VILLAGE OF GERMANTOWN
N112 W17001 MEQUON ROAD
GERMANTOWN, WI 53022

MEETING:	**REGULAR MEETING OF THE PLAN COMMISSION**
DATE AND TIME:	**Friday, April 14, 2023 6:30 PM**
LOCATION:	**Germantown Village Hall Board Room** **N112 W17001 Mequon Road**

NOTICE: Any member of the body and/or citizen may also attend the meeting virtually through the WebEx platform, Meeting #: 2553 216 2843 Password: qRNiKJrY345 which can be accessed by phone at 408-418-9388 or by logging on at:
https://villageofgermantown.my.webex.com/villageofgermantown.my/j.php?MTID=mc9dce1f069066f4f2d3614fe9ee4ae0f
Citizens not wishing to attend the meeting personally or virtually may submit public comments by sending an email to comments@germantownwi.gov by 4 p.m. on the day of the meeting so that they can be provided to the members of the body for their consideration. Previously recorded 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. PUBLIC INPUT/PUBLIC APPEARANCE: *Please be advised per §19.84(2) that information and comment will be received from the public. It is the policy of this municipality that public input be limited to a three (3) minute period per person with a time extension granted at the discretion of the Chairperson. Be advised that there may be limited discussion of the information received but no action will be taken.*

IV. APPROVAL OF MINUTES: *March 13, 2023*

A. Approval of Minutes DATE, Meeting

B. March 13, 2023

V. NEW BUSINESS:

A. Amendment to the Village of Germantown 2050 Comprehensive Plan to incorporate the 2022 Intergovernmental Agreement for the provision of Municipal Wastewater and Water Utility Service between the Village of Richfield and the Village of Germantown. **(PUBLIC HEARING & ACTION)**

B. Michael Doran for U.S. Cellular, Agent for Faith Lutheran Church, Property Owner – W172 N11183 Division Road. Conditional Use Permit (CUP) and Site Plan Review for a 190' high monopole tower and wireless communication facility. **(PUBLIC HEARING & ACTION**)

C. pb2 Architecture & Engineering, Agents for Meridian Germantown LLC, Property Owner and Walmart – W190 N9855 Appleton Avenue. Site Plan Review for a 3,865 sqft building addition, exterior renovations and Sign Review application. **(ACTION)**

D. Silver Leaf Signs & Graphics, Agent for Germantown Investment Group LLC, Property Owner and Veterinary Dental Specialists – N97 W17095 Division Road. Sign Review application. **(ACTION)**

E. Moraine Development LLC, Applicant and Property Owner – W215 N11380 Appleton Avenue. Site Plan review for gravel mining restoration. **(ACTION)**

F. Signs & Lines by Stretch, Agent for TI Investors of Germantown LLC, Property Owner and Motis Brands – W210 N12975 Gateway Crossing. **(ACTION)**

G. Village of Germantown 2050 Comprehensive Plan: Implementation Objectives & Action Steps**(DISCUSSION)**

VI. ANNOUNCEMENTS:

VII. ADJOURNMENT:

UPON REASONABLE NOTICE, efforts will be made to accommodate the needs of disabled individuals through appropriate aids and services. For Additional information or to request this service please contact the Village Clerk at (262)250-4740 at least 2 days prior to the meeting.

PLAN COMMISSION MINUTES
March 13, 2023

CALL TO ORDER: Chairman Wolter called the meeting to order at 6:30 pm.

ROLL CALL: Chairman Dean Wolter, Trustee Representative David Baum, Commissioners Peter Nilles, Bob Williams, Bill Shadid and Josh Tarantino were present. Commissioner Tony Laszewski was absent and excused. Also present were Community Development Director Jeff Retzlaff and Planning Assistant Lori Johnson.

PUBLIC INPUT:
- Melanie Smythe, N140 W17938 Cedar Lane, reviewed her comments on the implementation objectives and action steps for the 2050 Plan.
- Scott Hefle, W159 N10514 Old Farm Road, commented that no one can see this meeting and asked how to get the word out. He said we have time to develop the 2050 Plan, there is no rush, residents should be asked what they want.
- Steve Wesolowski, W169 N10427 Pheasant Run, said he talked to his neighbors about developing the 2050 Plan.

APPROVAL OF MINUTES:

MOTION Baum second Nilles to Approve the minutes from February 27, 2023
MOTION carried (Williams abstained).

ZPG Development and TI Investors of Germantown, Property Owner of Lot 8 of CSM 7262 Gateway Crossing. Site plan application for a 233, 282 sqft industrial building (Zilber 6). Director Retzlaff summarized the proposal.

MOTION Baum second Williams to Approve the site development and building plans for the 233,482 sqft "Zilber 6" industrial building located at W210 N13035 Gateway Crossing in the Germantown Gateway Corporate Park 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 architectural and engineering plans unless superseded by subsequent plan sheets approved by Village Staff pursuant to revisions required herein and/or by the Plan Commission:***
    a. ***"Onsite Civil Engineering and Infrastructure Plans for the Zilber Industrial 6 at Germantown Corporate Park" dated January 9, 2023;***
    b. ***Architectural plans labeled "Zilber Industrial 6" dated January 9, 2023;***
    c. ***Exterior lighting plans dated January 9, 2023;***
    d. ***Landscaping Plans dated January 9, 2023***
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.***
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***

DRAFT

submitted to Staff for further review, comment and approval prior to issuance of a building permit for the Zilber 6 building (excluding "early start" site clearing and footing/foundation work approved by the Village and/or WI DSPS):

a. March 8, 2023, memo from Public Works Director, Larry Ratayczak

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. ***The Zilber Property Group shall notify prospective tenants that said tenants are responsible for providing 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 at the time a Zoning/Occupancy Permit is obtained. RTU's shall be setback a minimum of 14 feet from the perimeter roof/wall edge to obscure the view of all RTU's from property lines around the building and the centerline of the Gateway Crossing. 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 issuance of an occupancy permit.***
7. ***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.***
8. ***A cross access easement agreement between the Zilber 5 and Zilber 6 parcels shall be recorded prior to the issuance of occupancy for any tenant for the Zilber 6 building.***

Discussion followed.

MOTION carried unanimously.

<u>Innovative Signs, agent for Goldendale III, property owner of W204 N13055 Goldendale Road.</u> Sign review for Daikin Comfort Technologies. Director Retzlaff summarized the proposal.

MOTION Baum second Shadid to Approve the proposed wall sign for Daikin-Goodman manufacturing facility located at W204 N13055 Goldendale Road as proposed.
MOTION carried unanimously.

<u>Village of Germantown – W210 N13180 Gateway Crossing</u>. Site Plan application for a 2,560 sqft potable water well station on the 2.5-acre water tower parcel. Director Retzlaff summarized the proposal. He indicated staff had concerns with the proposed landscaping and berming for the site.

MOTION Baum second Shadid to Approve the site development and building plans for the proposed 2,560 sqft Well Station #12 located at W210 N13180 Gateway Crossing in the Germantown Gateway Corporate Park 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 October 20, 2022;
b. Civil Engineering plans dated October 17, 2022;
c. Landscaping plans dated October 17, 2022;

2. All landscaping, screening, grading, and paving improvements shown on the approved site plans shall be installed within one (1) year after issuance of the occupancy permit for the shell building.
3. The landscape plan shall be revised to include a more continuous area of plantings along the entire Rockfield Road frontage with higher & wider berms. The revised plan shall be submitted to the Village Planner & Public Works Director for review and approval prior to issuance of an occupancy permit.

Commissioner Shadid questioned the reason for the second driveway at Rockfield Road. Director Retzlaff stated the second driveway provides additional access without having to turn around on the site. But it dissects the berm along Rockfield Road. Commissioner Shadid supported the idea to eliminate the second driveway. Trustee Baum mentioned the water tower on Mequon Road that has turnaround capacity on site. He said he was OK with staff figuring it out. Chairman Wolter said he would prefer a single driveway and a landscape plan to match what we tell others to do. If we have certain criteria for other businesses, we should follow the same. He also prefers the landscaping be cohesive and to not hold ourselves to a different standard than everyone else that builds in that area.

MOTION Baum second Shadid to Amend Comment #3 to work with staff and look at a scenario of the paved access similar to the water tower on Mequon Road with a single entrance and work with staff to revise the berming and landscaping to match the landscaping and berming on the Illing property.

MOTION to Amend carried unanimously.
MOTION to Approve as Amended carried unanimously.

TDC Willow Creek for BV Ryan Willow Creek II, property owner and Dickman Development – N102 W19200 Willow Creek Way. Site plan review for a 209,329 sqft industrial building in the Willow Creek Business Park. Director Retzlaff summarized the proposal.

MOTION Baum second Tarantino to Approve the site development and building plans for a 209,329 sqft industrial building located at N102 W19200 Willow Creek Way in the Germantown Willow Creek Business Park 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 architectural and engineering plans unless superseded by subsequent plan sheets approved by Village Staff pursuant to revisions required herein and/or by the Plan Commission:
a. Civil engineering, utility, erosion control, and storm water management plans dated February 13, 2023;
b. Architectural plans dated February 13, 2023;
c. Exterior lighting plans dated February 13, 2023;
d. Landscaping plans dated February 13, 2023

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.***
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. ***The Developer shall coordinate with the Village Public Works and Fire Department to design and install the secondary "emergency vehicle" access driveway to Appleton Avenue. In the event said emergency access driveway is not installed within one (1) year after issuance of the first occupancy permit, or, not allowed as planned within the ATC 125' transmission line easement or the ANR-TC Energy 100' pipeline easement, the Developer shall cooperate with the Village to identify a mutually acceptable alternative location and design for the required emergency access driveway. Once final details for the location and design, including the security fence and gate, have been determined, the Developer shall prepare and submit a revised site plan indicating how the emergency drive will interface with the parking lot to the Village Fire and Public Works Departments for review and approval.***
5. ***The Developer shall be responsible for ongoing and regular maintenance of the emergency access driveway as needed to keep the driveway accessible at all times of the day and through the year.***
6. ***The Village Engineer and Public Works Department has not completed its review of the civil plans, sewer & water easement utility realignment or storm water management plan and report (copy enclosed dated March 9, 2023). Consequently, no permits shall be issued by the Village for construction of the building until such time as Public Works & engineering staff have reviewed and approved the civil engineering, utility, and storm water management plans and reports for Village and other applicable code compliance (excluding "early start" site clearing and footing/foundation work approved by the Village and/or WI DSPS).***
7. ***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.***
8. ***The Developer/Owner shall notify prospective tenants that said tenants are responsible for providing 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 at the time a Zoning/Occupancy Permit is obtained. 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 issuance of an occupancy permit.***
9. ***All proposed exterior signage, including temporary, monument and wall-mounted signs, require review and approval by the Village staff or the Plan Commission.***

DRAFT

10. ***Copies of any/all final approval by American Transmission Company (ATC) and TC Energy (ANR Pipeline) shall be provided to the Village prior to commencement of any construction or other development activity within the ATC and TC Energy utility easements.***
11. ***The Developer/Owner shall notify all prospective tenants of the proposed industrial building that they are required to obtain a Zoning Compliance/Occupancy permit from the Village prior to occupancy of the building.***

Trustee Baum commented that the canopy above the doorway at each corner of the building is too high and too small to provide any protection for the door.

MOTION to Amend Baum second Shadid to add Condition #12 that the canopy should be lowered down to the top of the windows and also extended in both directions through the next window panel, through the pilaster and the next window.

Sam Dickman Jr. asked if the canopy could be at the height of what the ceiling would be so it is not lower than what the office ceiling would be. Trustee Baum was agreeable to bring the canopy down one tier. Chris Wenzler, Briohn, confirmed they will make all building canopies align.

MOTION to Amend carried unanimously.
MOTION to Approve as Amended carried unanimously.

2050 Comprehensive Plan: Implementation Objectives & Action Steps: Director Retzlaff continued discussion on the table of objectives and action steps. He reviewed priorities as part of the comments he received. Discussion included:

- Village Center District and Holy Hill Gateway are top priorities, start meeting with residents and put plans together for these areas. Look at all the issues, plan a bike path, potential of next generation housing, develop zoning regulations including buffers between industrial and residential to the north. Continue to include working with the school district, regional trails development.
- Pathway development, Holy Hill to Goldendale to JW Speaker - connect to Freistadt and create a path to the old downtown area. Include an easement area as part of Richfield utility project for part of the trail system. Park Commission has a trail master plan under way. See what's planned, include a plan for future development. Trail plan is part of the outdoor recreation plan – should coordinate to discuss common issues.
- Development is coming in, push to get something planned sooner than later.
- Germanic theme – what is it, what does it look like, no specific standards, need better definition. Should be some type of standard to follow.
- Discussed how to proceed, define zoning. Identify parcels, areas or blocks to be preserved and protected for Village Center and redevelopment. Connectivity Plan, get public input and create a zoning district so everyone knows what is expected.
- Start with Freistadt District then Village Center.
- Meeting planned for March 27th, RFP for Village Center District, pull together discussion points, area north of Rockfield Road east of Goldendale Road across from Industrial Park.

ANNOUNCEMENTS: Chairman Wolter announced the candidate forum tomorrow night from 5:30 to 7:00 pm in the Village Hall board room.

DRAFT

ADJOURNMENT: There being no further business the meeting was adjourned at 8:51 pm.

Respectfully submitted,

Lori Johnson
Planning Assistant

DRAFT

BUSINESS OF THE PLAN COMMISSION

MEETING DATE: April 14, 2023

PLACEMENT: Action Item

ITEM TITLE: Amendment to the Village of Germantown 2050 Comprehensive Plan to incorporate the 2022 Intergovernmental Agreement for the provision of Municipal Wastewater and Water Utility Service between the Village of Richfield and the Village of Germantown. **(PUBLIC HEARING & ACTION)**

SUBMITTED BY:

SUMMARY EXPLANATION:

ATTACHMENT:

RECOMMENDATION:

ACTION BY Committee:

Conditional Use Permit
US Cellular/ Faith Lutheran Church
Village of Germantown

February 9, 2023

RE: New Communication Facility CUP Application

Applicant: United States Cellular Operating Company, LLC

Property Owners: Faith Lutheran Church

Address: W172N11187 Division Road Germantown WI. 53022

3311 109th Street

Urbandale, IA 50322

Dear Village of Germantown Planning Board

On behalf of United States Cellular Operating Company, LLC, I Michael Doran hereby submits a CUP Application for a Communications Tower (WTF) on the property within the Village of Germantown, the tax parcel # 281967 and is owned by Faith Lutheran Church

The Zoning narrative is attached covering the Village of Germantown 17.56 - WIRELESS COMMUNICATION FACILITIES. (Cr. Ord. #37-99) and WI State Statute 66.0404. Documentation is included showing the need for the new tower based on the standards set forth in applicable ordinances and statutes.

Enclosed items with this letter are the following items:

- Germantown WI Uniform permit application
- Zoning Narrative (see immediately following pages) explaining how our proposed project complies with the State Statute 66.0404 and Germantown Zoning Ordinance. 7.56 - WIRELESS COMMUNICATION FACILITIES. (Cr. Ord. #37-99)
- Photo sims
- Propagation maps
- Site Survey
- Surrounding Tower Affidavit
- RF Statement
- Collocation affidavit
- RF Propagation Maps
- FAA Determination of No Hazard Letter.
- Structural Analysis and tower design

  Legal Description
- Full Set of construction and equipment drawing/specification's

Please do not hesitate to call for any clarifications or additional questions related to any of the administrative review process materials. So that we can monitor various internal and external deadlines, including but not limited to the deadline for approval of this application under Section 66.0404(2)(d) of Wisconsin statutes, please confirm that this application is complete or, if it is not complete, please provide a detailed description of the required information that is incomplete pursuant to Section 66.0404(2)(c) of Wisconsin statutes.

Sincerely,

Michael Doran

Digitally signed by Michael Doran
Date: 2023.02.10 12:17:17 -06'00'

Michael Doran

Site Development Agent on behalf United States Cellular Operating Company, LLC

Phone: 217-622-1377| Email: mdoran@maguiredevcorp.com

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

U. S Cellular/Michael Doran (Agent)
8410 W Bryn Mawr Ave
Chicago IL. 60631

Phone (217)-622-1377
Fax (N/A)
E-Mail mdoran@maguiredevcorp.com

PROPERTY OWNER

Faith Lutheran Church
W172N11183 Division Rd
Germantown WI. 53022
Tanner Hahn POC

Phone (608)415-0857
tannerhahn1919@gmail.com

2

TO WHOM SHOULD THE PERMIT BE ISSUED?

United States Cellular Operating Company LLC

3

PROPERTY ADDRESS	TAX KEY NUMBER
W172N11183 Division Rd Germantown WI. 53022	281967

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.

The Subject proerty is used as a Church and School . The WTF is located away from the church and School. Hour of operation are Monday thru Friday 8am to 12pm and Sunday 8 am to 11:30 Employees Varies

5

DESCRIPTION OF PROPOSED OPERATION

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

The purposed CUP is for a Wireless telecommunication facility

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

We are seeking a CUP for a wireless telecommuncation site and for the purpose of continuing enhanced seemless wireless coverage for the people of Germantown. The number of employees typically ther is 2 engineers overseeing the site however many people working with US Cellular would be working in the background to support the site IE sales, engineering.

6 METES AND BOUNDS LEGAL DESCRIPTION OF PROPERTY – REQUIRED

Attach pages as necessary

Please see attached

7 SUPPORTING DOCUMENTATION:

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

8 READ AND INITIAL THE FOLLOWING:

MD 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.

MD I will notify the Village if <u>any</u> aspects of the conditional use changes. I understand that failure to do so may result in the revocation of the CUP.

MD 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.

MD 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!

Michael Doran	2/9/23		2/3/22
Applicant	Date	Owner	Date

Zoning Narrative

CUP Application for a New Communication Tower

Village of Germantown

This zoning narrative is included to state how our application complies with the WI. Statute 66.0404 and the Village of Germantown 's Zoning Ordinance. I have portions of the WI. Statute 66.0404 below and state how it relates to our specific zoning request, and also the Village of Germantown 7.56 - WIRELESS COMMUNICATION FACILITIES. (Cr. Ord. #37-99)

1. Faith Lutheran Church is the property "Landlord", United States Cellular Operating Company, LLC "tenant", (USC) and together are requesting that the Village of Germantown consider granting a Conditional Use Permit authorizing construction of a new multi-tenant 190' telecommunication tower facility?

2. The project comprises construction of a multi-tenant 190' tall monopole and support equipment to be placed within a 75' x 75' fenced compound, with vegetative buffer. Additionally, a 30' wide access and utility easement will run between the tower compound and access to Division Rd. and will meet all applicable requirements of state and local law. See WI 66.0404 section 4 (g), the enclosed Engineered fall zone letter, and the enclosed CDs for details

3. The property owners have entered into an Option and Lease Agreement with United States Cellular Operating Company, LLC (USC) permitting the construction of the project in the leased area as described herein. which details the terms and conditions for usage of the 75' x 75' lease area. The lease area will be accessed from Division Rd. a 7' chain link fence topped by 1' of barbed wire for security will surround the compound. Because of the location in an M2 zoned area there will be a landscaping plan. This is a multi- tenant communications facility and is designed for 3 tenants.

4. The subject property is zoned M2 and is consistent with allowing a WTF to located on the parcel and use with the current Village of Germantown Comprehensive plan and Land Use.

5. The location will meet the needs of USC to provide wireless services to the south East sector of the village of Germantown and surrounding area. This will enhance coverage and capacity and be of used for a public purpose and benefit, it will be compatible with surrounding land uses as it is zoned M2, it will not disturb the tenor of, or harm neighboring properties, and it aligns with state priorities. This facility is an essential service and would benefit the greater public and satisfy the public interest requirements and help enhance E-911 services in the area by providing adequate coverage serving the public and promoting the general welfare of the public.

6§**.** Section 66.0404 of Wisconsin Statutes, Wisconsin's cellular tower siting law, has had the impact of altering local Authority to regulate cell tower siting and imposes limits on the manner and extent to which a municipality can use its zoning authority to regulate the siting and modification of mobile service facilities. The law states that if a political Subdivision has in effect on July 2, 2013, an ordinance that applies to new mobile service support structures and facilities, or the substantial modification of an existing structure and mobile service facilities, then a community can rely upon its local ordinance, but only to the extent that it is not inconsistent with the State law (66.0404(2)1.)). If the local ordinance is inconsistent, it does not apply and cannot be enforced. Thus, 66.0404 substantially limits the ability of a community to use it zoning authority to regulate Cell Towers.

WISCONSIN STATUTE SECTION 66.0404

As part of the 2013 Biennial Budget Act, the Wisconsin legislature enacted Wisconsin Statute Section 66.0404, which is the operative law regulating mobile communication structures and facilities (the "State Statute"). This law is the State's effort to create a standardized regulatory framework pertaining to these facilities and provides a 90-day period to review a completed application. The law has had the impact of altering local authority to regulate cell tower siting and imposes limits on the manner and extent to which a municipality can use its zoning authority to regulate the siting and modification of mobile service facilities. To the extent any local regulation conflicts with the State Statute, the conflicting regulations do not apply. *See* Wis. Stat. 66.0404(2)(h) and (i). The State Statute prohibits certain local regulations, including but not limited to:

A. Imposing environmental testing, sampling, or monitoring requirements, or other compliance measures for radio frequency emissions, on mobile service facilities or mobile radio service providers (*See* Wis. Stat. 66.0404(4)(a));

B. Prohibiting the placement of a mobile service support structure in particular locations within the Town (*See* Wis. Stat. 66.0404(4)(c));

C. Charging a mobile radio service provider, a fee in excess of one of the following amounts: (i) for a permit for class 2 collocation, the lesser of $500 or the amount charged by a political subdivision for a building permit for any other type of commercial development or land use development; and (ii) $3,000 for a permit for construction of a new mobile service support structure (*See* Wis. Stat. 66.0404(4)(d));

D. Disapproving an application based solely on aesthetic concerns (*See* Wis. Stat. 66.0404(4)(g));

E. Enacting or enforcing an ordinance related to radio frequency signal strength or the adequacy of mobile service quality concerns (*See* Wis. Stat. 66.0404(4)(h));

F. Imposing a surety requirement, unless the requirement is competitively neutral, nondiscriminatory, and commensurate with the historical record for surety requirements for other facilities and structures in the political subdivision which fall into disuse. There is a rebuttable presumption that a surety requirement of $20,000 or less complies with this requirement (*See* Wis. Stat. 66.0404(4)(i));

G. Disapproving an application based solely on the height of the mobile service support structure or on whether the structure requires lighting (*See* Wis. Stat. 66.0404(4)(L));

H. Limiting the duration of any permit that is granted (*See* Wis. Stat. 66.0404(4)(n));

I. Disapproving an application based on an assessment by the political subdivision of the suitability of other locations for conducting the activity (*See* Wis. Stat. 66.0404(4)(p));

J. Imposing a setback or fall zone requirement for a mobile service support structure that is different from a requirement that is imposed on other types of commercial structures (*See* Wis. Stat. 66.0404(4)(r)); and

K. Limiting the height of the structure to under 200 feet (*See* Wis. Stat. 66.0404(4)(u)).

Further, the State Statute sets forth the following parameters with respect to applications and their approvals. Responses demonstrating compliance with the State Statute are in **blue text**.

A. Per Wis. Stat. 66.0404(2)(b)(1-3) and (5-6), an application for a new mobile service support structure (such as the Tower), must include:

1. The name and business address of, and the contact individual for the applicant. *See* CUP Application Form and Zoning Narrative.

2. The location of the proposed or affected support structure. *See* Site Plan, CUP Application Form and Zoning Narrative.

3. The location of the proposed mobile service facility. *See* Site Plan.

4. If the application is to construct a new mobile service support structure, a construction plan which describes the proposed mobile service support structure and the equipment and network components, including antennas, transmitters, receivers, base stations, power supplies, cabling, and related equipment to be placed on or around the new mobile service support structure. *See* Site Plan and Construction Drawings.

5. If an application is to construct a new mobile service support structure, an explanation as to why the applicant chose the proposed location and why the applicant did not choose collocation, including a sworn statement from an individual who has responsibility over the placement of the mobile service support structure attesting that collocation within the applicant's search ring would not result in the same mobile service functionality, coverage, and capacity; is technically infeasible; or is economically burdensome to the mobile service provider. *See* surrounding tower affidavit. And RF Statement

B. Per Wis. Stat. 66.0404(2)(c), if an applicant submits to a political subdivision an application for a permit for a new mobile service support structure, which contains all of the information required under Wis. Stat. 66.0404(2)(b), the political subdivision shall consider the application complete. If the political subdivision does not believe that the application is complete, the political subdivision shall notify the applicant in writing, within 10 days of receiving the application, that the application is not complete. The written notification shall specify in detail the required information that was incomplete. An applicant may resubmit an application as often as necessary until it is complete.

C. Per Wis. Stat. 66.04040(2)(d), within 90-days of receiving a complete application, a political subdivision must complete its review, make a final decision on the request and notify the applicant in writing of its final decision along with an explanation of substantial evidence supporting the decision if the decision is to disapprove an application. If the 90-day period lapses, the application is deemed to be approved, unless the political subdivision and applicant agree in writing to extend the 90-day period.

Per Wis. Stat. 66.04040 States that a zoning ordinance does not apply to a particular structure if the applicant provides an engineering certification showing that the fall or collapse area is smaller than the setback required in the ordinance

- The Village of Germantown Zoning Ordinance. 7.56 - WIRELESS COMMUNICATION FACILITIES. (Cr. Ord. #37-99)

is below in *Blue Italic's* and how we have met the ordinance will be in black font

17.56 - WIRELESS COMMUNICATION FACILITIES. (Cr. Ord. #37-99)

6. *STATEMENT OF PURPOSE AND INTENT.*

- *The purpose of this section is to provide standards and criteria for the placement, construction and maintenance of wireless communication facilities in the Village of Germantown. The intent of this section is to:*
  - *Strike a balance between the interests of the wireless communication service providers, the consumers of those services and the Village of Germantown.*

    No response required
  - *Restrict the location of towers to nonresidential areas and minimize the total number of towers throughout the Village.*

    There were no leasable structures with-in a 1-mile radius of US Cellular RF desired location.
  - *Protect residential areas and land uses from potential adverse impacts of towers and antennas.*

    The location of this proposed Telecommunication site is located in a an M2 district and is 800' from the nearest residential structure to the East 1,300' to the north 1,900' to the South and West is primarily office building.
  - *Encourage location and co-location of new antennas on existing towers and other appropriate structures.*

If colocation were available, we would have reviewed it as a potential candidate however there weren't any structures with in a 1-mile area.

- *Encourage users of towers and antennas to configure them in a way that minimizes their adverse visual impact by careful design, siting, landscaping, screening and camouflaging techniques.*

  We will be landscaping around the lease area fence the village of Germantown's Ordinance. The monopole will be gray in color. It will also promote colocation

  Please *See* Wis. Stat. 66.0404(4)(g));

  Protect property values and the public health, safety and welfare.

  The design and construction of the proposed Wireless telecommunication Facility (WTF) does not create any substantial adverse effect, including value and injury (public safety) to the surrounding properties. In reference to property values, there are no known studies that could accurately measure the value of real-estate based off the placement of a WTF. One might say, it could promote development due to the very nature of the technology. Addressing safety, the WTF as mentioned above is quite a distance from the nearest home and meets the required setbacks from property lines so as to not affect the surrounding area. The proposed monopole will be engineered for a height of tower fall zone, the WTF will comply with all applicable structural engineering requirements and, if approved, the tower could be reviewed by the Village for certifications and inspections. The WTF will be unstaffed, and will typically require one or two routine visits a month by a service technician. Hence, the Facility will not have a material impact on parking or traffic.

  Over half of all "911" calls are placed on wireless networks. Wireless providers, such as U.S. Cellular, offer "E-911" service which is particularly helpful in locating users who are unable to articulate their exact location. Accordingly, reliable wireless infrastructure provides wireless service that is an essential part of the community's everyday life including emergency and non-emergency communication needs.

- *Encourage users of towers and antennas to locate them, to the extent possible, in areas where the impact on the community is minimal.*

  The Applicant has been sensitive in the selection and design of the proposed Facility by locating the proposed WTF on this property the Applicant believes this area with the limited view (see photo simulations) and tree height canopy surrounding the Wireless Telecommunication Facility (WTF) on three sides and being greater that 600' from the any major roadway, we would suggest that this would be in harmony, not only with the intent of the Ordinance, but also with the surrounding area and the land uses near the subject property as people use cell phones in their homes and businesses which is a majority of this area. The granting of the CUP being sought will not affect the normal and orderly development of the surrounding area. To the contrary, reliable utility networks such as electric, gas, water, and wireless networks are essential to the development and well-being of every community.

- *Avoid potential damage to adjacent properties from tower failure through careful engineering and siting of tower structures.*

  Please see submitted with this application is the structural analysis for the 190' monopole

- *Enable wireless communication service providers to provide their services to their customers in a prompt, effective and efficient manner.*

  With the CUP approval US Cellular can keep up with the changing technologies quickly so as to keep the Village of Germantown up to date with the most current technologies because US Cellular owns the tower.

  Create clear and objective approval criteria for towers and accessory structures.

  No response required

- *Ensure that all wireless communication providers are given an equal opportunity to compete in the local market.*

  The Proposed 190' monopole will be built to accommodate 3 additional carriers so as to limit the need for a new WTF in this area.

  DEFINITIONS. Intentionally Deleted

-

7. *APPLICABILITY OF REGULATIONS.*

- *Facilities Regulated by this Section . Except as provided in subsection (3)(b) of this section, the regulation contained in this chapter shall apply to all wireless communication facilities in the Village of Germantown.*
- *Facilities Exempt from this Section . The following wireless communication facilities are exempt from the provisions of this section, except the regulations contained in subparagraph (c) of this subsection.*
  - *A ground or building mounted receive-only radio or television antenna which does not exceed 25 feet in height and which is used solely by the occupants of a dwelling located in a residential zoning district.*

    The proposed WTF is 190' and will need to go thru the CUP process.
  - *A ground or building mounted receive-only radio or television satellite dish which does not exceed 36 inches in diameter; which does not project beyond the roof line and which is used solely by the occupants of a dwelling located in a residential zoning district.*

    N/A
  - *A citizen band radio tower and antenna which does not exceed 35 feet in height.*

    N/A

  - *A ham radio tower and antenna which does not exceed 75 feet in height.*

    N/A

- *Microwave dishes for private home use.*

  N/A

- *Governmentally owned and operated receive and/or transmit telemetry station antenna for supervisory control and data acquisition (SCADA) systems for water, flood alert, traffic control devises and signals, stormwater, pump stations and/or irrigation systems, with heights not exceeding 35 feet.*

  N/A

- *Towers, equipment facilities and antennas that existed prior to the effective date of this chapter (October 4, 1999).*

  N/A

  Regulation of Exempt Facilities .**N/A** *Notwithstanding subparagraph (a) of this subsection, exempt facilities shall be subject to the following rules and regulations.*

- *In residential districts there shall be no more than one antenna support structure per tax parcel.*

  The Proposed WTF is on M2 zoned property

- *Towers shall be designed to prevent children and trespassers from climbing on those structures. Ladder rungs shall be at least 20 feet above the ground.*

  The WTF will have a 7' high fence with a 1' of barbed wire at the top. There will not be climbing pegs lower that 20' on the monopole, see page 13 Sheet C7 for fence detail.

- *Towers and antennas constructed and maintained in the Village of Germantown shall comply with all other applicable local, State and Federal laws.*

  The Facility will be designed and constructed to meet all applicable governmental and industry safety guidelines. The Applicant will comply with FCC and FAA rules concerning construction requirements, safety standards, interference protection, power and height limitations, and radio frequency standards. The Facility will NOT interfere with any other radio devices such as TV's, radios or other cellular phones. Furthermore, the Facility will not interfere with any household products such as microwave ovens. The Applicant is licensed and regulated by the Federal Communications Commission ("FCC"), which imposes strict health, safety, and interference standards. The proposed Facility will comply with all rules and guidelines that regulate such installations including FCC guidelines with regard to human exposure to RF emissions. The FCC is the governing body that has jurisdiction over this area (RF emissions). It is therefore the belief of the Applicant that the proposed Facility will be operated so that public health, safety, and welfare will be protected.

- *Pre-existing towers and equipment shall not be exempt from the conditional use permit on file and the licensing requirements of section 22.06 of this Code.*

  N/A

9 COMPLIANCE WITH ZONING REGULATIONS.

- *Permitted Uses . The following uses are deemed permitted uses that require Village Plan Commission approval.*
    - *Antennas on Existing Towers. The attachment of a new antenna on an existing tower may be allowed, to minimize adverse visual impacts associated with the proliferation and clustering of towers, provided that:*

      U S Cellular is proposing a new structure

        - *A tower which is modified or reconstructed to accommodate the location of an additional antenna shall be of the same type and height as the existing tower.*

          No response required

        - *An existing tower may be modified or rebuilt to accommodate the colocation or additional antenna and may be moved onsite within 50 feet of its existing location, but the relocation may only occur one time per communication tower.*

          No response required

        - *After a tower is rebuilt to accommodate co-location, only one tower may remain on site.*

          No response required

        - *When relocating a tower on-site, the revised location of the tower shall be a minimum distance of the height of the tower, to the property line of residential units or residentially zoned lands*

          No response required

    - *Public Safety Communication Facilities. (Cr. Ord. #29-07) The construction of a new or the replacement of an existing wireless communication facility owned by the Village of Germantown, Washington County, or other municipal government that will be used primarily for public safety communication systems provided that plans for such facilities meet the following requirements of this section:*

        - *Subsection (4)(b)1. through 3.*

        - *Subsection (5)(c), (d), and (f) through (m).*

        - *Subsection (6).*

- *Conditional Uses . The installation of towers and antennas, including the placement of accessory buildings or equipment, may be allowed by Conditional Use Permit in all agricultural, institutional, business and industrial zoning districts. The applicant shall submit a conditional use permit in accordance with the application procedure described in section 17.42 of this chapter. In addition to the requirements detailed in section*

  No Response required

- *17.42 of this chapter, the conditional use permit shall not be granted until each of the following requirements are met.*

- *Antennas or Towers on Existing Structures. An antenna or tower may be situated on the roof of a commercial, industrial, professional, institutional or municipal structure provided that such device is installed and maintained in accordance with applicable state or local building codes, and complies with current standards of the FAA, FCC and any other agency of the State or Federal government with the authority to regulate antennas.*

  The Proposed WTF follows all FCC and FAA guidelines under penalties by law.

- *Plans, Specifications and Statements. The applicant for a permit to construct a new tower or equipment faci provide the following:*

- *Wisconsin Professional Engineer stamped Plans and Specifications for construction of the tower.*

  I have made part of this application a full set of CD's. signed by a Licensed State of Wisconsin engineer

- *A written statement by an electrical engineer licensed to practice in the State of Wisconsin that the reception and transmission functions of the proposed tower, antenna or equipment facility will not interfere with the usual and customary transmission and reception of radio, television or other services on adjacent properties.*

  WI 66.0404 prohibits this please see above B

- *A copy of the FAA determination, the FCC license and the State of Wisconsin Department of Commerce building plan approval indicating that the proposed tower, antenna or equipment facility complies with rules administered be those agencies.*

  I have included in the application the FAA opinion letter

- *For towers, a written statement from the applicant's engineer indicating:*

- *The types of antennas that may be accommodated by the tower.*

  Please review pages 18 thru 24 in the CD's

- *The tower's capacity for such antennas.*

  Please review the structural analysis included in the submission. The proposed WTF will be able have 3 additional carriers with equal loading as applicant

- *The failure characteristics of the tower.*

  Please review the structural analysis included in the submission.

- *The adequacy of its setback in event of failure.*

This site meets the height of tower setbacks from property lines Please see attached CD's sheet

- *Site and Landscaping Plans. The applicant shall provide the Plan Commission and Village Board with site plans and landscaping plans drawn to scale of 1" = 20'. Those plans should specify the location of any tower, building, parking, landscaping, fencing and other accessory uses. The landscape plan shall indicate the size, number and type of planting for the proposed site.*

  Please reference sheets 6,7, and 16 on the submitted CD's.

- *List of Other Antenna Facilities. The applicant shall provide the Plan Commission and Village Board with a list of the applicant's existing towers and antennas located in the Village of Germantown and within 10 miles of the Village limits. The list should identify the location, height and design of each tower and location of each antenna. The Plan Commission and Village Board may share such information with other applicants applying for a Conditional Use Permit to construct, install or alter wireless communication facilities.*

  If future applicants were interested in locating a new WTF within the Village of Germantown, they would not consider a WTF outside a 3-mile radius and more specifically only consider a colocation on an existing structure should it be with a 1-mile radius of their RF desired location with the Germantown jurisdiction. Having said that WI 66.0404 prohibits Jurisdictions from advising new WTF applicants from collocating on other structures. I have provide a link that provides the Village of Germantown Planning Department a 3 mile radius of All towers location, size and type https://www.antennasearch.com/

Disapproving an application based on an assessment by the political subdivision of the suitability of other locations for conducting the activity (*See* Wis. Stat. 66.0404(4)(p));

- *Affidavit Regarding Other Towers. The applicant for a Conditional Use Permit to construct a new tower shall execute an affidavit stating whether any other wireless communication tower is located within any portion of the area of a radius of 2,000 feet from the location of the proposed new tower, which lies outside of the corporate limits of the Village of Germantown.*

  Please find as part of this submission the surrounding tower affidavit.

  Co-location Statement for Towers. The applicant shall demonstrate, to the reasonable satisfaction of the Plan Commission and Village Board, that no existing tower or alternative tower structure can accommodate the applicant's proposed antenna. Upon a showing by the applicant that any one of the following circumstances enumerated below exist, the applicant shall be deemed to have satisfactorily demonstrated the need for a new tower. In evaluating such circumstances, the Village may employ the services of a consulting expert. The expense for which shall be compensated to the Village by the applicant as an administrative cost of processing the application.

  Please find as part of this submission the surrounding tower affidavit

- *No tower or alternative tower structure exists in a geographic area where it is necessary to place an antenna in order to provide effective wireless communication services.*

  Please find as part of this submission the surrounding tower affidavit

- *Existing towers or alternative tower structures are not of sufficient height to meet applicant's engineering requirements.*

  The Tower on the Village property is 160' and has an available rad center of 60' I've included as part of this submission an RF statement stating why the existing tower could not work for US Cellular objective for this area of Germantown.

- *Existing towers or alternative tower structures do not have sufficient strength to support applicant's pro and related equipment.*

The Tower on the Village property is 160' base on its present loading would likely need modification and furthermore WI 66.0404 restricts Jurisdictions from advising carriers to use a certain existing tower over building a new tower.

- *Applicant's proposed antenna would cause interference with another antenna already located on an existing tower or structure or that the antenna on the existing tower or structure would cause interference with applicant's proposed antenna.*

  N/A

- *The charges for the use of an existing tower or alternative tower structure are unreasonable. Charges for use of an existing tower or structure shall be deemed unreasonable if those charges exceed the (cost of constructing a wireless communication facility) (then reasonable market rates for co-location).*

  N/A

- *The applicant demonstrates that there are other reasonable factors that render an existing tower or alternative tower structure unsuitable.*

  Please see as part of this submission US Cellular' s RF engineers letter pertaining to the tower located on Village property.

- *Reservation of Antenna Space on Towers. Unless, specifically waived by the Village, new towers shall be designed to accommodate at least 2 other wireless communication service providers at market rate.*

  Please see sheet 17 of the summitted CD's. The proposed monopole design tower will allow 3 additional carriers with similar loading capacity.

- *Liability Insurance Coverage. The applicant shall annually furnish a certificate of general liability insurance coverage for a minimum of $1,000,000.00 for the tower site. The insurance coverage may be reviewed by the Plan Commission and Village Board to determine the sufficiency of such amount. The proof of insurance shall be placed on file with the Village Clerk's office.*

  U S Cellular under the terms of the lease agreement with Faith Lutheran Church must at all times carry an insurance policy of 1 M. That being stated US Cellular will provide the Village of Germantown a copy of their insurance policy annually.

- *OTHER REQUIREMENTS. (Am. Ord. #29-07) Except as may otherwise be provided in subsection (4)(a) herein, all wireless communication facilities shall meet the following requirements:*

- *Tower and Antenna Height . No tower shall exceed 150 feet in height. No antenna support structure, including any antenna or other device attached thereto, shall extend more than 20 feet above the highest point of the building or structure to which the antenna support structure is attached.*

L. Under the Wis. Stat. 66.0404(4)(u).a Jurisdiction may not regulate the height of a tower under 200'

- *Tower Separation. No new tower shall be constructed within 2,000 feet of an existing tower. The distance shall be measured in a straight line between the base of the existing tower and the proposed location for the base of the new tower.*

  As made part of the CUP submission please see the "surrounding tower affidavit" and US Cellular 's RF engineer's statement would conclude that we do meet the tower separation.

- *Advertising Signs . No person shall place any advertising sign on any tower, antenna support structure or antenna. Nor, shall anyone place a flag, decorative sign, streamer, pennant, ribbon, spinner or other moving object on a tower, antenna support structure or antenna, unless such object is an integral part of the facility design which is calculated to screen, conceal or camouflage the nature of the structure,*

such as a flag on a flag pole which is itself a camouflaged wireless communications facility, or in which such a facility is concealed.

US Cellular will affirm that no advertising or advertising signs will be made part of this WTF site.

- *Lighting . No tower, antenna support structure or antenna shall be artificially illuminated. This subsection does not prohibit the use of motion detectors and associated lighting nor the use of outdoor lights when the wireless communication provider's personnel are present. This subsection is not intended to prohibit any lighting required by any local, State or Federal law, rule or regulation. If lighting is required by such law, rule or regulation, the operator and owner shall choose the lighting which causes the least disturbance to the occupants of the adjacent properties.*
- The Proposed Telecommunication Tower will not have a light on it as its below the FAA required 200'

- *Points of Visual Interest . No wireless communication facility shall be located so as to obstruct the view of a point of visual interest from a residential zoning within 1,000 feet of the wireless communication facility.*

The WTF is not located in area that would be considered to have a visual interest.

- *Tower Color . The tower shall have a galvanized steel finish or shall be painted in a neutral color so as to reduce visual obtrusiveness or to camouflage the tower. Antennas and antenna support structures shall be of a neutral color which is identical to, or closely compatible with, the color of the tower or alternative support structure*

The Support Structure will be made of steel and be gray in color.

M Disapproving an application based solely on aesthetic concerns (*See* Wis. Stat. 66.0404(4)(g));

- *Ladders. Towers shall be designed to prevent children and trespassers from climbing on those structures. Ladder rungs on towers shall be placed a minimum of 20 feet above the ground.*

The WTF will have a locked gate and Barbed wire around the top of the fence there also will be no ladder or climbing pegs lower that 20'

- *Fencing . A wireless communications facility shall be enclosed by a security fence not less than 6 feet in height and secured so that it is not accessible by the general public. Fence design, materials and colors shall reflect the character of the surrounding area as determined by the Plan Commission and Village Board.*
- Please see sheet C7 of the submitted CD's which shows the WTF fence design and that it meets your specifications
- *Electrical fencing is prohibited within the Village of Germantown.*

US Cellular does not use electric fencing

- *[Conditional Use Permit .] A conditional use permit for siting a wireless communications facility in lands carrying an agricultural zoning classification shall provide conditions requiring sufficient screening or camouflage so as to eliminate visual obtrusiveness.*

As stated below US Cellular will follow The Village of Germantown's landscaping requirements to the letter.

- *Landscaping . A buffer of plant materials of sufficient maturity and size to immediately and effectively screen the equipment cabinets, structures or buildings from public view and from adjacent properties shall be provided.*

- US Cellular will follow the Village of Germantown landscaping requirement Please see sheet LP in the submitted CDs for the details

- *The minimum buffer shall consist of a landscaped strip at least 5 feet in width outside the entire perimeter of the wireless communications facility.*

  Please see Sheet LP in the submitted CD's for the landscaping that will be used at the WTF

- *In locations where the visual impact of the tower would be minimal, the landscaping requirement may be reduced or waived with the approval of the Plan Commission and Village Board.*

  The location of the WTF would require landscaping on all sides of the leased area.

- *Existing mature tree growth and natural land forms shall be preserved to the maximum extent possible. In some cases, such towers sited on large, wooded lots, natural growth around the property perimeter may be a sufficient buffer.*

  There are large mature trees to the East and South of the proposed WTF. There will not be any trees being taken down for this WTF

- *All landscaping requirements detailed here shall be properly maintained in perpetuity.*

  U S Cellular will maintain the landscaping around the WTF please see sheet LP for landscaping information

- *Buildings, Enclosures and Associated Devices .*

  There will not be any buildings at this site.

- *All buildings, enclosures, equipment and other associated devices shall be placed in close proximity to the base of the tower located on the wireless communications site. If the wireless communications facility does not have a tower, the buildings, equipment and other associated devices shall be placed in close proximity to the alternative tower structure. If the wireless communications facility has a roof mounted antenna support structure, an equipment enclosure may be located on the roof provided that such enclosure is placed as unobtrusively as possible and in compliance with all applicable building and zoning rules and regulations.*

  There will not be any buildings at this site.

- *All buildings and enclosures shall be kept locked at all times. Each building and enclosure shall have a label attached to it the label shall give the name, address and telephone number of the person who should be contacted in the event of an emergency.*

  There no buildings with the lease area.There will be a sign on the front gate stating ownership Site Number and a phone number to call in case of an emergency.

- *The aggregate floor area of all buildings and enclosures shall not exceed 400 square feet per tower. The total height of the structures shall not exceed 15 feet in height. A greater height and size, may be approved by the Village Board, if necessary to fulfill special considerations of the tower site. The construction materials shall consist of a brick exterior on all sides of the structures, However, different materials may be approved by the Village Board if they are determined to be more compatible with the surrounding land uses. (Am. Ord. #5-02)*

The WTF area will consist of a 70 Sq.ft cement pad with outdoor cabinets. The height of the equipment will no more than 10' in height.

- *Building Permit Required . After the conditional use permit and final site plans are approved, no tower or any type of structure shall be constructed until a building permit is reviewed, approved and issued from the Village Building Inspection Department.*

  Once the CUP has been approved U S Cellular will follow the building departments guidelines for the issuance of a building permit to construct the WTF.

- *Setbacks . All wireless communications facilities regulated by this section shall meet the required setback as determined by the Village Board and made a condition of the approved site plan. (Cr. Ord. #5-02)*

  The WTF meets the setback standards as they relate to the Village of Germantown's wireless code.

- *MAINTENANCE AND OPERATIONAL REQUIREMENTS.*

- *General Requirements . The wireless communication facility shall be maintained in accordance with all applicable local, State and Federal regulations. If the Building Inspector concludes that a tower or any other part of a wireless communication facility fails to comply with such codes and constitutes a danger to persons or property in the vicinity, the Village Building Inspector shall notify the owner or operator of the wireless communication facility of such fact. The notice shall be in writing and shall require the owner or operator to bring the facility into compliance with such codes within 30 days of the date of service of the notice. If the owner or operator fails to bring the wireless communication facility into compliance within the time provided, the Village Building Inspector may order the tower or other wireless communication facility to be removed to the extent necessary to protect persons or property in the vicinity. The cost of removing the tower or other portion of the wireless communication facility shall be at the owner's expense. The owner and the operator shall be responsible to maintain the premises upon which the wireless communication facility is located in a clean and sanitary condition.*

  US Cellular will the striclcy follow the requirements set down by the Building Inspector Code. Furthermore the Facility will be designed and constructed to meet all applicable governmental and industry safety guidelines. The Applicant will comply with FCC and FAA rules concerning construction requirements, safety standards, interference protection, power and height limitations, and radio frequency standards. The Facility will NOT interfere with any other radio devices such as TV's, radios or other cellular phones. Furthermore, the Facility will not interfere with any household products such as microwave ovens. The Applicant is licensed and regulated by the Federal Communications Commission ("FCC"), which imposes strict health, safety, and interference standards. The proposed Facility will comply with all rules and guidelines that regulate such installations including FCC guidelines with regard to human exposure to RF emissions. The FCC is the governing body that has jurisdiction over this area (RF emissions). It is therefore the belief of the Applicant that the proposed Facility will be operated so that public health, safety, and welfare will be protected.

- *Operator Interference . Operation of a tower facility shall be undertaken so as not to interfere with any other form of wireless communication. In the event any complaints of interference are received, and they are reasonably suspected by the Village to be caused by the tower, the Village shall notify the applicant and property owner. The applicant shall have a period of 30 days to investigate said complaints and respond to the Village of Germantown. In the event that it is determined that the tower is the source of interference, the applicant shall have 10 days to correct all problems.*

A Jurisdiction may not: Impose environmental testing, sampling, or monitoring requirements, or other compliance measures for radio frequency emissions, on mobile service facilities or mobile radio service providers (*See* Wis. Stat. 66.0404(4)(a));

- *Outdoor Storage Prohibited . No person shall store any vehicles, equipment or other goods on the site of the wireless communication facility except in an enclosed building. This section does not apply to overnight storage of vehicles or equipment necessary for the construction or repair of the wireless communication facility.*

  US Cellular will not allow nor would the Faith Lutheran Church allow any storeage, any vehicles, equipment or other goods on the site

ABANDONED TOWERS AND ANTENNAS.

-
- *Evidence of Abandonment . An antenna or tower shall be deemed abandoned if any of the following shall occur:*
- *The antenna or tower is not operated for 6 continuous months.*

  No response required

-
- *The owner or operator has notified the Village of Germantown that it has ceased operations of the antenna or tower.*

  US Cellular or their assignee or collateral assignee, will notify the Village of Germantown should US Cellular or their assignee or collateral assignee cease operations.

- *Notification of Abandonment . The owner or operator of a wireless communication facility shall notify the Village Planning Department in writing whenever an antenna or tower is abandoned or its use discontinued. Such notice shall be given to the Planning Department within 30 days of such abandonment or discontinuance.*

  US Cellular or their assignee or collateral assignee, will follow the Village of Germantown's abandonment notification.

- *Removal of Abandoned Towers and Antennas . The owner and operator of an abandoned tower or antenna shall remove it from the wireless communications facility within 6 months after the tower or antenna is abandoned or its use discontinued. If the owner fails to remove the antenna, tower, or any other structure within that time, the Village shall remove the antenna, tower or any other structure at the owner's and operator's expense. In the event that the cost of removal is not paid, the Village may assess the cost of such removal against the property upon which the wireless communications facility is located.*

  US Cellular will follow the Village of Germantown's removal as stated above.

- *Site Restoration . Whenever a tower is removed from a wireless communications facility, the remainder of the si restored to its preexisting condition and all buildings, equipment and other devices accessory to the tower shall removed from the site.*

Under the terms of the Ground Lease with Faith Lutheran Church US Cellular is required to remove all above ground equipment. US Cellular will follow the Village of Germantown's removal as stated above.

[Irrevocable Letter of Credit .] An applicant shall provide, as a condition of issuance of a conditional use permit, an irrevocable letter of credit or cash in. the amount of $25,000.00 to guaranty facilities removal and site restoration.

A. US Cellular will follow the wis Statute 66.0404 which states Imposing a surety requirement, unless the requirement is competitively neutral, nondiscriminatory, and commensurate with the historical record for surety requirements for other facilities and structures in the political subdivision which fall into disuse. There is a rebuttable presumption that a surety requirement of $20,000 or less complies with this requirement (*See* Wis. Stat. 66.0404(4)(i));

USC will Provide a surety bond for 20,000.

- *LEGAL NONCONFORMING FACILITIES. Preexisting towers, antenna support structures, antennas or wireless communication facilities which do not conform to the requirements of this chapter, shall be permitted to continue in accordance with the provisions of the zoning code of the Village of Germantown which deals with nonconforming buildings, structures and uses.*

No response required

- *ENFORCEMENT. The provisions of this chapter shall be enforced by the Planning Department and the Village Building Inspector. Any person who violates any provision of this chapter shall, upon a conviction be subject to a penalty as detailed in section 25.04 of the Germantown Municipal Code.*
- *State law references—Regulation of antennas, Wis. Stats. §§ 61.35, 62.23(7)(he), (7)(hf).*

NOTE: THIS PHOTO SIMULATION IS A VISUAL INTERPRETATION OF THE PROPOSED DESIGN. FINAL CONSTRUCTION MAY DIFFER FROM WHAT IS PRESENTED HERE.

TERRA CONSULTING GROUP
600 Busse Highway, Park Ridge, IL 60068
Phone: 847.698.6400 Fax: 847.698.6401
TCG #: 10-079

GERMANTOWN

PHOTO LOCATIONS

uscellular

BEFORE

AFTER

NOTE: THIS PHOTO SIMULATION IS A VISUAL INTERPRETATION OF THE PROPOSED DESIGN. FINAL CONSTRUCTION MAY DIFFER FROM WHAT IS PRESENTED HERE.

GERMANTOWN

View from North looking South

TERRA CONSULTING GROUP
600 Busse Highway, Park Ridge, IL 60068
Phone: 847.698.6400 Fax: 847.698.6401
TCG #: 10-079

uscellular™

BEFORE

AFTER

NOTE: THIS PHOTO SIMULATION IS A VISUAL INTERPRETATION OF THE PROPOSED DESIGN. FINAL CONSTRUCTION MAY DIFFER FROM WHAT IS PRESENTED HERE.

GERMANTOWN

View from East looking West

TERRA CONSULTING GROUP
600 Busse Highway, Park Ridge, IL 60068
Phone: 847.698.6400 Fax: 847.698.6401
TCG #: 10-079

uscellular™

BEFORE

AFTER

NOTE: THIS PHOTO SIMULATION IS A VISUAL INTERPRETATION OF THE PROPOSED DESIGN. FINAL CONSTRUCTION MAY DIFFER FROM WHAT IS PRESENTED HERE.

GERMANTOWN

View from South looking North

TERRA CONSULTING GROUP
600 Busse Highway, Park Ridge, IL 60068
Phone: 847.698.6400 Fax: 847.698.6401
TCG #: 10-079

uscellular™

BEFORE

AFTER

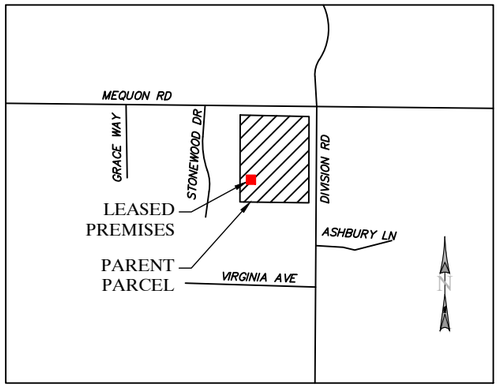
NOTE: THIS PHOTO SIMULATION IS A VISUAL INTERPRETATION OF THE PROPOSED DESIGN. FINAL CONSTRUCTION MAY DIFFER FROM WHAT IS PRESENTED HERE.

GERMANTOWN

View from West looking East

TERRA CONSULTING GROUP
600 Busse Highway, Park Ridge, IL 60068
Phone: 847.698.6400 Fax: 847.698.6401
TCG #: 10-079

uscellular™



VICINITY MAP

NOT TO SCALE

THE SOURCE OF BEARINGS WERE DETERMINED BY GPS OBSERVATIONS COMPLETED ON AUGUST 17, 2022

0 75 150 300

1" = 150'
GRAPHIC SCALE

LEGEND

- PARENT PROPERTY LINE
- CONTOUR LINES
- RIGHT OF WAY LINE
- OVERHEAD WIRE
- PROPOSED LEASE LINE
- PROPOSED ACCESS/UTILITY EASEMENT
- BUILDING
- FOUND IRON PIPE
- TRANSFORMER
- STREET LIGHT
- UTILITY POLE
- FIRE HYDRANT

GLOBAL POSITIONING SYSTEMS NOTE

1. RANDOM TRAVERSE CONTROL MONUMENTS WERE SET USING GPS METHODS. A PORTION OF THE TOPOGRAPHY AND FOUND BOUNDARY MONUMENTS WERE ALSO LOCATED USING GPS METHODS.
2. THE TYPE OF GPS UTILIZES AS NETWORK ADJUSTED REAL TIME KINEMATIC (HYPER SR NETWORK), NAD 83 WISCONSIN STATE PLANE (WASHINGTON).
3. TOPCON HIPER SR RECEIVERS WERE USED TO PERFORM THE SURVEY.

GENERAL NOTES

NO SEARCH OF PUBLIC RECORDS HAS BEEN COMPLETED BY XCEL CONSULTANTS TO DETERMINE ANY DEFECTS AND/OR AMBIGUITIES IN THE TITLE OF THE PARENT PARCEL.

THIS SURVEY IS FOR THE PROPOSED LEASED PREMISES AND THE PROPOSED EASEMENTS ONLY, AND ONLY A PARTIAL BOUNDARY SURVEY OF THE PARENT PARCEL HAS BEEN PERFORMED.

THIS PLAT IS NOT INTENDED FOR LAND TRANSFER.

THIS PROPERTY IS SUBJECT TO ANY RECORDED EASEMENTS AND/OR RIGHTS OF WAY SHOWN HEREON OR NOT.

XCEL CONSULTANTS HAS RECEIVED AND REVIEWED THE TITLE COMMITMENT PREPARED BY STEWART TITLE GUARANTY COMPANY, FILE NUMBER 22111495WI, DATED AUGUST 24, 2022 AT 8:00 AM, PREPARED FOR THE SUBJECT PROPERTY, TO DETERMINE THE IMPACTS OF EXISTING TITLE EXCEPTIONS.

BY GRAPHIC PLOTTING ONLY, THIS PROPERTY IS LOCATED IN ZONE "X" (AREA OF MINIMAL FLOOD HAZARD) OF THE FLOOD INSURANCE RATE MAP, COMMUNITY PANEL NO. 55131C0357D AND 55131C0376D, WHICH BOTH BEAR AN EFFECTIVE DATE OF NOVEMBER 20, 2013 AND IS NOT IN A SPECIAL FLOOD HAZARD AREA. NO FIELD SURVEYING WAS PERFORMED TO DETERMINE THIS ZONE AND AN ELEVATION CERTIFICATE MAY BE NEEDED TO VERIFY THIS DETERMINATION OR APPLY FOR A VARIANCE FROM THE FEDERAL EMERGENCY MANAGEMENT AGENCY.

NO WETLANDS AREAS HAVE BEEN INVESTIGATED BY THIS SURVEY

THERE WERE NO STREAMS, DRAINAGE DITCHES OR PIPES, OR RIVERS RUNNING THROUGH OR BORDERING THE PARENT PARCEL, LEASED PREMISES NOR NEW EASEMENTS AT THE TIME OF SURVEY.

THE LOCATION OF THE UTILITIES SHOWN HEREON ARE FROM OBSERVED EVIDENCE OF ABOVE GROUND APPURTENANCES AND PER WISCONSIN ONE CALL "DIGGERS HOTLINE" LOCATED REQUEST PLANNING PRINTS TICKET #20223421464. UTILITY SERVICE FOR THIS PROPERTY ARE PROVIDED BY WE ENERGIES, ELECTRIC AND GAS, TIME WARNER CABLE, VILLAGE OF GERMANTOWN, AT&T DISTRIBUTION, AND CENTURYLINK. ONLY UTILITY MAPS PROVIDED BY SAID COMPANIES ARE SHOWN HEREON. BEFORE DIGGING IN THIS AREA CALL DIGGERS HOTLINE AT 811.

* FAA COORDINATE POINT

NAD 83
LATITUDE: 43°13'09.0304" (43.21917510)
LONGITUDE: -88°07'30.1608" (-88.12504468)
NAVD88 ELEVATION: 878.87'± AMSL

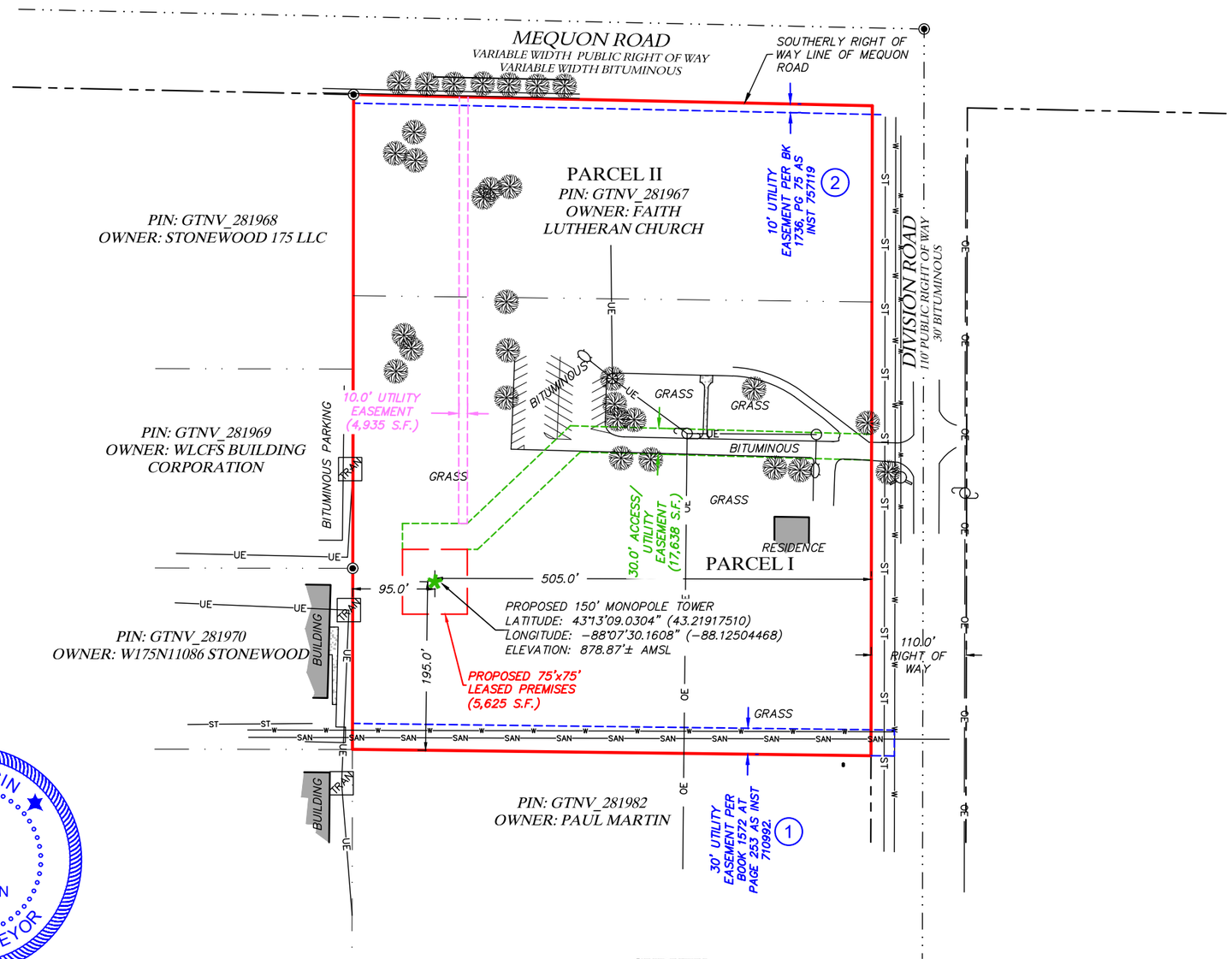
TO: U.S. CELLULAR; STEWART TITLE GUARANTY COMPANY

I, DAN J. KUEHL, A WISCONSIN PROFESSIONAL LAND SURVEYOR, CERTIFY THAT THE INFORMATION SHOWN HEREON WAS COMPILED USING DATA FROM AN ACTUAL FIELD SURVEY MADE UNDER MY DIRECT SUPERVISION AND THAT THE FIELD SURVEY AND THE COMPILATION OF INFORMATION SHOWN HEREIN WERE CONDUCTED IN ACCORDANCE WITH THE WISCONSIN MINIMUM STANDARDS OF PRACTICE. THE FIELD WORK WAS COMPLETED ON AUGUST 17, 2022.

SEPTEMBER 26, 2022

DAN J. KUEHL
LICENSE NUMBER 3104-8
MY LICENSE RENEWAL DATE IS JANUARY 31, 2024
SHEETS COVERED BY THIS SEAL B-1, B-2, B-3, AND B-4

WISCONSIN
DAN J. KUEHL
3104-8
MORRISON IL
LAND SURVEYOR



SURVEY

uscellular
8410 W. Bryn Mawr Avenue
Suite 700
Chicago, IL 60631

TERRA CONSULTING GROUP, LTD.
600 Busse Highway
Park Ridge, IL 60068
Ph: 847/698-6400
Fax: 847/698-6401

SURVEYED BY:
XCEL Consultants
8300 42ND STREET WEST
ROCK ISLAND, IL 61201
(O) 309-787-9988
(F) 309-756-5540
(E) XCEL@XCELCONSULTANTSINC.COM

XCEL PROJECT NUMBER: 224240

SURVEY

REV.	DATE	DESCRIPTION

SITE NAME:
GERMANTOWN

SITE NUMBER: 784809

W172N11083 DIVISION ROAD
GERMANTOWN, WI 53022

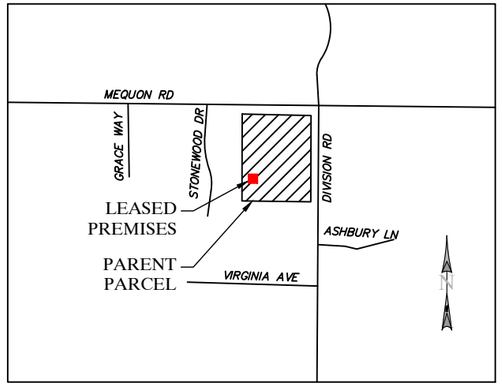
OWNER: FAITH LUTHERAN CHURCH
PARCEL #: GTNV_281967

WASHINGTON COUNTY
WISCONSIN

DRAWN BY: KJM
CHECKED BY: BCH
SURVEY DATE: 8/17/2022
PLAT DATE:

SHEET TITLE:
SURVEY
THIS DOES NOT REPRESENT A BOUNDARY SURVEY OF THE PARENT PARCEL

SHEET NUMBER:
B-1



VICINITY MAP

NOT TO SCALE

* FAA COORDINATE POINT

NAD 83
LATITUDE: 43°13'09.0304" (43.21917510)
LONGITUDE: −88°07'30.1608" (−88.12504468)
NAVD88 ELEVATION: 878.87'± AMSL

GENERAL NOTES

NO SEARCH OF PUBLIC RECORDS HAS BEEN COMPLETED BY XCEL CONSULTANTS TO DETERMINE ANY DEFECTS AND/OR AMBIGUITIES IN THE TITLE OF THE PARENT PARCEL.

THIS SURVEY IS FOR THE PROPOSED LEASED PREMISES AND THE PROPOSED EASEMENTS ONLY, AND ONLY A PARTIAL BOUNDARY SURVEY OF THE PARENT PARCEL HAS BEEN PERFORMED.

THIS PLAT IS NOT INTENDED FOR LAND TRANSFER.

THIS PROPERTY IS SUBJECT TO ANY RECORDED EASEMENTS AND/OR RIGHTS OF WAY SHOWN HEREON OR NOT.

XCEL CONSULTANTS HAS RECEIVED AND REVIEWED THE TITLE COMMITMENT PREPARED BY STEWART TITLE GUARANTY COMPANY, FILE NUMBER 22111495WI, DATED AUGUST 24, 2022 AT 8:00 AM, PREPARED FOR THE SUBJECT PROPERTY, TO DETERMINE THE IMPACTS OF EXISTING TITLE EXCEPTIONS.

BY GRAPHIC PLOTTING ONLY, THIS PROPERTY IS LOCATED IN ZONE "X" (AREA OF MINIMAL FLOOD HAZARD) OF THE FLOOD INSURANCE RATE MAP, COMMUNITY PANEL NO. 55131C0357D AND 55131C0376D, WHICH BOTH BEAR AN EFFECTIVE DATE OF NOVEMBER 20, 2013 AND IS NOT IN A SPECIAL FLOOD HAZARD AREA. NO FIELD SURVEYING WAS PERFORMED TO DETERMINE THIS ZONE AND AN ELEVATION CERTIFICATE MAY BE NEEDED TO VERIFY THIS DETERMINATION OR APPLY FOR A VARIANCE FROM THE FEDERAL EMERGENCY MANAGEMENT AGENCY.

NO WETLANDS AREAS HAVE BEEN INVESTIGATED BY THIS SURVEY

THERE WERE NO STREAMS, DRAINAGE DITCHES OR PIPES, OR RIVERS RUNNING THROUGH OR BORDERING THE PARENT PARCEL, LEASED PREMISES NOR NEW EASEMENTS AT THE TIME OF SURVEY.

THE LOCATION OF THE UTILITIES SHOWN HEREON ARE FROM OBSERVED EVIDENCE OF ABOVE GROUND APPURTENANCES AND PER WISCONSIN ONE CALL "DIGGERS HOTLINE" LOCATED REQUEST PLANNING PRINTS TICKET #20223421464. UTILITY SERVICE FOR THIS PROPERTY ARE PROVIDED BY WE ENERGIES, ELECTRIC AND GAS, TIME WARNER CABLE, VILLAGE OF GERMANTOWN, AT&T DISTRIBUTION, AND CENTURYLINK. ONLY UTILITY MAPS PROVIDED BY SAID COMPANIES ARE SHOWN HEREON. BEFORE DIGGING IN THIS AREA CALL DIGGERS HOTLINE AT 811.

GLOBAL POSITIONING SYSTEMS NOTE

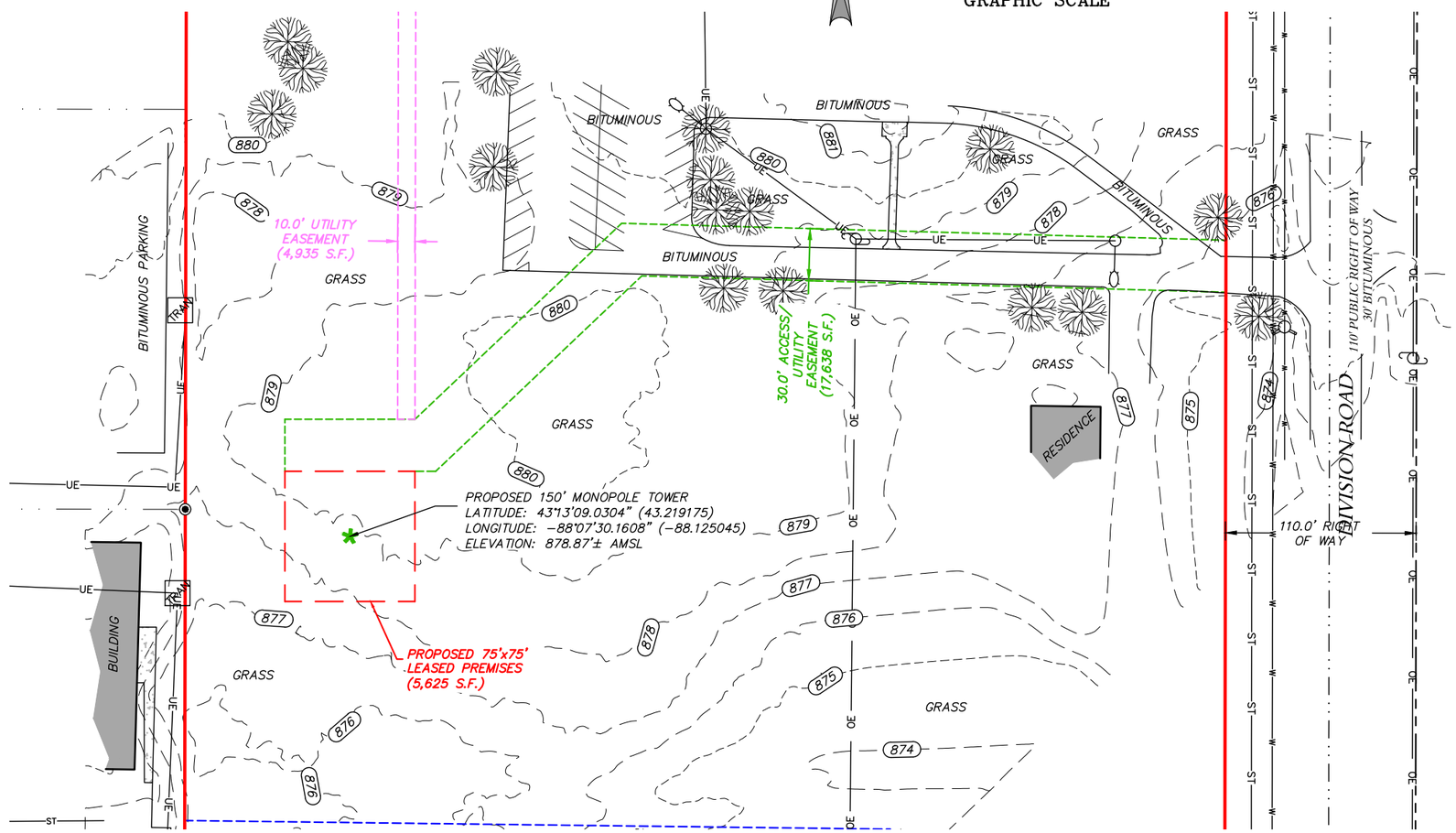
1. RANDOM TRAVERSE CONTROL MONUMENTS WERE SET USING GPS METHODS. A PORTION OF THE TOPOGRAPHY AND FOUND BOUNDARY MONUMENTS WERE ALSO LOCATED USING GPS METHODS.
2. THE TYPE OF GPS UTILIZES AS NETWORK ADJUSTED REAL TIME KINEMATIC (HYPER SR NETWORK), NAD 83 WISCONSIN STATE PLANE (WASHINGTON).
3. TOPCON HIPER SR RECEIVERS WERE USED TO PERFORM THE SURVEY.

THE SOURCE OF BEARINGS WERE DETERMINED BY GPS OBSERVATIONS COMPLETED ON AUGUST 17, 2022

N

0 40 80 160

1" = 80'
GRAPHIC SCALE



LEGEND

- PARENT PROPERTY LINE
- CONTOUR LINES
- RIGHT OF WAY LINE
- OVERHEAD WIRE
- PROPOSED LEASE LINE
- PROPOSED ACCESS/UTILITY EASEMENT
- BUILDING
- FOUND IRON PIPE
- TRANSFORMER
- STREET LIGHT
- UTILITY POLE
- FIRE HYDRANT

TO: U.S. CELLULAR; STEWART TITLE GUARANTY COMPANY

I, DAN J. KUEHL, A WISCONSIN PROFESSIONAL LAND SURVEYOR, CERTIFY THAT THE INFORMATION SHOWN HEREON WAS COMPILED USING DATA FROM AN ACTUAL FIELD SURVEY MADE UNDER MY DIRECT SUPERVISION AND THAT THE FIELD SURVEY AND THE COMPILATION OF INFORMATION SHOWN HEREIN WERE CONDUCTED IN ACCORDANCE WITH THE WISCONSIN MINIMUM STANDARDS OF PRACTICE. THE FIELD WORK WAS COMPLETED ON AUGUST 17, 2022.

SEPTEMBER 26, 2022

DAN J. KUEHL
LICENSE NUMBER 3104-8
MY LICENSE RENEWAL DATE IS JANUARY 31, 2024
SHEETS COVERED BY THIS SEAL B-1, B-2, B-3, AND B-4

WISCONSIN
DAN J. KUEHL
3104-8
MORRISON
IL
LAND SURVEYOR

uscellular
8410 W. Bryn Mawr Avenue
Suite 700
Chicago, IL 60631

TERRA CONSULTING GROUP, LTD.
600 Busse Highway
Park Ridge, IL 60068
Ph: 847/698-6400
Fax: 847/698-6401

SURVEYED BY:
XCEL Consultants
8300 42ND STREET WEST
ROCK ISLAND, IL 61201
(O) 309-787-9988
(F) 309-756-5540
(E) XCEL@XCELCONSULTANTSINC.COM

XCEL PROJECT NUMBER: 224240

SURVEY

REV.	DATE	DESCRIPTION

SITE NAME:
GERMANTOWN

SITE NUMBER: 784809

W172N11083 DIVISION ROAD
GERMANTOWN, WI 53022

OWNER: FAITH LUTHERAN CHURCH
PARCEL #: GTNV_281967

WASHINGTON COUNTY
WISCONSIN

DRAWN BY: KJM
CHECKED BY: BCH
SURVEY DATE: 8/17/2022
PLAT DATE:

SHEET TITLE:
SURVEY
THIS DOES NOT REPRESENT A BOUNDARY SURVEY OF THE PARENT PARCEL

SHEET NUMBER:
B-2

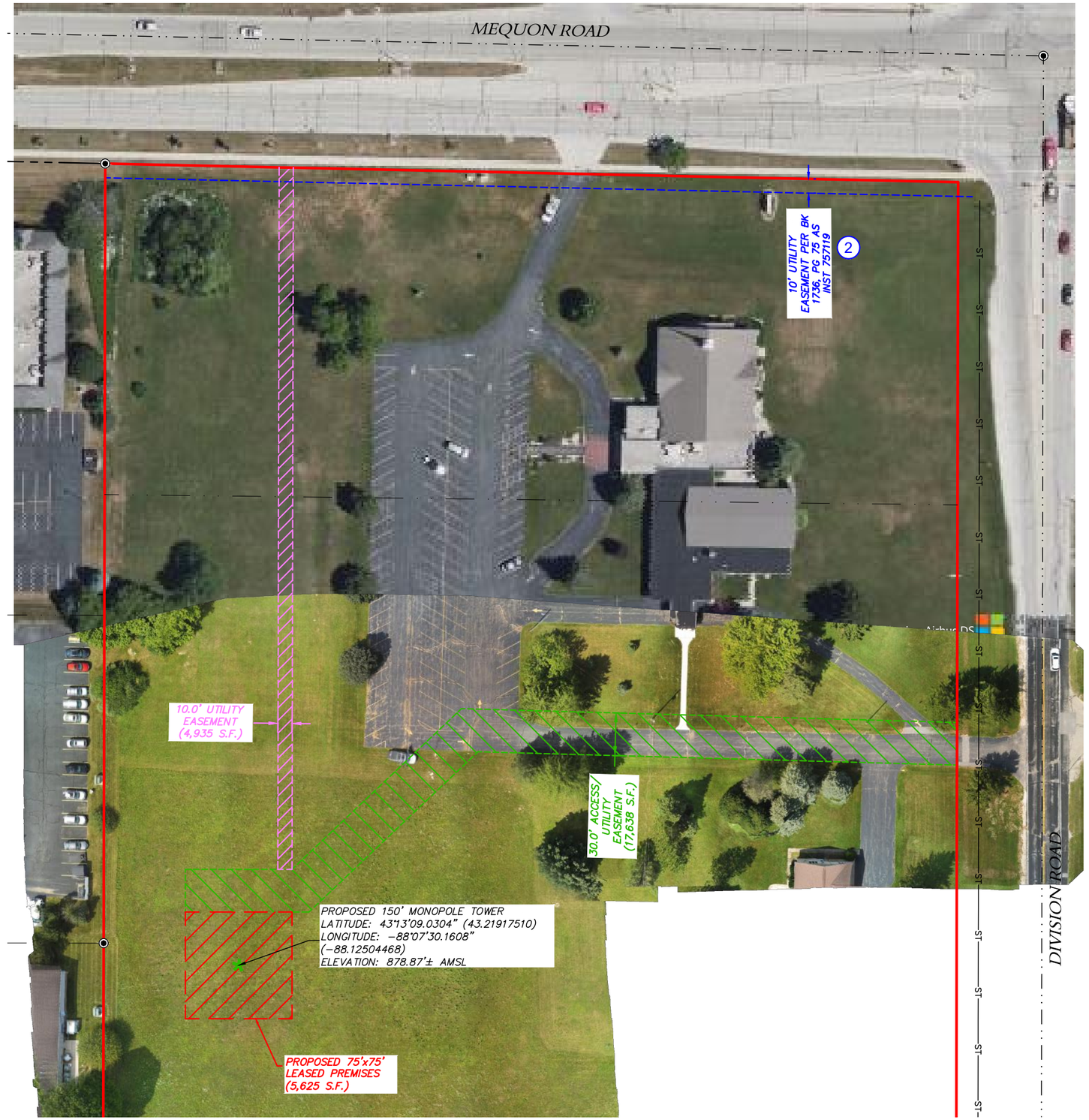
N

THE SOURCE OF BEARINGS WERE DETERMINED BY GPS OBSERVATIONS COMPLETED ON AUGUST 17, 2022.

0 40 80 160

1" = 80'
GRAPHIC SCALE

AERIAL PER XCEL CONSULTANTS, INC. FLOWN DRONE ON AUGUST 17, 2022.



WISCONSIN
DAN J. KUEHL
3104-8
MORRISON IL
LAND SURVEYOR

TO: U.S. CELLULAR; STEWART TITLE GUARANTY COMPANY

I, DAN J. KUEHL, A WISCONSIN PROFESSIONAL LAND SURVEYOR, CERTIFY THAT THE INFORMATION SHOWN HEREON WAS COMPILED USING DATA FROM AN ACTUAL FIELD SURVEY MADE UNDER MY DIRECT SUPERVISION AND THAT THE FIELD SURVEY AND THE COMPILATION OF INFORMATION SHOWN HEREIN WERE CONDUCTED IN ACCORDANCE WITH THE WISCONSIN MINIMUM STANDARDS OF PRACTICE. THE FIELD WORK WAS COMPLETED ON AUGUST 17, 2022.

SEPTEMBER 26, 2022

DAN J. KUEHL
LICENSE NUMBER 3104-8
MY LICENSE RENEWAL DATE IS JANUARY 31, 2024
SHEETS COVERED BY THIS SEAL B-1, B-2, B-3, AND B-4

uscellular
8410 W. Bryn Mawr Avenue
Suite 700
Chicago, IL 60631

TERRA CONSULTING GROUP, LTD.
600 Busse Highway
Park Ridge, IL 60068
Ph: 847/698-6400
Fax: 847/698-6401

SURVEYED BY:
XCEL Consultants
8300 42ND STREET WEST
ROCK ISLAND, IL 61201
(O) 309-787-9988
(F) 309-756-5540
(E) XCEL@XCELCONSULTANTSINC.COM

XCEL PROJECT NUMBER: 224240

SURVEY

REV.	DATE	DESCRIPTION

SITE NAME:
GERMANTOWN

SITE NUMBER: 784809

W172N11083 DIVISION ROAD
GERMANTOWN, WI 53022

OWNER: FAITH LUTHERAN CHURCH
PARCEL #: GTNV_281967

WASHINGTON COUNTY
WISCONSIN

DRAWN BY: KJM
CHECKED BY: BCH
SURVEY DATE: 8/17/2022
PLAT DATE:

SHEET TITLE:
SURVEY
THIS DOES NOT REPRESENT A BOUNDARY SURVEY OF THE PARENT PARCEL

SHEET NUMBER:
B-3

REPORT OF TITLE:

XCEL CONSULTANTS HAS RECEIVED AND REVIEWED THE TITLE COMMITMENT PREPARED BY STEWART TITLE GUARANTY COMPANY, FILE NUMBER 22111495WI, DATED AUGUST 24, 2022 AT 8:00 AM, PREPARED FOR THE SUBJECT PROPERTY, TO DETERMINE THE IMPACTS OF EXISTING TITLE EXCEPTIONS.

SURVEY MATTERS OR EASEMENTS LISTED IN SCHEDULE 'B':

1. SANITARY SEWER AND WATER MAIN EASEMENT BETWEEN FAITH LUTHERAN CHURCH AND THE VILLAGE OF GERMANTOWN DATED OCTOBER 26, 1995 AND RECORDED FEBRUARY 26, 1996 IN BOOK 1572 AT PAGE 253 AS INSTRUMENT 710992. LIES ON PROPERTY – AS SHOWN
2. AMERITECH EXCLUSIVE EASEMENT BETWEEN FAITH LUTHERAN CHURCH AND WISCONSIN BELL, INC. A.K.A AMERITECH WISCONSIN DATED SEPTEMBER 18, 1997 AND RECORDED SEPTEMBER 18, 1997 IN BOOK 1736 AT PAGE 75 AS INSTRUMENT 757119. LIES ON PROPERTY – AS SHOWN
3. RIGHT-OF-WAY GRANT BETWEEN FAITH LUTHERAN CHURCH AND WISCONSIN BELL, INC DATED JUNE 9, 1986 AND RECORDED JULY 16, 1986 IN BOOK 899 AT PAGE 531 AS INSTRUMENT 494984. DOES NOT LIE ON PROPERTY

PARENT PARCEL:

PARCEL I:
THAT PART OF THE NORTHEAST ONE-QUARTER (1/4) OF THE NORTHEAST ONE-QUARTER (1/4) OF SECTION TWENTY-EIGHT (28), IN TOWNSHIP NINE (9) NORTH, RANGE TWENTY (20) EAST, IN THE VILLAGE OF GERMANTOWN, COUNTY OF WASHINGTON, STATE OF WISCONSIN, DESCRIBED AS FOLLOWS:

COMMENCING AT THE NORTHEAST CORNER OF SAID SECTION 28; THENCE SOUTH ON THE EAST LINE OF THE NORTHEAST 1/4 OF SAID SECTION 316.50 FEET TO THE POINT OF BEGINNING OF THIS DESCRIPTION; THENCE CONTINUING SOUTH 524.83 FEET; THENCE NORTH 89°26' WEST 660.03 FEET; THENCE NORTH 531.17 FEET; THENCE SOUTH 88°53' EAST 660.13 FEET TO THE POINT OF BEGINNING. EXCEPTING THEREFROM THOSE LANDS CONVEYED TO THE STATE OF WISCONSIN, DEPARTMENT OF TRANSPORTATION IN A WARRANTY DEED RECORDED ON APRIL 29, 1996 IN VOLUME 1590 OF RECORDS, AT PAGE 642, AS DOCUMENT NO. 716269.

PARCEL II:
THAT PART OF THE NORTHEAST ONE-QUARTER (L/4) OF THE NORTHEAST ONE-QUARTER (1/4) OF SECTION TWENTY-EIGHT (28), IN TOWNSHIP NINE (9) NORTH, RANGE TWENTY (20) EAST, IN THE VILLAGE OF GERMANTOWN, COUNTY OF WASHINGTON, STATE OF WISCONSIN, DESCRIBED AS FOLLOWS:

COMMENCING AT THE NORTHEAST CORNER OF SAID SECTION 28; THENCE SOUTH ON THE EAST LINE OF THE NORTHEAST 1/4 OF SAID SECTION 316.50 FEET; THENCE NORTH 88°53' WEST 660.13 FEET; THENCE NORTH 316.50 FEET TO THE NORTH LINE OF THE NORTHEAST 1/4 OF SAID SECTION; THENCE SOUTH 88°53' EAST ON SAID NORTH LINE 660.13 FEET TO THE POINT OF BEGINNING. EXCEPTING THEREFROM THAT PORTION THEREOF CONVEYED TO WASHINGTON COUNTY, WISCONSIN, FOR HIGHWAY PURPOSES AS LONG AS SO USED, AS DESCRIBED BY DEED RECORDED I~ WASHINGTON COUNTY REGISTRY IN VOLUME 210 OF DEEDS ON PAGE 197, AS DOCUMENT NO. 232686.

EXCEPTING THEREFROM THOSE LANDS CONVEYED TO THE STATE OF WISCONSIN, DEPARTMENT OF TRANSPORTATION IN A WARRANTY DEED RECORDED ON APRIL 29, 1996 IN VOLUME 1590 OF RECORDS, AT PAGE 642, AS DOCUMENT NO. 716269.

LESS THAT PORTION CONVEYED TO THE STATE OF WISCONSIN IN BOOK 1590 AT PAGE 642.

LEASED PREMISES:

A PART OF THE LAND SHOWN IN C.S.M. AT DOCUMENT NO. 898738, WITHIN THE VILLAGE OF GERMANTOWN, WASHINGTON COUNTY, WI, MORE PARTICULARLY DESCRIBED AS: COMMENCING AT THE NE CORNER OF THE SAID LAND; THENCE S00°06'40"E, ALONG THE WEST LINE OF DIVISION ROAD, 379.93 FEET; THENCE N88°23'59"W, 348.73 FEET; THENCE S46°31'53"W, 164.29 FEET; THENCE S90°00'00"W, 75.00 FEET; THENCE S00°00'00"W, 30.00 FEET TO THE POINT OF BEGINNING FOR THE LEASE AREA HEREIN INTENDED TO BE DESCRIBED; THENCE N90°00'00"E, 75.00 FEET; THENCE S00°00'00"W, 75.00 FEET; THENCE S90°00'00"W, 75.00 FEET; THENCE N00°00'00"E, 75.00 FEET TO THE POINT OF BEGINNING, CONTAINING 5,625 SQUARE FEET.

ACCESS/UTILITY EASEMENT:

A PART OF THE LAND SHOWN IN C.S.M. AT DOCUMENT NO. 898738, WITHIN THE VILLAGE OF GERMANTOWN, WASHINGTON COUNTY, WI, MORE PARTICULARLY DESCRIBED AS: COMMENCING AT THE NE CORNER OF THE SAID LAND; THENCE S00°06'40"E, ALONG THE WEST LINE OF DIVISION ROAD, 379.93 FEET TO THE POINT OF BEGINNING FOR THE EASEMENT AREA HEREIN INTENDED TO BE DESCRIBED; THENCE N88°23'59"W, 348.73 FEET; THENCE S46°31'53"W, 164.29 FEET; THENCE S90°00'00"W, 75.00 FEET; THENCE S00°00'00"W, 30.00 FEET; THENCE N90°00'00"E, 86.96 FEET; THENCE N46°31'53"E, 163.80 FEET; THENCE S88°23'59"E, 337.07 FEET TO THE SAID WEST LINE OF DIVISION ROAD; THENCE N00°06'40"E, ALONG THE SAID WEST LINE, 30.01 FEET TO THE POINT OF BEGINNING, CONTAINING 17,638 SQUARE FEET.

UTILITY EASEMENT:

A PART OF THE LAND SHOWN IN C.S.M. AT DOCUMENT NO. 898738, WITHIN THE VILLAGE OF GERMANTOWN, WASHINGTON COUNTY, WI, MORE PARTICULARLY DESCRIBED AS: COMMENCING AT THE NE CORNER OF THE SAID LAND; THENCE N88°45'05"W, ALONG THE NORTH LINE OF SAID LAND, 467.72 FEET TO THE POINT OF BEGINNING FOR THE EASEMENT AREA HEREIN INTENDED TO BE DESCRIBED; THENCE S00°06'40"W, 493.41 FEET; THENCE S90°00'00"W, 10.00 FEET; THENCE N00°06'40"E, 493.63 FEET TO THE NORTH LINE OF SAID LAND; THENCE S88°45'05"E, 10.00 FEET TO THE POINT OF BEGINNING, CONTAINING 4,935 SQUARE FEET.

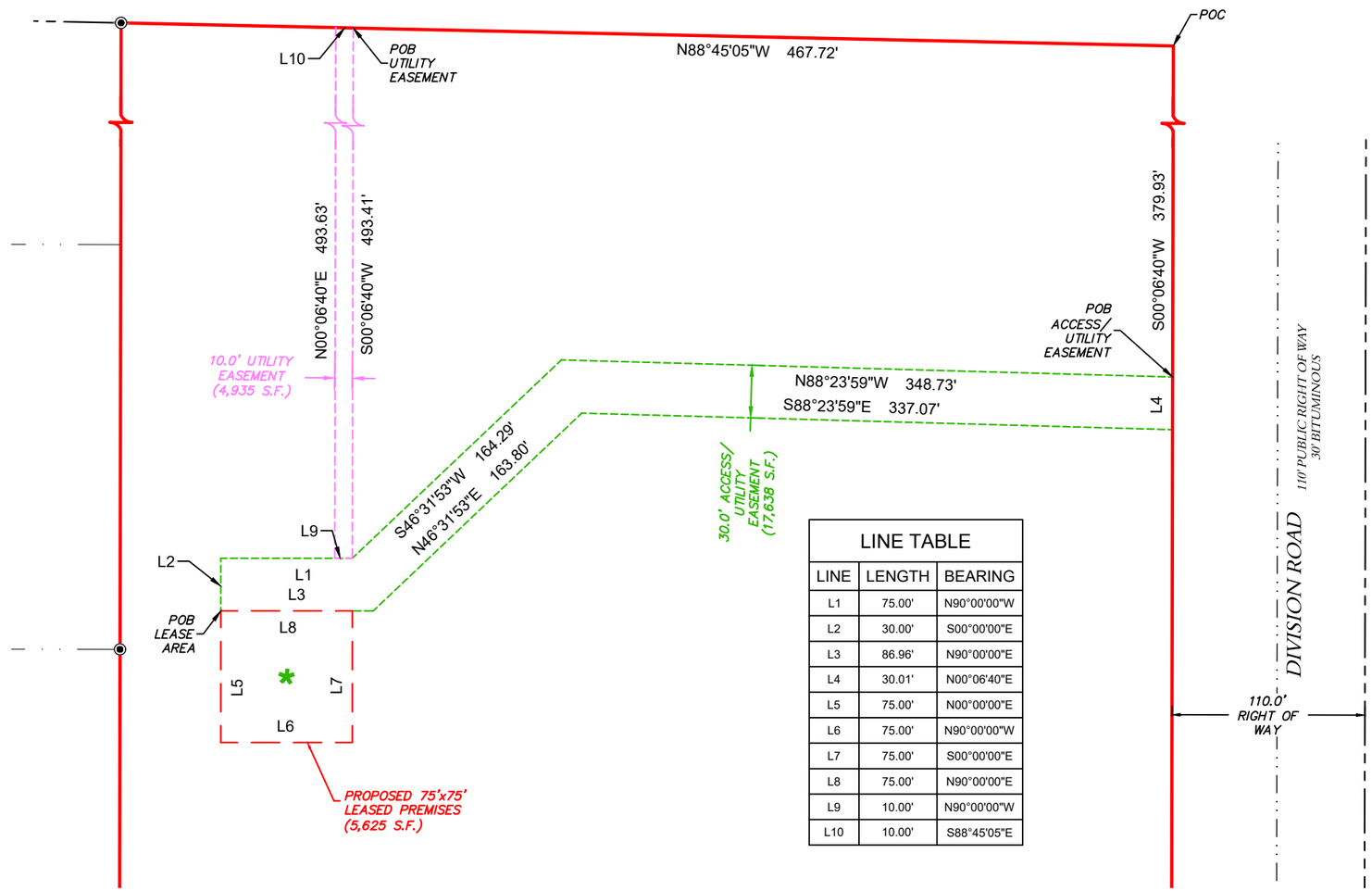
LEGEND:

PARENT PROPERTY LINE
RIGHT OF WAY LINE
PROPOSED LEASE LINE
PROPOSED ACCESS/UTILITY EASEMENT

THE SOURCE OF BEARINGS WERE DETERMINED BY GPS OBSERVATIONS COMPLETED ON AUGUST 17, 2022

0 40 80 160
1" = 80'
GRAPHIC SCALE

N



LINE TABLE		
LINE	LENGTH	BEARING
L1	75.00'	N90°00'00"W
L2	30.00'	S00°00'00"E
L3	86.96'	N90°00'00"E
L4	30.01'	N00°06'40"E
L5	75.00'	N00°00'00"E
L6	75.00'	N90°00'00"W
L7	75.00'	S00°00'00"E
L8	75.00'	N90°00'00"E
L9	10.00'	N90°00'00"W
L10	10.00'	S88°45'05"E

TO: U.S. CELLULAR; STEWART TITLE GUARANTY COMPANY

I, DAN J. KUEHL, A WISCONSIN PROFESSIONAL LAND SURVEYOR, CERTIFY THAT THE INFORMATION SHOWN HEREON WAS COMPILED USING DATA FROM AN ACTUAL FIELD SURVEY MADE UNDER MY DIRECT SUPERVISION AND THAT THE FIELD SURVEY AND THE COMPILATION OF INFORMATION SHOWN HEREIN WERE CONDUCTED IN ACCORDANCE WITH THE WISCONSIN MINIMUM STANDARDS OF PRACTICE. THE FIELD WORK WAS COMPLETED ON AUGUST 17, 2022.

SEPTEMBER 26, 2022

DAN J. KUEHL
LICENSE NUMBER 3104-8
MY LICENSE RENEWAL DATE IS JANUARY 31, 2024
SHEETS COVERED BY THIS SEAL B-1, B-2, B-3, AND B-4

WISCONSIN
DAN J. KUEHL
3104-8
MORRISON IL
LAND SURVEYOR

uscellular
8410 W. Bryn Mawr Avenue
Suite 700
Chicago, IL 60631

TERRA CONSULTING GROUP, LTD.
600 Busse Highway
Park Ridge, IL 60068
Ph: 847/698-6400
Fax: 847/698-6401

SURVEYED BY:
XCEL Consultants
8300 42ND STREET WEST
ROCK ISLAND, IL 61201
(O) 309-787-9988
(F) 309-756-5540
(E) XCEL@XCELCONSULTANTSINC.COM

XCEL PROJECT NUMBER: 224240

SURVEY

REV.	DATE	DESCRIPTION

SITE NAME:
GERMANTOWN

SITE NUMBER: 784809

W172N11083 DIVISION ROAD
GERMANTOWN, WI 53022

OWNER: FAITH LUTHERAN CHURCH
PARCEL #: GTNV_281967

WASHINGTON COUNTY
WISCONSIN

DRAWN BY: KJM
CHECKED BY: BCH
SURVEY DATE: 8/17/2022
PLAT DATE:

SHEET TITLE:
SURVEY
THIS DOES NOT REPRESENT A BOUNDARY SURVEY OF THE PARENT PARCEL

SHEET NUMBER:
B-4

uscellular

AFFIDAVIT

I/WE Thaddeus Johnson
being first duly sworn on oath, state as follows:

I/WE are the duly designated representatives of the US Cellular, that has submitted this form for the purpose to construct a telecommunications facility upon the following property:

W172N11187 Division Road Germantown WI. 53022

Pin #281967

I/WE hereby certify and swear that in conjunction with the issuance of an approved Zoning and Land Use Permit to establish a telecommunications facility on the subject property, I/WE did look and review the entire search area in a 1-mile radius for other Towers and/or Structures which could be used in lieu of building a new structure other than the 160' monopole listed below which due to the height and the existing loading this tower would not be a viable candidate, and we found no other structures found within a 1-mile radius

1) Village of Germantown 160' monopole 1,710' east

2)**US Cellular monopole 71'tower 1.27 MI. North**

See attached map

Thaddeus Johnson

Agent of US Cellular

uscellular

STATE OF IOWA

COUNTY OF POLK

On January 24, 2023, before me, LORI GERMAN, Notary Public, personally appeared Thaddeus Johnson, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same of his own free will.

WITNESS my hand and official seal.

Lori A German (SEAL)

Notary Public

NOTARIAL SEAL IOWA
LORI A GERMAN
Commission Number 832886
My Commission Expires
July 2, 2024

My commission expires: 07/02/2024

SWORN STATEMENT OF ASHUTOSH PANDEY
IN SUPPORT OF NEW TOWER CONSTRUCTION PURSUANT TO CONDITIONS REQUESTED

WASHINGTON COUNTY)
) ss.
STATE OF WISCONSIN)

ASHUTOSH PANDEY, being first duly sworn on oath, deposes and says that:

1. I am an adult resident of the State of North Carolina and serve as a Radio Frequency Engineer With US Cellular.

2. My job duties include responsibility over the placement of the mobile service support structure being proposed at W172N11187 Division Rd. The land is owned by the Faith Lutheran Church.

3. This sworn statement is made pursuant to the Conditions Requested to fulfill the Conditional Use Permit.

4. The proposed tower must be located at the proposed site to meet the coverage Requirements.

Subscribed and sworn to before me
this day of 01/10/2023

Cordelia B. Pearsall
Notary Public, State of ~~Wisconsin~~ North Carolina
My commission: 06/07/2026

North Carolina
Guilford County
I, Cordelia B. Pearsall, a Notary Public for said County and State, do hereby certify that Ashutosh Pandey personally appeared before me this day and acknowledged the due execution of the foregoing instrument.

Witness ~~my~~ hand and official seal, this 10th day of January, 2023

Cordelia B. Pearsall
Notary Public

(Official Seal)

My commission expires 06/07/2026

CORDELIA B. PEARSALL
Notary Public, North Carolina
Guilford County
My Commission Expires
06/07/2026

uscellular

COLOCATION AFFIDAVIT

United States Cellular Operating Company, LLC
8410 Bryn Mawr Ave
Chicago IL 60631
RE: Collocations on U.S. Cellular Towers structures,

To whom it may concern:

Please take this letter as US Cellular' s intent to allow colocation on their towers once constructed

The proposed tower will accommodate another carrier's telecommunications ground equipment and tower antennas of comparable weight and size and surface area to the telecommunication's facilities installed by applicant on the tower within six months of the completion of tower construction.

Additional companies interested in sharing shall be required to enter into an agreement with United States Cellular Operating Company, LLC and be required to follow its standard collocation procedure.

Regards,

Thaddeus Johnson

Agent of US Cellular

STATE OF IOWA

COUNTY OF POLK

On January 24, 2023, before me, LORI GERMAN, Notary Public, personally appeared Thaddeus Johnson, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same of his own free will.

WITNESS my hand and official seal.

(SEAL)

Notary Public

My commission expires: 07/02/2024

LORI A GERMAN
Commission Number 832886
My Commission Expires
July 2, 2024

ENGINEERING STATEMENT

I, Ashutosh Pandey, am a Radio Frequency Engineer for US Cellular. US Cellular is the wireline operator of the domestic public cellular radio telecommunications system that serves WI market.

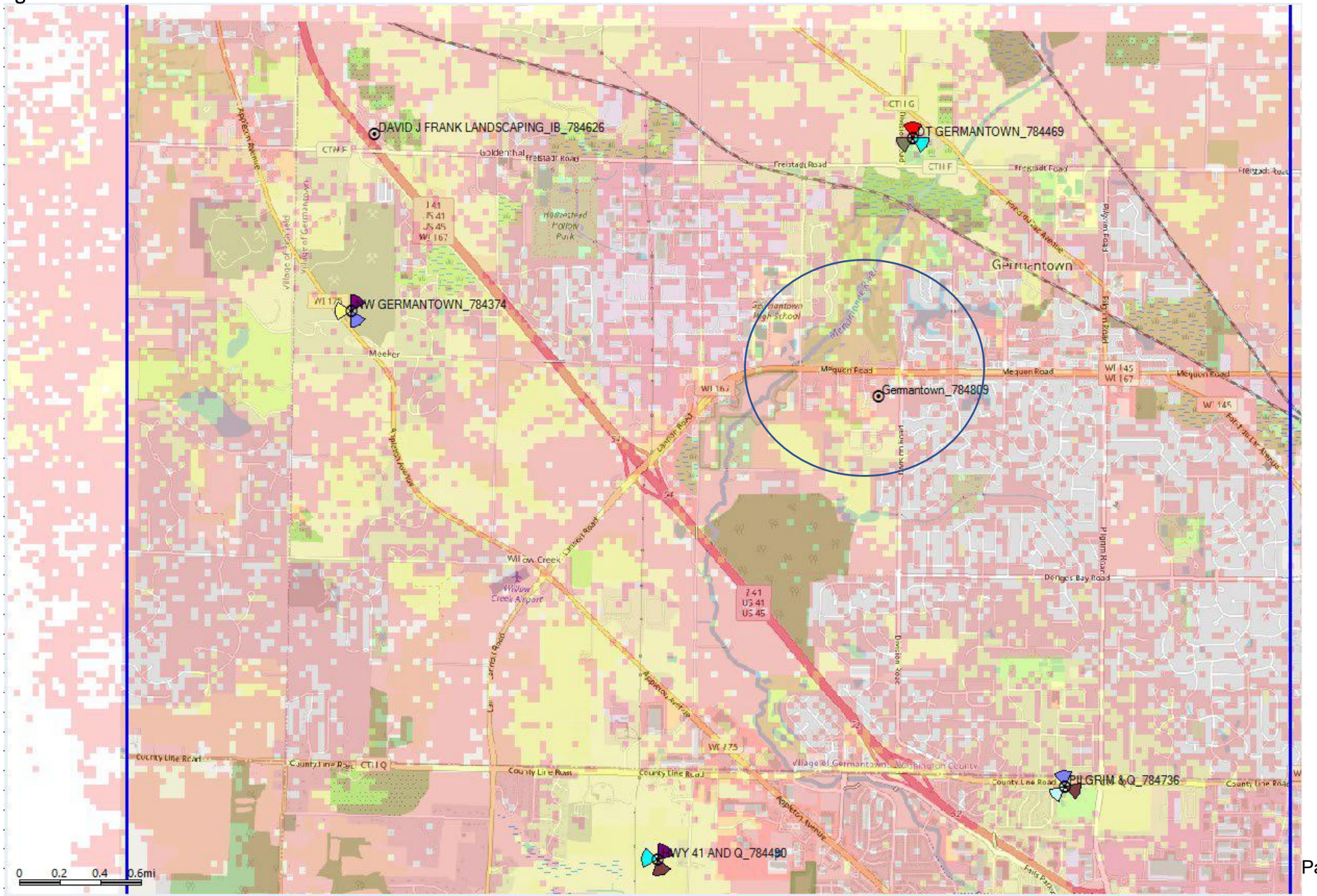
US Cellular desires to build a 185-foot cellular tower at W172N11187 Division Rd, Wisconsin. The proposed tower is needed to meet current and future wireless data and voice service needs in the area. The proposed tower will provide new coverage and capacity to Residential area around Mequon Rd and Hwy 41 in order to meet current and future mobile data demands. A secondary benefit will be an improvement with deep in-building signal for the College.

The location and height of the proposed tower meets US Cellular' s current and future capacity objectives for the area. The proposed site location is in an area of town currently being served by no other site and is not able to effectively keep up with the increasing demand of wireless services. The minimum required height of 185' will help the signals propagate over trees and terrain and help In Building coverage in Campus.

The included before and after coverage map shows deep in-building coverage in the area in yellow and red on road. The new coverage/capacity will help the much-needed area as marked in blue, with the site we get inbuilding and on road coverage/capacity.

Sincerely : Ashutosh Pandey RF Engineer - US Cellular

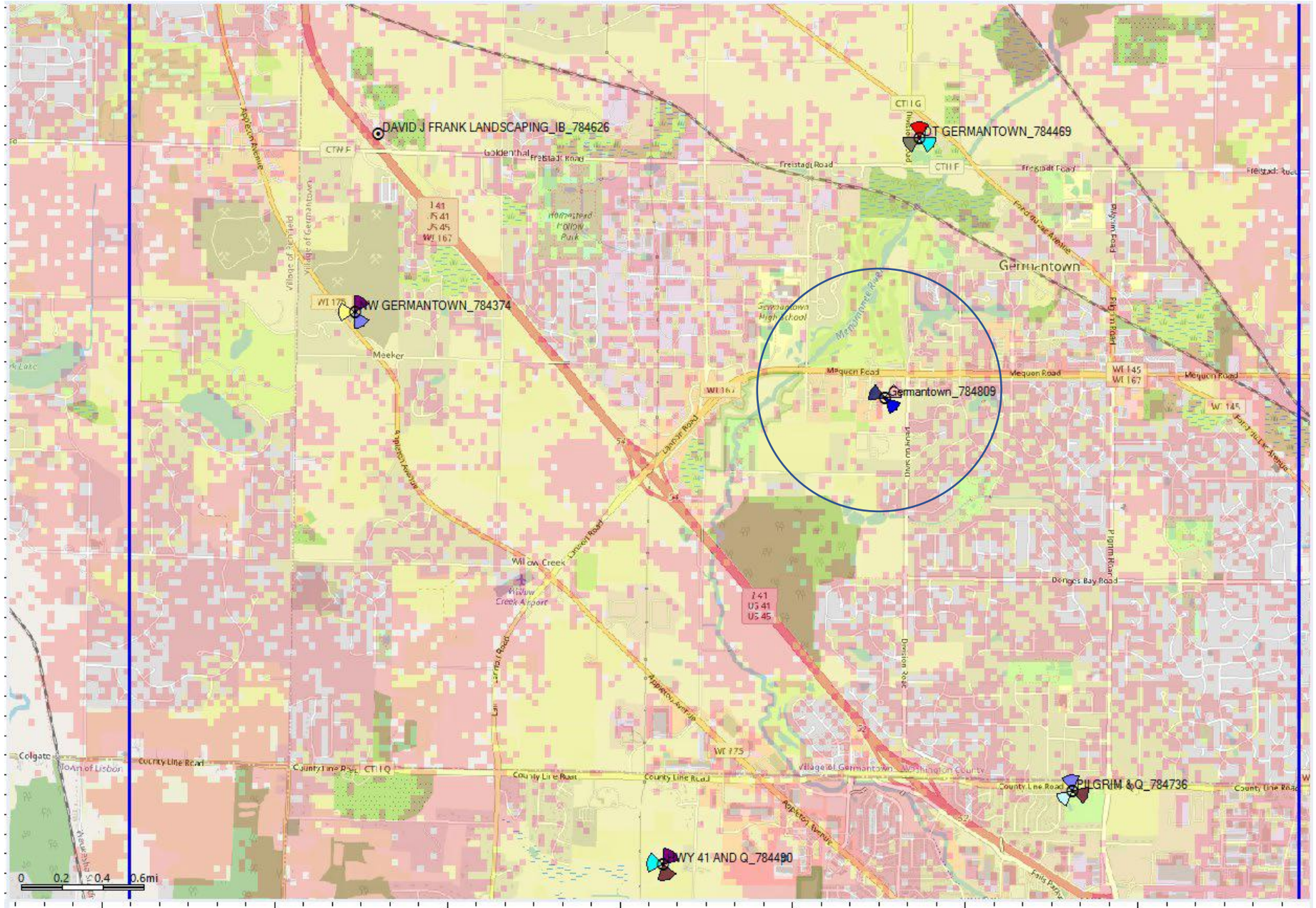
Germantown existing coverage



LTE: Downlink Coverage

- In Building
- On Road

Germantown existing coverage with new site



LTE: Downlink Coverage

- In Building
- On Road

WIRELESS APPLICATIONS, CORP.®
Connecting Wireless...

OPINION LETTER

August 31, 2022

FAA and FCC Not Required

Kathy Mayhew
US Cellular Corporation
3806 Thirlane Road, NW
Roanoke, VA 24019

RE: **784809 - Germantown, WI Airspace Analysis**

Latitude (NAD-83):	**43° 13' 09.03" N**
Longitude (NAD-83):	**88° 07' 30.16" W**
Ground Elevation:	**879.0 ft. GE**
Tower tip height:	**199.0 ft. AGL**
Overall height:	**1078.0 ft. AMSL**

Dear Ms. Mayhew,

Our airspace analysis results for the 784809 - Germantown, WI site are as follows:

1. **Per AIRSPACE, filing an FAA Form 7460-1 is not required for the proposed height of 199.0 ft. AGL (1078.0 ft. AMSL). The maximum allowable height for not filing an FAA Form 7460-1 is 200 ft. AGL.**
2. **FCC's TOWAIR Determination indicates that this Structure does not require registration. There are no airports within 8 kilometers (5 miles) of the coordinates you provided. The maximum allowable height for not filing an ASR is 200 ft AGL.**
3. The proposed site is 7.22 nm NW from the nearest public landing facility – MWC: Lawrence J Timmerman. At an overall height of 1078.0 ft. AMSL, it does not exceed FAR 77.9 (a) or FAR 77.9 (b) Notice Criteria for MWC airport. This airport has both Circling and Straight-In Instrument approach procedures. It does not exceed any glide slopes of MWC airport. MWC: Lawrence J Timmerman is an airport type landing facility associated with the city of Milwaukee, WI.
4. The proposed site is not within any of the instrument approach procedures of MWC airport.
5. The nearest private landing facility is WI77: Willow Creek, which is an airport type landing facility not eligible for study under FAR Part 77 sub-Part C. It is 1.71 nm SW from the proposed site.
6. The proposed 199.0 ft. AGL height would not adversely affect low altitude en route airways and/ or VFR routes in the area.
7. The nearest AM tower is WAUK, which is 8.01 mi (12885 meters) away bearing 349.85°. WAUK AM is operating a directional type antenna system. As noted per the FCC AM Tower Locator and per FCC regulation 13-115, Section 1.30002, the structure will not require a 'Proof of Performance' measurement study before and after construction.
8. Marking and lighting are not required for the proposed height of 199.0 ft. AGL.
9. All Wireless Applications Corp. analyses are based on the latest AIRSPACE, FAA Notice Criteria Tool and FCC TOWAIR programs.

If you have any questions, please do not hesitate to call.

Thank you.

Ronald W. Lageson, Jr.
425-643-5000 (office)
425-649-5675 (fax)

Structural Design Report

190' Monopole
Site: Germantown, WI
Site Number: 784809

Prepared for: US CELLULAR CORP
by: Sabre Industries ™

Job Number: 515837

November 14, 2022

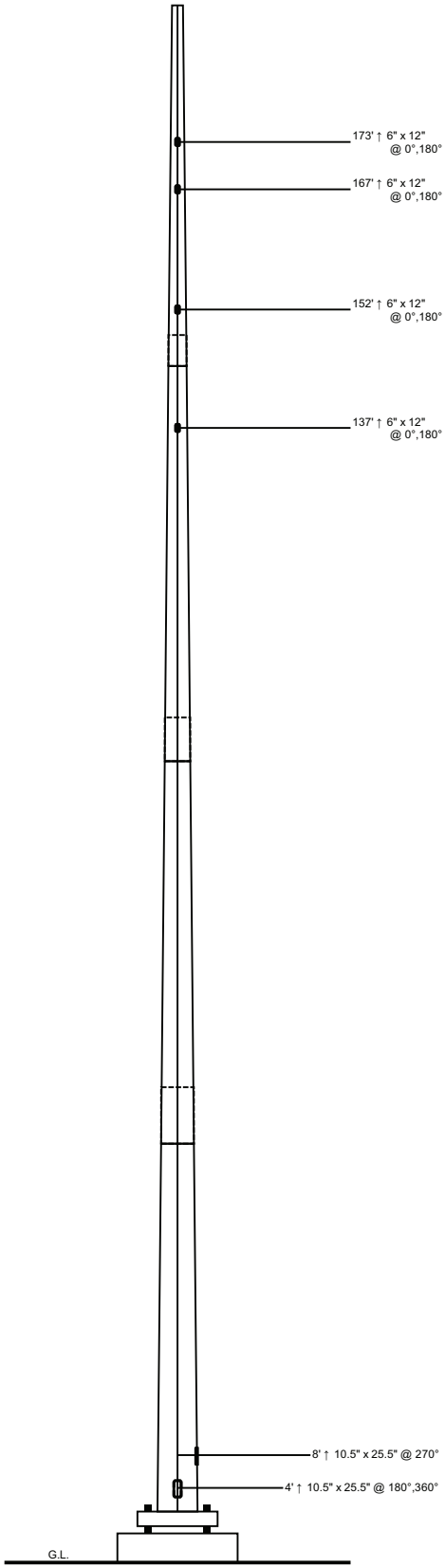
Monopole Profile..... **1**

Pole Calculations..... **2-19**

WISCONSIN
AMY R. HERBST
E-38026
SIOUX CITY
IA
PROFESSIONAL ENGINEER

11/14/22

Length (ft)	53'-3"	53'-6"	53'-6"	45'-3"						
Number Of Sides	18									
Thickness (in)	7/16"	3/8"	1/4"							
Lap Splice (ft)	7' - 0"	5' - 6"	A							
Top Diameter (in)	47.84"	37.25"	26.17"	16.5"						
Bottom Diameter (in)	60.96"	50.44"	39.36"	27.65"						
Taper (in/ft)	0.2465									
Grade	A572-65									
Weight (lbs)	16196	11632	7501	3005						
Overall Steel Height (ft)	189									



Designed Appurtenance Loading

Elev	Description	Tx-Line
185	(1) 30,000 sq. in. EPA 6,000# (no ice)	(4) 1 1/4"
169	(1) 25,000 sq. in. antenna loading (at top)	(3) 1 1/4"
154	(1) 25,000 sq. in. antenna loading (at top)	(3) 1 1/4"
139	(1) 25,000 sq. in. antenna loading (at top)	(3) 1 1/4"

Design Criteria - ANSI/TIA-222-H

Wind Speed (No Ice)	106 mph
Wind Speed (Ice)	40 mph
Design Ice Thickness	1.50 in
Risk Category	II
Exposure Category	C
Topographic Factor Procedure	Method 1 (Simplified)
Topographic Category	1
Ground Elevation	879 ft
Seismic Importance Factor, Ie	1.00
0.2-sec Spectral Response, Ss	0.071 g
1-sec Spectral Response, S1	0.046 g
Site Class	D (DEFAULT)
Seismic Design Category	B
Basic Seismic Force-Resisting System	Telecommunication Tower (Pole: Steel)

Limit State Load Combination Reactions

Load Combination	Axial (kips)	Shear (kips)	Moment (ft-k)	Deflection (ft)	Sway (deg)
1.2 D + 1.0 Wo	62.21	43.57	6400.92	18.94	11.64
0.9 D + 1.0 Wo	46.7	43.48	6281.56	18.5	11.32
1.2 D + 1.0 Di + 1.0 Wi	105.73	11.36	1820.13	5.79	3.58
1.2 D + 1.0 Ev + 1.0 Eh	62.94	1.55	254.46	0.82	0.51
0.9 D - 1.0 Ev + 1.0 Eh	45.83	1.56	249.36	0.79	0.49
1.0 D + 1.0 Wo (Service @ 60 mph)	51.9	12.49	1832.22	5.58	3.37

Base Plate Dimensions

Shape	Diameter	Thickness	Bolt Circle	Bolt Qty	Bolt Diameter
Round	73.75"	2.25"	68"	20	2.25"

Anchor Bolt Dimensions

Length	Diameter	Hole Diameter	Weight	Type	Finish
84"	2.25"	2.625"	2422	A615-75	Galv

Material List

Display	Value
A	4' - 0"

Notes

1) Antenna Feed Lines Run Inside Pole
2) All dimensions are above ground level, unless otherwise specified.
3) Weights shown are estimates. Final weights may vary.
4) Full Height Step Bolts
5) This tower design and, if applicable, the foundation design(s) shown on the following page(s) also meet or exceed the requirements of the 2015 International Building Code.
6) Tower Rating: 94.1%

Sabre Industries
INNOVATION DELIVERED

Sabre Industries
7101 Southbridge Drive
P.O. Box 658
Sioux City, IA 51102-0658
Phone: (712) 258-6690
Fax: (712) 279-0814

Information contained herein is the sole property of Sabre Communications Corporation, constitutes a trade secret as defined by Iowa Code Ch. 550 and shall not be reproduced, copied or used in whole or part for any purpose whatsoever without the prior written consent of Sabre Communications Corporation.

Job:	**515837**
Customer:	US CELLULAR CORP
Site Name:	Germantown, WI 784809
Description:	190' Monopole
Date:	11/14/2022 By: ARH

```
 ==============================================================================
 (USA 222-H) - Monopole Spatial Analysis               (c)2017      Guymast Inc.

 Tel:(416)736-7453             Fax:(416)736-4372             Web:www.guymast.com

 Processed under license at:

 Sabre Towers and Poles                            on: 14 nov 2022  at: 12:33:54
 ==============================================================================

 190' Monopole / Germantown, WI



* All pole diameters shown on the following pages are across corners.
   See profile drawing for widths across flats.

 POLE GEOMETRY
 =============

   ELEV SECTION No.  OUTSIDE   THICK   RESISTANCES  SPLICE ...OVERLAP...   w/t
        NAME    SIDE    DIAM   -NESS   ϕ*Pn   ϕ*Mn  TYPE   LENGTH  RATIO
     ft                   in      in   kip  ft-kip            ft

  189.0 ..........................................
                      16.75   0.250   958.0  317.9
        A         18                                                      10.4
                      27.07   0.250  1522.7  825.9
  147.7 ..........................................
                      27.07   0.250  1522.7  825.9
        A/B       18                                 SLIP     4.00   1.77
                      27.58   0.375  2368.8 1297.4
  143.7 ..........................................
                      27.58   0.375  2368.8 1297.4
        B         18                                                      11.8
                      38.58   0.375  3283.7 2535.3
   99.7 ..........................................
                      38.58   0.375  3283.7 2535.3
        B/C       18                                 SLIP     5.50   1.71
                      39.21   0.438  3938.9 3082.5
   94.2 ..........................................
                      39.21   0.438  3938.9 3082.5
        C         18                                                      14.7
                      49.45   0.438  4784.3 4743.7
   53.2 ..........................................
                      49.45   0.438  4784.3 4743.7
        C/D       18                                 SLIP     7.00   1.69
                      50.34   0.438  4845.7 4892.8
   46.2 ..........................................
                      50.34   0.438  4845.7 4892.8
        D         18                                                      19.1
                      61.90   0.438  5560.4 6926.7
    0.0 ..........................................

 POLE ASSEMBLY
 =============

SECTION     BASE  .............BOLTS AT BASE OF SECTION............     CALC
   NAME     ELEV  NUMBER   TYPE        DIAM   STRENGTH  THREADS IN      BASE
                                                         SHEAR PLANE     ELEV
              ft                         in        ksi                     ft
```

A	143.750	0	A325	0.00	92.0	0	143.750
B	94.250	0	A325	0.00	92.0	0	94.250
C	46.250	0	A325	0.00	92.0	0	46.250
D	0.000	0	A325	0.00	92.0	0	0.000

POLE SECTIONS
==========

SECTION NAME	No.of SIDES	LENGTH ft	OUTSIDE.DIAMETER BOT * in	OUTSIDE.DIAMETER TOP * in	BEND RAD in	MAT-ERIAL ID	FLANGE.ID BOT	FLANGE.ID TOP	FLANGE.WELD ..GROUP.ID.. BOT	FLANGE.WELD ..GROUP.ID.. TOP
A	18	45.25	28.08	16.75	0.625	1	0	0	0	0
B	18	53.50	39.96	26.57	0.625	2	0	0	0	0
C	18	53.50	51.22	37.83	0.625	3	0	0	0	0
D	18	53.25	61.90	48.58	0.625	4	0	0	0	0

* - Diameter of circumscribed circle

MATERIAL TYPES
==========

TYPE OF SHAPE	TYPE NO	NO OF ELEM.	ORIENT & deg	HEIGHT in	WIDTH in	.THICKNESS. WEB in	.THICKNESS. FLANGE in	IRREGULARITY .PROJECTION. % OF AREA	IRREGULARITY .PROJECTION. ORIENT deg
PL	1	1	0.0	28.08	0.25	0.250	0.250	0.00	0.0
PL	2	1	0.0	39.96	0.38	0.375	0.375	0.00	0.0
PL	3	1	0.0	51.22	0.44	0.438	0.438	0.00	0.0
PL	4	1	0.0	61.90	0.44	0.438	0.438	0.00	0.0

& - With respect to vertical

MATERIAL PROPERTIES
==========

MATERIAL TYPE NO.	ELASTIC MODULUS ksi	UNIT WEIGHT pcf	.. STRENGTH .. Fu ksi	.. STRENGTH .. Fy ksi	THERMAL COEFFICIENT /deg
1	29000.0	490.0	80.0	65.0	0.00001170
2	29000.0	490.0	80.0	65.0	0.00001170
3	29000.0	490.0	80.0	65.0	0.00001170
4	29000.0	490.0	80.0	65.0	0.00001170

* Only 5 condition(s) shown in full
* Some concentrated wind loads may have been derived from full-scale wind tunnel testing

==========

LOADING CONDITION A ==========

106 mph wind with no ice. Wind Azimuth: 0° (1.2 D + 1.0 Wo)

LOADS ON POLE
==========

LOAD TYPE	ELEV ft	APPLY..LOAD..AT RADIUS ft	AZI	LOAD AZI	.....FORCES..... HORIZ kip	DOWN kip	.....MOMENTS..... VERTICAL ft-kip	TORSNAL ft-kip
C	184.500	0.00	0.0	0.0	0.0275	0.0151	0.0000	0.0000
C	184.000	0.00	0.0	0.0	0.0000	0.5829	0.0000	0.0000
C	184.000	0.00	0.0	0.0	8.7249	7.2000	0.0000	0.0000
C	175.000	0.00	0.0	0.0	0.0303	0.0168	0.0000	0.0000
C	168.000	0.00	0.0	0.0	0.0000	0.3992	0.0000	0.0000
C	168.000	0.00	0.0	0.0	7.1450	3.9996	0.0000	0.0000
C	165.000	0.00	0.0	0.0	0.0299	0.0168	0.0000	0.0000
C	155.000	0.00	0.0	0.0	0.0295	0.0168	0.0000	0.0000
C	153.000	0.00	0.0	0.0	0.0000	0.3635	0.0000	0.0000
C	153.000	0.00	0.0	0.0	7.0066	3.9996	0.0000	0.0000
C	145.000	0.00	0.0	0.0	0.0291	0.0168	0.0000	0.0000
C	138.000	0.00	0.0	0.0	0.0000	0.3279	0.0000	0.0000
C	138.000	0.00	0.0	0.0	6.8570	3.9996	0.0000	0.0000
C	135.000	0.00	0.0	0.0	0.0287	0.0168	0.0000	0.0000
C	125.000	0.00	0.0	0.0	0.0282	0.0168	0.0000	0.0000
C	115.000	0.00	0.0	0.0	0.0277	0.0168	0.0000	0.0000
C	105.000	0.00	0.0	0.0	0.0272	0.0168	0.0000	0.0000
C	95.000	0.00	0.0	0.0	0.0266	0.0168	0.0000	0.0000
C	85.000	0.00	0.0	0.0	0.0260	0.0168	0.0000	0.0000
C	75.000	0.00	0.0	0.0	0.0253	0.0168	0.0000	0.0000
C	65.000	0.00	0.0	0.0	0.0246	0.0168	0.0000	0.0000
C	55.000	0.00	0.0	0.0	0.0237	0.0168	0.0000	0.0000
C	45.000	0.00	0.0	0.0	0.0227	0.0168	0.0000	0.0000
C	35.000	0.00	0.0	0.0	0.0216	0.0168	0.0000	0.0000
C	25.000	0.00	0.0	0.0	0.0201	0.0168	0.0000	0.0000
C	15.000	0.00	0.0	0.0	0.0181	0.0168	0.0000	0.0000
D	189.000	0.00	180.0	0.0	0.0406	0.0583	0.0000	0.0000
D	175.250	0.00	180.0	0.0	0.0406	0.0583	0.0000	0.0000
D	175.250	0.00	180.0	0.0	0.0474	0.0692	0.0000	0.0000
D	161.500	0.00	180.0	0.0	0.0474	0.0692	0.0000	0.0000
D	161.500	0.00	180.0	0.0	0.0538	0.0800	0.0000	0.0000
D	147.750	0.00	180.0	0.0	0.0538	0.0800	0.0000	0.0000
D	147.750	0.00	180.0	0.0	0.0578	0.2151	0.0000	0.0000
D	143.750	0.00	180.0	0.0	0.0578	0.2151	0.0000	0.0000
D	143.750	0.00	180.0	0.0	0.0608	0.1392	0.0000	0.0000
D	129.083	0.00	180.0	0.0	0.0608	0.1392	0.0000	0.0000
D	129.083	0.00	180.0	0.0	0.0668	0.1565	0.0000	0.0000
D	114.417	0.00	180.0	0.0	0.0668	0.1565	0.0000	0.0000
D	114.417	0.00	180.0	0.0	0.0723	0.1739	0.0000	0.0000
D	99.750	0.00	180.0	0.0	0.0723	0.1739	0.0000	0.0000
D	99.750	0.00	180.0	0.0	0.0757	0.3988	0.0000	0.0000
D	94.250	0.00	180.0	0.0	0.0757	0.3988	0.0000	0.0000
D	94.250	0.00	180.0	0.0	0.0771	0.2262	0.0000	0.0000
D	80.583	0.00	180.0	0.0	0.0771	0.2262	0.0000	0.0000
D	80.583	0.00	180.0	0.0	0.0807	0.2451	0.0000	0.0000
D	66.917	0.00	180.0	0.0	0.0807	0.2451	0.0000	0.0000
D	66.917	0.00	180.0	0.0	0.0833	0.2640	0.0000	0.0000
D	53.250	0.00	180.0	0.0	0.0833	0.2640	0.0000	0.0000
D	53.250	0.00	180.0	0.0	0.0844	0.5523	0.0000	0.0000

D	46.250	0.00	180.0	0.0	0.0844	0.5523	0.0000	0.0000
D	46.250	0.00	180.0	0.0	0.0832	0.2868	0.0000	0.0000
D	34.687	0.00	180.0	0.0	0.0832	0.2868	0.0000	0.0000
D	34.687	0.00	180.0	0.0	0.0820	0.3028	0.0000	0.0000
D	23.125	0.00	180.0	0.0	0.0820	0.3028	0.0000	0.0000
D	23.125	0.00	180.0	0.0	0.0779	0.3189	0.0000	0.0000
D	0.000	0.00	180.0	0.0	0.0786	0.3349	0.0000	0.0000

==========

LOADING CONDITION M ==========

106 mph wind with no ice. Wind Azimuth: 0° (0.9 D + 1.0 Wo)

LOADS ON POLE
==========

LOAD TYPE	ELEV ft	APPLY..LOAD..AT RADIUS ft	AZI	LOAD AZI	.....FORCES..... HORIZ kip	DOWN kip	.....MOMENTS..... VERTICAL ft-kip	TORSNAL ft-kip
C	184.500	0.00	0.0	0.0	0.0275	0.0113	0.0000	0.0000
C	184.000	0.00	0.0	0.0	0.0000	0.4372	0.0000	0.0000
C	184.000	0.00	0.0	0.0	8.7249	5.4000	0.0000	0.0000
C	175.000	0.00	0.0	0.0	0.0303	0.0126	0.0000	0.0000
C	168.000	0.00	0.0	0.0	0.0000	0.2994	0.0000	0.0000
C	168.000	0.00	0.0	0.0	7.1450	2.9997	0.0000	0.0000
C	165.000	0.00	0.0	0.0	0.0299	0.0126	0.0000	0.0000
C	155.000	0.00	0.0	0.0	0.0295	0.0126	0.0000	0.0000
C	153.000	0.00	0.0	0.0	0.0000	0.2726	0.0000	0.0000
C	153.000	0.00	0.0	0.0	7.0066	2.9997	0.0000	0.0000
C	145.000	0.00	0.0	0.0	0.0291	0.0126	0.0000	0.0000
C	138.000	0.00	0.0	0.0	0.0000	0.2459	0.0000	0.0000
C	138.000	0.00	0.0	0.0	6.8570	2.9997	0.0000	0.0000
C	135.000	0.00	0.0	0.0	0.0287	0.0126	0.0000	0.0000
C	125.000	0.00	0.0	0.0	0.0282	0.0126	0.0000	0.0000
C	115.000	0.00	0.0	0.0	0.0277	0.0126	0.0000	0.0000
C	105.000	0.00	0.0	0.0	0.0272	0.0126	0.0000	0.0000
C	95.000	0.00	0.0	0.0	0.0266	0.0126	0.0000	0.0000
C	85.000	0.00	0.0	0.0	0.0260	0.0126	0.0000	0.0000
C	75.000	0.00	0.0	0.0	0.0253	0.0126	0.0000	0.0000
C	65.000	0.00	0.0	0.0	0.0246	0.0126	0.0000	0.0000
C	55.000	0.00	0.0	0.0	0.0237	0.0126	0.0000	0.0000
C	45.000	0.00	0.0	0.0	0.0227	0.0126	0.0000	0.0000
C	35.000	0.00	0.0	0.0	0.0216	0.0126	0.0000	0.0000
C	25.000	0.00	0.0	0.0	0.0201	0.0126	0.0000	0.0000
C	15.000	0.00	0.0	0.0	0.0181	0.0126	0.0000	0.0000
D	189.000	0.00	180.0	0.0	0.0406	0.0437	0.0000	0.0000
D	147.750	0.00	180.0	0.0	0.0539	0.0600	0.0000	0.0000
D	147.750	0.00	180.0	0.0	0.0578	0.1614	0.0000	0.0000
D	143.750	0.00	180.0	0.0	0.0578	0.1614	0.0000	0.0000
D	143.750	0.00	180.0	0.0	0.0608	0.1044	0.0000	0.0000
D	129.083	0.00	180.0	0.0	0.0608	0.1044	0.0000	0.0000
D	129.083	0.00	180.0	0.0	0.0668	0.1174	0.0000	0.0000
D	114.417	0.00	180.0	0.0	0.0668	0.1174	0.0000	0.0000
D	114.417	0.00	180.0	0.0	0.0723	0.1304	0.0000	0.0000
D	99.750	0.00	180.0	0.0	0.0723	0.1304	0.0000	0.0000
D	99.750	0.00	180.0	0.0	0.0757	0.2991	0.0000	0.0000

D	94.250	0.00	180.0	0.0	0.0757	0.2991	0.0000	0.0000
D	94.250	0.00	180.0	0.0	0.0771	0.1697	0.0000	0.0000
D	80.583	0.00	180.0	0.0	0.0771	0.1697	0.0000	0.0000
D	80.583	0.00	180.0	0.0	0.0807	0.1838	0.0000	0.0000
D	66.917	0.00	180.0	0.0	0.0807	0.1838	0.0000	0.0000
D	66.917	0.00	180.0	0.0	0.0833	0.1980	0.0000	0.0000
D	53.250	0.00	180.0	0.0	0.0833	0.1980	0.0000	0.0000
D	53.250	0.00	180.0	0.0	0.0844	0.4142	0.0000	0.0000
D	46.250	0.00	180.0	0.0	0.0844	0.4142	0.0000	0.0000
D	46.250	0.00	180.0	0.0	0.0832	0.2151	0.0000	0.0000
D	34.687	0.00	180.0	0.0	0.0832	0.2151	0.0000	0.0000
D	34.687	0.00	180.0	0.0	0.0820	0.2271	0.0000	0.0000
D	23.125	0.00	180.0	0.0	0.0820	0.2271	0.0000	0.0000
D	23.125	0.00	180.0	0.0	0.0779	0.2392	0.0000	0.0000
D	0.000	0.00	180.0	0.0	0.0786	0.2512	0.0000	0.0000

==========

LOADING CONDITION Y ==========

40 mph wind with 1.5 ice. Wind Azimuth: 0° (1.2 D + 1.0 Di + 1.0 Wi)

LOADS ON POLE
==========

LOAD TYPE	ELEV ft	APPLY..LOAD..AT RADIUS ft	AZI	LOAD AZI	.....FORCES..... HORIZ kip	DOWN kip	.....MOMENTS..... VERTICAL ft-kip	TORSNAL ft-kip
C	184.500	0.00	0.0	0.0	0.0315	0.0271	0.0000	0.0000
C	184.000	0.00	0.0	0.0	0.0000	0.5829	0.0000	0.0000
C	184.000	0.00	0.0	0.0	2.1294	17.8932	0.0000	0.0000
C	175.000	0.00	0.0	0.0	0.0344	0.0288	0.0000	0.0000
C	168.000	0.00	0.0	0.0	0.0000	0.3992	0.0000	0.0000
C	168.000	0.00	0.0	0.0	1.7362	9.8862	0.0000	0.0000
C	165.000	0.00	0.0	0.0	0.0338	0.0288	0.0000	0.0000
C	155.000	0.00	0.0	0.0	0.0332	0.0288	0.0000	0.0000
C	153.000	0.00	0.0	0.0	0.0000	0.3635	0.0000	0.0000
C	153.000	0.00	0.0	0.0	1.6960	9.8317	0.0000	0.0000
C	145.000	0.00	0.0	0.0	0.0326	0.0288	0.0000	0.0000
C	138.000	0.00	0.0	0.0	0.0000	0.3279	0.0000	0.0000
C	138.000	0.00	0.0	0.0	1.6529	9.7723	0.0000	0.0000
C	135.000	0.00	0.0	0.0	0.0319	0.0288	0.0000	0.0000
C	125.000	0.00	0.0	0.0	0.0312	0.0288	0.0000	0.0000
C	115.000	0.00	0.0	0.0	0.0304	0.0288	0.0000	0.0000
C	105.000	0.00	0.0	0.0	0.0296	0.0288	0.0000	0.0000
C	95.000	0.00	0.0	0.0	0.0287	0.0288	0.0000	0.0000
C	85.000	0.00	0.0	0.0	0.0278	0.0288	0.0000	0.0000
C	75.000	0.00	0.0	0.0	0.0268	0.0288	0.0000	0.0000
C	65.000	0.00	0.0	0.0	0.0257	0.0288	0.0000	0.0000
C	55.000	0.00	0.0	0.0	0.0244	0.0288	0.0000	0.0000
C	45.000	0.00	0.0	0.0	0.0230	0.0288	0.0000	0.0000
C	35.000	0.00	0.0	0.0	0.0214	0.0288	0.0000	0.0000
C	25.000	0.00	0.0	0.0	0.0193	0.0288	0.0000	0.0000
C	15.000	0.00	0.0	0.0	0.0166	0.0288	0.0000	0.0000
D	189.000	0.00	180.0	0.0	0.0120	0.1024	0.0000	0.0000
D	175.250	0.00	180.0	0.0	0.0120	0.1024	0.0000	0.0000
D	175.250	0.00	180.0	0.0	0.0137	0.1203	0.0000	0.0000

D	161.500	0.00	180.0	0.0	0.0137	0.1203	0.0000	0.0000
D	161.500	0.00	180.0	0.0	0.0152	0.1380	0.0000	0.0000
D	147.750	0.00	180.0	0.0	0.0152	0.1380	0.0000	0.0000
D	147.750	0.00	180.0	0.0	0.0162	0.2775	0.0000	0.0000
D	143.750	0.00	180.0	0.0	0.0162	0.2775	0.0000	0.0000
D	143.750	0.00	180.0	0.0	0.0169	0.2050	0.0000	0.0000
D	129.083	0.00	180.0	0.0	0.0169	0.2050	0.0000	0.0000
D	129.083	0.00	180.0	0.0	0.0183	0.2292	0.0000	0.0000
D	114.417	0.00	180.0	0.0	0.0183	0.2292	0.0000	0.0000
D	114.417	0.00	180.0	0.0	0.0196	0.2532	0.0000	0.0000
D	99.750	0.00	180.0	0.0	0.0196	0.2532	0.0000	0.0000
D	99.750	0.00	180.0	0.0	0.0204	0.4825	0.0000	0.0000
D	94.250	0.00	180.0	0.0	0.0204	0.4825	0.0000	0.0000
D	94.250	0.00	180.0	0.0	0.0207	0.3123	0.0000	0.0000
D	80.583	0.00	180.0	0.0	0.0207	0.3123	0.0000	0.0000
D	80.583	0.00	180.0	0.0	0.0215	0.3365	0.0000	0.0000
D	66.917	0.00	180.0	0.0	0.0215	0.3365	0.0000	0.0000
D	66.917	0.00	180.0	0.0	0.0221	0.3602	0.0000	0.0000
D	53.250	0.00	180.0	0.0	0.0221	0.3602	0.0000	0.0000
D	53.250	0.00	180.0	0.0	0.0223	0.6516	0.0000	0.0000
D	46.250	0.00	180.0	0.0	0.0223	0.6516	0.0000	0.0000
D	46.250	0.00	180.0	0.0	0.0221	0.3871	0.0000	0.0000
D	11.562	0.00	180.0	0.0	0.0205	0.4211	0.0000	0.0000
D	11.562	0.00	180.0	0.0	0.0204	0.4315	0.0000	0.0000
D	0.000	0.00	180.0	0.0	0.0204	0.4315	0.0000	0.0000

==========

LOADING CONDITION AK ==========

Seismic - Azimuth: 0° (1.2 D + 1.0 Ev + 1.0 Eh)

LOADS ON POLE
==========

LOAD TYPE	ELEV ft	APPLY..LOAD..AT RADIUS ft	AZI	LOAD AZI	.....FORCES..... HORIZ kip	DOWN kip	.....MOMENTS..... VERTICAL ft-kip	TORSNAL ft-kip
C	184.500	0.00	0.0	0.0	0.0009	0.0153	0.0000	0.0000
C	184.000	0.00	0.0	0.0	0.0353	0.5904	0.0000	0.0000
C	184.000	0.00	0.0	0.0	0.4359	7.2912	0.0000	0.0000
C	175.000	0.00	0.0	0.0	0.0009	0.0170	0.0000	0.0000
C	168.000	0.00	0.0	0.0	0.0201	0.4042	0.0000	0.0000
C	168.000	0.00	0.0	0.0	0.2019	4.0503	0.0000	0.0000
C	166.380	0.00	0.0	0.0	0.1580	3.2316	0.0000	0.0000
C	165.000	0.00	0.0	0.0	0.0008	0.0170	0.0000	0.0000
C	155.000	0.00	0.0	0.0	0.0007	0.0170	0.0000	0.0000
C	153.000	0.00	0.0	0.0	0.0152	0.3681	0.0000	0.0000
C	153.000	0.00	0.0	0.0	0.1674	4.0503	0.0000	0.0000
C	145.000	0.00	0.0	0.0	0.0006	0.0170	0.0000	0.0000
C	138.000	0.00	0.0	0.0	0.0112	0.3320	0.0000	0.0000
C	138.000	0.00	0.0	0.0	0.1362	4.0503	0.0000	0.0000
C	135.000	0.00	0.0	0.0	0.0005	0.0170	0.0000	0.0000
C	125.000	0.00	0.0	0.0	0.0005	0.0170	0.0000	0.0000
C	121.000	0.00	0.0	0.0	0.2200	8.5081	0.0000	0.0000
C	115.000	0.00	0.0	0.0	0.0004	0.0170	0.0000	0.0000
C	105.000	0.00	0.0	0.0	0.0003	0.0170	0.0000	0.0000
C	95.000	0.00	0.0	0.0	0.0003	0.0170	0.0000	0.0000

C	85.000	0.00	0.0	0.0	0.0002	0.0170	0.0000	0.0000
C	75.000	0.00	0.0	0.0	0.0002	0.0170	0.0000	0.0000
C	73.000	0.00	0.0	0.0	0.1252	13.3005	0.0000	0.0000
C	65.000	0.00	0.0	0.0	0.0001	0.0170	0.0000	0.0000
C	55.000	0.00	0.0	0.0	0.0001	0.0170	0.0000	0.0000
C	45.000	0.00	0.0	0.0	0.0001	0.0170	0.0000	0.0000
C	35.000	0.00	0.0	0.0	0.0000	0.0170	0.0000	0.0000
C	26.620	0.00	0.0	0.0	0.0206	16.4585	0.0000	0.0000
C	25.000	0.00	0.0	0.0	0.0000	0.0170	0.0000	0.0000
C	15.000	0.00	0.0	0.0	0.0000	0.0170	0.0000	0.0000
D	189.000	0.00	180.0	180.0	0.0000	0.0000	0.0000	0.0000
D	0.000	0.00	180.0	180.0	0.0000	0.0000	0.0000	0.0000

==========

LOADING CONDITION AL ==========

Seismic - Azimuth: 0° (0.9 D - 1.0 Ev + 1.0 Eh)

LOADS ON POLE
==========

LOAD TYPE	ELEV ft	APPLY..LOAD..AT RADIUS ft	AZI	LOAD AZI	.....FORCES..... HORIZ kip	DOWN kip	.....MOMENTS..... VERTICAL ft-kip	TORSNAL ft-kip
C	184.500	0.00	0.0	0.0	0.0009	0.0111	0.0000	0.0000
C	184.000	0.00	0.0	0.0	0.0353	0.4298	0.0000	0.0000
C	184.000	0.00	0.0	0.0	0.4359	5.3088	0.0000	0.0000
C	175.000	0.00	0.0	0.0	0.0009	0.0124	0.0000	0.0000
C	168.000	0.00	0.0	0.0	0.0201	0.2942	0.0000	0.0000
C	168.000	0.00	0.0	0.0	0.2019	2.9490	0.0000	0.0000
C	166.380	0.00	0.0	0.0	0.1580	2.3530	0.0000	0.0000
C	165.000	0.00	0.0	0.0	0.0008	0.0124	0.0000	0.0000
C	155.000	0.00	0.0	0.0	0.0007	0.0124	0.0000	0.0000
C	153.000	0.00	0.0	0.0	0.0152	0.2680	0.0000	0.0000
C	153.000	0.00	0.0	0.0	0.1674	2.9490	0.0000	0.0000
C	145.000	0.00	0.0	0.0	0.0006	0.0124	0.0000	0.0000
C	138.000	0.00	0.0	0.0	0.0112	0.2417	0.0000	0.0000
C	138.000	0.00	0.0	0.0	0.1362	2.9490	0.0000	0.0000
C	135.000	0.00	0.0	0.0	0.0005	0.0124	0.0000	0.0000
C	125.000	0.00	0.0	0.0	0.0005	0.0124	0.0000	0.0000
C	121.000	0.00	0.0	0.0	0.2200	6.1949	0.0000	0.0000
C	115.000	0.00	0.0	0.0	0.0004	0.0124	0.0000	0.0000
C	105.000	0.00	0.0	0.0	0.0003	0.0124	0.0000	0.0000
C	95.000	0.00	0.0	0.0	0.0003	0.0124	0.0000	0.0000
C	85.000	0.00	0.0	0.0	0.0002	0.0124	0.0000	0.0000
C	75.000	0.00	0.0	0.0	0.0002	0.0124	0.0000	0.0000
C	73.000	0.00	0.0	0.0	0.1252	9.6842	0.0000	0.0000
C	65.000	0.00	0.0	0.0	0.0001	0.0124	0.0000	0.0000
C	55.000	0.00	0.0	0.0	0.0001	0.0124	0.0000	0.0000
C	45.000	0.00	0.0	0.0	0.0001	0.0124	0.0000	0.0000
C	35.000	0.00	0.0	0.0	0.0000	0.0124	0.0000	0.0000
C	26.620	0.00	0.0	0.0	0.0206	11.9835	0.0000	0.0000
C	25.000	0.00	0.0	0.0	0.0000	0.0124	0.0000	0.0000
C	15.000	0.00	0.0	0.0	0.0000	0.0124	0.0000	0.0000
D	189.000	0.00	180.0	180.0	0.0000	0.0000	0.0000	0.0000

```
D        0.000      0.00  180.0  180.0    0.0000    0.0000    0.0000    0.0000

================================================================================
================================================================================

================================================================================
(USA 222-H) - Monopole Spatial Analysis               (c)2017      Guymast Inc.

Tel:(416)736-7453            Fax:(416)736-4372            Web:www.guymast.com

Processed under license at:

Sabre Towers and Poles                            on: 14 nov 2022  at: 12:33:54
================================================================================

190' Monopole / Germantown, WI


MAXIMUM POLE DEFORMATIONS CALCULATED(w.r.t. wind direction)
============================================================

  MAST   .......DEFLECTIONS (ft).........   .........ROTATIONS (deg).........
  ELEV   ..... HORIZONTAL ......     DOWN   ........ TILT ..........    TWIST
    ft        ALONG       ACROSS                  ALONG       ACROSS


 189.0       18.94F        0.08B    2.71C        11.64F        0.04B    0.01Q
        ....................................................................
 175.2       16.26F        0.07B    2.17C        11.47F        0.04B    0.01Q

 161.5       13.68F        0.06B    1.66C        10.79F        0.04B    0.01Q
        ....................................................................
 147.7       11.29I        0.05B    1.23C         9.71F        0.04B    0.01Q

 143.7       10.64I        0.05B    1.13C         9.45F        0.04B    0.01Q
        ....................................................................
 129.1        8.41I        0.04B    0.78C         8.36F        0.04B    0.01Q

 114.4        6.46I        0.03B    0.51C         7.16F        0.03B    0.00Q
        ....................................................................
  99.7        4.80I        0.02B    0.32C         5.96F        0.03B    0.00Q

  94.2        4.25I        0.02B    0.27C         5.58F        0.03B    0.00Q
        ....................................................................
  80.6        3.05I        0.02B    0.16C         4.62I        0.02B    0.00Q

  66.9        2.06I        0.01B    0.09C         3.72I        0.02B    0.00Q
        ....................................................................
  53.2        1.28I        0.01B    0.04C         2.87I        0.01B    0.00Q

  46.2        0.95I        0.00B    0.03C         2.47I        0.01B    0.00Q
        ....................................................................
  34.7        0.52I        0.00B    0.01C         1.79I        0.01B    0.00Q

  23.1        0.23I        0.00B    0.00C         1.15I        0.01B    0.00Q
        ....................................................................
  11.6        0.06I        0.00B    0.00F         0.56I        0.00B    0.00Q

   0.0        0.00A        0.00A    0.00A         0.00A        0.00A    0.00A
        ....................................................................
```

MAXIMUM POLE FORCES CALCULATED(w.r.t. to wind direction)
==========

MAST ELEV ft	TOTAL AXIAL kip	SHEAR.w.r.t.WIND.DIR ALONG kip	SHEAR.w.r.t.WIND.DIR ACROSS kip	MOMENT.w.r.t.WIND.DIR ALONG ft-kip	MOMENT.w.r.t.WIND.DIR ACROSS ft-kip	TORSION ft-kip
189.0						
	0.01 B	0.00 N	0.00 E	0.01 B	0.00 O	0.00 E
	19.91 AF	9.33 W	0.00 E	-91.56 C	0.02 AD	0.02 R
175.2						
	19.91 AG	9.34 Q	0.00 T	-91.58 C	0.02 AD	0.02 T
	31.90 AG	17.18 Q	0.00 T	-293.10 C	0.08 T	0.07 H
161.5						
	31.90 AB	17.18 U	0.00 O	-293.12 C	0.08 T	0.07 H
	44.02 AB	24.92 U	0.00 O	-600.91 C	0.14 W	-0.14 O
147.7						
	44.03 AI	25.17 C	-0.10 F	-600.27 I	0.16 T	-0.15 X
	45.16 AI	25.43 C	-0.10 F	-711.94 C	0.28 F	-0.18 X
143.7						
	45.18 AA	25.46 Q	0.20 B	-711.46 C	0.28 T	-0.20 O
	58.31 AA	33.22 Q	0.20 B	-1193.14 K	-3.10 B	0.63 Q
129.1						
	58.31 AA	33.22 Q	0.21 Q	-1193.16 K	-3.10 B	0.64 Q
	61.73 AA	34.25 Q	0.21 Q	-1731.33 F	-6.05 B	1.12 Q
114.4						
	61.73 AA	34.25 Q	0.23 B	-1731.31 F	-6.05 B	1.12 Q
	65.47 AA	35.33 Q	0.23 B	-2283.54 B	-9.41 B	1.52 Q
99.7						
	65.47 AA	35.32 Q	0.31 B	-2283.75 B	-9.26 B	1.53 Q
	68.15 AA	35.76 Q	0.31 B	-2494.66 B	-10.94 B	1.65 Q
94.2						
	68.15 AA	35.80 I	-0.20 I	-2494.79 B	-11.03 B	1.64 Q
	72.45 AA	36.88 I	-0.20 I	-3028.72 B	-13.50 B	1.87 Q
80.6						
	72.45 AA	36.85 I	0.24 B	-3028.70 B	-13.51 B	1.87 Q
	77.07 AA	37.98 I	0.24 B	-3575.04 F	-16.79 B	2.03 Q
66.9						
	77.07 AA	37.98 I	0.24 B	-3575.04 F	-16.78 B	2.03 Q
	82.05 AA	39.17 I	0.24 B	-4132.92 F	-20.17 B	2.15 Q
53.2						
	82.05 AA	39.20 I	0.24 B	-4132.91 F	-20.17 B	2.15 Q
	86.61 AA	39.79 I	0.24 B	-4423.30 I	-21.87 B	2.21 Q
46.2						
	86.61 AA	39.78 I	0.25 B	-4423.27 I	-21.84 B	2.21 Q
	91.21 AA	40.79 I	0.25 B	-4909.39 I	-24.81 B	2.28 Q

```
  34.7   ...........................................................................
          91.21 AA    40.78 I      0.25 B  -4909.36 I    -24.81 B      2.28 Q

          95.91 AA    41.75 I      0.25 B  -5401.54 I    -27.74 B      2.33 Q
  23.1   ...........................................................................
          95.91 AA    41.75 I      0.26 B  -5401.53 I    -27.74 B      2.33 Q

         100.74 AA    42.67 I      0.26 B  -5899.07 I    -30.83 B      2.37 Q
  11.6   ...........................................................................
         100.74 AA    42.67 I      0.26 B  -5899.07 I    -30.82 B      2.37 Q

         105.73 AA    43.57 I      0.26 B  -6400.92 I    -33.83 B      2.38 Q
-------------------------------------------------------------------------------
 base
 reaction  105.73 AA   -43.57 I     -0.26 B   6400.92 I     33.83 B     -2.38 Q
-------------------------------------------------------------------------------


 COMPLIANCE WITH 4.8.2 & 4.5.4
 =============================

   ELEV       AXIAL   BENDING SHEAR +       TOTAL SATISFIED  D/t(w/t)   MAX
                              TORSIONAL                                  ALLOWED
     ft

 189.00  ...........................................................................
            0.00B     0.00O     0.00N     0.00B     YES      10.40A       45.2

            0.02AF    0.20C     0.02W     0.20C     YES      12.79A       45.2
 175.25  ...........................................................................
            0.02AG    0.20C     0.02Q     0.20C     YES      12.79A       45.2

            0.02AG    0.46C     0.03Q     0.47C     YES      15.18A       45.2
 161.50  ...........................................................................
            0.02AB    0.46C     0.03U     0.47C     YES      15.18A       45.2

            0.03AB    0.73C     0.03U     0.74C     YES      17.58A       45.2
 147.75  ...........................................................................
            0.02AI    0.48I     0.02C     0.49I     YES      11.60A       45.2

            0.02AI    0.53C     0.02C     0.54C     YES      12.06A       45.2
 143.75  ...........................................................................
            0.02AA    0.55C     0.02Q     0.56C     YES      11.83A       45.2

            0.02AA    0.71K     0.02Q     0.72K     YES      13.53A       45.2
 129.08  ...........................................................................
            0.02AA    0.71K     0.02Q     0.72K     YES      13.53A       45.2

            0.02AA    0.83F     0.02Q     0.84F     YES      15.23A       45.2
 114.42  ...........................................................................
            0.02AA    0.83F     0.02Q     0.84F     YES      15.23A       45.2

            0.02AA    0.90B     0.02Q     0.91B     YES      16.93A       45.2
  99.75  ...........................................................................
            0.02AA    0.77B     0.02Q     0.77B     YES      14.46A       45.2

            0.02AA    0.78B     0.02Q     0.79B     YES      15.01A       45.2
  94.25  ...........................................................................
            0.02AA    0.81B     0.02I     0.82B     YES      14.70A       45.2

            0.02AA    0.83B     0.02I     0.84B     YES      16.06A       45.2
```

```
 80.58  ....................................................................
            0.02AA    0.83B     0.02I     0.84B     YES      16.06A       45.2

            0.02AA    0.85F     0.02I     0.86F     YES      17.42A       45.2
 66.92  ....................................................................
            0.02AA    0.85F     0.02I     0.86F     YES      17.42A       45.2

            0.02AA    0.87F     0.02I     0.88F     YES      18.78A       45.2
 53.25  ....................................................................
            0.02AA    0.87F     0.02I     0.88F     YES      18.78A       45.2

            0.02AA    0.88I     0.02I     0.89I     YES      19.47A       45.2
 46.25  ....................................................................
            0.02AA    0.90I     0.02I     0.91I     YES      19.12A       45.2

            0.02AA    0.91I     0.02I     0.92I     YES      20.27A       45.2
 34.69  ....................................................................
            0.02AA    0.91I     0.02I     0.92I     YES      20.27A       45.2

            0.02AA    0.92I     0.02I     0.93I     YES      21.42A       45.2
 23.12  ....................................................................
            0.02AA    0.92I     0.02I     0.93I     YES      21.42A       45.2

            0.02AA    0.92I     0.02I     0.93I     YES      22.57A       45.2
 11.56  ....................................................................
            0.02AA    0.92I     0.02I     0.93I     YES      22.57A       45.2

            0.02AA    0.92I     0.02I     0.94I     YES      23.71A       45.2
  0.00  ....................................................................

MAXIMUM LOADS ONTO FOUNDATION(w.r.t. wind direction)
====================================================

    DOWN    SHEAR.w.r.t.WIND.DIR   MOMENT.w.r.t.WIND.DIR     TORSION
               ALONG      ACROSS       ALONG      ACROSS
     kip         kip         kip      ft-kip      ft-kip      ft-kip

  105.73       43.57        0.26    -6400.92      -33.83        2.38
      AA          I           B           I           B           Q


================================================================================


================================================================================
(USA 222-H) - Monopole Spatial Analysis               (c)2017      Guymast Inc.

Tel:(416)736-7453             Fax:(416)736-4372             Web:www.guymast.com

Processed under license at:

Sabre Towers and Poles                            on: 14 nov 2022  at: 12:34:14
================================================================================

190' Monopole / Germantown, WI


*******************************************************************************
```

********** Service Load Condition **********
****

* Only 1 condition(s) shown in full
* Some concentrated wind loads may have been derived from full-scale wind tunnel testing

LOADING CONDITION A ==========

60 mph wind with no ice. Wind Azimuth: 0° (1.0 D + 1.0 Wo)

LOADS ON POLE
==========

LOAD TYPE	ELEV ft	APPLY..LOAD..AT RADIUS ft	AZI	LOAD AZI	.....FORCES..... HORIZ kip	DOWN kip	.....MOMENTS..... VERTICAL ft-kip	TORSNAL ft-kip
C	184.500	0.00	0.0	0.0	0.0079	0.0126	0.0000	0.0000
C	184.000	0.00	0.0	0.0	0.0000	0.4858	0.0000	0.0000
C	184.000	0.00	0.0	0.0	2.5012	6.0000	0.0000	0.0000
C	175.000	0.00	0.0	0.0	0.0087	0.0140	0.0000	0.0000
C	168.000	0.00	0.0	0.0	0.0000	0.3326	0.0000	0.0000
C	168.000	0.00	0.0	0.0	2.0483	3.3330	0.0000	0.0000
C	165.000	0.00	0.0	0.0	0.0086	0.0140	0.0000	0.0000
C	155.000	0.00	0.0	0.0	0.0085	0.0140	0.0000	0.0000
C	153.000	0.00	0.0	0.0	0.0000	0.3029	0.0000	0.0000
C	153.000	0.00	0.0	0.0	2.0086	3.3330	0.0000	0.0000
C	145.000	0.00	0.0	0.0	0.0083	0.0140	0.0000	0.0000
C	138.000	0.00	0.0	0.0	0.0000	0.2732	0.0000	0.0000
C	138.000	0.00	0.0	0.0	1.9657	3.3330	0.0000	0.0000
C	135.000	0.00	0.0	0.0	0.0082	0.0140	0.0000	0.0000
C	125.000	0.00	0.0	0.0	0.0081	0.0140	0.0000	0.0000
C	115.000	0.00	0.0	0.0	0.0079	0.0140	0.0000	0.0000
C	105.000	0.00	0.0	0.0	0.0078	0.0140	0.0000	0.0000
C	95.000	0.00	0.0	0.0	0.0076	0.0140	0.0000	0.0000
C	85.000	0.00	0.0	0.0	0.0075	0.0140	0.0000	0.0000
C	75.000	0.00	0.0	0.0	0.0073	0.0140	0.0000	0.0000
C	65.000	0.00	0.0	0.0	0.0070	0.0140	0.0000	0.0000
C	55.000	0.00	0.0	0.0	0.0068	0.0140	0.0000	0.0000
C	45.000	0.00	0.0	0.0	0.0065	0.0140	0.0000	0.0000
C	35.000	0.00	0.0	0.0	0.0062	0.0140	0.0000	0.0000
C	25.000	0.00	0.0	0.0	0.0058	0.0140	0.0000	0.0000
C	15.000	0.00	0.0	0.0	0.0052	0.0140	0.0000	0.0000
D	189.000	0.00	180.0	0.0	0.0117	0.0486	0.0000	0.0000
D	147.750	0.00	180.0	0.0	0.0155	0.0667	0.0000	0.0000
D	147.750	0.00	180.0	0.0	0.0166	0.1793	0.0000	0.0000
D	143.750	0.00	180.0	0.0	0.0166	0.1793	0.0000	0.0000
D	143.750	0.00	180.0	0.0	0.0174	0.1160	0.0000	0.0000
D	129.083	0.00	180.0	0.0	0.0174	0.1160	0.0000	0.0000
D	129.083	0.00	180.0	0.0	0.0192	0.1305	0.0000	0.0000
D	114.417	0.00	180.0	0.0	0.0192	0.1305	0.0000	0.0000
D	114.417	0.00	180.0	0.0	0.0207	0.1449	0.0000	0.0000
D	99.750	0.00	180.0	0.0	0.0207	0.1449	0.0000	0.0000
D	99.750	0.00	180.0	0.0	0.0217	0.3323	0.0000	0.0000
D	94.250	0.00	180.0	0.0	0.0217	0.3323	0.0000	0.0000
D	94.250	0.00	180.0	0.0	0.0221	0.1885	0.0000	0.0000
D	80.583	0.00	180.0	0.0	0.0221	0.1885	0.0000	0.0000
D	80.583	0.00	180.0	0.0	0.0231	0.2043	0.0000	0.0000

D	66.917	0.00	180.0	0.0	0.0231	0.2043	0.0000	0.0000
D	66.917	0.00	180.0	0.0	0.0239	0.2200	0.0000	0.0000
D	53.250	0.00	180.0	0.0	0.0239	0.2200	0.0000	0.0000
D	53.250	0.00	180.0	0.0	0.0242	0.4602	0.0000	0.0000
D	46.250	0.00	180.0	0.0	0.0242	0.4602	0.0000	0.0000
D	46.250	0.00	180.0	0.0	0.0239	0.2390	0.0000	0.0000
D	34.687	0.00	180.0	0.0	0.0239	0.2390	0.0000	0.0000
D	34.687	0.00	180.0	0.0	0.0235	0.2524	0.0000	0.0000
D	23.125	0.00	180.0	0.0	0.0235	0.2524	0.0000	0.0000
D	23.125	0.00	180.0	0.0	0.0223	0.2657	0.0000	0.0000
D	0.000	0.00	180.0	0.0	0.0225	0.2791	0.0000	0.0000

==========

MAXIMUM POLE DEFORMATIONS CALCULATED(w.r.t. wind direction)
==========

MAST ELEV ft	.....DEFLECTIONS (ft)..... HORIZONTAL ..... ALONG	ACROSS	DOWN	.....ROTATIONS (deg)..... TILT ..... ALONG	ACROSS	TWIST
189.0	5.58B	0.01C	0.23B	3.37B	0.01C	0.00F
175.2	4.77B	0.01C	0.19B	3.33B	0.01C	0.00F
161.5	4.00B	0.01C	0.14B	3.12B	0.01C	0.00F
147.7	3.29B	0.01C	0.11B	2.80B	0.01C	0.00C
143.7	3.09B	-0.01L	0.10B	2.73B	0.01C	0.00C
129.1	2.44B	-0.01L	0.07B	2.41B	0.01C	0.00C
114.4	1.87B	-0.01L	0.04B	2.06B	0.01C	0.00C
99.7	1.38B	0.00L	0.03B	1.71B	0.00C	0.00C
94.2	1.22B	0.00L	0.02B	1.60B	0.00L	0.00C
80.6	0.88B	0.00L	0.01B	1.33B	0.00L	0.00C
66.9	0.59B	0.00L	0.01B	1.07B	0.00L	0.00C
53.2	0.37B	0.00L	0.00B	0.82B	0.00L	0.00C
46.2	0.27B	0.00L	0.00B	0.71B	0.00L	0.00C
34.7	0.15B	0.00L	0.00B	0.51B	0.00L	0.00C
23.1	0.07B	0.00L	0.00B	0.33B	0.00L	0.00C
11.6	0.02B	0.00L	0.00K	0.16B	0.00L	0.00C
0.0	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A

MAXIMUM POLE FORCES CALCULATED(w.r.t. to wind direction)
==========

MAST	TOTAL	SHEAR.w.r.t.WIND.DIR	MOMENT.w.r.t.WIND.DIR	TORSION

ELEV ft	AXIAL kip	ALONG kip	ACROSS kip	ALONG ft-kip	ACROSS ft-kip	ft-kip
189.0						
	0.00 C	0.00 I	0.00 K	0.00 K	0.00 K	0.00 K
	7.21 C	2.68 L	0.00 K	-26.62 E	0.01 K	0.00 K
175.2						
	7.21 F	2.68 C	0.00 E	-26.63 A	0.01 K	0.00 K
	11.69 F	4.93 C	0.00 E	-85.25 C	0.03 K	0.01 K
161.5						
	11.69 F	4.93 L	0.00 K	-85.25 C	0.02 K	0.01 K
	16.22 F	7.15 L	0.00 K	-174.43 L	0.07 K	0.02 K
147.7						
	16.22 B	7.20 E	0.03 C	-174.47 L	0.06 K	0.02 K
	16.96 B	7.28 E	0.03 C	-206.34 K	0.16 K	0.02 K
143.7						
	16.96 L	7.26 B	0.05 C	-206.40 D	0.12 K	0.02 F
	22.28 L	9.49 B	0.05 C	-344.90 B	-0.83 C	0.03 C
129.1						
	22.29 K	9.51 B	0.05 C	-344.90 B	-0.82 C	0.03 C
	24.23 K	9.80 B	0.05 C	-499.47 B	-1.58 C	0.05 C
114.4						
	24.23 K	9.81 B	0.05 C	-499.46 B	-1.59 C	0.05 C
	26.37 K	10.12 B	0.05 C	-657.51 B	-2.31 C	0.07 C
99.7						
	26.37 K	10.09 B	0.06 C	-657.55 B	-2.28 C	0.07 C
	28.21 K	10.21 B	0.06 C	-717.63 B	-2.59 C	0.08 C
94.2						
	28.21 K	10.26 B	-0.04 L	-717.63 B	-2.57 C	0.08 C
	30.80 K	10.57 B	-0.04 L	-870.04 B	-2.78 C	0.08 C
80.6						
	30.80 K	10.57 B	-0.04 L	-870.02 B	-2.77 C	0.08 C
	33.61 K	10.89 B	-0.04 L	-1025.71 B	-2.94 C	0.08 C
66.9						
	33.61 K	10.89 B	-0.04 L	-1025.70 B	-2.94 C	0.08 C
	36.64 K	11.23 B	-0.04 L	-1184.65 B	3.43 L	0.08 C
53.2						
	36.64 K	11.22 B	-0.03 L	-1184.64 B	3.43 L	0.08 C
	39.86 K	11.39 B	-0.03 L	-1267.31 B	3.67 L	0.08 C
46.2						
	39.86 K	11.40 B	-0.03 L	-1267.31 B	3.67 L	0.08 C
	42.65 K	11.69 B	-0.03 L	-1405.79 B	4.03 L	0.08 C
34.7						
	42.65 K	11.69 B	-0.03 L	-1405.79 B	4.03 L	0.08 C
	45.59 K	11.97 B	-0.03 L	-1546.27 B	4.41 L	0.08 C
23.1						

```
          45.59 K     11.97 B     -0.03 L  -1546.27 B      4.41 L      0.08 C

          48.71 K     12.23 B     -0.03 L  -1688.49 B      4.79 L      0.08 C
   11.6  ..........................................................................
          48.71 K     12.23 B     -0.03 L  -1688.50 B      4.79 L      0.08 C

          51.90 K     12.49 B     -0.03 L  -1832.22 B      5.15 L      0.08 C
-------------------------------------------------------------------------------
 base
 reaction   51.90 K    -12.49 B      0.03 L   1832.22 B     -5.15 L     -0.08 C
-------------------------------------------------------------------------------


 COMPLIANCE WITH 4.8.2 & 4.5.4
 =============================

   ELEV       AXIAL   BENDING SHEAR +       TOTAL SATISFIED  D/t(w/t)   MAX
                              TORSIONAL                                  ALLOWED
     ft

 189.00  ..........................................................................
            0.00C     0.00K     0.00I     0.00K     YES      10.40A       45.2

            0.01C     0.06E     0.00L     0.06E     YES      12.79A       45.2
 175.25  ..........................................................................
            0.01F     0.06A     0.00C     0.06A     YES      12.79A       45.2

            0.01F     0.13C     0.01C     0.14C     YES      15.18A       45.2
 161.50  ..........................................................................
            0.01F     0.13C     0.01L     0.14C     YES      15.18A       45.2

            0.01F     0.21L     0.01L     0.22L     YES      17.58A       45.2
 147.75  ..........................................................................
            0.01B     0.14L     0.01E     0.15L     YES      11.60A       45.2

            0.01B     0.15K     0.01E     0.16K     YES      12.06A       45.2
 143.75  ..........................................................................
            0.01L     0.16D     0.01B     0.17D     YES      11.83A       45.2

            0.01L     0.21B     0.01B     0.21B     YES      13.53A       45.2
 129.08  ..........................................................................
            0.01K     0.21B     0.01B     0.21B     YES      13.53A       45.2

            0.01K     0.24B     0.01B     0.25B     YES      15.23A       45.2
 114.42  ..........................................................................
            0.01K     0.24B     0.01B     0.25B     YES      15.23A       45.2

            0.01K     0.26B     0.01B     0.27B     YES      16.93A       45.2
  99.75  ..........................................................................
            0.01K     0.22B     0.01B     0.23B     YES      14.46A       45.2

            0.01K     0.22B     0.01B     0.23B     YES      15.01A       45.2
  94.25  ..........................................................................
            0.01K     0.23B     0.01B     0.24B     YES      14.70A       45.2

            0.01K     0.24B     0.00B     0.25B     YES      16.06A       45.2
  80.58  ..........................................................................
            0.01K     0.24B     0.00B     0.25B     YES      16.06A       45.2

            0.01K     0.24B     0.00B     0.25B     YES      17.42A       45.2
  66.92  ..........................................................................
```

```
            0.01K     0.24B     0.00B     0.25B     YES      17.42A       45.2

            0.01K     0.25B     0.00B     0.26B     YES      18.78A       45.2
 53.25  ......................................................................
            0.01K     0.25B     0.00B     0.26B     YES      18.78A       45.2

            0.01K     0.25B     0.00B     0.26B     YES      19.47A       45.2
 46.25  ......................................................................
            0.01K     0.26B     0.00B     0.27B     YES      19.12A       45.2

            0.01K     0.26B     0.00B     0.27B     YES      20.27A       45.2
 34.69  ......................................................................
            0.01K     0.26B     0.00B     0.27B     YES      20.27A       45.2

            0.01K     0.26B     0.00B     0.27B     YES      21.42A       45.2
 23.12  ......................................................................
            0.01K     0.26B     0.00B     0.27B     YES      21.42A       45.2

            0.01K     0.26B     0.00B     0.27B     YES      22.57A       45.2
 11.56  ......................................................................
            0.01K     0.26B     0.00B     0.27B     YES      22.57A       45.2

            0.01K     0.26B     0.00B     0.27B     YES      23.71A       45.2
  0.00  ......................................................................

MAXIMUM LOADS ONTO FOUNDATION(w.r.t. wind direction)
====================================================

    DOWN    SHEAR.w.r.t.WIND.DIR   MOMENT.w.r.t.WIND.DIR     TORSION
               ALONG      ACROSS       ALONG      ACROSS
     kip         kip         kip      ft-kip      ft-kip      ft-kip

   51.90       12.49       -0.03    -1832.22        5.15        0.08
      K           B           L           B           L           C


==============================================================================
```

Seismic Load Effects
Equivalent Lateral Force Procedure
ANSI/TIA-222-H

Parameters	
Risk Category	II
R	1.500
S_S	0.071
S_1	0.046
Site Class	D (default)
T_L (sec)	12.000
F_a	1.600
F_v	2.400
S_{MS}	0.114
S_{M1}	0.110
S_{DS}	0.076
S_{D1}	0.074
T_s	0.974
I_e	1.000
Ω	1.500
C_S	0.030
E (ksi)	29,000
I_{top} (in^4)	431
I_{bot} (in^4)	38,985
I_{avg} (in^4)	19,708
g (in/s^2)	386.4
W_t (kips)	51.794
W_u (kips)	15.999
W_L (kips)	35.795
L_p (in)	2268
f_1 (Hertz)	0.243
T (sec)	4.122
k_e	2.0000
V_s (kips)	1.554
Seismic Design Category	B

Vertical Distribution of Seismic Forces

Description	h_i (ft.)	w_i (kips)	W_u (kips)	$w_i h_i^{ke}$	F_{sz} or E_h (kips)	E_V (kips)	1.2 D + 1.0 E_V (kips)	0.9 D - 1.0 E_V (kips)
Step Bolts Load	184.50	0.0126	0.0000	428.9072	0.0009	0.0002	0.0153	0.0111
Antenna Load	184.00	6.0000	6.0000	203,136.0000	0.4359	0.0912	7.2912	5.3088
Line Deadload	184.00	0.4858	0.0000	16,447.2448	0.0353	0.0074	0.5904	0.4298
Step Bolts Load	175.00	0.0140	0.0000	428.7500	0.0009	0.0002	0.0170	0.0124
Antenna Load	168.00	3.3330	3.3330	94,070.5920	0.2019	0.0507	4.0503	2.9490
Line Deadload	168.00	0.3326	0.0000	9,387.3024	0.0201	0.0051	0.4042	0.2942
Structure - Section 1	166.38	2.6593	0.0000	73,615.5521	0.1580	0.0404	3.2316	2.3530
Step Bolts Load	165.00	0.0140	0.0000	381.1500	0.0008	0.0002	0.0170	0.0124
Step Bolts Load	155.00	0.0140	0.0000	336.3500	0.0007	0.0002	0.0170	0.0124
Antenna Load	153.00	3.3330	3.3330	78,022.1970	0.1674	0.0507	4.0503	2.9490
Line Deadload	153.00	0.3029	0.0000	7,090.5861	0.0152	0.0046	0.3681	0.2680
Step Bolts Load	145.00	0.0140	0.0000	294.3500	0.0006	0.0002	0.0170	0.0124
Antenna Load	138.00	3.3330	3.3330	63,473.6520	0.1362	0.0507	4.0503	2.9490
Line Deadload	138.00	0.2732	0.0000	5,202.8208	0.0112	0.0042	0.3320	0.2417
Step Bolts Load	135.00	0.0140	0.0000	255.1500	0.0005	0.0002	0.0170	0.0124
Step Bolts Load	125.00	0.0140	0.0000	218.7500	0.0005	0.0002	0.0170	0.0124
Structure - Section 2	121.00	7.0014	0.0000	102,507.4974	0.2200	0.1064	8.5081	6.1949
Step Bolts Load	115.00	0.0140	0.0000	185.1500	0.0004	0.0002	0.0170	0.0124
Step Bolts Load	105.00	0.0140	0.0000	154.3500	0.0003	0.0002	0.0170	0.0124
Step Bolts Load	95.00	0.0140	0.0000	126.3500	0.0003	0.0002	0.0170	0.0124
Step Bolts Load	85.00	0.0140	0.0000	101.1500	0.0002	0.0002	0.0170	0.0124
Step Bolts Load	75.00	0.0140	0.0000	78.7500	0.0002	0.0002	0.0170	0.0124
Structure - Section 3	73.00	10.9451	0.0000	58,326.4379	0.1252	0.1664	13.3005	9.6842
Step Bolts Load	65.00	0.0140	0.0000	59.1500	0.0001	0.0002	0.0170	0.0124
Step Bolts Load	55.00	0.0140	0.0000	42.3500	0.0001	0.0002	0.0170	0.0124
Step Bolts Load	45.00	0.0140	0.0000	28.3500	0.0001	0.0002	0.0170	0.0124
Step Bolts Load	35.00	0.0140	0.0000	17.1500	0.0000	0.0002	0.0170	0.0124
Structure - Section 4	26.62	13.5438	0.0000	9,597.4671	0.0206	0.2059	16.4585	11.9835
Step Bolts Load	25.00	0.0140	0.0000	8.7500	0.0000	0.0002	0.0170	0.0124
Step Bolts Load	15.00	0.0140	0.0000	3.1500	0.0000	0.0002	0.0170	0.0124
	Σ	51.79	15.9990	724,025.41	1.55	0.79	62.94	45.83

SO#: 515837
Site Name: Germantown, WI
Date: 11/14/2022

Round Base Plate and Anchor Rods, per ANSI/TIA 222-H

Pole Data

Diameter:	60.960	in (flat to flat)
Thickness:	0.4375	in
Yield (Fy):	65	ksi
# of Sides:	18	"0" IF Round
Strength (Fu):	80	ksi

Reactions

Moment, Mu:	6400.92	ft-kips
Axial, Pu:	62.21	kips
Shear, Vu:	43.57	kips

Anchor Rod Data

Quantity:	20		
Diameter:	2.25	in	
Rod Material:	A615		
Strength (Fu):	100	ksi	
Yield (Fy):	75	ksi	
BC Diam. (in):	68	BC Override:	

Anchor Rod Results

(per 4.9.9)

Maximum Put:	223.58	Kips
Φt*Rnt:	243.75	Kips
Vu:	2.18	Kips
Φv*Rnv:	149.10	Kips
Tension Interaction Ratio:	0.84	
Maximum Puc:	229.03	Kips
Φc*Rnc:	268.39	Kips
Vu:	2.18	Kips
Φc*Rnvc:	120.77	Kips
Compression Interaction Ratio:	0.85	
Maximum Interaction Ratio:	**85.4%**	**Pass**

Plate Data

Diameter (in):	73.75	Dia. Override:	
Thickness:	2.25	in	
Yield (Fy):	50	ksi	
Eff Width/Rod:	9.67	in	
Drain Hole:	2.625	in. diameter	
Drain Location:	28.25	in. center of pole to center of drain hole	
Center Hole:	48.5	in. diameter	

Base Plate Results

Base Plate (Mu/Z):	42.4	ksi	
Allowable Φ*Fy:	45.0	ksi	(per AISC)
Base Plate Interaction Ratio:	**94.1%**	**Pass**	

THENCE N00°00'00"E, 75.00 FEET TO THE POINT OF BEGINNING, CONTAINING 5,625 SQUARE FEET.

ACCESS/UTILITY EASEMENT:

A PART OF THE LAND SHOWN IN C.S.M. AT DOCUMENT NO. 898738, WITHIN THE VILLAGE OF GERMANTOWN, WASHINGTON COUNTY, WI, MORE PARTICULARLY DESCRIBED AS: COMMENCING AT THE NE CORNER OF THE SAID LAND; THENCE S00°06'40"E, ALONG THE WEST LINE OF DIVISION ROAD, 379.93 FEET TO THE POINT OF BEGINNING FOR THE EASEMENT AREA HEREIN INTENDED TO BE DESCRIBED; THENCE N88°23'59"W, 348.73 FEET; THENCE S46°31'53"W, 164.29 FEET; THENCE S90°00'00"W, 75.00 FEET; THENCE S00°00'00"W, 30.00 FEET; THENCE N90°00'00"E, 86.96 FEET; THENCE N46°31'53"E, 163.80 FEET; THENCE S88°23'59"E, 337.07 FEET TO THE SAID WEST LINE OF DIVISION ROAD; THENCE N00°06'40"E, ALONG THE SAID WEST LINE, 30.01 FEET TO THE POINT OF BEGINNING, CONTAINING 17,638 SQUARE FEET.

UTILITY EASEMENT:

A PART OF THE LAND SHOWN IN C.S.M. AT DOCUMENT NO. 898738, WITHIN THE VILLAGE OF GERMANTOWN, WASHINGTON COUNTY, WI, MORE PARTICULARLY DESCRIBED AS: COMMENCING AT THE NE CORNER OF THE SAID LAND; THENCE N88°45'05"W, ALONG THE NORTH LINE OF SAID LAND, 467.72 FEET TO THE POINT OF BEGINNING FOR THE EASEMENT AREA HEREIN INTENDED TO BE DESCRIBED; THENCE S00°06'40"W, 493.41 FEET; THENCE S90°00'00"W, 10.00 FEET; THENCE N00°06'40"E, 493.63 FEET TO THE NORTH LINE OF SAID LAND; THENCE S88°45'05"E, 10.00 FEET TO THE POINT OF BEGINNING, CONTAINING 4,935 SQUARE FEET.

Parent Parcel I:
That part of the Northeast One-quarter (1/4) of the Northeast One-quarter (1/4) of SectionTwenty-eight (28), in Township Nine (9) North, Range Twenty (20) East, in the village ofGermantown, County of Washington, State of Wisconsin, described as follows:commencing at the Northeast corner of said section 28; thence South on the East line
of the Northeast 1/4 of said Section 316.50 feet to the point of beginning of this description; thence c Parcel I:
That part of the Northeast One-quarter (1/4) of the Northeast One-quarter (1/4) of Section
Twenty-eight (28), in Township Nine (9) North, Range Twenty (20) East, in the village of
Germantown, County of Washington, State of Wisconsin, described as follows:
commencing at the Northeast corner of said section 28; thence South on the East line
of the Northeast 1/4 of said Section 316.50 feet to the point of beginning of this description; thence continuing south 524.83 feet; thence North 89°26' West 660.03 feet:
thence North 531.17 feet; thence south 88°53' East 660.13 feet to the point of beginning.
Excepting therefrom those lands conveyed to the state of Wisconsin, Department of Transportation in a Warranty Deed recorded on April 29, 1996 in Volume 1590 of Records, at
Page 642, as Document No. 716269.
Parcel II:
That part of the Northeast one-quarter (l/4) of the Northeast one-quarter (1/4) of section
Twenty-eight (28), in Township Nine (9) North, Range Twenty (20) East, in the Village of
Germantown, County of Washington, state of Wisconsin, described as follows:
commencing at the Northeast corner of said section 28; thence south on the East line
of the Northeast 1/4 of said Section 316.50 feet; thence North 88°53' West 660.13 feet;
thence North 316.50 feet to the North line of the Northeast 1/4 of said section; thence
south 88°53' East on said North line 660.13 feet to the point of beginning. Excepting therefrom that portion thereof conveyed to Washington county, Wisconsin, for highway
purposes as long as so used, as described by deed recorded i~ Washington county Registry
in volume 210 of Deeds on Page 197, as Document No. 232686.
Excepting therefrom those lands conveyed to the state of Wisconsin, Department of Transportation in a warranty Deed recorded on April 29, 1996 in volume 1590 of Records, at
Page 642, as Document No. 716269.

LESS That portion conveyed to the State of Wisconsin in Book 1590 at Page 642.ontinuing south 524.83 feet; thence North 89°26' West 660.03 feet: thence North 531.17 feet; thence south 88°53' East 660.13 feet to the point of beginning.
Excepting therefrom those lands conveyed to the state of Wisconsin, Department of Transportation in a Warranty Deed recorded on April 29, 1996 in Volume 1590 of Records, at
Page 642, as Document No. 716269.
Parcel II:
That part of the Northeast one-quarter (l/4) of the Northeast one-quarter (1/4) of section
Twenty-eight (28), in Township Nine (9) North, Range Twenty (20) East, in the Village of
Germantown, County of Washington, state of Wisconsin, described as follows: commencing at the Northeast corner of said section 28; thence south on the East line of the Northeast 1/4 of said Section 316.50 feet; thence North 88°53' West 660.13 feet;
thence North 316.50 feet to the North line of the Northeast 1/4 of said section; thence
south 88°53' East on said North line 660.13 feet to the point of beginning. Excepting therefrom that portion thereof conveyed to Washington county, Wisconsin, for highway
purposes as long as so used, as described by deed recorded i~ Washington county Registry
in volume 210 of Deeds on Page 197, as Document No. 232686.
Excepting therefrom those lands conveyed to the state of Wisconsin, Department of Transportation in a warranty Deed recorded on April 29, 1996 in volume 1590 of Records, at
Page 642, as Document No. 716269.
LESS That portion conveyed to the State of Wisconsin in Book 1590 at Page 642.

LEASED PREMISES:
A PART OF THE LAND SHOWN IN C.S.M. AT DOCUMENT NO. 898738, WITHIN THE VILLAGE OF GERMANTOWN, WASHINGTON COUNTY, WI, MORE PARTICULARLY DESCRIBED AS: COMMENCING AT THE NE CORNER OF THE SAID LAND; THENCE S00°06'40"E, ALONG THE WEST LINE OF DIVISION ROAD, 379.93 FEET; THENCE N88°23'59"W, 348.73 FEET; THENCE S46°31'53"W, 164.29 FEET; THENCE S90°00'00"W, 75.00 FEET; THENCE S00°00'00"W, 30.00 FEET TO THE POINT OF BEGINNING FOR THE LEASE AREA HEREIN INTENDED TO BE DESCRIBED; THENCE N90°00'00"E, 75.00 FEET; THENCE S00°00'00"W, 75.00 FEET; THENCE S90°00'00"W, 75.00 FEET;

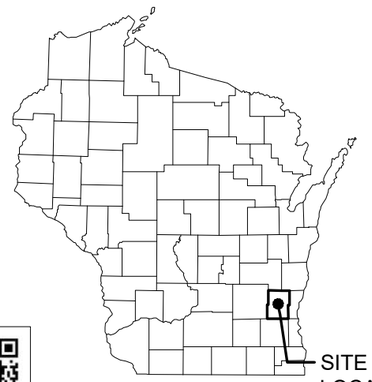
PROJECT TEAM

PROJECT CONSULTANT:
TERRA CONSULTING GROUP, LTD
910 E. BROADWAY, SUITE 206
COLUMBIA, MO 65201
POC: ERIC WARD
(573) 777-3535

SURVEYOR:
XCEL CONSULTANTS
120 10TH AVE. EAST, SUITE 3
MILAN, IL 61264
POC: BRIAN HOLLAND
P:309-787-9988

STATE MAP

N.T.S.



SITE NAME: GERMANTOWN

SITE NUMBER: 784809

PROPOSED ANTENNAS MOUNTED ON A 190' MONOPOLE TOWER WITH PROPOSED 7'-0" X 10'-0" EQUIPMENT PAD AT BASE.

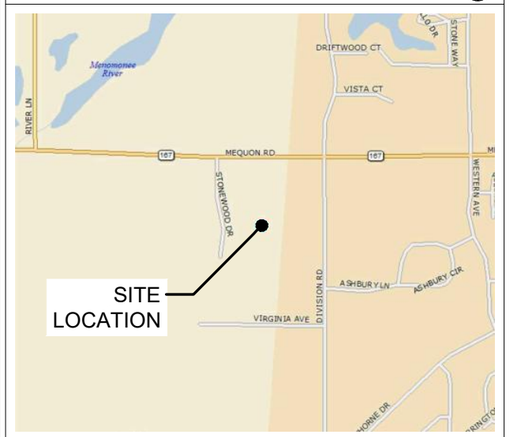
WISCONSIN
JOHN J. ZIMMERMANN
E29548
PARK RIDGE, IL
PROFESSIONAL ENGINEER
1/11/2023

uscellular
8410 W. BRYN MAWR AVE.
CHICAGO, IL 60631
POC: STEVE HATMAKER

TERRA CONSULTING GROUP, LTD.
600 BUSSE HIGHWAY
PARK RIDGE, IL 60068
PH: 847-698-6400
FAX: 847-698-6401

LOCATION MAP

N.T.S.



ONE CALL SYSTEM

DIGGERS HOTLINE
"Call 3 Work Days Before You Dig!"
TOLL FREE 1-800-242-8511
MILW. AREA (414) 259-1181
TDD 1-800-542-2289

OTHER UTILITIES NOT INCLUDED IN DIGGERS HOTLINE AND LOCAL UTILITY DISTRICTS AND COMPANIES SHALL ALSO BE NOTIFIED

PROJECT INFORMATION

SITE NAME:	GERMANTOWN
P.I.N. #:	GTNV_281967
SITE ADDRESS:	W172N11083 DIVISION ROAD GERMANTOWN, WI 53022
LATITUDE (NAD83):	N 43° 13' 09.0304" (FROM 1A)
LONGITUDE (NAD83):	W 88° 07' 30.1608" (FROM 1A)
GROUND ELEVATION:	878.87 FT A.M.S.L. (FROM 1A)
ZONING JURISDICTION:	CITY OF GERMANTOWN
CONSTRUCTION TYPE:	RAW LAND
TOWER OWNER:	U.S. CELLULAR
STRUCTURE TYPE:	MONOPOLE TOWER
ANTENNA RAD CENTER:	185' A.G.L.
LOADING TYPE:	700/2T4R, MIDBAND/2T2R
GATE COMBO:	8722
ACCESS ISSUES:	NONE
POWER PROVIDER:	TBD
FIBER PROVIDER:	CHARTER SPECTRUM

NOTE: UTILITY COORDINATION BY OTHERS. DO NOT PROCEED WITH CONSTRUCTION UNTIL POWER / TELCO / FIBER HAVE BEEN CONFIRMED.

APPLICANT:	U.S. CELLULAR CORPORATION 8410 WEST BRYN MAWR AVE. CHICAGO, IL 60631 POC: STEVE HATMAKER
SITE AC MANAGER:	GSS INC. 3111 109TH STREET URBANDALE, IA 50322 SHAUN HEMSTED (515) 331-2103 EXT. 106

SCOPE OF WORK

TOWER SCOPE
PROPOSED EQUIPMENT:
- (3) OCT8-2LX2HX-BW65 ANTENNAS
- (3) ANTENNAA MOUNT; V-FRAME MOUNTING SYSTEM, SABRE P/N: C10857803-5278
- (2) RRU MOUNT; QUAD COLLAR, SABRE P/N: C10112540
- (6) RRU MOUNT; COMPACT DUAL TOWER MOUNT, SABRE PN# C10114260
- (1) 1-1/4" HYBRID CABLE
- (1) RAYCAP RUSDC-6267-PF-48
- (5) RADIOS; (3) 4480 B12/B71, (2) 4480 B2/B66
- (3) GROUND BARS

LTE JUMPERS:
- (10) FIBER JUMPERS FROM RAYCAP TO RADIOS
- (5) POWER JUMPERS FROM RAYCAP TO RADIOS
- (20) 1/2" COAX JUMPERS FROM RADIO TO ANTENNA
- (3) RET JUMPER FROM RADIO TO ANTENNA

GROUND EQUIPMENT SCOPE
PROPOSED EQUIPMENT:
- (1) 7'x10' CONCRETE PAD
- (2) EQUIPMENT CABINETS
  - B174 BATTERY CABINET
  - B6160 RBS EQUIPMENT CABINET
- (2) ICE BRIDGE (30' PROVIDED BY TOWER MFGR)
- (1) RAYCAP RUSDC-6267-PF-48 (MOUNTED ON H-FRAME)
- (1) POWER/FIBER JUNCTION BOX (MOUNTED ON UNISTRUT)
- (2) FIBER JUNCTION BOX (MOUNTED ON UNISTRUT)
- (1) GROUND BAR (MOUNTED ON H-FRAME)
- (1) PPC EQUIPMENT CABINET
- (8) 6" UNITSTRUTS FOR H-FRAME & U-BOLTS FOR MOUNTING
- (1) 800A, 4-GANG METER BANK (CONTRACTOR TO COORDINATE WITH LOCAL UTILITY PROVIDER)

STRUCTURAL NOTES
STRUCTURAL STATUS:
1. TOWER SA: N/A
2. MOUNT SA: N/A
3. FOUNDATION: N/A

****TOWER ERECTION DRAWINGS PROVIDED BY TOWER OWNER**

SPEC IAL NOTES:
1. HANDICAP REQUIREMENTS: FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION HANDICAPPED ACCESS REQUIREMENTS NOT REQUIRED
2. PLUMBING REQUIREMENTS: FACILITY HAS NO PLUMBING OR REFRIGERANTS.
3. FAA & FCC REQUIREMENTS: THIS FACILITY SHALL MEET OR EXCEED ALL FAA AND FCC REQUIREMENTS.
4. CONSTRUCTION REQUIREMENTS: ALL WORK MUST CONFORM TO ALL U.S. CELLULAR CONSTRUCTION INSTALLATION STANDARDS & ALL APPLICABLE CODES AND ORDINANCES.

SHEET INDEX

SHEET	DESCRIPTION	REVISION
T-1	TITLE SHEET	1
B-1	SURVEY	-
B-2	SURVEY	-
B-3	SURVEY	-
B-4	SURVEY	-
LP	LOCATION PLAN	1
C-1	ENLARGED SITE PLAN	1
C-2	SITE GRADING PLAN (SHEET 1 OF 1)	1
C-3	CONCRETE SLAB FOUNDATION PLAN	1
C-4	EQUIPMENT CABINET PLAN	1
C-5	EQUIPMENT PAD ELEVATIONS	1
C-6	CABINET DETAILS	1
C-7	FENCE DETAILS	1
C-8	SITE DETAILS	1
C-9	SITE DETAILS	1
L-1	LANDSCAPE PLAN	1
ANT-1	SITE ELEVATION	1
ANT-2	ANTENNA & EQUIPMENT LAYOUT	1
ANT-3	ANTENNA SPECIFICATIONS	1
ANT-4	EQUIPMENT SPECIFICATIONS	1
ANT-5	ANTENNA MOUNTING DETAILS	1
ANT-6	LABELING STANDARDS 1	1
ANT-7	LABELING STANDARDS 2	1
ANT-8	PLUMBING DIAGRAM	1
E-1	UTILITY ROUTING PLAN	1
E-2	UTILITY DETAILS	1
E-3	UTILITY H-FRAME DETAILS	1
E-4	COMPOUND H-FRAME DETAILS	1
G-1	OVERALL GROUNDING SITE PLAN	1
G-2	GROUNDING DETAILS	1
G-3	GROUNDING DETAILS	1
SP-1	GENERAL SPECIFICATIONS	1
SP-2	GENERAL SPECIFICATIONS	1
SP-3	GENERAL SPECIFICATIONS	1
	STRUCTURAL ATTACHMENTS	
-	-	-

REVISIONS

NO.	DESCRIPTION	DATE	BY
A	ISSUED FOR REVIEW	11/04/22	BJC
B	REVISED PER USCC COMMENTS	12/19/22	JGL
0	ISSUED FOR CONSTRUCTION	12/20/22	EW
1	ADDED LANDSCAPE BUFFER	01/11/23	EW

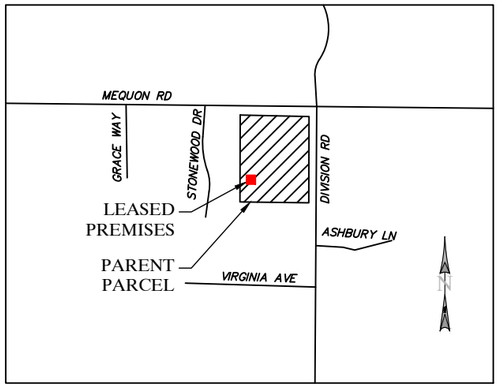
SITE# 784809
GERMANTOWN

W172N11083
DIVISION ROAD,
GERMANTOWN, WI 53022

DRAWN BY:	BJC
CHECKED BY:	EW
DATE:	10/25/22
PROJECT #:	10-079

SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1



VICINITY MAP

NOT TO SCALE

THE SOURCE OF BEARINGS WERE DETERMINED BY GPS OBSERVATIONS COMPLETED ON AUGUST 17, 2022

0 75 150 300

1" = 150'
GRAPHIC SCALE

LEGEND

- PARENT PROPERTY LINE
- CONTOUR LINES
- RIGHT OF WAY LINE
- OVERHEAD WIRE
- PROPOSED LEASE LINE
- PROPOSED ACCESS/UTILITY EASEMENT
- BUILDING
- FOUND IRON PIPE
- TRANSFORMER
- STREET LIGHT
- UTILITY POLE
- FIRE HYDRANT

GLOBAL POSITIONING SYSTEMS NOTE

1. RANDOM TRAVERSE CONTROL MONUMENTS WERE SET USING GPS METHODS. A PORTION OF THE TOPOGRAPHY AND FOUND BOUNDARY MONUMENTS WERE ALSO LOCATED USING GPS METHODS.
2. THE TYPE OF GPS UTILIZES AS NETWORK ADJUSTED REAL TIME KINEMATIC (HYPER SR NETWORK), NAD 83 WISCONSIN STATE PLANE (WASHINGTON).
3. TOPCON HIPER SR RECEIVERS WERE USED TO PERFORM THE SURVEY.

GENERAL NOTES

NO SEARCH OF PUBLIC RECORDS HAS BEEN COMPLETED BY XCEL CONSULTANTS TO DETERMINE ANY DEFECTS AND/OR AMBIGUITIES IN THE TITLE OF THE PARENT PARCEL.

THIS SURVEY IS FOR THE PROPOSED LEASED PREMISES AND THE PROPOSED EASEMENTS ONLY, AND ONLY A PARTIAL BOUNDARY SURVEY OF THE PARENT PARCEL HAS BEEN PERFORMED.

THIS PLAT IS NOT INTENDED FOR LAND TRANSFER.

THIS PROPERTY IS SUBJECT TO ANY RECORDED EASEMENTS AND/OR RIGHTS OF WAY SHOWN HEREON OR NOT.

XCEL CONSULTANTS HAS RECEIVED AND REVIEWED THE TITLE COMMITMENT PREPARED BY STEWART TITLE GUARANTY COMPANY, FILE NUMBER 22111495WI, DATED AUGUST 24, 2022 AT 8:00 AM, PREPARED FOR THE SUBJECT PROPERTY, TO DETERMINE THE IMPACTS OF EXISTING TITLE EXCEPTIONS.

BY GRAPHIC PLOTTING ONLY, THIS PROPERTY IS LOCATED IN ZONE "X" (AREA OF MINIMAL FLOOD HAZARD) OF THE FLOOD INSURANCE RATE MAP, COMMUNITY PANEL NO. 55131C0357D AND 55131C0376D, WHICH BOTH BEAR AN EFFECTIVE DATE OF NOVEMBER 20, 2013 AND IS NOT IN A SPECIAL FLOOD HAZARD AREA. NO FIELD SURVEYING WAS PERFORMED TO DETERMINE THIS ZONE AND AN ELEVATION CERTIFICATE MAY BE NEEDED TO VERIFY THIS DETERMINATION OR APPLY FOR A VARIANCE FROM THE FEDERAL EMERGENCY MANAGEMENT AGENCY.

NO WETLANDS AREAS HAVE BEEN INVESTIGATED BY THIS SURVEY

THERE WERE NO STREAMS, DRAINAGE DITCHES OR PIPES, OR RIVERS RUNNING THROUGH OR BORDERING THE PARENT PARCEL, LEASED PREMISES NOR NEW EASEMENTS AT THE TIME OF SURVEY.

THE LOCATION OF THE UTILITIES SHOWN HEREON ARE FROM OBSERVED EVIDENCE OF ABOVE GROUND APPURTENANCES AND PER WISCONSIN ONE CALL "DIGGERS HOTLINE" LOCATED REQUEST PLANNING PRINTS TICKET #20223421464. UTILITY SERVICE FOR THIS PROPERTY ARE PROVIDED BY WE ENERGIES, ELECTRIC AND GAS, TIME WARNER CABLE, VILLAGE OF GERMANTOWN, AT&T DISTRIBUTION, AND CENTURYLINK. ONLY UTILITY MAPS PROVIDED BY SAID COMPANIES ARE SHOWN HEREON. BEFORE DIGGING IN THIS AREA CALL DIGGERS HOTLINE AT 811.

* FAA COORDINATE POINT

NAD 83
LATITUDE: 43°13'09.0304" (43.21917510)
LONGITUDE: -88°07'30.1608" (-88.12504468)
NAVD88 ELEVATION: 878.87'± AMSL

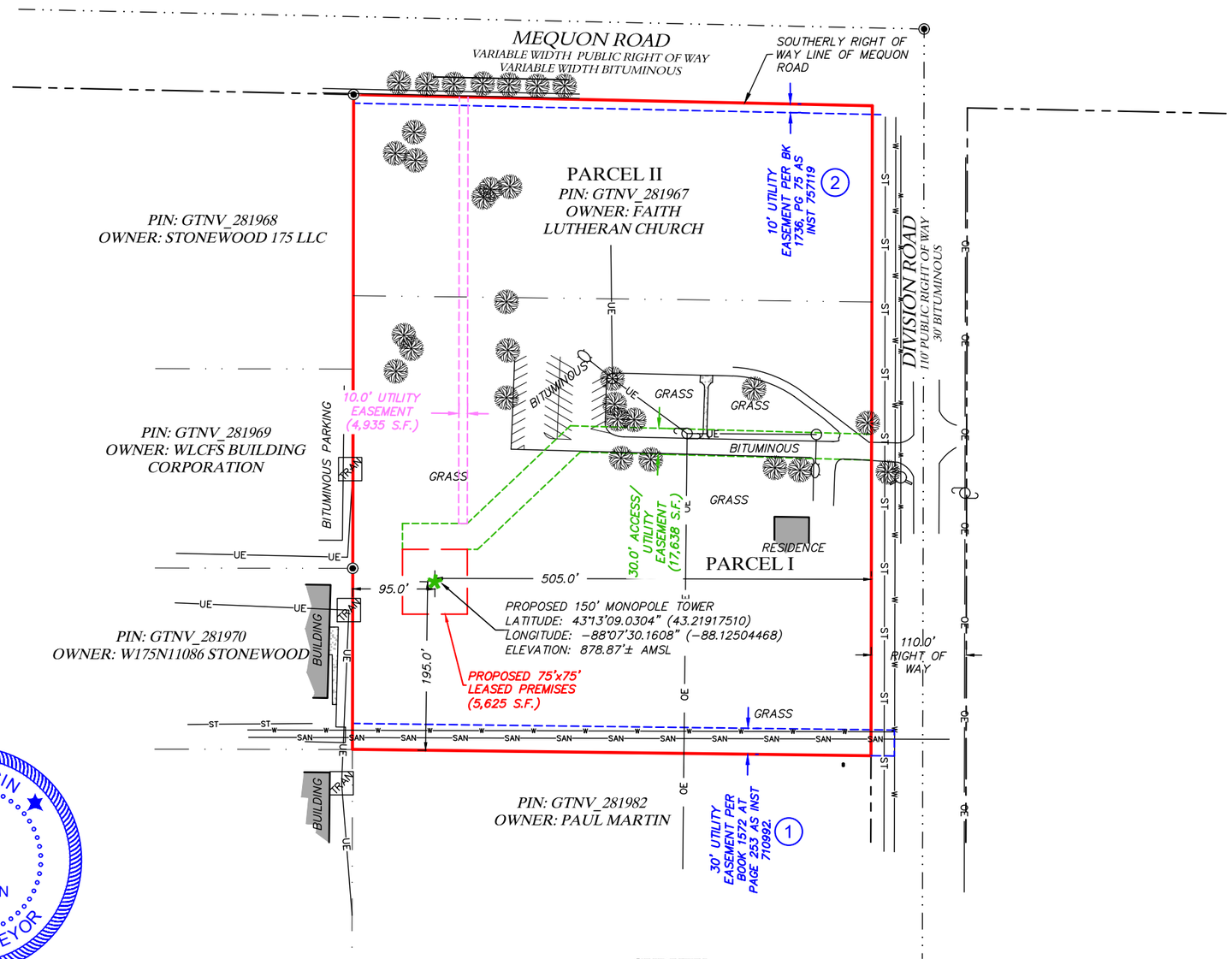
TO: U.S. CELLULAR; STEWART TITLE GUARANTY COMPANY

I, DAN J. KUEHL, A WISCONSIN PROFESSIONAL LAND SURVEYOR, CERTIFY THAT THE INFORMATION SHOWN HEREON WAS COMPILED USING DATA FROM AN ACTUAL FIELD SURVEY MADE UNDER MY DIRECT SUPERVISION AND THAT THE FIELD SURVEY AND THE COMPILATION OF INFORMATION SHOWN HEREIN WERE CONDUCTED IN ACCORDANCE WITH THE WISCONSIN MINIMUM STANDARDS OF PRACTICE. THE FIELD WORK WAS COMPLETED ON AUGUST 17, 2022.

SEPTEMBER 26, 2022

DAN J. KUEHL
LICENSE NUMBER 3104-8
MY LICENSE RENEWAL DATE IS JANUARY 31, 2024
SHEETS COVERED BY THIS SEAL B-1, B-2, B-3, AND B-4

WISCONSIN
DAN J. KUEHL
3104-8
MORRISON IL
LAND SURVEYOR



SURVEY

uscellular
8410 W. Bryn Mawr Avenue
Suite 700
Chicago, IL 60631

TERRA CONSULTING GROUP, LTD.
600 Busse Highway
Park Ridge, IL 60068
Ph: 847/698-6400
Fax: 847/698-6401

SURVEYED BY:
XCEL Consultants
8300 42ND STREET WEST
ROCK ISLAND, IL 61201
(O) 309-787-9988
(F) 309-756-5540
(E) XCEL@XCELCONSULTANTSINC.COM

XCEL PROJECT NUMBER: 224240

SURVEY

REV.	DATE	DESCRIPTION

SITE NAME:
GERMANTOWN

SITE NUMBER: 784809

W172N11083 DIVISION ROAD
GERMANTOWN, WI 53022

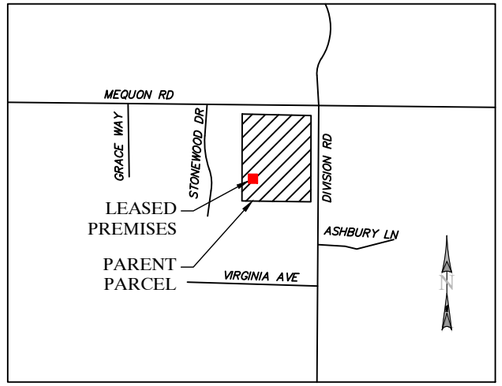
OWNER: FAITH LUTHERAN CHURCH
PARCEL #: GTNV_281967

WASHINGTON COUNTY
WISCONSIN

DRAWN BY: KJM
CHECKED BY: BCH
SURVEY DATE: 8/17/2022
PLAT DATE:

SHEET TITLE:
SURVEY
THIS DOES NOT REPRESENT A BOUNDARY SURVEY OF THE PARENT PARCEL

SHEET NUMBER:
B-1



VICINITY MAP

NOT TO SCALE

* FAA COORDINATE POINT

NAD 83
LATITUDE: 43°13'09.0304" (43.21917510)
LONGITUDE: −88°07'30.1608" (−88.12504468)
NAVD88 ELEVATION: 878.87'± AMSL

GENERAL NOTES

NO SEARCH OF PUBLIC RECORDS HAS BEEN COMPLETED BY XCEL CONSULTANTS TO DETERMINE ANY DEFECTS AND/OR AMBIGUITIES IN THE TITLE OF THE PARENT PARCEL.

THIS SURVEY IS FOR THE PROPOSED LEASED PREMISES AND THE PROPOSED EASEMENTS ONLY, AND ONLY A PARTIAL BOUNDARY SURVEY OF THE PARENT PARCEL HAS BEEN PERFORMED.

THIS PLAT IS NOT INTENDED FOR LAND TRANSFER.

THIS PROPERTY IS SUBJECT TO ANY RECORDED EASEMENTS AND/OR RIGHTS OF WAY SHOWN HEREON OR NOT.

XCEL CONSULTANTS HAS RECEIVED AND REVIEWED THE TITLE COMMITMENT PREPARED BY STEWART TITLE GUARANTY COMPANY, FILE NUMBER 22111495WI, DATED AUGUST 24, 2022 AT 8:00 AM, PREPARED FOR THE SUBJECT PROPERTY, TO DETERMINE THE IMPACTS OF EXISTING TITLE EXCEPTIONS.

BY GRAPHIC PLOTTING ONLY, THIS PROPERTY IS LOCATED IN ZONE "X" (AREA OF MINIMAL FLOOD HAZARD) OF THE FLOOD INSURANCE RATE MAP, COMMUNITY PANEL NO. 55131C0357D AND 55131C0376D, WHICH BOTH BEAR AN EFFECTIVE DATE OF NOVEMBER 20, 2013 AND IS NOT IN A SPECIAL FLOOD HAZARD AREA. NO FIELD SURVEYING WAS PERFORMED TO DETERMINE THIS ZONE AND AN ELEVATION CERTIFICATE MAY BE NEEDED TO VERIFY THIS DETERMINATION OR APPLY FOR A VARIANCE FROM THE FEDERAL EMERGENCY MANAGEMENT AGENCY.

NO WETLANDS AREAS HAVE BEEN INVESTIGATED BY THIS SURVEY

THERE WERE NO STREAMS, DRAINAGE DITCHES OR PIPES, OR RIVERS RUNNING THROUGH OR BORDERING THE PARENT PARCEL, LEASED PREMISES NOR NEW EASEMENTS AT THE TIME OF SURVEY.

THE LOCATION OF THE UTILITIES SHOWN HEREON ARE FROM OBSERVED EVIDENCE OF ABOVE GROUND APPURTENANCES AND PER WISCONSIN ONE CALL "DIGGERS HOTLINE" LOCATED REQUEST PLANNING PRINTS TICKET #20223421464. UTILITY SERVICE FOR THIS PROPERTY ARE PROVIDED BY WE ENERGIES, ELECTRIC AND GAS, TIME WARNER CABLE, VILLAGE OF GERMANTOWN, AT&T DISTRIBUTION, AND CENTURYLINK. ONLY UTILITY MAPS PROVIDED BY SAID COMPANIES ARE SHOWN HEREON. BEFORE DIGGING IN THIS AREA CALL DIGGERS HOTLINE AT 811.

GLOBAL POSITIONING SYSTEMS NOTE

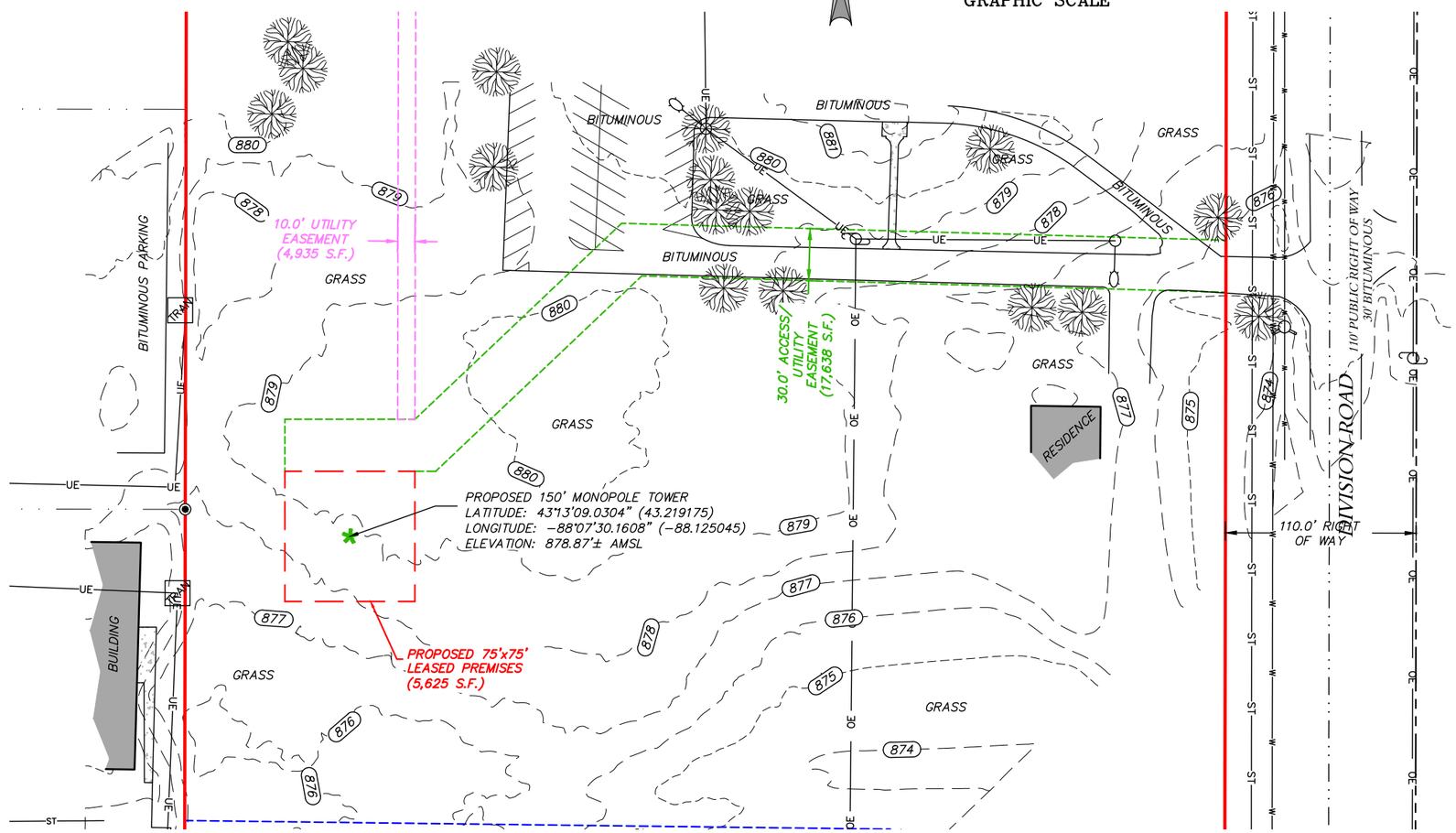
1. RANDOM TRAVERSE CONTROL MONUMENTS WERE SET USING GPS METHODS. A PORTION OF THE TOPOGRAPHY AND FOUND BOUNDARY MONUMENTS WERE ALSO LOCATED USING GPS METHODS.
2. THE TYPE OF GPS UTILIZES AS NETWORK ADJUSTED REAL TIME KINEMATIC (HYPER SR NETWORK), NAD 83 WISCONSIN STATE PLANE (WASHINGTON).
3. TOPCON HIPER SR RECEIVERS WERE USED TO PERFORM THE SURVEY.

THE SOURCE OF BEARINGS WERE DETERMINED BY GPS OBSERVATIONS COMPLETED ON AUGUST 17, 2022

N

0 40 80 160

1" = 80'
GRAPHIC SCALE



LEGEND

- PARENT PROPERTY LINE
- CONTOUR LINES
- RIGHT OF WAY LINE
- OVERHEAD WIRE
- PROPOSED LEASE LINE
- PROPOSED ACCESS/UTILITY EASEMENT
- BUILDING
- FOUND IRON PIPE
- TRANSFORMER
- STREET LIGHT
- UTILITY POLE
- FIRE HYDRANT

TO: U.S. CELLULAR; STEWART TITLE GUARANTY COMPANY

I, DAN J. KUEHL, A WISCONSIN PROFESSIONAL LAND SURVEYOR, CERTIFY THAT THE INFORMATION SHOWN HEREON WAS COMPILED USING DATA FROM AN ACTUAL FIELD SURVEY MADE UNDER MY DIRECT SUPERVISION AND THAT THE FIELD SURVEY AND THE COMPILATION OF INFORMATION SHOWN HEREIN WERE CONDUCTED IN ACCORDANCE WITH THE WISCONSIN MINIMUM STANDARDS OF PRACTICE. THE FIELD WORK WAS COMPLETED ON AUGUST 17, 2022.

SEPTEMBER 26, 2022

DAN J. KUEHL
LICENSE NUMBER 3104-8
MY LICENSE RENEWAL DATE IS JANUARY 31, 2024
SHEETS COVERED BY THIS SEAL B-1, B-2, B-3, AND B-4

WISCONSIN
DAN J. KUEHL
3104-8
MORRISON
IL
LAND SURVEYOR

uscellular
8410 W. Bryn Mawr Avenue
Suite 700
Chicago, IL 60631

TERRA CONSULTING GROUP, LTD.
600 Busse Highway
Park Ridge, IL 60068
Ph: 847/698-6400
Fax: 847/698-6401

SURVEYED BY:
XCEL Consultants
8300 42ND STREET WEST
ROCK ISLAND, IL 61201
(O) 309-787-9988
(F) 309-756-5540
(E) XCEL@XCELCONSULTANTSINC.COM

XCEL PROJECT NUMBER: 224240

SURVEY

REV.	DATE	DESCRIPTION

SITE NAME:
GERMANTOWN

SITE NUMBER: 784809

W172N11083 DIVISION ROAD
GERMANTOWN, WI 53022

OWNER: FAITH LUTHERAN CHURCH
PARCEL #: GTNV_281967

WASHINGTON COUNTY
WISCONSIN

DRAWN BY: KJM
CHECKED BY: BCH
SURVEY DATE: 8/17/2022
PLAT DATE:

SHEET TITLE:
SURVEY
THIS DOES NOT REPRESENT A BOUNDARY SURVEY OF THE PARENT PARCEL

SHEET NUMBER:
B-2

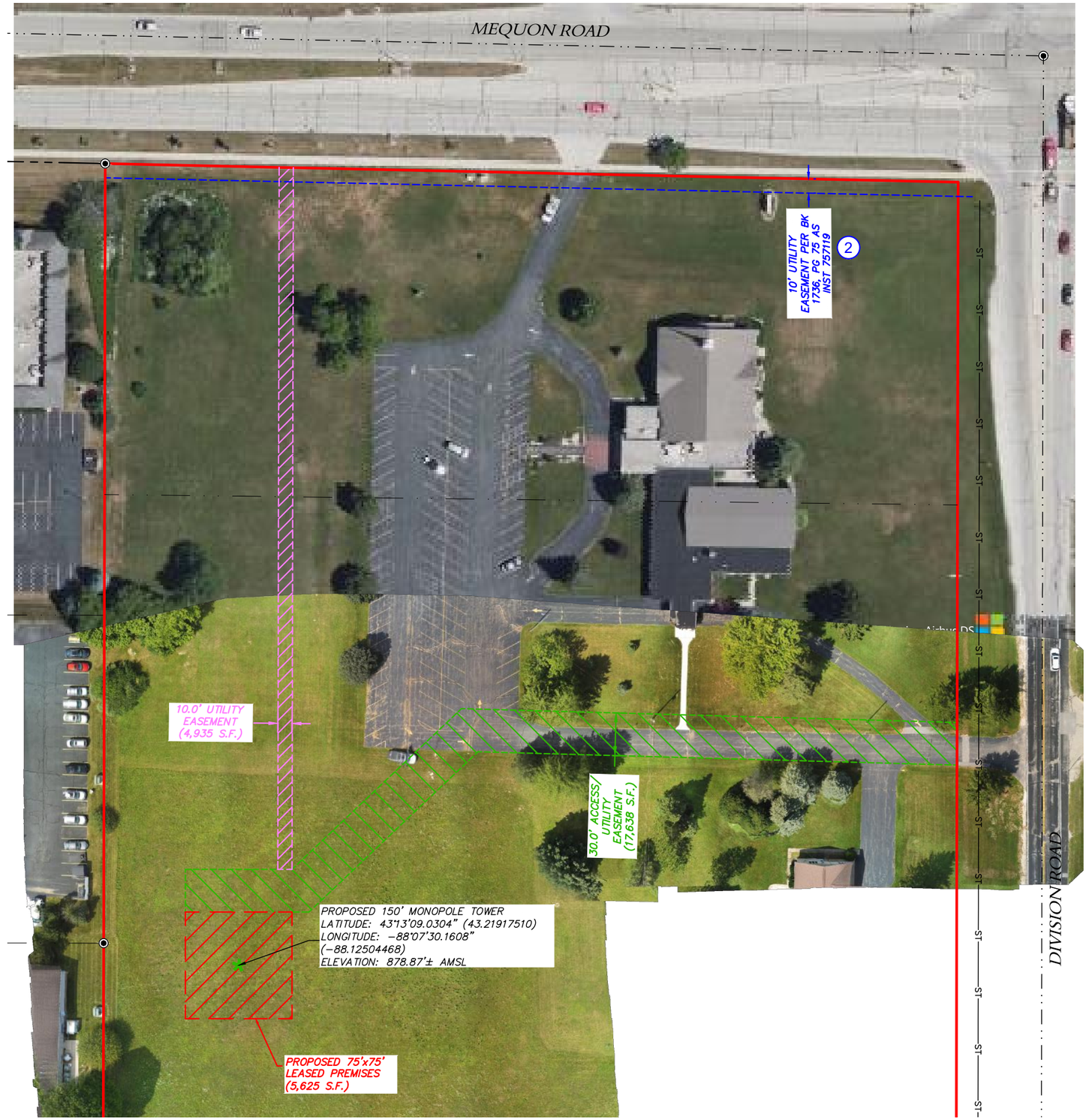
N

THE SOURCE OF BEARINGS WERE DETERMINED BY GPS OBSERVATIONS COMPLETED ON AUGUST 17, 2022.

0 40 80 160

1" = 80'
GRAPHIC SCALE

AERIAL PER XCEL CONSULTANTS, INC. FLOWN DRONE ON AUGUST 17, 2022.



WISCONSIN
DAN J. KUEHL
3104-8
MORRISON IL
LAND SURVEYOR

TO: U.S. CELLULAR; STEWART TITLE GUARANTY COMPANY

I, DAN J. KUEHL, A WISCONSIN PROFESSIONAL LAND SURVEYOR, CERTIFY THAT THE INFORMATION SHOWN HEREON WAS COMPILED USING DATA FROM AN ACTUAL FIELD SURVEY MADE UNDER MY DIRECT SUPERVISION AND THAT THE FIELD SURVEY AND THE COMPILATION OF INFORMATION SHOWN HEREIN WERE CONDUCTED IN ACCORDANCE WITH THE WISCONSIN MINIMUM STANDARDS OF PRACTICE. THE FIELD WORK WAS COMPLETED ON AUGUST 17, 2022.

SEPTEMBER 26, 2022

DAN J. KUEHL
LICENSE NUMBER 3104-8
MY LICENSE RENEWAL DATE IS JANUARY 31, 2024
SHEETS COVERED BY THIS SEAL B-1, B-2, B-3, AND B-4

uscellular
8410 W. Bryn Mawr Avenue
Suite 700
Chicago, IL 60631

TERRA CONSULTING GROUP, LTD.
600 Busse Highway
Park Ridge, IL 60068
Ph: 847/698-6400
Fax: 847/698-6401

SURVEYED BY:
XCEL Consultants
8300 42ND STREET WEST
ROCK ISLAND, IL 61201
(O) 309-787-9988
(F) 309-756-5540
(E) XCEL@XCELCONSULTANTSINC.COM

XCEL PROJECT NUMBER: 224240

SURVEY

REV.	DATE	DESCRIPTION

SITE NAME:
GERMANTOWN

SITE NUMBER: 784809

W172N11083 DIVISION ROAD
GERMANTOWN, WI 53022

OWNER: FAITH LUTHERAN CHURCH
PARCEL #: GTNV_281967

WASHINGTON COUNTY
WISCONSIN

DRAWN BY: KJM
CHECKED BY: BCH
SURVEY DATE: 8/17/2022
PLAT DATE:

SHEET TITLE:
SURVEY
THIS DOES NOT REPRESENT A BOUNDARY SURVEY OF THE PARENT PARCEL

SHEET NUMBER:
B-3

REPORT OF TITLE:

XCEL CONSULTANTS HAS RECEIVED AND REVIEWED THE TITLE COMMITMENT PREPARED BY STEWART TITLE GUARANTY COMPANY, FILE NUMBER 22111495WI, DATED AUGUST 24, 2022 AT 8:00 AM, PREPARED FOR THE SUBJECT PROPERTY, TO DETERMINE THE IMPACTS OF EXISTING TITLE EXCEPTIONS.

SURVEY MATTERS OR EASEMENTS LISTED IN SCHEDULE 'B':

1. SANITARY SEWER AND WATER MAIN EASEMENT BETWEEN FAITH LUTHERAN CHURCH AND THE VILLAGE OF GERMANTOWN DATED OCTOBER 26, 1995 AND RECORDED FEBRUARY 26, 1996 IN BOOK 1572 AT PAGE 253 AS INSTRUMENT 710992. LIES ON PROPERTY – AS SHOWN
2. AMERITECH EXCLUSIVE EASEMENT BETWEEN FAITH LUTHERAN CHURCH AND WISCONSIN BELL, INC. A.K.A AMERITECH WISCONSIN DATED SEPTEMBER 18, 1997 AND RECORDED SEPTEMBER 18, 1997 IN BOOK 1736 AT PAGE 75 AS INSTRUMENT 757119. LIES ON PROPERTY – AS SHOWN
3. RIGHT-OF-WAY GRANT BETWEEN FAITH LUTHERAN CHURCH AND WISCONSIN BELL, INC DATED JUNE 9, 1986 AND RECORDED JULY 16, 1986 IN BOOK 899 AT PAGE 531 AS INSTRUMENT 494984. DOES NOT LIE ON PROPERTY

PARENT PARCEL:

PARCEL I:
THAT PART OF THE NORTHEAST ONE-QUARTER (1/4) OF THE NORTHEAST ONE-QUARTER (1/4) OF SECTION TWENTY-EIGHT (28), IN TOWNSHIP NINE (9) NORTH, RANGE TWENTY (20) EAST, IN THE VILLAGE OF GERMANTOWN, COUNTY OF WASHINGTON, STATE OF WISCONSIN, DESCRIBED AS FOLLOWS:

COMMENCING AT THE NORTHEAST CORNER OF SAID SECTION 28; THENCE SOUTH ON THE EAST LINE OF THE NORTHEAST 1/4 OF SAID SECTION 316.50 FEET TO THE POINT OF BEGINNING OF THIS DESCRIPTION; THENCE CONTINUING SOUTH 524.83 FEET; THENCE NORTH 89°26' WEST 660.03 FEET; THENCE NORTH 531.17 FEET; THENCE SOUTH 88°53' EAST 660.13 FEET TO THE POINT OF BEGINNING. EXCEPTING THEREFROM THOSE LANDS CONVEYED TO THE STATE OF WISCONSIN, DEPARTMENT OF TRANSPORTATION IN A WARRANTY DEED RECORDED ON APRIL 29, 1996 IN VOLUME 1590 OF RECORDS, AT PAGE 642, AS DOCUMENT NO. 716269.

PARCEL II:
THAT PART OF THE NORTHEAST ONE-QUARTER (L/4) OF THE NORTHEAST ONE-QUARTER (1/4) OF SECTION TWENTY-EIGHT (28), IN TOWNSHIP NINE (9) NORTH, RANGE TWENTY (20) EAST, IN THE VILLAGE OF GERMANTOWN, COUNTY OF WASHINGTON, STATE OF WISCONSIN, DESCRIBED AS FOLLOWS:

COMMENCING AT THE NORTHEAST CORNER OF SAID SECTION 28; THENCE SOUTH ON THE EAST LINE OF THE NORTHEAST 1/4 OF SAID SECTION 316.50 FEET; THENCE NORTH 88°53' WEST 660.13 FEET; THENCE NORTH 316.50 FEET TO THE NORTH LINE OF THE NORTHEAST 1/4 OF SAID SECTION; THENCE SOUTH 88°53' EAST ON SAID NORTH LINE 660.13 FEET TO THE POINT OF BEGINNING. EXCEPTING THEREFROM THAT PORTION THEREOF CONVEYED TO WASHINGTON COUNTY, WISCONSIN, FOR HIGHWAY PURPOSES AS LONG AS SO USED, AS DESCRIBED BY DEED RECORDED I~ WASHINGTON COUNTY REGISTRY IN VOLUME 210 OF DEEDS ON PAGE 197, AS DOCUMENT NO. 232686.

EXCEPTING THEREFROM THOSE LANDS CONVEYED TO THE STATE OF WISCONSIN, DEPARTMENT OF TRANSPORTATION IN A WARRANTY DEED RECORDED ON APRIL 29, 1996 IN VOLUME 1590 OF RECORDS, AT PAGE 642, AS DOCUMENT NO. 716269.

LESS THAT PORTION CONVEYED TO THE STATE OF WISCONSIN IN BOOK 1590 AT PAGE 642.

LEASED PREMISES:

A PART OF THE LAND SHOWN IN C.S.M. AT DOCUMENT NO. 898738, WITHIN THE VILLAGE OF GERMANTOWN, WASHINGTON COUNTY, WI, MORE PARTICULARLY DESCRIBED AS: COMMENCING AT THE NE CORNER OF THE SAID LAND; THENCE S00°06'40"E, ALONG THE WEST LINE OF DIVISION ROAD, 379.93 FEET; THENCE N88°23'59"W, 348.73 FEET; THENCE S46°31'53"W, 164.29 FEET; THENCE S90°00'00"W, 75.00 FEET; THENCE S00°00'00"W, 30.00 FEET TO THE POINT OF BEGINNING FOR THE LEASE AREA HEREIN INTENDED TO BE DESCRIBED; THENCE N90°00'00"E, 75.00 FEET; THENCE S00°00'00"W, 75.00 FEET; THENCE S90°00'00"W, 75.00 FEET; THENCE N00°00'00"E, 75.00 FEET TO THE POINT OF BEGINNING, CONTAINING 5,625 SQUARE FEET.

ACCESS/UTILITY EASEMENT:

A PART OF THE LAND SHOWN IN C.S.M. AT DOCUMENT NO. 898738, WITHIN THE VILLAGE OF GERMANTOWN, WASHINGTON COUNTY, WI, MORE PARTICULARLY DESCRIBED AS: COMMENCING AT THE NE CORNER OF THE SAID LAND; THENCE S00°06'40"E, ALONG THE WEST LINE OF DIVISION ROAD, 379.93 FEET TO THE POINT OF BEGINNING FOR THE EASEMENT AREA HEREIN INTENDED TO BE DESCRIBED; THENCE N88°23'59"W, 348.73 FEET; THENCE S46°31'53"W, 164.29 FEET; THENCE S90°00'00"W, 75.00 FEET; THENCE S00°00'00"W, 30.00 FEET; THENCE N90°00'00"E, 86.96 FEET; THENCE N46°31'53"E, 163.80 FEET; THENCE S88°23'59"E, 337.07 FEET TO THE SAID WEST LINE OF DIVISION ROAD; THENCE N00°06'40"E, ALONG THE SAID WEST LINE, 30.01 FEET TO THE POINT OF BEGINNING, CONTAINING 17,638 SQUARE FEET.

UTILITY EASEMENT:

A PART OF THE LAND SHOWN IN C.S.M. AT DOCUMENT NO. 898738, WITHIN THE VILLAGE OF GERMANTOWN, WASHINGTON COUNTY, WI, MORE PARTICULARLY DESCRIBED AS: COMMENCING AT THE NE CORNER OF THE SAID LAND; THENCE N88°45'05"W, ALONG THE NORTH LINE OF SAID LAND, 467.72 FEET TO THE POINT OF BEGINNING FOR THE EASEMENT AREA HEREIN INTENDED TO BE DESCRIBED; THENCE S00°06'40"W, 493.41 FEET; THENCE S90°00'00"W, 10.00 FEET; THENCE N00°06'40"E, 493.63 FEET TO THE NORTH LINE OF SAID LAND; THENCE S88°45'05"E, 10.00 FEET TO THE POINT OF BEGINNING, CONTAINING 4,935 SQUARE FEET.

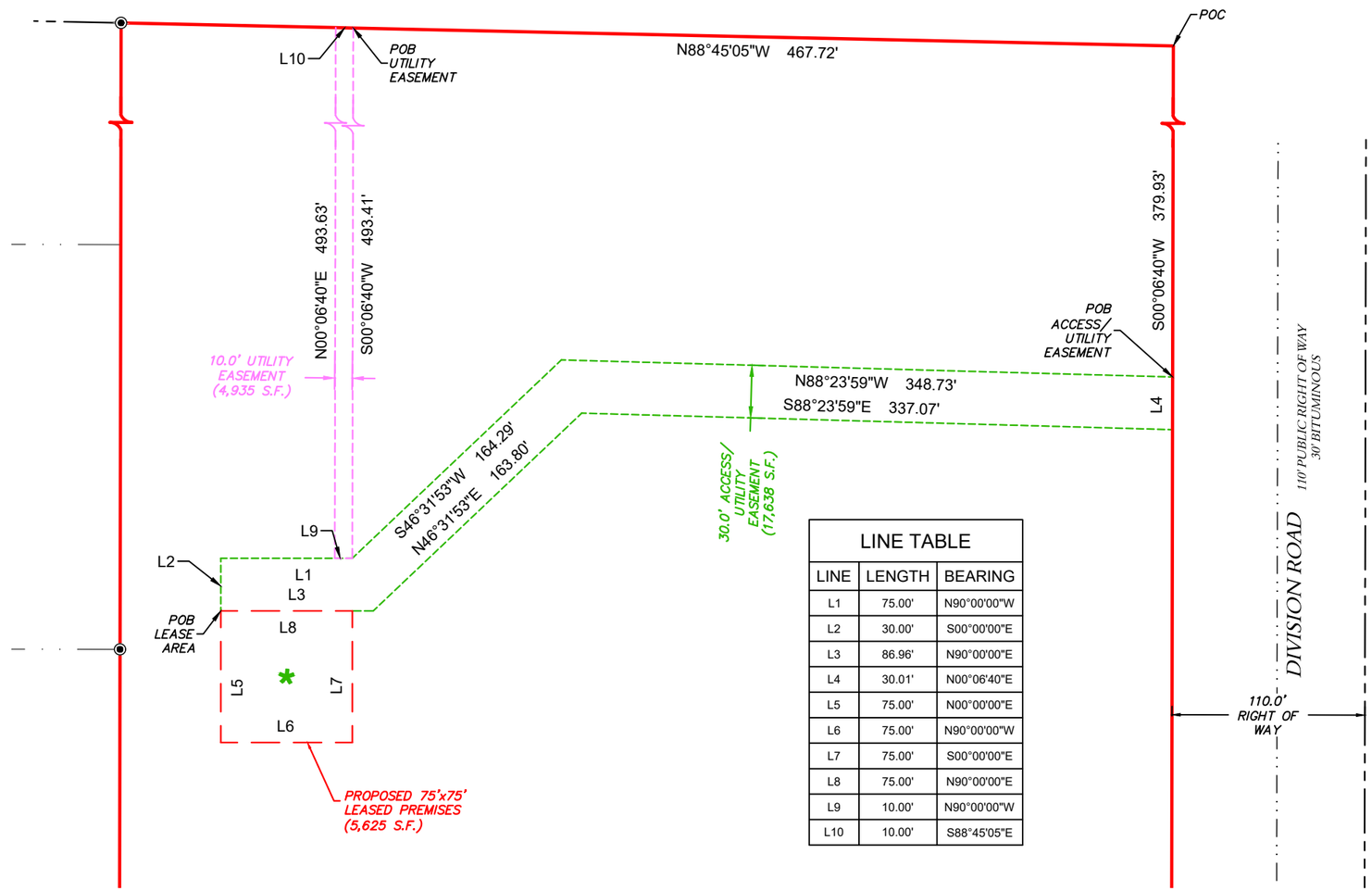
LEGEND:

PARENT PROPERTY LINE
RIGHT OF WAY LINE
PROPOSED LEASE LINE
PROPOSED ACCESS/UTILITY EASEMENT

THE SOURCE OF BEARINGS WERE DETERMINED BY GPS OBSERVATIONS COMPLETED ON AUGUST 17, 2022

0 40 80 160
1" = 80'
GRAPHIC SCALE

N



LINE TABLE		
LINE	LENGTH	BEARING
L1	75.00'	N90°00'00"W
L2	30.00'	S00°00'00"E
L3	86.96'	N90°00'00"E
L4	30.01'	N00°06'40"E
L5	75.00'	N00°00'00"E
L6	75.00'	N90°00'00"W
L7	75.00'	S00°00'00"E
L8	75.00'	N90°00'00"E
L9	10.00'	N90°00'00"W
L10	10.00'	S88°45'05"E

TO: U.S. CELLULAR; STEWART TITLE GUARANTY COMPANY

I, DAN J. KUEHL, A WISCONSIN PROFESSIONAL LAND SURVEYOR, CERTIFY THAT THE INFORMATION SHOWN HEREON WAS COMPILED USING DATA FROM AN ACTUAL FIELD SURVEY MADE UNDER MY DIRECT SUPERVISION AND THAT THE FIELD SURVEY AND THE COMPILATION OF INFORMATION SHOWN HEREIN WERE CONDUCTED IN ACCORDANCE WITH THE WISCONSIN MINIMUM STANDARDS OF PRACTICE. THE FIELD WORK WAS COMPLETED ON AUGUST 17, 2022.

SEPTEMBER 26, 2022

DAN J. KUEHL
LICENSE NUMBER 3104-8
MY LICENSE RENEWAL DATE IS JANUARY 31, 2024
SHEETS COVERED BY THIS SEAL B-1, B-2, B-3, AND B-4

WISCONSIN
DAN J. KUEHL
3104-8
MORRISON IL
LAND SURVEYOR

uscellular
8410 W. Bryn Mawr Avenue
Suite 700
Chicago, IL 60631

TERRA CONSULTING GROUP, LTD.
600 Busse Highway
Park Ridge, IL 60068
Ph: 847/698-6400
Fax: 847/698-6401

SURVEYED BY:
XCEL Consultants
8300 42ND STREET WEST
ROCK ISLAND, IL 61201
(O) 309-787-9988
(F) 309-756-5540
(E) XCEL@XCELCONSULTANTSINC.COM

XCEL PROJECT NUMBER: 224240

SURVEY

REV.	DATE	DESCRIPTION

SITE NAME:
GERMANTOWN

SITE NUMBER: 784809

W172N11083 DIVISION ROAD
GERMANTOWN, WI 53022

OWNER: FAITH LUTHERAN CHURCH
PARCEL #: GTNV_281967

WASHINGTON COUNTY
WISCONSIN

DRAWN BY: KJM
CHECKED BY: BCH
SURVEY DATE: 8/17/2022
PLAT DATE:

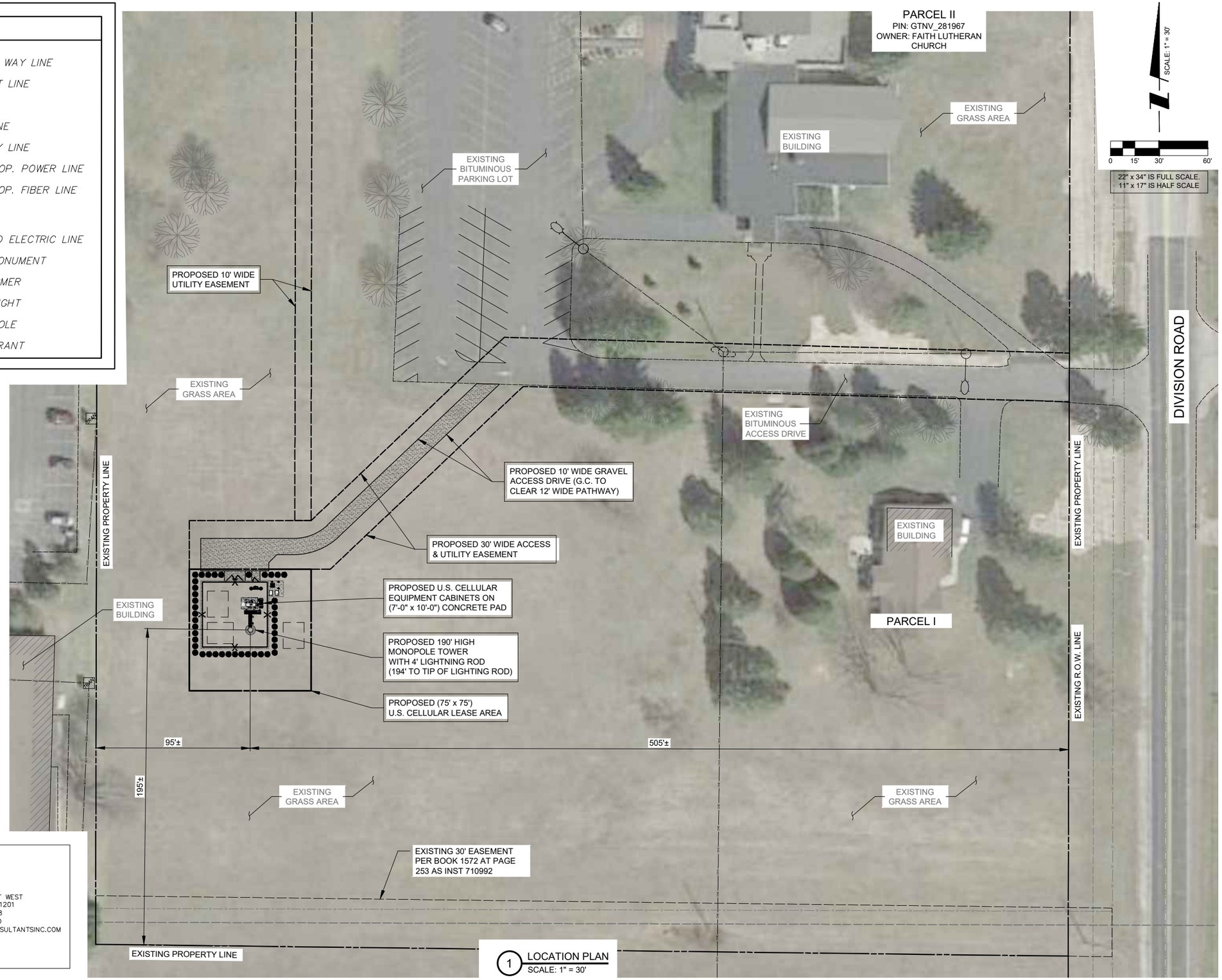
SHEET TITLE:
SURVEY
THIS DOES NOT REPRESENT A BOUNDARY SURVEY OF THE PARENT PARCEL

SHEET NUMBER:
B-4

LEGEND

- RIGHT OF WAY LINE
- EASEMENT LINE
- LOT LINE
- CENTERLINE
- PROPERTY LINE
- UGE — (UGE) PROP. POWER LINE
- UGF — (UGF) PROP. FIBER LINE
- BUILDING
- OVERHEAD ELECTRIC LINE
- FOUND MONUMENT
- TRANSFORMER
- STREET LIGHT
- UTILITY POLE
- FIRE HYDRANT

NOTE:
AERIAL IMAGE TAKEN FROM GOOGLE EARTH.
G.C. TO FIELD VERIFY EXISTING CONDITIONS
PRIOR TO START OF CONSTRUCTION.



1 LOCATION PLAN
SCALE: 1" = 30'

DIGGERS HOTLINE
"Call 3 Work Days Before You Dig!"
TOLL FREE 1-800-242-8511
MILW. AREA (414) 259-1181
TDD 1-800-542-2289

OTHER UTILITIES NOT INCLUDED IN DIGGERS HOTLINE AND LOCAL UTILITY DISTRICTS AND COMPANIES SHALL ALSO BE NOTIFIED

SURVEY PERFORMED BY:

XCEL Consultants
8300 42ND STREET WEST
ROCK ISLAND, IL 61201
(O) 309-787-9988
(F) 309-756-5540
(E) XCEL@XCELCONSULTANTSINC.COM

uscellular
8410 W. BRYN MAWR AVE.
CHICAGO, IL 60631
POC: STEVE HATMAKER

TERRA CONSULTING GROUP, LTD.
600 BUSSE HIGHWAY
PARK RIDGE, IL 60068
PH: 847-698-6400
FAX: 847-698-6401

REVISIONS

NO.	DESCRIPTION	DATE	BY
A	ISSUED FOR REVIEW	11/04/22	BJC
B	REVISED PER USCC COMMENTS	12/19/22	JGL
0	ISSUED FOR CONSTRUCTION	12/20/22	EW
1	ADDED LANDSCAPE BUFFER	01/11/23	EW

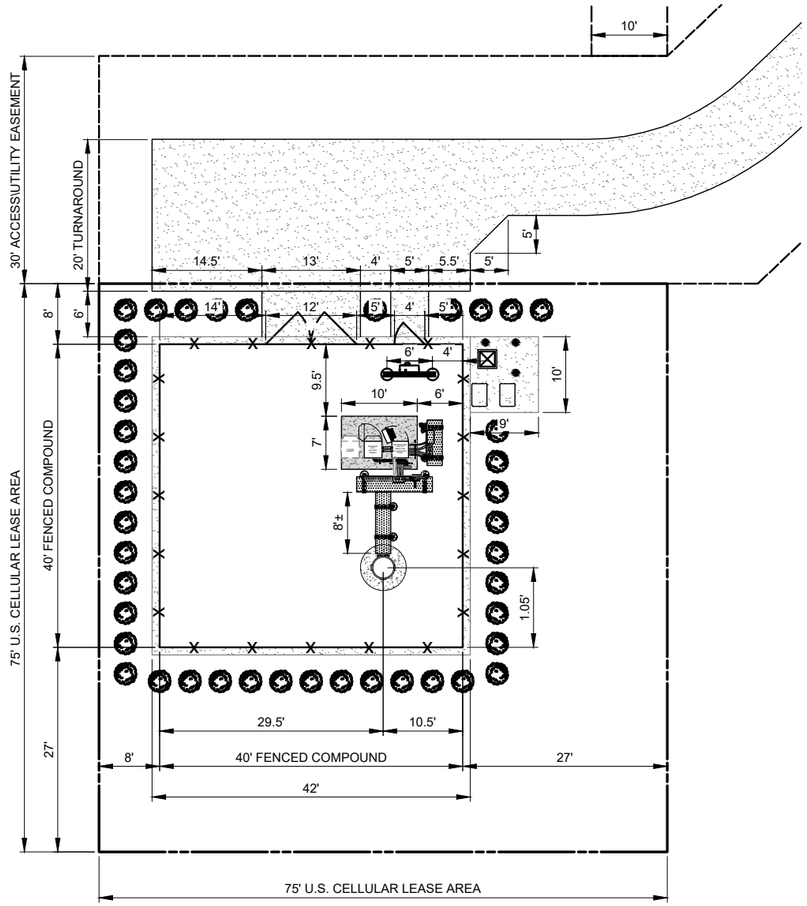
SITE# 784809
GERMANTOWN

W172N11083
DIVISION ROAD,
GERMANTOWN, WI 53022

DRAWN BY:	BJC
CHECKED BY:	EW
DATE:	10/25/22
PROJECT #:	10-079

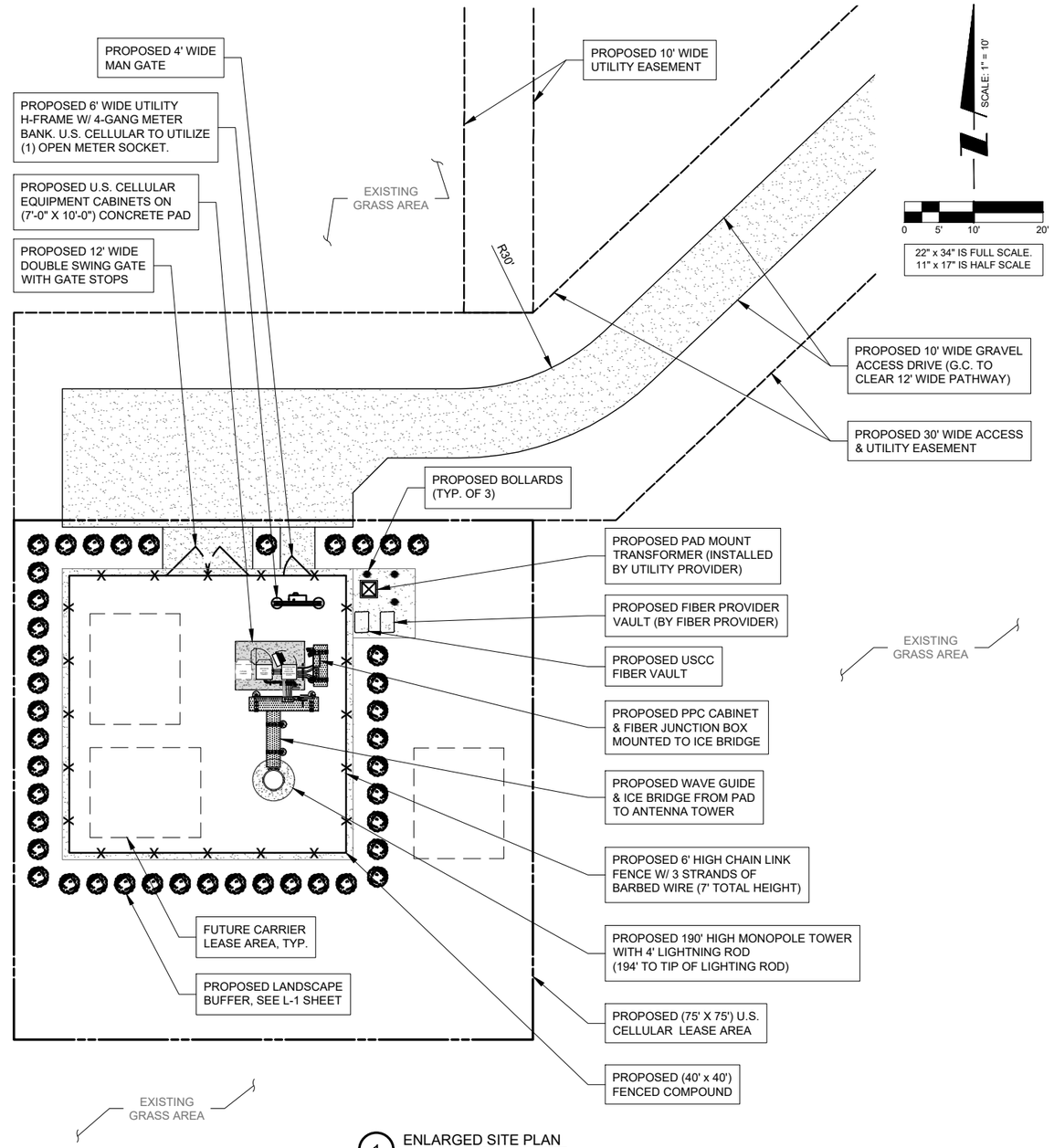
SHEET TITLE
LOCATION PLAN

SHEET NUMBER
LP



NOTE:
TOWER FOUNDATION DIAMETER
PENDING FINAL TOWER DESIGN

2 SITE DIMENSION PLAN
SCALE: 1" = 10'



1 ENLARGED SITE PLAN
SCALE: 1" = 10'

PAVEMENT MATERIAL

ACCESS ROAD + GRAVEL WALKWAY (HATCHED)

310 S.Y.
FINISH AGGREGATE 4" MIN. OF 3/4" (WELL GRADED) CRUSHED AGGREGATE BASE COURSE, 6" MIN. OF 3" BREAKER RUN AGGREGATE BASE COURSE, WOVEN MIRAFI HP270 OR EQUAL

FENCED COMPOUND + GRAVEL UTILITY AREA

208 S.Y.
3" MIN. OF 3/4" CRUSHED AGGREGATE WITHOUT FINES, 4 OZ. SPUNBOUNDED WEED BARRIER FABRIC, 6" MIN. OF 3/4" CRUSHED AGGREGATE W/ FINES, 18" MIN. SELECT FILL IN 8" LIFTS

DIGGERS HOTLINE
"Call 3 Work Days Before You Dig!"
TOLL FREE 1-800-242-8511
MILW. AREA (414) 259-1181
TDD 1-800-542-2289

OTHER UTILITIES NOT INCLUDED IN DIGGERS HOTLINE AND LOCAL UTILITY DISTRICTS AND COMPANIES SHALL ALSO BE NOTIFIED

NOTE:

1. THE CONTRACTOR SHALL INCLUDE AS PART OF THE BID, THE COST OF REMOVAL OF ANY SURFACE VEGETATION AND ORGANIC SOILS OR OTHER DELETERIOUS MATERIALS AND THE REPLACEMENT WITH ENGINEERED BACKFILL FOR THE AGGREGATE ACCESS DRIVE AND LEASE SITE, IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE GEOTECHNICAL REPORT.
2. CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE TO EXISTING PAVEMENT. CONTRACTOR SHALL PHOTOGRAPH AND VIDEOTAPE EXISTING PAVEMENT PRIOR TO CONSTRUCTION. ANY DAMAGE CAUSED DURING CONSTRUCTION SHALL BE REPLACED TO EXISTING OR BETTER CONDITION AT NO ADDITIONAL COST.
4. BEFORE AND DURING CONSTRUCTION, THE CONTRACTOR SHALL PROVIDE ADEQUATE EROSION CONTROL AS NECESSARY IN THE FORM OF SILT FENCES FOR THE SITE AND BALES AROUND ANY EXISTING MANHOLES, INLETS, OR CATCHBASINS SUSCEPTIBLE TO EROSION. EROSION CONTROL MEASURES SHALL BE PERIODICALLY INSPECTED TO ENSURE PROPER FUNCTION. EROSION CONTROL SHALL BE REMOVED UPON COMPLETION OF WORK.
5. THE CONTRACTOR WILL, UPON BECOMING AWARE OF SUBSURFACE OR LATENT PHYSICAL CONDITIONS DIFFERING FROM THOSE DISCLOSED BY THE ORIGINAL SOIL INVESTIGATION WORK, PROMPTLY NOTIFY THE OWNER VERBALLY AND IN WRITING, AS TO THE NATURE OF THE DIFFERING CONDITIONS. NO CLAIM BY THE CONTRACTOR FOR ANY CONDITIONS DIFFERING FROM THOSE ANTICIPATED IN THE PLANS AND SPECIFICATIONS AND DISCLOSED BY THE SOIL STUDIES WILL BE ALLOWED UNLESS THE CONTRACTOR HAS SO NOTIFIED THE OWNER, VERBALLY AND IN WRITING, AS REQUIRED ABOVE, OF SUCH DIFFERING SUBSURFACE CONDITIONS.
6. CONTRACTOR TO PROVIDE APPROXIMATE 50'X50' STAGING AREA AND TEMPORARY ROAD. CONTRACTOR SHALL COORDINATE WITH ANTENNA CONTRACTOR, A STAGING AREA AND TEMPORARY ROAD THAT IS ACCEPTABLE TO THE OWNER. STAGING AREA AND TEMPORARY ROAD SHALL BE RESTORED TO EXISTING CONDITIONS AS NECESSARY UPON COMPLETION OF THE PROJECT.

uscellular
8410 W. BRYN MAWR AVE.
CHICAGO, IL 60631
POC: STEVE HATMAKER

TERRA CONSULTING GROUP, LTD.
600 BUSSE HIGHWAY
PARK RIDGE, IL 60068
PH: 847-698-6400
FAX: 847-698-6401

REVISIONS

NO.	DESCRIPTION	DATE	BY
A	ISSUED FOR REVIEW	11/04/22	BJC
B	REVISED PER USCC COMMENTS	12/19/22	JGL
0	ISSUED FOR CONSTRUCTION	12/20/22	EW
1	ADDED LANDSCAPE BUFFER	01/11/23	EW

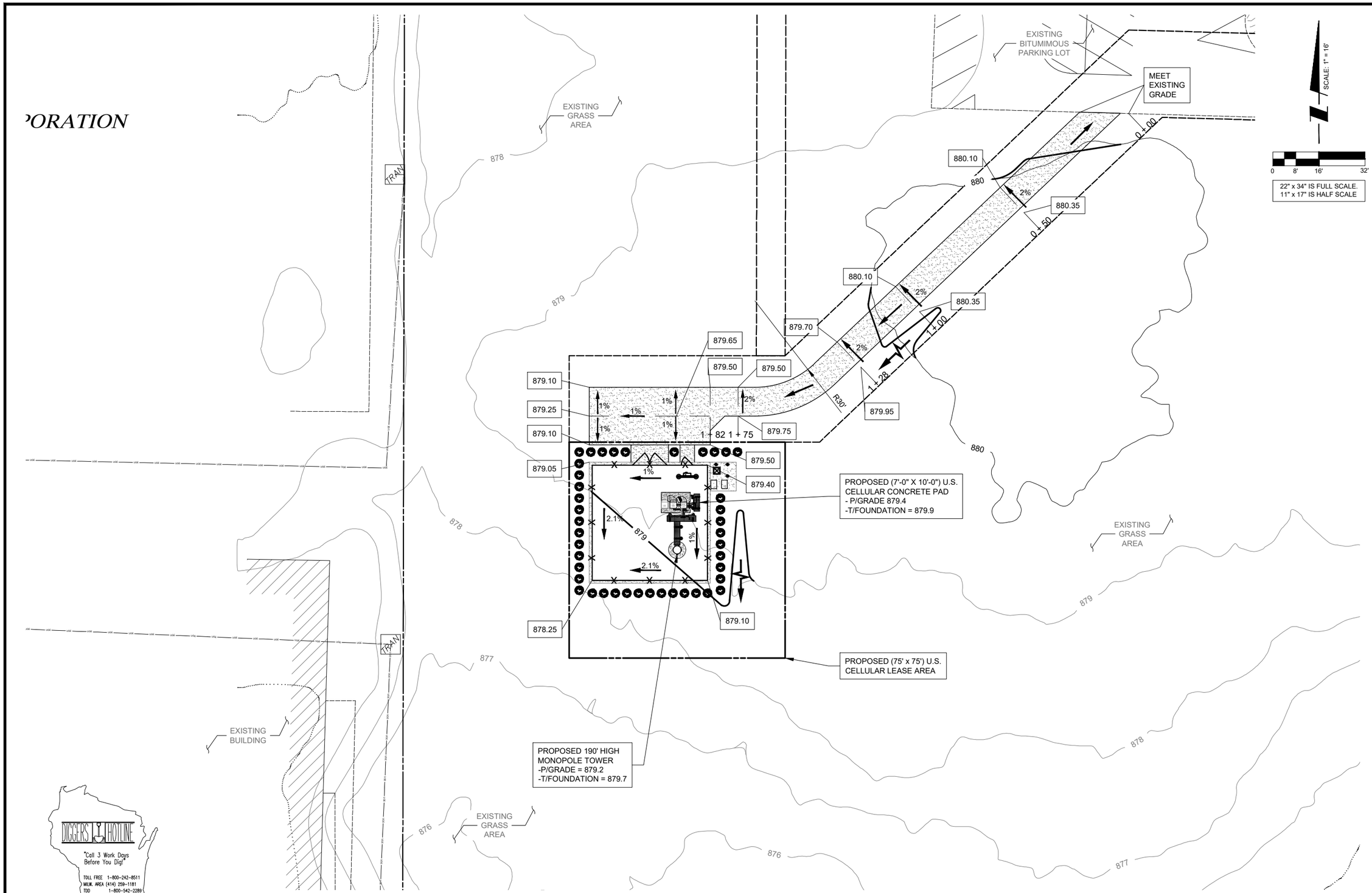
SITE# 784809
GERMANTOWN

W172N11083
DIVISION ROAD,
GERMANTOWN, WI 53022

DRAWN BY:	BJC
CHECKED BY:	EW
DATE:	10/25/22
PROJECT #:	10-079

SHEET TITLE
ENLARGED SITE PLAN

SHEET NUMBER
C-1



DIGGERS HOTLINE
"Call 3 Work Days Before You Dig!"
TOLL FREE 1-800-242-8511
MILW. AREA (414) 259-1181
TDD 1-800-542-2289

OTHER UTILITIES NOT INCLUDED IN DIGGERS HOTLINE AND LOCAL UTILITY DISTRICTS AND COMPANIES SHALL ALSO BE NOTIFIED

1 SITE GRADING PLAN
SCALE: 1" = 16'

uscellular
8410 W. BRYN MAWR AVE.
CHICAGO, IL 60631
POC: STEVE HATMAKER

TERRA CONSULTING GROUP, LTD.
600 BUSSE HIGHWAY
PARK RIDGE, IL 60068
PH: 847-698-6400
FAX: 847-698-6401

REVISIONS

NO.	DESCRIPTION	DATE	BY
A	ISSUED FOR REVIEW	11/04/22	BJC
B	REVISED PER USCC COMMENTS	12/19/22	JGL
0	ISSUED FOR CONSTRUCTION	12/20/22	EW
1	ADDED LANDSCAPE BUFFER	01/11/23	EW

SITE# 784809
GERMANTOWN

W172N11083
DIVISION ROAD,
GERMANTOWN, WI 53022

DRAWN BY:	BJC
CHECKED BY:	EW
DATE:	10/25/22
PROJECT #:	10-079

SHEET TITLE
SITE GRADING PLAN

SHEET NUMBER
C-2

CONCRETE AND REINFORCING NOTES:

1. ALL CONCRETE CONSTRUCTION SHALL BE IN ACCORDANCE WITH LOCAL BUILDING CODE REQUIREMENTS AND MOST CURRENT VERSION OF ACI STANDARDS.

2. ALL CONCRETE UNLESS SPECIFICALLY NOTED SHALL BE NORMAL WEIGHT(145 PCF) AND SHALL ACHIEVE A 28-DAY COMPRESSIVE STRENGTH (fc) OF 4,000 PSI. EXPOSED EXTERIOR CONCRETE TO BE AIR ENTRAINED WITH 6% +/- 1 % AIR CONTENT. CONTRACTOR TO PERFORM CONCRETE SLUMP TEST (4" MAX SLUMP). NO WATER TO BE ADDED AFTER SLUMP HAS BEEN MEASURED.

3. ALL CONCRETE REINFORCING SHALL BE ASTM A615 GRADE 60 AND PLACED IN ACCORDANCE WITH ACI STANDARDS

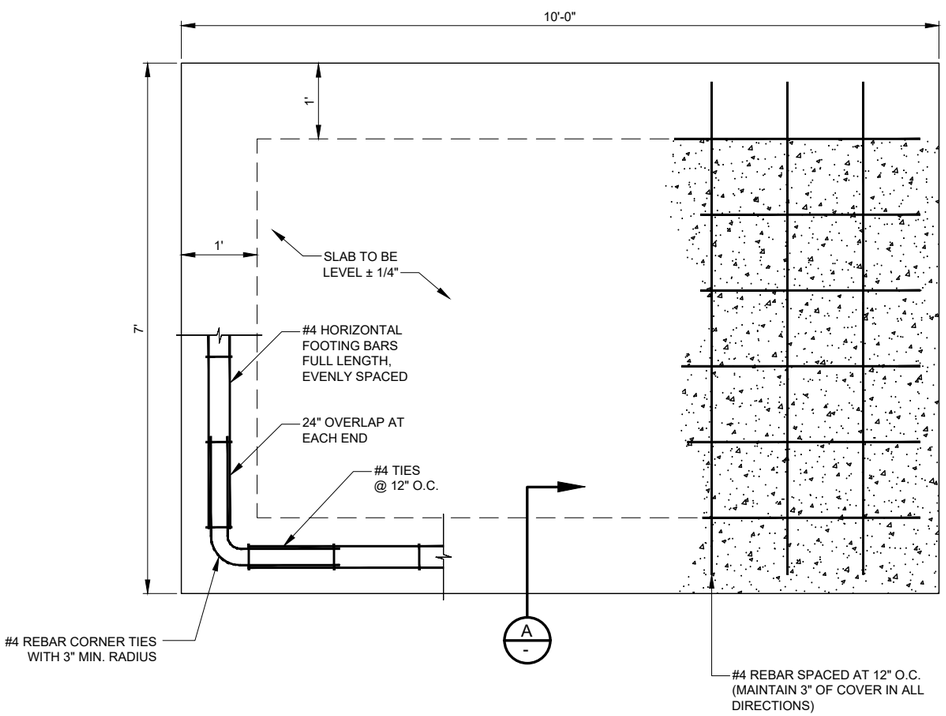
4. REMOVE ALL ORGANIC MATERIAL, SOFT AND/OR UNSUITABLE SOILS WITHIN FOUNDATION FOOTPRINT. DO NOT UTILIZE THESE SOILS FOR BACKFILL.

5. CONSULT GEOTECHNICAL INVESTIGATION REPORT FOR ANTICIPATED SOIL CONDITIONS AND CONSTRUCTION CONSIDERATIONS.

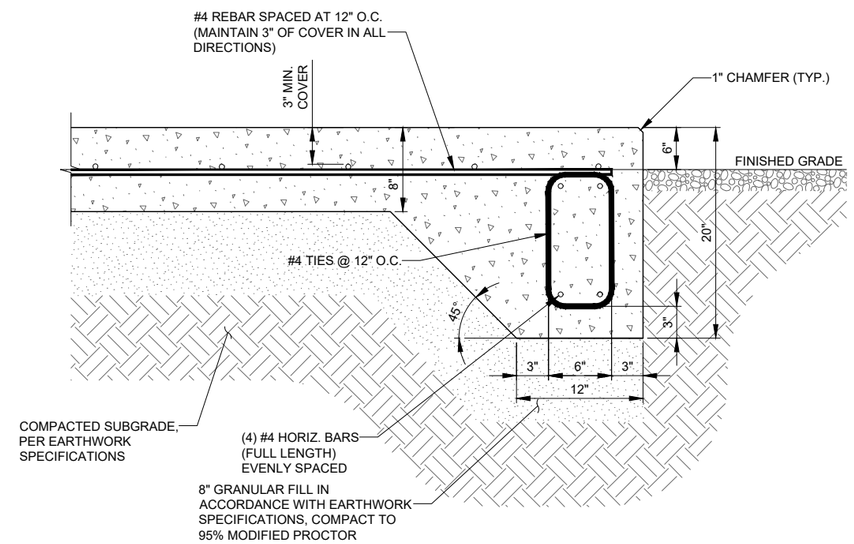
6. FOUNDATION DESIGN BASED ON A PRESUMPTIVE SOIL BEARING CAPACITY OF 2000 PSF AND MAX. PLASTICITY INDEX OF 20, CONTRACTOR TO CONFIRM BEARING SOILS MEET THESE CONDITIONS BEFORE INSTALLATION.

7. SOILS NOT MEETING THE DESIGN BEARING STRENGTH SHALL BE UNDERCUT AND REPLACED WITH 3-INCH BREAKER STONE. UNDERCUT ONE FOOT ON EACH SIDE OF THE FOOTING FOR EVERY FOOT IN DEPTH. CONSULT WITH ENGINEER FOR REQUIRED UNDERCUT DEPTH.

8. CONTRACTOR TO ENSURE POSITIVE DRAINAGE FROM ALL FOUNDATIONS.



1 EQUIPMENT FOUNDATION PLAN
N.T.S.



A TYPICAL FOUNDATION SECTION
N.T.S.

uscellular
8410 W. BRYN MAWR AVE.
CHICAGO, IL 60631
POC: STEVE HATMAKER

TERRA CONSULTING GROUP, LTD.
600 BUSSE HIGHWAY
PARK RIDGE, IL 60068
PH: 847-698-6400
FAX: 847-698-6401

REVISIONS

NO.	DESCRIPTION	DATE	BY
A	ISSUED FOR REVIEW	11/04/22	BJC
B	REVISED PER USCC COMMENTS	12/19/22	JGL
0	ISSUED FOR CONSTRUCTION	12/20/22	EW
1	ADDED LANDSCAPE BUFFER	01/11/23	EW

SITE# 784809
GERMANTOWN

W172N11083
DIVISION ROAD,
GERMANTOWN, WI 53022

DRAWN BY:	BJC
CHECKED BY:	EW
DATE:	10/25/22
PROJECT #:	10-079

SHEET TITLE
CONCRETE SLAB FOUNDATION PLAN

SHEET NUMBER
C-3

EQUIPMENT KEY NOTES:

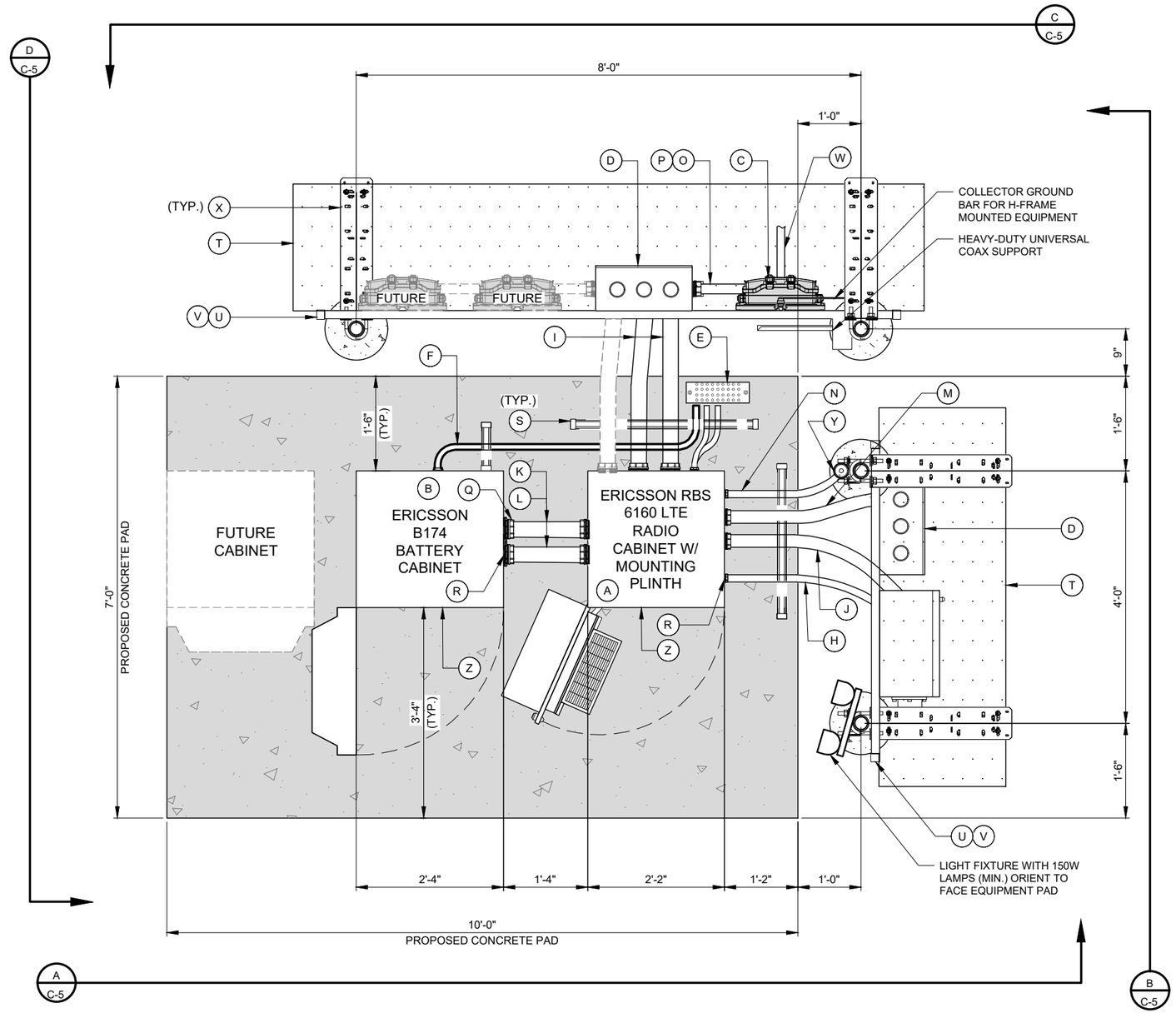
- (A) ERICSSON RBS 6160 EQUIPMENT CABINET WITH MOUNTING PLINTH
- (B) ERICSSON B174 BATTERY CABINET
- (C) RAYCAP SPD RUSDC-6267-PF-48 SECURED TO H-FRAME AT EQUIPMENT PAD
- (D) 12" x 12" x 6" FIBER/POWER JUNCTION BOX SECURED TO UNISTRUT
- (E) MASTER GROUND BAR (MGB) MOUNTED TO CONCRETE PAD ON INSULATORS. MGB SHALL BE BONDED TO THE EQUIPMENT GROUND RING.

CONDUITS:

- (F) 3/4" (1" O.D.) LIQUID-TIGHT FLEXIBLE NON-METALLIC CONDUIT FOR GROUND LEAD BETWEEN CABINET AND MGB (TYP.)
- (G) 1" CONDUIT W/ CAT-5 FOR ALARM TO RBS 6160 CABINET
- (H) 1" (1-1/4" O.D.) LIQUID TIGHT FLEXIBLE METALLC CONDUIT FROM PPC TO RBS 6161 RADIO CABINET FOR ALARM CABLING
- (I) PROPOSED 2-1/2" CONDUIT FOR FIBER & 2-1/2" CONDUIT FOR POWER TO JUNCTION BOX
- (J) PROPOSED 2" (2-3/8" O.D.) LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT FROM PPC TO RBS 6160 RADIO CABINET FOR POWER
- (K) 3" (3.460" O.D.) LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT FROM BATTERY BACKUP CABINET TO EQUIPMENT CABINET PLINTH FOR CAT5. ALARM CABLING AND BATTERY BACKUP CABINET GROUNDING
- (L) 3" (3.460" O.D.) LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT FROM BATTERY BACKUP CABINET TO EQUIPMENT CABINET PLINTH FOR AC POWER
- (M) 2" (2-3/8" O.D.) LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT FROM FIBER JUNCTION BOX TO RBS 6160 RADIO CABINET FOR FIBER OPTIC; LB TO BE INSTALLED ABOVE GRADE FOR TRANSITION FROM PVC TO LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT.
- (N) 1" (1-1/4" O.D.) LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT FROM EQUIPMENT CABINET PLINTH TO UNISTRUT RACK FOR GPS CABLING
- (O) 1-1/2" (1.9" O.D.) LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT FROM JUNCTION BOX TO RAYCAP SPD FOR POWER CABLING (TYP. PER RAYCAP SPD)
- (P) 1-1/4" (1.66" O.D.) LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT FROM JUNCTION BOX TO RAYCAP SPD FOR FIBER CABLING (TYP. PER RAYCAP SPD)
- (Q) LIQUID-TIGHT CONDUIT FITTING (TYP.)
- (R) ROXTEC SEALING SYSTEM (OR APPROVED EQUAL) AT CONDUIT STUB-UP AREA FOR RODENT PROTECTION.
- (S) UNISTRUT CONDUIT TIE DOWN

EQUIPMENT PAD RACK KEY NOTES:

- (T) 2'-0" WIDE ICE BRIDGE, 30' LENGTH PROVIDED
- (U) P-1000T GALV. UNISTRUT OR APPROVED EQUIV.; UNISTRUT TO BE CUT TO LENGTH TO ENSURE PROPER FASTENING TO POST WITHOUT EXCESS
- (V) UNISTRUT END CAP AT EACH END OF UNISTRUT; SITE PRO 1 #: UNICAP OR APPROVED EQUIV.
- (W) HYBRID CABLE; MAINTAIN MINIMUM BEND RADIUS
- (X) HEAVY-DUTY UNIVERSAL COAX SUPPORT BRACKET
- (Y) GPS ANTENNA SECURED TO ICE BRIDGE POST
- (Z) ISOLATION MAT UNDER CABINETS



1 EQUIPMENT CABINET PLAN
N.T.S.

uscellular
8410 W. BRYN MAWR AVE.
CHICAGO, IL 60631
POC: STEVE HATMAKER

TERRA CONSULTING GROUP, LTD.
600 BUSSE HIGHWAY
PARK RIDGE, IL 60068
PH: 847-698-6400
FAX: 847-698-6401

REVISIONS

NO.	DESCRIPTION	DATE	BY
A	ISSUED FOR REVIEW	11/04/22	BJC
B	REVISED PER USCC COMMENTS	12/19/22	JGL
0	ISSUED FOR CONSTRUCTION	12/20/22	EW
1	ADDED LANDSCAPE BUFFER	01/11/23	EW

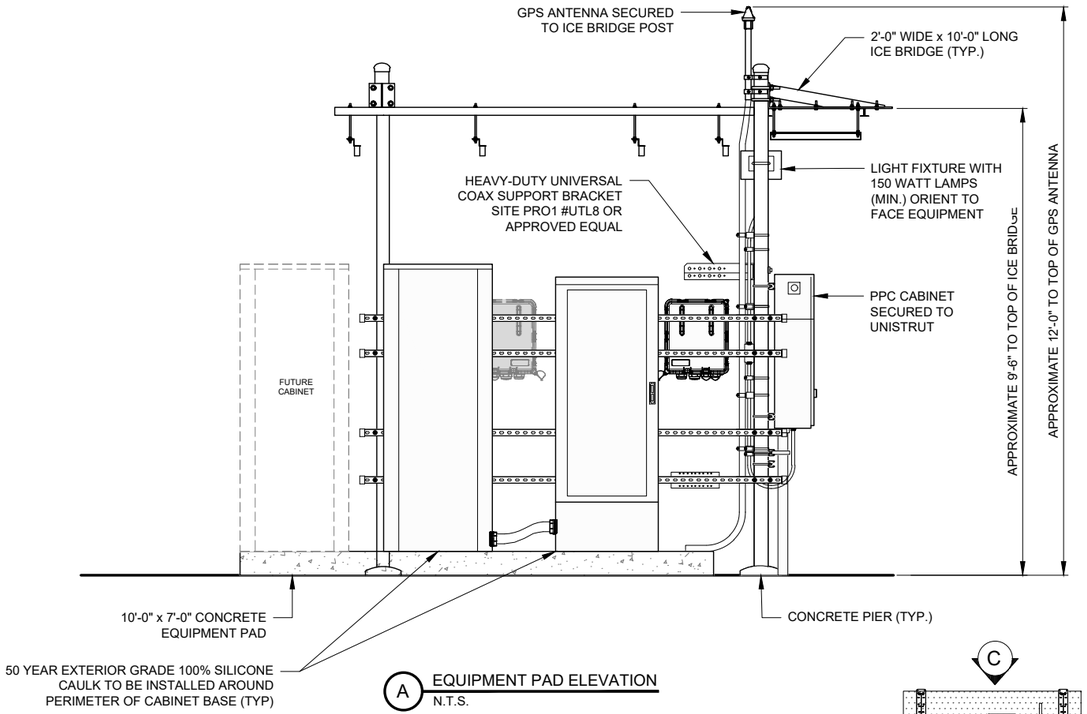
SITE# 784809
GERMANTOWN

W172N11083
DIVISION ROAD,
GERMANTOWN, WI 53022

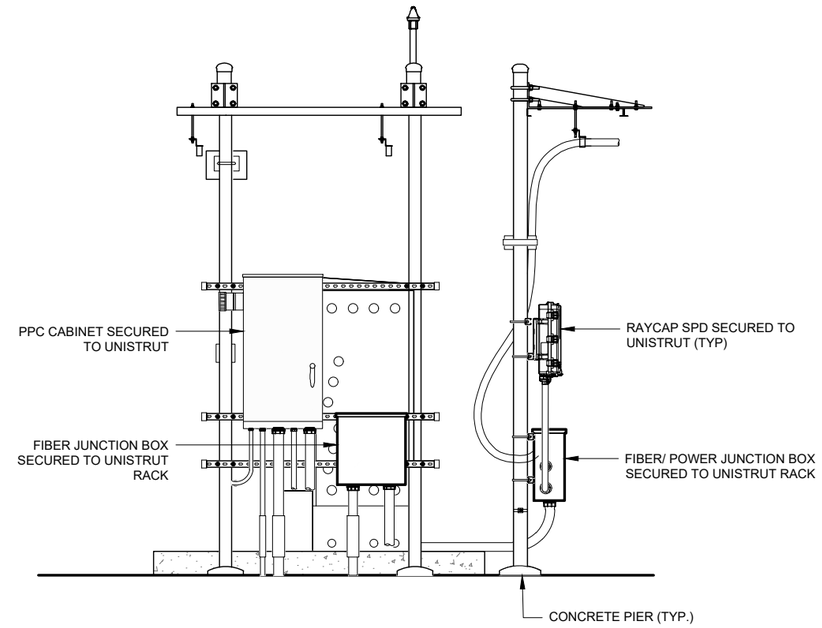
DRAWN BY:	BJC
CHECKED BY:	EW
DATE:	10/25/22
PROJECT #:	10-079

SHEET TITLE
EQUIPMENT CABINET PLAN

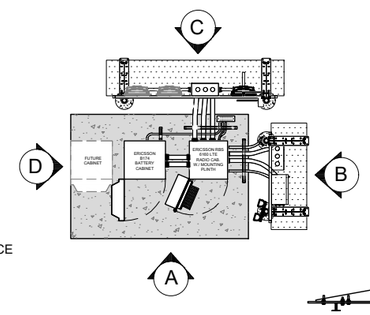
SHEET NUMBER
C-4

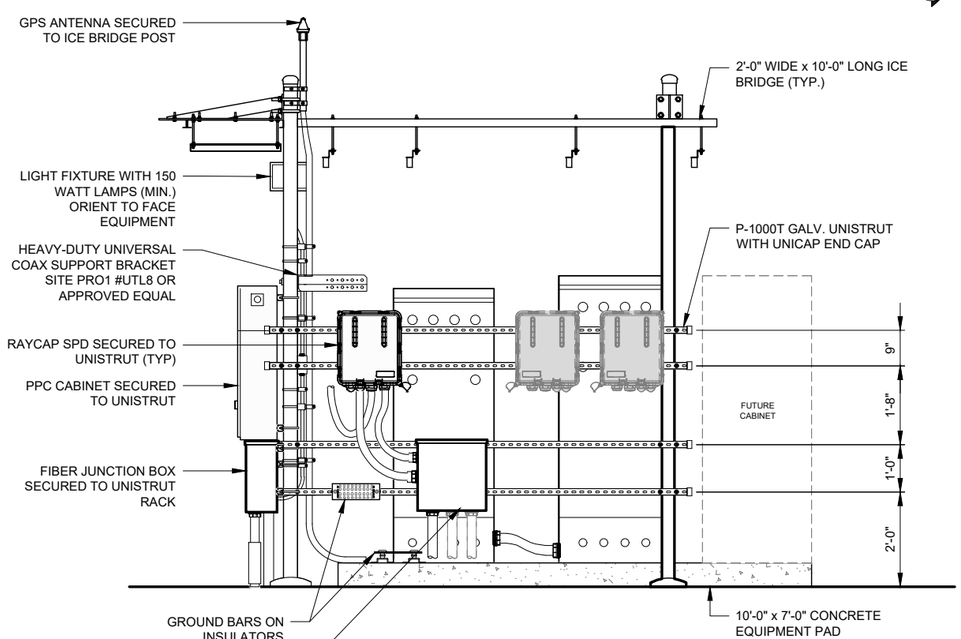


A EQUIPMENT PAD ELEVATION
N.T.S.

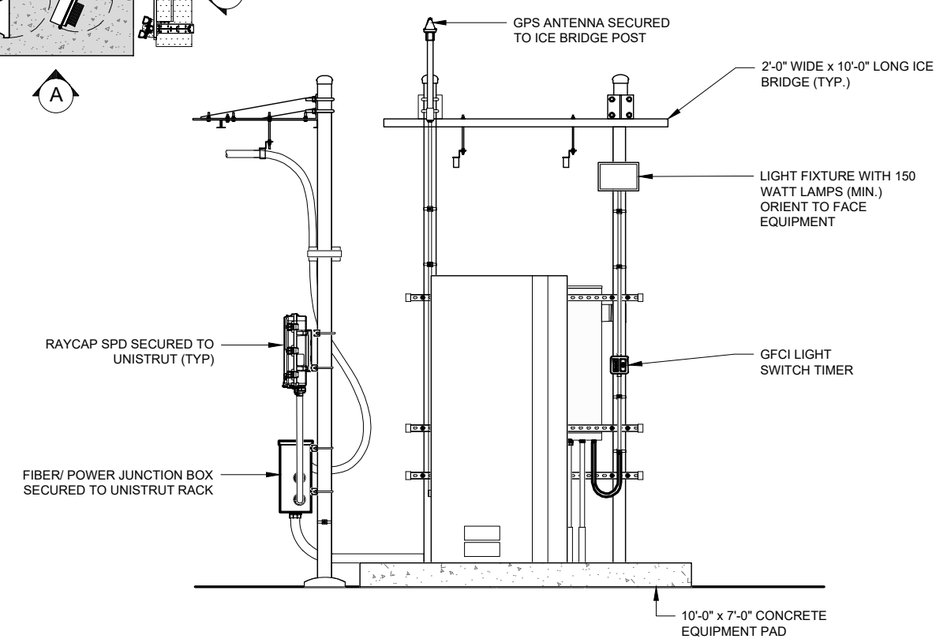


B EQUIPMENT PAD ELEVATION
N.T.S.





C EQUIPMENT PAD ELEVATION
N.T.S.



D EQUIPMENT PAD ELEVATION
N.T.S.

uscellular
8410 W. BRYN MAWR AVE.
CHICAGO, IL 60631
POC: STEVE HATMAKER

TERRA CONSULTING GROUP, LTD.
600 BUSSE HIGHWAY
PARK RIDGE, IL 60068
PH: 847-698-6400
FAX: 847-698-6401

REVISIONS

NO.	DESCRIPTION	DATE	BY
A	ISSUED FOR REVIEW	11/04/22	BJC
B	REVISED PER USCC COMMENTS	12/19/22	JGL
0	ISSUED FOR CONSTRUCTION	12/20/22	EW
1	ADDED LANDSCAPE BUFFER	01/11/23	EW

SITE# 784809
GERMANTOWN

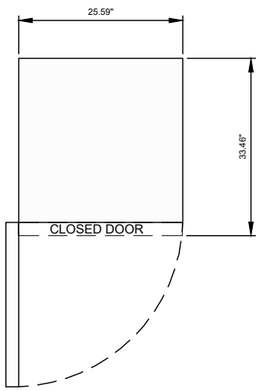
W172N11083
DIVISION ROAD,
GERMANTOWN, WI 53022

DRAWN BY:	BJC
CHECKED BY:	EW
DATE:	10/25/22
PROJECT #:	10-079

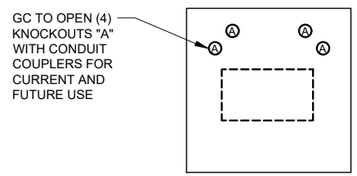
SHEET TITLE
EQUIPMENT PAD ELEVATIONS

SHEET NUMBER
C-5

NOTES:
1. GC TO INSTALL POWER CABLE FROM PPC CABINET TO ENCLOSURE 6160.
2. ERICSSON TO VERIFY AC POWER AT ENCLOSURE PRIOR TO POWERING CABINET.
3. GC TO WIRE AC OUTLET TO PPC AT INITIAL INSTALLATION.
4. ERICSSON 12" BASE/PLINTH, PN# SXK 125 509/1, TO BE INCLUDED IN ERICSSON BOM.



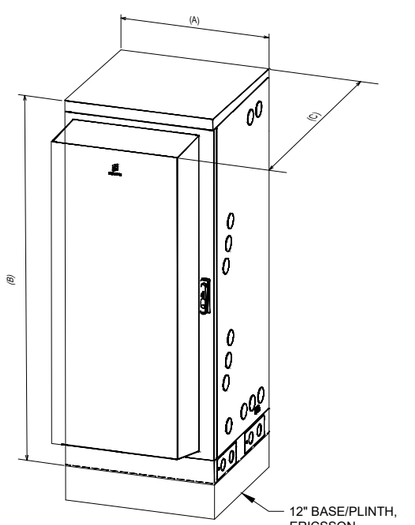
TOP VIEW



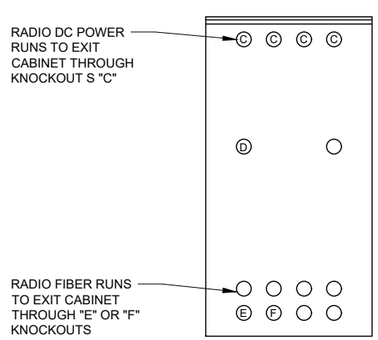
NOTE:
ALL UNUSED OPENINGS MUST BE FILLED/SEALED TO DISCOURAGE RODENTS / PESTS AND ENSURE CABINET ENVIRONMENTAL COOLING & HEATING

BOTTOM VIEW
KNOCKOUT INSTRUCTIONS

Dimensions	
Width (A)	650 mm / 25.5906 in
Height (B)	1450 mm / 57.08661 in (without base frame) 1600 mm / 62.99213 in (without base frame)
Depth (C)	850 mm / 33.4646 in
Weight	
Empty enclosure	176 kg / 388.014 lb



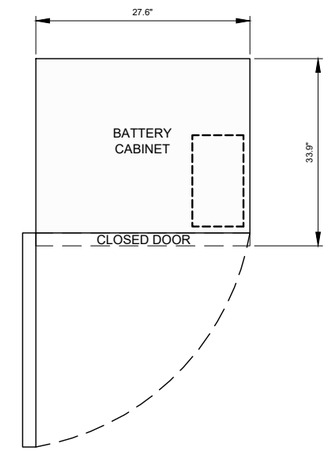
ISOMETRIC VIEW

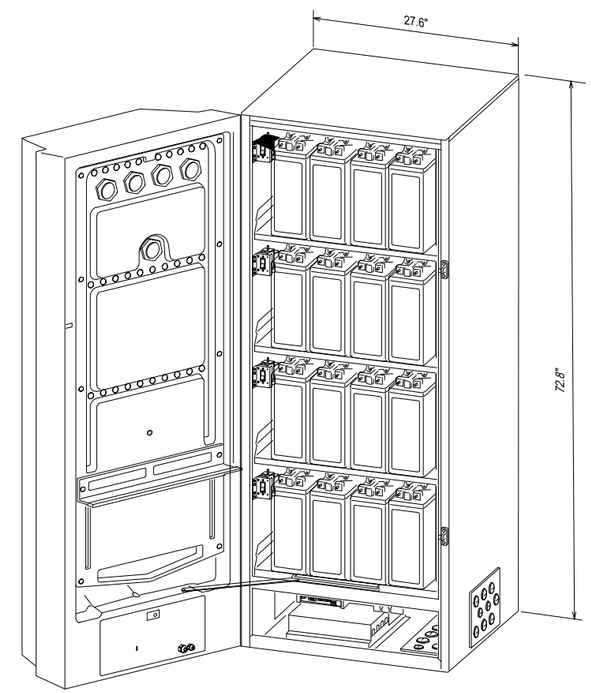


NOTE:
*#10 AWG POWER CABLE TO BE PROVIDED BY USCC TO BE USED FOR RADIO DC POWER JUMPERS (TOWER TOP & BOTTOM)

BACK VIEW
KNOCKOUT INSTRUCTIONS

1 ERICSSON 6160 DETAILS
SCALE: N.T.S.





MANUFACTURER: ERICSSON
MODEL: B174
DIMENSION: 72.8" x 27.6" x 33.9" (H x W x D)
DESCRIPTION: A -48 V/840 AH OUTDOOR BATTERY BACKUP SYSTEM

CLEARANCE REQUIREMENTS:
- FRONT = 28"
- REAR = 8"
- LEFT = 39"
- RIGHT = 10"

NOTE:
1. CONTRACTOR TO INSTALL 1/2" THICK SKIRTBOARD RUBBER MAT BENEATH CABINET; PAD TO HAVE A 1/2" SMALLER FOOTPRINT THAN THE CABINET, PERIMETER OF PAD TO BE SEALED WITH OUTDOOR GRADE 100% SILICONE CAULK.
2. ATTACHED TO PROPOSED HSS PER MANUFACTURER RECOMMENDATIONS.
3. CONTRACTOR TO VERIFY EQUIPMENT REQUIREMENTS WITH ERICSSON PRIOR TO INSTALLATION.

2 ERICSSON B174 DETAILS
SCALE: N.T.S.

uscellular
8410 W. BRYN MAWR AVE.
CHICAGO, IL 60631
POC: STEVE HATMAKER

TERRA CONSULTING GROUP, LTD.
600 BUSSE HIGHWAY
PARK RIDGE, IL 60068
PH: 847-698-6400
FAX: 847-698-6401

REVISIONS

NO.	DESCRIPTION	DATE	BY
A	ISSUED FOR REVIEW	11/04/22	BJC
B	REVISED PER USCC COMMENTS	12/19/22	JGL
0	ISSUED FOR CONSTRUCTION	12/20/22	EW
1	ADDED LANDSCAPE BUFFER	01/11/23	EW

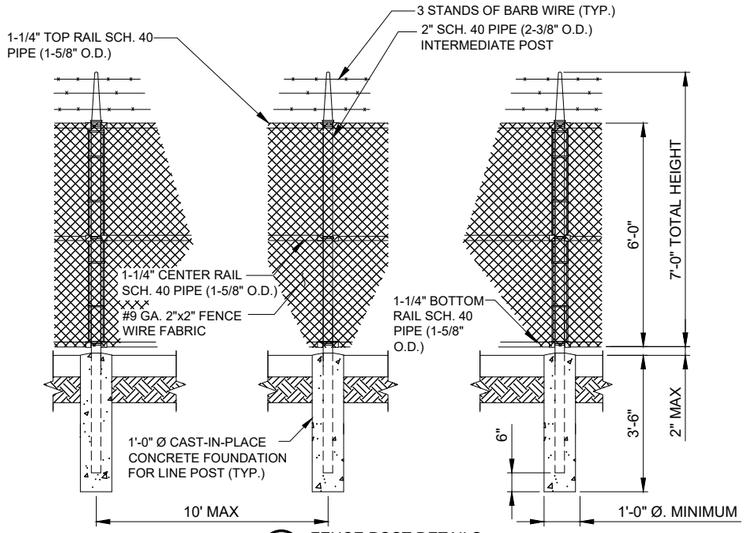
SITE# 784809
GERMANTOWN

W172N11083
DIVISION ROAD,
GERMANTOWN, WI 53022

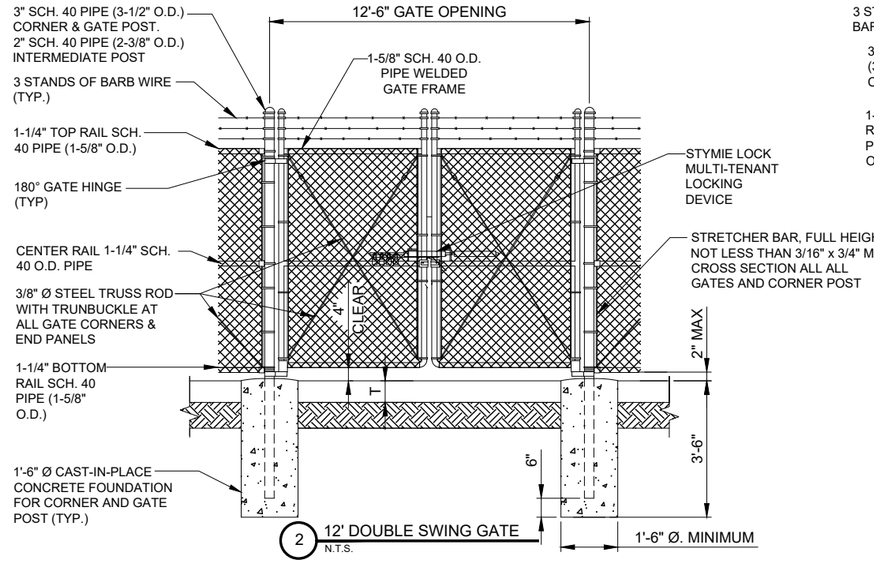
DRAWN BY:	BJC
CHECKED BY:	EW
DATE:	10/25/22
PROJECT #:	10-079

SHEET TITLE
CABINET DETAILS

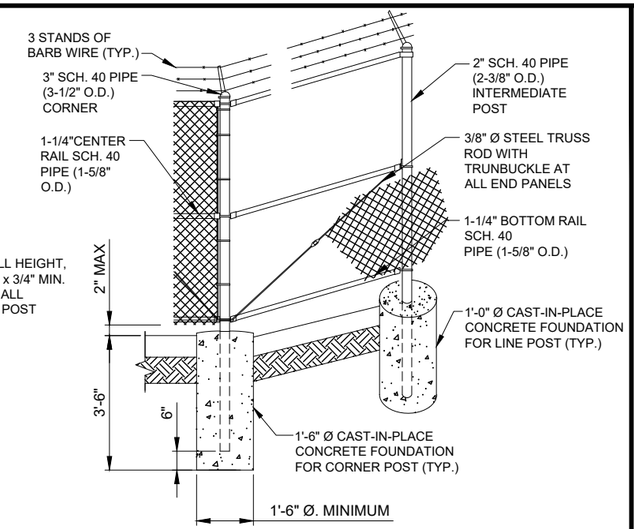
SHEET NUMBER
C-6



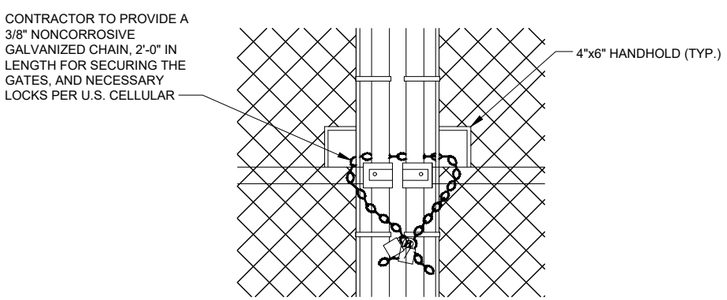
1 FENCE POST DETAILS
N.T.S.



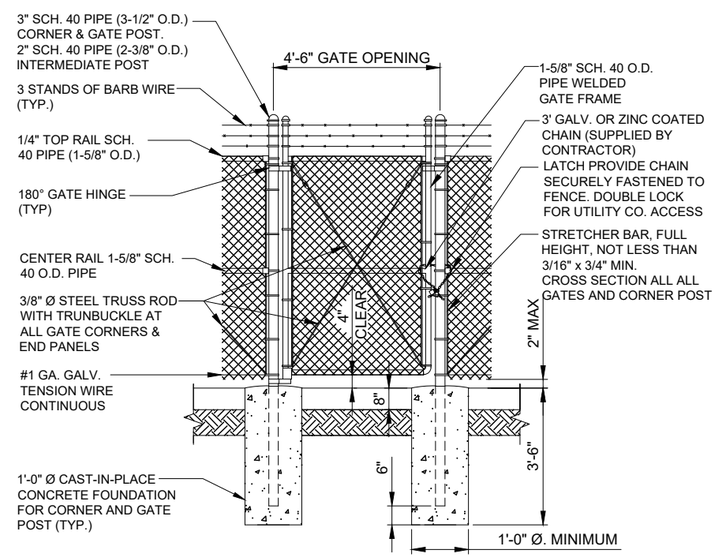
2 12' DOUBLE SWING GATE
N.T.S.



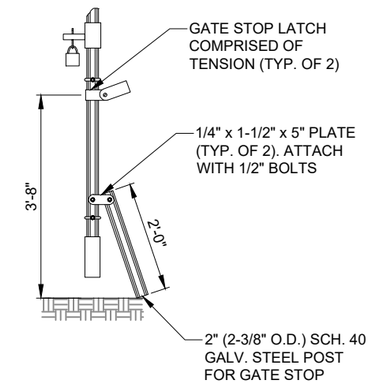
3 CORNER POST DETAIL
N.T.S.



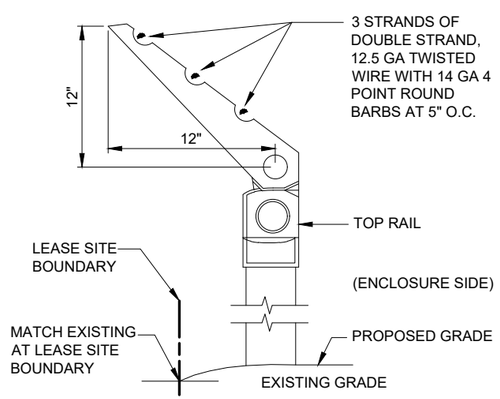
4 GATE HANDHOLE DETAIL
N.T.S.



5 4' WIDE MAN GATE
N.T.S.



6 GATE KEEPER DETAIL
N.T.S.



7 BARBED WIRE DETAIL
N.T.S.

NOTE:
G.C. TO ORDER BROWN PRIVACY SLATS WITH FENCE

FENCING NOTES:
1. ALL STEEL MATERIAL SHALL BE HOT-DIPPED GALVANIZED AND CONFORM TO FEDERAL SPECIFICATION RR-F-191.
2. GATE HINGE BOLTS SHALL HAVE THEIR THREADS PEENED OR WELDED TO PREVENT UNAUTHORIZED REMOVAL.
3. THE FENCE SHALL BE GROUNDED AS SHOWN IN ELECTRICAL DETAILS
4. ALL FENCING AND RELATED ASSEMBLIES SHALL BE GALVANIZED ZINC FINISH (BARB WIRE-ASTM A585 FABRIC-ASTM A392-84 FRAME WORK-ASTM F669-81)
5. 2. ALL CONCRETE FOOTINGS SHALL BE 6.1 BAG MIX 3000 PSI CONCRETE
6. ALL CORNER POST SHALL HAVE BARB WIRE/ ARMS LEANING OUT.
7. ALL GATE FABRIC, POSTS AND HARDWARE SHALL HAVE A GALVANIZED FINISH CONFORMING TO ASTM A153 OR 120/123

GENERAL NOTES

1) G.C. IS RESPONSIBLE TO PAY AND SCHEDULE THIRD PARTY INSPECTIONS FOR BOTH TOWER AND BUILDING FOUNDATIONS. CAPITAL TELECOM GETS COPIES AT CLOSE OUT.

COPIES OF THE REPORT ARE ISSUED TO THE CONTRACTOR FOR CONVENIENCE ONLY. THE REPORT IS NOT A PART OF THE CONTRACT DOCUMENTS. NEITHER THE OWNER NOR THE ENGINEER/ARCHITECT GUARANTEE THE ACCURACY OR VALIDITY OF THE DATA CONTAINED THEREIN, NOR DO THEY ASSUME ANY RESPONSIBILITY FOR THE CONTRACTOR'S USE OR INTERPRETATION OF THE DATA CONTAINED THEREIN.

GEOTEXTILE PARAMETERS

PROPERTY	MINIMUM VALUE (a)	TEST METHOD
GRAB STRENGTH	180 LBS.	ASTM D-4632-91
PUNCTURE STRENGTH	75 LBS.	ASTM D-4833-88
BURST STRENGTH	290 LBS.	ASTM D-3786
TRAPEZOIDAL TEAR	50 LBS.	ASTM D-4571-87

(a) ALL VALUES REPRESENT MINIMUM ROLL VALUES

NOTES:
THE FABRIC SHOULD BE PLACED IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS. INTERSECTIONS OF SHEETS MUST BE SEWN OR SUFFICIENTLY OVERLAPPED (AT LEAST 24 INCHES) OR AS SPECIFIED BY THE MANUFACTURER). THE GEOTEXTILE SHEETS SHOULD ALSO BE PLACED TAUT TO REDUCE WRINKLES OR FOLDS. CARE MUST BE EXERCISED TO PREVENT PHYSICAL DAMAGE OF THE GEOTEXTILE PRIOR TO, DURING AND AFTER INSTALLATION. UTILITIES SHOULD BE INSTALLED BEFORE PLACING THE FABRIC.

uscellular
8410 W. BRYN MAWR AVE.
CHICAGO, IL 60631
POC: STEVE HATMAKER

TERRA CONSULTING GROUP, LTD.
600 BUSSE HIGHWAY
PARK RIDGE, IL 60068
PH: 847-698-6400
FAX: 847-698-6401

REVISIONS

NO.	DESCRIPTION	DATE	BY
A	ISSUED FOR REVIEW	11/04/22	BJC
B	REVISED PER USCC COMMENTS	12/19/22	JGL
0	ISSUED FOR CONSTRUCTION	12/20/22	EW
1	ADDED LANDSCAPE BUFFER	01/11/23	EW

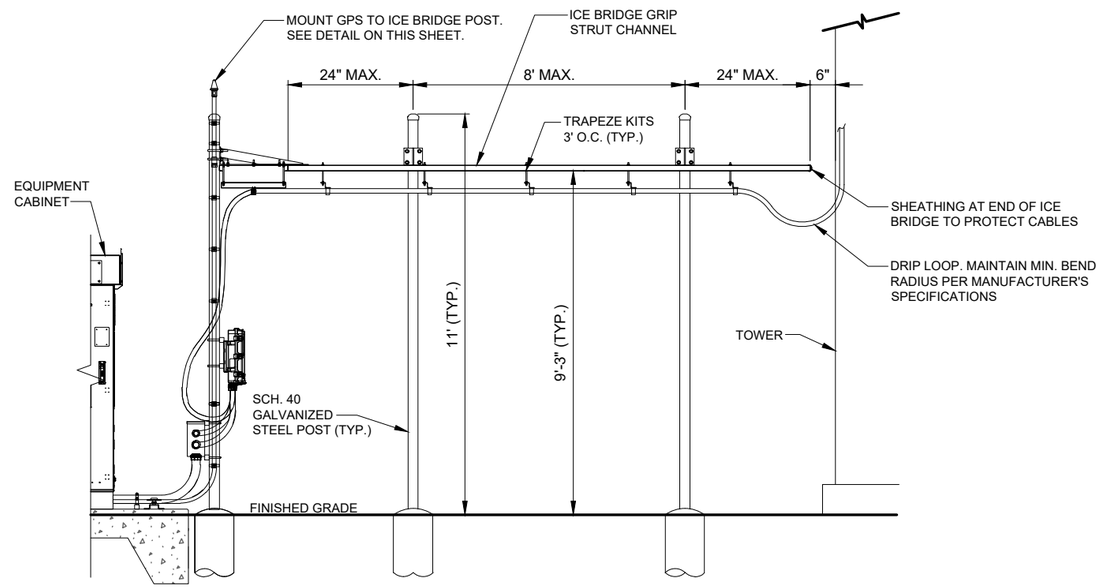
SITE# 784809
GERMANTOWN

W172N11083
DIVISION ROAD,
GERMANTOWN, WI 53022

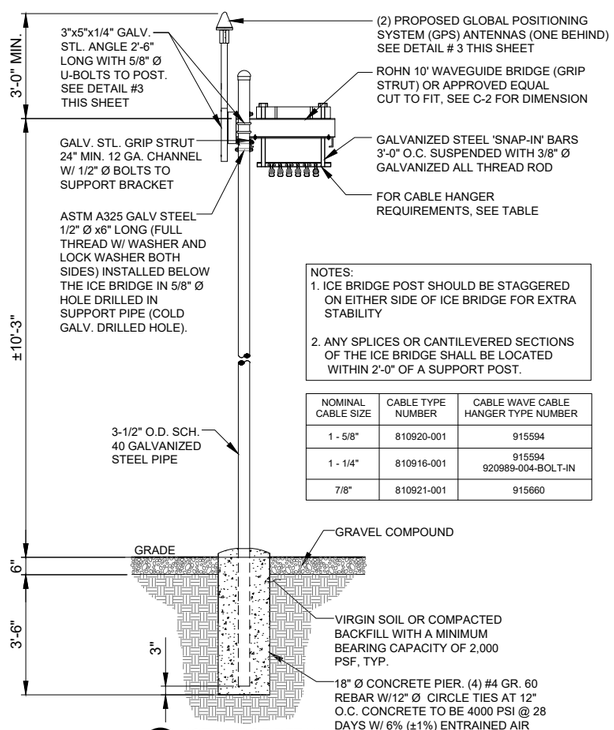
DRAWN BY:	BJC
CHECKED BY:	EW
DATE:	10/25/22
PROJECT #:	10-079

SHEET TITLE
FENCE DETAILS

SHEET NUMBER
C-7



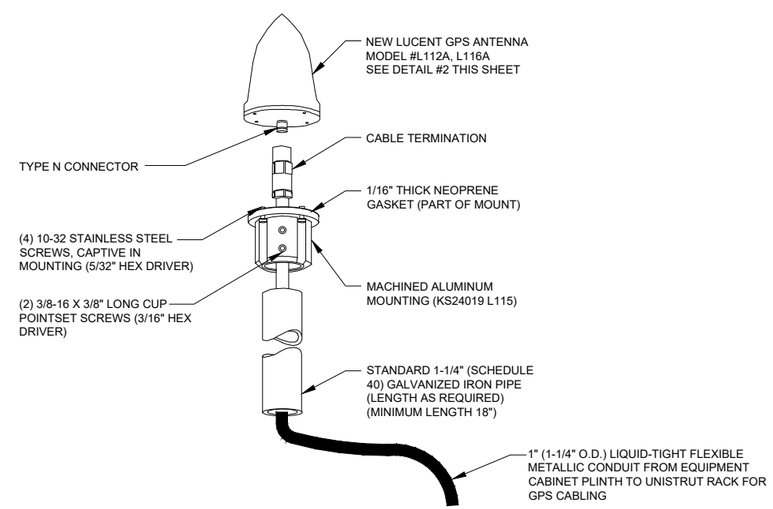
1 ICE BRIDGE INSTALLATION DETAIL
N.T.S.



NOTES:
1. ICE BRIDGE POST SHOULD BE STAGGERED ON EITHER SIDE OF ICE BRIDGE FOR EXTRA STABILITY
2. ANY SPLICES OR CANTILEVERED SECTIONS OF THE ICE BRIDGE SHALL BE LOCATED WITHIN 2'-0" OF A SUPPORT POST.

NOMINAL CABLE SIZE	CABLE TYPE NUMBER	CABLE WAVE CABLE HANGER TYPE NUMBER
1 - 5/8"	810920-001	915594
1 - 1/4"	810916-001	915594 920989-004-BOLT-IN
7/8"	810921-001	915660

2 ICE BRIDGE DETAIL
N.T.S.



3 TYPICAL GPS DETAIL
N.T.S.

uscellular
8410 W. BRYN MAWR AVE.
CHICAGO, IL 60631
POC: STEVE HATMAKER

TERRA CONSULTING GROUP, LTD.
600 BUSSE HIGHWAY
PARK RIDGE, IL 60068
PH: 847-698-6400
FAX: 847-698-6401

REVISIONS

NO.	DESCRIPTION	DATE	BY
A	ISSUED FOR REVIEW	11/04/22	BJC
B	REVISED PER USCC COMMENTS	12/19/22	JGL
0	ISSUED FOR CONSTRUCTION	12/20/22	EW
1	ADDED LANDSCAPE BUFFER	01/11/23	EW

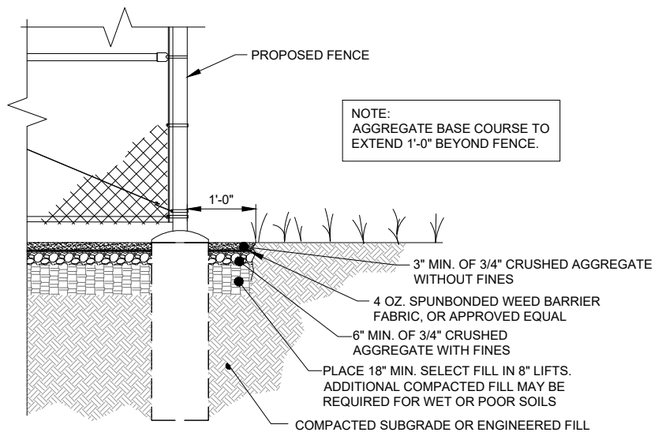
SITE# 784809
GERMANTOWN

W172N11083
DIVISION ROAD,
GERMANTOWN, WI 53022

DRAWN BY:	BJC
CHECKED BY:	EW
DATE:	10/25/22
PROJECT #:	10-079

SHEET TITLE
SITE DETAILS

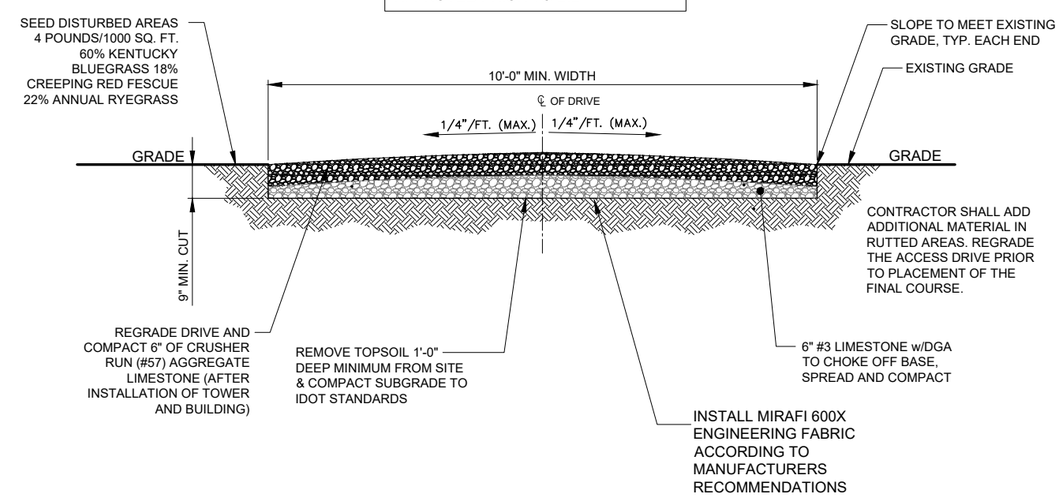
SHEET NUMBER
C-8



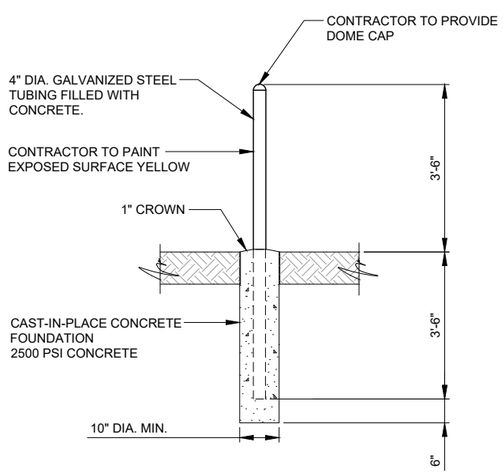
1 AGGREGATE CROSS-SECTION
N.T.S.

NOTE:
G.C. TO CLEAR 12' WIDE PATH FOR GRAVEL ACCESS DRIVE

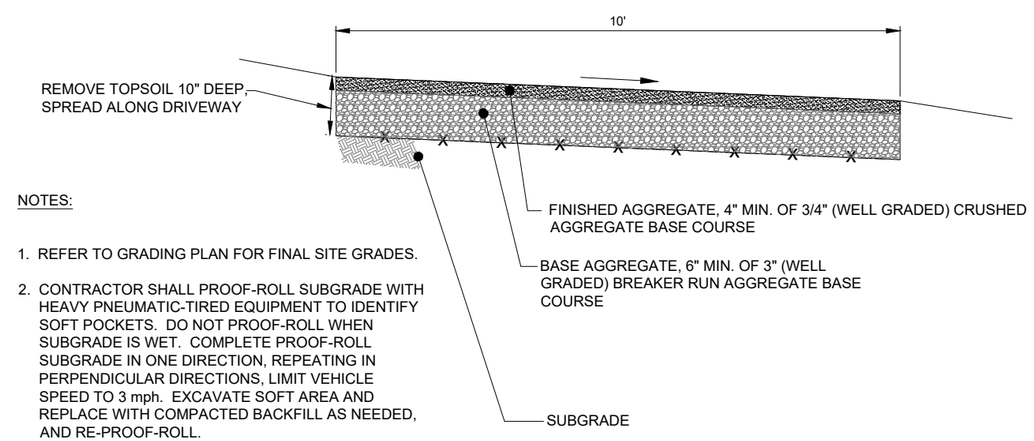
NOTE:
ANY VARIANCE FROM THIS ROADWAY DESIGN MUST BE SUBMITTED AND APPROVED PRIOR TO BID



3 GRAVEL ROAD SECTION - CROWN
SCALE: N.T.S



2 BOLLARD DETAIL
N.T.S.



NOTES:

1. REFER TO GRADING PLAN FOR FINAL SITE GRADES.
2. CONTRACTOR SHALL PROOF-ROLL SUBGRADE WITH HEAVY PNEUMATIC-TIRED EQUIPMENT TO IDENTIFY SOFT POCKETS. DO NOT PROOF-ROLL WHEN SUBGRADE IS WET. COMPLETE PROOF-ROLL SUBGRADE IN ONE DIRECTION, REPEATING IN PERPENDICULAR DIRECTIONS, LIMIT VEHICLE SPEED TO 3 mph. EXCAVATE SOFT AREA AND REPLACE WITH COMPACTED BACKFILL AS NEEDED, AND RE-PROOF-ROLL.

3 GRAVEL ROAD SECTION - SLOPE
SCALE: N.T.S

uscellular
8410 W. BRYN MAWR AVE.
CHICAGO, IL 60631
POC: STEVE HATMAKER

TERRA CONSULTING GROUP, LTD.
600 BUSSE HIGHWAY
PARK RIDGE, IL 60068
PH: 847-698-6400
FAX: 847-698-6401

REVISIONS

NO.	DESCRIPTION	DATE	BY
A	ISSUED FOR REVIEW	11/04/22	BJC
B	REVISED PER USCC COMMENTS	12/19/22	JGL
0	ISSUED FOR CONSTRUCTION	12/20/22	EW
1	ADDED LANDSCAPE BUFFER	01/11/23	EW

SITE# 784809
GERMANTOWN

W172N11083
DIVISION ROAD,
GERMANTOWN, WI 53022

DRAWN BY:	BJC
CHECKED BY:	EW
DATE:	10/25/22
PROJECT #:	10-079

SHEET TITLE
SITE DETAILS

SHEET NUMBER
C-9

GENERAL LANDSCAPE NOTES

1. PRUNE NEWLY INSTALLED SHRUBS. WORK SHALL BE DONE BY EXPERIENCED PERSONNEL TO THE ACCEPTED HORTICULTURAL AND ARBORICULTURAL STANDARDS. PRUNING SHALL RESULT IN A LOOSE OUTLINE CONFORMING TO THE GENERAL SHAPE OF THE SHRUB TYPE. DO NOT USE HEDGE SHEARS.

2. ALL PLANTING STOCK SHALL BE NURSERY-GROWN IN ACCORDANCE WITH GOOD HORTICULTURAL PRACTICE. PLANTS SHALL BE FREE OF DISEASE, INSECTS EGGS, LARVAE AND DEFECTS SUCH AS KNOTS, SUN-SCALD, INJURIES, ABRASIONS OR DISFIGUREMENT. THEY SHALL HAVE SOUND, HEALTHY VIGOROUS AND UNIFORM GROWTH TYPICAL OF THE SPECIES AND VARIETY, WELL-FORMED, FREE FROM IRREGULARITIES, WITH THE MINIMUM QUALITY AND SIZE CONFORMING TO AMERICAN STANDARD FOR NURSERY STOCK. ABUSE, DAMAGE BY OTHERS, OR UNUSUAL PHENOMENA OR INCIDENTS BEYOND THE

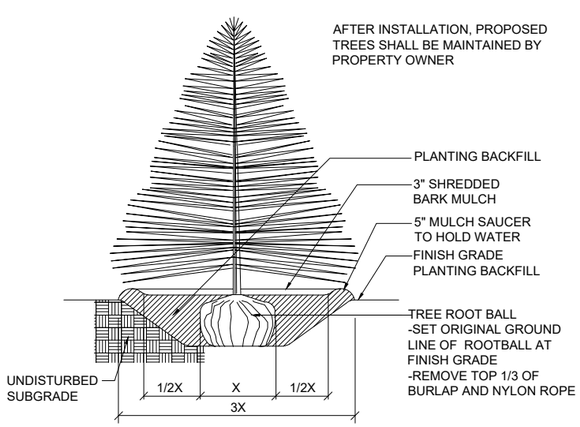
3. GUARENTEE: WARRANT ALL PLANT MATERIAL TO BE TRUE TO BOTANICAL NAME AND SPECIFIED SIZE. AFTER COMPLETION OF PLANTING, ALL PLANT MATERIALS SHALL BE WARRANTED AGAINST DEFECTS, INCLUDING DEATH AND UNSATISFACTORY GROWTH FOR A WARRANTY PERIOD OF ONE YEAR. THE CONTRACTOR WILL NOT BE RESPONSIBLE FOR DEFECTS RESULTING FROM NEGLECT

   CONTRACTORS CONTROL WHICH RESULT FROM NATURAL CAUSES SUCH AS FLOODS STORMS, FIRES OR VANDALISM.
   REPLACEMENTS: DURING THE WARANTY PERIOD, REPLACE ONE TIME, AT NO ADDITIONAL COST TO THE OWNER, PLANT MATERIALS THAT ARE DEAD, OR IN THE OPINION OF THE LANDSCAPE ARCHITECT, IN AN UNHEALTHY OR UNSIGHTLY CONDITION. REJECTED PLANT MATERIALS SHALL BE REMOVED FROM THE SITE AT CONTRACTOR'S EXPENSE. REPLACEMENTS ARE TO BE MADE NO LATER THAN THE SUBSEQUENT PLANTING SEASON. RESTORE AREAS DISTURBED BY REPLACEMENT OPERATIONS.

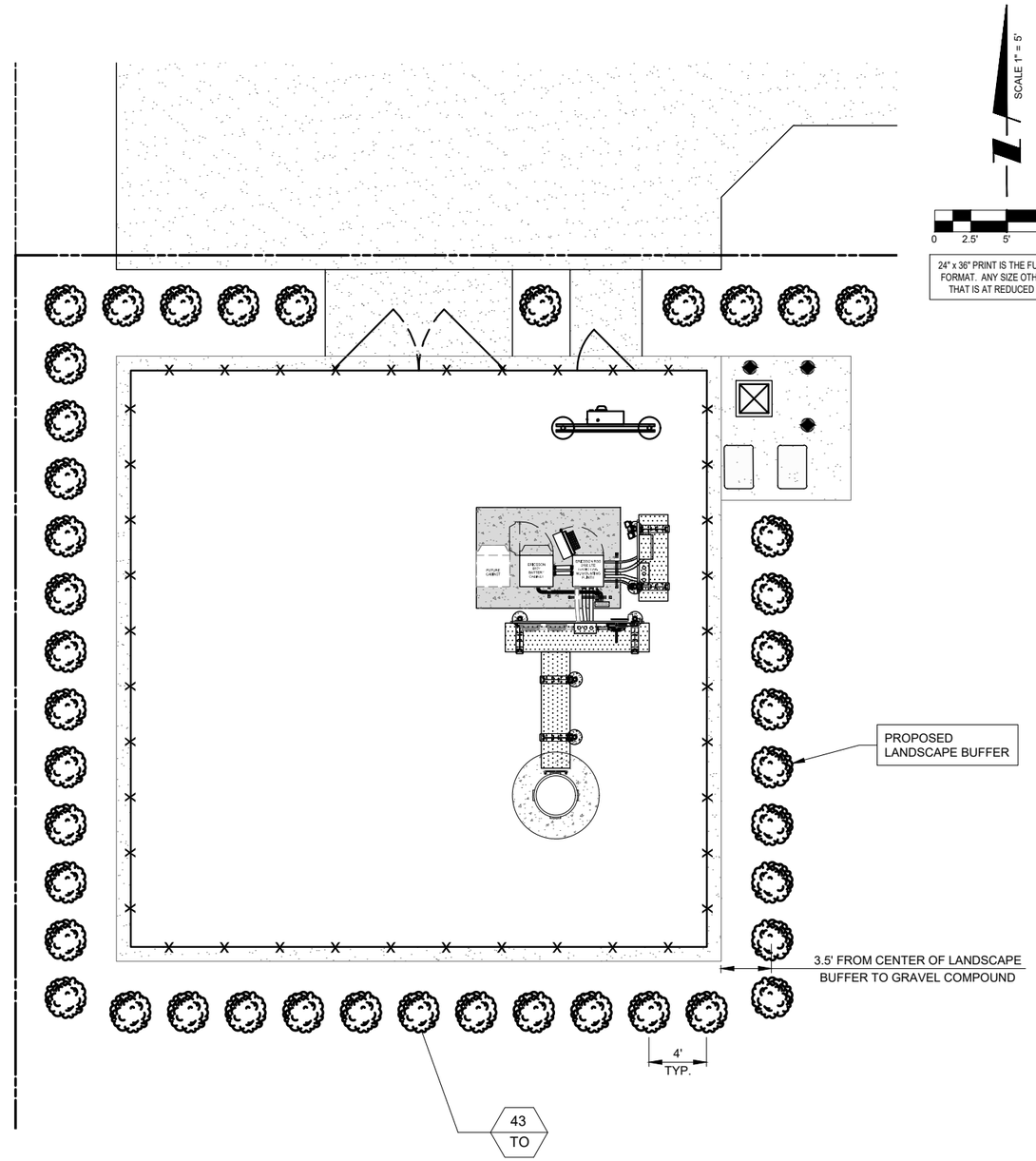
4. MULCHING SHALL BE DONE WITHIN 48 HOURS AFTER PLANTING. MULCH SHRUB BEDS TO A UNIFORM DEPTH OF THREE INCHES. MULCH SHALL BE CLEAN COMPOSTED PINE BARK MULCH FREE OF FOREIGN MATERIAL AND LARGE PIECES OVER THREE INCHES LONG. DO NOT MULCH TREE AND SHRUB PLANTING PITS.

5. TOPSOIL SHALL CONSIST OF FERTILE FRIABLE NATURAL LOAM, CONTAINING A LIBERAL AMOUNT OF HUMUS AND SHALL BE SUBJECT TO INSPECTION AND APPROVAL. IT SHALL BE FREE OF ADMIXTURES OF SUBSOIL AND FREE OF CRAB GRASS, ROOTS, STICKS AND OTHER EXTRANEOUS MATTER, AND SHALL NOT BE USED FOR PLANTING OPERATIONS WHILE IN A FROZEN OR MUDDY CONDITIONS.

6. REPAIR ALL TURF AREAS BY SEEDING. SEEDING INSTALLATION SHALL BE EXECUTED ONLY AFTER ALL FINISH GRADING HAS BEEN COMPLETED. NO SEEDING WORK SHALL BE DONE PAST SEPTEMBER 15, UNLESS APPROVED BY THE OWNER'S REPRESENTATIVE.
   SEED: SEED MIX SHALL MATCH EXISTING TURF, OR BE A 50/50 MIX OF CERTIFIED IMPROVED BLEND OF BLUEGRASS AND CERTIFIED IMPROVED PERENNIAL RYE. MIX SHALL BE APPROVED BY THE OWNER'S REPRESENTATIVE PRIOR TO PLANTING. SEEDING SHALL BE APPLIED AT A MINIMUM RATE OF 120 POUNDS PER ACRE. FUTERRA BLANKET, OR EQUAL, SHALL BE USED FOR EROSION CONTROL MULCH WHERE NECESSARY IN LIEU OF HYDRO MULCH.



2 EVERGREEN TREE PLANTING
SCALE: NTS



1 LANDSCAPE PLAN
SCALE: 1" = 5'

PLANT LIST

SYMBOL	BOTANICAL NAME	COMMON NAME	QUANTITY	SIZE	COMMENTS
TREES					
TO	THUJA OCCIDENTALIS	AMERICAN ARBORVITAE	43	4 FT. HT. MIN.	B & B (BALLED & BURLAPPED)

uscellular
8410 W. BRYN MAWR AVE.
CHICAGO, IL 60631
POC: STEVE HATMAKER

TERRA CONSULTING GROUP, LTD.
600 BUSSE HIGHWAY
PARK RIDGE, IL 60068
PH: 847-698-6400
FAX: 847-698-6401

REVISIONS

NO.	DESCRIPTION	DATE	BY
A	ISSUED FOR REVIEW	11/04/22	BJC
B	REVISED PER USCC COMMENTS	12/19/22	JGL
0	ISSUED FOR CONSTRUCTION	12/20/22	EW
1	ADDED LANDSCAPE BUFFER	01/11/23	EW

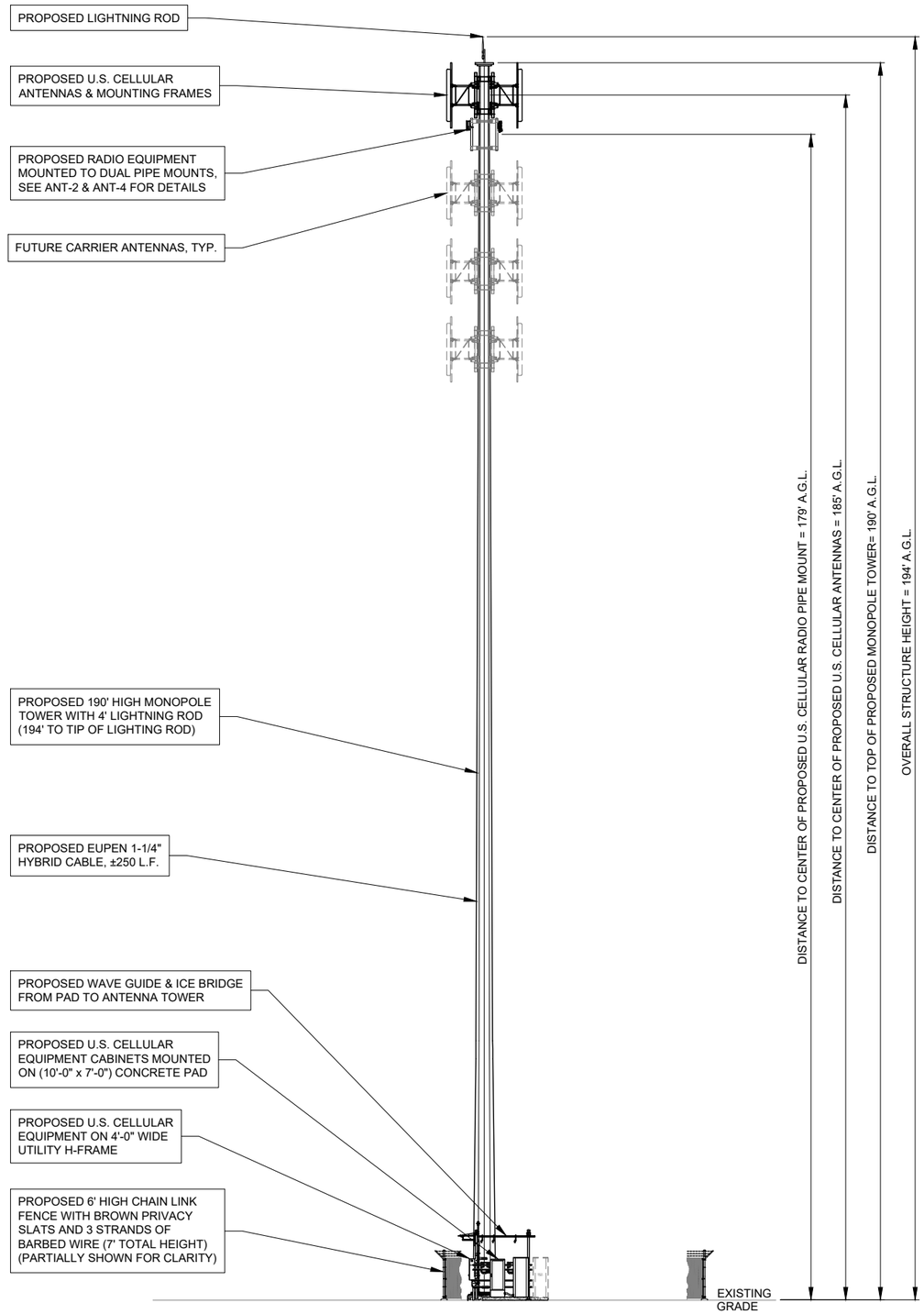
SITE# 784809
GERMANTOWN

W172N11083
DIVISION ROAD,
GERMANTOWN, WI 53022

DRAWN BY:	BJC
CHECKED BY:	EW
DATE:	10/25/22
PROJECT #:	10-079

SHEET TITLE
LANDSCAPE PLAN

SHEET NUMBER
L-1



1 SITE ELEVATION
SCALE: 3/32" = 1'-0"

0 1/2" 1" 2"
SCALE: 3/32" = 1'-0"

22" x 34" PRINT IS THE FULL SCALE FORMAT. ANY SIZE OTHER THAN THAT IS AT REDUCED SCALE.

uscellular™
8410 W. BRYN MAWR AVE.
CHICAGO, IL 60631
POC: STEVE HATMAKER

TERRA CONSULTING GROUP, LTD.
600 BUSSE HIGHWAY
PARK RIDGE, IL 60068
PH: 847-698-6400
FAX: 847-698-6401

REVISIONS

NO.	DESCRIPTION	DATE	BY
A	ISSUED FOR REVIEW	11/04/22	BJC
B	REVISED PER USCC COMMENTS	12/19/22	JGL
0	ISSUED FOR CONSTRUCTION	12/20/22	EW
1	ADDED LANDSCAPE BUFFER	01/11/23	EW

SITE# 784809
GERMANTOWN

W172N11083
DIVISION ROAD,
GERMANTOWN, WI 53022

DRAWN BY:	BJC
CHECKED BY:	EW
DATE:	10/25/22
PROJECT #:	10-079

SHEET TITLE
SITE ELEVATION

SHEET NUMBER
ANT-1

QTY.	EUPEN CABLE LENGTH	LENGTH (FT.)
1	HYBRID CABLE QTY.	-
-	ICE BRIDGE LENGTH	25'
-	BASE OF TOWER TO RAYCAP SPD	178'
	TOTAL LENGTH OF CABLE	203'
-	**CABLE LENGTH TO BE ORDERED**	**250'**

1. TYPICAL CABLE LENGTH = 410' MAX
2. LOW INDUCTANCE CABLE = 550' MAX
3. CABLE LENGTH TO BE ROUNDED UP TO NEAREST 50' LENGTH

QTY.	FIBER JUMPER CABLE INFO (RAYCAP TO RADIO)	LENGTH (FT.)
4	ALPHA	25'
4	BETA	25'
2	GAMMA	25'

1. STANDARD JUMPER LENGTH = 32.8' (10m)

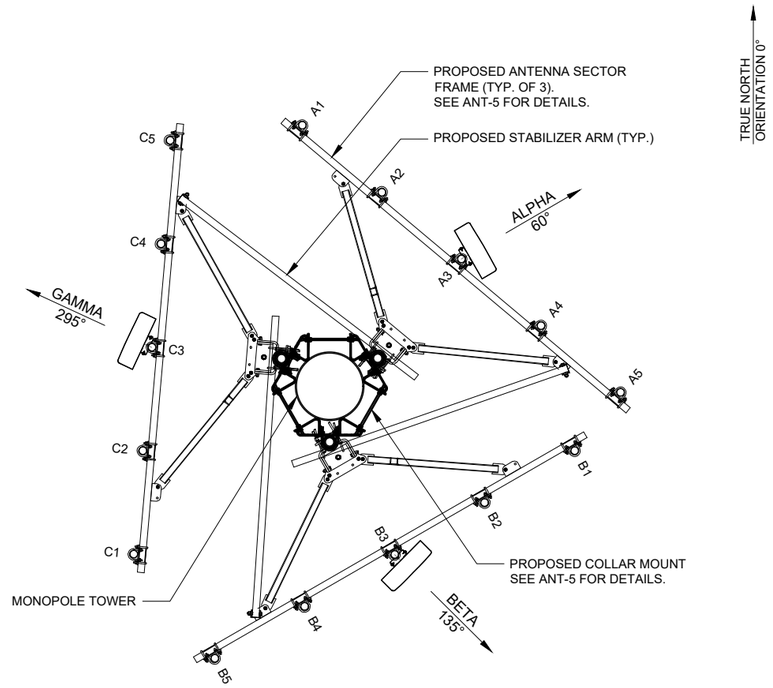
QTY.	RET CABLE INFO (RADIO TO ANTENNA)	LENGTH (FT.)
1	ALPHA	32.8'
1	BETA	32.8'
1	GAMMA	32.8'

1. STANDARD RET CABLE LENGTH = 32.8' (10m)
2. RF APPROVAL REQ'D FOR ADDITIONAL CABLE LENGTH

QTY.	COAX JUMPER CABLE INFO (RADIO TO ANTENNA)	LENGTH (FT.)
6	ALPHA	25'
6	BETA	25'
8	GAMMA	25'

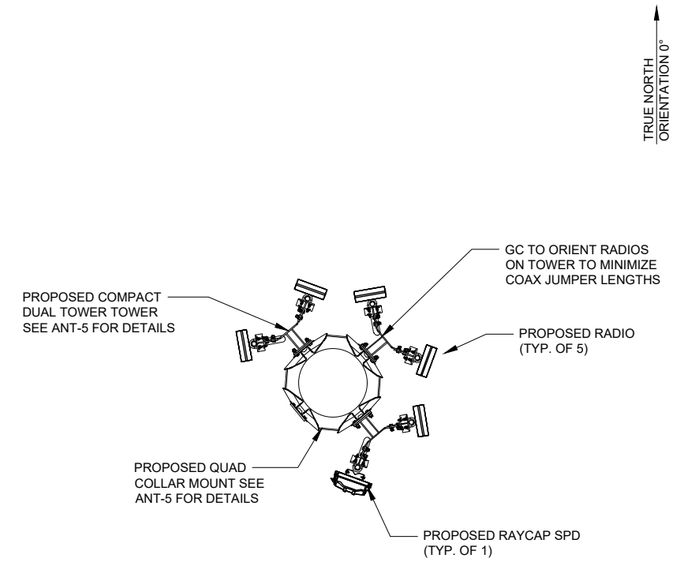
1. JUMPER CABLES TO BE SAME LENGTH FOR ALL SECTORS
2. APPROVED JUMPER LENGTH:
- SEPARTE ANXILLARY MOUNT = 25'
- ANTENNA MOUNT = 15'
3. JUMPER CABLES ARE PRE-ORDERED BY U.S. CELLULAR

1 CABLING INFORMATION
SCALE: N.T.S.



2 ANTENNA LAYOUT - 185' A.G.L.
SCALE: N.T.S.

G.C. TO ROTATE SECTOR FRAMES TO AZIMUTHS: 40°, 150°, AND 275°



3 EQUIPMENT LAYOUT - 179' A.G.L.
SCALE: N.T.S.

PROPOSED ANTENNA KEY - 784809 GERMANTOWN

	POS	Antenna CL (ft AGL)	Technology	Antenna Make / Model	Ant. QTY	Azimuth	Mech Downtilt	Elec. LB-TILT	Elec. MB-TILT	RRU Make/Model	RRU QTY	Distribution Box Make/Model	OVP QTY	Hybrid Cable Make/Model	Hybrid Cable Count	Hybrid Cable Size	Hybrid Cable Length	Fiber Jumper QTY	Fiber Jumper Length	Pwr Jumper QTY	Power Jumper Length	RET Jumper QTY (Radio to Ant.)	RET Jumper Length, Ft (Radio to Ant.)	RF Jumper QTY	RF Jumper Length (Ft)
Mainline Cable & Distribution												RUSDC -6267-PF-48	1	EUPEN 114-12AWG6-2X12MM5	1	1-1/4"	250'								
Alpha Sector	A1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	A2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	A3	185	PCS/AWS/LTE	DENGYO / OCT8-2LX2HX-BW65	1	60	0	2	2	4480 B12/B71	1	-	-	-	-	-	-	2	25'	1	32.8'	1	32.8'	4	25'
	A4	-	-	-	-	-	-	-	-	*4480 B2/B66	1	-	-	-	-	-	-	2	25'	1	32.8'	-	-	2	25'
	A5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Beta Sector	B1	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-
	B2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	B3	185	PCS/AWS/LTE	DENGYO / OCT8-2LX2HX-BW65	1	135	0	2	2	4480 B12/B71	1	-	-	-	-	-	-	2	25'	1	32.8'	1	32.8'	4	25'
	B4	-	-	-	-	-	-	-	-	4480 B2/B66	*SHARED	-	-	-	-	-	-	-	-	-	-	-	-	2	25'
	B5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gamma Sector	G1	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-
	G2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	G3	185	PCS/AWS/LTE	DENGYO / OCT8-2LX2HX-BW65	1	295	0	2	2	4480 B12/B71	1	-	-	-	-	-	-	2	25'	1	32.8'	1	32.8'	4	25'
	G4	-	-	-	-	-	-	-	-	4480 B2/B66	1	-	-	-	-	-	-	2	25'	1	32.8'	-	-	4	25'
	G5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
				Antenna Total	**3**					**RRU Total**	**5**	**Distro Box Total**	**1**	**Hybrid Cable Total**	**1**	**Jumper Totals**		**10**		**5**		**3**		**20**	

NOTE:
RADIOS ARE SHARED ACROSS MULTIPLE SECTORS, SEE PLUMBING DIAGRAM ON SHEET ANT-8 FOR DETAILS

4 PROPOSED ANTENNA AND EQUIPMENT LOADING
SCALE: N.T.S.

PLUMBING DIAGRAM: **W5.DX1050**

uscellular
8410 W. BRYN MAWR AVE.
CHICAGO, IL 60631
POC: STEVE HATMAKER

TERRA CONSULTING GROUP, LTD.
600 BUSSE HIGHWAY
PARK RIDGE, IL 60068
PH: 847-698-6400
FAX: 847-698-6401

REVISIONS

NO.	DESCRIPTION	DATE	BY
A	ISSUED FOR REVIEW	11/04/22	BJC
B	REVISED PER USCC COMMENTS	12/19/22	JGL
0	ISSUED FOR CONSTRUCTION	12/20/22	EW
1	ADDED LANDSCAPE BUFFER	01/11/23	EW

SITE# 784809
GERMANTOWN

W172N11083
DIVISION ROAD,
GERMANTOWN, WI 53022

DRAWN BY:	BJC
CHECKED BY:	EW
DATE:	10/25/22
PROJECT #:	10-079

SHEET TITLE
ANTENNA & EQUIPMENT LAYOUT

SHEET NUMBER
ANT-2

DENGYO

Base Station Antennas

Frequency Range	617-894x2 1695-2400x2
Polarization	±45°
Half-Power Beam Width	65°
Electrical Downtilt	2° - 12°x4

Type OCT8-2LX2HX-BW65

Base Station Antenna

8-ports 617-894 / 617-894 /1695-2400 /1695-2400 MHz 65°, 16 / 16 / 18 / 18 dBi, 2°-12° / 2°-12° / 2°-12° / 2° -12 °Tilt Antenna With 4 Integrated RCUs.

AISG

Electrical Specifications

Frequency Range(MHz)		2x617-894			2x1695-2400		
		617-698	698-824	824-894	1695-1920	1920-2180	2300-2400
Polarization		±45°					
Horizontal 3dB Beamwidth(°)		70	63	60	66	63	58
Vertical 3dB Beamwidth(°)		10.4	9.1	8.0	5.5	5	4.3
Gain (dBi)		15.0	15.5	16.0	17.6	18.0	18.1
Electrical Downtilt		2°-12°			2°-12°		
Upper Sidelobe Suppression(dB)	First	≥16	≥16	≥16	≥16	≥16	≥16
Front-to-Back Ratio Total Power,±30° (dB)		≥23	≥24	≥25	≥25	≥25	≥25
Cross polar ratio	Main direction(dB)	≥17	≥17	≥17	≥17	≥17	≥17
	±60° (dB)	≥7	≥7	≥7	≥7	≥7	≥7
Isolation ports		≥25 dB					
Isolation Frequency		≥30 dB					
VSWR		< 1.5					
Intermodulation IM3		< -150 dBc(2x43dBm carrier)					
Impedance		50 Ω					
Max. Power per Input (at 50°C ambient temperature)		500 W			300 W		
Lightning Protection		DC Ground					

Mechanical Specifications

Radome Material	Fiberglass
Connector Type and Location	4.3-10x8 ,Bottom iRCU in:1 x 8 pin male iRCU out:1 x 8 pin female
Dimensions,HxWxD(mm)/(inches)	2438 x 499 x 180 / 95.9 x 19.6 x 7.1
Packing Size(mm)/(inches)	2750 x 620 x 325 / 108.3 x 24.4 x 12.8
Weight ,w/o Mounting kit(kg)/(lbs)	47 / 103.4
Weight w/ Downtilt Bracket(kg)/(lbs)	54/ 118.8
Weight w/ Fixed Bracket(kg)/(lbs)	52 / 114.4
Packing Weight（w/ Downtilt Bracket）(kg)/(lbs)	64/ 140.8
Packing Weight（w/ Fixed Bracket）(kg)/(lbs)	62 / 136.4
Max. Wind Velocity(mph)	150
Mounting hardware	ϕ50 mm ~ ϕ115 mm
Operational Temperature(°C)	-40 to +65
Operational Humidity(%)	<95
Wind Load at 100mph (Frontal/lateral/Rearside(N))	1416/280/1027

This publication is issued to information only and is not to form part of any order or contract DENGYO reserves the right to changes specifications without prior notice.

Copyright © 2020 DENGYO All Rights Reserved

DENGYO

Base Station Antennas

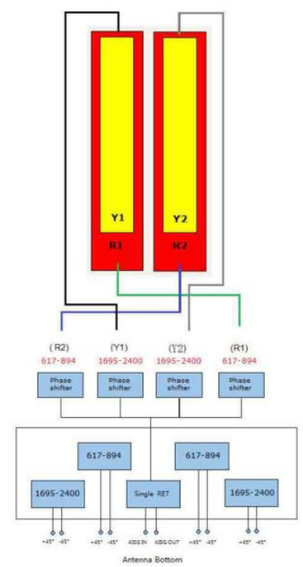
Frequency Range	617-894x2 1695-2400x2
Polarization	±45°
Half-Power Beam Width	65°
Electrical Downtilt	2° - 12°x4

Type OCT8-2LX2HX-BW65

Integrated RET Properties

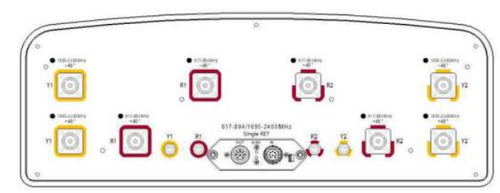
RET Type		4x Type 1 Single RET
Protocols		Compliant to AISG 2.0/3GPP
Input voltage range		+10~+30VDC(pin 6)
Power consumption		<2W(stand by);<13W(motor activated)
Connectors	AISG	2 x 8 pin connector acc. To IEC 60130-9 Acc.to AISG Daisy chain in:male Daisy chain out:female
	Antenna	Two motor shaft(Embedded motor)
Hardware interface	AISG	RS485A/B(pin5/pin3);Power supply(pin6); DC return(pin7)Acc.to AISG
Adjustment time(full range)		40 sec(typically,depending on antenna)
Adjustment Cycles		≥10000
Torque Max		≥160mN.m
Lightning Protection Rating		IEC 61000-4-5 Current Pulse Profile,8/20 μs 10 Repetitions Min.@ 6kA IEC 61312-1 Annex B Current Pulse Profile, 10/350 μs,200 Repetitions Min. @ 0.6KA

COMPREHENSIVE TILT CONFIGURATION



Frequency Range	Array	RET Unique ID
617-894MHz	R1	NDPMXXXXXXXX-6089R1
617-894MHz	R2	NDPMXXXXXXXX-6089R2
1695-2400MHz	Y1	NDPMXXXXXXXX-1724Y1
1695-2400MHz	Y2	NDPMXXXXXXXX-1724Y2

Note: (1) Physical RET Unit containing (4) Single RET



This publication is issued to information only and is not to form part of any order or contract DENGYO reserves the right to changes specifications without prior notice.

Copyright © 2020 DENGYO All Rights Reserved

uscellular
8410 W. BRYN MAWR AVE.
CHICAGO, IL 60631
POC: STEVE HATMAKER

TERRA CONSULTING GROUP, LTD.
600 BUSSE HIGHWAY
PARK RIDGE, IL 60068
PH: 847-698-6400
FAX: 847-698-6401

REVISIONS

NO.	DESCRIPTION	DATE	BY
A	ISSUED FOR REVIEW	11/04/22	BJC
B	REVISED PER USCC COMMENTS	12/19/22	JGL
0	ISSUED FOR CONSTRUCTION	12/20/22	EW
1	ADDED LANDSCAPE BUFFER	01/11/23	EW

SITE# 784809
GERMANTOWN

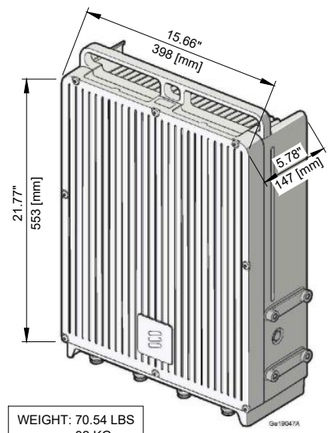
W172N11083
DIVISION ROAD,
GERMANTOWN, WI 53022

DRAWN BY:	BJC
CHECKED BY:	EW
DATE:	10/25/22
PROJECT #:	10-079

SHEET TITLE
ANTENNA SPECIFICATIONS

SHEET NUMBER
ANT-3

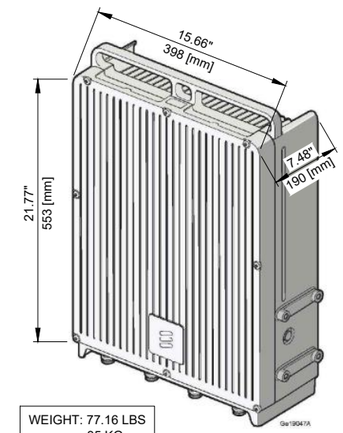
SUPPLIED BY U.S. CELLULAR



WEIGHT: 70.54 LBS
32 KG

1 RADIO 4480 44B2/B25 44B66A C - MID BAND - DETAILS
SCALE: NTS

SUPPLIED BY U.S. CELLULAR

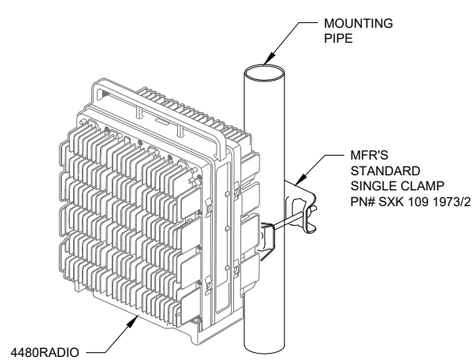


WEIGHT: 77.16 LBS
35 KG

2 RADIO 4480 44B71 44B85A C - LOW BAND - DETAILS
SCALE: NTS

NOTES:
1. MOUNTING HARDWARE INCLUDED WITH UNIT.
2. EQUIPMENT INFORMATION OBTAINED FROM MANUFACTURERS PRODUCT DATA SHEET, SUBJECT TO CHANGE. CONTRACTOR TO VERIFY

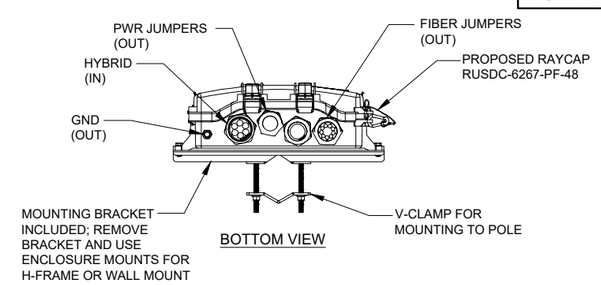
SUPPLIED BY U.S. CELLULAR



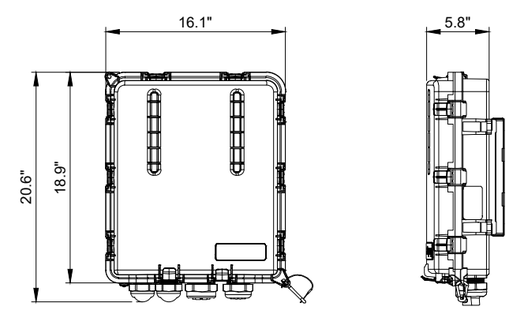
POLE INSTALLATION
WITH SINGLE CLAMP

3 RADIO MOUNT DETAIL (4480)
SCALE: N.T.S.

SUPPLIED BY U.S. CELLULAR



BOTTOM VIEW



FRONT VIEW

SIDE VIEW

4 RAYCAP SURGE PROTECTOR DEVICE (SPD)
SCALE: N.T.S.

uscellular
8410 W. BRYN MAWR AVE.
CHICAGO, IL 60631
POC: STEVE HATMAKER

TERRA CONSULTING GROUP, LTD.
600 BUSSE HIGHWAY
PARK RIDGE, IL 60068
PH: 847-698-6400
FAX: 847-698-6401

REVISIONS

NO.	DESCRIPTION	DATE	BY
A	ISSUED FOR REVIEW	11/04/22	BJC
B	REVISED PER USCC COMMENTS	12/19/22	JGL
0	ISSUED FOR CONSTRUCTION	12/20/22	EW
1	ADDED LANDSCAPE BUFFER	01/11/23	EW

SITE# 784809
GERMANTOWN

W172N11083
DIVISION ROAD,
GERMANTOWN, WI 53022

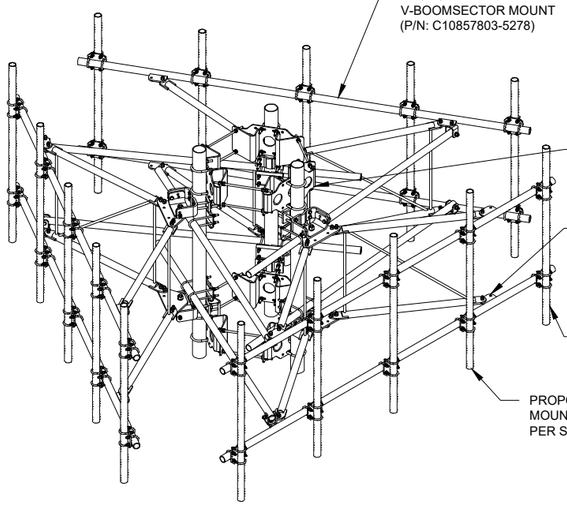
DRAWN BY:	BJC
CHECKED BY:	EW
DATE:	10/25/22
PROJECT #:	10-079

SHEET TITLE
EQUIPMENT SPECIFICATIONS

SHEET NUMBER
ANT-4

NOTE:
1. INSTALL MOUNT TO TOWER AS SHOWN, SO THAT WELDED STANDOFF DIAGONAL IS SLOPING DOWNWARD FROM TOWER END TO FACE PIPE END.
2. INSTALL PRODUCT EXACTLY AS SHOWN IN DRAWING WITH ALL BOLTS FACING UPWARDS.
3. SEE MANUFACTURER'S DRAWINGS FOR GUIDE DURING INSTALLATION.

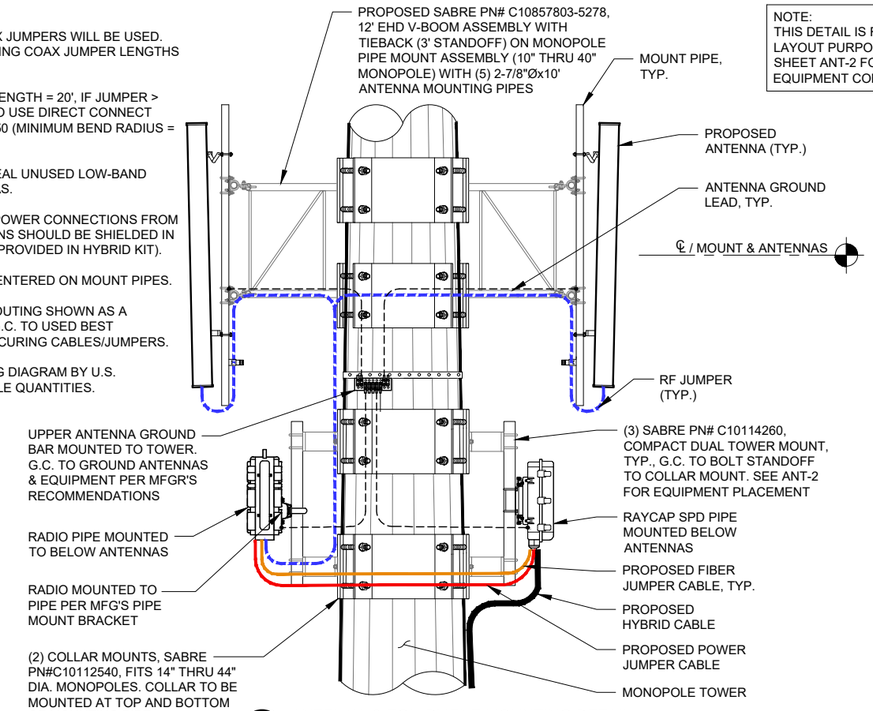
NOTES:
1. THE SABRE V-FRAME MOUNTING SYSTEM IS MODEL #C10857803-5278.
2. COLLAR FITS 10" TO 40" DIAMETER POLES.
3. MOUNT TOTAL WEIGHT: 3345 LBS
4. MOUNT SUPPLIED BY US CELLULAR. GC TO VERIFY TOWER DIAMETER AT MOUNTING ELEVATION PRIOR TO START OF CONSTRUCTION.



1 ANTENNA MOUNT DETAIL - 10" TO 40" MONOPOLE
N.T.S.

NOTES:
1. PRE-MADE 1/2" COAX JUMPERS WILL BE USED. ENSURE ALL MATCHING COAX JUMPER LENGTHS PER RADIO.
2. MAXIMUM JUMPER LENGTH = 20', IF JUMPER > 20', CONTRACTOR TO USE DIRECT CONNECT COMMSCOPE VXL5-50 (MINIMUM BEND RADIUS = 5").
3. CONTRACTOR TO SEAL UNUSED LOW-BAND PORTS ON ANTENNAS.
4. TOWER TOP FIBER/POWER CONNECTIONS FROM RAYCAP TO RRH RUNS SHOULD BE SHIELDED IN 1" INNDERDUCT (75' PROVIDED IN HYBRID KIT).
5. ANTENNAS TO BE CENTERED ON MOUNT PIPES.
6. CABLE & JUMPER ROUTING SHOWN AS A SCHEMATIC ONLY. G.C. TO USED BEST PRACTICE WHEN SECURING CABLES/JUMPERS.
7. REFER TO PLUMBING DIAGRAM BY U.S. CELLULAR FOR CABLE QUANTITIES.

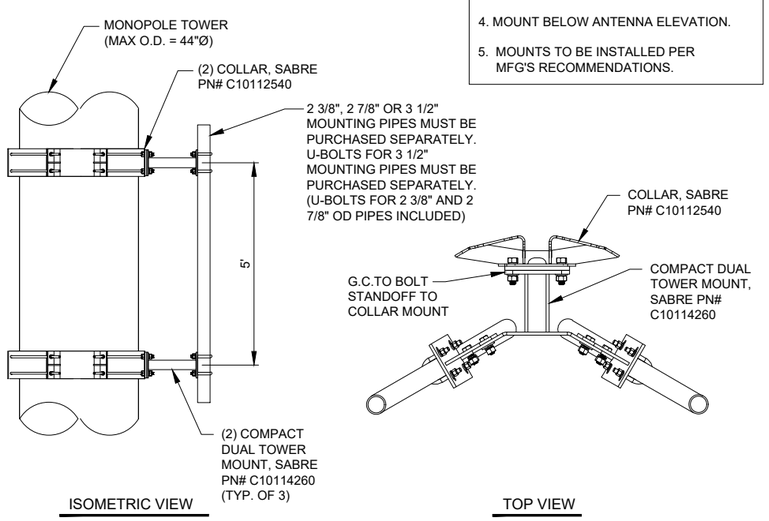
NOTE:
THIS DETAIL IS FOR EXHIBIT AND LAYOUT PURPOSES ONLY. SEE SHEET ANT-2 FOR ANTENNA & EQUIPMENT CONFIGURATION AT SITE



2 ANTENNA & EQUIPMENT MOUNTING DETAIL
N.T.S.

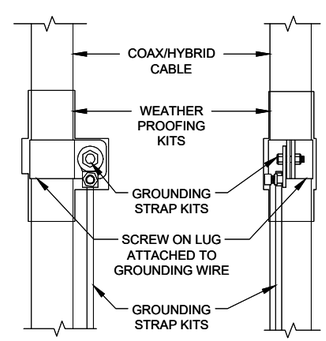
NOTE:
MOUNT ALLOWS FOR ±30° VERTICAL TILT ADJUSTMENT

NOTES:
1. COMPACT DUAL TOWER MOUNT, SABRE PN# C10114260
2. QUAD COLLAR, SABRE PN# C10112540. FITS 14" THRU 44" DIA POLES.
3. MOUNTS SUPPLIED BY US CELLULAR.
4. MOUNT BELOW ANTENNA ELEVATION.
5. MOUNTS TO BE INSTALLED PER MFG'S RECOMMENDATIONS.

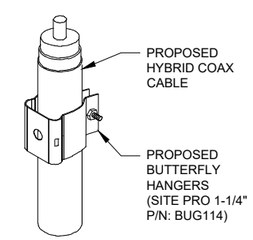


3 TYPICAL RAYCAP SPD & RADIO DUAL PIPE MOUNT
N.T.S.

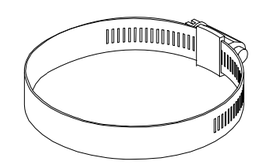
NOTES:
1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.
2. THIS DETAIL IS TYPICAL FOR EACH COAX CABLE WHERE IT IS SPECIFIED TO BE GROUNDED
3. CABLE TO BE GROUNDED AT ANTENNA LEVEL AND PRIOR TO ENTERING EQUIPMENT CABINET.
4. CABLE ALSO TO BE GROUNDED TO GROUND BAR AT TOWER BASE IF APPLICABLE.
5. USE ONLY TIN PLATED GROUNDING KITS.



4 COAX / HYBRID CABLE GROUND KIT DETAIL
N.T.S.

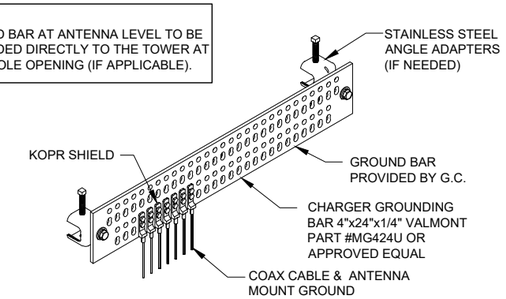


5 BUTTERFLY HANGER DETAIL
N.T.S.

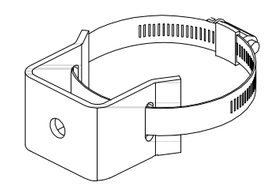


7 ROUND MEMBER ADAPTER DETAIL
N.T.S.

NOTE:
GROUND BAR AT ANTENNA LEVEL TO BE GROUNDED DIRECTLY TO THE TOWER AT HAND HOLE OPENING (IF APPLICABLE).



6 GROUND BAR AT ANTENNA LEVEL
N.T.S.



8 UNIVERSAL STANDOFF DETAIL
N.T.S.

uscellular
8410 W. BRYN MAWR AVE.
CHICAGO, IL 60631
POC: STEVE HATMAKER

TERRA CONSULTING GROUP, LTD.
600 BUSSE HIGHWAY
PARK RIDGE, IL 60068
PH: 847-698-6400
FAX: 847-698-6401

REVISIONS

NO.	DESCRIPTION	DATE	BY
A	ISSUED FOR REVIEW	11/04/22	BJC
B	REVISED PER USCC COMMENTS	12/19/22	JGL
0	ISSUED FOR CONSTRUCTION	12/20/22	EW
1	ADDED LANDSCAPE BUFFER	01/11/23	EW

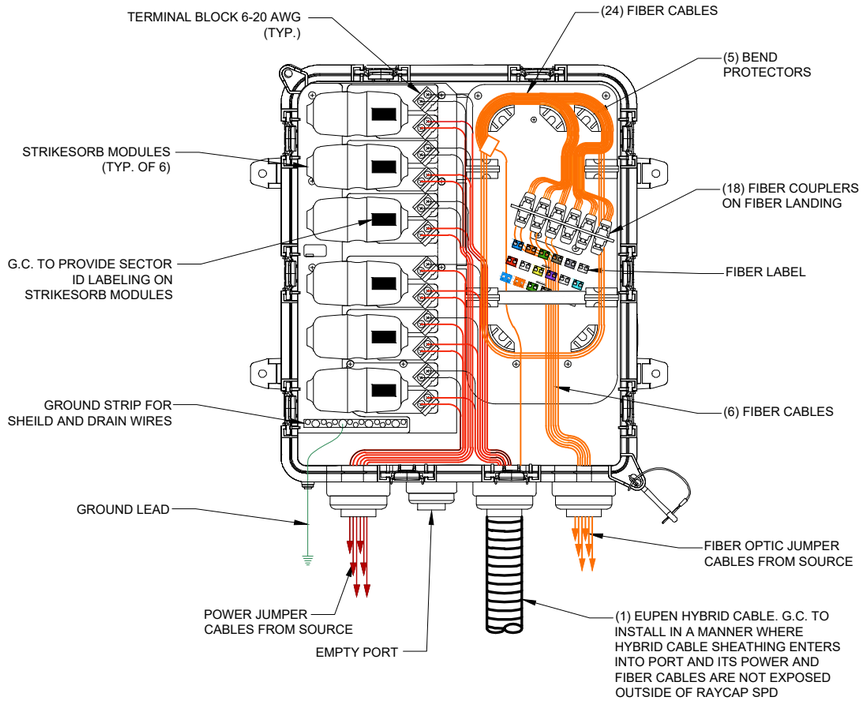
SITE# 784809
GERMANTOWN

W172N11083
DIVISION ROAD,
GERMANTOWN, WI 53022

DRAWN BY:	BJC
CHECKED BY:	EW
DATE:	10/25/22
PROJECT #:	10-079

SHEET TITLE
ANTENNA MOUNTING DETAILS

SHEET NUMBER
ANT-5

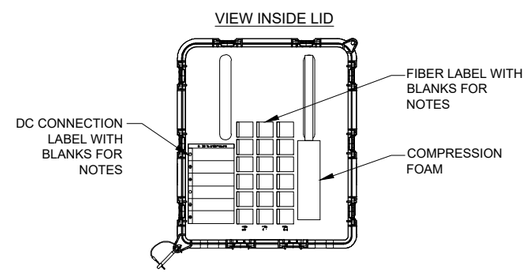


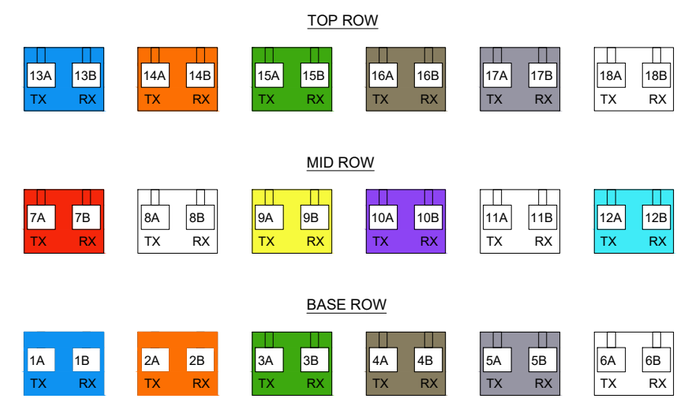
1 RAYCAP SURGE PROTECTOR DEVICE (SPD) CABLING
SCALE: N.T.S.

NOTE:

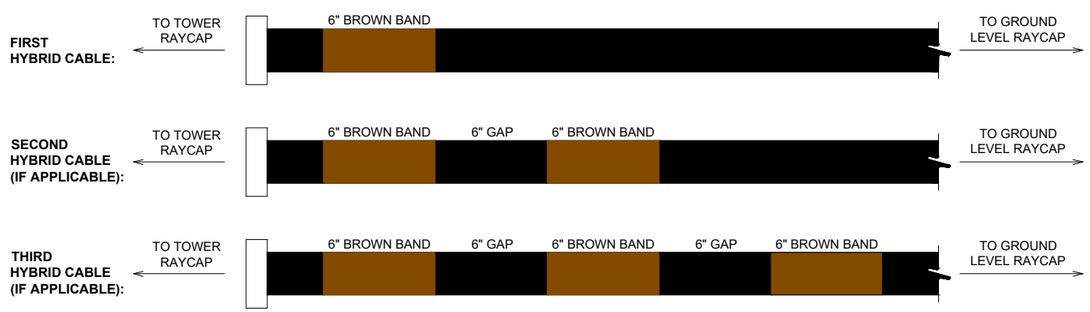
REFER TO USCC DOCUMENT "TOWER MOUNTED EQUIPMENT AND TOWER CABLE STANDARDS AT CELL SITES" FOR COMPLETE COLOR CODING STANDARDS.

CONNECTOR 13	CONNECTOR 14	CONNECTOR 15	CONNECTOR 16	CONNECTOR 17	CONNECTOR 18
13A: BLUE TX	14A: ORANGE TX	15A: GREEN TX	16A: BROWN TX	17A: SLATE TX	18A: WHITE TX
13B: BLUE RX	14B: ORANGE RX	15B: GREEN RX	16B: BROWN RX	17B: SLATE RX	18B: WHITE RX
WITH TRACERS	WITH TRACERS	WITH TRACERS	WITH TRACERS	WITH TRACERS	WITH TRACERS
CONNECTOR 7	CONNECTOR 8	CONNECTOR 9	CONNECTOR 10	CONNECTOR 11	CONNECTOR 12
7A: RED TX	8A: BLACK TX	9A: YELLOW TX	10A: VIOLET TX	11A: ROSE TX	12A: AQUA TX
7B: RED RX	8B: BLACK RX	9B: YELLOW RX	10B: VIOLET RX	11B: ROSE RX	12B: AQUA RX
CONNECTOR 1	CONNECTOR 2	CONNECTOR 3	CONNECTOR 4	CONNECTOR 5	CONNECTOR 6
1A: BLUE TX	2A: ORANGE TX	3A: GREEN TX	4A: BROWN TX	5A: SLATE TX	6A: WHITE TX
1B: BLUE RX	2B: ORANGE RX	3B: GREEN RX	4B: BROWN RX	5B: SLATE RX	6B: WHITE RX

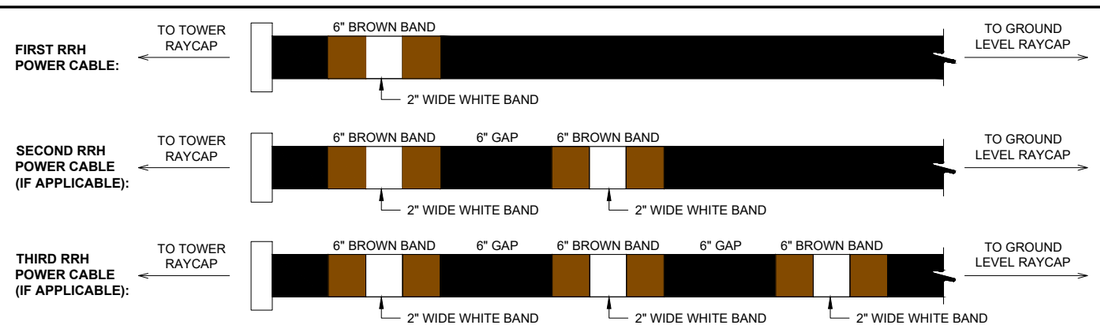




2 FIBER CABLE LABELING
SCALE: N.T.S.



3 HYBRID CABLE BANDING
SCALE: N.T.S.



4 POWER CABLE BANDING
SCALE: N.T.S.

uscellular
8410 W. BRYN MAWR AVE.
CHICAGO, IL 60631
POC: STEVE HATMAKER

TERRA CONSULTING GROUP, LTD.
600 BUSSE HIGHWAY
PARK RIDGE, IL 60068
PH: 847-698-6400
FAX: 847-698-6401

REVISIONS

NO.	DESCRIPTION	DATE	BY
A	ISSUED FOR REVIEW	11/04/22	BJC
B	REVISED PER USCC COMMENTS	12/19/22	JGL
0	ISSUED FOR CONSTRUCTION	12/20/22	EW
1	ADDED LANDSCAPE BUFFER	01/11/23	EW

SITE# 784809
GERMANTOWN

W172N11083
DIVISION ROAD,
GERMANTOWN, WI 53022

DRAWN BY:	BJC
CHECKED BY:	EW
DATE:	10/25/22
PROJECT #:	10-079

SHEET TITLE
LABELING STANDARDS 1

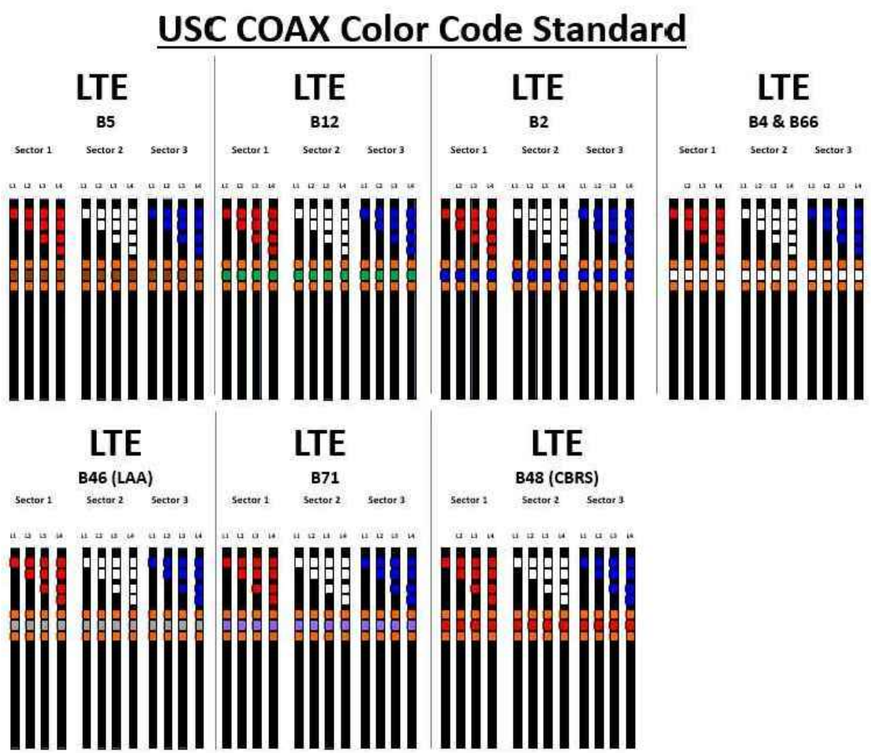
SHEET NUMBER
ANT-6

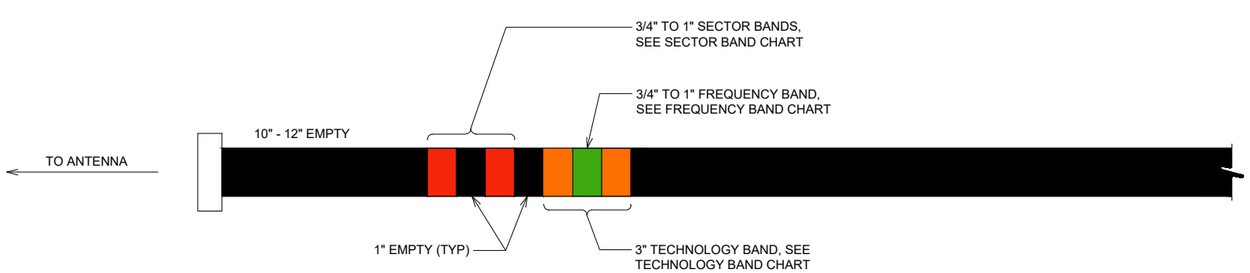
SECTOR BAND	ASSIGNED COLOR	LINE 1	LINE 2	LINE 3	LINE 4
ALPHA (SECTOR 1)	RED	1 RED BAND	2 RED BAND	3 RED BAND	4 RED BAND
BETA (SECTOR 2)	WHITE	1 WHITE BAND	2 WHITE BAND	3 WHITE BAND	4 WHITE BAND
GAMMA (SECTOR 3)	BLUE	1 BLUE BLAND	2 BLUE BLAND	3 BLUE BLAND	4 BLUE BLAND
DELTA (SECTOR 4, IF APPLICABLE)	GREEN	1 GREEN BAND	2 GREEN BAND	3 GREEN BAND	4 GREEN BAND
EPSILON (SECTOR 5, IF APPLICABLE)	VIOLET	1 VIOLET BAND	2 VIOLET BAND	3 VIOLET BAND	4 VIOLET BAND
ZETA (SECTOR 6, IF APPLICABLE)	BROWN	1 BROWN BAND	2 BROWN BAND	3 BROWN BAND	4 BROWN BAND

FREQUENCY BAND

FREQUENCY	FREQUENCY BAND
700 (B12)	GREEN
800 (B5)	BROWN
1900 (B2)	BLUE
2100 (B4 & B66)	WHITE
5100 (B46) - LAA	GREY
600 (B71)	VIOLET
3500 (B45) - CBRS	RED

USC COAX COLOR CODE STANDARD

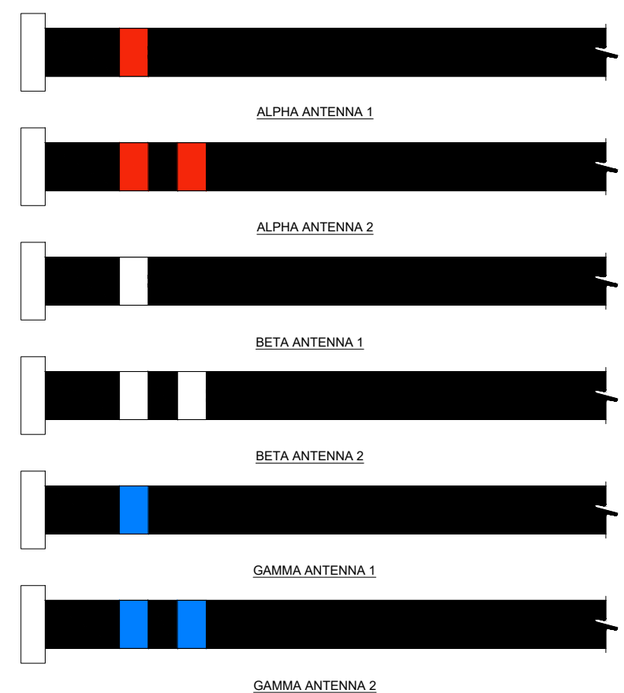




1 COAX CABLE BANDING
SCALE: N.T.S.

RET SECTOR BAND

SECTOR	LINE 1 - FIRST TECHNOLOGY	LINE 2 - FIRST TECHNOLOGY
ALPHA	(1) RED BAND	(2) RED BAND
BETA	(1) WHITE BAND	(2) WHITE BAND
GAMMA	(1) BLUE BAND	(2) BLUE BAND



2 RED CABLE BANDING
SCALE: N.T.S.

uscellular
8410 W. BRYN MAWR AVE.
CHICAGO, IL 60631
POC: STEVE HATMAKER

TERRA CONSULTING GROUP, LTD.
600 BUSSE HIGHWAY
PARK RIDGE, IL 60068
PH: 847-698-6400
FAX: 847-698-6401

REVISIONS

NO.	DESCRIPTION	DATE	BY
A	ISSUED FOR REVIEW	11/04/22	BJC
B	REVISED PER USCC COMMENTS	12/19/22	JGL
0	ISSUED FOR CONSTRUCTION	12/20/22	EW
1	ADDED LANDSCAPE BUFFER	01/11/23	EW

SITE# 784809
GERMANTOWN

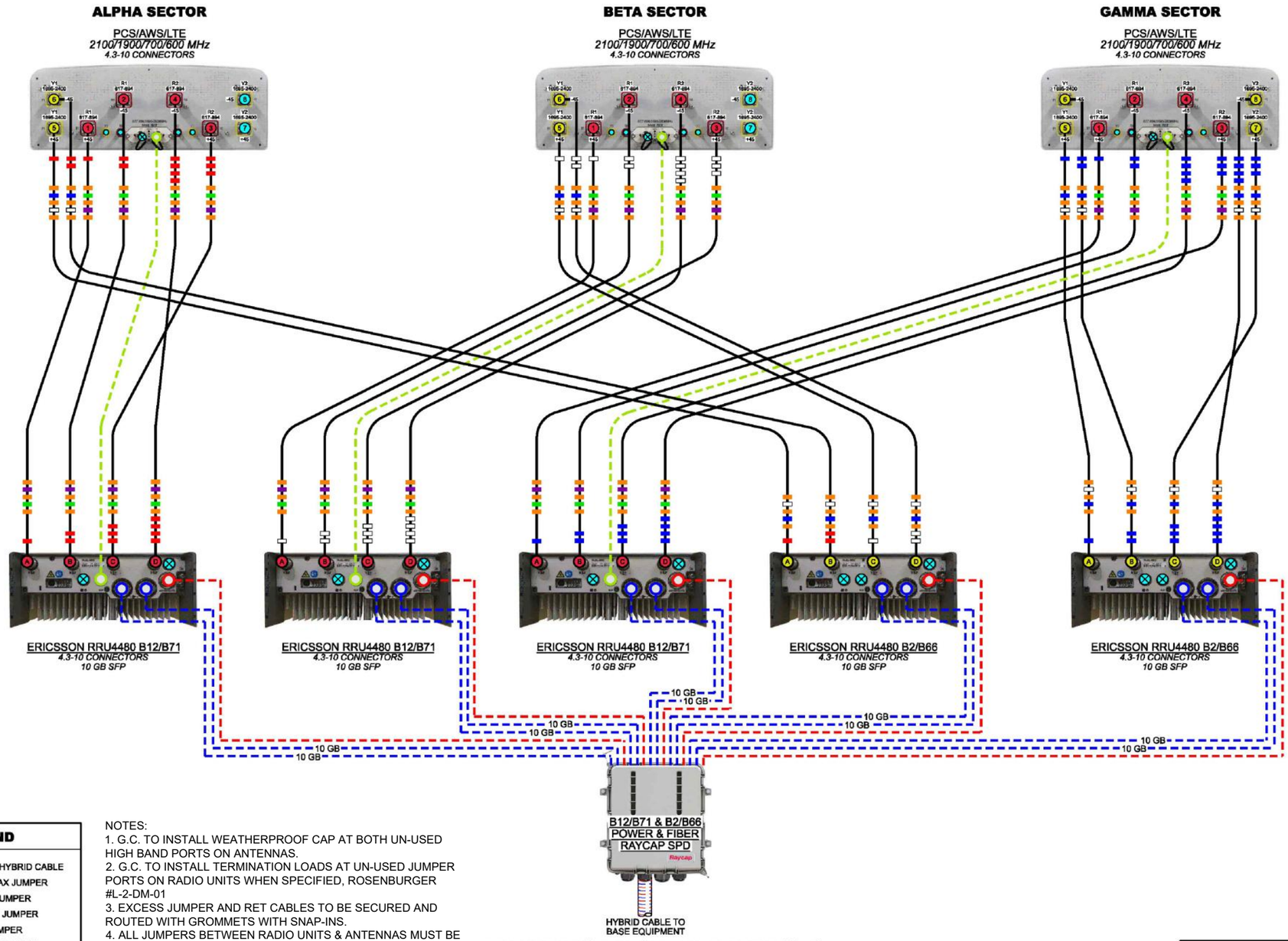
W172N11083
DIVISION ROAD,
GERMANTOWN, WI 53022

DRAWN BY:	BJC
CHECKED BY:	EW
DATE:	10/25/22
PROJECT #:	10-079

SHEET TITLE
LABELING STANDARDS 2

SHEET NUMBER
ANT-7

E// B12/B71 2T4R / B2/B66 2T2R



CABLE LEGEND

- EUPEN HYBRID CABLE
- 1/2" COAX JUMPER
- FIBER JUMPER
- POWER JUMPER
- RET JUMPER
- MID BAND PORT
- LOW BAND PORT
- WEATHERPROOF CAP

DATE CREATED: 01/24/2022

NOTES:
1. G.C. TO INSTALL WEATHERPROOF CAP AT BOTH UN-USED HIGH BAND PORTS ON ANTENNAS.
2. G.C. TO INSTALL TERMINATION LOADS AT UN-USED JUMPER PORTS ON RADIO UNITS WHEN SPECIFIED, ROSENBURGER #L-2-DM-01
3. EXCESS JUMPER AND RET CABLES TO BE SECURED AND ROUTED WITH GROMMETS WITH SNAP-INS.
4. ALL JUMPERS BETWEEN RADIO UNITS & ANTENNAS MUST BE SAME LENGTH.

PLUMBING DIAGRAM: W5.DX1050
2T2R DESIGN: Yes-5

CONTAINS U.S. CELLULAR® CONFIDENTIAL INFORMATION. NOT FOR EXTERNAL USE OR DISCLOSURE WITHOUT PROPER AUTHORIZATION.

NOTES:
1. ALL JUMPERS BETWEEN RADIO UNITS & ANTENNAS MUST BE THE SAME LENGTH.
2. CONTRACTOR TO INSTALL WEATHERPROOF CAP ON ALL UN-USED PORTS.

1 PLUMBING DIAGRAM
SCALE: N.T.S.

uscellular
8410 W. BRYN MAWR AVE.
CHICAGO, IL 60631
POC: STEVE HATMAKER

TERRA CONSULTING GROUP, LTD.
600 BUSSE HIGHWAY
PARK RIDGE, IL 60068
PH: 847-698-6400
FAX: 847-698-6401

REVISIONS

NO.	DESCRIPTION	DATE	BY
A	ISSUED FOR REVIEW	11/04/22	BJC
B	REVISED PER USCC COMMENTS	12/19/22	JGL
0	ISSUED FOR CONSTRUCTION	12/20/22	EW
1	ADDED LANDSCAPE BUFFER	01/11/23	EW

SITE# 784809
GERMANTOWN

W172N11083
DIVISION ROAD,
GERMANTOWN, WI 53022

DRAWN BY:	BJC
CHECKED BY:	EW
DATE:	10/25/22
PROJECT #:	10-079

SHEET TITLE
PLUMBING DIAGRAM

SHEET NUMBER
ANT-8

ELECTRICAL - GENERAL NOTES:

THE GENERAL NOTES AND ACCOMPANYING DRAWINGS ARE TO INDICATE THE PROVISIONS AND REQUIREMENTS N BY THE ELECTRICAL CONTRACTOR OF ALL LABOR, MATERIALS, AND EQUIPMENT REQUIRED TO INSTALL THE ELECTRICAL WORK COMPLETE IN CONNECTION WITH THIS ALLTEL (THE OWNER) SITE AND SHALL INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING:

1. THE INSTALLATION, PROVISIONS, AND CONNECTION OF A GROUND ROD (ELECTRODE) SYSTEM AS INDICATED IN THE DRAWINGS.
2. THE INSTALLATION AND PROVISION OF AN ELECTRICAL SERVICE (OVERHEAD OR UNDERGROUND) AND ALL CONDUIT AND WIRE ASSOCIATED WITH IT AS INDICATED AND/OR REQUIRED ON PLANS.
3. THE INSTALLATION, PROVISION OF CONDUIT AND CONNECTIONS FOR LOCAL FIBER SERVICE.
4. CONDUITS SHALL BE PVC SCHED. 40 UNLESS OTHERWISE NOTED.
5. ALL FISH LINE SHALL BE LEFT IN CONDUITS (PVC) FOR FUTURE USE.
6. THE CONTRACTOR SHALL FURNISH AND INSTALL ELECTRICAL SERVICE ENTRANCE CONDUCTORS, CONDUIT AND METER SOCKET AND MAKE THE NECESSARY CONNECTION TO THE SERVICE EQUIPMENT WITHIN THE CABINETS.

PRIOR TO THE SUBMISSION OF BIDS, THE ELECTRICAL CONTRACTOR SHALL VERIFY ALL DETAILS AND SCHEDULES ON THE DRAWINGS AND SPECIFICATIONS PROVIDED BY THE OWNER, FOR MEANING OF ABBREVIATIONS AND ADDITIONAL REQUIREMENTS AND INFORMATION, CHECK STRUCTURAL AND OTHER MECHANICAL AND ELECTRICAL DRAWINGS FOR SCALE, SPACE LIMITATIONS, BEAMS, DOOR SWINGS, WINDOWS, COORDINATION, AND ADDITIONAL INFORMATION, ETC. REPORT ANY DISCREPANCIES, CONFLICTS, ETC. TO THE OWNER BEFORE SUBMITTING BID.

UNLESS OTHERWISE NOTED, THE ELECTRICAL CONTRACTOR SHALL PROVIDE THE NECESSARY MOTOR STARTERS, DISCONNECTS, CONTROLS, ETC. FOR ALL EQUIPMENT FURNISHED BY OTHERS (FBO). ALL ASSOCIATED EQUIPMENT SHALL BE INSTALLED AND COMPLETELY WIRED BY THE ELECTRICAL CONTRACTOR IN ACCORDANCE WITH MANUFACTURER'S WIRE DIAGRAMS AND AS REQUIRED FOR A COMPLETE OPERATING INSTALLATION. ELECTRICAL CONTRACTOR SHALL VERIFY AND COORDINATE CHARACTERISTICS AND REQUIREMENTS OF (FBO) EQUIPMENT PRIOR TO ROUGH-IN OF OF CONDUIT AND WIRINGS TO AVOID CONFLICT.

CONTRACTOR RESPONSIBILITIES

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND SECURING ALL REQUIRED PERMITS, LICENSES, INSPECTIONS, APPROVALS, AND PAYMENT OF ALL FEES.
2. THE INSTALLATION SHALL BE IN ACCORDANCE WITH ALL APPLICABLE: STATE, LOCAL, AND NATIONAL CODES AS WELL AS THE LATEST ISSUE OF THE VARIOUS APPLICABLE STANDARD SPECIFICATIONS OF THE FOLLOWING RECOGNIZED AUTHORITIES:

NEC	NATIONAL ELECTRIC CODE
ANSI	AMERICAN NATIONAL STANDARD INSTITUTE
IEEE	INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS
ASTM	AMERICAN SOCIETY FOR TESTING MATERIALS
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
UL	UNDERWRITERS LABORATORY, INC.

3. PRIOR TO COMMENCING WORK, THE ELECTRICAL CONTRACTOR SHALL CONFORM TO THE LOCAL UTILITY COMPANY'S REGULATIONS AND SHALL GET THE APPROVAL FROM SAME, BEFORE SUBMITTING HIS BID, TO DETERMINE FROM EACH UTILITY ADDITIONAL COSTS THEY MAY REQUIRE, AND SHALL BE INCLUDED IN HIS BID FOR CONTRACT.

UTILITY CONTACTS:

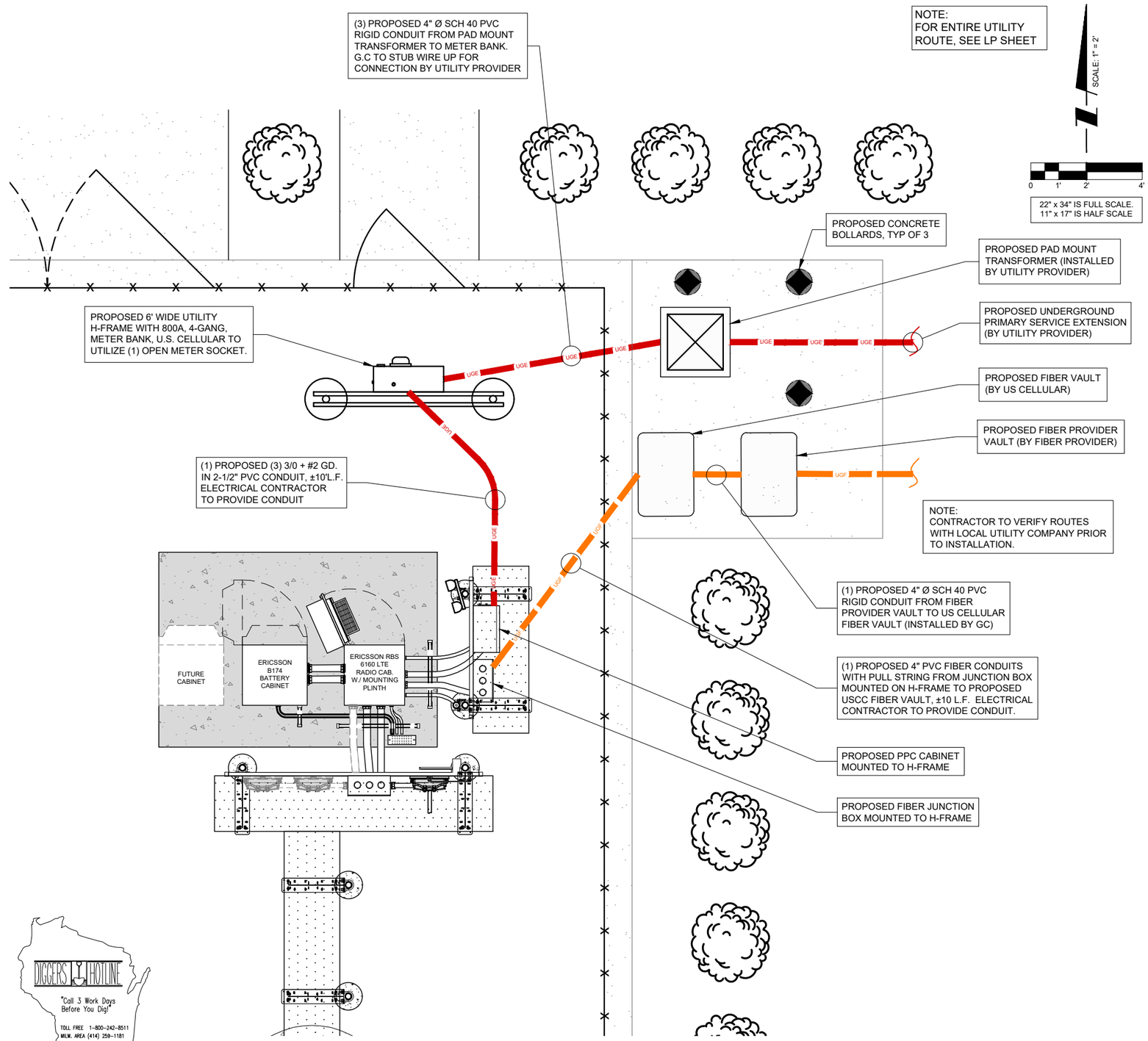
POWER CO
COORDINATED BY OTHERS

FIBER CO
COORDINATED BY OTHERS

ELECTRICAL CONTRACTOR SHALL COORDINATE WITH POWER COMPANY FOR ENTRY INTO FENCED AREA BY EITHER MAILING A KEY TO A SLAVE LOCKED CHAIN AT THE FENCE GATE OR CALLING AND LEAVING A COMBINATION.

FOR CONTINUATION AND CONNECTION OF ELECTRIC AND TELEPHONE SERVICE. COORDINATE WITH ELECTRIC AND PHONE COMPANY

NOTE:
UTILITY COORDINATION BY OTHERS
DO NOT PROCEED WITH CONSTRUCTION UNTIL POWER / FIBER HAVE BEEN CONFIRMED.



1 UTILITY ROUTING PLAN
SCALE: 1" = 2'

DIGGERS HOTLINE
"Call 3 Work Days Before You Dig!"
TOLL FREE 1-800-242-8511
MILW. AREA (414) 259-1181
TDD 1-800-542-2289

OTHER UTILITIES NOT INCLUDED IN DIGGERS HOTLINE AND LOCAL UTILITY DISTRICTS AND COMPANIES SHALL ALSO BE NOTIFIED

uscellular™
8410 W. BRYN MAWR AVE.
CHICAGO, IL 60631
POC: STEVE HATMAKER

TERRA CONSULTING GROUP, LTD.
600 BUSSE HIGHWAY
PARK RIDGE, IL 60068
PH: 847-698-6400
FAX: 847-698-6401

REVISIONS

NO.	DESCRIPTION	DATE	BY
A	ISSUED FOR REVIEW	11/04/22	BJC
B	REVISED PER USCC COMMENTS	12/19/22	JGL
0	ISSUED FOR CONSTRUCTION	12/20/22	EW
1	ADDED LANDSCAPE BUFFER	01/11/23	EW

SITE# 784809
GERMANTOWN

W172N11083
DIVISION ROAD,
GERMANTOWN, WI 53022

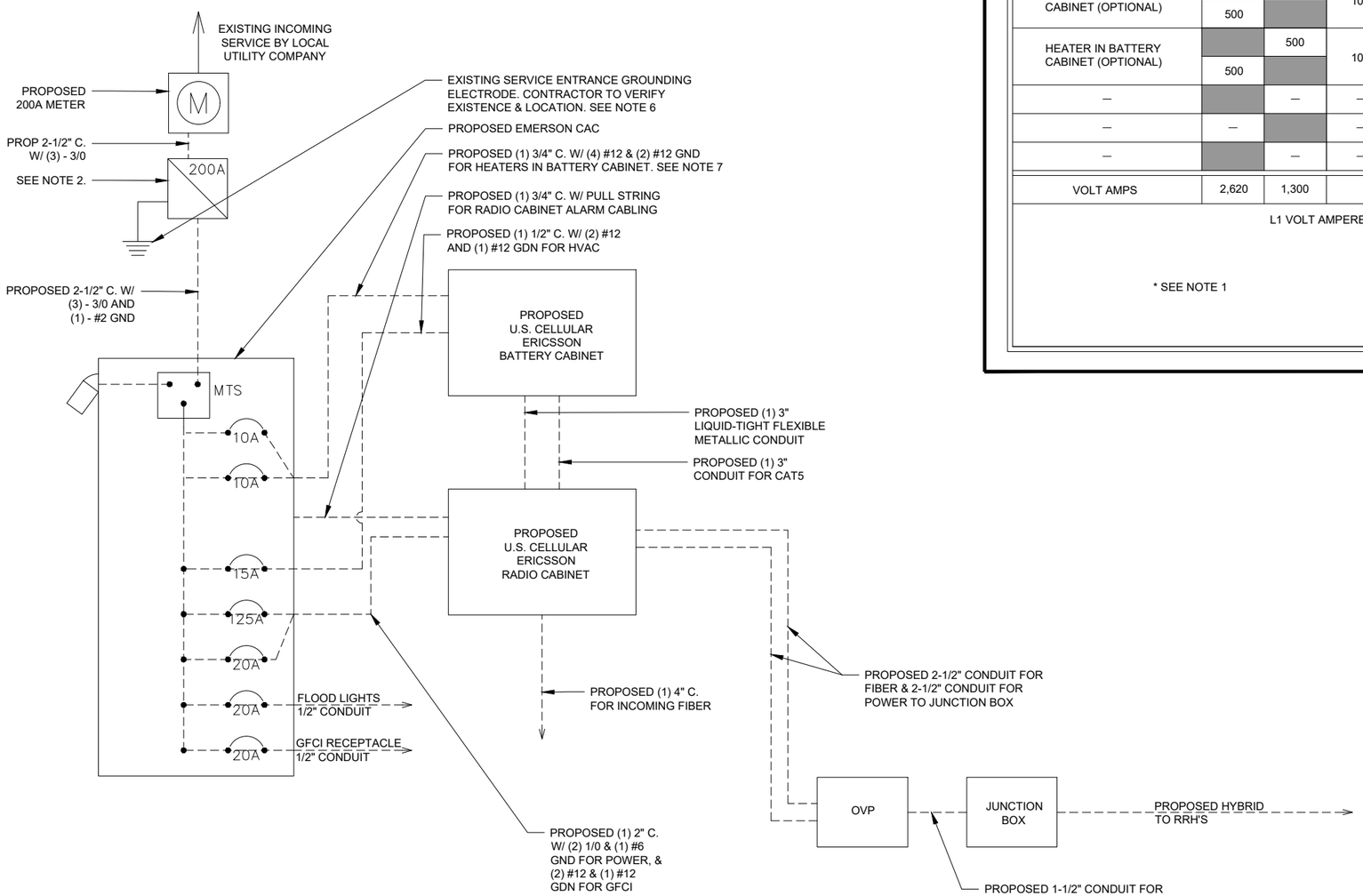
DRAWN BY:	BJC
CHECKED BY:	EW
DATE:	10/25/22
PROJECT #:	10-079

SHEET TITLE
UTILITY ROUTING PLAN

SHEET NUMBER
E-1

NOTES

1. FOR COMPLETE INTERNAL WIRING AND ARRANGEMENT, REFER TO VENDOR PRINTS PROVIDED BY EQUIPMENT MANUFACTURER.
2. 200A RATED DISCONNECT FUSED AT 200A. IF NOT EXISTING, INSTALL 200A SERVICE ENTRANCE RATED DISCONNECT FUSED AT 200A.
3. SOME BREAKERS NOT SHOWN IN ONE LINE DIAGRAM FOR CLARITY.
4. CONTRACTOR TO VERIFY LOAD CENTER PANEL CAPACITY AND EXISTING LOADING IS WITHIN RATED LIMITS.
5. THE BREAKERS AND CONDUCTORS SIZES SHOWN ARE BASED ON TYPICAL EQUIPMENT CONFIGURATIONS AT SIMILAR SITES. THE CONTRACTOR WILL VERIFY THE WIRING REQUIREMENTS WITH THE CABINET INSTALLATION GUIDE AND INCLUDED EQUIPMENT .
6. GEC AND N-G BOND ARE SIZED FOR A SINGLE 200A SERVICE ONLY. IF ALL METERS SHARE A COMMON N-G BOND, THE CONTRACTOR WILL INSTALL (1) 3/0 COPPER GEC AND N-G BOND INSTEAD.
7. THE WIRING DIAGRAMS PROVIDED TO TERRA INDICATE THAT A NEUTRAL IS NOT REQUIRED FOR THE BATTERY CABINET HEATERS. THE CONTRACTOR SHOULD CONFIRM THIS WITH THE INSTALLATION DOCUMENTS PROVIDED WITH BATTERY CABINET BEFORE PULLING CONDUCTORS .



1 ONE-LINE DIAGRAM
SCALE: N.T.S.

NOTES:

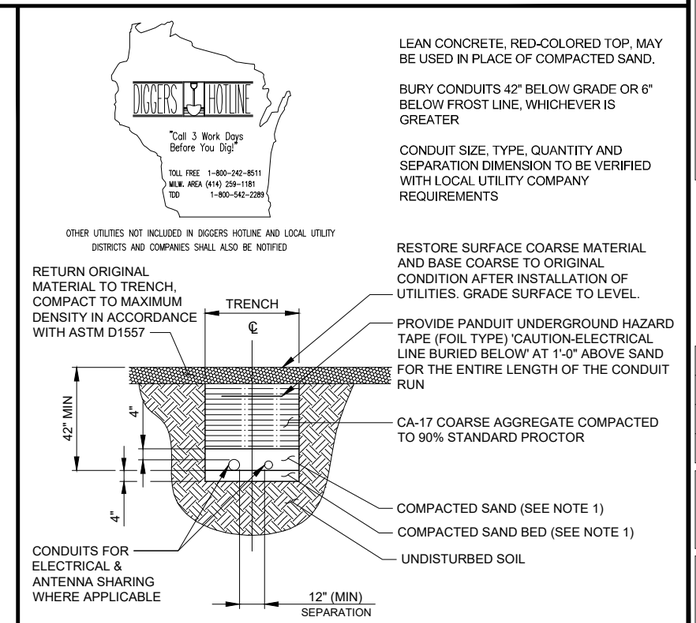
1. LOADING SHOWN IS BASED ON MAXIMUM BREAKER LOADING. CONTRACTOR TO VERIFY LOADING AND CAPACITIES OF ALL EQUIPMENT AND NOTIFY TERRA OF ANY DISCREPANCIES.
2. CONTRACTOR TO VERIFY THE SIZE OF ALL BREAKERS SOWN AND WITH MANUFACTURER SPECIFICATIONS.

200A 120/240VAC POWER PANEL SCHEDULE

LOAD SERVED	VOLT AMPERES (WATTS) L1	VOLT AMPERES (WATTS) L2	TRIP	CKT#	PHASE	CKT#	TRIP	VOLT AMPERES (WATTS) L1	VOLT AMPERES (WATTS) L2	LOAD SERVED
SURGE SUPPRESSOR	0		60A	1	A	2	125A	12960*		PROPOSED 6160 RADIO CABINET
		0		3	B	4			12960*	
GFCI RECEPTACLE	180		20A	5	A	6	20A	180		PROPOSED 6160 GFCI
FLOOD LIGHTS		300	20A	7	B	8	–		–	–
BATTERY CABINET HVAC	1440		15A	9	A	10	–	–		–
HEATER IN BATTERY CABINET (OPTIONAL)		500	10A	11	B	12	–		–	–
	500			13	A	14	–	–		–
HEATER IN BATTERY CABINET (OPTIONAL)		500	10A	15	B	16	–		–	–
	500			17	A	18	–	–		–
–		–	–	19	B	20	–		–	–
–	–		–	21	A	22	–	–		–
–		–	–	23	B	24	–		–	–
VOLT AMPS	2,620	1,300						13,140	12,960	VOLT AMPS

L1 VOLT AMPERES	15,760	14,260 L2 VOLT AMPERES
	15,760	MAX VOLT AMPERES
	131.3	TOTAL AMPS
	164.2	AMPS X 125%

* SEE NOTE 1



2 UTILITY TRENCH DETAIL
SCALE: N.T.S.

uscellular
8410 W. BRYN MAWR AVE.
CHICAGO, IL 60631
POC: STEVE HATMAKER

TERRA CONSULTING GROUP, LTD.
600 BUSSE HIGHWAY
PARK RIDGE, IL 60068
PH: 847-698-6400
FAX: 847-698-6401

REVISIONS

NO.	DESCRIPTION	DATE	BY
A	ISSUED FOR REVIEW	11/04/22	BJC
B	REVISED PER USCC COMMENTS	12/19/22	JGL
0	ISSUED FOR CONSTRUCTION	12/20/22	EW
1	ADDED LANDSCAPE BUFFER	01/11/23	EW

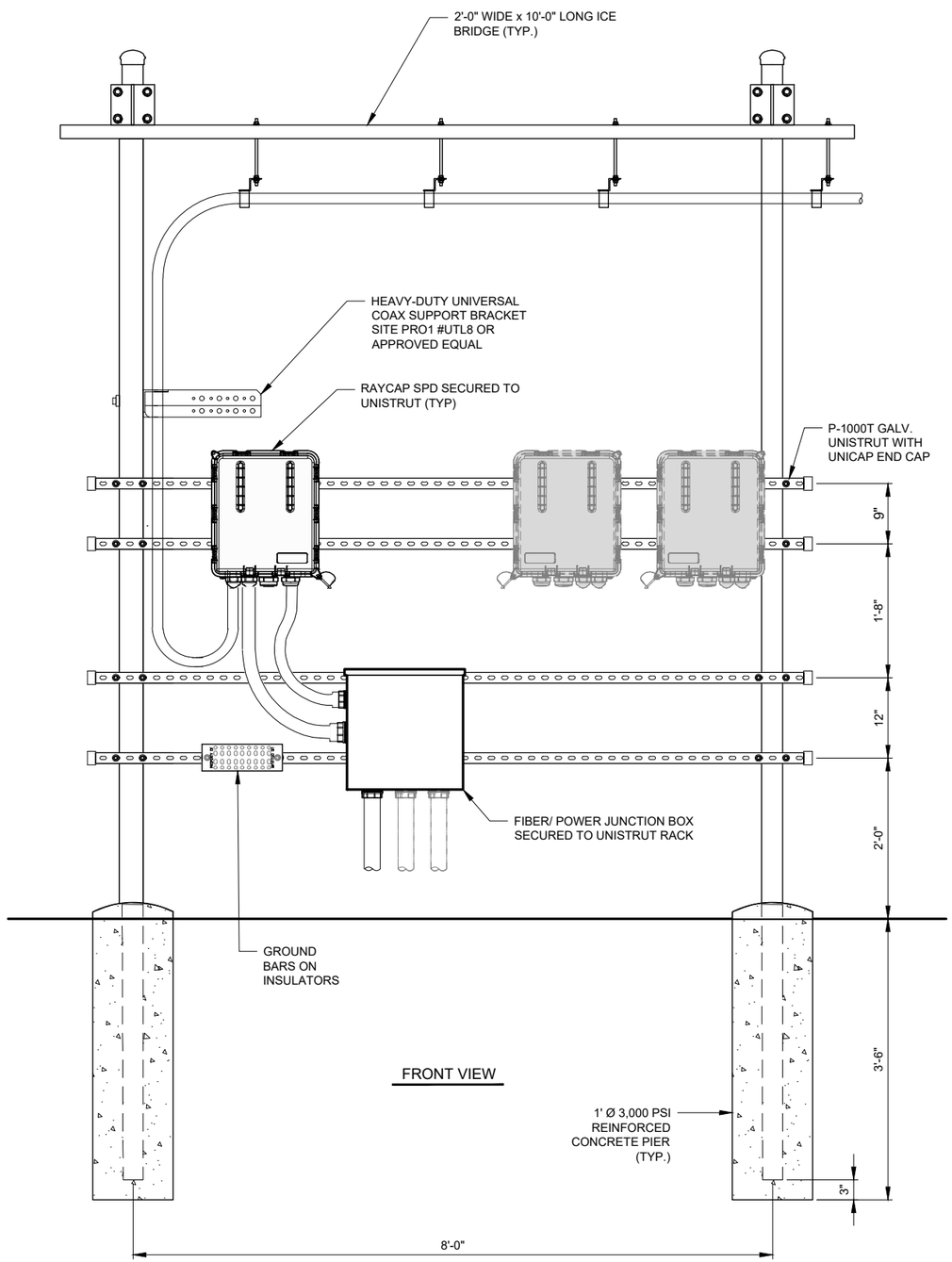
SITE# 784809
GERMANTOWN

W172N11083
DIVISION ROAD,
GERMANTOWN, WI 53022

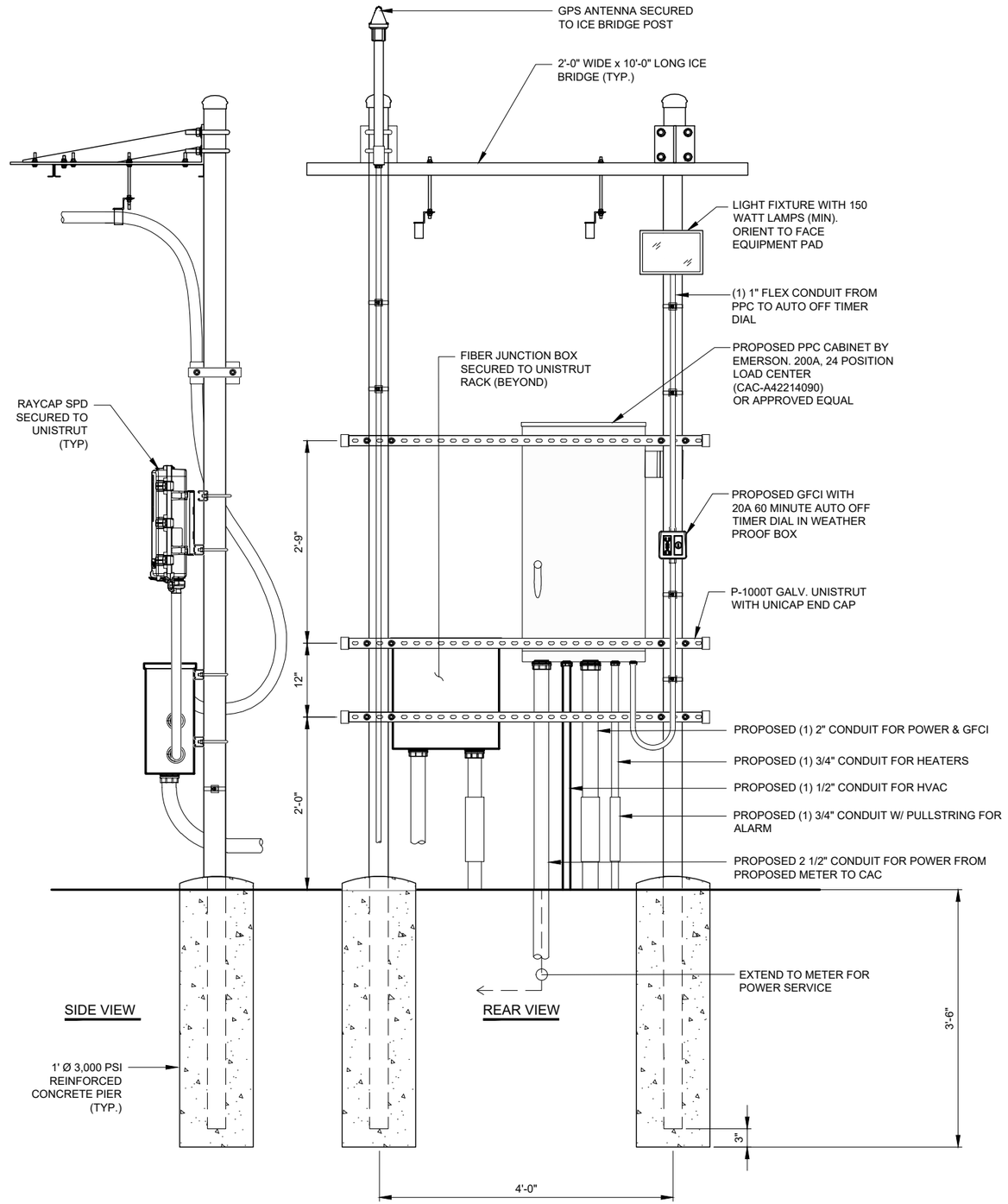
DRAWN BY:	BJC
CHECKED BY:	EW
DATE:	10/25/22
PROJECT #:	10-079

SHEET TITLE
UTILITY DETAILS

SHEET NUMBER
E-2



1 8'-0" EQUIPMENT H-FRAME DETAIL
N.T.S.



2 4-0" PPC CABINET H-FRAME DETAIL
N.T.S.

uscellular
8410 W. BRYN MAWR AVE.
CHICAGO, IL 60631
POC: STEVE HATMAKER

TERRA CONSULTING GROUP, LTD.
600 BUSSE HIGHWAY
PARK RIDGE, IL 60068
PH: 847-698-6400
FAX: 847-698-6401

REVISIONS

NO.	DESCRIPTION	DATE	BY
A	ISSUED FOR REVIEW	11/04/22	BJC
B	REVISED PER USCC COMMENTS	12/19/22	JGL
0	ISSUED FOR CONSTRUCTION	12/20/22	EW
1	ADDED LANDSCAPE BUFFER	01/11/23	EW

SITE# 784809
GERMANTOWN

W172N11083
DIVISION ROAD,
GERMANTOWN, WI 53022

DRAWN BY:	BJC
CHECKED BY:	EW
DATE:	10/25/22
PROJECT #:	10-079

SHEET TITLE
EQUIPMENT & CAC H-FRAME DETAILS

SHEET NUMBER
E-3

NOTES:
1. PER 2020 NEC CODE, SCHEDULE 80 PVC CONDUIT TO BE USED FOR ALL CONDUITS EXPOSED ABOVE GRADE.

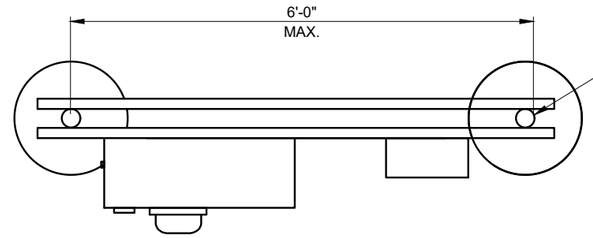
2. G.C. TO PROVIDE A SLIP JOINT CONNECTION AT ALL ABOVE GRADE UTILITY CONNECTIONS AT H-FRAME.

NOTE:
G.C. SHALL FURNISH, INSTALL & ENGRAVE PLASTIC LABELS WITH ARC FLASH INFORMATION BASED ON UTILITY TRANSFORMER SIZE. INFORMATION TO BE OBTAINED FROM LOCATION UTILITY COMPANY.

NOTES:
1. UTILITY COORDINATION NOT BY TERRA CONSULTING GROUP.

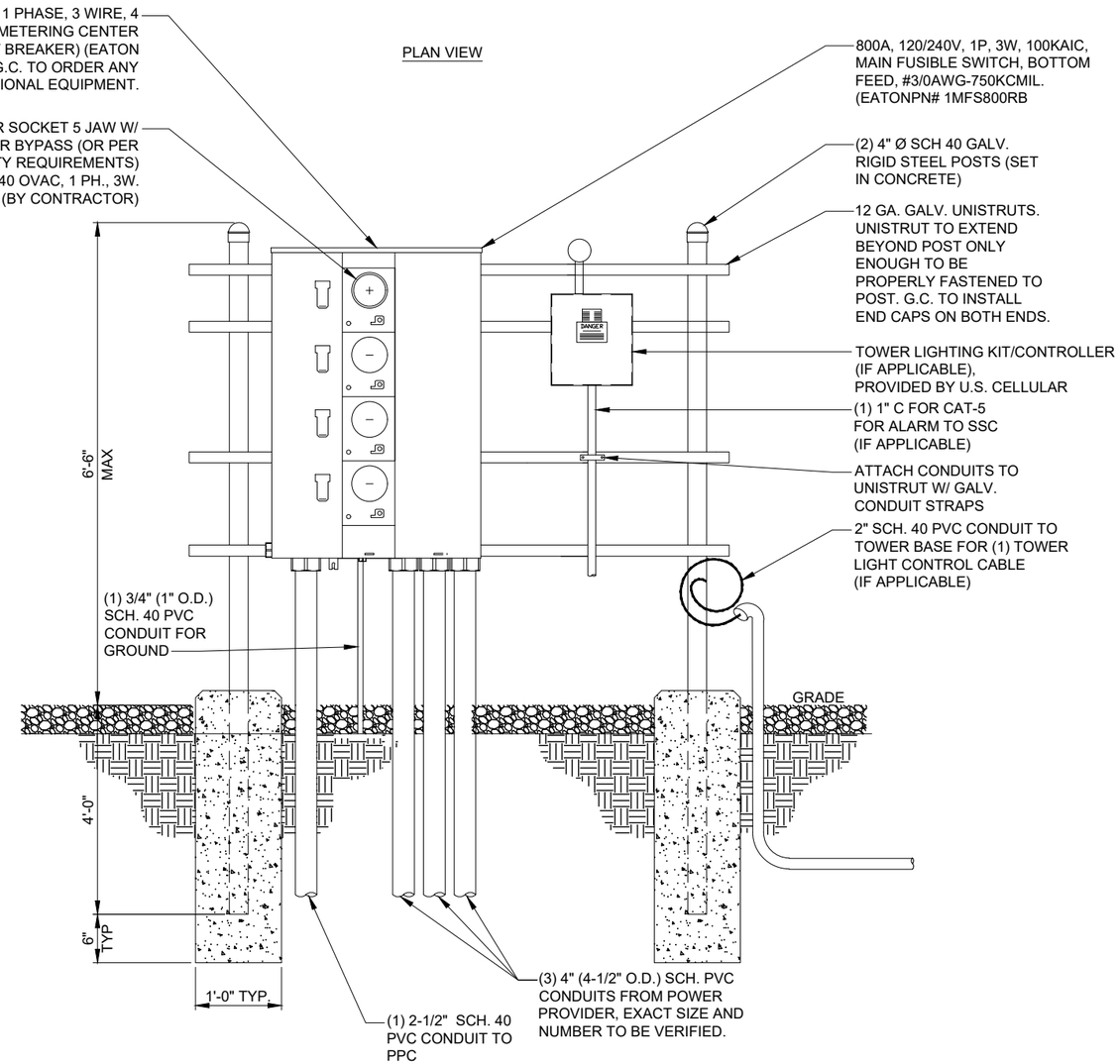
2. ALL METERING EQUIPMENT TO BE APPROVED FOR INSTALLATION BY LOCAL UTILITY COMPANY PRIOR TO ORDERING METERING EQUIPMENT.

3. METERING EQUIPMENT SHALL MEET ALL NEC REQUIREMENTS AS ADOPTED BY INDIVIDUAL STATE ELECTRICAL STANDARDS PRIOR TO ORDERING OF EQUIPMENT.



G.C. TO ADD (1) POST WHEN ADDITIONAL EQUIPMENT IS REQUIRED BY UTILITY PROVIDER

PLAN VIEW



UTILITY H-FRAME FRONT - ELECTRICAL SIDE

uscellular
8410 W. BRYN MAWR AVE.
CHICAGO, IL 60631
POC: STEVE HATMAKER

TERRA CONSULTING GROUP, LTD.
600 BUSSE HIGHWAY
PARK RIDGE, IL 60068
PH: 847-698-6400
FAX: 847-698-6401

REVISIONS

NO.	DESCRIPTION	DATE	BY
A	ISSUED FOR REVIEW	11/04/22	BJC
B	REVISED PER USCC COMMENTS	12/19/22	JGL
0	ISSUED FOR CONSTRUCTION	12/20/22	EW
1	ADDED LANDSCAPE BUFFER	01/11/23	EW

SITE# 784809
GERMANTOWN

W172N11083
DIVISION ROAD,
GERMANTOWN, WI 53022

DRAWN BY:	BJC
CHECKED BY:	EW
DATE:	10/25/22
PROJECT #:	10-079

SHEET TITLE
COMPOUND
H-FRAME DETAILS

SHEET NUMBER
E-4

GROUNDING ELECTRODE SYSTEM NOTES:

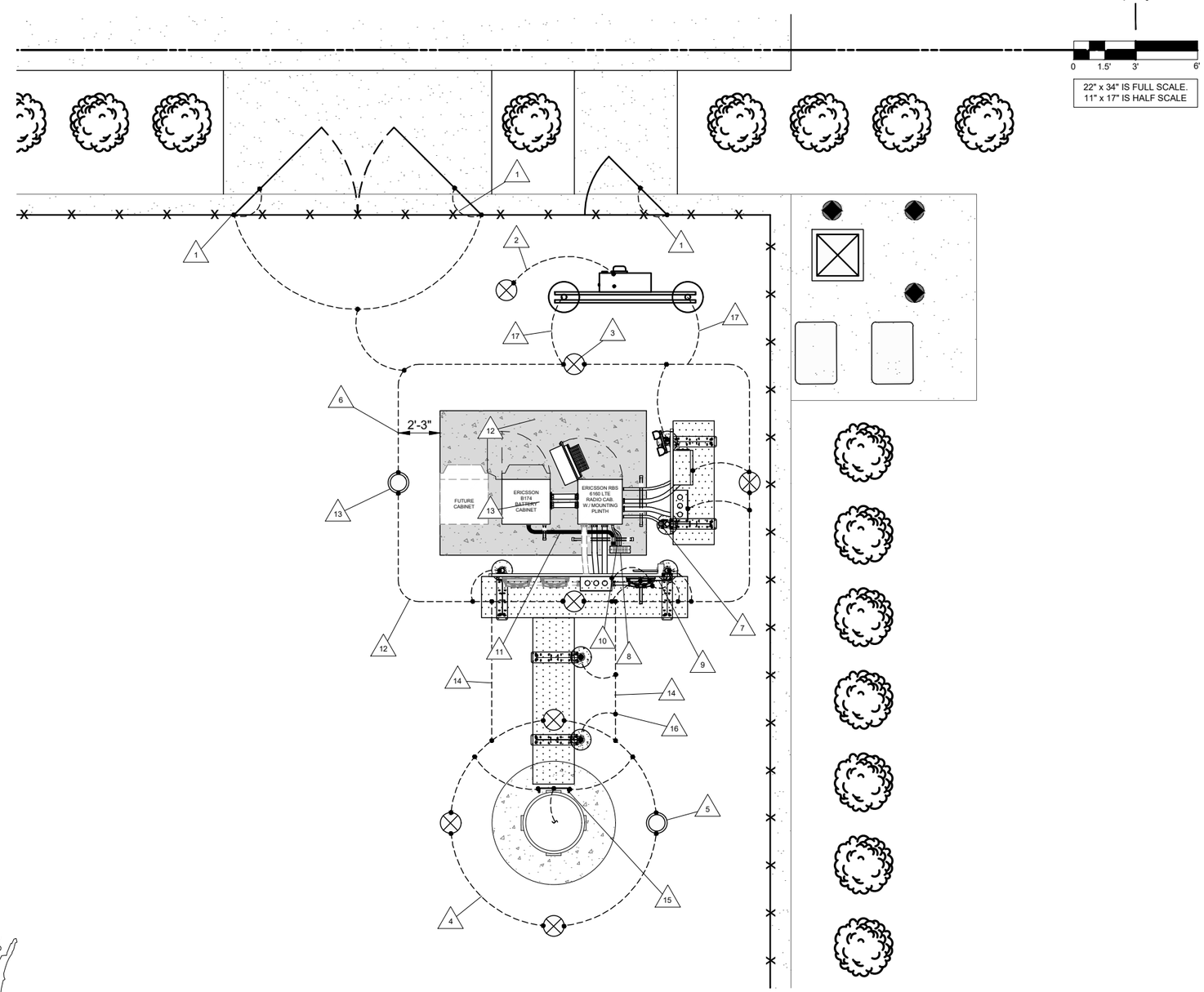
1. ALL GROUNDING CONNECTIONS SHALL BE MADE BY THE EXOTHERMIC PROCESS OR COMPRESSION CRIMPED. CONNECTIONS SHALL INCLUDE ALL CABLE TO CABLE, SPLICES, ETC. ALL CABLE TO GROUND RODS, GROUND RODS SPLICES AND LIGHTNING PROTECTION SYSTEM AS INDICATED. GROUND FOUNDATION ONLY AS INDICATED BY PM. ALL MATERIALS USED (MOLDS, WELDING, METAL, TOOLS, ETC.) SHALL BE BY EXOTHERMIC PROCESS AND INSTALLED PER MANUFACTURERS RECOMMENDATIONS AND PROCEDURES.GROUND CONDUCTOR SHALL HAVE A MINIMUM 24" BENDING RADIUS.
2. ALL EXOTHERMIC CONNECTIONS ON GALVANIZED SURFACES SHALL BE CLEANED THOROUGHLY AND COLORED TO MATCH SURFACE WITH (2) TWO COATS OF SHERWIN-WILLIAMS GALVITE (WHITE) PAINT B50W3 (OR EQUAL) OR SHERWIN- WILLIAMS SILVERBRITE (ALUMINUM) B59S11 (OR EQUAL).
3. ALL ELECTRICAL & MECHANICAL GROUND CONNECTIONS SHALL HAVE ANTI-OXIDANT COMPOUND APPLIED TO CONNECTION
4. FENCE/GATE: GROUND FENCE POSTS WITHIN 6 FEET OF PAD AND 25 FEET OF TOWER AS INDICATED ON DRAWINGS. GROUND EACH GATE POSTGROUND CONNECTIONS TO FENCE POSTS SHALL BE MADE BY THE EXOTHERMIC PROCESS AND INSTALLED PER MANUFACTURER'S RECOMMENDATIONS AND PROCEDURES. ALL OTHER CONNECTIONS FOR THE GROUND GRID SYSTEM SHALL BE MADE BY THE EXOTHERMIC PROCESS, AND INSTALLED PER MANUFACTURER'S RECOMMENDATIONS AND PROCEDURES.
6. UTILITY COMPANY COORDINATION: ELECTRICAL CONTRACTOR SHALL CONFIRM THAT ALL WORK IS IN ACCORDANCE WITH THE RULES OF THE LOCAL UTILITY COMPANY BEFORE SUBMITTING THE BID, THE CONTRACTOR SHALL CHECK WITH THE UTILITY COMPANIES SUPPLYING SERVICE TO THIS PROJECT AND SHALL DETERMINE FROM THEM ALL EQUIPMENT AND CHARGES WHICH THEY WILL REQUIRE AND SHALL INCLUDE THE COST IN THE BID.
7. GROUND TEST: GROUND TESTS SHALL BE PERFORMED AS REQUIRED BY LESSEE STANDARD PROCEDURES. GROUND GRID RESISTANCE SHALL NOT EXCEED 5 OHMS.
8. CONTRACTOR SHALL SUBMIT THE GROUND RESISTANCE TEST REPORT AS FOLLOWS:
   1. ONE (1) COPY TO OWNER REPRESENTATIVE
   2. ONE (1) COPY TO ENGINEER
9. FOR ALL GALVANIZED ANTENNA SUPPORTING STRUCTURES, ZINGA SHALL BE USED TO COAT ALL WELDS, CAD WELDS, AND SCRATCHES. NO APPROVED EQUALS AT THIS TIME.

TYPICAL KEYED GROUNDING NOTES

1. GATE GROUND LEADS TO GATE POST (IF APPLICABLE)
2. ELECTRIC METER GROUNDED ON A SINGLE DRIVEN GROUND ROD THAT IS NOT ATTACHED TO THE GROUND RING
3. 3/4" THICK x 10' LONG GROUND ROD (TYP.) SPACED ONE-ROD LENGTH MINIMUM BETWEEN RODS
4. TOWER GROUND RING, #2 SOLID TINNED COPPER, 30" BELOW GRADE OR 6" BELOW FROST LINE, WHICHEVER IS DEEPER
5. TOWER GROUND RING INSPECTION WELL
6. MAINTAIN 2'-3' SEPARATION BETWEEN GROUND RING AND FOUNDATION (TYP.)
7. GROUND GPS UNIT TO COLLECTOR GROUND BAR (CGB) ON UTILITY H-FRAME
8. MASTER GROUND BAR (MGB MOUNTED HORIZONTALLY TO CONCRETE PAD ON INSULATORS; (2) GROUNDS FROM MGB TO EQUIPMENT GROUND RING.
9. COLLECTOR GROUND BAR (CGB) MOUNTED TO UNISTRUT RACK ON INSULATORS; (2) GROUNDS FROM MGB TO EQUIPMENT GROUND RING.
10. EQUIPMENT CABINET GROUNDING: (1) LEAD FROM MASTER GROUND BAR TO GROUND BAR INSIDE RBS CABINET AND (1) LEAD FROM MASTER GROUND BAR TO RBS PLINTH, #2 INSULATED COPPER (TYP); ROUTE THROUGH NEW PENETRATIONS AND LIQUID-TIGHT CONDUIT FITTINGS THROUGH BACK OF MOUNTING PLINTH
11. (1) GROUND LEAD FROM BATTERY CABINET TO MASTER GROUND BAR, #2 INSULATED COPPER; ROUTE IN LIQUID TIGHT FLEXIBLE NON-METALLIC CONDUIT OUT NEW PENETRATION THOUGH BACK OF EQUIPMENT CABINET PLINTH.
12. EQUIPMENT GROUND RING,30" BELOW GRADE OR 6" BELOW FROST LINE, WHICHEVER IS DEEPER
13. EQUIPMENT GROUND RING INSPECTION WELL
14. GROUND LEAD FROM EQUIPMENT GROUND RING TO TOWER GROUND RING (TYP. OF 2), #2 SOLID TINNED COPPER
15. TOWER GROUND BAR (TGB) WITH (2) GROUNDS FROM TGB TO TOWER GROUND RING AND (1) BOND FROM TGB TO TOWER STEEL
16. GROUND LEAD FROM ICE BRIDGE POST TO BURIED GROUND RING (TYP.)
17. GROUND LEAD FROM UTILITY H-FRAME TO EQUIPMENT GROUND RING

LEGEND

- #2 SOLID TINNED COPPER GROUND WIRE
- 3/4" x 10' COPPER CLAD GROUND ROD SPACED AT 10' TO 20' O.C.
- GROUND INSPECTION WELL
- CADWELD CONNECTION
- PROPOSED FENCE LINE



1 GROUNDING SITE PLAN
SCALE: 1" = 3'

DIGGERS HOTLINE
"Call 3 Work Days Before You Dig!"
TOLL FREE 1-800-242-8511
MILW. AREA (414) 259-1181
TDD 1-800-542-2289

OTHER UTILITIES NOT INCLUDED IN DIGGERS HOTLINE AND LOCAL UTILITY DISTRICTS AND COMPANIES SHALL ALSO BE NOTIFIED

NOTE:
FINAL GROUNDING PLAN PENDING
FINAL TOWER FOUNDATION DESIGN.
TOWER ERECTION DRAWINGS
PROVIDED BY TOWER OWNER

uscellular
8410 W. BRYN MAWR AVE.
CHICAGO, IL 60631
POC: STEVE HATMAKER

TERRA CONSULTING GROUP, LTD.
600 BUSSE HIGHWAY
PARK RIDGE, IL 60068
PH: 847-698-6400
FAX: 847-698-6401

REVISIONS

NO.	DESCRIPTION	DATE	BY
A	ISSUED FOR REVIEW	11/04/22	BJC
B	REVISED PER USCC COMMENTS	12/19/22	JGL
0	ISSUED FOR CONSTRUCTION	12/20/22	EW
1	ADDED LANDSCAPE BUFFER	01/11/23	EW

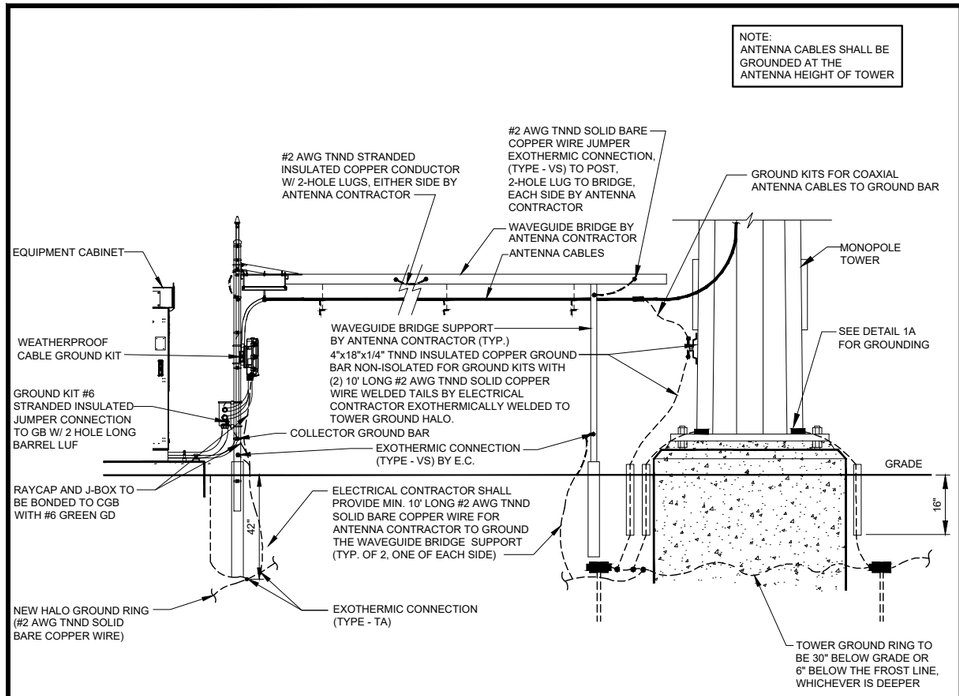
SITE# 784809
GERMANTOWN

W172N11083
DIVISION ROAD,
GERMANTOWN, WI 53022

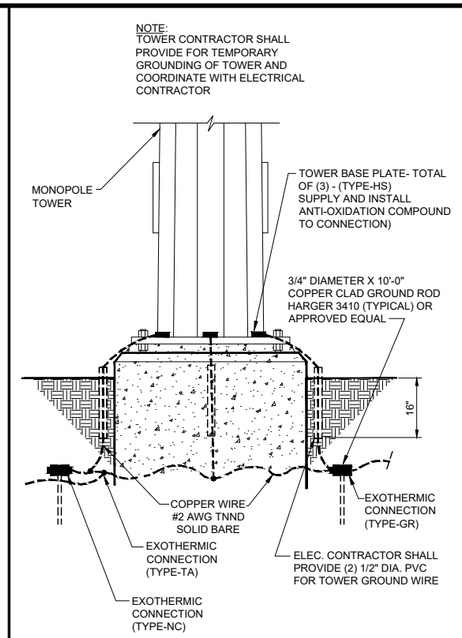
DRAWN BY:	BJC
CHECKED BY:	EW
DATE:	10/25/22
PROJECT #:	10-079

SHEET TITLE
OVERALL GROUNDING SITE PLAN

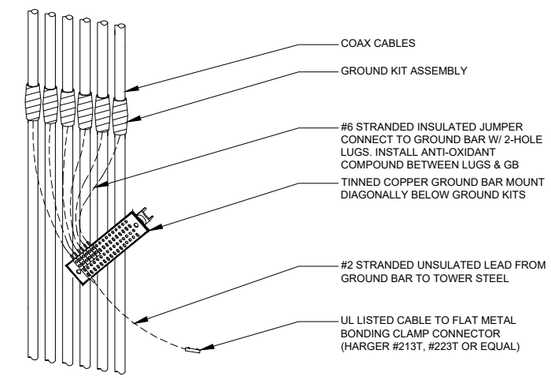
SHEET NUMBER
G-1



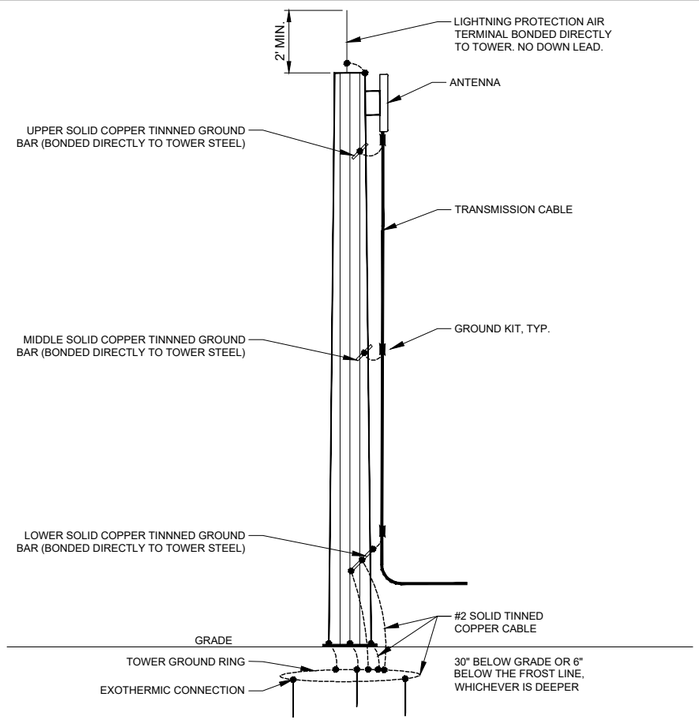
1 ANTENNA CABLE AND WAVEGUIDE BRIDGE GROUNDING DETAIL
N.T.S.



1A PROPOSED MONOPOLE TOWER GROUNDING DETAIL
N.T.S.



2 GROUND KIT DETAIL
N.T.S.



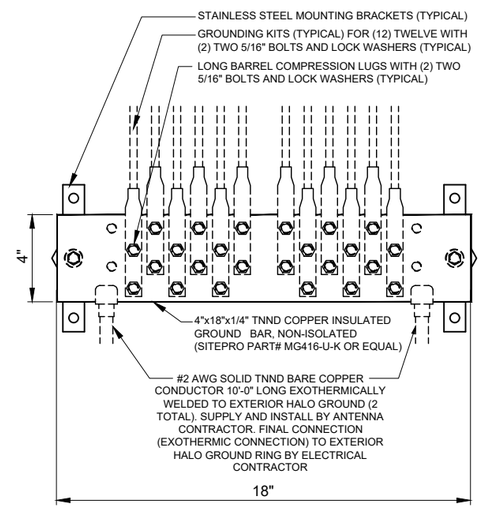
4 TOWER GROUNDING ELEVATION
N.T.S.

AIR TERMINAL FOR ALL TOWER TYPES:

- LIGHTNING AIR TERMINALS SHALL BE AT LEASE 2 FEET ABOVE THE TALLEST POINT OF THE TOWER AND BONDED TO TOWER
- LIGHTNING AIR TERMINALS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO TOWER FRAME
- LIGHTNING RODS SHALL NOT VIOLATE FAA DETERMINATEION LETTER
- EXOTHERMIC WELDS ARE TO BE TREATED WITH ZINGA

TOWER GROUND BAR (TGB)

- EACH TGB SHALL ACT AS A COLLECTION POINT FOR GROUNDING CONDUCTORS FROM TRANSMISSION CABLE GROUNDING KITS. 3.16.2 EACH TGB SHALL BE BOLTED TO THE TOWER USING STAINLESS STEEL HARDWARE.
- NO INSULATORS ARE TO BE INSTALLED ON THE TGB'S.
- ALL CONNECTION POINTS SHALL USE ANTI-OXIDATION MATERIAL AND STAINLESS HARDWARE.
- THE TOP TGB SHALL BE BOLTED TO THE TOWER BELOW ANTENNAS USING STAINLESS STEEL HARDWARE.
- THE MIDDLE TGB SHALL BE BOLTED TO THE TOWER USING STAINLESS STEEL HARDWARE, BELOW TRANSMISSION CABLE GROUNDING KITS ON CABLE RUNS OVER 300 FEET.
- BOTTOM TGB SHALL BE BOLTED TO THE TOWER USING STAINLESS STEEL HARDWARE, BELOW THE TRANSMISSION CABLE GROUNDING KITS. IDEALLY, THIS TGB SHALL BE MOUNTED DIAGONALLY JUST ABOVE THE ICE BRIDGE.
- BOTTOM TGB SHALL ADDITIONALLY BE BONDED TO THE TOWER GROUND RING USING 2 # 2 BARE, SOLID TINNED COPPER CABLES. 3.14.9 ALL GROUND BARS SHALL BE SOLID COPPER TINNED PLATED.
- EXOTHERMIC WELDS ARE TO BE TREATED WITH ZINGA.
- ALL CONNECTIONS TO THE GROUND BAR SHALL BE TREATED WITH ANTI-OXIDATION MATERIAL.



GROUND BAR TYPE & MODEL	
EQUIPMENT PAD GROUND BAR:	1/4" x 4" x 18" BROUND BAR W/ INSULARTORS AND BRACKETS SIZED FOR 42 SETS OF 2 HOLE-LUGS. SITEPRO PART # MG416-U-K OR EQUAL
LOWER TOWER GROUND BAR:	1/4" X 4" x 18" GROUND BAR SIZED FOR 42 SETS OF 2-HOLE LUGS SITEPRO PART #TINMG418-U OR EQUAL
MIDDLE TOWER GROUND BAR:	1/4" X 4" x 18" GROUND BAR SIZED FOR 42 SETS OF 2-HOLE LUGS SITEPRO PART #TINMG418-U OR EQUAL
UPPER TOWER GROUND BAR:	1/4" X 4" x 18" GROUND BAR SIZED FOR 42 SETS OF 2-HOLE LUGS SITEPRO PART #TINMG418-U OR EQUAL

5 EXTERIOR GROUND BAR DETAIL
N.T.S.

uscellular
8410 W. BRYN MAWR AVE.
CHICAGO, IL 60631
POC: STEVE HATMAKER

TERRA CONSULTING GROUP, LTD.
600 BUSSE HIGHWAY
PARK RIDGE, IL 60068
PH: 847-698-6400
FAX: 847-698-6401

REVISIONS

NO.	DESCRIPTION	DATE	BY
A	ISSUED FOR REVIEW	11/04/22	BJC
B	REVISED PER USCC COMMENTS	12/19/22	JGL
0	ISSUED FOR CONSTRUCTION	12/20/22	EW
1	ADDED LANDSCAPE BUFFER	01/11/23	EW

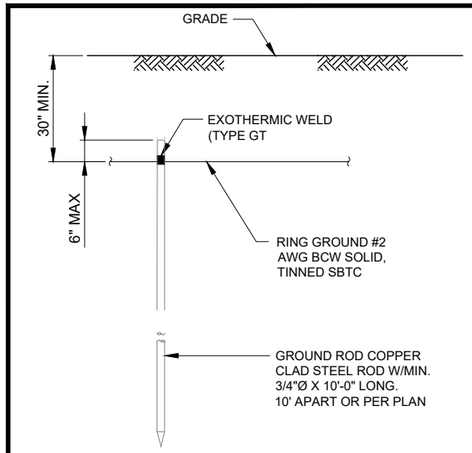
SITE# 784809
GERMANTOWN

W172N11083
DIVISION ROAD,
GERMANTOWN, WI 53022

DRAWN BY:	BJC
CHECKED BY:	EW
DATE:	10/25/22
PROJECT #:	10-079

SHEET TITLE
GROUNDING DETAILS

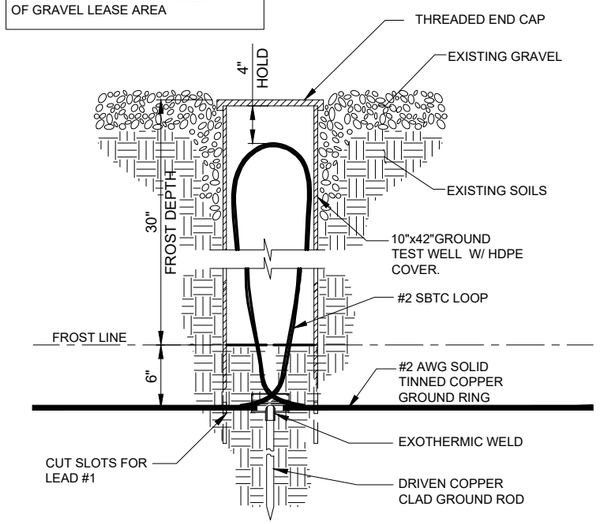
SHEET NUMBER
G-2



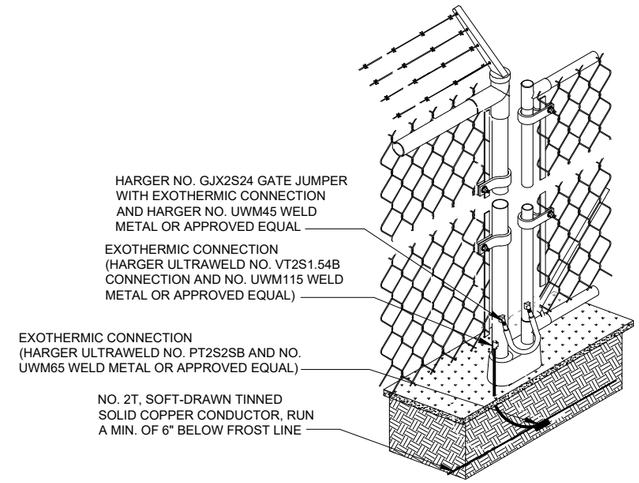
NOTE:
GROUND ROD SHALL BE DRIVEN VERTICALLY, NOT TO EXCEED 45 DEGREES FROM THE VERTICAL.

1 GROUND ROD DETAIL
SCALE: N.T.S.

NOTE:
SET TEST WELL COVER 1" BELOW TOP OF GRAVEL LEASE AREA



2 TEST WELL DETAIL
SCALE: N.T.S.



3 FENCE GROUNDING DETAIL
N.T.S.

uscellular
8410 W. BRYN MAWR AVE.
CHICAGO, IL 60631
POC: STEVE HATMAKER

TERRA CONSULTING GROUP, LTD.
600 BUSSE HIGHWAY
PARK RIDGE, IL 60068
PH: 847-698-6400
FAX: 847-698-6401

REVISIONS

NO.	DESCRIPTION	DATE	BY
A	ISSUED FOR REVIEW	11/04/22	BJC
B	REVISED PER USCC COMMENTS	12/19/22	JGL
0	ISSUED FOR CONSTRUCTION	12/20/22	EW
1	ADDED LANDSCAPE BUFFER	01/11/23	EW

SITE# 784809
GERMANTOWN

W172N11083
DIVISION ROAD,
GERMANTOWN, WI 53022

DRAWN BY:	BJC
CHECKED BY:	EW
DATE:	10/25/22
PROJECT #:	10-079

SHEET TITLE
GROUNDING DETAILS

SHEET NUMBER
G-3

GENERAL REQUIREMENTS

1. SITE WORK SHALL BE COMPLETED IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS (U.S. CELLULAR STANDARD PLANS AND SPECIFICATIONS) AND THE REFERENCED STANDARDS.

A. ALL APPLICABLE LOCAL, STATE AND FEDERAL CODES AND REGULATIONS.

B. UNIFORM BUILDING CODE (UBC) BUILDING OFFICIALS & CODE ADMINISTRATORS (BOCA) AS APPLICABLE.

C. AMERICAN CONCRETE INSTITUTE (ACI).

D. AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM).

E. ELECTRONICS INDUSTRIES ASSOCIATION STANDARDS (EIA/TIA-222-F) MOST CURRENT VERSION ADOPTED BY SUBJECT STATE.

F. OCCUPATIONAL SAFETY AND HEAL TH ADMINISTRATION (OSHA).

2. WHERE A CONFLICT OCCURS BETWEEN REFERENCED STANDARDS AND U.S. CELLULAR STANDARD PLANS AND SPECIFICATIONS, THE MORE STRINGENT STANDARD SHALL APPLY.

3. THE FACILITY IS AN UNOCCUPIED SPECIALIZED MOBILE RADIO FACILITY.

4. PLANS ARE NOT TO BE SCALED AND ARE INTENDED TO BE A DIAGRAMMATIC OUTLINE ONLY, UNLESS NOTED OTHERWISE THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.

5. PRIOR TO THE SUBMISSIONS OF THE BIDS, THE CONTRACTOR SHALL VISIT THE JOB SITE AND BECOME FAMILIAR WITH THE FIELD CONDITIONS. ANY DISCREPANCIES ARE TO BE BROUGHT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE.

6. THE CONTRACTOR SHALL RECEIVE IN WRITING, AUTHORIZATION TO PROCEED BEFORE STARTING WORK ON ANY ITEM NOT CLEARLY IDENTIFIED BY THE CONTRACT DOCUMENTS.

7. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY OTHERWISE NOTED.

8. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK USING BEST SKILLED PERSONNEL. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT INCLUDING CONTACT AND COORDINATION WITH THE LANDLORDS AUTHORIZED REPRESENTATIVE.

9. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS OF THE SITE AND NOTIFY THE OWNER'S REPRESENTATIVE OF ANY DISCREPANCIES BEFORE STARTING ANY WORK.

10. WHEN CONTRACTOR'S ACTIVITIES IMPEDE OR OBSTRUCT TRAFFIC FLOW, CONTRACTOR SHALL PROVIDE TRAFFIC CONTROL DEVICES, SIGNS, AND FLAGMEN IN ACCORDANCE WITH PART VI OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AS PUBLISHED BY THE FEDERAL HIGHWAY ADMINISTRATION.

11. THE CONTRACTOR SHALL COORDINATE SITE ACCESS AND SECURITY WITH THE PROPERTY OWNER AND U.S. CELLULAR PRIOR TO CONSTRUCTION.

12. THE CONTRACTOR SHALL MAKE NECESSARY PROVISIONS TO PROTECT EXISTING IMPROVEMENTS SUCH AS BUT NOT LIMITED TO, PAVING, CURBS, AGRICULTURAL CROPS, DRAIN TILE, FENCES, LANDSCAPING, GALVANIZED SURFACES, ETC. AND UPON COMPLETION OF WORK REPAIR ANY DAMAGE THAT OCCURRED DURING CONSTRUCTION.

13. THE LOCATIONS OF UTILITIES SHOWN ON THE PLAN ARE BASED ON EXISTING RECORDS, FIELD LOCATIONS OR OWNER SUPPLIED INFORMATION AND MAY NOT BE ACCURATE. THE CONTRACTOR SHALL MARK ALL PUBLIC & PRIVATE UTILITIES. THE CONTRACTOR SHALL CALL THE LOCAL "ONE CALL" PROVIDER A MINIMUM OF THREE BUSINESS DAYS PRIOR TO EXCAVATING TO ALLOW MEMBER UTILITIES TO LOCATE THEIR FACILITIES. THE PROPERTY OWNER SHALL BE NOTIFIED IN A SIMILAR FASHION TO ALLOW HIM TO LOCATE HIS PRIVATE UTILITIES.

14. WHEN EXCAVATING AROUND UTILITIES, THE CONTRACTOR SHALL USE REASONABLE CARE IN LOCATING AND PROTECTING UTILITIES. U.S. CELLULAR SHALL BE NOTIFIED IMMEDIATELY OF ANY CONFLICTS BETWEEN EXISTING UTILITIES AND PROPOSED CONSTRUCTION.

15. DAMAGE TO PUBLIC OR PRIVATE UTILITIES SHALL BE REPORTED TO U.S. CELLULAR AND THE OWNER OF THE UTILITY IMMEDIATELY. ANY DAMAGE RESULTING FROM CONTRACTOR'S NEGLIGENCE OR FAILURE TO ACT WITH DUE REGARD SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE.

16. UNLESS OTHERWISE NOTED ON THE PLANS, CONTRACTOR SHALL ASSUME ALL SURFACE FEATURES SUCH AS BUILDINGS, PAVEMENTS, LANDSCAPING FEATURES AND PLANTS ARE TO BE SAVED AND PROTECTED FROM DAMAGE.

17. KEEP THE CONSTRUCTION SITE CLEAN, HAZARD FREE, AND DISPOSE OF ALL DIRT, DEBRIS, l RUBBISH AND REMOVE EQUIPMENT NOT SPECIFIED AS REMAINING ON THE PROPERTY. LEAVE PREMISES IN CLEAN CONDITION AND FREE FROM PAINT SPOTS, DUST, OR SMUDGES OF ANY NATURE.

18. THE CONTRACTOR SHALL PROVIDE ON-SITE TRASH RECEPTACLES FOR COLLECTION OF NON-TOXIC DEBRIS. ALL TRASH SHALL BE COLLECTED ON A DAILY BASIS.

19. ALL TOXIC AND ENVIRONMENTALLY HAZARDOUS SUBSTANCES SHALL BE USED AND DISPOSED OF IN ACCORDANCE WITH MANUFACTURER SPECIFICATIONS. UNDER NO CIRCUMSTANCES SHALL RINSING OR DUMPING OF THESE SUBSTANCES OCCUR ON-SITE.

20. THE CONTRACTOR SHALL MAINTAIN AND SUPPLY U.S. CELLULAR WITH AS-BUILT PLANS UPON COMPLETION OF THE PROJECT.

21. MEANS AND METHODS OF CONSTRUCTION INCLUDING, BUT NOT LIMITED TO, THE DESIGN AND PLACEMENT OF FORMS AND SHORING ARE THE RESPONSIBILITY OF THE CONTRACTOR.

22. THE GENERAL CONTRACTOR SHALL COORDINATE/ASSIST DIFFERENT TRADE CONTRACTORS IN TERMS OF COORDINATION OF SITE ACCESS.

23. ALL ARCHITECTURAL, MECHANICAL & ELECTRICAL SYSTEM AND COMPONENTS IN THIS FACILITY SHALL BE INSTALLED TO RESIST WIND, ICE AND SNOW FORCES AS PER NATIONAL STANDARDS AND BUILDING CODES (LATEST ADOPTED EDITION).

24. U.S. CELLULAR WILL OBTAIN NECESSARY PERMITS AND LICENSES FROM THE FEDERAL COMMUNICATIONS COMMISSION (FCC) AND THE FEDERAL AVIATION ADMINISTRATION (FAA). UNLESS OTHERWISE NOTED IN THE PLANS OR SPECIAL PROVISIONS, CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING AND PAYING FOR ALL OTHER PERMITS NECESSARY FOR CONSTRUCTION.

25. U.S. CELLULAR WILL ORDER AND PAY FOR ANY NECESSARY ELECTRIC AND TELEPHONE UTILITY INSTALLATIONS TO THE POINT OF TERMINATION AS SHOWN ON THE PROJECT PLANS. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION WITH UTILITIES.

26. U.S. CELLULAR WILL PROVIDE PRIMARY HORIZONTAL AND VERTICAL CONTROL FOR CONSTRUCTION. CONTRACTOR WILL BE RESPONSIBLE TO CORRECTLY TRANSFER LINE AND GRADE. THE CONTRACTOR SHALL PROVIDE ANY ADDITIONAL STAKING OR RE-STAKING.

27. U.S. CELLULAR MAY RETAIN THE SERVICES OF A TESTING LABORATORY TO PERFORM QUALITY ASSURANCE TESTING ON VARIOUS PORTIONS OF THE CONTRACTORS WORK. WHEN REQUESTED, THE CONTRACTOR SHALL INFORM THE TESTING LABORATORY AND ASSIST THEM IN COMPLETING TESTS.

28. THE CONTRACTOR SHALL PROVIDE ANY TEMPORARY UTILITIES OR FACILITIES IT DEEMS NECESSARY TO COMPLETE IT'S WORK. THIS INCLUDES, BUT IS NOT LIMITED TO WATER, SEWER, POWER, TELEPHONE, HEAT, LIGHTING OR SECURITY.

29. NOTIFY ENGINEER 2 DAYS IN ADVANCE OF INITIATING SITE CONSTRUCTION ACTIVITIES.

DEMOLITION

1. PERFORM DEMOLITION AND REMOVAL OF EXISTING MATERIALS OR STRUCTURES AS SHOWN ON THE PLANS AND AS SPECIFIED IN SPECIAL CONDITIONS.
PROTECT EXISTING FACILITIES OR STRUCTURES THAT ARE TO REMAIN.

2. COMPLETE DEMOLITION IN A SYSTEMATIC MANNER BEGINNING AT THE HIGHEST LEVEL.

3. NEATLY SAW OR CUT JOINTS AT THE LIMITS OF REMOVAL; WHENEVER POSSIBLE LOCATE CUTS AT EXISTING JOINTS.

4. PATCH AND REPAIR ANY DAMAGED SURFACES OR STRUCTURAL MEMBERS AT THE LIMITS OF REMOVAL.

5. REMOVAL DEMOLITION DEBRIS FROM THE SITE ON A REGULAR BASIS. DISPOSE ALL DEBRIS OFFSITE IN ACCORDANCE WITH STATE AND LOCAL REGULATIONS. BURNING OF MATERIAL SHALL NOT BE ALLOWED UNLESS OTHERWISE NOTED IN THE PLANS OR SPECIAL PROVISIONS.

CLEARING AND GRUBBING

1. REMOVE TREES, STUMPS, SHRUBS, GRASS AND OTHER VEGETATION AS SHOWN ON THE PLANS TO ALLOW FOR CONSTRUCTION OF NEW CELLULAR FACILITIES.

2. WHEN POSSIBLE, NEATLY TRIM OR CUT BACK EXISTING TREES OR VEGETATION TO ALLOW FOR CONSTRUCTION OF NEW CELLULAR FACILITIES.

3. WHEN CLEARING TREES, PROTECT ALL SURROUNDING STRUCTURES, PAVEMENTS AND LANDSCAPING BY TOPPING, TRIMMING AND USING GUY LINES.

4. COMPLETELY REMOVE ALL STUMPS AND ROOTS. STUMPS AND ROOTS MAY BE REMOVED BY GRUBBING, CHIPPING OR GRINDING.

5. DISPOSE OF ALL DEBRIS OFFSITE IN ACCORDANCE WITH STATE AND LOCAL REGULATIONS. BURNING OF MATERIAL SHALL NOT BE ALLOWED UNLESS OTHERWISE NOTED IN THE PLANS OR SPECIAL PROVISIONS.

EARTHWORK

1. REMOVE TOPSOIL FROM BENEATH ALL PROPOSED ROADS. PARKING AREAS. BUILDINGS AND AREAS TO RECEIVE MORE THAN 6" OF FILL. STOCKPILE TOPSOIL FOR USE DURING RESTORATION.

2. ALL TREES DESIGNATED TO REMAIN SHALL BE PROTECTED DURING CONSTRUCTION BY A 5 FOOT HIGH TREE BARRIER UTILIZING WIRE FENCING, OR PROTECTIVE SAFETY NETTING.

3. GRADE AREAS IN ACCORDANCE WITH ELEVATIONS AND GRADES SHOWN ON THE PLANS OR AS NECESSARY IN GRADING TO PROVIDE DRAINAGE.

4. FILL MATERIAL USED IN GRADING OPERATIONS SHALL CONSIST OF EARTH WHICH IS FREE OF DEBRIS, BOULDERS OR ORGANIC MATERIAL. FILL SHALL BE PLACED IN 12" LIFTS AND COMPACTED TO 90% OF MODIFIED PROCTOR **MAXIMUM** DRY DENSITY.

5. ALL FILL SHALL BE TESTED FOR FIELD DENSITY. TESTS SHALL BE TAKEN IN EACH LIFT OF FILL AT LOCATIONS DESIGNATED BY THE OWNER'S REPRESENTATIVE.

6. SELECT GRANULAR FILL SHALL BE USED WHEN FILLING OR BACKFILLING BENEATH AND/OR AROUND ANY STRUCTURES, ROADS OR PARKING AREAS. SELECT FILL SHALL BE PLACED IN 9" LIFTS AND COMPACTED TO 95% OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY. SELECT GRANULAR FILL SHALL CONSIST OF SAND, GRAVEL OR MIXTURE OF SAND AND GRAVEL FREE OF ORGANIC MATERIAL. THE MATERIAL SHALL HAVE A 2" MAXIMUM SIZE, LESS THAN 10% PASSING NO. 200 SIEVE, A PLASTICITY INDEX OF 6 OR LESS, AND A UNIFORMITY COEFFICIENT OF 5 OR GREATER.

7. ALL DISTURBED AREAS SHALL BE RESTORED AS SOON AS POSSIBLE WITH 4" TOPSOIL, SEED, FERTILIZER AND MULCH. GRASS SEED SHALL BE A SUITABLE MIX CONTAINING BOTH ANNUAL AND PERENNIAL VARIETIES OF FESCURE, RYE AND BLUEGRASS. FERTILIZER SHALL CONTAIN A MINIMUM OF 10% EACH OF NITROGEN, PHOSPHORIC ACID AND POTASH. MULCH SHALL BE A STRAW OR HAY MIXTURE FREE OF NOXIOUS WEED SEEDS. APPLY SEED AND FERTILIZER AS RECOMMENDED BY MANUFACTURER. MULCH SHALL BE CRIMPED AFTER APPLICATION.

8. THE CONTRACTOR SHALL VERIFY, UPON COMPLETION OF DEVELOPMENT, THE SITE IS PROPERLY STABILIZED AND ALL INDICATED SWALES AND STORMWATER FACILITIES ARE CONSTRUCTED AS INDICATED ON THE PLANS.

9. TOWER, TOWER FOUNDATIONS, SLABS, MODULAR BUILDINGS, AND ELECTRICAL AND MECHANICAL FEATURES ARE TO BE DESIGNED AND SPECIFIED BY OTHERS.

EROSION CONTROL

1. CONTRACTOR SHALL PROVIDE EROSION CONTROL MEASURES IN ACCORDANCE WITH THE MOST STRINGENT OF: PROJECT PLANS, SPECIAL PROVISIONS, APPLICABLE STATE DEPARTMENT OF NATURAL RESOURCES OR LOCAL ORDINANCES.

2. ESTABLISH EROSION CONTROL MEASURES PRIOR TO STARTING CONSTRUCTION AND MAINTAIN THROUGHOUT CONSTRUCTION. INSPECT EROSION CONTROL MEASURES FOLLOWING EACH RAINFALL EVENT AND REPAIR AS NECESSARY.

3. SEDIMENTATION CONTROL SHALL BE ACCOMPLISHED DURING CONSTRUCTION THROUGH THE USE OF SILT FENCING PLACED AS SHOWN ON THE ATTACHED PLAN. THE CONTROL DEVICES SHALL BE SET AT THE ONSET OF SITE GRADING TO PREVENT SILTING OF THE EXISTING STORMWATER FACILITIES.

ROAD AND PARKING AREA CONSTRUCTION

1. PREPARE SUBGRADE FOR ROADS AND PARKING AREAS IN ACCORDANCE WITH "EARTHWORK" SECTION.
2. PROOF ROLL ROAD TO IDENTIFY UNSUITABLE MATERIALS. EXCAVATE UNSUITABLE MATERIAL AND DISPOSE OFFSITE. BACKFILL UNDERCUT EXCAVATION USING 3" BREAKER RUN MATERIAL. BREAKER RUN MATERIAL SHALL BE CRUSHED STONE MEETING THE FOLLOWING GRADATION:

SIEVE SIZE	% WEIGHT PASSING
3"	100
1-1/2"	0-50
3/4"	0-20
#200	0-10

3. PLACE CRUSHED AGGREGATE BASE COURSE IN MAXIMUM OF 6" THICK LIFTS IN ACCORDANCE WITH DETAIL DRAWINGS. MOISTURE CONDITION BASE COURSE AS NECESSARY TO ACHIEVE COMPACTION. BASE COURSE SHALL BE COMPACTED TO 95% OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY. BASE COURSE MATERIAL SHALL MEET THE FOLLOWING REQUIREMENTS:

3" BASE COURSE

SIEVE SIZE	% WEIGHT PASSING
3"	100
2-1/2"	25-60
3/4"	0-20
3/8"	0-5

1-1/2" BASE COURSE

1-1/2"	100
1"	70-100
3/4"	55-95
3/8"	30-65
#4	25-55
#10	15-40
#200	0-10

4. PLACE BASE COURSE WITH CROWN OR UNIFORM SLOPE AS NECESSARY TO PROVIDE DRAINAGE FROM THE SITE.
5. GEOTEXTILE FABRIC SHALL BE USED IN THE EVENT OF UNSTABLE SOIL CONDITIONS. VERIFICATION OF SUCH CONDITIONS IS THE RESPONSIBILITY OF THE CONTRACTOR.

uscellular
8410 W. BRYN MAWR AVE.
CHICAGO, IL 60631
POC: STEVE HATMAKER

TERRA CONSULTING GROUP, LTD.
600 BUSSE HIGHWAY
PARK RIDGE, IL 60068
PH: 847-698-6400
FAX: 847-698-6401

REVISIONS

NO.	DESCRIPTION	DATE	BY
A	ISSUED FOR REVIEW	11/04/22	BJC
B	REVISED PER USCC COMMENTS	12/19/22	JGL
0	ISSUED FOR CONSTRUCTION	12/20/22	EW
1	ADDED LANDSCAPE BUFFER	01/11/23	EW

SITE# 784809
GERMANTOWN

W172N11083
DIVISION ROAD,
GERMANTOWN, WI 53022

DRAWN BY:	BJC
CHECKED BY:	EW
DATE:	10/25/22
PROJECT #:	10-079

SHEET TITLE
GENERAL SPECIFICATIONS

SHEET NUMBER
SP-1

CONCRETE AND STEEL REINFORCEMENT

1. CONCRETE SHALL BE MIXED AND DELIVERED IN ACCORDANCE WITH ASTM C94. CONCRETE SHALL BE 6 BAG MIX HAVING A 28 DAY COMPRESSIVE STRENGTH OF 4000 PSI, MAXIMUM AGGREGATE SIZE OF 1", MAXIMUM WATER CEMENT RATIO OF 0.45, AIR ENTRAINMENT OF 6% +/-1%, AND SLUMP OF 3" +/- 1". DEVIATIONS FROM THE MIX MUST BE APPROVED BY U.S. CELLULAR PRIOR TO USE.

2. CONCRETE CONSTRUCTION SHALL BE COMPLETED IN ACCORDANCE WITH THE MOST STRINGENT OF: PROJECT PLANS, SPECIAL PROVISIONS, OR THE AMERICAN CONCRETE INSTITUTE (ACI) PUBLICATIONS. CONCRETE WORK FOR TOWER FOUNDATIONS SHALL BE COMPLETED IN ACCORDANCE WITH PLANS AND SPECIFICATIONS PROVIDED BY THE TOWER VENDOR.

3. FORM MATERIALS WILL COMPLY WITH ACI 301. PLYWOOD FORMS SHALL BE APA B-B PLYFORM CLASS I SOUND SHEETS. LUMBER SHALL BE SPRUCE-PINE-FIR SPECIES #2 OR BETTER GRADE. TUBULAR COLUMN FORMS MAY BE SPIRALLY WOUND LAMINATED FIBER MATERIAL. FORM TIES SHALL BE REMOVABLE OR SNAP-OFF METAL TYPE.

4. CONCRETE SHALL BE MADE OF CEMENT MEETING THE REQUIREMENTS OF ASTM C150, NORMAL, TYPE I PORTLAND. FINE AND COARSE AGGREGATES FOR CONCRETE SHALL MEET THE REQUIREMENTS OF ASTM C33.

5. PLACE, SUPPORT AND SECURE REINFORCEMENT STEEL AT LOCATIONS SHOWN ON PLANS. REINFORCING STEEL SHALL BE PLACED IN ACCORDANCE WITH ACI 315. REBAR YIELD STRENGTH = 60,000 PSI.

6. AIR ENTRAINING ADMIXTURES SHALL MEET THE REQUIREMENTS OF ASTM C260; WATER REDUCING ADMIXTURES SHALL MEET THE REQUIREMENTS OF ASTM C494, TYPE A. ALL OTHER ADMIXTURES ARE PROHIBITED WITHOUT PRIOR APPROVAL BY U.S. CELLULAR.

7. VAPOR BARRIER SHALL BE 6 MIL THICK POLYETHYLENE, MEETING THE REQUIREMENTS OF ASTM D2103.

8. CURING COMPOUND SHALL MEET THE REQUIREMENTS OF ASTM C309.

9. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185.

10. ALL CONSTRUCTION AND EXPANSION JOINTS SHALL BE INSTALLED PER THE DRAWINGS.

11. ALL EXPOSED CORNERS OF CONCRETE WORK SHALL BE CHAMFERED 3/4 " UNLESS NOTED OTHERWISE.

12. PLACE, SUPPORT AND SECURE REINFORCEMENT STEEL AT LOCATIONS SHOWN ON PLANS. REINFORCING STEEL SHALL BE PLACED IN ACCORDANCE WITH ACI 315.

13. ALL FORM WORK SHALL BE RIGID, TIGHT, LEVEL, PLUMB AND SUFFICIENTLY SHORED TO RESIST CONSTRUCTION LOAD CONDITIONS. COAT FORMS WITH RELEASE AGENT PRIOR TO PLACING REINFORCING STEEL.

14. PREPARE SUBGRADE FOR CONCRETE IN ACCORDANCE WITH PROJECT PLANS AND SPECIAL PROVISION. DO NOT PLACE CONCRETE ON FROZEN SUBGRADE.

15. PROVIDE U.S. CELLULAR A MINIMUM OF 48 HRS. NOTICE PRIOR TO PLACING CONCRETE TO ALLOW FOR INSPECTION AND SCHEDULING OF TESTING.

16. UTILIZE CHUTES, TROUGHS OR CONVEYORS TO PLACE CONCRETE SO THAT HANDLING OF CONCRETE IS MINIMIZED. AVOID SEGREGATION OF THE AGGREGATE AND DISTURBING REINFORCING STEEL.

17. UNIFORMLY CONSOLIDATE CONCRETE USING HAND TOOLS OR MECHANICAL VIBRATORS. THOROUGHLY CONSOLIDATE EACH LAYER PRIOR TO PLACING SUBSEQUENT LAYERS.

18. WHEN PLACING OPERATIONS ARE TEMPORARILY SUSPENDED, THE UNFINISHED FACE OF THE POUR SHALL BE COVERED WITH WET BURLAP UNTIL PLACING OPERATIONS ARE RESUMED. WHEN PLACING OPERATIONS ARE SUSPENDED FOR MORE THAN 30 MINUTES, PROVIDE AN BONDING AGENT TO CONSTRUCTION JOINT.

19. TROWEL FINISH SURFACES UNLESS OTHERWISE DIRECTED ON THE PLANS.

20. AFTER FINAL FINISHING, PROVIDE POLYETHYLENE VAPOR BARRIER OR CURING COMPOUND TO MAINTAIN MOISTURE AND TEMPERATURE OF CONCRETE.

21. IN EXTREME WEATHER PLACE AND CURE CONCRETE IN ACCORDANCE WITH EITHER ACI 306R-89 FOR COLD WEATHER OR ACI 305R-89 FOR HOT WEATHER.

22. WELDING OF REINFORCING STEEL IS PROHIBITED.

23. REMOVE FORMS IN A MANNER THAT DOES NOT DAMAGE THE CONCRETE. FILL AND PATCH POCKETS OR HOLES ON EXPOSED SURFACES USING MORTAR MIXTURE.

24. PROVIDE TEST CYLINDERS AS FOLLOWS:
A. EQUIPMENT ENCLOSURE:
1 CYLINDER AT 7DAYS.
1 CYLINDER AT 14 DAYS.
2 CYLINDERS AT 28 DAYS.

25. NOTIFY ENGINEER 48 HOURS IN ADVANCE OF TOWER FOUNDATION INSTALLATION.

26. REFER TO TOWER MANUFACTURER SPECIFICATIONS REGARDING FOUNDATION REQUIREMENTS.

CHAINLINK FENCING

1.0 SCOPE:

1.1 THIS SECTION COVERS THE REQUIREMENTS FOR THE MATERIALS AND THE CONSTRUCTION OF SITE FENCING. SEE SITE PLAN AND DRAWINGS FOR DETAILS.

2.0 SPECIAL REQUIREMENTS

2.1 ALL WIRE, FABRIC, FITTINGS, HARDWARE AND STEEL MEMBERS USED FOR SITE AREA FENCING SHALL BE HOT DIPPED GALVANIZED (ASTM A153) OR OTHER APPROVED NON CORROSIVE MATERIAL AND CONFORM TO FEDERAL SPEC RR-F-191G (1-25-74).

2.2 ALL NON-CORROSIVE MATERIAL SHALL BE PRE-APPROVED BY THE PROJECT MANAGER.

2.3 ANY DAMAGE TO GALVANIZING OR NON-CORROSIVE COATING DURING CONSTRUCTION SHALL BE REPAIRED ACCORDING TO MANUFACTURER'S RECOMMENDED METHODS.

3.0 GATE.:

3.1 LOCATION OF GATE SHALL CONFORM TO THE SITE PLAN.

3.2 ALL JOINTS BETWEEN TUBULAR GATE MEMBERS SHALL BE WELDED OR HEAVY FITTINGS PROVIDING RIGID AND WATERTIGHT CONNECTIONS.

3.3 GATE HINGES SHALL PROVIDE FOR 180 DEGREE RADIUS GATE SWING. ALL HINGE NUTS SHALL BE ON THE INSIDE AND DOUBLE-NUT TO DETER UNAUTHORIZED ENTRY.

3.4 BARBED WIRE GUARD SHALL BE INSTALLED ON TOP OF GATES. ADEQUATE CLEARANCE SHALL BE MAINTAINED TO ALLOW GATE OPERATION.

3.5 GATE SHALL BE INSTALLED PLUMB AND SHALL OPEN AND CLOSE FREELY.

3.6 GATE POSTS SHALL NOT BE SHARED AS A CORNER POST
.

4.0 **FENCE POSTS**

4.1 LOCATION OF CORNER POSTS SHALL BE DETERMINED FROM STAKES AND PROPERTY PINS INSTALLED BY THE REGISTERED LAND SURVEYOR UNDER CONTRACT FOR THE PROJECT. IF THE STAKES ARE NOT PRESENT OR DO NOT CONFORM TO THE SITE PLAN, CONSULT WITH THE PROJECT MANAGER.

4.2 CORNER POSTS SHALL BE SET WITHIN ONE INCH (1") OF DIMENSIONS INDICATED ON THE SITE PLAN.

4.3 FENCE POSTS SHALL BE VERTICALLY PLUMB IN ALL PLANES WITHIN 1/2 INCH (1/2").

4.4 LINE POSTS BETWEEN CORNER AND GATE POSTS SHALL BE EQUALLY SPACED WITH A TEN FOOT (10') MAXIMUM SPACING. GATE POST LOCATIONS SHALL BE IN ACCORDANCE WITH SITE PLAN AND SHALL BE VERIFIED WITH THE PROJECT MANAGER.

4.5 ALL FOUR CORNERS POSTS AND BOTH GATE POSTS SHALL BE CONNECTED TO THE SITE GROUNDING SYSTEM (REFER TO GROUNDING SYSTEM STANDARD). 4.6 FENCE POST OUTSIDE DIAMETER (O.D.) ARE MINIMUM SPECIFICATIONS. LARGER SIZES MAY BE SUBSTITUTED WITH APPROVAL FROM PROJECT MANAGER.

5.0 FABRIC

5.1 FABRIC SHALL BE TENSIONED PER MANUFACTURER'S RECOMMENDATIONS TO PRESENT A NEAT APPEARANCE.

5.2 FABRIC SHALL BE SECURED AT CORNER AND GATE POSTS USING STRETCHER BARS AND TENSION BAND CLIPS.

5.3 FABRIC SHALL BE SECURED TO THE TOP RAIL AND BRACE RODS USING TIE CLIPS.

uscellular
8410 W. BRYN MAWR AVE.
CHICAGO, IL 60631
POC: STEVE HATMAKER

TERRA CONSULTING GROUP, LTD.
600 BUSSE HIGHWAY
PARK RIDGE, IL 60068
PH: 847-698-6400
FAX: 847-698-6401

REVISIONS

NO.	DESCRIPTION	DATE	BY
A	ISSUED FOR REVIEW	11/04/22	BJC
B	REVISED PER USCC COMMENTS	12/19/22	JGL
0	ISSUED FOR CONSTRUCTION	12/20/22	EW
1	ADDED LANDSCAPE BUFFER	01/11/23	EW

SITE# 784809
GERMANTOWN

W172N11083
DIVISION ROAD,
GERMANTOWN, WI 53022

DRAWN BY:	BJC
CHECKED BY:	EW
DATE:	10/25/22
PROJECT #:	10-079

SHEET TITLE
GENERAL SPECIFICATIONS

SHEET NUMBER
SP-2

ELECTRICAL NOTES

1.0 GENERAL

1.1 CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS, INSURANCE, EQUIPMENT, INSTALLATION, CONSTRUCTION TOOLS, TRANSPORTATION, ETC. FOR A COMPLETE AND PROPERLY OPERA TING SYSTEM ENERGIZED THROUGHOUT AS INDICATED ON DRAWINGS, AS SPECIFIED HEREIN AND/OR AS OTHERWISE REQUIRED.

1.2 CONTRACTOR IS TO COORDINATE WITH UTILITY COMPANY FOR CONNECTION OF PERMANENT POWER TO THE SITE.

1.3 CONTRACTOR SHALL OBTAIN ALL NECESSARY BUILDING PERMITS, INSPECTIONS AND APPROVALS, AND PAY ALL REQUIRED FEES PURSUANT TO THE WORK.

1.4 ALL WORK SHALL BE IN STRICT ACCORDANCE WITH THE LATEST VERSION OF THE NATIONAL ELECTRICAL CODE AND ANY APPLICABLE NATIONAL, STATE AND LOCAL CODES. ALL COMPONENTS SHALL BE U.L. APPROVED.

1.5 CONTRACTOR SHALL BEFORE SUBMITTING HIS BID, VISIT THE SITE OF THE PROJECT AND BECOME FAMILIAR WITH THE CONDITIONS. NO ALLOWANCE WILL BE MADE FOR EXISTING CONDITIONS OR FAILURE OF THE CONTRACTOR TO OBSERVE THEM.

1.6 EXACT LOCATION OF ALL EQUIPMENT SHALL BE COORDINATED WITH OWNER AND OTHER TRADES.

1.7 CONTRACTOR SHALL PROVIDE ALL VERIFICATION OBSERVATION TESTS AND EXAMINE ALL WORK PRIOR TO ORDERING THE ELECTRICAL EQUIPMENT AND THE ACTUAL CONSTRUCTION. CONTRACTOR SHALL ISSUE A WRITTEN NOTICE OF ALL FINDINGS TO THE ARCHITECT/ENGINEER LISTING ALL MALFUNCTIONS, FAULTY EQUIPMENT AND DISCREPANCIES.

1.8 ALL MATERIALS AND EQUIPMENT SHALL BE NEW AND IN SAFE CONDITION WHEN INSTALLED AND SHALL BE OF THE BEST GRADE AND OF THE SAME MANUFACTURER THROUGHOUT FOR EACH CLASS OR GROUP OF EQUIPMENT (SEE NOTE 1.7 FOR EXCEPTIONS). MATERIALS SHALL MEET WITH APPROVAL OF THE DIVISION OF INDUSTRIAL SAFETY AND ALL GOVERNING BODIES HAVING JURISDICTION. MATERIALS SHALL BE MANUFACTURED **IN** ACCORDANCE WITH APPLICABLE STANDARDS ESTABLISHED BY ANSI, NEMA, NBFU AND "UL" LISTED.

1.9 WHERE EQUIPMENT IS SPECIFIED BY MANUFACTURER AND TYPE, SUBSTITUTION SHALL ONLY BE MADE WITH THE APPROVAL OF THE ENGINEER. THE CONTRACTOR SHALL SUBMIT DETAILS OF PROPOSED MATERIALS, REASON FOR CHANGE AND CHANGE IN CONTRACT AMOUNT.

1.10 EACH CONDUCTOR OF EVERY SYSTEM SHALL BE PERMANENTLY LABELED WITH ENGRAVED PLASTIC LABELS FOR EACH PANELBOARD, PULL BOX, J-BOX, SWITCH BOX, ETC. IN COMPLIANCE WITH OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA)

1.11 THESE PLANS ARE DIAGRAMMATIC ONLY AND ARE TO BE FOLLOWED AS CLOSELY AS POSSIBLE.

1.12 THE TEMPERATURE RATING ASSOCIATED WITH THE AMPACITY OF A CONDUCTOR SHALL BE SO SELECTED AND COORDINATED AS TO NOT EXCEED THE LOWEST TEMPERATURE RATING OF ANY CONNECTED TERMINATION, CONDUCTOR, OR DEVICE.

1.13 ALL ENCLOSURES CONTAINING THE SERVICE CONDUCTORS-SERVICE RACEWAY, CABLE ARMOR, BOXES, FITTINGS, CABINETS MUST BE EFFECTIVELY BONDED TOGETHER.

1.14 ALL UNDERGROUND CONDUIT SHALL BE PVC SCHEDULE 40 UNLESS OTHERWISE SPECIFIED, WITH UV PROTECTION (UNLESS NOTED OTHERWISE) AT A MINIMUM DEPTH SPECIFIED BY NATIONAL STATE AND LOCAL CODES. IT IS REQUIRED AND WILL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR TO NOTIFY THE DIGGER HOTLINE OR OTHER SUCH NOTIFYING AGENCY PRIOR TO THE START OF DIGGING, TRENCHING, EXCAVATION, OR OTHER SUCH EARTH REMOVAL; SEE G--001 FOR NOTIFICATION REQUIREMENTS.

1.15 THE UNDERGROUND SERVICE ENTRANCE WORK MUST BE CONSTRUCTED ACCORDING TO THE LOCAL BUILDING CODE, NEC & UTILITY STANDARDS. THE ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE ELECTRICAL UTILITY BEFORE QUOTING AND DURING THE CONSTRUCTION.

ELECTRICAL NOTES (CONTINUED)

2.0 MATERIALS, ELECTRICAL WIRING AND RACEWAYS

2.1 ALL CIRCUIT BREAKERS, FUSES, CONDUCTORS AND ELECTRICAL EQUIPMENT SHALL HAVE AN INTERRUPTING SHORT CIRCUIT TO WHICH THEY MAY BE SUBJECTED AND A MINIMUM OF 10,000 AIC RATING UNLESS SPECIFIED OTHERWISE.

2.2 PLASTIC PLATES FOR ALL SWITCHES, RECEPTACLES, TELEPHONE AND BLANKED OUTLETS SHALL HAVE ENGRAVED LETTERING WHERE INDICATED ON THE DRAWINGS. WEATHERPROOF RECEPTACLES SHALL HAVE SIERRA "WPD 8" LIFT COVER PLATES.

2.3 METER SOCKET AMPERAGE, VOLTAGE AND NUMBER OF PHASES SHALL BE AS NOTED ON THE DRAWINGS AND MANUFACTURED BY SQUARE "D" COMPANY OR **AN** APPROVED EQUAL.

2.4 INSTALLATION OF RIGID METAL CONDUIT SHALL COMPLY WITH THE APPLICABLE PROVISIONS OF ARTICLES 300 & 346-NEC. SHALL BE UL APPROVED.

2.5 INSTALLATION OF ELECTRICAL METALLIC TUBING (EMT) SHALL COMPLY WITH THE APPLICABLE PROVISIONS OF ARTICLES 300 & 348-NEC. SHALL BE U.L. APPROVED.

2.6 INSTALLATION OF INTERMEDIATE METAL CONDUIT (IMC) SHALL COMPLY WITH THE APPLICABLE PROVISIONS OF ARTICLES 300 & 348-NEC. SHALL BE UL APPROVED.

2.7 PLASTIC CONDUIT SHALL BE SCHEDULE 40, HIGH IMPACT, POLYVINYL CHLORIDE AND SHALL BE USED WITH UNTHREADED SOLVENT CEMENT PLASTIC CONDUIT FITTINGS. COUPLINGS SHALL HAVE A CENTER STOP TO TYPE ENSURE PROPER SEATING. CONDUIT SHALL BE MANUFACTURED BY CARLON OR ACCEPTABLE EQUAL SHALL BE IN COMPLIANCE WITH ART 300 & 347-NEC, UL APPROVED.

2.8 ALL WIRING OF ALL KINDS MUST BE INSTALLED IN CONDUIT, UNLESS OTHERWISE NOTED OR APPROVED BY THE ELECTRICAL ENGINEER.

2.9 ALL WIRING SHALL BE IN ACCORDANCE WITH THE (NEC) NATIONAL ELECTRICAL CODE OR AS INDICATED ON PLANS.

2.10 RACEWAYS SHALL BE STEEL GALVANIZED AND/OR PAINTED, WITH SIZE AS SPECIFIED AND IN ACCORDANCE WITH THE (NEC) NATIONAL ELECTRICAL CODE UNLESS OTHERWISE NOTED ON PLANS. ALL RACEWAYS SHALL BE APPROVED PRIOR TO INSTALLATION.

2.11 JUNCTION BOXES OR PULL BOXES SHALL MEET (NEC) NATIONAL ELECTRICAL CODE STANDARDS AND AS APPROVED FOR INSTALLATION OF RACEWAYS AND WIRING.

2.12 THE RACEWAY AND WIRING INSTALLATION SHALL BE GROUNDED PERMANENTLY AND EFFECTIVELY IN ACCORDANCE WITH ARTICLE 250 OF THE (NEC) NATIONAL ELECTRICAL CODE.

2.13 THE CONTRACTOR SHALL BE AWARE THAT ALL STATE AND LOCAL CODES SHALL APPLY TO THIS INSTALLATION AND MUST BE ADHERED TO.

3.0 SCOPE OF WORK

3.1 THE CONTRACTOR SHALL PROVIDE ALL ELECTRICAL WIRING AND EQUIPMENT UNLESS OTHERWISE INDICATED. MAIN COMPONENTS ARE AS FOLLOWS:
A. PROVIDE ELECTRICAL SERVICE AS INDICATED ON THE DRAWINGS.
B. PROVIDE FIBER CONDUIT WITH PULL WIRE AS INDICATED HEREIN AND ON DRAWINGS.
C. COORDINATE ELECTRICAL SERVICE WITH LOCAL POWER COMPANY.
E. COORDINATE FIBER SERVICE WITH LOCAL FIBER COMPANY.
F. INSTALL WIRE AND CONDUIT AS INDICATED. PROVIDE CABLE SUPPORTS AS INDICATED.
G. PROVIDE GROUNDING AS INDICATED.

3.2 ONE SET OF COMPLETE ELECTRICAL "AS INSTALLED" OR "AS-BUILT" DRAWINGS AT THE COMPLETION OF THE JOB SHOWING ACTUAL DIMENSIONS, ROUTINGS AND CIRCUITS SHALL BE PROVIDED TO CLIENT. ALL BROCHURES, OPERATING MANUALS, CATALOGS, SHOP DRAWINGS, ETC. SHALL BE TURNED OVER TO CLIENT AT JOB COMPLETION.

3.3 PATCH, REPAIR AND PAINT ANY AREA THAT HAS BEEN DAMAGED IN THE COURSE OF ELECTRICAL WORK.

3.4 UPON COMPLETION OF WORK, CONDUIT CONTINUITY, SHORT CIRCUIT, AND GROUNDING FALL POTENTIAL TEST WILL BE MADE FOR APPROVAL. SUBMIT TEST REPORTS TO CLIENT. CLEAN PREMISES OF ALL DEBRIS RESULTING FROM WORK AND LEAVE IN A COMPLETE AND UNDAMAGED CONDITION.

3.5 THE COMPLETE JOB SHALL BE GUARANTEED FOR A PERIOD OF ONE (1) YEAR AFTER THE DATE OF SITE ACCEPTANCE BY CLIENT. ANY WORK MATERIAL OR EQUIPMENT FOUND TO BE FAULTY DURING THAT PERIOD SHALL BE CORRECTED AT ONCE, UPON WRITTEN NOTIFICATION, AND AT THE EXPENSE OF THE CONTRACTOR.

3.6 THE ELECTRICAL CONTRACTOR SHALL VERIFY THE ELECTRICAL EQUIPMENT PROVIDED BY CLIENTS SUPPLIERS.

uscellular
8410 W. BRYN MAWR AVE.
CHICAGO, IL 60631
POC: STEVE HATMAKER

TERRA CONSULTING GROUP, LTD.
600 BUSSE HIGHWAY
PARK RIDGE, IL 60068
PH: 847-698-6400
FAX: 847-698-6401

REVISIONS

NO.	DESCRIPTION	DATE	BY
A	ISSUED FOR REVIEW	11/04/22	BJC
B	REVISED PER USCC COMMENTS	12/19/22	JGL
0	ISSUED FOR CONSTRUCTION	12/20/22	EW
1	ADDED LANDSCAPE BUFFER	01/11/23	EW

SITE# 784809
GERMANTOWN

W172N11083
DIVISION ROAD,
GERMANTOWN, WI 53022

DRAWN BY:	BJC
CHECKED BY:	EW
DATE:	10/25/22
PROJECT #:	10-079

SHEET TITLE
GENERAL SPECIFICATIONS

SHEET NUMBER
SP-3

BUSINESS OF THE PLAN COMMISSION

MEETING DATE: April 14, 2023

PLACEMENT: Action Item

ITEM TITLE: pb2 Architecture & Engineering, Agents for Meridian Germantown LLC, Property Owner and Walmart – W190 N9855 Appleton Avenue. Site Plan Review for a 3,865 sqft building addition, exterior renovations and Sign Review application. **(ACTION)**

SUBMITTED BY:

SUMMARY EXPLANATION:

ATTACHMENT:

RECOMMENDATION:

ACTION BY Committee:

SIGN REVIEW

4/10/23 Plan Commission Meeting

Silver Leaf Signs & Graphics / Veterinary Dental Specialists

Planning & Zoning Report **Germantown, Wisconsin**

Summary

Silver Leaf Signs & Graphics, agent for Germantown Investment Group LLC, property owner, and Veterinary Dental Specialists is requesting approval for new wall, monument insert and entrance signs for the multi-tenant office building located at N97 W17095 Division Road.

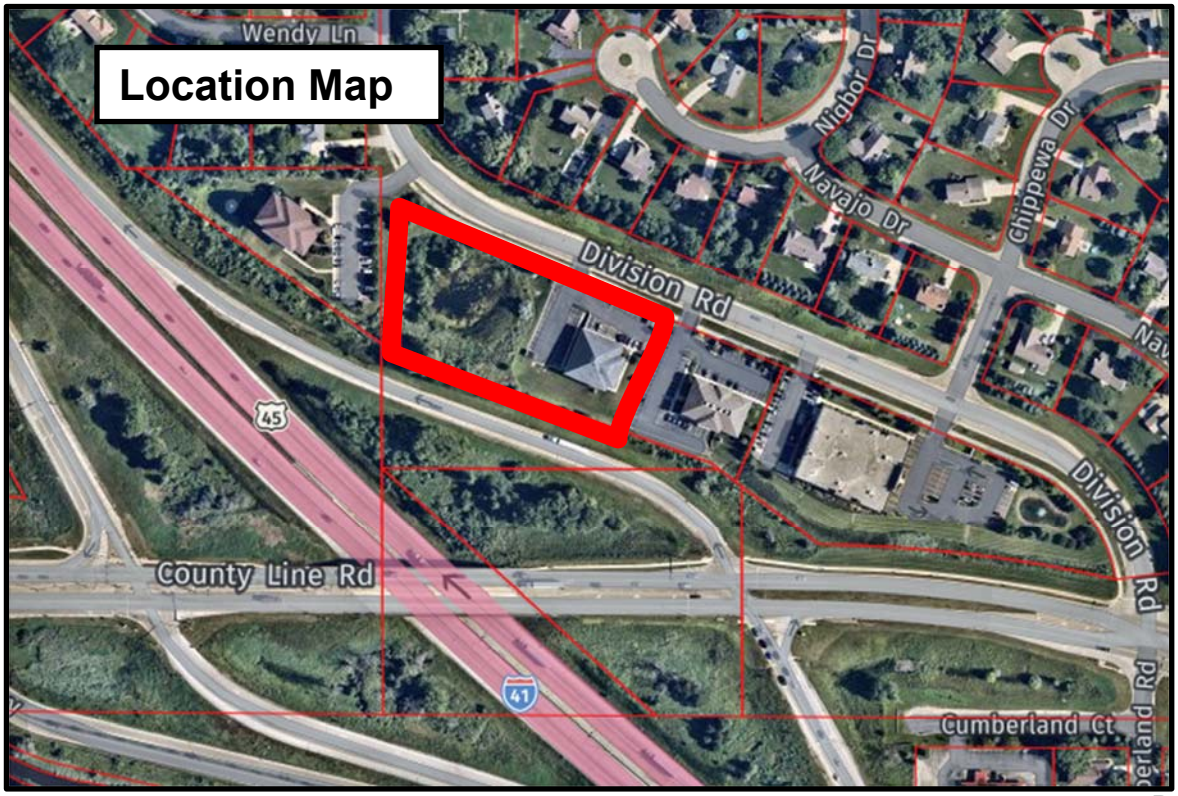
Location: N97 W17095 Division Road

Agent/
Property Owners:

Silver Leaf Signs	Germantown Investment Group LLC
11830 W Ripley Ave	1636 Cypress Pointe Drive
Wauwatosa, WI	Vernon Hills, WI

Zoning: B-4: Professional Office District

Adjacent Land Uses		Zoning
North	Residential	Rs-4
South	County Line Road/Menomonee Falls	n/a
East	Business (Kesslers)	B-2/PDD
West	Business	B-4



Background/Proposal
Silver Leaf Signs & Graphics, agent for Germantown Investment Group LLC, property owner, and Veterinary Dental Specialists is requesting approval for new wall, monument insert and entrance signs for the multi-tenant office building located at N97 W17095 Division Road.

Wall Sign

- 1'10" x 19'7" (36 square feet) wall sign comprised of an aluminum frame channel cabinet w/ flat acrylic & vinyl letter faces mounted to the east elevation facing County Line Road (on ramp to US41). The sign is internally illuminated;

Monument Insert

- 1'10" x 8' (15 square feet) monument sign insert comprised of a flat acrylic & vinyl lettering face. The monument sign is internally illuminated.

Window Graphics

- 1'8" x 2' (2 sqft) vinyl window lettering/logo mounted on front entrance door.

Staff Comments
All requirements of the Village Sign Code have been met, except for the background color of the proposed wall sign. Section 17.46(10) of the Zoning code requires the background color of internally illuminated signs to be opaque or a dark color.

Village Staff Recommendation

APPROVE the proposed signs for Veterinary Dental Specialists in the multi-tenant office building located at N97 W17095 Division Road subject to the following conditions:

1. Electrical permits shall be obtained from Inspection Services prior to installation of any/all electrical components.
2. The background panel for the proposed wall sign on the south (rear) elevation shall be changed to be either opaque or a dark color to prevent glare.

Village of Germantown ...Willkommen

Fee must accompany application

$275 Sign Review Fee

$ 75 Sign Face Replacement

Paid [illegible] Date 2/13/22

SIGN REVIEW APPLICATION

Pursuant to Section 17.46 of the Municipal Code

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

1 APPLICANT OR AGENT

Silver Leaf Signs + Graphics
11830 W. Ripley Ave
Wauwatosa WI 53226

Phone (414) 975-6973

Fax ( )

E-Mail brian@silverleafsigns.us

PROPERTY OWNER

Vet Dental Specialists
Dr. John Watson
N97W17095 Division Road
Germantown, WI 53022

Phone (262) 252-4161

2 PROPERTY ADDRESS OR GENERAL LOCATION

N97W17095 Division Road
Germantown, WI 53022

3 SIGN INFORMATION

Sign Dimensions 22 height x 23'5" width Single/Multi Tenant (circle one)

Number of Sides 1 Building Frontage SF _____

Total Square Footage of Sign (include all sides) _____

Total height of the Sign _____

Is the Sign to be illuminated x yes _____ no

Type of Sign Construction Materials LED-

Distance to Closest Property Line _____

Are there any existing signs on the property yes - monument sign

If yes, what is the total Square Footage of existing signs _____

What are the intentions for the existing signs: Take down _____ Remain X

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

Applicant 12/7/22 Date

Owner 12/7/22 Date

DISCLAIMER: ALL ARTWORK IS PROPERTY OF SLSG AND CANNOT BE REPRODUCED WITHOUT SILVER LEAF SIGNS AND GRAPHIC'S PERMISSION.
IT IS ILLEGAL TO DUPLICATE OR REPRODUCE COPYRIGHTED ARTWORK WITHOUT PRIOR WRITTEN CONSENT.

SILVER LEAF
SIGNS & GRAPHICS
NOTICEABLY DIFFERENT

Client: Veterinary Dental
Address:

Job Type: Window Graphics

Dimensions: 20.5" x 23.5"
total graphic area

Quantity:1

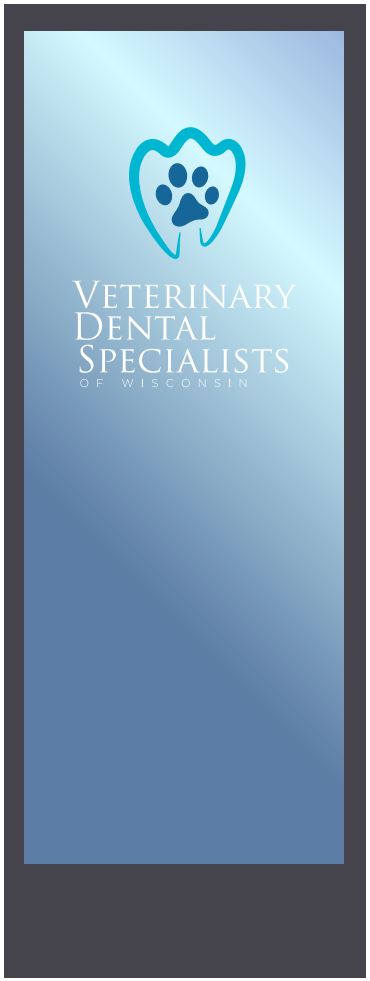
Materials:
vinyl graphics

Representative:Brian

Designer: Elly

Date:12-8-22

Version:1



☐ APPROVED

☐ REVISE & RESUBMIT

*PRODUCTION CANNOT BEGIN UNTIL WE RECEIVE YOUR AUTHORIZATION THE PROOF IS ACCURATE.
DELAYS IN RECEIVING YOUR APPROVAL WILL DELAY PRODUCTION TIMES.

NOTE: THE COLORS SHOWN IN THIS PROOF ARE CONCEPTUAL ONLY AND DO NOT REPRESENT ACTUAL PAINT, VINYL, ACRYLIC OR LIGHTING COLORS. ACTUAL SAMPLES MAY BE PROVIDED UPON CUSTOMER'S REQUEST.

DISCLAIMER: ALL ARTWORK IS PROPERTY OF SLSG AND CANNOT BE REPRODUCED WITHOUT SILVER LEAF SIGNS AND GRAPHIC'S PERMISSION.
IT IS ILLEGAL TO DUPLICATE OR REPRODUCE COPYRIGHTED ARTWORK WITHOUT PRIOR WRITTEN CONSENT.

SILVER LEAF
SIGNS & GRAPHICS
NOTICEABLY DIFFERENT

Client: Veterinary Dental
Address:

Job Type: Monument Panel

Dimensions: VO: 96" x 21.5"

Quantity:1

Materials: 3M 3630 Duranodic vinyl graphics, reverse cut

Representative:Brian

Designer: Elly

Date:12-8-22

Version:1

VETERINARY DENTAL SPECIALISTS
OF WISCONSIN

☐ APPROVED

☐ REVISE & RESUBMIT

*PRODUCTION CANNOT BEGIN UNTIL WE RECEIVE YOUR AUTHORIZATION THE PROOF IS ACCURATE.
DELAYS IN RECEIVING YOUR APPROVAL WILL DELAY PRODUCTION TIMES.

NOTE: THE COLORS SHOWN IN THIS PROOF ARE CONCEPTUAL ONLY AND DO NOT REPRESENT ACTUAL PAINT, VINYL, ACRYLIC OR LIGHTING COLORS. ACTUAL SAMPLES MAY BE PROVIDED UPON CUSTOMER'S REQUEST.

DISCLAIMER: ALL ARTWORK IS PROPERTY OF SLSG AND CANNOT BE REPRODUCED WITHOUT SILVER LEAF SIGNS AND GRAPHIC'S PERMISSION.
IT IS ILLEGAL TO DUPLICATE OR REPRODUCE COPYRIGHTED ARTWORK WITHOUT PRIOR WRITTEN CONSENT.

SILVER LEAF
SIGNS & GRAPHICS
NOTICEABLY DIFFERENT

VETERINARY DENTAL SPECIALISTS
OF WISCONSIN

Client: Veterinary Dental
Address:

Job Type: Channel sign

Dimensions: 235” x 22”

Quantity:1

Materials: Channel sign on raceway: 7527C

Representative:Brian

Designer: Elly

Date:12-8-22

Version:1

☐ APPROVED

☐ REVISE & RESUBMIT

*PRODUCTION CANNOT BEGIN UNTIL WE RECEIVE YOUR AUTHORIZATION THE PROOF IS ACCURATE.
DELAYS IN RECEIVING YOUR APPROVAL WILL DELAY PRODUCTION TIMES.

NOTE: THE COLORS SHOWN IN THIS PROOF ARE CONCEPTUAL ONLY AND DO NOT REPRESENT ACTUAL PAINT, VINYL, ACRYLIC OR LIGHTING COLORS. ACTUAL SAMPLES MAY BE PROVIDED UPON CUSTOMER'S REQUEST.

Village of Germantown ...Willkommen

Fee must accompany application

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

PAID _____ DATE _____

SITE PLAN REVIEW APPLICATION

Pursuant to Section 17.43 of the Municipal Code

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

1

APPLICANT OR AGENT

Moraine Development, LLC
N52 W23096 Lisbon Rd
Sussex, WI 53089

Phone (262) 251-1520
E-Mail hans@lamanstone.net

PROPERTY OWNER

Moraine Development, LLC
N52 W23096 Lisbon Rd.
Sussex, WI 53089

Phone (262) 251-1520
E-Mail hans@lamanstone.net

2

PROPERTY ADDRESS

W218 N11546 Appleton Ave.
Germantown, WI 53022

3

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

North	South	East	West
Ehrlich - farm TR Capital - storage Am Mobile Home - residential	MPH - wood/construction Meyer - commercial	Many acres - residential	Many acres - residential

4

READ AND INITIAL THE FOLLOWING:

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

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

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

5

SIGNATURES – ALL APPLICATION MUST BE SIGNED BY OWNER!

2/11/23 — Applicant — Date

2/11/23 — Owner — Date

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 1/02)

GENERAL INFORMATION

- [x] Provide Completed Checklist with submittal
- [x] Names and addresses of owner/developer/designer
- [x] Graphic scale, north arrow
- [x] Location sketch
- [ ] Size of site (gross and net acreage)
- [ ] Existing zoning
- [ ] Adjacent zoning and uses
- [ ] Number of residents (subdivisions)
- [ ] Number of employees

EXISTING SITE INFORMATION

- [ ] Dimensions of site and lot lines (pipes found, pipes set, monuments)
- [x] Existing grades (2' contours minimum)
- [x] Adjacent property grades (within 10' minimum of property lines)
- [x] Adjacent structures (within 20' minimum of property lines)
- [x] Drainage systems and structures
- [x] Natural features (woods, streams, lakes, ponds, outcroppings)
- [ ] Wetland boundaries (provide date of staking)
- [ ] Floodplain elevation and boundaries
- [ ] Environmental concerns (underground tanks, etc)
- [ ] Roads, curbs, parking lots, pavement areas
- [x] Structures (location, size)
- [ ] 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.

ARCHITECTURAL PLANS

- [ ] Existing building location
- [ ] Existing building elevations/materials
- [ ] Proposed use (use list from Section 17.45)
- [x] Statement of design intent (narrative)
- [ ] Proposed floor plans (dimension)
- [ ] Square footage (total and individual rooms/stores)
- [ ] Proposed elevations (dimension)
- [ ] Proposed building height
- [ ] Proposed materials and colors (material sample board required for new construction)
- [ ] Proposed signage (elevations, color, square footage, height, construction material, lighting)
- [ ] Details of any special features

PROPOSED SITE PLAN

- [x] Grading and spot elevations
- [x] 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
- [x] Building location (dimension)
- [ ] Building elevation (finished grade)
- [ ] Location of proposed signage
- [ ] Details of outside storage (including trash receptacles)
- [ ] Setbacks (clearly marked and dimensioned)
- [x] 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)
- [ ] Lot coverage
  - Square footage total
  - Impervious surfaces total (%)
  - Green space total (%)
  - Percent permitted (over/under %)
- [ ] Municipal utility connections
  - Sanitary sewer (pipe size/elevations)
  - Water (size, valve location, elevations)
  - Location of hydrants
- [ ] Easement for public water mains

LIGHTING PLAN

- Major improvements for context
- Location/nature of existing fixtures
- Location of proposed fixtures
- Photometric report (to scale on plan)
- Manufacturers cut-sheets of all fixtures
- Lighting schedule
  - key to plan
  - number/type of fixtures
  - output (wattage)
- Installation details as appropriate

LANDSCAPING PLAN

- Major improvements for context (building, drives, walks)
- Proposed outdoor amenities (benches, paths, etc.)
- Existing vegetation
  - Species
  - Size
  - Approximate canopy in plan
- Vegetation to be destroyed
  - List and show location
- Proposed method of saving existing vegetation during construction

- Proposed landscape features (berms, fountains)
- Existing/proposed lighting
- Irrigation/watering systems (locate outlets)
- Plant lists or schedules
  - Keyed to plan
  - Number of each species
  - Size when planted (caliper)
- Installation details/staking

MODEL SUBMITTAL INCLUDES THE FOLLOWING PLANS:

1. Cover / Title Page
2. Existing Conditions Survey
3. General Site Plan
4. Grading, Paving & Erosion Control Plan
5. Utility Plan
6. Site Details (curbing, catch basins, detention ponds, pavement, erosion control and sign details)
7. Landscape Plan
8. Landscape details (planting schedule, berming cross-sections, method of installation)
9. Lighting Plan
10. Floor Plan
11. Exterior Building Elevations
12. Building Material Sample Board

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.

raSmith
CREATIVITY BEYOND ENGINEERING

R.A. Smith, Inc.
16745 W. Bluemound Road
Brookfield, WI 53005-5938
(262) 781-1000 | rasmith.com

February 10, 2023

Mr. Jeff Retzlaff, AICP
Village of Germantown
Planning & Zoning Services
N112 W17001 Mequon Road
Germantown, WI 53022

RE: Gravel Mining Restoration
Design Intent Narrative

Dear Mr. Retzlaff:

On behalf of Moraine Development, I am pleased to present this Plan Commission Consultation application for the planned restoration of gravel mining operations on the following parcels:

- GTNV_192999
- GTNV_193951
- GTNV_193952
- GTNV_193953
- GTNV_193973
- GTNV_193980

This application packet includes the following illustrations, which will be further advanced during administrative compliance and permit coverage for the initial restoration activities scheduled to commence in 2023:

- Existing Conditions Plan
- Grading & Erosion Control Plan
- Restoration Master Plan
- Development Master Plan

The applicant was encouraged by Village Planning & Zoning staff to generally introduce the proposed restoration to the Plan Commission, prior to proceeding with the initial phase of work. Several years of active and passive land management will be necessary to achieve full restoration of the parcels.

If you should have any questions or require any additional detail, please email me at chris.hitch@rasmith.com or call me at 262-317-3267.

Sincerely,
R.A. Smith, Inc.

Christopher D. Hitch
Senior Project Manager

MORAINE DEVELOPMENT - GERMANTOWN, WI

DEVELOPMENT MASTER PLAN - FEBRUARY 9, 2023

raSmith

CREATIVITY BEYOND ENGINEERING

N

GRAPHIC SCALE

75 0 75 150 300

(IN FEET)

811

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

R.A.SMITH, INC. ASSUMES NO RESPONSIBILITY FOR DAMAGES, LIABILITY OR COSTS RESULTING FROM CHANGES OR ALTERATIONS MADE TO THIS PLAN WITHOUT THE EXPRESSED WRITTEN CONSENT OF R.A.SMITH, INC.

ALL COPYRIGHTS TO THESE DRAWINGS ARE RESERVED. THEY MAY NOT BE COPIED, CHANGED, OR ASSIGNED TO ANY THIRD PARTY IN ANY MANNER WITHOUT OBTAINING THE EXPRESSED WRITTEN PERMISSION OF R.A.SMITH, INC.

DATE	DESCRIPTION

raSmith
CREATIVITY BEYOND ENGINEERING

16745 W. Bluemound Road
Brookfield, WI 53005-5938
(262) 781-1000
rasmith.com

Brookfield, WI | Milwaukee, WI | Appleton, WI | Madison, WI
Cedarburg, WI | Naperville, IL | Irvine, CA

MORAINE DEVELOPMENT GERMANTOWN, WI

EXISTING CONDITIONS PLAN

© COPYRIGHT 2023
R.A. Smith, Inc.

DATE: 02/13/2023

SCALE: 1"=150'

JOB NO. 3220196

PROJECT MANAGER:
CHRIS HITCH, PE

DESIGNED BY: DJM

CHECKED BY: CDH

SHEET NUMBER

C100

P:\3220196\Dwg\2023-02-13 submittal\3220196-EX1.dwg, EXISTING CONDITIONS, 2/8/2023 11:24:16 AM, djm

CONSTRUCTION SEQUENCE:

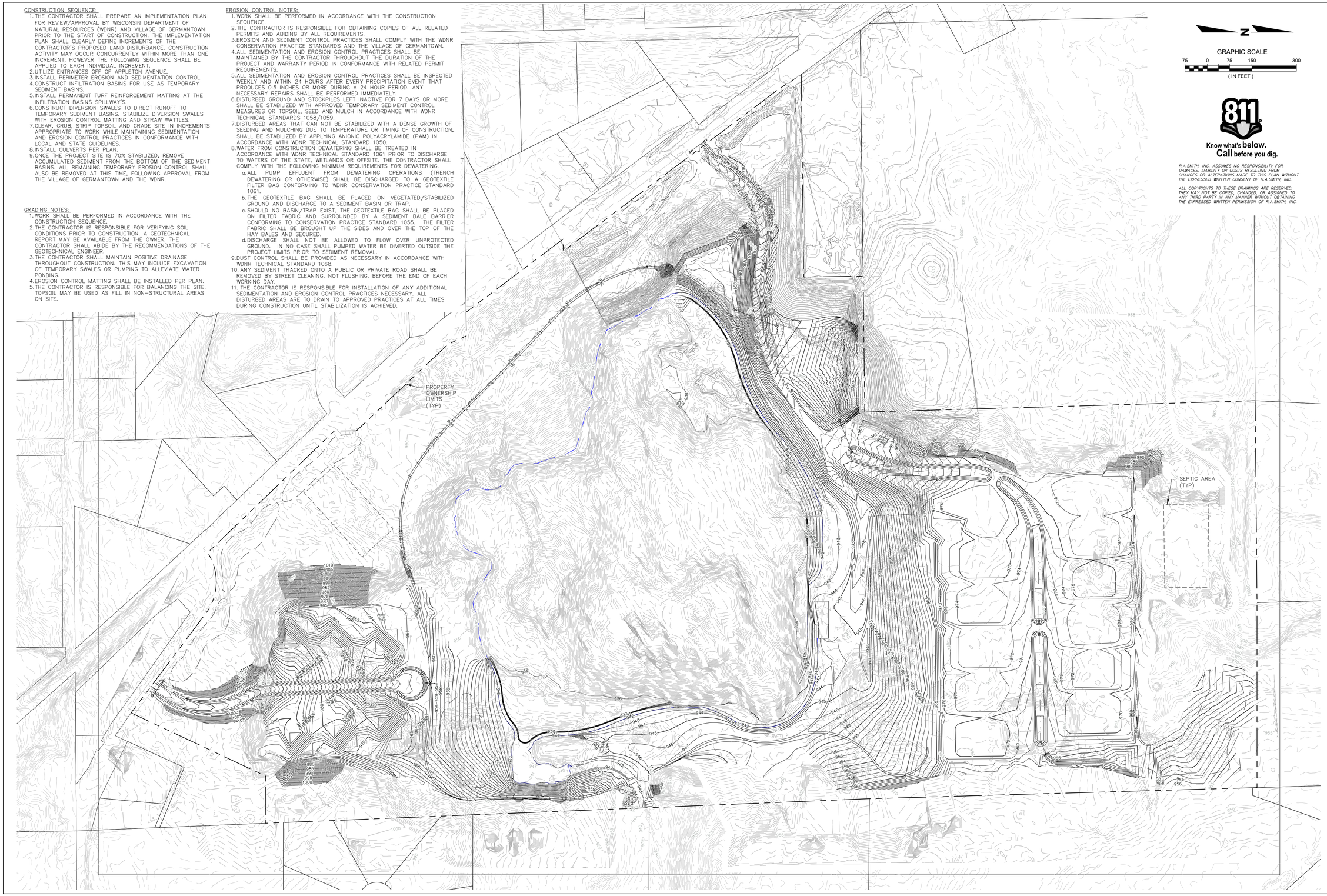
1. THE CONTRACTOR SHALL PREPARE AN IMPLEMENTATION PLAN FOR REVIEW/APPROVAL BY WISCONSIN DEPARTMENT OF NATURAL RESOURCES (WDNR) AND VILLAGE OF GERMANTOWN PRIOR TO THE START OF CONSTRUCTION. THE IMPLEMENTATION PLAN SHALL CLEARLY DEFINE INCREMENTS OF THE CONTRACTOR'S PROPOSED LAND DISTURBANCE. CONSTRUCTION ACTIVITY MAY OCCUR CONCURRENTLY WITHIN MORE THAN ONE INCREMENT, HOWEVER THE FOLLOWING SEQUENCE SHALL BE APPLIED TO EACH INDIVIDUAL INCREMENT.
2. UTILIZE ENTRANCES OFF OF APPLETON AVENUE.
3. INSTALL PERIMETER EROSION AND SEDIMENTATION CONTROL.
4. CONSTRUCT INFILTRATION BASINS FOR USE AS TEMPORARY SEDIMENT BASINS.
5. INSTALL PERMANENT TURF REINFORCEMENT MATTING AT THE INFILTRATION BASINS SPILLWAY'S.
6. CONSTRUCT DIVERSION SWALES TO DIRECT RUNOFF TO TEMPORARY SEDIMENT BASINS. STABILIZE DIVERSION SWALES WITH EROSION CONTROL MATTING AND STRAW WATTLES.
7. CLEAR, GRUB, STRIP TOPSOIL AND GRADE SITE IN INCREMENTS APPROPRIATE TO WORK WHILE MAINTAINING SEDIMENTATION AND EROSION CONTROL PRACTICES IN CONFORMANCE WITH LOCAL AND STATE GUIDELINES.
8. INSTALL CULVERTS PER PLAN.
9. ONCE THE PROJECT SITE IS 70% STABILIZED, REMOVE ACCUMULATED SEDIMENT FROM THE BOTTOM OF THE SEDIMENT BASINS. ALL REMAINING TEMPORARY EROSION CONTROL SHALL ALSO BE REMOVED AT THIS TIME, FOLLOWING APPROVAL FROM THE VILLAGE OF GERMANTOWN AND THE WDNR.

GRADING NOTES:

1. WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE CONSTRUCTION SEQUENCE.
2. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING SOIL CONDITIONS PRIOR TO CONSTRUCTION. A GEOTECHNICAL REPORT MAY BE AVAILABLE FROM THE OWNER. THE CONTRACTOR SHALL ABIDE BY THE RECOMMENDATIONS OF THE GEOTECHNICAL ENGINEER.
3. THE CONTRACTOR SHALL MAINTAIN POSITIVE DRAINAGE THROUGHOUT CONSTRUCTION. THIS MAY INCLUDE EXCAVATION OF TEMPORARY SWALES OR PUMPING TO ALLEVIATE WATER PONDING.
4. EROSION CONTROL MATTING SHALL BE INSTALLED PER PLAN.
5. THE CONTRACTOR IS RESPONSIBLE FOR BALANCING THE SITE. TOPSOIL MAY BE USED AS FILL IN NON-STRUCTURAL AREAS ON SITE.

EROSION CONTROL NOTES:

1. WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE CONSTRUCTION SEQUENCE.
2. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING COPIES OF ALL RELATED PERMITS AND ABIDING BY ALL REQUIREMENTS.
3. EROSION AND SEDIMENT CONTROL PRACTICES SHALL COMPLY WITH THE WDNR CONSERVATION PRACTICE STANDARDS AND THE VILLAGE OF GERMANTOWN.
4. ALL SEDIMENTATION AND EROSION CONTROL PRACTICES SHALL BE MAINTAINED BY THE CONTRACTOR THROUGHOUT THE DURATION OF THE PROJECT AND WARRANTY PERIOD IN CONFORMANCE WITH RELATED PERMIT REQUIREMENTS.
5. ALL SEDIMENTATION AND EROSION CONTROL PRACTICES SHALL BE INSPECTED WEEKLY AND WITHIN 24 HOURS AFTER EVERY PRECIPITATION EVENT THAT PRODUCES 0.5 INCHES OR MORE DURING A 24 HOUR PERIOD. ANY NECESSARY REPAIRS SHALL BE PERFORMED IMMEDIATELY.
6. DISTURBED GROUND AND STOCKPILES LEFT INACTIVE FOR 7 DAYS OR MORE SHALL BE STABILIZED WITH APPROVED TEMPORARY SEDIMENT CONTROL MEASURES OR TOPSOIL, SEED AND MULCH IN ACCORDANCE WITH WDNR TECHNICAL STANDARDS 1058/1059.
7. DISTURBED AREAS THAT CAN NOT BE STABILIZED WITH A DENSE GROWTH OF SEEDING AND MULCHING DUE TO TEMPERATURE OR TIMING OF CONSTRUCTION, SHALL BE STABILIZED BY APPLYING ANIONIC POLYACRYLAMIDE (PAM) IN ACCORDANCE WITH WDNR TECHNICAL STANDARD 1050.
8. WATER FROM CONSTRUCTION DEWATERING SHALL BE TREATED IN ACCORDANCE WITH WDNR TECHNICAL STANDARD 1061 PRIOR TO DISCHARGE TO WATERS OF THE STATE, WETLANDS OR OFFSITE. THE CONTRACTOR SHALL COMPLY WITH THE FOLLOWING MINIMUM REQUIREMENTS FOR DEWATERING.
   a. ALL PUMP EFFLUENT FROM DEWATERING OPERATIONS (TRENCH DEWATERING OR OTHERWSE) SHALL BE DISCHARGED TO A GEOTEXTILE FILTER BAG CONFORMING TO WDNR CONSERVATION PRACTICE STANDARD 1061.
   b. THE GEOTEXTILE BAG SHALL BE PLACED ON VEGETATED/STABILIZED GROUND AND DISCHARGE TO A SEDIMENT BASIN OR TRAP.
   c. SHOULD NO BASIN/TRAP EXIST, THE GEOTEXTILE BAG SHALL BE PLACED ON FILTER FABRIC AND SURROUNDED BY A SEDIMENT BALE BARRIER CONFORMING TO CONSERVATION PRACTICE STANDARD 1055. THE FILTER FABRIC SHALL BE BROUGHT UP THE SIDES AND OVER THE TOP OF THE HAY BALES AND SECURED.
   d. DISCHARGE SHALL NOT BE ALLOWED TO FLOW OVER UNPROTECTED GROUND. IN NO CASE SHALL PUMPED WATER BE DIVERTED OUTSIDE THE PROJECT LIMITS PRIOR TO SEDIMENT REMOVAL.
9. DUST CONTROL SHALL BE PROVIDED AS NECESSARY IN ACCORDANCE WITH WDNR TECHNICAL STANDARD 1068.
10. ANY SEDIMENT TRACKED ONTO A PUBLIC OR PRIVATE ROAD SHALL BE REMOVED BY STREET CLEANING, NOT FLUSHING, BEFORE THE END OF EACH WORKING DAY.
11. THE CONTRACTOR IS RESPONSIBLE FOR INSTALLATION OF ANY ADDITIONAL SEDIMENTATION AND EROSION CONTROL PRACTICES NECESSARY. ALL DISTURBED AREAS ARE TO DRAIN TO APPROVED PRACTICES AT ALL TIMES DURING CONSTRUCTION UNTIL STABILIZATION IS ACHIEVED.



GRAPHIC SCALE
75 0 75 150 300
(IN FEET)

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

R.A.SMITH, INC. ASSUMES NO RESPONSIBILITY FOR DAMAGES, LIABILITY OR COSTS RESULTING FROM CHANGES OR ALTERATIONS MADE TO THIS PLAN WITHOUT THE EXPRESSED WRITTEN CONSENT OF R.A.SMITH, INC.

ALL COPYRIGHTS TO THESE DRAWINGS ARE RESERVED. THEY MAY NOT BE COPIED, CHANGED, OR ASSIGNED TO ANY THIRD PARTY IN ANY MANNER WITHOUT OBTAINING THE EXPRESSED WRITTEN PERMISSION OF R.A.SMITH, INC.

DATE	DESCRIPTION

raSmith
CREATIVITY BEYOND ENGINEERING
16745 W. Bluemound Road
Brookfield, WI 53005-5938
(262) 781-1000
rasmith.com
Brookfield, WI | Milwaukee, WI | Appleton, WI | Madison, WI
Cedarburg, WI | Naperville, IL | Irvine, CA

MORAINE DEVELOPMENT GERMANTOWN, WI

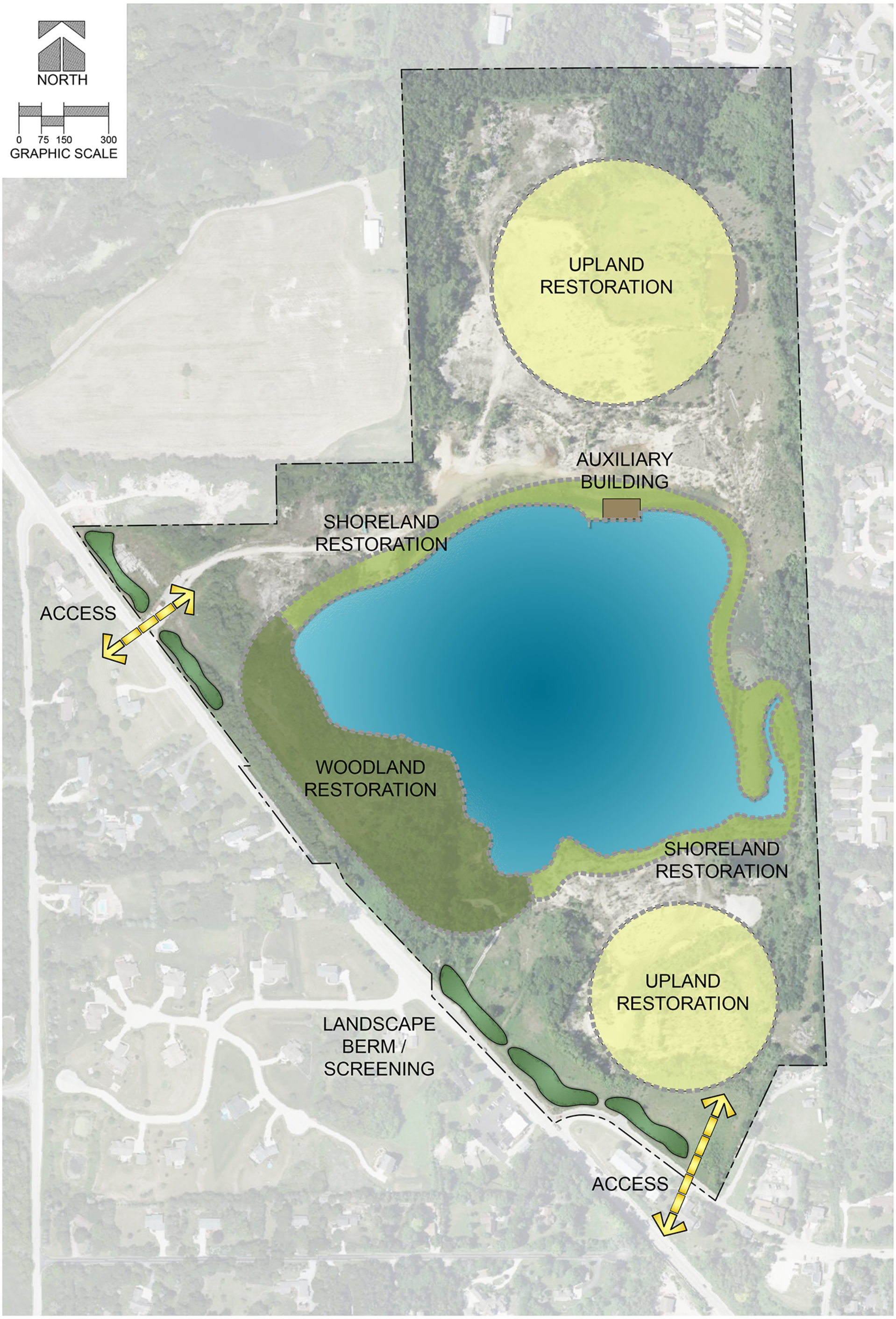
OVERALL GRADING & EROSION CONTROL PLAN

© COPYRIGHT 2023
R.A. Smith, Inc.

DATE: 02/13/2023
SCALE: 1"=150'
JOB NO. 3220196
PROJECT MANAGER: CHRIS HITCH, PE
DESIGNED BY: DJM
CHECKED BY: CDH

SHEET NUMBER
C200

P:\3220196\Dwg\2023-02-13 submittal\3220196-GPO.dwg, OVERALL GRADING PLAN, 2/8/2023 11:25:26 AM, djm



MORAINE DEVELOPMENT - GERMANTOWN, WI

RESTORATION MASTER PLAN - FEBRUARY 9, 2023

raSmith

CREATIVITY BEYOND ENGINEERING

RESTORATION PLANS

GERMANTOWN, WI

LEGEND
(PROPOSED FEATURES)

- TREE REMOVAL
- EXISTING CONCRETE PAVEMENT TO BE REMOVED
- EXISTING ASPHALT PAVEMENT TO BE REMOVED
- EXISTING GRAVEL TO BE REMOVED
- EXISTING BUILDING/STRUCTURE TO BE REMOVED
- SAWCUT LINE
- PROPOSED PROPERTY LINE
- PROJECT LIMITS
- PROPOSED SITE LIGHTING (DESIGNED BY OTHERS, FOR REFERENCE ONLY)
- MONUMENT SIGNS (CONSTRUCTION DETAILS BY OTHERS)
- SIGN
- HEAVY-DUTY CONCRETE PAVEMENT
- CONCRETE SIDEWALK
- HEAVY-DUTY ASPHALT PAVEMENT
- STANDARD-DUTY ASPHALT PAVEMENT
- COLORED AND STAMPED CONCRETE
- PROPOSED 18" REJECT CURB & GUTTER (AS SHOWN ON SITE PLAN)
- PROPOSED 18" STANDARD CURB & GUTTER (AS SHOWN ON SITE PLAN)
- PROPOSED ACCESSIBLE PAVEMENT MARKING
- VAN — VAN ACCESSIBLE STALL
- PROPOSED TYPE 3 CURB RAMP (SEE DETAIL SHEET. NOTE LINEWORK ON PLAN IS SYMBOLIC ONLY.)
- PROPOSED TYPE 3A CURB RAMP (SEE DETAIL SHEET. NOTE LINEWORK ON PLAN IS SYMBOLIC ONLY.)
- PROPOSED TYPE 4 CURB RAMP (SEE DETAIL SHEET. NOTE LINEWORK ON PLAN IS SYMBOLIC ONLY.)
- PROPOSED TYPE 4A CURB RAMP (SEE DETAIL SHEET. NOTE LINEWORK ON PLAN IS SYMBOLIC ONLY.)
- PROPOSED TYPE 7 CURB RAMP (SEE DETAIL SHEET. NOTE LINEWORK ON PLAN IS SYMBOLIC ONLY.)
- DOOR
- STRUCTURAL RETAINING WALL – (DESIGNED BY OTHERS)
- 869.5 — PROPOSED 0.5-FOOT GRADE CONTOUR (ONLY USED WHEN CRITICAL)
- 869 — PROPOSED 1-FOOT GRADE CONTOUR
- 870 — PROPOSED 5-FOOT GRADE CONTOUR
- 877.70 × — PROPOSED SPOT GRADE
- (877.70) × — PROPOSED TOP OF CURB
- 877.70 TW — PROPOSED FINISHED SURFACE GRADE ADJACENT TO TOP OF WALL
- 877.00 BW — PROPOSED FINISHED SURFACE GRADE ADJACENT TO BASE OF WALL
- PROPOSED STRAW WATTLE
- PROPOSED SILT FENCE
- PROPOSED TURBIDITY BARRIER
- PROPOSED INLET PROTECTION
- PROPOSED TEMPORARY DIVERSION SWALE & BERM
- PROPOSED LEVEL SPREADER
- PROPOSED EROSION TACKIFER
- PROPOSED EROSION CONTROL MAT
- PROPOSED STONE TRACKING MAT
- PROPOSED PERMANENT TURF REINFORCEMENT MAT
- PROPOSED EROSION CONTROL BLANKET
- PROPOSED GRAVEL PATH
- PROPOSED GRAVEL DRIVE
- PROPOSED RIPRAP
- G — PROPOSED GAS LINE
- E — PROPOSED ELECTRIC LINE
- T — PROPOSED TELEPHONE LINE
- W — PROPOSED WATER MAIN
- STO — PROPOSED STORM SEWER
- S — PROPOSED SANITARY SEWER
- PROPOSED FIRE DEPARTMENT CONNECTION
- PROPOSED WATER VALVE
- PROPOSED FIRE HYDRANT
- PROPOSED INLET/ CB
- PROPOSED STORM MANHOLE
- PROPOSED AREA DRAIN
- PROPOSED SANITARY MANHOLE

LEGEND

- ( ) INDICATES RECORDED DIMENSION WHERE DIFFERENT FROM ACTUAL MEASUREMENT
- OR SECTION OR 1/4 SECTION CORNER AS DESCRIBED
- 1" DIA. IRON PIPE FOUND (UNLESS OTHERWISE NOTED)
- 1" DIA. IRON PIPE, 18" LONG-SET (UNLESS OTHERWISE NOTED)
- BOLLARD
- SOIL BORING/MONITORING WELL
- FLAGPOLE
- MAILBOX
- SIGN
- BILLBOARD
- A AIR CONDITIONER
- B CONTROL BOX
- TRAFFIC SIGNAL
- RAILROAD CROSSING SIGNAL
- C CABLE PEDESTAL
- POWER POLE
- GUY POLE
- GUY WIRE
- LIGHT POLE
- SPOT/YARD/PEDESTAL LIGHT
- HANDICAPPED PARKING
- E ELECTRIC MANHOLE
- E ELECTRIC PEDESTAL
- ELECTRIC METER
- ELECTRIC TRANSFORMER
- T TELEPHONE MANHOLE
- T TELEPHONE PEDESTAL
- FO MARKED FIBER OPTIC
- GAS VALVE
- GAS METER
- GAS WARNING SIGN
- ST STORM MANHOLE
- ROUND INLET
- SQUARE INLET
- STORM SEWER END SECTION
- S SANITARY MANHOLE
- SANITARY CLEANOUT OR SEPTIC VENT
- SANITARY INTERCEPTOR MANHOLE
- MISCELLANEOUS MANHOLE
- W WATER VALVE
- HYDRANT
- WS WATER SERVICE CURB STOP
- W WATER MANHOLE
- WELL
- WATER SURFACE
- WETLANDS FLAG
- MARSH
- CONIFEROUS TREE
- DECIDUOUS TREE
- SHRUB
- S — EDGE OF TREES
- S — SANITARY SEWER
- STO — STORM SEWER
- W — WATERMAIN
- G — MARKED GAS MAIN
- E — MARKED ELECTRIC
- OHW — OVERHEAD WIRES
- B — BUREAU ELEC. SERV.
- T — MARKED TELEPHONE
- TV — MARKED CABLE TV LINE
- FO — MARKED FIBER OPTIC
- 780 — INDICATES EXISTING CONTOUR ELEVATION
- × 780.55 — INDICATES EXISTING SPOT ELEVATION
- EXISTING PROPERTY LINE
- EXISTING EASEMENT LINE

VICINITY MAP

PLAN INDEX

SHEET NO.	DESCRIPTION
C000	TITLE SHEET
C100	EXISTING CONDITIONS PLAN
C101	DEMOLITION PLAN
C102	OVERALL INTERIM GRADING PLAN
C103	INTERIM GRADING NORTH PLAN
C104	INTERIM GRADING NORTHEAST PLAN
C105	INTERIM GRADING NORTHWEST PLAN
C106	INTERIM GRADING SOUTHWEST PLAN
C107	INTERIM GRADING SOUTH PLAN
C108	INTERIM GRADING EAST PLAN
C200	OVERALL EROSION CONTROL PLAN
C201	EROSION CONTROL NORTH PLAN
C202	EROSION CONTROL NORTHEAST PLAN
C203	EROSION CONTROL NORTHWEST PLAN
C204	EROSION CONTROL SOUTHWEST PLAN
C205	EROSION CONTROL SOUTH PLAN
C206	EROSION CONTROL EAST PLAN
C300	OVERALL REVEGETATION PLAN
C400 – C402	NORTH SIDE PLAN & PROFILE
C403	SOUTH SIDE PLAN & PROFILE
C404	INFILTRATION BASINS 1 & 2A PLAN & PROFILE
C405	INFILTRATION BASIN 2 PLAN & PROFILE
C406	INFILTRATION BASIN 3 PLAN & PROFILE
C500 – C501	SITE CIVIL DETAILS
C502	SITE CIVIL NOTES AND SPECIFICATIONS

DEVELOPER / OWNER:

MORAINE DEVELOPMENT LLC
A LENNAR HOME COMPANY

N52W23096 LISBON ROAD
SUSSEX, WI 53089
(262) 251-1520

ENGINEER AND LANDSCAPE ARCHITECT:

raSmith
CREATIVITY BEYOND ENGINEERING

16745 W. Bluemound Road
Brookfield, WI 53005-5938
(262) 781-1000
rasmith.com

EXISTING DATA:

EXISTING GROUND DATA DEVELOPED FROM OWNER PROVIDED AERIAL FLIGHT DATA, FLOWN YEAR 2017; COORDINATE SYSTEM – NAD83, WI STATE PLANE, SOUTH ZONE, US SURVEY FT.

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

R.A.SMITH, INC. ASSUMES NO RESPONSIBILITY FOR DAMAGES, LIABILITY OR COSTS RESULTING FROM CHANGES OR ALTERATIONS MADE TO THIS PLAN WITHOUT THE EXPRESSED WRITTEN CONSENT OF R.A.SMITH, INC.

ALL COPYRIGHTS TO THESE DRAWINGS ARE RESERVED. THEY MAY NOT BE COPIED, CHANGED, OR ASSIGNED TO ANY THIRD PARTY IN ANY MANNER WITHOUT OBTAINING THE EXPRESSED WRITTEN PERMISSION OF R.A.SMITH, INC.

PLAN DATE: 03/10/2023

REVISIONS	ISSUE DATE	SHEET NO.'S	ISSUED FOR:

DATE	DESCRIPTION

raSmith
CREATIVITY BEYOND ENGINEERING
16745 W. Bluemound Road
Brookfield, WI 53005-5938
(262) 781-1000
rasmith.com
Brookfield, WI | Milwaukee, WI | Appleton, WI | Madison, WI
Cedarburg, WI | Naperville, IL | Irvine, CA

MORAINE DEVELOPMENT
GERMANTOWN, WI

TITLE SHEET

PRELIMINARY NOT FOR CONSTRUCTION

© COPYRIGHT 2023
R.A. Smith, Inc.

DATE: 03/10/2023
SCALE: 1" = 600'
JOB NO. 3220196
PROJECT MANAGER: CHRIS HITCH, PE
DESIGNED BY: DJM
CHECKED BY: CDH

SHEET NUMBER
C000

N

GRAPHIC SCALE

75 0 75 150 300

(IN FEET)

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

R.A.SMITH, INC. ASSUMES NO RESPONSIBILITY FOR DAMAGES, LIABILITY OR COSTS RESULTING FROM CHANGES OR ALTERATIONS MADE TO THIS PLAN WITHOUT THE EXPRESSED WRITTEN CONSENT OF R.A.SMITH, INC.

ALL COPYRIGHTS TO THESE DRAWINGS ARE RESERVED. THEY MAY NOT BE COPIED, CHANGED, OR ASSIGNED TO ANY THIRD PARTY IN ANY MANNER WITHOUT OBTAINING THE EXPRESSED WRITTEN PERMISSION OF R.A.SMITH, INC.

DATE	DESCRIPTION

raSmith
CREATIVITY BEYOND ENGINEERING
16745 W. Bluemound Road
Brookfield, WI 53005-5938
(262) 781-1000
rasmith.com
Brookfield, WI | Milwaukee, WI | Appleton, WI | Madison, WI
Cedarburg, WI | Naperville, IL | Irvine, CA

MORAINE DEVELOPMENT GERMANTOWN, WI

EXISTING CONDITIONS PLAN

PRELIMINARY NOT FOR CONSTRUCTION

© COPYRIGHT 2023
R.A. Smith, Inc.

DATE: 03/10/2023

SCALE: 1"=150'

JOB NO. 3220196

PROJECT MANAGER: CHRIS HITCH, PE

DESIGNED BY: DJM

CHECKED BY: CDH

SHEET NUMBER

C100

CONSTRUCTION SEQUENCE:

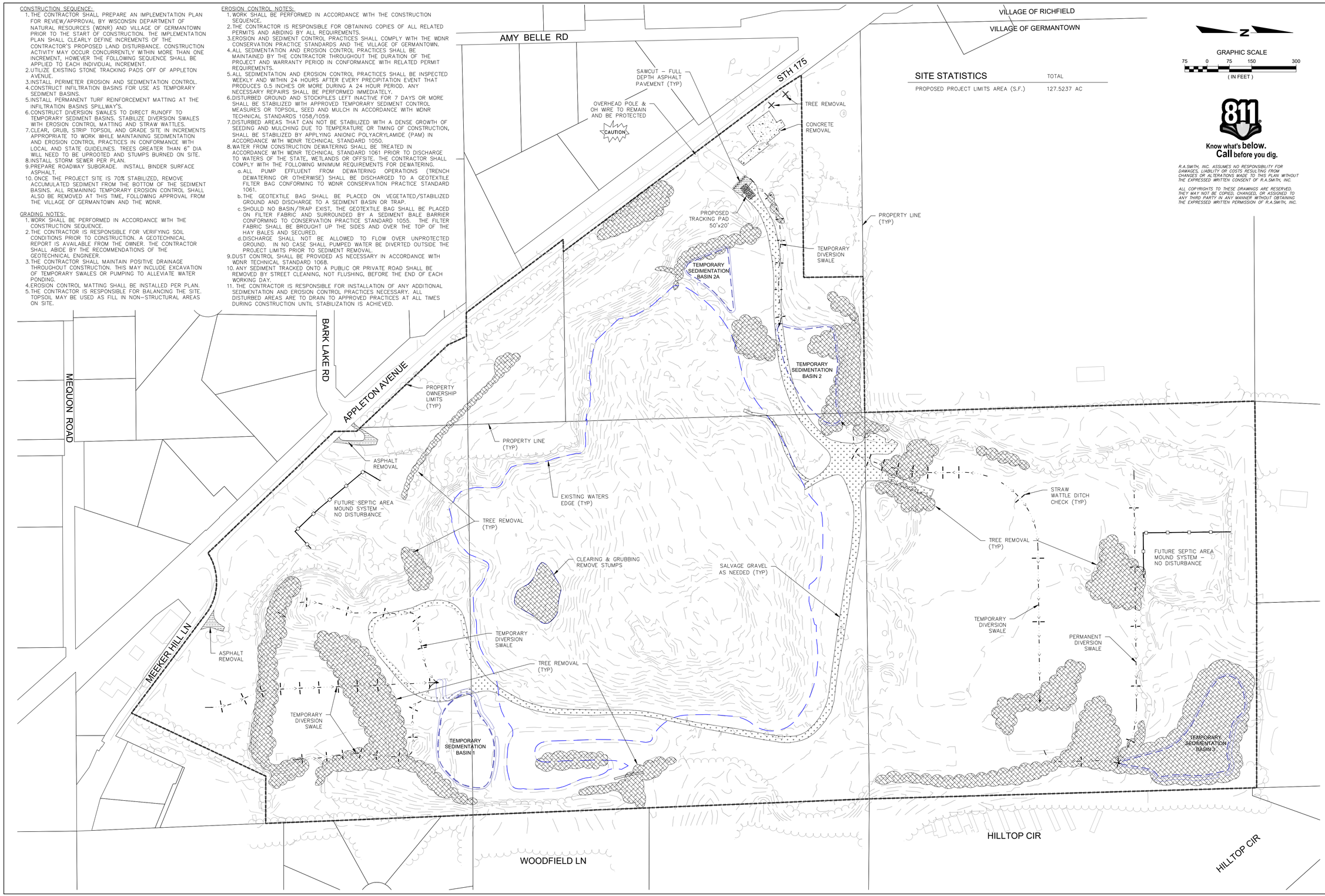
1. THE CONTRACTOR SHALL PREPARE AN IMPLEMENTATION PLAN FOR REVIEW/APPROVAL BY WISCONSIN DEPARTMENT OF NATURAL RESOURCES (WDNR) AND VILLAGE OF GERMANTOWN PRIOR TO THE START OF CONSTRUCTION. THE IMPLEMENTATION PLAN SHALL CLEARLY DEFINE INCREMENTS OF THE CONTRACTOR'S PROPOSED LAND DISTURBANCE. CONSTRUCTION ACTIVITY MAY OCCUR CONCURRENTLY WITHIN MORE THAN ONE INCREMENT, HOWEVER THE FOLLOWING SEQUENCE SHALL BE APPLIED TO EACH INDIVIDUAL INCREMENT.
2. UTILIZE EXISTING STONE TRACKING PADS OFF OF APPLETON AVENUE.
3. INSTALL PERIMETER EROSION AND SEDIMENTATION CONTROL.
4. CONSTRUCT INFILTRATION BASINS FOR USE AS TEMPORARY SEDIMENT BASINS.
5. INSTALL PERMANENT TURF REINFORCEMENT MATTING AT THE INFILTRATION BASINS SPILLWAY'S.
6. CONSTRUCT DIVERSION SWALES TO DIRECT RUNOFF TO TEMPORARY SEDIMENT BASINS. STABILIZE DIVERSION SWALES WITH EROSION CONTROL MATTING AND STRAW WATTLES.
7. CLEAR, GRUB, STRIP TOPSOIL AND GRADE SITE IN INCREMENTS APPROPRIATE TO WORK WHILE MAINTAINING SEDIMENTATION AND EROSION CONTROL PRACTICES IN CONFORMANCE WITH LOCAL AND STATE GUIDELINES. TREES GREATER THAN 6" DIA WILL NEED TO BE UPROOTED AND STUMPS BURNED ON SITE.
8. INSTALL STORM SEWER PER PLAN.
9. PREPARE ROADWAY SUBGRADE. INSTALL BINDER SURFACE ASPHALT.
10. ONCE THE PROJECT SITE IS 70% STABILIZED, REMOVE ACCUMULATED SEDIMENT FROM THE BOTTOM OF THE SEDIMENT BASINS. ALL REMAINING TEMPORARY EROSION CONTROL SHALL ALSO BE REMOVED AT THIS TIME, FOLLOWING APPROVAL FROM THE VILLAGE OF GERMANTOWN AND THE WDNR.

GRADING NOTES:

1. WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE CONSTRUCTION SEQUENCE.
2. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING SOIL CONDITIONS PRIOR TO CONSTRUCTION. A GEOTECHNICAL REPORT IS AVAILABLE FROM THE OWNER. THE CONTRACTOR SHALL ABIDE BY THE RECOMMENDATIONS OF THE GEOTECHNICAL ENGINEER.
3. THE CONTRACTOR SHALL MAINTAIN POSITIVE DRAINAGE THROUGHOUT CONSTRUCTION. THIS MAY INCLUDE EXCAVATION OF TEMPORARY SWALES OR PUMPING TO ALLEVIATE WATER PONDING.
4. EROSION CONTROL MATTING SHALL BE INSTALLED PER PLAN.
5. THE CONTRACTOR IS RESPONSIBLE FOR BALANCING THE SITE. TOPSOIL MAY BE USED AS FILL IN NON-STRUCTURAL AREAS ON SITE.

EROSION CONTROL NOTES:

1. WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE CONSTRUCTION SEQUENCE.
2. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING COPIES OF ALL RELATED PERMITS AND ABIDING BY ALL REQUIREMENTS.
3. EROSION AND SEDIMENT CONTROL PRACTICES SHALL COMPLY WITH THE WDNR CONSERVATION PRACTICE STANDARDS AND THE VILLAGE OF GERMANTOWN.
4. ALL SEDIMENTATION AND EROSION CONTROL PRACTICES SHALL BE MAINTAINED BY THE CONTRACTOR THROUGHOUT THE DURATION OF THE PROJECT AND WARRANTY PERIOD IN CONFORMANCE WITH RELATED PERMIT REQUIREMENTS.
5. ALL SEDIMENTATION AND EROSION CONTROL PRACTICES SHALL BE INSPECTED WEEKLY AND WITHIN 24 HOURS AFTER EVERY PRECIPITATION EVENT THAT PRODUCES 0.5 INCHES OR MORE DURING A 24 HOUR PERIOD. ANY NECESSARY REPAIRS SHALL BE PERFORMED IMMEDIATELY.
6. DISTURBED GROUND AND STOCKPILES LEFT INACTIVE FOR 7 DAYS OR MORE SHALL BE STABILIZED WITH APPROVED TEMPORARY SEDIMENT CONTROL MEASURES OR TOPSOIL, SEED AND MULCH IN ACCORDANCE WITH WDNR TECHNICAL STANDARDS 1058/1059.
7. DISTURBED AREAS THAT CAN NOT BE STABILIZED WITH A DENSE GROWTH OF SEEDING AND MULCHING DUE TO TEMPERATURE OR TIMING OF CONSTRUCTION, SHALL BE STABILIZED BY APPLYING ANIONIC POLYACRYLAMIDE (PAM) IN ACCORDANCE WITH WDNR TECHNICAL STANDARD 1050.
8. WATER FROM CONSTRUCTION DEWATERING SHALL BE TREATED IN ACCORDANCE WITH WDNR TECHNICAL STANDARD 1061 PRIOR TO DISCHARGE TO WATERS OF THE STATE, WETLANDS OR OFFSITE. THE CONTRACTOR SHALL COMPLY WITH THE FOLLOWING MINIMUM REQUIREMENTS FOR DEWATERING.
   a. ALL PUMP EFFLUENT FROM DEWATERING OPERATIONS (TRENCH DEWATERING OR OTHERWISE) SHALL BE DISCHARGED TO A GEOTEXTILE FILTER BAG CONFORMING TO WDNR CONSERVATION PRACTICE STANDARD 1061.
   b. THE GEOTEXTILE BAG SHALL BE PLACED ON VEGETATED/STABILIZED GROUND AND DISCHARGE TO A SEDIMENT BASIN OR TRAP.
   c. SHOULD NO BASIN/TRAP EXIST, THE GEOTEXTILE BAG SHALL BE PLACED ON FILTER FABRIC AND SURROUNDED BY A SEDIMENT BALE BARRIER CONFORMING TO CONSERVATION PRACTICE STANDARD 1055. THE FILTER FABRIC SHALL BE BROUGHT UP THE SIDES AND OVER THE TOP OF THE HAY BALES AND SECURED.
   d. DISCHARGE SHALL NOT BE ALLOWED TO FLOW OVER UNPROTECTED GROUND. IN NO CASE SHALL PUMPED WATER BE DIVERTED OUTSIDE THE PROJECT LIMITS PRIOR TO SEDIMENT REMOVAL.
9. DUST CONTROL SHALL BE PROVIDED AS NECESSARY IN ACCORDANCE WITH WDNR TECHNICAL STANDARD 1068.
10. ANY SEDIMENT TRACKED ONTO A PUBLIC OR PRIVATE ROAD SHALL BE REMOVED BY STREET CLEANING, NOT FLUSHING, BEFORE THE END OF EACH WORKING DAY.
11. THE CONTRACTOR IS RESPONSIBLE FOR INSTALLATION OF ANY ADDITIONAL SEDIMENTATION AND EROSION CONTROL PRACTICES NECESSARY. ALL DISTURBED AREAS ARE TO DRAIN TO APPROVED PRACTICES AT ALL TIMES DURING CONSTRUCTION UNTIL STABILIZATION IS ACHIEVED.



SITE STATISTICS

	TOTAL
PROPOSED PROJECT LIMITS AREA (S.F.)	127.5237 AC

N

GRAPHIC SCALE

75 0 75 150 300

(IN FEET)

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

R.A.SMITH, INC. ASSUMES NO RESPONSIBILITY FOR DAMAGES, LIABILITY OR COSTS RESULTING FROM CHANGES OR ALTERATIONS MADE TO THIS PLAN WITHOUT THE EXPRESSED WRITTEN CONSENT OF R.A.SMITH, INC.

ALL COPYRIGHTS TO THESE DRAWINGS ARE RESERVED. THEY MAY NOT BE COPIED, CHANGED, OR ASSIGNED TO ANY THIRD PARTY IN ANY MANNER WITHOUT OBTAINING THE EXPRESSED WRITTEN PERMISSION OF R.A.SMITH, INC.

DATE	DESCRIPTION

raSmith
CREATIVITY BEYOND ENGINEERING
16745 W. Bluemound Road
Brookfield, WI 53005-5938
(262) 781-1000
rasmith.com
Brookfield, WI | Milwaukee, WI | Appleton, WI | Madison, WI
Cedarburg, WI | Naperville, IL | Irvine, CA

MORAINE DEVELOPMENT GERMANTOWN, WI

DEMOLITION PLAN

PRELIMINARY NOT FOR CONSTRUCTION

© COPYRIGHT 2023 R.A. Smith, Inc.

DATE: 03/10/2023

SCALE: 1"=150'

JOB NO. 3220196

PROJECT MANAGER: CHRIS HITCH, PE

DESIGNED BY: DJM

CHECKED BY: CDH

SHEET NUMBER

C101

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

R.A.SMITH, INC. ASSUMES NO RESPONSIBILITY FOR DAMAGES, LIABILITY OR COSTS RESULTING FROM CHANGES OR ALTERATIONS MADE TO THIS PLAN WITHOUT THE EXPRESSED WRITTEN CONSENT OF R.A.SMITH, INC.

ALL COPYRIGHTS TO THESE DRAWINGS ARE RESERVED. THEY MAY NOT BE COPIED, CHANGED, OR ASSIGNED TO ANY THIRD PARTY IN ANY MANNER WITHOUT OBTAINING THE EXPRESSED WRITTEN PERMISSION OF R.A.SMITH, INC.

DATE	DESCRIPTION

raSmith
CREATIVITY BEYOND ENGINEERING
16745 W. Bluemound Road
Brookfield, WI 53005-5938
(262) 781-1000
rasmith.com
Brookfield, WI | Milwaukee, WI | Appleton, WI | Madison, WI
Cedarburg, WI | Naperville, IL | Irvine, CA

MORAINE DEVELOPMENT
GERMANTOWN, WI

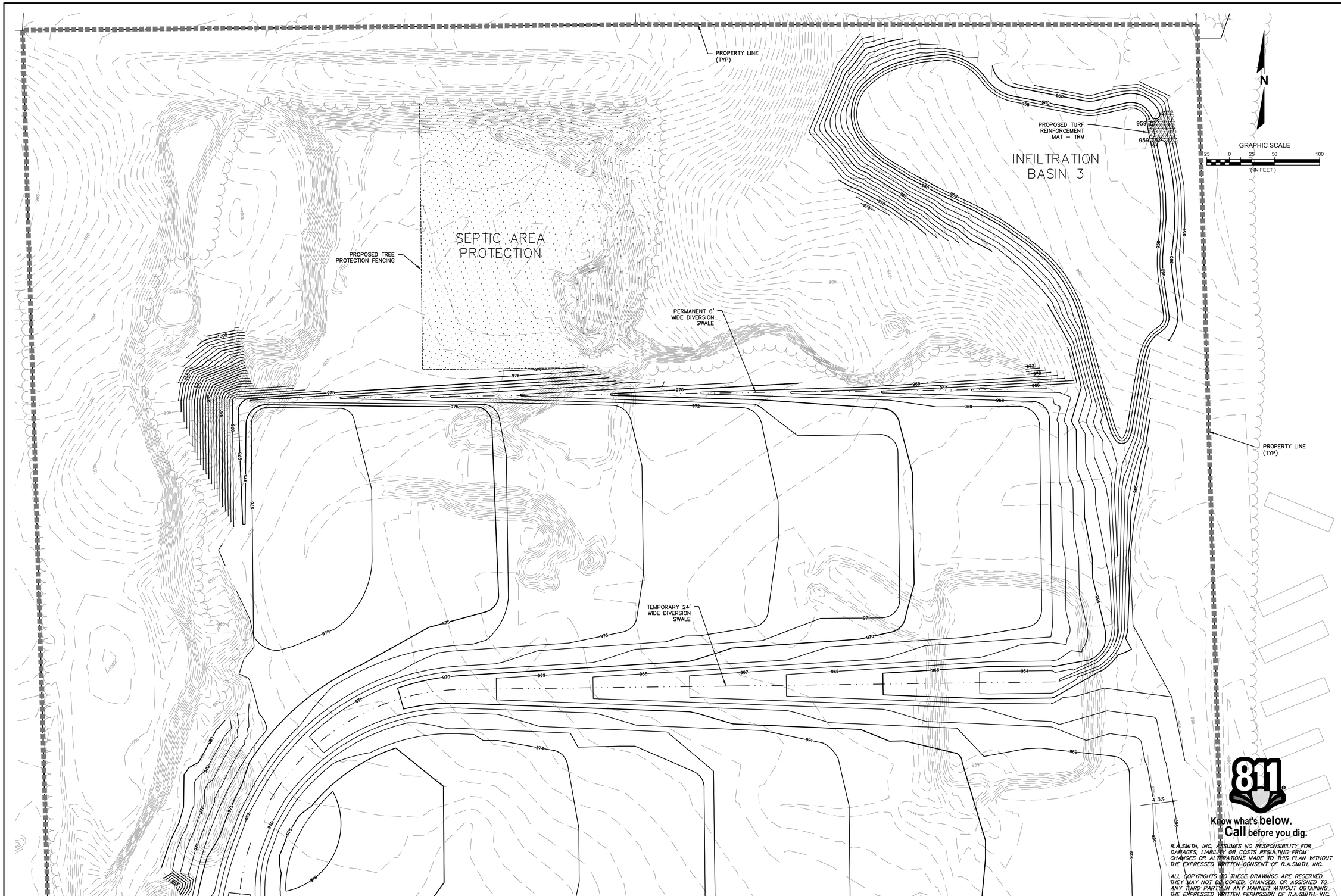
OVERALL INTERIM GRADING PLAN

PRELIMINARY NOT FOR CONSTRUCTION

© COPYRIGHT 2023
R.A. Smith, Inc.

DATE: 03/10/2023
SCALE: 1"=150'
JOB NO. 3220196
PROJECT MANAGER: CHRIS HITCH, PE
DESIGNED BY: DJM
CHECKED BY: CDH

SHEET NUMBER
C102



Know what's below.
Call before you dig.

R.A.SMITH, INC. ASSUMES NO RESPONSIBILITY FOR DAMAGES, LIABILITY OR COSTS RESULTING FROM CHANGES OR ALTERATIONS MADE TO THIS PLAN WITHOUT THE EXPRESSED WRITTEN CONSENT OF R.A.SMITH, INC.

ALL COPYRIGHTS TO THESE DRAWINGS ARE RESERVED. THEY MAY NOT BE COPIED, CHANGED, OR ASSIGNED TO ANY THIRD PARTY IN ANY MANNER WITHOUT OBTAINING THE EXPRESSED WRITTEN PERMISSION OF R.A.SMITH, INC.

DATE	DESCRIPTION

raSmith
CREATIVITY BEYOND ENGINEERING
16745 W. Bluemound Road
Brookfield, WI 53005-5938
(262) 781-1000
rasmith.com
Brookfield, WI | Milwaukee, WI | Appleton, WI | Madison, WI
Cedarburg, WI | Naperville, IL | Irvine, CA

MORAINE DEVELOPMENT GERMANTOWN, WI

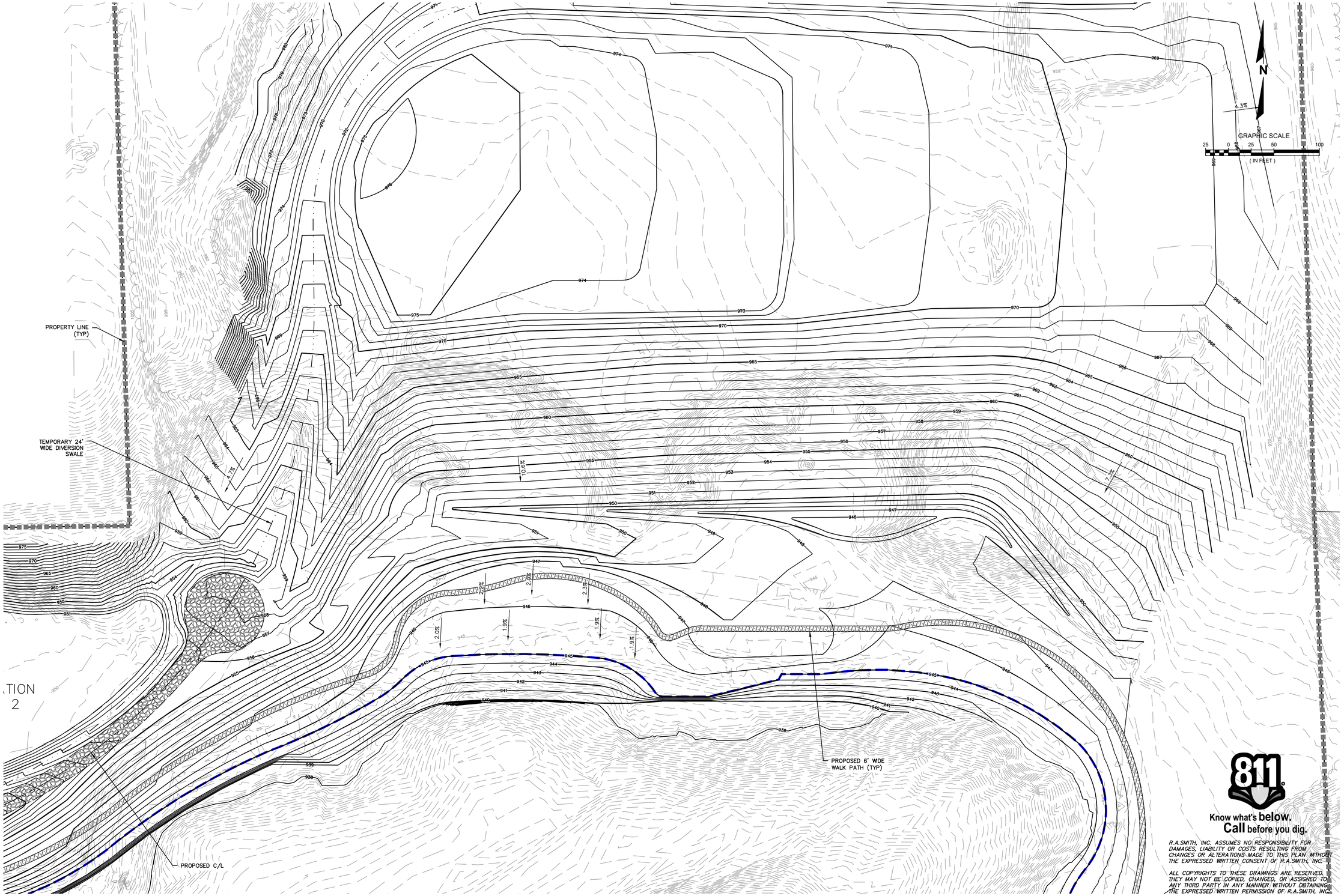
INTERIM GRADING NORTH PLAN

PRELIMINARY NOT FOR CONSTRUCTION

© COPYRIGHT 2023
R.A. Smith, Inc.

DATE: 03/10/2023
SCALE: 1" = 50'
JOB NO. 3220196
PROJECT MANAGER: CHRIS HITCH, PE
DESIGNED BY: DJM
CHECKED BY: CDH

SHEET NUMBER
C103



DATE	DESCRIPTION

raSmith
CREATIVITY BEYOND ENGINEERING

16745 W. Bluemound Road
Brookfield, WI 53005-5938
(262) 781-1000
rasmith.com

Brookfield, WI | Milwaukee, WI | Appleton, WI | Madison, WI
Cedarburg, WI | Naperville, IL | Irvine, CA

MORAINE DEVELOPMENT GERMANTOWN, WI

INTERIM GRADING NORTHEAST PLAN

PRELIMINARY NOT FOR CONSTRUCTION

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

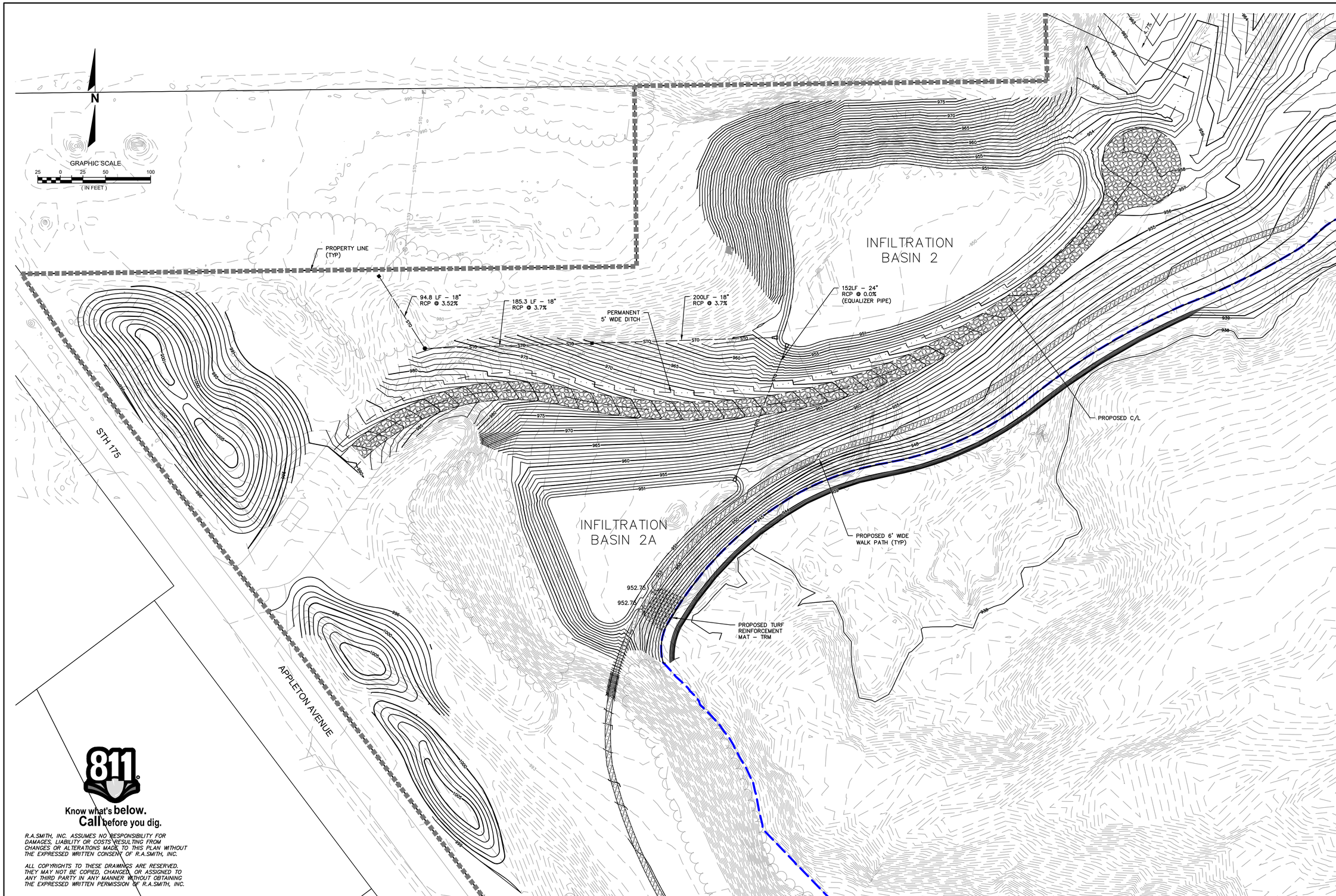
R.A.SMITH, INC. ASSUMES NO RESPONSIBILITY FOR DAMAGES, LIABILITY OR COSTS RESULTING FROM CHANGES OR ALTERATIONS MADE TO THIS PLAN WITHOUT THE EXPRESSED WRITTEN CONSENT OF R.A.SMITH, INC.

ALL COPYRIGHTS TO THESE DRAWINGS ARE RESERVED. THEY MAY NOT BE COPIED, CHANGED, OR ASSIGNED TO ANY THIRD PARTY IN ANY MANNER WITHOUT OBTAINING THE EXPRESSED WRITTEN PERMISSION OF R.A.SMITH, INC.

© COPYRIGHT 2023
R.A. Smith, Inc.

DATE: 03/10/2023
SCALE: 1" = 50'
JOB NO. 3220196
PROJECT MANAGER: CHRIS HITCH, PE
DESIGNED BY: DJM
CHECKED BY: CDH

SHEET NUMBER
C104



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

R.A.SMITH, INC. ASSUMES NO RESPONSIBILITY FOR DAMAGES, LIABILITY OR COSTS RESULTING FROM CHANGES OR ALTERATIONS MADE TO THIS PLAN WITHOUT THE EXPRESSED WRITTEN CONSENT OF R.A.SMITH, INC.

ALL COPYRIGHTS TO THESE DRAWINGS ARE RESERVED. THEY MAY NOT BE COPIED, CHANGED, OR ASSIGNED TO ANY THIRD PARTY IN ANY MANNER WITHOUT OBTAINING THE EXPRESSED WRITTEN PERMISSION OF R.A.SMITH, INC.

DATE	DESCRIPTION

raSmith
CREATIVITY BEYOND ENGINEERING
16745 W. Bluemound Road
Brookfield, WI 53005-5938
(262) 781-1000
rasmith.com
Brookfield, WI | Milwaukee, WI | Appleton, WI | Madison, WI
Cedarburg, WI | Naperville, IL | Irvine, CA

MORAINE DEVELOPMENT
GERMANTOWN, WI

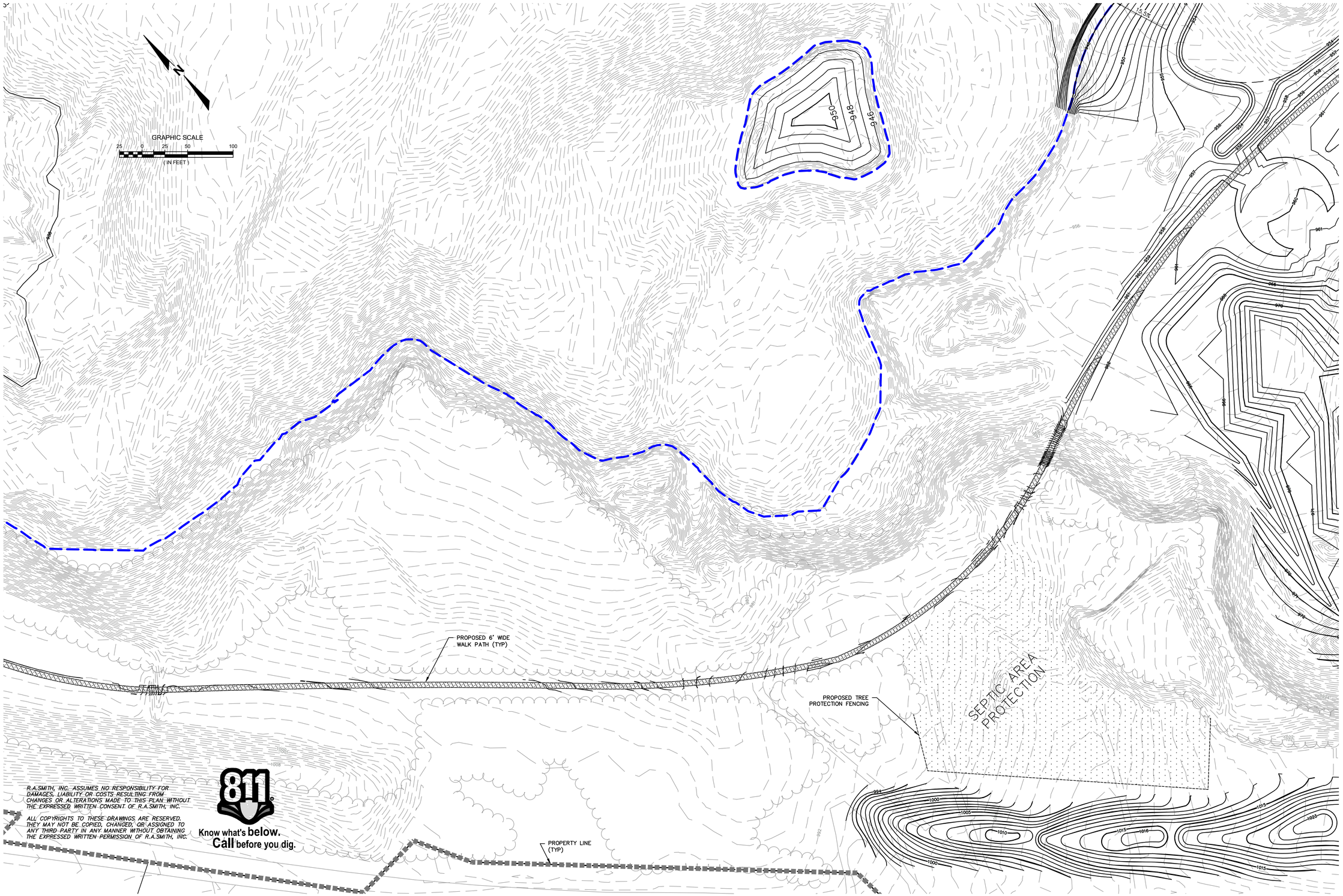
INTERIM GRADING
NORTHWEST PLAN

PRELIMINARY NOT FOR CONSTRUCTION

© COPYRIGHT 2023
R.A. Smith, Inc.

DATE: 03/10/2023
SCALE: 1" = 50'
JOB NO. 3220196
PROJECT MANAGER: CHRIS HITCH, PE
DESIGNED BY: DJM
CHECKED BY: CDH

SHEET NUMBER
C105



R.A.SMITH, INC. ASSUMES NO RESPONSIBILITY FOR DAMAGES, LIABILITY OR COSTS RESULTING FROM CHANGES OR ALTERATIONS MADE TO THIS PLAN WITHOUT THE EXPRESSED WRITTEN CONSENT OF R.A.SMITH, INC.

ALL COPYRIGHTS TO THESE DRAWINGS ARE RESERVED. THEY MAY NOT BE COPIED, CHANGED, OR ASSIGNED TO ANY THIRD PARTY IN ANY MANNER WITHOUT OBTAINING THE EXPRESSED WRITTEN PERMISSION OF R.A.SMITH, INC.

DATE	DESCRIPTION

raSmith
CREATIVITY BEYOND ENGINEERING
16745 W. Bluemound Road
Brookfield, WI 53005-5938
(262) 781-1000
rasmith.com
Brookfield, WI | Milwaukee, WI | Appleton, WI | Madison, WI
Cedarburg, WI | Naperville, IL | Irvine, CA

MORAINE DEVELOPMENT GERMANTOWN, WI

INTERIM GRADING SOUTHWEST PLAN

PRELIMINARY NOT FOR CONSTRUCTION

© COPYRIGHT 2023
R.A. Smith, Inc.

DATE: 03/10/2023

SCALE: 1" = 50'

JOB NO. 3220196

PROJECT MANAGER: CHRIS HITCH, PE

DESIGNED BY: DJM

CHECKED BY: CDH

SHEET NUMBER

C106

R.A.SMITH, INC. ASSUMES NO RESPONSIBILITY FOR DAMAGES, LIABILITY OR COSTS RESULTING FROM CHANGES OR ALTERATIONS MADE TO THIS PLAN WITHOUT THE EXPRESSED WRITTEN CONSENT OF R.A.SMITH, INC.

ALL COPYRIGHTS TO THESE DRAWINGS ARE RESERVED. THEY MAY NOT BE COPIED, CHANGED, OR ASSIGNED TO ANY THIRD PARTY IN ANY MANNER WITHOUT OBTAINING THE EXPRESSED WRITTEN PERMISSION OF R.A.SMITH, INC.

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

DATE	DESCRIPTION

raSmith
CREATIVITY BEYOND ENGINEERING
16745 W. Bluemound Road
Brookfield, WI 53005-5938
(262) 781-1000
rasmith.com
Brookfield, WI | Milwaukee, WI | Appleton, WI | Madison, WI
Cedarburg, WI | Naperville, IL | Irvine, CA

MORAINE DEVELOPMENT GERMANTOWN, WI

INTERIM GRADING SOUTH PLAN

PRELIMINARY NOT FOR CONSTRUCTION

© COPYRIGHT 2023
R.A. Smith, Inc.

DATE: 03/10/2023

SCALE: 1" = 50'

JOB NO. 3220196

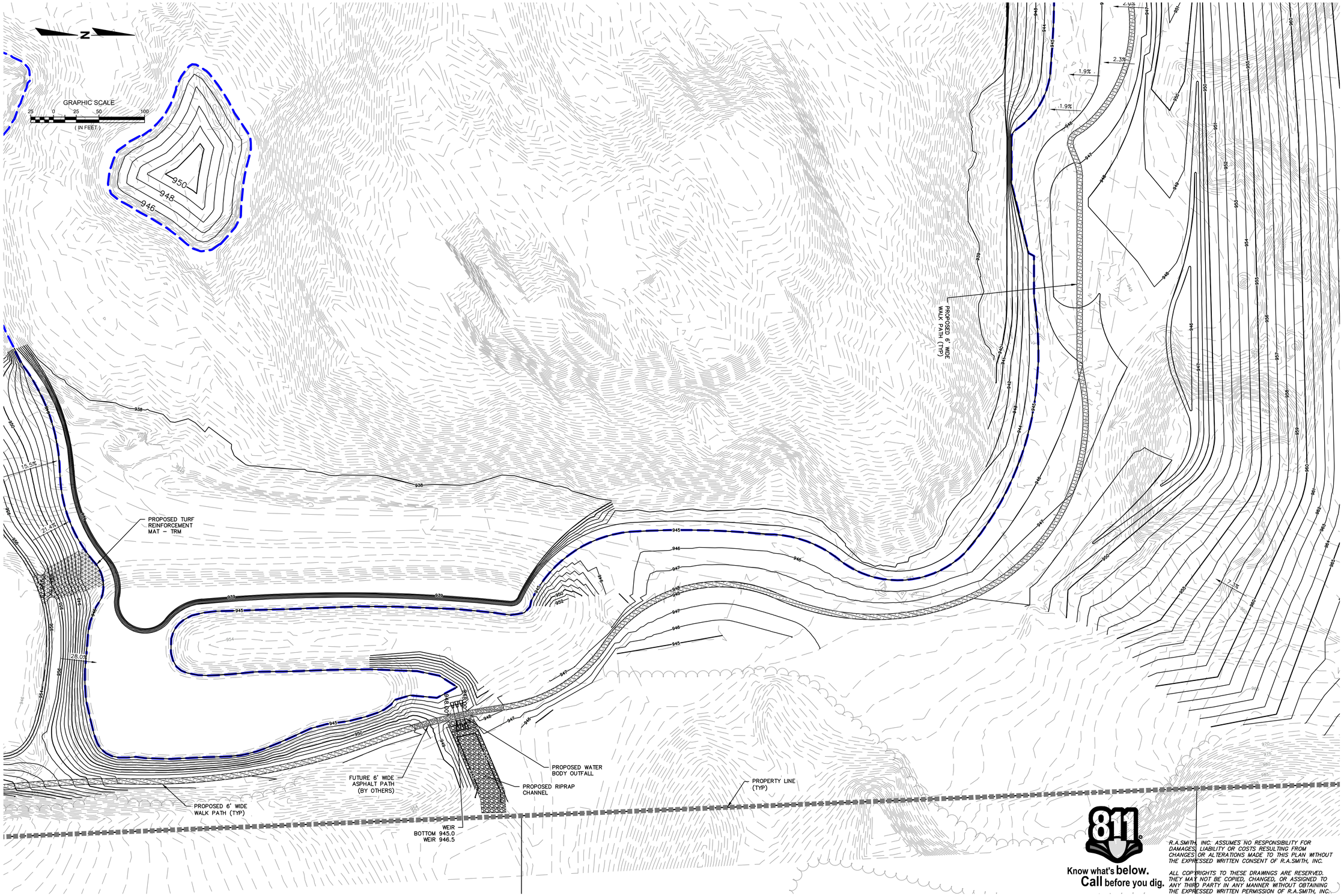
PROJECT MANAGER: CHRIS HITCH, PE

DESIGNED BY: DJM

CHECKED BY: CDH

SHEET NUMBER

C107



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

R.A.SMITH, INC. ASSUMES NO RESPONSIBILITY FOR DAMAGES, LIABILITY OR COSTS RESULTING FROM CHANGES OR ALTERATIONS MADE TO THIS PLAN WITHOUT THE EXPRESSED WRITTEN CONSENT OF R.A.SMITH, INC.

ALL COPYRIGHTS TO THESE DRAWINGS ARE RESERVED. THEY MAY NOT BE COPIED, CHANGED, OR ASSIGNED TO ANY THIRD PARTY IN ANY MANNER WITHOUT OBTAINING THE EXPRESSED WRITTEN PERMISSION OF R.A.SMITH, INC.

DATE	DESCRIPTION

raSmith
CREATIVITY BEYOND ENGINEERING
16745 W. Bluemound Road
Brookfield, WI 53005-5938
(262) 781-1000
rasmith.com
Brookfield, WI | Milwaukee, WI | Appleton, WI | Madison, WI
Cedarburg, WI | Naperville, IL | Irvine, CA

MORAINE DEVELOPMENT GERMANTOWN, WI

INTERIM GRADING EAST PLAN

PRELIMINARY NOT FOR CONSTRUCTION

© COPYRIGHT 2023 R.A. Smith, Inc.

DATE: 03/10/2023

SCALE: 1" = 50'

JOB NO. 3220196

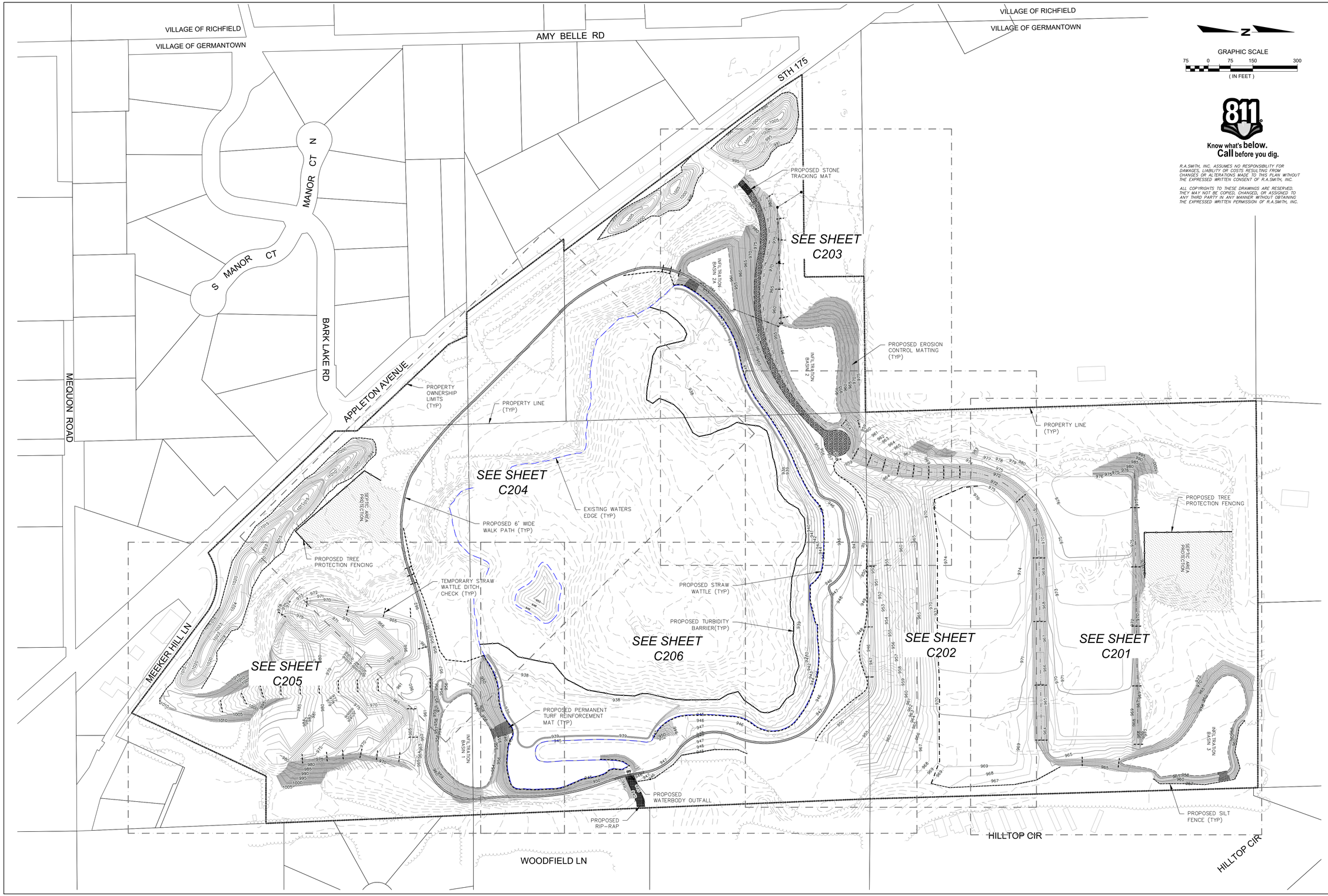
PROJECT MANAGER: CHRIS HITCH, PE

DESIGNED BY: DJM

CHECKED BY: CDH

SHEET NUMBER

C108



R.A.SMITH, INC. ASSUMES NO RESPONSIBILITY FOR DAMAGES, LIABILITY OR COSTS RESULTING FROM CHANGES OR ALTERATIONS MADE TO THIS PLAN WITHOUT THE EXPRESSED WRITTEN CONSENT OF R.A.SMITH, INC.

ALL COPYRIGHTS TO THESE DRAWINGS ARE RESERVED. THEY MAY NOT BE COPIED, CHANGED, OR ASSIGNED TO ANY THIRD PARTY IN ANY MANNER WITHOUT OBTAINING THE EXPRESSED WRITTEN PERMISSION OF R.A.SMITH, INC.

DATE	DESCRIPTION

raSmith
CREATIVITY BEYOND ENGINEERING
16745 W. Bluemound Road
Brookfield, WI 53005-5938
(262) 781-1000
rasmith.com
Brookfield, WI | Milwaukee, WI | Appleton, WI | Madison, WI
Cedarburg, WI | Naperville, IL | Irvine, CA

MORAINE DEVELOPMENT GERMANTOWN, WI

OVERALL EROSION CONTROL PLAN

PRELIMINARY NOT FOR CONSTRUCTION

© COPYRIGHT 2023
R.A. Smith, Inc.

DATE: 03/10/2023

SCALE: 1"=150'

JOB NO. 3220196

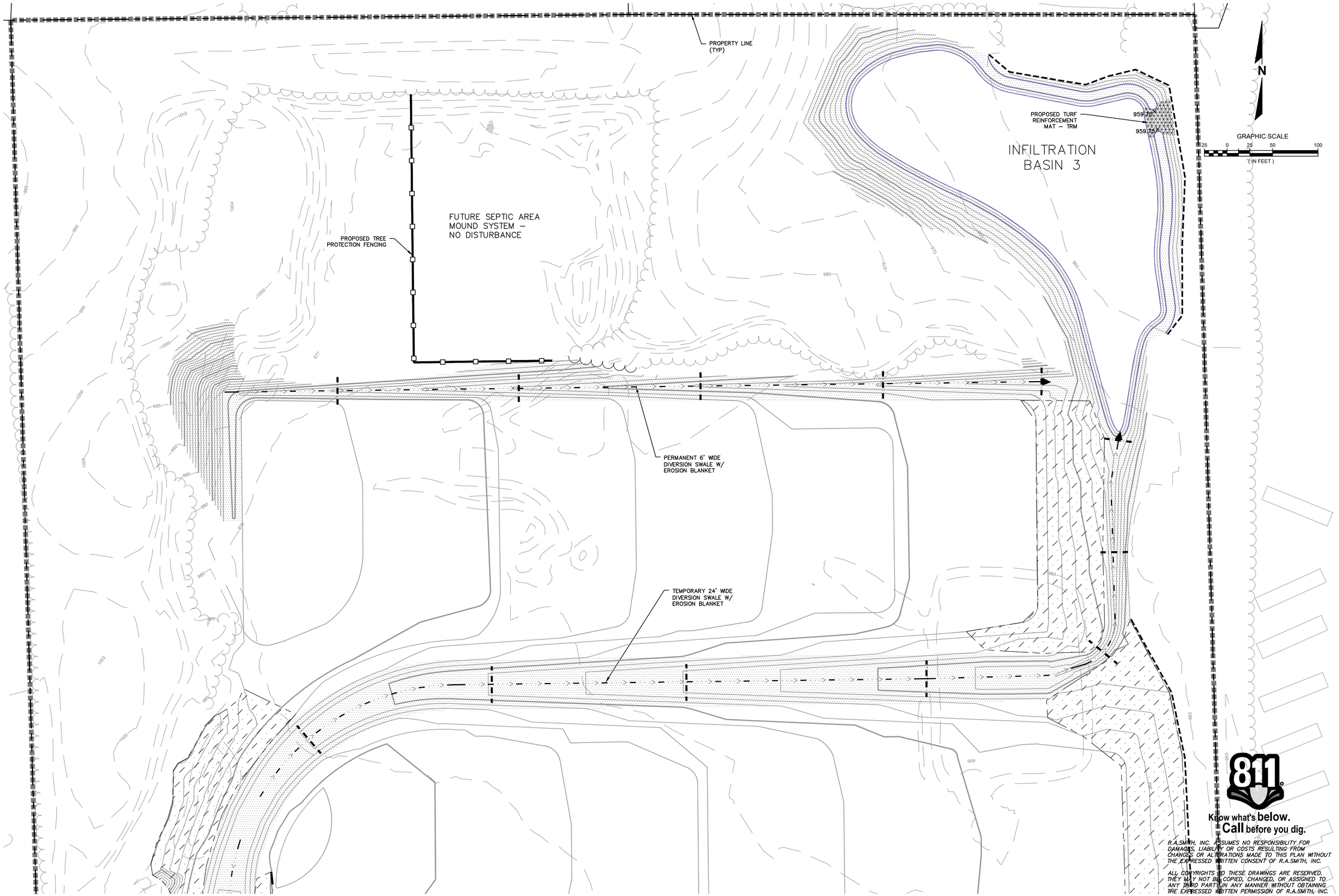
PROJECT MANAGER: CHRIS HITCH, PE

DESIGNED BY: DJM

CHECKED BY: CDH

SHEET NUMBER

C200



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

R.A.SMITH, INC. ASSUMES NO RESPONSIBILITY FOR DAMAGES, LIABILITY OR COSTS RESULTING FROM CHANGES OR ALTERATIONS MADE TO THIS PLAN WITHOUT THE EXPRESSED WRITTEN CONSENT OF R.A.SMITH, INC.

ALL COPYRIGHTS TO THESE DRAWINGS ARE RESERVED. THEY MAY NOT BE COPIED, CHANGED, OR ASSIGNED TO ANY THIRD PARTY IN ANY MANNER WITHOUT OBTAINING THE EXPRESSED WRITTEN PERMISSION OF R.A.SMITH, INC.

DATE	DESCRIPTION

raSmith
CREATIVITY BEYOND ENGINEERING
16745 W. Bluemound Road
Brookfield, WI 53005-5938
(262) 781-1000
rasmith.com
Brookfield, WI | Milwaukee, WI | Appleton, WI | Madison, WI
Cedarburg, WI | Naperville, IL | Irvine, CA

MORAINE DEVELOPMENT GERMANTOWN, WI

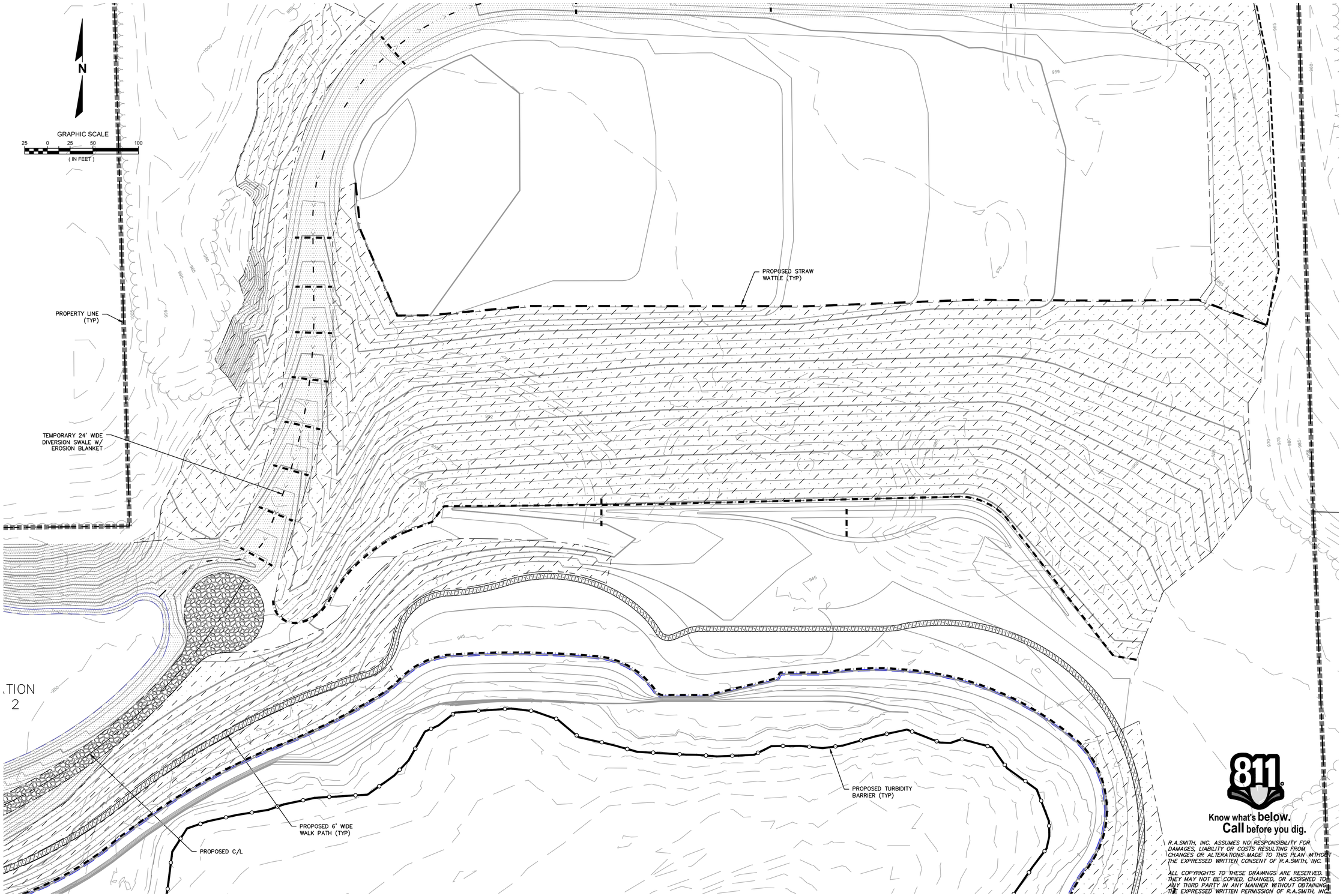
EROSION CONTROL NORTH PLAN

PRELIMINARY NOT FOR CONSTRUCTION

© COPYRIGHT 2023
R.A. Smith, Inc.

DATE: 03/10/2023
SCALE: 1" = 50'
JOB NO. 3220196
PROJECT MANAGER: CHRIS HITCH, PE
DESIGNED BY: DJM
CHECKED BY: CDH

SHEET NUMBER
C201



DATE	DESCRIPTION

raSmith
CREATIVITY BEYOND ENGINEERING

16745 W. Bluemound Road
Brookfield, WI 53005-5938
(262) 781-1000
rasmith.com

Brookfield, WI | Milwaukee, WI | Appleton, WI | Madison, WI
Cedarburg, WI | Naperville, IL | Irvine, CA

MORAINE DEVELOPMENT
GERMANTOWN, WI

EROSION CONTROL
NORTHEAST PLAN

PRELIMINARY
NOT FOR
CONSTRUCTION

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

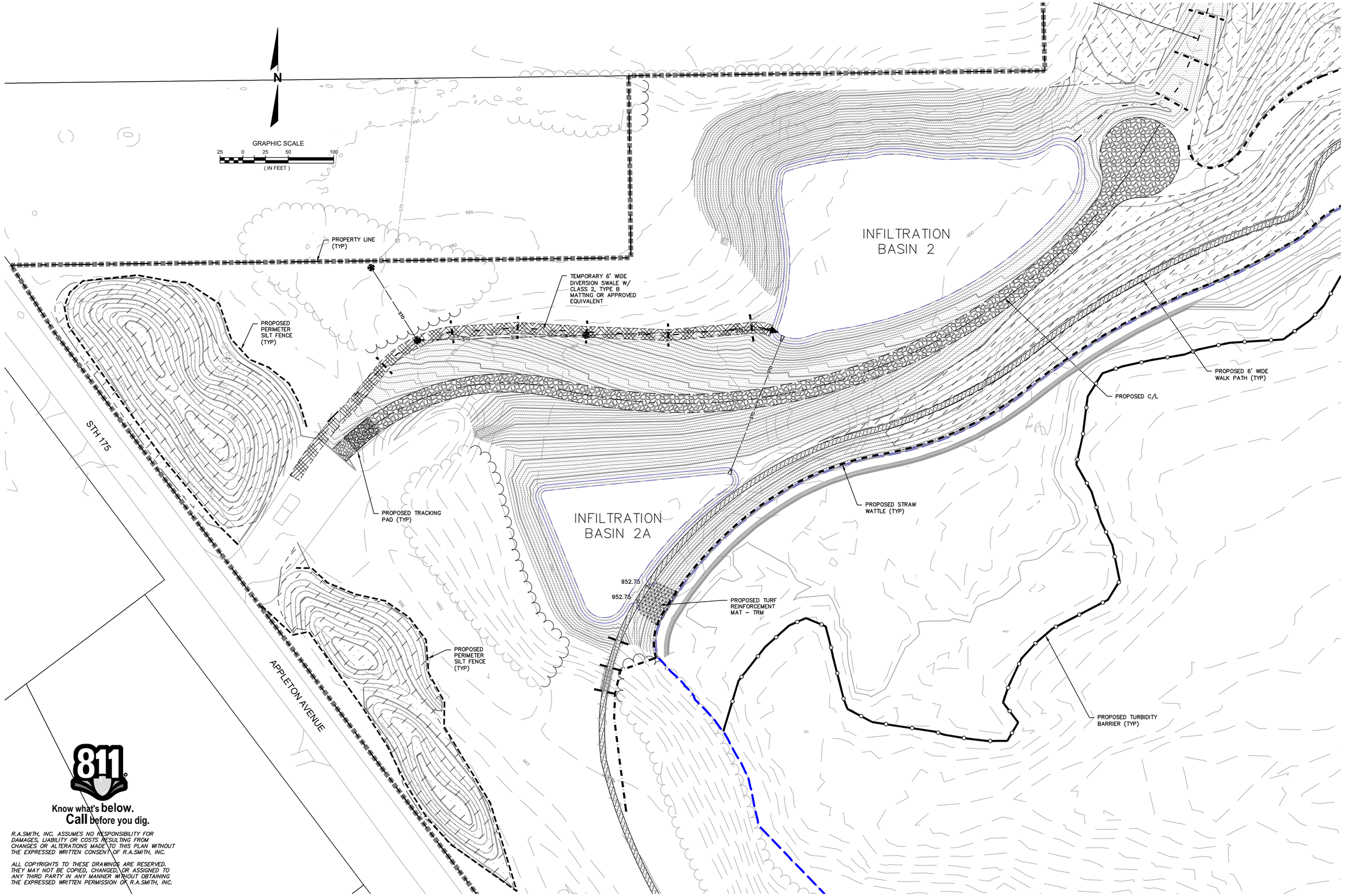
R.A.SMITH, INC. ASSUMES NO RESPONSIBILITY FOR DAMAGES, LIABILITY OR COSTS RESULTING FROM CHANGES OR ALTERATIONS MADE TO THIS PLAN WITHOUT THE EXPRESSED WRITTEN CONSENT OF R.A.SMITH, INC.

ALL COPYRIGHTS TO THESE DRAWINGS ARE RESERVED. THEY MAY NOT BE COPIED, CHANGED, OR ASSIGNED TO ANY THIRD PARTY IN ANY MANNER WITHOUT OBTAINING THE EXPRESSED WRITTEN PERMISSION OF R.A.SMITH, INC.

© COPYRIGHT 2023
R.A. Smith, Inc.

DATE: 03/10/2023
SCALE: 1" = 50'
JOB NO. 3220196
PROJECT MANAGER: CHRIS HITCH, PE
DESIGNED BY: DJM
CHECKED BY: CDH

SHEET NUMBER
C202



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

R.A.SMITH, INC. ASSUMES NO RESPONSIBILITY FOR DAMAGES, LIABILITY OR COSTS RESULTING FROM CHANGES OR ALTERATIONS MADE TO THIS PLAN WITHOUT THE EXPRESSED WRITTEN CONSENT OF R.A.SMITH, INC.

ALL COPYRIGHTS TO THESE DRAWINGS ARE RESERVED. THEY MAY NOT BE COPIED, CHANGED, OR ASSIGNED TO ANY THIRD PARTY IN ANY MANNER WITHOUT OBTAINING THE EXPRESSED WRITTEN PERMISSION OF R.A.SMITH, INC.

DATE	DESCRIPTION

raSmith
CREATIVITY BEYOND ENGINEERING
16745 W. Bluemound Road
Brookfield, WI 53005-5938
(262) 781-1000
rasmith.com
Brookfield, WI | Milwaukee, WI | Appleton, WI | Madison, WI
Cedarburg, WI | Naperville, IL | Irvine, CA

MORAINE DEVELOPMENT
GERMANTOWN, WI

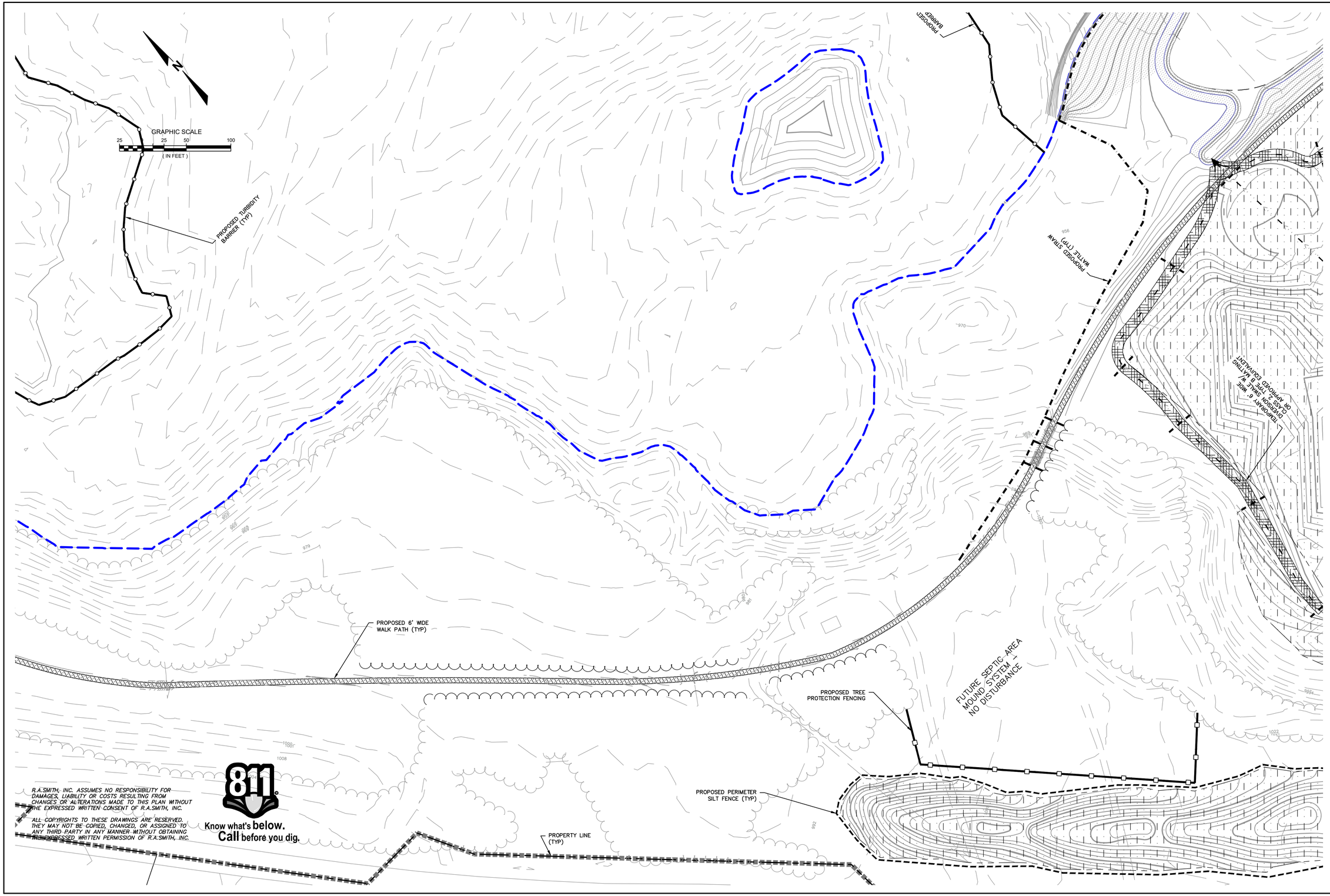
EROSION CONTROL
NORTHWEST PLAN

PRELIMINARY NOT FOR CONSTRUCTION

© COPYRIGHT 2023
R.A. Smith, Inc.

DATE: 03/10/2023
SCALE: 1" = 50'
JOB NO. 3220196
PROJECT MANAGER: CHRIS HITCH, PE
DESIGNED BY: DJM
CHECKED BY: CDH

SHEET NUMBER
C203



R.A.SMITH, INC. ASSUMES NO RESPONSIBILITY FOR DAMAGES, LIABILITY OR COSTS RESULTING FROM CHANGES OR ALTERATIONS MADE TO THIS PLAN WITHOUT THE EXPRESSED WRITTEN CONSENT OF R.A.SMITH, INC.

ALL COPYRIGHTS TO THESE DRAWINGS ARE RESERVED. THEY MAY NOT BE COPIED, CHANGED, OR ASSIGNED TO ANY THIRD PARTY IN ANY MANNER WITHOUT OBTAINING THE EXPRESSED WRITTEN PERMISSION OF R.A.SMITH, INC.

DATE	DESCRIPTION

raSmith
CREATIVITY BEYOND ENGINEERING
16745 W. Bluemound Road
Brookfield, WI 53005-5938
(262) 781-1000
rasmith.com
Brookfield, WI | Milwaukee, WI | Appleton, WI | Madison, WI
Cedarburg, WI | Naperville, IL | Irvine, CA

MORAINE DEVELOPMENT
GERMANTOWN, WI

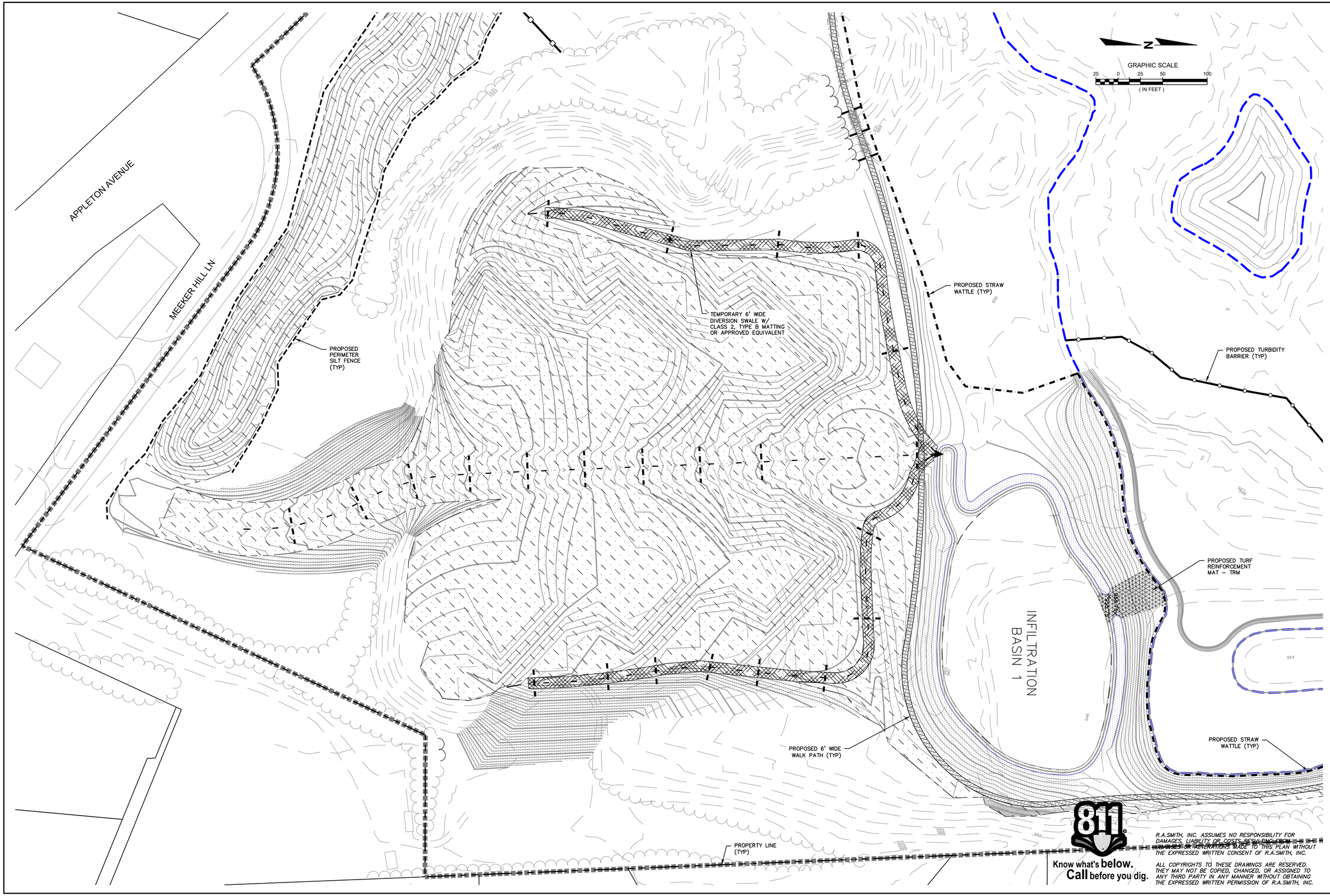
EROSION CONTROL SOUTHWEST PLAN

PRELIMINARY NOT FOR CONSTRUCTION

© COPYRIGHT 2023
R.A. Smith, Inc.

DATE: 03/10/2023
SCALE: 1" = 50'
JOB NO. 3220196
PROJECT MANAGER: CHRIS HITCH, PE
DESIGNED BY: DJM
CHECKED BY: CDH

SHEET NUMBER
C204



DATE	DESCRIPTION

raSmith
CREATIVITY BEYOND ENGINEERING
16745 W. Bluemound Road
Brookfield, WI 53005-5938
(262) 781-1000
rasmith.com
Brookfield, WI | Milwaukee, WI | Appleton, WI | Madison, WI
Cedarburg, WI | Naperville, IL | Irvine, CA

MORAINE DEVELOPMENT
GERMANTOWN, WI

EROSION CONTROL
SOUTH PLAN

PRELIMINARY NOT FOR CONSTRUCTION

© COPYRIGHT 2023
R.A. Smith, Inc.

DATE: 03/10/2023

SCALE: 1" = 50'

JOB NO. 3220196

PROJECT MANAGER: CHRIS HITCH, PE

DESIGNED BY: DJM

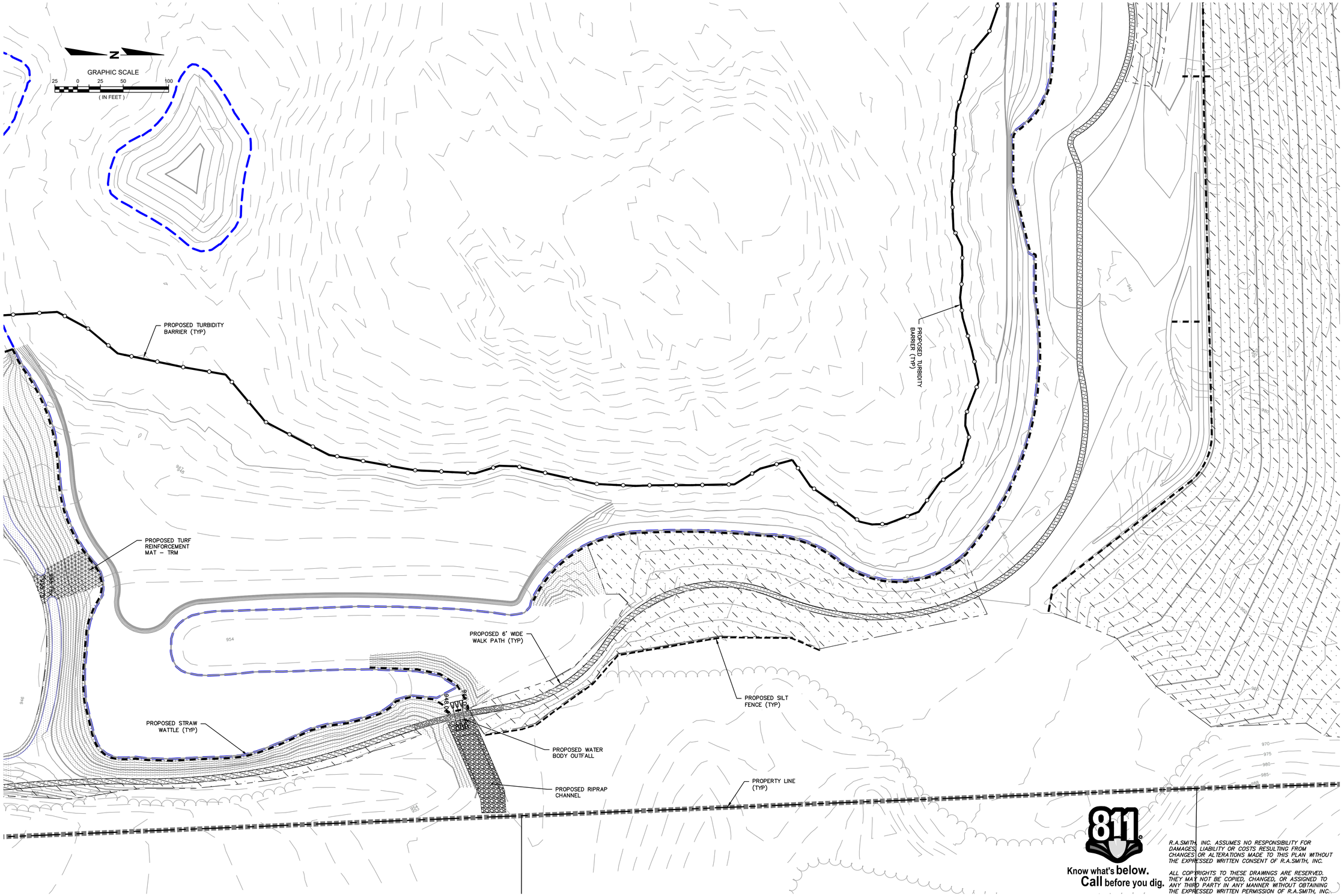
CHECKED BY: CDH

SHEET NUMBER
C205

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

R.A.SMITH, INC. ASSUMES NO RESPONSIBILITY FOR DAMAGES, LIABILITY OR COSTS RESULTING FROM CHANGES OR ALTERATIONS MADE TO THIS PLAN WITHOUT THE EXPRESSED WRITTEN CONSENT OF R.A.SMITH, INC.

ALL COPYRIGHTS TO THESE DRAWINGS ARE RESERVED. THEY MAY NOT BE COPIED, CHANGED, OR ASSIGNED TO ANY THIRD PARTY IN ANY MANNER WITHOUT OBTAINING THE EXPRESSED WRITTEN PERMISSION OF R.A.SMITH, INC.



Know what's below. Call before you dig.

R.A.SMITH, INC. ASSUMES NO RESPONSIBILITY FOR DAMAGES, LIABILITY OR COSTS RESULTING FROM CHANGES OR ALTERATIONS MADE TO THIS PLAN WITHOUT THE EXPRESSED WRITTEN CONSENT OF R.A.SMITH, INC.

ALL COPYRIGHTS TO THESE DRAWINGS ARE RESERVED. THEY MAY NOT BE COPIED, CHANGED, OR ASSIGNED TO ANY THIRD PARTY IN ANY MANNER WITHOUT OBTAINING THE EXPRESSED WRITTEN PERMISSION OF R.A.SMITH, INC.

DATE	DESCRIPTION

raSmith
CREATIVITY BEYOND ENGINEERING
16745 W. Bluemound Road
Brookfield, WI 53005-5938
(262) 781-1000
rasmith.com
Brookfield, WI | Milwaukee, WI | Appleton, WI | Madison, WI
Cedarburg, WI | Naperville, IL | Irvine, CA

MORAINE DEVELOPMENT GERMANTOWN, WI

EROSION CONTROL EAST PLAN

PRELIMINARY NOT FOR CONSTRUCTION

© COPYRIGHT 2023
R.A. Smith, Inc.

DATE: 03/10/2023

SCALE: 1" = 50'

JOB NO. 3220196

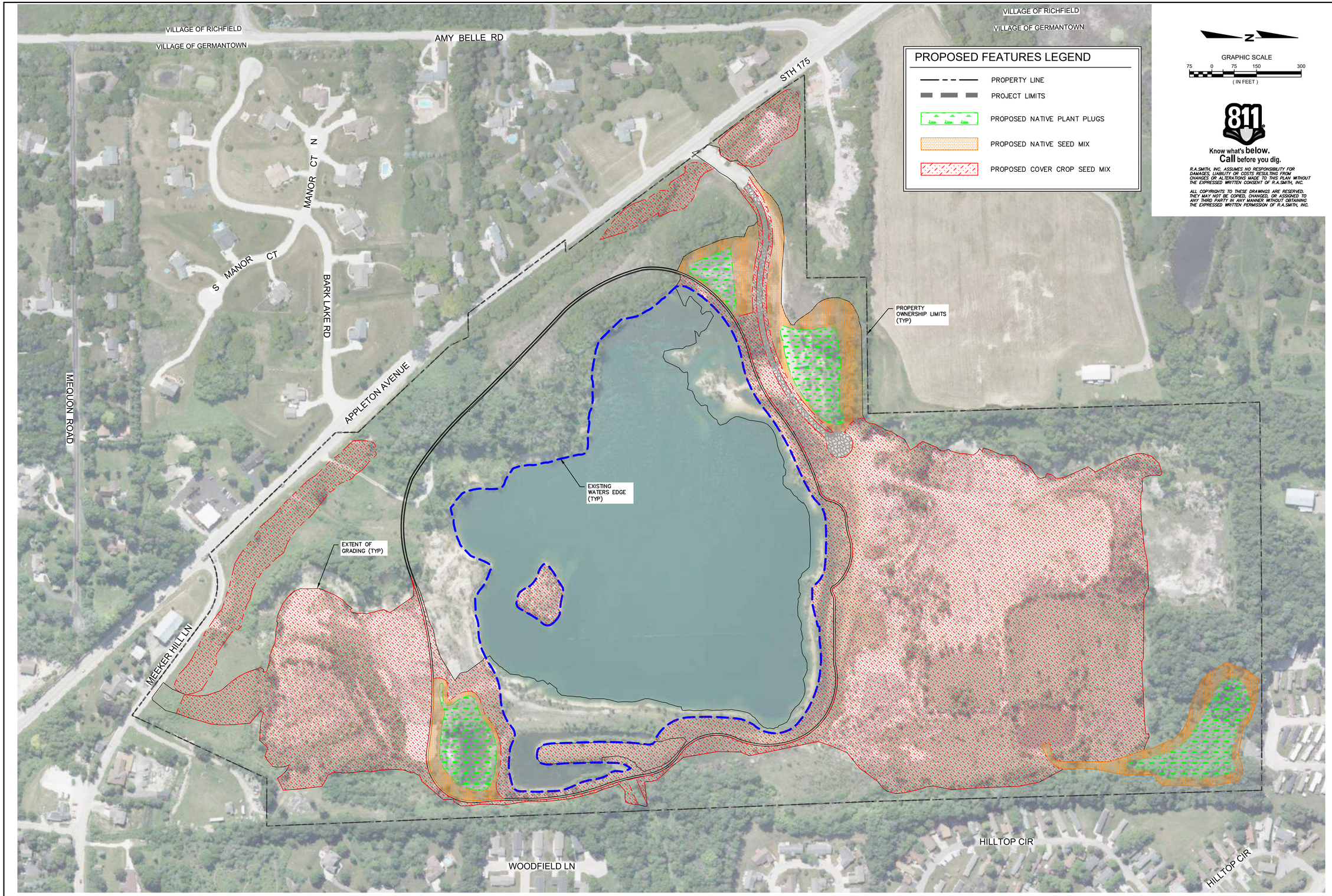
PROJECT MANAGER: CHRIS HITCH, PE

DESIGNED BY: DJM

CHECKED BY: CDH

SHEET NUMBER

C206



R.A.SMITH, INC. ASSUMES NO RESPONSIBILITY FOR DAMAGES, LIABILITY OR COSTS RESULTING FROM CHANGES OR ALTERATIONS MADE TO THIS PLAN WITHOUT THE EXPRESSED WRITTEN CONSENT OF R.A.SMITH, INC.

ALL COPYRIGHTS TO THESE DRAWINGS ARE RESERVED. THEY MAY NOT BE COPIED, CHANGED, OR ASSIGNED TO ANY THIRD PARTY IN ANY MANNER WITHOUT OBTAINING THE EXPRESSED WRITTEN PERMISSION OF R.A.SMITH, INC.

DATE	DESCRIPTION

raSmith
CREATIVITY BEYOND ENGINEERING
16745 W. Bluemound Road
Brookfield, WI 53005-5938
(262) 781-1000
rasmith.com
Brookfield, WI | Milwaukee, WI | Appleton, WI | Madison, WI
Cedarburg, WI | Naperville, IL | Irvine, CA

MORAINE DEVELOPMENT GERMANTOWN, WI

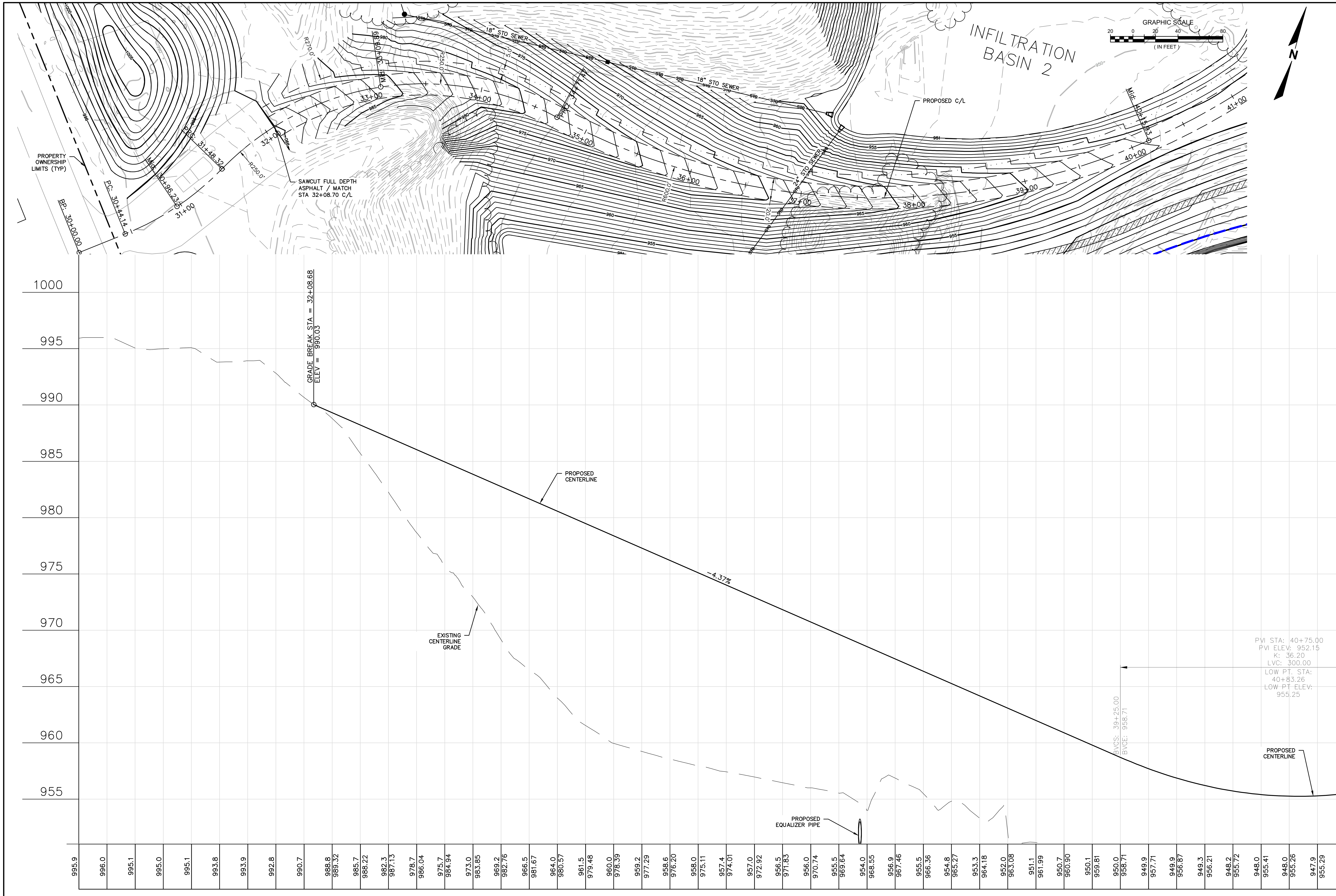
OVERALL REVEGETATION PLAN

PRELIMINARY NOT FOR CONSTRUCTION

© COPYRIGHT 2023
R.A. Smith, Inc.

DATE: 03/10/2023
SCALE: 1"=150'
JOB NO. 3220196
PROJECT MANAGER: CHRIS HITCH, PE
DESIGNED BY: DJM
CHECKED BY: CDH

SHEET NUMBER
C300



DATE	DESCRIPTION

raSmith
CREATIVITY BEYOND ENGINEERING
16745 W. Bluemound Road
Brookfield, WI 53005-5938
(262) 781-1000
rasmith.com
Brookfield, WI | Milwaukee, WI | Appleton, WI | Madison, WI
Cedarburg, WI | Naperville, IL | Irvine, CA

MORAINE DEVELOPMENT
GERMANTOWN, WI

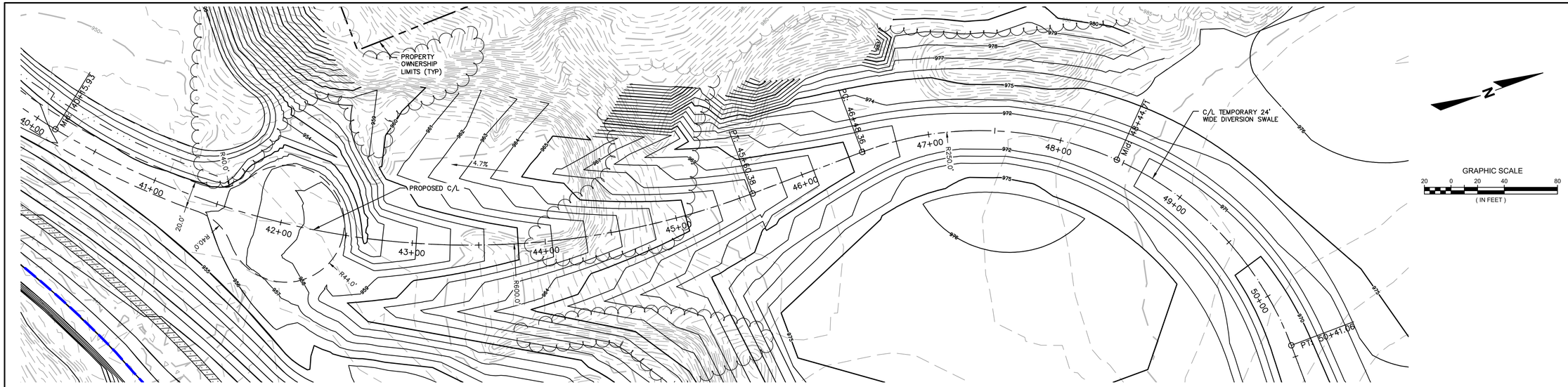
NORTH SIDE
PLAN & PROFILE

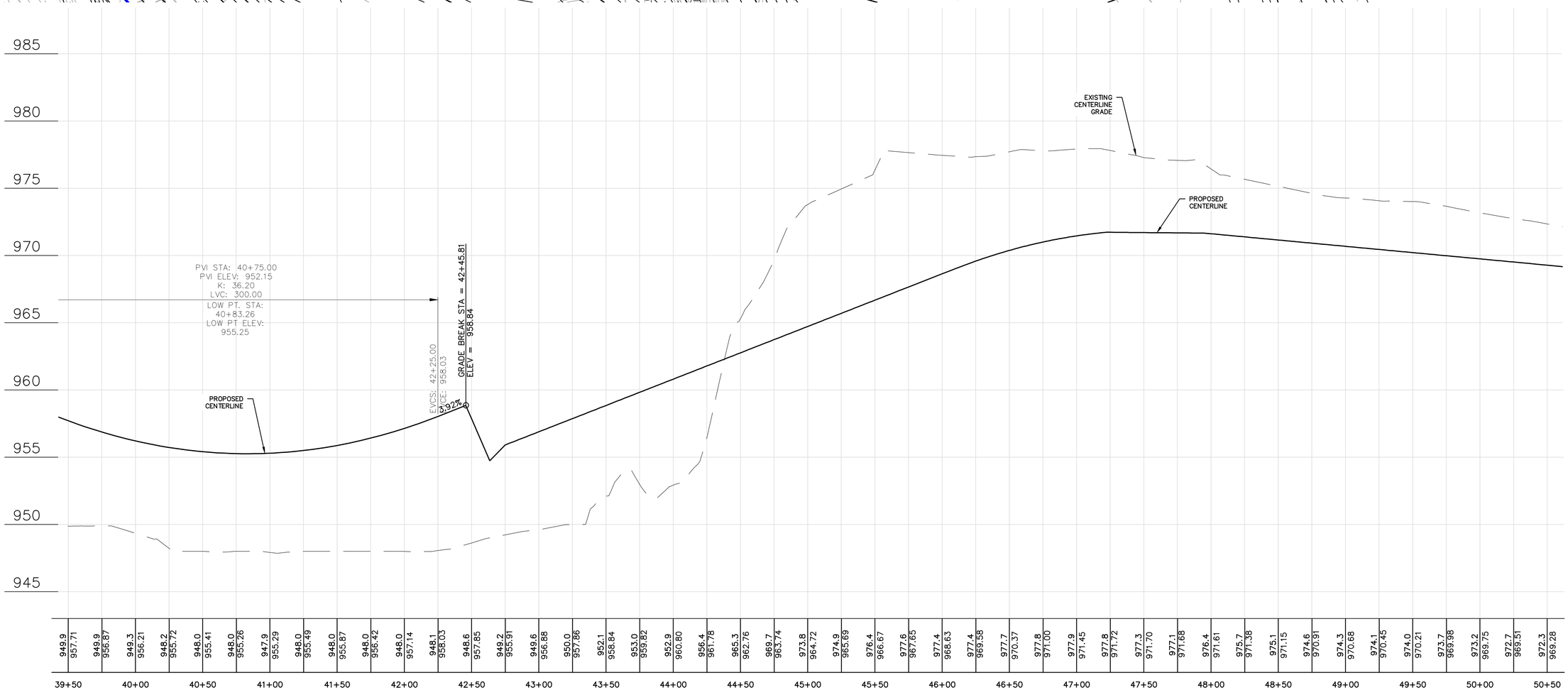
PRELIMINARY
NOT FOR
CONSTRUCTION

© COPYRIGHT 2023
R.A. Smith, Inc.

DATE: **03/10/2023**
SCALE: **1" = 40'**
JOB NO. **3220196**
PROJECT MANAGER: **CHRIS HITCH, PE**
DESIGNED BY: **DJM**
CHECKED BY: **CDH**

SHEET NUMBER
C400





DATE	DESCRIPTION

raSmith
CREATIVITY BEYOND ENGINEERING

16745 W. Bluemound Road
Brookfield, WI 53005-5938
(262) 781-1000
rasmith.com

Brookfield, WI | Milwaukee, WI | Appleton, WI | Madison, WI
Cedarburg, WI | Naperville, IL | Irvine, CA

MORAINE DEVELOPMENT
GERMANTOWN, WI

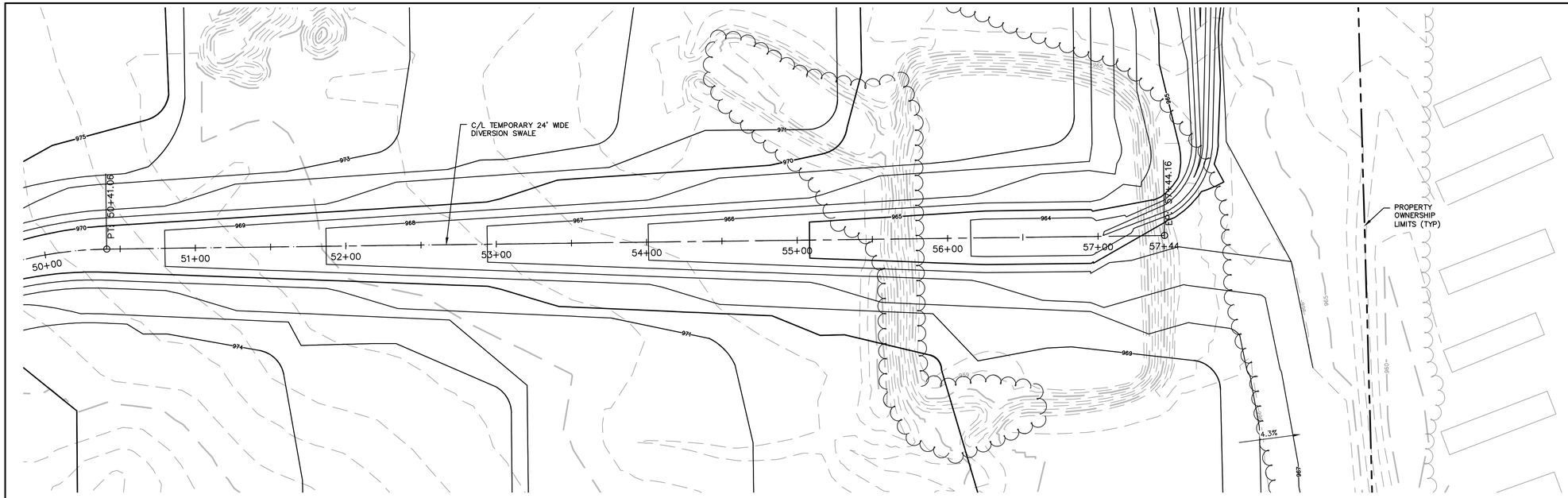
NORTH SIDE
PLAN & PROFILE

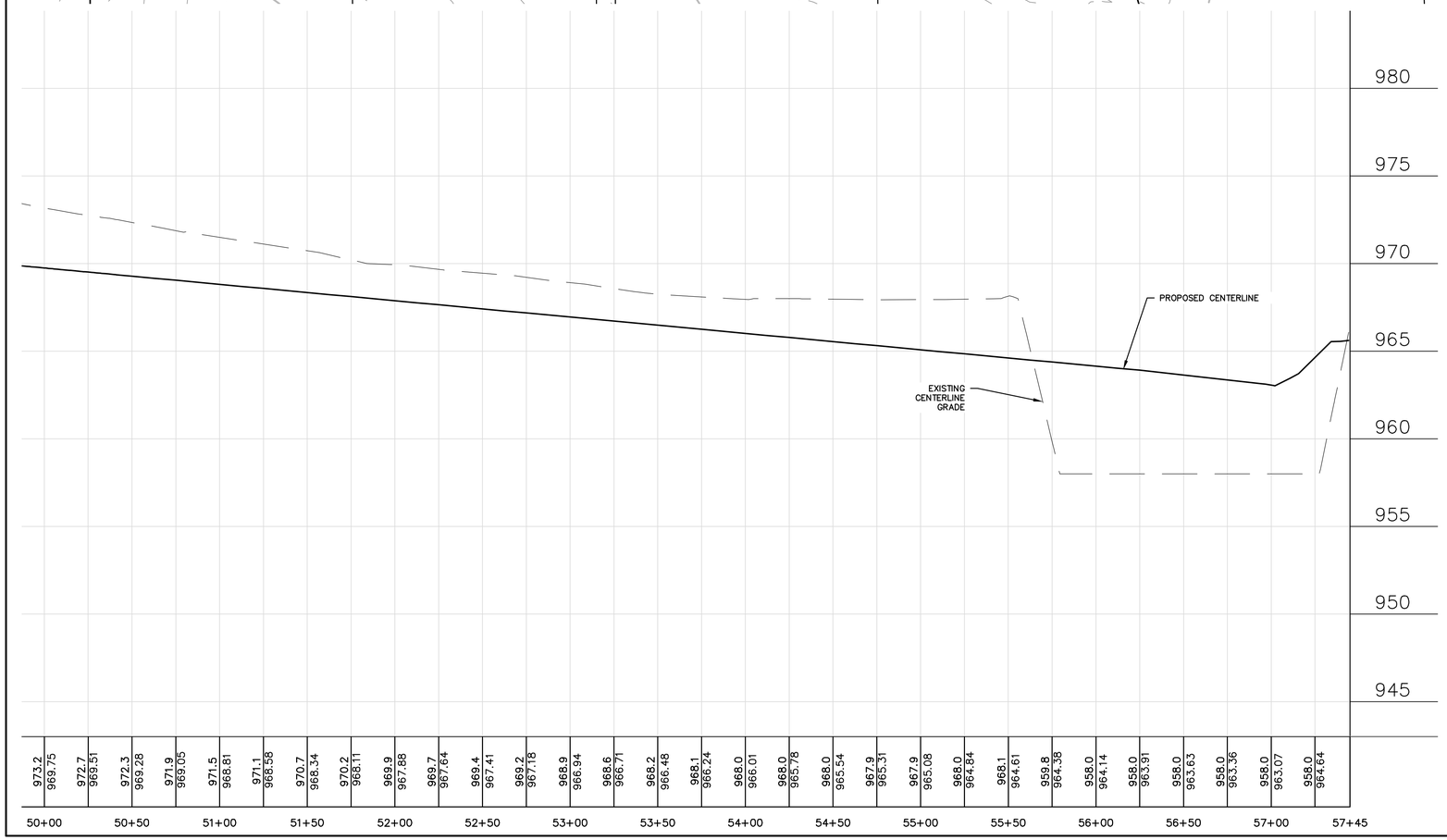
PRELIMINARY NOT FOR CONSTRUCTION

© COPYRIGHT 2023
R.A. Smith, Inc.

DATE: 03/10/2023
SCALE: 1" = 40'
JOB NO. 3220196
PROJECT MANAGER: CHRIS HITCH, PE
DESIGNED BY: DJM
CHECKED BY: CDH

SHEET NUMBER
C401





DATE	DESCRIPTION

raSmith
CREATIVITY BEYOND ENGINEERING
16745 W. Bluemound Road
Brookfield, WI 53005-5938
(262) 781-1000
rasmith.com
Brookfield, WI | Milwaukee, WI | Appleton, WI | Madison, WI
Cedarburg, WI | Naperville, IL | Irvine, CA

MORAINE DEVELOPMENT
GERMANTOWN, WI

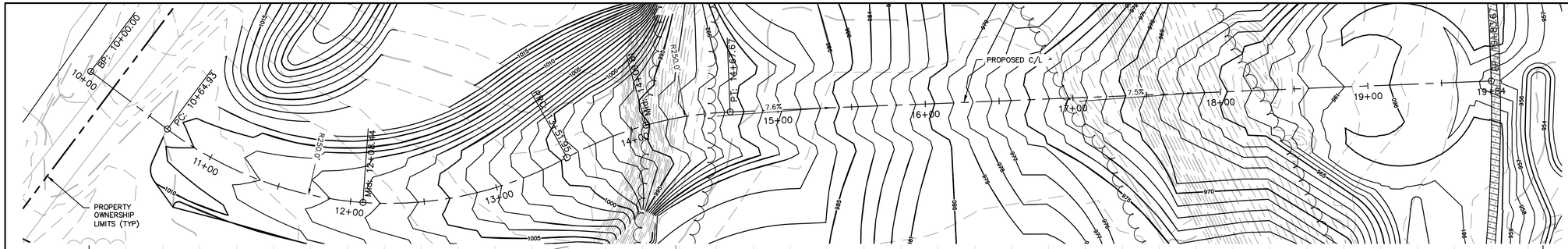
NORTH SIDE
PLAN & PROFILE

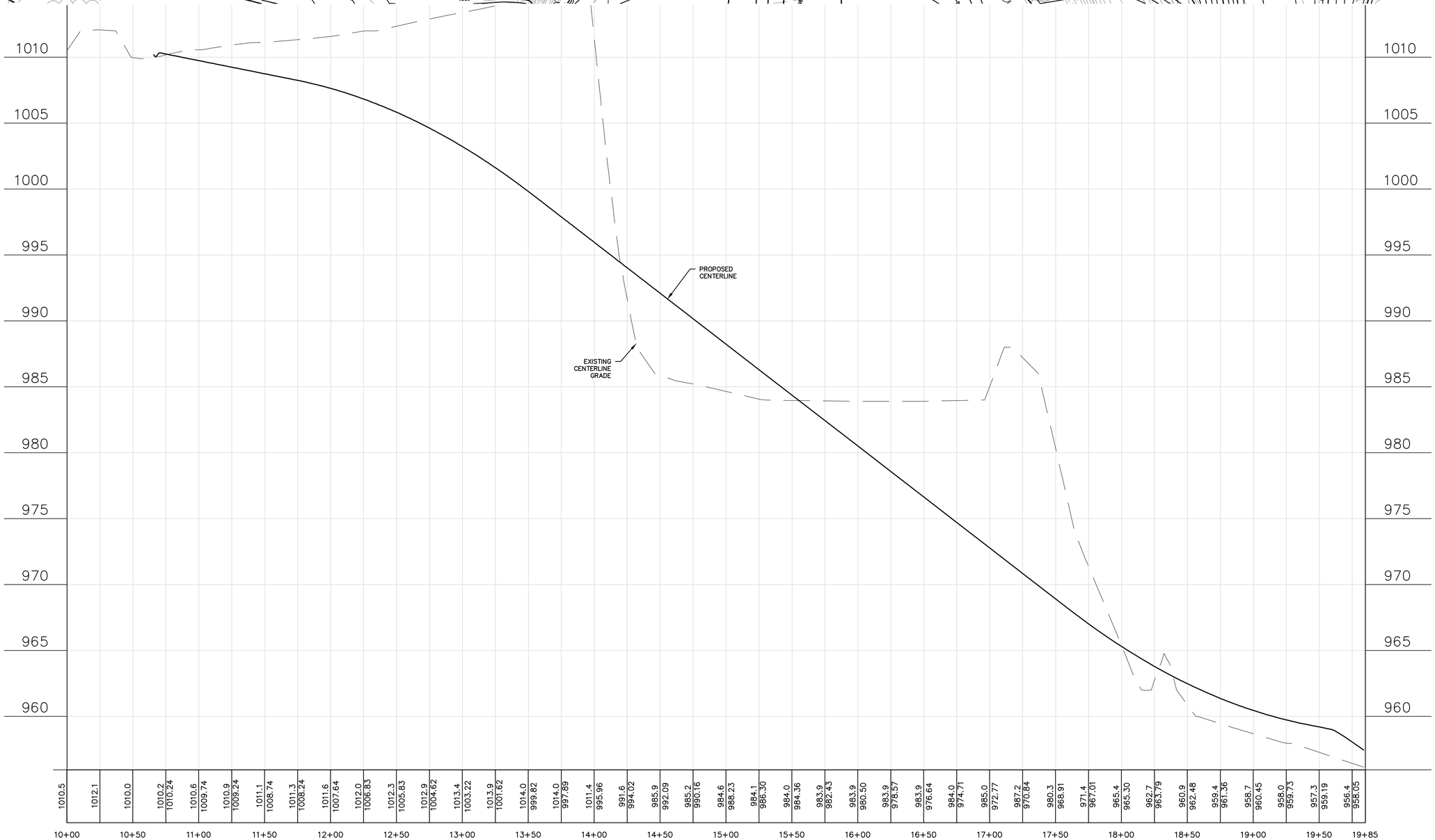
PRELIMINARY
NOT FOR
CONSTRUCTION

© COPYRIGHT 2023
R.A. Smith, Inc.

DATE: 03/10/2023
SCALE: 1" = 40'
JOB NO. 3220196
PROJECT MANAGER: CHRIS HITCH, PE
DESIGNED BY: DJM
CHECKED BY: CDH

SHEET NUMBER
C402





DATE	DESCRIPTION

raSmith
CREATIVITY BEYOND ENGINEERING
16745 W. Bluemound Road
Brookfield, WI 53005-5938
(262) 781-1000
rasmith.com
Brookfield, WI | Milwaukee, WI | Appleton, WI | Madison, WI
Cedarburg, WI | Naperville, IL | Irvine, CA

MORAINE DEVELOPMENT
GERMANTOWN, WI

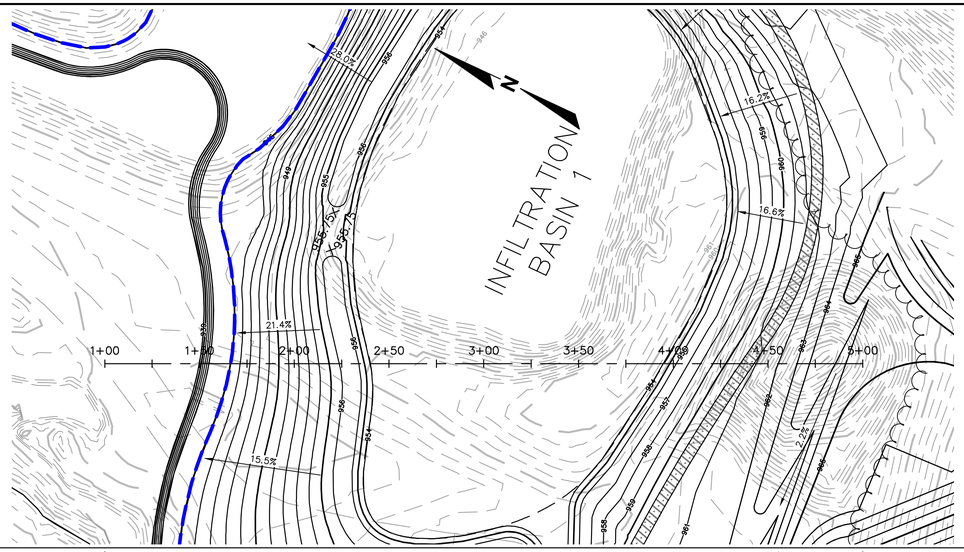
SOUTH SIDE
PLAN & PROFILE

PRELIMINARY NOT FOR CONSTRUCTION

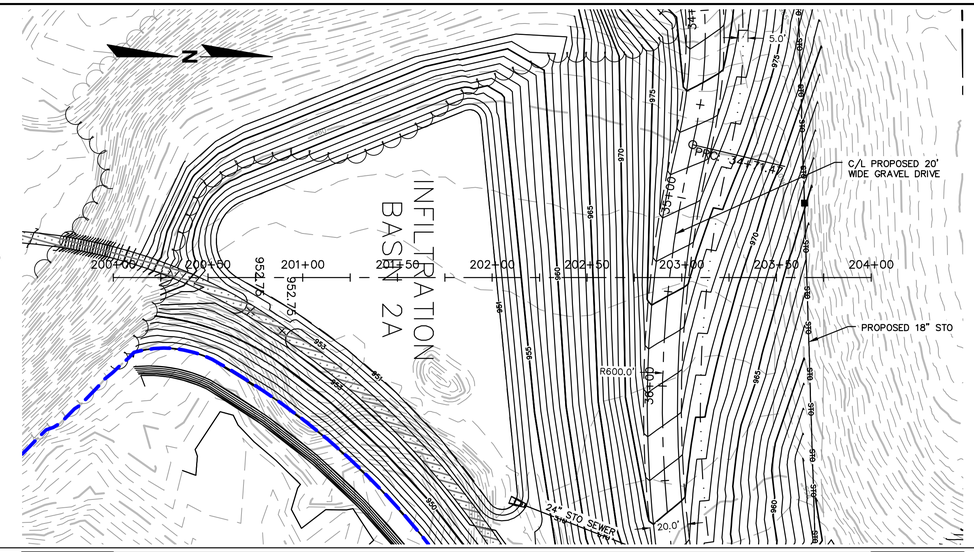
© COPYRIGHT 2023
R.A. Smith, Inc.

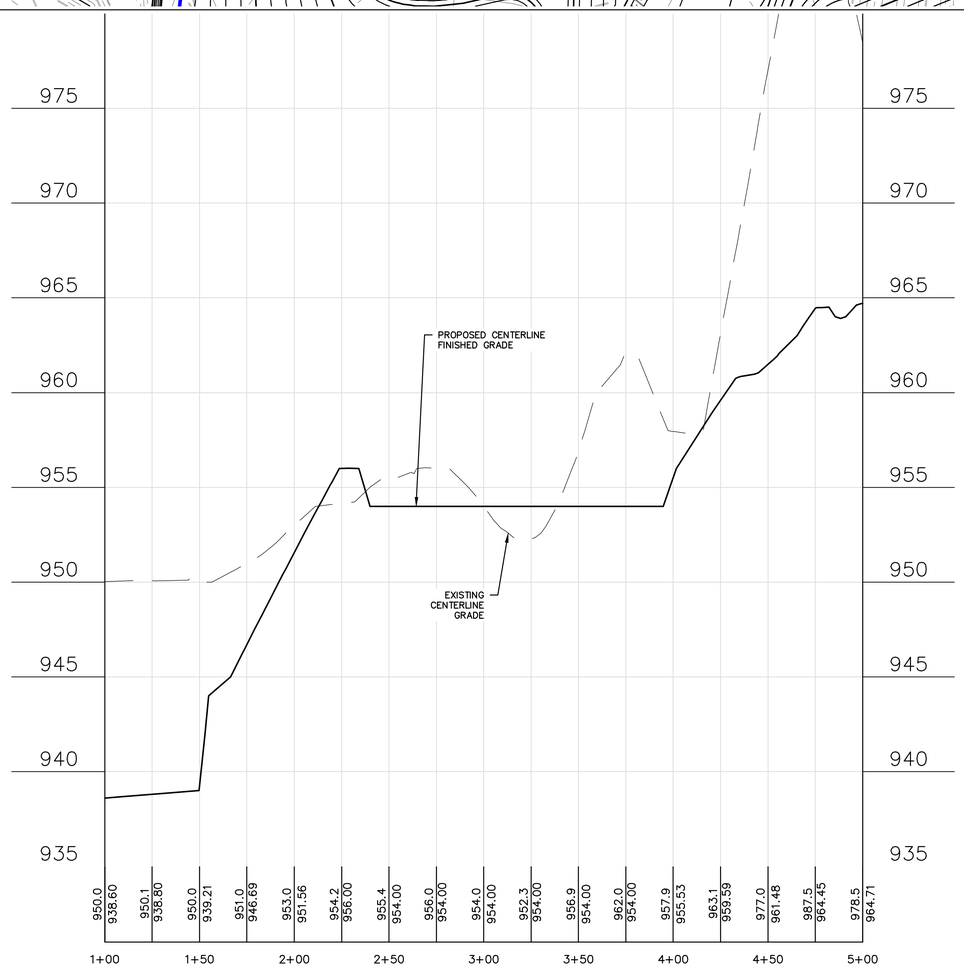
DATE: 03/10/2023
SCALE: 1" = 40'
JOB NO. 3220196
PROJECT MANAGER: CHRIS HITCH, PE
DESIGNED BY: DJM
CHECKED BY: CDH

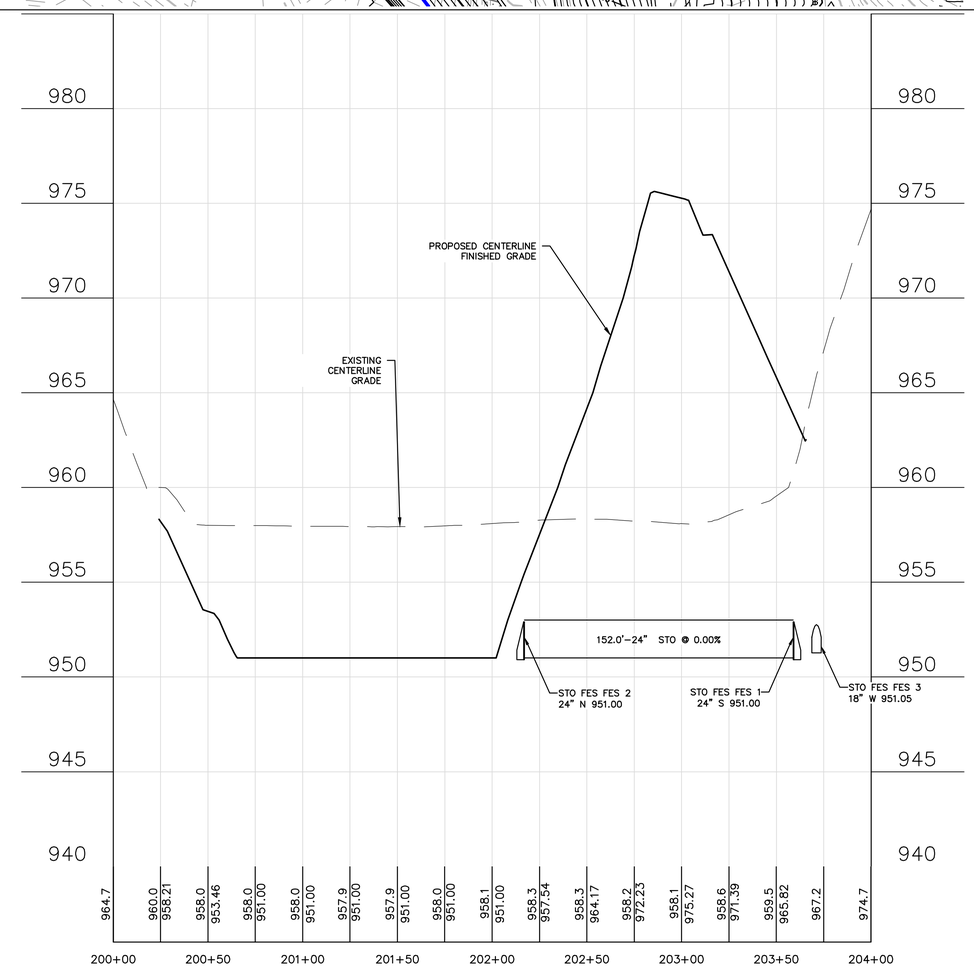
SHEET NUMBER
C403



GRAPHIC SCALE
20 0 20 40 80
(IN FEET)







DATE	DESCRIPTION

raSmith
CREATIVITY BEYOND ENGINEERING

16745 W. Bluemound Road
Brookfield, WI 53005-5938
(262) 781-1000
rasmith.com

Brookfield, WI | Milwaukee, WI | Appleton, WI | Madison, WI
Cedarburg, WI | Naperville, IL | Irvine, CA

MORAINE DEVELOPMENT
GERMANTOWN, WI

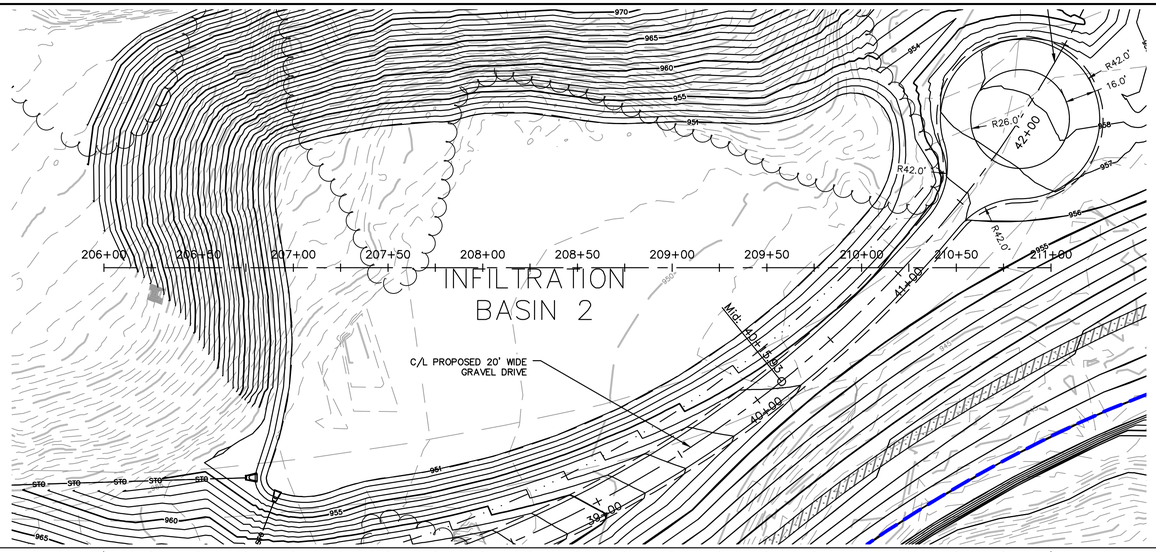
INFILTRATION BASINS 1 & 2A
PLAN & PROFILE

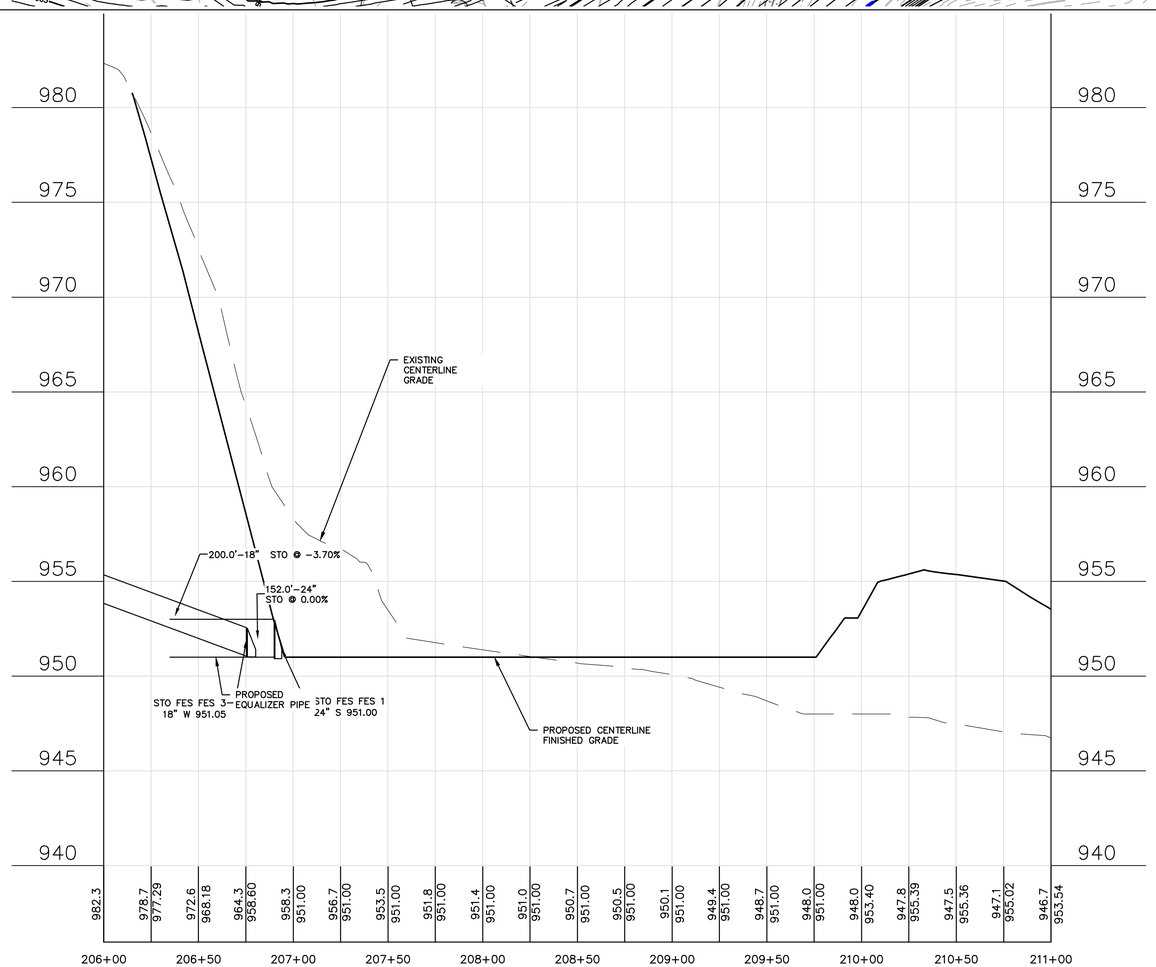
PRELIMINARY NOT FOR CONSTRUCTION

© COPYRIGHT 2023
R.A. Smith, Inc.

DATE: 03/10/2023
SCALE: 1" = 40'
JOB NO. 3220196
PROJECT MANAGER: CHRIS HITCH, PE
DESIGNED BY: DJM
CHECKED BY: CDH

SHEET NUMBER
C404





N

GRAPHIC SCALE
0 ## ##
(IN FEET)

DATE	DESCRIPTION

raSmith
CREATIVITY BEYOND ENGINEERING

16745 W. Bluemound Road
Brookfield, WI 53005-5938
(262) 781-1000
rasmith.com

Brookfield, WI | Milwaukee, WI | Appleton, WI | Madison, WI
Cedarburg, WI | Naperville, IL | Irvine, CA

MORAINE DEVELOPMENT
GERMANTOWN, WI

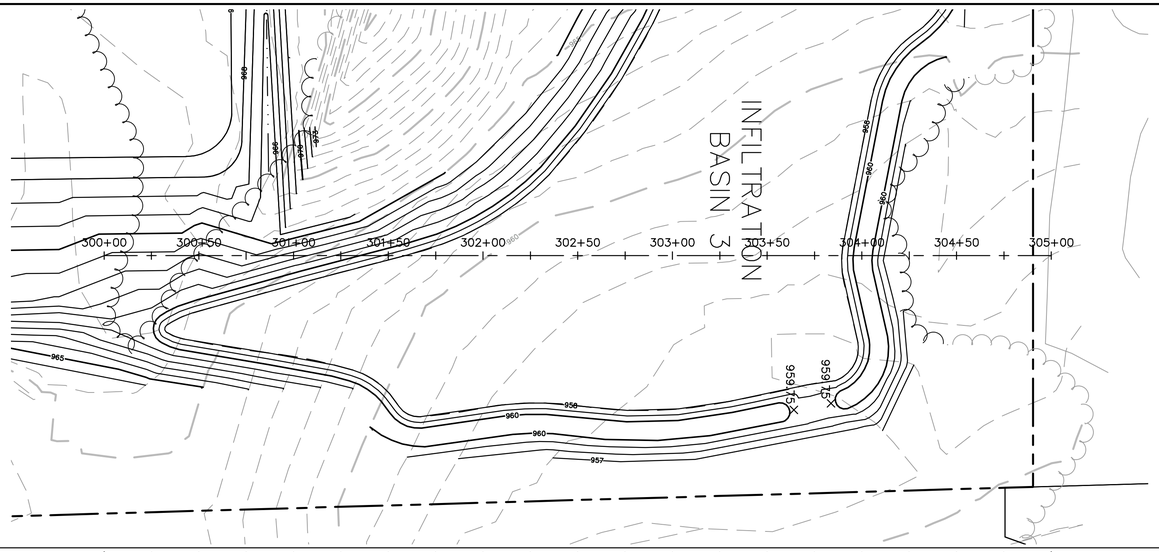
INFILTRATION BASIN 2
PLAN & PROFILE

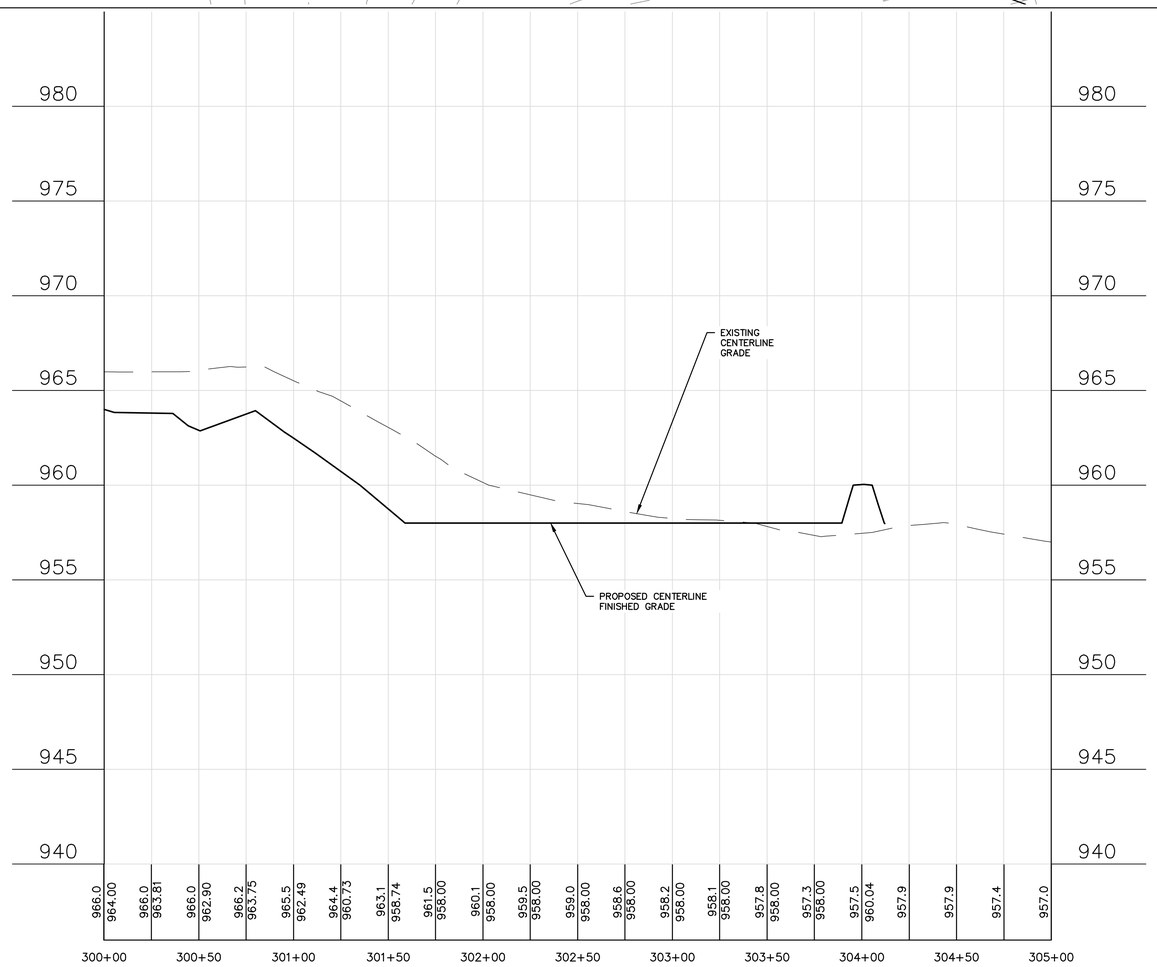
PRELIMINARY
NOT FOR
CONSTRUCTION

© COPYRIGHT 2023
R.A. Smith, Inc.

DATE: 03/10/2023
SCALE: 1" = 40'
JOB NO. 3220196
PROJECT MANAGER:
CHRIS HITCH, PE
DESIGNED BY: DJM
CHECKED BY: CDH

SHEET NUMBER
C405





N

GRAPHIC SCALE

0 ## ##

(IN FEET)

DATE	DESCRIPTION

raSmith
CREATIVITY BEYOND ENGINEERING
16745 W. Bluemound Road
Brookfield, WI 53005-5938
(262) 781-1000
rasmith.com
Brookfield, WI | Milwaukee, WI | Appleton, WI | Madison, WI
Cedarburg, WI | Naperville, IL | Irvine, CA

MORAINE DEVELOPMENT
GERMANTOWN, WI

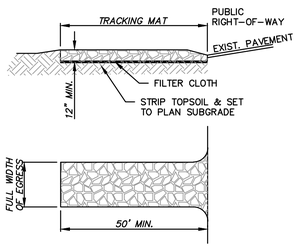
INFILTRATION BASIN 3
PLAN & PROFILE

PRELIMINARY
NOT FOR
CONSTRUCTION

© COPYRIGHT 2023
R.A. Smith, Inc.

DATE: 03/10/2023
SCALE: 1" = 40'
JOB NO. 3220196
PROJECT MANAGER: CHRIS HITCH, PE
DESIGNED BY: DJM
CHECKED BY: CDH

SHEET NUMBER
C406



CONSIDERATIONS:

1. TIRE WASHING AND TRACKING PAD TO CONFORM TO WDNR CONSERVATION PRACTICE STANDARD 1057.
2. VEHICLES TRAVELING ACROSS THE TRACKING PAD SHOULD MAINTAIN A SLOW CONSTANT SPEED.
3. THE BEST APPROACH TO PREVENTING OFF-SITE TRACKING IS TO RESTRICT VEHICLES TO STABILIZED AREAS.
4. IT IS ALWAYS PREFERABLE TO PREVENT SEDIMENT FROM BEING DEPOSITED UPON THE ROAD THAN CLEANING THE ROAD LATER. SEDIMENT ON A ROAD CAN CREATE A SAFETY HAZARD AS WELL AS A POLLUTION PROBLEM.
5. ANY SEDIMENT TRACKED ONTO A PUBLIC OR PRIVATE ROAD SHOULD BE REMOVED BY STREET CLEANING, NOT FLUSHING, BEFORE THE END OF EACH WORKING DAY.

NOTES:

A. TRACKING PAD:

1. THE TRACKING PAD SHALL BE INSTALLED PRIOR TO ANY TRAFFIC LEAVING THE SITE.
2. THE AGGREGATE FOR THE TRACKING PAD SHALL BE HARD, DURABLE, ANGULAR STONE OR RECYCLED CONCRETE MEETING THE GRADATION OF TABLE 1 OF THE WISCONSIN DNR TECHNICAL STANDARD 1057. WHERE THIS GRADATION IS NOT AVAILABLE, MEET THE GRADATION IN WISCONSIN DEPARTMENT OF TRANSPORTATION (DOT) 2018 STANDARD SPECIFICATION, SECTION 312, SELECT CRUSHED MATERIAL.
3. THE AGGREGATE SHALL BE PLACED IN A LAYER AT LEAST 12 INCHES THICK. ON SITES WITH A HIGH WATER TABLE, OR WHERE SATURATED CONDITIONS ARE EXPECTED DURING THE LIFE OF THE PRACTICE, STONE TRACKING PADS SHALL BE UNDERLAIN WITH A WISDOT TYPE R GEOTEXTILE FABRIC TO PREVENT MIGRATION OF UNDERLYING SOIL INTO THE STONE.
4. THE TRACKING PAD SHALL BE THE FULL WIDTH OF THE EGRESS POINT. THE TRACKING PAD SHALL BE A MINIMUM OF 50 FEET LONG.
5. SURFACE WATER MUST BE PREVENTED FROM PASSING THROUGH THE TRACKING PAD. FLOWS SHALL BE DIVERTED AWAY FROM TRACKING PADS OR CONVEYED UNDER AND AROUND THEM BY USING A VARIETY OF PRACTICES, SUCH AS CULVERTS, WATER BARS, OR OTHER SIMILAR PRACTICES.

B. TIRE WASHING:

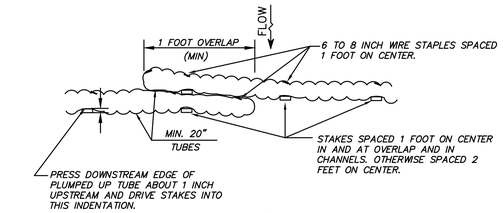
IF CONDITIONS ON THE SITE ARE SUCH THAT THE SEDIMENT IS NOT REMOVED FROM VEHICLE TIRES BY THE TRACKING PAD, THEN TIRES SHALL BE WASHED UTILIZING PRESSURIZED WATER BEFORE ENTERING A PUBLIC ROAD.

1. THE WASHING STATION SHALL BE LOCATED ON-SITE ON AN AREA THAT IS STABILIZED AND DRAINS INTO A SUITABLE SEDIMENT TRAPPING OR SETTLING DEVICE.
2. THE WASH RACK SHALL CONSIST OF A HEAVY GRATING OVER A LOWERED AREA. THE RACK SHALL BE STRONG ENOUGH TO SUPPORT THE VEHICLES THAT WILL CROSS IT.

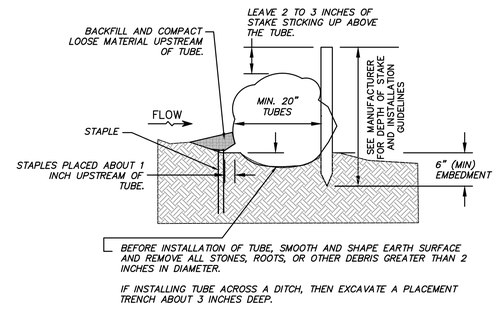
C. MAINTENANCE

1. ROCKS LODGED BETWEEN THE TIRES IF DUAL WHEEL VEHICLES SHALL BE REMOVED PRIOR TO LEAVING THE CONSTRUCTION SITE.
2. TRACKING PADS AND TIRE WASHING STATIONS SHALL, AT AT MINIMUM, BE INSPECTED WEEKLY AND WITHIN 24 HOURS AFTER EVERY PRECIPITATION EVENT THAT PRODUCES 0.5 INCHES OF RAIN OR MORE DURING A 24-HOUR PERIOD.
3. THE TRACKING PAD PERFORMANCE SHALL BE MAINTAINED BY SCRAPING OR TOP-DRESSING WITH ADDITIONAL AGGREGATE.
4. A MINIMUM 12-INCH THICK PAD SHALL BE MAINTAINED.

STONE TRACKING PAD AND TIRE WASHING
(NOT TO SCALE)

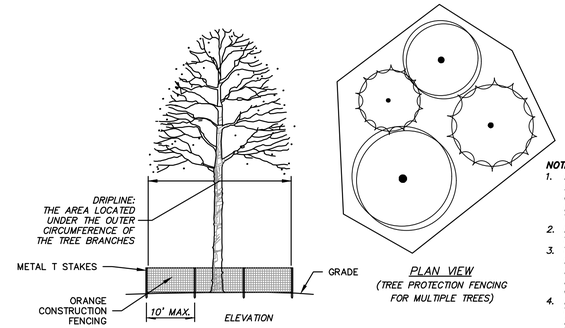


PLAN



SECTION

STRAW WATTLE
(NOT TO SCALE)



NOTES:

1. INSTALL 4' HIGH ORANGE VINYL SNOW / CONSTRUCTION FENCING OR SIMILAR FENCING AT OR BEYOND THE DRIPLINE OF ALL TREES TO SAVE.
2. ERECT FENCE WITH 5' METAL T-STAKES AT LEAST EVERY 10'.
3. THE FENCING SHALL BE IN PLACE BEFORE CONSTRUCTION ACTIVITY BEGINS AND REMAIN UNTIL ALL EXTERIOR WORK HAS BEEN COMPLETED.
4. NO CONSTRUCTION ACTIVITY SHALL TAKE PLACE NOR SHALL ANY EQUIPMENT BE STORED INSIDE OF THE FENCING.

TREE PROTECTION FENCING
(NOT TO SCALE)

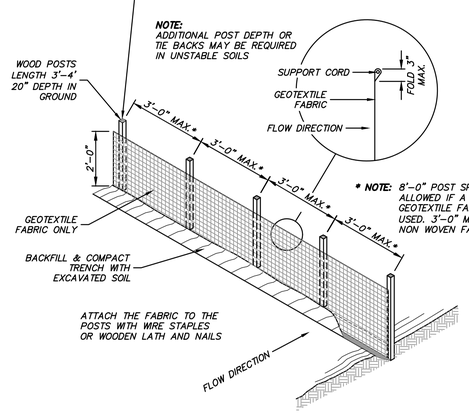
NOTES:

1. SILT FENCE INSTALLATION AND MATERIALS SHALL CONFORM TO WDNR CONSERVATION STANDARD 1056
2. SILT FENCE SHALL BE PLACED ON THE CONTOUR AND NOT PERPENDICULAR TO THE CONTOUR. THE ENDS SHALL BE EXTENDED UPSLOPE TO PREVENT WATER FROM FLOWING AROUND THE ENDS OF THE FENCE.
3. WHEN SILT FENCE IS INSTALLED ON A SLOPE, THE PARALLEL SPACING SHALL NOT EXCEED THE REQUIREMENTS IN THE TABLE BELOW:

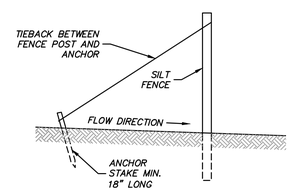
SLOPE	FENCE SPACING
< 2%	100 FEET
2 TO 5%	75 FEET
5 TO 10%	50 FEET
10 TO 33%	25 FEET
> 33%	20 FEET

4. INSTALLED SILT FENCES SHALL BE MINIMUM 14 INCHES HIGH AND A MAXIMUM OF 28 INCHES IN HEIGHT MEASURED FROM THE INSTALLED GROUND ELEVATION.
5. A MINIMUM OF 20 INCHES OF THE POST SHALL EXTEND INTO THE GROUND AFTER INSTALLATION.
6. SILT FENCE SHALL BE ANCHORED BY SPREADING AT LEAST 8 INCHES OF THE FABRIC IN A 4-INCH TRENCH WIDE BY 6-INCH DEEP TRENCH, OR 6-INCH V-TRENCH ON THE UPSLOPE SIDE OF THE FENCE. TRENCH SHALL BE BACKFILLED AND COMPACTED. TRENCHES SHALL NOT BE EXCAVATED WIDER THAN NECESSARY FOR PROPER INSTALLATION.
7. CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS:
   A) TWIST METHOD---OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES.
   B) HOOK METHOD---HOOK THE END OF EACH SILT FENCE LENGTH.
8. SILT FENCE SHALL AT A MINIMUM BE INSPECTED WEEKLY AND WITHIN 24 HOURS AFTER EACH PRECIPITATION EVENT THAT PRODUCES 0.5 INCHES OF RAIN OR MORE DURING A 24-HOUR PERIOD.
9. DAMAGED OR DECOMPOSED FENCES, UNDERCUTTING, OR FLOW CHANNELS AROUND THE END OF BARRIERS SHALL BE REPAIRED OR CORRECTED.
10. SEDIMENT SHALL BE PROPERLY DISPOSED OF ONCE THE DEPOSITS REACH ONE HALF THE HEIGHT OF THE FENCE.
11. SILT FENCES SHALL BE REMOVED ONCE THE DISTURBED AREA IS PERMANENTLY STABILIZED AND IS NO LONGER SUSCEPTIBLE TO EROSION.

NOTE:
SILT FENCE SHALL BE SUPPORTED BY EITHER WOOD OR STEEL SUPPORTS AS SPECIFIED BELOW:
A. WOOD - 1 1/8" X 1 1/8" AIR OR KILN DRIED OAK OR HICKORY; FABRIC SHALL BE STAPLED USING 1/2-INCH MINIMUM STAPLES TO THE UPSLOPE SIDE OF THE FENCE IN AT LEAST 3 PLACES; POSTS SHALL BE A MINIMUM OF 3 FEET LONG FOR 24-INCH FENCE AND 4 FEET LONG FOR 36-INCH FENCE.
B. STEEL - MINIMUM 5 FEET IN LENGTH WITH STRENGTH OF 1.33 LBS/FT AND HAVE PROJECTIONS FOR FASTENERS; FABRIC SHALL BE ATTACHED IN AT LEAST THREE PLACES ON THE UPSLOPE SIDE WITH 50LB. PLASTIC TIE STRAPS OR WIRE FASTENERS.



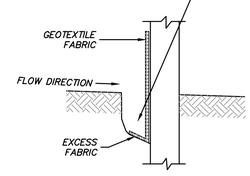
SILT FENCE
(NOT TO SCALE)



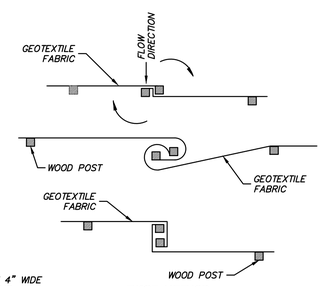
SILT FENCE TIE BACK
(WHEN ADDITIONAL SUPPORT IS REQUIRED)

NOTES:

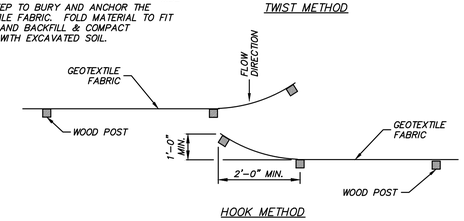
1. TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.



TRENCH DETAIL



TWIST METHOD



HOOK METHOD

JOINING TWO LENGTHS OF SILT FENCE

R.A.SMITH, INC. ASSUMES NO RESPONSIBILITY FOR DAMAGES, LIABILITY OR COSTS RESULTING FROM CHANGES OR ALTERATIONS MADE TO THIS PLAN WITHOUT THE EXPRESSED WRITTEN CONSENT OF R.A.SMITH, INC.

ALL COPYRIGHTS TO THESE DRAWINGS ARE RESERVED. THEY MAY NOT BE COPIED, CHANGED, OR ASSIGNED TO ANY THIRD PARTY IN ANY MANNER WITHOUT OBTAINING THE EXPRESSED WRITTEN PERMISSION OF R.A.SMITH, INC.

DATE	DESCRIPTION

raSmith
CREATIVITY BEYOND ENGINEERING
16745 W. Bluemound Road
Brookfield, WI 53005-5938
(262) 781-1000
rasmith.com
Brookfield, WI | Milwaukee, WI | Appleton, WI | Madison, WI
Cedarburg, WI | Naperville, IL | Irvine, CA

MORAINE DEVELOPMENT
GERMANTOWN, WI

SITE CIVIL DETAILS
EROSION CONTROL

PRELIMINARY NOT FOR CONSTRUCTION

© COPYRIGHT 2023
R.A. Smith, Inc.

DATE: 03/10/2023
SCALE: NONE
JOB NO. 3220196
PROJECT MANAGER: CHRIS HITCH, PE
DESIGNED BY: DJM
CHECKED BY: CDH

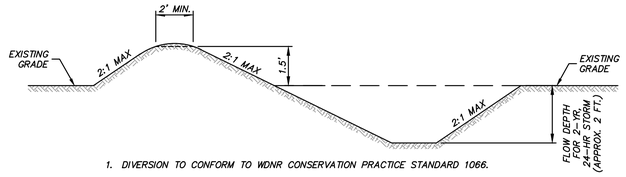
SHEET NUMBER
C500

Table 1 – Prescriptive Compliance Area Soil Stabilization

Prescriptive Compliance Areas	Bare Soil	Slope & Channel Management	Periods of Inactivity	Final Grade
Soil stockpiles that will exist for more than 7 days **Utility trench backfills** **Temporary ditches/swales that will exist for more than 7 days** **Permanent ditches/swales** **Small areas – Less than 1 acre and less than 1% of site** **Discrete areas – Less than 1 acre** **Storm water practice side slopes** **Slopes steeper than 20%**	Areas that Do Not Drain to Sediment Basins or Traps Limit the duration of soil exposure to no more than 30 days. Areas that Drain to Sediment Basins or Traps Limit the duration of soil exposure to no more than 90 days. However, use the duration from the soil loss and sediment discharge calculations for the other areas of the site if less than 90 days.	General Design and implement approved soil stabilization practices per DNR technical standards. Refer to WisDOT Slope & Channel Matrices for appropriate slope and slope length conditions. Slopes Steeper than 20% Provide stable diversion of off-site runoff around the slope. Provide slope interruption devices in accordance with Manufactured Perimeter Control & Slope Interruption Products Technical Standard 1071 or equivalent methods to reduce uninterrupted slope length.	Planned Inactivity Stabilize immediately if area will be left inactive for more than 14 days. Unplanned Inactivity Stabilize area immediately if period of inactivity reaches 14 days.	Permanent Features Stabilize area immediately after reaching final grade. Temporary Features Stabilize area immediately after establishment of temporary feature or reaching specified temporary grade.

WDNR September 2017

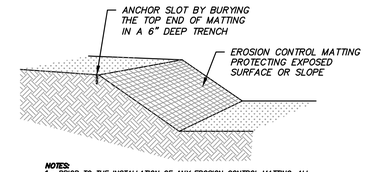
PCA SOIL STABILIZATION



1. DIVERSION TO CONFORM TO WDNR CONSERVATION PRACTICE STANDARD 1066.
2. DIVERSION TO BE STABILIZED WITH VEGETATION OR EROSION MAT PRIOR TO USE.
3. DIVERSIONS SHALL, AT A MINIMUM, BE INSPECTED WEEKLY AND WITHIN 24 HOURS AFTER EVERY PRECIPITATION EVENT THAT PRODUCES 0.5 INCHES OF RAIN OR MORE DURING A 24-HOUR PERIOD.
4. MAINTENANCE SHALL BE COMPLETED AS SOON AS POSSIBLE WITH CONSIDERATION TO SITE CONDITIONS.
5. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES ONE-HALF THE HEIGHT OF THE DIVERSION BERM. PROPERLY DISPOSE OF ANY SEDIMENT REMOVED FROM THE DIVERSION.
6. DIVERSIONS SHALL BE REMOVED AND THE AREA STABILIZED ACCORDING TO CONSTRUCTION PLANS.

DIVERSION SWALE

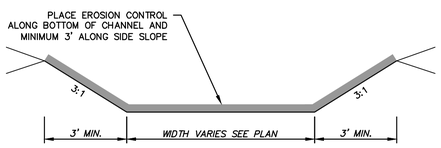
(NOT TO SCALE)



NOTES:
1. PRIOR TO THE INSTALLATION OF ANY EROSION CONTROL MATTING, ALL ROCKS, DIRT CLODS, STUMPS, ROOTS, TRASH AND ANY OTHER OBSTRUCTIONS WHICH WOULD PREVENT THE MAT FROM LAYING IN DIRECT CONTACT WITH THE SOIL SHALL BE REMOVED.
2. EROSION CONTROL MATTING SHALL BE INSTALLED IN ACCORDANCE WITH SECTION 628 OF THE WISCONSIN DOT STANDARD SPECIFICATIONS, DNR TECHNICAL STANDARD 1052 (NON CHANNEL APPLICATIONS), DNR TECHNICAL STANDARD 1053 (CHANNEL APPLICATIONS), AND LATEST MANUFACTURER SPECIFICATIONS, ESPECIALLY NOTING REQUIRED STAPLE PATTERNS AND ANCHOR TRENCH REQUIREMENTS.
3. INSTALLATION PROCEDURES MUST INSURE THAT THE MAT WILL REMAIN IN CONTACT WITH THE SOIL.
4. THE MATTING SHALL BE ANCHORED PER MANUFACTURER REQUIREMENTS.
5. THE MATTING SHALL BE ANCHORED TO THE GROUND PER MANUFACTURER REQUIREMENTS.
6. TEMPORARY EROSION CONTROL MATTING SHALL BE WisDOT PAL CLASS I, TYPE B AND PERMANENT EROSION CONTROL MATTING SHALL BE WisDOT PAL CLASS III, TYPE A.
7. MATTED AREAS MUST BE INSPECTED ON A WEEKLY BASIS, AND AFTER EACH SIGNIFICANT RAINFALL. BARE SPOTS, MISSING OR LOOSENED MATTING MUST BE IMMEDIATELY REPLACED AND/OR RE-ANCHORED.
8. FOR CHANNEL APPLICATIONS, EXTEND MAT UPSLOPE ONE-FOOT MINIMUM VERTICALLY FROM DITCH BOTTOM OR SIX-INCHES HIGHER THAN DESIGN FLOW, WHICHEVER IS GREATER.

EROSION CONTROL MATTING DETAIL

NOTE: INSTALL ON ALL SLOPES OF 4:1 OR GREATER



CHANNEL EROSION CONTROL BLANKET AND PERMANENT TURF REINFORCEMENT MAT

NOTE: SEE PLAN FOR LOCATION

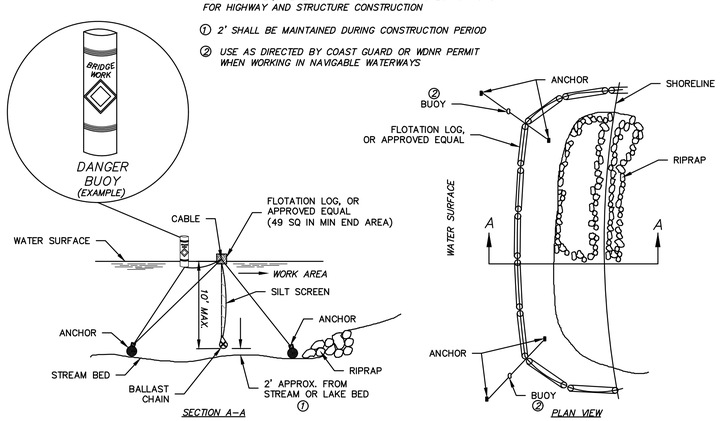
NOTES:
1. PRIOR TO THE INSTALLATION OF ANY EROSION CONTROL MATTING, ALL ROCKS, DIRT CLODS, STUMPS, ROOTS, TRASH AND ANY OTHER OBSTRUCTIONS WHICH WOULD PREVENT THE MAT FROM LAYING IN DIRECT CONTACT WITH THE SOIL SHALL BE REMOVED.
2. EROSION CONTROL MATTING SHALL BE INSTALLED IN ACCORDANCE WITH SECTION 628 OF THE WISCONSIN DOT STANDARD SPECIFICATIONS, DNR TECHNICAL STANDARD 1052 (NON CHANNEL APPLICATIONS), DNR TECHNICAL STANDARD 1053 (CHANNEL APPLICATIONS), AND LATEST MANUFACTURER SPECIFICATIONS, ESPECIALLY NOTING REQUIRED STAPLE PATTERNS AND ANCHOR TRENCH REQUIREMENTS.
3. INSTALLATION PROCEDURES MUST INSURE THAT THE MAT WILL REMAIN IN CONTACT WITH THE SOIL.
4. MATTED AREAS MUST BE INSPECTED ON A WEEKLY BASIS, AND AFTER EACH SIGNIFICANT RAINFALL. BARE SPOTS, MISSING OR LOOSENED MATTING MUST BE IMMEDIATELY REPLACED AND/OR RE-ANCHORED.
5. FOR CHANNEL APPLICATIONS USE WISDOT PAL: SLOPES BELOW 6 PERCENT USE CLASS I, TYPE B; SLOPES GREATER THAN 6 PERCENT USE CLASS II, COCONUT TYPE B.
6. WHERE PERMANENT TURF REINFORCEMENT MAT CALLED OUT, USE WISDOT PAL: CLASS III, TYPE D. FILL WITH TOPSOIL AND SEED PER MANUFACTURER'S INSTRUCTION. COVER WITH CLASS I, TYPE B.

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION

① 2' SHALL BE MAINTAINED DURING CONSTRUCTION PERIOD

② USE AS DIRECTED BY COAST GUARD OR WDNR PERMIT WHEN WORKING IN NAVIGABLE WATERWAYS



SILT CURTAIN

(NOT TO SCALE)

R.A.SMITH, INC. ASSUMES NO RESPONSIBILITY FOR DAMAGES, LIABILITY OR COSTS RESULTING FROM CHANGES OR ALTERATIONS MADE TO THIS PLAN WITHOUT THE EXPRESSED WRITTEN CONSENT OF R.A.SMITH, INC.

ALL COPYRIGHTS TO THESE DRAWINGS ARE RESERVED. THEY MAY NOT BE COPIED, CHANGED, OR ASSIGNED TO ANY THIRD PARTY IN ANY MANNER WITHOUT OBTAINING THE EXPRESSED WRITTEN PERMISSION OF R.A.SMITH, INC.

DATE	DESCRIPTION

raSmith
CREATIVITY BEYOND ENGINEERING
16745 W. Bluemound Road
Brookfield, WI 53005-5938
(262) 781-1000
rasmith.com
Brookfield, WI | Milwaukee, WI | Appleton, WI | Madison, WI
Cedarburg, WI | Naperville, IL | Irvine, CA

MORAINE DEVELOPMENT
GERMANTOWN, WI

SITE CIVIL DETAILS
EROSION CONTROL

PRELIMINARY NOT FOR CONSTRUCTION

© COPYRIGHT 2023
R.A. Smith, Inc.

DATE: 03/10/2023
SCALE: NONE
JOB NO. 3220196
PROJECT MANAGER: CHRIS HITCH, PE
DESIGNED BY: DJM
CHECKED BY: CDH

SHEET NUMBER
C501

DIVISION 1 – GENERAL REQUIREMENTS

01 41 00 – REGULATORY REQUIREMENTS

1. THE LATEST EDITIONS OF THE FOLLOWING DOCUMENTS AND ANY SUPPLEMENTS THERETO, SHALL GOVERN ALL CONSTRUCTION ITEMS ON THIS PLAN UNLESS OTHERWISE NOTED:
   a. WISCONSIN DEPARTMENT OF NATURAL RESOURCES (WDNR) STORM WATER TECHNICAL STANDARDS
   b. WISCONSIN EROSION CONTROL PRODUCT ACCEPTABILITY LIST
   c. STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN (SSSWCW)
   d. WISCONSIN ADMINISTRATIVE CODE, SECTIONS SPS 382–387
   e. WISCONSIN DEPARTMENT OF TRANSPORTATION (WISDOT) STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION
   f. FEDERAL HIGHWAY ADMINISTRATION MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD)
   g. WISCONSIN MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (WMUTCD)
   h. UNITED STATES DEPARTMENT OF JUSTICE ADA STANDARDS
   i. UNITED STATES DEPARTMENT OF TRANSPORTATION ADA STANDARDS FOR TRANSPORTATION FACILITIES
   j. MUNICIPALITY DEVELOPMENT STANDARDS
   k. COUNTY DEVELOPMENT STANDARDS
2. THE OWNER, ENGINEER AND MUNICIPALITY SHALL BE NOTIFIED AT LEAST 48 HOURS IN ADVANCE OF PERFORMING ANY CONSTRUCTION ACTIVITIES.
3. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING COPIES OF ALL PERMITS AND FOR ABIDING BY ALL PERMIT REQUIREMENTS AND RESTRICTIONS.
4. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR COMPLYING WITH ALL FEDERAL, STATE, AND LOCAL SAFETY REQUIREMENTS TOGETHER WITH EXERCISING PRECAUTIONS AT ALL TIMES FOR THE PROTECTION OF PERSONS (INCLUDING EMPLOYEES) AND PROPERTY. IT IS ALSO THE RESPONSIBILITY OF THE CONTRACTOR TO INITIATE, MAINTAIN, AND SUPERVISE ALL SAFETY REQUIREMENTS, PRECAUTIONS, AND PROGRAMS IN CONNECTION WITH THE WORK.
5. SHOP DRAWINGS AND/OR MANUFACTURER'S PRODUCT DATA SUBMITTALS ARE REQUIRED ONLY IF THE PRODUCT OR METHOD OF CONSTRUCTION IS DIFFERENT FROM THAT SPECIFIED OR IF REQUIRED BY THE MUNICIPAL ENGINEER.
   a. ALL DOCUMENTS SUBMITTED FOR REVIEW SHALL HAVE THE SPECIFIC MATERIAL, PART, SIZE, ETC. HIGHLIGHTED IN SOME FASHION. EXAMPLE: A FITTING CUT SHEET HAS MULTIPLE PRESSURE RATING FOR DIFFERENT SIZE BENDS. HIGHLIGHT THE PRESSURE CLASS & SIZE TO BE USED ON PROJECT. ALL SUBMITTALS NOT PROPERLY IDENTIFYING THE SPECIFIC MATERIAL BEING USED WILL BE REJECTED.
   b. CONTRACTOR SHALL SUBMIT A PDF COPY AND AN EXPLANATION AS TO HOW THE SUBSTITUTION MEETS THE PROPOSED DESIGN (PRODUCT SPECIFICATION SHEETS WITHOUT EXPLANATION WILL NOT BE ACCEPTED) TO THE OWNER'S REPRESENTATIVE OR ENGINEER FOR REVIEW AND APPROVAL. THE CONTRACTOR SHALL NOT PROCEED UNTIL THE OWNER'S APPROVAL IS GIVEN. IN PROJECT SCHEDULING CONTRACTOR SHALL ACCOUNT FOR 5 WORKING DAYS FOR SUBMITTAL REVIEW. IN THE EVENT SUCH SUBSTITUTION IS APPROVED, THE OWNER WILL REQUIRE FROM THE CONTRACTOR A CREDITED DEDUCTION FROM THE CONTRACT AMOUNT EQUAL TO ANY SAVINGS IN MATERIAL COST RESULTING FROM USE OF THE PROPOSED SUBSTITUTE.
6. THE CONTRACTOR SHALL ASSUME COMPLETE AND SOLE RESPONSIBILITY FOR THE QUALITY OF WORK. IF CHANGES OR ADJUSTMENTS ARE RECOMMENDED BY THE CONTRACTOR, THEY MAY BE MADE ONLY UPON WRITTEN APPROVAL OF THE OWNER OR THEIR REPRESENTATIVE.
   a. ALL WORK SHALL BE DONE IN COMPLIANCE WITH THE CONTRACT DOCUMENTS. THE OWNER OR THEIR REPRESENTATIVE SHALL DECIDE ALL QUESTIONS WHICH SHALL ARISE AS TO THE QUALITY AND ACCEPTABILITY OF MATERIALS FURNISHED, WORK PERFORMED, AND WORKMANSHIP., INTERPRETATION OF THE PLANS AND SPECIFICATIONS HE SHALL DETERMINE THE AMOUNT OF WORK PERFORMED AND MATERIALS FURNISHED.
   b. FAILURE OR NEGLIGENCE ON THE PART OF THE OWNER OR THEIR REPRESENTATIVE TO CONDEMN OR REJECT SUBSTANDARD OR INFERIOR WORK OR MATERIALS SHALL NOT BE CONSTRUED TO IMPLY AN ACCEPTANCE OF SUCH WORK OR MATERIALS, IF IT BECOMES EVIDENT AT ANY TIME PRIOR TO THE FINAL ACCEPTANCE OF THE WORK BY THE OWNER. NEITHER SHALL IT BE CONSTRUED AS BARRING THE OWNER, AT ANY SUBSEQUENT TIME, FROM THE RECOVERY OF DAMAGES OR OF SUCH A SUM OF MONEY AS MAY BE NEEDED TO BUILD ANEW ALL PORTIONS OF THE SUBSTANDARD OR INFERIOR WORK OR REPLACEMENT OF IMPROPER MATERIALS WHEREVER FOUND.
   c. INSPECTORS EMPLOYED BY THE OWNER SHALL BE AUTHORIZED TO INSPECT ALL WORK DONE AND ALL MATERIAL FURNISHED. SUCH INSPECTION MAY EXTEND TO ALL OR ANY PART OF THE WORK AND TO THE PREPARATION, FABRICATION OR MANUFACTURE OF THE MATERIALS TO BE USED. THE INSPECTOR IS NOT AUTHORIZED TO REVOKE, ALTER OR WAIVE ANY REQUIREMENTS OF THE SPECIFICATIONS, NOR IS HE AUTHORIZED TO APPROVE OR ACCEPT ANY PORTION OF THE COMPLETED PROJECT. HE SHALL CALL THE ATTENTION OF THE CONTRACTOR TO ANY FAILURE OF THE WORK OR MATERIALS TO CONFORM TO THE SPECIFICATIONS AND CONTRACT, AND SHALL HAVE THE AUTHORITY TO REJECT MATERIALS. ANY DISPUTE BETWEEN THE INSPECTOR AND CONTRACTOR SHALL BE REFERRED TO THE OWNER OR THEIR REPRESENTATIVE. ANY ADVICE WHICH THE INSPECTOR MAY GIVE THE CONTRACTOR SHALL IN NO WAY BE CONSTRUED AS BINDING THE ENGINEER IN ANY WAY OR RELEASING THE CONTRACTOR FROM FULFILLING ANY OF THE TERMS OF THE CONTRACT.
   d. ALL MATERIALS AND EACH PART OF DETAIL OF THE WORK SHALL BE SUBJECT AT ALL TIMES TO INSPECTION BY THE OWNER OR HIS AUTHORIZED REPRESENTATIVE OR THE AUTHORITY HAVING JURISDICTION AND THE CONTRACTOR WILL BE HELD STRICTLY TO THE TRUE INTENT OF THE SPECIFICATIONS IN REGARD TO QUALITY OF MATERIALS, WORKMANSHIP, AND THE DILIGENT EXECUTION OF THE CONTRACT. SUCH INSPECTION MAY INCLUDE MILL, PLANT OR SHOP INSPECTION, AND ANY MATERIAL FURNISHED UNDER THESE SPECIFICATIONS IS SUBJECT TO SUCH INSPECTION. THE OWNER OR HIS REPRESENTATIVES SHALL BE ALLOWED ACCESS TO ALL PART OF THE WORK, AND SHALL BE FURNISHED WITH SUCH INFORMATION AND ASSISTANCE BY THE CONTRACTOR AS IS DETERMINED BY THE OWNER OR HIS REPRESENTATIVE, TO MAKE A COMPLETE AND DETAILED INSPECTION.
   e. ALL WORKMANSHIP SHALL CONFORM TO THE BEST STANDARD PRACTICE. UNLESS OTHERWISE SPECIFIED, THE SPECIFICATIONS OR RECOGNIZED ASSOCIATION OF MANUFACTURERS AND CONTRACTORS OR INDUSTRIAL MANUFACTURERS SHALL BE USED AS GUIDES FOR THE STANDARDS OF WORKMANSHIP.
   f. ALL EXPOSED ITEMS OF WORK SHALL PRESENT A NEAT WORKMANLIKE APPEARANCE AND SHALL BE AS TRUE TO SHAPE AND ALIGNMENT AS POSSIBLE TO OBTAIN WITH MEASURING OR LEVELING INSTRUMENTS GENERALLY USED IN THE RESPECTIVE TYPES OF WORK. ITEMS OF WORK SHALL BE SOUND AND FULLY PROTECTED AGAINST DAMAGE AND PREMATURE DETERIORATION. IT IS SPECIFICALLY UNDERSTOOD THAT IN ALL QUESTIONS OF QUALITY AND ACCEPTABILITY OF WORKMANSHIP, THE CONTRACTOR AGREES TO ABIDE BY THE DECISION OF THE OWNER OR THEIR REPRESENTATIVE.
   g. ALL MATERIALS AND WORKMANSHIP NOT CONFORMING TO THE REQUIREMENTS OF THE CONTRACT DOCUMENTS SHALL BE CONSIDERED AS DEFECTIVE, AND ALL SUCH MATERIALS, WHETHER IN–PLACE OR NOT, SHALL BE REJECTED AND SHALL BE REMOVED FROM THE WORK BY THE CONTRACTOR AT HIS EXPENSE. UPON FAILURE ON THE PART OF THE CONTRACTOR TO COMPLY WITH ANY ORDER OF THE OWNER RELATIVE TO THE PROVISIONS OF THIS ARTICLE, THE OWNER SHALL HAVE THE AUTHORITY TO REMOVE AND REPLACE SUCH DEFECTIVE MATERIAL AND TO DEDUCT THE COST OF REMOVAL AND REPLACEMENT FROM ANY MONIES DUE OR WHICH MAY BECOME DUE THE CONTRACTOR.
   h. THE CONTRACTOR SHALL KEEP A LEGIBLE COPY OF THE PLANS, SPECIFICATIONS, AND ALL PERMITS AT THE SITE OF THE WORK AT ALL TIMES.
   i. AT THE COMPLETION OF THE WORK AND PRIOR TO FINAL PAYMENT, THE CONTRACTOR SHALL PROVIDE THE OWNER OR THEIR REPRESENTATIVE WITH A MARKED–UP SET OF DRAWINGS SHOWING ALL CHANGES OR VARIATIONS FROM THE ORIGINAL DRAWINGS. THESE CHANGES SHALL BE MADE ON A SET OF FIELD DRAWINGS AS THE WORK TAKES PLACE, AND NOT FROM MEMORY WHEN THE WORK IS DONE. THIS SET OF DRAWINGS SHOULD BE KEPT CLEAN IN A LOCATION AT THE SITE WHERE THE OWNER OR THEIR REPRESENTATIVE MAY EXAMINE THEM.
      i. THE MARKED–UP DRAWINGS SHALL BE ACCURATE. ARBITRARY MARKINGS ARE OF NO VALUE. CAREFUL MEASUREMENTS SHALL BE MADE TO LOCATE UNDERGROUND EXTERIOR AND UNDERGROUND INTERIOR SEWERS, GAS LINES, WATER LINES, ELECTRICAL CONDUIT AND MISCELLANEOUS PIPING.
7. CONTRACTOR IS RESPONSIBLE FOR ALL TRAFFIC CONTROL, TRAFFIC CONTROL PLANS AND PERMITTING FOR ALL WORK TO BE COMPLETED ONSITE OR IN THE PUBLIC RIGHT–OF WAY.

01 70 00 – EXECUTION & CLOSEOUT REQUIREMENTS

1. THE CONTRACTOR IS RESPONSIBLE FOR EXAMINING ALL EXISTING SITE CONDITIONS PRIOR TO COMMENCEMENT OF CONSTRUCTION AND SHALL COMPARE WITH THIS PLAN.
2. EXISTING UTILITY INFORMATION IS PROVIDED FOR INFORMATIONAL PURPOSES ONLY, BASED ON BEST AVAILABLE PUBLIC RECORDS, AS–BUILT DRAWINGS, AND FIELD OBSERVATIONS. NO RESPONSIBILITY IS ASSUMED BY THE OWNER OR ENGINEER FOR ACCURACY OR COMPLETENESS. THE CONTRACTOR IS RESPONSIBLE FOR MAKING THEIR OWN DETERMINATION AS TO THE TYPE AND NATURE OF EXISTING UTILITIES, AS MAY BE NECESSARY TO AVOID DAMAGE THERETO.
3. THE CONTRACTOR SHALL VERIFY ALL LOCATIONS, ELEVATIONS, AND SIZES OF EXISTING UTILITIES AND SHALL CHECK ALL PROPOSED UTILITY CONNECTIONS AND CROSSINGS PRIOR TO PROCEEDING WITH ANY WORK. ANY CONFLICTS SHALL BE REPORTED TO THE ENGINEER SO REDESIGN MAY OCCUR IF NEEDED. COST OF REPLACEMENT OR REPAIR OF EXISTING UTILITIES DAMAGED AS A RESULT OF THE CONTRACTOR'S OPERATIONS SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
4. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING SOIL CONDITIONS PRIOR TO COMMENCEMENT OF CONSTRUCTION. A GEOTECHNICAL REPORT MAY BE AVAILABLE FROM THE OWNER. THE CONTRACTOR SHALL ABIDE BY THE RECOMMENDATIONS OF THE GEOTECHNICAL REPORT AND SUBSEQUENT RECOMMENDATIONS OF THE GEOTECHNICAL ENGINEER DURING CONSTRUCTION.
5. THE CONTRACTOR SHALL FIELD VERIFY ELEVATIONS OF THE BENCHMARKS AND HORIZONTAL CONTROL BY REFERENCING SHOWN COORDINATES TO KNOWN PROPERTY LINES, AND SHALL NOTIFY THE ENGINEER OF DISCREPANCIES IN EITHER VERTICAL OR HORIZONTAL CONTROL PRIOR TO PROCEEDING WITH ANY WORK.
6. SURVEY BENCHMARKS AND CONTROL POINTS SHALL BE MAINTAINED AND PROTECTED FROM DISTURBANCE.
7. PROPERTY CORNERS SHALL BE CAREFULLY PROTECTED AT ALL TIMES. PROPERTY MONUMENTS DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
8. ANY ADJACENT PROPERTIES OR ROAD RIGHT–OF–WAYS WHICH ARE DAMAGED DURING CONSTRUCTION SHALL BE RESTORED BY THE CONTRACTOR. THE COST OF RESTORATION IS CONSIDERED INCIDENTAL AND SHALL BE INCLUDED.
9. PUBLIC ROADS SHALL NOT BE FULLY CLOSED TO TRAFFIC AT ANY TIME. ALL INGRESS AND EGRESS TRAFFIC TO THE PROJECT SITE SHALL BE LIMITED TO THE CONSTRUCTION ENTRANCE.
10. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR DETERMINING QUANTITIES, SHALL BID ON THEIR OWN ESTIMATE OF THE WORK REQUIRED, AND SHALL NOT RELY ON THE ENGINEER'S ESTIMATE.
11. REQUESTS FOR CLARIFICATION WILL BE INTERPRETED BY THE OWNER/ENGINEER PRIOR TO AWARD OF CONTRACT, AND WHEN NECESSARY, OFFICIAL WRITTEN RESPONSES WILL BE ISSUED. OFFICIAL WRITTEN RESPONSES SHALL BE BINDING TO THE WORK. IN NO WAY SHALL VERBAL DIALOGUE CONSTITUTE OFFICIAL RESPONSE.
12. SHOULD ANY DISCREPANCIES BE DISCOVERED BY THE CONTRACTOR AFTER AWARD OF CONTRACT, NOTIFY OWNER/ENGINEER IN WRITING IMMEDIATELY. CONSTRUCTION OF ITEMS AFFECTED BY THE DISCREPANCIES SHALL NOT COMMENCE OR CONTINUE UNTIL AN OFFICIAL WRITTEN RESPONSE IS ISSUED.
13. ALL WORK SHALL BE GUARANTEED BY THE CONTRACTOR FOR A MINIMUM PERIOD OF 12 MONTHS FROM THE DATE OF FINAL ACCEPTANCE. THIS GUARANTEE SHALL INCLUDE ALL DEFECTS IN MATERIALS AND WORKMANSHIP.
14. THE CONTRACTOR SHALL INDEMNIFY THE OWNER, THE ENGINEER, AND THE MUNICIPALITY, THEIR AGENTS, ETC., FROM ALL LIABILITY INVOLVED WITH THE CONSTRUCTION, INSTALLATION, AND TESTING OF THE WORK ON THIS PROJECT.

DIVISION 31 – EARTHWORK

31 10 00 – SITE CLEARING & DEMOLITION

1. WORK SHALL CONSIST OF DEMOLITION, ABANDONMENT, AND REMOVAL OF EXISTING FOUNDATIONS, WALLS, SLABS, FENCES, PIPING, PAVEMENTS, AND OTHER MANMADE ITEMS INTERFERING WITH NEW CONSTRUCTION. WORK SHALL ALSO CONSIST OF CLEARING AND GRUBBING OF TREES, SHRUBS, VEGETATION, ROOTS, STUMPS, RUBBISH, AND OTHER PERISHABLE MATTER INTERFERING WITH NEW CONSTRUCTION.
2. ALL ITEMS SHALL INCLUDE ALL NECESSARY MATERIALS AND LABOR TO COMPLETE THE ITEM IN PLACE.
3. CALL 811 TO NOTIFY UTILITY PROVIDERS AND REQUEST FIELD LOCATION OF EXISTING UTILITIES WITHIN PROJECT LIMITS PRIOR TO ANY CONSTRUCTION RELATED ACTIVITIES.
4. INSTALL PERIMETER FENCING AS INDICATED PRIOR TO COMMENCING ANY CONSTRUCTION RELATED ACTIVITY.
5. CLEARLY IDENTIFY ALL VEGETATION TO BE PRESERVED AND/OR RELOCATED PRIOR TO CLEARING AND GRUBBING.
6. PROTECT EXISTING IMPROVEMENTS TO REMAIN DURING CONSTRUCTION. ANY DAMAGED IMPROVEMENTS SHALL BE RESTORED TO ORIGINAL CONDITION, OR AS OTHERWISE ACCEPTABLE TO THE OWNER.
7. REMOVE EXISTING ABOVE–GRADE AND BELOW–GRADE IMPROVEMENTS AS INDICATED AND AS NECESSARY TO CONSTRUCT PROPOSED IMPROVEMENTS.
8. SAWCUT ALL PAVEMENT TO BE REMOVED IN STRAIGHT LINES TO FULL DEPTH.
9. DEMOLISH CONCRETE AND MASONRY IN SMALL SECTIONS. BREAK UP CONCRETE SLABS THAT ARE 2 FEET OR MORE BELOW PROPOSED SUBGRADE TO PERMIT DRAINAGE.
10. DISCONNECT AND SEAL/CAP EXISTING UTILITIES TO BE REMOVED, RELOCATED, OR ABANDONED IN ACCORDANCE WITH REQUIREMENTS OF UTILITY PROVIDERS.
11. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING OWNERSHIP OF AND COORDINATING NECESSARY REMOVAL AND/OR RELOCATION OF ALL EXISTING UTILITIES WITHIN THE PROJECT LIMITS.
12. DO NOT INTERRUPT UTILITY SERVICE TO EXISTING FACILITIES UNLESS PERMITTED BY THE OWNER.
13. VOIDS LEFT BY REMOVALS SHALL BE LEVELED TO PREVENT PONDING OF WATER.
14. REMOVE AND LEGALLY DISPOSE OF DEMOLISHED MATERIALS, TRASH, AND DEBRIS FROM THE PROJECT SITE. RUBBISH, TRASH, GARBAGE, AND LITTER SHALL BE PLACED IN SEALED CONTAINERS THROUGHOUT CONSTRUCTION.

31 20 00 – EARTH MOVING

1. WORK SHALL CONSIST OF STRIPPING AND STORAGE OF TOPSOIL, EXCAVATION, EMBANKMENT, IMPORTING OR EXPORTING MATERIAL TO ACHIEVE LAND BALANCE, COMPACTION, FINISH GRADING, SUBGRADE PREPARATION, AND REPLACEMENT OF TOPSOIL.
2. ALL ITEMS SHALL INCLUDE ALL NECESSARY MATERIALS AND LABOR TO COMPLETE THE ITEM IN PLACE.
3. ALL EARTHWORK SHALL BE IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE GEOTECHNICAL REPORT AND SUBSEQUENT RECOMMENDATIONS OF THE GEOTECHNICAL ENGINEER DURING CONSTRUCTION BASED ON FIELD CONDITIONS, AND THESE REQUIREMENTS. THE RECOMMENDATIONS OF THE GEOTECHNICAL ENGINEER SHALL GOVERN.
4. EXCAVATE TO SUBGRADE REGARDLESS OF THE CHARACTER OF SURFACE AND SUBSURFACE CONDITIONS ENCOUNTERED. EXCAVATED MATERIAL MAY INCLUDE ROCK AND UNCLASSIFIED OBSTRUCTIONS, WHICH IS CONSIDERED INCIDENTAL AND SHALL BE INCLUDED IN THE WORK.
5. EXISTING FOUNDATIONS, BUILDING REMNANTS, AND UNSATISFACTORY MATERIAL SHALL BE COMPLETELY REMOVED FROM WITHIN AND A MINIMUM OF 10 FEET BEYOND BUILDING PAD AREAS. ANY RELATED EXCAVATION SHALL BE BACKFILLED WITH COMPACTED ENGINEERED FILL MATERIAL.
6. EXISTING FOUNDATIONS, BUILDING REMNANTS, AND UNSATISFACTORY MATERIAL SHALL BE REMOVED TO A MINIMUM OF 2 FEET BELOW PROPOSED SUBGRADE WITHIN GREENSPACE AND PAVEMENT AREAS. ANY RELATED EXCAVATION SHALL BE BACKFILLED WITH COMPACTED ENGINEERED FILL MATERIAL.
7. AREAS SHALL BE GRADED TO WITHIN 1 INCH, MORE OR LESS, OF PROPOSED SUBGRADE. DEVIATIONS SHALL NOT BE CONSISTENT IN ONE DIRECTION.
8. DISKING, HARROWING, AND AERATION TECHNIQUES SHALL BE USED TO DRY SUBGRADE PRIOR TO PROOF ROLLING.
9. IN THE PRESENCE OF THE GEOTECHNICAL ENGINEER, PROOF ROLL SUBGRADE BELOW BUILDING PAD AND PAVEMENT AREAS DURING DRY WEATHER WITH A FULLY LOADED TANDEM AXLE DUMP TRUCK WHERE COHESIVE SOILS ARE PREDOMINANT, AND WITH A SMOOTH DRUMMED VIBRATORY ROLLER WHERE GRANULAR SOILS ARE PREDOMINANT. SUBGRADE WHICH IS OBSERVED TO RUT OR DEFLECT EXCESSIVELY SHALL BE UNDERCUT IN ACCORDANCE WITH RECOMMENDATIONS OF THE GEOTECHNICAL ENGINEER. DO NOT PROOF ROLL WET OR SATURATED SUBGRADE.
10. THE CONTRACTOR SHALL MAINTAIN POSITIVE SITE DRAINAGE THROUGHOUT CONSTRUCTION. THIS MAY INCLUDE EXCAVATION OF TEMPORARY DITCHES OR PUMPING TO ALLEVIATE WATER PONDING. SURFACE WATER AND GROUNDWATER SHALL BE PREVENTED FROM ENTERING EXCAVATIONS, PONDING ON PREPARED SUBGRADES, AND FLOODING PROJECT SITE AND/OR SURROUNDING AREAS.
11. THE CONTRACTOR SHALL ASSUME SOLE RESPONSIBILITY FOR ALL EARTHWORK COMPUTATIONS AND FOR ACTUAL LAND BALANCE, INCLUDING UTILITY TRENCH SPOIL. THE CONTRACTOR SHALL IMPORT OR EXPORT MATERIAL AS NECESSARY TO COMPLETE THE PROJECT.
12. TOPSOIL REPLACEMENT DEPTH SHALL BE AS CALLED OUT ON THE CIVIL OR LANDSCAPE PLANS, OR A MINIMUM OF FOUR INCHES IF NOT CALLED OUT ON LANDSCAPE PLAN.

31 25 00 – EROSION & SEDIMENTATION CONTROLS

1. WORK SHALL CONSIST OF INSTALLATION OF TEMPORARY AND PERMANENT PRACTICES FOR SEDIMENTATION CONTROL, EROSION CONTROL, SLOPE PROTECTION, AND REMOVAL OF PRACTICES UPON FINAL SITE STABILIZATION.
2. ALL ITEMS SHALL INCLUDE ALL NECESSARY MATERIALS AND LABOR TO COMPLETE THE ITEM IN PLACE.
3. INSTALLATION AND MAINTENANCE OF PRACTICES SHALL BE IN ACCORDANCE WITH THE APPLICABLE WDNR TECHNICAL STANDARD, OR THE WISCONSIN CONSTRUCTION SITE BEST MANAGEMENT PRACTICE HANDBOOK IF A TECHNICAL STANDARD IS NOT AVAILABLE.
4. ALL PRACTICES SHALL BE INSTALLED PRIOR TO COMMENCING ANY LAND DISTURBING CONSTRUCTION RELATED ACTIVITY. EARTHWORK ASSOCIATED WITH INSTALLATION OF PRACTICES MAY OCCUR CONCURRENTLY.
5. ALL PRACTICES SHALL BE MAINTAINED THROUGHOUT THE DURATION OF THE PROJECT AND WARRANTY PERIOD IN CONFORMANCE WITH PERMIT REQUIREMENTS.
6. ALL PRACTICES SHALL BE ROUTINELY INSPECTED EVERY 7 DAYS AND WITHIN 24 HOURS OF A RAINFALL GREATER THAN 0.5 INCHES. THE CONTRACTOR IS REQUIRED TO PERFORM INSPECTIONS, KEEP A LOG, AND CONDUCT REPAIRS AS NEEDED.
7. ALL DISTURBED AREAS SHALL DRAIN TO A CONTROL PRACTICE AT ALL TIMES DURING CONSTRUCTION UNTIL FINAL STABILIZATION IS ACHIEVED. DEPENDING UPON HOW THE CONTRACTOR GRADES THE SITE, IT MAY BE NECESSARY TO INSTALL ADDITIONAL CONTROL PRACTICES IN VARIOUS LOCATIONS THROUGHOUT THE PROJECT SITE. THE CONTRACTOR IS RESPONSIBLE FOR INSTALLATION OF ANY ADDITIONAL CONTROL PRACTICES NECESSARY TO PREVENT EROSION AND SEDIMENTATION.
8. ALL DISTURBED GROUND LEFT INACTIVE FOR 7 DAYS SHALL BE STABILIZED WITH A TEMPORARY SEED MIXTURE AND MULCH. THE TEMPORARY SEED MIXTURE SHALL BE IN ACCORDANCE WITH SECTION 630 OF WSDOT STANDARD SPECIFICATIONS. WINTER WHEAT OR RYE SHALL BE USED FOR TEMPORARY SEED AFTER SEPTEMBER 1.
9. DISTURBED AREAS THAT CAN NOT BE STABILIZED WITH A DENSE GROWTH OF VEGETATION DUE TO TEMPERATURE OR TIMING OF CONSTRUCTION SHALL BE STABILIZED BY APPLYING ANIONIC POLYACRYLAMIDE (PAM).
10. ALL ACTIVITIES ON THE PROJECT SITE SHALL BE CONDUCTED IN A LOGICAL SEQUENCE TO MINIMIZE THE AREA OF BARE SOIL EXPOSED AT ANY ONE TIME.
11. DUST GENERATED BY CONSTRUCTION RELATED ACTIVITIES SHALL BE MINIMIZED BY USE OF WATERING, CALCIUM CHLORIDE SURFACE TREATMENT, CONSTRUCTION SCHEDULING, OR OTHER APPROPRIATE MEASURES.
12. THE CONTRACTOR SHALL BE PREPARED FOR DEWATERING CONDITIONS BY HAVING APPROPRIATE PUMPS AND FILTER BAGS ONSITE. ALL WATER FROM CONSTRUCTION DEWATERING SHALL BE TREATED PRIOR TO DISCHARGE FROM THE PROJECT SITE.
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE CLEANLINESS OF THE PROJECT SITE AND PUBLIC ROADS DURING CONSTRUCTION. PUBLIC ROADS SHALL BE KEPT FREE OF SEDIMENT TRACKED FROM AREAS UNDER CONSTRUCTION BY DAILY SWEEPING OR OTHER APPROPRIATE MEASURES.
14. FINAL STABILIZATION OF LANDSCAPED AREAS SHALL BE IN ACCORDANCE WITH THE APPROVED LANDSCAPE PLAN.
15. ALL SEEDED AREAS SHALL BE FERTILIZED, RESEEDED AS NECESSARY, AND MULCHED IN ACCORDANCE WITH THE APPROVED LANDSCAPE PLAN TO MAINTAIN A VIGOROUS DENSE VEGETATIVE COVER.

R.A.SMITH, INC. ASSUMES NO RESPONSIBILITY FOR DAMAGES, LIABILITY OR COSTS RESULTING FROM CHANGES OR ALTERATIONS MADE TO THIS PLAN WITHOUT THE EXPRESSED WRITTEN CONSENT OF R.A.SMITH, INC.

ALL COPYRIGHTS TO THESE DRAWINGS ARE RESERVED. THEY MAY NOT BE COPIED, CHANGED, OR ASSIGNED TO ANY THIRD PARTY IN ANY MANNER WITHOUT OBTAINING THE EXPRESSED WRITTEN PERMISSION OF R.A.SMITH, INC.

DATE	DESCRIPTION

raSmith
CREATIVITY BEYOND ENGINEERING
16745 W. Bluemound Road
Brookfield, WI 53005-5938
(262) 781-1000
rasmith.com
Brookfield, WI | Milwaukee, WI | Appleton, WI | Madison, WI
Cedarburg, WI | Naperville, IL | Irvine, CA

MORAINE DEVELOPMENT
GERMANTOWN, WI

SITE CIVIL NOTES
AND SPECIFICATIONS

PRELIMINARY
NOT FOR
CONSTRUCTION

© COPYRIGHT 2023
R.A. Smith, Inc.

DATE: 03/10/2023

SCALE: NONE

JOB NO. 3220196

PROJECT MANAGER:
CHRIS HITCH, PE

DESIGNED BY: DJM

CHECKED BY: CDH

SHEET NUMBER
C502

raSmith

CREATIVITY BEYOND ENGINEERING

Runoff Management Study for

MORAINE DEVELOPMENT

Village of Germantown, Wisconsin

Project No. 3220196

Prepared by:
raSmith
16745 W. Bluemound Road
Brookfield, WI 53005

Prepared for:
Mr. Hans Dawson
Lannon Stone Inc.
N52W23096 Lisbon Road
Sussex, WI 53089

Issued: October 26, 2022
Revised: December 7, 2022
Revised: March 3, 2023

INTRODUCTION

This analysis was completed for the Moraine Development, as a part of the reclamation plan of a non-metallic mining site, located east of Appleton Ave, north of Meeker Hill Lane and west of Brookside Meadows subdivision in the Village of Germantown, Washington County, Wisconsin.

The existing drainage is self-contained with the waterbody on-site. The proposed development will drain to naturalized swales that will outfall to three proposed infiltration basins sized to detain and infiltrate up to the 100-year storm. The infiltration basin detaining P2 will have a release over the spillway in the 100-year storm but will not exceed the top of berm. The release is tributary to the existing self-contained waterbody.

Stormwater management facilities for the proposed development site were designed according to Germantown Municipal Code – Chapter 27, MMSD Rules & Regulations – Chapter 13, Wisconsin Administrative Code – Chapter NR 151 and latest Wisconsin Department of Natural Resources Technical Standards. The following is a summary of key performance standards:

- Reduce the post-development average annual suspended solids load by a minimum of 80% when compared to the same developed condition with no runoff management controls.
- Infiltrate a volume of 90% of the pre-development infiltration volume in the post-development conditions.

METHOD OF ANALYSIS

Analysis included in this report was performed using HydroCAD Stormwater Modeling. Modeling parameters include drainage area, SCS runoff curve number, time of concentration, NOAA Atlas 14 precipitation and NRCS MSE3 distribution.

Table 1 – Design Storm Events

Frequency (years)	Duration (hours)	Rainfall Depth (inches)
1	24	2.37
2	24	2.68
10	24	3.84
50	24	5.52
100	24	6.38
200	24	7.33

SUMMARY OF ANALYSIS

The study area includes 63.98 acres and is comprised of mostly B soils. The existing soil is believed to be sandy and thus a conductivity of 3.6 inches per hour was utilized for the exfiltration rate. A copy of the NRCS soil survey is included with this report.

The following minimum runoff curve numbers were used for the analysis:

Water Surface = 98 Lawn = 61
Pavement = 98 Row-crops = 78
Woods = 60

Table 2 summarizes the tributary volume from each drainage area generated by the 2-year and 100-year storm events. See appendix for further design information.

Table 2 – Tributary Volume (ac-ft)

Watershed	2-year	100-year
P1 S	0.399	3.189
P2 NW	0.349	2.242
P2-A NW	0.100	0.716
P3 NE	0.565	4.495
Appleton Storage	0.791	3.286

Table 3 summarizes bottom, emergency spillway and top elevations of each infiltration basin and the peak elevation in each infiltration basin generated by the 2-year & 100-year storm events. See appendix for further design information.

Table 3 – Infiltration Basin Elevations

Watershed	Bottom of Basin	2-year Elevation	100-year Elevation	Spillway Elevation	Top of Basin
Infil Basin 1 S	954.00	954.00	955.45	955.75	956.00
Infil Basin 1 NW	951.00	951.10	952.93	952.75	953.00
Infil Basin 1 NE	958.00	958.01	959.44	959.75	960.00

TABLE OF CONTENTS – APPENDICES

Appendix A: Soils Information
NRCS Soils Map

Appendix B: Water Quantity Calculations
HydroCAD Modeling Data
Runoff Management Study Exhibit

Appendix A

(Soils Information)

Map Scale: 1:4,250 if printed on B portrait (11" x 17") sheet.

Meters: 0, 50, 100, 200, 300

Feet: 0, 200, 400, 800, 1200

N

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

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features

- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

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 22, Sep 6, 2022

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.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
CeC2	Casco loam, 6 to 12 percent slopes, eroded	3.9	3.0%
CeD2	Casco loam, 12 to 20 percent slopes, eroded	1.0	0.8%
CrD2	Casco-Rodman complex, 12 to 20 percent slopes, eroded	2.3	1.8%
Cw	Colwood silt loam, 0 to 2 percent slopes	0.2	0.1%
DsA	Dresden silt loam, 1 to 3 percent slopes	0.1	0.0%
FsB	Fox silt loam, 2 to 6 percent slopes	5.5	4.3%
GP	Gravel pit	105.6	81.7%
HmC2	Hochheim loam, 6 to 12 percent slopes, eroded	2.3	1.8%
MmA	Matherton silt loam, 1 to 3 percent slopes	0.1	0.1%
RaA	Radford silt loam, 0 to 3 percent slopes	0.6	0.4%
ThB	Theresa silt loam, 2 to 6 percent slopes	3.9	3.0%
ThB2	Theresa silt loam, 2 to 6 percent slopes, eroded	3.9	3.0%
Totals for Area of Interest		**129.3**	**100.0%**

Hydrologic Soil Group and Surface Runoff

This table gives estimates of various soil water features. The estimates are used in land use planning that involves engineering considerations.

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 four hydrologic soil groups are:

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.

Surface runoff refers to the loss of water from an area by flow over the land surface. Surface runoff classes are based on slope, climate, and vegetative cover. The concept indicates relative runoff for very specific conditions. It is assumed that the surface of the soil is bare and that the retention of surface water resulting from irregularities in the ground surface is minimal. The classes are negligible, very low, low, medium, high, and very high.

Report—Hydrologic Soil Group and Surface Runoff

Absence of an entry indicates that the data were not estimated. The dash indicates no documented presence.

Hydrologic Soil Group and Surface Runoff–Washington County, Wisconsin			
Map symbol and soil name	**Pct. of map unit**	**Surface Runoff**	**Hydrologic Soil Group**
CeC2—Casco loam, 6 to 12 percent slopes, eroded			
Casco, eroded	85	Medium	B

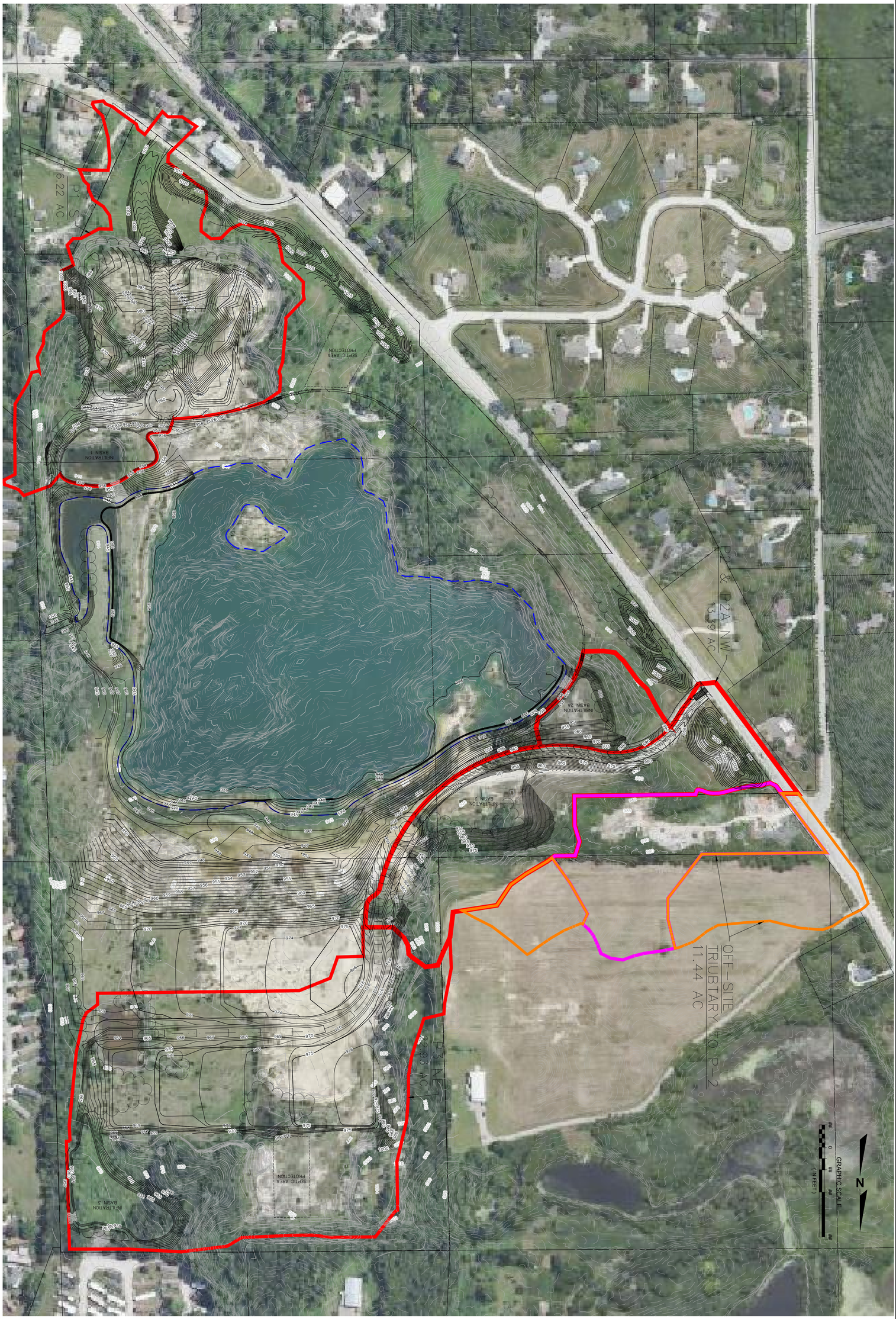
Hydrologic Soil Group and Surface Runoff–Washington County, Wisconsin			
Map symbol and soil name	**Pct. of map unit**	**Surface Runoff**	**Hydrologic Soil Group**
CeD2—Casco loam, 12 to 20 percent slopes, eroded			
Casco, eroded	85	Medium	B
CrD2—Casco-Rodman complex, 12 to 20 percent slopes, eroded			
Casco, eroded	53	Medium	B
Rodman, eroded	37	Low	A
Cw—Colwood silt loam, 0 to 2 percent slopes			
Colwood	85	—	C/D
DsA—Dresden silt loam, 1 to 3 percent slopes			
Dresden	90	—	B
FsB—Fox silt loam, 2 to 6 percent slopes			
Fox	85	Low	B
GP—Gravel pit			
Pits, gravel	99	—	—
HmC2—Hochheim loam, 6 to 12 percent slopes, eroded			
Hochheim, eroded	90	—	D
MmA—Matherton silt loam, 1 to 3 percent slopes			
Matherton	90	—	B/D
RaA—Radford silt loam, 0 to 3 percent slopes			
Radford	90	—	B/D
ThB—Theresa silt loam, 2 to 6 percent slopes			
Theresa	85	—	C
ThB2—Theresa silt loam, 2 to 6 percent slopes, eroded			
Theresa, eroded	83	—	C

Data Source Information

Soil Survey Area: Washington County, Wisconsin
Survey Area Data: Version 22, Sep 6, 2022

Appendix B

(Water Quantity Calculations)



MORAINE DEVELOPMENT
GERMANTOWN, WI

RUNOFF MANAGEMENT STUDY
EXHIBIT

raSmith
CREATIVITY BEYOND ENGINEERING

16745 W. Bluemound Road
Brookfield, WI 53005-5938
(262) 781-1000
rasmith.com

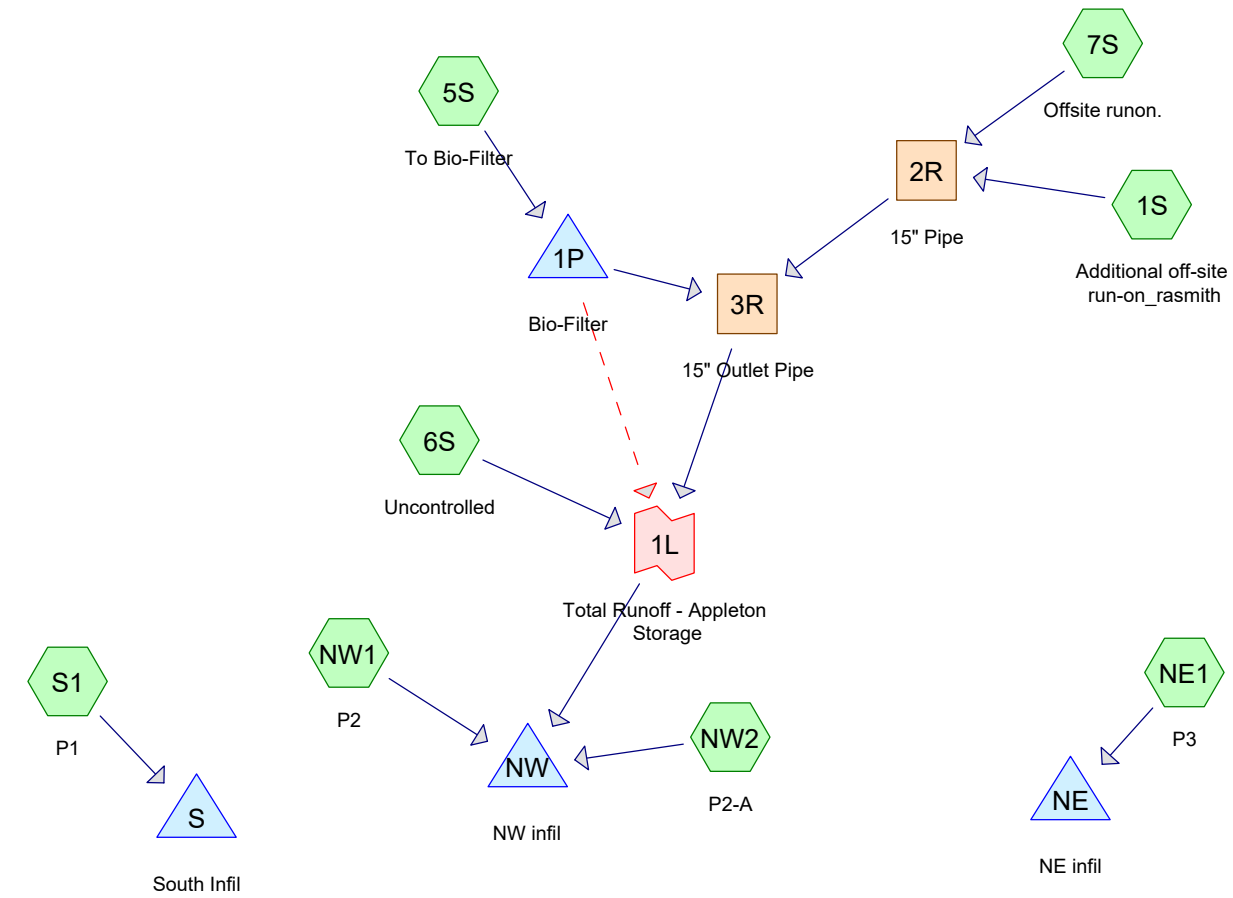
Brookfield, WI | Milwaukee, WI | Appleton, WI | Madison, WI
Cedarburg, WI | Naperville, IL | Irvine, CA

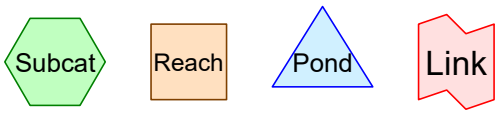
DATE	DESCRIPTION

© COPYRIGHT 2023
R.A. Smith, Inc.

DATE: 03/01/2023
SCALE: 1"=150'
JOB NO. 3220196
PROJECT MANAGER: CHRIS HITCH, PE
DESIGNED BY: CBT
CHECKED BY: CDH

SHEET NUMBER
GX1





Routing Diagram for 3220196-Lannon_2023-03-03
Prepared by RA Smith, Inc., Printed 3/2/2023
HydroCAD® 10.10-7a s/n 02878 © 2021 HydroCAD Software Solutions LLC

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2yr	MSE 24-hr	3	Default	24.00	1	2.68	2
2	50yr	MSE 24-hr	3	Default	24.00	1	5.52	2
3	100yr	MSE 24-hr	3	Default	24.00	1	6.38	2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
44.093	61	>75% Grass cover, Good, HSG B (5S, 6S, NE1, NW1, NW2, S1)
2.056	98	Paved parking (5S)
1.180	89	Paved roads w/open ditches, 50% imp, HSG B (1S, NW1)
0.527	98	Proposed Buildings (5S)
7.295	78	Row crops, straight row, Good, HSG B (1S, 7S)
2.690	98	Water Surface, 0% imp, HSG B (NW1, NW2, S1)
1.530	98	Water Surface, HSG B (NE1)
4.610	60	Woods, Fair, HSG B (NE1)
63.982	**67**	**TOTAL AREA**

Time span=11.75-21.75 hrs, dt=0.05 hrs, 201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: Additional off-site Runoff Area=5.110 ac 5.28% Impervious Runoff Depth>0.93"
Tc=22.4 min CN=79 Runoff=5.00 cfs 0.397 af

Subcatchment5S: To Bio-Filter Runoff Area=146,447 sf 76.85% Impervious Runoff Depth>1.46"
Flow Length=687' Tc=10.1 min CN=89 Runoff=8.16 cfs 0.410 af

Subcatchment6S: Uncontrolled Runoff Area=10,659 sf 0.00% Impervious Runoff Depth>0.24"
Tc=6.0 min CN=61 Runoff=0.06 cfs 0.005 af

Subcatchment7S: Offsite runon. Runoff Area=118,717 sf 0.00% Impervious Runoff Depth>0.88"
Flow Length=350' Tc=22.4 min CN=78 Runoff=2.50 cfs 0.200 af

SubcatchmentNE1: P3 Runoff Area=22.930 ac 6.67% Impervious Runoff Depth>0.30"
Tc=10.0 min CN=63 Runoff=6.76 cfs 0.565 af

SubcatchmentNW1: P2 Runoff Area=9.990 ac 3.20% Impervious Runoff Depth>0.42"
Flow Length=1,006' Tc=16.0 min CN=67 Runoff=4.12 cfs 0.349 af

SubcatchmentNW2: P2-A Runoff Area=3.400 ac 0.00% Impervious Runoff Depth>0.35"
Tc=16.0 min CN=65 Runoff=1.08 cfs 0.100 af

SubcatchmentS1: P1 Runoff Area=16.220 ac 0.00% Impervious Runoff Depth>0.30"
Flow Length=941' Tc=14.2 min CN=63 Runoff=4.02 cfs 0.399 af

Reach 2R: 15" Pipe Avg. Flow Depth=0.54' Max Vel=14.65 fps Inflow=7.50 cfs 0.597 af
15.0" Round Pipe n=0.010 L=172.0' S=0.0520 '/' Capacity=19.15 cfs Outflow=7.50 cfs 0.597 af

Reach 3R: 15" Outlet Pipe Avg. Flow Depth=0.61' Max Vel=12.71 fps Inflow=7.64 cfs 0.786 af
15.0" Round Pipe n=0.010 L=24.0' S=0.0350 '/' Capacity=15.71 cfs Outflow=7.63 cfs 0.786 af

Pond 1P: Bio-Filter Peak Elev=982.21' Storage=0.287 af Inflow=8.16 cfs 0.410 af
Primary=0.27 cfs 0.189 af Secondary=0.00 cfs 0.000 af Outflow=0.27 cfs 0.189 af

Pond NE: NE infil Peak Elev=958.01' Storage=0.008 af Inflow=6.76 cfs 0.565 af
Discarded=5.56 cfs 0.565 af Primary=0.00 cfs 0.000 af Outflow=5.56 cfs 0.565 af

Pond NW: NW infil Peak Elev=951.10' Storage=0.160 af Inflow=12.66 cfs 1.240 af
Discarded=6.05 cfs 1.242 af Primary=0.00 cfs 0.000 af Outflow=6.05 cfs 1.242 af

Pond S: South Infil Peak Elev=954.00' Storage=0.001 af Inflow=4.02 cfs 0.399 af
Discarded=3.85 cfs 0.399 af Primary=0.00 cfs 0.000 af Outflow=3.85 cfs 0.399 af

Link 1L: Total Runoff - Appleton Storage Inflow=7.67 cfs 0.791 af
Primary=7.67 cfs 0.791 af

Total Runoff Area = 63.982 ac Runoff Volume = 2.425 af Average Runoff Depth = 0.45"
92.65% Pervious = 59.279 ac 7.35% Impervious = 4.704 ac

Summary for Subcatchment 1S: Additional off-site run-on_rasmith

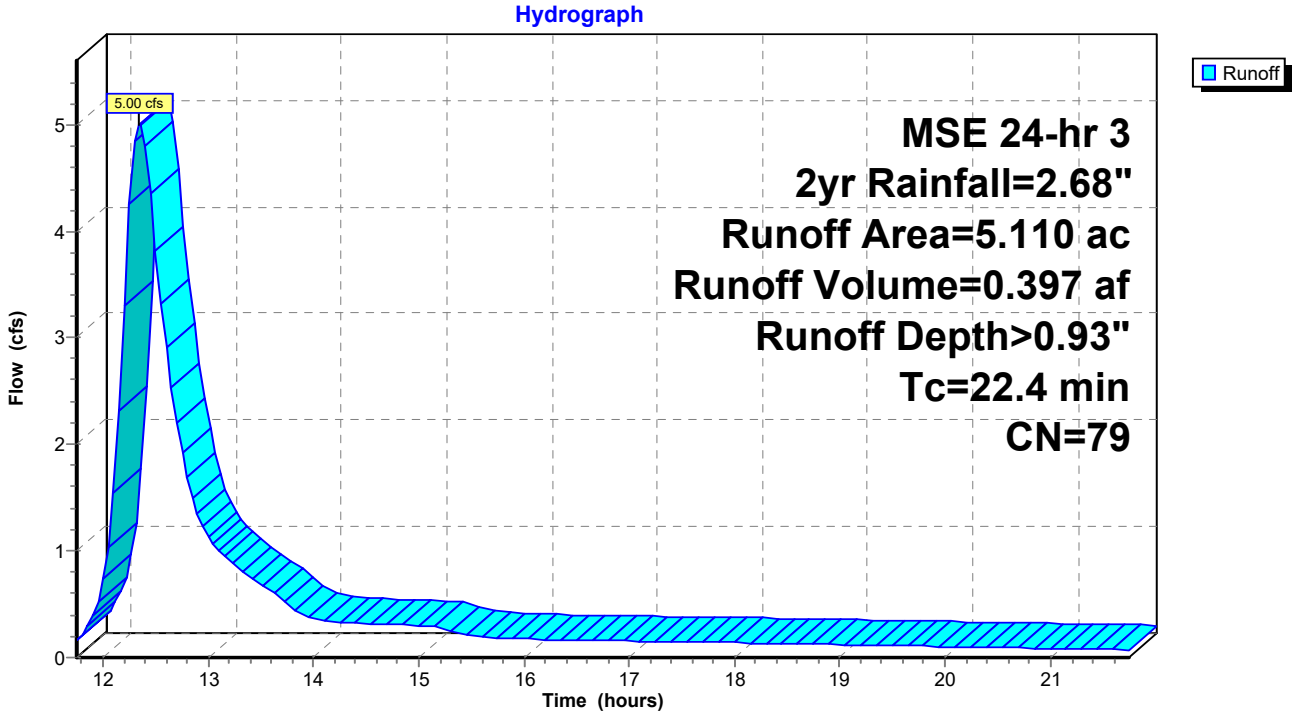
Runoff = 5.00 cfs @ 12.35 hrs, Volume= 0.397 af, Depth> 0.93"
Routed to Reach 2R : 15" Pipe

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 11.75-21.75 hrs, dt= 0.05 hrs
MSE 24-hr 3 2yr Rainfall=2.68"

Area (ac)	CN	Description
3.120	78	Row crops, straight row, Good, HSG B
0.540	89	Paved roads w/open ditches, 50% imp, HSG B
1.450	78	Row crops, straight row, Good, HSG B
5.110	79	Weighted Average
4.840		94.72% Pervious Area
0.270		5.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.4					**Direct Entry, Per 12/29/21 SWMP**

Subcatchment 1S: Additional off-site run-on_rasmith



Summary for Subcatchment 5S: To Bio-Filter

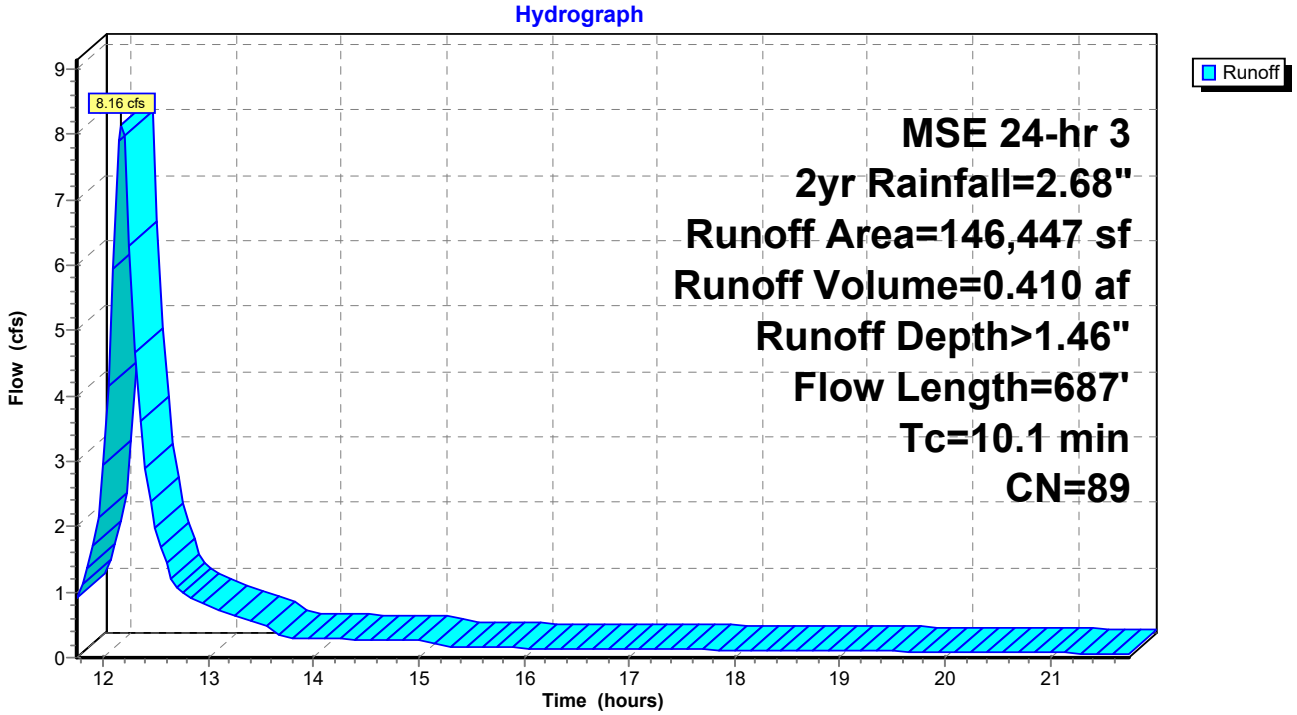
Runoff = 8.16 cfs @ 12.18 hrs, Volume= 0.410 af, Depth> 1.46"
Routed to Pond 1P : Bio-Filter

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 11.75-21.75 hrs, dt= 0.05 hrs
MSE 24-hr 3 2yr Rainfall=2.68"

	Area (sf)	CN	Description
*	22,960	98	Proposed Buildings
*	89,578	98	Paved parking
	33,909	61	>75% Grass cover, Good, HSG B
	146,447	89	Weighted Average
	33,909		23.15% Pervious Area
	112,538		76.85% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.6	54	0.0500	0.14		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.65"
2.9	260	0.0100	1.50		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
0.6	373	0.0270	10.86	65.14	**Channel Flow,** Area= 6.0 sf Perim= 10.0' r= 0.60' n= 0.016
10.1	687	Total			

Subcatchment 5S: To Bio-Filter



Summary for Subcatchment 6S: Uncontrolled

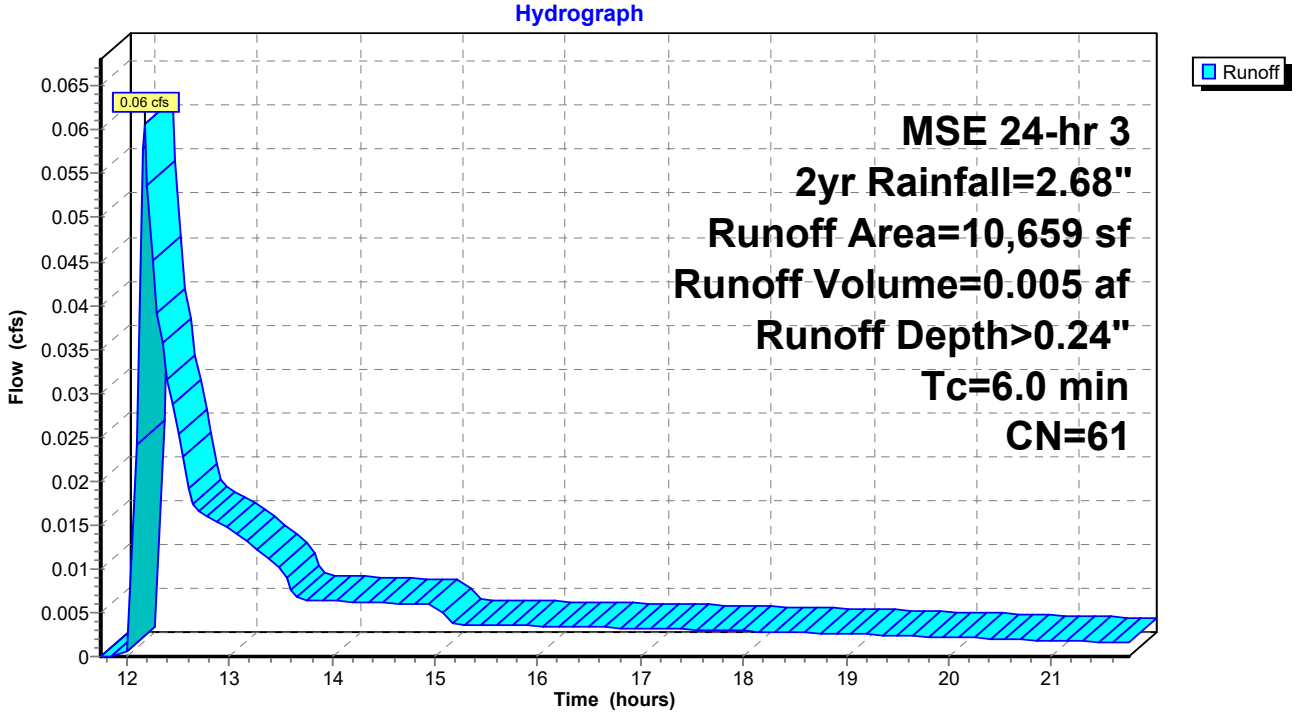
Runoff = 0.06 cfs @ 12.17 hrs, Volume= 0.005 af, Depth> 0.24"
Routed to Link 1L : Total Runoff - Appleton Storage

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 11.75-21.75 hrs, dt= 0.05 hrs
MSE 24-hr 3 2yr Rainfall=2.68"

Area (sf)	CN	Description
7,671	61	>75% Grass cover, Good, HSG B
2,988	61	>75% Grass cover, Good, HSG B
10,659	61	Weighted Average
10,659		100.00% Pervious Area

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

Subcatchment 6S: Uncontrolled



Summary for Subcatchment 7S: Offsite runon.

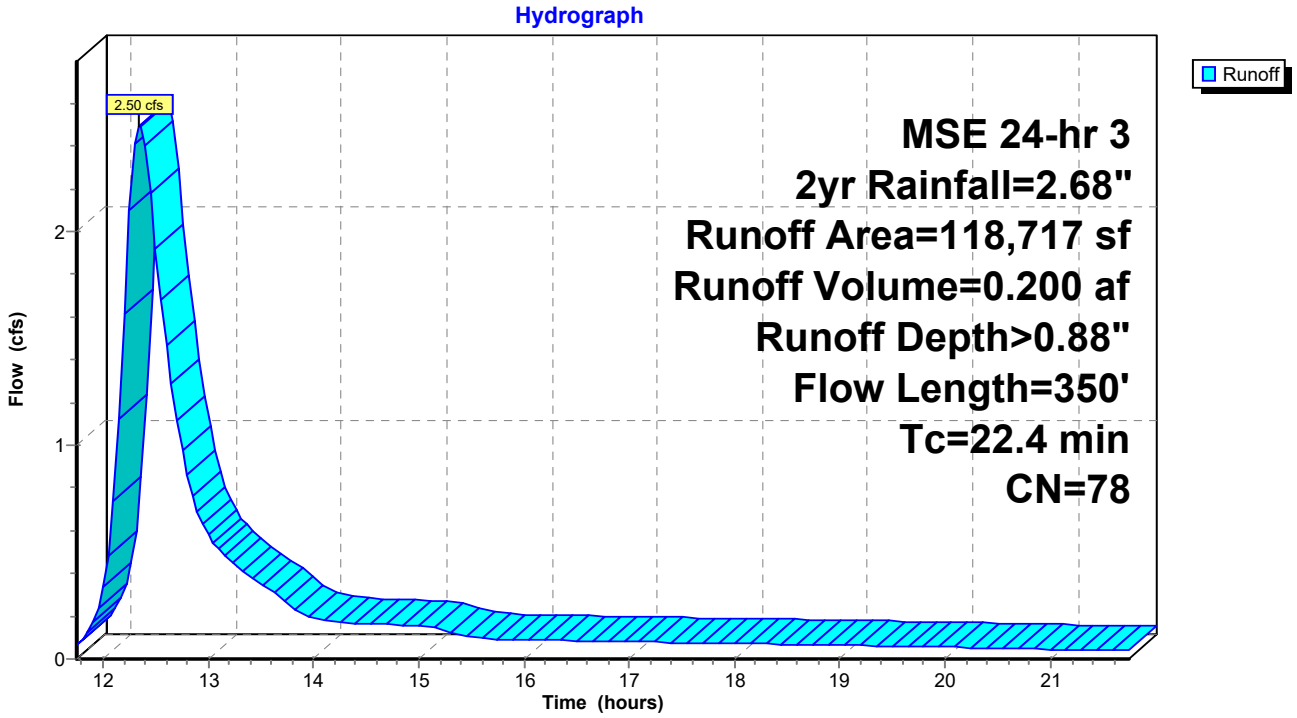
Runoff = 2.50 cfs @ 12.35 hrs, Volume= 0.200 af, Depth> 0.88"
Routed to Reach 2R : 15" Pipe

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 11.75-21.75 hrs, dt= 0.05 hrs
MSE 24-hr 3 2yr Rainfall=2.68"

Area (sf)	CN	Description
118,717	78	Row crops, straight row, Good, HSG B
118,717		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.7	300	0.0400	0.23		**Sheet Flow,** Cultivated: Residue>20% n= 0.170 P2= 2.65"
0.7	50	0.0200	1.27		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
22.4	350	Total			

Subcatchment 7S: Offsite runon.



Summary for Subcatchment NE1: P3

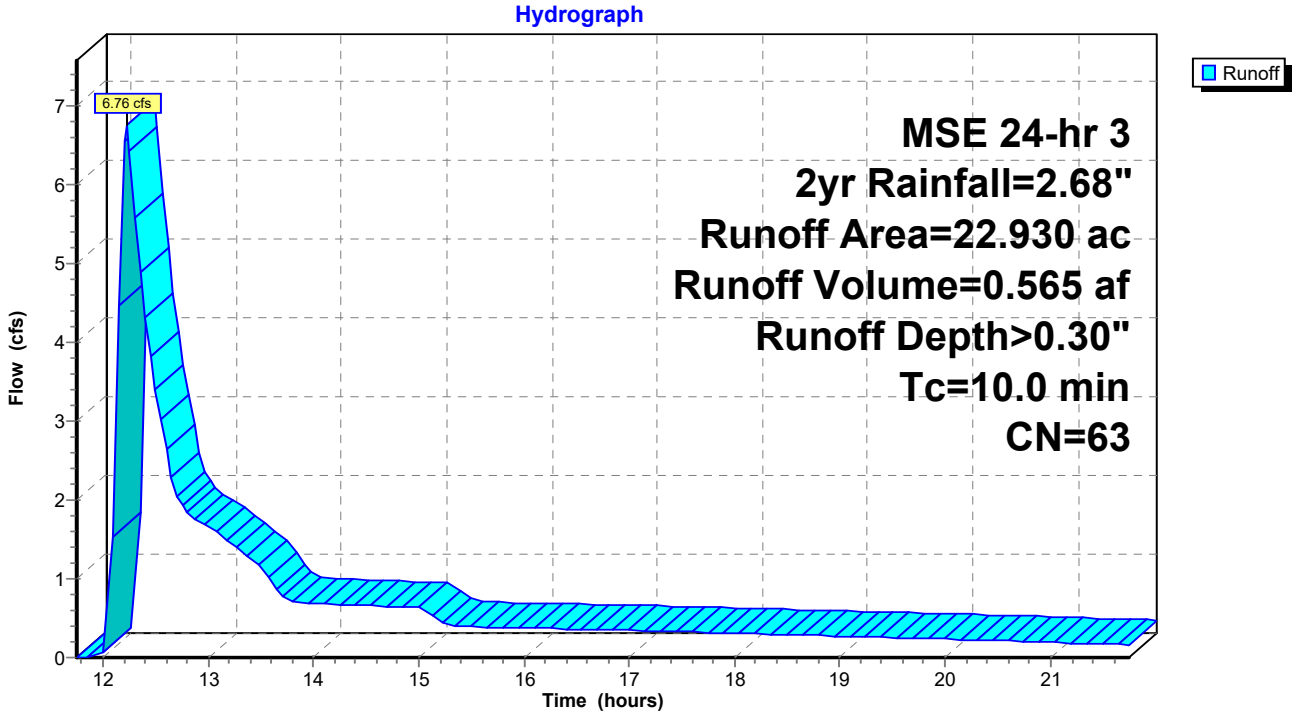
Runoff = 6.76 cfs @ 12.22 hrs, Volume= 0.565 af, Depth> 0.30"
Routed to Pond NE : NE infil

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 11.75-21.75 hrs, dt= 0.05 hrs
MSE 24-hr 3 2yr Rainfall=2.68"

Area (ac)	CN	Description
4.610	60	Woods, Fair, HSG B
1.530	98	Water Surface, HSG B
16.790	61	>75% Grass cover, Good, HSG B
22.930	63	Weighted Average
21.400		93.33% Pervious Area
1.530		6.67% Impervious Area

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

Subcatchment NE1: P3



Summary for Subcatchment NW1: P2

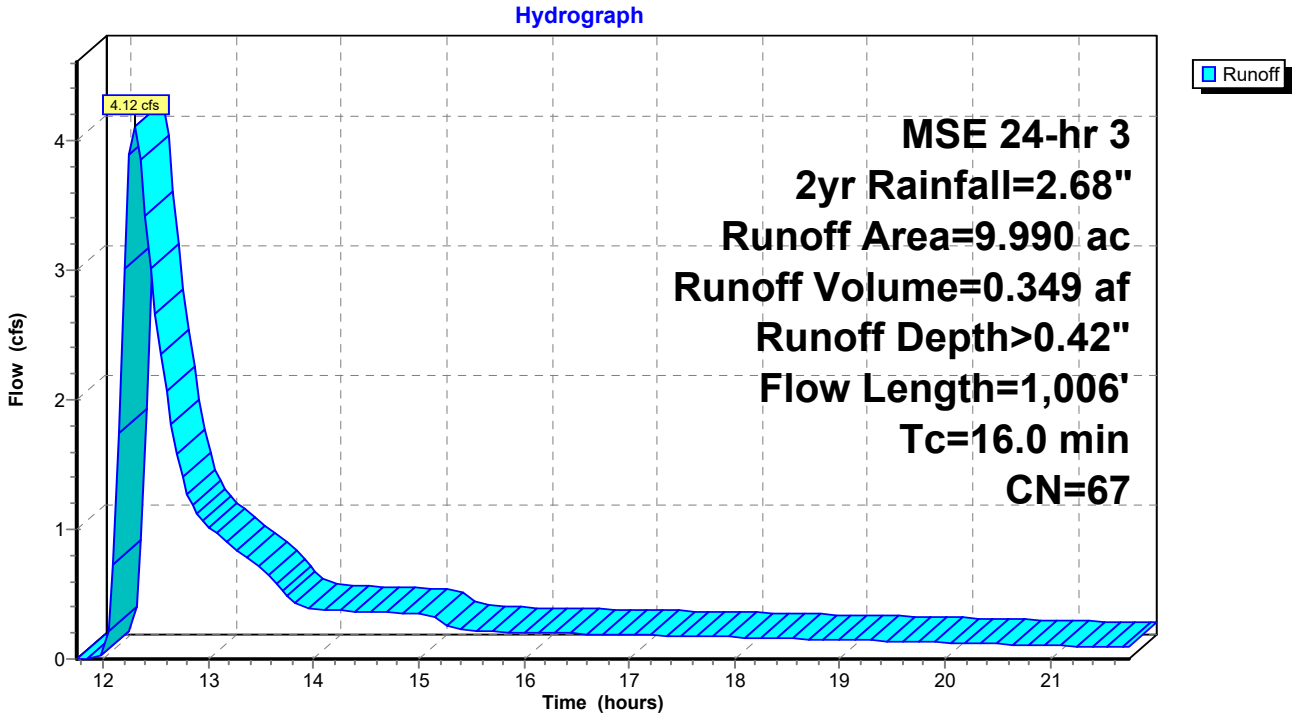
Runoff = 4.12 cfs @ 12.30 hrs, Volume= 0.349 af, Depth> 0.42"
Routed to Pond NW : NW infil

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 11.75-21.75 hrs, dt= 0.05 hrs
MSE 24-hr 3 2yr Rainfall=2.68"

Area (ac)	CN	Description
0.640	89	Paved roads w/open ditches, 50% imp, HSG B
1.250	98	Water Surface, 0% imp, HSG B
8.100	61	>75% Grass cover, Good, HSG B
9.990	67	Weighted Average
9.670		96.80% Pervious Area
0.320		3.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	150	0.0250	0.18		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.65"
0.9	123	0.0250	2.37		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
1.5	733	0.0450	8.08	20.61	**Trap/Vee/Rect Channel Flow,** Bot.W=5.00' D=0.50' Z= 0.2 '/' Top.W=5.20' n= 0.022 Earth, clean & straight
16.0	1,006	Total			

Subcatchment NW1: P2



Summary for Subcatchment NW2: P2-A

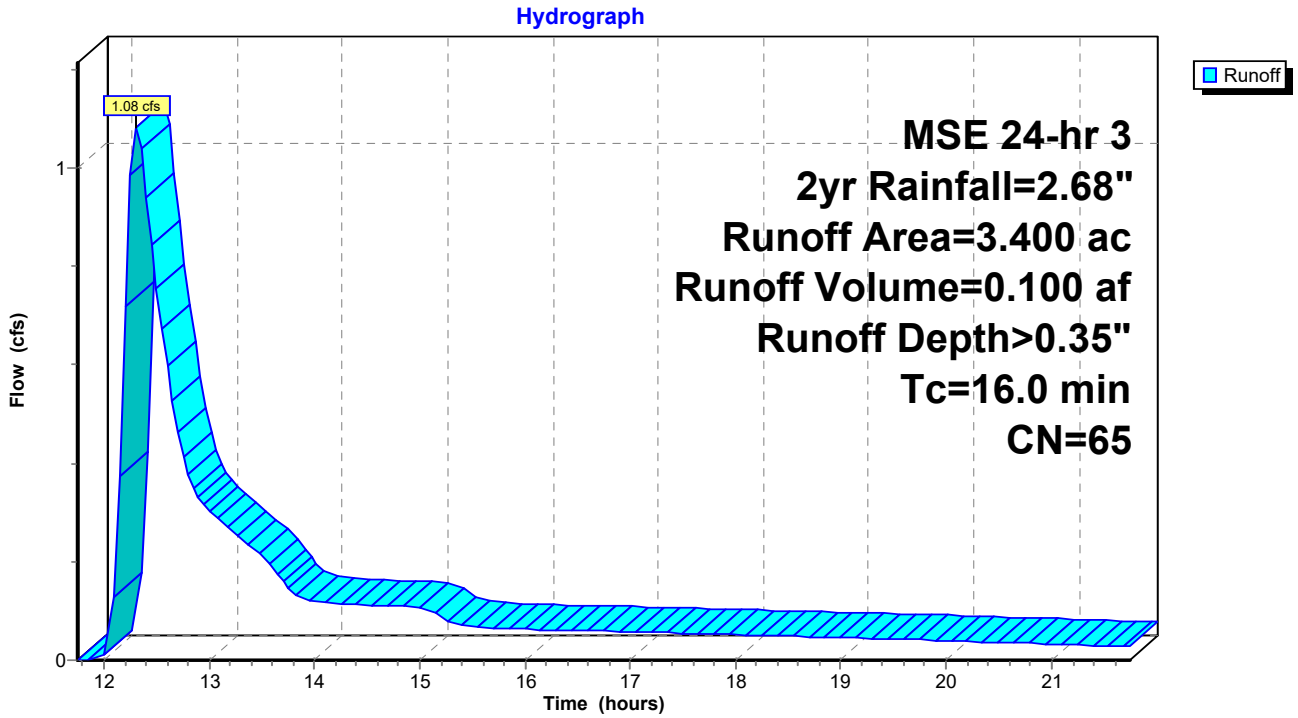
Runoff = 1.08 cfs @ 12.31 hrs, Volume= 0.100 af, Depth> 0.35"
Routed to Pond NW : NW infil

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 11.75-21.75 hrs, dt= 0.05 hrs
MSE 24-hr 3 2yr Rainfall=2.68"

Area (ac)	CN	Description
0.000	89	Paved roads w/open ditches, 50% imp, HSG B
0.370	98	Water Surface, 0% imp, HSG B
3.030	61	>75% Grass cover, Good, HSG B
3.400	65	Weighted Average
3.400		100.00% Pervious Area

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

Subcatchment NW2: P2-A



Summary for Subcatchment S1: P1

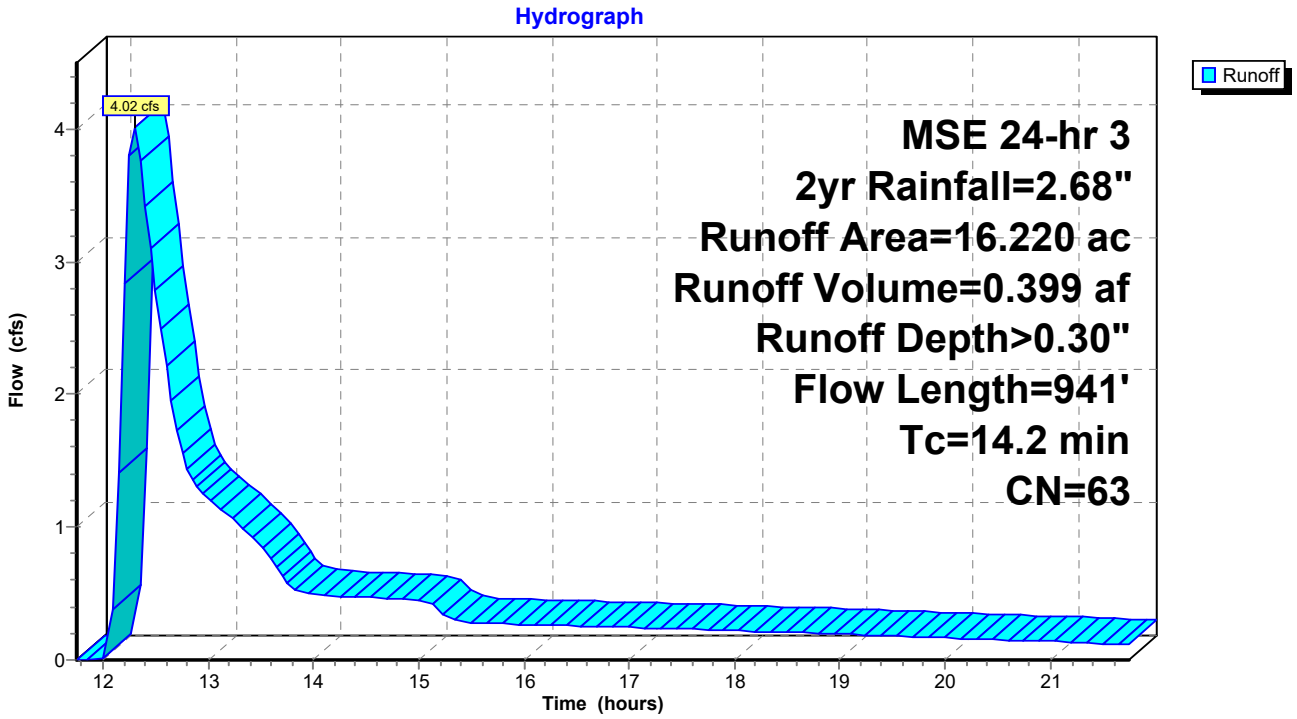
Runoff = 4.02 cfs @ 12.30 hrs, Volume= 0.399 af, Depth> 0.30"
Routed to Pond S : South Infil

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 11.75-21.75 hrs, dt= 0.05 hrs
MSE 24-hr 3 2yr Rainfall=2.68"

Area (ac)	CN	Description
15.150	61	>75% Grass cover, Good, HSG B
1.070	98	Water Surface, 0% imp, HSG B
16.220	63	Weighted Average
16.220		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.3	150	0.0500	0.24		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.65"
0.3	85	0.1200	5.20		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
3.6	706	0.0510	3.24	0.65	**Trap/Vee/Rect Channel Flow,** Bot.W=0.00' D=1.00' Z= 0.2 '/' Top.W=0.40' n= 0.022 Earth, clean & straight
14.2	941	Total			

Subcatchment S1: P1



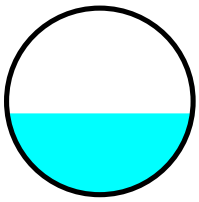
Summary for Reach 2R: 15" Pipe

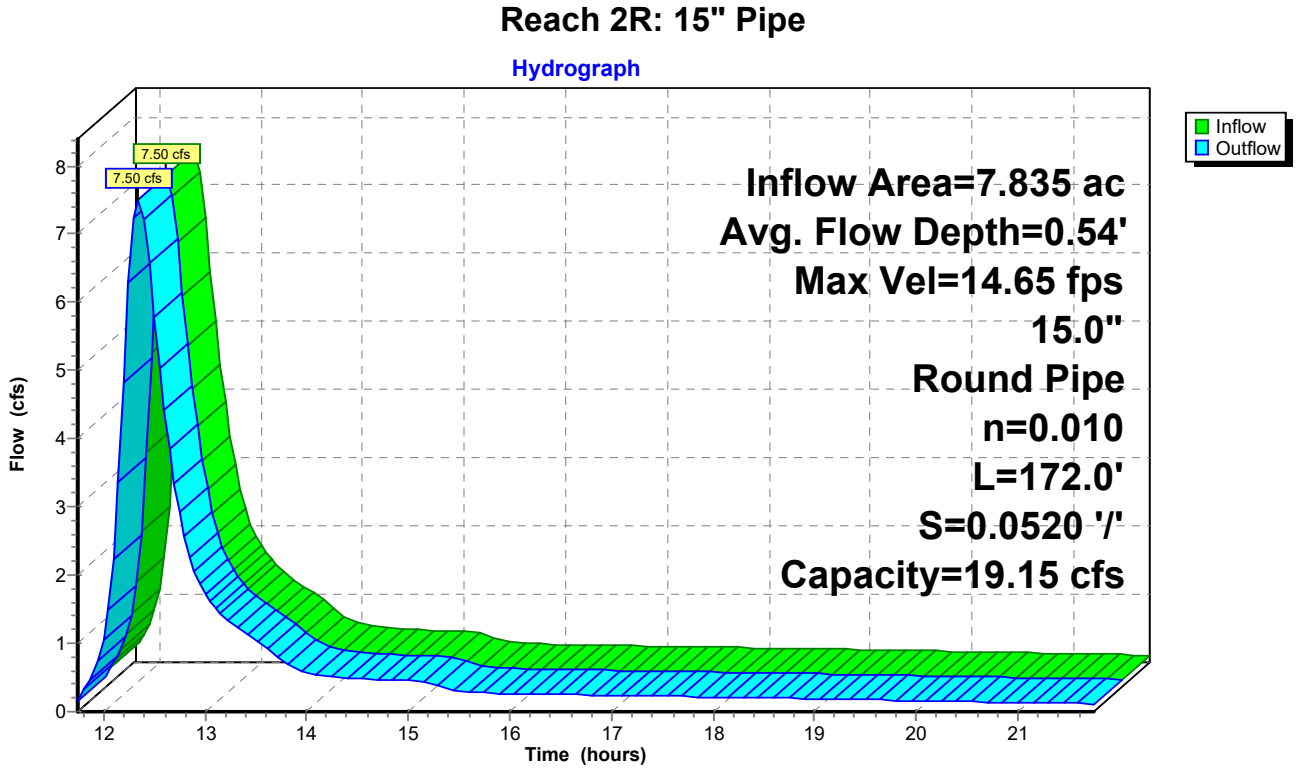
Inflow Area = 7.835 ac, 3.45% Impervious, Inflow Depth > 0.91" for 2yr event
Inflow = 7.50 cfs @ 12.35 hrs, Volume= 0.597 af
Outflow = 7.50 cfs @ 12.35 hrs, Volume= 0.597 af, Atten= 0%, Lag= 0.1 min
Routed to Reach 3R : 15" Outlet Pipe

Routing by Dyn-Stor-Ind method, Time Span= 11.75-21.75 hrs, dt= 0.05 hrs
Max. Velocity= 14.65 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 6.31 fps, Avg. Travel Time= 0.5 min

Peak Storage= 88 cf @ 12.35 hrs
Average Depth at Peak Storage= 0.54' , Surface Width= 1.24'
Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 19.15 cfs

15.0" Round Pipe
n= 0.010 PVC, smooth interior
Length= 172.0' Slope= 0.0520 '/'
Inlet Invert= 983.94', Outlet Invert= 975.00'





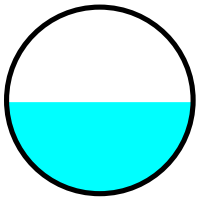
Summary for Reach 3R: 15" Outlet Pipe

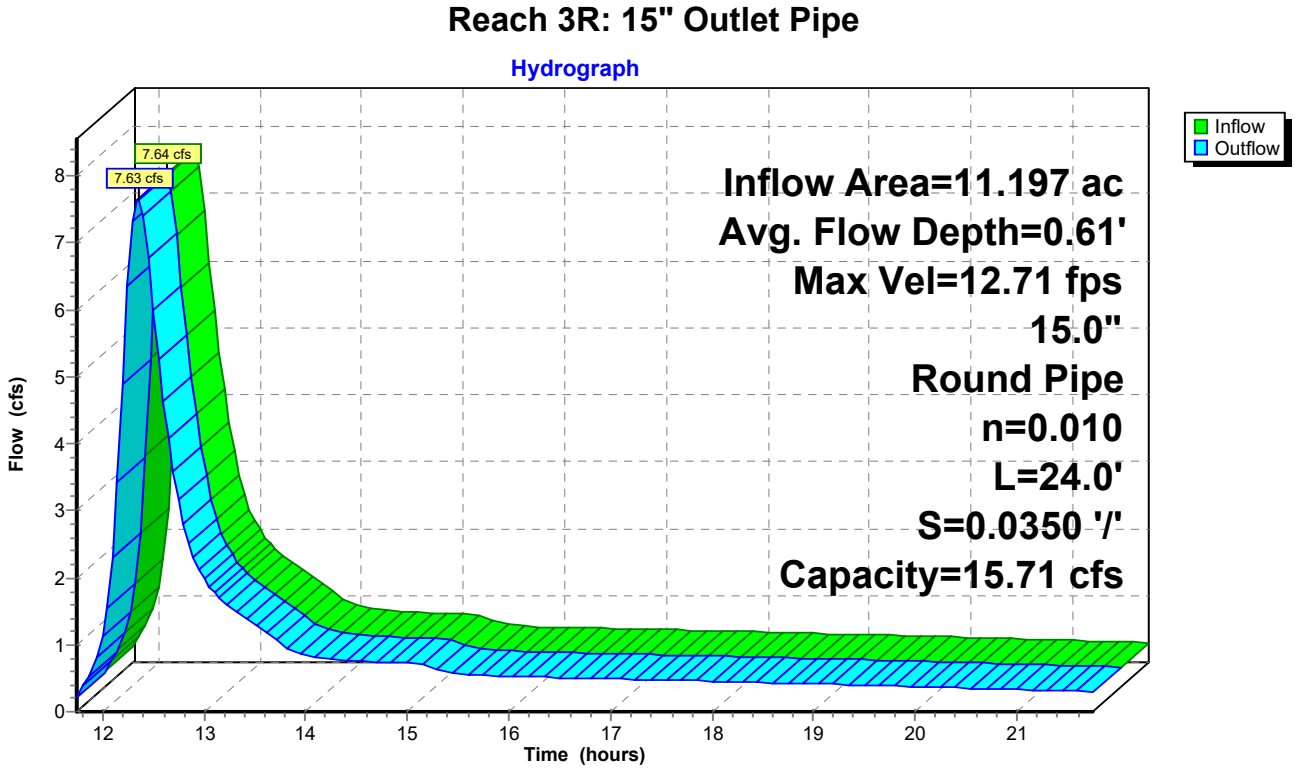
Inflow Area = 11.197 ac, 25.48% Impervious, Inflow Depth > 0.84" for 2yr event
Inflow = 7.64 cfs @ 12.35 hrs, Volume= 0.786 af
Outflow = 7.63 cfs @ 12.35 hrs, Volume= 0.786 af, Atten= 0%, Lag= 0.0 min
Routed to Link 1L : Total Runoff - Appleton Storage

Routing by Dyn-Stor-Ind method, Time Span= 11.75-21.75 hrs, dt= 0.05 hrs
Max. Velocity= 12.71 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 6.42 fps, Avg. Travel Time= 0.1 min

Peak Storage= 14 cf @ 12.35 hrs
Average Depth at Peak Storage= 0.61' , Surface Width= 1.25'
Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 15.71 cfs

15.0" Round Pipe
n= 0.010 PVC, smooth interior
Length= 24.0' Slope= 0.0350 '/'
Inlet Invert= 974.84', Outlet Invert= 974.00'





Summary for Pond 1P: Bio-Filter

Inflow Area = 3.362 ac, 76.85% Impervious, Inflow Depth > 1.46" for 2yr event
Inflow = 8.16 cfs @ 12.18 hrs, Volume= 0.410 af
Outflow = 0.27 cfs @ 14.75 hrs, Volume= 0.189 af, Atten= 97%, Lag= 154.2 min
Primary = 0.27 cfs @ 14.75 hrs, Volume= 0.189 af
Routed to Reach 3R : 15" Outlet Pipe
Secondary = 0.00 cfs @ 11.75 hrs, Volume= 0.000 af
Routed to Link 1L : Total Runoff - Appleton Storage

Routing by Dyn-Stor-Ind method, Time Span= 11.75-21.75 hrs, dt= 0.05 hrs
Peak Elev= 982.21' @ 14.75 hrs Surf.Area= 0.259 ac Storage= 0.287 af

Plug-Flow detention time= 282.1 min calculated for 0.187 af (46% of inflow)
Center-of-Mass det. time= 204.7 min (1,006.0 - 801.3)

Volume	Invert	Avail.Storage	Storage Description
#1	977.00'	0.001 af	**Custom Stage Data (Prismatic)** Listed below (Recalc) 0.240 af Overall x 0.3% Voids
#2	980.00'	0.962 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)
		0.963 af	Total Available Storage

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
977.00	0.080	0.000	0.000
980.00	0.080	0.240	0.240

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
980.00	0.080	0.000	0.000
985.00	0.305	0.962	0.962

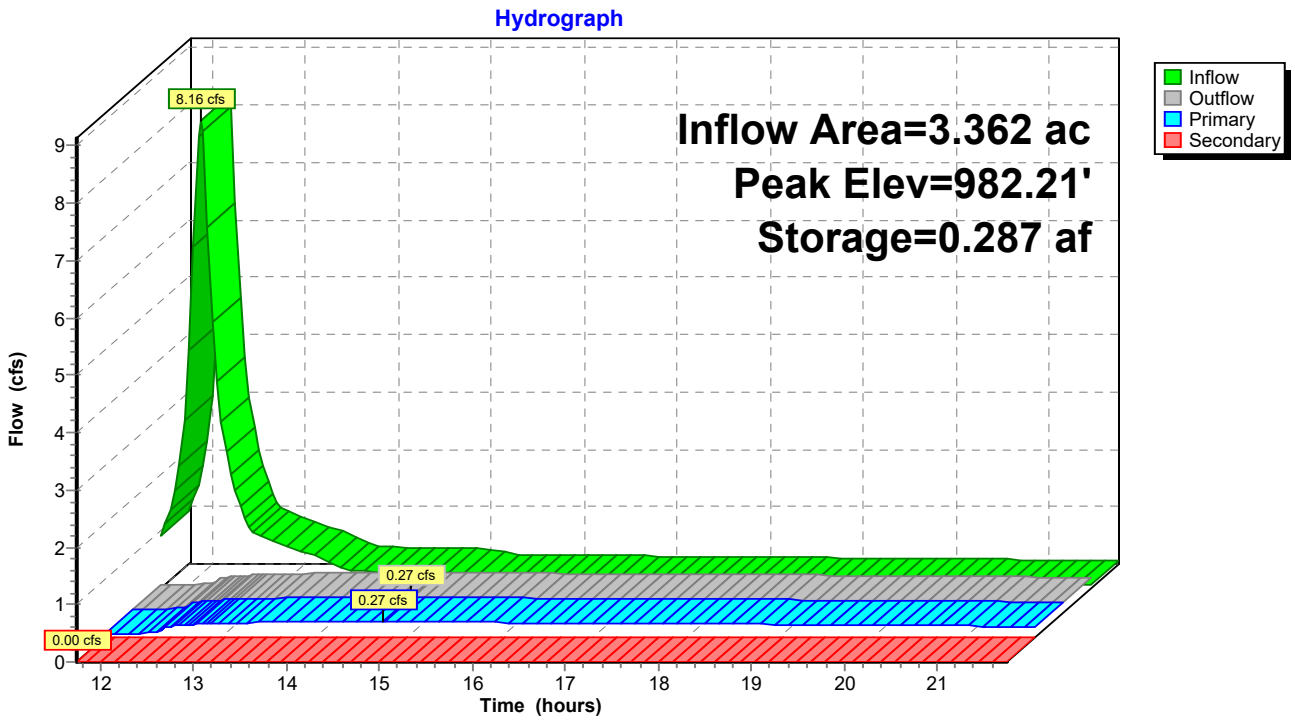
Device	Routing	Invert	Outlet Devices
#1	Primary	974.91'	**15.0" Round 15" Round Culvert** L= 2.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 974.91' / 974.84' S= 0.0350 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 1.23 sf
#2	Device 1	977.00'	**1.2" Vert. 1.2" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 2	977.00'	**6.0" Round 6.0" Round Culvert** L= 125.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 977.00' / 977.00' S= 0.0000 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.20 sf
#4	Device 3	977.00'	**3.940 in/hr 3.940 in/hr Exfiltration over Surface Area over Surface area** Conductivity to Groundwater Elevation = 965.00'
#5	Device 1	981.50'	**3.0" Vert. 3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#6	Device 1	982.65'	**36.0" Horiz. 36.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#7	Secondary	984.00'	**40.0' long x 5.0' breadth 40.0' long x 5.0' breadth Broad-Crested Rectangular** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00

2.50 3.00 3.50 4.00 4.50 5.00 5.50
Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65
2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=0.27 cfs @ 14.75 hrs HW=982.21' TW=975.02' (Dynamic Tailwater)
- **1=15" Round Culvert** (Passes 0.27 cfs of 12.05 cfs potential flow)
  - **2=1.2" Vert. Orifice/Grate** (Orifice Controls 0.09 cfs @ 10.94 fps)
    - **3=6.0" Round Culvert** (Passes 0.09 cfs of 0.68 cfs potential flow)
      - **4=3.940 in/hr Exfiltration over Surface Area** (Passes 0.09 cfs of 1.24 cfs potential flow)
  - **5=3.0" Vert. Orifice/Grate** (Orifice Controls 0.18 cfs @ 3.68 fps)
  - **6=36.0" Horiz. Orifice/Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 11.75 hrs HW=980.01' TW=0.00' (Dynamic Tailwater)
- **7=40.0' long x 5.0' breadth Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1P: Bio-Filter



Summary for Pond NE: NE infil

Inflow Area =	22.930 ac,	6.67% Impervious,	Inflow Depth >	0.30"	for 2yr event
Inflow =	6.76 cfs @	12.22 hrs,	Volume=	0.565 af	
Outflow =	5.56 cfs @	12.30 hrs,	Volume=	0.565 af,	Atten= 18%, Lag= 4.9 min
Discarded =	5.56 cfs @	12.30 hrs,	Volume=	0.565 af	
Primary =	0.00 cfs @	11.75 hrs,	Volume=	0.000 af	

Routing by Dyn-Stor-Ind method, Time Span= 11.75-21.75 hrs, dt= 0.05 hrs
Peak Elev= 958.01' @ 12.30 hrs Surf.Area= 1.530 ac Storage= 0.008 af

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= (not calculated: outflow precedes inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	958.00'	3.230 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

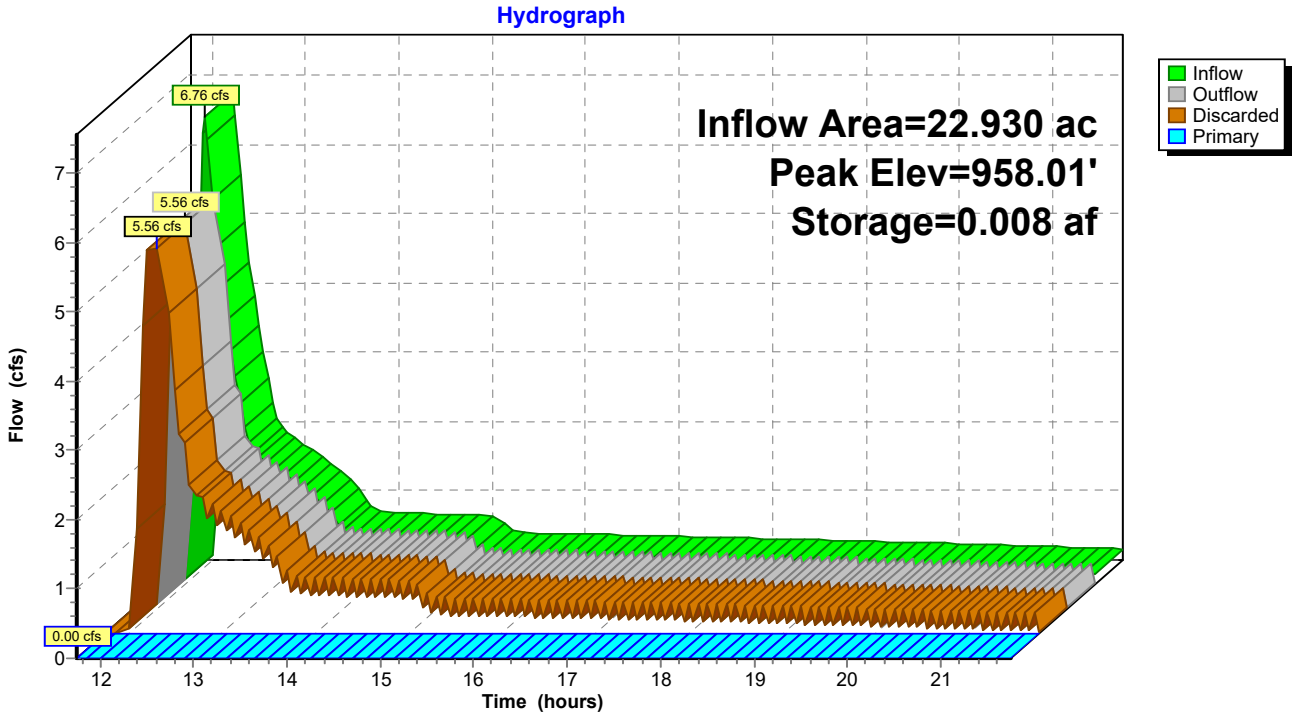
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
958.00	1.530	0.000	0.000
960.00	1.700	3.230	3.230

Device	Routing	Invert	Outlet Devices
#1	Discarded	958.00'	**3.600 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 942.00'
#2	Primary	959.75'	**25.0' long + 0.3 '/' SideZ x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=5.56 cfs @ 12.30 hrs HW=958.00' (Free Discharge)
└─**1=Exfiltration** (Controls 5.56 cfs)

Primary OutFlow Max=0.00 cfs @ 11.75 hrs HW=958.00' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond NE: NE infil



Summary for Pond NW: NW infil

Inflow Area = 24.832 ac, 12.78% Impervious, Inflow Depth > 0.60" for 2yr event
Inflow = 12.66 cfs @ 12.33 hrs, Volume= 1.240 af
Outflow = 6.05 cfs @ 12.67 hrs, Volume= 1.242 af, Atten= 52%, Lag= 20.9 min
Discarded = 6.05 cfs @ 12.67 hrs, Volume= 1.242 af
Primary = 0.00 cfs @ 11.75 hrs, Volume= 0.000 af
Routed to nonexistent node 3P

Routing by Dyn-Stor-Ind method, Time Span= 11.75-21.75 hrs, dt= 0.05 hrs
Peak Elev= 951.10' @ 12.67 hrs Surf.Area= 1.650 ac Storage= 0.160 af

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 6.4 min (870.6 - 864.2)

Volume	Invert	Avail.Storage	Storage Description
#1	951.00'	2.630 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)
#2	951.00'	0.860 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)
		3.490 af	Total Available Storage

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
951.00	1.250	0.000	0.000
953.00	1.380	2.630	2.630

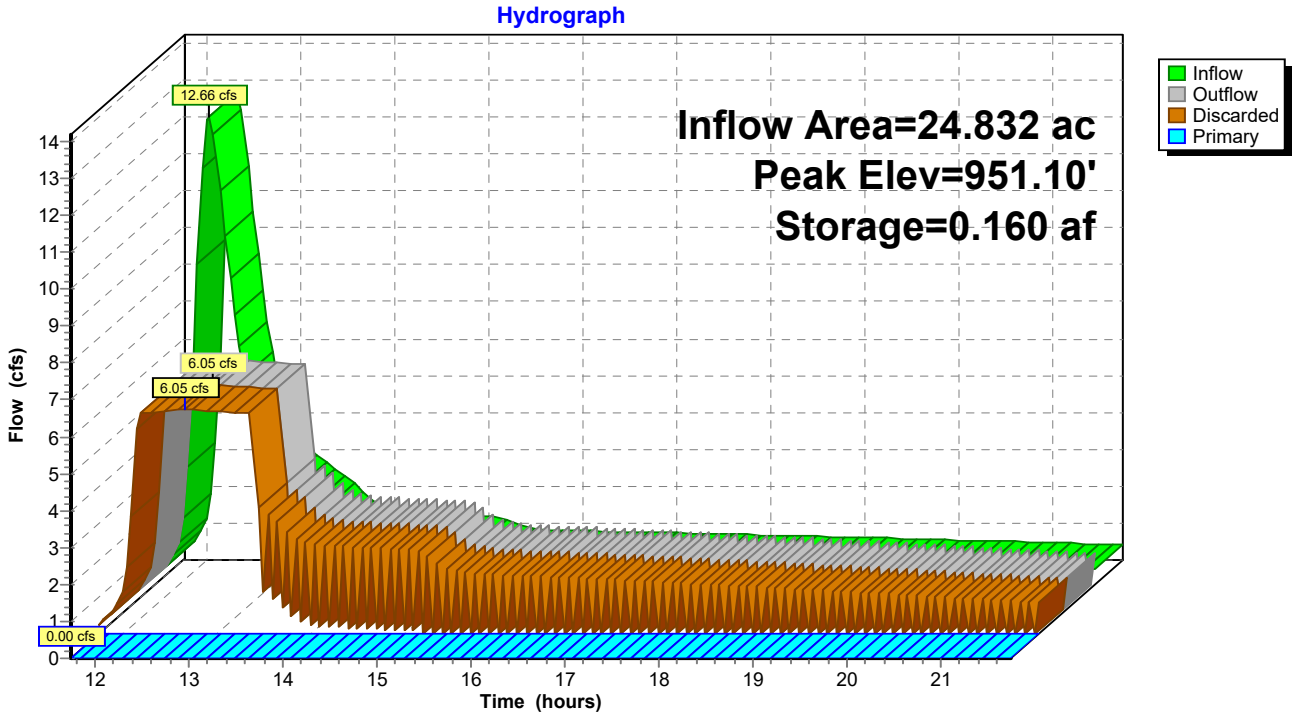
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
951.00	0.390	0.000	0.000
953.00	0.470	0.860	0.860

Device	Routing	Invert	Outlet Devices
#1	Discarded	951.00'	**3.600 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 942.00'
#2	Primary	952.75'	**20.0' long + 0.3 '/' SideZ x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=6.05 cfs @ 12.67 hrs HW=951.10' (Free Discharge)
└**1=Exfiltration** (Controls 6.05 cfs)

Primary OutFlow Max=0.00 cfs @ 11.75 hrs HW=951.00' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond NW: NW infil



Summary for Pond S: South Infil

Inflow Area = 16.220 ac, 0.00% Impervious, Inflow Depth > 0.30" for 2yr event
Inflow = 4.02 cfs @ 12.30 hrs, Volume= 0.399 af
Outflow = 3.85 cfs @ 12.33 hrs, Volume= 0.399 af, Atten= 4%, Lag= 1.9 min
Discarded = 3.85 cfs @ 12.33 hrs, Volume= 0.399 af
Primary = 0.00 cfs @ 11.75 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 11.75-21.75 hrs, dt= 0.05 hrs
Peak Elev= 954.00' @ 12.34 hrs Surf.Area= 1.060 ac Storage= 0.001 af

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= (not calculated: outflow precedes inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	954.00'	2.260 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

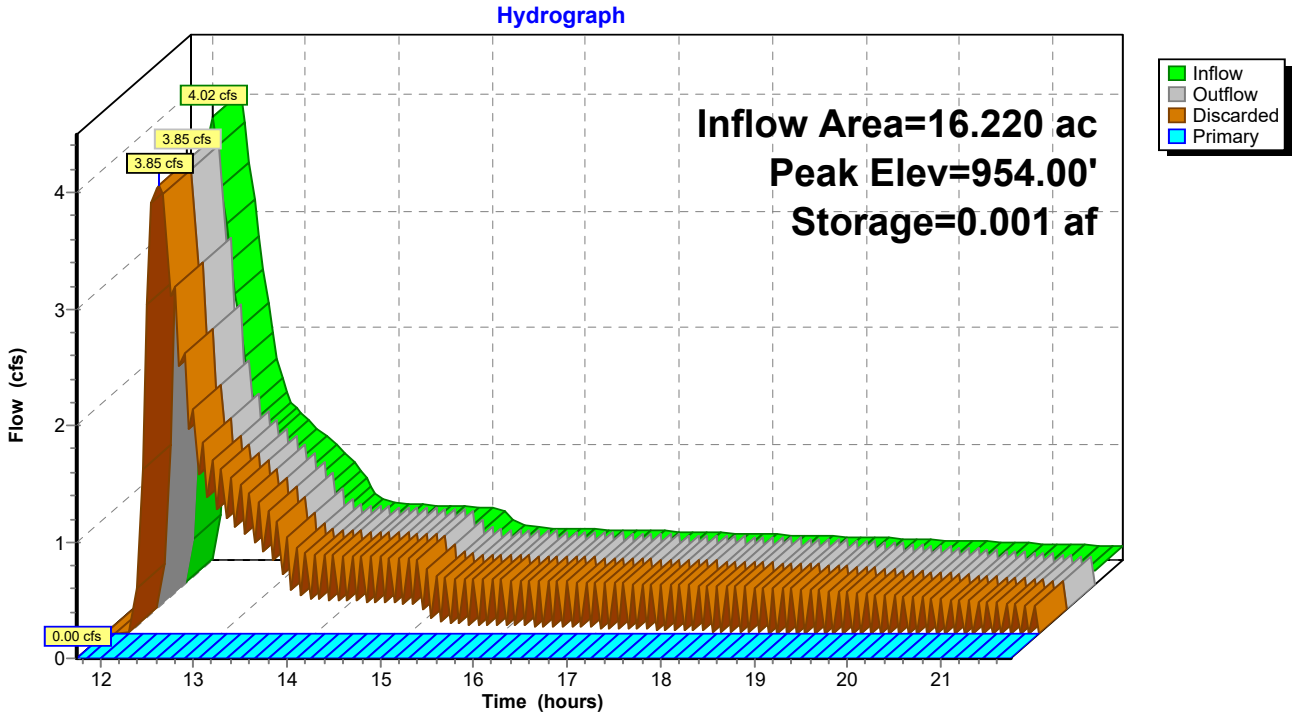
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
954.00	1.060	0.000	0.000
956.00	1.200	2.260	2.260

Device	Routing	Invert	Outlet Devices
#1	Discarded	954.00'	**3.600 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 942.00'
#2	Primary	955.75'	**25.0' long + 0.3 '/' SideZ x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=3.85 cfs @ 12.33 hrs HW=954.00' (Free Discharge)
└─**1=Exfiltration** (Controls 3.85 cfs)

Primary OutFlow Max=0.00 cfs @ 11.75 hrs HW=954.00' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond S: South Infil

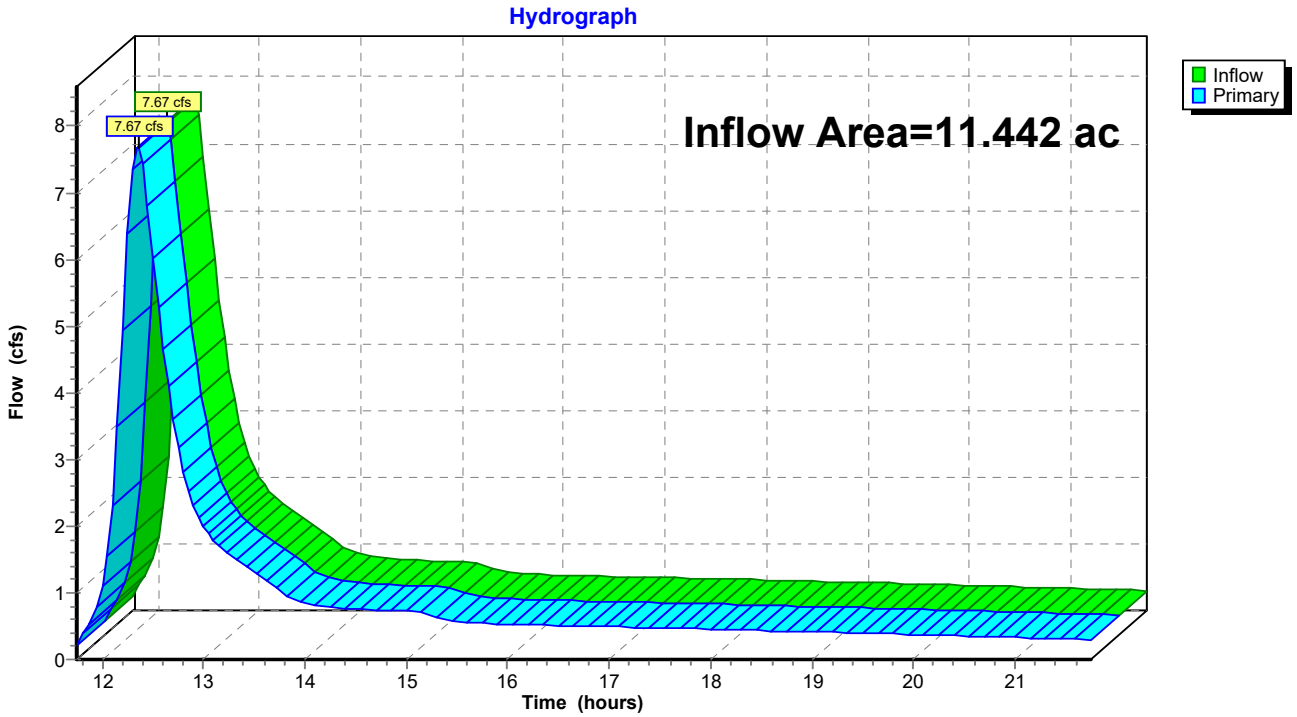


Summary for Link 1L: Total Runoff - Appleton Storage

Inflow Area = 11.442 ac, 24.94% Impervious, Inflow Depth > 0.83" for 2yr event
Inflow = 7.67 cfs @ 12.35 hrs, Volume= 0.791 af
Primary = 7.67 cfs @ 12.35 hrs, Volume= 0.791 af, Atten= 0%, Lag= 0.0 min
Routed to Pond NW : NW infil

Primary outflow = Inflow, Time Span= 11.75-21.75 hrs, dt= 0.05 hrs

Link 1L: Total Runoff - Appleton Storage



Time span=11.75-21.75 hrs, dt=0.05 hrs, 201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: Additional off-site Runoff Area=5.110 ac 5.28% Impervious Runoff Depth>3.02"
Tc=22.4 min CN=79 Runoff=17.51 cfs 1.285 af

Subcatchment5S: To Bio-Filter Runoff Area=146,447 sf 76.85% Impervious Runoff Depth>3.62"
Flow Length=687' Tc=10.1 min CN=89 Runoff=20.73 cfs 1.014 af

Subcatchment6S: Uncontrolled Runoff Area=10,659 sf 0.00% Impervious Runoff Depth>1.64"
Tc=6.0 min CN=61 Runoff=0.73 cfs 0.034 af

Subcatchment7S: Offsite runon. Runoff Area=118,717 sf 0.00% Impervious Runoff Depth>2.94"
Flow Length=350' Tc=22.4 min CN=78 Runoff=9.07 cfs 0.668 af

SubcatchmentNE1: P3 Runoff Area=22.930 ac 6.67% Impervious Runoff Depth>1.79"
Tc=10.0 min CN=63 Runoff=62.92 cfs 3.424 af

SubcatchmentNW1: P2 Runoff Area=9.990 ac 3.20% Impervious Runoff Depth>2.10"
Flow Length=1,006' Tc=16.0 min CN=67 Runoff=26.65 cfs 1.744 af

SubcatchmentNW2: P2-A Runoff Area=3.400 ac 0.00% Impervious Runoff Depth>1.94"
Tc=16.0 min CN=65 Runoff=8.31 cfs 0.551 af

SubcatchmentS1: P1 Runoff Area=16.220 ac 0.00% Impervious Runoff Depth>1.79"
Flow Length=941' Tc=14.2 min CN=63 Runoff=38.09 cfs 2.425 af

Reach 2R: 15" Pipe Avg. Flow Depth=1.25' Max Vel=17.77 fps Inflow=26.57 cfs 1.953 af
15.0" Round Pipe n=0.010 L=172.0' S=0.0520 '/' Capacity=19.15 cfs Outflow=19.45 cfs 1.953 af

Reach 3R: 15" Outlet Pipe Avg. Flow Depth=1.25' Max Vel=14.56 fps Inflow=28.10 cfs 2.637 af
15.0" Round Pipe n=0.010 L=24.0' S=0.0350 '/' Capacity=15.71 cfs Outflow=15.71 cfs 2.637 af

Pond 1P: Bio-Filter Peak Elev=983.08' Storage=0.460 af Inflow=20.73 cfs 1.014 af
Primary=8.96 cfs 0.684 af Secondary=0.00 cfs 0.000 af Outflow=8.96 cfs 0.684 af

Pond NE: NE infil Peak Elev=958.98' Storage=1.542 af Inflow=62.92 cfs 3.424 af
Discarded=6.21 cfs 3.428 af Primary=0.00 cfs 0.000 af Outflow=6.21 cfs 3.428 af

Pond NW: NW infil Peak Elev=952.45' Storage=2.484 af Inflow=51.00 cfs 4.966 af
Discarded=7.50 cfs 4.975 af Primary=0.00 cfs 0.000 af Outflow=7.50 cfs 4.975 af

Pond S: South Infil Peak Elev=954.99' Storage=1.085 af Inflow=38.09 cfs 2.425 af
Discarded=4.43 cfs 2.424 af Primary=0.00 cfs 0.000 af Outflow=4.43 cfs 2.424 af

Link 1L: Total Runoff - Appleton Storage Inflow=16.25 cfs 2.670 af
Primary=16.25 cfs 2.670 af

Total Runoff Area = 63.982 ac Runoff Volume = 11.145 af Average Runoff Depth = 2.09"
92.65% Pervious = 59.279 ac 7.35% Impervious = 4.704 ac

Summary for Subcatchment 1S: Additional off-site run-on_rasmith

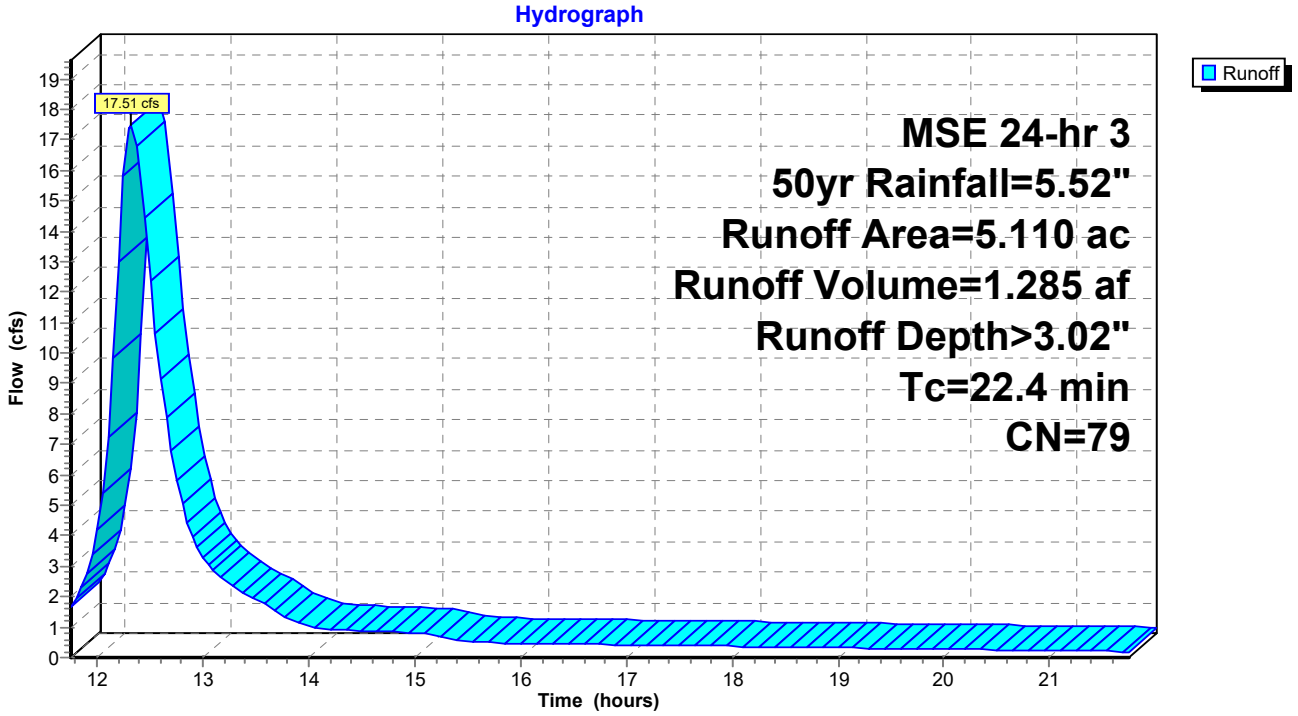
Runoff = 17.51 cfs @ 12.33 hrs, Volume= 1.285 af, Depth> 3.02"
Routed to Reach 2R : 15" Pipe

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 11.75-21.75 hrs, dt= 0.05 hrs
MSE 24-hr 3 50yr Rainfall=5.52"

Area (ac)	CN	Description
3.120	78	Row crops, straight row, Good, HSG B
0.540	89	Paved roads w/open ditches, 50% imp, HSG B
1.450	78	Row crops, straight row, Good, HSG B
5.110	79	Weighted Average
4.840		94.72% Pervious Area
0.270		5.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.4					**Direct Entry, Per 12/29/21 SWMP**

Subcatchment 1S: Additional off-site run-on_rasmith



Summary for Subcatchment 5S: To Bio-Filter

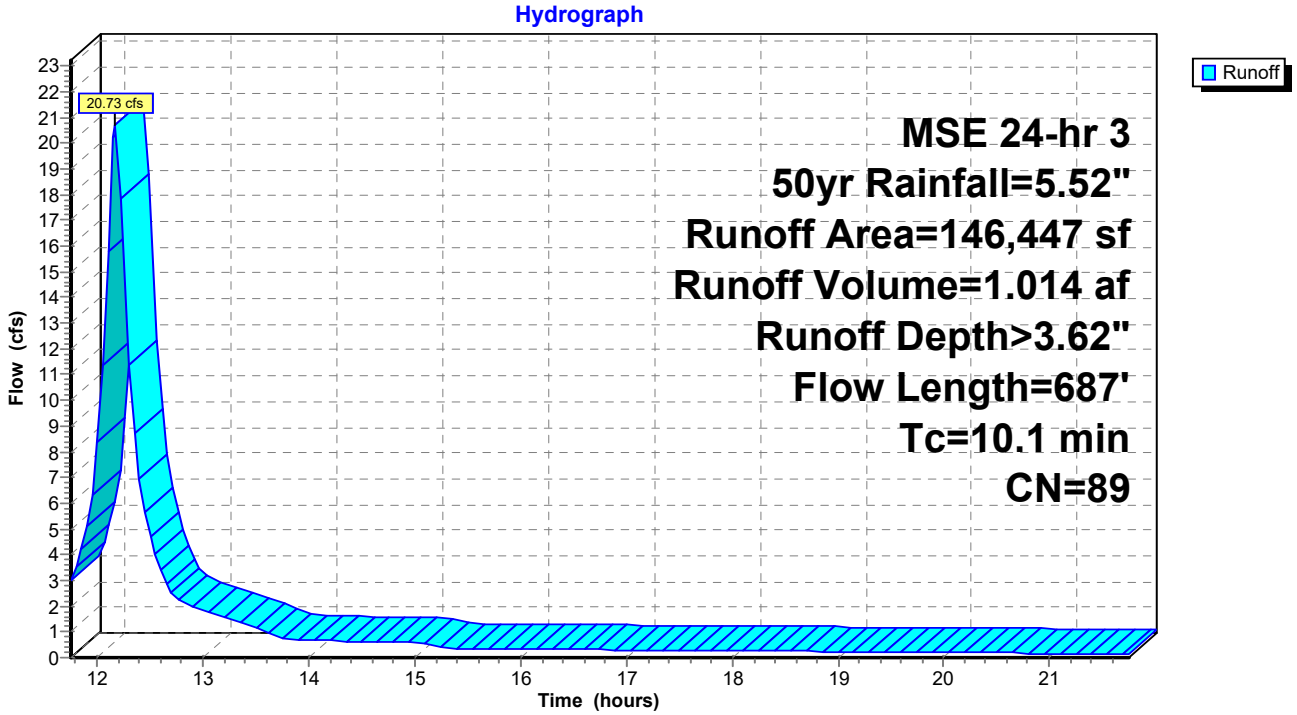
Runoff = 20.73 cfs @ 12.17 hrs, Volume= 1.014 af, Depth> 3.62"
Routed to Pond 1P : Bio-Filter

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 11.75-21.75 hrs, dt= 0.05 hrs
MSE 24-hr 3 50yr Rainfall=5.52"

	Area (sf)	CN	Description
*	22,960	98	Proposed Buildings
*	89,578	98	Paved parking
	33,909	61	>75% Grass cover, Good, HSG B
	146,447	89	Weighted Average
	33,909		23.15% Pervious Area
	112,538		76.85% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.6	54	0.0500	0.14		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.65"
2.9	260	0.0100	1.50		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
0.6	373	0.0270	10.86	65.14	**Channel Flow,** Area= 6.0 sf Perim= 10.0' r= 0.60' n= 0.016
10.1	687	Total			

Subcatchment 5S: To Bio-Filter



Summary for Subcatchment 6S: Uncontrolled

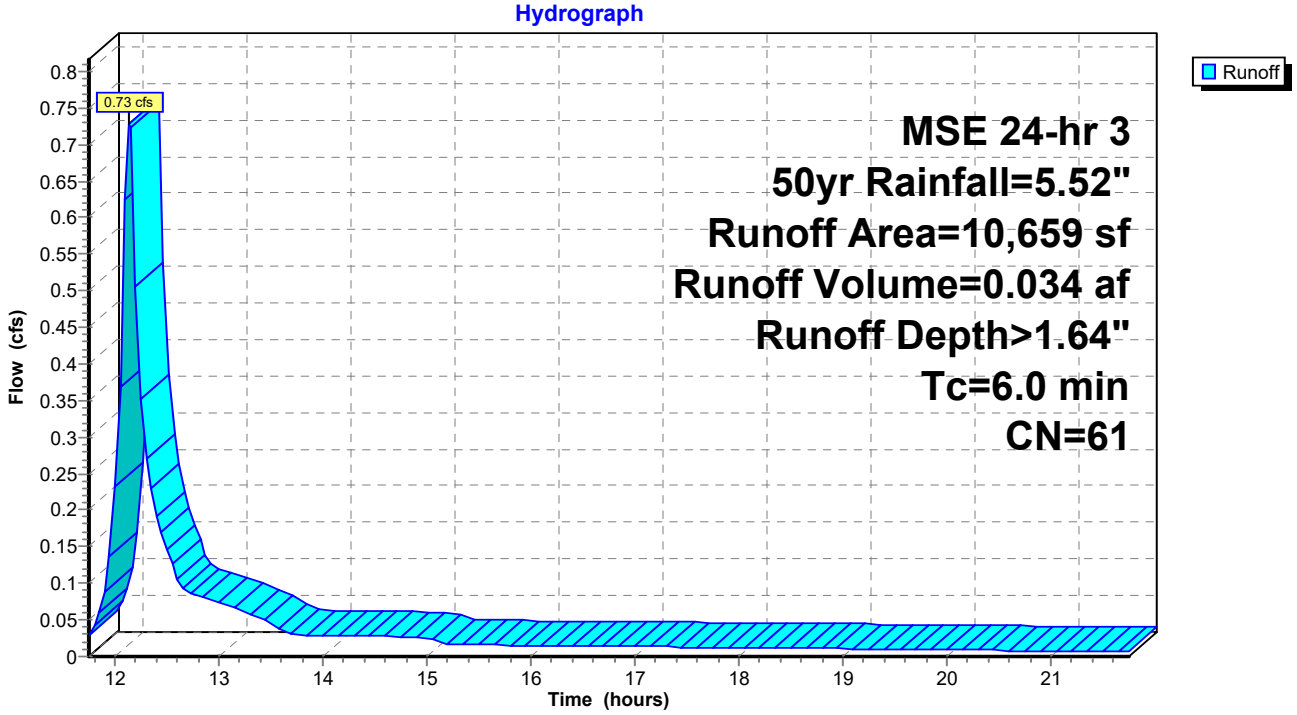
Runoff = 0.73 cfs @ 12.14 hrs, Volume= 0.034 af, Depth> 1.64"
Routed to Link 1L : Total Runoff - Appleton Storage

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 11.75-21.75 hrs, dt= 0.05 hrs
MSE 24-hr 3 50yr Rainfall=5.52"

Area (sf)	CN	Description
7,671	61	>75% Grass cover, Good, HSG B
2,988	61	>75% Grass cover, Good, HSG B
10,659	61	Weighted Average
10,659		100.00% Pervious Area

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

Subcatchment 6S: Uncontrolled



Summary for Subcatchment 7S: Offsite runon.

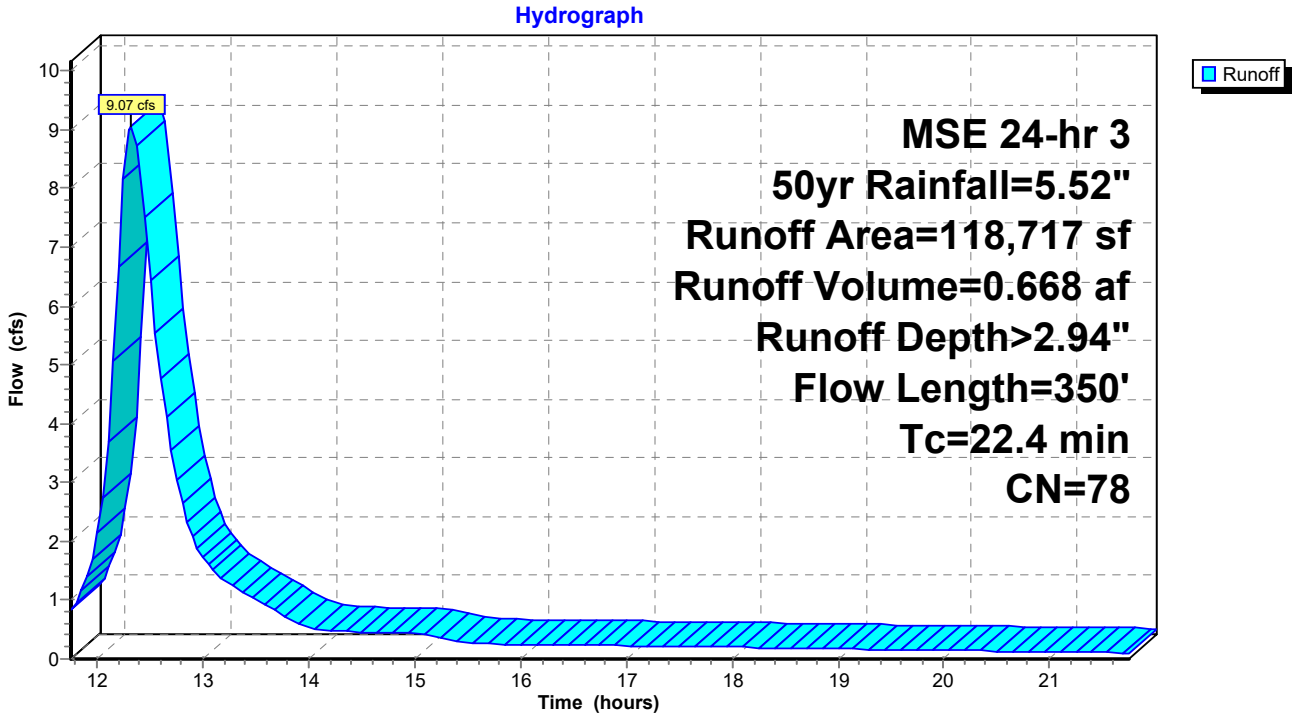
Runoff = 9.07 cfs @ 12.33 hrs, Volume= 0.668 af, Depth> 2.94"
Routed to Reach 2R : 15" Pipe

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 11.75-21.75 hrs, dt= 0.05 hrs
MSE 24-hr 3 50yr Rainfall=5.52"

Area (sf)	CN	Description
118,717	78	Row crops, straight row, Good, HSG B
118,717		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.7	300	0.0400	0.23		**Sheet Flow,** Cultivated: Residue>20% n= 0.170 P2= 2.65"
0.7	50	0.0200	1.27		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
22.4	350	Total			

Subcatchment 7S: Offsite runon.



Summary for Subcatchment NE1: P3

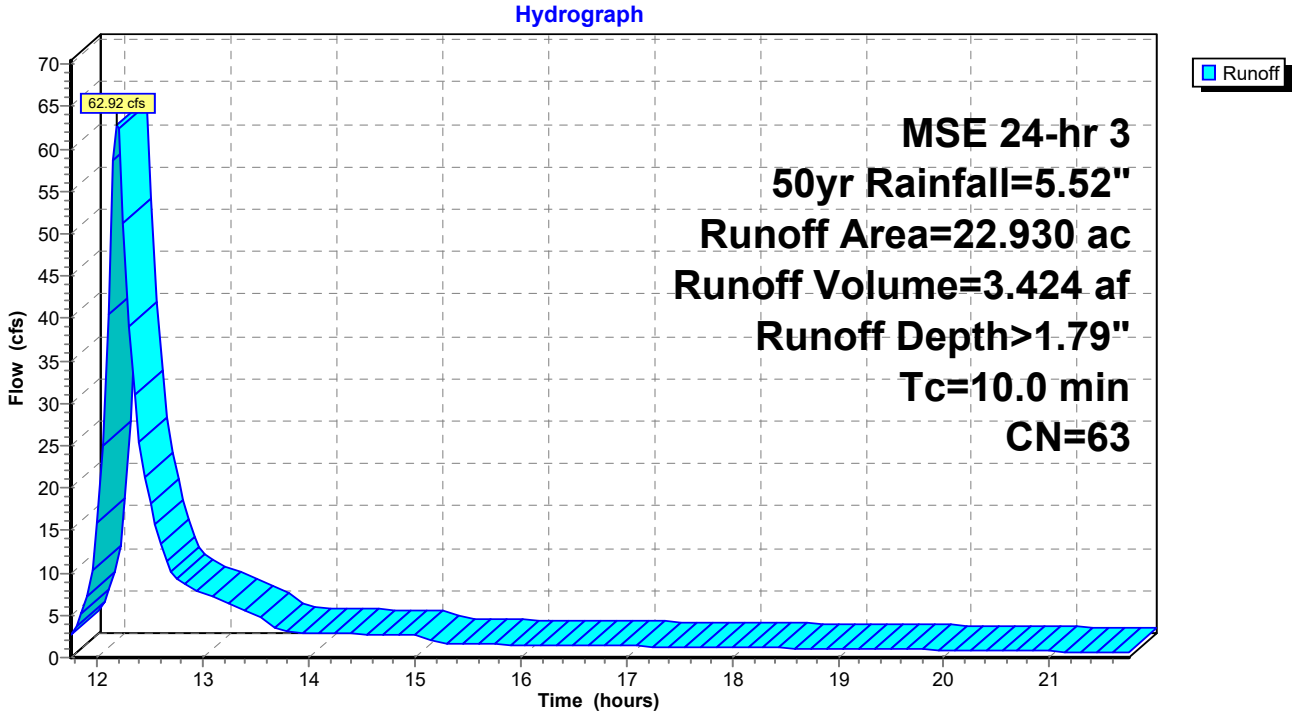
Runoff = 62.92 cfs @ 12.19 hrs, Volume= 3.424 af, Depth> 1.79"
Routed to Pond NE : NE infil

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 11.75-21.75 hrs, dt= 0.05 hrs
MSE 24-hr 3 50yr Rainfall=5.52"

Area (ac)	CN	Description
4.610	60	Woods, Fair, HSG B
1.530	98	Water Surface, HSG B
16.790	61	>75% Grass cover, Good, HSG B
22.930	63	Weighted Average
21.400		93.33% Pervious Area
1.530		6.67% Impervious Area

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

Subcatchment NE1: P3



Summary for Subcatchment NW1: P2

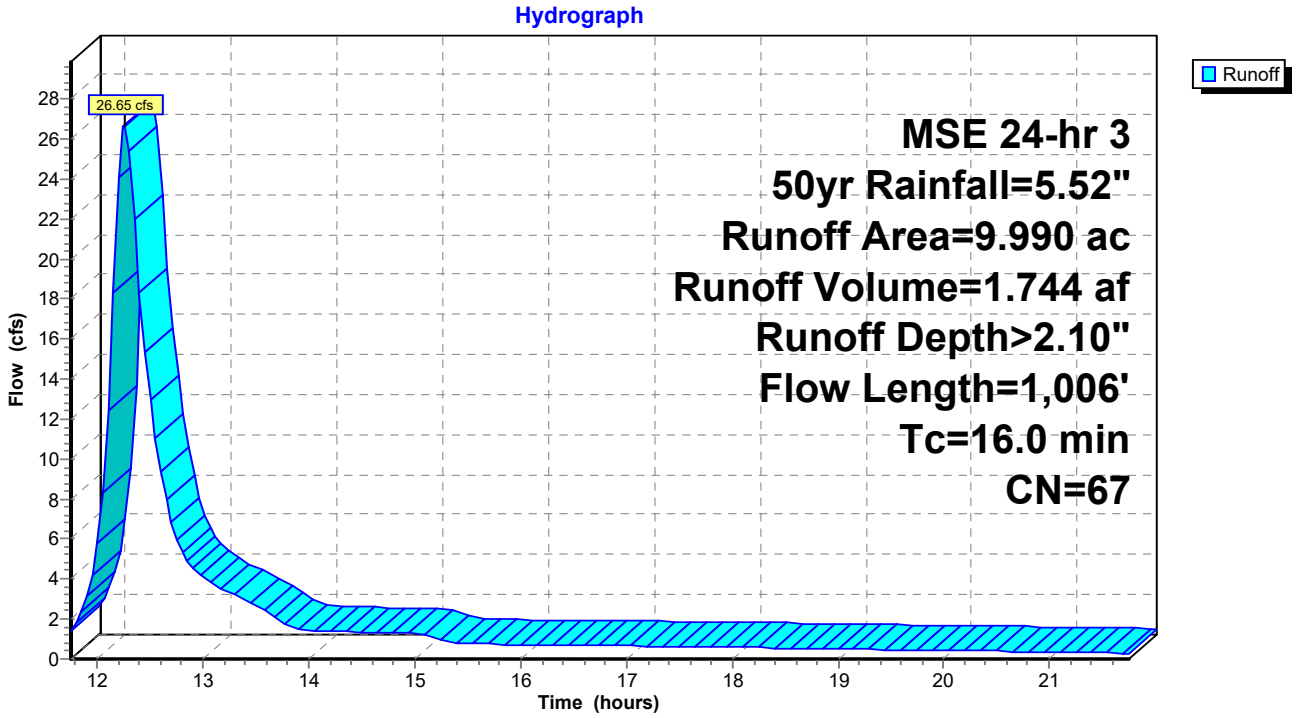
Runoff = 26.65 cfs @ 12.26 hrs, Volume= 1.744 af, Depth> 2.10"
Routed to Pond NW : NW infil

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 11.75-21.75 hrs, dt= 0.05 hrs
MSE 24-hr 3 50yr Rainfall=5.52"

Area (ac)	CN	Description
0.640	89	Paved roads w/open ditches, 50% imp, HSG B
1.250	98	Water Surface, 0% imp, HSG B
8.100	61	>75% Grass cover, Good, HSG B
9.990	67	Weighted Average
9.670		96.80% Pervious Area
0.320		3.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	150	0.0250	0.18		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.65"
0.9	123	0.0250	2.37		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
1.5	733	0.0450	8.08	20.61	**Trap/Vee/Rect Channel Flow,** Bot.W=5.00' D=0.50' Z= 0.2 '/' Top.W=5.20' n= 0.022 Earth, clean & straight
16.0	1,006	Total			

Subcatchment NW1: P2



Summary for Subcatchment NW2: P2-A

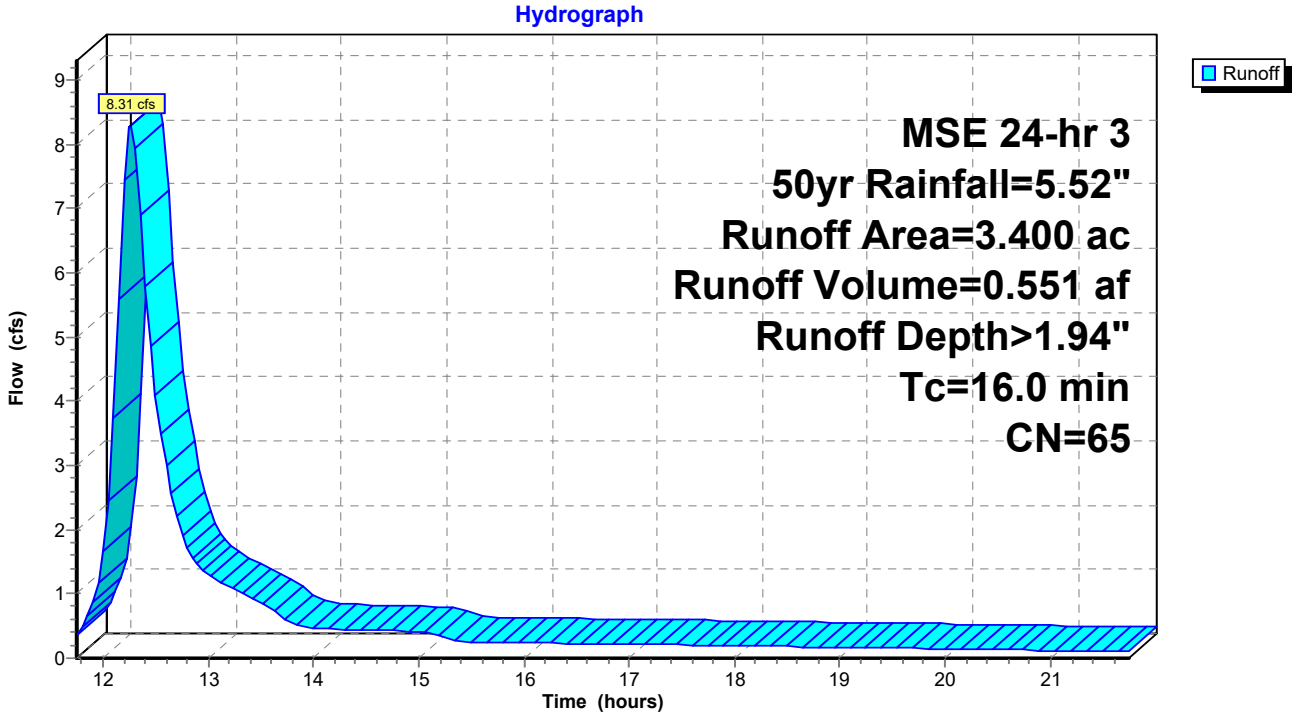
Runoff = 8.31 cfs @ 12.26 hrs, Volume= 0.551 af, Depth> 1.94"
Routed to Pond NW : NW infil

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 11.75-21.75 hrs, dt= 0.05 hrs
MSE 24-hr 3 50yr Rainfall=5.52"

Area (ac)	CN	Description
0.000	89	Paved roads w/open ditches, 50% imp, HSG B
0.370	98	Water Surface, 0% imp, HSG B
3.030	61	>75% Grass cover, Good, HSG B
3.400	65	Weighted Average
3.400		100.00% Pervious Area

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

Subcatchment NW2: P2-A



Summary for Subcatchment S1: P1

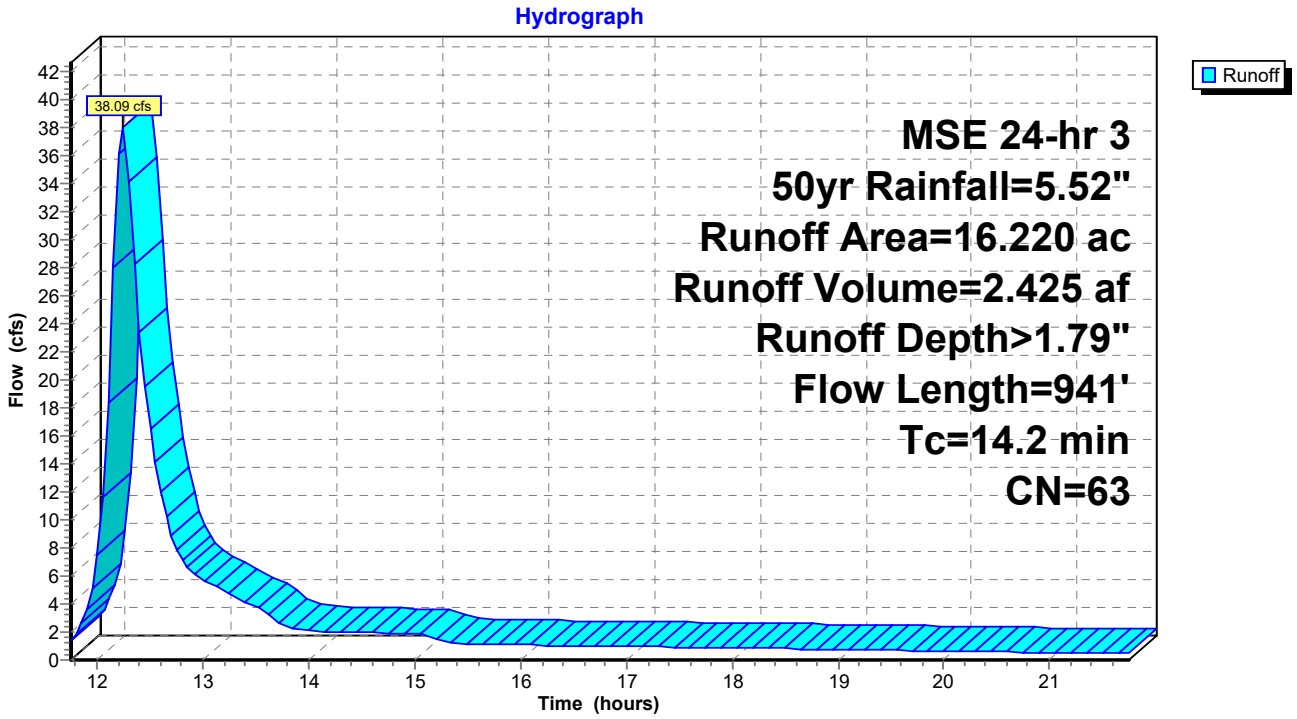
Runoff = 38.09 cfs @ 12.24 hrs, Volume= 2.425 af, Depth> 1.79"
Routed to Pond S : South Infil

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 11.75-21.75 hrs, dt= 0.05 hrs
MSE 24-hr 3 50yr Rainfall=5.52"

Area (ac)	CN	Description
15.150	61	>75% Grass cover, Good, HSG B
1.070	98	Water Surface, 0% imp, HSG B
16.220	63	Weighted Average
16.220		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.3	150	0.0500	0.24		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.65"
0.3	85	0.1200	5.20		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
3.6	706	0.0510	3.24	0.65	**Trap/Vee/Rect Channel Flow,** Bot.W=0.00' D=1.00' Z= 0.2 '/' Top.W=0.40' n= 0.022 Earth, clean & straight
14.2	941	Total			

Subcatchment S1: P1



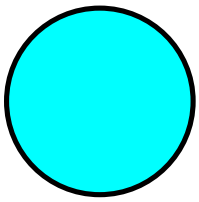
Summary for Reach 2R: 15" Pipe

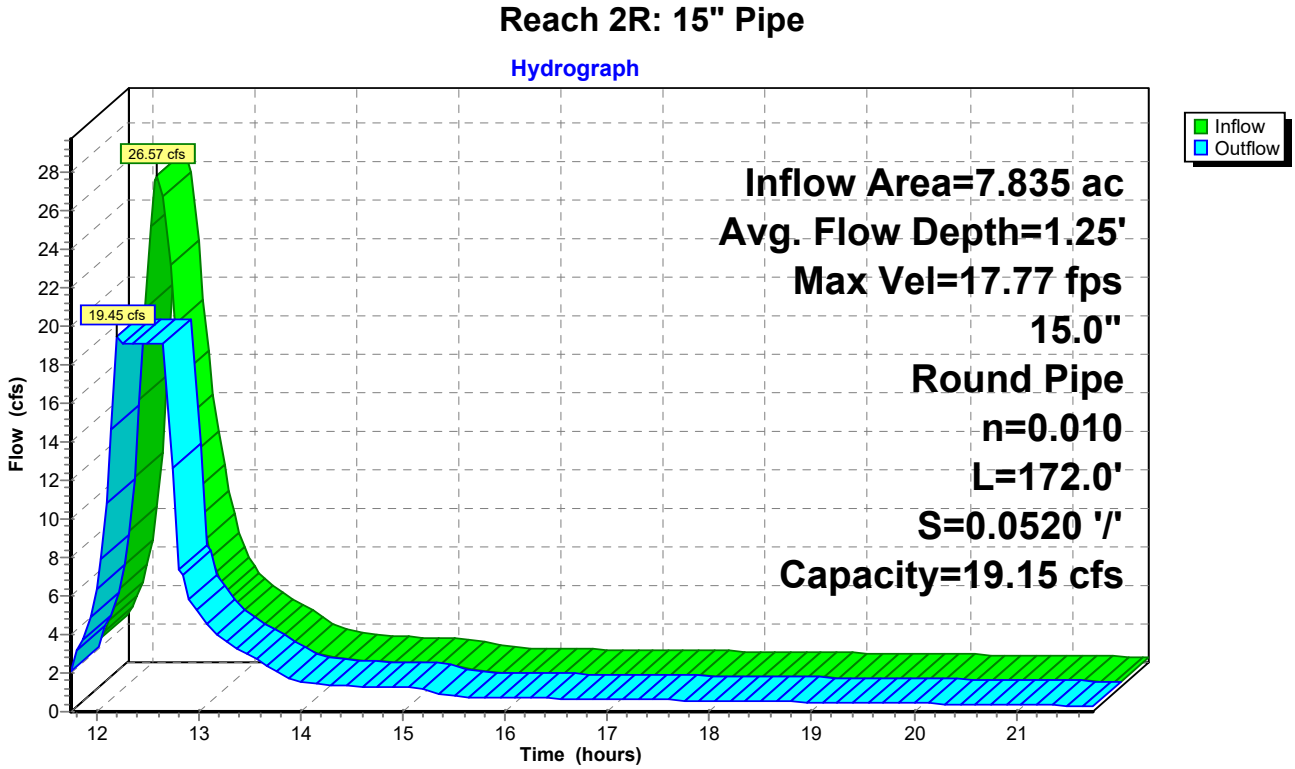
Inflow Area = 7.835 ac, 3.45% Impervious, Inflow Depth > 2.99" for 50yr event
Inflow = 26.57 cfs @ 12.33 hrs, Volume= 1.953 af
Outflow = 19.45 cfs @ 12.20 hrs, Volume= 1.953 af, Atten= 27%, Lag= 0.0 min
Routed to Reach 3R : 15" Outlet Pipe

Routing by Dyn-Stor-Ind method, Time Span= 11.75-21.75 hrs, dt= 0.05 hrs
Max. Velocity= 17.77 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 8.50 fps, Avg. Travel Time= 0.3 min

Peak Storage= 211 cf @ 12.25 hrs
Average Depth at Peak Storage= 1.25'
Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 19.15 cfs

15.0" Round Pipe
n= 0.010 PVC, smooth interior
Length= 172.0' Slope= 0.0520 '/'
Inlet Invert= 983.94', Outlet Invert= 975.00'





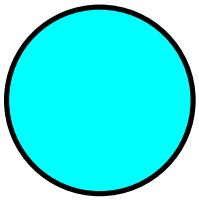
Summary for Reach 3R: 15" Outlet Pipe

Inflow Area = 11.197 ac, 25.48% Impervious, Inflow Depth > 2.83" for 50yr event
Inflow = 28.10 cfs @ 12.36 hrs, Volume= 2.637 af
Outflow = 15.71 cfs @ 12.20 hrs, Volume= 2.637 af, Atten= 44%, Lag= 0.0 min
Routed to Link 1L : Total Runoff - Appleton Storage

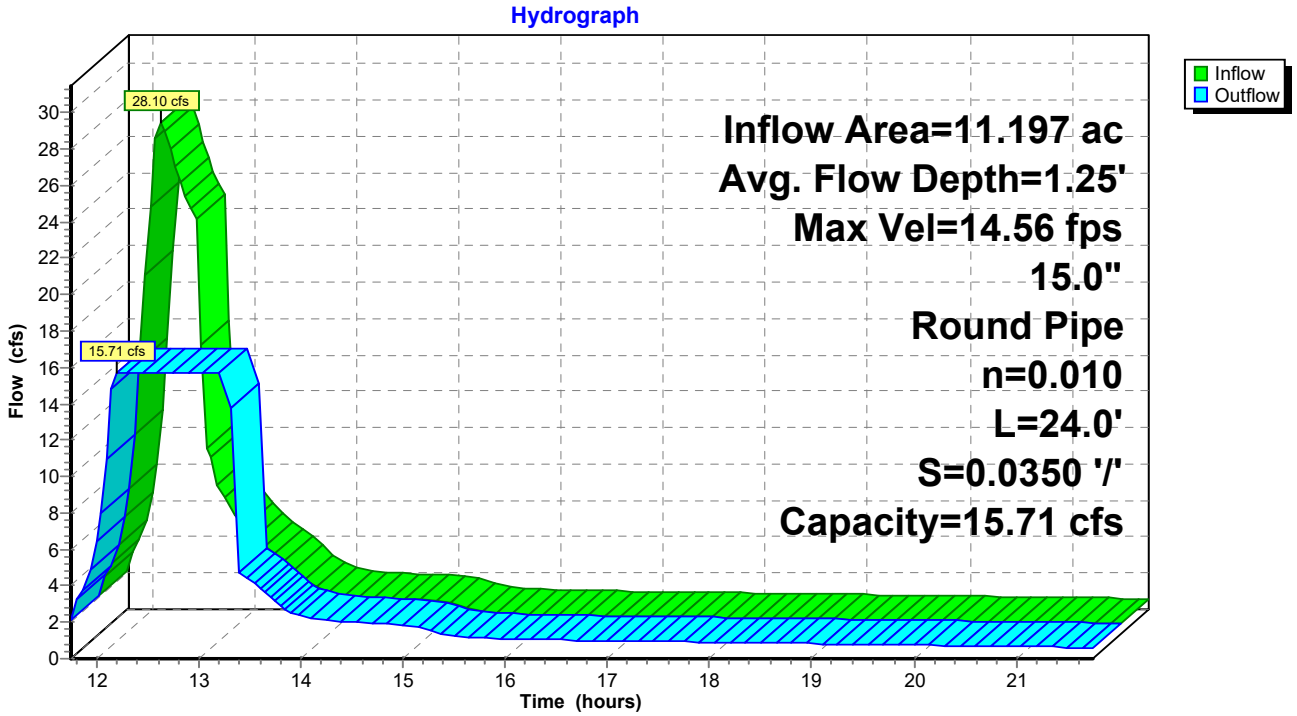
Routing by Dyn-Stor-Ind method, Time Span= 11.75-21.75 hrs, dt= 0.05 hrs
Max. Velocity= 14.56 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 8.23 fps, Avg. Travel Time= 0.0 min

Peak Storage= 29 cf @ 12.20 hrs
Average Depth at Peak Storage= 1.25'
Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 15.71 cfs

15.0" Round Pipe
n= 0.010 PVC, smooth interior
Length= 24.0' Slope= 0.0350 '/'
Inlet Invert= 974.84', Outlet Invert= 974.00'



Reach 3R: 15" Outlet Pipe



Summary for Pond 1P: Bio-Filter

Inflow Area = 3.362 ac, 76.85% Impervious, Inflow Depth > 3.62" for 50yr event
Inflow = 20.73 cfs @ 12.17 hrs, Volume= 1.014 af
Outflow = 8.96 cfs @ 12.36 hrs, Volume= 0.684 af, Atten= 57%, Lag= 11.0 min
Primary = 8.96 cfs @ 12.36 hrs, Volume= 0.684 af
Routed to Reach 3R : 15" Outlet Pipe
Secondary = 0.00 cfs @ 11.75 hrs, Volume= 0.000 af
Routed to Link 1L : Total Runoff - Appleton Storage

Routing by Dyn-Stor-Ind method, Time Span= 11.75-21.75 hrs, dt= 0.05 hrs
Peak Elev= 983.08' @ 12.36 hrs Surf.Area= 0.298 ac Storage= 0.460 af

Plug-Flow detention time= 134.2 min calculated for 0.678 af (67% of inflow)
Center-of-Mass det. time= 69.8 min (864.7 - 794.9)

Volume	Invert	Avail.Storage	Storage Description
#1	977.00'	0.001 af	**Custom Stage Data (Prismatic)** Listed below (Recalc) 0.240 af Overall x 0.3% Voids
#2	980.00'	0.962 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)
		0.963 af	Total Available Storage

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
977.00	0.080	0.000	0.000
980.00	0.080	0.240	0.240

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
980.00	0.080	0.000	0.000
985.00	0.305	0.962	0.962

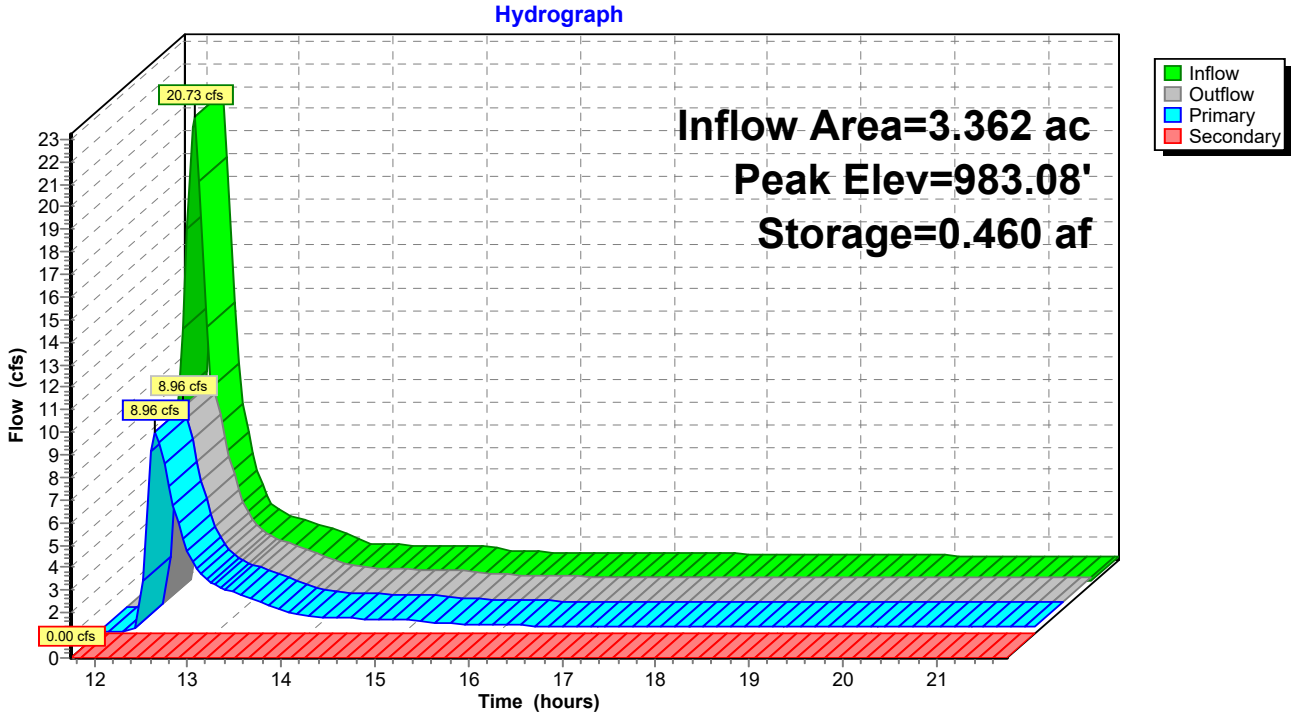
Device	Routing	Invert	Outlet Devices
#1	Primary	974.91'	**15.0" Round 15" Round Culvert** L= 2.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 974.91' / 974.84' S= 0.0350 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 1.23 sf
#2	Device 1	977.00'	**1.2" Vert. 1.2" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 2	977.00'	**6.0" Round 6.0" Round Culvert** L= 125.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 977.00' / 977.00' S= 0.0000 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.20 sf
#4	Device 3	977.00'	**3.940 in/hr 3.940 in/hr Exfiltration over Surface Area over Surface area** Conductivity to Groundwater Elevation = 965.00'
#5	Device 1	981.50'	**3.0" Vert. 3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#6	Device 1	982.65'	**36.0" Horiz. 36.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#7	Secondary	984.00'	**40.0' long x 5.0' breadth 40.0' long x 5.0' breadth Broad-Crested Rectangular** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00

2.50 3.00 3.50 4.00 4.50 5.00 5.50
Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65
2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=8.87 cfs @ 12.36 hrs HW=983.07' TW=976.09' (Dynamic Tailwater)
- **1=15" Round Culvert** (Passes 8.87 cfs of 12.33 cfs potential flow)
  - **2=1.2" Vert. Orifice/Grate** (Orifice Controls 0.09 cfs @ 11.82 fps)
    - **3=6.0" Round Culvert** (Passes 0.09 cfs of 0.74 cfs potential flow)
      - **4=3.940 in/hr Exfiltration over Surface Area** (Passes 0.09 cfs of 1.46 cfs potential flow)
  - **5=3.0" Vert. Orifice/Grate** (Orifice Controls 0.28 cfs @ 5.80 fps)
  - **6=36.0" Horiz. Orifice/Grate** (Weir Controls 8.50 cfs @ 2.13 fps)

Secondary OutFlow Max=0.00 cfs @ 11.75 hrs HW=980.07' TW=0.00' (Dynamic Tailwater)
- **7=40.0' long x 5.0' breadth Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1P: Bio-Filter



Summary for Pond NE: NE infil

Inflow Area =	22.930 ac,	6.67% Impervious,	Inflow Depth >	1.79"	for 50yr event
Inflow =	62.92 cfs @	12.19 hrs,	Volume=	3.424 af	
Outflow =	6.21 cfs @	13.28 hrs,	Volume=	3.428 af,	Atten= 90%, Lag= 65.7 min
Discarded =	6.21 cfs @	13.28 hrs,	Volume=	3.428 af	
Primary =	0.00 cfs @	11.75 hrs,	Volume=	0.000 af	

Routing by Dyn-Stor-Ind method, Time Span= 11.75-21.75 hrs, dt= 0.05 hrs
Peak Elev= 958.98' @ 13.28 hrs Surf.Area= 1.613 ac Storage= 1.542 af

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 101.2 min (919.8 - 818.7)

Volume	Invert	Avail.Storage	Storage Description
#1	958.00'	3.230 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

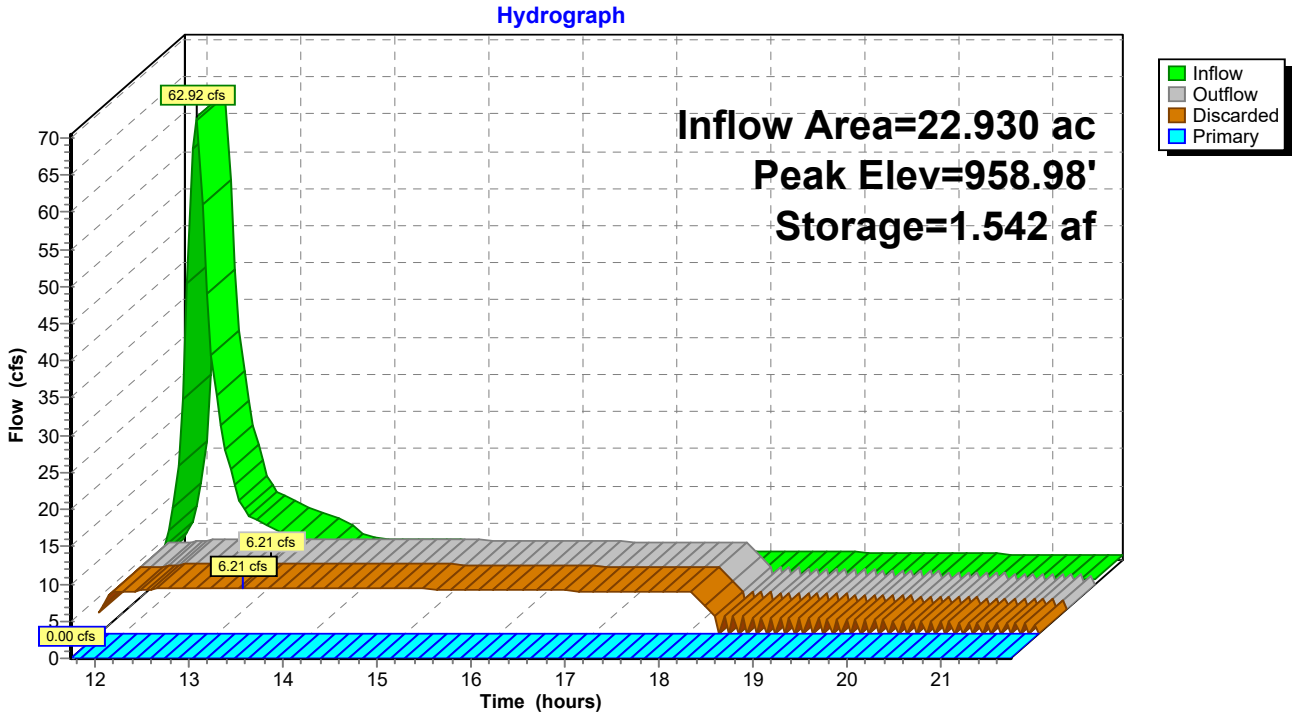
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
958.00	1.530	0.000	0.000
960.00	1.700	3.230	3.230

Device	Routing	Invert	Outlet Devices
#1	Discarded	958.00'	**3.600 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 942.00'
#2	Primary	959.75'	**25.0' long + 0.3 '/' SideZ x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=6.21 cfs @ 13.28 hrs HW=958.98' (Free Discharge)
└─**1=Exfiltration** (Controls 6.21 cfs)

Primary OutFlow Max=0.00 cfs @ 11.75 hrs HW=958.00' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond NE: NE infil



Summary for Pond NW: NW infil

Inflow Area = 24.832 ac, 12.78% Impervious, Inflow Depth > 2.40" for 50yr event
Inflow = 51.00 cfs @ 12.26 hrs, Volume= 4.966 af
Outflow = 7.50 cfs @ 13.55 hrs, Volume= 4.975 af, Atten= 85%, Lag= 77.5 min
Discarded = 7.50 cfs @ 13.55 hrs, Volume= 4.975 af
Primary = 0.00 cfs @ 11.75 hrs, Volume= 0.000 af
Routed to nonexistent node 3P

Routing by Dyn-Stor-Ind method, Time Span= 11.75-21.75 hrs, dt= 0.05 hrs
Peak Elev= 952.45' @ 13.55 hrs Surf.Area= 1.792 ac Storage= 2.484 af

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 140.1 min (965.4 - 825.4)

Volume	Invert	Avail.Storage	Storage Description
#1	951.00'	2.630 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)
#2	951.00'	0.860 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)
		3.490 af	Total Available Storage

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
951.00	1.250	0.000	0.000
953.00	1.380	2.630	2.630

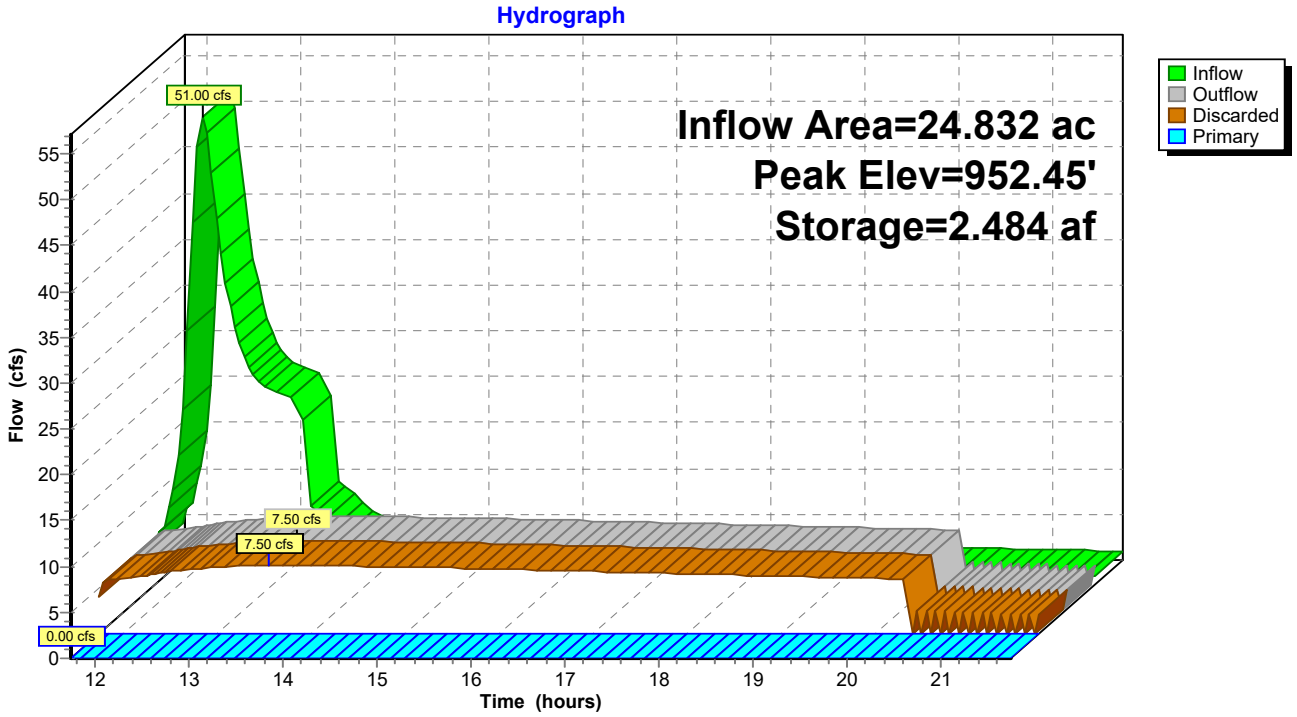
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
951.00	0.390	0.000	0.000
953.00	0.470	0.860	0.860

Device	Routing	Invert	Outlet Devices
#1	Discarded	951.00'	**3.600 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 942.00'
#2	Primary	952.75'	**20.0' long + 0.3 '/' SideZ x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=7.50 cfs @ 13.55 hrs HW=952.45' (Free Discharge)
└**1=Exfiltration** (Controls 7.50 cfs)

Primary OutFlow Max=0.00 cfs @ 11.75 hrs HW=951.00' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond NW: NW infil



Summary for Pond S: South Infil

Inflow Area = 16.220 ac, 0.00% Impervious, Inflow Depth > 1.79" for 50yr event
Inflow = 38.09 cfs @ 12.24 hrs, Volume= 2.425 af
Outflow = 4.43 cfs @ 13.34 hrs, Volume= 2.424 af, Atten= 88%, Lag= 65.8 min
Discarded = 4.43 cfs @ 13.34 hrs, Volume= 2.424 af
Primary = 0.00 cfs @ 11.75 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 11.75-21.75 hrs, dt= 0.05 hrs
Peak Elev= 954.99' @ 13.34 hrs Surf.Area= 1.129 ac Storage= 1.085 af

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 99.9 min (921.7 - 821.8)

Volume	Invert	Avail.Storage	Storage Description
#1	954.00'	2.260 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

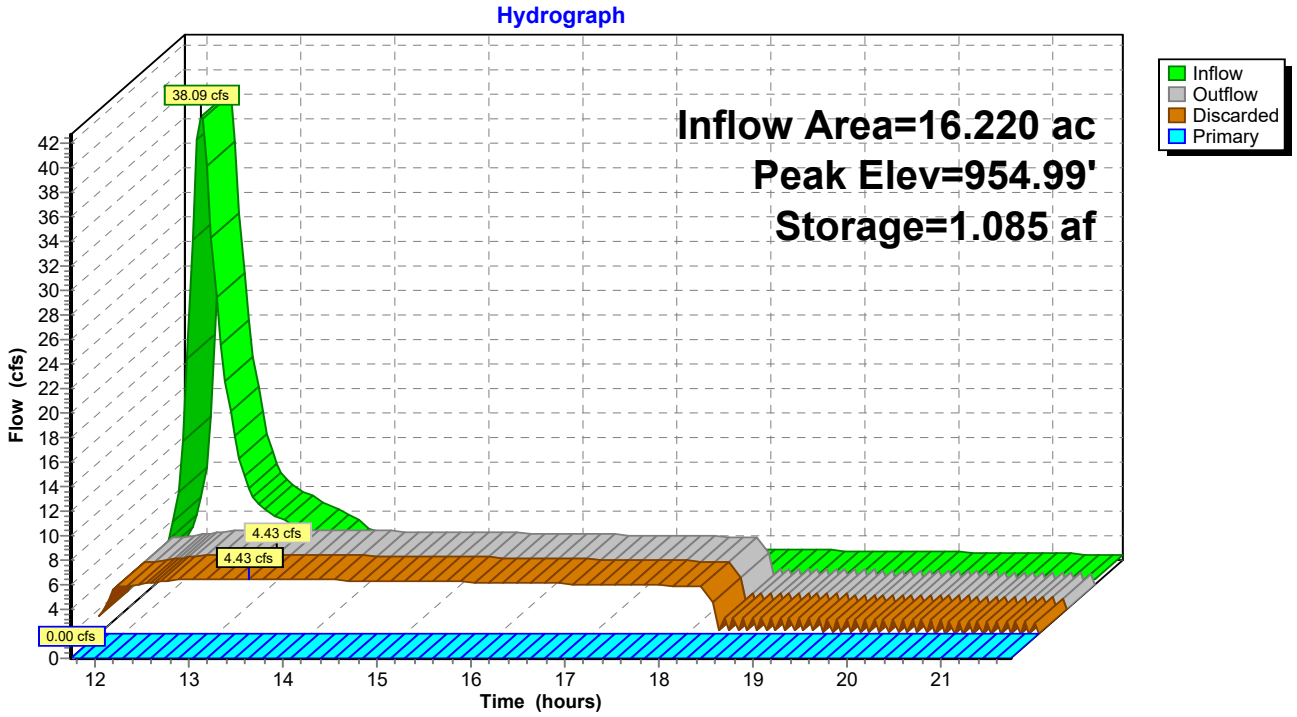
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
954.00	1.060	0.000	0.000
956.00	1.200	2.260	2.260

Device	Routing	Invert	Outlet Devices
#1	Discarded	954.00'	**3.600 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 942.00'
#2	Primary	955.75'	**25.0' long + 0.3 '/' SideZ x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=4.43 cfs @ 13.34 hrs HW=954.99' (Free Discharge)
└─**1=Exfiltration** (Controls 4.43 cfs)

Primary OutFlow Max=0.00 cfs @ 11.75 hrs HW=954.00' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond S: South Infil

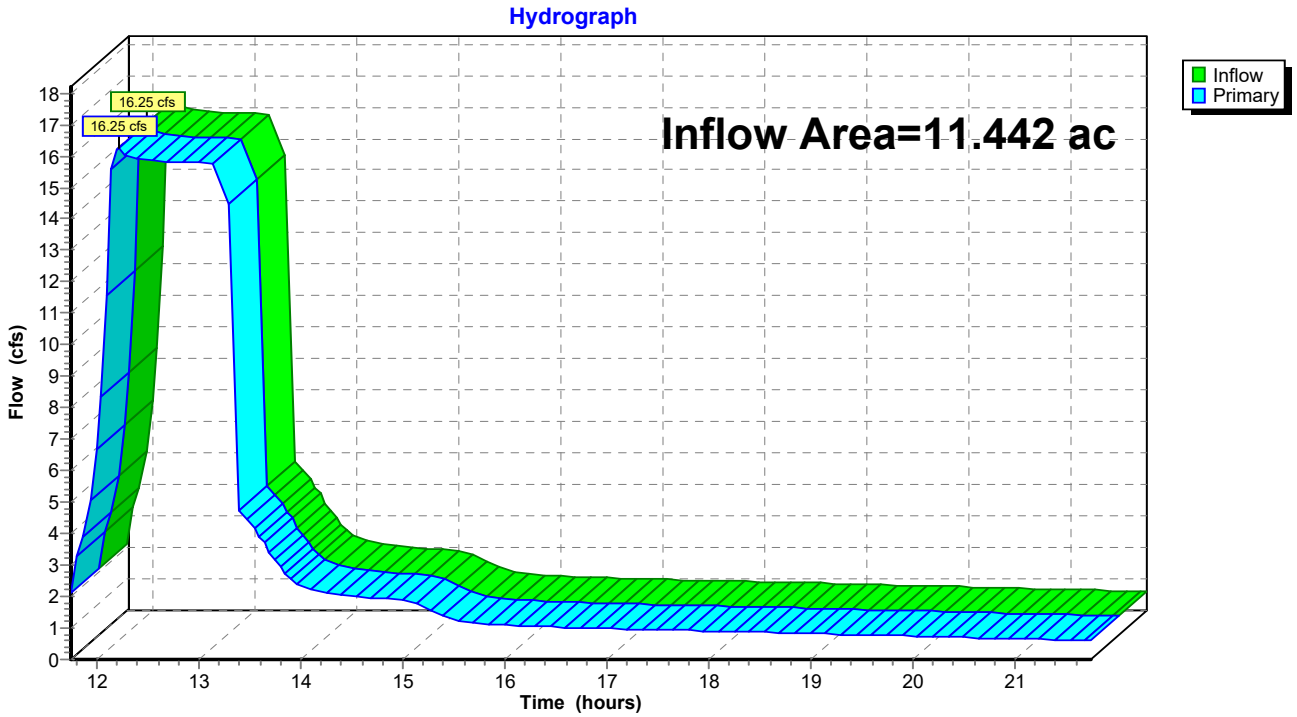


Summary for Link 1L: Total Runoff - Appleton Storage

Inflow Area = 11.442 ac, 24.94% Impervious, Inflow Depth > 2.80" for 50yr event
Inflow = 16.25 cfs @ 12.22 hrs, Volume= 2.670 af
Primary = 16.25 cfs @ 12.22 hrs, Volume= 2.670 af, Atten= 0%, Lag= 0.0 min
Routed to Pond NW : NW infil

Primary outflow = Inflow, Time Span= 11.75-21.75 hrs, dt= 0.05 hrs

Link 1L: Total Runoff - Appleton Storage



Time span=11.75-21.75 hrs, dt=0.05 hrs, 201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: Additional off-site Runoff Area=5.110 ac 5.28% Impervious Runoff Depth>3.69"
Tc=22.4 min CN=79 Runoff=21.63 cfs 1.569 af

Subcatchment5S: To Bio-Filter Runoff Area=146,447 sf 76.85% Impervious Runoff Depth>4.27"
Flow Length=687' Tc=10.1 min CN=89 Runoff=24.52 cfs 1.196 af

Subcatchment6S: Uncontrolled Runoff Area=10,659 sf 0.00% Impervious Runoff Depth>2.18"
Tc=6.0 min CN=61 Runoff=0.99 cfs 0.044 af

Subcatchment7S: Offsite runon. Runoff Area=118,717 sf 0.00% Impervious Runoff Depth>3.61"
Flow Length=350' Tc=22.4 min CN=78 Runoff=11.25 cfs 0.819 af

SubcatchmentNE1: P3 Runoff Area=22.930 ac 6.67% Impervious Runoff Depth>2.35"
Tc=10.0 min CN=63 Runoff=84.39 cfs 4.495 af

SubcatchmentNW1: P2 Runoff Area=9.990 ac 3.20% Impervious Runoff Depth>2.69"
Flow Length=1,006' Tc=16.0 min CN=67 Runoff=34.90 cfs 2.242 af

SubcatchmentNW2: P2-A Runoff Area=3.400 ac 0.00% Impervious Runoff Depth>2.53"
Tc=16.0 min CN=65 Runoff=11.03 cfs 0.716 af

SubcatchmentS1: P1 Runoff Area=16.220 ac 0.00% Impervious Runoff Depth>2.36"
Flow Length=941' Tc=14.2 min CN=63 Runoff=51.25 cfs 3.189 af

Reach 2R: 15" Pipe Avg. Flow Depth=1.25' Max Vel=17.77 fps Inflow=32.88 cfs 2.389 af
15.0" Round Pipe n=0.010 L=172.0' S=0.0520 '/' Capacity=19.15 cfs Outflow=19.15 cfs 2.388 af

Reach 3R: 15" Outlet Pipe Avg. Flow Depth=1.25' Max Vel=14.47 fps Inflow=31.75 cfs 3.242 af
15.0" Round Pipe n=0.010 L=24.0' S=0.0350 '/' Capacity=15.71 cfs Outflow=15.71 cfs 3.242 af

Pond 1P: Bio-Filter Peak Elev=983.23' Storage=0.494 af Inflow=24.52 cfs 1.196 af
Primary=12.60 cfs 0.853 af Secondary=0.00 cfs 0.000 af Outflow=12.60 cfs 0.853 af

Pond NE: NE infil Peak Elev=959.44' Storage=2.294 af Inflow=84.39 cfs 4.495 af
Discarded=6.52 cfs 4.499 af Primary=0.00 cfs 0.000 af Outflow=6.52 cfs 4.499 af

Pond NW: NW infil Peak Elev=952.93' Storage=3.355 af Inflow=62.08 cfs 6.245 af
Discarded=8.03 cfs 5.896 af Primary=3.71 cfs 0.166 af Outflow=11.75 cfs 6.062 af

Pond S: South Infil Peak Elev=955.45' Storage=1.612 af Inflow=51.25 cfs 3.189 af
Discarded=4.70 cfs 3.195 af Primary=0.00 cfs 0.000 af Outflow=4.70 cfs 3.195 af

Link 1L: Total Runoff - Appleton Storage Inflow=16.82 cfs 3.286 af
Primary=16.82 cfs 3.286 af

Total Runoff Area = 63.982 ac Runoff Volume = 14.271 af Average Runoff Depth = 2.68"
92.65% Pervious = 59.279 ac 7.35% Impervious = 4.704 ac

Summary for Subcatchment 1S: Additional off-site run-on_rasmith

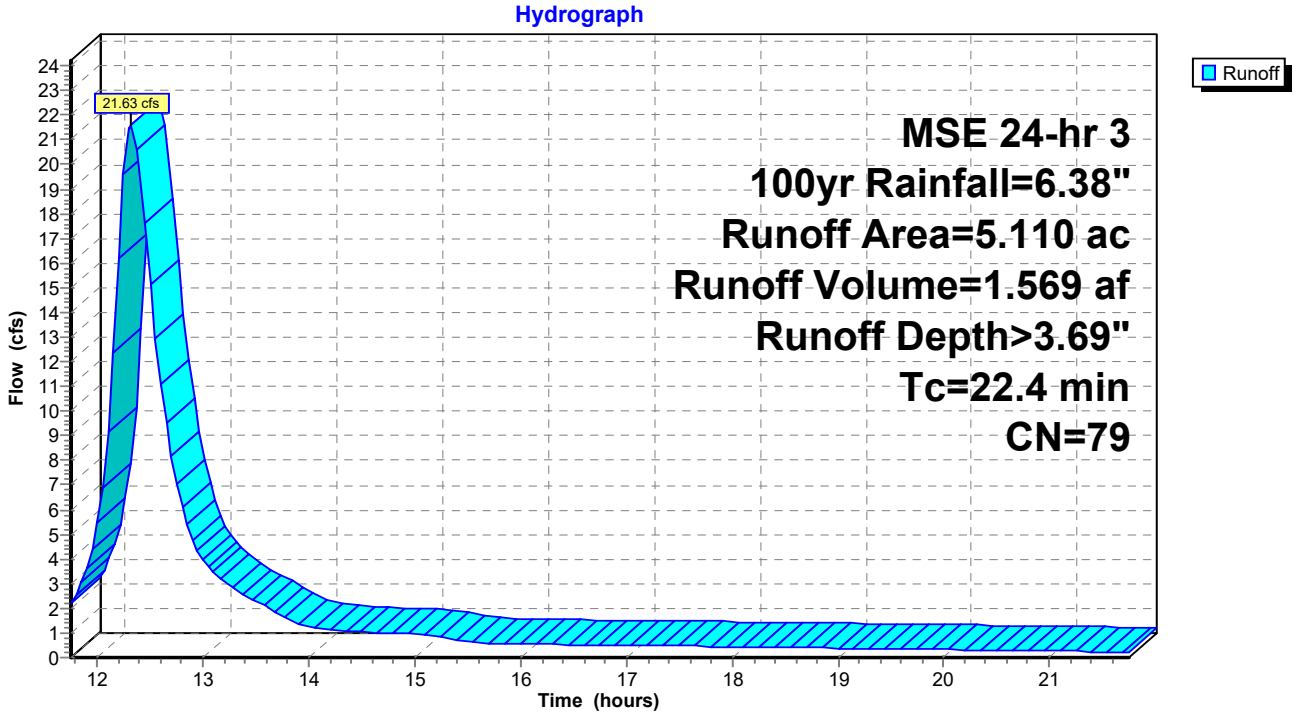
Runoff = 21.63 cfs @ 12.32 hrs, Volume= 1.569 af, Depth> 3.69"
Routed to Reach 2R : 15" Pipe

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 11.75-21.75 hrs, dt= 0.05 hrs
MSE 24-hr 3 100yr Rainfall=6.38"

Area (ac)	CN	Description
3.120	78	Row crops, straight row, Good, HSG B
0.540	89	Paved roads w/open ditches, 50% imp, HSG B
1.450	78	Row crops, straight row, Good, HSG B
5.110	79	Weighted Average
4.840		94.72% Pervious Area
0.270		5.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.4					**Direct Entry, Per 12/29/21 SWMP**

Subcatchment 1S: Additional off-site run-on_rasmith



Summary for Subcatchment 5S: To Bio-Filter

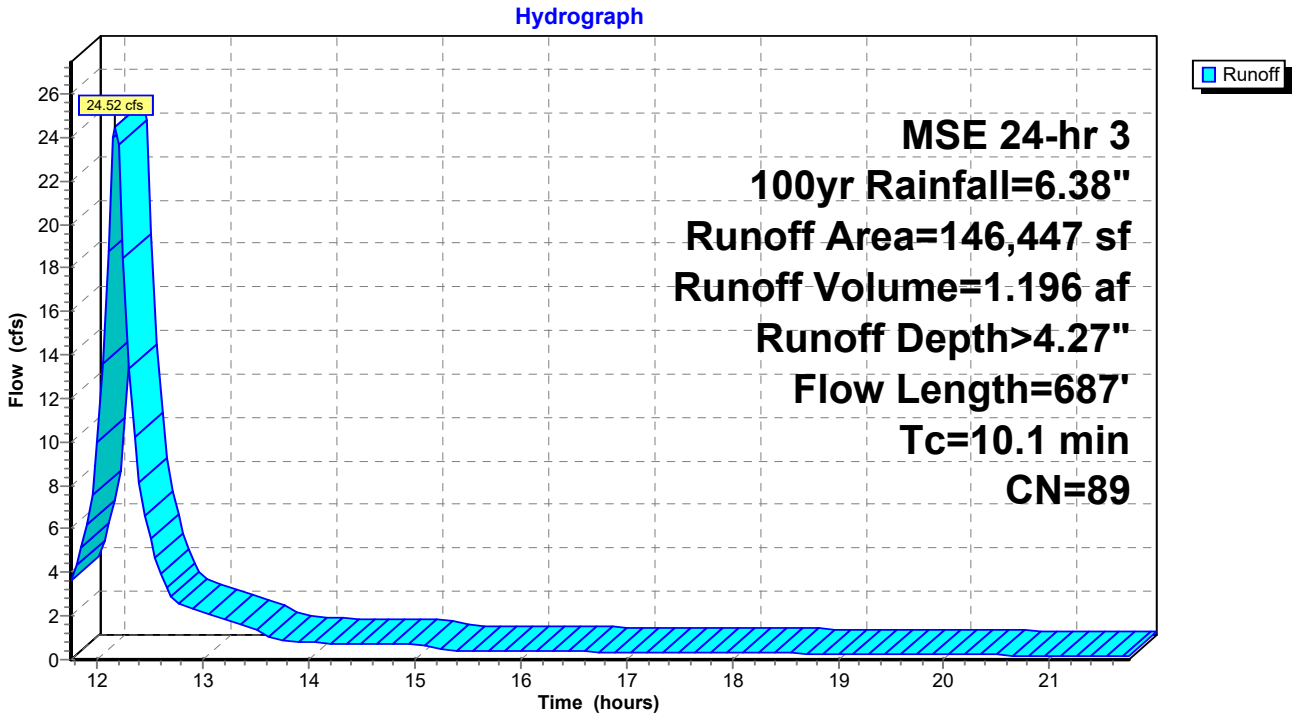
Runoff = 24.52 cfs @ 12.17 hrs, Volume= 1.196 af, Depth> 4.27"
Routed to Pond 1P : Bio-Filter

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 11.75-21.75 hrs, dt= 0.05 hrs
MSE 24-hr 3 100yr Rainfall=6.38"

	Area (sf)	CN	Description
*	22,960	98	Proposed Buildings
*	89,578	98	Paved parking
	33,909	61	>75% Grass cover, Good, HSG B
	146,447	89	Weighted Average
	33,909		23.15% Pervious Area
	112,538		76.85% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.6	54	0.0500	0.14		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.65"
2.9	260	0.0100	1.50		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
0.6	373	0.0270	10.86	65.14	**Channel Flow,** Area= 6.0 sf Perim= 10.0' r= 0.60' n= 0.016
10.1	687	Total			

Subcatchment 5S: To Bio-Filter



Summary for Subcatchment 6S: Uncontrolled

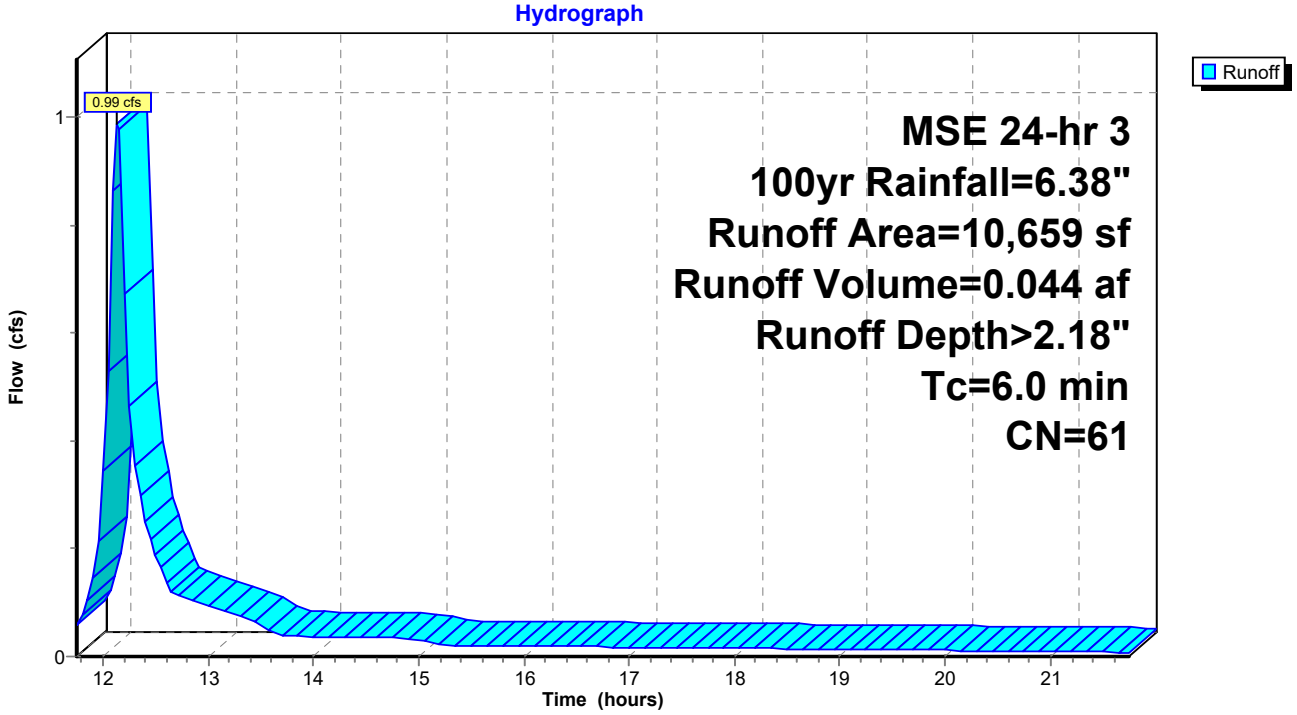
Runoff = 0.99 cfs @ 12.14 hrs, Volume= 0.044 af, Depth> 2.18"
Routed to Link 1L : Total Runoff - Appleton Storage

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 11.75-21.75 hrs, dt= 0.05 hrs
MSE 24-hr 3 100yr Rainfall=6.38"

Area (sf)	CN	Description
7,671	61	>75% Grass cover, Good, HSG B
2,988	61	>75% Grass cover, Good, HSG B
10,659	61	Weighted Average
10,659		100.00% Pervious Area

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

Subcatchment 6S: Uncontrolled



Summary for Subcatchment 7S: Offsite runon.

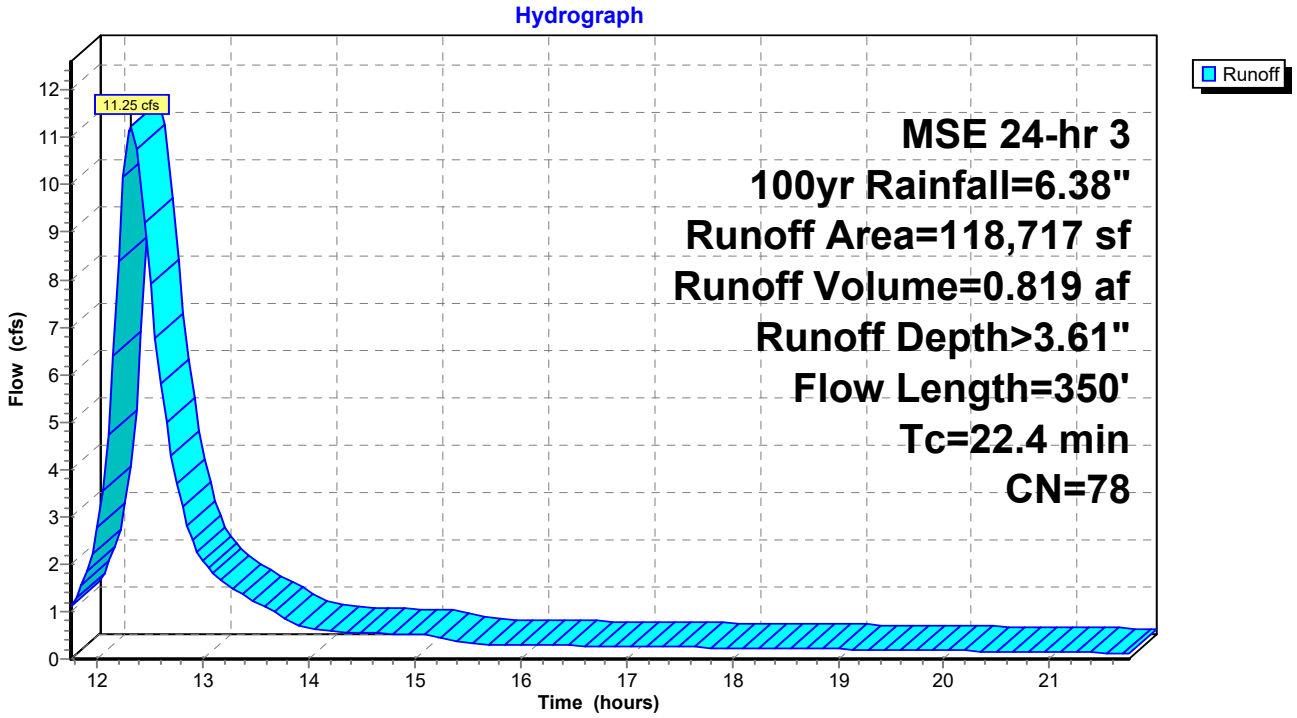
Runoff = 11.25 cfs @ 12.32 hrs, Volume= 0.819 af, Depth> 3.61"
Routed to Reach 2R : 15" Pipe

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 11.75-21.75 hrs, dt= 0.05 hrs
MSE 24-hr 3 100yr Rainfall=6.38"

Area (sf)	CN	Description
118,717	78	Row crops, straight row, Good, HSG B
118,717		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.7	300	0.0400	0.23		**Sheet Flow,** Cultivated: Residue>20% n= 0.170 P2= 2.65"
0.7	50	0.0200	1.27		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
22.4	350	Total			

Subcatchment 7S: Offsite runon.



Summary for Subcatchment NE1: P3

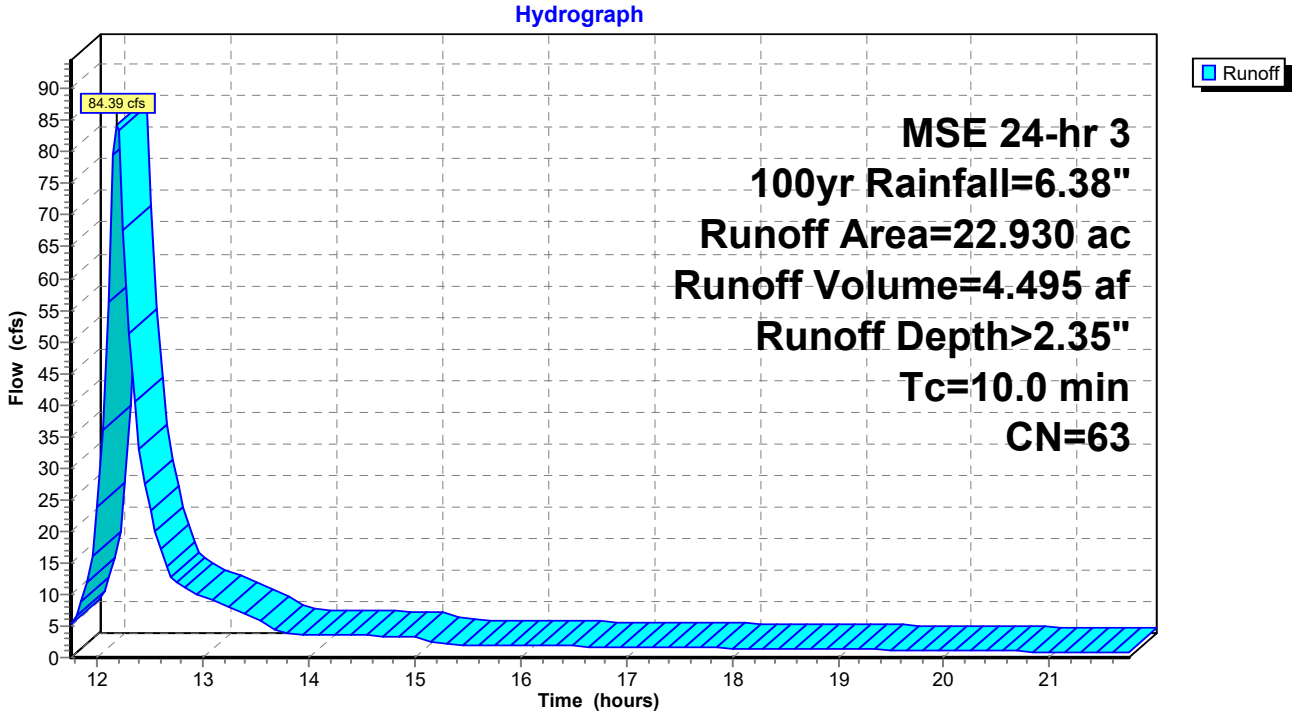
Runoff = 84.39 cfs @ 12.18 hrs, Volume= 4.495 af, Depth> 2.35"
Routed to Pond NE : NE infil

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 11.75-21.75 hrs, dt= 0.05 hrs
MSE 24-hr 3 100yr Rainfall=6.38"

Area (ac)	CN	Description
4.610	60	Woods, Fair, HSG B
1.530	98	Water Surface, HSG B
16.790	61	>75% Grass cover, Good, HSG B
22.930	63	Weighted Average
21.400		93.33% Pervious Area
1.530		6.67% Impervious Area

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

Subcatchment NE1: P3



Summary for Subcatchment NW1: P2

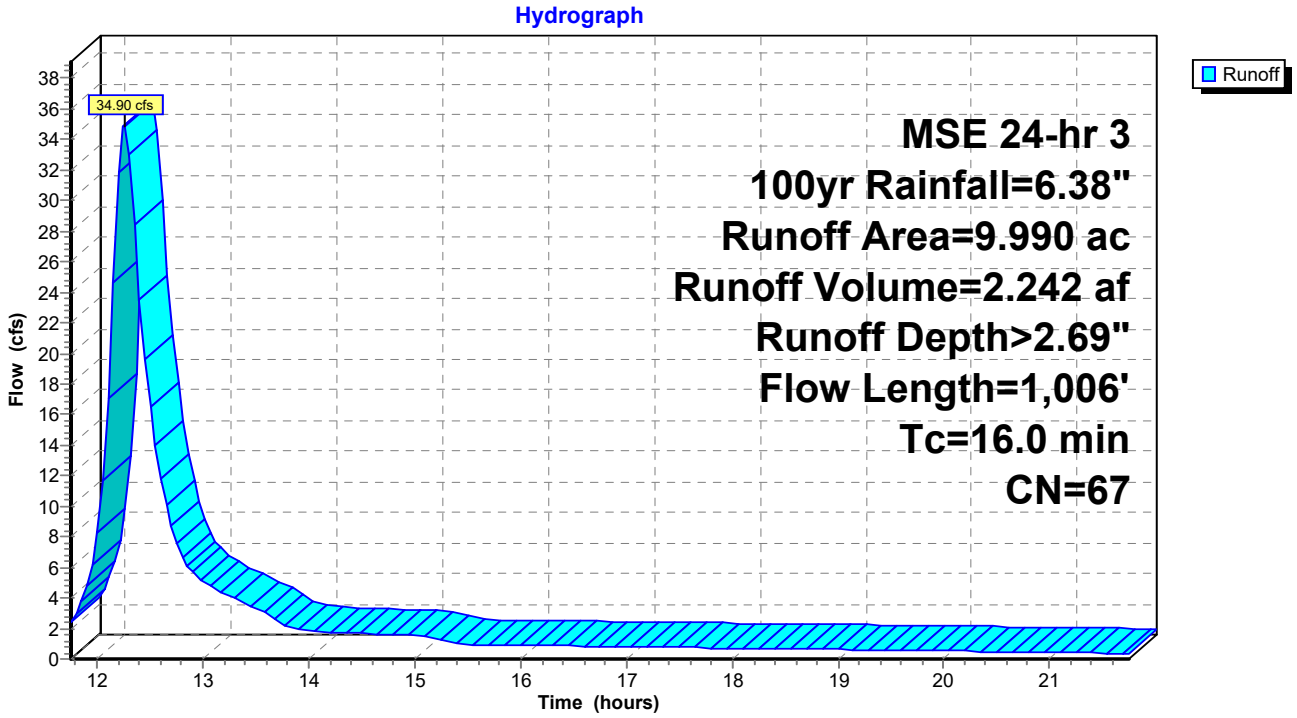
Runoff = 34.90 cfs @ 12.26 hrs, Volume= 2.242 af, Depth> 2.69"
Routed to Pond NW : NW infil

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 11.75-21.75 hrs, dt= 0.05 hrs
MSE 24-hr 3 100yr Rainfall=6.38"

Area (ac)	CN	Description
0.640	89	Paved roads w/open ditches, 50% imp, HSG B
1.250	98	Water Surface, 0% imp, HSG B
8.100	61	>75% Grass cover, Good, HSG B
9.990	67	Weighted Average
9.670		96.80% Pervious Area
0.320		3.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	150	0.0250	0.18		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.65"
0.9	123	0.0250	2.37		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
1.5	733	0.0450	8.08	20.61	**Trap/Vee/Rect Channel Flow,** Bot.W=5.00' D=0.50' Z= 0.2 '/' Top.W=5.20' n= 0.022 Earth, clean & straight
16.0	1,006	Total			

Subcatchment NW1: P2



Summary for Subcatchment NW2: P2-A

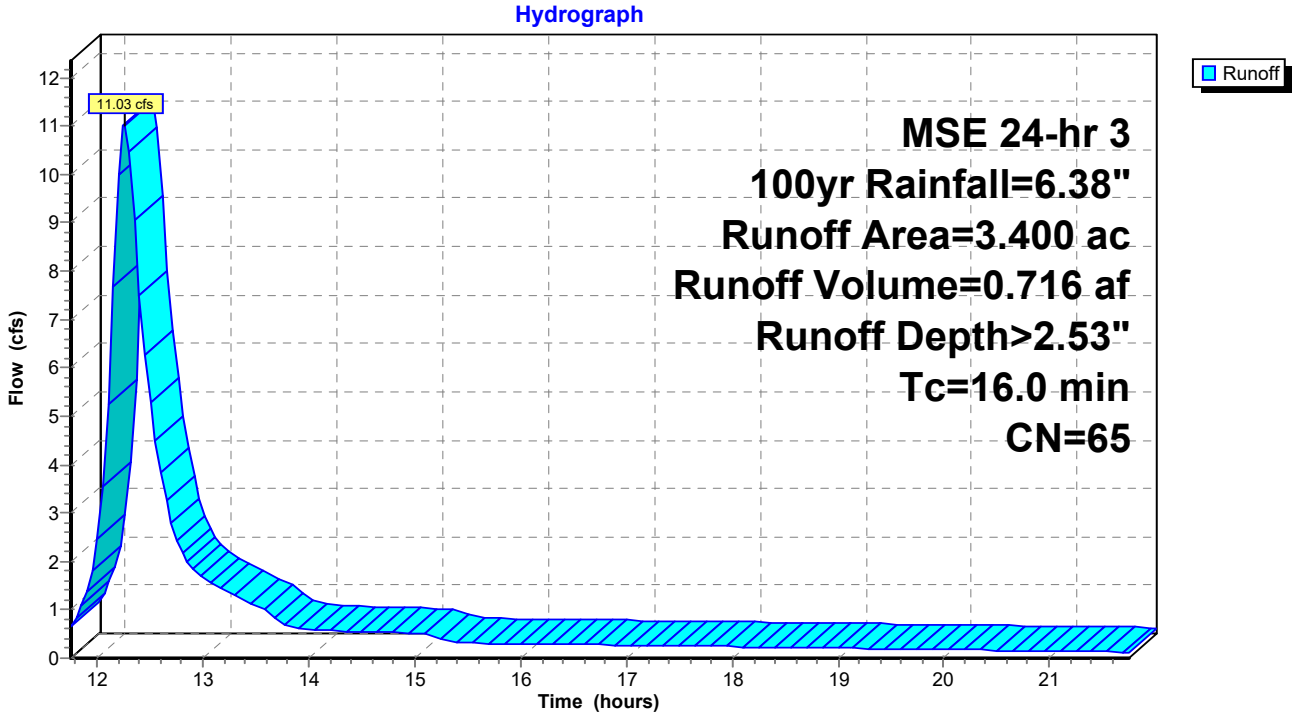
Runoff = 11.03 cfs @ 12.26 hrs, Volume= 0.716 af, Depth> 2.53"
Routed to Pond NW : NW infil

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 11.75-21.75 hrs, dt= 0.05 hrs
MSE 24-hr 3 100yr Rainfall=6.38"

Area (ac)	CN	Description
0.000	89	Paved roads w/open ditches, 50% imp, HSG B
0.370	98	Water Surface, 0% imp, HSG B
3.030	61	>75% Grass cover, Good, HSG B
3.400	65	Weighted Average
3.400		100.00% Pervious Area

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

Subcatchment NW2: P2-A



Summary for Subcatchment S1: P1

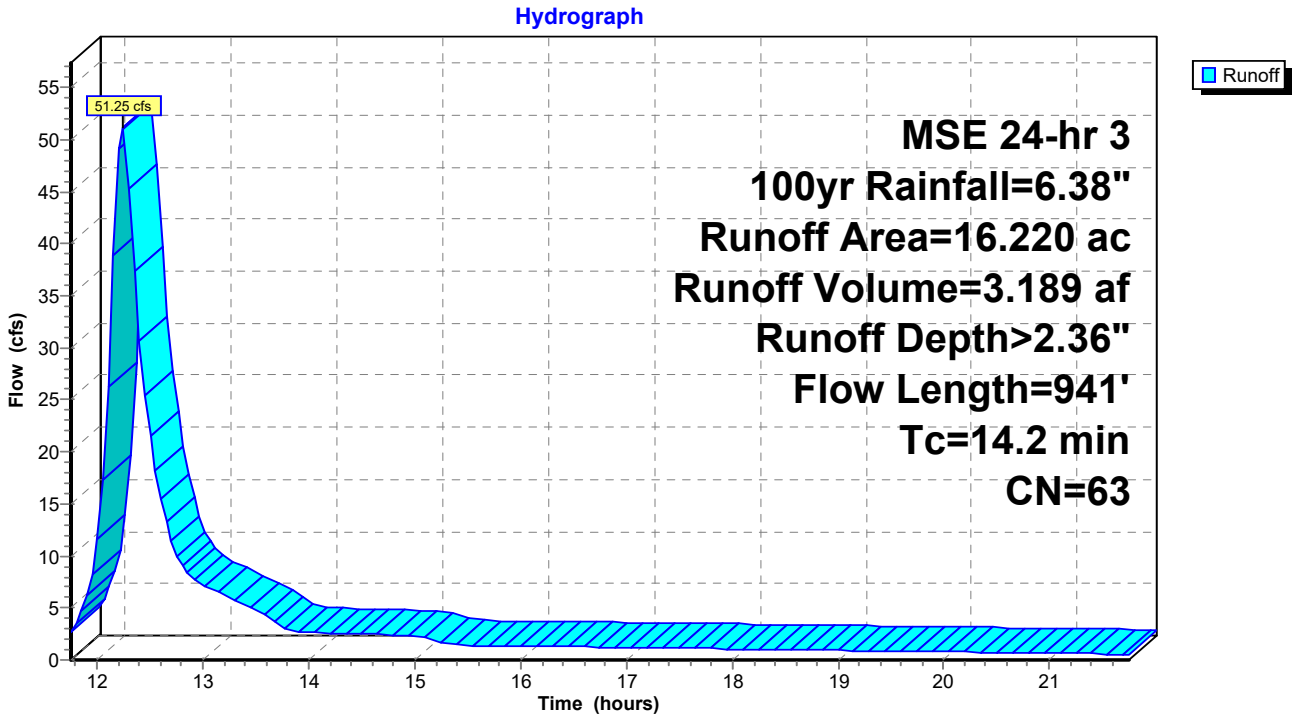
Runoff = 51.25 cfs @ 12.24 hrs, Volume= 3.189 af, Depth> 2.36"
Routed to Pond S : South Infil

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 11.75-21.75 hrs, dt= 0.05 hrs
MSE 24-hr 3 100yr Rainfall=6.38"

Area (ac)	CN	Description
15.150	61	>75% Grass cover, Good, HSG B
1.070	98	Water Surface, 0% imp, HSG B
16.220	63	Weighted Average
16.220		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.3	150	0.0500	0.24		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.65"
0.3	85	0.1200	5.20		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
3.6	706	0.0510	3.24	0.65	**Trap/Vee/Rect Channel Flow,** Bot.W=0.00' D=1.00' Z= 0.2 '/' Top.W=0.40' n= 0.022 Earth, clean & straight
14.2	941	Total			

Subcatchment S1: P1



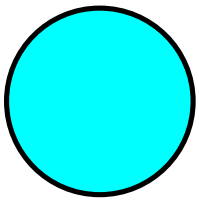
Summary for Reach 2R: 15" Pipe

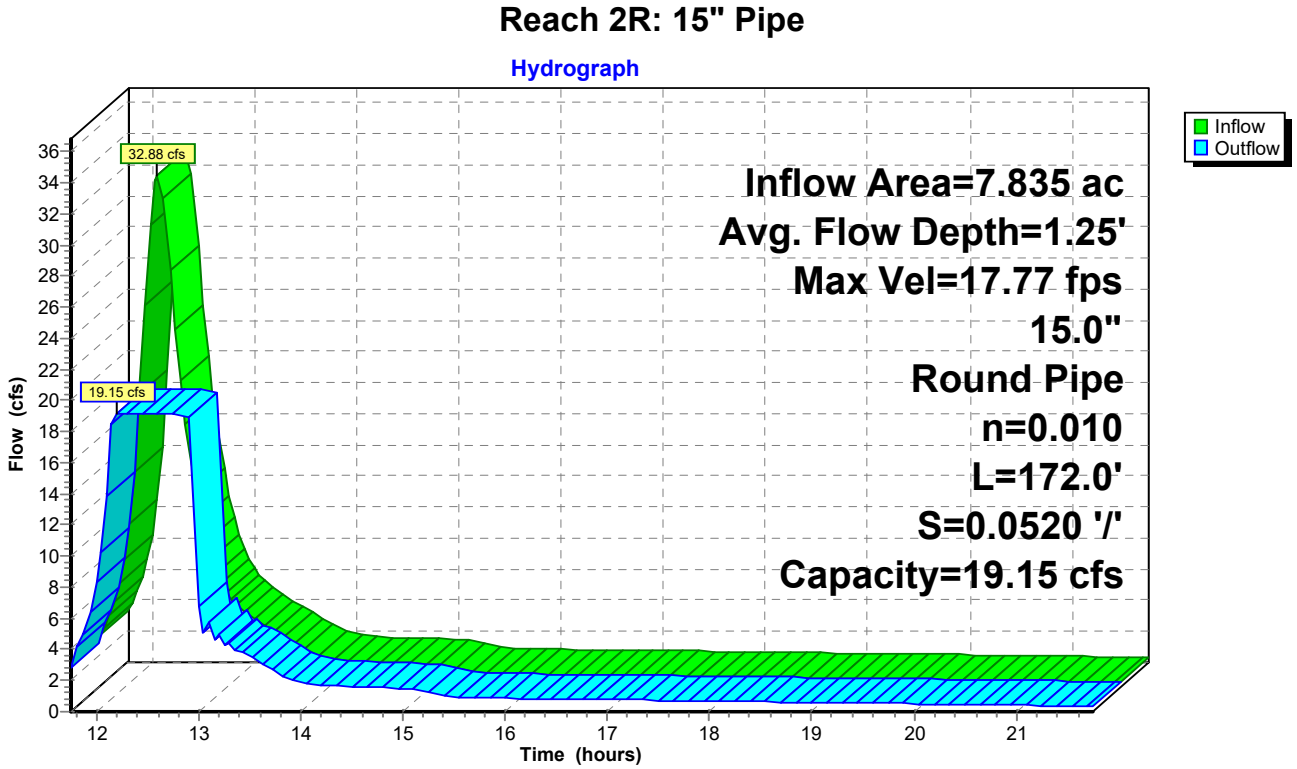
Inflow Area = 7.835 ac, 3.45% Impervious, Inflow Depth > 3.66" for 100yr event
Inflow = 32.88 cfs @ 12.32 hrs, Volume= 2.389 af
Outflow = 19.15 cfs @ 12.20 hrs, Volume= 2.388 af, Atten= 42%, Lag= 0.0 min
Routed to Reach 3R : 15" Outlet Pipe

Routing by Dyn-Stor-Ind method, Time Span= 11.75-21.75 hrs, dt= 0.05 hrs
Max. Velocity= 17.77 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 8.93 fps, Avg. Travel Time= 0.3 min

Peak Storage= 211 cf @ 12.20 hrs
Average Depth at Peak Storage= 1.25'
Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 19.15 cfs

15.0" Round Pipe
n= 0.010 PVC, smooth interior
Length= 172.0' Slope= 0.0520 '/'
Inlet Invert= 983.94', Outlet Invert= 975.00'





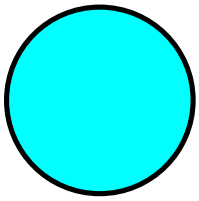
Summary for Reach 3R: 15" Outlet Pipe

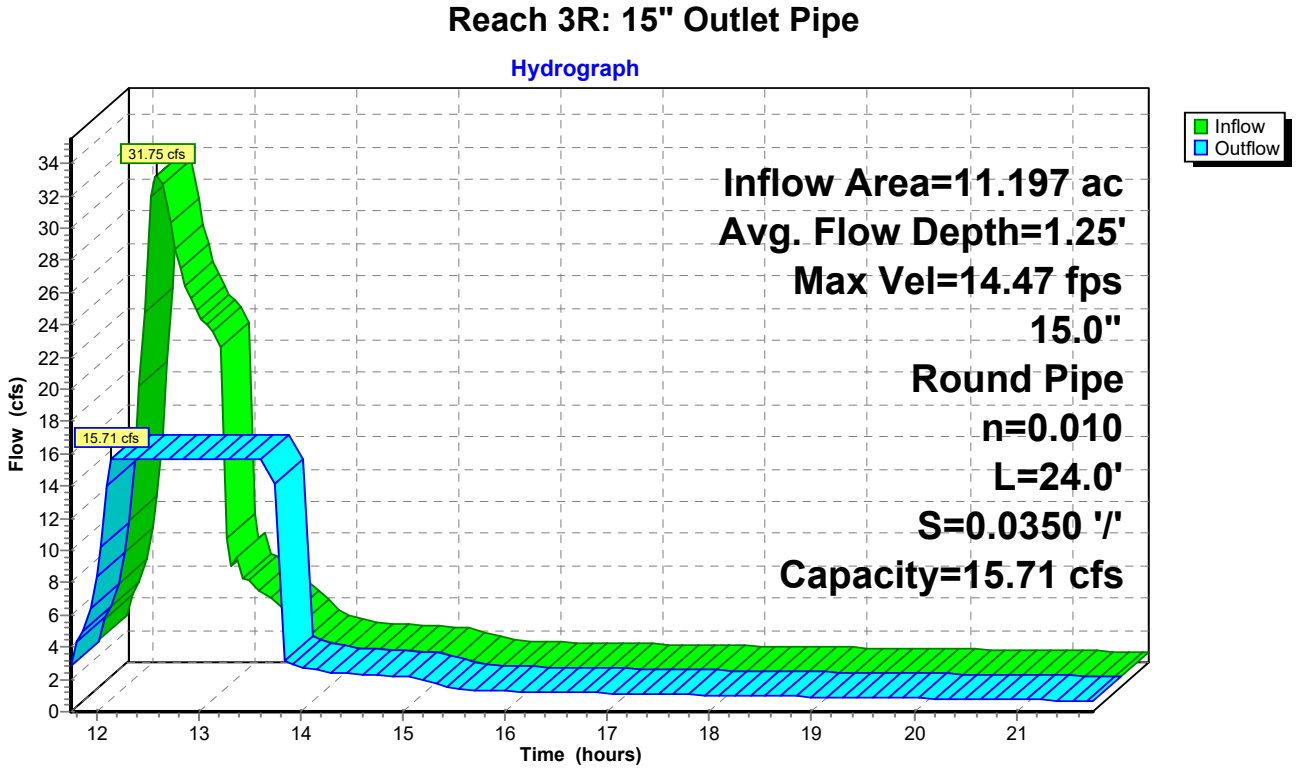
Inflow Area = 11.197 ac, 25.48% Impervious, Inflow Depth > 3.47" for 100yr event
Inflow = 31.75 cfs @ 12.32 hrs, Volume= 3.242 af
Outflow = 15.71 cfs @ 12.15 hrs, Volume= 3.242 af, Atten= 51%, Lag= 0.0 min
Routed to Link 1L : Total Runoff - Appleton Storage

Routing by Dyn-Stor-Ind method, Time Span= 11.75-21.75 hrs, dt= 0.05 hrs
Max. Velocity= 14.47 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 8.59 fps, Avg. Travel Time= 0.0 min

Peak Storage= 29 cf @ 12.15 hrs
Average Depth at Peak Storage= 1.25'
Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 15.71 cfs

15.0" Round Pipe
n= 0.010 PVC, smooth interior
Length= 24.0' Slope= 0.0350 '/'
Inlet Invert= 974.84', Outlet Invert= 974.00'





Summary for Pond 1P: Bio-Filter

Inflow Area = 3.362 ac, 76.85% Impervious, Inflow Depth > 4.27" for 100yr event
Inflow = 24.52 cfs @ 12.17 hrs, Volume= 1.196 af
Outflow = 12.60 cfs @ 12.32 hrs, Volume= 0.853 af, Atten= 49%, Lag= 9.1 min
Primary = 12.60 cfs @ 12.32 hrs, Volume= 0.853 af
Routed to Reach 3R : 15" Outlet Pipe
Secondary = 0.00 cfs @ 11.75 hrs, Volume= 0.000 af
Routed to Link 1L : Total Runoff - Appleton Storage

Routing by Dyn-Stor-Ind method, Time Span= 11.75-21.75 hrs, dt= 0.05 hrs
Peak Elev= 983.23' @ 12.32 hrs Surf.Area= 0.305 ac Storage= 0.494 af

Plug-Flow detention time= 112.6 min calculated for 0.842 af (70% of inflow)
Center-of-Mass det. time= 53.0 min (847.2 - 794.1)

Volume	Invert	Avail.Storage	Storage Description
#1	977.00'	0.001 af	**Custom Stage Data (Prismatic)** Listed below (Recalc) 0.240 af Overall x 0.3% Voids
#2	980.00'	0.962 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)
		0.963 af	Total Available Storage

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
977.00	0.080	0.000	0.000
980.00	0.080	0.240	0.240

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
980.00	0.080	0.000	0.000
985.00	0.305	0.962	0.962

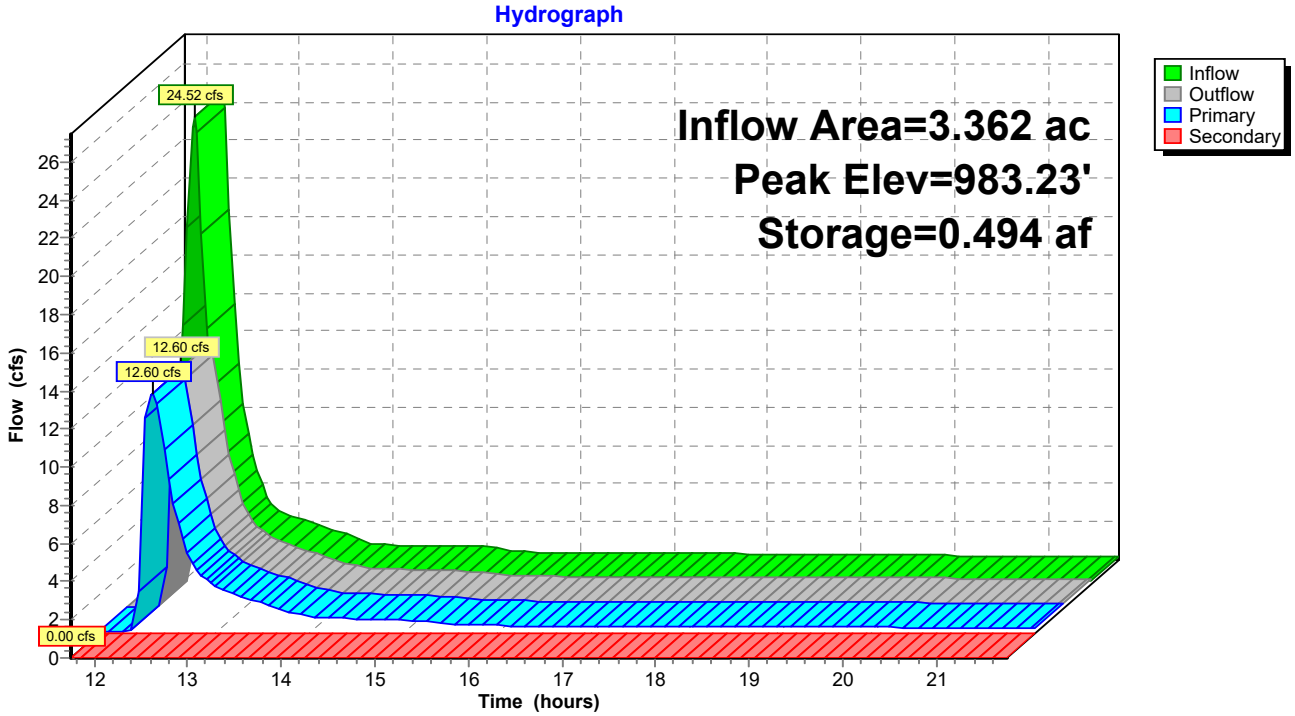
Device	Routing	Invert	Outlet Devices
#1	Primary	974.91'	**15.0" Round 15" Round Culvert** L= 2.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 974.91' / 974.84' S= 0.0350 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 1.23 sf
#2	Device 1	977.00'	**1.2" Vert. 1.2" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 2	977.00'	**6.0" Round 6.0" Round Culvert** L= 125.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 977.00' / 977.00' S= 0.0000 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.20 sf
#4	Device 3	977.00'	**3.940 in/hr 3.940 in/hr Exfiltration over Surface Area over Surface area** Conductivity to Groundwater Elevation = 965.00'
#5	Device 1	981.50'	**3.0" Vert. 3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#6	Device 1	982.65'	**36.0" Horiz. 36.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#7	Secondary	984.00'	**40.0' long x 5.0' breadth 40.0' long x 5.0' breadth Broad-Crested Rectangular** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00

2.50 3.00 3.50 4.00 4.50 5.00 5.50
Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65
2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=12.46 cfs @ 12.32 hrs HW=983.22' TW=976.09' (Dynamic Tailwater)
- **1=15" Round Culvert** (Inlet Controls 12.46 cfs @ 10.15 fps)
  - **2=1.2" Vert. Orifice/Grate** (Passes < 0.09 cfs potential flow)
    - **3=6.0" Round Culvert** (Passes < 0.75 cfs potential flow)
      - **4=3.940 in/hr Exfiltration over Surface Area** (Passes < 1.50 cfs potential flow)
  - **5=3.0" Vert. Orifice/Grate** (Passes < 0.30 cfs potential flow)
  - **6=36.0" Horiz. Orifice/Grate** (Passes < 13.25 cfs potential flow)

Secondary OutFlow Max=0.00 cfs @ 11.75 hrs HW=980.08' TW=0.00' (Dynamic Tailwater)
- **7=40.0' long x 5.0' breadth Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1P: Bio-Filter



Summary for Pond NE: NE infil

Inflow Area =	22.930 ac,	6.67% Impervious,	Inflow Depth >	2.35"	for 100yr event
Inflow =	84.39 cfs @	12.18 hrs,	Volume=	4.495 af	
Outflow =	6.52 cfs @	13.47 hrs,	Volume=	4.499 af,	Atten= 92%, Lag= 77.4 min
Discarded =	6.52 cfs @	13.47 hrs,	Volume=	4.499 af	
Primary =	0.00 cfs @	11.75 hrs,	Volume=	0.000 af	

Routing by Dyn-Stor-Ind method, Time Span= 11.75-21.75 hrs, dt= 0.05 hrs
Peak Elev= 959.44' @ 13.47 hrs Surf.Area= 1.653 ac Storage= 2.294 af

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 152.6 min (966.9 - 814.3)

Volume	Invert	Avail.Storage	Storage Description
#1	958.00'	3.230 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

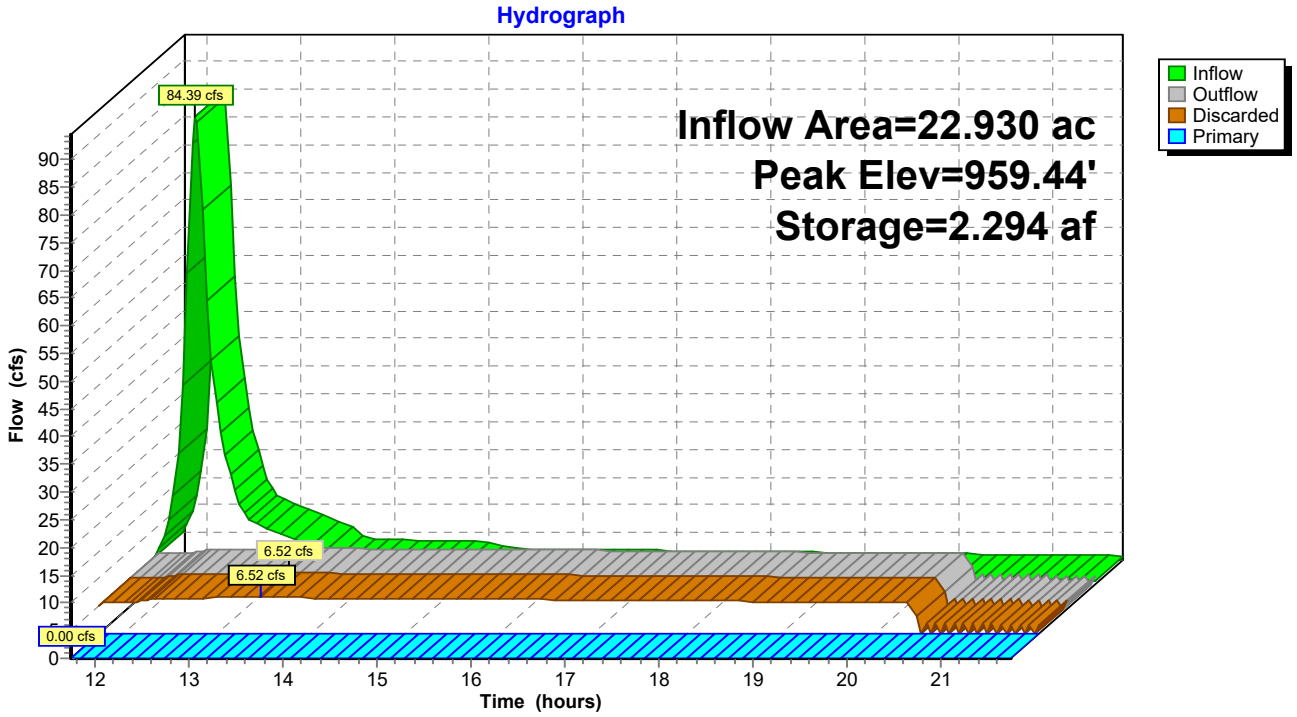
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
958.00	1.530	0.000	0.000
960.00	1.700	3.230	3.230

Device	Routing	Invert	Outlet Devices
#1	Discarded	958.00'	**3.600 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 942.00'
#2	Primary	959.75'	**25.0' long + 0.3 '/' SideZ x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=6.52 cfs @ 13.47 hrs HW=959.44' (Free Discharge)
└─**1=Exfiltration** (Controls 6.52 cfs)

Primary OutFlow Max=0.00 cfs @ 11.75 hrs HW=958.00' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond NE: NE infil



Summary for Pond NW: NW infil

Inflow Area = 24.832 ac, 12.78% Impervious, Inflow Depth > 3.02" for 100yr event
Inflow = 62.08 cfs @ 12.26 hrs, Volume= 6.245 af
Outflow = 11.75 cfs @ 13.81 hrs, Volume= 6.062 af, Atten= 81%, Lag= 93.3 min
Discarded = 8.03 cfs @ 13.81 hrs, Volume= 5.896 af
Primary = 3.71 cfs @ 13.81 hrs, Volume= 0.166 af
Routed to nonexistent node 3P

Routing by Dyn-Stor-Ind method, Time Span= 11.75-21.75 hrs, dt= 0.05 hrs
Peak Elev= 952.93' @ 13.81 hrs Surf.Area= 1.842 ac Storage= 3.355 af

Plug-Flow detention time= 181.4 min calculated for 6.031 af (97% of inflow)
Center-of-Mass det. time= 168.0 min (992.0 - 824.1)

Volume	Invert	Avail.Storage	Storage Description
#1	951.00'	2.630 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)
#2	951.00'	0.860 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)
		3.490 af	Total Available Storage

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
951.00	1.250	0.000	0.000
953.00	1.380	2.630	2.630

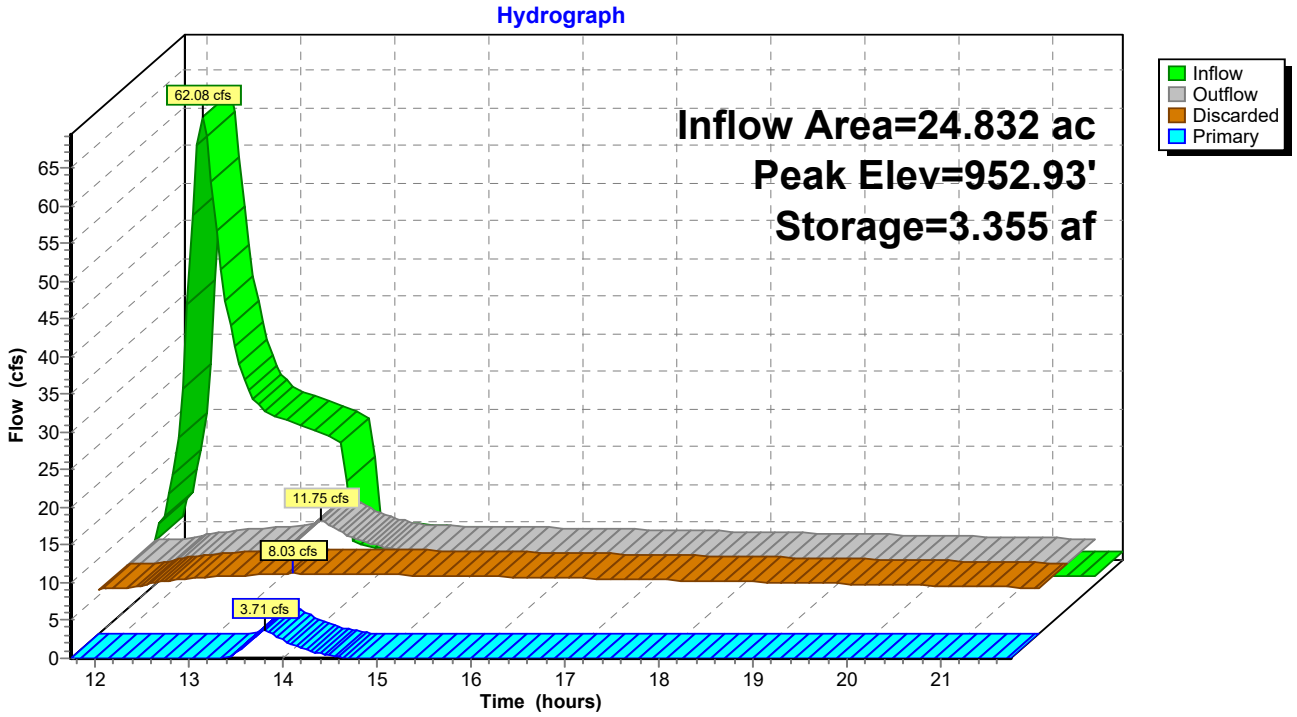
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
951.00	0.390	0.000	0.000
953.00	0.470	0.860	0.860

Device	Routing	Invert	Outlet Devices
#1	Discarded	951.00'	**3.600 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 942.00'
#2	Primary	952.75'	**20.0' long + 0.3 '/' SideZ x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=8.03 cfs @ 13.81 hrs HW=952.93' (Free Discharge)
└**1=Exfiltration** (Controls 8.03 cfs)

Primary OutFlow Max=3.67 cfs @ 13.81 hrs HW=952.93' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Weir Controls 3.67 cfs @ 1.04 fps)

Pond NW: NW infil



Summary for Pond S: South Infil

Inflow Area = 16.220 ac, 0.00% Impervious, Inflow Depth > 2.36" for 100yr event
Inflow = 51.25 cfs @ 12.24 hrs, Volume= 3.189 af
Outflow = 4.70 cfs @ 13.52 hrs, Volume= 3.195 af, Atten= 91%, Lag= 77.0 min
Discarded = 4.70 cfs @ 13.52 hrs, Volume= 3.195 af
Primary = 0.00 cfs @ 11.75 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 11.75-21.75 hrs, dt= 0.05 hrs
Peak Elev= 955.45' @ 13.52 hrs Surf.Area= 1.162 ac Storage= 1.612 af

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 149.6 min (966.9 - 817.3)

Volume	Invert	Avail.Storage	Storage Description
#1	954.00'	2.260 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

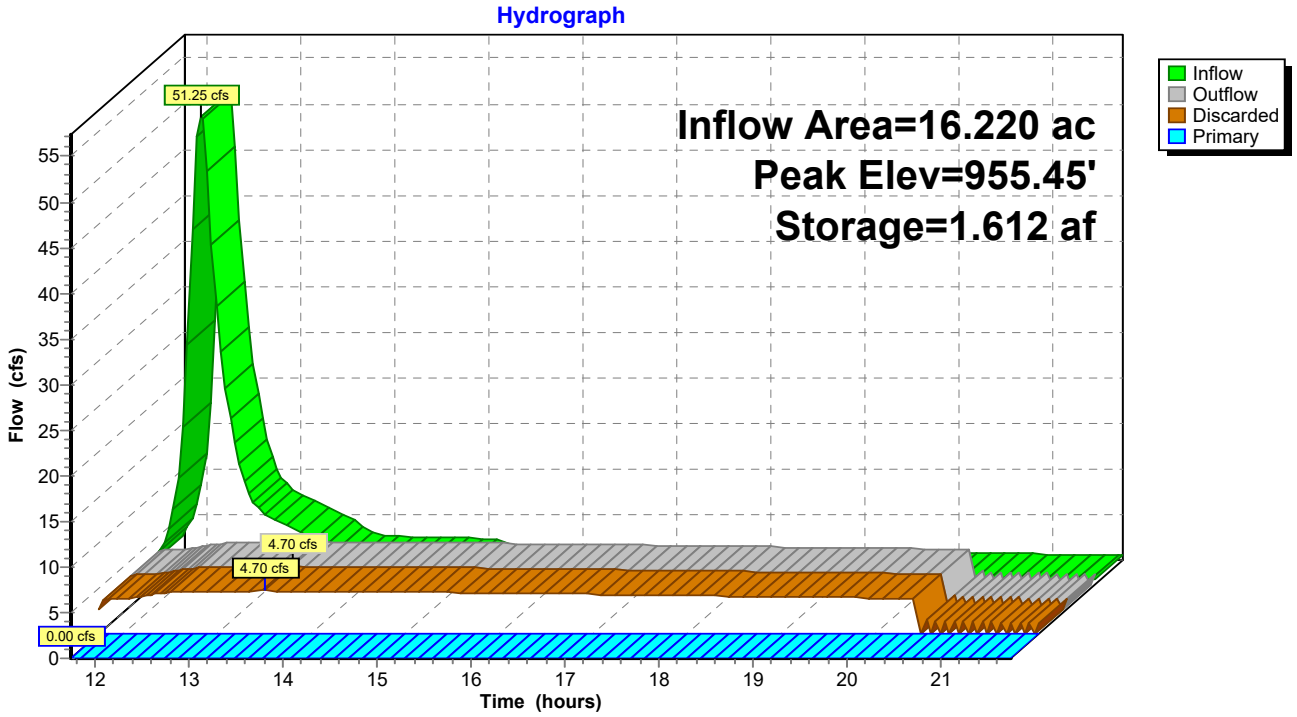
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
954.00	1.060	0.000	0.000
956.00	1.200	2.260	2.260

Device	Routing	Invert	Outlet Devices
#1	Discarded	954.00'	**3.600 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 942.00'
#2	Primary	955.75'	**25.0' long + 0.3 '/' SideZ x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=4.70 cfs @ 13.52 hrs HW=955.45' (Free Discharge)
└─**1=Exfiltration** (Controls 4.70 cfs)

Primary OutFlow Max=0.00 cfs @ 11.75 hrs HW=954.00' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond S: South Infil

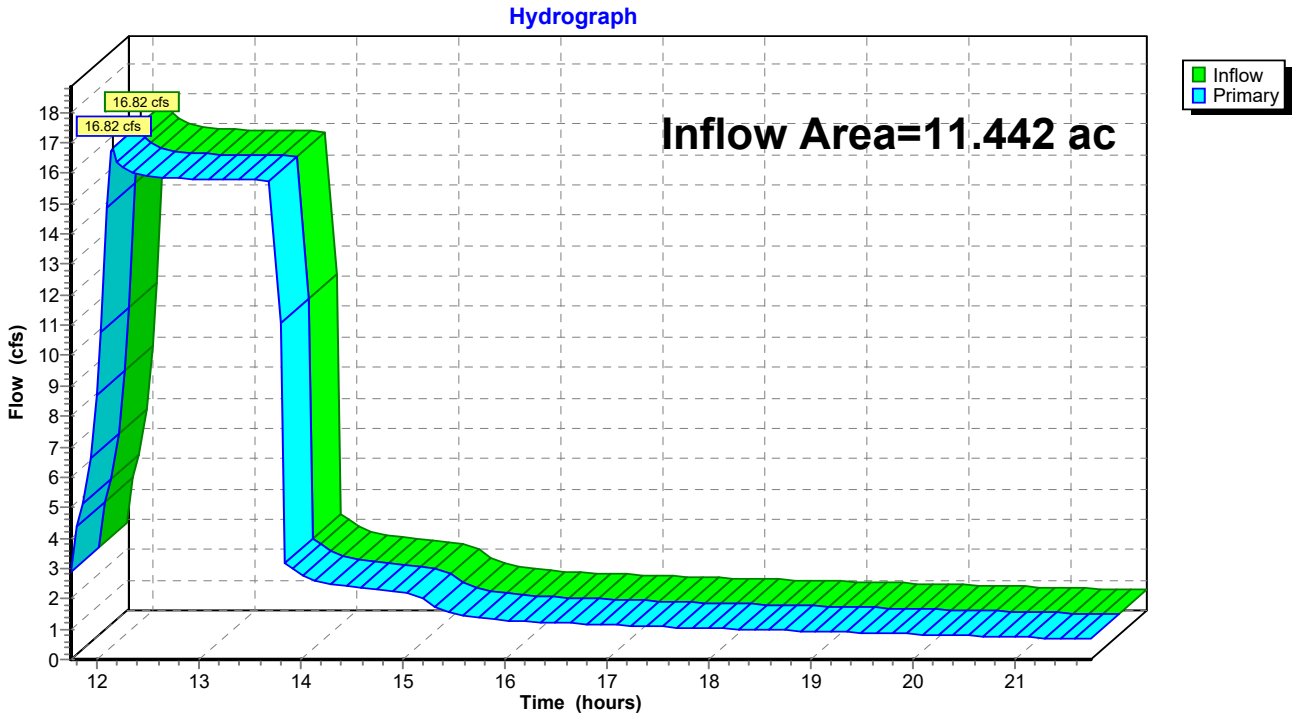


Summary for Link 1L: Total Runoff - Appleton Storage

Inflow Area = 11.442 ac, 24.94% Impervious, Inflow Depth > 3.45" for 100yr event
Inflow = 16.82 cfs @ 12.17 hrs, Volume= 3.286 af
Primary = 16.82 cfs @ 12.17 hrs, Volume= 3.286 af, Atten= 0%, Lag= 0.0 min
Routed to Pond NW : NW infil

Primary outflow = Inflow, Time Span= 11.75-21.75 hrs, dt= 0.05 hrs

Link 1L: Total Runoff - Appleton Storage



SIGN REVIEW

4/10/23 Plan Commission Meeting

Signs & Lines / Zilber 5 / TI Investors of Germantown LLC

Planning & Zoning Report **Germantown, Wisconsin**

Summary

Signs & Lines by Stretch, agent for TI Investors Germantown LLC, property owner, and Motis Manufacturing is requesting approval for a new wall sign for the multi-tenant building located at W210 N12975 Gateway Crossing (Zilber Building #5) in the Germantown Gateway Corporate Park.

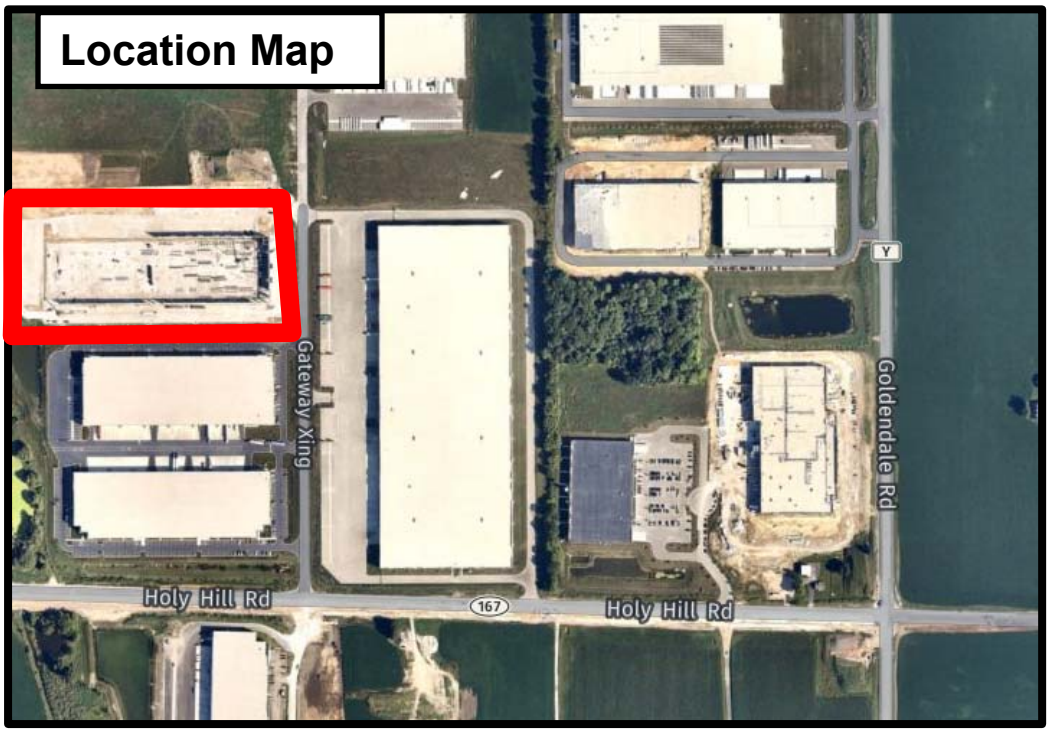
Location: W210 N12975 Gateway Crossing (Zilber Building #5)

Agent/ Property Owners:

Signs & Lines	TI Investors Germantown LLC
W240S3990 Rockwood	710 N. Plankinton Ave
Waukesha, WI 53189	Milwaukee, WI 53203

Zoning: M-1: Limited Industrial District

Adjacent Land Uses		Zoning
North	Industrial	M-1
South	Industrial	M-1
East	Agricultural	A-1
West	Industrial	M-1



Background/Proposal
Signs & Lines by Stretch, agent for TI Investors Germantown LLC, property owner, and Motis Manufacturing is requesting approval for a new wall sign for the multi-tenant building located at W210 N12975 Gateway Crossing (Zilber Building #5) in the Germantown Gateway Corporate Park .

Wall Sign

- 5’2” x 12’10” (66 square feet) wall sign comprised of aluminum frame channel letters w/ flat acrylic & vinyl letter faces mounted to the east elevation facing Gateway Crossing. The sign letters are halo-lit from behind as shown in the rendering.

Staff Comments
All requirements of the Village Sign Code have been met.

Village Staff Recommendation

APPROVE the proposed wall sign for Motis Manufacturing in the multi-tenant building located at W210 N12975 Gateway Crossing (Zilber Building #5) in the Germantown Gateway Corporate Park subject to the following conditions:

1. Electrical permits shall be obtained from Inspection Services prior to installation of any/all electrical components.

Village of Germantown ...Willkommen

Fee must accompany application

$275 Sign Review Fee

$ 75 Sign Face Replacement

Paid _____ Date_____

SIGN REVIEW APPLICATION

Pursuant to Section 17.46 of the Municipal Code

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

1 APPLICANT OR AGENT

Signs & Lines by Stretch
W240 S3990 Rockwood Circle
Waukesha, WI, 53189
Phone (262) 544-9628
Fax (262) 549-0928
E-Mail matthew@slines.net

PROPERTY OWNER

Motis Brands TI Investors of Germantown IV LLC
N102W19400 Willow Creek Way 710 N. Plankinton Ave
Germantown, WI 53022 Milwaukee, WI 53203
Phone (414) 380-1443

2 PROPERTY ADDRESS OR GENERAL LOCATION

Motis Brands
W201N12975 Gateway Crossing
Germantown, WI 53022

Wall sign to be installed on building over main entrance

3 SIGN INFORMATION

Sign Dimensions 5' 2" height x 12' 10" width Single/Multi Tenant (circle one)
Number of Sides 1 Building Frontage SF 17,100
Total Square Footage of Sign (include all sides) 66
Total height of the Sign 35 ft
Is the Sign to be illuminated X yes _____ no
Type of Sign Construction Materials Aluminum and Acrylic
Distance to Closest Property Line_____

Are there any existing signs on the property Monument sign by road
If yes, what is the total Square Footage of existing signs 50

What are the intentions for the existing signs: Take down _____ Remain X

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

Matthew Wegner 2/28/2023
Applicant Date

2-28-2023
Owner Date

R. M. McIlwee 4/3/23
Ryan M. McIlwee, Sr. Property Manager

Quote #: 53035
Job #: XXXXX

Qty: 01

Halo-Lit Channel Letters

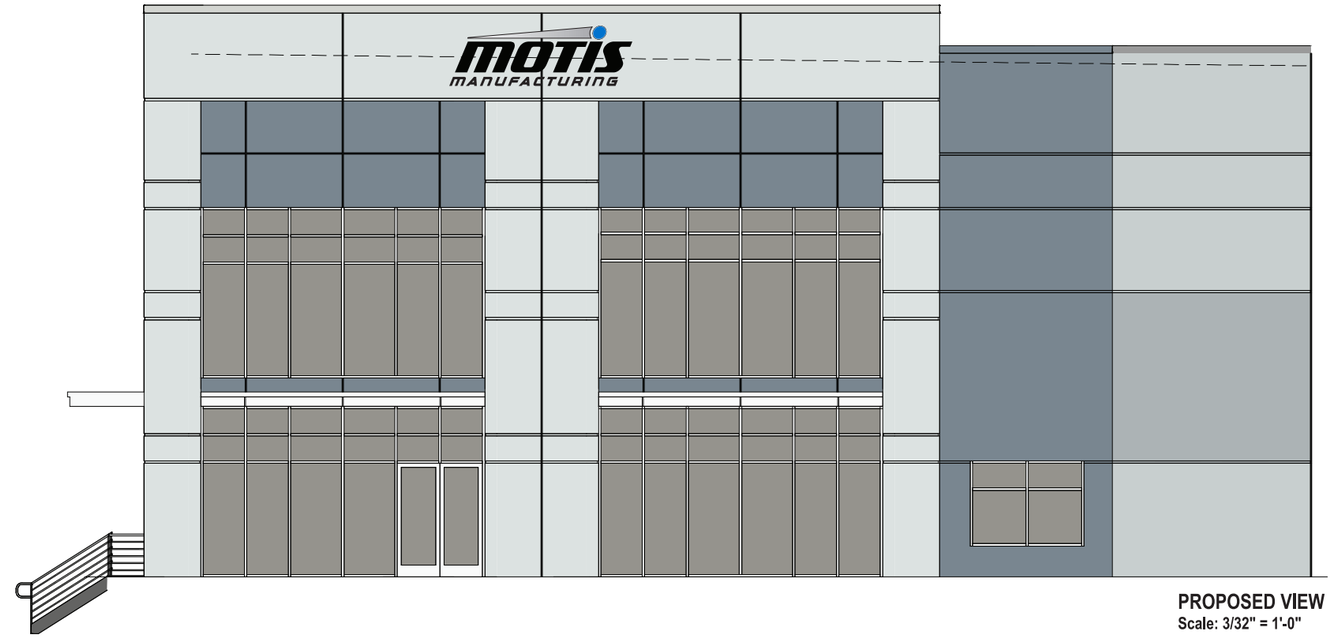
Client Name: Motis Brands

Color/ Material Key:

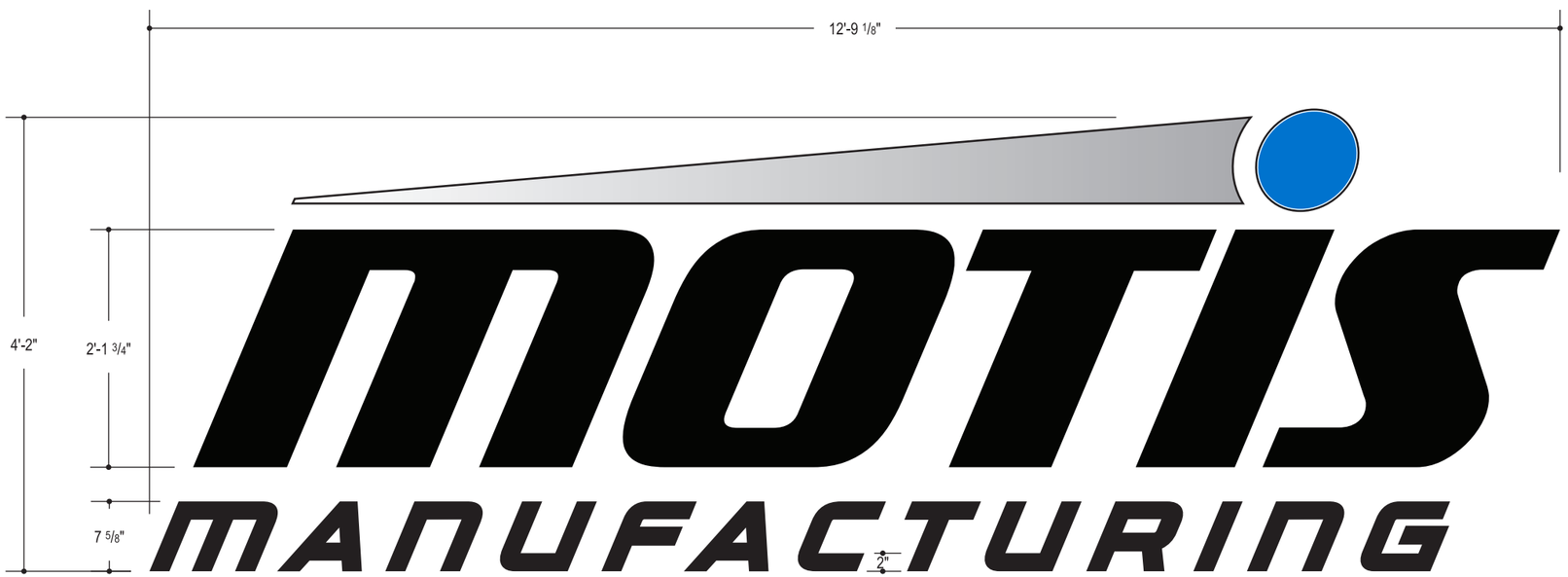
- Sherwin Williams, Standard Black
- Digital Laminate Print (Gradient and PMS 285)
- Sherwin Williams (To Match Building)

Fabrication Details:
- Painted Black, Halo-Lit Channel Letters ("MOTIS" & "MANUFACTURING"), 3" Black Returns w/ 1 1/2" Stand Off
- Top Accent Bar and Dot, Face-Lit w/ Digital Print Vinyl and Halo-Lit, 5" Black Returns w/ 1 1/2" Stand Off

FIELD SURVEY REQUIRED TO ASCERTAIN ROOFLINE/ PARAPET HEIGHT



PROPOSED VIEW
Scale: 3/32" = 1'-0"



Scale: 3/4" = 1'-0"

NIGHT VIEW - NTS

DESIGN LAYOUTS ARE COPYRIGHT © 2022

SIGNS & LINES BY STRETCH
W240 S3990 Rockwood Circle
Waukesha, WI 53189
(262) 544 - 9628
www.slines.net

ARTWORK CHARGE: One customer requested revision allowed per drawing/ estimate. There will be an artwork charge for any customer requested revisions.

Project: Channel Letters Holy Hill
Install Address: W201N12975 Gateway Crossing, Germantown, WI 53022
Sales Person: Matthew Wegner
Project Manager: XXX

I have checked the DETAILS of this proof and approve the design. Signs & Lines by Stretch is not responsible for typographical errors. My signature authorizes Signs & Lines by Stretch to proceed with production of this order. I understand that I will be charged for product and labor, even if I cancel the order after this date.

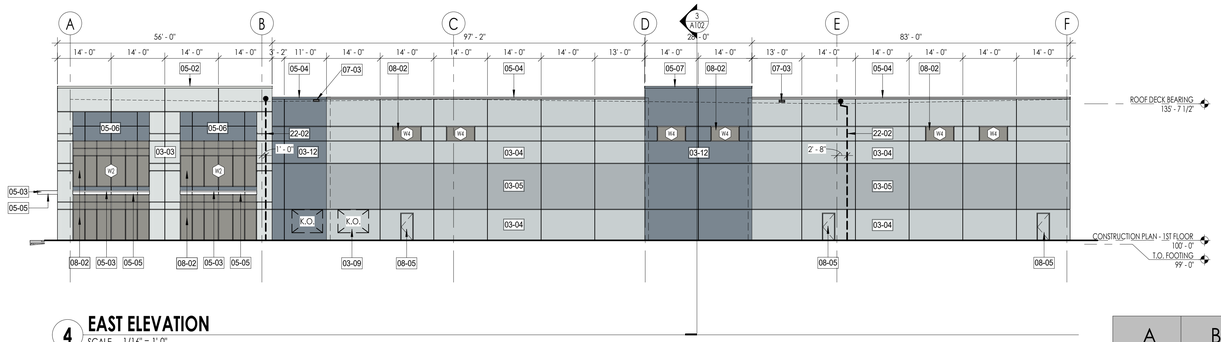
Approval: _____ Date: _____

Designer: Amanda Otto
Date: 12.01.2022

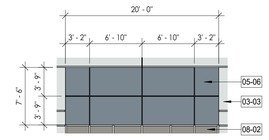
REVISIONS
01: XX.XX.XX - ATO - Revision
02: XX.XX.XX - ATO - Revision
03: XX.XX.XX - ATO - Revision
04: XX.XX.XX - ATO - Revision
05: XX.XX.XX - ATO - Revision
06: XX.XX.XX - ATO - Revision

SHEET KEYNOTES

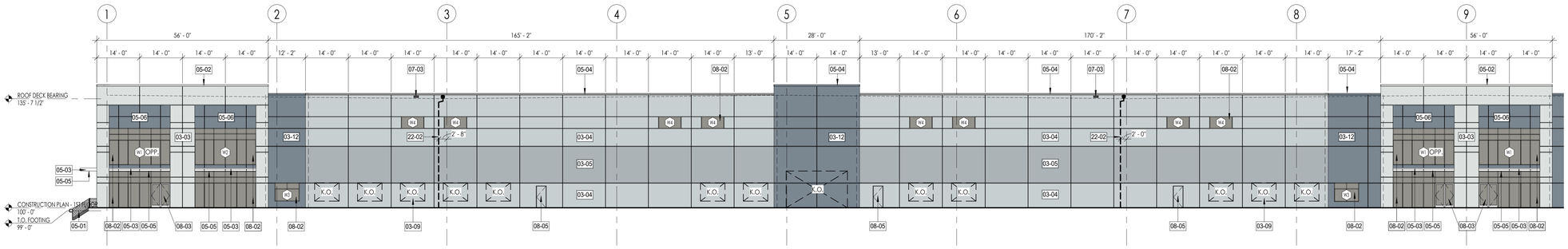
03-03	INSULATED PRECAST WALL PANEL ENTRANCE AREA COLOR (EPT1) - SHERWIN WILLIAMS COLOR: SW 6245 QUICKSILVER
03-04	INSULATED PRECAST WALL PANEL FIELD COLOR (EPT2) - SHERWIN WILLIAMS COLOR: SW 6246 NORTH STAR
03-05	INSULATED PRECAST WALL PANEL ACCENT BAND COLOR (EPT3) - SHERWIN WILLIAMS COLOR: SW 6248 JUBILEE
03-09	FUTURE PRECAST KNOCKOUT FOR PUNCHED WINDOWS
03-12	INSULATED PRECAST WALL PANEL ACCENT WALL COLOR (EPT4) - SHERWIN WILLIAMS COLOR: SW 6249 STORM CLOUD
05-01	DOCK STAIR (AM8) - HOT DIPPED GALVANIZED METAL
05-02	PREFINISHED METAL COPING (AM1) - PAC-CLAD COLOR: STONE WHITE
05-03	PREFINISHED COMPOSITE CANOPY PANEL (AM5) - STONEWOOD ARCHITECTURAL PANEL COLOR: MATCH STOREFRONT WINDOW SYSTEM FINISH
05-04	PREFINISHED METAL COPING (AM10) - PAC-CLAD COLOR: CITYSCAPE
05-05	PREFINISHED COMPOSITE CANOPY SOFFIT PANEL (AM9) - STONEWOOD ARCHITECTURAL PANEL COLOR: MATCH STOREFRONT WINDOW SYSTEM FINISH
05-06	PREFINISHED COMPOSITE WALL PANEL (AM11) - STONEWOOD ARCHITECTURAL PANEL COLOR: SQUIRREL GREY 7000-CD
05-07	FILED FINISHED METAL COPING (AM12) - PAC-CLAD COLOR: MATCH SHERWIN WILLIAMS SW 6249 STORM CLOUD
07-03	PREFINISHED METAL THRU-WALL SCUPPER
08-02	ALUMINUM STOREFRONT WINDOW SYSTEM (AM2) - KAWNEER COLOR: CLEAR ANODIZED ALUMINUM
08-03	ALUMINUM STOREFRONT DOOR SYSTEM (AM3) - KAWNEER COLOR: CLEAR ANODIZED ALUMINUM
08-05	INSULATED STEEL DOOR & FRAME (EPT5) - SHERWIN WILLIAMS COLOR: SW 6246 NORTH STAR
22-02	ROOF DRAIN LEADER. CONFIRM SIZE/LOCATION WITH D/B PLUMBING CONTACTOR



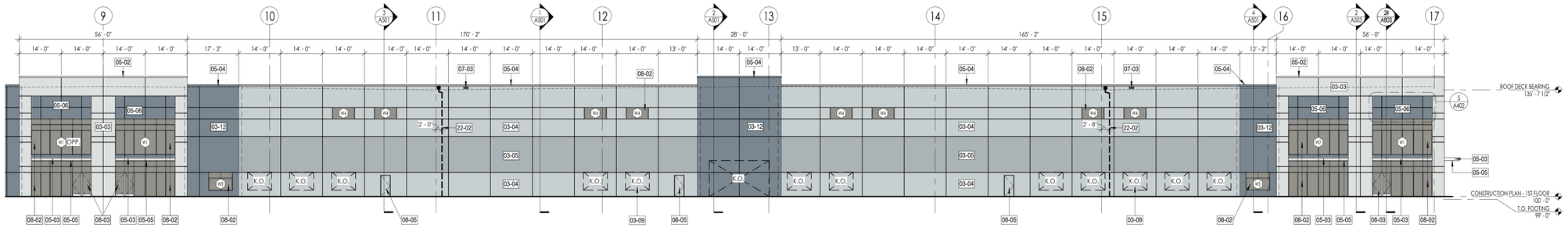
4 EAST ELEVATION
SCALE 1/16" = 1'-0"



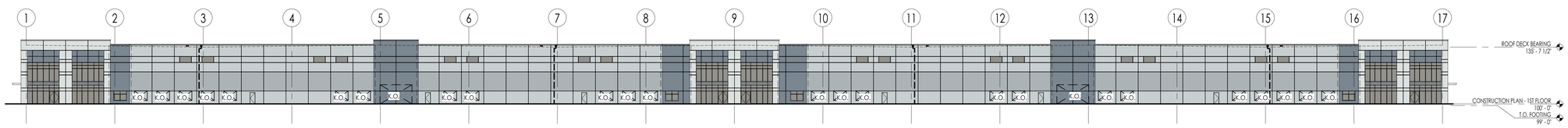
5 TYP. COMPOSITE PANEL ELEVATION
SCALE 1/8" = 1'-0"



3 SOUTH ELEVATION 'A'
SCALE 1/16" = 1'-0"



2 SOUTH ELEVATION 'B'
SCALE 1/16" = 1'-0"



1 SOUTH ELEVATION - OVERALL
SCALE 1" = 30'-0"

STEPHEN PERRY SMITH ARCHITECTS, INC.
215 N. WATER STREET, SUITE 250
MILWAUKEE, WISCONSIN 53202
T 414.277.9700 | F 414.277.9705
spsarchitects.com

PINNACLE ENGINEERING GROUP

raSmith
CREATIVITY BEYOND ENGINEERING

PROJECT

PROPOSED BUILDING FOR:

ZILBER INDUSTRIAL 5

GERMANTOWN GATEWAY
CORPORATE PARK
GATEWAY CROSSING & ROCKFIELD ROAD
GERMANTOWN, WI

OWNER

ZILBER PROPERTY GROUP SM

CONTRACTOR

RILEY CONSTRUCTION

REVISIONS

NO.	DESCRIPTION	DATE
	Contract Set: 3/10/22	

INFORMATION

PROJECT ARCHITECT	SRC
PROJECT MANAGER	MAM
PROJECT NUMBER	211105
ISSUED FOR	MUNICIPAL REVIEW
DATE	FEBRUARY 4, 2022

SHEET

BUILDING ELEVATIONS

A402

C:\Users\Scott\Documents\211105 Zilber 5 Rev 0a_scottcieslak.rvt

BUSINESS OF THE PLAN COMMISSION

MEETING DATE: April 14, 2023

PLACEMENT: Action Item

ITEM TITLE: Village of Germantown 2050 Comprehensive Plan: Implementation Objectives & Action Steps**(DISCUSSION)**

SUBMITTED BY:

SUMMARY EXPLANATION:

ATTACHMENT:

RECOMMENDATION:

ACTION BY Committee: