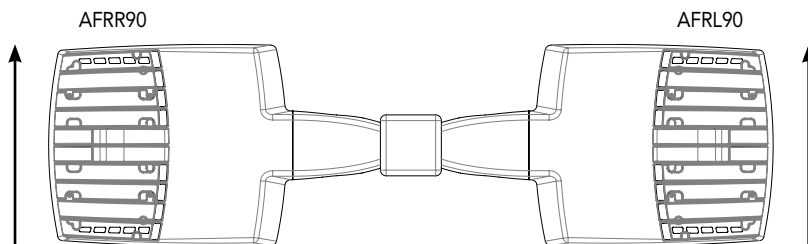
RSX1 with Adjustable Tilt Arm with Wall Bracket and Surface Conduit Box (AAWSC)



Additional Reference Drawings



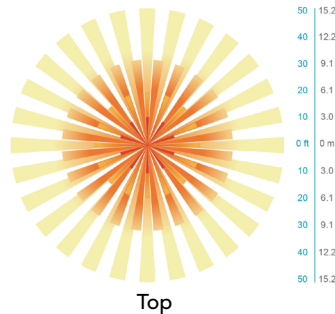
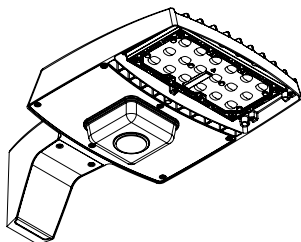
Automotive Front Row - Rotated Optics (AFRL90/R90)



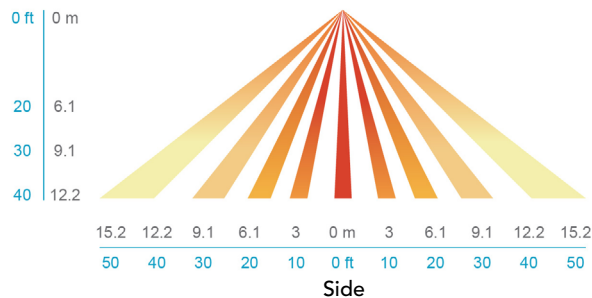
(Example: 2@180 - arrows indicate direction of light exiting the luminaire)

nLight Sensor Coverage Pattern

NLTAIR2 PIRHN



Top



Side

Motion Sensor Default Settings - Option PIRHN

Option	Dimmed State (unoccupied)	High Level (when occupied)	Photocell Operation	Dwell Time (occupancy time delay)	Ramp-up Time (from unoccupied to occupied)	Ramp-down Time (from occupied to unoccupied)
NLTAIR2 PIRHN	Approx. 30% Output	100% Output	Enabled @ 1.5FC	7.5 minutes	3 seconds	5 minutes

*Note: NLTAIR2 PIRHN default settings including photocell set-point, high/low dim rates, and occupancy sensor time delay are all configurable using the Clairity Pro App. Sensor coverage pattern shown with luminaire at 0°. Sensor coverage pattern is affected when luminaire is tilted.

FEATURES & SPECIFICATIONS

INTENDED USE

The RSX LED area family is designed to provide a long-lasting, energy-efficient solution for the one-for-one replacement of existing metal halide or high pressure sodium lighting. The RSX1 delivers 7,000 to 17,000 lumens and is ideal for replacing 70W to 400W HID pole-mounted luminaires in parking lots and other area lighting applications.

CONSTRUCTION

The RSX LED area luminaire features a rugged die-cast aluminum main body that uses heat-dissipating fins and flow-through venting to provide optimal thermal management that both enhances LED performance and extends component life. Integral "no drill" mounting arm allows the luminaire to be mounted on existing pole drillings, greatly reducing installation labor. The light engines and housing are sealed against moisture and environmental contaminants to IP66. The low-profile design results in a low EPA, allowing pole optimization. All mountings are rated for minimum 1.5 G vibration load per ANSI C136.31. 3G Mountings: Include SPA, RPA, MA, IS, AASP, and AARP rated for 3G vibration. 1.5G Mountings: Include WBA, WBASC, AAWB and AAWSC rated for 1.5G vibration.

FINISH

Exterior parts are protected by a zinc-infused Super Durable TGIC thermoset powder coat finish that provides superior resistance to corrosion and weathering. A tightly controlled multi-stage process ensures superior adhesion as well as a minimum finish thickness of 3 mils. The result is a high-quality finish that is warrantied not to crack or peel.

OPTICS

Precision acrylic refractive lenses are engineered for superior application efficiency, distributing the light to where it is needed most. Available in short and wide pattern distributions including Type 2, Type 3, Type 3S, Type 4, Type 4S, Type 5, Type 5S, AFR (Automotive Front Row), and AFR rotated AFR90 and ARFL90.

ELECTRICAL

Light engine(s) configurations consist of high-efficacy LEDs mounted on metal-core circuit boards and aluminum heat sinks to maximize heat dissipation. Light engines are IP66 rated. LED lumen maintenance is >L92/100,000 hours. CCT's of 3000K, 4000K and 5000K (minimum 70 CRI) are available. Class 1 electronic drivers ensure system power factor >90% and THD <20%. Easily serviceable 10kV surge protection device meets a minimum Category C Low operation (per ANSI/IEEE C62.41.2).

STANDARD CONTROLS

The RSX LED area luminaire has a wide assortment of control options. Dusk to dawn controls include MVOLT and 347V button-type photocells and NEMA twist-lock photocell receptacles.

nLIGHT AIR CONTROLS

The RSX LED area luminaire is also available with nLight® AIR for the ultimate in wireless control. This powerful controls platform provides out-of-the-box basic motion sensing with photocell functionality and is suitable for mounting heights up to 40 feet. No commissioning is required when using factory default settings that provide basic stand-alone motion occupancy dimming that is switched on and off with a built-in photocell. See chart above for motion sensor default out-of-box settings. For more advanced wireless functionality, such as group dimming, nLight AIR can be commissioned using a smartphone and the easy-to-use CLAIRITY app. nLight AIR equipped luminaires can be grouped, resulting in motion sensor and photocell group response without the need for additional equipment. Scheduled dimming with motion sensor over-ride can be achieved when used with the nLight Eclipse. Additional information about nLight Air can be found [here](#).

INSTALLATION

Integral "no-drill" mounting arm allows for fast, easy mounting using existing pole drillings. Select the "SPA" option for square poles and the "RPA" option to mount to round poles. Note, the RPA mount can also be used for mounting to square poles by omitting the RPA adapter plate. Select the "MA" option to attach the luminaire to a 2 3/8" horizontal mast arm or the "IS" option for an adjustable slipfitter that mounts on a 2 3/8" OD tenon. The adjustable slipfitter has an integral junction box and offers easy installation. Can be tilted up to 90° above horizontal. Additional mountings are available including a wall bracket, adjustable tilt arm for direct-to-pole and wall and a surface conduit box for wall mount applications.

LISTINGS

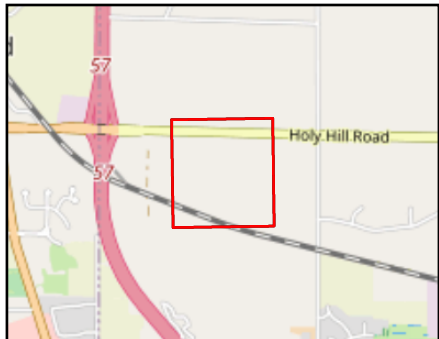
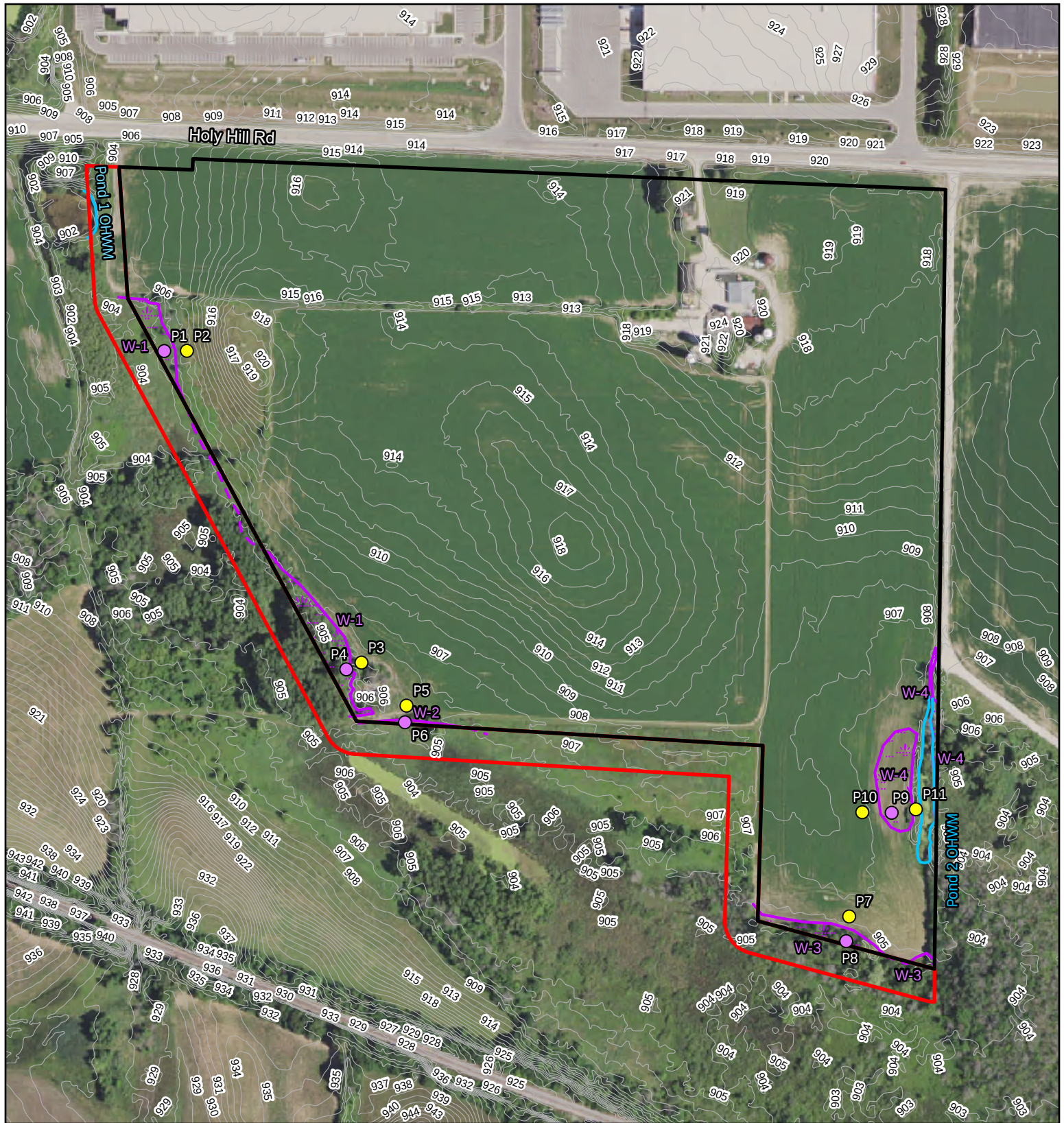
CSA Certified to meet U.S. and Canadian standards. Suitable for wet locations. Rated for -40°C minimum ambient. DesignLights Consortium® (DLC) Premium qualified product and DLC qualified product. Not all versions of this product may be DLC Premium qualified or DLC qualified. Please check the DLC Qualified Products List at www.designlights.org/QPL to confirm which versions are qualified.

International Dark-Sky Association (IDA) Fixture Seal of Approval (FSA) is available for all products on this page utilizing 3000K color temperature only.

WARRANTY

5-year limited warranty. Complete warranty terms located at: www.acuitybrands.com/support/customer-support/terms-and-conditions

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



- Study Area (52.67 ac)
 - 75-Foot Study Area Buffer
 - ~ Washington Co 1' Contours
 - ~ Pond OHWM
 - Field Delineated Wetlands (1.25 ac)
 - ~ Offsite Wetland Boundaries
- Sample Points**
- Upland
 - Wetland

0 150 300
Ft

Heartland
ECOLOGICAL GROUP INC

Figure 6. Field Delineated Wetlands
Holy Hill Road
Project #20210497
T9N, R20E, S18
V Germantown,
Washington Co

2020 NAIP
County Co, HEG

Wetland Setback Mitigation Plan Narrative
Capstone Quadrangle Development Company
Capstone 41 Development
July 16th, 2021

Capstone is proposing the development of parcel #181987 located on the South side of Holy Hill Road directly across from Gateway Crossing. Phase 1 of the development will include an industrial use building which is 203,019 sf along with two stormwater basins. Every effort has been taken to avoid wetland impacts resulting from this proposed development, but there are areas where disturbances are needed within the 25' wetland setback. These disturbances are primarily due to grading associated with the stormwater basins; with some disturbance resulting from a needed access drive. These disturbances are shown on Exhibit A. Restoration of the wetland setback areas are proposed, along with native plantings around the stormwater basins. Native vegetated connections are proposed between the stormwater basins and the existing wetlands to create more opportunities for wildlife. Restoration areas are shown on Exhibit B.

Wetland Setback Disturbance

Disturbance within the 25' wetland setback will be considered wetland setback disturbance. The total wetland setback disturbance is 0.676 acres. Refer to Exhibit A for detailed locations of impact.

Navigable Water Setback Disturbance

Disturbance within the 75' navigable water setback will be considered navigable water setback disturbance. The total navigable water setback disturbance is 0.215 acres. Refer to Exhibit A for detailed locations of impact.

Wetland Disturbance

Disturbance of delineated wetland is considered wetland disturbance. Existing wetlands on site shall not be impacted through the development process.

Wetland Mitigation Plan

Exhibit B identifies post-construction areas of wetland setback disturbance mitigation. Disturbed wetland setback areas will be restored to create a new wetland buffer. These buffers will consist of native plantings, trees and shrubs, and mown turf dependent on specific locations. Refer to Exhibit B for more detailed information. The primary reason for disturbance of existing wetland buffers is due to grading operations related to the two stormwater management ponds. In an effort to create/restore wildlife habitat, native plantings will be utilized surrounding the pond locations. Native plantings are also being proposed to connect the stormwater ponds to the existing wetlands and native plantings are being proposed to enhance certain wetland buffer areas through overseeding existing vegetation.

Summary

25' Wetland Setback / 75' navigable water setback disturbance: -0.891 AC (1:2 Mitigation required)

Restored wetland buffer –turf with a mix of landscaping: +0.253 AC

Restored wetland buffer – Native plantings: +0.964 AC

Created pond edge/buffer – Native plantings: +1.015 AC

Required Mitigation: 1.782 AC

Provided Mitigation: 2.232 AC

Mitigation Ratio: 2.5

MANAGEMENT OF NATIVE PLANTINGS

The following methods shall be used to maintain and ensure high quality native plantings and wetland buffers. These methods shall be performed in accordance with the following schedule.

	<i>Task</i>	Year 1 Quarter	Year 2 Quarter	Year 3 Quarter	Year 4 Quarter	Year 5 Quarter
1.	Mowing: Conducted twice in the first and second years, and once annually thereafter if needed to control invasive species. June and August are ideal mowing dates.					
		1 [2][3]4	1 [2][3]4	1 2 3 4	1 2 3 4	1 2 3 4
2.	Herbicide Application: Conducted at least twice annually for weed control, or as supplement to mowing and brushing.					
		1 [2][3] 4	1 [2][3] 4	1 [2][3] 4	1 [2] [3] 4	1 [2] [3] 4
3.	Supplemental Seeding/Planting: Only if required to meet guarantees for native vegetation cover.					
		1 [2] [3] 4	1 [2] [3] 4	1 [2] [3] 4	1 2 3 4	1 2 3 4
4.	Woody Species Removal: Conducted as needed to meet performance standards, preferably during winter months.					
		[1] 2 3 [4]	[1] 2 3 [4]	[1] 2 3 [4]	1 2 3 4	1 2 3 4
5.	Prescribed Burn: Conduct burn in early spring or late fall at least every three years.					
		1 2 3 4	1 2 3 4	1 2 3 4	1 [2] 3 4	1 2 3 4

MOWING

Native plant communities shall be mown to a height of 6-10" after vegetation in said areas reaches a height of 24" and before non-native species go to seed. Mowing should be performed at least two times during the first growing season. Mowing shall be performed to a height of 12" two times during the second growing season (approximately mid-June and mid-August) and one time during the third growing season (approximately mid-June) unless the owner's consulting ecologist determines that mowing is not needed. Mowing should be done with a rotary bush hog style mower to ensure clippings are dispersed rather than deposited in dense mats, which smother vegetation, or the clippings/branches should be removed from the mowed area.

HERBICIDE APPLICATION

Weeds and other herbaceous invasive species shall be treated with an appropriate herbicide based on the specific locations on Site. Application of herbicide shall be wick or spot treatment with rodeo, or other approved herbicide. Reed canary grass, teasel, buckthorn, thistles, sweet clover, purple loosestrife, and any other non-native or invasive species present in the project vicinity should be treated directly with a 2% solution of rodeo. The best application period is just before or during the very earliest stages of flowering. Where large patches of target weeds are present, it may be necessary to use a larger wick unit that can be attached to an all-terrain-vehicle or tractor. Several back-to-back treatments may be useful in greatly reducing these plants.

SUPPLEMENTAL SEEDING/PLANTING

Areas of planting failure will need to be replanted. Areas of failure and a determination for the reason for failure shall be identified to ensure viability of reseeded areas.

PRESCRIBED BURNING

Prescribed burning shall be the primary method for long-term ecological management and weed control on the site. Burning shall be conducted in the fall (November or December) of the third year following initial planting or spring (mid-March or April) of the fourth year following planting. Burning should be conducted by an entity experienced in burn planning and permit application as well as prescribed burn management. Prior to the commencement of prescribed burning, the owner or contractor shall compile a burn plan that outlines a plan of action, identifies contingencies, and lists the names and phone numbers of emergency agencies (fire department, police department, etc.). Proper notice of intent to burn shall be given. The owner shall apply for and receive all required permits prior to the commencement of prescribed burning. Burning shall be repeated every three to four years.

If prescribed burning is not possible, vegetation shall be cut/mowed as close to the ground as possible during the time that the burning was to occur. All cut vegetation shall be removed and disposed of offsite. This type of mowing shall occur every three to four years in place of regular burning.

MONITORING

- Twice annual monitoring of all plant communities shall be conducted for three full growing seasons following initial implementation.
- The annual site visits each year shall be conducted between May 1 and September 30.
- Each visit shall be conducted by a qualified professional with adequate plant identification skills and who is also able to make recommendations regarding management of native plant

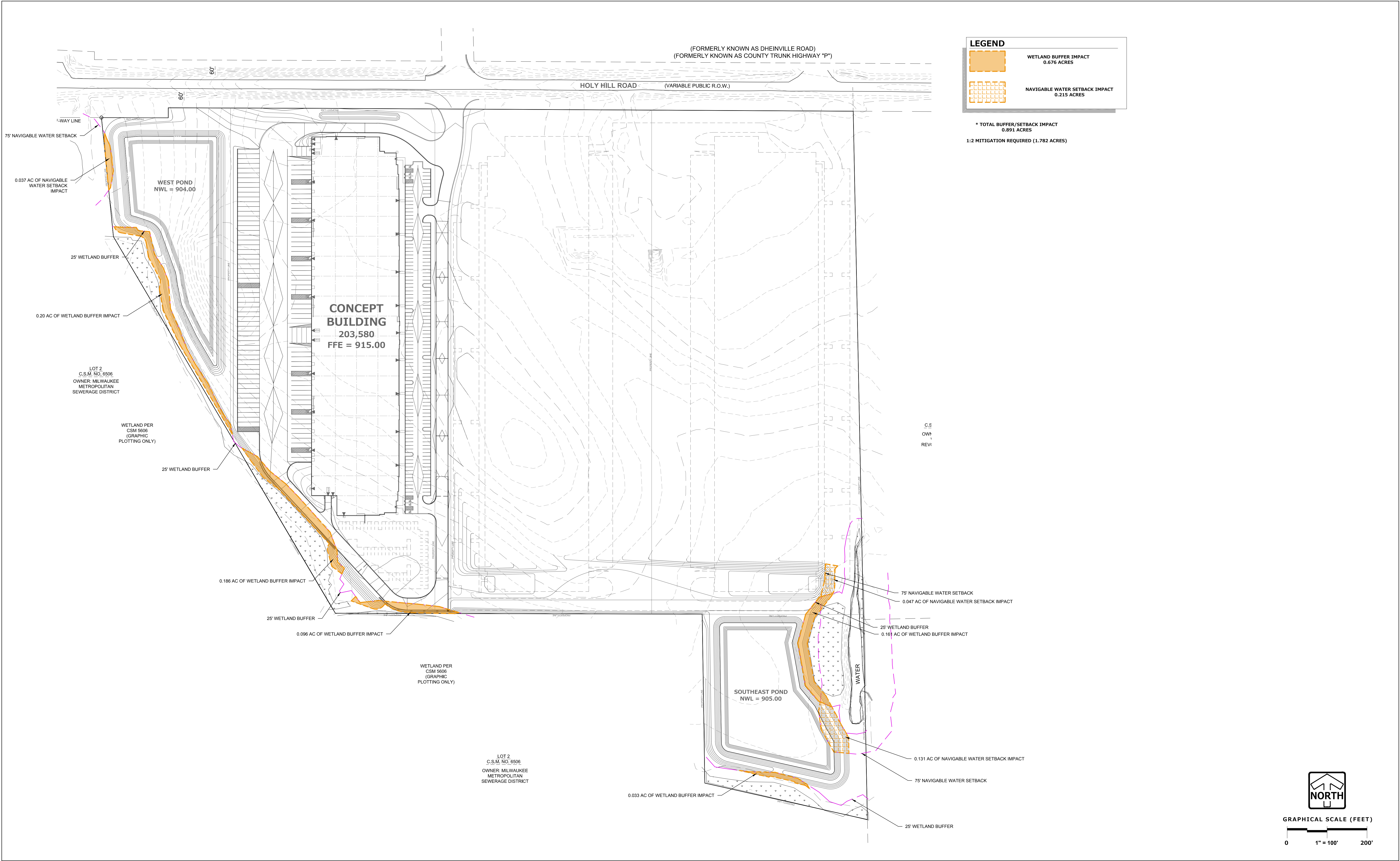
communities and associated maintenance. The site inspector shall collaborate over the needed maintenance requirements for a given year with the owner and/or maintenance contractor.

- The vegetation monitoring shall be conducted using the “meander search” method to:
 - 1) Identify dominant vegetation (native vs. Non-native) within each plant community.
 - 2) Identify the approximate percent vegetative coverage by native and non-native species within each plant community.
 - 3) Identify a species list for each plant community that can be compared to installed plant lists.
 - 4) Make recommendations related to site management to meet performance standards.
- Representative photographs of the restored native plant communities shall be taken to document the site conditions through time.

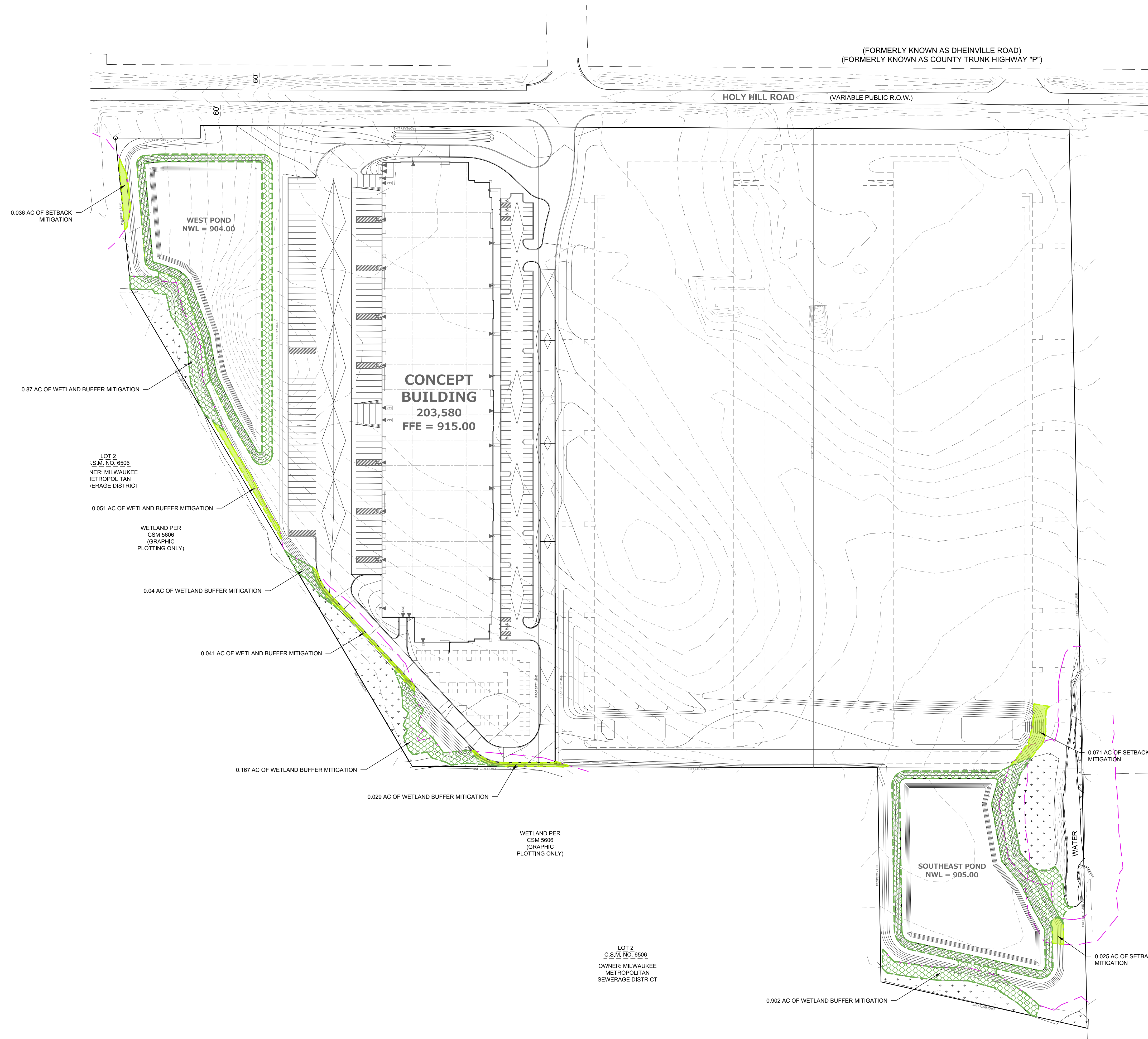
REPORTING

- A brief memo report shall be prepared and submitted to the owner after each inspection.
- The second report of the year shall identify management recommendations and services that have been conducted throughout the growing season and outline future management recommendations.

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LEGEND

	BUFFER IMPACT MITIGATION - TURF AND LANDSCAPE 0.253 ACRES
	BUFFER IMPACT MITIGATION - NATIVE PLANTINGS 1.979 ACRES

* TOTAL MITIGATION PLANTINGS
2.232 ACRES
MITIGATION RATIO (2.5)

NORTH

GRAPHICAL SCALE (FEET)
0 1" = 100' 200'

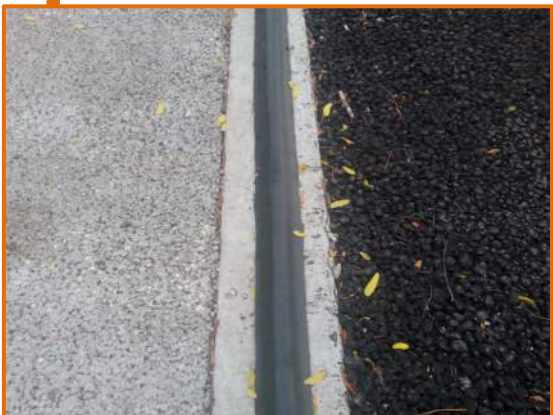
STORMWATER MANAGEMENT PLAN

CAPSTONE 41

Germantown, Wisconsin

PEG Project Number: 1262.00A-WI

July 16, 2021



PINNACLE ENGINEERING GROUP

20725 Watertown Road | Suite 100 | Brookfield, WI 53186

www.pinnacle-engr.com

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PROPOSED DEVELOPMENT CONDITIONS	3
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SUMMARY OF RESULTS	4
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- Soils Map
- Aerial Photo

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- Hydrology Exhibit – Existing Conditions
- Hydrographs

APPENDIX 3 – POST-DEVELOPMENT CONDITIONS (RATE ATTENUATION)

- Hydrology Exhibit – Proposed Conditions
- Hydrographs
- MMSD Volumetric Summary

APPENDIX 4 –MMSD VOLUMETRIC COMPARISON

- Hydrology Exhibit – Proposed Conditions
- Hydrographs
- MMSD Volumetric Summary

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- WinSLAMM Modeling Input Data & Output Computations

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APPENDIX 7 – GEOTECHNICAL REPORT

- Excerpts from the Geotechnical Report

Questions and comments can be directed to:

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Associate Project Manager
Phone: 262.754.8888 | Fax: 262.754.8850
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 **PINNACLE ENGINEERING GROUP**
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INTRODUCTION

The proposed project consists of a 52-acre development which is new development north of Holy Hill Road just east of Interstate 41. A new building, mass grading, and a main public roadway are proposed. The Village of Germantown, MMSD, and WI DNR have jurisdiction over the stormwater on this site. PEG has prepared a plan to meet the requirements of the agencies.

DESIGN CRITERIA

Village of GermantownChapter 27

Wisconsin Department of Natural Resources:.....NR 216 & NR 151

MMSDChapter 13

The site is actively farmed and contains some wooded areas and thus by DNR and MMSD definitions is considered new development.

Water Quantity: Runoff reductions per Village of Germantown Design, Drafting & Construction Standards & Specifications Section 7.0: Stormwater Management Requirements can be acquired either through a unit release rate or by the volumetric method. In this case, the volumetric method is employed due the fringe areas that cannot be readily captured. Village of Germantown Section 7 states that the SCS Type II rainfall distribution with the rainfall depths found in NOAA Atlas 14. However, MMSD requires a MSE3 rainfall distribution. The MSE3 rainfall distribution has a higher intensity, therefore the MSE3 rainfall distribution was used.

Water Quality: The minimum Village and DNR requirements are to remove 80% of the total suspended solids (TSS) load on an average annual basis.

Infiltration: The site is exempt from infiltration per NR 151.124(4)(c)(1). Per the attached geotech report, the soils on site are not suitable for stormwater infiltration.

Protective Areas: Wetlands are present to the west of the site. No impervious runoff will be directed towards the wetlands directly, therefore the protective areas do not apply.

EXISTING CONDITIONS

Currently the approximately 52-acre site is mostly vacant other than the existing farmstead and associated buildings utilized for agricultural purposes; the site is split into three existing basins draining to the East, West, and South. The drainage across the site ultimately enters an unnamed tributary to Little Cedar Creek. All existing drainage basins drain to the existing wetlands surrounding the site. Soils on site are classified as primarily Mayville, Kendall, and Pella Silt Loam. Geotechnical boring investigation identified Silty Clay, Clay, Sandy Loam, Coarse Sand, Sand, and Loamy Sand on site which are classified primarily as a mixture of type B and C soils.

POST-DEVELOPMENT CONDITIONS

It is proposed to construct an industrial building and associated parking, a park road, and provide separate ponds for the proposed and future phase. Grading operations for the future development will occur at the time of its proposed construction, however the pond will be

installed as a part of the current phase. Currently proposed is a 203,000 square foot building located to the west of the development. A centrally located private roadway will be graded in to service the proposed building and accommodate the future building; the future building will consist of an additional industrial facility and associated parking. All future development has been factored into the stormwater modeling.

The site has been separated into three separate drainage basins. Two of the basins, East and West, will have runoff conveyed to wet detention basins located to the west and southeast of the site. These are independent ponds that function separately for each development area, with overland flow able to enter the ponds during the 100-year storm event, any area that cannot be drained with overland flow will be piped to the pond. The third drainage basin is an undetained grass fringe area that will flow directly into the existing wetlands on the periphery of the site.

ANALYSIS METHODS

HydroCAD® (Version 10.00) software has been used to analyze stormwater characteristics for this stormwater management plan. HydroCAD uses the accepted TR-55 methodology for determining peak discharge runoff rates. Rainfall depths for the 1-year, 2-year, and 100-year storm events are 2.37, 2.68 and 6.39 inches in accordance with ATLAS 14 rainfall depths. The volumetric method is selected for this design because the undetained fringe areas would take up a substantial portion of the allowable release rate if the unit rate release method were used. The Milwaukee River has a critical time period of 12 hours which will be used in the HydroCAD model.

TSS reduction characteristics for the proposed water quality facilities were determined using WinSLAMM® (Version 10.2) Source Loading and Management Model.

SUMMARY OF RESULTS

Existing Drainage Data

Area	Area (ac)	CN	Tc (min)	Peak Flows 1-year (cfs)	Peak Flows 2-year (cfs)	Volume 2-year (ac-ft)	Peak Flows 100-year (cfs)	Volume 100-year (ac-ft)
WEST EX	16.52	76	42.8	2.37	8.91	--	44.47	--
SOUTH EX	2.11	76	40.5	2.37	1.18	--	5.87	--
EAST EX	33.84	76	67.4	9.96	13.47	--	67.58	--
SITE	52.47	76	--	15.79	21.39	3.489	108.08	15.768

Proposed Drainage Data

Area	Area (ac)	CN	Tc (min)	Peak Flows 1-year (cfs)	Peak Flows 2-year (cfs)	Volume 2-year (ac-ft)	Peak Flows 100-year (cfs)	Volume 100-year (ac-ft)
WEST	24.69	94	6.0*	73.35	84.97	-	221.43	-
EAST	25.12	94	6.0*	74.63	86.45	-	225.29	-
OFFSITE - EAST	2.66	74	6.0*	2.39	3.27	-	16.67	-
SITE	52.47	--	--	3.21	4.19	1.493	37.63	14.859

* Assumed value based on min Tc per TR 55

Pond Data

Pond	Normal Water	Peak W.S. Elev. 2-year	Peak W.S. Elev. 100-year	Spillway	Top of Berm
West Pond	904.0	905.83	908.06	908.60	909.00
Southeast Pond	905.0	906.99	908.95	909.60	910.0

The modeling indicates that the ponds will detain the flows so that the 1 year and 2 year storms do not have an increase in peak flows from existing conditions. The system will also control the volume so there is a reduction over the critical time period.

Overall Water Quality Summary

Pounds of TSS Generated (No Controls)	Pounds of TSS Remaining (w/ Controls)	Percent Removal
39,393	5,396	86.3%

The two wet ponds will remove 86.37% of TSS which is in excess of the minimum TSS of 80% TSS required to achieve the TSS removal goals.

Infiltration

The site is exempt from infiltration requirements.

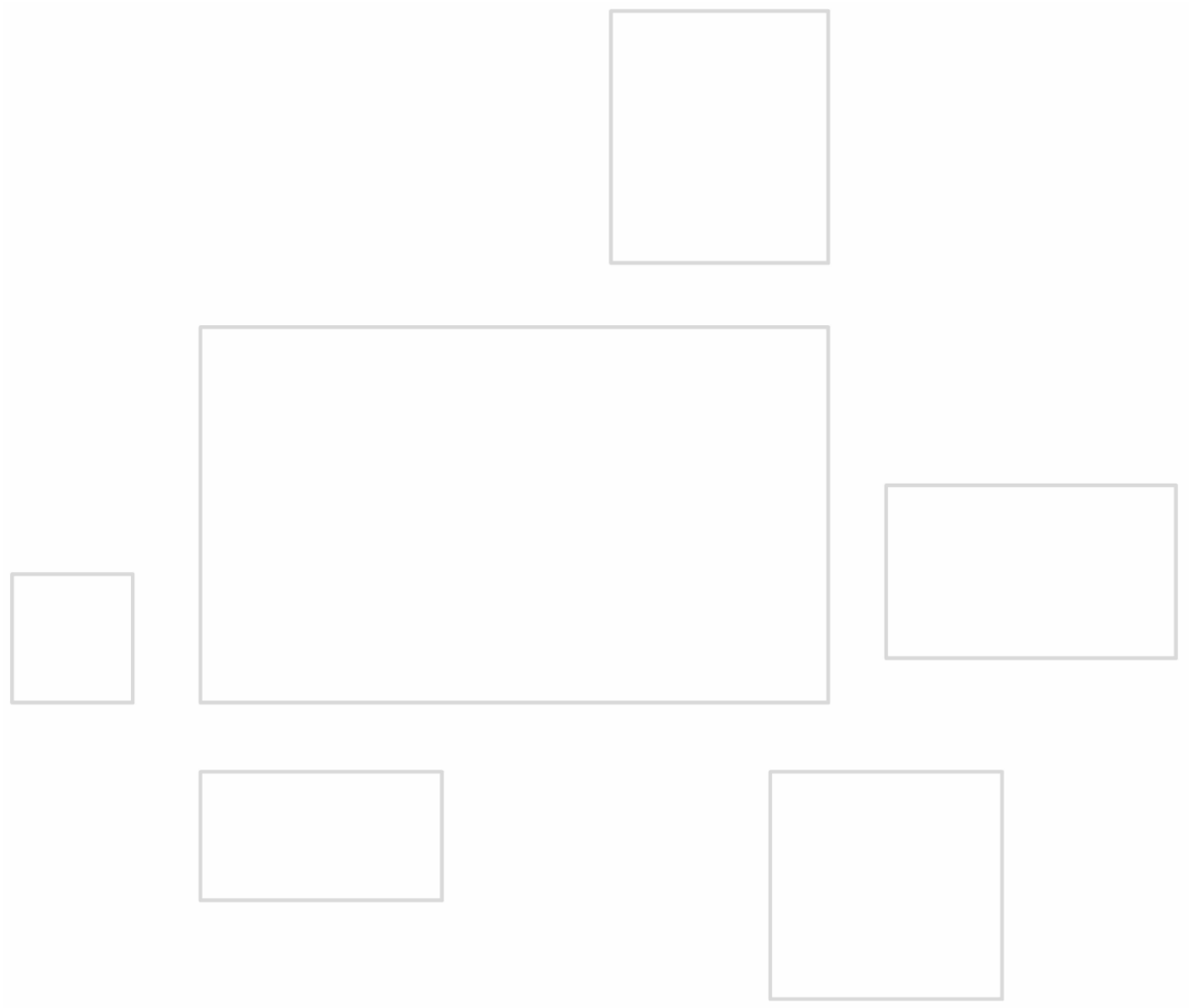
Protective Areas

Wetlands are present to the west and south of the site. No impervious runoff will be directed towards the wetlands directly, therefore the protective areas do not apply.

CONCLUSION

This project is subject to Village of Germantown, MMSD, and DNR regulations. Runoff will be attenuated and treated through the installation of ponds to meet the pertinent regulations and ordinances. Maintenance is expected to occur on a regular basis. An agreement with the Village of Germantown will be executed to ensure this occurs.

APPENDIX 1 MAPS

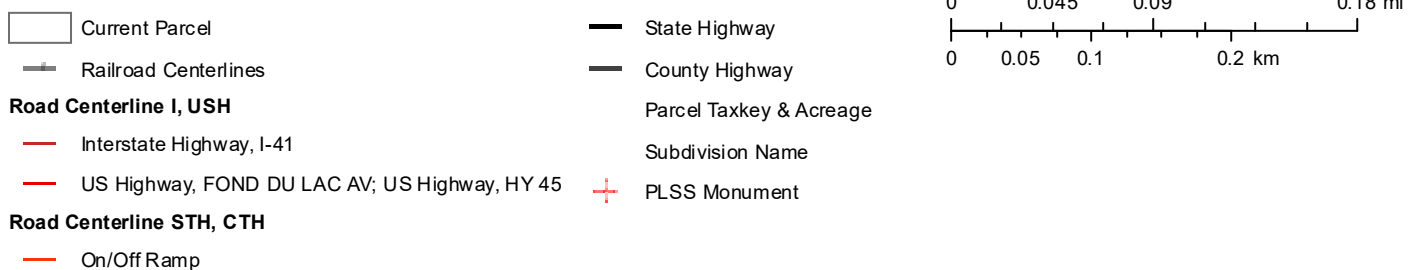


Washington County, Wisconsin



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1:5,398



Hydrologic Soil Group—Washington County, Wisconsin



Map Scale: 1:4,930 if printed on A landscape (11" x 8.5") sheet.

0 50 100 200 300 Meters

0 200 400 800 1200 Feet

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



**Natural Resources
Conservation Service**

Web Soil Survey
National Cooperative Soil Survey

7/16/2021
Page 1 of 4

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

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

Soil Rating Lines

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

Soil Rating Points

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

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

Water Features

-  Streams and Canals

Transportation

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

Background

-  Aerial Photography

MAP INFORMATION

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

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

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

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

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

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

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

Soil Survey Area: Washington County, Wisconsin
Survey Area Data: Version 20, Jun 8, 2020

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

Date(s) aerial images were photographed: May 20, 2020—Aug 20, 2020

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

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
KIA	Kendall silt loam, 1 to 3 percent slopes	B/D	20.9	31.3%
LmA	Lamartine silt loam, 0 to 3 percent slopes	B/D	1.0	1.4%
MoB	Mayville silt loam, 2 to 6 percent slopes	C	21.0	31.4%
Mzb	Montgomery silty clay loam	C/D	3.0	4.4%
Pc	Palms mucky peat, 0 to 2 percent slopes	B/D	0.1	0.1%
Ph	Pella silt loam, 0 to 2 percent slopes	B/D	11.0	16.4%
ThB	Theresa silt loam, 2 to 6 percent slopes	C	5.2	7.7%
ThB2	Theresa silt loam, 2 to 6 percent slopes, eroded	C	4.8	7.2%
Totals for Area of Interest			67.0	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



NOAA Atlas 14, Volume 8, Version 2
Location name: Richfield, Wisconsin, USA*
Latitude: 43.2524°, Longitude: -88.1704°
Elevation: 921.55 ft**
* source: ESRI Maps
** source: USGS



POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Deborah Martin, Sandra Pavlovic, Ishani Roy, Michael St. Laurent, Carl Trypaluk, Dale Unruh, Michael Yekta, Geoffery Bonnin

NOAA, National Weather Service, Silver Spring, Maryland

[PF tabular](#) | [PF graphical](#) | [Maps & aerals](#)

PF tabular

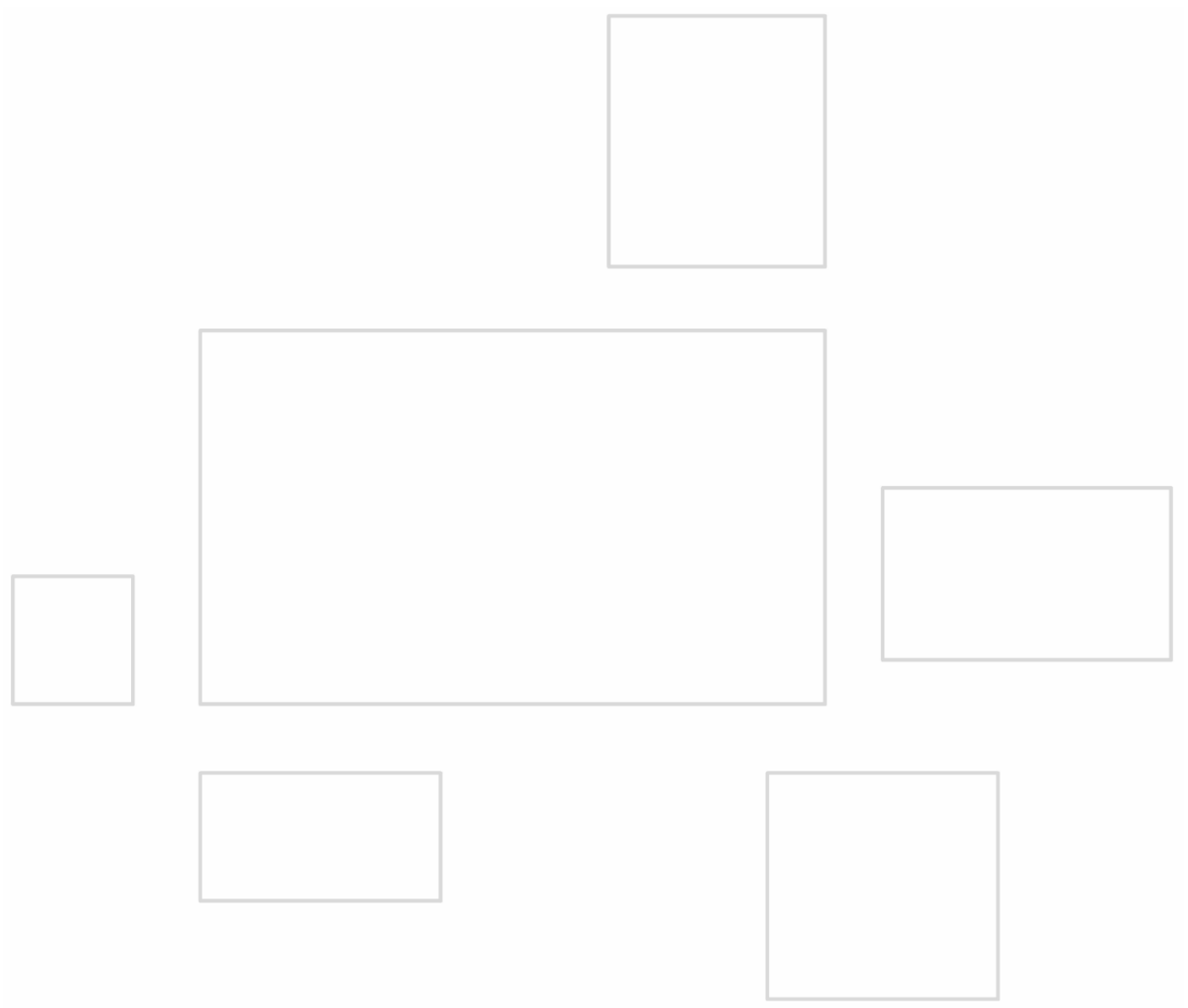
PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches) ¹										
Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.336 (0.264-0.415)	0.406 (0.319-0.502)	0.517 (0.406-0.640)	0.606 (0.474-0.752)	0.724 (0.548-0.910)	0.812 (0.604-1.03)	0.896 (0.649-1.15)	0.978 (0.686-1.28)	1.08 (0.737-1.44)	1.16 (0.775-1.56)
10-min	0.491 (0.387-0.607)	0.594 (0.467-0.734)	0.757 (0.594-0.937)	0.887 (0.694-1.10)	1.06 (0.802-1.33)	1.19 (0.884-1.51)	1.31 (0.951-1.69)	1.43 (1.00-1.88)	1.58 (1.08-2.11)	1.69 (1.13-2.29)
15-min	0.599 (0.472-0.741)	0.724 (0.570-0.896)	0.923 (0.725-1.14)	1.08 (0.846-1.34)	1.29 (0.978-1.63)	1.45 (1.08-1.84)	1.60 (1.16-2.06)	1.75 (1.23-2.29)	1.93 (1.32-2.58)	2.07 (1.38-2.79)
30-min	0.814 (0.641-1.01)	0.989 (0.778-1.22)	1.27 (0.995-1.57)	1.49 (1.17-1.85)	1.79 (1.35-2.25)	2.01 (1.49-2.55)	2.22 (1.61-2.86)	2.42 (1.70-3.17)	2.68 (1.83-3.58)	2.87 (1.92-3.88)
60-min	1.05 (0.824-1.29)	1.26 (0.995-1.56)	1.62 (1.27-2.01)	1.93 (1.50-2.39)	2.34 (1.78-2.97)	2.67 (2.00-3.41)	3.00 (2.19-3.89)	3.34 (2.35-4.40)	3.79 (2.59-5.08)	4.14 (2.77-5.60)
2-hr	1.28 (1.02-1.57)	1.54 (1.23-1.89)	1.98 (1.57-2.43)	2.36 (1.86-2.90)	2.90 (2.24-3.66)	3.34 (2.53-4.24)	3.79 (2.79-4.88)	4.26 (3.03-5.58)	4.90 (3.39-6.54)	5.41 (3.65-7.26)
3-hr	1.44 (1.15-1.75)	1.71 (1.37-2.09)	2.19 (1.75-2.67)	2.62 (2.09-3.21)	3.26 (2.54-4.12)	3.78 (2.89-4.80)	4.34 (3.23-5.60)	4.94 (3.55-6.47)	5.78 (4.02-7.70)	6.45 (4.38-8.62)
6-hr	1.74 (1.41-2.10)	2.02 (1.64-2.43)	2.54 (2.05-3.06)	3.02 (2.43-3.66)	3.78 (3.00-4.77)	4.43 (3.44-5.61)	5.14 (3.87-6.61)	5.93 (4.31-7.74)	7.05 (4.96-9.36)	7.98 (5.45-10.6)
12-hr	2.07 (1.70-2.47)	2.34 (1.92-2.79)	2.86 (2.34-3.42)	3.37 (2.75-4.05)	4.19 (3.38-5.26)	4.91 (3.86-6.18)	5.71 (4.35-7.29)	6.60 (4.85-8.56)	7.89 (5.61-10.4)	8.97 (6.18-11.8)
24-hr	2.37 (1.97-2.80)	2.68 (2.22-3.16)	3.27 (2.70-3.87)	3.84 (3.16-4.56)	4.74 (3.85-5.88)	5.52 (4.38-6.88)	6.39 (4.92-8.08)	7.36 (5.45-9.45)	8.76 (6.27-11.4)	9.91 (6.88-12.9)
2-day	2.65 (2.22-3.09)	3.05 (2.56-3.57)	3.79 (3.17-4.44)	4.47 (3.73-5.26)	5.52 (4.52-6.75)	6.41 (5.12-7.87)	7.37 (5.71-9.20)	8.42 (6.28-10.7)	9.92 (7.15-12.8)	11.1 (7.80-14.4)
3-day	2.91 (2.46-3.38)	3.32 (2.81-3.87)	4.09 (3.45-4.76)	4.79 (4.02-5.60)	5.87 (4.84-7.13)	6.79 (5.46-8.29)	7.78 (6.06-9.66)	8.86 (6.65-11.2)	10.4 (7.54-13.4)	11.7 (8.22-15.1)
4-day	3.14 (2.67-3.63)	3.56 (3.03-4.13)	4.34 (3.68-5.03)	5.05 (4.26-5.88)	6.15 (5.09-7.44)	7.08 (5.72-8.61)	8.09 (6.33-10.0)	9.19 (6.93-11.6)	10.8 (7.83-13.8)	12.1 (8.51-15.5)
7-day	3.68 (3.17-4.23)	4.18 (3.59-4.80)	5.06 (4.33-5.82)	5.85 (4.98-6.75)	7.02 (5.85-8.39)	8.00 (6.51-9.62)	9.05 (7.12-11.1)	10.2 (7.71-12.7)	11.7 (8.59-14.9)	13.0 (9.25-16.6)
10-day	4.17 (3.61-4.76)	4.73 (4.09-5.41)	5.70 (4.92-6.53)	6.55 (5.62-7.53)	7.79 (6.51-9.22)	8.81 (7.19-10.5)	9.86 (7.80-12.0)	11.0 (8.36-13.6)	12.5 (9.20-15.8)	13.8 (9.84-17.5)
20-day	5.69 (4.99-6.43)	6.38 (5.59-7.22)	7.53 (6.57-8.53)	8.50 (7.38-9.66)	9.85 (8.29-11.5)	10.9 (8.98-12.8)	12.0 (9.55-14.3)	13.1 (10.0-16.0)	14.6 (10.8-18.2)	15.7 (11.3-19.8)
30-day	7.03 (6.21-7.90)	7.84 (6.92-8.82)	9.15 (8.05-10.3)	10.2 (8.95-11.6)	11.7 (9.87-13.5)	12.8 (10.6-14.9)	13.9 (11.1-16.5)	14.9 (11.5-18.1)	16.4 (12.1-20.2)	17.4 (12.6-21.8)
45-day	8.78 (7.82-9.81)	9.79 (8.70-10.9)	11.4 (10.1-12.7)	12.6 (11.1-14.2)	14.2 (12.1-16.2)	15.4 (12.8-17.8)	16.5 (13.3-19.4)	17.6 (13.6-21.1)	18.9 (14.0-23.1)	19.8 (14.4-24.7)
60-day	10.3 (9.23-11.5)	11.5 (10.3-12.8)	13.4 (11.9-14.9)	14.8 (13.1-16.5)	16.6 (14.1-18.7)	17.8 (14.9-20.4)	19.0 (15.3-22.1)	20.0 (15.5-23.9)	21.2 (15.8-25.9)	22.0 (16.0-27.4)
¹ Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS). Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values. Please refer to NOAA Atlas 14 document for more information.										

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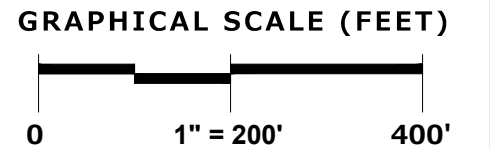
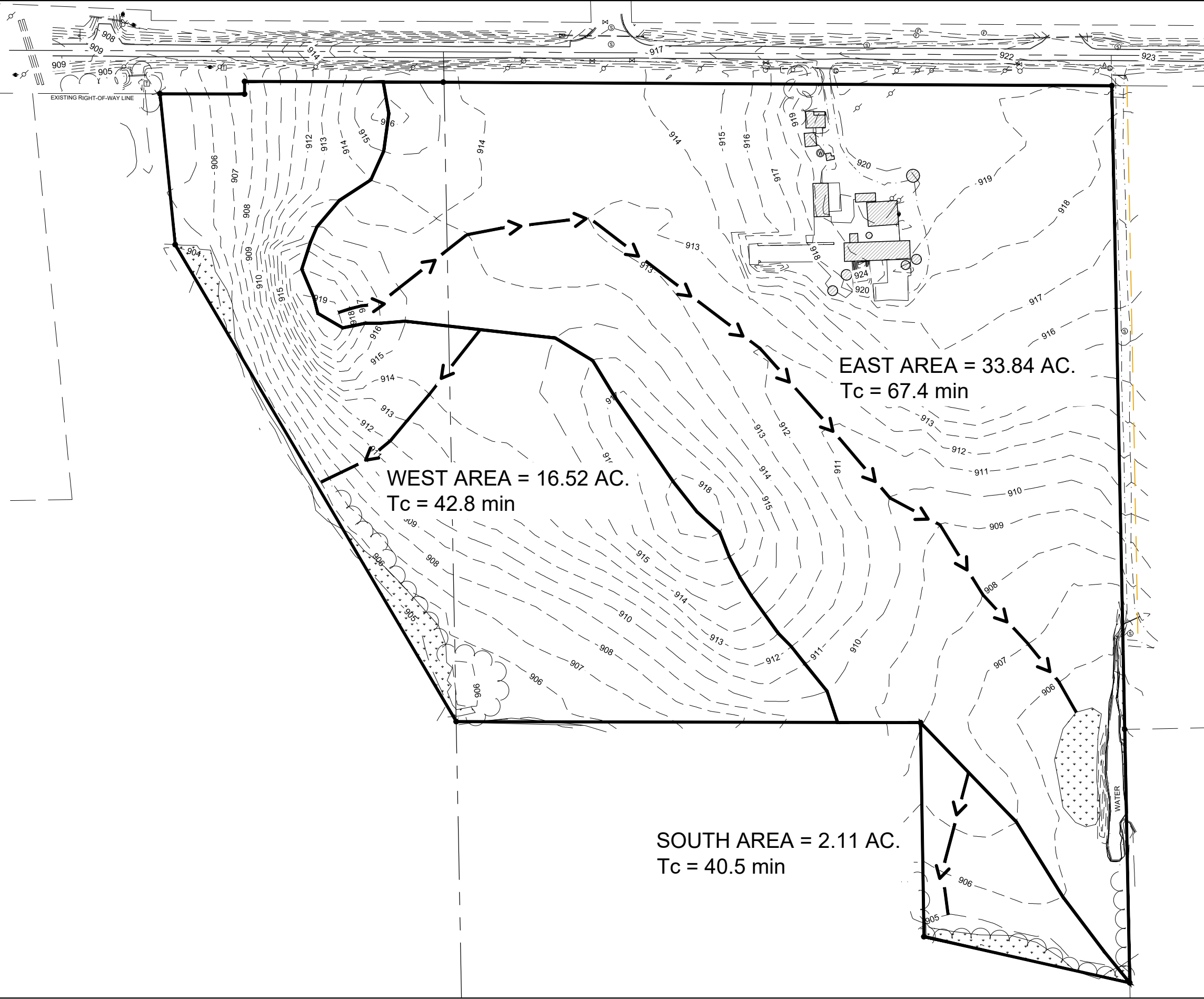
PF graphical

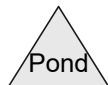
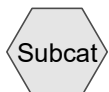
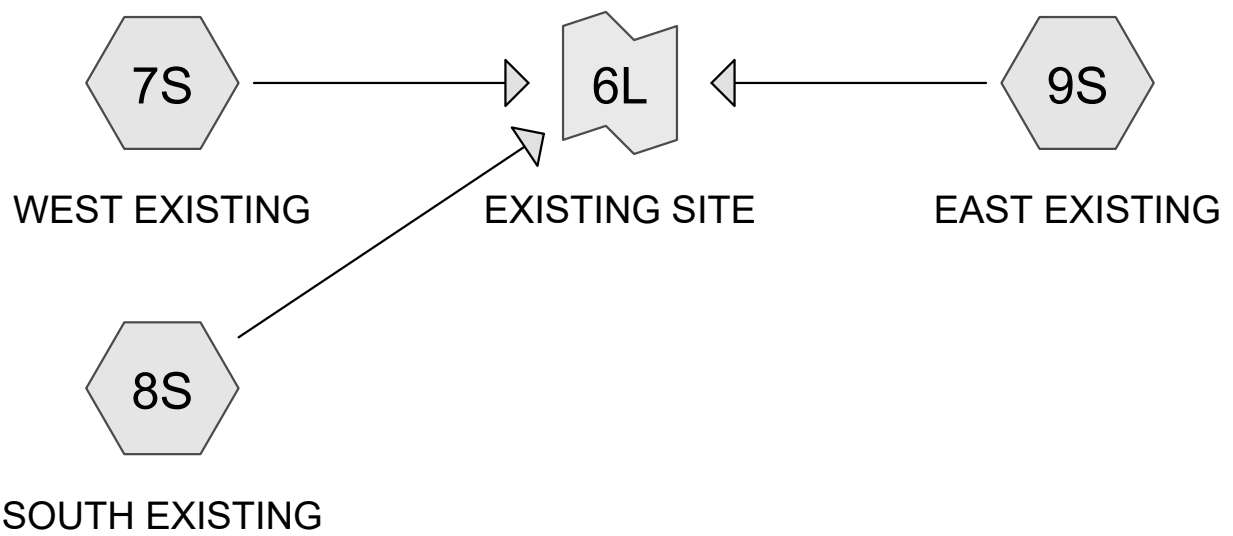
APPENDIX 2

PRE DEVELOPMENT CONDITIONS



Z:\PROJECTS\2018\1262.00A-WI\CAD\EXHIBITS\1262.00A-WI EXISTING HYDROLOGY EXHIBIT.DWG 7/16/2021 3:11 PM





2021-07-14 Holly Hill

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Printed 7/16/2021

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Page 2

Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
52.470	76	Row crops, C&T + CR, Good, HSG C (7S, 8S, 9S)
52.470	76	TOTAL AREA

Soil Listing (selected nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
52.470	HSG C	7S, 8S, 9S
0.000	HSG D	
0.000	Other	
52.470		TOTAL AREA

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Page 4

Ground Covers (selected nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	52.470	0.000	0.000	52.470	Row crops, C&T + CR, Good	7S, 8S, 9S
0.000	0.000	52.470	0.000	0.000	52.470	TOTAL AREA	

2021-07-14 Holly Hill

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MSE 24-hr 3 1-yr Rainfall=2.37"

Printed 7/16/2021

Page 5

Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Sim-Route method - Pond routing by Sim-Route method

Subcatchment7S: WEST EXISTING

Runoff Area=16.520 ac 0.00% Impervious Runoff Depth=0.62"
Flow Length=447' Tc=42.8 min CN=76 Runoff=6.59 cfs 0.850 af

Subcatchment8S: SOUTH EXISTING

Runoff Area=2.110 ac 0.00% Impervious Runoff Depth=0.62"
Flow Length=289' Slope=0.0090 '/' Tc=40.5 min CN=76 Runoff=0.87 cfs 0.109 af

Subcatchment9S: EAST EXISTING

Runoff Area=33.840 ac 0.00% Impervious Runoff Depth=0.62"
Flow Length=1,937' Tc=67.4 min CN=76 Runoff=9.96 cfs 1.741 af

Link 6L: EXISTING SITE

Inflow=15.79 cfs 2.699 af
Primary=15.79 cfs 2.699 af

Total Runoff Area = 52.470 ac Runoff Volume = 2.699 af Average Runoff Depth = 0.62"
100.00% Pervious = 52.470 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment 7S: WEST EXISTING

Runoff = 6.59 cfs @ 12.66 hrs, Volume= 0.850 af, Depth= 0.62"

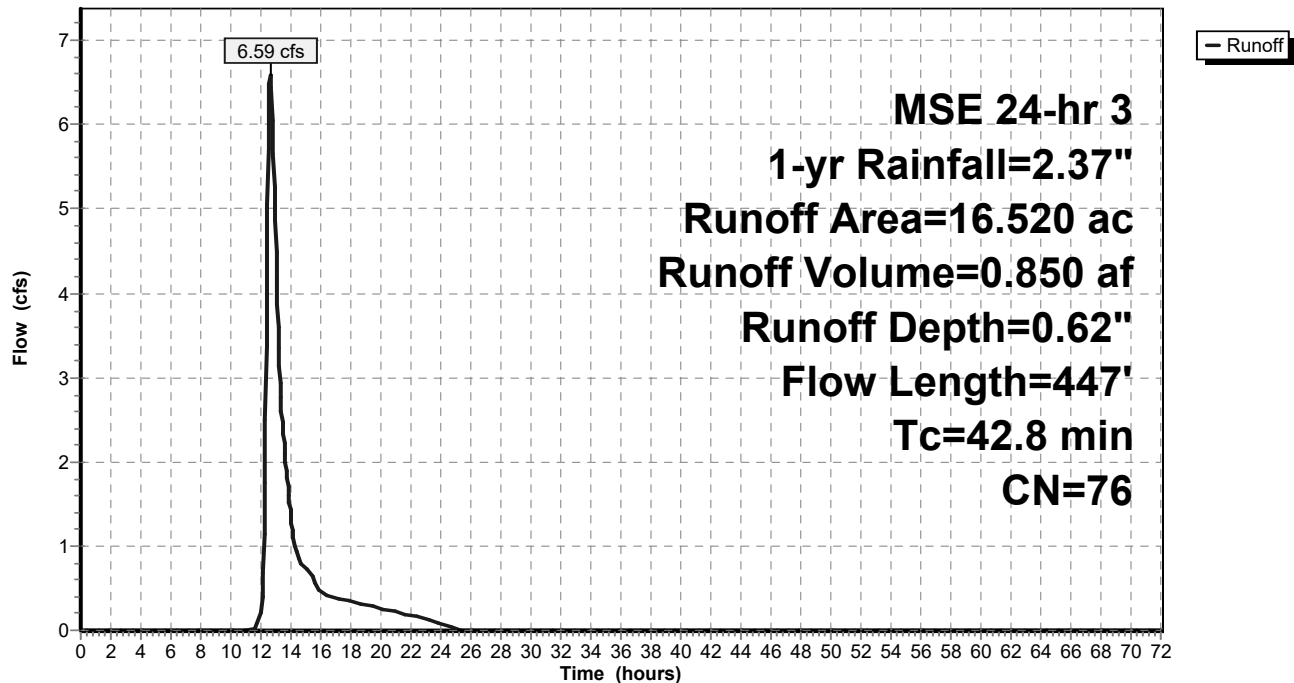
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 1-yr Rainfall=2.37"

Area (ac)	CN	Description
* 16.520	76	Row crops, C&T + CR, Good, HSG C
16.520		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
40.5	236	0.0060	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 2.37"
2.3	211	0.0300	1.56		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
42.8	447	Total			

Subcatchment 7S: WEST EXISTING

Hydrograph



Summary for Subcatchment 8S: SOUTH EXISTING

Runoff = 0.87 cfs @ 12.63 hrs, Volume= 0.109 af, Depth= 0.62"

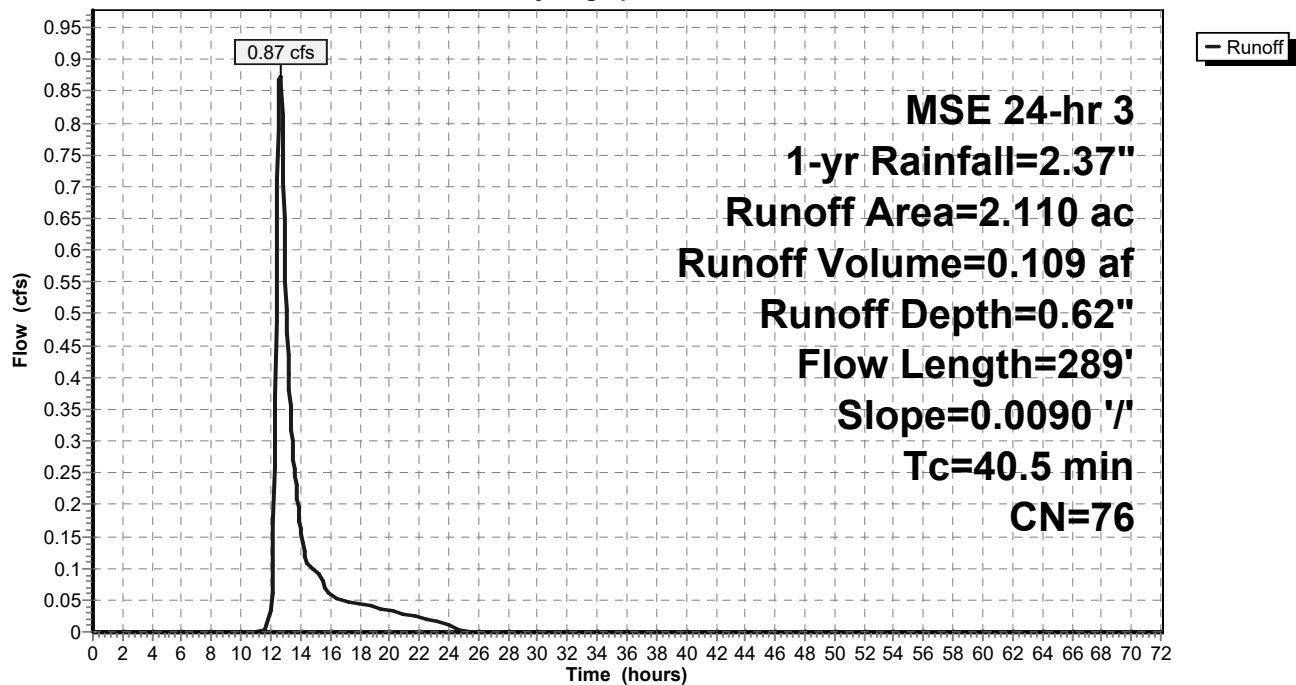
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 1-yr Rainfall=2.37"

Area (ac)	CN	Description
* 2.110	76	Row crops, C&T + CR, Good, HSG C
2.110		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
40.5	289	0.0090	0.12		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 2.37"

Subcatchment 8S: SOUTH EXISTING

Hydrograph



Summary for Subcatchment 9S: EAST EXISTING

Runoff = 9.96 cfs @ 13.00 hrs, Volume= 1.741 af, Depth= 0.62"

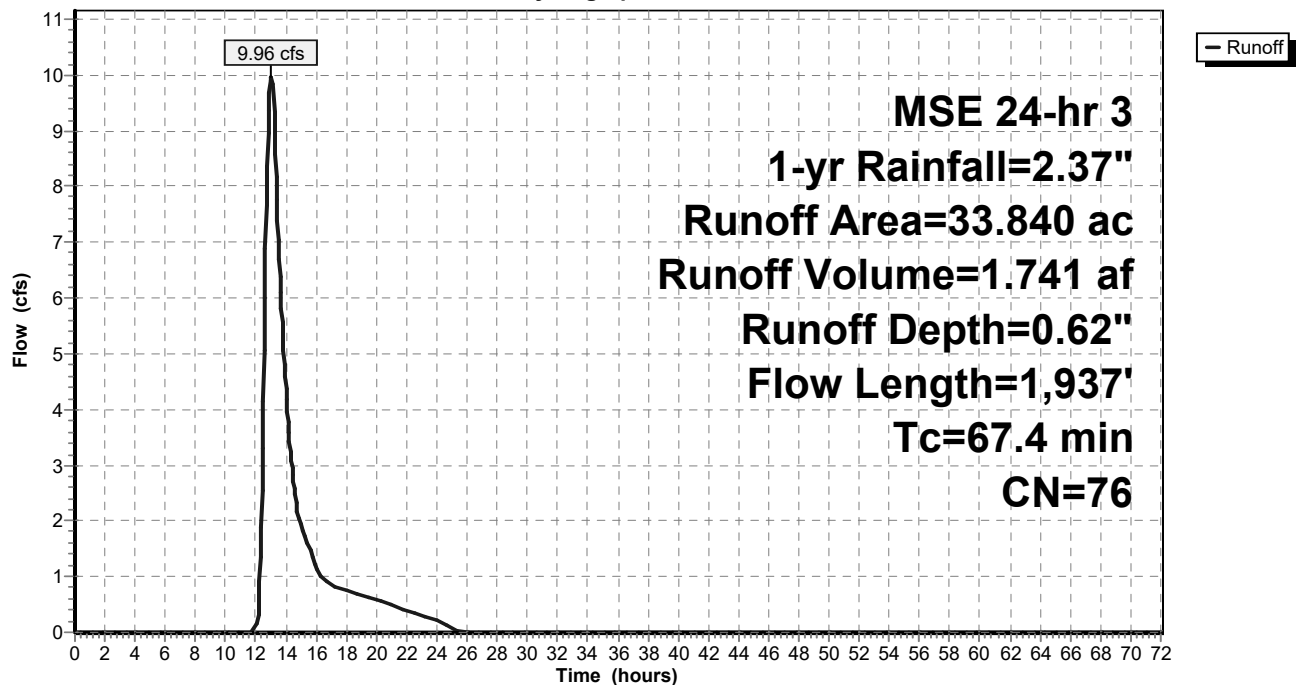
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 1-yr Rainfall=2.37"

Area (ac)	CN	Description
* 33.840	76	Row crops, C&T + CR, Good, HSG C
33.840		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.8	300	0.0300	0.19		Sheet Flow,
					Cultivated: Residue>20% n= 0.170 P2= 2.37"
41.6	1,637	0.0053	0.66		Shallow Concentrated Flow,
					Cultivated Straight Rows Kv= 9.0 fps
67.4	1,937	Total			

Subcatchment 9S: EAST EXISTING

Hydrograph



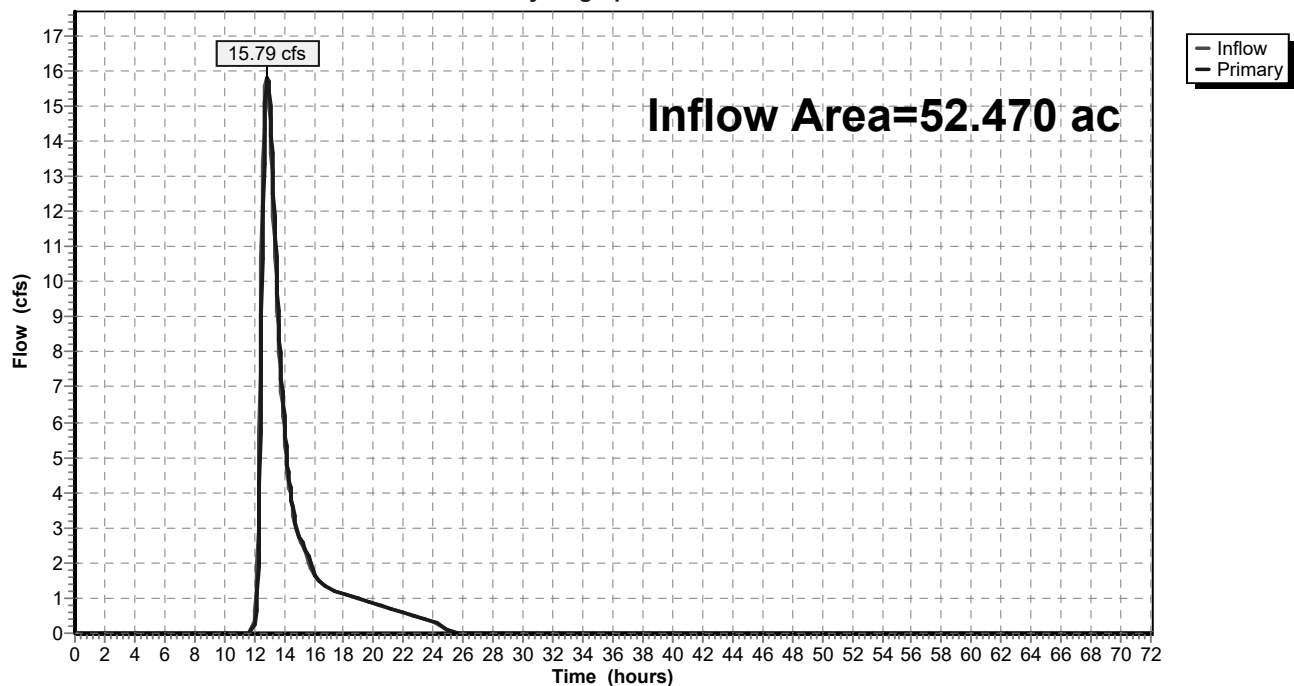
Summary for Link 6L: EXISTING SITE

Inflow Area = 52.470 ac, 0.00% Impervious, Inflow Depth = 0.62" for 1-yr event
Inflow = 15.79 cfs @ 12.82 hrs, Volume= 2.699 af
Primary = 15.79 cfs @ 12.87 hrs, Volume= 2.699 af, Atten= 0%, Lag= 3.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 6L: EXISTING SITE

Hydrograph



Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Sim-Route method - Pond routing by Sim-Route method

Subcatchment7S: WEST EXISTING

Runoff Area=16.520 ac 0.00% Impervious Runoff Depth=0.81"
Flow Length=447' Tc=42.8 min CN=76 Runoff=8.91 cfs 1.110 af

Subcatchment8S: SOUTH EXISTING

Runoff Area=2.110 ac 0.00% Impervious Runoff Depth=0.81"
Flow Length=289' Slope=0.0090 '/' Tc=40.5 min CN=76 Runoff=1.18 cfs 0.142 af

Subcatchment9S: EAST EXISTING

Runoff Area=33.840 ac 0.00% Impervious Runoff Depth=0.81"
Flow Length=1,937' Tc=67.4 min CN=76 Runoff=13.47 cfs 2.273 af

Link 6L: EXISTING SITE

Inflow=21.39 cfs 3.524 af
Primary=21.39 cfs 3.524 af

Total Runoff Area = 52.470 ac Runoff Volume = 3.524 af Average Runoff Depth = 0.81"
100.00% Pervious = 52.470 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment 7S: WEST EXISTING

Runoff = 8.91 cfs @ 12.64 hrs, Volume= 1.110 af, Depth= 0.81"

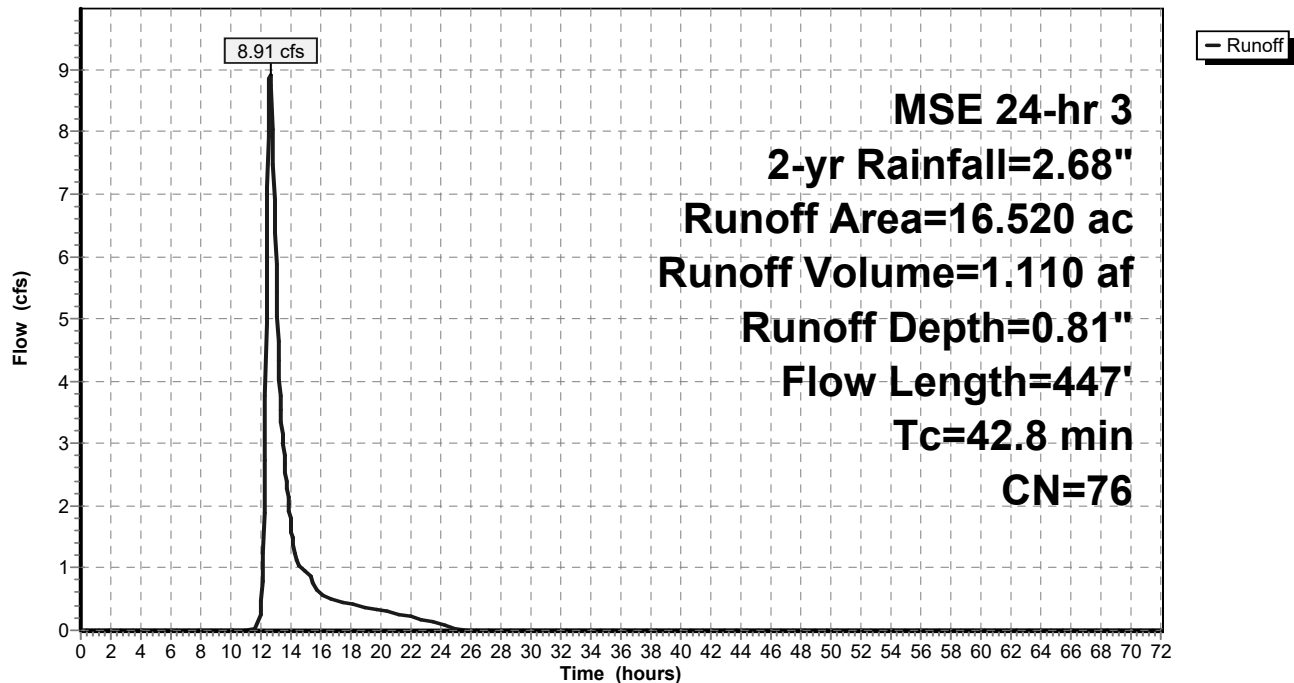
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 2-yr Rainfall=2.68"

Area (ac)	CN	Description
* 16.520	76	Row crops, C&T + CR, Good, HSG C
16.520		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
40.5	236	0.0060	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 2.37"
2.3	211	0.0300	1.56		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
42.8	447	Total			

Subcatchment 7S: WEST EXISTING

Hydrograph



Summary for Subcatchment 8S: SOUTH EXISTING

Runoff = 1.18 cfs @ 12.62 hrs, Volume= 0.142 af, Depth= 0.81"

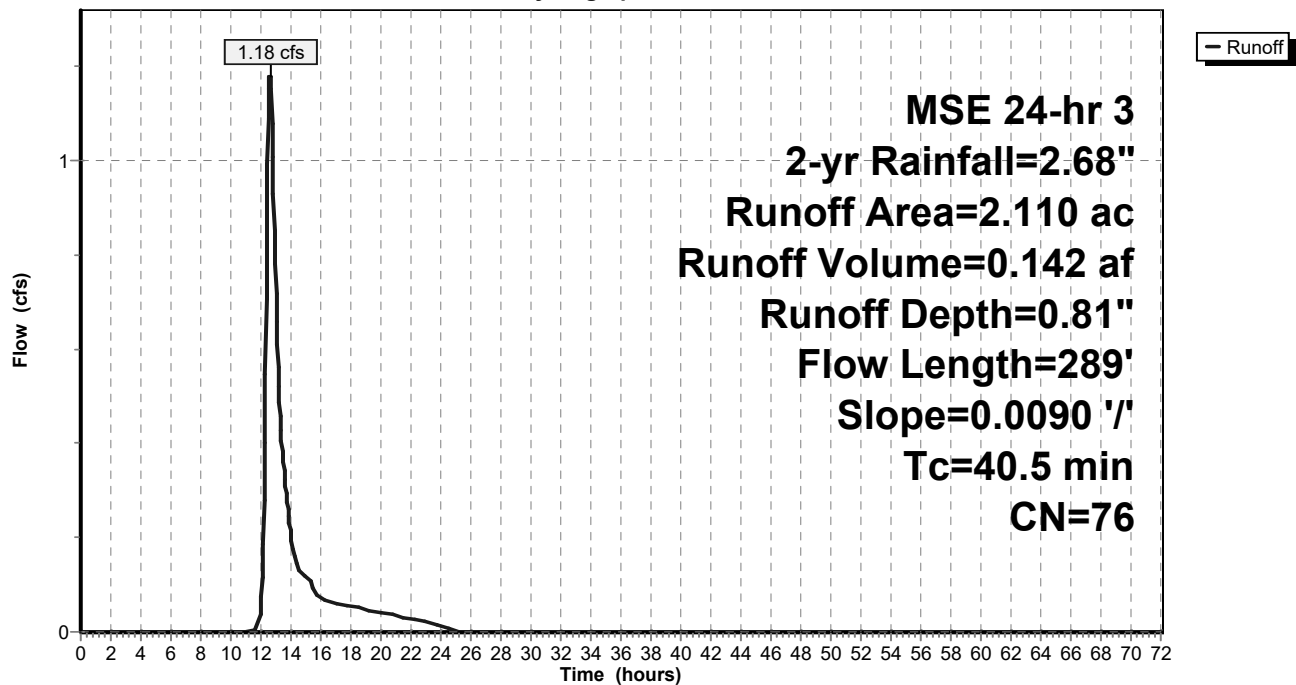
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 2-yr Rainfall=2.68"

Area (ac)	CN	Description
* 2.110	76	Row crops, C&T + CR, Good, HSG C
2.110		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
40.5	289	0.0090	0.12		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 2.37"

Subcatchment 8S: SOUTH EXISTING

Hydrograph



Summary for Subcatchment 9S: EAST EXISTING

Runoff = 13.47 cfs @ 12.98 hrs, Volume= 2.273 af, Depth= 0.81"

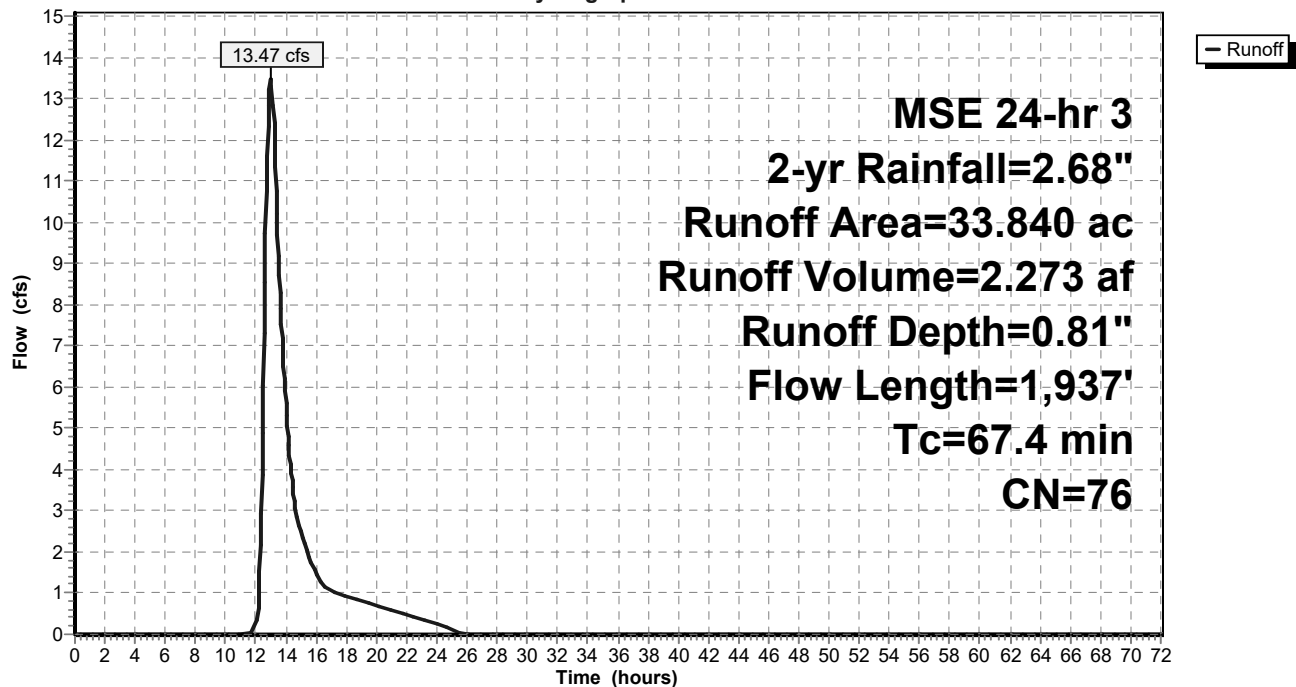
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 2-yr Rainfall=2.68"

Area (ac)	CN	Description
* 33.840	76	Row crops, C&T + CR, Good, HSG C
33.840		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.8	300	0.0300	0.19		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 2.37"
41.6	1,637	0.0053	0.66		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
67.4	1,937	Total			

Subcatchment 9S: EAST EXISTING

Hydrograph



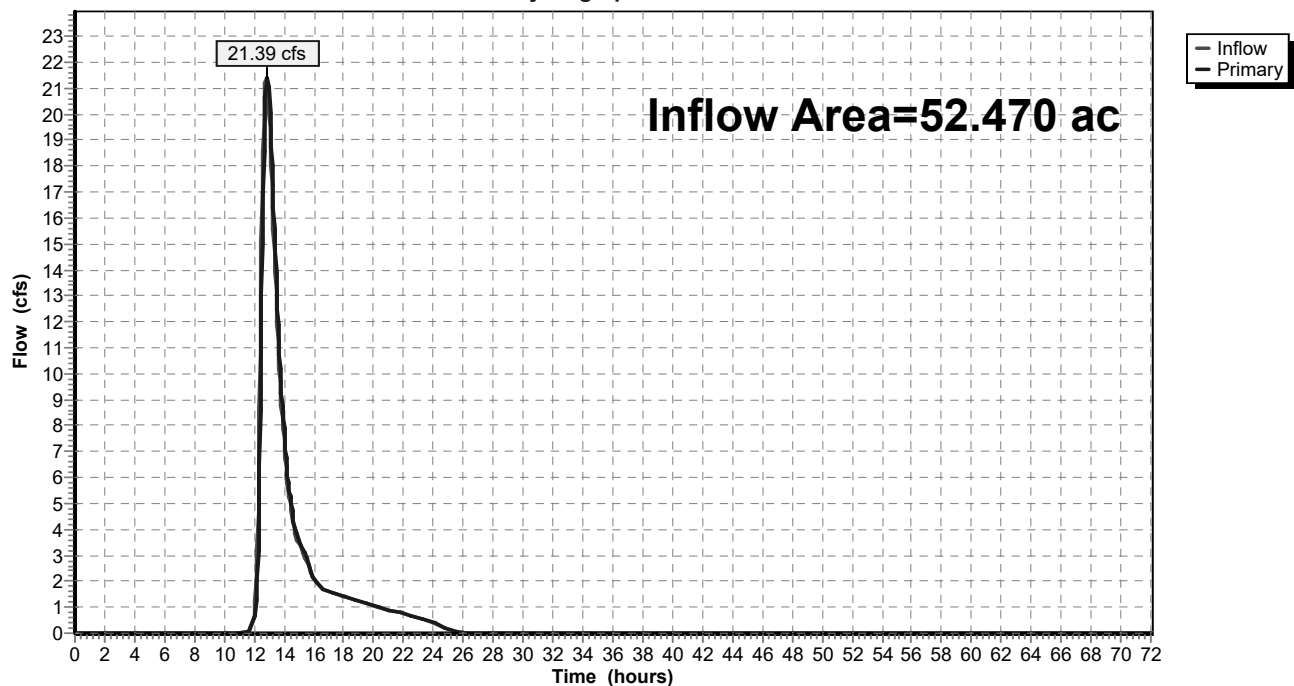
Summary for Link 6L: EXISTING SITE

Inflow Area = 52.470 ac, 0.00% Impervious, Inflow Depth = 0.81" for 2-yr event
Inflow = 21.39 cfs @ 12.80 hrs, Volume= 3.524 af
Primary = 21.39 cfs @ 12.85 hrs, Volume= 3.524 af, Atten= 0%, Lag= 3.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 6L: EXISTING SITE

Hydrograph



Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Sim-Route method - Pond routing by Sim-Route method

Subcatchment7S: WEST EXISTING

Runoff Area=16.520 ac 0.00% Impervious Runoff Depth=3.72"
Flow Length=447' Tc=42.8 min CN=76 Runoff=44.47 cfs 5.120 af

Subcatchment8S: SOUTH EXISTING

Runoff Area=2.110 ac 0.00% Impervious Runoff Depth=3.72"
Flow Length=289' Slope=0.0090 '/' Tc=40.5 min CN=76 Runoff=5.87 cfs 0.654 af

Subcatchment9S: EAST EXISTING

Runoff Area=33.840 ac 0.00% Impervious Runoff Depth=3.72"
Flow Length=1,937' Tc=67.4 min CN=76 Runoff=67.58 cfs 10.487 af

Link 6L: EXISTING SITE

Inflow=108.08 cfs 16.261 af
Primary=108.08 cfs 16.261 af

Total Runoff Area = 52.470 ac Runoff Volume = 16.261 af Average Runoff Depth = 3.72"
100.00% Pervious = 52.470 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment 7S: WEST EXISTING

Runoff = 44.47 cfs @ 12.59 hrs, Volume= 5.120 af, Depth= 3.72"

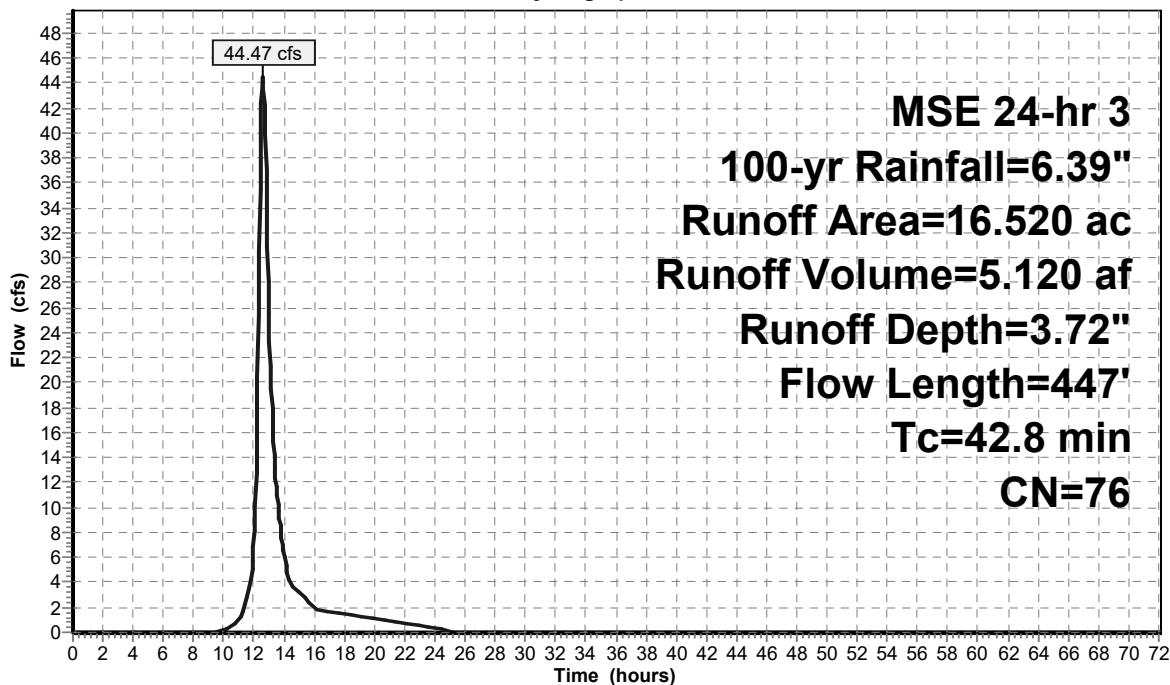
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100-yr Rainfall=6.39"

Area (ac)	CN	Description
* 16.520	76	Row crops, C&T + CR, Good, HSG C
16.520		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
40.5	236	0.0060	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 2.37"
2.3	211	0.0300	1.56		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
42.8	447	Total			

Subcatchment 7S: WEST EXISTING

Hydrograph



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MSE 24-hr 3 100-yr Rainfall=6.39"

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Summary for Subcatchment 8S: SOUTH EXISTING

Runoff = 5.87 cfs @ 12.56 hrs, Volume= 0.654 af, Depth= 3.72"

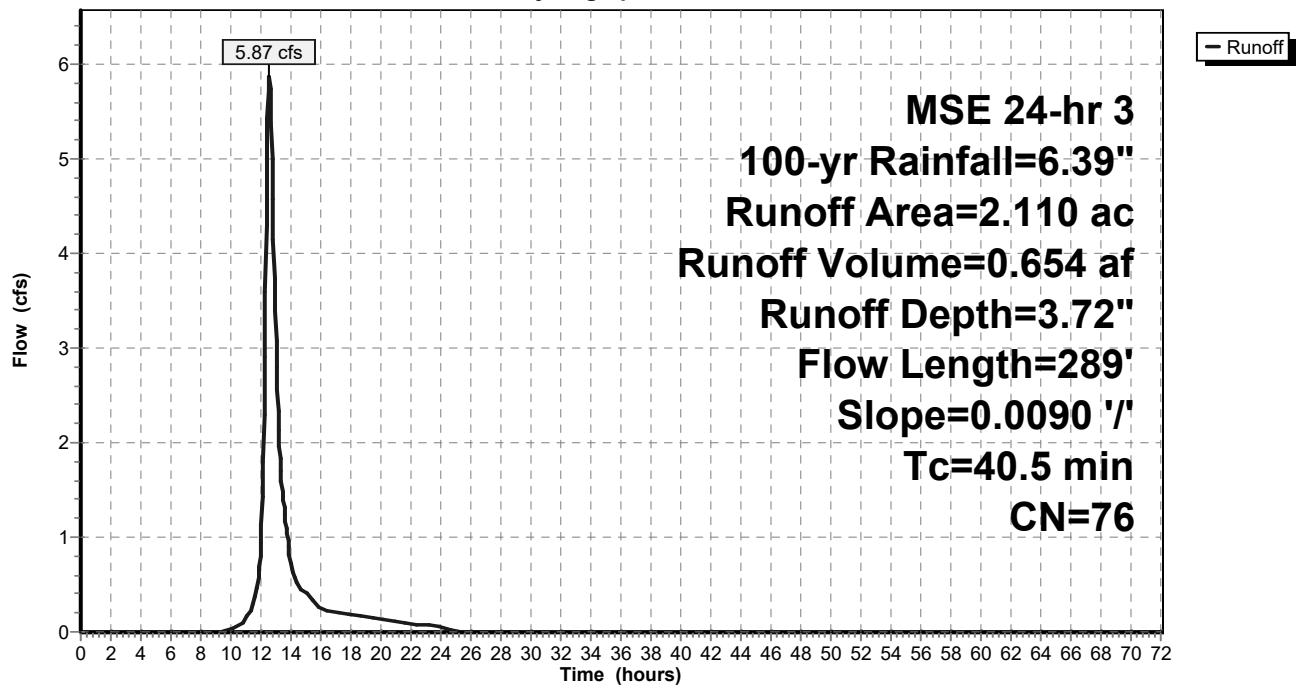
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100-yr Rainfall=6.39"

Area (ac)	CN	Description
* 2.110	76	Row crops, C&T + CR, Good, HSG C
2.110		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
40.5	289	0.0090	0.12		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 2.37"

Subcatchment 8S: SOUTH EXISTING

Hydrograph



Summary for Subcatchment 9S: EAST EXISTING

Runoff = 67.58 cfs @ 12.93 hrs, Volume= 10.487 af, Depth= 3.72"

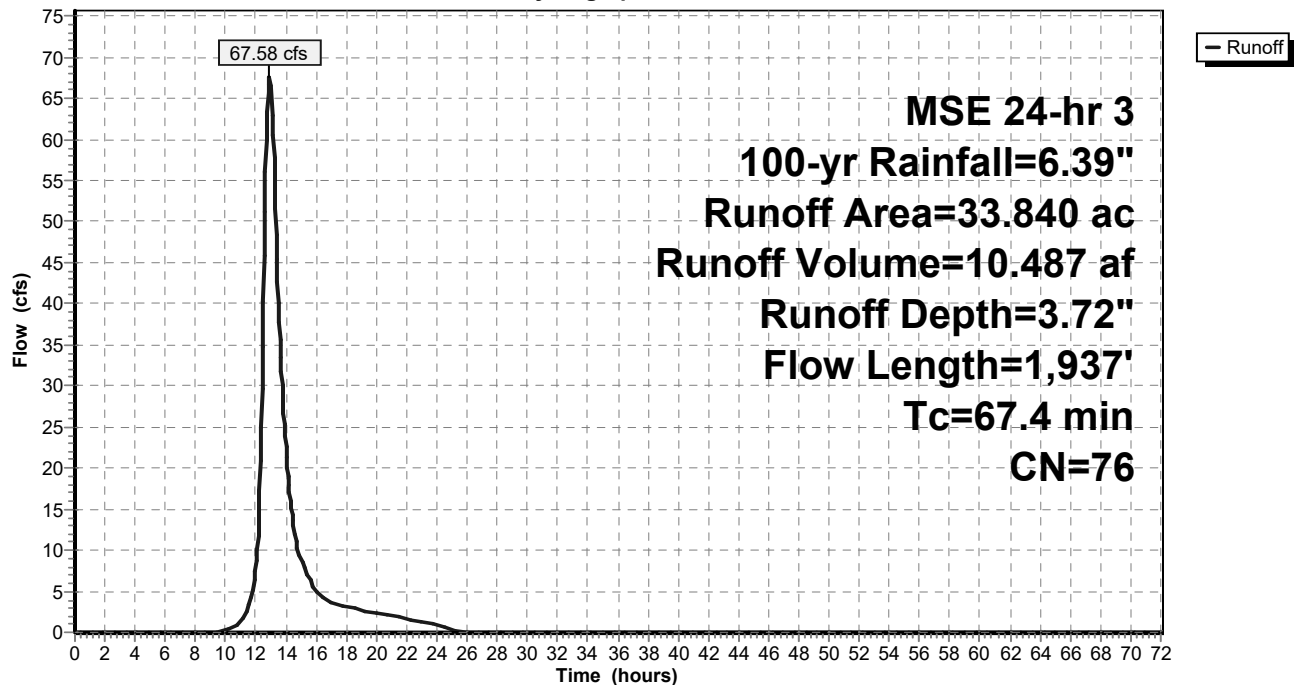
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100-yr Rainfall=6.39"

Area (ac)	CN	Description
* 33.840	76	Row crops, C&T + CR, Good, HSG C
33.840		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.8	300	0.0300	0.19		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 2.37"
41.6	1,637	0.0053	0.66		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
67.4	1,937	Total			

Subcatchment 9S: EAST EXISTING

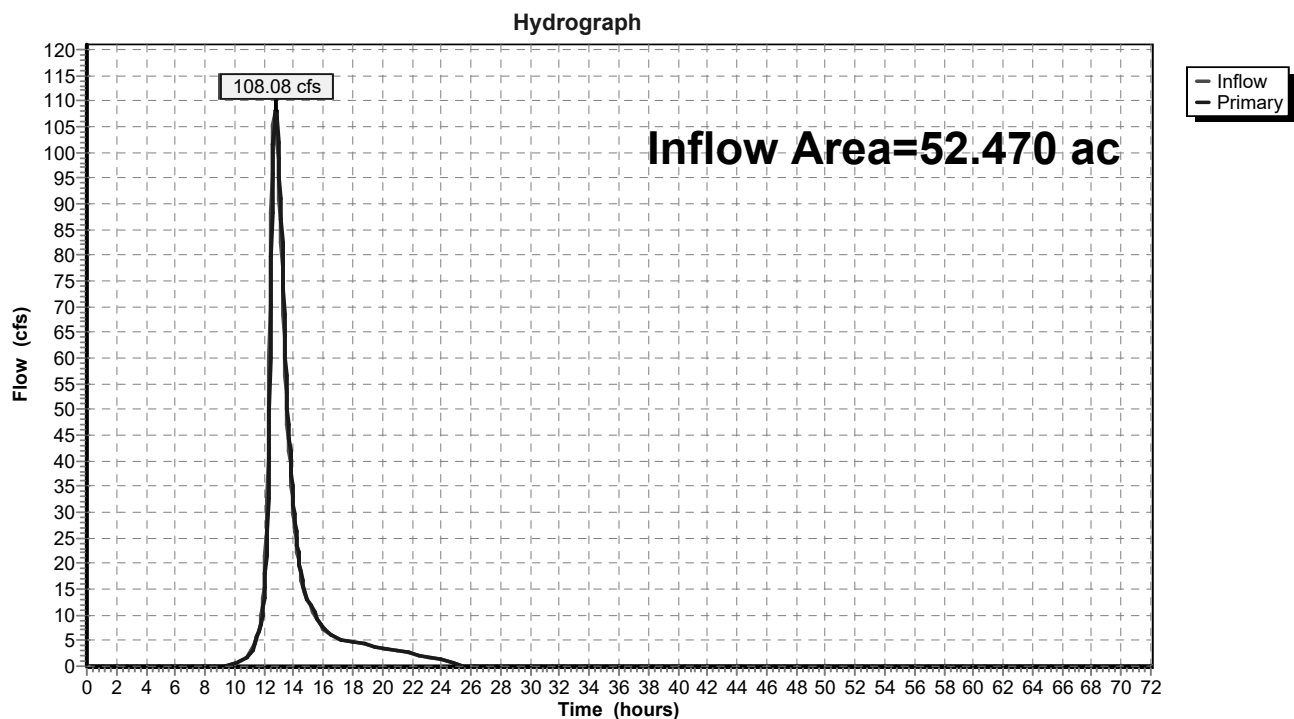
Hydrograph



Summary for Link 6L: EXISTING SITE

Inflow Area = 52.470 ac, 0.00% Impervious, Inflow Depth = 3.72" for 100-yr event
Inflow = 108.08 cfs @ 12.74 hrs, Volume= 16.261 af
Primary = 108.08 cfs @ 12.79 hrs, Volume= 16.261 af, Atten= 0%, Lag= 3.0 min

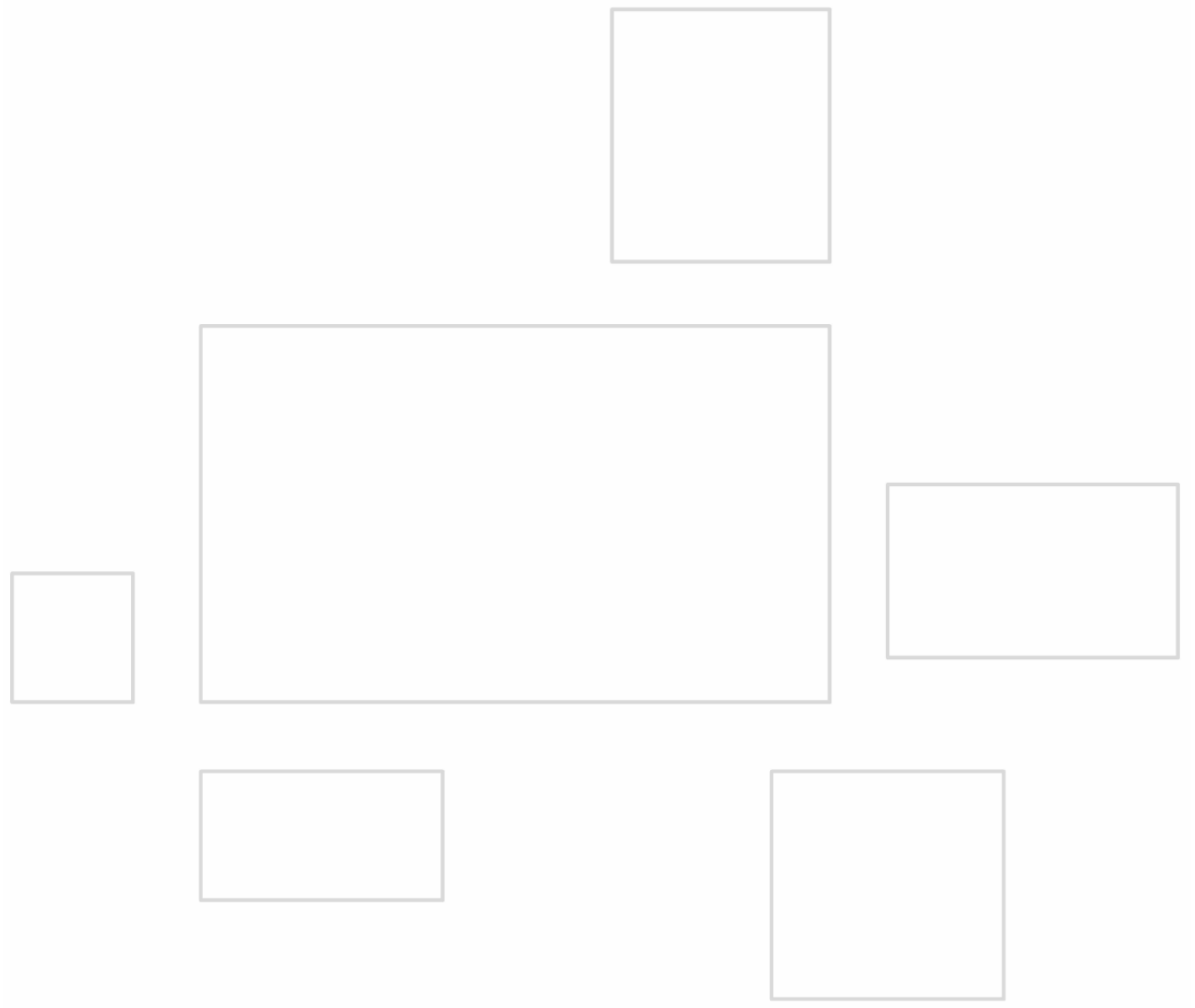
Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 6L: EXISTING SITE

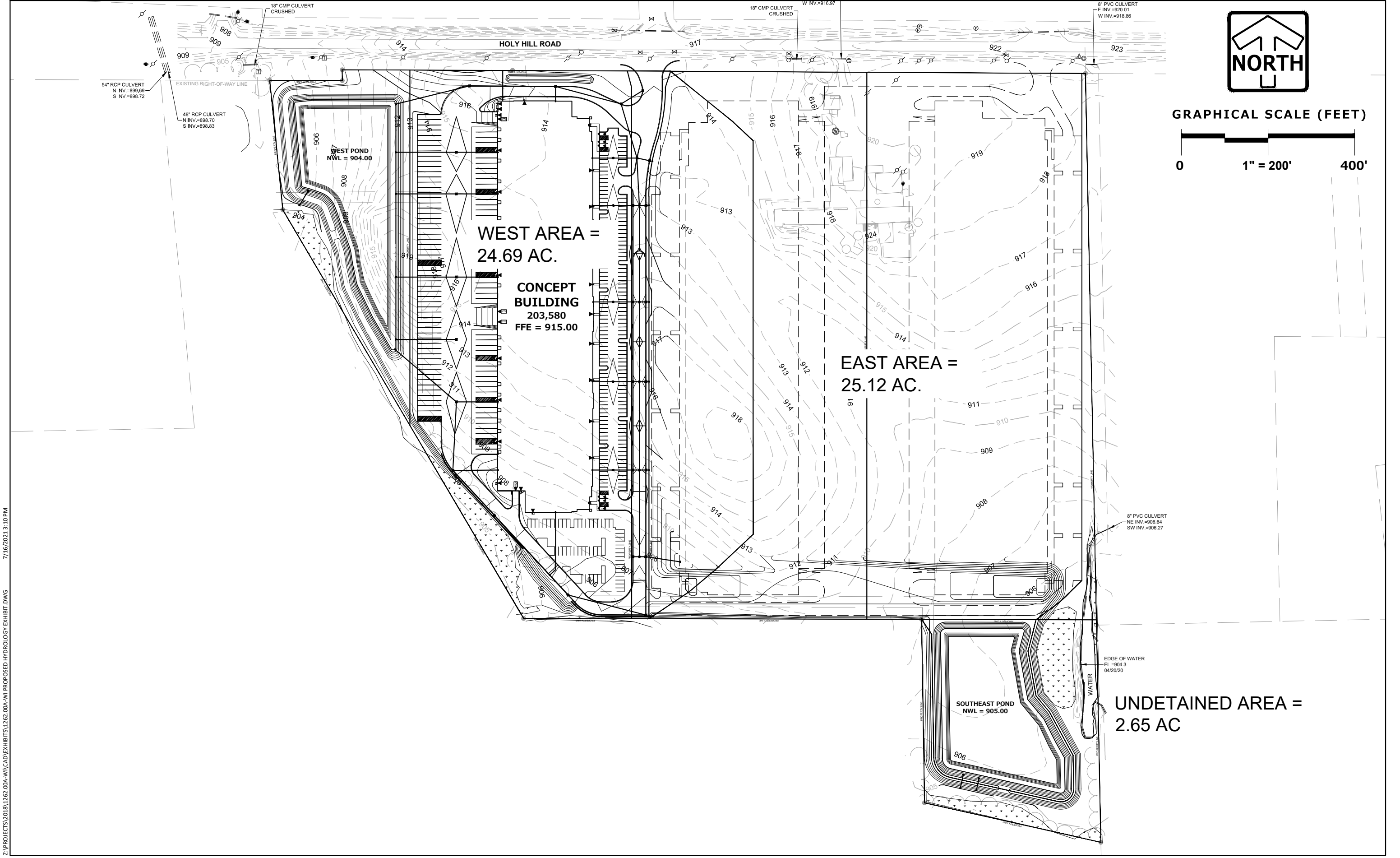
APPENDIX 3

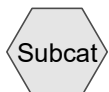
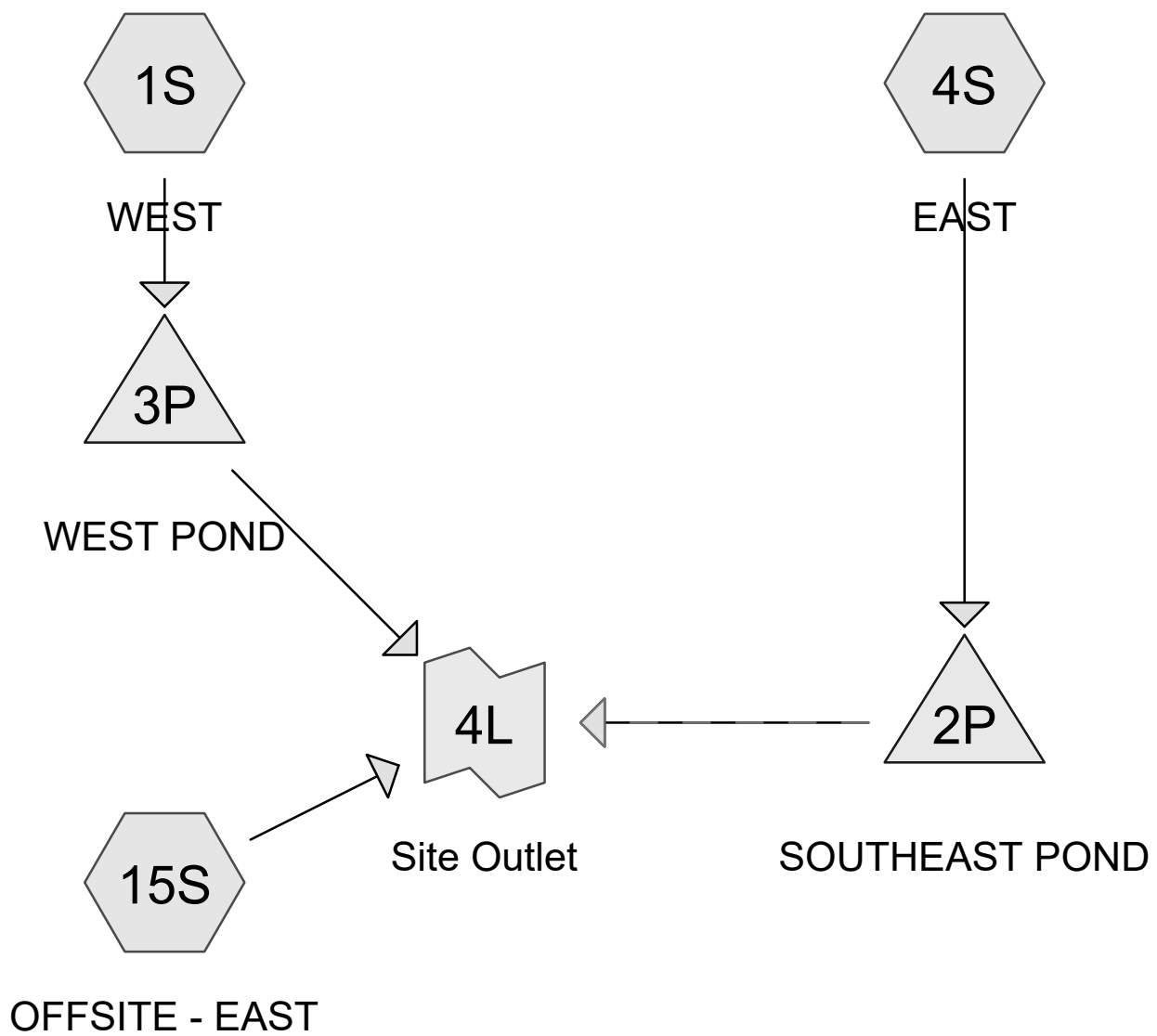
POST DEVELOPMENT CONDITIONS

RATE ATTENUATION



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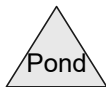




Subcat



Reach



Pond



Link

Routing Diagram for 2021-07-14 Holly Hill

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Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
2.660	74	>75% Grass cover, Good, HSG C (15S)
49.810	94	Urban commercial, 85% imp, HSG C (1S, 4S)
52.470	93	TOTAL AREA

Soil Listing (selected nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
52.470	HSG C	1S, 4S, 15S
0.000	HSG D	
0.000	Other	
52.470		TOTAL AREA

2021-07-14 Holly Hill

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Ground Covers (selected nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	2.660	0.000	0.000	2.660	>75% Grass cover, Good	15S
0.000	0.000	49.810	0.000	0.000	49.810	Urban commercial, 85% imp	1S, 4S
0.000	0.000	52.470	0.000	0.000	52.470	TOTAL AREA	

Pipe Listing (selected nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Diam/Width (inches)	Height (inches)	Inside-Fill (inches)
1	2P	905.00	905.00	32.8	0.0000	0.013	24.0	0.0	0.0
2	2P	906.80	907.00	35.0	-0.0057	0.013	18.0	0.0	0.0
3	3P	904.00	903.90	50.0	0.0020	0.013	15.0	0.0	0.0

2021-07-14 Holly Hill

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MSE 24-hr 3 1-yr Rainfall=2.37"

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Page 6

Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Sim-Route method - Pond routing by Sim-Route method

Subcatchment1S: WEST

Runoff Area=24.690 ac 85.00% Impervious Runoff Depth=1.75"
Tc=6.0 min CN=94 Runoff=73.35 cfs 3.591 af

Subcatchment4S: EAST

Runoff Area=25.120 ac 85.00% Impervious Runoff Depth=1.75"
Tc=6.0 min CN=94 Runoff=74.63 cfs 3.654 af

Subcatchment15S: OFFSITE - EAST

Runoff Area=2.660 ac 0.00% Impervious Runoff Depth=0.54"
Tc=6.0 min CN=74 Runoff=2.39 cfs 0.119 af

Pond 2P: SOUTHEASTPOND

Peak Elev=906.70' Storage=139,039 cf Inflow=74.63 cfs 3.654 af
Primary=0.52 cfs 2.197 af Secondary=0.00 cfs 0.000 af Tertiary=0.00 cfs 0.000 af Outflow=0.52 cfs 2.197 af

Pond 3P: WEST POND

Peak Elev=905.56' Storage=129,791 cf Inflow=73.35 cfs 3.591 af
Primary=0.76 cfs 2.820 af Secondary=0.00 cfs 0.000 af Outflow=0.76 cfs 2.820 af

Link 4L: Site Outlet

Inflow=3.21 cfs 5.134 af
Primary=3.21 cfs 5.134 af

Total Runoff Area = 52.470 ac Runoff Volume = 7.364 af Average Runoff Depth = 1.68"
19.31% Pervious = 10.131 ac 80.69% Impervious = 42.338 ac

Summary for Subcatchment 1S: WEST

Runoff = 73.35 cfs @ 12.13 hrs, Volume= 3.591 af, Depth= 1.75"

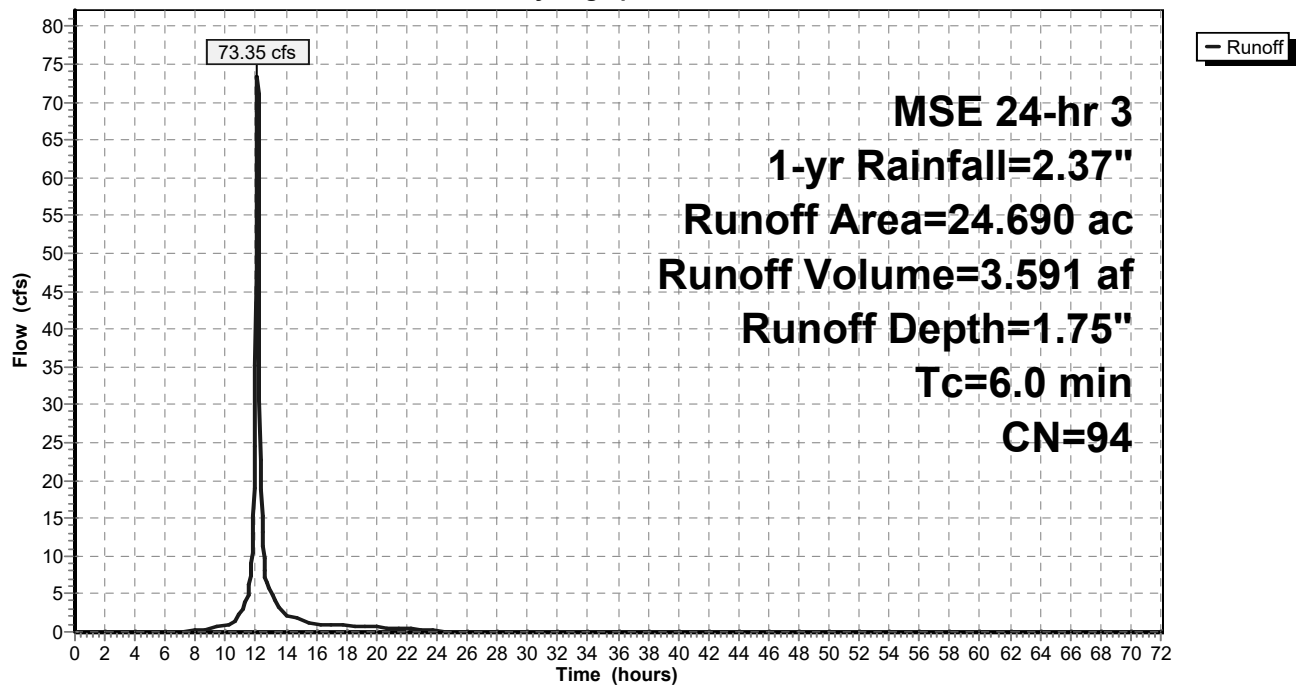
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 1-yr Rainfall=2.37"

Area (ac)	CN	Description
24.690	94	Urban commercial, 85% imp, HSG C
3.703		15.00% Pervious Area
20.986		85.00% Impervious Area

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

Subcatchment 1S: WEST

Hydrograph



Summary for Subcatchment 4S: EAST

Runoff = 74.63 cfs @ 12.13 hrs, Volume= 3.654 af, Depth= 1.75"

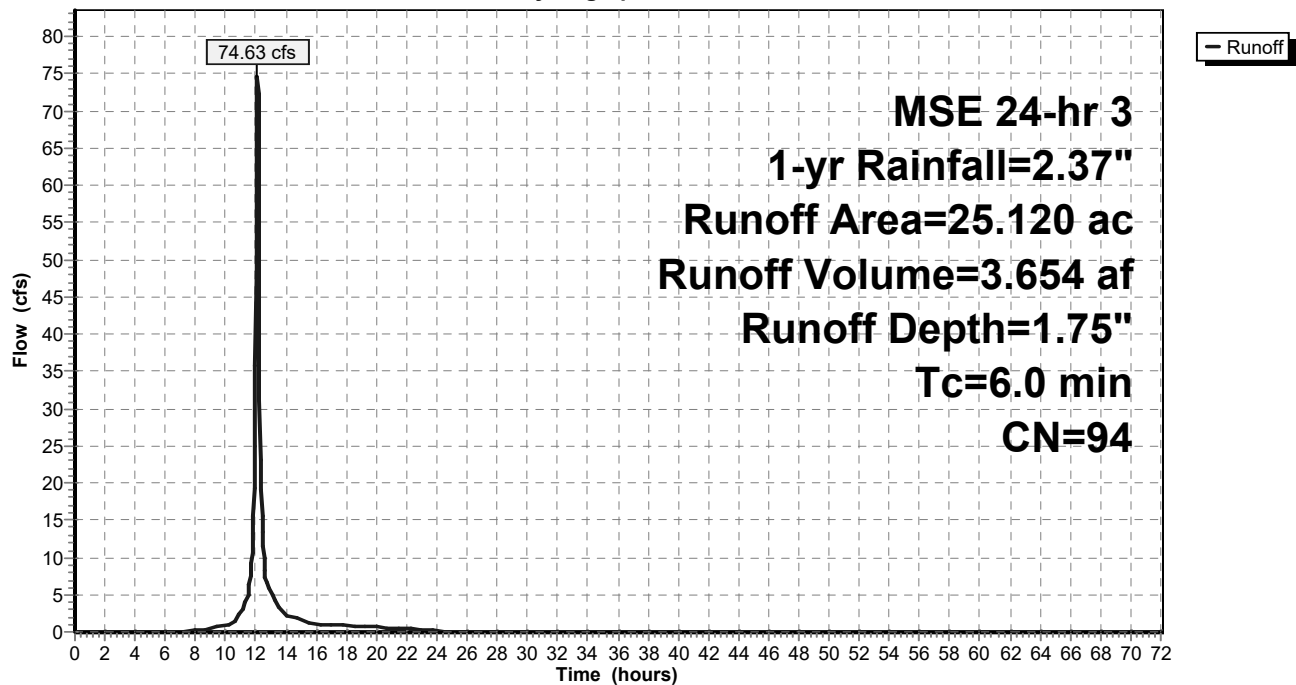
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 1-yr Rainfall=2.37"

Area (ac)	CN	Description
25.120	94	Urban commercial, 85% imp, HSG C
3.768		15.00% Pervious Area
21.352		85.00% Impervious Area

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

Subcatchment 4S: EAST

Hydrograph



Summary for Subcatchment 15S: OFFSITE - EAST

Runoff = 2.39 cfs @ 12.15 hrs, Volume= 0.119 af, Depth= 0.54"

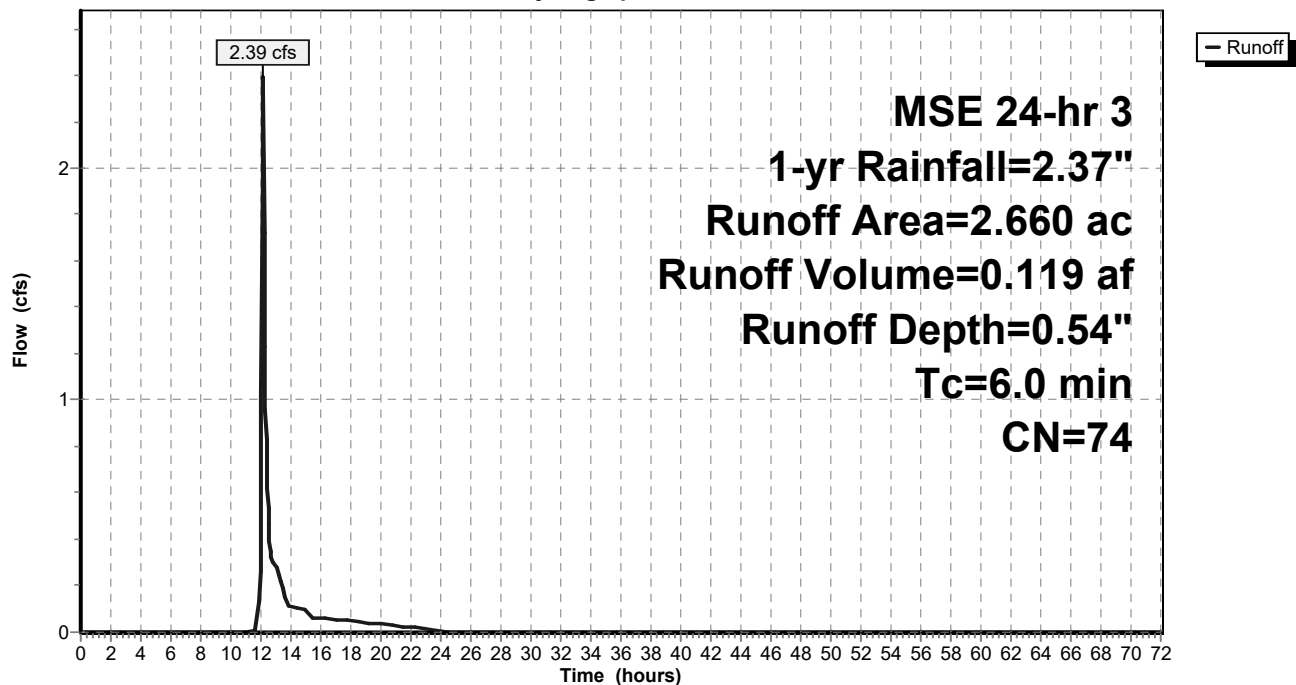
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 1-yr Rainfall=2.37"

Area (ac)	CN	Description
2.660	74	>75% Grass cover, Good, HSG C
2.660		100.00% Pervious Area

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

Subcatchment 15S: OFFSITE - EAST

Hydrograph



Summary for Pond 2P: SOUTHEAST POND

Inflow Area = 25.120 ac, 85.00% Impervious, Inflow Depth = 1.75" for 1-yr event
 Inflow = 74.63 cfs @ 12.13 hrs, Volume= 3.654 af
 Outflow = 0.52 cfs @ 20.80 hrs, Volume= 2.197 af, Atten= 99%, Lag= 520.0 min
 Primary = 0.52 cfs @ 20.80 hrs, Volume= 2.197 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Tertiary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Sim-Route method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 906.70' @ 20.80 hrs Surf.Area= 84,760 sf Storage= 139,039 cf

Plug-Flow detention time= 1,675.4 min calculated for 2.195 af (60% of inflow)
 Center-of-Mass det. time= 1,601.8 min (2,384.2 - 782.4)

Volume	Invert	Avail.Storage	Storage Description
#1	905.00'	438,757 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
905.00	78,603	0	0
906.00	82,197	80,400	80,400
907.00	85,845	84,021	164,421
908.00	89,548	87,697	252,118
909.00	93,306	91,427	343,545
910.00	97,118	95,212	438,757

Device	Routing	Invert	Outlet Devices
#1	Primary	905.00'	24.0" Round Culvert L= 32.8' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 905.00' / 905.00' S= 0.0000 ' S= 0.0000 ' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf
#2	Device 1	905.00'	4.0" Vert. Orifice/Grate C= 0.600
#3	Device 1	907.50'	48.0" Vert. Orifice/Grate C= 0.600
#4	Tertiary	907.00'	18.0" Round Culvert L= 35.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 906.80' / 907.00' S= -0.0057 ' S= -0.0057 ' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#5	Secondary	909.60'	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=0.52 cfs @ 20.80 hrs HW=906.70' TW=0.00' (Dynamic Tailwater)

↑ **1=Culvert** (Passes 0.52 cfs of 8.17 cfs potential flow)
 ↑ **2=Orifice/Grate** (Orifice Controls 0.52 cfs @ 5.97 fps)
 ↑ **3=Orifice/Grate** (Controls 0.00 cfs)

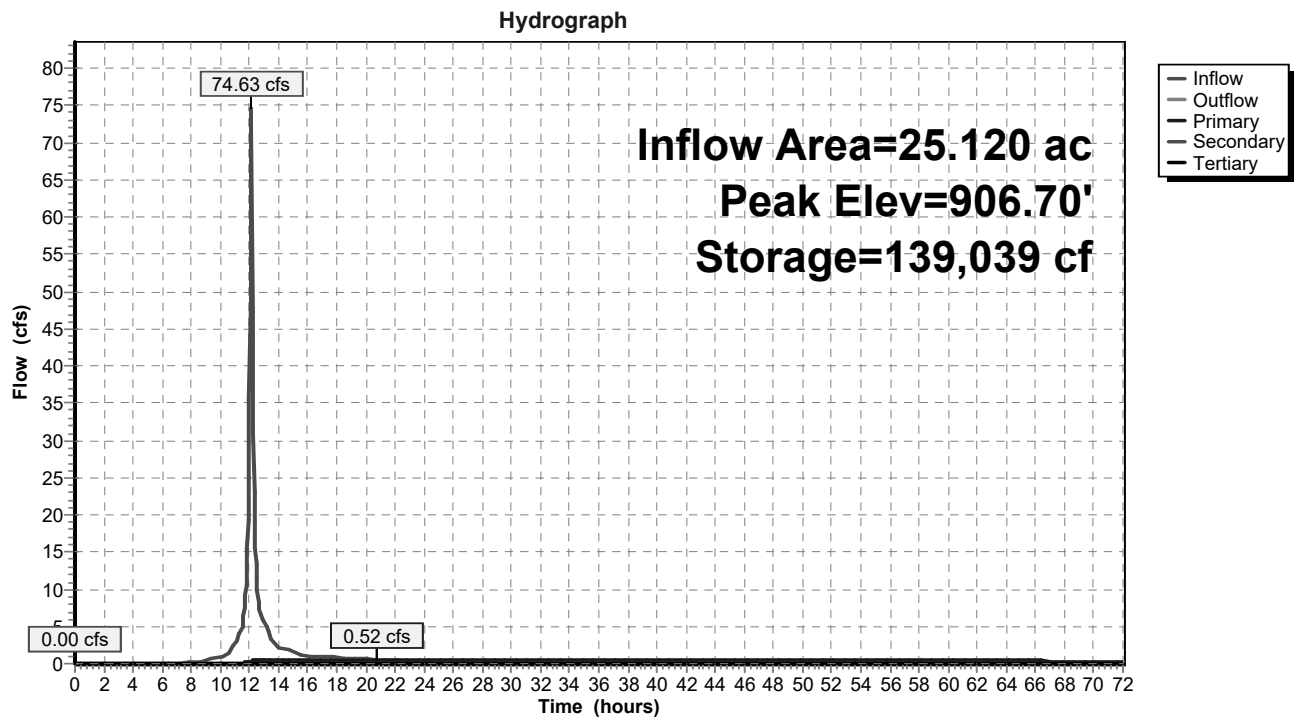
Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=905.00' (Free Discharge)

↑ **5=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=905.00' TW=0.00' (Dynamic Tailwater)

↑ **4=Culvert** (Controls 0.00 cfs)

Pond 2P: SOUTHEAST POND



Summary for Pond 3P: WEST POND

Inflow Area = 24.690 ac, 85.00% Impervious, Inflow Depth = 1.75" for 1-yr event
 Inflow = 73.35 cfs @ 12.13 hrs, Volume= 3.591 af
 Outflow = 0.76 cfs @ 18.53 hrs, Volume= 2.820 af, Atten= 99%, Lag= 383.8 min
 Primary = 0.76 cfs @ 18.53 hrs, Volume= 2.820 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Sim-Route method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 905.56' @ 18.53 hrs Surf.Area= 86,954 sf Storage= 129,791 cf

Plug-Flow detention time= 1,531.2 min calculated for 2.818 af (78% of inflow)
 Center-of-Mass det. time= 1,470.9 min (2,253.2 - 782.4)

Volume	Invert	Avail.Storage	Storage Description
#1	904.00'	459,432 cf	Custom Stage Data (Prismatic) Listed below

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
904.00	79,112	0	0
905.00	84,126	81,619	81,619
906.00	89,214	86,670	168,289
907.00	94,388	91,801	260,090
908.00	99,649	97,019	357,109
909.00	104,997	102,323	459,432

Device	Routing	Invert	Outlet Devices
#1	Primary	904.00'	15.0" Round Culvert L= 50.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 904.00' / 903.90' S= 0.0020 ' S= 0.0020 ' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Device 1	904.00'	5.0" Vert. Orifice/Grate C= 0.600
#3	Device 1	906.25'	48.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#4	Secondary	908.60'	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=0.76 cfs @ 18.53 hrs HW=905.56' TW=0.00' (Dynamic Tailwater)

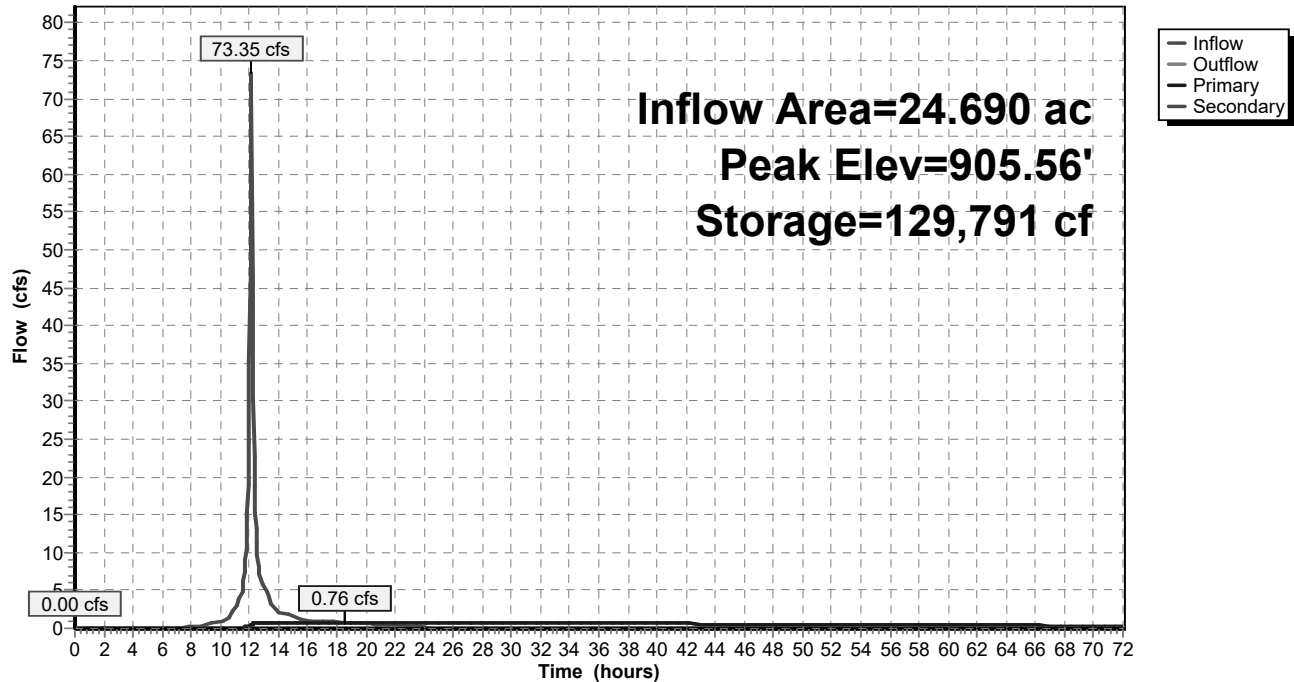
↑ **1=Culvert** (Passes 0.76 cfs of 4.27 cfs potential flow)
 ↑ **2=Orifice/Grate** (Orifice Controls 0.76 cfs @ 5.59 fps)
 ↑ **3=Orifice/Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=904.00' (Free Discharge)

↑ **4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 3P: WEST POND

Hydrograph



Summary for Link 4L: Site Outlet

2-year max = 18.94

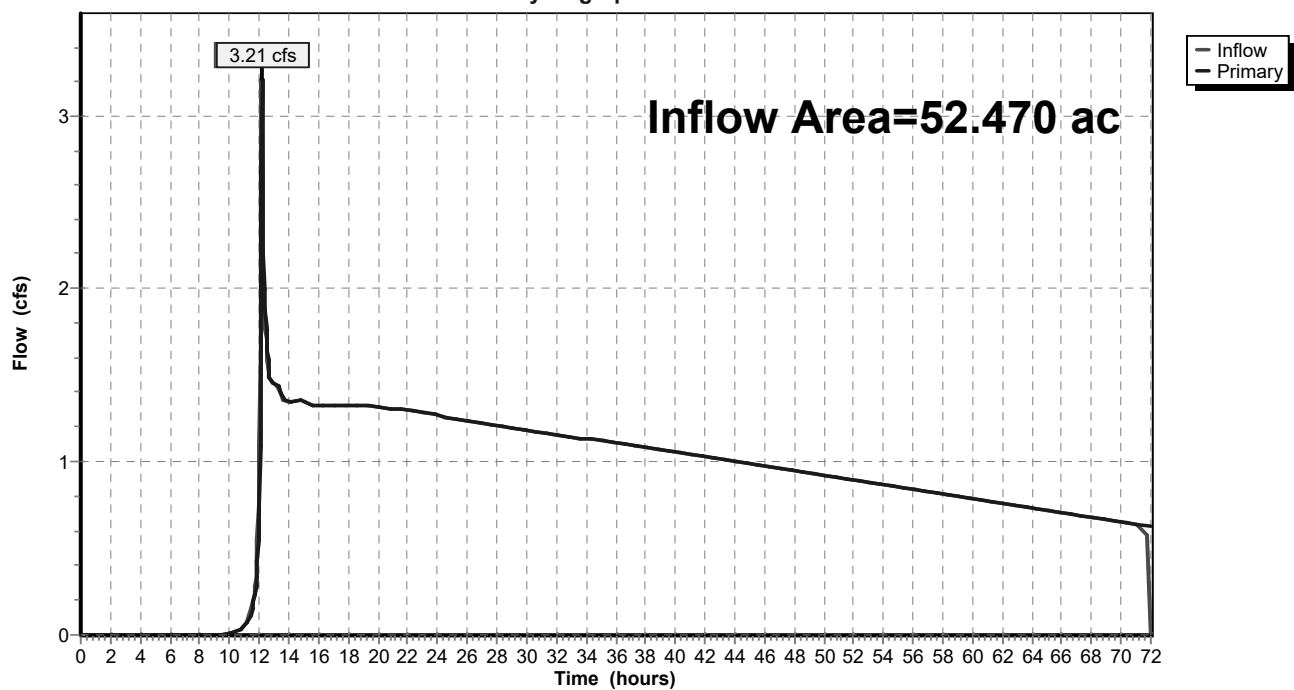
100 year max = 63.13

Inflow Area = 52.470 ac, 80.69% Impervious, Inflow Depth > 1.17" for 1-yr event
Inflow = 3.21 cfs @ 12.15 hrs, Volume= 5.134 af
Primary = 3.21 cfs @ 12.20 hrs, Volume= 5.134 af, Atten= 0%, Lag= 3.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 4L: Site Outlet

Hydrograph



Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Sim-Route method - Pond routing by Sim-Route method

Subcatchment1S: WEST

Runoff Area=24.690 ac 85.00% Impervious Runoff Depth=2.04"
Tc=6.0 min CN=94 Runoff=84.97 cfs 4.201 af

Subcatchment4S: EAST

Runoff Area=25.120 ac 85.00% Impervious Runoff Depth=2.04"
Tc=6.0 min CN=94 Runoff=86.45 cfs 4.274 af

Subcatchment15S: OFFSITE - EAST

Runoff Area=2.660 ac 0.00% Impervious Runoff Depth=0.71"
Tc=6.0 min CN=74 Runoff=3.27 cfs 0.158 af

Pond 2P: SOUTHEASTPOND

Peak Elev=906.99' Storage=163,885 cf Inflow=86.45 cfs 4.274 af
Primary=0.57 cfs 2.440 af Secondary=0.00 cfs 0.000 af Tertiary=0.00 cfs 0.000 af Outflow=0.57 cfs 2.440 af

Pond 3P: WEST POND

Peak Elev=905.83' Storage=153,196 cf Inflow=84.97 cfs 4.201 af
Primary=0.84 cfs 3.201 af Secondary=0.00 cfs 0.000 af Outflow=0.84 cfs 3.201 af

Link 4L: Site Outlet

Inflow=4.19 cfs 5.795 af
Primary=4.19 cfs 5.795 af

Total Runoff Area = 52.470 ac Runoff Volume = 8.633 af Average Runoff Depth = 1.97"
19.31% Pervious = 10.131 ac 80.69% Impervious = 42.338 ac

Summary for Subcatchment 1S: WEST

Runoff = 84.97 cfs @ 12.13 hrs, Volume= 4.201 af, Depth= 2.04"

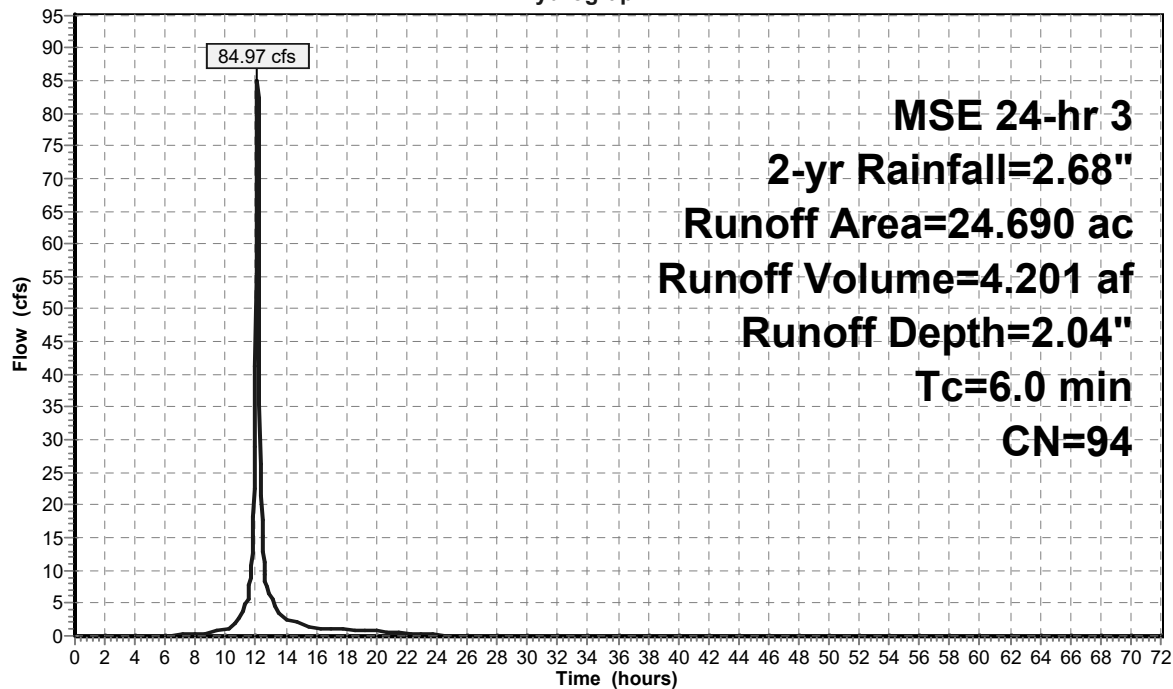
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 2-yr Rainfall=2.68"

Area (ac)	CN	Description
24.690	94	Urban commercial, 85% imp, HSG C
3.703		15.00% Pervious Area
20.986		85.00% Impervious Area

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

Subcatchment 1S: WEST

Hydrograph



Summary for Subcatchment 4S: EAST

Runoff = 86.45 cfs @ 12.13 hrs, Volume= 4.274 af, Depth= 2.04"

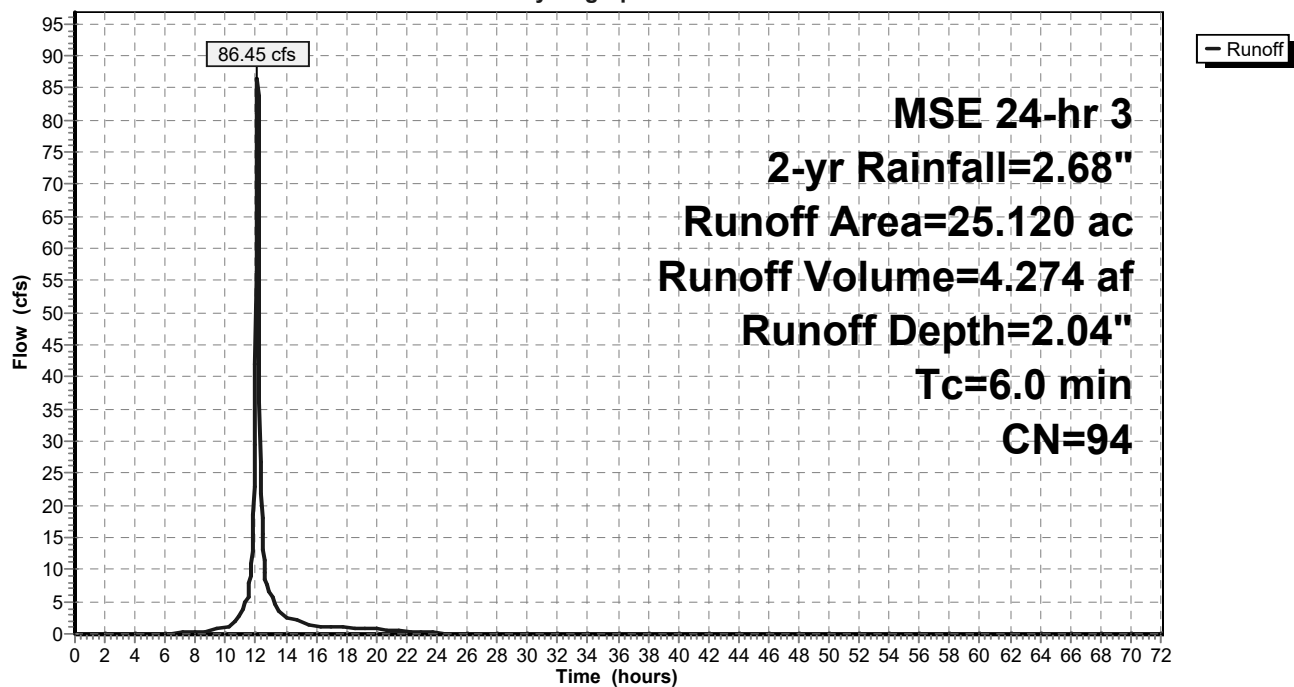
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 2-yr Rainfall=2.68"

Area (ac)	CN	Description
25.120	94	Urban commercial, 85% imp, HSG C
3.768		15.00% Pervious Area
21.352		85.00% Impervious Area

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

Subcatchment 4S: EAST

Hydrograph



Summary for Subcatchment 15S: OFFSITE - EAST

Runoff = 3.27 cfs @ 12.14 hrs, Volume= 0.158 af, Depth= 0.71"

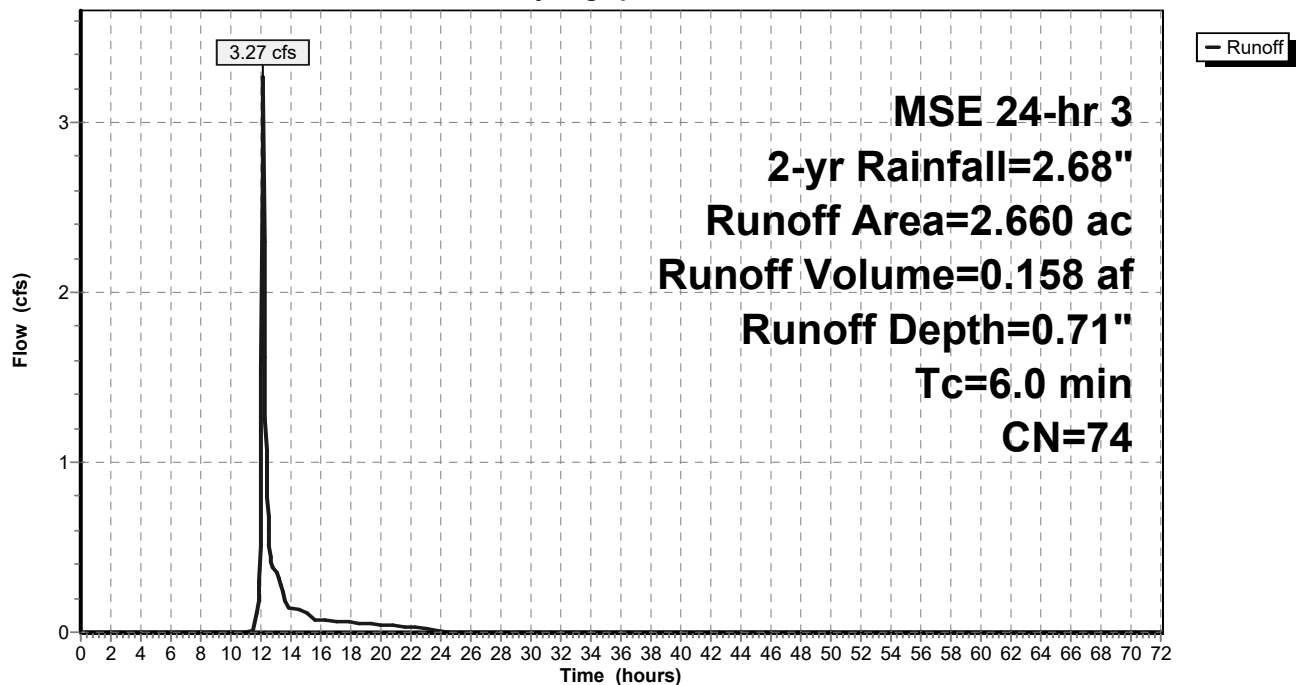
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 2-yr Rainfall=2.68"

Area (ac)	CN	Description
2.660	74	>75% Grass cover, Good, HSG C
2.660		100.00% Pervious Area

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

Subcatchment 15S: OFFSITE - EAST

Hydrograph



Summary for Pond 2P: SOUTHEAST POND

Inflow Area = 25.120 ac, 85.00% Impervious, Inflow Depth = 2.04" for 2-yr event
 Inflow = 86.45 cfs @ 12.13 hrs, Volume= 4.274 af
 Outflow = 0.57 cfs @ 21.00 hrs, Volume= 2.440 af, Atten= 99%, Lag= 532.5 min
 Primary = 0.57 cfs @ 21.00 hrs, Volume= 2.440 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Tertiary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Sim-Route method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 906.99' @ 21.00 hrs Surf.Area= 85,822 sf Storage= 163,885 cf

Plug-Flow detention time= 1,694.2 min calculated for 2.440 af (57% of inflow)
 Center-of-Mass det. time= 1,617.9 min (2,397.2 - 779.3)

Volume	Invert	Avail.Storage	Storage Description
#1	905.00'	438,757 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
905.00	78,603	0	0
906.00	82,197	80,400	80,400
907.00	85,845	84,021	164,421
908.00	89,548	87,697	252,118
909.00	93,306	91,427	343,545
910.00	97,118	95,212	438,757

Device	Routing	Invert	Outlet Devices
#1	Primary	905.00'	24.0" Round Culvert L= 32.8' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 905.00' / 905.00' S= 0.0000 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf
#2	Device 1	905.00'	4.0" Vert. Orifice/Grate C= 0.600
#3	Device 1	907.50'	48.0" Vert. Orifice/Grate C= 0.600
#4	Tertiary	907.00'	18.0" Round Culvert L= 35.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 906.80' / 907.00' S= -0.0057 '/' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#5	Secondary	909.60'	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=0.57 cfs @ 21.00 hrs HW=906.99' TW=0.00' (Dynamic Tailwater)

↑ **1=Culvert** (Passes 0.57 cfs of 10.58 cfs potential flow)
 ↑ **2=Orifice/Grate** (Orifice Controls 0.57 cfs @ 6.51 fps)
 ↑ **3=Orifice/Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=905.00' (Free Discharge)

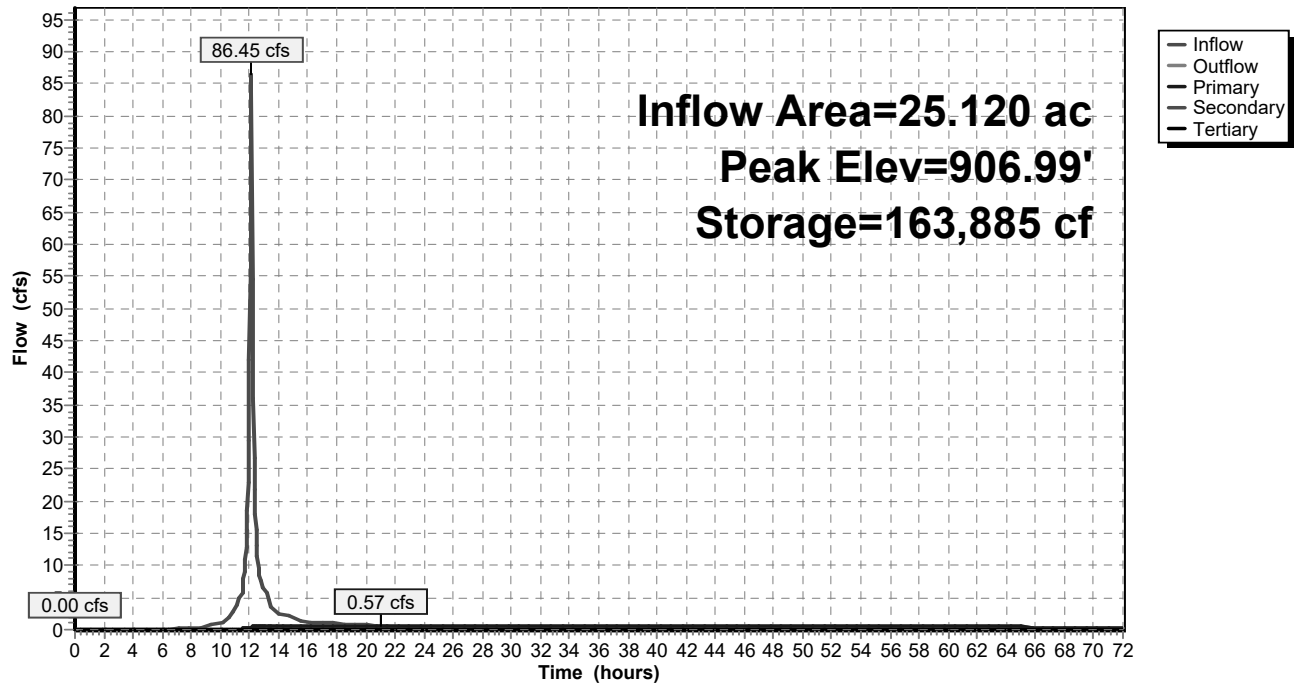
↑ **5=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=905.00' TW=0.00' (Dynamic Tailwater)

↑ **4=Culvert** (Controls 0.00 cfs)

Pond 2P: SOUTHEAST POND

Hydrograph



Summary for Pond 3P: WEST POND

Inflow Area = 24.690 ac, 85.00% Impervious, Inflow Depth = 2.04" for 2-yr event
 Inflow = 84.97 cfs @ 12.13 hrs, Volume= 4.201 af
 Outflow = 0.84 cfs @ 18.78 hrs, Volume= 3.201 af, Atten= 99%, Lag= 399.2 min
 Primary = 0.84 cfs @ 18.78 hrs, Volume= 3.201 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Sim-Route method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 905.83' @ 18.78 hrs Surf.Area= 88,328 sf Storage= 153,196 cf

Plug-Flow detention time= 1,570.6 min calculated for 3.201 af (76% of inflow)
 Center-of-Mass det. time= 1,507.1 min (2,286.3 - 779.3)

Volume	Invert	Avail.Storage	Storage Description
#1	904.00'	459,432 cf	Custom Stage Data (Prismatic) Listed below

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
904.00	79,112	0	0
905.00	84,126	81,619	81,619
906.00	89,214	86,670	168,289
907.00	94,388	91,801	260,090
908.00	99,649	97,019	357,109
909.00	104,997	102,323	459,432

Device	Routing	Invert	Outlet Devices
#1	Primary	904.00'	15.0" Round Culvert L= 50.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 904.00' / 903.90' S= 0.0020 ' / Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Device 1	904.00'	5.0" Vert. Orifice/Grate C= 0.600
#3	Device 1	906.25'	48.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#4	Secondary	908.60'	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=0.84 cfs @ 18.78 hrs HW=905.83' TW=0.00' (Dynamic Tailwater)

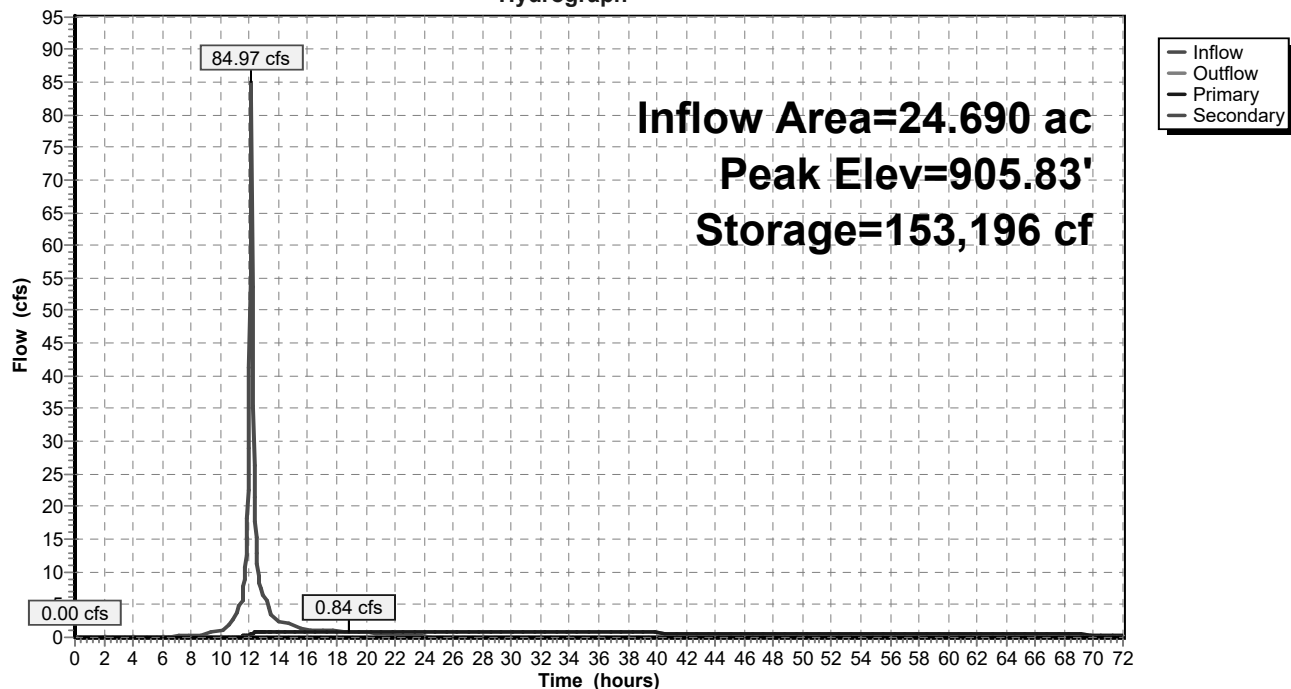
↑ **1=Culvert** (Passes 0.84 cfs of 4.96 cfs potential flow)
 ↑ **2=Orifice/Grate** (Orifice Controls 0.84 cfs @ 6.12 fps)
 ↑ **3=Orifice/Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=904.00' (Free Discharge)

↑ **4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 3P: WEST POND

Hydrograph



Summary for Link 4L: Site Outlet

2-year max = 18.94

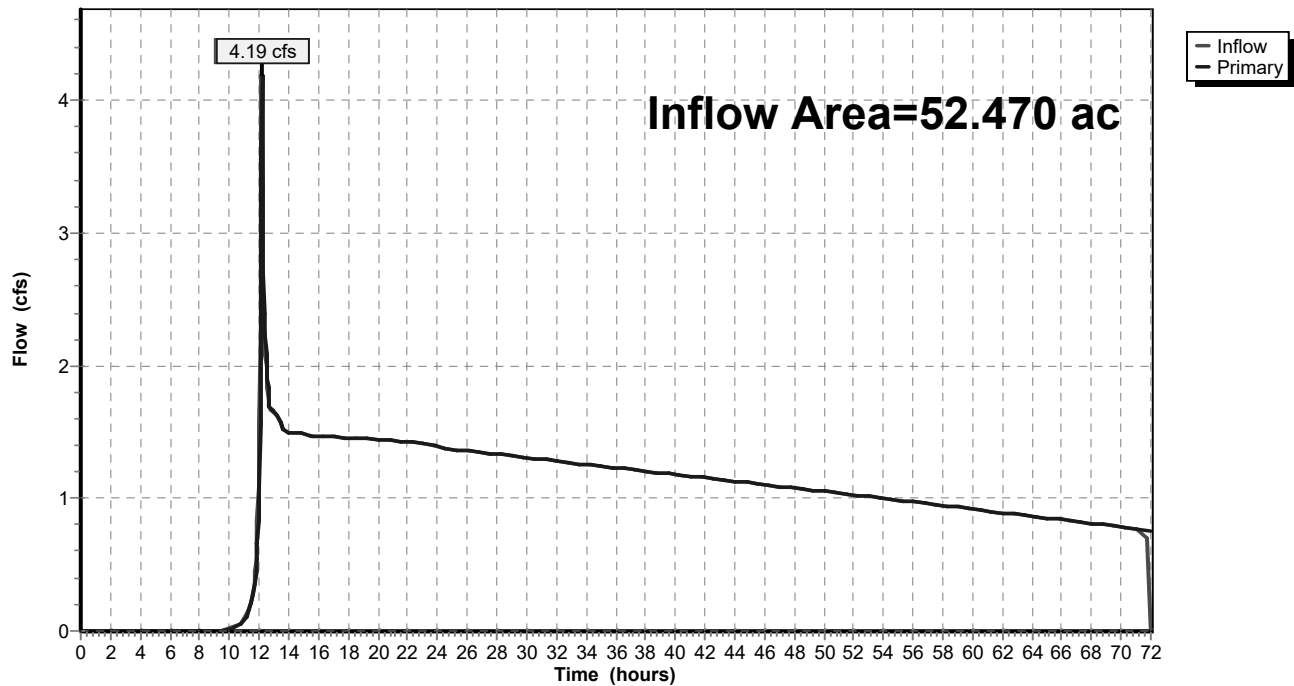
100 year max = 63.13

Inflow Area = 52.470 ac, 80.69% Impervious, Inflow Depth > 1.33" for 2-yr event
 Inflow = 4.19 cfs @ 12.15 hrs, Volume= 5.795 af
 Primary = 4.19 cfs @ 12.20 hrs, Volume= 5.795 af, Atten= 0%, Lag= 3.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 4L: Site Outlet

Hydrograph



2021-07-14 Holly Hill

Prepared by PINNACLE ENGINEERING GROUP

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MSE 24-hr 3 100-yr Rainfall=6.39"

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Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Sim-Route method - Pond routing by Sim-Route method

Subcatchment1S: WEST

Runoff Area=24.690 ac 85.00% Impervious Runoff Depth=5.68"
Tc=6.0 min CN=94 Runoff=221.43 cfs 11.693 af

Subcatchment4S: EAST

Runoff Area=25.120 ac 85.00% Impervious Runoff Depth=5.68"
Tc=6.0 min CN=94 Runoff=225.29 cfs 11.897 af

Subcatchment15S: OFFSITE - EAST

Runoff Area=2.660 ac 0.00% Impervious Runoff Depth=3.52"
Tc=6.0 min CN=74 Runoff=16.67 cfs 0.779 af

Pond 2P: SOUTHEASTPOND

Peak Elev=908.95' Storage=338,817 cf Inflow=225.29 cfs 11.897 af
Primary=17.66 cfs 6.037 af Secondary=0.00 cfs 0.000 af Tertiary=7.81 cfs 3.532 af Outflow=25.47 cfs 9.569 af

Pond 3P: WEST POND

Peak Elev=908.06' Storage=363,554 cf Inflow=221.43 cfs 11.693 af
Primary=10.29 cfs 10.148 af Secondary=0.00 cfs 0.000 af Outflow=10.29 cfs 10.148 af

Link 4L: Site Outlet

Inflow=37.63 cfs 20.492 af
Primary=37.63 cfs 20.492 af

Total Runoff Area = 52.470 ac Runoff Volume = 24.369 af Average Runoff Depth = 5.57"
19.31% Pervious = 10.131 ac 80.69% Impervious = 42.338 ac

Summary for Subcatchment 1S: WEST

Runoff = 221.43 cfs @ 12.13 hrs, Volume= 11.693 af, Depth= 5.68"

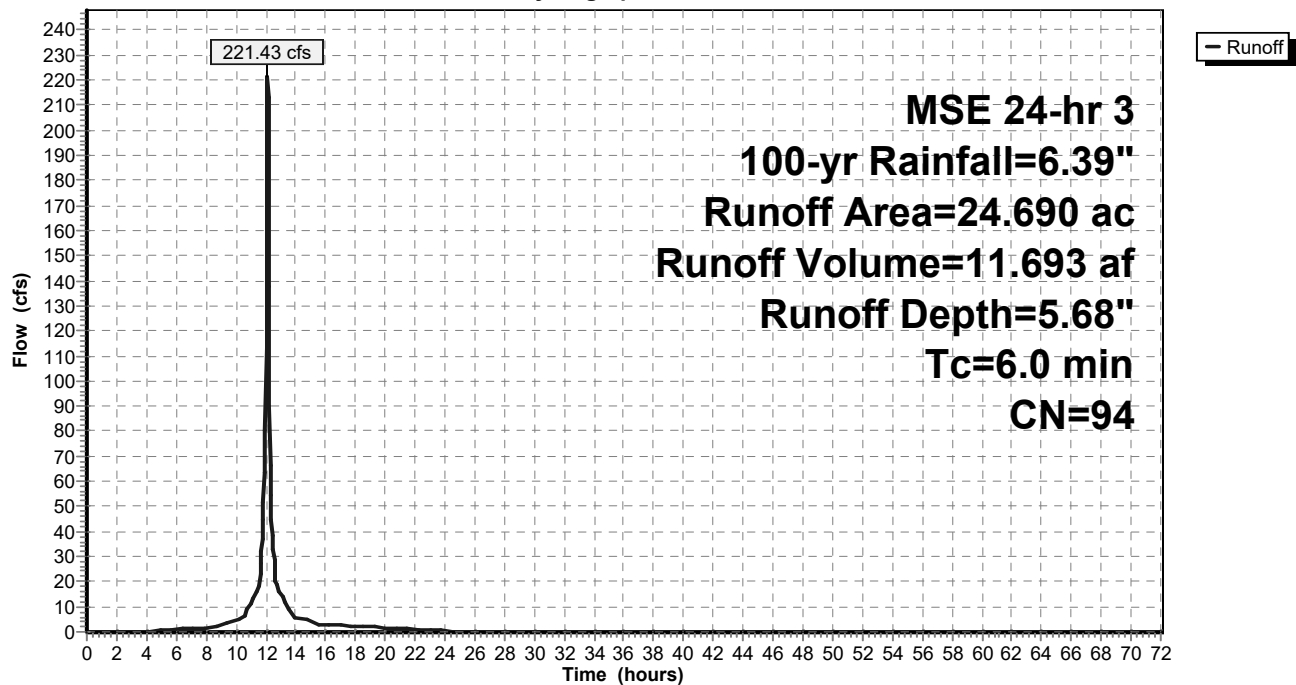
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100-yr Rainfall=6.39"

Area (ac)	CN	Description
24.690	94	Urban commercial, 85% imp, HSG C
3.703		15.00% Pervious Area
20.986		85.00% Impervious Area

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

Subcatchment 1S: WEST

Hydrograph



Summary for Subcatchment 4S: EAST

Runoff = 225.29 cfs @ 12.13 hrs, Volume= 11.897 af, Depth= 5.68"

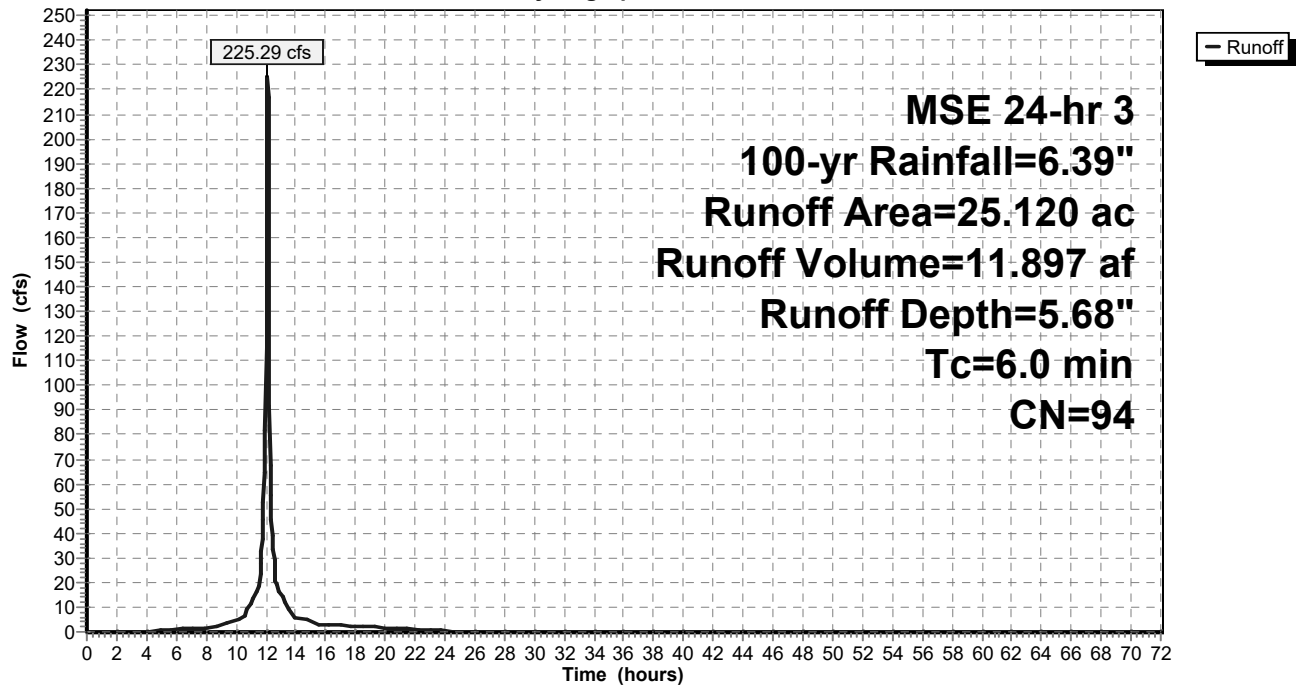
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100-yr Rainfall=6.39"

Area (ac)	CN	Description
25.120	94	Urban commercial, 85% imp, HSG C
3.768		15.00% Pervious Area
21.352		85.00% Impervious Area

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

Subcatchment 4S: EAST

Hydrograph



Summary for Subcatchment 15S: OFFSITE - EAST

Runoff = 16.67 cfs @ 12.13 hrs, Volume= 0.779 af, Depth= 3.52"

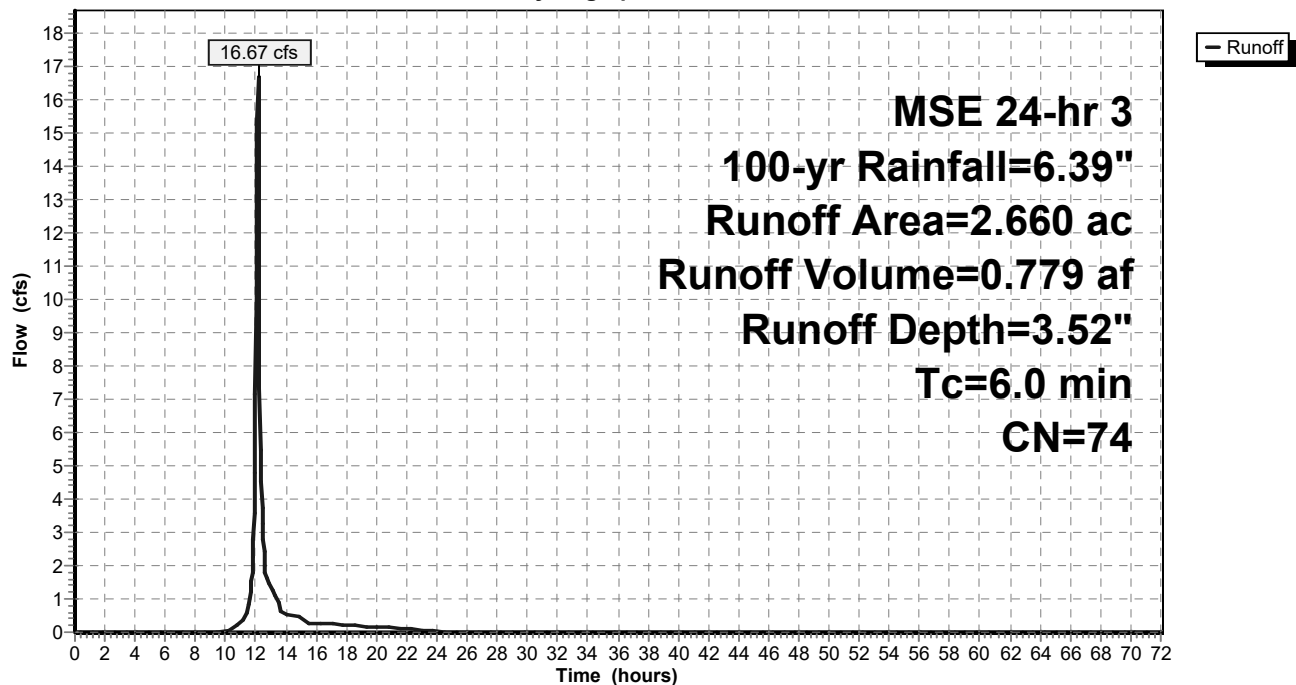
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100-yr Rainfall=6.39"

Area (ac)	CN	Description
2.660	74	>75% Grass cover, Good, HSG C
2.660		100.00% Pervious Area

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

Subcatchment 15S: OFFSITE - EAST

Hydrograph



Summary for Pond 2P: SOUTHEAST POND

Inflow Area = 25.120 ac, 85.00% Impervious, Inflow Depth = 5.68" for 100-yr event
 Inflow = 225.29 cfs @ 12.13 hrs, Volume= 11.897 af
 Outflow = 25.47 cfs @ 12.61 hrs, Volume= 9.569 af, Atten= 89%, Lag= 28.9 min
 Primary = 17.66 cfs @ 12.61 hrs, Volume= 6.037 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Tertiary = 7.81 cfs @ 12.61 hrs, Volume= 3.532 af

Routing by Sim-Route method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 908.95' @ 12.61 hrs Surf.Area= 93,115 sf Storage= 338,817 cf

Plug-Flow detention time= 654.8 min calculated for 9.569 af (80% of inflow)
 Center-of-Mass det. time= 597.0 min (1,356.9 - 759.9)

Volume	Invert	Avail.Storage	Storage Description
#1	905.00'	438,757 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
905.00	78,603	0	0
906.00	82,197	80,400	80,400
907.00	85,845	84,021	164,421
908.00	89,548	87,697	252,118
909.00	93,306	91,427	343,545
910.00	97,118	95,212	438,757

Device	Routing	Invert	Outlet Devices
#1	Primary	905.00'	24.0" Round Culvert L= 32.8' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 905.00' / 905.00' S= 0.0000 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf
#2	Device 1	905.00'	4.0" Vert. Orifice/Grate C= 0.600
#3	Device 1	907.50'	48.0" Vert. Orifice/Grate C= 0.600
#4	Tertiary	907.00'	18.0" Round Culvert L= 35.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 906.80' / 907.00' S= -0.0057 '/' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#5	Secondary	909.60'	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=17.64 cfs @ 12.61 hrs HW=908.95' TW=0.00' (Dynamic Tailwater)

- 1=Culvert (Passes 17.64 cfs of 25.47 cfs potential flow)
- 2=Orifice/Grate (Orifice Controls 0.82 cfs @ 9.36 fps)
- 3=Orifice/Grate (Orifice Controls 16.82 cfs @ 4.10 fps)

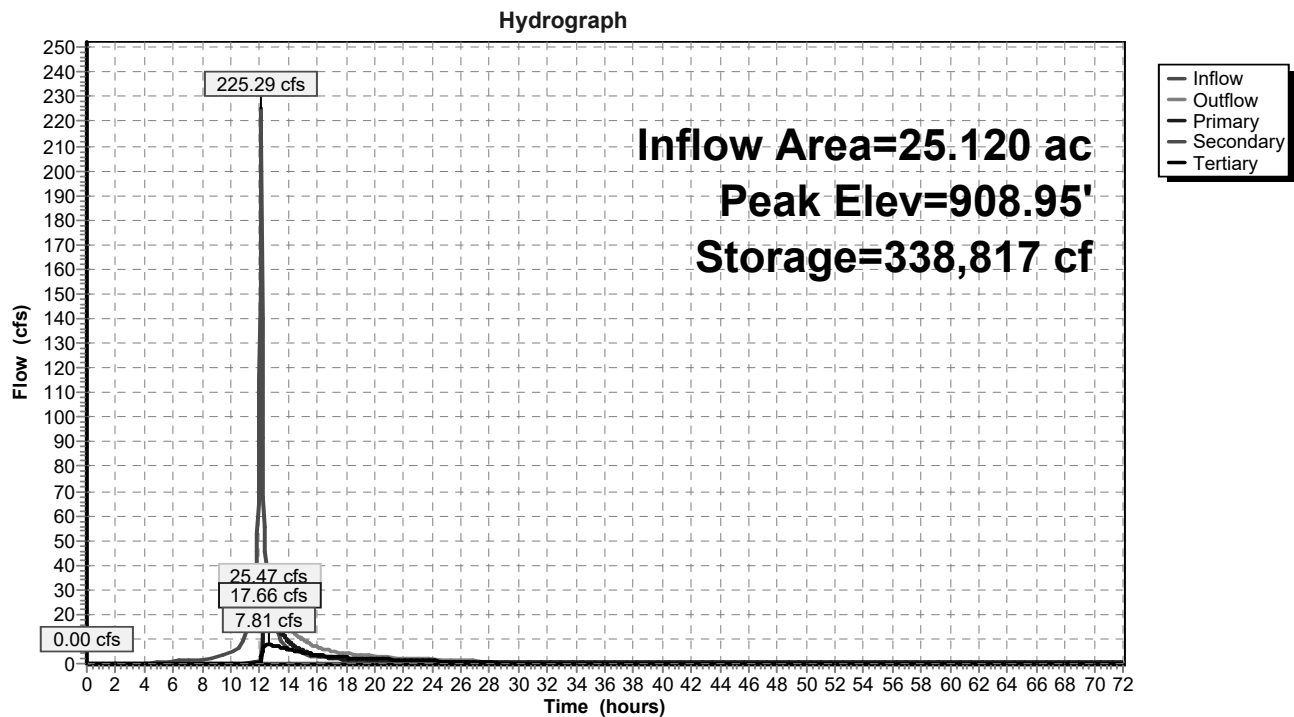
Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=905.00' (Free Discharge)

- 5=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Tertiary OutFlow Max=7.81 cfs @ 12.61 hrs HW=908.95' TW=0.00' (Dynamic Tailwater)

- 4=Culvert (Barrel Controls 7.81 cfs @ 4.42 fps)

Pond 2P: SOUTHEAST POND



Summary for Pond 3P: WEST POND

Inflow Area = 24.690 ac, 85.00% Impervious, Inflow Depth = 5.68" for 100-yr event
 Inflow = 221.43 cfs @ 12.13 hrs, Volume= 11.693 af
 Outflow = 10.29 cfs @ 13.47 hrs, Volume= 10.148 af, Atten= 95%, Lag= 80.3 min
 Primary = 10.29 cfs @ 13.47 hrs, Volume= 10.148 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Sim-Route method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 908.06' @ 13.47 hrs Surf.Area= 99,986 sf Storage= 363,554 cf

Plug-Flow detention time= 785.4 min calculated for 10.141 af (87% of inflow)
 Center-of-Mass det. time= 738.9 min (1,498.9 - 759.9)

Volume	Invert	Avail.Storage	Storage Description
#1	904.00'	459,432 cf	Custom Stage Data (Prismatic) Listed below

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
904.00	79,112	0	0
905.00	84,126	81,619	81,619
906.00	89,214	86,670	168,289
907.00	94,388	91,801	260,090
908.00	99,649	97,019	357,109
909.00	104,997	102,323	459,432

Device	Routing	Invert	Outlet Devices
#1	Primary	904.00'	15.0" Round Culvert L= 50.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 904.00' / 903.90' S= 0.0020 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Device 1	904.00'	5.0" Vert. Orifice/Grate C= 0.600
#3	Device 1	906.25'	48.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#4	Secondary	908.60'	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=10.29 cfs @ 13.47 hrs HW=908.06' TW=0.00' (Dynamic Tailwater)

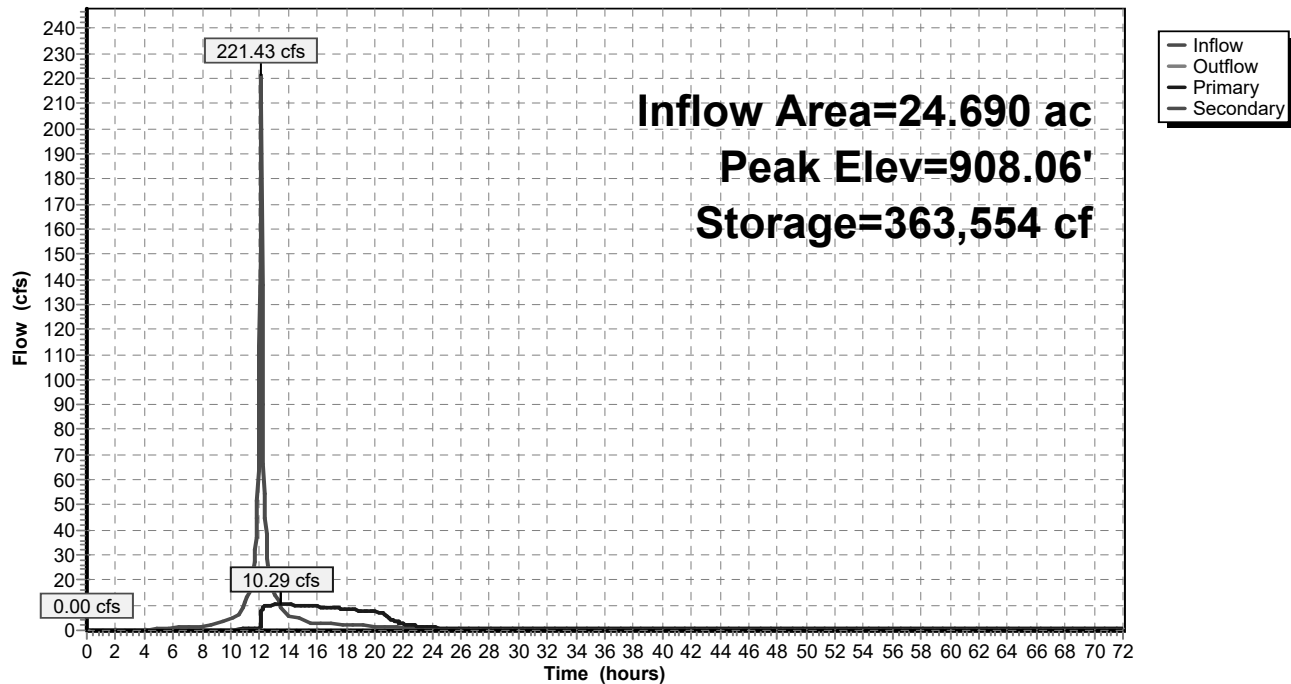
↑ **1=Culvert** (Barrel Controls 10.29 cfs @ 8.39 fps)
 ↑ **2=Orifice/Grate** (Passes < 1.29 cfs potential flow)
 ↑ **3=Orifice/Grate** (Passes < 81.47 cfs potential flow)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=904.00' (Free Discharge)

↑ **4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 3P: WEST POND

Hydrograph



Summary for Link 4L: Site Outlet

2-year max = 18.94

100 year max = 63.13

Inflow Area = 52.470 ac, 80.69% Impervious, Inflow Depth > 4.69" for 100-yr event

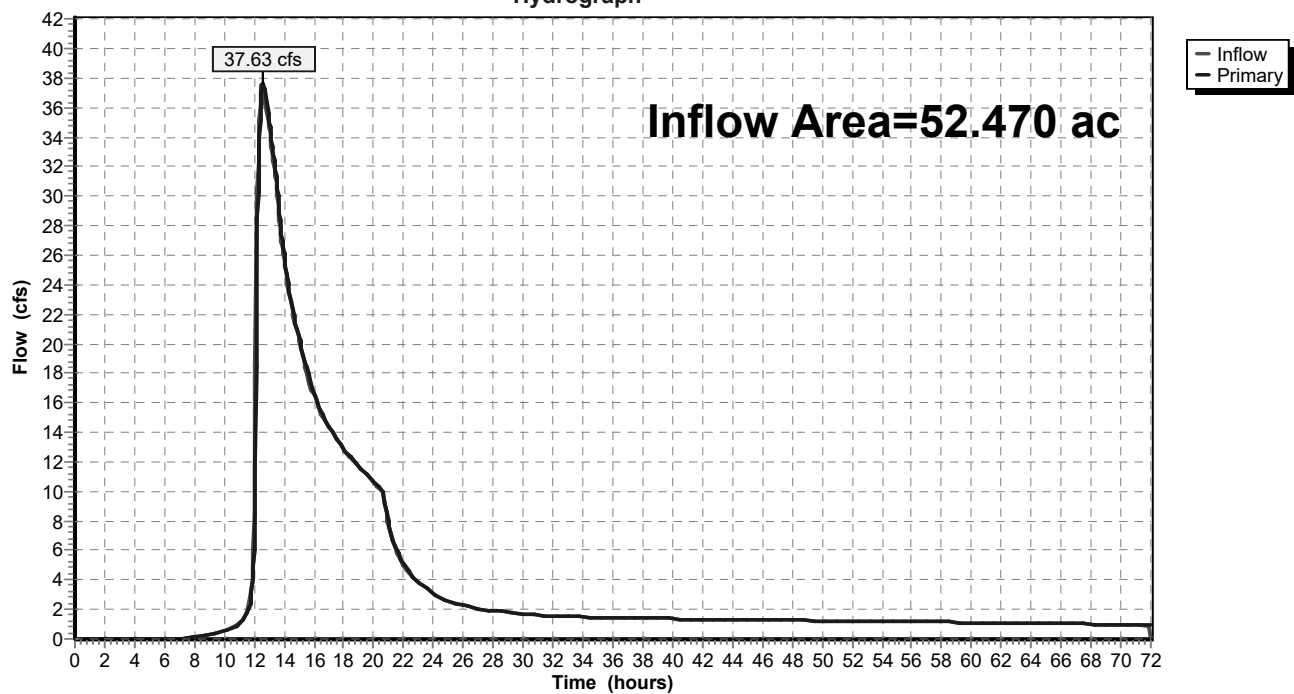
Inflow = 37.63 cfs @ 12.55 hrs, Volume= 20.492 af

Primary = 37.63 cfs @ 12.60 hrs, Volume= 20.492 af, Atten= 0%, Lag= 3.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

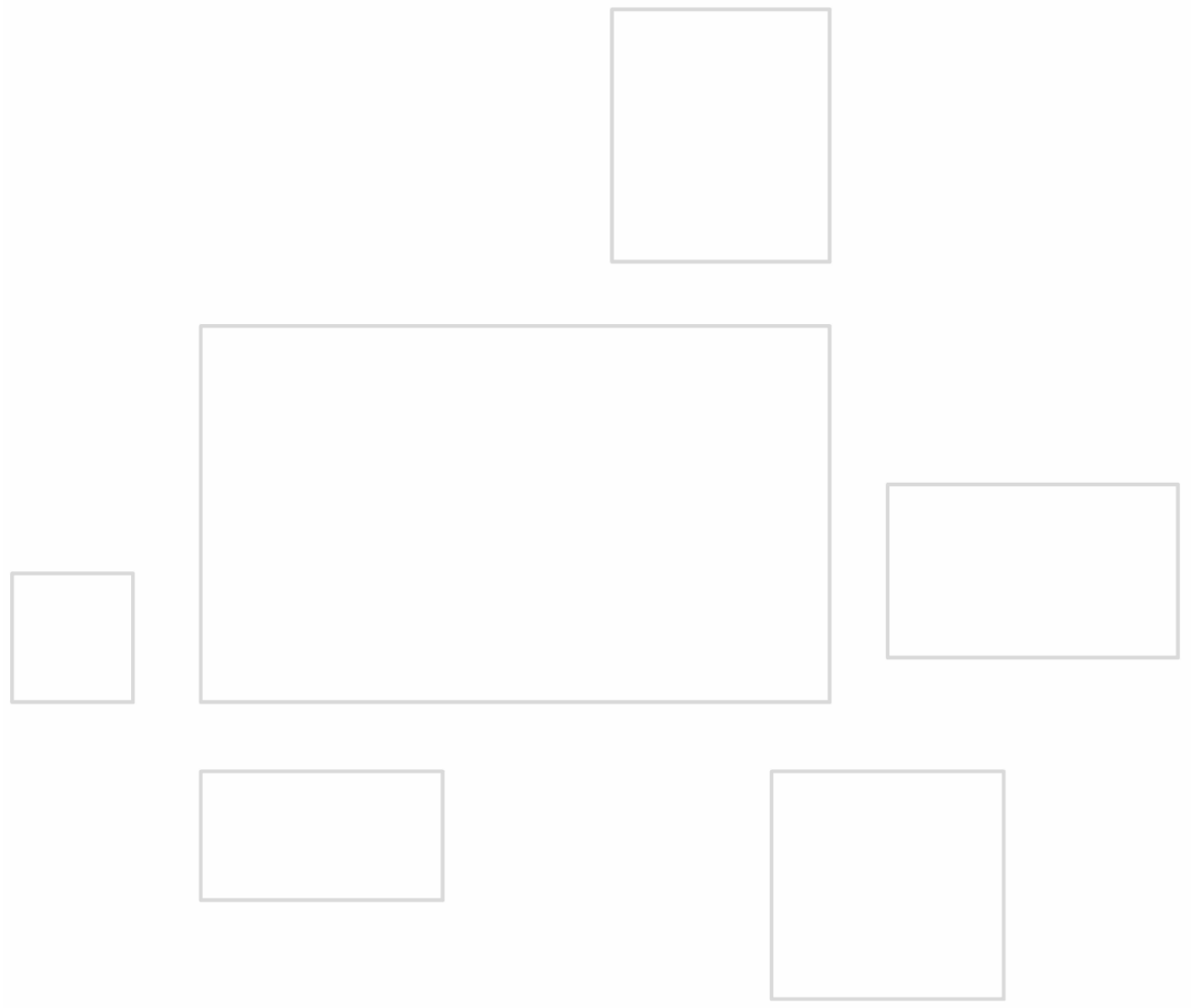
Link 4L: Site Outlet

Hydrograph



APPENDIX 4

MMSD VOLUMETRIC COMPARISON



2-YEAR VOLUMETRIC COMPARISON							
2-Year Existing Volume				2-Year Proposed Volume			
Time (hours)	Outflow (cfs)	Incremental Volume (Ac-ft)	Total Volume (Ac-ft)	Time (hours)	Outflow (cfs)	Incremental Volume (Ac-ft)	Total Volume (Ac-ft)
11.75	0.01	X	X	11.75	0.45	X	X
11.80	0.03	0.00008	0.000	11.80	0.54	0.00205	0.002
11.85	0.06	0.00019	0.000	11.85	0.66	0.00248	0.005
11.90	0.11	0.00035	0.001	11.90	0.83	0.00308	0.008
11.95	0.19	0.00062	0.001	11.95	1.08	0.00395	0.012
12.00	0.32	0.00105	0.002	12.00	1.56	0.00545	0.017
12.05	0.52	0.00174	0.004	12.05	2.27	0.00791	0.025
12.10	0.83	0.00279	0.007	12.10	3.55	0.01202	0.037
12.15	1.31	0.00442	0.011	12.15	4.18	0.01597	0.053
12.20	2.08	0.00700	0.018	12.20	3.33	0.01552	0.068
12.25	3.18	0.01087	0.029	12.25	2.72	0.01250	0.081
12.30	4.67	0.01622	0.045	12.30	2.39	0.01056	0.091
12.35	6.48	0.02304	0.068	12.35	2.23	0.00955	0.101
12.40	8.56	0.03107	0.099	12.40	2.08	0.00890	0.110
12.45	10.80	0.04000	0.139	12.45	1.99	0.00841	0.118
12.50	13.00	0.04917	0.189	12.50	1.90	0.00804	0.126
12.55	15.08	0.05802	0.247	12.55	1.83	0.00771	0.134
12.60	16.96	0.06620	0.313	12.60	1.74	0.00738	0.141
12.65	18.57	0.07341	0.386	12.65	1.69	0.00709	0.149
12.70	19.79	0.07926	0.465	12.70	1.67	0.00694	0.155
12.75	20.66	0.08357	0.549	12.75	1.67	0.00690	0.162
12.80	21.18	0.08645	0.636	12.80	1.66	0.00688	0.169
12.85	21.39	0.08795	0.723	12.85	1.66	0.00686	0.176
12.90	21.25	0.08810	0.812	12.90	1.65	0.00684	0.183
12.95	20.98	0.08725	0.899	12.95	1.65	0.00682	0.190
13.00	20.61	0.08593	0.985	13.00	1.64	0.00680	0.197
13.05	20.05	0.08401	1.069	13.05	1.64	0.00678	0.203
13.10	19.43	0.08157	1.150	13.10	1.63	0.00676	0.210
13.15	18.78	0.07895	1.229	13.15	1.62	0.00671	0.217
13.20	18.03	0.07605	1.305	13.20	1.61	0.00667	0.224
13.25	17.25	0.07289	1.378	13.25	1.61	0.00665	0.230
13.30	16.43	0.06959	1.448	13.30	1.59	0.00661	0.237
13.35	15.56	0.06610	1.514	13.35	1.59	0.00657	0.243
13.40	14.72	0.06256	1.576	13.40	1.58	0.00655	0.250
13.45	13.93	0.05919	1.636	13.45	1.57	0.00651	0.256
13.50	13.20	0.05605	1.692	13.50	1.56	0.00647	0.263
13.55	12.52	0.05314	1.745	13.55	1.54	0.00640	0.269
13.60	11.89	0.05043	1.795	13.60	1.51	0.00630	0.276
13.65	11.29	0.04789	1.843	13.65	1.49	0.00620	0.282
13.70	10.74	0.04552	1.889	13.70	1.49	0.00616	0.288
13.75	10.22	0.04331	1.932	13.75	1.49	0.00616	0.294

2-YEAR VOLUMETRIC COMPARISON							
2-Year Existing Volume				2-Year Proposed Volume			
Time (hours)	Outflow (cfs)	Incremental Volume (Ac-ft)	Total Volume (Ac-ft)	Time (hours)	Outflow (cfs)	Incremental Volume (Ac-ft)	Total Volume (Ac-ft)
13.80	9.72	0.04120	1.973	13.80	1.49	0.00616	0.300
13.85	9.24	0.03917	2.012	13.85	1.49	0.00616	0.306
13.90	8.77	0.03721	2.050	13.90	1.49	0.00616	0.313
13.95	8.32	0.03531	2.085	13.95	1.49	0.00616	0.319
14.00	7.90	0.03351	2.118	14.00	1.49	0.00616	0.325
14.05	7.50	0.03182	2.150	14.05	1.49	0.00616	0.331
14.10	7.11	0.03019	2.180	14.10	1.49	0.00616	0.337
14.15	6.74	0.02862	2.209	14.15	1.49	0.00616	0.343
14.20	6.40	0.02715	2.236	14.20	1.49	0.00616	0.350
14.25	6.07	0.02576	2.262	14.25	1.49	0.00616	0.356
14.30	5.77	0.02446	2.286	14.30	1.50	0.00618	0.362
14.35	5.50	0.02329	2.310	14.35	1.50	0.00620	0.368
14.40	5.24	0.02219	2.332	14.40	1.50	0.00620	0.374
14.45	5.01	0.02118	2.353	14.45	1.50	0.00620	0.380
14.50	4.80	0.02027	2.373	14.50	1.50	0.00620	0.387
14.55	4.60	0.01942	2.393	14.55	1.50	0.00620	0.393
14.60	4.42	0.01864	2.411	14.60	1.50	0.00620	0.399
14.65	4.27	0.01795	2.429	14.65	1.50	0.00620	0.405
14.70	4.12	0.01733	2.447	14.70	1.50	0.00620	0.411
14.75	3.99	0.01676	2.463	14.75	1.50	0.00620	0.418
14.80	3.88	0.01626	2.480	14.80	1.50	0.00620	0.424
14.85	3.77	0.01581	2.495	14.85	1.50	0.00620	0.430
14.90	3.67	0.01537	2.511	14.90	1.50	0.00620	0.436
14.95	3.59	0.01500	2.526	14.95	1.50	0.00620	0.442
15.00	3.51	0.01467	2.541	15.00	1.50	0.00620	0.449
15.05	3.44	0.01436	2.555	15.05	1.50	0.00620	0.455
15.10	3.38	0.01409	2.569	15.10	1.48	0.00616	0.461
15.15	3.31	0.01382	2.583	15.15	1.46	0.00607	0.467
15.20	3.25	0.01355	2.596	15.20	1.46	0.00603	0.473
15.25	3.20	0.01333	2.610	15.25	1.46	0.00603	0.479
15.30	3.14	0.01310	2.623	15.30	1.46	0.00603	0.485
15.35	3.08	0.01285	2.636	15.35	1.46	0.00603	0.491
15.40	3.02	0.01260	2.648	15.40	1.46	0.00603	0.497
15.45	2.94	0.01231	2.661	15.45	1.46	0.00603	0.503
15.50	2.87	0.01200	2.673	15.50	1.46	0.00603	0.509
15.55	2.79	0.01169	2.684	15.55	1.46	0.00603	0.515
15.60	2.71	0.01136	2.696	15.60	1.46	0.00603	0.521
15.65	2.63	0.01103	2.707	15.65	1.46	0.00603	0.527
15.70	2.55	0.01070	2.717	15.70	1.46	0.00603	0.533
15.75	2.47	0.01037	2.728	15.75	1.46	0.00603	0.539
15.80	2.39	0.01004	2.738	15.80	1.46	0.00603	0.545

2-YEAR VOLUMETRIC COMPARISON							
2-Year Existing Volume				2-Year Proposed Volume			
Time (hours)	Outflow (cfs)	Incremental Volume (Ac-ft)	Total Volume (Ac-ft)	Time (hours)	Outflow (cfs)	Incremental Volume (Ac-ft)	Total Volume (Ac-ft)
15.85	2.32	0.00973	2.748	15.85	1.46	0.00603	0.552
15.90	2.25	0.00944	2.757	15.90	1.46	0.00603	0.558
15.95	2.19	0.00917	2.766	15.95	1.46	0.00603	0.564
16.00	2.13	0.00893	2.775	16.00	1.46	0.00603	0.570
16.05	2.08	0.00870	2.784	16.05	1.46	0.00603	0.576
16.10	2.03	0.00849	2.792	16.10	1.46	0.00603	0.582
16.15	1.98	0.00829	2.801	16.15	1.46	0.00603	0.588
16.20	1.94	0.00810	2.809	16.20	1.46	0.00603	0.594
16.25	1.90	0.00793	2.817	16.25	1.46	0.00603	0.600
16.30	1.87	0.00779	2.824	16.30	1.46	0.00603	0.606
16.35	1.84	0.00767	2.832	16.35	1.46	0.00603	0.612
16.40	1.81	0.00754	2.840	16.40	1.46	0.00603	0.618
16.45	1.78	0.00742	2.847	16.45	1.46	0.00603	0.624
16.50	1.76	0.00731	2.854	16.50	1.46	0.00603	0.630
16.55	1.73	0.00721	2.861	16.55	1.46	0.00603	0.636
16.60	1.71	0.00711	2.869	16.60	1.46	0.00603	0.642
16.65	1.69	0.00702	2.876	16.65	1.46	0.00603	0.648
16.70	1.68	0.00696	2.883	16.70	1.46	0.00603	0.654
16.75	1.66	0.00690	2.889	16.75	1.46	0.00603	0.660
16.80	1.64	0.00682	2.896	16.80	1.46	0.00603	0.666
16.85	1.63	0.00676	2.903	16.85	1.46	0.00603	0.672
16.90	1.62	0.00671	2.910	16.90	1.46	0.00603	0.678
16.95	1.60	0.00665	2.916	16.95	1.46	0.00603	0.684
17.00	1.59	0.00659	2.923	17.00	1.46	0.00603	0.690
17.05	1.58	0.00655	2.930	17.05	1.46	0.00603	0.696
17.10	1.57	0.00651	2.936	17.10	1.46	0.00603	0.702
17.15	1.56	0.00647	2.943	17.15	1.46	0.00603	0.708
17.20	1.55	0.00643	2.949	17.20	1.46	0.00603	0.714
17.25	1.53	0.00636	2.955	17.25	1.46	0.00603	0.720
17.30	1.52	0.00630	2.962	17.30	1.46	0.00603	0.726
17.35	1.52	0.00628	2.968	17.35	1.46	0.00603	0.732
17.40	1.51	0.00626	2.974	17.40	1.46	0.00603	0.739
17.45	1.50	0.00622	2.980	17.45	1.46	0.00603	0.745
17.50	1.49	0.00618	2.987	17.50	1.46	0.00603	0.751
17.55	1.48	0.00614	2.993	17.55	1.46	0.00603	0.757
17.60	1.47	0.00610	2.999	17.60	1.46	0.00603	0.763
17.65	1.46	0.00605	3.005	17.65	1.46	0.00603	0.769
17.70	1.45	0.00601	3.011	17.70	1.46	0.00603	0.775
17.75	1.44	0.00597	3.017	17.75	1.46	0.00603	0.781
17.80	1.44	0.00595	3.023	17.80	1.46	0.00603	0.787
17.85	1.43	0.00593	3.029	17.85	1.46	0.00603	0.793

2-YEAR VOLUMETRIC COMPARISON							
2-Year Existing Volume				2-Year Proposed Volume			
Time (hours)	Outflow (cfs)	Incremental Volume (Ac-ft)	Total Volume (Ac-ft)	Time (hours)	Outflow (cfs)	Incremental Volume (Ac-ft)	Total Volume (Ac-ft)
17.90	1.42	0.00589	3.035	17.90	1.46	0.00603	0.799
17.95	1.41	0.00585	3.040	17.95	1.46	0.00603	0.805
18.00	1.40	0.00581	3.046	18.00	1.46	0.00603	0.811
18.05	1.39	0.00576	3.052	18.05	1.46	0.00603	0.817
18.10	1.39	0.00574	3.058	18.10	1.46	0.00603	0.823
18.15	1.38	0.00572	3.063	18.15	1.46	0.00603	0.829
18.20	1.37	0.00568	3.069	18.20	1.46	0.00603	0.835
18.25	1.36	0.00564	3.075	18.25	1.46	0.00603	0.841
18.30	1.35	0.00560	3.080	18.30	1.46	0.00603	0.847
18.35	1.35	0.00558	3.086	18.35	1.46	0.00603	0.853
18.40	1.34	0.00556	3.092	18.40	1.46	0.00603	0.859
18.45	1.33	0.00552	3.097	18.45	1.46	0.00603	0.865
18.50	1.32	0.00548	3.103	18.50	1.46	0.00603	0.871
18.55	1.31	0.00543	3.108	18.55	1.46	0.00603	0.877
18.60	1.31	0.00541	3.113	18.60	1.46	0.00603	0.883
18.65	1.30	0.00539	3.119	18.65	1.46	0.00603	0.889
18.70	1.29	0.00535	3.124	18.70	1.46	0.00603	0.895
18.75	1.28	0.00531	3.129	18.75	1.45	0.00601	0.901
18.80	1.27	0.00527	3.135	18.80	1.45	0.00599	0.907
18.85	1.27	0.00525	3.140	18.85	1.45	0.00599	0.913
18.90	1.26	0.00523	3.145	18.90	1.45	0.00599	0.919
18.95	1.25	0.00519	3.150	18.95	1.45	0.00599	0.925
19.00	1.24	0.00514	3.156	19.00	1.45	0.00599	0.931
19.05	1.23	0.00510	3.161	19.05	1.45	0.00599	0.937
19.10	1.23	0.00508	3.166	19.10	1.45	0.00599	0.943
19.15	1.22	0.00506	3.171	19.15	1.45	0.00599	0.949
19.20	1.21	0.00502	3.176	19.20	1.45	0.00599	0.955
19.25	1.20	0.00498	3.181	19.25	1.45	0.00599	0.961
19.30	1.20	0.00496	3.186	19.30	1.45	0.00599	0.967
19.35	1.19	0.00494	3.191	19.35	1.45	0.00599	0.973
19.40	1.18	0.00490	3.196	19.40	1.45	0.00599	0.979
19.45	1.17	0.00486	3.200	19.45	1.45	0.00599	0.985
19.50	1.16	0.00481	3.205	19.50	1.45	0.00599	0.991
19.55	1.15	0.00477	3.210	19.55	1.45	0.00599	0.997
19.60	1.15	0.00475	3.215	19.60	1.45	0.00599	1.003
19.65	1.14	0.00473	3.219	19.65	1.45	0.00599	1.009
19.70	1.13	0.00469	3.224	19.70	1.45	0.00599	1.015
19.75	1.12	0.00465	3.229	19.75	1.45	0.00599	1.021
19.80	1.11	0.00461	3.233	19.80	1.45	0.00599	1.027
19.85	1.11	0.00459	3.238	19.85	1.45	0.00599	1.033
19.90	1.10	0.00457	3.243	19.90	1.45	0.00599	1.039

2-YEAR VOLUMETRIC COMPARISON							
2-Year Existing Volume				2-Year Proposed Volume			
Time (hours)	Outflow (cfs)	Incremental Volume (Ac-ft)	Total Volume (Ac-ft)	Time (hours)	Outflow (cfs)	Incremental Volume (Ac-ft)	Total Volume (Ac-ft)
19.95	1.09	0.00452	3.247	19.95	1.45	0.00599	1.045
20.00	1.08	0.00448	3.252	20.00	1.45	0.00599	1.051
20.05	1.07	0.00444	3.256	20.05	1.45	0.00599	1.057
20.10	1.06	0.00440	3.260	20.10	1.45	0.00599	1.063
20.15	1.06	0.00438	3.265	20.15	1.44	0.00597	1.069
20.20	1.05	0.00436	3.269	20.20	1.44	0.00595	1.075
20.25	1.04	0.00432	3.273	20.25	1.44	0.00595	1.081
20.30	1.03	0.00428	3.278	20.30	1.44	0.00595	1.087
20.35	1.02	0.00424	3.282	20.35	1.44	0.00595	1.093
20.40	1.01	0.00419	3.286	20.40	1.44	0.00595	1.099
20.45	1.01	0.00417	3.290	20.45	1.44	0.00595	1.105
20.50	1.00	0.00415	3.295	20.50	1.44	0.00595	1.111
20.55	0.99	0.00411	3.299	20.55	1.44	0.00595	1.117
20.60	0.98	0.00407	3.303	20.60	1.44	0.00595	1.123
20.65	0.97	0.00403	3.307	20.65	1.44	0.00595	1.129
20.70	0.96	0.00399	3.311	20.70	1.44	0.00595	1.135
20.75	0.96	0.00397	3.315	20.75	1.44	0.00595	1.141
20.80	0.95	0.00395	3.319	20.80	1.44	0.00595	1.147
20.85	0.94	0.00390	3.323	20.85	1.44	0.00595	1.152
20.90	0.93	0.00386	3.326	20.90	1.44	0.00595	1.158
20.95	0.92	0.00382	3.330	20.95	1.44	0.00595	1.164
21.00	0.91	0.00378	3.334	21.00	1.44	0.00595	1.170
21.05	0.91	0.00376	3.338	21.05	1.44	0.00595	1.176
21.10	0.90	0.00374	3.342	21.10	1.44	0.00595	1.182
21.15	0.89	0.00370	3.345	21.15	1.43	0.00593	1.188
21.20	0.88	0.00366	3.349	21.20	1.43	0.00591	1.194
21.25	0.87	0.00362	3.352	21.25	1.43	0.00591	1.200
21.30	0.86	0.00357	3.356	21.30	1.43	0.00591	1.206
21.35	0.86	0.00355	3.360	21.35	1.43	0.00591	1.212
21.40	0.85	0.00353	3.363	21.40	1.43	0.00591	1.218
21.45	0.84	0.00349	3.367	21.45	1.43	0.00591	1.224
21.50	0.83	0.00345	3.370	21.50	1.43	0.00591	1.230
21.55	0.82	0.00341	3.373	21.55	1.43	0.00591	1.235
21.60	0.81	0.00337	3.377	21.60	1.43	0.00591	1.241
21.65	0.81	0.00335	3.380	21.65	1.43	0.00591	1.247
21.70	0.80	0.00333	3.384	21.70	1.43	0.00591	1.253
21.75	0.79	0.00329	3.387	21.75	1.43	0.00591	1.259
21.80	0.78	0.00324	3.390	21.80	1.43	0.00591	1.265
21.85	0.77	0.00320	3.393	21.85	1.43	0.00591	1.271
21.90	0.76	0.00316	3.396	21.90	1.43	0.00591	1.277
21.95	0.75	0.00312	3.400	21.95	1.42	0.00589	1.283

2-YEAR VOLUMETRIC COMPARISON							
2-Year Existing Volume				2-Year Proposed Volume			
Time (hours)	Outflow (cfs)	Incremental Volume (Ac-ft)	Total Volume (Ac-ft)	Time (hours)	Outflow (cfs)	Incremental Volume (Ac-ft)	Total Volume (Ac-ft)
22.00	0.75	0.00310	3.403	22.00	1.42	0.00587	1.289
22.05	0.74	0.00308	3.406	22.05	1.42	0.00587	1.294
22.10	0.73	0.00304	3.409	22.10	1.42	0.00587	1.300
22.15	0.72	0.00300	3.412	22.15	1.42	0.00587	1.306
22.20	0.71	0.00295	3.415	22.20	1.42	0.00587	1.312
22.25	0.70	0.00291	3.418	22.25	1.42	0.00587	1.318
22.30	0.69	0.00287	3.420	22.30	1.42	0.00587	1.324
22.35	0.68	0.00283	3.423	22.35	1.42	0.00587	1.330
22.40	0.68	0.00281	3.426	22.40	1.42	0.00587	1.335
22.45	0.67	0.00279	3.429	22.45	1.42	0.00587	1.341
22.50	0.66	0.00275	3.432	22.50	1.42	0.00587	1.347
22.55	0.65	0.00271	3.434	22.55	1.42	0.00587	1.353
22.60	0.64	0.00267	3.437	22.60	1.42	0.00587	1.359
22.65	0.63	0.00262	3.440	22.65	1.41	0.00585	1.365
22.70	0.62	0.00258	3.442	22.70	1.41	0.00583	1.371
22.75	0.62	0.00256	3.445	22.75	1.41	0.00583	1.376
22.80	0.61	0.00254	3.447	22.80	1.41	0.00583	1.382
22.85	0.60	0.00250	3.450	22.85	1.41	0.00583	1.388
22.90	0.59	0.00246	3.452	22.90	1.41	0.00583	1.394
22.95	0.58	0.00242	3.455	22.95	1.41	0.00583	1.400
23.00	0.57	0.00238	3.457	23.00	1.41	0.00583	1.406
23.05	0.56	0.00233	3.459	23.05	1.41	0.00583	1.411
23.10	0.56	0.00231	3.462	23.10	1.41	0.00583	1.417
23.15	0.55	0.00229	3.464	23.15	1.41	0.00583	1.423
23.20	0.54	0.00225	3.466	23.20	1.41	0.00583	1.429
23.25	0.53	0.00221	3.469	23.25	1.41	0.00583	1.435
23.30	0.52	0.00217	3.471	23.30	1.40	0.00581	1.441
23.35	0.51	0.00213	3.473	23.35	1.40	0.00579	1.446
23.40	0.50	0.00209	3.475	23.40	1.40	0.00579	1.452
23.45	0.49	0.00205	3.477	23.45	1.40	0.00579	1.458
23.50	0.49	0.00202	3.479	23.50	1.40	0.00579	1.464
23.55	0.48	0.00200	3.481	23.55	1.40	0.00579	1.469
23.60	0.47	0.00196	3.483	23.60	1.40	0.00579	1.475
23.65	0.46	0.00192	3.485	23.65	1.40	0.00579	1.481
23.70	0.45	0.00188	3.487	23.70	1.40	0.00579	1.487
23.75	0.44	0.00184	3.489	23.75	1.40	0.00579	1.493

EXISTING
VOLUME

PROPOSED
VOLUME

100-YEAR VOLUMETRIC COMPARISON							
100-Year Existing Volume				100-Year Proposed Volume			
Time (hours)	Outflow (cfs)	Incremental Volume (Ac-ft)	Total Volume (Ac-ft)	Time (hours)	Outflow (cfs)	Incremental Volume (Ac-ft)	Total Volume (Ac-ft)
11.75	7.89	X	X	11.75	2.57	X	X
11.80	8.63	0.03413	0.034	11.80	2.92	0.01134	0.011
11.85	9.47	0.03740	0.072	11.85	3.43	0.01312	0.024
11.90	10.50	0.04126	0.113	11.90	3.98	0.01531	0.040
11.95	11.75	0.04597	0.159	11.95	4.84	0.01822	0.058
12.00	13.32	0.05180	0.211	12.00	6.10	0.02260	0.081
12.05	15.31	0.05915	0.270	12.05	8.55	0.03027	0.111
12.10	17.97	0.06876	0.338	12.10	11.66	0.04176	0.153
12.15	21.54	0.08163	0.420	12.15	18.41	0.06213	0.215
12.20	26.40	0.09905	0.519	12.20	28.46	0.09684	0.312
12.25	32.74	0.12219	0.641	12.25	30.29	0.12138	0.433
12.30	40.70	0.15174	0.793	12.30	32.28	0.12928	0.562
12.35	49.86	0.18711	0.980	12.35	33.96	0.13686	0.699
12.40	59.87	0.22671	1.207	12.40	35.23	0.14295	0.842
12.45	70.12	0.26857	1.475	12.45	36.27	0.14773	0.990
12.50	79.73	0.30961	1.785	12.50	37.08	0.15155	1.141
12.55	88.40	0.34738	2.132	12.55	37.50	0.15409	1.295
12.60	95.69	0.38035	2.513	12.60	37.67	0.15531	1.451
12.65	101.53	0.40748	2.920	12.65	37.50	0.15531	1.606
12.70	105.44	0.42762	3.348	12.70	37.22	0.15438	1.760
12.75	107.54	0.44004	3.788	12.75	36.90	0.15314	1.914
12.80	108.07	0.44548	4.233	12.80	36.58	0.15182	2.065
12.85	107.25	0.44488	4.678	12.85	36.23	0.15043	2.216
12.90	104.88	0.43829	5.117	12.90	35.87	0.14897	2.365
12.95	102.06	0.42756	5.544	12.95	35.49	0.14744	2.512
13.00	98.92	0.41525	5.959	13.00	35.10	0.14585	2.658
13.05	95.03	0.40072	6.360	13.05	34.69	0.14419	2.802
13.10	90.97	0.38430	6.744	13.10	34.27	0.14248	2.945
13.15	86.82	0.36733	7.112	13.15	33.84	0.14072	3.085
13.20	82.36	0.34955	7.461	13.20	33.40	0.13893	3.224
13.25	77.85	0.33101	7.792	13.25	32.94	0.13707	3.361
13.30	73.34	0.31238	8.105	13.30	32.60	0.13541	3.497
13.35	68.69	0.29345	8.398	13.35	32.21	0.13390	3.631
13.40	64.27	0.27471	8.673	13.40	31.82	0.13229	3.763
13.45	60.17	0.25711	8.930	13.45	31.39	0.13060	3.894
13.50	56.50	0.24105	9.171	13.50	30.96	0.12882	4.023
13.55	53.08	0.22640	9.397	13.55	30.50	0.12698	4.149
13.60	49.96	0.21289	9.610	13.60	30.02	0.12504	4.275
13.65	47.05	0.20043	9.811	13.65	29.45	0.12287	4.397
13.70	44.37	0.18888	10.000	13.70	28.90	0.12056	4.518
13.75	41.88	0.17820	10.178	13.75	28.37	0.11833	4.636

100-YEAR VOLUMETRIC COMPARISON							
100-Year Existing Volume				100-Year Proposed Volume			
Time (hours)	Outflow (cfs)	Incremental Volume (Ac-ft)	Total Volume (Ac-ft)	Time (hours)	Outflow (cfs)	Incremental Volume (Ac-ft)	Total Volume (Ac-ft)
13.80	39.55	0.16824	10.346	13.80	27.87	0.11620	4.752
13.85	37.31	0.15880	10.505	13.85	27.40	0.11419	4.867
13.90	35.19	0.14979	10.655	13.90	26.94	0.11227	4.979
13.95	33.16	0.14122	10.796	13.95	26.50	0.11041	5.089
14.00	31.27	0.13312	10.929	14.00	26.09	0.10866	5.198
14.05	29.50	0.12556	11.055	14.05	25.69	0.10698	5.305
14.10	27.81	0.11841	11.173	14.10	25.30	0.10535	5.410
14.15	26.23	0.11165	11.285	14.15	24.93	0.10378	5.514
14.20	24.77	0.10537	11.390	14.20	24.58	0.10229	5.616
14.25	23.39	0.09950	11.490	14.25	24.24	0.10087	5.717
14.30	22.11	0.09401	11.584	14.30	23.92	0.09950	5.817
14.35	20.97	0.08901	11.673	14.35	23.61	0.09820	5.915
14.40	19.88	0.08440	11.757	14.40	23.31	0.09694	6.012
14.45	18.89	0.08010	11.837	14.45	23.02	0.09572	6.108
14.50	18.01	0.07624	11.913	14.50	22.74	0.09455	6.202
14.55	17.21	0.07277	11.986	14.55	22.47	0.09341	6.296
14.60	16.47	0.06959	12.056	14.60	22.22	0.09233	6.388
14.65	15.83	0.06674	12.122	14.65	21.97	0.09130	6.479
14.70	15.22	0.06415	12.187	14.70	21.73	0.09029	6.570
14.75	14.69	0.06180	12.248	14.75	21.50	0.08932	6.659
14.80	14.21	0.05971	12.308	14.80	21.28	0.08839	6.747
14.85	13.77	0.05781	12.366	14.85	21.06	0.08748	6.835
14.90	13.36	0.05605	12.422	14.90	20.86	0.08661	6.921
14.95	13.02	0.05450	12.476	14.95	20.65	0.08576	7.007
15.00	12.68	0.05310	12.529	15.00	20.46	0.08494	7.092
15.05	12.38	0.05178	12.581	15.05	20.27	0.08415	7.176
15.10	12.12	0.05062	12.632	15.10	20.06	0.08333	7.260
15.15	11.86	0.04955	12.681	15.15	19.79	0.08233	7.342
15.20	11.62	0.04851	12.730	15.20	19.54	0.08126	7.423
15.25	11.38	0.04752	12.777	15.25	19.30	0.08025	7.503
15.30	11.15	0.04655	12.824	15.30	19.07	0.07928	7.583
15.35	10.90	0.04556	12.870	15.35	18.86	0.07837	7.661
15.40	10.66	0.04455	12.914	15.40	18.65	0.07750	7.739
15.45	10.38	0.04347	12.958	15.45	18.45	0.07665	7.815
15.50	10.10	0.04231	13.000	15.50	18.25	0.07583	7.891
15.55	9.82	0.04116	13.041	15.55	18.06	0.07502	7.966
15.60	9.51	0.03994	13.081	15.60	17.88	0.07426	8.040
15.65	9.21	0.03868	13.120	15.65	17.71	0.07353	8.114
15.70	8.92	0.03746	13.157	15.70	17.54	0.07283	8.187
15.75	8.62	0.03624	13.193	15.75	17.37	0.07213	8.259
15.80	8.34	0.03504	13.228	15.80	17.21	0.07145	8.330

100-YEAR VOLUMETRIC COMPARISON							
100-Year Existing Volume				100-Year Proposed Volume			
Time (hours)	Outflow (cfs)	Incremental Volume (Ac-ft)	Total Volume (Ac-ft)	Time (hours)	Outflow (cfs)	Incremental Volume (Ac-ft)	Total Volume (Ac-ft)
15.85	8.08	0.03393	13.262	15.85	17.06	0.07081	8.401
15.90	7.82	0.03285	13.295	15.90	16.91	0.07019	8.471
15.95	7.59	0.03184	13.327	15.95	16.76	0.06957	8.541
16.00	7.39	0.03095	13.358	16.00	16.62	0.06897	8.610
16.05	7.20	0.03014	13.388	16.05	16.48	0.06839	8.678
16.10	7.02	0.02938	13.418	16.10	16.35	0.06783	8.746
16.15	6.86	0.02868	13.446	16.15	16.22	0.06729	8.813
16.20	6.70	0.02802	13.474	16.20	16.09	0.06676	8.880
16.25	6.56	0.02740	13.502	16.25	15.97	0.06624	8.946
16.30	6.44	0.02686	13.528	16.30	15.85	0.06574	9.012
16.35	6.33	0.02638	13.555	16.35	15.73	0.06525	9.077
16.40	6.22	0.02593	13.581	16.40	15.61	0.06475	9.142
16.45	6.13	0.02552	13.606	16.45	15.50	0.06428	9.206
16.50	6.04	0.02514	13.631	16.50	15.39	0.06382	9.270
16.55	5.96	0.02479	13.656	16.55	15.29	0.06339	9.333
16.60	5.89	0.02448	13.681	16.60	15.18	0.06295	9.396
16.65	5.82	0.02419	13.705	16.65	15.08	0.06252	9.459
16.70	5.75	0.02390	13.729	16.70	14.98	0.06211	9.521
16.75	5.70	0.02366	13.752	16.75	14.88	0.06169	9.583
16.80	5.64	0.02343	13.776	16.80	14.79	0.06130	9.644
16.85	5.59	0.02320	13.799	16.85	14.69	0.06091	9.705
16.90	5.54	0.02300	13.822	16.90	14.60	0.06052	9.765
16.95	5.49	0.02279	13.845	16.95	14.51	0.06014	9.826
17.00	5.44	0.02258	13.867	17.00	14.42	0.05977	9.885
17.05	5.40	0.02240	13.890	17.05	14.33	0.05940	9.945
17.10	5.35	0.02221	13.912	17.10	14.25	0.05905	10.004
17.15	5.31	0.02202	13.934	17.15	14.16	0.05870	10.063
17.20	5.28	0.02188	13.956	17.20	14.08	0.05835	10.121
17.25	5.24	0.02174	13.978	17.25	14.00	0.05802	10.179
17.30	5.20	0.02157	13.999	17.30	13.92	0.05769	10.237
17.35	5.17	0.02143	14.021	17.35	13.84	0.05736	10.294
17.40	5.13	0.02128	14.042	17.40	13.76	0.05702	10.351
17.45	5.10	0.02114	14.063	17.45	13.69	0.05671	10.408
17.50	5.07	0.02101	14.084	17.50	13.61	0.05640	10.464
17.55	5.03	0.02087	14.105	17.55	13.54	0.05610	10.520
17.60	5.00	0.02072	14.126	17.60	13.46	0.05579	10.576
17.65	4.97	0.02060	14.146	17.65	13.39	0.05548	10.631
17.70	4.94	0.02048	14.167	17.70	13.32	0.05519	10.687
17.75	4.91	0.02035	14.187	17.75	13.25	0.05490	10.742
17.80	4.88	0.02023	14.207	17.80	13.18	0.05461	10.796
17.85	4.85	0.02010	14.227	17.85	13.11	0.05432	10.850

100-YEAR VOLUMETRIC COMPARISON							
100-Year Existing Volume				100-Year Proposed Volume			
Time (hours)	Outflow (cfs)	Incremental Volume (Ac-ft)	Total Volume (Ac-ft)	Time (hours)	Outflow (cfs)	Incremental Volume (Ac-ft)	Total Volume (Ac-ft)
17.90	4.82	0.01998	14.247	17.90	13.04	0.05403	10.904
17.95	4.79	0.01986	14.267	17.95	12.98	0.05376	10.958
18.00	4.76	0.01973	14.287	18.00	12.91	0.05349	11.012
18.05	4.73	0.01961	14.307	18.05	12.85	0.05322	11.065
18.10	4.70	0.01948	14.326	18.10	12.78	0.05295	11.118
18.15	4.67	0.01936	14.345	18.15	12.72	0.05269	11.171
18.20	4.64	0.01924	14.365	18.20	12.65	0.05242	11.223
18.25	4.62	0.01913	14.384	18.25	12.59	0.05215	11.275
18.30	4.58	0.01901	14.403	18.30	12.53	0.05190	11.327
18.35	4.56	0.01888	14.422	18.35	12.47	0.05165	11.379
18.40	4.53	0.01878	14.441	18.40	12.41	0.05140	11.430
18.45	4.50	0.01866	14.459	18.45	12.35	0.05116	11.481
18.50	4.47	0.01853	14.478	18.50	12.29	0.05091	11.532
18.55	4.44	0.01841	14.496	18.55	12.23	0.05066	11.583
18.60	4.41	0.01829	14.514	18.60	12.17	0.05041	11.633
18.65	4.38	0.01816	14.533	18.65	12.11	0.05017	11.683
18.70	4.36	0.01806	14.551	18.70	12.05	0.04992	11.733
18.75	4.33	0.01795	14.569	18.75	11.99	0.04967	11.783
18.80	4.30	0.01783	14.586	18.80	11.94	0.04944	11.832
18.85	4.27	0.01771	14.604	18.85	11.88	0.04921	11.882
18.90	4.24	0.01758	14.622	18.90	11.82	0.04897	11.931
18.95	4.21	0.01746	14.639	18.95	11.76	0.04872	11.979
19.00	4.19	0.01736	14.657	19.00	11.71	0.04849	12.028
19.05	4.16	0.01725	14.674	19.05	11.65	0.04826	12.076
19.10	4.13	0.01713	14.691	19.10	11.60	0.04804	12.124
19.15	4.10	0.01700	14.708	19.15	11.54	0.04781	12.172
19.20	4.07	0.01688	14.725	19.20	11.49	0.04758	12.220
19.25	4.04	0.01676	14.742	19.25	11.43	0.04736	12.267
19.30	4.02	0.01665	14.758	19.30	11.38	0.04713	12.314
19.35	3.99	0.01655	14.775	19.35	11.32	0.04690	12.361
19.40	3.96	0.01643	14.791	19.40	11.27	0.04667	12.408
19.45	3.93	0.01630	14.807	19.45	11.22	0.04647	12.454
19.50	3.90	0.01618	14.824	19.50	11.16	0.04624	12.500
19.55	3.88	0.01607	14.840	19.55	11.11	0.04601	12.546
19.60	3.85	0.01597	14.856	19.60	11.06	0.04581	12.592
19.65	3.82	0.01585	14.872	19.65	11.00	0.04558	12.638
19.70	3.79	0.01572	14.887	19.70	10.95	0.04535	12.683
19.75	3.76	0.01560	14.903	19.75	10.90	0.04514	12.728
19.80	3.73	0.01548	14.918	19.80	10.85	0.04494	12.773
19.85	3.71	0.01537	14.934	19.85	10.80	0.04473	12.818
19.90	3.68	0.01527	14.949	19.90	10.75	0.04452	12.862

100-YEAR VOLUMETRIC COMPARISON							
100-Year Existing Volume				100-Year Proposed Volume			
Time (hours)	Outflow (cfs)	Incremental Volume (Ac-ft)	Total Volume (Ac-ft)	Time (hours)	Outflow (cfs)	Incremental Volume (Ac-ft)	Total Volume (Ac-ft)
19.95	3.65	0.01514	14.964	19.95	10.70	0.04432	12.907
20.00	3.62	0.01502	14.979	20.00	10.64	0.04409	12.951
20.05	3.59	0.01490	14.994	20.05	10.59	0.04386	12.995
20.10	3.56	0.01477	15.009	20.10	10.54	0.04366	13.038
20.15	3.54	0.01467	15.023	20.15	10.49	0.04345	13.082
20.20	3.51	0.01457	15.038	20.20	10.44	0.04324	13.125
20.25	3.48	0.01444	15.053	20.25	10.39	0.04304	13.168
20.30	3.45	0.01432	15.067	20.30	10.34	0.04283	13.211
20.35	3.42	0.01419	15.081	20.35	10.29	0.04262	13.254
20.40	3.39	0.01407	15.095	20.40	10.25	0.04244	13.296
20.45	3.36	0.01395	15.109	20.45	10.20	0.04225	13.338
20.50	3.34	0.01384	15.123	20.50	10.15	0.04205	13.380
20.55	3.31	0.01374	15.137	20.55	10.10	0.04184	13.422
20.60	3.28	0.01362	15.150	20.60	10.05	0.04163	13.464
20.65	3.25	0.01349	15.164	20.65	10.00	0.04143	13.505
20.70	3.22	0.01337	15.177	20.70	9.62	0.04054	13.546
20.75	3.19	0.01324	15.190	20.75	9.27	0.03903	13.585
20.80	3.17	0.01314	15.203	20.80	8.95	0.03764	13.622
20.85	3.14	0.01304	15.217	20.85	8.65	0.03636	13.659
20.90	3.11	0.01291	15.229	20.90	8.37	0.03517	13.694
20.95	3.08	0.01279	15.242	20.95	8.11	0.03405	13.728
21.00	3.05	0.01267	15.255	21.00	7.87	0.03302	13.761
21.05	3.02	0.01254	15.267	21.05	7.65	0.03207	13.793
21.10	2.99	0.01242	15.280	21.10	7.43	0.03116	13.824
21.15	2.96	0.01229	15.292	21.15	7.23	0.03029	13.854
21.20	2.94	0.01219	15.304	21.20	7.04	0.02948	13.884
21.25	2.91	0.01209	15.316	21.25	6.87	0.02874	13.913
21.30	2.88	0.01196	15.328	21.30	6.70	0.02804	13.941
21.35	2.85	0.01184	15.340	21.35	6.54	0.02736	13.968
21.40	2.82	0.01171	15.352	21.40	6.39	0.02671	13.995
21.45	2.79	0.01159	15.364	21.45	6.25	0.02612	14.021
21.50	2.76	0.01147	15.375	21.50	6.12	0.02556	14.046
21.55	2.74	0.01136	15.386	21.55	5.99	0.02502	14.071
21.60	2.71	0.01126	15.398	21.60	5.87	0.02450	14.096
21.65	2.68	0.01114	15.409	21.65	5.75	0.02401	14.120
21.70	2.65	0.01101	15.420	21.70	5.64	0.02353	14.144
21.75	2.62	0.01089	15.431	21.75	5.54	0.02310	14.167
21.80	2.59	0.01076	15.441	21.80	5.44	0.02269	14.189
21.85	2.56	0.01064	15.452	21.85	5.34	0.02227	14.212
21.90	2.53	0.01052	15.463	21.90	5.25	0.02188	14.233
21.95	2.51	0.01041	15.473	21.95	5.16	0.02151	14.255

100-YEAR VOLUMETRIC COMPARISON							
100-Year Existing Volume				100-Year Proposed Volume			
Time (hours)	Outflow (cfs)	Incremental Volume (Ac-ft)	Total Volume (Ac-ft)	Time (hours)	Outflow (cfs)	Incremental Volume (Ac-ft)	Total Volume (Ac-ft)
22.00	2.48	0.01031	15.483	22.00	5.07	0.02114	14.276
22.05	2.45	0.01019	15.493	22.05	4.99	0.02079	14.297
22.10	2.42	0.01006	15.504	22.10	4.91	0.02045	14.317
22.15	2.39	0.00994	15.513	22.15	4.84	0.02014	14.338
22.20	2.36	0.00981	15.523	22.20	4.76	0.01983	14.357
22.25	2.33	0.00969	15.533	22.25	4.69	0.01952	14.377
22.30	2.30	0.00957	15.543	22.30	4.62	0.01924	14.396
22.35	2.27	0.00944	15.552	22.35	4.56	0.01897	14.415
22.40	2.24	0.00932	15.561	22.40	4.49	0.01870	14.434
22.45	2.22	0.00921	15.571	22.45	4.43	0.01843	14.452
22.50	2.19	0.00911	15.580	22.50	4.37	0.01818	14.470
22.55	2.16	0.00899	15.589	22.55	4.31	0.01793	14.488
22.60	2.13	0.00886	15.597	22.60	4.25	0.01769	14.506
22.65	2.10	0.00874	15.606	22.65	4.20	0.01746	14.523
22.70	2.07	0.00862	15.615	22.70	4.14	0.01723	14.541
22.75	2.04	0.00849	15.623	22.75	4.09	0.01700	14.558
22.80	2.01	0.00837	15.632	22.80	4.04	0.01680	14.574
22.85	1.98	0.00824	15.640	22.85	3.99	0.01659	14.591
22.90	1.96	0.00814	15.648	22.90	3.94	0.01638	14.607
22.95	1.93	0.00804	15.656	22.95	3.89	0.01618	14.624
23.00	1.90	0.00791	15.664	23.00	3.85	0.01599	14.640
23.05	1.87	0.00779	15.672	23.05	3.80	0.01581	14.655
23.10	1.84	0.00767	15.679	23.10	3.76	0.01562	14.671
23.15	1.81	0.00754	15.687	23.15	3.72	0.01545	14.687
23.20	1.78	0.00742	15.694	23.20	3.67	0.01527	14.702
23.25	1.75	0.00729	15.702	23.25	3.63	0.01508	14.717
23.30	1.72	0.00717	15.709	23.30	3.59	0.01492	14.732
23.35	1.70	0.00707	15.716	23.35	3.55	0.01475	14.747
23.40	1.67	0.00696	15.723	23.40	3.51	0.01459	14.761
23.45	1.64	0.00684	15.730	23.45	3.48	0.01444	14.776
23.50	1.61	0.00671	15.736	23.50	3.44	0.01430	14.790
23.55	1.58	0.00659	15.743	23.55	3.40	0.01413	14.804
23.60	1.55	0.00647	15.750	23.60	3.37	0.01399	14.818
23.65	1.52	0.00634	15.756	23.65	3.33	0.01384	14.832
23.70	1.49	0.00622	15.762	23.70	3.30	0.01370	14.846
23.75	1.46	0.00610	15.768	23.75	3.26	0.01355	14.859

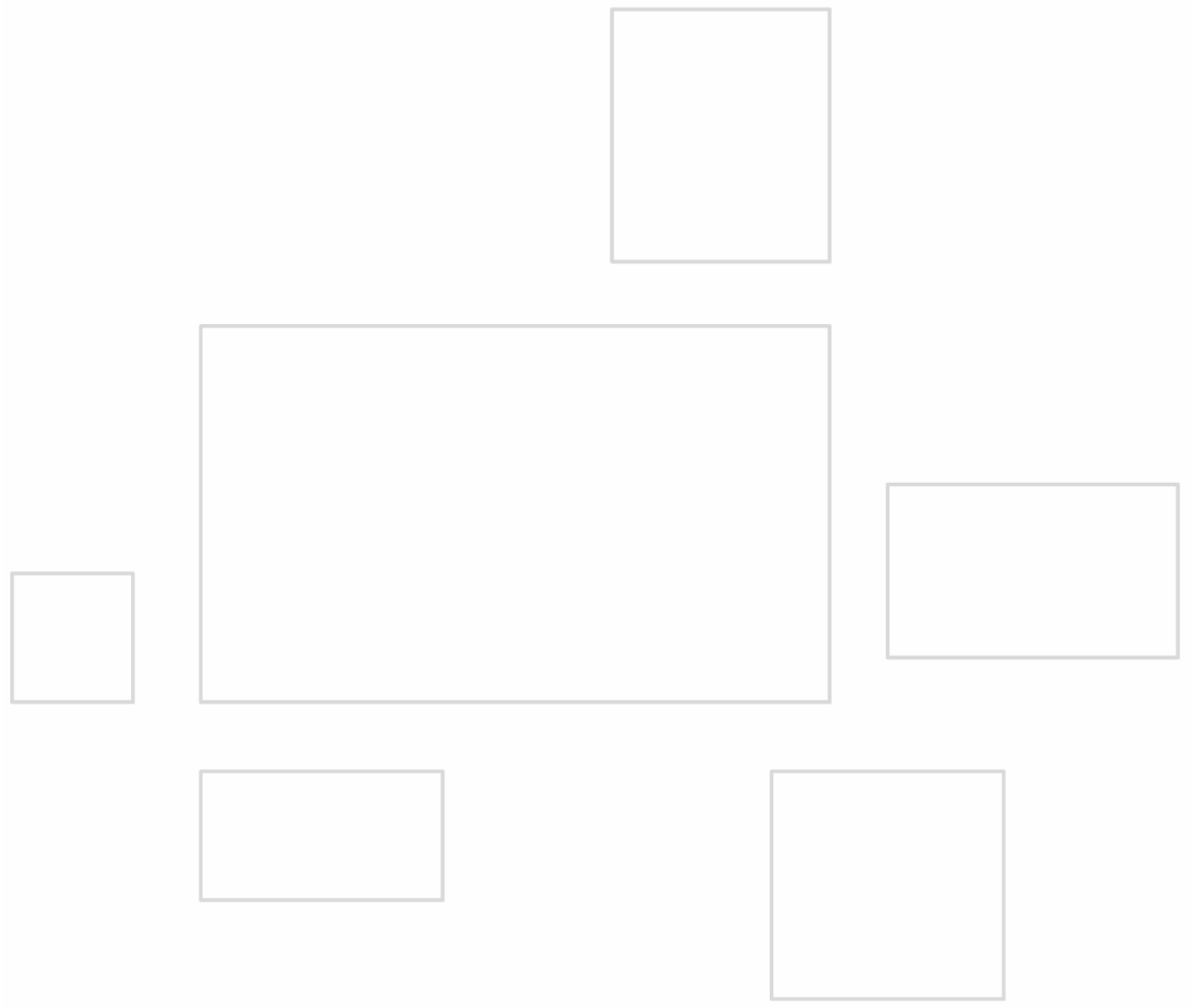
EXISTING
VOLUME

PROPOSED
VOLUME

APPENDIX 5

POST DEVELOPMENT CONDITIONS

WATER QUALITY



Data file name: Z:\Projects\2018\1262.00A-WI\DESIGN\SWMP\SLAMM\1262.00A Germantown Holy Hill.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\w10.1 WI_AVG01.pscx
Runoff Coefficient file name: C:\WinSLAMM Files\WI_SL06 Dec06.rsvx
Residential Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Institutional Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Commercial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Industrial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Other Urban Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Freeway Street Delivery file name: C:\WinSLAMM Files\Freeway Dec06.std
Apply Street Delivery Files to Adjust the After Event Load Street Dirt Mass Balance: False
Pollutant Relative Concentration file name: C:\WinSLAMM Files\WI_GEO03.ppdX
Source Area PSD and Peak to Average Flow Ratio File: C:\WinSLAMM Files\NURP Source Area PSD Files.csv
Cost Data file name:
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: 03/12
Date: 07-16-2021 Time: 15:02:57
Site information:

LU# 1 - Industrial: West Total area (ac): 25.120
1 - Roofs 1: 9.740 ac. Flat Connected PSD File: C:\WinSLAMM Files\NURP.cpz
13 - Paved Parking 1: 10.720 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz
45 - Large Landscaped Areas 1: 2.860 ac. Moderately Compacted Clayey PSD File: C:\WinSLAMM Files\NURP.cpz
70 - Water Body Areas: 1.800 ac. PSD File:

LU# 2 - Industrial: EAST Total area (ac): 24.690
1 - Roofs 1: 8.300 ac. Flat Connected PSD File: C:\WinSLAMM Files\NURP.cpz
13 - Paved Parking 1: 7.690 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz
45 - Large Landscaped Areas 1: 6.880 ac. Moderately Compacted Clayey PSD File: C:\WinSLAMM Files\NURP.cpz
70 - Water Body Areas: 1.820 ac. PSD File: C:\WinSLAMM Files\Industrial Land Use

LU# 3 - Industrial: UNDETAINED Total area (ac): 2.650
45 - Large Landscaped Areas 1: 2.650 ac. Moderately Compacted Clayey PSD File: C:\WinSLAMM Files\NURP.cpz

Control Practice 1: Wet Detention Pond CP# 1 (DS) - SOUTHEAST POND
Particle Size Distribution file name: Not needed - calculated by program
Initial stage elevation (ft): 5
Peak to Average Flow Ratio: 3.8
Maximum flow allowed into pond (cfs): No maximum value entered
Outlet Characteristics:

- Outlet type: Orifice 1
 - 1. Orifice diameter (ft): 0.33
 - 2. Number of orifices: 1
 - 3. Invert elevation above datum (ft): 5
- Outlet type: Orifice 2
 - 1. Orifice diameter (ft): 1.5
 - 2. Number of orifices: 1
 - 3. Invert elevation above datum (ft): 7
- 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: 9.6
- Outlet type: Vertical Stand Pipe
 - 1. Stand pipe diameter (ft): 4
 - 2. Stand pipe height above datum (ft): 7.5

Pond stage and surface area

Entry Number	Stage (ft)	Pond Area (acres)	Natural Seepage (in/hr)	Other Outflow (cfs)
0	0.00	0.0000	0.00	0.00
1	0.10	1.3400	0.00	0.00
2	1.00	1.3900	0.00	0.00
3	2.00	1.4400	0.00	0.00
4	3.00	1.4900	0.00	0.00
5	4.00	1.5400	0.00	0.00
6	5.00	1.8000	0.00	0.00
7	6.00	1.8900	0.00	0.00
8	7.00	1.9700	0.00	0.00
9	8.00	2.0600	0.00	0.00
10	9.00	2.1400	0.00	0.00
11	10.00	2.2300	0.00	0.00

Control Practice 2: Wet Detention Pond CP# 2 (DS) - WEST POND

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): 0.42
2. Number of orifices: 1
3. Invert elevation above datum (ft): 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: 8.6

Outlet type: Vertical Stand Pipe

1. Stand pipe diameter (ft): 4
2. Stand pipe height above datum (ft): 7.25

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	1.2500	0.00	0.00
2	1.00	1.3100	0.00	0.00
3	2.00	1.3700	0.00	0.00
4	3.00	1.4300	0.00	0.00
5	4.00	1.4900	0.00	0.00
6	5.00	1.8200	0.00	0.00
7	6.00	1.9310	0.00	0.00
8	7.00	2.0480	0.00	0.00
9	8.00	2.2880	0.00	0.00
10	9.00	2.4100	0.00	0.00

SLAMM for Windows Version 10.4.1

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Data file name: Z:\Projects\2018\1262.00A-WI\DESIGN\SWMP\SLAMM\1262.00A Germantown Holy Hill.mdb

Data file description:

Rain file name: C:\WinSLAMM Files\Rain Files\WisReg - Milwaukee WI 1969.RAN

Particulate Solids Concentration file name: C:\WinSLAMM Files\v10.1 WI_AVG01.pscx

Runoff Coefficient file name: C:\WinSLAMM Files\WI_SL06 Dec06.rsvx

Pollutant Relative Concentration file name: C:\WinSLAMM Files\WI_GE003.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

Start of Winter Season: 12/06

End of Winter Season: 03/12

Model Run Start Date: 01/05/69 Model Run End Date: 12/31/69

Date of run: 07-16-2021 Time of run: 14:57:31

Total Area Modeled (acres): 52.460

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:	4.337E+06	-	145.5	39393	-
Outfall Total with Controls:	4.031E+06	7.06%	21.44	5396	86.30%
Annualized Total After Outfall Controls:	4.087E+06			5471	

APPENDIX 6

STORM SEWER CALCULATIONS

This section contains a large rectangular area with a light gray background. Inside this area are several smaller, empty rectangular boxes of various sizes, intended for storm sewer calculations. The boxes are arranged as follows:

- A large central rectangle.
- A smaller rectangle to the left of the central rectangle.
- A smaller rectangle below the central rectangle.
- A smaller rectangle to the right of the central rectangle.
- A smaller rectangle above the central rectangle.
- A smaller rectangle below the right-side rectangle.



STORM SEWER COMPUTATIONS
FOR
CAPSTONE - GERMANTOWN

SHEET 1 OF 1
DESIGN BY: SRB
PROJECT NUMBER: 1262.00A
DATE: 7/16/2021

GERMANTOWN, WI

DESIGN DATA																			Cover to Crown	
County: Washington		Design Storm:	10	yr	Storm Duration: 10 min		DESIGN INTENSITY (I): 5.36 in/hr				Intensity calculated using SEWRPC IDF equations.									
STRUCTURE DATA			DRAINAGE AREA AND FLOW DATA				PIPE DATA				PIPE CAPACITY INFORMATION					ELEVATIONS				
Notes	Upstream Structure	Downstream Structure	Flow is determined by Rational Method Q = CIA								Pipe capacity is determined by Manning's Equation Q = 1.486/n AR ^{2/3} S ^{1/2}					Rim/Toc Up	Invert Up	Invert Down		
			Individual Acres A	Individual Coefficient C	Individual Flow Q (cfs)	Cumulative Flow (cfs)					Required Drop (ft)	Actual Drop (ft)	Percent Full (%)	Actual Velocity (fps)	Max. Capacity (cfs)					
	FES 1.2	CB 1.1	1.03	0.90		4.97	81.40	18	0.20	0.012	0.16	0.16	86%	3.28	5.47	908.80	908.80	908.63		
TC / STORM DURATION = 6.0 MIN	CB 1.1	MH 1.0	0.10	0.90		0.61	15.00	24	0.20	0.012	0.01	0.03	51%	3.50	11.79	913.56	907.19	907.16	4.37	
	CB 1.3	MH 1.0	0.35	0.90		1.69	15.00	15	0.20	0.012	0.01	0.03	53%	2.60	3.37	913.56	907.19	907.16	5.12	
	STUB 2.2	CB 2.1	0.84	0.90		4.05	7.00	18	0.20	0.012	0.01	0.01	72%	3.20	5.47	914.75	906.81	906.79	6.44	
	CB 2.1	MH 2.0	0.08	0.90		0.39	15.00	18	0.20	0.012	0.02	0.03	77%	3.25	5.47	913.83	906.79	906.76	5.54	
TC / STORM DURATION = 6.0 MIN	BC 2.5	CB 2.4	0.36	0.90		2.19	48.30	10	1.04	0.011	0.35	0.50	74%	5.41	2.84	915.00	907.39	906.89	6.78	
	CB 2.4	CB 2.3	0.32	0.90		1.54	45.50	18	0.20	0.012	0.05	0.09	67%	3.15	5.47	913.46	906.89	906.79	5.07	
TC / STORM DURATION = 6.0 MIN	CB 2.3	MH 2.0	0.05	0.90		0.30	15.00	18	0.20	0.012	0.02	0.03	72%	3.20	5.47	913.83	906.79	906.76	5.54	
	STUB 3.2	CB 3.1	1.07	0.90		5.16	7.00	24	0.20	0.012	0.00	0.01	48%	3.44	11.79	914.75	906.40	906.39	6.35	
	CB 3.1	MH 3.0	0.10	0.90		0.48	15.00	24	0.20	0.012	0.01	0.03	51%	3.52	11.79	913.83	906.39	906.36	5.44	
TC / STORM DURATION = 6.0 MIN	BC 3.5	CB 3.4	0.49	0.90		2.99	48.30	12	1.04	0.011	0.24	0.50	64%	5.91	4.62	915.00	906.98	906.48	7.02	
	CB 3.4	CB 3.3	0.41	0.90		1.98	45.50	18	0.20	0.012	0.09	0.09	86%	3.28	5.47	913.46	906.48	906.39	5.48	
TC / STORM DURATION = 6.0 MIN	CB 3.3	MH 3.0	0.07	0.90		0.43	15.00	24	0.20	0.012	0.01	0.03	49%	3.47	11.79	913.83	906.39	906.36	5.44	
	STUB 4.2	CB 4.1	1.12	0.90		5.40	7.00	24	0.20	0.012	0.00	0.01	49%	3.48	11.79	914.75	906.03	906.02	6.72	
	CB 4.1	MH 4.0	0.10	0.90		0.48	15.00	24	0.20	0.012	0.01	0.03	53%	3.55	11.79	913.83	906.02	905.99	5.81	
TC / STORM DURATION = 6.0 MIN	BC 4.5	CB 4.4	0.49	0.90		2.99	46.60	12	1.04	0.011	0.23	0.48	64%	5.91	4.62	915.00	906.59	906.11	7.41	
	CB 4.4	CB 4.3	0.43	0.90		2.07	45.50	18	0.20	0.012	0.09	0.09	87%	3.28	5.47	913.46	906.11	906.02	5.85	
TC / STORM DURATION = 6.0 MIN	CB 4.3	MH 4.0	0.07	0.90		0.43	15.00	24	0.20	0.012	0.01	0.03	50%	3.49	11.79	913.83	906.02	905.99	5.81	
	STUB 5.2	CB 5.1	0.90	0.90		4.34	6.70	18	0.20	0.012	0.01	0.01	76%	3.23	5.47	914.75	905.59	905.57	7.66	
	CB 5.1	MH 5.0	0.08	0.90		0.39	15.00	18	0.20	0.012	0.03	0.03	82%	3.27	5.47	913.70	905.57	905.54	6.63	
TC / STORM DURATION = 6.0 MIN	BC 5.5	CB 5.4	0.37	0.90		2.25	48.30	10	1.04	0.011	0.37	0.50	76%	5.44	2.84	915.00	906.17	905.66	8.00	
	CB 5.4	CB 5.3	0.35	0.90		1.69	45.50	18	0.20	0.012	0.05	0.09	70%	3.18	5.47	913.46	905.66	905.57	6.30	
TC / STORM DURATION = 6.0 MIN	CB 5.3	MH 5.0	0.07	0.90		0.43	15.00	18	0.20	0.012	0.02	0.03	76%	3.24	5.47	913.70	905.57	905.54	6.63	
	STUB 6.2	CB 6.1	0.26	0.90		1.25	7.00	12	0.20	0.012	0.01	0.01	67%	2.40	1.86	914.75	905.40	905.38	8.35	
	CB 6.1	CB 6.0	0.02	0.90		0.10	30.00	12	0.20	0.012	0.04	0.06	71%	2.43	1.86	914.07	905.38	905.32	7.69	
TC / STORM DURATION = 6.0 MIN	BC 6.4	CB 6.3	0.34	0.90		1.64	48.30	10	1.04	0.011	0.19	0.50	59%	5.10	2.84	915.00	905.94	905.43	8.23	
	CB 6.3	CB 6.0	0.26	0.90		1.25	54.90	15	0.20	0.012	0.09	0.11	81%	2.90	3.37	913.51	905.43	905.32	6.83	
	CB 7.1	CB 7.0	0.96	0.90		4.63	58.50	18	0.20	0.012	0.10	0.12	80%	3.26	5.47	914.04	905.18	905.06	7.36	
TC / STORM DURATION = 6.0 MIN	BC 8.1	CB 8.0	0.23	0.90		1.40	34.70	10	1.04	0.012	0.12	0.36	56%	4.60	2.60	915.00	908.28	907.92	5.89	
	MH 1.0	MH 2.0	0.00	0.90		0.00	200.00	24	0.20	0.012	0.18	0.40	62%	3.73	11.79	913.58	907.16	906.76	4.42	
	MH 2.0	MH 3.0	0.00	0.90		0.00	15.75	204.00	30	0.20	0.012	0.26	0.41	71%	4.49	21.38	914.13	906.76	906.36	4.87
	MH 3.0	MH 4.0	0.00	0.90		0.00	26.78	183.80	36	0.20	0.012	0.25	0.37	74%	5.11	34.76	914.13	906.36	905.99	4.77
	MH 4.0	MH 5.0	0.00	0.90		0.00	38.15	222.80	42	0.20	0.012	0.27	0.45	71%	5.61	52.43	914.13	905.99	905.54	4.64
	MH 5.0	CB 6.0	0.00	0.90		0.00	47.25	109.40	48	0.20	0.012	0.10	0.22	63%	5.95	74.86	914.00	905.54	905.32	4.46
TC / STORM DURATION = 6.0 MIN	CB 6.0	MH 7.0	0.04	0.90		0.24	51.74	130.30	48	0.20	0.012	0.14	0.26	68%	6.07	74.86	914.07	905.32	905.06	4.75
	CB 7.0	CB 8.0	0.13	0.90		0.63	57.00	156.60	48	0.20	0.012	0.21	0.31	73%	6.18	74.86	914.48	905.06	904.75	5.42
	CB 8.0	CB 9.0	0.36	0.90		1.74	60.13	198.50	48	0.20	0.012	0.30	0.40	77%	6.23	74.86	914.00	904.75	904.35	5.25
	CB 9.0	FES 10.0	0.30	0.90		1.45	61.58	177.00	54	0.20	0.013	0.17	0.35	65%	5.98	94.60	911.85	904.35	904.00	3.00

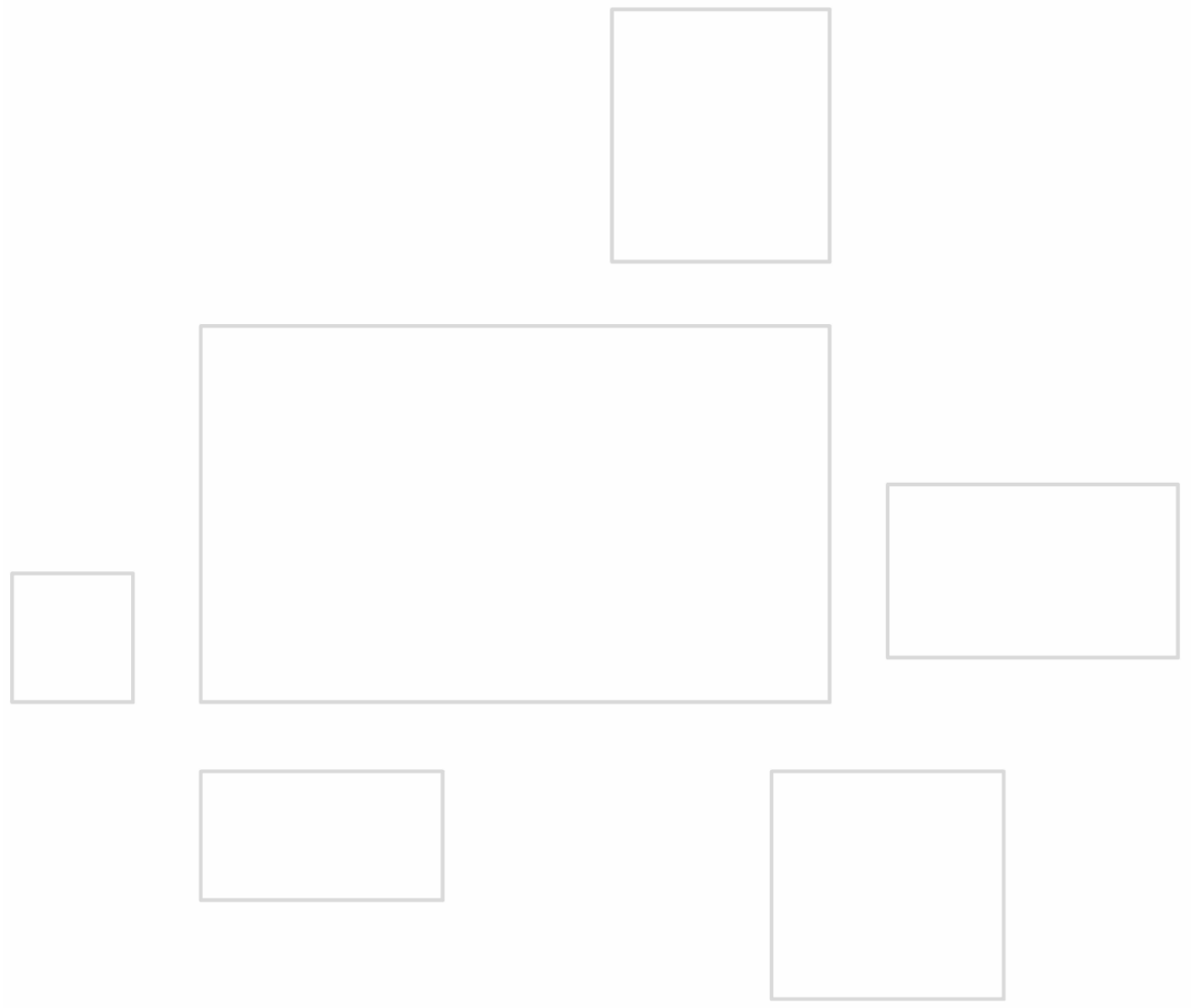
STORM SEWER COMPUTATIONS
FOR
CAPSTONE - GERMANTOWN
 GERMANTOWN, WI

SHEET 1 OF 1
 DESIGN BY: SRB
 PROJECT NUMBER: 1262.00A
 DATE: 7/16/2021

DESIGN DATA																			
County: Washington			Design Storm: 10 yr		Storm Duration: 10 min		DESIGN INTENSITY (I): 5.36 in/hr				Intensity calculated using SEWRPC IDF equations.								
STRUCTURE DATA			DRAINAGE AREA AND FLOW DATA				PIPE DATA				PIPE CAPACITY INFORMATION					ELEVATIONS			
Notes	Upstream Structure	Downstream Structure	Flow is determined by Rational Method Q = CIA								Pipe capacity is determined by Manning's Equation Q = 1.486/n AR ^{2/3} S ^{1/2}								
			Individual Acres A	Individual Coefficient C	Individual Flow Q (cfs)	Cumulative Flow (cfs)					Required Drop (ft)	Actual Drop (ft)	Percent Full (%)	Actual Velocity (fps)	Max. Capacity (cfs)				
TC / STORM DURATION = 6.0 MIN	BC 11.0	CB 12.0	0.39	0.90	2.38	2.38	96.30	10	1.04	0.011	0.81	1.00	80%	5.48	2.84	915.00	908.28	907.28	5.88
TC / STORM DURATION = 6.0 MIN	CB 12.0	FES 13.0	0.72	0.90	4.39	6.76	141.50	24	0.20	0.013	0.13	0.28	62%	3.45	10.88	909.18	904.28	904.00	
TC / STORM DURATION = 6.0 MIN	BC 14.0	CB 15.0	0.39	0.90	2.38	2.38	96.30	10	1.04	0.011	0.81	1.00	80%	5.48	2.84	915.00	908.28	907.28	5.88
TC / STORM DURATION = 6.0 MIN	CB 15.0	FES 16.0	0.61	0.90	3.72	6.09	141.50	24	0.20	0.013	0.10	0.28	58%	3.37	10.88	909.09	904.28	904.00	
TC / STORM DURATION = 6.0 MIN	BC 17.0	CB 18.0	0.52	0.90	3.17	3.17	96.30	12	1.04	0.011	0.55	1.00	67%	5.98	4.62	915.00	908.28	907.28	5.72
TC / STORM DURATION = 6.0 MIN	CB 18.0	FES 19.0	0.71	0.90	4.33	7.49	141.50	24	0.20	0.013	0.16	0.28	68%	3.53	10.88	909.17	904.28	904.00	
TC / STORM DURATION = 6.0 MIN	CB 26.0	FES 27.0	0.61	0.90	3.72	3.72	141.50	18	0.20	0.013	0.18	0.28	71%	2.95	5.05	909.17	904.28	904.00	3.39
TC / STORM DURATION = 6.0 MIN	BC 24.1	CB 24.0	0.52	0.90	3.17	3.17	96.30	12	1.04	0.011	0.55	1.00	67%	5.98	4.62	915.00	908.38	907.38	
TC / STORM DURATION = 6.0 MIN	BC 23.1	CB 23.0	0.36	0.90	2.19	2.19	104.40	10	1.04	0.011	0.75	1.09	74%	5.41	2.84	915.00	908.78	907.69	5.39
TC / STORM DURATION = 6.0 MIN	BC 21.3	WYE 21.1	0.20	0.90	1.22	1.22	152.00	10	1.04	0.011	0.34	1.58	47%	4.75	2.84	915.00	906.93	905.35	
	CB 20.0	CB 21.0	0.66	0.90	3.18	3.18	185.70	18	0.20	0.012	0.15	0.37	59%	3.04	5.47	912.00	905.85	905.47	4.65
	CB 21.0	CB 22.0	0.12	0.90	0.58	4.98	250.20	18	0.20	0.012	0.48	0.50	86%	3.28	5.47	912.20	905.47	904.97	
	CB 22.0	CB 23.0	0.42	0.90	2.03	7.01	141.10	24	0.20	0.012	0.12	0.28	60%	3.70	11.79	912.28	904.97	904.69	5.31
	CB 23.0	CB 24.0	0.17	0.90	0.82	10.02	158.40	24	0.20	0.012	0.26	0.32	81%	3.96	11.79	910.90	904.69	904.38	
TC / STORM DURATION = 6.0 MIN	CB 24.0	FES 25.0	0.82	0.90	5.00	18.19	187.50	30	0.20	0.013	0.37	0.38	87%	4.26	19.73	909.17	904.38	904.00	2.29

APPENDIX 7

GEOTECHNICAL REPORT





Professional Service Industries, Inc.
821 Corporate Court, Waukesha, WI 53189
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May 26, 2020

Capstone Development Company
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ATTN: Mr. Mike Faber
Principal

SUBJECT: Preliminary Subsurface Exploration and Site Feasibility Evaluation
Proposed Holy Hill Road Development
Holy Hill Road
Germantown, Wisconsin
PSI Project No. 00522563

Dear Mr. Faber:

The preliminary subsurface exploration and site feasibility evaluation for the referenced project has been completed. An electronic copy of the report is being provided via email. Paper copies can be issued upon request. After you have had the opportunity of reading the report, please call at any time with any questions or comments you may have. Professional Service Industries, Inc. (PSI), an Intertek Company, appreciates the opportunity to be of service on this project and looks forward to continuing as your geotechnical consultant during the design and construction phases, as well as your upcoming projects.

Sincerely,

PROFESSIONAL SERVICE INDUSTRIES, INC.

A handwritten signature in black ink, reading "Cody A. Rodell".

Cody A. Rodell
Staff Engineer
Geotechnical Services

A handwritten signature in black ink, reading "James M. Becco".

James M. Becco, P.E.
Regional Vice President



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INTRODUCTION

General

This report presents the results of the preliminary subsurface exploration and site feasibility evaluation for the proposed development in Germantown, Wisconsin. The work was performed for Capstone Development Company at the request of Mr. Mike Faber.

Purpose

The purpose of this preliminary study was to evaluate the subsurface conditions at specific boring locations on the site, and to provide subsurface information for general site feasibility and preliminary design planning. A comprehensive foundation evaluation and recommendations for specific structures were beyond the scope of this preliminary site evaluation but are recommended as part of design planning.

Scope

The scope of services included a site reconnaissance, the subsurface exploration, a determination of soil characteristics by field and laboratory testing, and an evaluation of the data obtained. Subgrade preparation recommendations and construction considerations are also provided. The scope of the field work, including the number, depth and locations of the borings, wells, and hand auger probes was determined by the client.

Authorization

The description of services and authorization to perform this subsurface exploration and evaluation were in the form of a signed proposal (PSI Proposal No. 305169, dated April 9, 2019). The general conditions for the performance of the work were referenced in the proposal. This report has been prepared on behalf of, and exclusively for the use of Capstone Development Company. The information contained in this report may not be relied upon by any other parties without the express written consent of PSI, and acceptance by such parties of PSI's General Conditions.

SITE AND PROJECT DESCRIPTION

Site Features

The project site is an approximately 50-acre parcel located on the south side of Holy Hill Road, about 0.50 miles east of U.S. Highway 41 and about 0.25 miles west of County Highway Y, in Germantown, Wisconsin. At the time of the exploration, the project site

was occupied by agricultural land and a farmstead containing several existing structures at the northeast corner of the site. Wetland area borders the site to the west, south, and southeast. The topography of the site generally slopes down to the south and west, with an elevation difference of about 16 feet (EL. 920 to EL. 904).

Project Description

Based on information provided by the client, it is understood that the proposed development will consist of an industrial business park. Two options are being considered for the site plan. One option includes the construction of two buildings ranging in size from about 356,000 square feet to about 376,000 square feet, oriented in an east-west fashion with one building at the north portion of the site and one building at the south portion of the site. The other option includes the construction of three buildings ranging in size from about 170,000 square feet to about 295,000 square feet, oriented in a north-south fashion with one building at the west portion of the site, one building at the center, and one building at the east portion of the site. It is understood that the proposed buildings will consist of slab-on-grade construction, without basements, and be supported by a shallow spread foundation system.

The two plans being considered both include stormwater management areas at the northwest and southeast corners of the site, and pavement areas surrounding the proposed buildings that will consist of drives, passenger vehicle parking spaces, truck docks, and trailer stalls. It is understood that new utilities will also be constructed as part of the development.

The finished floor elevations for the proposed structures, utility invert elevations, bottom of stormwater management area elevations, surface grades, or other planned elevations were not known at the time of report preparation. Existing grades across the property range from about EL. 920 at the northeast portion of the site to about EL. 904 at the west and southeast portion of the site. There is an area southwest of the southwest boundary of the site that slopes down relatively steeply toward the property, from about EL. 830 to EL. 805. It is estimated that moderate to substantial grade changes will be required. When a grading plan is available, and when finished floor elevations, utility invert elevations, bottom of stormwater management area elevations, and pavement grades have been established, PSI must be informed so that any necessary re-evaluation or revisions to this report can be made.

This preliminary exploration has been commissioned to evaluate the subsurface conditions at the boring locations on the subject site and to provide subsurface information for general site feasibility and preliminary design planning for the proposed development. The number, spacing, and locations of the borings requested is not considered sufficient to serve as a conventional foundation evaluation for proposed buildings. Additional borings are necessary and recommended within any proposed building footprints to further evaluate more specific soil conditions and provide

subsequent recommendations at each building location. In addition, when finished floor, utility invert, roadway, and other elevations and the building locations are determined, PSI must be provided an opportunity to review them and determine if a redirection of the evaluation and recommendations contained herein is warranted, or if additional borings in areas beyond the planned structures are also necessary.

EXPLORATION AND LABORATORY PROCEDURES

Scope Summary

The field and laboratory data utilized in the evaluation of the subsurface materials was obtained by drilling exploratory test borings, securing soil samples by the split-spoon sampling method, and subjecting the samples to laboratory testing. Groundwater monitoring wells were also installed, and hand auger probes were performed to estimate topsoil thickness.

With respect to the stormwater management areas, the field and laboratory work for classification of the subgrade soils was performed to provide information for use by the basin design personnel when considering requirements of Chapter NR151 of the Wisconsin Administrative Code, and of WDNR Technical Standard 1002, "Site Evaluation for Stormwater Infiltration" guidelines. The design of the proposed stormwater management area was beyond the scope of services for this project.

Field Exploration

Twenty-six (26) soil borings were performed for this project to depths ranging from about 15 to 25 feet below existing grade. Three (3) of the soil borings were converted into groundwater monitoring wells upon completion of drilling. Twenty-two (22) hand auger probes were also performed to estimate topsoil thickness. The number, depths, and locations of the borings, hand auger probes, and groundwater monitoring wells were provided by the client. The locations were staked in the field by the client, who also provided surface elevations.

The soil test borings were performed with an ATV-mounted rotary drilling rig utilizing continuous flight hollow stem augers to advance the holes. Representative samples were obtained by the Standard Penetration Test (SPT) method using split-spoon sampling in general accordance with ASTM D-1586 procedures. Samples were secured at 2.5-foot intervals to a depth of 10 feet, and then at 5-foot intervals thereafter to the end of the borings. With respect to the stormwater management area borings, samples were collected continuously at 2-foot intervals. The standard penetration value (N) is defined as the number of blows of a 140-pound hammer, falling thirty (30) inches, required to advance the split-spoon sampler one (1) foot into the soil. The sampler is lowered to the bottom of the drill hole and the number of blows recorded for each of the

three (3) successive increments of six (6) inches penetration. The “N” value is obtained by adding the second and third incremental numbers. The SPT provides a means of estimating the relative density of granular soils and comparative consistency of cohesive soils, thereby providing a method of evaluating the relative strength and compressibility characteristics of the subsoils.

The SPT samples were transferred into clean glass jars immediately after retrieval and returned to the laboratory upon completion of the field operations. Samples will be discarded unless other instructions are received. The soil samples from the borings were visually classified in general accordance with the Unified Soil Classification System (USCS) (ASTM D-2488-75). With respect to the stormwater management areas, soil samples were visually classified in general accordance with USDA National Resources Conservation Service textural soil classification procedures. After completion of the borings, the auger holes were backfilled with bentonite chips.

The hand auger probes were performed with an approximately 3-inch diameter auger by retracting the device at approximately 6-inch increments to remove the retained material. The depth of topsoil was then estimated based on observation of the retained material and the soil along the side of the borehole. The hand auger boreholes were backfilled with removed soils upon completion.

A copy of the Soil Boring Logs and Boring Location Plan are enclosed in the Appendix. The soil stratification shown on the logs represents the approximate soil conditions in the actual boring locations at the time of the exploration. The terms and symbols used on the logs are described in the General Notes found in the Appendix.

Laboratory Physical Testing

Soil samples obtained from the exploration were visually classified in the laboratory, and subjected to testing, which included moisture content determinations. Selected cohesive soil samples were tested in unconfined compression with a calibrated hand penetrometer to aid in evaluating the soil strength characteristics. The values of strength tests performed on soil samples obtained by the Standard Penetration Test Method (SPT) are considered approximate, recognizing that the SPT method provides a representative but somewhat disturbed soil sample.

The laboratory testing was performed in general accordance with the respective ASTM methods, as applicable, and the results are shown on the boring logs in the Appendix.

DESCRIPTION OF SUBSURFACE CONDITIONS

General

A description of the subsurface conditions encountered at the test boring locations is shown on the Soil Boring Logs. The lines of demarcation shown on the logs represent approximate boundaries between the various soil classifications. It must be recognized that the soil descriptions are considered representative estimates for the specific test hole locations, but variations may occur between and beyond the sampling intervals and boring locations. Soil depths, topsoil, and layer thicknesses, and demarcation lines utilized for preconstruction planning should not be expected to yield exact and final quantities. A summary of the major soil profile components is described in the following paragraphs.

Soil Conditions

Hand Auger Probes

Approximate topsoil thicknesses encountered at the hand auger probe locations ranged from about 13.5 to 18.5 inches. Table 1 – Topsoil Probes, located in the Appendix of this report, summarizes the thicknesses encountered at each location.

Building and Pavement Area Borings – USCS Classification

Surficial material encountered at the building and pavement area borings consisted of about 11 to 18 inches of topsoil generally consisting of silty clay. Below the surficial topsoil at the building and pavement area borings, natural granular soils consisting of sandy silt with gravel, sandy silt, silt, silty sand, silty sand with gravel, and sand with gravel, were generally encountered to the boring termination depth of 15 or 16 feet (EL. 904.3 to EL. 891.5) below existing grade. These native granular soils were loose to very dense with N-values ranging from about 5 blows per foot (bpf) to about 50 blows per 2 inches of split spoon sampler penetration.

As an exception to the above, natural cohesive soils consisting of lean clay were encountered below the surficial topsoil at SB-305, SB-307, SB-324, and SB-328, extending to a depth of about 3 feet (EL. 907.7 to EL. 912.0) below existing grade. These native cohesive soils were stiff to very stiff in consistency, with estimated unconfined compressive strengths ranging from about 1.5 to 2.5 tons per square foot (tsf).

SB-318 was planned to extend to a depth of 25 feet below existing grade, however, auger refusal was experienced on possible cobbles, boulders, or bedrock at a depth of about 16 feet (EL. 891.5) below existing grade.

Stormwater Management Area Borings – USDA Classification

Surficial material encountered at the stormwater management area borings (SB-300, SB-302, SB-333, SB-334, and SB-336) consisted of about 12 to 24 inches of silty clay (SiC) topsoil. Below the surficial topsoil was generally clay (C), sandy loam (SL), coarse sand (COS), sand (S), and loamy sand (LS) soils with varying amounts of gravel extending to the boring termination depths.

The stormwater management area borings were planned to extend to a depth of 25 feet below existing grade. However, auger refusal was experienced on possible cobbles, boulders, or bedrock at SB-300 and SB-336 at depths of 18.5 feet (EL. 888.6) and 12 feet (EL. 893.7) below existing grade, respectively.

The foregoing discussion of soil conditions on this site represents a generalized soil profile as determined at the test boring locations. A more detailed description and supporting data for each test location can be found on the individual Soil Boring Logs.

Groundwater Observations

Groundwater observations were made during the drilling operations, and in the open boreholes at completion. Groundwater was encountered during auger advancement within the borings at depths ranging from about 1 to 12 feet (EL. 912.8 to EL. 896.3) below existing grade. Upon completion of drilling and removal of the augers, groundwater was encountered within the borings at depths ranging from about 2 to 11 feet (EL. 913.7 to EL. 899.7) below existing grade. As an exception to the above, groundwater was not encountered during auger advancement or upon completion of drilling and removal of the augers at SB-300, SB-303, SB-310, SB-330, and SB-346.

The observed water levels are considered to be somewhat erratic/variable, and may be indicative of both a perched condition and/or the long-term groundwater level.

The groundwater observations reported herein are considered approximate. It must be recognized that groundwater levels fluctuate with time due to variations in seasonal precipitation, lateral drainage conditions, and soil permeability characteristics. Longer term monitoring would be required to better evaluate groundwater levels on this site.

Groundwater Monitoring Wells

As requested, groundwater monitoring wells were installed at the locations of SB-302, SB-318, and SB-336. The monitoring wells were installed with 2-inch I.D. Schedule 40 PVC. 10-foot screen (0.01-inch slot size) sections were installed at varying depths, with 5 to 15 feet of riser extending about 3 feet above ground surface. The annulus space was filled with sand to about 1 to 2 feet above the slotted screen, with the remaining annulus filled with bentonite. Expandable caps were installed at the tops of the wells. The screened interval at each well is shown in the table below:

MONITORING WELL	SURFACE ELEVATION (FEET MSL)	WELL SCREEN DEPTH (FEET BGS)	WELL SCREEN ELEVATION (FEET MSL)	APPROXIMATE WATER LEVEL ELEVATION (5/19/20)*
SB-302	906.7	13 to 23	EL. 893.7 to EL. 883.7	906.2
SB-318	907.5	5 to 15	EL. 902.5 to EL. 892.5	907.0
SB-336	905.7	2 to 12	EL. 903.7 to EL. 893.7	905.2

*Measurements obtained by PSI.

It is understood that additional measurement of the water levels will be made by the client at future dates.

EVALUATION AND RECOMMENDATIONS

General Development Considerations

In view of the subsurface conditions encountered in the test borings, together with the structural loading criteria and development grades anticipated, conventional spread footings can generally be used for support of the proposed structures. However, the removal of soft, wet, or otherwise unstable zones may be necessary.

Shallow groundwater and granular soils were generally encountered within the upper 5.5 to 8 feet of most of the borings. Based on this, substantial difficulty with excavation stability and groundwater may be experienced during construction.

Auger refusal on possible cobbles, boulders, or bedrock was encountered at SB-300, SB-318, and SB-336 at depths ranging from about 12 to 18.5 feet (EL. 888.6 to EL. 893.7) below existing grade. Dependent on final grades, specialized excavation techniques and/or blasting may be required.

The existing soils (with the exception of topsoil) can generally be utilized for support of the floor slabs and pavements. However, some overexcavation of unsuitable soils may be necessary on at least an isolated basis. A discussion of the building foundation and pavement design parameters, as well as the support conditions for the floor slabs and pavements are included in later sections of this report.

The number, depth, and spacing of the borings performed for this preliminary study is not considered sufficient to serve as a conventional foundation evaluation for specific structures. Therefore, additional borings within the footprints of the proposed structures, and in utility areas are recommended and considered essential to further evaluate the subsurface conditions and groundwater levels in order to provide subsequent recommendations. It must be recognized that the conditions encountered by the additional explorations (along with finished floor elevations, and associated surface,

utility and other elevations) may warrant an alteration of the preliminary foundation and soil bearing design recommendations presented in this report. The additional borings will also be essential for further evaluating groundwater levels, in order to assist with establishing finished floor elevations. A discussion of preliminary guidelines and recommendations is included in the following sections.

Site Preparation

The presence of organic topsoil, vegetation, trees, and roots in the subgrade can adversely affect the serviceability of structural fills, foundations, floor slabs, pavements, and other structures placed upon them. Approximately 11 to 24 inches of topsoil was present on the surface of the site at the borings and hand auger probes. However, some variation should be anticipated. All topsoil, vegetation, trees, roots, and any other deleterious matter must be stripped from all structural areas.

Site preparation will require removal of the existing structures and remnants of former buildings, including foundations and underground utilities. Extensive areas of loose backfill material may be encountered within utility trenches, adjacent to the existing structures, and in former building, basement, and other structural areas. These will also require removal. The areas, including basements, must then be properly backfilled with compacted structural fill. Prior to the backfilling, the areas must be observed by a PSI representative to evaluate the suitability of the subgrade for subsequent support of the new building, utilities, or other structures.

The majority of the property was a farm field at the time of the field exploration. If any remnant drain tiles are encountered during construction, it is generally recommended that they be tied into new drainage structures or otherwise be properly drained to a suitable area (in accordance with any applicable regulatory requirements or restrictions), since they may still actively drain areas of the subject site or adjacent properties.

Topsoil depths and/or the presence of organic soils may increase substantially within and encroaching upon wetland areas. It is generally recommended that development within wetland areas not be performed due to the typical presence of highly organic soils and shallow groundwater. If such development is contemplated, special permits will likely be required from the Army Corps of Engineers, the WDNR, or other government agencies.

After stripping the topsoil and cutting high areas of the site to the planned finished grade, and prior to the placement of new fill used to raise grades, the subgrade must be thoroughly proofrolled to detect unstable, yielding soils, which must be removed or improved by appropriate preparation and compaction techniques. Proofrolling should consist of overlapping passes in a perpendicular grid pattern of a fully loaded tandem-axle dump truck, or other equipment of similar size and weight. However, care must be

used on this site to avoid disturbing the near surface fine-grained soils during the proofrolling, especially during periods of precipitation or spring thaw. Unstable soils may be encountered, at least on an isolated basis, but may become extensive depending upon moisture conditions at the time of construction. When encountered, unstable soils must be properly remediated. Scarification, drying, and recompaction of wet soils or removal and replacement with suitable fill, are two methods which can be considered, but the proper method must be determined by the soils engineer at the time of construction. Low areas may then be raised to the planned grades with suitable properly compacted fill. It must be recognized that the silt and clay soils present on the site are highly moisture sensitive, and substantial difficulty with subgrade preparation can be expected if the soils are wet during construction.

Equipment and worker traffic must be kept to a minimum on subgrade bearing surfaces, especially during times of precipitation or following spring thaw. Some difficulty with subgrade preparation can be expected in wet or cold weather conditions. Removal of unsuitable portions of the near surface soils and replacement with structural fill may be required, on at least an isolated basis, especially if earthwork is not carried out during periods of relatively warm, dry weather, which provide more favorable conditions for drying of these soils. Any soft zones, which cannot be improved by scarification and aeration, must be removed and replaced with compacted structural fill, such as clean crushed stone, possibly in conjunction with the use of a geotextile fabric. Lime, lime kiln dust, fly ash, or Portland cement modification are additional remedial measures which can be considered for fine grained soils. However, this must only be performed at the direction and under the supervision of the geotechnical engineer. A proper mix design must be performed prior to the performance of any modification. Substantial construction delays and difficulty with subgrade stabilization should be expected during periods of wet and/or cool weather. Consideration should be given to installing construction roads to reduce disturbance to the sensitive subgrade soils.

Every effort must be made to keep excavations dry. If construction proceeds during wet weather, some additional overexcavation may be necessary. If weather permits, the soil could be dried and recompacted. A crushed stone working mat, possibly in conjunction with a geotextile fabric, may also be feasible to help stabilize subgrades. Site grading runoff should be directed to catch basins, so that the potential for the softening of the subgrade soils is reduced.

Where the removal of unsuitable bearing material is performed beneath proposed footings or pavement areas, the excavation must extend laterally beyond the perimeter of the foundation, or edge of the pavement, for a distance at least equal to the thickness of the fill below the footing bottom or pavement subgrade. This general guideline also applies to instances where a raised structural fill pad is constructed to achieve a bearing elevation greater than existing grades. The influence zone of footing stresses can be represented as an imaginary 45° line extending downward and outward from the footing

bottom. All fill placed within this zone after cutting to firm soil must be properly engineered, from the bottom of the cut, up to the floor slab subgrade elevation.

Where site grades are raised in excess of 2 feet, the first lift of new fill must be placed to extend a minimum lateral distance of 5 feet beyond the planned top building pad dimension or edge of the pavement, or for a distance equal to at least 1 foot laterally beyond the top pad dimension, or edge of the pavement, for every foot of fill thickness (for fills greater than 5 feet in depth). Subsequent lifts can then be placed on an approximate 1H:1V slope up to the planned top perimeter dimension of the pad or pavement subgrade. Proper moisture control is essential to reduce the amount of compactive effort necessary to achieve the desired densities.

When a firm and stable subgrade is established, low areas may be raised to planned grades with properly compacted structural fill. Any new fill should be a clean granular soil, such as those materials meeting the gradations outlined in Section 209 or 305 of the State of Wisconsin Standard Specification for Highway and Structure Construction. If fine-grained soils, such as those with high silt or clay content are used, they should generally be placed over large open areas, where conditions are more favorable for the proper placement and compaction of such materials. It must be recognized that high silt or clay content materials are difficult to compact when placed at moisture contents beyond a few percent of the optimum moisture content. In addition, the near surface soils across the site are considered to be highly moisture sensitive; therefore, substantial instability and difficulty with subgrade preparation may be experienced, especially if they become wet during construction. Extensive undercutting or stabilization may be necessary. Fill must be placed in layers of not more than nine (9) inches in thickness, at moisture contents at or near optimum, and be compacted to a minimum density of 95 percent of the maximum dry density as determined by ASTM designation D-698 (Standard Proctor). Where fill thicknesses exceed 10 feet, it is recommended that the compaction percentage be increased to 98 percent. Silt, clay, and wet granular soils are not suitable for reuse as fill in trenches, or adjacent to foundation stem walls or retaining walls.

Proper moisture control is essential to reduce the amount of compactive effort necessary to achieve the desired densities. This is especially true of clayey soils, where scarification and aeration may be required to achieve near-optimum moisture levels prior to compaction. A sheepsfoot roller is generally required for compaction of clayey soils, whereas a vibratory smooth drum roller is preferred for granular material. Small hand-operated compactors should be used in confined areas; granular fills are generally more readily compacted to the required densities in such applications.

It is recommended that well-graded granular soils be utilized as backfill in new utility trenches and alongside below grade walls to reduce the potential for consolidation and settlement of the fill. All fill soils must be placed and compacted under engineering-controlled conditions, to provide suitable support for overlaying structures. Additional

guidance can be provided at the time of construction in the selection process for grade-raising fill and trench backfill.

When excavations encroach upon or extend below the groundwater or perched zones, and into sandy, silty, or soft clay soils, subgrade instability and sloughing/caving of sidewalls can occur. Some overexcavation of softened or loosened soils, in conjunction with the use of a crushed stone working mat, may be necessary. Additionally, significantly widened excavations may result, or be required for stability.

The selection of fill materials for various applications should be done in consultation with the soils engineer. Similarly, the evaluation of the subgrade and placement and compaction of fill for structural applications should be monitored and tested by a qualified representative of the soils engineer.

Preliminary Foundation Evaluation

The following is a general overview of the subsurface conditions for the site, as it relates to foundation evaluation, and can be used in preliminary site planning.

The proposed buildings may be supported by conventional spread foundations. For preliminary planning, spread and continuous wall footings bearing upon suitable natural soils encountered within the borings, or structural fill (or lean concrete mix) used to replace unsuitable materials, can generally be designed to exert net allowable soil bearing pressures of 2,000 to 4,000 psf, dependent upon location and bearing elevation. However, some undercutting of soft, loose, wet, or otherwise unsuitable natural soils may be required and may become extensive in some areas. All foundations must bear upon suitable and stable soils of sufficient strength. A more comprehensive exploration, consisting of additional borings is recommended to better evaluate subsurface conditions within each structure.

Wet soils may be encountered within footing excavations and may be widespread. These soils are susceptible to a substantial loss in strength when the confining effect of the overburden is removed. A significantly softened subgrade may develop, requiring undercutting and the use of a crushed stone working mat (or "mud mat") to establish a stable bearing grade. Substantial sloughing and caving may also occur, and dewatering will likely be required.

The suitability of the existing soils for support of proposed foundations is recommended to be determined by testing by a qualified geotechnical engineer during construction, utilizing static cone penetrometer tests or dynamic cone penetrometer tests for cohesive and granular soils, respectively. Soft, loose, or otherwise unsuitable materials not disclosed by the borings, may be encountered in the foundation excavations at the bearing elevation. If unsuitable existing soil is present, it must be removed throughout a zone extending one foot laterally for each foot removed below the foundation, on either

side of the planned footing. The over-excavated area must be backfilled with structural compacted fill. Alternatively, the excavation could extend 4 inches beyond the planned footing width to suitable bearing soil and then backfilled with lean (500 to 1000 psi) concrete mix to planned footing grade to reduce lateral over-excavation.

All perimeter footings must be placed at a depth of at least 4 feet (or deeper if required by local code or in accordance with customary practice) below the finish grade for frost protection. Due to periodic severity of winters in this area, it is recommended that footings in poorly heated or unheated areas of the building also be placed at least 4 feet below the adjacent exterior grade. Interior footings not subject to frost action may be placed at a shallow depth of 18 inches below the floor slab, provided they bear on suitable natural soils or engineered fills. All foundations must be protected from the effects of frost if construction is carried out during winter months.

It is recommended that the footings supporting individual columns have a minimum dimension of 30 inches, and continuous footings have a minimum width of 24 inches, even if the maximum recommended allowable bearing pressure is not fully utilized. In order to minimize the effects of any slight differential movement that may occur due to variations in the character of the supporting soils and any variations in seasonal moisture contents, it is recommended that all foundations be suitably reinforced to make them as rigid as needed.

In general, the performance of the foundation system on this site is dependent on the various factors discussed herein. The excavation, preparation, and concreting of foundations should be monitored and tested by a representative of the soils engineer.

Preliminary Floor Slab and Pavement Subgrades

Prior to constructing the floor slabs or pavements, and prior to the placement of any fill used to raise grades, the exposed subgrade must be prepared utilizing the proofrolling procedures described previously. In areas that exhibit soft, yielding or unstable soil conditions, the following remedial measures are recommended to provide a stable subgrade. It must be recognized that the high silt and clay content near surface soils are highly sensitive to increases in moisture and construction disturbance. It will therefore be necessary to maintain these materials in a relatively dry condition to allow for proper subgrade preparation. It is recommended that the proofrolling operations be monitored by a representative of the geotechnical engineer so that a firm, suitable subgrade is present prior to placement of new fills, or to construction of floor slabs and pavements.

Localized wet, soft or unstable areas should be undercut to such depths determined necessary in the field to reach stable material. The overexcavations should then be backfilled with imported crushed stone, such as a 1¼-inch dense graded base specified in Section 305 of the WisDOT Standard Specifications, placed and compacted as recommended in the Site Preparation section of this report. If relatively thick zones or

areas of extensive yielding are observed that cannot be stabilized by normal discing, aeration and recompaction procedures, undercutting and replacement with crushed stone and geotextile fabric (if needed) may also be required in these areas.

The floor slabs may be designed utilizing an estimated modulus of subgrade reaction of 175 pci based on the presence of natural sandy silt soils. The final design and detailing should be performed by a qualified structural engineer based on the intended slab use, loading conditions and anticipated subgrade conditions.

A granular mat, which can be designed as a drainage layer, should be provided below floor slabs. This must be a minimum of six (6) inches in thickness and properly compacted. In moisture sensitive areas, a vapor barrier may be placed beneath the floor slab or base course; however, it is recommended that the architect be consulted in this regard. The proper use of a vapor barrier may not completely prevent moisture beneath or on top of slabs. If the base course contains sharp particles, a cushion layer of sand approximately 2 inches in thickness may be required to provide protection from puncture.

The floor slabs must be suitably reinforced to make them as rigid as necessary and proper joints provided at the junction of slabs and the foundation system so that a small amount of independent movement can occur without causing damage. Large floor areas must be provided with joints at frequent intervals (maximum spacing of 30 times the slab thickness, per ACI) to compensate for concrete volume changes (shrinkage). Where the slab will be supporting live loads, such as moving vehicles, joints must be keyed or dowelled to permit proper load transfer. It is recommended that appropriate construction methods and curing procedures be used to minimize shrinkage and curling of the floor slabs.

Preliminary Pavement Recommendations

The subgrade soils encountered in the borings generally consisted of sandy silt, silt, and lean clay. The following subgrade parameters are recommended for pavement construction design considerations based on the predominance of sandy silt and clay subgrade soils and based on the subgrade being properly prepared as discussed in the Site Preparation section of this report.

The poorer quality silt and clay subgrade soils have been assigned an estimated visual classification of A-4 and A-6 by the AASHTO classification method. They are generally rated as poor for pavement subgrade support due to their moderate to high frost susceptibility, poor drainage characteristics, and high susceptibility to strength loss when exposed to free water. Provided that the subgrade soils are prepared as outlined in the Site Preparation section of this report, the in-place subgrade soils and any new structural fill can be used for standard flexible or rigid pavement construction.

PAVEMENT SUBGRADE DESIGN COEFFICIENTS

AASHTO Soil Classification	A-4/A-6
Design Frost Index	F-3
Design Group Index	12
Soil Support Value	4.2
Estimated Subgrade Modulus (k)	150 pci

Some variations may be encountered and should be expected due to the relatively widely spaced borings. In order to use the above values, all new fill used to raise low areas or replace unsuitable material must have pavement support characteristics that are equal to or better than the existing soils. The final design should be performed by a qualified engineer based on the intended pavement use, anticipated loading and subgrade conditions, and desired service life.

The subject site is located in an area that experiences annual freezing cycles and the subgrade soils encountered have been classified as highly susceptible to frost action when free water is present. In order to reduce the potential for frost action, it will be necessary to control surface runoff and water seepage, because complete removal and replacement of the frost susceptible subgrade soils is not considered economically feasible. It is recommended that sufficient underdrains be placed within the subgrade, just below the granular base, to help reduce the potential for trapping water within the aggregate base layer.

Exterior/Unheated Area Slabs

Entry slabs, sidewalks, aprons, and other slabs in exterior or unheated areas may bear upon silty or clayey soils, which are highly frost susceptible and poorly drained. Slabs placed directly upon such soils are subject to heaving and subsequent settlement due to freeze/thaw cycles. This can result in heaving, cracking, misalignment, and other related effects (especially at joints). It is recommended that consideration be given to limited undercutting of the frost susceptible materials to a depth of 1 to 2 feet below the slab, and replacement with well graded, properly placed and compacted granular soils. A properly designed under drain system connected to the municipal sewer (if permissible) or directed to on-site stormwater management areas should also be incorporated to reduce the potential effects of freeze/thaw cycles.

Utility Construction

In general, the on-site soils can be used for support of utility lines. However, some undercutting of soft, loose, wet, or otherwise unsuitable soils, in conjunction with the placement of crushed stone or other suitable granular backfill may be necessary to establish a stable working mat and/or bearing subgrade, and may become extensive in some areas. Substantial difficulty with the stability of utility trenches may be

experienced, especially in the presence of water. The use of shoring, bracing, or trench boxes will be required for excavations. Additionally, excavations encroaching upon or extending below the groundwater or perched zones can become substantially unstable when the confining effect of the overburden is removed. An adequate dewatering effort and bracing of sidewalls will be required. Utility construction should be performed in accordance with "The Standard Specifications for Sewer and Water Line Construction" for the State of Wisconsin.

It is recommended that well graded granular soils such as those specified in Tables 37 and 39 of the Standard Specification for Sewer and Water Construction be utilized as backfill in utility trenches to reduce the potential for consolidation and settlement of the backfill. All fill soils must be properly placed and compacted under engineering-controlled conditions to provide suitable support for overlaying structures and roadways. Silty and clayey soils, organic soils, and wet granular materials are not recommended for use as backfill within utility trenches due to the substantial difficulty of obtaining proper compaction in confined areas. Substantial importing of suitable fill will likely be required.

Auger refusal on possible cobbles, boulders, or bedrock was encountered at SB-300, SB-318, and SB-336 at depths ranging from about 12 to 18.5 feet (EL. 888.6 to EL. 893.7) below existing grade. Utility excavations in some areas may encroach upon and extend below the refusal depths, and specialized excavation techniques and/or blasting may be necessary.

As with all excavation work, all open cut trenches must be properly shored and braced as required by applicable federal and state OSHA codes, and as necessary to protect life and property.

Loading Dock Walls

It is recommended that the dock walls be protected by a suitable drainage system to prevent development of excessive lateral pressures. The walls must therefore be backfilled for a lateral distance of 3 to 4 feet with a well-graded, free draining granular material such as clean crushed stone or sand and gravel. Silty and clayey soils are not recommended for such applications. The granular materials must be placed in lifts not exceeding 12 inches in thickness, and be compacted to at least 90% of the maximum dry density as determined by Standard Proctor (ASTM D698). However, where the wall backfill will be within the influence zone of the building footings, floor slab, or other structural areas, compaction must be increased to at least 95 percent of the Standard Proctor value.

Based upon the use of free draining granular backfill ($\phi=32$; $\gamma_m=130$ pcf), an equivalent fluid pressure of 40 psf may be used as the horizontal component of the active earth pressure for walls which are not restrained from movement. For "fixed" walls, an at rest

fluid pressure of 65 psf should be used. However, when a proposed fill material has been selected, a representative sample must be submitted to PSI for testing to verify the above values and associated recommendations. It must be recognized that the above values are based upon a drained condition, and are exclusive of traffic and other surcharge loads near the walls, which must be factored into the design. It is therefore recommended that a fabric wrapped footing drain be placed behind the walls, and directed to a suitable outlet, such as the municipal sewer (if permissible). If this is not feasible, the drains must be properly daylighted to an appropriate area of the site to prevent pavement icing in winter.

Because of the relatively shallow groundwater on this site, careful design consideration must be given to proper groundwater control in the area of below grade dock walls in order to maintain a drained condition, thereby preventing excessive lateral pressures from developing. Larger diameter drain tile and possibly the use of collection sumps and pumps may be necessary if adequate gravity drainage cannot be provided.

CONSTRUCTION CONSIDERATIONS

Groundwater Control

Groundwater was encountered during auger advancement within the borings at depths ranging from about 1 to 12 feet (EL. 912.8 to EL. 896.3) below existing grade. Upon completion of drilling and removal of the augers, groundwater was encountered within the borings at depths ranging from about 2 to 11 feet (EL. 913.7 to EL. 899.7) below existing grade. As an exception to the above, groundwater was not encountered during auger advancement or upon completion of drilling and removal of the augers at SB-300, SB-303, SB-310, SB-330, and SB-346.

Based on these observations, and those at the monitoring wells, substantial difficulty with groundwater may be experienced during excavation work. If excavations extend only a few inches or so below the groundwater or perched zones, filtered sump pumps or other conventional means may suffice to control the groundwater. However, for deeper excavations, or for substantial perched zones, prolonged dewatering with a series of sumps or well points and high capacity sump pumps, or other more comprehensive means may be necessary to facilitate construction. Due care must be used during dewatering in order to avoid rapid or excessive drawdown, which may cause settlement or other related distress to existing buildings, utilities, or other structures. Additional evaluation of groundwater and related control procedures must be performed by PSI when building locations, elevations, and other details are finalized.

Since the foundation materials are subject to softening when exposed to free moisture, every effort should be made to keep excavations dry. Discharge water from roof drains should be directed away from buildings, and the site grading direct runoff to catch

basins or other appropriate areas of the site, so that the potential for the softening of the foundation and pavement subgrade soils is reduced.

The groundwater observations reported herein are considered approximate, and preliminary. It must be recognized that groundwater levels fluctuate with time due to variations in seasonal precipitation, lateral drainage conditions, and soil permeability characteristics.

Excavations and Site Drainage

Sloping, shoring or bracing of the excavation sidewalls will be necessary. Excavating may be difficult due to the instability of vertical slopes, and will therefore require a flattening of trench sides, or some other means of protection, to facilitate construction and to protect life and property. Substantial sloughing and caving should be expected within unprotected excavations. The degree of excavation instability problems is dependent upon the depth and length of time that excavations remain open, excavation bank slopes, water levels and the effectiveness of any dewatering systems. However, severe instability can be expected within granular or soft cohesive soils, especially encroaching upon and extending below the groundwater or perched zones. All excavation work must be performed in accordance with OSHA and local building code requirements.

Where excavations encroach upon or extend below the groundwater or perched zones and into fine sand, silt, or soft clay, they may become substantially unstable when the confining effect of the overburden is removed. Significant sloughing or caving of sidewalls may also occur. Some overexcavation of softened or loosened soils, in conjunction with the use of a crushed stone working mat, may be necessary to establish a stable bearing subgrade. Additionally, significantly widened excavations may result, or be required to maintain or achieve sidewall stability.

All excavations must be performed with caution and utilize methods which will prevent undermining or destabilization of slopes, buildings, utilities, pavements, sidewalks or other structures. The use of a properly designed shoring and bracing, sheet piling, or underpinning system must be utilized as necessary to adequately protect existing buildings, utilities, pavements, and other structures. This must be performed by an experienced specialty contractor. Additionally, extreme care must be used during the installation of any bracing system, especially those using driven or vibratory methods, in order to avoid damaging existing buildings, utilities, and other structures. Consideration should be given to the performance of video and/or photographic documentation of the condition of nearby buildings, utilities, and other structures prior to installation.

Auger refusal on possible cobbles, boulders, or bedrock was encountered at SB-300, SB-318, and SB-336 at depths ranging from about 12 to 18.5 feet (EL. 888.6 to EL. 893.7) below existing grade, and generally very dense granular soils were encountered

with increasing depth. Substantial difficulty digging and longer excavation times should be expected with increasing depth in at least some areas of the site. Specialized excavation techniques and/or blasting may be necessary. Dependent on final development grades, additional subsurface exploration with backhoe test pits may be necessary to further evaluate refusal depths, and the type and excavatability of the materials.

Since the subgrade soils are generally sensitive to moisture, every effort should be made to provide adequate drainage across the site during construction, and to prevent ponding of runoff on the subgrade. These soils are also subject to erosion caused by runoff, and erosion control measures should be implemented where needed or required by local ordinances.

It is mandated that excavations, whether they be for utility trenches, basement excavations or footing excavations, be constructed in accordance with current Occupational Safety and Health Administration (OSHA) guidelines to protect workers and others during construction. PSI recommends that these regulations be strictly enforced; otherwise, workers could be in danger and the owner(s) and the contractor(s) could be liable for substantial penalties. The contractor is solely responsible for designing and constructing stable, temporary excavations and should shore, slope, or bench the sides of the excavations 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. PSI is providing this information solely as a service to our client. PSI does not assume responsibility for construction site safety or the contractor's or other parties' compliance with local, state, and federal safety or other regulations.

Seismic Design Considerations

The on-site natural soils are preliminarily estimated to meet the criteria for Site Class C or D in accordance with Table 1613.5.2 of the International Building Code-2015.

STORMWATER MANAGEMENT AREA CONSIDERATIONS

SB-300, SB-302, SB-333, SB-334, and SB-336, were performed in the area of planned stormwater management areas. The soils encountered in these borings have been visually classified in general accordance with the USDA textural soil classification system. Surficial material encountered at these borings consisted of about 12 to 24 inches of silty clay (SiC) topsoil. Below the surficial topsoil was generally clay (C), sandy loam (SL), coarse sand (COS), sand (S), and loamy sand (LS) soils with varying amounts of gravel extending to the boring termination depths.

The stormwater management area borings were planned to extend to a depth of 25 feet below existing grade. However, auger refusal was experienced on possible cobbles, boulders, or bedrock at SB-300 and SB-336 at depths of about 18.5 feet (EL. 888.6) and 12 feet (EL. 893.7) below existing grade, respectively.

Groundwater was encountered during auger advancement in SB-302, SB-333, SB-334, and SB-336 at depths ranging from about 3 to 5.5 feet (EL. 901.2 to EL. 903.5) below existing grade. Upon completion of drilling and removal of the augers, groundwater was encountered in SB-302, SB-333, SB-334, and SB-336 at depths ranging from about 4 to 6 feet (EL. 899.7 to EL. 902.5) below existing grade.

With regard to the above soil and groundwater conditions encountered at the borings, NR 151.124(4)(c)1 and 2 – *Infiltration rate exemptions* indicates that infiltration practices located in an area where the infiltration rate of the soil measured at the proposed bottom of the infiltration system is less than 0.6 inches per hour using a scientifically credible field test method; or where the least permeable soil horizon to 5 feet below the proposed bottom of the infiltration system using the USDA method of soils analysis consists of sandy clay loam, clay loam, sandy clay, silty clay or clay. These soils may be credited toward meeting the requirements, but the decision to infiltrate under these conditions is optional. In addition, NR 151.124(4)(b)1 – Separation distances indicates that infiltration practices shall be located so that the characteristics of the soil and the separation distance between the bottom of the infiltration system and the elevation of seasonal high groundwater or the top of bedrock are in accordance with the following Table (reproduced from NR 151.124):

Table 1. Separation Distances and Soil Characteristics		
Source Area	Separation Distance	Soil Characteristics
Industrial, Commercial, Institutional Parking Lots and Roads	5 feet or more	Filtering Layer*
Residential Arterial Roads	5 feet or more	Filtering Layer*
Roofs Draining to Surface Infiltration Practices	1 foot or more	Native or Engineering Soils with Particles Finer than Coarse Sand
Roofs Draining to Surface Infiltration Practices	Not Applicable	
All Other Impervious Source Areas	3 feet or more	Filtering Layer*

*Defined in NR 151.002(14r) as a "soil that has at least a 3-foot deep layer with at least 20 percent fines; or at least a 5-foot deep layer with at least 10 percent fines; or an engineered soil with an equivalent level of protection as determined by the regulatory authority for the site."

The information shown above is a selected excerpt from NR151 that is intended only as general guidance for considering stormwater management in conjunction with the encountered subsurface conditions at the borings. Basin design must be performed by a qualified and experienced firm. In addition, the entirety of Chapter NR151 of the Wisconsin Administrative Code, the Site Evaluation for Stormwater Infiltration (1002)

document, and other applicable references; along with appropriate state, local or other municipal requirements must be consulted as part of site-specific stormwater design.

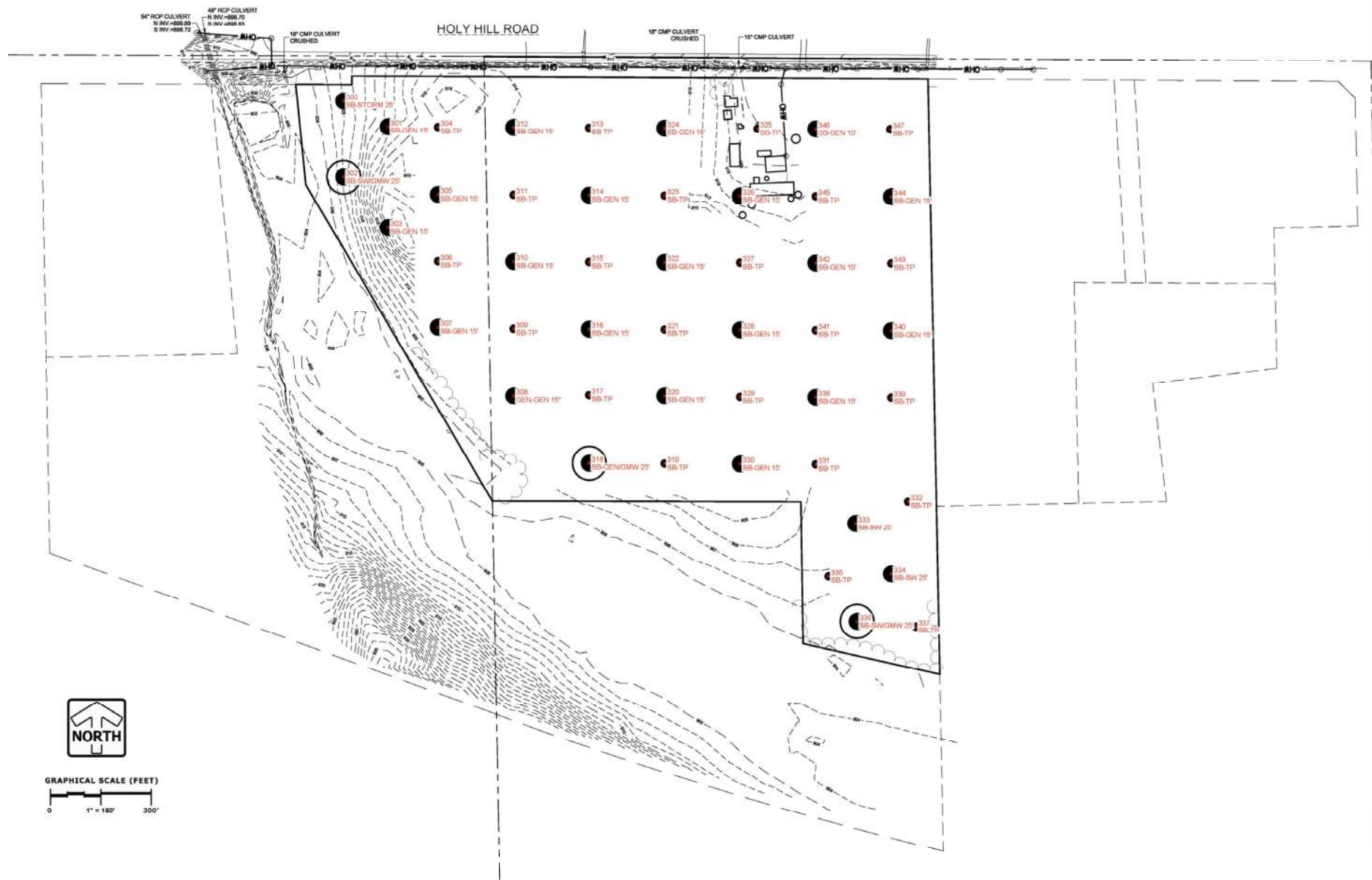
GENERAL COMMENTS

This preliminary subsurface exploration and site feasibility evaluation has been prepared to aid in the evaluation of the subject site for general site development. The recommendations presented herein are based on the available soil information and the design information provided. Any changes in the design information or building locations should be brought to the attention of PSI to determine if modifications in the recommendations are required. The final design plans and specifications should also be reviewed by PSI to determine that the recommendations presented herein have been interpreted and implemented as intended.

The widely spaced soil borings performed for this preliminary exploration and site evaluation are considered suitable for preliminary planning and design purposes. Additional exploration and evaluation should be performed within the proposed building footprints. The conditions encountered by the additional explorations may warrant an alteration of the preliminary foundation and soil bearing design recommendations presented in this report. Specific foundation and floor slab recommendations can then be provided.

This geotechnical study has been conducted in a manner consistent with that level of care ordinarily exercised by members of the profession currently practicing in the same locality under similar conditions. The findings, recommendations and opinions contained herein have been promulgated in accordance with generally accepted practice in the fields of foundation engineering, soils mechanics, and engineering geology. No other representations, expressed or implied, and no warranty or guarantee is included or intended in this report.

It is recommended that the earthwork and foundation operations be monitored by the soils engineer, to test and evaluate the bearing capacities, and the selection, placement and compaction of controlled fills.



Proposed Development
Holy Hill Road
Germantown, WI

SCALE: 1 inch = 400 feet (approx.)

DATE: 5/22/2020

FIGURE 1: BORING LOCATION PLAN

PROJECT NUMBER: 00522563

Table 1 - Topsoil Probes

Probe No.	Surface Elevation (feet MSL)	Approximate Topsoil Thickness (inches)
SB-TP-304	914.7	17
SB-TP-306	915.4	16.5
SB-TP-309	913.6	15
SB-TP-311	913.4	15.5
SB-TP-313	913.5	16
SB-TP-315	916.2	15
SB-TP-317	912.5	16.5
SB-TP-319	911.1	15
SB-TP-321	916.3	16
SB-TP-323	913.3	15.5
SB-TP-325	920	13.5
SB-TP-327	912.8	14
SB-TP-329	912.7	15
SB-TP-331	907.7	15
SB-TP-332	905.2	16
SB-TP-335	906.6	14.5
SB-TP-337	905.5	14
SB-TP-339	907.6	16.5
SB-TP-341	911.1	14.5
SB-TP-343	915.7	16.5
SB-TP-345	918.1	15
SB-TP-347	918.7	18.5

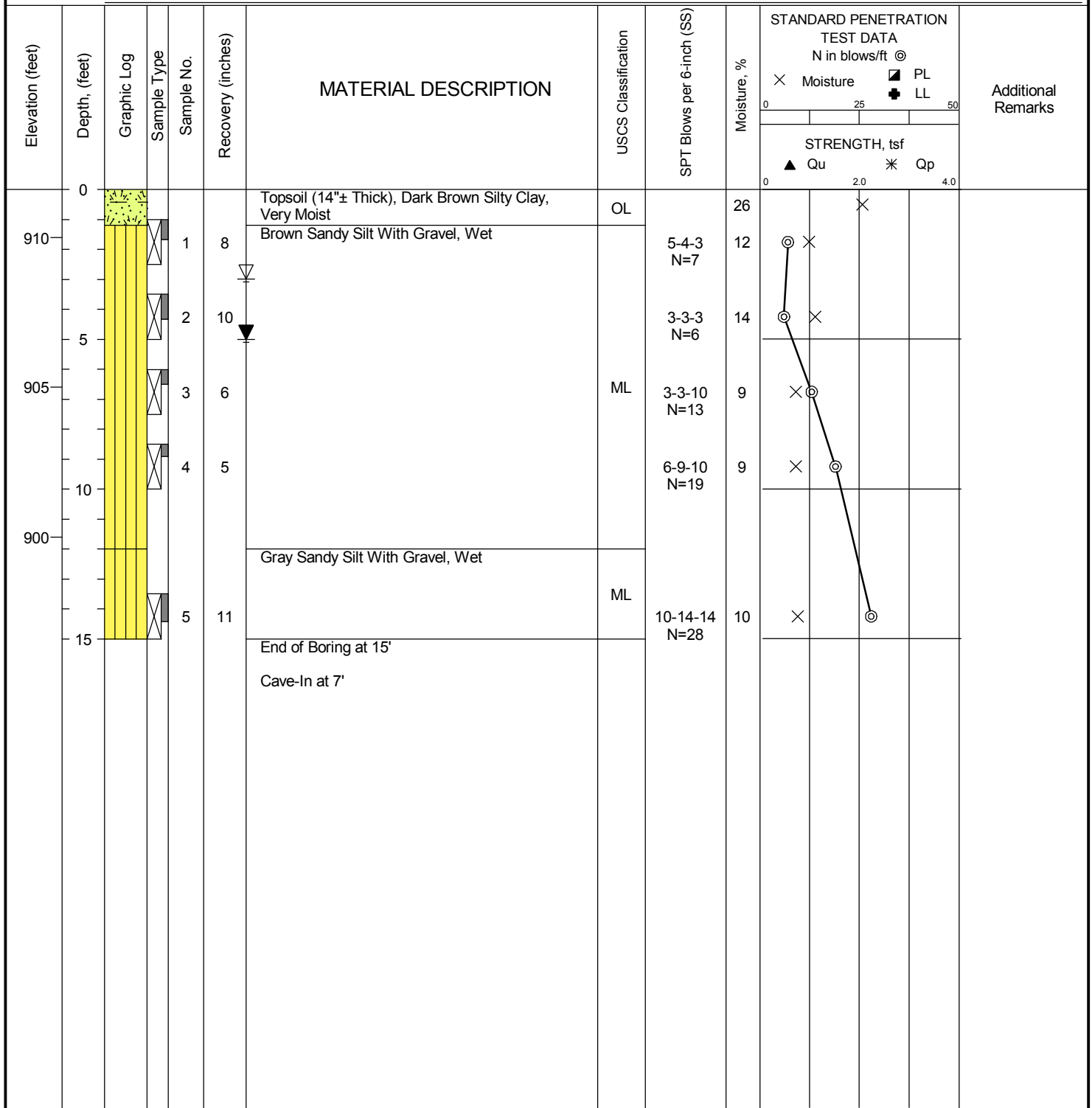
DATE STARTED: 4/20/20		DRILL COMPANY: PSI, Inc.		BORING SB-300	
DATE COMPLETED: 4/20/20		DRILLER: PR LOGGED BY: RS			
COMPLETION DEPTH: 18.5 ft		DRILL RIG: CME 45 ATV - Rig #383		Water While Drilling Upon Completion Delay Not Obsvd Not Obsvd N/A	
BENCHMARK: N/A		DRILLING METHOD: Hollow Stem Auger			
ELEVATION: 907.1 ft		SAMPLING METHOD: 2-in SS			
LATITUDE:		HAMMER TYPE: Automatic		BORING LOCATION:	
LONGITUDE:		EFFICIENCY: N/A			
STATION: N/A OFFSET: N/A		REVIEWED BY: CR			
REMARKS:					

Elevation (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS)	Moisture, %	STANDARD PENETRATION TEST DATA N in blows/ft ©				Additional Remarks
										×	Moisture	■	PL	
										0	25	50	LL	
										STRENGTH, tsf				
										▲	Qu	*	Qp	
										0	2.0	4.0		
905 <														

	Professional Service Industries, Inc.	PROJECT NO.: 00522563
	821 Corporate Court, Suite 100	PROJECT: Holy Hill Rd Development
	Waukesha, WI 53189	LOCATION: N128 W20943 Holy Hill Rd
	Telephone: (262) 521-2125	Germantown, WI

The stratification lines represent approximate boundaries. The transition may be gradual.

DATE STARTED: 4/20/20		DRILL COMPANY: PSI, Inc.		BORING SB-301	
DATE COMPLETED: 4/20/20		DRILLER: VJ LOGGED BY: DB			
COMPLETION DEPTH: 15.0 ft		DRILL RIG: Marooka D-50 ATV - Rig #395		Water ▽ While Drilling ▼ Upon Completion ▽ Delay 3 feet 5 feet N/A	
BENCHMARK: N/A		DRILLING METHOD: Hollow Stem Auger			
ELEVATION: 911.6 ft		SAMPLING METHOD: 2-in SS		BORING LOCATION:	
LATITUDE:		HAMMER TYPE: Automatic			
LONGITUDE:		EFFICIENCY: N/A			
STATION: N/A OFFSET: N/A		REVIEWED BY: CR			
REMARKS:					



	Professional Service Industries, Inc. 821 Corporate Court, Suite 100 Waukesha, WI 53189 Telephone: (262) 521-2125		PROJECT NO.: 00522563 PROJECT: Holy Hill Rd Development LOCATION: N128 W20943 Holy Hill Rd Germantown, WI

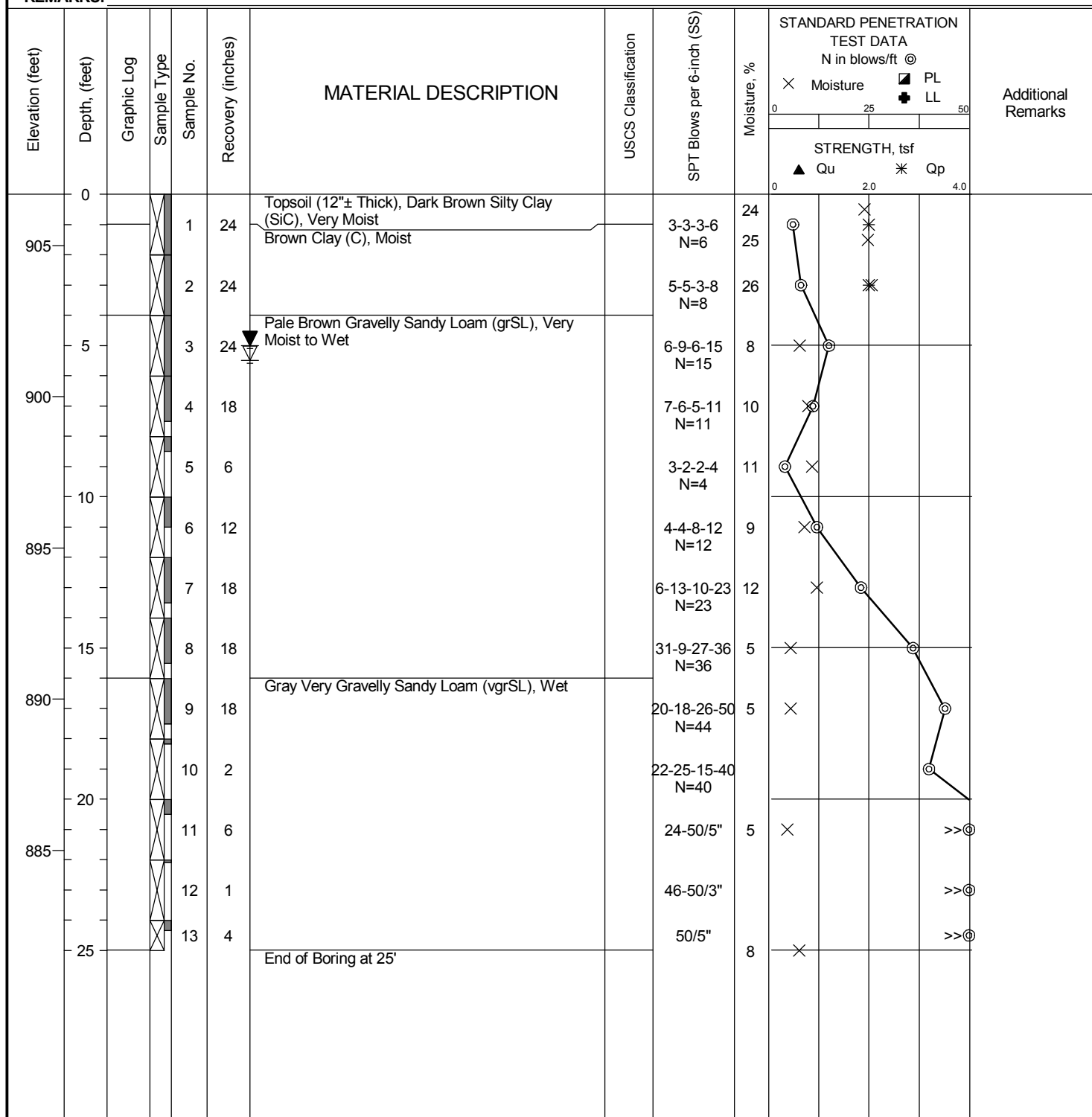
DATE STARTED: 4/21/20
DATE COMPLETED: 4/21/20
COMPLETION DEPTH: 25.0 ft
BENCHMARK: N/A
ELEVATION: 906.7 ft
LATITUDE:
LONGITUDE:
STATION: N/A OFFSET: N/A
REMARKS:

DRILL COMPANY: PSI, Inc.
DRILLER: VJ LOGGED BY: PR
DRILL RIG: Marooka D-50 ATV - Rig #395
DRILLING METHOD: Hollow Stem Auger
SAMPLING METHOD: 2-in SS
HAMMER TYPE: Automatic
EFFICIENCY: N/A
REVIEWED BY: CR

BORING SB-302

Water
While Drilling 5.5 feet
Upon Completion 5 feet
Delay N/A

BORING LOCATION:



Professional Service Industries, Inc.
821 Corporate Court, Suite 100
Waukesha, WI 53189
Telephone: (262) 521-2125

PROJECT NO.: 00522563
PROJECT: Holy Hill Rd Development
LOCATION: N128 W20943 Holy Hill Rd
Germantown, WI

DATE STARTED: 4/20/20		DRILL COMPANY: PSI, Inc.		BORING SB-303	
DATE COMPLETED: 4/20/20		DRILLER: PR LOGGED BY: RS			
COMPLETION DEPTH: 15.0 ft		DRILL RIG: CME 45 ATV - Rig #383		Water ▽ While Drilling ▼ Upon Completion ▽ Delay Not Obsvd Not Obsvd N/A	
BENCHMARK: N/A		DRILLING METHOD: Hollow Stem Auger			
ELEVATION: 918.2 ft		SAMPLING METHOD: 2-in SS			
LATITUDE:		HAMMER TYPE: Automatic		BORING LOCATION:	
LONGITUDE:		EFFICIENCY: N/A			
STATION: N/A OFFSET: N/A		REVIEWED BY: CR			
REMARKS:					

Elevation (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS)	Moisture, %	STANDARD PENETRATION TEST DATA N in blows/ft @	Additional Remarks
										× Moisture ■ PL ⊕ LL 0 25 50 STRENGTH, tsf ▲ Qu ✱ Qp 0 2.0 4.0	
0						Topsoil (11"± Thick), Dark Brown Silt Clay, Very Moist	OL		42		
				1	8	Brown Sandy Silt With Gravel, Very Moist to Moist		3-3-7 N=10	9		
915				2	13		ML	3-3-3 N=6	11		
5				3	13			7-8-8 N=16	7		
910				4	3			4-10-15 N=25	1		
10											
				5	5	Gray Sandy Silt With Gravel, Moist	ML	11-20-20 N=40	3		
905											
15						End of Boring at 15'					
						Cave-In at 8'					

	Professional Service Industries, Inc. 821 Corporate Court, Suite 100 Waukesha, WI 53189 Telephone: (262) 521-2125		PROJECT NO.: 00522563 PROJECT: Holy Hill Rd Development LOCATION: N128 W20943 Holy Hill Rd Germantown, WI

DATE STARTED: 4/20/20 DATE COMPLETED: 4/20/20 COMPLETION DEPTH: 15.0 ft BENCHMARK: N/A ELEVATION: 915.0 ft LATITUDE: LONGITUDE: STATION: N/A OFFSET: N/A REMARKS:	DRILL COMPANY: PSI, Inc. DRILLER: PR LOGGED BY: RS DRILL RIG: CME 45 ATV - Rig #383 DRILLING METHOD: Hollow Stem Auger SAMPLING METHOD: 2-in SS HAMMER TYPE: Automatic EFFICIENCY: N/A REVIEWED BY: CR	BORING SB-305 <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td rowspan="3" style="width:5%; text-align: center; font-weight: bold;">Water</td> <td style="width:10%; text-align: center;">▽</td> <td style="width:65%;">While Drilling</td> <td style="width:20%; text-align: right;">5.5 feet</td> </tr> <tr> <td style="text-align: center;">▼</td> <td>Upon Completion</td> <td style="text-align: right;">5.5 feet</td> </tr> <tr> <td style="text-align: center;">▽</td> <td>Delay</td> <td style="text-align: right;">N/A</td> </tr> </table> BORING LOCATION:	Water	▽	While Drilling	5.5 feet	▼	Upon Completion	5.5 feet	▽	Delay	N/A
Water	▽	While Drilling		5.5 feet								
	▼	Upon Completion		5.5 feet								
	▽	Delay	N/A									

Elevation (feet)	Depth (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS)	Moisture, %	STANDARD PENETRATION TEST DATA N in blows/ft @	Additional Remarks
										X Moisture PL LL STRENGTH, tsf ▲ Qu * Qp	
	0					Topsoil (13"± Thick), Dark Brown Silty Clay, Very Moist	OL		25		
				1	6	Light Brown Lean Clay, Very Moist	CL	3-3-4 N=7	20		
						Brown Sandy Silt, Very Moist	ML	3-4-5 N=9	15		
910	5			2	7						
				3	5	Brown Sandy Silt With Gravel, Wet		3-3-3 N=6	30		
				4	5		ML	7-3-3 N=6	7		
905	10										
				5	1			28-38-50/3"			
900	15					End of Boring at 15'					
						Cave-In at 7'					

	Professional Service Industries, Inc. 821 Corporate Court, Suite 100 Waukesha, WI 53189 Telephone: (262) 521-2125	PROJECT NO.: 00522563 PROJECT: Holy Hill Rd Development LOCATION: N128 W20943 Holy Hill Rd Germantown, WI
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DATE STARTED: 4/21/20 DATE COMPLETED: 4/21/20 COMPLETION DEPTH: 15.0 ft BENCHMARK: N/A ELEVATION: 910.7 ft LATITUDE: LONGITUDE: STATION: N/A OFFSET: N/A REMARKS:	DRILL COMPANY: PSI, Inc. DRILLER: RS LOGGED BY: AS DRILL RIG: CME 45 ATV - Rig #383 DRILLING METHOD: Hollow Stem Auger SAMPLING METHOD: 2-in SS HAMMER TYPE: Automatic EFFICIENCY: N/A REVIEWED BY: CR	BORING SB-307 <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td rowspan="3" style="width: 5%; text-align: center; font-weight: bold;">Water</td> <td style="width: 10%; text-align: center;">▽</td> <td style="width: 75%;">While Drilling</td> <td style="width: 10%; text-align: right;">3 feet</td> </tr> <tr> <td style="text-align: center;">▼</td> <td>Upon Completion</td> <td style="text-align: right;">3 feet</td> </tr> <tr> <td style="text-align: center;">▽</td> <td>Delay</td> <td style="text-align: right;">N/A</td> </tr> </table> BORING LOCATION:	Water	▽	While Drilling	3 feet	▼	Upon Completion	3 feet	▽	Delay	N/A
Water	▽	While Drilling		3 feet								
	▼	Upon Completion		3 feet								
	▽	Delay	N/A									

Elevation (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS)	Moisture, %	STANDARD PENETRATION TEST DATA N in blows/ft @	Additional Remarks
										X Moisture PL LL STRENGTH, tsf ▲ Qu * Qp	
910	0					Topsoil (16"± Thick), Dark Brown Silty Clay, Very Moist	OL		24		
				1	9	Dark Brown Lean Clay, Very Moist	CL	5-3-3 N=6	24		Q _r = 1.7 tsf
						Brown Sandy Silt With Gravel, Wet					
				2	7			7-7-7 N=14	16		
905	5			3	10			5-5-8 N=13	8		
				4	8		ML	7-12-32 N=44	8		
900	10										
				5	12			50/5"	5		>>⊙
15	15					End of Boring at 15'					
						Cave-In at 9'					

	Professional Service Industries, Inc. 821 Corporate Court, Suite 100 Waukesha, WI 53189 Telephone: (262) 521-2125	PROJECT NO.: 00522563 PROJECT: Holy Hill Rd Development LOCATION: N128 W20943 Holy Hill Rd Germantown, WI
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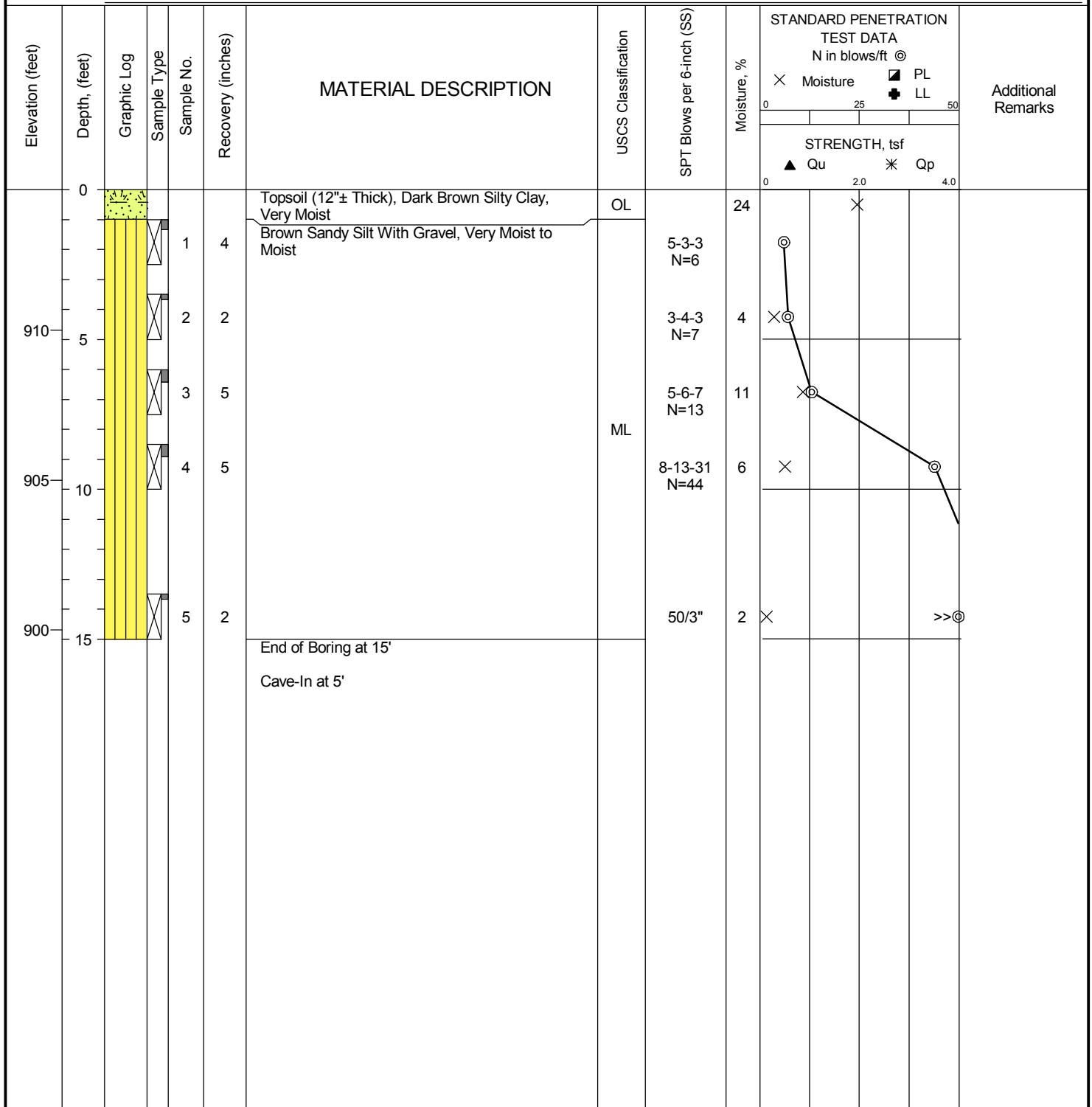
DATE STARTED: 4/22/20		DRILL COMPANY: PSI, Inc.		BORING SB-308	
DATE COMPLETED: 4/22/20		DRILLER: VJ LOGGED BY: DB			
COMPLETION DEPTH: 15.0 ft		DRILL RIG: Marooka D-50 ATV - Rig #395		Water ▽ While Drilling ▼ Upon Completion ▽ Delay 5.5 feet 6 feet N/A	
BENCHMARK: N/A		DRILLING METHOD: Hollow Stem Auger			
ELEVATION: 909.0 ft		SAMPLING METHOD: 2-in SS			
LATITUDE:		HAMMER TYPE: Automatic		BORING LOCATION:	
LONGITUDE:		EFFICIENCY: N/A			
STATION: N/A OFFSET: N/A		REVIEWED BY: CR			
REMARKS:					

Elevation (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS)	Moisture, %	STANDARD PENETRATION TEST DATA N in blows/ft @	Additional Remarks
										× Moisture ■ PL + LL 0 25 50	
										STRENGTH, tsf ▲ Qu ✱ Qp 0 2.0 4.0	
	0					Topsoil (16"± Thick), Dark Brown Silty Clay, Very Moist	OL		11		
				1	7	Brown Silt, Trace Sand and Gravel, Very Moist	ML	3-3-5 N=8	26		
						Brown Sandy Silt With Gravel, Very Moist to Wet					
905				2	8		ML	5-4-3 N=7	7		
5											
				3	10			5-3-3 N=6	10		
						Gray Sandy Silt With Gravel, Wet					
900				4	14		ML	9-12-13 N=25	9		
	10										
895				5	6			19-29-41 N=70	4		>>⊙
15						End of Boring at 15'					
						Cave-In at 9'					

	Professional Service Industries, Inc.	PROJECT NO.: 00522563
	821 Corporate Court, Suite 100	PROJECT: Holy Hill Rd Development
	Waukesha, WI 53189	LOCATION: N128 W20943 Holy Hill Rd
	Telephone: (262) 521-2125	Germantown, WI

The stratification lines represent approximate boundaries. The transition may be gradual.

DATE STARTED: 4/20/20		DRILL COMPANY: PSI, Inc.		BORING SB-310	
DATE COMPLETED: 4/20/20		DRILLER: PR LOGGED BY: RS			
COMPLETION DEPTH: 15.0 ft		DRILL RIG: CME 45 ATV - Rig #383		Water ▽ While Drilling ▼ Upon Completion ▽ Delay Not Obsvd Not Obsvd N/A	
BENCHMARK: N/A		DRILLING METHOD: Hollow Stem Auger			
ELEVATION: 914.7 ft		SAMPLING METHOD: 2-in SS			
LATITUDE:		HAMMER TYPE: Automatic		BORING LOCATION:	
LONGITUDE:		EFFICIENCY: N/A			
STATION: N/A OFFSET: N/A		REVIEWED BY: CR			
REMARKS:					



	Professional Service Industries, Inc.	PROJECT NO.: 00522563
	821 Corporate Court, Suite 100	PROJECT: Holy Hill Rd Development
	Waukesha, WI 53189	LOCATION: N128 W20943 Holy Hill Rd
	Telephone: (262) 521-2125	Germantown, WI

The stratification lines represent approximate boundaries. The transition may be gradual.

DATE STARTED: 4/20/20		DRILL COMPANY: PSI, Inc.		BORING SB-312	
DATE COMPLETED: 4/20/20		DRILLER: VJ LOGGED BY: DB			
COMPLETION DEPTH: 15.0 ft		DRILL RIG: Marooka D-50 ATV - Rig #395		Water ▽ While Drilling ▼ Upon Completion ▽ Delay 3 feet 5 feet N/A	
BENCHMARK: N/A		DRILLING METHOD: Hollow Stem Auger			
ELEVATION: 914.0 ft		SAMPLING METHOD: 2-in SS			
LATITUDE:		HAMMER TYPE: Automatic		BORING LOCATION:	
LONGITUDE:		EFFICIENCY: N/A			
STATION: N/A OFFSET: N/A		REVIEWED BY: CR			
REMARKS:					

Elevation (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS)	Moisture, %	STANDARD PENETRATION TEST DATA N in blows/ft @	Additional Remarks
										× Moisture ■ PL ▼ LL ▲ Qu ✱ Qp	
0	0					Topsoil (15"± Thick), Dark Brown Silty Clay, Very Moist	OL		30		
				1	6	Brown Silty Sand, Very Moist	SM	3-3-5 N=8	18		
						Brown Sandy Silt, Wet					
910	5			2	10		ML	3-3-3 N=6	31		
						Brown Sand and Gravel, Wet					
				3	13			5-6-8 N=14	9		
905	10			4	16		SW	5-9-11 N=20	6		
						Gray Sandy Silt With Gravel, Wet					
900	15			5	9		ML	3-4-7 N=11	12		
						End of Boring at 15'					
						Cave-In at 8'					

	Professional Service Industries, Inc.	PROJECT NO.: 00522563
	821 Corporate Court, Suite 100	PROJECT: Holy Hill Rd Development
	Waukesha, WI 53189	LOCATION: N128 W20943 Holy Hill Rd
	Telephone: (262) 521-2125	Germantown, WI

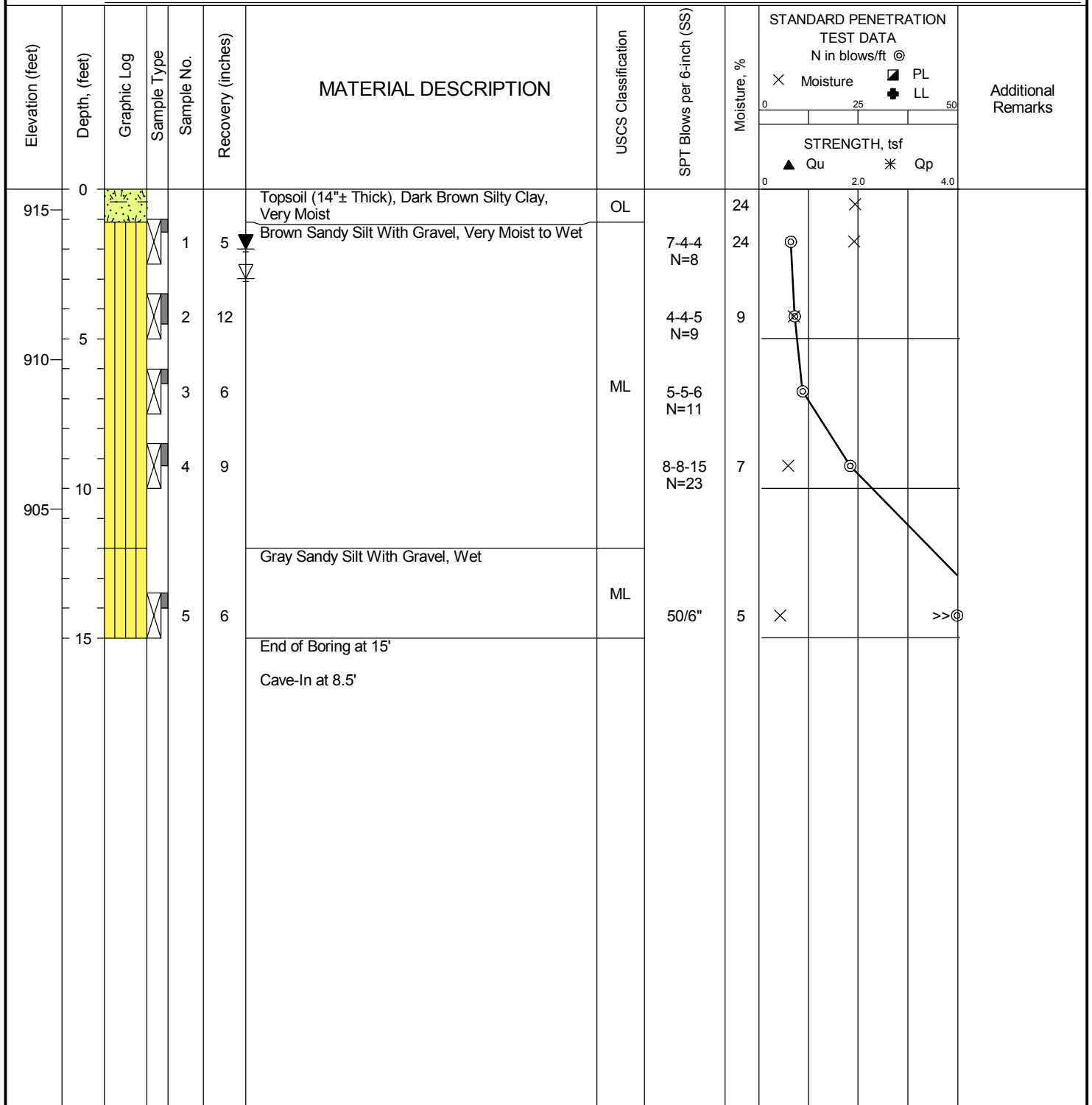
DATE STARTED: 4/20/20		DRILL COMPANY: PSI, Inc.		BORING SB-314	
DATE COMPLETED: 4/20/20		DRILLER: PR LOGGED BY: RS			
COMPLETION DEPTH: 15.0 ft		DRILL RIG: CME 45 ATV - Rig #383		Water ▽ While Drilling ▼ Upon Completion ▽ Delay 8 feet 5 feet N/A	
BENCHMARK: N/A		DRILLING METHOD: Hollow Stem Auger			
ELEVATION: 913.1 ft		SAMPLING METHOD: 2-in SS		BORING LOCATION:	
LATITUDE:		HAMMER TYPE: Automatic			
LONGITUDE:		EFFICIENCY: N/A			
STATION: N/A OFFSET: N/A		REVIEWED BY: CR			
REMARKS:					

Elevation (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS)	Moisture, %	STANDARD PENETRATION TEST DATA N in blows/ft @	Additional Remarks
										× Moisture ■ PL ● LL 0 25 50 STRENGTH, tsf ▲ Qu ✱ Qp 0 2.0 4.0	
	0					Topsoil (12"± Thick), Dark Brown Silty Clay, Very Moist	OL		31		
				1	5	Brown Silty Fine Sand, Very Moist	SM	3-4-8 N=12	9	×	
910						Brown Sandy Silt With Gravel, Very Moist to Wet		10-12-8 N=20			
	5			2	2						
								10-14-9 N=23	9	×	
905				3	6		ML	3-3-3 N=6			
	10			4	4						
						Gray Sandy Silt With Gravel, Wet		23-50/5"	6	×	
900				5	10		ML				
	15					End of Boring at 15'					
						Cave-In at 6'					

	Professional Service Industries, Inc. 821 Corporate Court, Suite 100 Waukesha, WI 53189 Telephone: (262) 521-2125		PROJECT NO.: 00522563 PROJECT: Holy Hill Rd Development LOCATION: N128 W20943 Holy Hill Rd Germantown, WI

The stratification lines represent approximate boundaries. The transition may be gradual.

DATE STARTED: 4/21/20		DRILL COMPANY: PSI, Inc.		BORING SB-316	
DATE COMPLETED: 4/21/20		DRILLER: RS LOGGED BY: AS			
COMPLETION DEPTH: 15.0 ft		DRILL RIG: CME 45 ATV - Rig #383		Water ▽ While Drilling ▼ Upon Completion ▽ Delay 3 feet 2 feet N/A	
BENCHMARK: N/A		DRILLING METHOD: Hollow Stem Auger			
ELEVATION: 915.7 ft		SAMPLING METHOD: 2-in SS			
LATITUDE:		HAMMER TYPE: Automatic		BORING LOCATION:	
LONGITUDE:		EFFICIENCY: N/A			
STATION: N/A OFFSET: N/A		REVIEWED BY: CR			
REMARKS:					



	Professional Service Industries, Inc.	PROJECT NO.: 00522563
	821 Corporate Court, Suite 100	PROJECT: Holy Hill Rd Development
	Waukesha, WI 53189	LOCATION: N128 W20943 Holy Hill Rd
	Telephone: (262) 521-2125	Germantown, WI

The stratification lines represent approximate boundaries. The transition may be gradual.

DATE STARTED: 4/21/20		DRILL COMPANY: PSI, Inc.		BORING SB-318											
DATE COMPLETED: 4/21/20		DRILLER: RS LOGGED BY: AS													
COMPLETION DEPTH: 16.0 ft		DRILL RIG: CME 45 ATV - Rig #383		<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td rowspan="3" style="width: 30px; text-align: center; vertical-align: middle;">Water</td> <td style="text-align: center;">▽</td> <td>While Drilling</td> <td style="text-align: right;">5.5 feet</td> </tr> <tr> <td style="text-align: center;">▼</td> <td>Upon Completion</td> <td style="text-align: right;">5 feet</td> </tr> <tr> <td style="text-align: center;">▽</td> <td>Delay</td> <td style="text-align: right;">N/A</td> </tr> </table>		Water	▽	While Drilling	5.5 feet	▼	Upon Completion	5 feet	▽	Delay	N/A
Water	▽	While Drilling	5.5 feet												
	▼	Upon Completion	5 feet												
	▽	Delay	N/A												
BENCHMARK: N/A		DRILLING METHOD: Hollow Stem Auger		BORING LOCATION:											
ELEVATION: 907.5 ft		SAMPLING METHOD: 2-in SS													
LATITUDE:		HAMMER TYPE: Automatic													
LONGITUDE:		EFFICIENCY: N/A													
STATION: N/A OFFSET: N/A		REVIEWED BY: CR													
REMARKS:															

Elevation (feet)	Depth (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS)	Moisture, %	STANDARD PENETRATION TEST DATA N in blows/ft @	Additional Remarks
										X Moisture PL LL 0 25 50 ▲ Qu * Qp 0 2.0 4.0	
	0			1	18	Topsoil (11"± Thick), Dark Brown Silty Clay, Very Moist	OL	2-3-4-3 N=7	22		
						Brown Silt, Moist	ML		21		
905				2	24	Brown Silty Sand and Gravel, Very Moist to Wet		4-4-8-8 N=12	8		
	5			3	18		SM	5-5-13-13 N=18	11		
900				4	5			16-21-13-11 N=34	9		
				5	12	Gray Sandy Silt with Gravel, Wet		5-6-22-26 N=28	10		
	10			6	24		ML	30-26-22-32 N=48	10		
895				7	18			11-21-30-36 N=51	8		>>④
	15			8	18			8-20-39-50/5" N=59	8		>>④
				9	0	End of Boring at 16' Due to Auger Refusal on Possible Cobbles, Boulders, or Bedrock		50/1"			>>④

	Professional Service Industries, Inc. 821 Corporate Court, Suite 100 Waukesha, WI 53189 Telephone: (262) 521-2125		PROJECT NO.: 00522563 PROJECT: Holy Hill Rd Development LOCATION: N128 W20943 Holy Hill Rd Germantown, WI

The stratification lines represent approximate boundaries. The transition may be gradual.

DATE STARTED: 4/22/20		DRILL COMPANY: PSI, Inc.		BORING SB-320	
DATE COMPLETED: 4/22/20		DRILLER: VJ LOGGED BY: DB			
COMPLETION DEPTH: 15.0 ft		DRILL RIG: Marooka D-50 ATV - Rig #395		Water ▽ While Drilling ▼ Upon Completion ▽ Delay 5.5 feet 8 feet N/A	
BENCHMARK: N/A		DRILLING METHOD: Hollow Stem Auger			
ELEVATION: 917.2 ft		SAMPLING METHOD: 2-in SS			
LATITUDE:		HAMMER TYPE: Automatic		BORING LOCATION:	
LONGITUDE:		EFFICIENCY: N/A			
STATION: N/A OFFSET: N/A		REVIEWED BY: CR			
REMARKS:					

Elevation (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS)	Moisture, %	STANDARD PENETRATION TEST DATA N in blows/ft @	Additional Remarks
										× Moisture ■ PL + LL ▲ Qu ✱ Qp 02550 02040	
	0					Topsoil (15"± Thick), Dark Brown Silty Clay, Very Moist	OL		26		
915				1	10	Brown Sandy Silt With Gravel, Very Moist to Wet		6-3-5 N=8	12		
	5			2	14			3-5-5 N=10	8		
910				3	8		ML	4-5-8 N=13	3		
	10			4	13			8-22-39 N=61	7		>>⊙
905											
	15			5	10			21-20-41 N=61	5		>>⊙
						End of Boring at 15'					
						Cave-In at 10'					

	Professional Service Industries, Inc.	PROJECT NO.: 00522563
	821 Corporate Court, Suite 100	PROJECT: Holy Hill Rd Development
	Waukesha, WI 53189	LOCATION: N128 W20943 Holy Hill Rd
	Telephone: (262) 521-2125	Germantown, WI

The stratification lines represent approximate boundaries. The transition may be gradual.

DATE STARTED: 4/20/20		DRILL COMPANY: PSI, Inc.		BORING SB-322	
DATE COMPLETED: 4/20/20		DRILLER: PR LOGGED BY: RS			
COMPLETION DEPTH: 15.0 ft		DRILL RIG: CME 45 ATV - Rig #383		Water ▽ While Drilling ▼ Upon Completion ▽ Delay 1 feet 4 feet N/A	
BENCHMARK: N/A		DRILLING METHOD: Hollow Stem Auger			
ELEVATION: 913.1 ft		SAMPLING METHOD: 2-in SS		BORING LOCATION:	
LATITUDE:		HAMMER TYPE: Automatic			
LONGITUDE:		EFFICIENCY: N/A			
STATION: N/A OFFSET: N/A		REVIEWED BY: CR			
REMARKS:					

Elevation (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS)	Moisture, %	STANDARD PENETRATION TEST DATA N in blows/ft @	Additional Remarks
										× Moisture ■ PL ⬛ LL 0 25 50 STRENGTH, tsf ▲ Qu ✱ Qp 0 2.0 4.0	
0	0					Topsoil (14"± Thick), Dark Brown Silty Clay, Very Moist	OL		28		
				1	3	Brown Sandy Silt With Gravel, Wet		19-9-9 N=18	6	×	⊙
910	5			2			ML	4-3-4 N=7		⊙	
				3	5			8-11-12 N=23		⊙	
905	10			4	8			5-12-13 N=25	7	×	⊙
						Gray Sandy Silt, Wet	ML				
900				5	9			12-20-48 N=68	7	×	>>⊙
15						End of Boring at 15'					
						Cave-In at 5'					

	Professional Service Industries, Inc. 821 Corporate Court, Suite 100 Waukesha, WI 53189 Telephone: (262) 521-2125		PROJECT NO.: 00522563 PROJECT: Holy Hill Rd Development LOCATION: N128 W20943 Holy Hill Rd Germantown, WI

DATE STARTED: 4/20/20		DRILL COMPANY: PSI, Inc.		BORING SB-324	
DATE COMPLETED: 4/20/20		DRILLER: VJ LOGGED BY: DB			
COMPLETION DEPTH: 15.0 ft		DRILL RIG: Marooka D-50 ATV - Rig #395		Water ▽ While Drilling ▼ Upon Completion ▽ Delay 5.5 feet 5 feet N/A	
BENCHMARK: N/A		DRILLING METHOD: Hollow Stem Auger			
ELEVATION: 914.8 ft		SAMPLING METHOD: 2-in SS			
LATITUDE:		HAMMER TYPE: Automatic		BORING LOCATION:	
LONGITUDE:		EFFICIENCY: N/A			
STATION: N/A OFFSET: N/A		REVIEWED BY: CR			
REMARKS:					

Elevation (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS)	Moisture, %	STANDARD PENETRATION TEST DATA N in blows/ft @	Additional Remarks
										× Moisture ■ PL ● LL 0 25 50 STRENGTH, tsf ▲ Qu * Qp 0 2.0 4.0	
	0					Topsoil (16"± Thick), Dark Brown Silty Clay, Very Moist	OL		29		
				1	10	Grayish Brown Lean Clay, Very Moist	CL	3-3-4 N=7	24		
						Brown Sandy Silt, Trace Gravel, Very Moist to Wet		3-4-4 N=8			
910	5			2	13		ML				
				3	10			3-3-3 N=6	17		
				4	14			3-3-5 N=8	9		
905	10					Gray Sandy Silt With Gravel, Wet	ML				
				5	12			5-7-14 N=21	9		
900	15					End of Boring at 15'					

	Professional Service Industries, Inc. 821 Corporate Court, Suite 100 Waukesha, WI 53189 Telephone: (262) 521-2125		PROJECT NO.: 00522563 PROJECT: Holy Hill Rd Development LOCATION: N128 W20943 Holy Hill Rd Germantown, WI

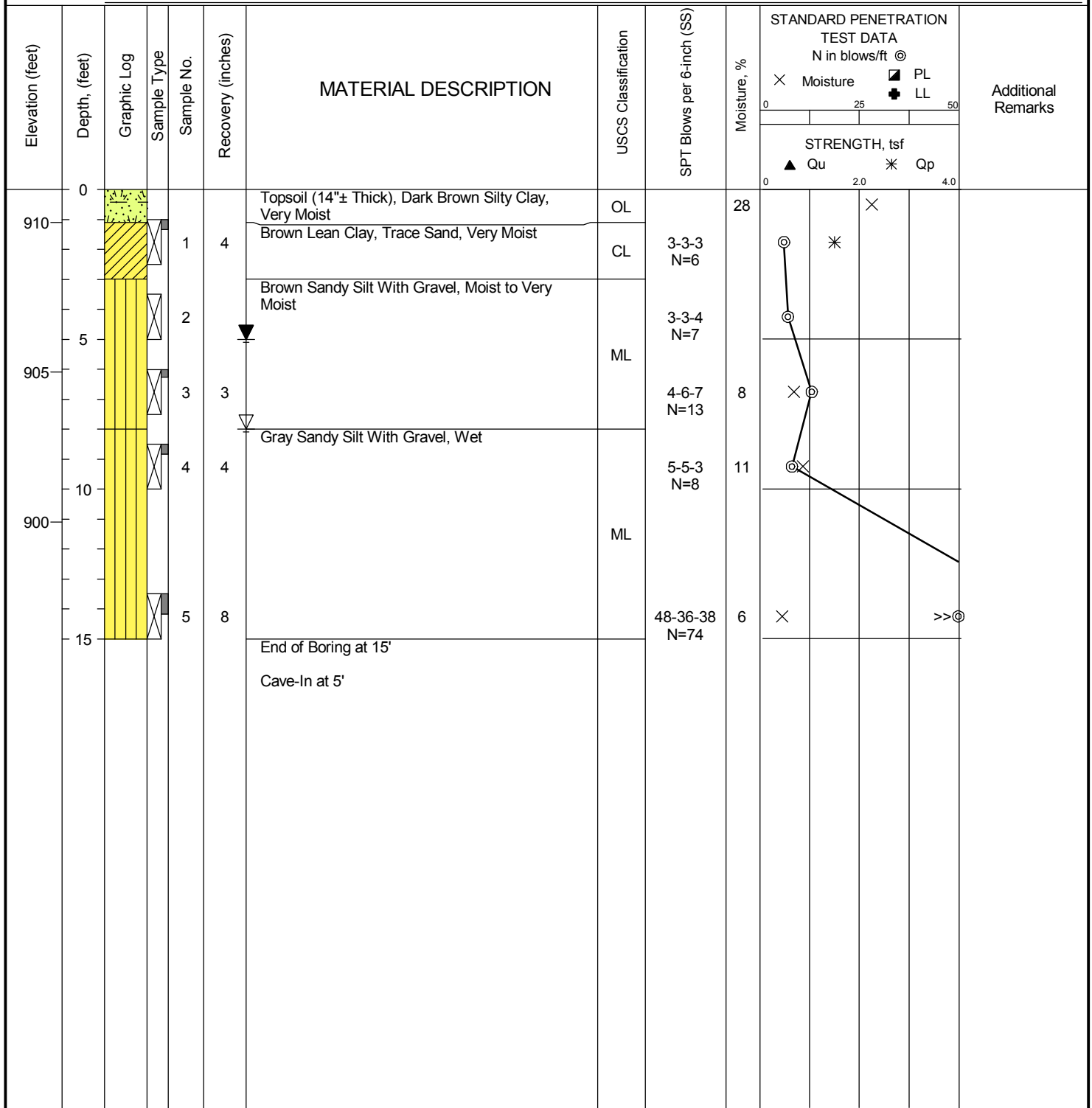
DATE STARTED: 4/22/20		DRILL COMPANY: PSI, Inc.		BORING SB-326	
DATE COMPLETED: 4/22/20		DRILLER: VJ LOGGED BY: DB			
COMPLETION DEPTH: 15.0 ft		DRILL RIG: Marooka D-50 ATV - Rig #395		Water ▽ While Drilling ▼ Upon Completion ▽ Delay 5.5 feet 5 feet N/A	
BENCHMARK: N/A		DRILLING METHOD: Hollow Stem Auger			
ELEVATION: 918.3 ft		SAMPLING METHOD: 2-in SS		BORING LOCATION:	
LATITUDE:		HAMMER TYPE: Automatic			
LONGITUDE:		EFFICIENCY: N/A			
STATION: N/A OFFSET: N/A		REVIEWED BY: CR			
REMARKS:					

Elevation (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS)	Moisture, %	STANDARD PENETRATION TEST DATA N in blows/ft @	Additional Remarks
										× Moisture ■ PL + LL ▲ Qu ✱ Qp	
0	0					Topsoil (2"± Thick), Brown Silt With Root Matter, Very Moist	OL		15		
				1	9	Brown Silt, Trace Sand, Very Moist	ML	3-3-6 N=9	13		
915	5			2	12	Brown Sandy Silt With Gravel, Very Moist to Wet		8-10-12 N=22	10		
				3	10		ML	4-3-4 N=7	10		
910	10			4	9			8-14-16 N=30	7		
						Gray Sandy Silt With Gravel, Wet	ML	12-18-24 N=42	7		
905	15			5	13	End of Boring at 15'					
						Cave-In at 8'					

	Professional Service Industries, Inc.	PROJECT NO.: 00522563
	821 Corporate Court, Suite 100	PROJECT: Holy Hill Rd Development
	Waukesha, WI 53189	LOCATION: N128 W20943 Holy Hill Rd
	Telephone: (262) 521-2125	Germantown, WI

The stratification lines represent approximate boundaries. The transition may be gradual.

DATE STARTED: 4/21/20		DRILL COMPANY: PSI, Inc.		BORING SB-328	
DATE COMPLETED: 4/21/20		DRILLER: RS LOGGED BY: AS			
COMPLETION DEPTH: 15.0 ft		DRILL RIG: CME 45 ATV - Rig #383		Water ▽ While Drilling ▼ Upon Completion ▽ Delay 8 feet 5 feet N/A	
BENCHMARK: N/A		DRILLING METHOD: Hollow Stem Auger			
ELEVATION: 911.1 ft		SAMPLING METHOD: 2-in SS		BORING LOCATION:	
LATITUDE:		HAMMER TYPE: Automatic			
LONGITUDE:		EFFICIENCY: N/A			
STATION: N/A OFFSET: N/A		REVIEWED BY: CR			
REMARKS:					



Water		While Drilling	Not Obsvd
		Upon Completion	Not Obsvd
		Delay	N/A

STANDARD PENETRATION
TEST DATA
N in blows/ft ©

✕ Moisture ☐ PL
 + LL

0 25 50

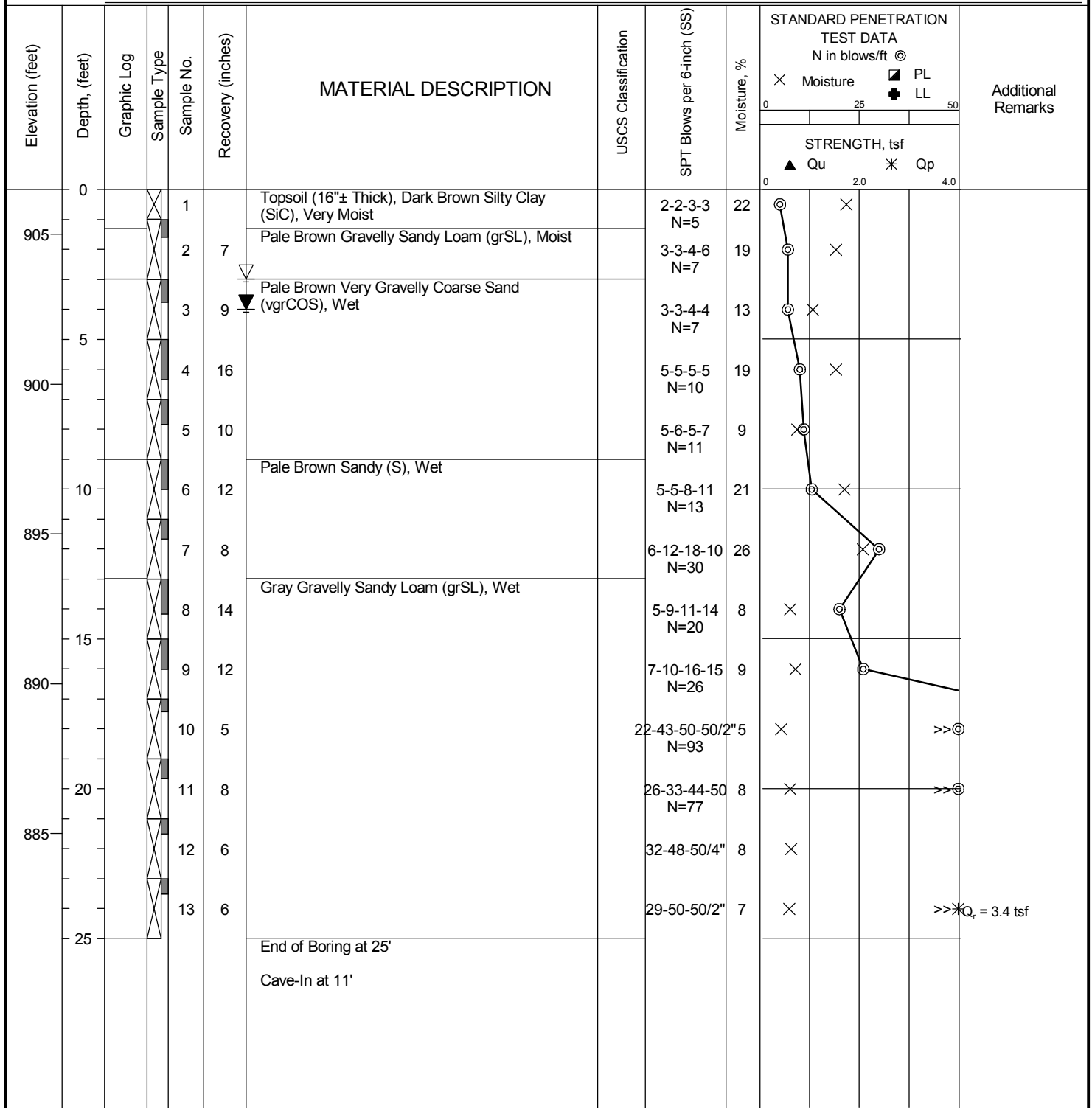
STRENGTH, tsf

▲ Qu ✱ Qp

0 2.0 4.0

PROJECT NO.: 00522563
PROJECT: Holy Hill Rd Development
LOCATION: N128 W20943 Holy Hill Rd
 Germantown, WI

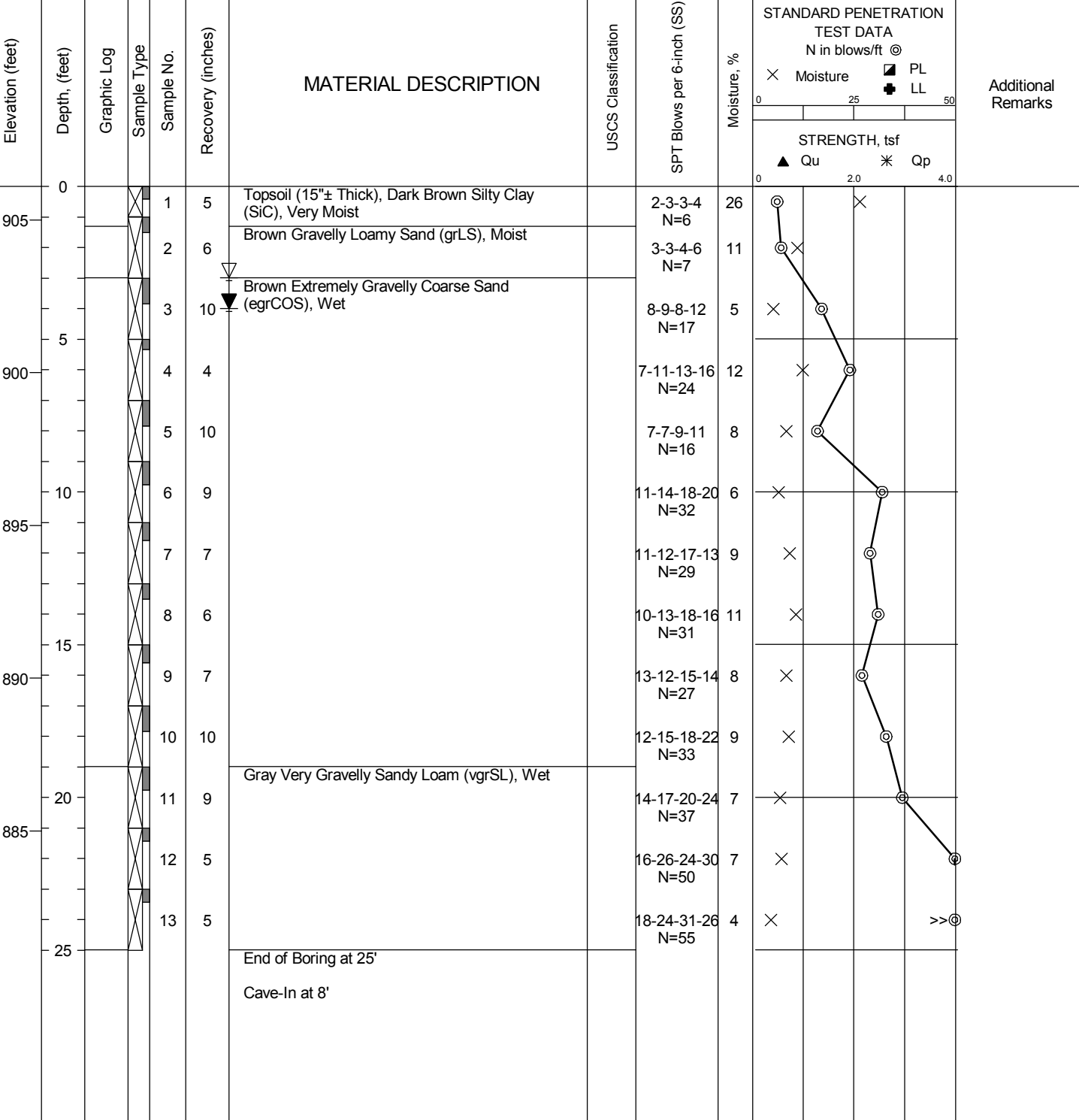
DATE STARTED: 4/20/20		DRILL COMPANY: PSI, Inc.		BORING SB-333	
DATE COMPLETED: 4/20/20		DRILLER: VJ LOGGED BY: DB			
COMPLETION DEPTH: 25.0 ft		DRILL RIG: Marooka D-50 ATV - Rig #395		Water ▽ While Drilling ▼ Upon Completion ▽ Delay 3 feet 4 feet N/A	
BENCHMARK: N/A		DRILLING METHOD: Hollow Stem Auger			
ELEVATION: 906.5 ft		SAMPLING METHOD: 2-in SS			
LATITUDE:		HAMMER TYPE: Automatic		BORING LOCATION:	
LONGITUDE:		EFFICIENCY: N/A			
STATION: N/A OFFSET: N/A		REVIEWED BY: CR			
REMARKS:					



	Professional Service Industries, Inc.	PROJECT NO.: 00522563
	821 Corporate Court, Suite 100	PROJECT: Holy Hill Rd Development
	Waukesha, WI 53189	LOCATION: N128 W20943 Holy Hill Rd
	Telephone: (262) 521-2125	Germantown, WI

The stratification lines represent approximate boundaries. The transition may be gradual.

DATE STARTED:	4/20/20	DRILL COMPANY:	PSI, Inc.
DATE COMPLETED:	4/20/20	DRILLER:	VJ LOGGED BY: DB
COMPLETION DEPTH	25.0 ft	DRILL RIG:	Marooka D-50 ATV - Rig #395
BENCHMARK:	N/A	DRILLING METHOD:	Hollow Stem Auger
ELEVATION:	906.1 ft	SAMPLING METHOD:	2-in SS
LATITUDE:		HAMMER TYPE:	Automatic
LONGITUDE:		EFFICIENCY	N/A
STATION:	N/A	REVIEWED BY:	CR
OFFSET:	N/A		
REMARKS:			





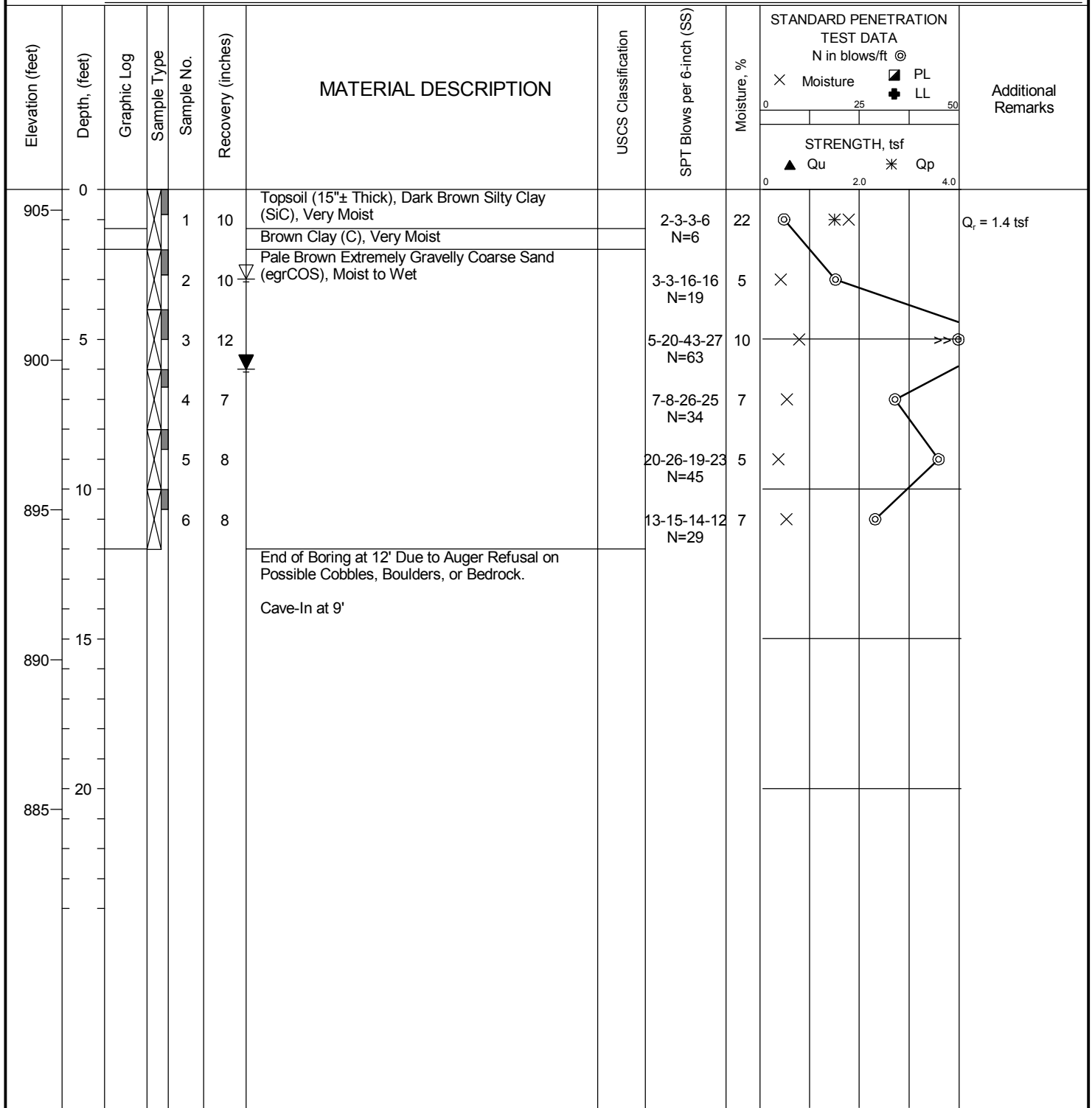
Professional Service Industries, Inc.
 821 Corporate Court, Suite 100
 Waukesha, WI 53189
 Telephone: (262) 521-2125

PROJECT NO.: 00522563

PROJECT: Holy Hill Rd Development

LOCATION: N128 W20943 Holy Hill Rd
 Germantown, WI

DATE STARTED: 4/22/20		DRILL COMPANY: PSI, Inc.		BORING SB-336	
DATE COMPLETED: 4/22/20		DRILLER: VJ LOGGED BY: DB			
COMPLETION DEPTH: 24.0 ft		DRILL RIG: CME 45 ATV - Rig #383		Water ▽ While Drilling ▼ Upon Completion ▽ Delay 3 feet 6 feet N/A	
BENCHMARK: N/A		DRILLING METHOD: Hollow Stem Auger			
ELEVATION: 905.7 ft		SAMPLING METHOD: 2-in SS		BORING LOCATION:	
LATITUDE:		HAMMER TYPE: Automatic			
LONGITUDE:		EFFICIENCY: N/A			
STATION: N/A OFFSET: N/A		REVIEWED BY: CR			
REMARKS:					



	Professional Service Industries, Inc.	PROJECT NO.: 00522563
	821 Corporate Court, Suite 100	PROJECT: Holy Hill Rd Development
	Waukesha, WI 53189	LOCATION: N128 W20943 Holy Hill Rd
	Telephone: (262) 521-2125	Germantown, WI

DATE STARTED: 4/21/20		DRILL COMPANY: PSI, Inc.		BORING SB-338	
DATE COMPLETED: 4/21/20		DRILLER: PR LOGGED BY: RS			
COMPLETION DEPTH: 15.0 ft		DRILL RIG: CME 45 ATV - Rig #383		Water ▽ While Drilling ▼ Upon Completion ▽ Delay 12 feet 6 feet N/A	
BENCHMARK: N/A		DRILLING METHOD: Hollow Stem Auger			
ELEVATION: 908.3 ft		SAMPLING METHOD: 2-in SS			
LATITUDE:		HAMMER TYPE: Automatic		BORING LOCATION:	
LONGITUDE:		EFFICIENCY: N/A			
STATION: N/A OFFSET: N/A		REVIEWED BY: CR			
REMARKS:					

Elevation (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS)	Moisture, %	STANDARD PENETRATION TEST DATA N in blows/ft @	Additional Remarks
										× Moisture ■ PL ● LL ▲ Qu ✱ Qp	
0	0					Topsoil (15"± Thick), Dark Brown Silty Clay, Very Moist	OL				
905	3			1	6	Brown Sand and Gravel, Wet (Possible Perched Water)	SW	3-3-3 N=6	12		
5	5			2				4-8-7 N=15			
900	8			3	4	▼ Gray Sandy Silt With Gravel, Moist to Wet		5-9-9 N=18	8		
10	10			4	6		ML	6-8-12 N=20			
895	13										
15	15			5	9			18-50/5"	9		
						End of Boring at 15'					
						Cave-In at 7'					

	Professional Service Industries, Inc.	PROJECT NO.: 00522563
	821 Corporate Court, Suite 100	PROJECT: Holy Hill Rd Development
	Waukesha, WI 53189	LOCATION: N128 W20943 Holy Hill Rd
	Telephone: (262) 521-2125	Germantown, WI

The stratification lines represent approximate boundaries. The transition may be gradual.

DATE STARTED: 4/20/20		DRILL COMPANY: PSI, Inc.		BORING SB-340	
DATE COMPLETED: 4/20/20		DRILLER: PR LOGGED BY: RS			
COMPLETION DEPTH: 15.0 ft		DRILL RIG: CME 45 ATV - Rig #383		Water ▽ While Drilling ▼ Upon Completion ▽ Delay 12 feet 5 feet N/A	
BENCHMARK: N/A		DRILLING METHOD: Hollow Stem Auger			
ELEVATION: 910.7 ft		SAMPLING METHOD: 2-in SS			
LATITUDE:		HAMMER TYPE: Automatic		BORING LOCATION:	
LONGITUDE:		EFFICIENCY: N/A			
STATION: N/A OFFSET: N/A		REVIEWED BY: CR			
REMARKS:					

Elevation (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS)	Moisture, %	STANDARD PENETRATION TEST DATA N in blows/ft @	Additional Remarks
										× Moisture ■ PL ● LL ▲ Qu ✱ Qp	
910	0					Topsoil (17"± Thick), Dark Brown Silty Clay, Very Moist	OL		30		
				1	8	Brown Sandy Silt With Gravel, Very Moist to Moist		3-3-3 N=6	19	×	
				2	8			3-3-4 N=7	14	×	
905	5			3	12		ML	3-3-5 N=8	8		
				4	10			6-6-10 N=16	9	×	
900	10					Gray Sandy Silt With Gravel, Wet	ML				
				5	7			18-50-50/2"	8	×	
15	15					End of Boring at 15'					
						Cave-In at 7'					

	Professional Service Industries, Inc. 821 Corporate Court, Suite 100 Waukesha, WI 53189 Telephone: (262) 521-2125		PROJECT NO.: 00522563 PROJECT: Holy Hill Rd Development LOCATION: N128 W20943 Holy Hill Rd Germantown, WI

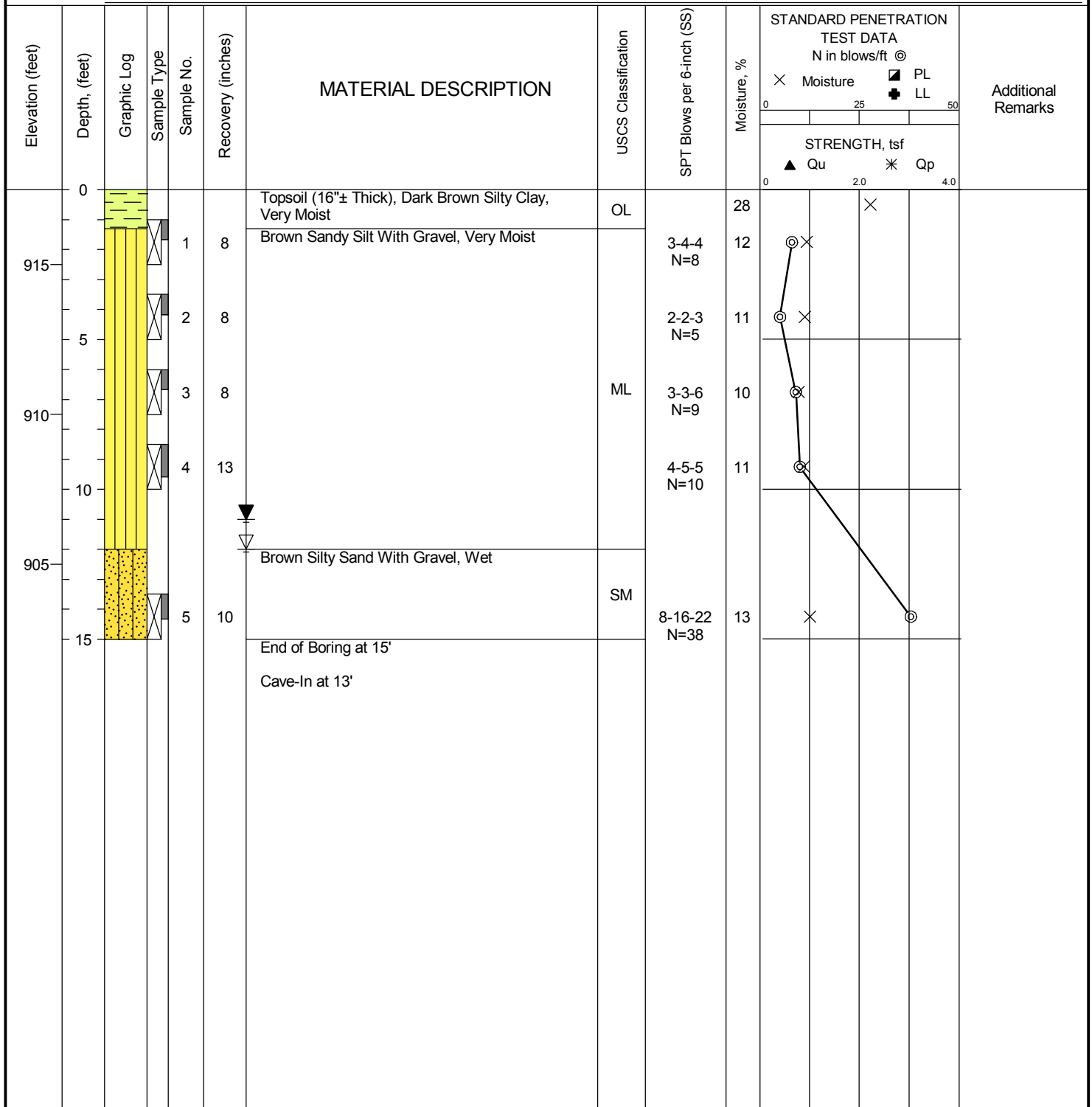
The stratification lines represent approximate boundaries. The transition may be gradual.

DATE STARTED: 4/20/20 DATE COMPLETED: 4/20/20 COMPLETION DEPTH: 15.0 ft BENCHMARK: N/A ELEVATION: 916.8 ft LATITUDE: LONGITUDE: STATION: N/A OFFSET: N/A REMARKS:	DRILL COMPANY: PSI, Inc. DRILLER: PR LOGGED BY: RS DRILL RIG: CME 45 ATV - Rig #383 DRILLING METHOD: Hollow Stem Auger SAMPLING METHOD: 2-in SS HAMMER TYPE: Automatic EFFICIENCY: N/A REVIEWED BY: CR	BORING SB-342 <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td rowspan="3" style="width:5%; text-align: center; font-weight: bold;">Water</td> <td style="width:10%; text-align: center;">▽</td> <td style="width:75%;">While Drilling</td> <td style="width:10%; text-align: right;">12 feet</td> </tr> <tr> <td style="text-align: center;">▼</td> <td>Upon Completion</td> <td style="text-align: right;">10 feet</td> </tr> <tr> <td style="text-align: center;">▽</td> <td>Delay</td> <td style="text-align: right;">N/A</td> </tr> </table> BORING LOCATION:	Water	▽	While Drilling	12 feet	▼	Upon Completion	10 feet	▽	Delay	N/A
Water	▽	While Drilling		12 feet								
	▼	Upon Completion		10 feet								
	▽	Delay	N/A									

Elevation (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS)	Moisture, %	STANDARD PENETRATION TEST DATA N in blows/ft @	Additional Remarks
										X Moisture PL LL STRENGTH, tsf ▲ Qu * Qp	
0						Topsoil (13"± Thick), Dark Brown Silty Clay, Very Moist	OL		20		
915				1	6	Brown Sandy Silt With Gravel, Very Moist to Wet		3-8-5 N=13	9		
	5			2	5			3-3-3 N=6	4		
910				3	3		ML	5-5-9 N=14			
	10			4	5			18-20-35 N=55	7		
905											
	15			5	5			27-29-40 N=69	12		
						End of Boring at 15'					
						Cave-In at 12'					

	Professional Service Industries, Inc. 821 Corporate Court, Suite 100 Waukesha, WI 53189 Telephone: (262) 521-2125	PROJECT NO.: 00522563 PROJECT: Holy Hill Rd Development LOCATION: N128 W20943 Holy Hill Rd Germantown, WI
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DATE STARTED: 4/20/20		DRILL COMPANY: PSI, Inc.		BORING SB-344
DATE COMPLETED: 4/20/20		DRILLER: VJ LOGGED BY: DB		
COMPLETION DEPTH: 15.0 ft		DRILL RIG: Marooka D-50 ATV - Rig #395		Water ▽ While Drilling ▼ Upon Completion ▽ Delay 12 feet 11 feet N/A
BENCHMARK: N/A		DRILLING METHOD: Hollow Stem Auger		
ELEVATION: 917.5 ft		SAMPLING METHOD: 2-in SS		
LATITUDE:		HAMMER TYPE: Automatic		BORING LOCATION:
LONGITUDE:		EFFICIENCY: N/A		
STATION: N/A OFFSET: N/A		REVIEWED BY: CR		
REMARKS:				



	Professional Service Industries, Inc.	PROJECT NO.: 00522563
	821 Corporate Court, Suite 100	PROJECT: Holy Hill Rd Development
	Waukesha, WI 53189	LOCATION: N128 W20943 Holy Hill Rd
	Telephone: (262) 521-2125	Germantown, WI

DATE STARTED: 4/22/20 DATE COMPLETED: 4/22/20 COMPLETION DEPTH: 15.0 ft BENCHMARK: N/A ELEVATION: 919.3 ft LATITUDE: LONGITUDE: STATION: N/A OFFSET: N/A REMARKS:	DRILL COMPANY: PSI, Inc. DRILLER: VJ LOGGED BY: DB DRILL RIG: Marooka D-50 ATV - Rig #395 DRILLING METHOD: Hollow Stem Auger SAMPLING METHOD: 2-in SS HAMMER TYPE: Automatic EFFICIENCY: N/A REVIEWED BY: CR	BORING SB-346 Water ☐ While Drilling ☒ Upon Completion ☐ Delay Not Obsvd Not Obsvd N/A BORING LOCATION:
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Elevation (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS)	Moisture, %	STANDARD PENETRATION TEST DATA N in blows/ft @	Additional Remarks
										X Moisture ☒ PL ☒ LL STRENGTH, tsf ▲ Qu * Qp	
	0			1	8	Topsoil (18"± Thick), Dark Brown Silty Clay, Very Moist	OL		22		
				2	12	Brown Sandy Silt With Gravel, Very Moist to Moist	ML	5-4-3 N=7	12		
915	5			3	10			3-4-6 N=10	11		
				4	16			3-4-4 N=8	7		
910	10			5	6			10-14-15 N=29	8		
905	15					End of Boring at 15'		23-29-32 N=61	1		
						Cave-In at 11'					

	Professional Service Industries, Inc. 821 Corporate Court, Suite 100 Waukesha, WI 53189 Telephone: (262) 521-2125	PROJECT NO.: 00522563 PROJECT: Holy Hill Rd Development LOCATION: N128 W20943 Holy Hill Rd Germantown, WI
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Attach complete site plan on paper not less than 8 ½ x 11 inches in size. Plan must include, but not be 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. 181987
Reviewed by _____ Date _____

Property Owner MLG/RMS LTD Partnership				Property Location N128 W20943 Holy Hill Rd			
Property Owner's Mailing Address 19000 W Bluemound Rd				Lot # 3	Block #	Subd. Name or CSM# CSM 6506	
City Brookfield	State WI	Zip Code 53045	Phone Number ()	☐ City	☒ Village	☐ Town	Nearest Road Holy Hill Rd

Drainage area _____ ☐ sq. ft. ☐ acres Optional: Test Site Suitable for (check all that apply) ☐ Irrigation ☐ Bioretention trench ☐ Trench(es) ☐ Rain garden ☐ Infiltration Pond ☐ Reuse ☐ infiltration trench ☐ Retention Pond ☐ Other _____	Hydraulic Application Test Method: ☒ Morphological Evaluation ☐ Double-Ring Infiltrometer ☐ Other (specify) _____	Soil Moisture Date of Soil Borings: USDA-NRCS WETS Value: ☐ Dry = 1 ☒ Normal = 2 ☐ Wet = 3
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1	Obs. #	☒ Boring SB-300 ☐ Pit	Ground surface elev. 907.1 ft.	Depth to limiting factor <u>96</u> in.	Table 2 Infiltration Rate Inches/Hr					
Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frag.**	% Fines** ¹	Inches/Hr
1	Topsoil (24"± Thick)									
2	24-96	10YR 6/3	-	grSL	1, f, cr	mvfr	-	15-35	15-55	0.50
3	96-144	10YR 6/1	-	C	1, vf, sbk	mvfi	-	0-15	55-100	0.07
4	144-222*	10YR 6/1	-	grSL	1, f, cr	mvfr	-	15-35	15-55	0.50

2	Obs. #	☒ Boring SB-302 ☐ Pit	Ground surface elev. <u>906.7</u> ft.	Depth to limiting factor <u>72</u> in.	Wet at 72 in. Table 2 Infiltration Rate Inches/Hr					
Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frag.**	% Fines** ¹	Inches/Hr
1	Topsoil (12"± Thick)									
2	12-48	10YR 4/3	-	C	1, vf, sbk	mvfi	-	0-15	55-100	0.07
3	48-192	10YR 6/3	-	grSL	1, f, cr	mvfr	-	15-35	15-55	0.50
4	192-300	10YR 6/1	-	vgrSL	1, f, cr	mvfr	-	35-60	15-55	0.50

3	Obs. #	☒ Boring SB-333 ☐ Pit	Ground surface elev. <u>906.5</u> ft.	Depth to limiting factor <u>36</u> in.	Wet at 36 in.
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Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frag.**	% Fines**,1	Table 2 Infiltration Rate Inches/Hr
1	Topsoil (16"± Thick)									
2	16-36	10YR 6/3	-	grSL	1, f, cr	mvfr	-	15-35	15-55	0.50
3	36-108	10YR 6/3	-	vgrCOS	0, c, gr	ml	-	35-60	0-15	3.60
4	108-156	10YR 6/3	-	S	0, f to m, gr	ml	-	0-15	0-15	3.60
5	156-300	10YR 6/1	-	grSL	1, f, cr	mvfr	-	15-35	15-55	0.50

4	Obs. #	☒ Boring SB-334 ☐ Pit	Ground surface elev. <u>906.1</u> ft.	Depth to limiting factor <u>36</u> in.	Wet at 36 in.
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Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frag.**	% Fines**,1	Table 2 Infiltration Rate Inches/Hr
1	Topsoil (15" ± Thick)									
2	15-36	10YR 5/3	-	grLS	0, f to m, gr	ml	-	15-35	10-30	1.63
3	36-228	10YR 5/3	-	egrCOS	0, c, gr	ml	-	60-90	0-15	3.60
4	228-300	10YR 6/1	-	vgrSL	1, f, cr	mvfr	-	35-60	15-55	0.50

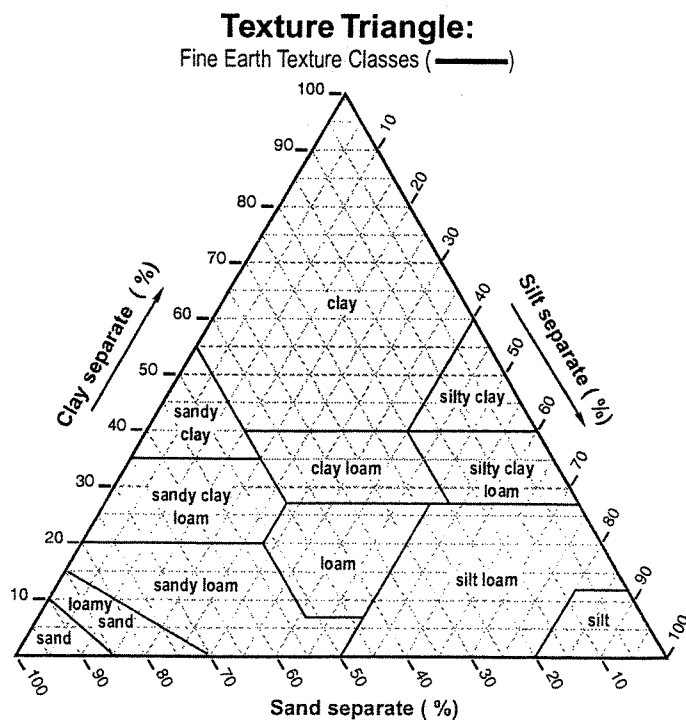
5	Obs. #	☒ Boring SB- 336 ☐ Pit	Ground surface elev. <u>905.7</u> ft.	Depth to limiting factor <u>36</u> in.	Wet at 36 in.
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Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frag.**	% Fines**,1	Table 2 Infiltration Rate Inches/Hr
1	Topsoil (15" ± Thick)									
2	15-24	10YR 4/3	-	C	1, vf, sbk	mvfi	-	0-15	55-100	0.07
3	24-144*	10YR 6/3	-	egrCOS	0, c, gr	ml	-	60-90	0-15	3.60

CST/PSS Name (Please Print)	Signature	WI-CST Number
Bradley J. Broback, P.E.		1411511
Address		Telephone Number
821 Corporate Court, Waukesha, Wisconsin 53189		262-521-2125

* Auger Refusal experienced on possible cobbles, boulders, or bedrock.
 **Estimated based upon the visual classification and not based upon laboratory testing.
¹ Based on only the fraction of soil that passes through the No. 10 sieve.

SBD-10793 (R.01/17)



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 or 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 .

(SOIL) TEXTURE

This is the numerical proportion (percent by weight) of sand, silt, and clay in a soil. Sand, silt, and clay content is estimated in the field by hand (or quantitatively measured in the office/lab by hydrometer or pipette) and then placed within the texture triangle to determine **Texture Class**. Estimate the **Texture Class**; e.g., *sandy loam*; or **Subclass**; e.g., *fine sandy loam* of the fine earth (≤ 2 mm) fraction, or choose a **Term in Lieu of Texture**; e.g., *gravel*. If appropriate, use a **Textural Class Modifier**; e.g., *gravelly silt loam*.

NOTE: Soil Texture encompasses only the fine earth fraction (≤ 2 mm). **Particle Size Distribution (PSD)** encompasses the whole soil, including both the fine earth fraction (≤ 2 mm; weight %) and rock fragments (> 2 mm; volume %).

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 - (adjectives)

ROCK FRAGMENTS: Size & Quantity ¹	Code		Criteria: Percent (By Volume) of Total Rock Fragments and Dominated By (name size): ¹
	Conv.	PDP/ NASIS	
ROCK FRAGMENTS (> 2 mm; ≥ Strongly Cemented)			
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
PARAROCK FRAGMENTS (> 2 mm; < Strongly Cemented) ^{2, 3}			
Parabouldery	PBY	PBY	(same criteria as bouldery)
Very Parabouldery	VPBY	PBYV	(same criteria as very bouldery)
Extr. Parabouldery	XPBY	PBYX	(same criteria as ext. bouldery)
etc.	etc.	etc.	(same criteria as non-para)

¹ The "Quantity" modifier (e.g., *very*) is based on the total rock fragment content. The "Size" modifier (e.g., *cobbly*) is independently based on the largest, dominant fragment size. For a mixture of sizes (e.g., *gravel and stones*), a smaller size-class is named only if its quantity (%) sufficiently exceeds that of a larger size-class. For field texture determination, a smaller size-class must exceed 2 times the quantity (vol. %) of a larger size class before it is named (e.g., 30% gravel and 14% stones = *very gravelly*, but 20% gravel and 14% stones = *stony*). For more explicit naming criteria see NSSH-Part 618, Exhibit 618.11(Soil Survey Staff, 2001b).

GENERAL NOTES

SAMPLE IDENTIFICATION

The Unified Soil Classification System (USCS), AASHTO 1988 and ASTM designations D2487 and D-2488 are used to identify the encountered materials unless otherwise noted. Coarse-grained soils are defined as having more than 50% of their dry weight retained on a #200 sieve (0.075mm); they are described as: boulders, cobbles, gravel or sand. Fine-grained soils have less than 50% of their dry weight retained on a #200 sieve; they are defined as silts or clay depending on their Atterberg Limit attributes. Major constituents may be added as modifiers and minor constituents may be added according to the relative proportions based on grain size.

DRILLING AND SAMPLING SYMBOLS

SFA: Solid Flight Auger - typically 4" diameter flights, except where noted.	☒ SS: Split-Spoon - 1 3/8" I.D., 2" O.D., except where noted.
HSA: Hollow Stem Auger - typically 3 1/4" or 4 1/4" I.D. openings, except where noted.	■ ST: Shelby Tube - 3" O.D., except where noted.
M.R.: Mud Rotary - Uses a rotary head with Bentonite or Polymer Slurry	▮ RC: Rock Core
R.C.: Diamond Bit Core Sampler	↓ TC: Texas Cone
H.A.: Hand Auger	☞ BS: Bulk Sample
P.A.: Power Auger - Handheld motorized auger	☒ PM: Pressuremeter
	CPT-U: Cone Penetrometer Testing with Pore-Pressure Readings

SOIL PROPERTY SYMBOLS

N: Standard "N" penetration: Blows per foot of a 140 pound hammer falling 30 inches on a 2-inch O.D. Split-Spoon.
N ₆₀ : A "N" penetration value corrected to an equivalent 60% hammer energy transfer efficiency (ETR)
Q _u : Unconfined compressive strength, TSF
Q _p : Pocket penetrometer value, unconfined compressive strength, TSF
w%: Moisture/water content, %
LL: Liquid Limit, %
PL: Plastic Limit, %
PI: Plasticity Index = (LL-PL), %
DD: Dry unit weight, pcf
▼, ▼, ▼ Apparent groundwater level at time noted

RELATIVE DENSITY OF COARSE-GRAINED SOILS

Relative Density	N - Blows/foot
Very Loose	0 - 4
Loose	4 - 10
Medium Dense	10 - 30
Dense	30 - 50
Very Dense	50 - 80
Extremely Dense	80+

ANGULARITY OF COARSE-GRAINED PARTICLES

Description	Criteria
Angular:	Particles have sharp edges and relatively plane sides with unpolished surfaces
Subangular:	Particles are similar to angular description, but have rounded edges
Subrounded:	Particles have nearly plane sides, but have well-rounded corners and edges
Rounded:	Particles have smoothly curved sides and no edges

GRAIN-SIZE TERMINOLOGY

Component	Size Range
Boulders:	Over 300 mm (>12 in.)
Cobbles:	75 mm to 300 mm (3 in. to 12 in.)
Coarse-Grained Gravel:	19 mm to 75 mm (3/4 in. to 3 in.)
Fine-Grained Gravel:	4.75 mm to 19 mm (No.4 to 3/4 in.)
Coarse-Grained Sand:	2 mm to 4.75 mm (No.10 to No.4)
Medium-Grained Sand:	0.42 mm to 2 mm (No.40 to No.10)
Fine-Grained Sand:	0.075 mm to 0.42 mm (No. 200 to No.40)
Silt:	0.005 mm to 0.075 mm
Clay:	<0.005 mm

PARTICLE SHAPE

Description	Criteria
Flat:	Particles with width/thickness ratio > 3
Elongated:	Particles with length/width ratio > 3
Flat & Elongated:	Particles meet criteria for both flat and elongated

RELATIVE PROPORTIONS OF FINES

Descriptive Term	% Dry Weight
Trace:	< 5%
With:	5% to 12%
Modifier:	>12%

GENERAL NOTES

(Continued)

CONSISTENCY OF FINE-GRAINED SOILS

<u>Q_u - TSF</u>	<u>N - Blows/foot</u>	<u>Consistency</u>
0 - 0.25	0 - 2	Very Soft
0.25 - 0.50	2 - 4	Soft
0.50 - 1.00	4 - 8	Firm (Medium Stiff)
1.00 - 2.00	8 - 15	Stiff
2.00 - 4.00	15 - 30	Very Stiff
4.00 - 8.00	30 - 50	Hard
8.00+	50+	Very Hard

MOISTURE CONDITION DESCRIPTION

<u>Description</u>	<u>Criteria</u>
Dry:	Absence of moisture, dusty, dry to the touch
Moist:	Damp but no visible water
Wet:	Visible free water, usually soil is below water table

RELATIVE PROPORTIONS OF SAND AND GRAVEL

<u>Descriptive Term</u>	<u>% Dry Weight</u>
Trace:	< 15%
With:	15% to 30%
Modifier:	>30%

STRUCTURE DESCRIPTION

<u>Description</u>	<u>Criteria</u>	<u>Description</u>	<u>Criteria</u>
Stratified:	Alternating layers of varying material or color with layers at least ¼-inch (6 mm) thick	Blocky:	Cohesive soil that can be broken down into small angular lumps which resist further breakdown
Laminated:	Alternating layers of varying material or color with layers less than ¼-inch (6 mm) thick	Lensed:	Inclusion of small pockets of different soils
Fissured:	Breaks along definite planes of fracture with little resistance to fracturing	Layer:	Inclusion greater than 3 inches thick (75 mm)
Slickensided:	Fracture planes appear polished or glossy, sometimes striated	Seam:	Inclusion 1/8-inch to 3 inches (3 to 75 mm) thick extending through the sample
		Parting:	Inclusion less than 1/8-inch (3 mm) thick

SCALE OF RELATIVE ROCK HARDNESS

<u>Q_u - TSF</u>	<u>Consistency</u>
2.5 - 10	Extremely Soft
10 - 50	Very Soft
50 - 250	Soft
250 - 525	Medium Hard
525 - 1,050	Moderately Hard
1,050 - 2,600	Hard
>2,600	Very Hard

ROCK BEDDING THICKNESSES

<u>Description</u>	<u>Criteria</u>
Very Thick Bedded	Greater than 3-foot (>1.0 m)
Thick Bedded	1-foot to 3-foot (0.3 m to 1.0 m)
Medium Bedded	4-inch to 1-foot (0.1 m to 0.3 m)
Thin Bedded	1¼-inch to 4-inch (30 mm to 100 mm)
Very Thin Bedded	½-inch to 1¼-inch (10 mm to 30 mm)
Thickly Laminated	1/8-inch to ½-inch (3 mm to 10 mm)
Thinly Laminated	1/8-inch or less "paper thin" (<3 mm)

ROCK VOIDS

<u>Voids</u>	<u>Void Diameter</u>
Pit	<6 mm (<0.25 in)
Vug	6 mm to 50 mm (0.25 in to 2 in)
Cavity	50 mm to 600 mm (2 in to 24 in)
Cave	>600 mm (>24 in)

GRAIN-SIZED TERMINOLOGY

<u>(Typically Sedimentary Rock)</u>	
<u>Component</u>	<u>Size Range</u>
Very Coarse Grained	>4.76 mm
Coarse Grained	2.0 mm - 4.76 mm
Medium Grained	0.42 mm - 2.0 mm
Fine Grained	0.075 mm - 0.42 mm
Very Fine Grained	<0.075 mm

ROCK QUALITY DESCRIPTION

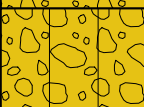
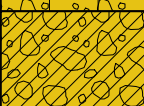
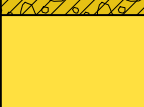
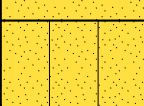
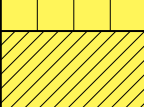
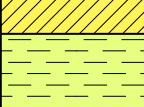
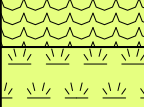
<u>Rock Mass Description</u>	<u>RQD Value</u>
Excellent	90 - 100
Good	75 - 90
Fair	50 - 75
Poor	25 - 50
Very Poor	Less than 25

DEGREE OF WEATHERING

Slightly Weathered:	Rock generally fresh, joints stained and discoloration extends into rock up to 25 mm (1 in), open joints may contain clay, core rings under hammer impact.
Weathered:	Rock mass is decomposed 50% or less, significant portions of the rock show discoloration and weathering effects, cores cannot be broken by hand or scraped by knife.
Highly Weathered:	Rock mass is more than 50% decomposed, complete discoloration of rock fabric, core may be extremely broken and gives clunk sound when struck by hammer, may be shaved with a knife.

SOIL CLASSIFICATION CHART

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

MAJOR DIVISIONS			SYMBOLS		TYPICAL DESCRIPTIONS
			GRAPH	LETTER	
COARSE GRAINED SOILS MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
				GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	CLEAN SANDS (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
				SP	POORLY-GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND - SILT MIXTURES
				SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS LIQUID LIMIT LESS THAN 50			ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS LIQUID LIMIT GREATER THAN 50			MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS



Assured Wetland Delineation Report

Holy Hill Road Property

Village of Germantown, Washington County, Wisconsin

August 6, 2021

Project Number: 20210497

Holy Hill Road Property

Village of Germantown, Washington County, Wisconsin

August 6, 2021

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1.0 Introduction

Heartland Ecological Group, Inc. (“Heartland”) completed an assured wetland determination and delineation on the Holy Hill Road property on May 18, 2021 at the request of Pinnacle Engineering Group. Fieldwork was completed by Eric C. Parker, SPWS, an assured delineator qualified via the Wisconsin Department of Natural Resources’ (WDNR’s) Wetland Delineation Assurance Program (Appendix E, Qualifications). The 52.67-acre site (the “Study Area”) is southeast of the intersection of State Trunk Highway (STH) 167 (Holy Hill Road) and U.S. Interstate Highway 41/45 (I-41), in the northeast ¼ of Section 18, 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, waterways, and water bodies within the Study Area.

Four (4) wetland areas totaling approximately 1.25 acres were delineated and mapped within the Study Area (Figure 6, Appendix A). Two (2) historically excavated ponds were also identified within and adjacent to the Study Area. Wetlands, waterways, and water bodies 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 Wisconsin Department of Natural Resources' *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) National Agriculture Imagery Program (NAIP). 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.

In actively farmed areas within the Study Area where hydric soils may be present, methods described in Chapter 5 (Difficult Wetland Situations) of the Regional Supplement were followed. Available aerial imagery was analyzed using procedures described in the *Guidance for Offsite Hydrology/Wetland Determinations* (USACE and Minnesota Board of Water and Soil Resources, July 2016 – "July 2016 Guidance"). An off-site aerial imagery analysis (Off-Site Analysis) was completed to document the presence or absence of wetland signatures and assist in the wetland determination. A wetland signature is evidence, recorded by aerial imagery, of ponding, flooding, or impacts of saturation for sufficient duration to meet wetland hydrology and possibly wetland vegetation criteria. 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 each year 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 years consistently 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 years, the years 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 in a “normal” precipitation year, and if signatures were visible in at least 50 percent of the years (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 NRCS, 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 on line and the long-term conditions at the time of the fieldwork were in the mid-range. Fieldwork was completed prior to the onset of 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 rolling, with various hills, depressions, and slopes and a topographic high of approximately 924 feet above mean sea level (msl) in the farmstead area near the northeast corner of the Study Area, and a topographic low of approximately 905 feet above msl along the southern and western Study Area boundaries (Figures 2 and 6, Appendix A). Land uses within the Study Area and surrounding areas are primarily agricultural row cropping with residential, pasture, and woodland areas also present. General drainage in the western portion of the Study Area is to the west and north, while the rest of the Study Area drainage is to the south.

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).

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
KIA: Kendall silt loam, 1-3% slopes	Kendall	90	Drainageways	No
	Pella	10	Depressions	Yes
MoB: Mayville silt loam, 2-6% slopes	Mayville	80-95	Drumlins	No



Soil symbol: Soil Unit Name	Soil Unit Component	Soil Unit Component Percentage	Landform	Hydric status
	Dodge	5-17	Drumlins	No
	Lamartine	0-3	Drumlins	No
Mzb: Montgomery silty clay loam	Montgomery	95	Depressions	Yes
	Martinton	5	Drainageways	No
Ph: Pella silt loam, 0-2% slopes	Pella	80-91	Drainageways	Yes
	Kendall	5-9	Drainageways	No
	Lamartine	4-8	Drainageways	No
	Palms-Muck	1-3	Depressions	Yes
ThB: Theresa silt loam, 2-6% slopes	Theresa	80-92	Drumlins	No
	Hochheim	5-14	Drumlins	No
	Lamartine	3-6	Drumlins	No

Wetland Mapping

The Wisconsin Wetlands Inventory (WWI) mapping (Figure 5, Appendix A) depicts four (4) wetland areas within the Study Area along the southern and western boundaries. All of these areas are contiguous with each other outside the Study Area. Three (3) emergent/wet meadow wetlands (E2K & T3/E1K) are mapped along the western Study Area boundary, and one scrub/shrub, emergent/wet meadow (S3/E1K) is mapped along the Study Area boundaries in the southeast corner.

Previous Wetland Delineations and Landowner Contacts

A wetland delineation was previously conducted in 1997 by SEWERPC (Appendix G). The mapping is similar to Heartland's 2021 findings.

Aerial Photography

An off-site analysis was completed in this investigation and image interpretations are described in the next section.

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). From the



aerial imagery, the primary wetland hydrology indicator of “Inundation Visible on Aerial Imagery” (B7) was noted in a depression in the southeast portion of the Study Area. In that same location and in one (1) additional low area south of it, the secondary wetland hydrology indicators “Saturation Visible on Aerial Imagery” (C9) and “Stunted or Stressed Plants” (D1) were noted.

A total of 21 aerial images were selected and reviewed based on availability and quality of the imagery. Of these images, 13 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 consistently noted in normal precipitation years in both areas. In the wet precipitation years, such wetland signatures were noted in five (5) of the six (6) years. In dry precipitation years, there were wetland signatures noted at the northern location in one (1) of the two (2) years.

Based on the off-site analysis, two (2) areas were likely to be wetland prior to the fieldwork. One (1) of these areas appeared to be an isolated depression, while the other was located on gradually sloping ground toward the property off-site to the south. There were no drain tile signatures noted in the off-site analysis.

3.2 Field Review

Four (4) wetlands were identified and delineated within the Study Area. Wetland determination data sheets (Appendix C) were completed at 11 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/ Shallow Marsh/ Hardwood Swamp	Contiguous to unnamed intermittent waterway; drainage to Little Cedar Creek	Less susceptible, 10-30 feet	0.57
W-2	Wet Meadow/ Shallow Marsh	Contiguous to unnamed intermittent waterway; drainage to Goldendale Creek	Less susceptible, 10-30 feet	0.03
W-3	Hardwood Swamp/ Shrub- carr	Contiguous to unnamed intermittent waterway; drainage to Goldendale Creek	Moderately susceptible, 50 feet	0.21
W-4	Farmed Wet Meadow/ Shallow Marsh	Adjacent to an Excavated Pond; Potentially isolated	Less susceptible, 10-30 feet	0.45
<i>*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.</i>				1.25

Wetland 1 (W-1)

Wetland 1 (W-1) is a 0.57-acre complex of wet meadow, shallow marsh, and hardwood swamp. A significant portion of the wetland appears to occur outside the Study Area to the west. W-1 appeared to be contiguous with a ditched waterway that conveys water to the north into a tributary system of Little Cedar Creek. Pond 1 (Figure 6, Appendix A) was mapped just outside the northwest corner of the Study Area that is also contiguous with the same tributary system.

Dominant vegetation observed in W-1 included white willow (*Salix alba*, FACW), reed canary grass (*Phalaris arundinacea*, FACW), purplestem aster (*Symphyotrichum puniceum*, OBL), and jewelweed (*Impatiens capensis*, FACW).

Depleted Below Dark Surface (A11), Thick Dark Surface (A12), Depleted Matrix (F3) and Redox Dark Surface (F6) hydric soil indicators were noted at the sample points completed in W-1, which is reasonably consistent with the mapped Pella silt loam soil type.

The primary wetland hydrology indicators of High Water Table (A2) and Saturation (A3) were noted within W-1, while secondary indicators included Geomorphic Position (D2) and a positive FAC-Neutral Test (D5). Therefore the wetland hydrology parameter was met.



Wetland W-1 appears to be contiguous with an unnamed intermittent waterway, which lies outside the Study Area to the south that is tributary to Little Cedar Creek. The boundary of W-1 generally followed a moderately-defined topographic break.

Wetland 2 (W-2)

Wetland 2 (W-2) is a large wet meadow and shallow marsh that lies mostly outside the Study Area to the south. The portion within the Study area is approximately 0.03 acres. An excavated pond lies within W-2, however well outside the Study Area.

Dominant vegetation observed at the sample point completed in W-2 within the Study Area included sandbar willow (*Salix interior*, FACW), and reed canary grass. Narrow-leaved cattail (*Typha angustifolia*, OBL) was also observed to be dominating W-2 outside the Study Area to the south.

A Depleted Matrix (F3) hydric soil indicator was met at the sample point completed in W-2, which is reasonably consistent with the mapped Pella silt loam soil type.

The primary wetland hydrology indicator of Saturation (A3) was noted within W-2, while secondary indicators included Geomorphic Position (D2) and a positive FAC-Neutral Test (D5). Therefore the wetland hydrology parameter was met.

Wetland W-2 appears to be potentially contiguous with an unnamed intermittent waterway, which lies outside the Study Area to the south and is a tributary to Goldendale Creek. The boundary of W-2 generally followed a moderately-defined topographic break.

Wetland 3 (W-3)

Wetland 3 (W-3) is contiguous with W-2 outside the Study Area and is a complex of hardwood swamp and shrub-carr within and proximate to the Study Area. A significant portion of the wetland appears to occur outside the Study Area boundary.

Dominant vegetation observed in W-3 included peachleaf willow (*Salix amygdaloides*, FACW), eastern cottonwood (*Populus deltoides*, FAC), common buckthorn (*Rhamnus cathartica*, FAC), Bebb's willow (*Salix bebbiana*, FACW), red-osier dogwood (*Cornus alba*, FACW), reed canary grass, and enchanter's nightshade (*Circaea canadensis*, FACU).

The Depleted Matrix (F3) hydric soil indicator was noted in W-3, which is reasonably consistent with the mapped Pella silt loam soil type.



The primary wetland hydrology indicators of High Water Table (A2) and Saturation (A3), were noted within W-3, while secondary indicators included Geomorphic Position (D2) and a positive FAC-Neutral Test (D5). Therefore the wetland hydrology parameter was met.

Wetland W-3 appears to be contiguous with an unnamed intermittent waterway, which lies outside the Study Area to the south and is a tributary to Goldendale Creek. The boundary of W-3 generally followed a moderately-defined topographic break.

Wetland 4 (W-4)

Wetland W-4 is a depressional farmed wetland that appears to be isolated from other wetlands and waterways within the Study Area. This wetland is typically plowed and planted regularly and has a partial success rate of row-cropping over a period of 27 years that comprises the imagery reviewed in the off-site analysis. Normal circumstances were not present within W-4 and vegetation was significantly disturbed due to agricultural activities.

Vegetation within W-4 was very sparse due to disturbance from agricultural activities. Foxtail barley (*Hordeum jubatum*, FAC) and prairie speedwell (*Veronica peregrina*, FAC) were noted within the herbaceous stratum. An area outside the agricultural field approximately 30 feet east of sample point P9 at approximately the same elevation was observed to be dominated by reed canary grass and sandbar willow.

The Redox Dark Surface (F6) hydric soil indicator was noted in W-4 and is consistent with the mapped Pella silt loam hydric soil type.

The primary wetland hydrology indicator of Inundation Visible on Aerial Imagery (B7) was noted within W-4 per the OSA. The secondary indicator of Saturation Visible on Aerial Imagery (C9) was also noted per the OSA. In addition, the secondary indicators of Geomorphic Position (D2) and a positive FAC-Neutral Test (D5) were noted at sample point P9. Therefore the wetland hydrology parameter was met in W-4.

The boundary of W-4 was determined primarily from the off-site analysis and located in the field. The boundary correlated mostly with a poor to moderately-defined topographic break that correlated with the extent of wetland signatures observed on the desktop review.



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 Holy Hill Road site on May 18, 2021 at the request of Pinnacle Engineering Group. Fieldwork was completed by Eric C. Parker, SPWS, an assured delineator qualified via the WDNR's Assurance Program. The Study Area lies in Section 18, T9N, R20E, Village of Germantown, Washington County, WI.

Four (4) wetland areas were delineated and mapped within the 52.67-acre Study Area. The wetlands, which may be classified as wet meadow, shrub carr, hardwood swamp, and farmed wet meadow total approximately 1.25 acres within the Study Area. Two (2) ponds were also observed within and adjacent to the Study Area. The approximate ordinary high water mark of the ponds was identified and mapped using GPS (Figure 6, Appendix A)

Wetlands, waterways, and water bodies 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 needed for determination of 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.



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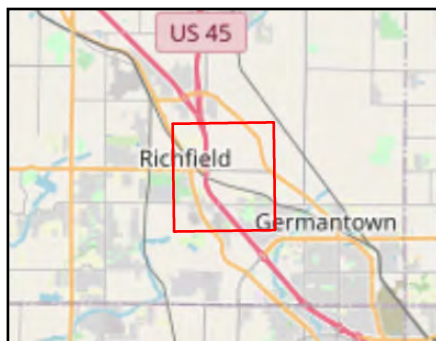
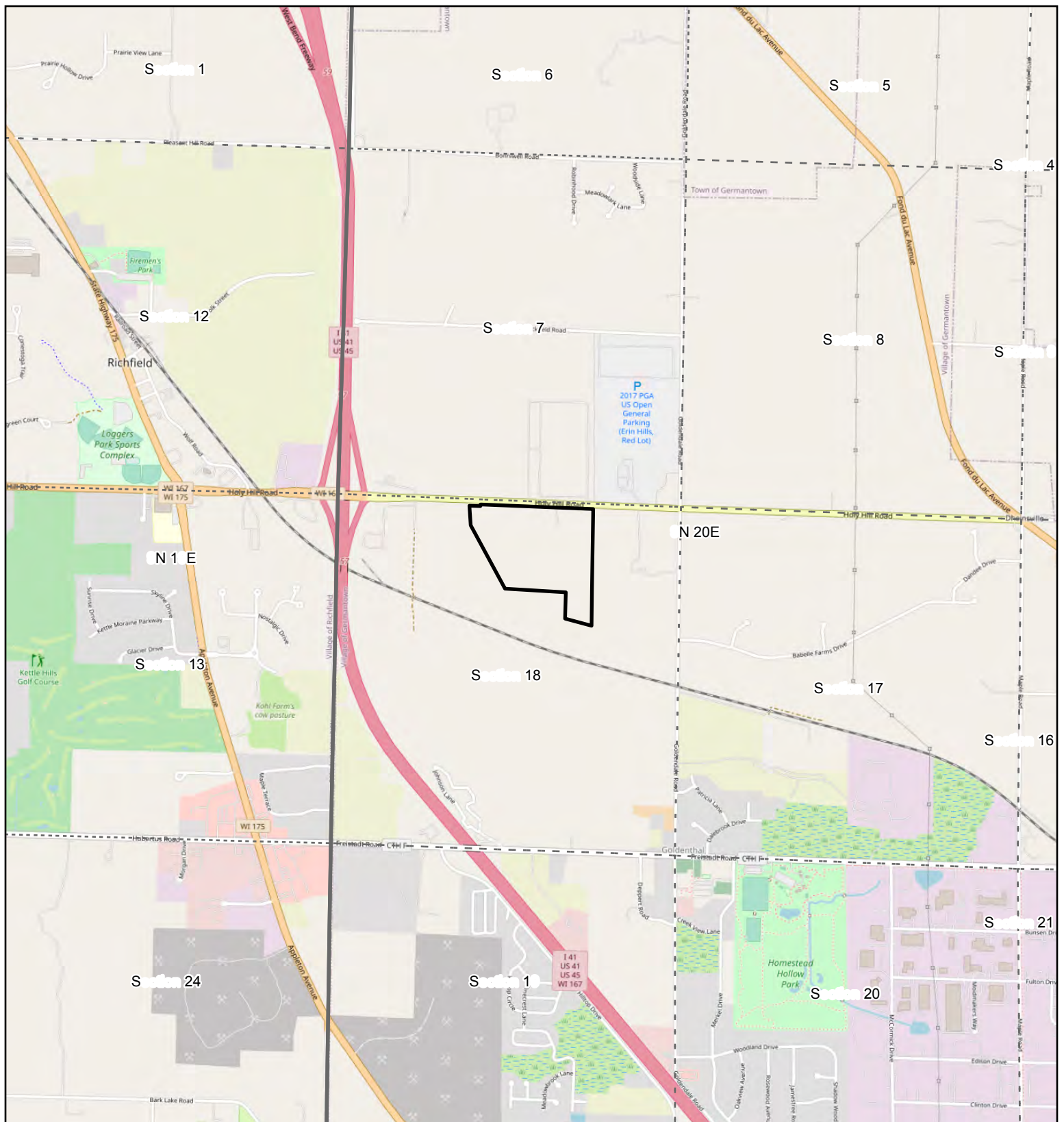
<https://www.arcgis.com/home/item.html?id=16119ac2100c4286ab8219bf03377ebf>.

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Pinnacle Engineering Group
Holy Hill Road Property
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Appendix A | Figures



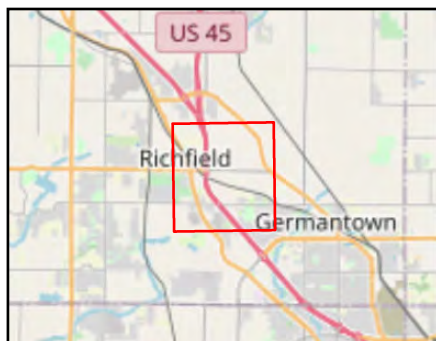
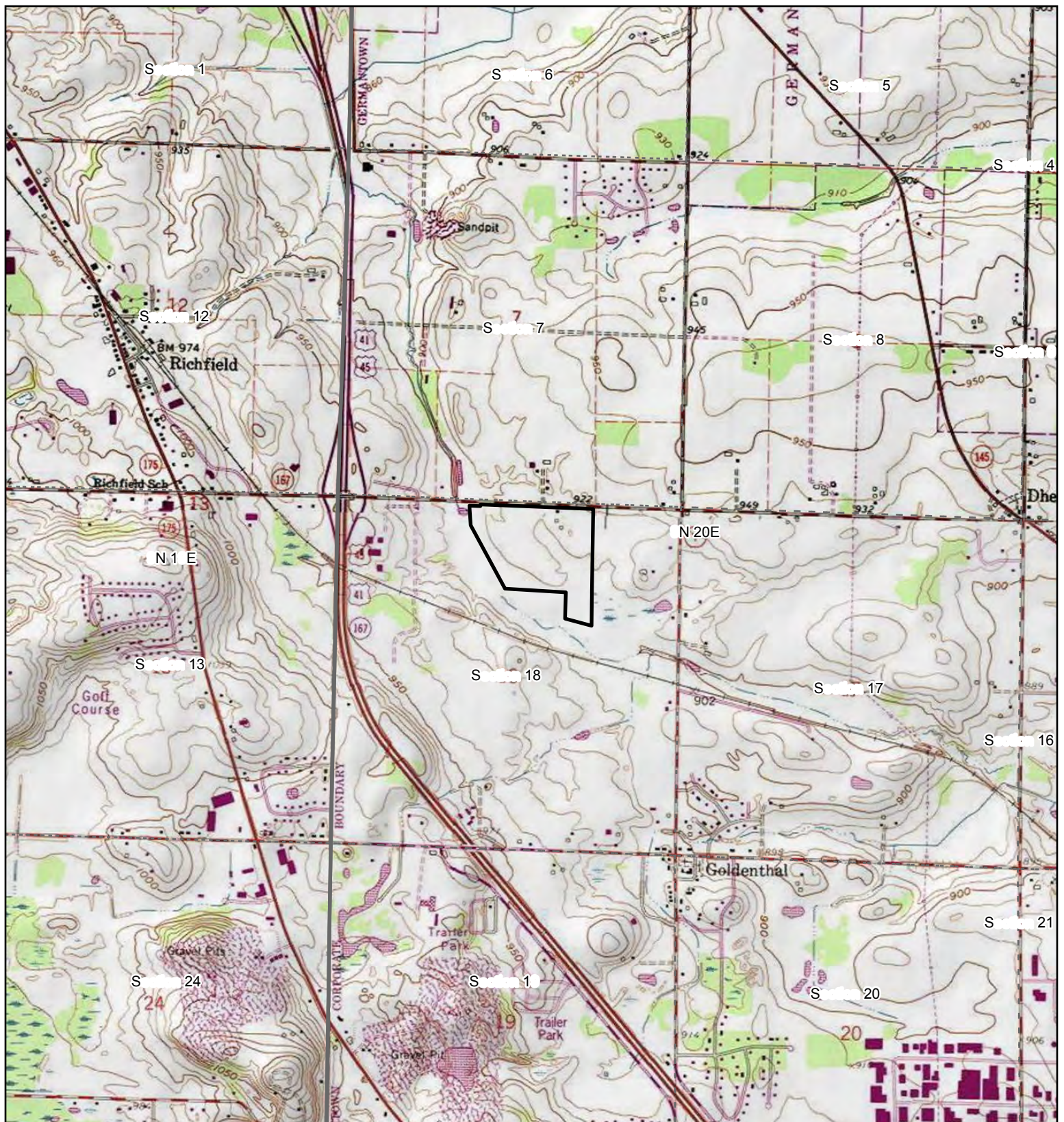
- Study Area (52.67 ac)
- Township
- Section

0 1 000 2 000
F

Heartland
ECOLOGICAL GROUP INC

Figure 1. Project Location
Holy Hill Road
Project #20210497
T9N, R20E, S18
V Germantown,
Washington Co

OpenStreetMap
ESRI



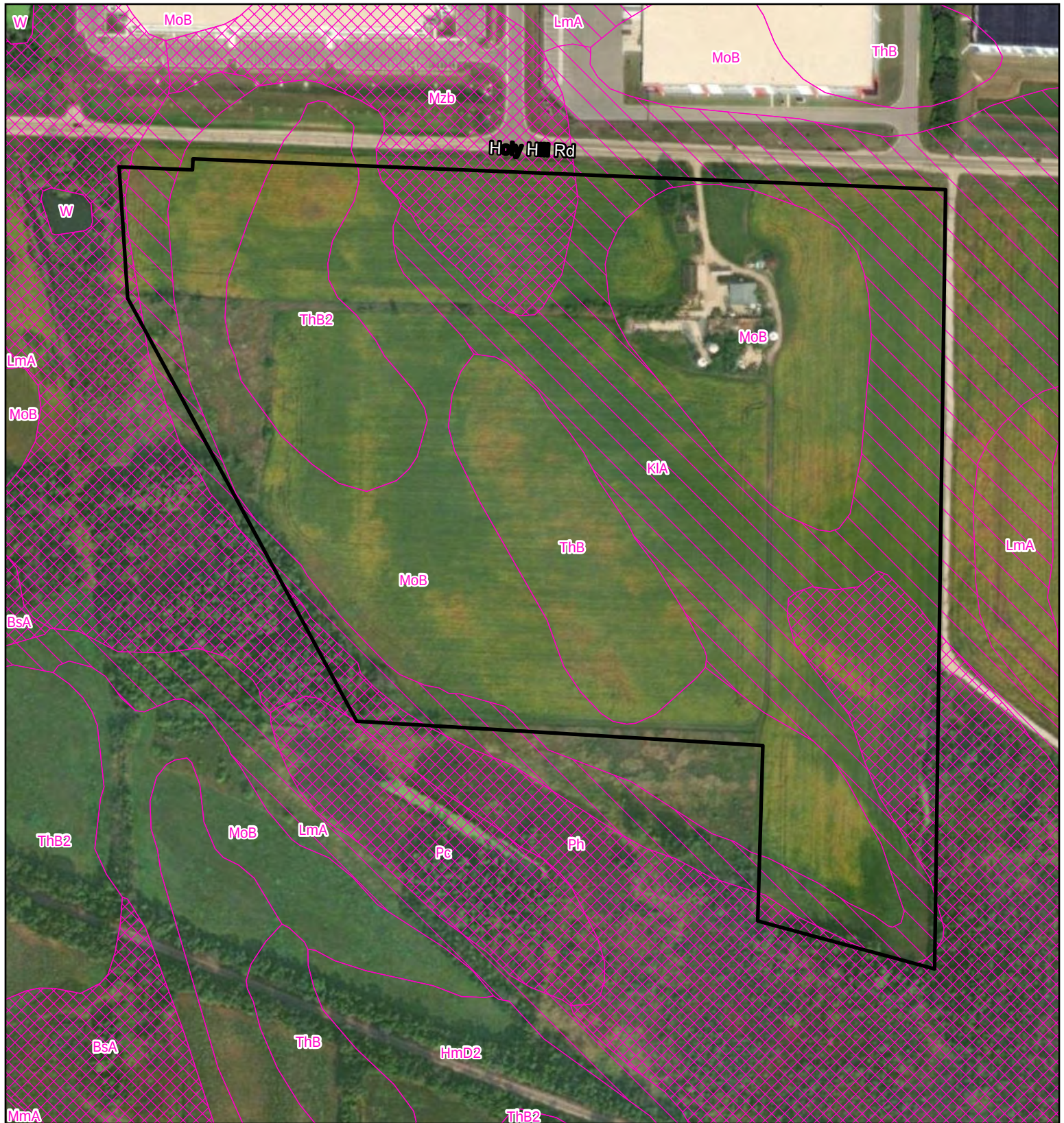
- Study Area (52.67 ac)
- Township
- Section

0 1 000 2 000
F

Heartland
ECOLOGICAL GROUP INC

Figure 2. USGS
Topography
Holy Hill Road
Project #20210497
T9N, R20E, S18
V Germantown,
Washington Co

USGSTopo
USGS



NRCS Soil Survey Data

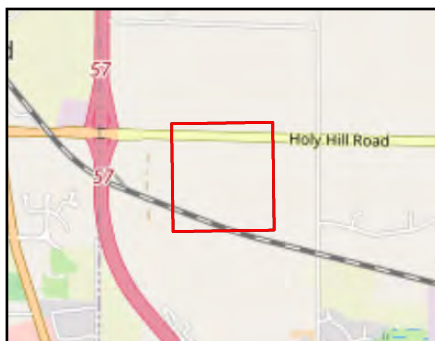
-  Predominantly Hydric (85-100%)
-  Partially Hydric (16-84%)
-  Predominantly Non-Hydric (1-15%)
-  Non-Hydric (0%)

0 150 300
F

Heartland
ECOLOGICAL GROUP INC

Figure 3. NRCS
Hydric Soils
Holy Hill Road
Project #20210497
T9N, R20E, S18
V Germantown,
Washington Co

2020 NAIP
NRCS

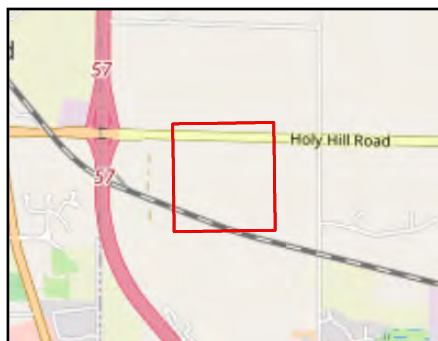




Study Area (52.67 ac)

Maximum Extent Wetland Indicators

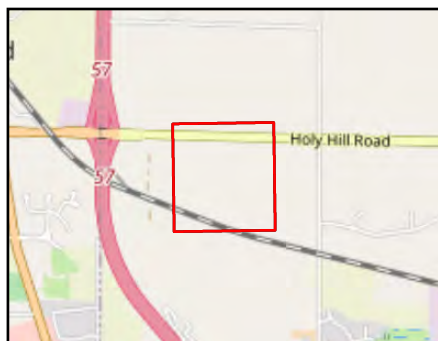
0 150 300 F



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ECOLOGICAL GROUP INC

Figure 4. SWDV
Wetland Indicators
Holy Hill Road
Project #20210497
T9N, R20E, S18
V Germantown,
Washington Co

2020 NAIP
WDNR



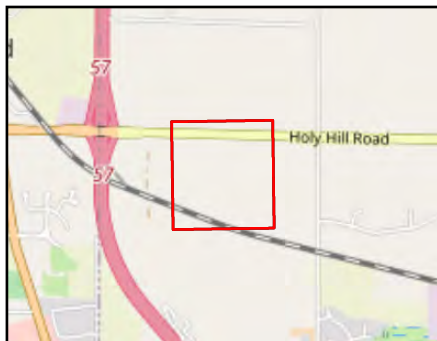
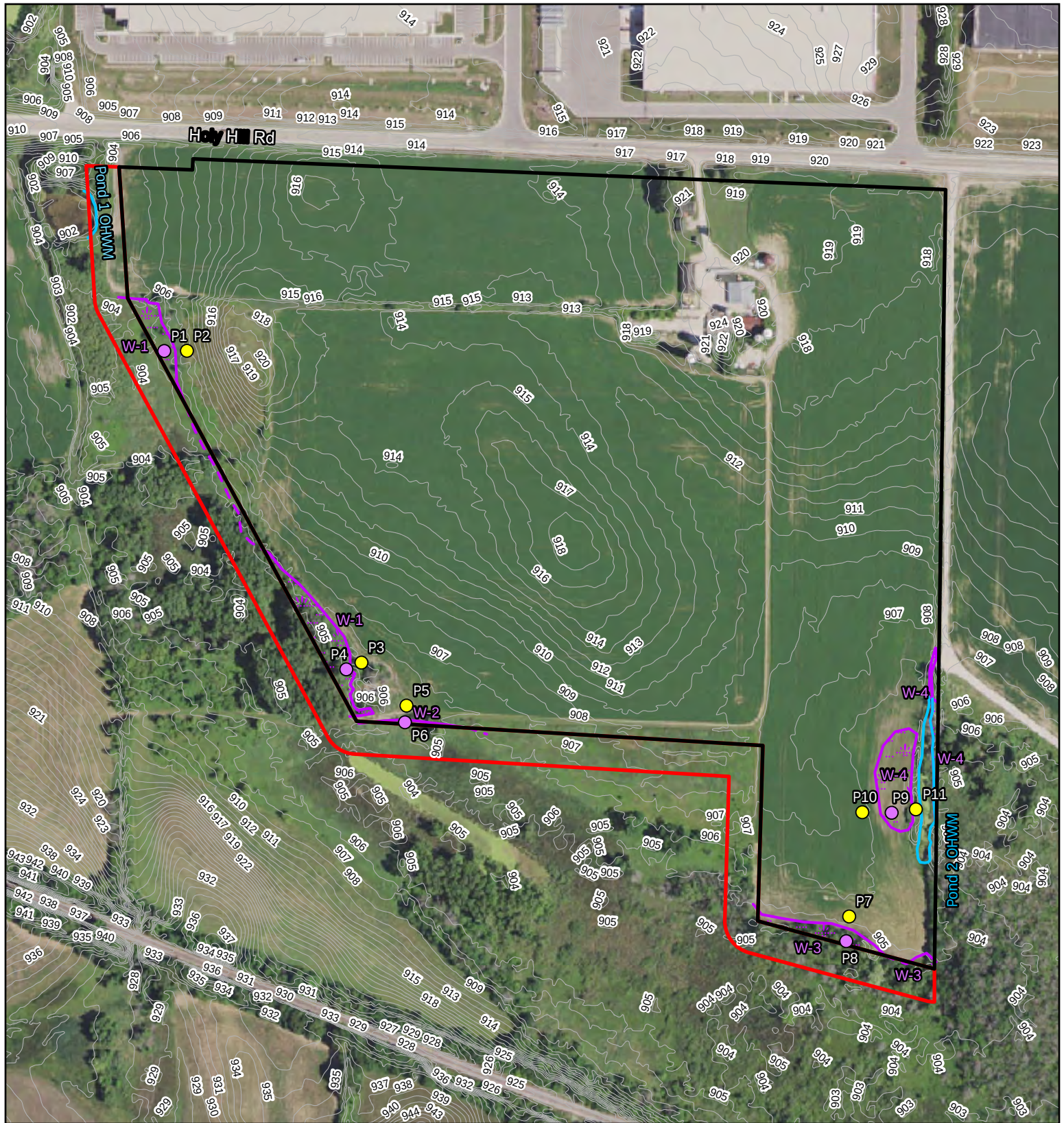
- Study Area (52.67 ac)
- WWI Wetlands
- NHD Waterway

0 150 300
F

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Figure 5. Wisconsin
Wetland Inventory
Holy Hill Road
Project #20210497
T9N, R20E, S18
V Germantown,
Washington Co

2020 NAIP
WDNR, USGS



- Study Area (52.67 ac)
- 75-Foot Study Area Buffer
- ~ Washington Co 1' Contours
- ~ Pond OHWM
- ~ Field Delineated Wetlands (1.25 ac)
- ~ Offsite Wetland Boundaries

Sample Points

- Upland
- Wetland

0 150 300
F

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Figure 6. Field
Delineated Wetlands
Holy Hill Road
Project #20210497
T9N, R20E, S18
V Germantown,
Washington Co

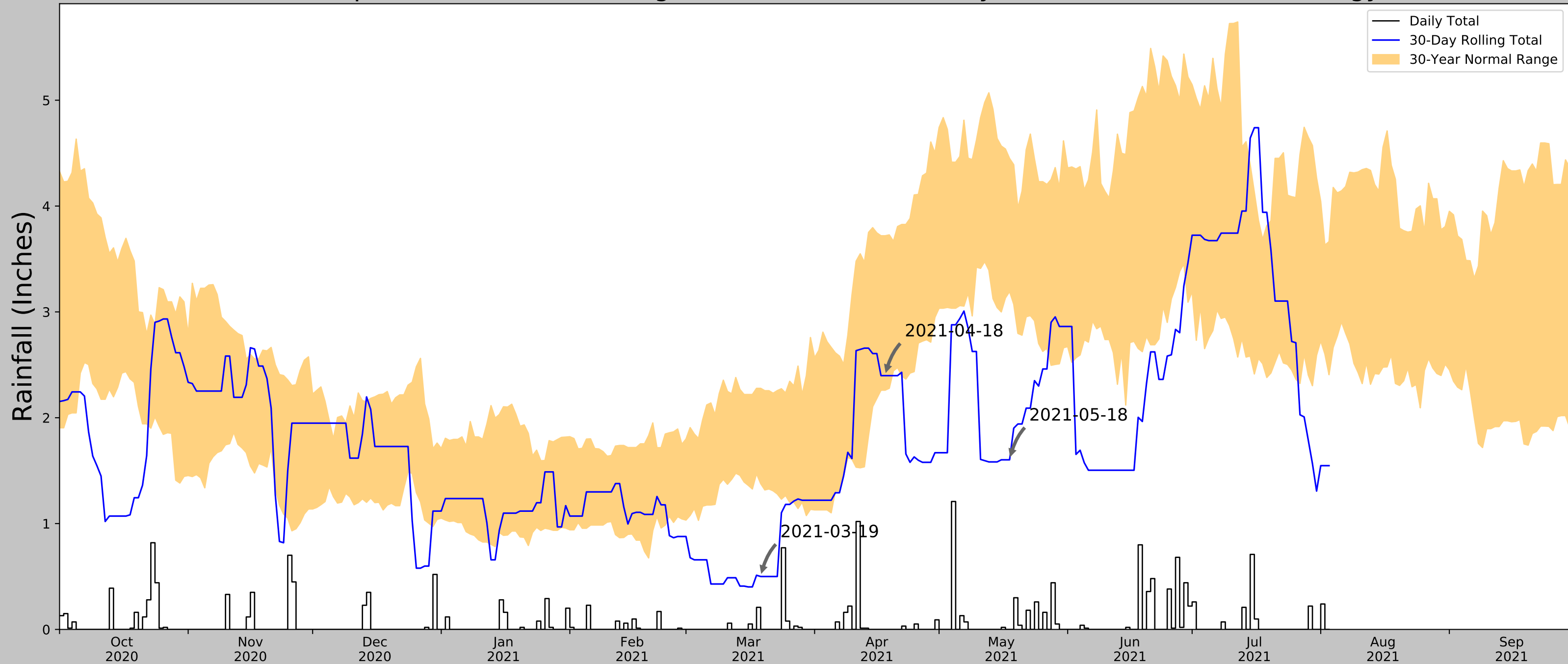
2020 NAIP
County Co, HEG



Pinnacle Engineering Group
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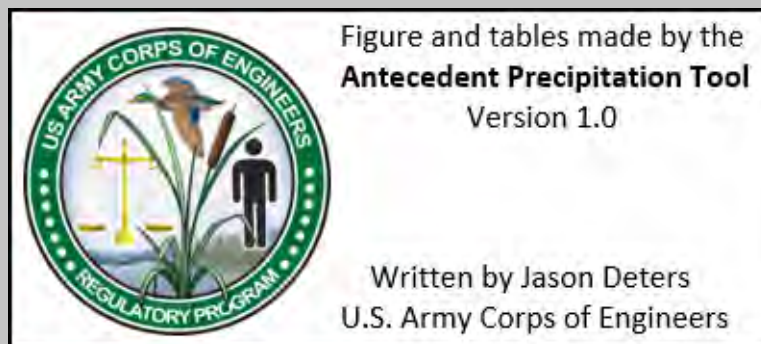
Appendix B | WETS Analysis

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



Coordinates	43.249933, -88.170958
Observation Date	2021-05-18
Elevation (ft)	913.47
Drought Index (PDSI)	Mild drought
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
2021-05-18	3.19252	4.449213	1.602362	Dry	1	3	3
2021-04-18	2.260236	3.719291	2.397638	Normal	2	2	4
2021-03-19	1.377559	2.277953	0.5	Dry	1	1	1
Result							Drier than Normal - 8



Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
GERMANTOWN	43.2389, -88.1222	850.066	2.57	63.404	1.319	11307	90
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



Pinnacle Engineering Group
Holy Hill Road Property
Project #: 20210497
August 6, 2021

Appendix C | Wetland Determination Data Sheets

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Holy Hill Road Site City/County: V Germantown / Washington Co Sampling Date: 2021-05-18
 Applicant/Owner: Pinnacle Engineering Group State: Wisconsin Sampling Point: P1
 Investigator(s): Eric C Parker, SPWS Section, Township, Range: Section 18, T9N, R20E
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 1-2
 Subregion (LRR or MLRA): K 95B Lat: 43.2491760 Long: -88.1740980 Datum: WGS 84
 Soil Map Unit Name: Kendall SiL (KIA) NWI classification: E2K

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: <u>W-1</u>
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)
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		
☐ 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:

Sampling Point: P1

Tree Stratum (Plot size: <u>30 ft r</u>)				Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1.	<u>Fraxinus pennsylvanica</u>			<u>3</u>		<u>FACW</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)	
2.							Total Number of Dominant Species Across All Strata: <u>2</u> (B)	
3.							Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)	
4.								
5.								
6.								
7.								
				<u>3%</u>	<u>= Total Cover</u>			
Sapling/Shrub Stratum (Plot size: <u>15 ft r</u>)								
1.								
2.								
3.								
4.								
5.								
6.								
7.								
					<u>= Total Cover</u>			
Herb Stratum (Plot size: <u>5 ft r</u>)								
1.	<u>Phalaris arundinacea</u>			<u>60</u>	<u>✓</u>	<u>FACW</u>		
2.	<u>Symphotrichum puniceum</u>			<u>15</u>	<u>✓</u>	<u>OBL</u>		
3.								
4.								
5.								
6.								
7.								
8.								
9.								
10.								
11.								
12.								
				<u>75%</u>	<u>= Total Cover</u>			
Woody Vine Stratum (Plot size: <u>30 ft r</u>)								
1.								
2.								
3.								
4.								
					<u>= Total Cover</u>			
Remarks: (Include photo numbers here or on a separate sheet.)								
Wet meadow								

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 - 5	10YR 3/1	100					Silt Loam	
5 - 11	10YR 4/2	90	10YR 4/4	10	C	M	Silt Loam	
11 - 17	10YR 5/1	85	10YR 4/6	15	C	M	Silty Clay Loam	
17 - 24	2.5Y 3/1	85	10YR 3/3	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: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Holy Hill Road Site City/County: V Germantown / Washington Co Sampling Date: 2021-05-18
Applicant/Owner: Pinnacle Engineering Group State: Wisconsin Sampling Point: P2
Investigator(s): Eric C Parker, SPWS Section, Township, Range: Section 18, T9N, R20E
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Linear Slope (%): 4-6
Subregion (LRR or MLRA): K 95B Lat: 43.2491760 Long: -88.1739034 Datum: WGS 84
Soil Map Unit Name: Mayville SiL (MoB) 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): _____	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: **P2**

Tree Stratum (Plot size: <u>30 ft r</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
1. <u>Fraxinus pennsylvanica</u>	<u>2</u>		FACW	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. _____	_____	_____	_____															
		<u>2%</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>4</u></td> <td>x 2 = <u>8</u></td> </tr> <tr> <td>FAC species <u>2</u></td> <td>x 3 = <u>6</u></td> </tr> <tr> <td>FACU species <u>75</u></td> <td>x 4 = <u>300</u></td> </tr> <tr> <td>UPL species <u>20</u></td> <td>x 5 = <u>100</u></td> </tr> <tr> <td>Column Totals: <u>101</u> (A)</td> <td><u>414</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>4</u>	x 2 = <u>8</u>	FAC species <u>2</u>	x 3 = <u>6</u>	FACU species <u>75</u>	x 4 = <u>300</u>	UPL species <u>20</u>	x 5 = <u>100</u>	Column Totals: <u>101</u> (A)	<u>414</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>4</u>	x 2 = <u>8</u>																	
FAC species <u>2</u>	x 3 = <u>6</u>																	
FACU species <u>75</u>	x 4 = <u>300</u>																	
UPL species <u>20</u>	x 5 = <u>100</u>																	
Column Totals: <u>101</u> (A)	<u>414</u> (B)																	
Sapling/Shrub Stratum (Plot size: <u>15 ft r</u>)																		
1. <u>Fraxinus pennsylvanica</u>	<u>2</u>		FACW															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
		<u>2%</u> = Total Cover																
Herb Stratum (Plot size: <u>5 ft r</u>)																		
1. <u>Poa pratensis</u>	<u>70</u>	☒	FACU	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>Bromus inermis</u>	<u>20</u>	☒	UPL															
3. <u>Cirsium arvense</u>	<u>3</u>		FACU															
4. <u>Acer negundo</u>	<u>2</u>		FAC															
5. <u>Taraxacum officinale</u>	<u>2</u>		FACU															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
11. _____	_____	_____	_____															
12. _____	_____	_____	_____															
		<u>97%</u> = Total Cover																
Woody Vine Stratum (Plot size: <u>30 ft r</u>)																		
1. _____	_____	_____	_____	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. _____	_____	_____	_____															
		_____ = Total Cover																
Remarks: (Include photo numbers here or on a separate sheet.) Old field				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 - 3	10YR 3/1	100					Silt Loam	
3 - 10	10YR 3/2	100					Silt Loam	
10 - 15	10YR 4/3	100					Silty Clay Loam	W/5% gravel/stones
15 - 24	10YR 5/4	93	7.5YR 4/6	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: Holy Hill Road Site City/County: V Germantown / Washington Co Sampling Date: 2021-05-18
Applicant/Owner: Pinnacle Engineering Group State: Wisconsin Sampling Point: P3
Investigator(s): Eric C Parker, SPWS Section, Township, Range: Section 18, T9N, R20E
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Undulating Slope (%): 3-5
Subregion (LRR or MLRA): K 95B Lat: 43.2472534 Long: -88.1723731 Datum: WGS 84
Soil Map Unit Name: Kendall SiL (E2K) NWI classification: E2K

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. Near farm junk disposal and rock pile area

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
<u>Primary Indicators (minimum of one is required; check all that apply)</u>	☐ Surface Soil Cracks (B6)
☐ Surface Water (A1)	☐ Drainage Patterns (B10)
☐ High Water Table (A2)	☐ Moss Trim Lines (B16)
☐ Saturation (A3)	☐ Dry-Season Water Table (C2)
☐ Water Marks (B1)	☐ Crayfish Burrows (C8)
☐ Sediment Deposits (B2)	☐ Saturation Visible on Aerial Imagery (C9)
☐ Drift Deposits (B3)	☐ Stunted or Stressed Plants (D1)
☐ Algal Mat or Crust (B4)	☐ Geomorphic Position (D2)
☐ Iron Deposits (B5)	☐ Shallow Aquitard (D3)
☐ Inundation Visible on Aerial Imagery (B7)	☐ Microtopographic Relief (D4)
☐ Sparsely Vegetated Concave Surface (B8)	☒ FAC-Neutral Test (D5)
☐ 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)	

Field Observations:

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

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

Remarks:

No wetland hydrology indicators observed, no saturation.

Sampling Point: P3

Tree Stratum (Plot size: <u>30 ft r</u>)				Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1.	<u>Fraxinus pennsylvanica</u>	<u>5</u>	<u>✓</u>	<u>FACW</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A)			
2.					Total Number of Dominant Species Across All Strata: <u>4</u> (B)			
3.					Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)			
4.								
5.								
6.								
7.								
				<u>5%</u>	= Total Cover			
Sapling/Shrub Stratum (Plot size: <u>15 ft r</u>)								Prevalence Index worksheet:
1.	<u>Rhamnus cathartica</u>	<u>15</u>	<u>✓</u>	<u>FAC</u>	Total % Cover of:		Multiply by:	
2.	<u>Acer negundo</u>	<u>2</u>		<u>FAC</u>	OBL species	<u>7</u>	x 1 =	<u>7</u>
3.					FACW species	<u>65</u>	x 2 =	<u>130</u>
4.					FAC species	<u>23</u>	x 3 =	<u>69</u>
5.					FACU species	<u>11</u>	x 4 =	<u>44</u>
6.					UPL species	<u>0</u>	x 5 =	<u>0</u>
7.					Column Totals:	<u>106</u>	(A)	<u>250</u> (B)
				<u>17%</u>	= Total Cover	Prevalence Index = B/A = <u>2.4</u>		
Herb Stratum (Plot size: <u>5 ft r</u>)								Hydrophytic Vegetation Indicators:
1.	<u>Phalaris arundinacea</u>	<u>60</u>	<u>✓</u>	<u>FACW</u>	<u> </u> 1 - Rapid Test for Hydrophytic Vegetation			
2.	<u>Symphyotrichum puniceum</u>	<u>7</u>		<u>OBL</u>	<u>✓</u> 2 - Dominance Test is >50%			
3.	<u>Arctium minus</u>	<u>5</u>		<u>FACU</u>	<u> </u> 3 - Prevalence Index is ≤3.0 ¹			
4.	<u>Cirsium arvense</u>	<u>3</u>		<u>FACU</u>	<u> </u> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)			
5.	<u>Taraxacum officinale</u>	<u>3</u>		<u>FACU</u>	<u> </u> Problematic Hydrophytic Vegetation ¹ (Explain)			
6.	<u>Acer negundo</u>	<u>1</u>		<u>FAC</u>	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.			
7.					Definitions of Vegetation Strata:			
8.					Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.			
9.					Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.			
10.					Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.			
11.					Woody vines – All woody vines greater than 3.28 ft in height.			
12.								
				<u>79%</u>	= Total Cover			
Woody Vine Stratum (Plot size: <u>30 ft r</u>)								Hydrophytic Vegetation Present?
1.	<u>Vitis riparia</u>	<u>5</u>	<u>✓</u>	<u>FAC</u>	Yes <u>✓</u> No <u> </u>			
2.								
3.								
4.								
				<u>5%</u>	= Total Cover			
Remarks: (Include photo numbers here or on a separate sheet.)								
Weedy edge of field area								

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 - 14	10YR 3/1	100					Silt Loam	
14 - 24	10YR 3/1	40					Silty Clay Loam	Mixed matrix old fill
14 - 24	10YR 4/2	20					Silty Clay Loam	Mixed matrix old fill
14 - 24	10YR 5/2	35	10YR 4/6	5	C	M	Silty Clay Loam	Mixed matrix old fill
-								
-								
-								
-								
-								
-								
-								
-								
-								
-								
-								

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: Holy Hill Road Site City/County: V Germantown / Washington Co Sampling Date: 2021-05-18
 Applicant/Owner: Pinnacle Engineering Group State: Wisconsin Sampling Point: P4
 Investigator(s): Eric C Parker, SPWS Section, Township, Range: Section 18, T9N, R20E
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Undulating Slope (%): 1-2
 Subregion (LRR or MLRA): K 95B Lat: 43.2472229 Long: -88.1725072 Datum: WGS 84
 Soil Map Unit Name: Pella SiL (Ph) 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: <u>W-1</u>
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): _____
 Water Table Present? Yes ☒ No _____ Depth (inches): 6
 Saturation Present? Yes ☒ No _____ Depth (inches): 2
 (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: **P4**

Tree Stratum (Plot size: <u>30 ft r</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
1. <u>Salix alba</u>	<u>40</u>	☒	<u>FACW</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)														
2. _____	_____	_____	_____															
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>132</u></td> <td>x 2 = <u>264</u></td> </tr> <tr> <td>FAC species <u>8</u></td> <td>x 3 = <u>24</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>143</u> (A)</td> <td><u>300</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>2.1</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>132</u>	x 2 = <u>264</u>	FAC species <u>8</u>	x 3 = <u>24</u>	FACU species <u>3</u>	x 4 = <u>12</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>143</u> (A)	<u>300</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>132</u>	x 2 = <u>264</u>																	
FAC species <u>8</u>	x 3 = <u>24</u>																	
FACU species <u>3</u>	x 4 = <u>12</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>143</u> (A)	<u>300</u> (B)																	
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>Phalaris arundinacea</u>	<u>50</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>Impatiens capensis</u>	<u>40</u>	☒	<u>FACW</u>															
3. <u>Solanum dulcamara</u>	<u>5</u>	_____	<u>FAC</u>															
4. <u>Galium aparine</u>	<u>3</u>	_____	<u>FACU</u>															
5. <u>Echinocystis lobata</u>	<u>2</u>	_____	<u>FACW</u>															
6. <u>Urtica dioica</u>	<u>2</u>	_____	<u>FAC</u>															
7. <u>Acer negundo</u>	<u>1</u>	_____	<u>FAC</u>															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
11. _____	_____	_____	_____															
12. _____	_____	_____	_____															
		<u>103%</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.) Edge of HWS																		

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 - 5	10YR 2/1	95	10YR 3/2	5	C	M	Silt Loam	
5 - 14	10YR 2/1	90	10YR 4/3	10	C	M	Silty Clay Loam	
14 - 24	10YR 5/2	85	10YR 4/4	15	C	M	Silty Clay	
-								
-								
-								
-								
-								
-								
-								
-								
-								
-								
-								
-								

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: Holy Hill Road Site City/County: V Germantown / Washington Co Sampling Date: 2021-05-18
 Applicant/Owner: Pinnacle Engineering Group State: Wisconsin Sampling Point: P5
 Investigator(s): Eric C Parker, SPWS Section, Township, Range: Section 18, T9N, R20E
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Linear Slope (%): 2-4
 Subregion (LRR or MLRA): K 95B Lat: 43.2469788 Long: -88.1719820 Datum: WGS 84
 Soil Map Unit Name: Kendall SiL (E2K) NWI classification: E2K

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. Near farm junk disposal and rock pile area

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.

Sampling Point: P5

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Fraxinus pennsylvanica</u>	1		FACW	
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
	1% = Total Cover			

Sapling/Shrub Stratum (Plot size: 15 ft r)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Acer negundo</u>	3		FAC	
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
	3% = Total Cover			

Herb Stratum (Plot size: 5 ft r)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Phalaris arundinacea</u>	50	✓	FACW	
2. <u>Poa pratensis</u>	15		FACU	
3. <u>Taraxacum officinale</u>	10		FACU	
4. <u>Solidago canadensis</u>	7		FACU	
5. <u>Sonchus arvensis</u>	7		FACU	
6. <u>Bromus inermis</u>	5		UPL	
7. <u>Erigeron pulchellus</u>	2		FACU	
8. <u>Acer negundo</u>	1		FAC	
9. _____				
10. _____				
11. _____				
12. _____				
	97% = Total Cover			

Woody Vine Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____				
2. _____				
3. _____				
4. _____				
	_____ = Total Cover			

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

 Total Number of Dominant Species Across All Strata: 1 (B)

 Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>51</u>	x 2 = <u>102</u>
FAC species <u>4</u>	x 3 = <u>12</u>
FACU species <u>41</u>	x 4 = <u>164</u>
UPL species <u>5</u>	x 5 = <u>25</u>
Column Totals: <u>101</u> (A)	<u>303</u> (B)

 Prevalence Index = B/A = 3.0

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.)

Weedy edge of field area

SOIL

Sampling Point: **P5****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 - 15	10YR 4/2	100					Silt Loam	
15 - 24	10YR 4/2	50					Silty Clay Loam	Mixed matrix old fill
15 - 24	10YR 5/2	25	10YR 4/4	5	C	M	Silty Clay Loam	Mixed matrix old fill
15 - 24	10YR 3/1	20					Silty Clay Loam	Mixed matrix old fill
-								
-								
-								
-								
-								
-								
-								
-								
-								
-								
-								
-								

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: Holy Hill Road Site City/County: V Germantown / Washington Co Sampling Date: 2021-05-18
 Applicant/Owner: Pinnacle Engineering Group State: Wisconsin Sampling Point: P6
 Investigator(s): Eric C Parker, SPWS Section, Township, Range: Section 18, T9N, R20E
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 1-3
 Subregion (LRR or MLRA): K 95B Lat: 43.2468872 Long: -88.1719952 Datum: WGS 84
 Soil Map Unit Name: Pella SiL (Ph) NWI classification: E2K

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: <u>W-2</u>
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): _____
 Water Table Present? Yes ☒ No _____ Depth (inches): 16
 Saturation Present? Yes ☒ No _____ Depth (inches): 12
 (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: **P6**

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>2</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>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>68</u></td> <td>x 2 = <u>136</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>68</u> (A)</td> <td><u>136</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>2.0</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>68</u>	x 2 = <u>136</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>68</u> (A)	<u>136</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>68</u>	x 2 = <u>136</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>68</u> (A)	<u>136</u> (B)																	
Sapling/Shrub Stratum (Plot size: <u>15 ft r</u>)																		
1. <u>Salix interior</u>	<u>5</u>	☒	<u>FACW</u>															
2. <u>Sambucus nigra</u>	<u>1</u>		<u>FACW</u>															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>6%</u> = Total Cover																		
Herb Stratum (Plot size: <u>5 ft r</u>)																		
1. <u>Phalaris arundinacea</u>	<u>60</u>	☒	<u>FACW</u>															
2. <u>Salix interior</u>	<u>2</u>		<u>FACW</u>															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
11. _____	_____	_____	_____															
12. _____	_____	_____	_____															
<u>62%</u> = Total Cover																		
Woody Vine Stratum (Plot size: <u>30 ft r</u>)																		
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
_____ = 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.																		
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.) FWM																		

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 - 3	10YR 4/2	100					Silt Loam	
3 - 13	10YR 4/2	85	10YR 4/4	15	C	PL / M	Silt Loam	
13 - 20	10YR 2/1	95	10YR 3/1	5	C	M	Silt Loam	High organic content, buried A.
20 - 24	10Y 5/0	95	10YR 5/6	5	C	M	Silty Clay	
-								
-								
-								
-								
-								
-								
-								
-								
-								
-								
-								

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: Holy Hill Road Site City/County: V Germantown / Washington Co Sampling Date: 2021-05-18
 Applicant/Owner: Pinnacle Engineering Group State: Wisconsin Sampling Point: P7
 Investigator(s): Eric C Parker, SPWS Section, Township, Range: Section 18, T9N, R20E
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Linear Slope (%): 1-3
 Subregion (LRR or MLRA): K 95B Lat: 43.2457275 Long: -88.1681736 Datum: WGS 84
 Soil Map Unit Name: Kendall SiL (KIA) 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. Active agricultural field, 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:

Outside consistent signature in OSA signature area 2.

Remarks:

No field wetland hydrology indicators observed. No saturation. C9 derived from OSA only.

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. _____	_____	_____	_____	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>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>33.3</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>1</u></td> <td>x 3 = <u>3</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>3</u> (A)</td> <td><u>11</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>3.67</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>1</u>	x 3 = <u>3</u>	FACU species <u>2</u>	x 4 = <u>8</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>3</u> (A)	<u>11</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>1</u>	x 3 = <u>3</u>																	
FACU species <u>2</u>	x 4 = <u>8</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>3</u> (A)	<u>11</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>Erigeron annuus</u>	<u>1</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>Taraxacum officinale</u>	<u>1</u>	<u>✓</u>	<u>FACU</u>															
3. <u>Veronica peregrina</u>	<u>1</u>	<u>✓</u>	<u>FAC</u>															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
11. _____	_____	_____	_____															
12. _____	_____	_____	_____															
<u>3%</u> = Total Cover																		
Woody Vine Stratum (Plot size: <u>30 ft r</u>)																		
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
_____ = Total Cover																		
Hydrophytic Vegetation Present? Yes _____ No <u>✓</u>																		
Remarks: (Include photo numbers here or on a separate sheet.) Sparse weeds in a newly planted field																		

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 4/2	100					Silty Clay Loam	
14 - 17	10YR 5/3	95	10YR 5/6	5	C	M	Silty Clay Loam	
17 - 24	10YR 5/2	90	10YR 5/6	10	C	M	Silty Clay	
-								
-								
-								
-								
-								
-								
-								
-								
-								
-								
-								
-								
-								

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: Holy Hill Road Site City/County: V Germantown / Washington Co Sampling Date: 2021-05-18
 Applicant/Owner: Pinnacle Engineering Group State: Wisconsin Sampling Point: P8
 Investigator(s): Eric C Parker, SPWS Section, Township, Range: Section 18, T9N, R20E
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 1-2
 Subregion (LRR or MLRA): K 95B Lat: 43.2455444 Long: -88.1681994 Datum: WGS 84
 Soil Map Unit Name: Pella SiL (Ph) NWI classification: S3/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: <u>W-3</u>
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): _____
 Water Table Present? Yes ☒ No _____ Depth (inches): 10
 Saturation Present? Yes ☒ No _____ Depth (inches): 6
 (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: **P8**

Tree Stratum (Plot size: <u>30 ft r</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
1. <u>Salix amygdaloides</u>	<u>20</u>	☒	<u>FACW</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>7</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>88</u> (A/B)														
2. <u>Populus deltoides</u>	<u>10</u>	☒	<u>FAC</u>															
3. <u>Salix bebbiana</u>	<u>5</u>		<u>FACW</u>															
4. <u>Fraxinus pennsylvanica</u>	<u>3</u>		<u>FACW</u>															
5. _____	_____																	
6. _____	_____																	
7. _____	_____																	
<u>38%</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>98</u></td> <td>x 2 = <u>196</u></td> </tr> <tr> <td>FAC species <u>52</u></td> <td>x 3 = <u>156</u></td> </tr> <tr> <td>FACU species <u>14</u></td> <td>x 4 = <u>56</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>164</u> (A)</td> <td><u>408</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>2.5</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>98</u>	x 2 = <u>196</u>	FAC species <u>52</u>	x 3 = <u>156</u>	FACU species <u>14</u>	x 4 = <u>56</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>164</u> (A)	<u>408</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>98</u>	x 2 = <u>196</u>																	
FAC species <u>52</u>	x 3 = <u>156</u>																	
FACU species <u>14</u>	x 4 = <u>56</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>164</u> (A)	<u>408</u> (B)																	
Sapling/Shrub Stratum (Plot size: <u>15 ft r</u>)																		
1. <u>Rhamnus cathartica</u>	<u>30</u>	☒	<u>FAC</u>															
2. <u>Salix bebbiana</u>	<u>15</u>	☒	<u>FACW</u>															
3. <u>Cornus alba</u>	<u>10</u>		<u>FACW</u>															
4. <u>Fraxinus pennsylvanica</u>	<u>7</u>		<u>FACW</u>															
5. <u>Lonicera X bella</u>	<u>5</u>		<u>FACU</u>															
<u>67%</u> = Total Cover																		
Herb Stratum (Plot size: <u>5 ft r</u>)																		
1. <u>Cornus alba</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>Phalaris arundinacea</u>	<u>10</u>	☒	<u>FACW</u>															
3. <u>Circaea canadensis</u>	<u>7</u>	☒	<u>FACU</u>															
4. <u>Rhamnus cathartica</u>	<u>7</u>	☒	<u>FAC</u>															
5. <u>Fraxinus pennsylvanica</u>	<u>5</u>		<u>FACW</u>															
6. <u>Geum canadense</u>	<u>5</u>		<u>FAC</u>															
7. <u>Ranunculus recurvatus</u>	<u>3</u>		<u>FACW</u>															
8. <u>Ribes americanum</u>	<u>3</u>		<u>FACW</u>															
9. <u>Symphotrichum lanceolatum</u>	<u>3</u>		<u>FACW</u>															
10. <u>Parthenocissus quinquefolia</u>	<u>2</u>		<u>FACU</u>															
11. <u>Ulmus americana</u>	<u>2</u>		<u>FACW</u>															
12. <u>Viburnum opulus</u>	<u>2</u>		<u>FACW</u>															
<u>59%</u> = Total Cover																		
Woody Vine Stratum (Plot size: <u>30 ft r</u>)																		
1. _____	_____			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. _____	_____																	
_____ = Total Cover																		
Remarks: (Include photo numbers here or on a separate sheet.) HWS/SC																		

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 4/2	100					Silt Loam	
4 - 12	10YR 4/2	85	10YR 4/4	15	C	PL / M	Silty Clay Loam	
12 - 24	5Y 5/2	90	10YR 4/6	10	C	M	Silty Clay	
-								
-								
-								
-								
-								
-								
-								
-								
-								
-								
-								
-								

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: Holy Hill Road Site City/County: V Germantown / Washington Co Sampling Date: 2021-05-18
 Applicant/Owner: Pinnacle Engineering Group State: Wisconsin Sampling Point: P9
 Investigator(s): Eric C Parker, SPWS Section, Township, Range: Section 18, T9N, R20E
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 1-3
 Subregion (LRR or MLRA): K 95B Lat: 43.2463684 Long: -88.1678233 Datum: WGS 84
 Soil Map Unit Name: Pella SiL (Ph) 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 ☐
Hydric Soil Present? Yes ☒ No ☐	If yes, optional Wetland Site ID: <u>W-4</u>
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. agricultural field recently planted, 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)	☒ 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:		Wetland Hydrology Present? Yes ☒ No ☐
Surface Water Present? Yes ☐ No ☒ Depth (inches): _____		
Water Table Present? Yes ☐ No ☒ Depth (inches): _____		
Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____		

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

OSA signature area #1.

Remarks:

No saturation. D1 also derived from the OSA.

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>2</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>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>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>2</u></td> <td>x 3 = <u>6</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>2</u> (A)</td> <td><u>6</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>3.00</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>2</u>	x 3 = <u>6</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>2</u> (A)	<u>6</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>2</u>	x 3 = <u>6</u>																	
FACU species <u>0</u>	x 4 = <u>0</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>2</u> (A)	<u>6</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>Hordeum jubatum</u>	<u>1</u>	☒	<u>FAC</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>Veronica peregrina</u>	<u>1</u>	☒	<u>FAC</u>															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
11. _____	_____	_____	_____															
12. _____	_____	_____	_____															
<u>2%</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.) Newly planted and sparse veg weeds. Edge of field 30 ft to east +/- same elev. - dominated by Phalaris and Salix interior.																		

SOIL

Sampling Point: **P9****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 - 15	10YR 3/1	98	10YR 3/3	2	C	M	Silty Clay Loam	
15 - 19	10YR 4/2	95	10YR 4/4	5	C	M	Silty Clay Loam	
19 - 24	10YR 5/2	90	10YR 4/4	10	C	M	Silty Clay	
-								
-								
-								
-								
-								
-								
-								
-								
-								
-								
-								
-								

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: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Holy Hill Road Site City/County: V Germantown / Washington Co Sampling Date: 2021-05-18
 Applicant/Owner: Pinnacle Engineering Group State: Wisconsin Sampling Point: P10
 Investigator(s): Eric C Parker, SPWS Section, Township, Range: Section 18, T9N, R20E
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Linear Slope (%): 2-4
 Subregion (LRR or MLRA): K 95B Lat: 43.2463684 Long: -88.1680735 Datum: WGS 84
 Soil Map Unit Name: Mayville SiL (MoB) 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. agricultural field recently planted, 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)	☐ 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:

Outside OSA signature area #1

Remarks:

No wetland hydrology indicators observed, no saturation.

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. _____	_____	_____	_____	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>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>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>0.0</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)																	
_____ = 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. _____	_____	_____	_____															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
11. _____	_____	_____	_____															
12. _____	_____	_____	_____															
_____ = 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.) Newly planted and no weeds present. Last year's soybean stubble with healthy appearance.																		

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 - 14	10YR 4/3	100					Silt Loam	
14 - 18	10YR 5/4	98	10YR 4/4	2	C	M	Silty Clay	
18 - 24	10YR 6/3	70	10YR 4/6	30	C	M	Silty Clay	
-								
-								
-								
-								
-								
-								
-								
-								
-								
-								
-								
-								

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: Holy Hill Road Site City/County: V Germantown / Washington Co Sampling Date: 2021-05-18
 Applicant/Owner: Pinnacle Engineering Group State: Wisconsin Sampling Point: P11
 Investigator(s): Eric C Parker, SPWS Section, Township, Range: Section 18, T9N, R20E
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 10-12
 Subregion (LRR or MLRA): K 95B Lat: 43.2463989 Long: -88.1676164 Datum: WGS 84
 Soil Map Unit Name: Pella SiL NWI classification: S3/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. P10 is on dredge spoils 3-4 ft above in elev than the wetland to the west.

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? (includes capillary fringe) Yes ☐ No ☒	Depth (inches): _____	

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: **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>2</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>67</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>91</u></td> <td>x 2 = <u>182</u></td> </tr> <tr> <td>FAC species <u>8</u></td> <td>x 3 = <u>24</u></td> </tr> <tr> <td>FACU species <u>15</u></td> <td>x 4 = <u>60</u></td> </tr> <tr> <td>UPL species <u>10</u></td> <td>x 5 = <u>50</u></td> </tr> <tr> <td>Column Totals: <u>124</u> (A)</td> <td><u>316</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>2.5</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>91</u>	x 2 = <u>182</u>	FAC species <u>8</u>	x 3 = <u>24</u>	FACU species <u>15</u>	x 4 = <u>60</u>	UPL species <u>10</u>	x 5 = <u>50</u>	Column Totals: <u>124</u> (A)	<u>316</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>91</u>	x 2 = <u>182</u>																	
FAC species <u>8</u>	x 3 = <u>24</u>																	
FACU species <u>15</u>	x 4 = <u>60</u>																	
UPL species <u>10</u>	x 5 = <u>50</u>																	
Column Totals: <u>124</u> (A)	<u>316</u> (B)																	
_____ = Total Cover																		
Sapling/Shrub Stratum (Plot size: <u>15 ft r</u>)																		
1. <u>Salix interior</u>	<u>20</u>	☒	<u>FACW</u>															
2. <u>Acer negundo</u>	<u>5</u>		<u>FAC</u>															
3. <u>Rubus occidentalis</u>	<u>5</u>		<u>UPL</u>															
4. <u>Populus deltoides</u>	<u>2</u>		<u>FAC</u>															
5. <u>Fraxinus pennsylvanica</u>	<u>1</u>		<u>FACW</u>															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<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>Cirsium arvense</u>	<u>5</u>		<u>FACU</u>															
3. <u>Rubus occidentalis</u>	<u>5</u>		<u>UPL</u>															
4. <u>Solidago canadensis</u>	<u>5</u>		<u>FACU</u>															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
11. _____	_____	_____	_____															
12. _____	_____	_____	_____															
<u>85%</u> = Total Cover																		
Woody Vine Stratum (Plot size: <u>30 ft r</u>)																		
1. <u>Parthenocissus quinquefolia</u>	<u>5</u>	☒	<u>FACU</u>															
2. <u>Vitis riparia</u>	<u>1</u>		<u>FAC</u>															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
<u>6%</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: **P11****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 - 24	10YR 5/2	25	10YR 4/3	5	C	M	Sandy Loam	Vf SL, dredge spoils, mixed matrix
0 - 24	10YR 6/2	45	10YR 4/4	5	C	M	Sandy Loam	Vf SL, dredge spoils, mixed matrix
0 - 24	10YR 5/3	17	10YR 5/4	3	C	M	Sandy Loam	Vf SL, dredge spoils, 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:



Pinnacle Engineering Group
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Appendix D | Site Photographs



Photo #1 Sample point P1, view north



Photo #2 Sample point P1, view east



Photo #3 Sample point P1, view south



Photo #4 Sample point P1, view west



Photo #5 Sample point P2, view north



Photo #6 Sample point P2, view east



Photo #7 Sample point P2, view south



Photo #8 Sample point P2, view west

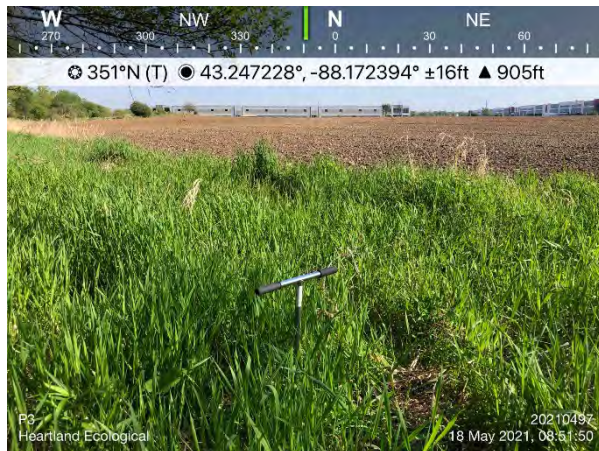


Photo #9 Sample point P3, view north



Photo #10 Sample point P3, view east



Photo #11 Sample point P3, view south



Photo #12 Sample point P3, view west



Photo #13 Sample point P4, view north



Photo #14 Sample point P4, view east



Photo #15 Sample point P4, view south



Photo #16 Sample point P4, view west



Photo #17 Sample point P5, view north



Photo #18 Sample point P5, view east



Photo #19 Sample point P5, view south



Photo #20 Sample point P5, view west



Photo #21 Sample point P6, view north



Photo #22 Sample point P6, view east



Photo #23 Sample point P6, view south



Photo #24 Sample point P6, view west

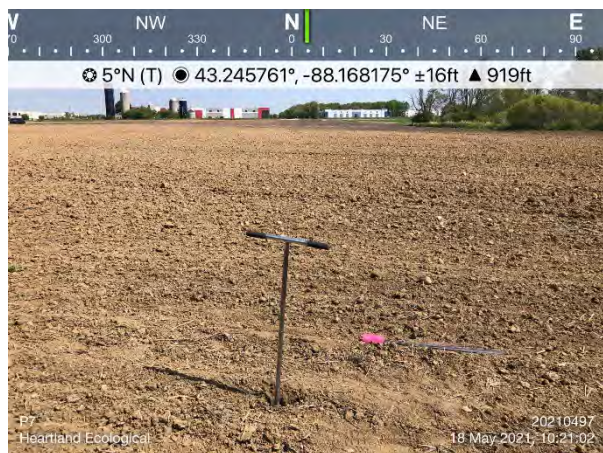


Photo #25 Sample point P7, view north



Photo #26 Sample point P7, view east



Photo #27 Sample point P7, view south



Photo #28 Sample point P7, view west



Photo #29 Sample point P8, view north



Photo #30 Sample point P8, view east



Photo #31 Sample point P8, view south



Photo #32 Sample point P8, view west



Photo #33 Pond 2, view north



Photo #34 Sample point P9, view north



Photo #35 Sample point P9, view east



Photo #36 Sample point P9, view south

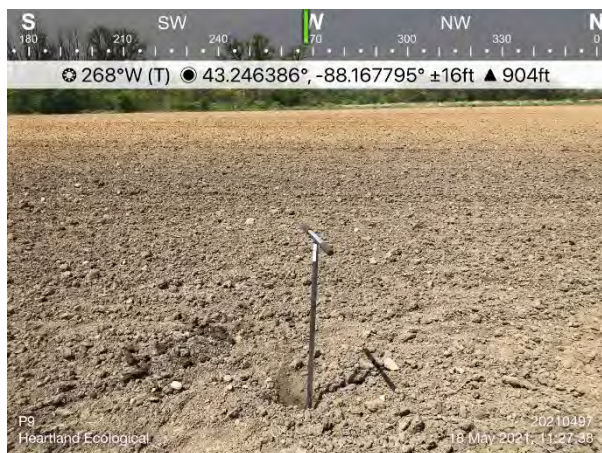


Photo #37 Sample point P9, view west

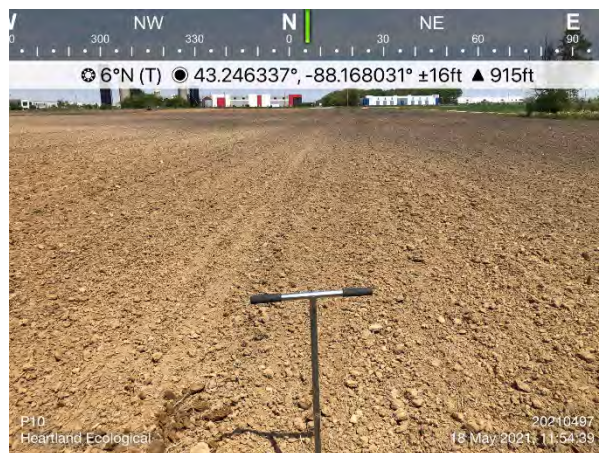


Photo #38 Sample point P10, view north

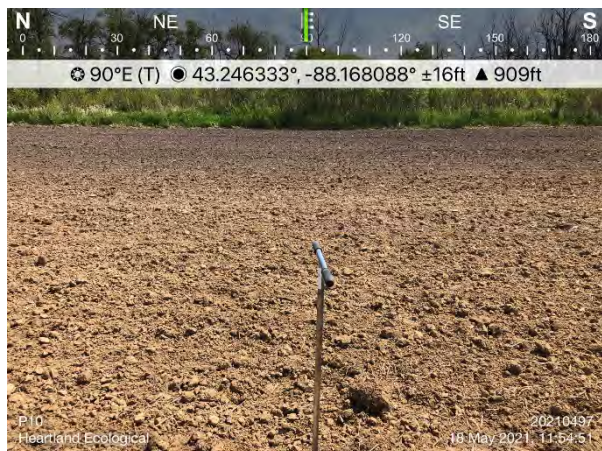


Photo #39 Sample point P10, view east



Photo #40 Sample point P10, view south

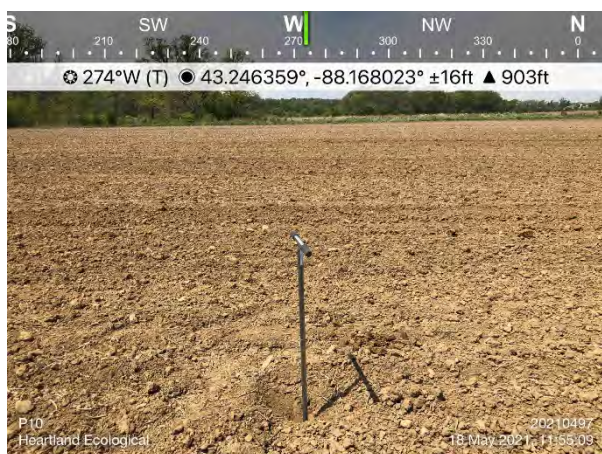


Photo #41 Sample point P10, view west



Photo #42 Sample point P11, view north



Photo #43 Sample point P11, view east



Photo #44 Sample point P11, view south



Photo #45 Sample point P11, view west



Photo #46 Pond 1, view southeast



Pinnacle Engineering Group
Holy Hill Road Property
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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)



Pinnacle Engineering Group
Holy Hill Road Property
Project #: 20210497
August 6, 2021

Appendix F | Off-Site Analysis

TABLE A1

Wetland Hydrology from Aerial Imagery - Recording Form*

Project Name: Holy Hill Rd Site

Date: 5/17/2021

County: Washington

Investigator: Eric C. Parker, SPWS

Legal Description (T, R, S): T09N

R20E

Sec. 18

Summary Table

Date Image Taken (M-Y)	Image Source	Climate Condition (wet, dry, normal)	Image Interpretation(s)						
			See 2018 NAIP image for general outline of Areas 1-2						
			Area: 1 (P9)	Area: 2					
Jun-94	FSA Slide	Dry	NV/NSS	NV/NSS					
Jul-97	FSA Slide	Normal	NV/NSS	SS					
Aug-99	FSA Slide	Wet	SS/CS	SS/CS					
Jul-00	FSA Slide	Normal	WS	SS					
Jun-01	FSA Slide	Normal	WS	WS					
Jul-02	FSA Slide	Normal	NV/NSS	NV/NSS					
Jun-05	NAIP	Normal	SS-	NV/NSS					
Jul-06	NAIP	Normal	NV/NSS	NV/NSS					
Oct-07	GE	Wet	CS	SS					
Jul-08	NAIP	Normal	SS	NV/NSS					
Jul-10	NAIP	Wet	SS	SS-					
Aug-11	GE	Normal	WS	NV/NSS					
Jun-13	NAIP	Wet	SW/SS	SS-					
Apr-14	GE	Dry	SS	NV/NSS					
Jun-15	GE	Normal	SS	NV/NSS					
Oct-15	NAIP	Wet	NV/NSS	NV/NSS					
Apr-17	GE	Normal	SS	SS					
Aug-17	NAIP	Wet	CS	NV/NSS					
Sep-18	NAIP	Normal	CS	CS					
Jun-20	GE	Normal	SS	SS					
Aug-20	NAIP	Normal	CS/DO	CS/DO					
Normal Climate Condition			Area: 1 (P9)	Area: 2	0	0	0	0	0
Number of Normal Years			13	13					
Number with wet signatures			10	7					
Percent with wet signatures			77%	54%					

Key

WS - Wetland Signature	SS - Soil Wetness Signature	CS - Crop Stress
NC - Not Cropped	AP - Altered Pattern	NV - Normal Vegetative Cover
DO - Drowned Out	SW - Standing Water	NSS - No Soil Wetness Signature

• Use above key to label image interpretations. It is imperative that the reviewer read and understand the guidance associated with the key. If labels are used, indicate in box above.

• If less than five (5) images taken during normal climate conditions are available, use an equal number of images taken during wet conditions as you have available. Describe the results using this methodology in your report.

* Source: http://www.bwsr.state.mn.us/wetlands/delineation/Guidance_for_Offsite_Hydrology_and_Wetland_Determinations.pdf



Wetland Determination from Aerial Imagery - Recording Form*

Project Name: Holy Hill Rd Site
Investigator: Eric C. Parker, SPWS

Date: 5/17/2021 County: Washington
Legal Description (T, R, S): T09N R20E Sec. 18

Use the decision matrix below to create Table A2

Hydric Soils Present? ¹	Identified on NWI or WWI? ²	Percent with Wet Signatures from TABLE A1	Field Verification Required? ³	Wetland?
Yes	Yes	>50%	No	Yes
Yes	Yes	30-50%	No	Yes
Yes	Yes	<30%	Yes	Yes, if other hydrology indicators are present
Yes	No	>50%	No	Yes
Yes	No	30-50%	Yes	Yes, if other hydrology indicators are present
Yes	No	<30%	No	No
No	Yes	>50%	No	Yes
No	Yes	30-50%	No	Yes
No	Yes	<30%	No	No
No	No	>50%	Yes	Yes, if other hydrology indicators are present
No	No	30-50%	Yes	Yes, if other hydrology indicators are present
No	No	<30%	No	No

¹ The presence of hydric soils can be determined from the "Hydric Rating by Map Unit Feature" under "Land Classifications" from the Web Soil Survey. "Not Hydric" is the only category considered to not have hydric soils. Field sampling for the presence/absence of hydric soil indicators can be used in lieu of the hydric rating if appropriately documented by providing completed field data sheets.

² At minimum, the most updated NWI data available for the area must be reviewed for this step. Any and all other local or regional wetland maps that are publicly available should be reviewed.

³ Area should be reviewed in the field for the presence/absence of wetland hydrology indicators per the applicable 8/ manual regional supplement, including the D2 indicator (geomorphic position).

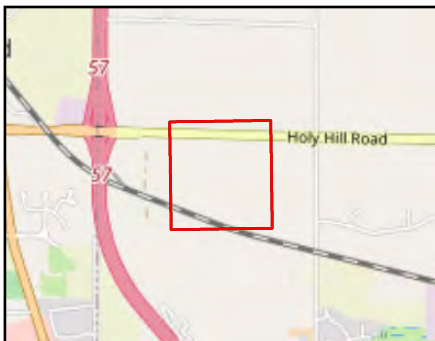
TABLE A2

Area	Hydric Soils Present? ¹	Identified on NWI or WWI?	Percent with Wet Signatures from TABLE A1	Other Hydrology Indicators Present? ¹	Wetland?
1	Yes	No	77%	Yes	Yes
2	Yes	No	54%	Yes	Yes

¹ Answer "N/A" if field verification is not required and was not conducted.

* Source: http://www.bwsr.state.mn.us/wetlands/delineation/Guidance_for_Offsite_Hydrology_and_Wetland_Determinations.pdf





 Study Area (52.67 ac)

0 150 300
F

Heartland
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Appendix: 2018-09-15
NAIP Aerial Imagery
Holy Hill Road
Project #20210497
T9N, R20E, S18
V Germantown,
Washington Co
2018 NAIP
USDA

June 1994 Dry



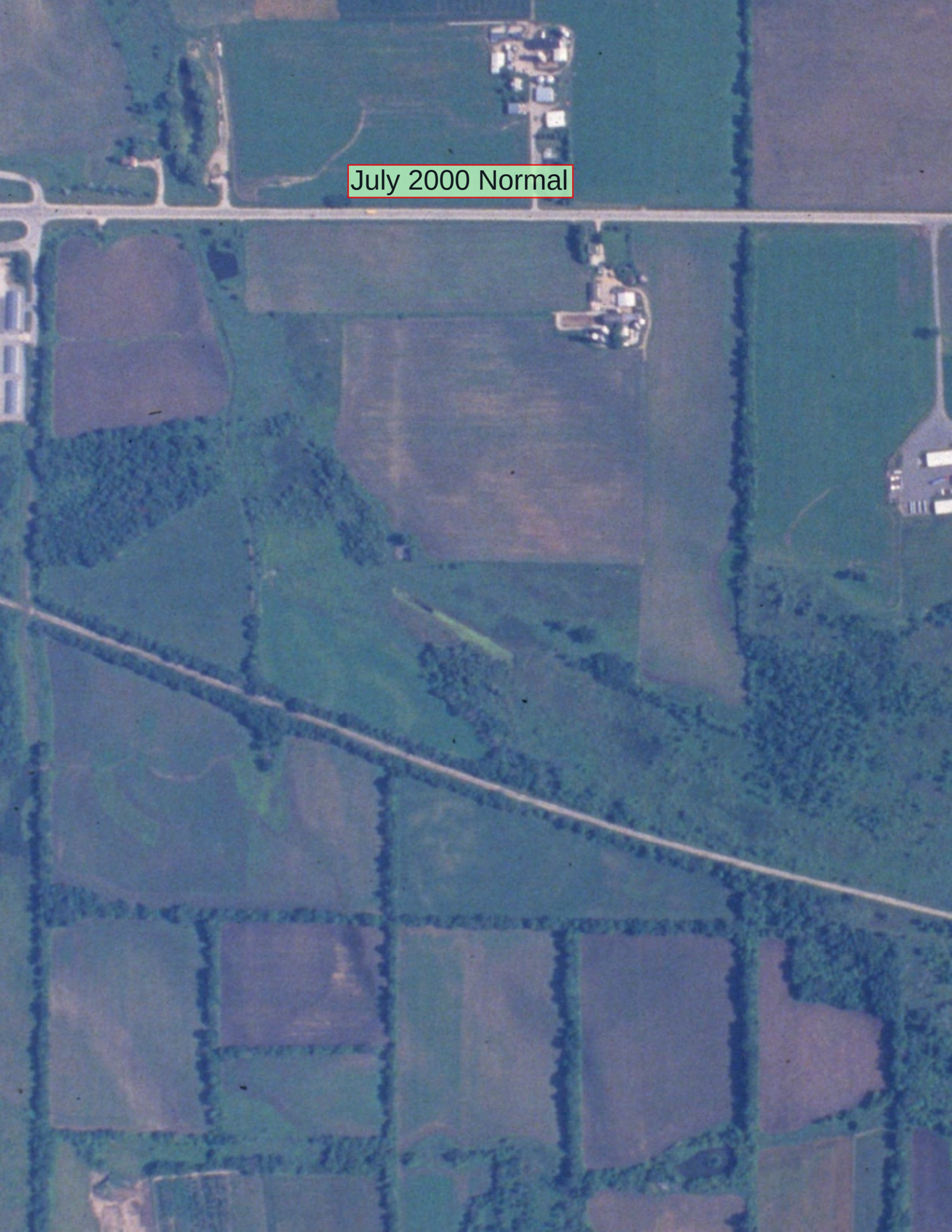
July 1997 Normal



August 1999 Wet



July 2000 Normal



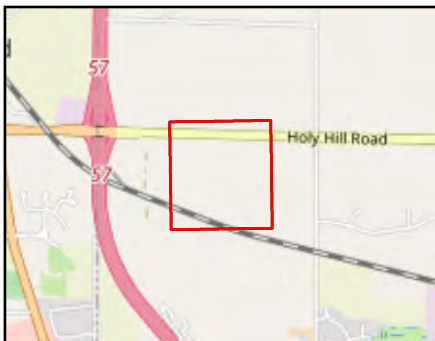
June 2001 Normal



July 2002 Normal



June 2005 Normal



 Study Area (52.67 ac)

0 150 300
F

Heartland
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Appendix: 2005-06-16

NAIP Aerial Imagery

Holy Hill Road

Project #20210497

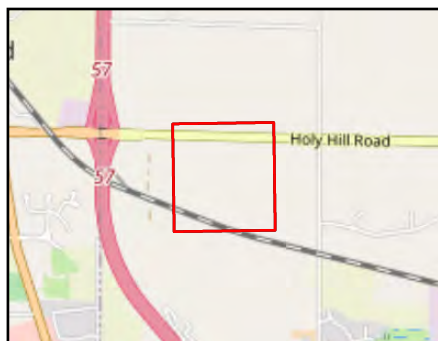
T9N, R20E, S18

V Germantown,

Washington Co

2005 NAIP
USDA

July 2006 Normal



 Study Area (52.67 ac)

0 150 300
F

Heartland
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Appendix: 2006-06-29
NAIP Aerial Imagery
Holy Hill Road
Project #20210497
T9N, R20E, S18
V Germantown,
Washington Co

2006 NAIP
USDA

Untitled Map

Write a description for your map.

Legend

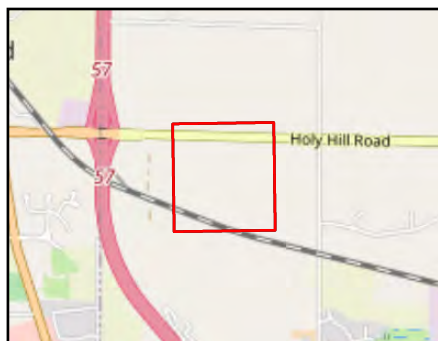
October 2007 Wet

Google Earth

2000 ft



July 2008 Normal



 Study Area (52.67 ac)

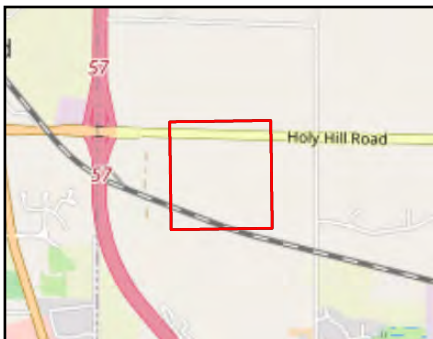
0 150 300
F

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Appendix: 2008-07-05
NAIP Aerial Imagery
Holy Hill Road
Project #20210497
T9N, R20E, S18
V Germantown,
Washington Co

2008 NAIP
USDA

July 2010 Wet



 Study Area (52.67 ac)

0 150 300
F

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Appendix: 2010-07-01

NAIP Aerial Imagery

Holy Hill Road

Project #20210497

T9N, R20E, S18

V Germantown,

Washington Co

2010 NAIP
USDA

Untitled Map

Write a description for your map.

Legend

August 2011 Normal

Google Earth

2000 ft

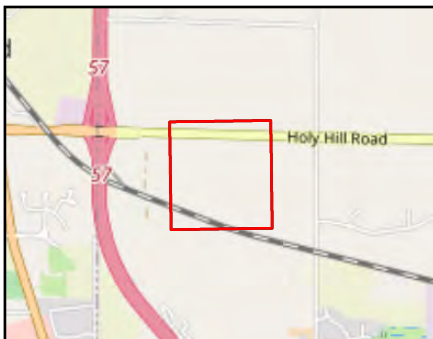


June 2013 Wet



 Study Area (52.67 ac)

0 150 300
F



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Appendix: 2013-06-19
NAIP Aerial Imagery
Holy Hill Road
Project #20210497
T9N, R20E, S18
V Germantown,
Washington Co

2013 NAIP
USDA

Untitled Map

Write a description for your map.

Legend

April 2014 Dry



Untitled Map

Write a description for your map.

Legend

June 2015 Normal



October 2015 Wet



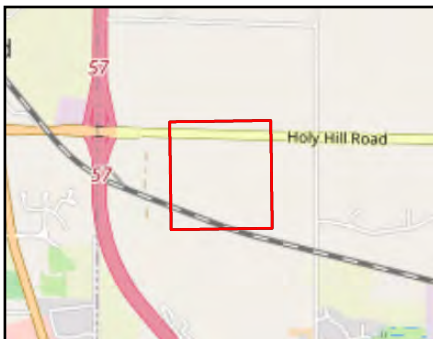
 Study Area (52.67 ac)

0 150 300
F

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Appendix: 2015-09-22
NAIP Aerial Imagery
Holy Hill Road
Project #20210497
T9N, R20E, S18
V Germantown,
Washington Co

2015 NAIP
USDA



Untitled Map

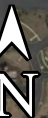
Write a description for your map.

Legend

April 2017 Normal

Google Earth

2000 ft

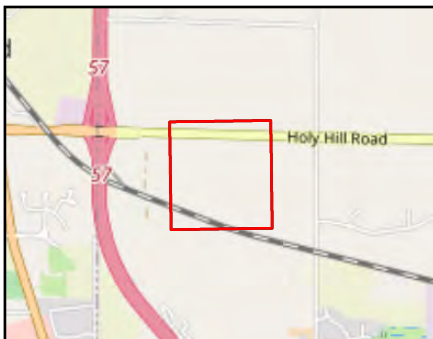


August 2017 Wet



 Study Area (52.67 ac)

0 150 300
F

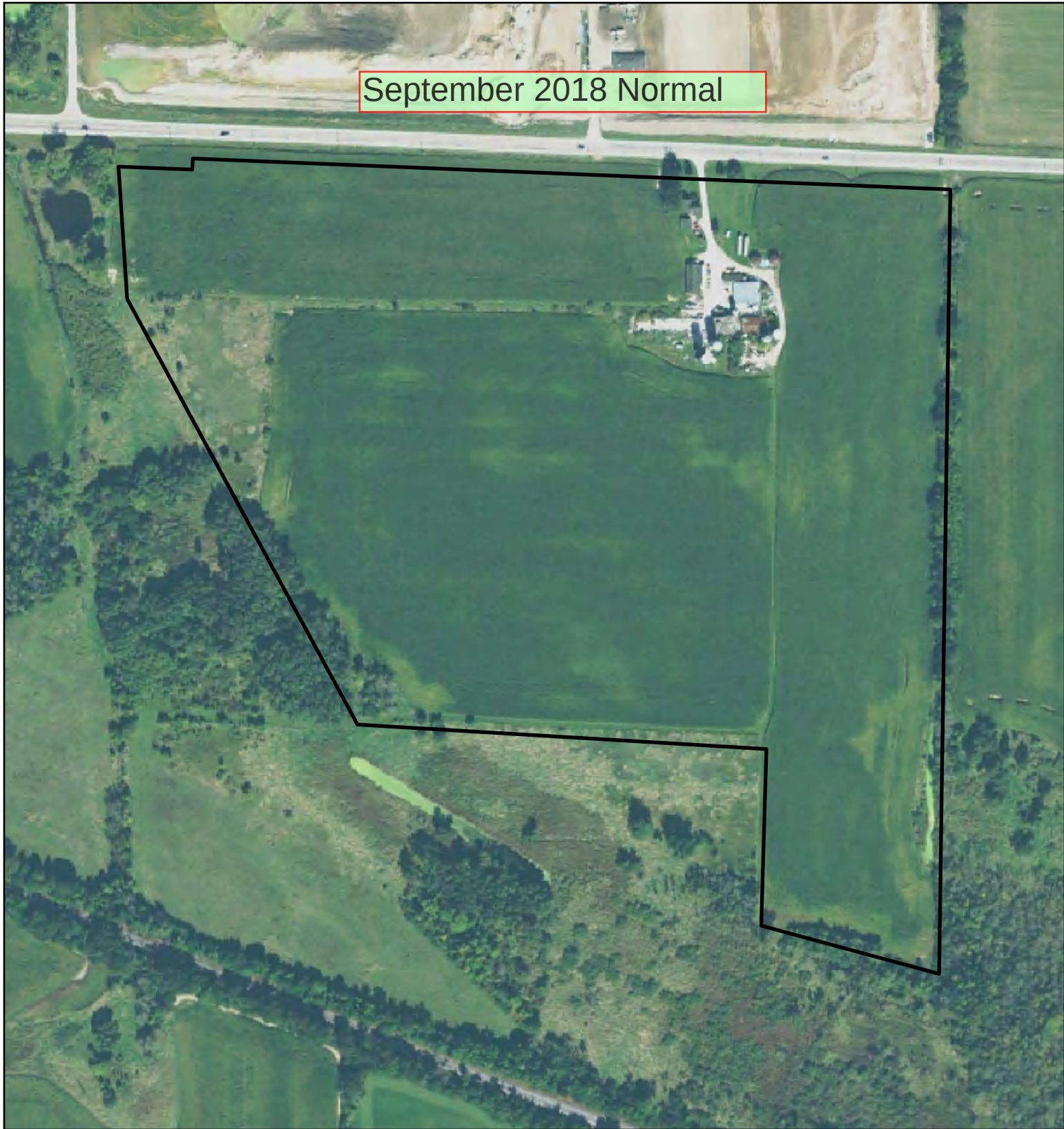


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Appendix: 2017-07-30
NAIP Aerial Imagery
Holy Hill Road
Project #20210497
T9N, R20E, S18
V Germantown,
Washington Co

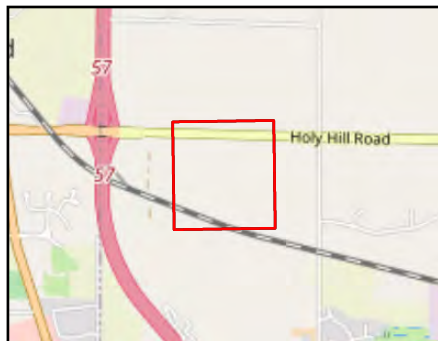
2017 NAIP
USDA

September 2018 Normal



Study Area (52.67 ac)

0 150 300 F



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Appendix: 2018-09-15
NAIP Aerial Imagery
Holy Hill Road
Project #20210497
T9N, R20E, S18
V Germantown,
Washington Co

2018 NAIP
USDA

Untitled Map

Write a description for your map.

Legend

June 2020 Normal

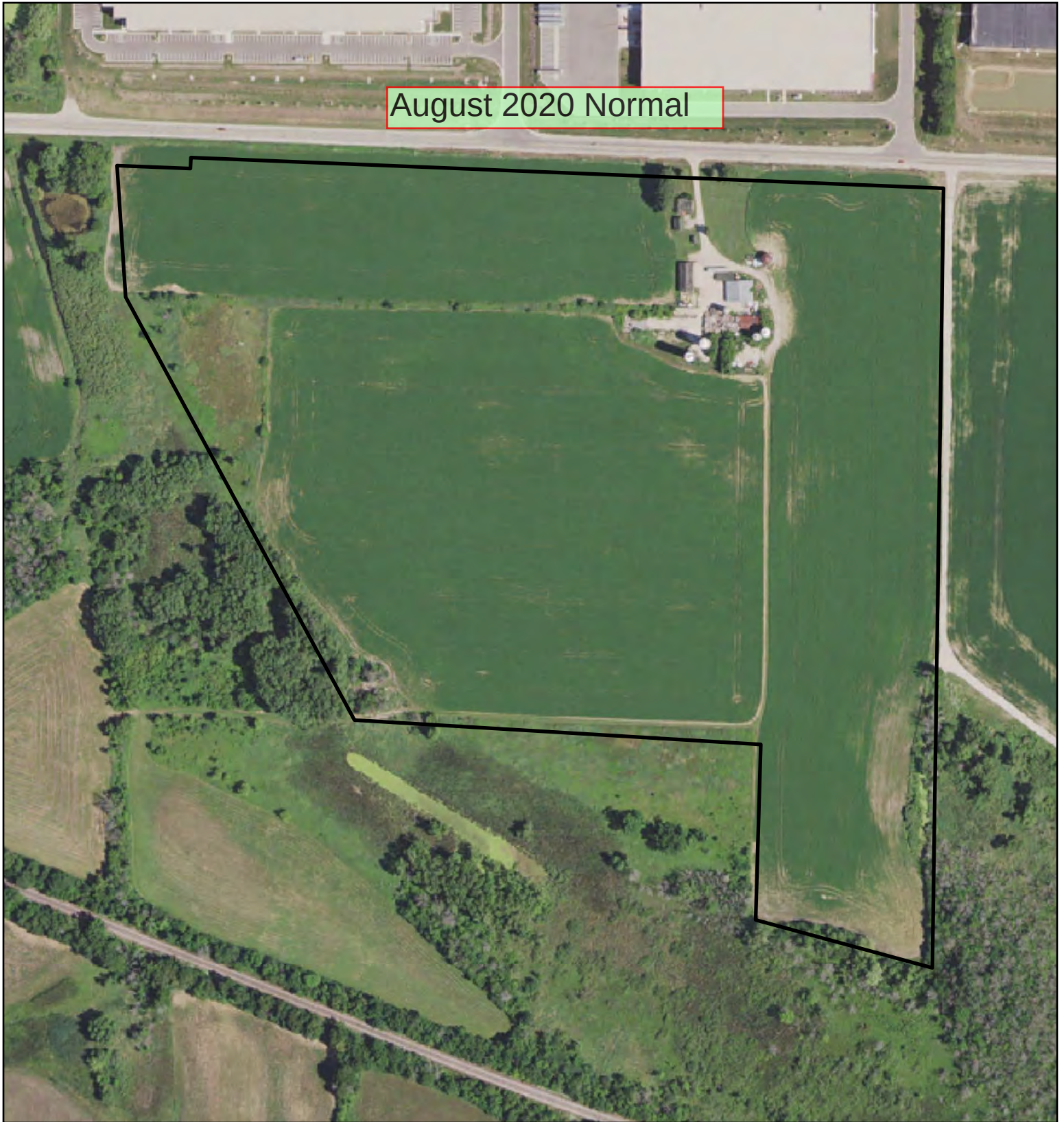
Google Earth

Image © 2021 Maxar Technologies



2000 ft

August 2020 Normal



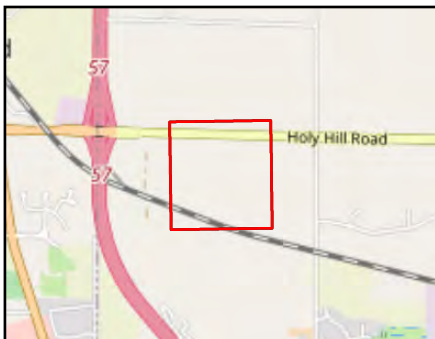
 Study Area (52.67 ac)

0 150 300
F

Heartland
ECOLOGICAL GROUP INC

Appendix: 2020-07-24
NAIP Aerial Imagery
Holy Hill Road
Project #20210497
T9N, R20E, S18
V Germantown,
Washington Co

2020 NAIP
USDA



April Aerial Imagery

Off-Site Aerial Imagery Analysis

Date	Monthly Rainfall in Inches ¹						Weighted Sum	Relative Wetness
	January	Weighted Precip	February	Weighted Precip	March	Weighted Precip		
April 2014 GE	0.55	1	0.97	4	0.65	3	8	Dry
April 2017 GE	1.86	2	1.16	4	2.00	6	12	Normal
30% chance less than**	0.97		0.82		1.15			
30 Year Average**	1.55		1.37		1.93			
30% chance more than**	1.88		1.67		2.34			

¹ Germantown, WI Weather Station

30-Year Average (1990-2020) from FOTG Website:

https://efotg.sc.egov.usda.gov/efotg_locator.aspx

June Aerial Imagery

Off-Site Aerial Imagery Analysis

Date	Monthly Rainfall in Inches ¹						Weighted Sum	Relative Wetness
	March	Weighted Precip	April	Weighted Precip	May	Weighted Precip		
June 1994 FSA	0.83	1	1.28	2	1.57	3	6	Dry
June 2001 FSA	0.32	1	3.90	4	4.63	6	11	Normal
June 2005 NAIP	1.22	2	1.09	2	3.15	6	10	Normal
June 2013 NAIP	1.12	1	6.70	6	5.62	9	16	Wet
June 2015 GE	0.64	1	5.79	6	3.23	6	13	Normal
June 2020 GE	3.74	3	2.11	2	4.39	6	11	Normal
30% chance less than**	1.15		2.62		2.71			
30 Year Average**	1.93		3.79		4.01			
30% chance more than**	2.34		4.52		4.79			

*Germantown, WI Weather Station

30-Year Average (1990-2020) from FOTG Website:

https://efotg.sc.egov.usda.gov/efotg_locator.aspx

July Aerial Imagery

Off-Site Aerial Imagery Analysis

Date	Monthly Rainfall in Inches ¹						Weighted Sum	Relative Wetness
	April	Weighted Precip	May	Weighted Precip	June	Weighted Precip		
July 1997 FSA	1.23	1	4.12	4	9.61	9	14	Normal
July 2000 FSA	2.96	2	8.28	6	4.60	6	14	Normal
July 2002 NAIP	3.91	2	2.30	2	5.85	9	13	Normal
July 2006 NAIP	4.24	2	6.11	6	2.38	3	11	Normal
July 2008 NAIP	7.79	3	1.33	2	9.87	9	14	Normal
July 2010 NAIP	5.01	3	3.28	4	6.50	9	16	Wet
30% chance less than**	2.62		2.71		2.71			
30 Year Average**	3.79		4.01		4.36			
30% chance more than**	4.52		4.79		5.27			

^{*} Germantown, WI Weather Station

30-Year Average (1990-2020) from FOTG Website:

https://efotg.sc.egov.usda.gov/efotg_locator.aspx

August Aerial Imagery

Off-Site Aerial Imagery Analysis

Date	Monthly Rainfall in Inches ¹						Weighted Sum	Relative Wetness
	May	Weighted Precip	June	Weighted Precip	July	Weighted Precip		
August 1999 FSA	4.97	3	4.55	4	8.39	9	16	Wet
August 2011 GE	2.53	1	4.26	4	4.63	9	14	Normal
August 2017 NAIP	4.97	3	6.63	6	3.76	6	15	Wet
August 2020 NAIP	4.39	2	2.28	2	4.00	6	10	Normal
30% chance less than**	2.71		2.71		2.75			
30 Year Average**	4.01		4.36		3.86			
30% chance more than**	4.79		5.27		4.57			

* Germantown, WI Weather Station
 30-Year Average (1990-2020) from FOTG Website:
https://efotg.sc.egov.usda.gov/efotg_locator.aspx

September Aerial Imagery

Off-Site Aerial Imagery Analysis

Date	Monthly Rainfall in Inches ¹						Weighted Sum	Relative Wetness
	June	Weighted Precip	July	Weighted Precip	August	Weighted Precip		
September 2018 NAIP	3.98	2	2.63	2	9.45	9	13	Normal
30% chance less than**	2.71		2.75		2.64			
30 Year Average**	4.36		3.86		3.86			
30% chance more than**	5.27		4.57		4.61			

* Germantown, WI Weather Station

30-Year Average (1990-2020) from FOTG Website:

https://efotg.sc.egov.usda.gov/efotg_locator.aspx

October Aerial Imagery

Off-Site Aerial Imagery Analysis

Date	Monthly Rainfall in Inches ¹						Weighted Sum	Relative Wetness
	July	Weighted Precip	August	Weighted Precip	September	Weighted Precip		
October 2007 GE	2.30	1	3.95	4	4.70	9	14	Normal
October 2015 NAIP	3.12	2	3.89	4	5.40	9	15	Wet
30% chance less than**	2.74		2.67		1.87			
30 Year Average**	3.91		3.97		3.19			
30% chance more than**	4.64		4.75		3.87			

¹Germantown, WI Weather Station

30-Year Average (1990-2020) from FOTG Website:

https://efotg.sc.egov.usda.gov/efotg_locator.aspx



Pinnacle Engineering Group
Holy Hill Road Property
Project #: 20210497
August 6, 2021

Appendix G | Previous Wetland Mapping/Reports

COPY

SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION

916 N. EAST AVENUE • P.O. BOX 1607 • WAUKESHA, WISCONSIN 53187-1607 • TELEPHONE (414) 547-6721
FAX (414) 547-1103

Serving the Counties of: KENOSHA
MILWAUKEE
OZAUKEE
RACINE
WALWORTH
WASHINGTON
WAUKESHA



February 2, 1998

Mr. Sigurd Strautmanis
Village Planner/Zoning Administrator
Village of Germantown
P.O. Box 337
Germantown, WI 53022-0337

Re: SEWRPC No. CA-606-166

Dear Mr. Strautmanis:

This is to acknowledge receipt of, and to respond to, the letter of July 31, 1997 from your predecessor, Mr. Henry J. Elling, requesting the Commission staff to conduct a field inspection of the proposed Mooney LeSage Group lands for the purpose of identifying in the field the boundary of the wetlands on the subject lands. The subject lands are located in parts of the Southeast and Southwest one-quarters of U. S. Public Land Survey Section 7, and the Northeast and Northwest one-quarters of U. S. Public Land Survey Section 18, Township 9 North, Range 20 East, Village of Germantown, Washington County, Wisconsin.

The wetland boundaries were identified and staked in the field by Mr. Donald M. Reed, Chief Biologist, and Ms. Rachel E. Lang, Senior Specialist-Biologist, of the Commission staff, on October 14 and 22, November 29 and December 9, 1997. It is the Commission staff's understanding that the wetland boundaries will be surveyed and identified on a forthcoming plat of survey attendant to the development of the subject lands. A list of plant species identified within the subject wetlands is attached hereto as Exhibit A.

Should you have any questions regarding this information, please do not hesitate to call.

Sincerely,

Philip C. Evenson
Executive Director

PCE/DMR/mlh
Enclosures

cc: Mr. Bruce Lasko, Mooney LeSage Group
Mr. Richard Wagner, STS Consultants
Ms. Katherine Kramasz, DNR-Milwaukee
Mr. Howard J. Ecklund, COE-Waukesha
Mr. Patrick A. Murphy, NRCS-West Bend

SVY1702
CA606-166

EXHIBIT A

PRELIMINARY VEGETATION SURVEY
PROPOSED MOONEY-LASAGE GROUP DEVELOPMENT LANDS

Dates: October 14, 1997
October 22, 1997
November ~~22~~, 1997
December 9, 1997

20

Observers: Donald M. Reed, Chief Biologist
Rachel E. Lang, Senior Specialist-Biologist
Southeastern Wisconsin Regional Planning Commission

Location: Village of Germantown in parts of the Southeast and Southwest one-quarters of U.S. Public Land Survey Section 7, and in parts of the Northeast and Northwest one-quarters of U.S. Public Land Survey Section 18, Township 9 North, Range 20 East, Washington County, Wisconsin.

Species List: Plant Community Area No. 1

GRAMINEAE

Bromus inermis^{1,2}--Smooth brome grass
Festuca elatior^{1,2}--Tall fescue
Poa pratensis--Kentucky bluegrass
Dactylis glomerata^{1,2}--Orchard grass
Agropyron repens^{1,2}--Quack grass
Phalaris arundinacea¹--Reed canary grass
Leersia oryzoides--Rice cut grass
Echinochloa crusgalli¹--Barnyard grass
Setaria sp. ^{1,2}--Foxtail

CYPERACEAE

Eleocharis sp. --Spike rush
Scirpus atrovirens--Green bulrush
Carex stricta--Tussock sedge
Carex sp. --Sedge

LEMNACEAE

Lemna minor--Lesser duckweed

SALICACEAE

Populus deltoides--Cottonwood
Salix babylonica¹--Weeping willow
Salix nigra--Black willow
Salix exigua--Sand-bar willow
Salix bebbiana--Beaked willow

ULMACEAE

Ulmus americana--American elm

URTICACEAE

Urtica dioica--Stinging nettle

POLYGONACEAE

Polygonum amphibium--Smartweed
Polygonum sp. ²--Smartweed

CHENOPODIACEAE

Chenopodium album^{1,2}--Lamb's quarter

ROSACEAE

Rubus occidentalis--Black raspberry
Rubus strigosus--Red raspberry

FABACEAE

Melilotus alba^{1,2}--White sweet clover

BALSAMINACEAE

Impatiens biflora--Jewelweed

VITACEAE

Vitis riparia--River-bank grape

CORNACEAE

Cornus stolonifera--Red osier dogwood
Cornus racemosa--Grey dogwood

OLEACEAE

Fraxinus pennsylvanica--Green ash

VERBENACEAE

Verbena hastata--Blue vervain

LABIATAE

Lycopus americanus--Cutleaf bugleweed
Mentha arvensis--Wild mint

SCROPHULARIACEAE

Verbascum thapsus^{1,2}--Mullein

CAPRIFOLIACEAE

Sambucus canadensis--Elderberry

COMPOSITAE

Ambrosia artemisiifolia--Common ragweed
Xanthium strumarium¹--Cocklebur
Solidago altissima²--Tall goldenrod
Solidago graminifolia--Grassleaf goldenrod
Conyza canadensis--Horseweed
Arctium minus^{1,2}--Common burdock
Cirsium vulgare¹--Bull thistle
Cirsium arvense¹--Canada thistle
Lactuca serriola^{1,2}--Prickly wild lettuce

Total number of plant species: 46

Number of alien, or non-native, plant species: 16 (35 percent)

This approximately 9.0-acre plant community area is part of an agricultural drainageway tributary to Bonniwell Creek and consists of an artificial pond, and disturbed fresh (wet) meadow with second growth, Southern wet to wet-mesic lowland hardwoods along the wetland edge. Disturbances to the plant community area include siltation and sedimentation due to storm water runoff from adjacent agricultural lands; water level changes due to stream channel realignment; ditching; draining; tiling; pond excavation; side casting of dredge spoil material; dumping along the wetland edge; and agricultural land management activities including plowing. No federal- or state-designated rare, threatened, or endangered species were observed during the field inspection.

-
- ¹ Alien, or non-native, plant species.
² Growing along the wetland edge.

Plant Community Area No. 2

POLYPODIACEAE

Onoclea sensibilis--Sensitive fern

GRAMINEAE

Poa pratensis--Kentucky bluegrass

Elymus virginicus--Virginia wild rye

Phalaris arundinacea¹--Reed canary grass

CYPERACEAE

Carex stricta--Tussock sedge

SALICACEAE

Salix bebbiana--Beaked willow

Salix nigra--Black willow

FAGACEAE

Quercus bicolor--Swamp white oak

ULMACEAE

Ulmus americana--American elm

SAXIFRAGACEAE

Ribes americanum--Wild black currant

ROSACEAE

Geum canadense--White avens

Rubus occidentalis--Black raspberry

Rubus strigosus--Red raspberry

Prunus serotina²--Black cherry

RUTACEAE

Zanthoxylum americanum²--Prickly-ash

ACERACEAE

Acer saccharinum--Silver maple

Acer negundo--Boxelder

BALSAMACEAE

Impatiens biflora--Jewelweed

RHAMNACEAE

Rhamnus cathartica¹--Common buckthorn

TILIACEAE

Tilia americana²--Basswood

ONAGRACEAE

Epilobium coloratum--Willow herb

UMBELLIFERAE

Sium suave--Water parsnip

CORNACEAE

Cornus amomum--Silky dogwood

Cornus stolonifera--Red osier dogwood

Cornus racemosa--Grey dogwood

OLEACEAE

Fraxinus pennsylvanica--Green ash

SCROPHULARIACEAE

Pedicularis lanceolata--Swamp lousewort

CAPRIFOLIACEAE

Viburnum lentago--Nannyberry

Sambucus canadensis--Elderberry

COMPOSITAE

Solidago gigantea--Giant goldenrod

Solidago graminifolia--Grassleaf goldenrod

Aster lateriflorus--Calico aster

Eupatorium maculatum--Joe-pye weed

Total number of plant species: 33

Number of alien, or non-native, plant species: 2 (6 percent)

This approximately 4.0-acre plant community area is part of an unnamed drainageway tributary to Bonniwell Creek and consists of fresh (wet) meadow, shrub-carr, and second growth, Southern wet to wet-mesic lowland hardwoods. Disturbances to the plant community area include siltation and sedimentation due to storm water runoff from adjacent lands; water level changes due to stream channel realignment; adjacent ditching and draining; and agricultural land management activities along the wetland edge. No federal- or state-designated rare, threatened, or endangered species were observed during the field inspection.

¹ Alien, or non-native, plant species.

² Growing along the wetland edge.

Plant Community Area No. 3

GRAMINEAE

Poa pratensis--Kentucky bluegrass

CYPERACEAE

Carex granularis--Sedge

FAGACEAE

Quercus bicolor X macrocarpa--Hybrid oak

ULMACEAE

Ulmus americana--American elm

RANUNCULACEAE

Isopyrum biternatum--False rue anemone

ROSACEAE

Fragaria virginiana--Wild strawberry

Geum canadense--White avens

Rubus occidentalis--Black raspberry

Prunus serotina--Black cherry

Prunus virginiana--Choke cherry

Crataegus sp. --Hawthorn

RUTACEAE

Zanthoxylum americanum--Prickly-ash

ACERACEAE

Acer saccharum--Sugar maple

Acer negundo--Boxelder

RHAMNACEAE

Rhamnus cathartica¹--Common buckthorn

TILIACEAE

Tilia americana--Basswood

UMBELLIFERAE

Daucus carota¹--Queen Anne's lace

CORNACEAE

Cornus racemosa--Grey dogwood

OLEACEAE

Fraxinus pennsylvanica--Green ash

ASCLEPIADACEAE

Asclepias exaltata--Poke milkweed

SOLANACEAE

Solanum dulcamara¹--Deadly nightshade

COMPOSITAE

Solidago altissima--Tall goldenrod

Aster pilosus--Frost aster

Aster lateriflorus--Calico aster

Total number of plant species: 24

Number of alien, or non-native, plant species: 3 (13 percent)

This approximately 1.6-acre upland plant community area consists of second growth, Southern mesic to dry-mesic upland hardwoods. Disturbances to the plant community area include siltation and sedimentation due to stormwater runoff from adjacent agricultural lands. No federal- or state-designated rare, threatened, or endangered species were observed during the field inspection.

-
- ¹ Alien, or non-native, plant species.
² Growing along the woodland edge.

Plant Community Area No. 4

EQUISETACEAE

Equisetum arvense--Common horsetail

PINACEAE

Picea pungens¹--Colorado blue spruce

Pinus strobus--White pine

Pinus resinosa--Red pine

Pinus sylvestris¹--Scotch pine

TYPHACEAE

Typha latifolia--Broad-leaved cat-tail

Typha angustifolia--Narrow-leaved cat-tail

GRAMINEAE

Bromus inermis^{1,2}--Smooth brome grass

Festuca elatior^{1,2}--Tall fescue

Poa pratensis--Kentucky bluegrass

Agropyron repens^{1,2}--Quack grass

Agrostis stolonifera¹--Spreading bentgrass

Phleum pratense^{1,2}--Timothy grass

Muhlenbergia schreberi--Muhly grass

Phalaris arundinacea¹--Reed canary grass

Panicum capillare²--Witch grass

Setaria faberi^{1,2}--Giant foxtail

CYPERACEAE

Scirpus atrovirens--Green bulrush

Scirpus lineatus--Red bulrush

Carex vulpinoidea--Fox sedge

Carex granularis--Sedge

Carex stricta--Tussock sedge

Carex sp. --Sedge

JUNCACEAE

Juncus dudleyi--Dudley's rush

SALICACEAE

Populus deltoides--Cottonwood

Salix nigra--Black willow

Salix exigua--Sand-bar willow

Salix bebbiana--Beaked willow

Salix discolor--Pussy willow

Salix sp. --Willow

FAGACEAE

Quercus macrocarpa²--Bur oak

ULMACEAE

Ulmus americana--American elm

POLYGONACEAE

Rumex crispus¹--Curly dock

Polygonum pensylvanicum--Pinkweed

CRUCIFERAE

Nasturtium officinale¹--Water-cress

ROSACEAE

Fragaria virginiana--Wild strawberry
Rubus occidentalis--Black raspberry
Rubus strigosus--Red raspberry
Prunus serotina²--Black cherry
Crataegus sp. --Hawthorn

FABACEAE

Melilotus alba^{1,2}--White sweet clover

RUTACEAE

Zanthoxylum americanum²--Prickly-ash

ACERACEAE

Acer negundo--Boxelder

VITACEAE

Vitis riparia--River-bank grape

UMBELLIFERAE

Daucus carota¹--Queen Anne's lace
Oxypolis rigidior--Cowbane
Angelica atropurpurea--Angelica

CORNACEAE

Cornus amomum--Silky dogwood
Cornus stolonifera--Red osier dogwood
Cornus racemosa--Grey dogwood

OLEACEAE

Fraxinus pennsylvanica--Green ash

ASCLEPIADACEAE

Asclepias syriaca²--Common milkweed

VERBENACEAE

Verbena hastata--Blue vervain

SOLANACEAE

Solanum dulcamara¹--Deadly nightshade

SCROPHULARIACEAE

Chelone glabra--Turtlehead

CAPRIFOLIACEAE

Viburnum lentago--Nannyberry

COMPOSITAE

Bidens sp. --Beggar's-ticks
Ambrosia trifida²--Giant ragweed
Ambrosia artemisiifolia--Common ragweed
Achillea millefolium^{1,2}--Yarrow
Solidago gigantea--Giant goldenrod
Solidago altissima²--Tall goldenrod
Solidago graminifolia--Grassleaf goldenrod
Aster novae-angliae--New England aster
Aster puniceus--Red-stemmed aster
Aster lucidulus--Swamp aster
Aster pilosus²--Frost aster
Aster simplex--Marsh aster

Eupatorium maculatum--Joe-pye weed
Cirsium vulgare^{1,2}--Bull thistle
Cirsium arvense^{1,2}--Canada thistle
Cichorium intybus^{1,2}--Chicory

Total number of plant species: 72

Number of alien, or non-native, plant species: 18 (25 percent)

This approximately 52-acre plant community area is part of an agricultural drainageway tributary to Bonniwell Creek and consists of an artificial pond, shallow marsh, disturbed fresh (wet) meadow, shrub-carr (willow thicket), and second growth, Southern wet to wet-mesic lowland hardwoods. Disturbances to the plant community area include siltation and sedimentation due to storm water runoff from adjacent agricultural lands; water level changes due to ditching and draining; pond excavation; side casting of dredge spoil material; filling and dumping along the wetland edge; and past agricultural land management activities including mowing and attempted plowing in dry years. No federal- or state-designated rare, threatened, or endangered species were observed during the field inspection.

¹ Alien, or non-native, plant species.

² Growing along the wetland edge.

Plant Community Area No. 5

PINACEAE

Picea glauca--White spruce

GRAMINAE

Festuca elatior¹--Tall fescue

Poa pratensis--Kentucky bluegrass

Agrostis stolonifera¹--Spreading bentgrass

Phalaris arundinacea¹--Reed canary grass

CYPERACEAE

Carex stricta--Tussock sedge

CORNACEAE

Cornus amomum--Silky dogwood

Cornus stolonifera--Red-osier dogwood

OLEACEAE

Fraxinus pennsylvanica--Green ash

SALICACEAE

Salix sp.--Willow

COMPOSITAE

Solidago gigantea--Giant goldenrod

Solidago graminifolia--Grassleaf goldenrod

Total number of plant species: 12

Number of alien, or non-native, plant species: 3 (25 percent)

This approximately 2.5-acre plant community area is part of an agricultural drainageway tributary to the West Branch Menomonee River and consists of disturbed fresh (wet) meadow and recent conifer planting. Disturbances to the plant community area include water level changes due to ditching and draining and past agricultural land management activities including plowing. No federal- or state-designated rare, threatened, or endangered species were observed during the field inspection.

¹ Alien, or non-native, plant species.

GERMANTOWN

T9N R20E

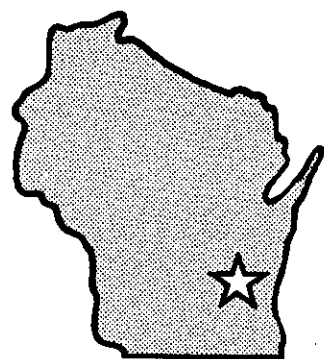
18	2	1	2	1	17
	3	4	3	4	
19	2	1	2	1	20
	3	4	3	4	

- PARCEL BOUNDARY
- SECONDARY ENVIRONMENTAL CORRIDOR
- WETLAND BOUNDARY

WETLAND STAKED BY SEWRPC ON 10/14/97
10/22/97 & 11/20/97
12/9/97

Source: SEWRPC 1" = 400' N1

GOLDENDALE RD



Village of

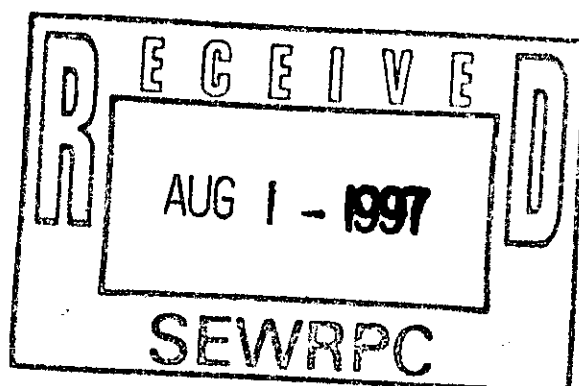
★★★
Germantown

... Willkommen

N122 W17177 Fond du Lac Avenue P.O. Box 337
Germantown, Wisconsin 53022-0337
Phones: (414) 253-8250 or 677-2177 FAX (414) 253-8255

July 31, 1997

Ms. Rachel Lang
Staff Biologist
S.E.W.R.P.C.
P.O. BOX 1607
Waukesha, WI 53187-1607



RE: Wetland Delineation Request

Dear Ms. Lang:

On behalf of the Village of Germantown, and many property owners in Sections 7 and 18 of the Village, I request your assistance in wetland delineation of a large tract of land proposed for development in the next 2+ years. The land includes property currently under various arrangements by the Mooney-LeSage Group. I believe that you have been contacted by Mr. Bruce H. Lasko in regards to this project.

I have attached a larger village-wide map to identify the various lands included in this request. Two additional letter-size pages show more specifically the areas under discussion.

At this time, the project is only in the discussion phases, and no official applications have been filed with the Village of Germantown or the Town of Richfield. Because the development site includes lands outside the Village limits, I will be notifying the Town Planner, Jeff Retzlaff of this request. However, given the size of the project, and the coordinated nature of the development proposal, I hope that you will be able to accomplish site evaluations on all the lands, whether Village of Germantown or Town of Richfield.

If township requests or information are necessary, please contact Mr. Lasko directly at 797-9400. They are currently in the process of selecting an engineering/surveying firm to complete the survey of your delineation. At this time, if you can contact me and Mr. Lasko when you will be on the site, we would be happy to accompany you with the surveyors.

Cordially,

Henry J. Elling *no long there*

Henry J. Elling
Village Planner

Sig Stroutman is

cc: Jeff Retzlaff, Town Planner, Town of Richfield
Paul Brandenburg, Village Administrator
Lloyd Turner, Director of Public Works
Bruce Lasko, MLG

#

BUSINESS OF THE VILLAGE BOARD GERMANTOWN, WI

MEETING DATE: August 16, 2021

AGENDA ITEM: New Business [CSM]

ITEM TITLE: Home Path Financial LP, Property Owner; 4-lot Certified Survey Map (CSM)

SUBMITTED BY: Emily Zandt, Associate Planner, Planning & Zoning

SUMMARY EXPLANATION:

Home Path Financial LP, property owner, is seeking approval of a 4-lot Certified Survey Map (CSM) to extend the Bittersweet Trail right-of-way to the south and to create four (4) residential lots. The area of the proposed CSM was included as a part of the preliminary plat for the Heritage Park North Subdivision, which was approved in April of 2019. While the preliminary plat was approved, approval of the CSM was deferred by the owner. Home Path Financial has since acquired the property subject of the Heritage Park North Subdivision plat and the CSM and will be developing the entire 35 lot neighborhood.

PLAN COMMISSION RECOMMENDATIONS:

APPROVE the 4-lot Certified Survey Map to extend the Bittersweet Trail right-of-way to the south and to create four (4) residential lots as a part of the Heritage Park North Subdivision subject to two (2) conditions.

APPLICATION, PLANS & RELATED DOCUMENTS:

All relevant documents, including applications, plans, supporting information, the staff report & recommendation, and Plan Commission meeting minutes (when available) are included in the PDF digital file distributed by the Village Clerk.

CERTIFIED SURVEY MAP (CSM) APPLICATION

8/9/21 Plan Commission Meeting

Home Path Financial LP

Village Planner Report

Germantown, Wisconsin

Summary

Home Path Financial LP, property owner, is seeking approval of a Certified Survey Map (CSM) to extend the Bittersweet Trail right-of-way to the south and to create four (4) residential lots.

Property Location: South of Bittersweet Trail, east of Division Road

**Applicant/
Property Owner:** Home Path Financial LP
19435 W Capital Drive Suite 102
Brookfield, WI 53045

Current Zoning: Rs-5: Single-family Residential

Adjacent Land Uses		Zoning
North	Residential	Rs-5
South	Residential	Rs-5
East	Residential	Rs-5
West	Residential	Rs-5



Proposal

Home Path Financial LP, property owner, is seeking approval of a Certified Survey Map (CSM) to extend the Bittersweet Trail right-of-way to the south and to create four (4) residential lots. The area subject of the proposed CSM was included as a part of the preliminary plat for the Heritage Park North Subdivision, which was approved in April of 2019. While the preliminary plat was approved, approval of the CSM was deferred by the owner. Home Path Financial has since acquired the property subject of the Heritage Park North Subdivision plat and the CSM and will be developing the entire 35 lot neighborhood.

Staff CommentPlanning & Zoning

All four proposed residential lots created by the CSM meet the requirements of the Rs-5 Single-family residential district. These lots are within the Urban Service Area and will be served by Village water and sewer.

As the proposed CSM is to be a part of the Heritage Park North Subdivision, the four (4) residential lots created shall be included as a part of the Development agreement to be submitted to the Village prior to the final plat submittal for the remaining 31 lots.

Village Engineer/Public Works Department

The Village's engineering consultant has identified minor plan revisions and technical corrections to the CSM as set forth in an August 5, 2021 review memo (copy attached). These corrections have been added as a condition of approval.

The water utility will require that all underground facilities be located by the developer whenever Diggers Hotline calls in for a ticket until Germantown's GIS is updated with as-built records.

VILLAGE STAFF RECOMMENDATION

APPROVE the 4-lot Certified Survey Map to extend the Bittersweet Trail right-of-way to the south and to create four (4) residential lots as a part of the Heritage Park North Subdivision subject to the following conditions:

1. All technical issues and corrections identified in the August 5, 2021 review memo by Burt Naumann, Graef Engineering, that shall be addressed and reflected in a revised CSM submitted and approved by the Engineering Department prior to recording the CSM.
2. A note shall be added to the CSM stating that the four (4) residential lots created through this CSM are subject to the Development Agreement for the Heritage Park North subdivision pending review and approval by the Village of Germantown.



The Avenue
275 West Wisconsin Avenue, Suite 300
Milwaukee, WI 53203
414 / 259 1500
414 / 259 0037 fax
www.graef-usa.com

collaborāte / formulāte / innovāte

August 5, 2021

Jeff Retzlaff, Village Planner
Village of Germantown
N112 W17001 Mequon Road
Germantown, WI 53022

SUBJECT: Home Path Financial, LP CSM Review

Certified Survey Map

Applicant or Owner: Home Path Financial, LP

Land Surveyor/Firm: Keith Kindred, SEH

1. A 3" x 3" square in the upper right-hand corner of Sheet 1 is to be left blank for Washington County recording information.
2. Per Chapter 18 of the Village Land Division Ordinance all Subdivisions and Certified Survey Maps will be referenced to the Wisconsin State Plane Coordinate System, South Zone (NAD 1983-2011 datum) grid bearings for a bearing basis.
3. Coordinates (NAD 1983 Grid) of point of commencement monument.
4. Point of beginning should be labeled.
5. Lots should be labeled 1 through 4 to avoid confusing this CSM with the Heritage Park North Subdivision Plat.
6. This CSM should include all of CSM 4988 and then dedicate the Bittersweet Trail right of way to the Village for roadway purposes.
7. The last paragraph in the Surveyor's Certificate should include Chapter 18 of the Village of Germantown Subdivision Control Ordinance.
8. The second paragraph in the Surveyor's Certificate should be corrected to "Commencing at the **West** ¼ corner".
9. A mortgagee certificate should be included if applicable.
10. Show and label the temporary turn around easement from CSM 4988.

11. The **Village of Germantown Board Approval** should read as:

This Certified Survey Map, being a division of $\frac{1}{4}$ $\frac{1}{4}$ Section ____, Township 9 North, Range 20 East, Village of Germantown, Washington County, Wisconsin, having been approved by the Planning Commission being the same, is hereby approved and the dedication of that part of (insert street name) for public road purposes as shown on Sheet __ of __ is hereby accepted by the Village Board of Trustees of the Village of Germantown on this ____ day of _____, 2021.

12. The **Village of Germantown Planning Commission Approval** should read as:

This Certified Survey Map is hereby approved by the Planning Commission of the Village of Germantown on this ____ day of _____, 2021.

13. The Planning Commission Secretary signs as Laura A. Johnson.

No further review comments.

Document Approval and Recording

For this CSM 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.

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.

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 2019 on compact disk (CD) or 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.



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Note: In 2020, the Village will be upgrading its municipal code to recognize the NAD83 Datum, 2011 adjustment for horizontal control and NAVD88 for vertical control for mapping all land division documents and plan submittals for review.

There are new dossier sheets for all the Public Land Survey System monuments that contain the new coordinate positions and elevations available currently on the State Cartographer's website by using the Survey Control Finder application

Prior to Recording the Certified Survey Map or Final Subdivision Plat, the Village Engineering Department will verify that the boundary markers have been installed as described on the submitted map. All boundary corners are to be clearly marked in the field by the professional land surveyor of record.

Sincerely,

A handwritten signature in blue ink, reading "Burt J. Naumann".

Burt J. Naumann, PLS
Senior Vice President



Village of

Germantown
Willkommen

Fee must accompany application

- ☐ \$2,900 with public improvements
☐ \$1,960 no public improvements

Paid 47 Date 6/24/21

CERTIFIED SURVEY MAP APPLICATION

Pursuant to Section 18.06 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 LP

19435 W Capitol Drive Suite 102

Brookfield, WI 53045

Phone (262) 282 - 1721

Fax () N/A

E-Mail sjagodzinski@myhomepath.com

PROPERTY OWNER

Home Path Financial LP

19435 W Capitol Drive Suite 102

Brookfield, WI 53045

Phone (262) 282 - 1721

PROPERTY ADDRESS OR GENERAL LOCATION

TAX KEY NUMBER

2

Bittersweet Trail (No Formal Property Address)

342271

3

PURPOSE OF LAND SPLIT

To subdivide one large lot into four lots which will each between 0.39 - 0.5 acre single-family lots

Will the land split require rezoning?

No

From

To

4

READ AND INITIAL THE FOLLOWING:

SJ I understand that the Certified Survey Map 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.

SJ I understand that the Map will not be placed on the Village Board agenda until all the technical corrections to the CSM are made, the payment of any outstanding impact fees are paid to the Village Clerk's Department, and the original signed and stamped copy of the Map is submitted on the proper paper.

SJ 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.

SJ I understand all delinquent property taxes on any of the properties involved shall be paid prior to recording.

5

SIGNATURES -- ALL APPLICATIONS MUST BE SIGNED BY OWNER!

Applicant

Date

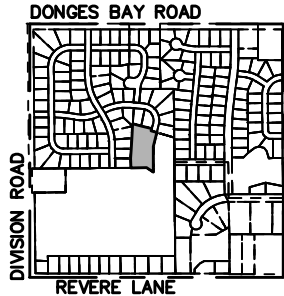
Owner

Date

CERTIFIED SURVEY MAP NO.

BEING PART OF THE OUTLOT OF CERTIFIED SURVEY MAP NO. 4988, BEING PART OF THE NE. 1/4, NW. 1/4 AND SW. 1/4 OF THE NW. 1/4 OF SECTION 34, T.9N., R.20E., VILLAGE OF GERMANTOWN, WASHINGTON COUNTY, WISCONSIN.

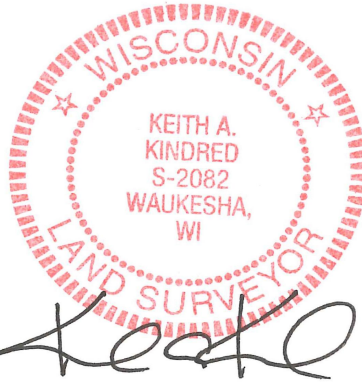
LOCATION MAP



NW. 1/4 SEC. 34-T9N-R20E

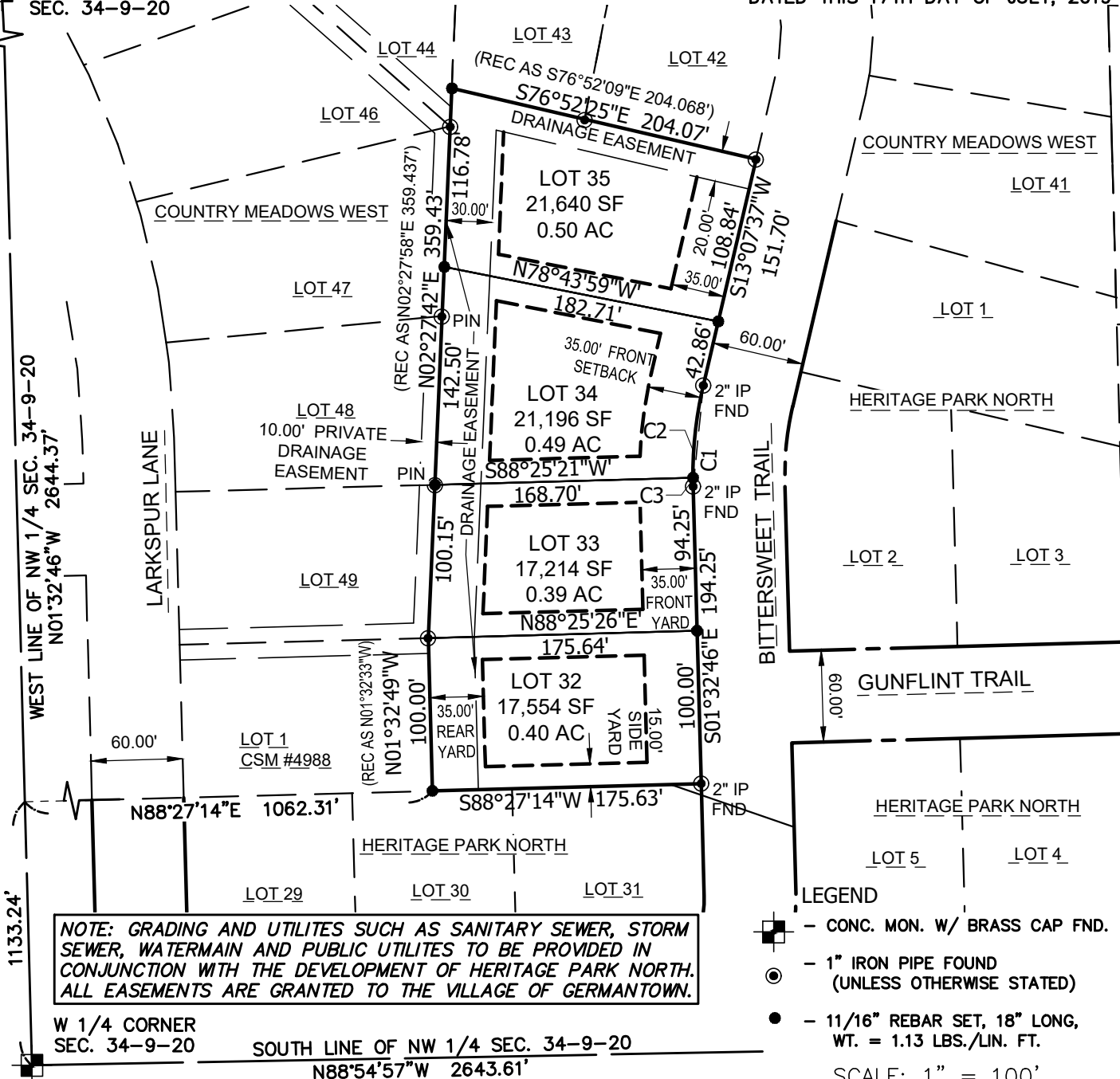
SURVEYOR:
KEITH A. KINDRED, PLS S-2082
SEH, INC.
501 MAPLE AVE.
DELAFIELD, WI 53018
(414) 949-8919

SURVEY FOR:
HOME PATH FINANCIAL, LP
19435 W. CAPITOL DR.
SUITE 102
BROOKFIELD, WI 53045



REVISED THIS 3RD DAY OF JUNE, 2021
REVISED THIS 30TH DAY OF JULY, 2019
REVISED THIS 25TH DAY OF JULY, 2019
DATED THIS 17TH DAY OF JULY, 2019

NW CORNER
NW 1/4
SEC. 34-9-20



NOTE: GRADING AND UTILITES SUCH AS SANITARY SEWER, STORM SEWER, WATERMAIN AND PUBLIC UTILITES TO BE PROVIDED IN CONJUNCTION WITH THE DEVELOPMENT OF HERITAGE PARK NORTH. ALL EASEMENTS ARE GRANTED TO THE VILLAGE OF GERMANTOWN.

W 1/4 CORNER
SEC. 34-9-20
SOUTH LINE OF NW 1/4 SEC. 34-9-20
N88°54'57"W 2643.61'

NOTE: BY SIGNING THIS CERTIFIED SURVEY MAP, THE VILLAGE OF GERMANTOWN RELEASES THE TEMPORARY TURN AROUND EASEMENT ON THE OUTLOT OF CERTIFIED SURVEY MAP NO. 4988.

PHONE: 414.949.8962
501 MAPLE AVENUE
DELAFIELD, WI 53018-9351
www.sehinc.com

BEARINGS ARE REFERENCED TO THE WISCONSIN STATE PLANE COORDINATE SYSTEM, SOUTH ZONE (NAD 1927) GRID NORTH ON THE WEST LINE OF THE NW 1/4 OF SECTION 34-9-20 AS N01°32'46"W.

- LEGEND
- CONC. MON. W/ BRASS CAP FND.
 - 1" IRON PIPE FOUND (UNLESS OTHERWISE STATED)
 - 11/16" REBAR SET, 18" LONG, WT. = 1.13 LBS./LIN. FT.
- SCALE: 1" = 100'



CERTIFIED SURVEY MAP NO.

BEING PART OF THE OUTLOT OF CERTIFIED SURVEY MAP NO. 4988, BEING PART OF THE NE. 1/4, NW. 1/4 AND SW. 1/4 OF THE NW. 1/4 OF SECTION 34, T.9N., R.20E., VILLAGE OF GERMANTOWN, WASHINGTON COUNTY, WISCONSIN.

SURVEYOR'S CERTIFICATE:

I, Keith A. Kindred, Professional Land Surveyor hereby certify;



PHONE: 414.949.8962
501 MAPLE AVENUE
DELAFIELD, WI 53018-9351
www.sehinc.com

That I have surveyed, divided and mapped a part of the Outlot of Certified Survey Map No. 4988, being a part of the Northeast 1/4, the Northwest 1/4 and the Southwest 1/4 of the Northwest 1/4 of Section 34, Town 9 North, Range 20 East, Village of Germantown, Washington County, Wisconsin, more particularly described as follows:

Commencing at the East 1/4 corner of Section 34; thence N01°32'46"W along the West line of the Northwest 1/4 of said Section 34 a distance of 1133.24 feet to the North line of Certified Survey Map No. 2895 and the extension thereof; thence N88°27'14"E along said North line, also being the South line of Country Meadows West and South line of Lot 1 of Certified Survey Map No. 4988 a distance of 1062.31 feet to the point of beginning; thence N01°32'49"W along the East line of Lot 1 of Certified Survey Map No. 4988 a distance of 100.00 feet; thence N02°27'42"E along the East line of Lots 49, 48, 47 and 44 of Country Meadows West 359.43 feet to the South line of Lot 43 of Country Meadows West; thence S76°52'25"E along the South line of Lot 43 and Lot 42 of Country Meadows West 204.07 feet to the Westerly line of Bittersweet Trail; thence S13°07'37"W along said Westerly line 151.70 feet; thence Southwesterly along said Westerly line and the arc of a curve to the left, whose radius is 260.00 feet and whose chord bears S05°47'26"W, 66.40 feet; thence S01°32'46"E along said Westerly line 194.25 feet to the North line of Lot 31, Heritage Park North; thence S88°27'14"W along the North line of Lot 32 and Lot 32 of Heritage Park North 175.63 feet to the point of beginning.

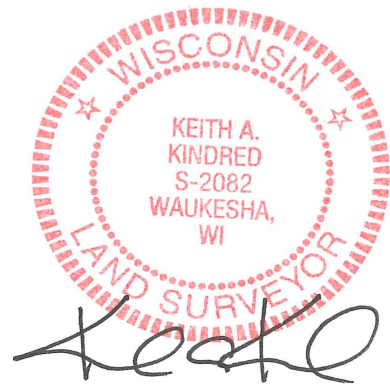
Said lands contain 77,604 Sq.Ft. or 1.78 Acres.

That I have made such survey, land division and Certified Survey Map by the direction of the Home Path Financial, LP, owner of said lands.

That such survey is a correct representation of all the exterior boundaries of the lands surveyed and the division thereof made.

That I have fully complied with the provisions of Chapter 236 of the Wisconsin State Statutes and the subdivision regulations of the Village of Germantown and Washington County in surveying, dividing and mapping the same.

Dated this 17th day of July, 2019
Revised this 25th day of July, 2019
Revised this 30th day of July, 2019
Revised this 3rd day of June, 2021



Keith A Kindred, PLS 2082

Curve Table							
CURVE #	RADIUS	DELTA	ARC DIST	CHORD DIST	CHORD BEARING	TAN BEARING 1	TAN BEARING 2
C1	260.00'	14°40'23"	66.58'	66.40'	S05°47'26"W	S01°32'46"E	S13°07'37"W
C2	260.00'	13°24'19"	60.83'	60.69'	S06°25'27"W	S00°16'42"E	S13°07'37"W
C3	260.00'	1°16'04"	5.75'	5.75'	S00°54'44"E	S01°32'46"E	S00°16'42"E

CERTIFIED SURVEY MAP NO. _____

BEING PART OF THE OUTLOT OF CERTIFIED SURVEY MAP NO. 4988, BEING PART OF THE NE. 1/4, NW. 1/4 AND SW. 1/4 OF THE NW. 1/4 OF SECTION 34, T.9N., R.20E., VILLAGE OF GERMANTOWN, WASHINGTON COUNTY, WISCONSIN.

OWNER'S CERTIFICATE OF DEDICATION:

As owner, Home Path Financial, LP, we hereby certify that we caused that land described on this Certified Survey Map to be surveyed, divided, mapped and dedicated as represented on the Certified Survey Map. We also certify that this Certified Survey Map is required by s.236.10 or s.236.12 to be submitted to the following for approval or objection:

- 1) WASHINGTON COUNTY
- 2) VILLAGE OF GERMANTOWN

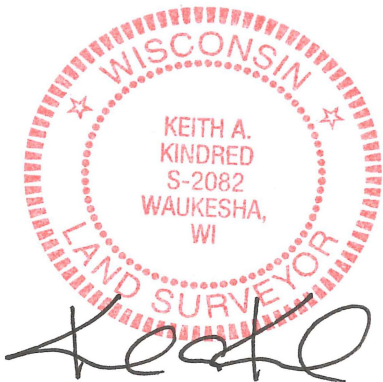
Date: _____ Signed: _____
Jeffrey M. Kleiner, member

STATE OF _____)
_____ COUNTY) SS

Personally came before me this _____ day of _____, 20_____, the above named Jeffrey M. Kleiner, to me known to be the same persons who executed the foregoing instrument and acknowledged the same.

Notary Public

County, Wisconsin
My Commission Expires _____



CERTIFIED SURVEY MAP NO. _____

BEING PART OF THE OUTLOT OF CERTIFIED SURVEY MAP NO. 4988, BEING PART OF THE NE. 1/4, NW. 1/4 AND SW. 1/4 OF THE NW. 1/4 OF SECTION 34, T.9N., R.20E., VILLAGE OF GERMANTOWN, WASHINGTON COUNTY, WISCONSIN.

VILLAGE BOARD APPROVAL CERTIFICATE:

Resolved that the Certified Survey Map, in the Village of Germantown, is hereby approved by the Village Board.

All conditions have been met as of the _____ day of _____, 20____.

Date: _____ Signed _____
Dean Wolter, Village President

Date: _____ Signed _____
Deanna Braunschweig, Village Clerk

PLANNING COMMISSION APPROVAL CERTIFICATE:

APPROVED, that the Certified Survey Map, in the Village of Germantown, is hereby approved by the Planning Commission.

Approved as of the _____ day of _____, 20____.

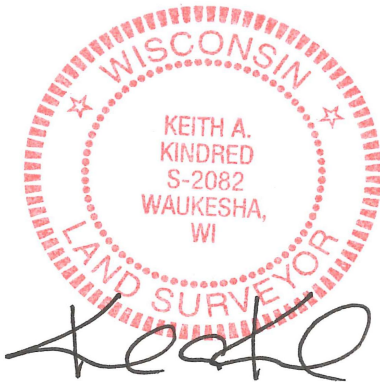
Date: _____ Signed _____
Dean Wolter, Chairperson

I hereby certify that the foregoing is true and correct copy of a resolution adopted by the Planning Commission of the Village of Germantown.

Date: _____ Signed _____
Lori Johnson, Secretary



PHONE: 414.949.8962
501 MAPLE AVENUE
DELAFIELD, WI 53018-9351
www.sehinc.com



REVISED THIS 3RD DAY OF JUNE, 2021
REVISED THIS 30TH DAY OF JULY, 2019
REVISED THIS 25TH DAY OF JULY, 2019
DATED THIS 17TH DAY OF JULY, 2019