

REZONING & PLANNED DEVELOPMENT DISTRICT (PDD) AMENDMENT & SITE PLAN APPLICATIONS

8/14/23 Plan Commission Meeting

Virtus Development LLC / District One LLC / Hacker Trust

Village Planner Report

Germantown, Wisconsin

Summary

Greg Nagel, President of Virtus Development and agent for District One LLC, property owner, and the Hacker Trust, property owner, is requesting approval of a rezoning application to amend & expand the “Kuhburg Planned Development District” and site development & building plans for a 33-stall commercial parking lot and 4-unit multi-family townhouse located in the southwest corner of the Donges Bay Road @ Fond du Lac Ave/STH145 intersection.

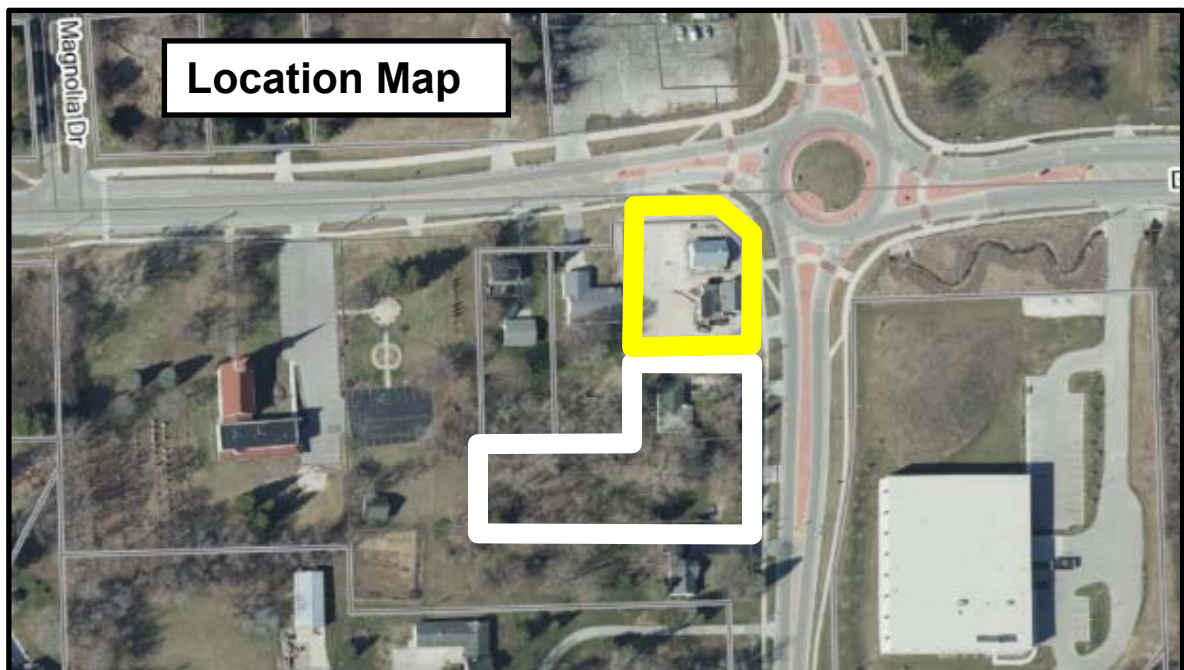
Property Location: W140 N10363 Fond du Lac Ave (.34 ac parcel)
W140 N10349 Fond du Lac Ave (.73 ac parcel)

Applicant/

Property Owner: Greg Nagel District One LLC Hacker Trust
Virtus Development 13100 Watertown W140 N10363 Fond du Lac
13890 Bishops Dr Elm Grove, WI Germantown, WI
Brookfield, WI

Current Zoning: B-3: General Business (.28 ac parcel)
Rs-6: Single-Family Residential (.73 ac parcel)

Adjacent Land Uses		Zoning
North	Business	B-3
South	Residential	Rs-6
East	Industrial	M-1
West	Residential	Rs-6



Background

As discussed in October, 2022, the original Kuhburg Planned Development District (.43-ac) was created in February, 2018 to stimulate the renovation of two parcels and existing buildings located in the southwest corner of the intersection, including a single-story schoolhouse and a 2-story tavern into a coffee shop and restaurant. To date, renovation of the schoolhouse into the Stone Creek Coffee “Kaffeehaus” is complete, along with the reconstruction of the parking lot west of the building. Remaining improvements include construction of a covered portico between providing seasonal, outdoor seating for both the Kaffeehaus and the planned renovation of the existing Gamroth’s Kuhburg Junction tavern.

At that time, a public hearing was held with mixed opinions (see enclosed October 10 PC meeting minutes). The Plan Commission closed the public hearing and tabled action on the proposal with direction to reduce the number of units/density and consider revision to the townhouse site layout.

Proposal

At this time, the Developer is requesting approval of a rezoning application to amend & expand the Kuhburg Planned Development Zoning District to the south by adding and re-developing two abutting parcels to the south totaling approximately 1.1 acres with detailed site development & building plans for the following:

1. 33-stall parking lot (to serve the two commercial retail buildings)
2. 4-unit multi-family residential townhouse-style building (reduced from the original 6-unit proposal)
3. storm water management basin serving the parking lot and townhouse development

Kuhburg PDD Text & General Development Plan Amendment

As detailed in the July 21 statement, the Developer proposes a series of text amendments to the current conditions & restrictions resolution for the Kuhburg PDD, including the following (~~strikeouts~~ to be deleted; underlines to be added):

1. **PURPOSE AND INTENT.** The Kuhburg District PDD is intended to provide for the orderly and attractive re-development and operation of commercial retail uses, as well as multi-family dwelling uses, where such activities are conducted within the two existing buildings located at the Donges Bay Road @ Fond du Lac Ave/STH145 intersection, including a vacant schoolhouse and 2-story tavern, and a 4-unit multi-family townhouse. The Kuhburg District PDD will be comprised of a 1-story coffee shop building and a 2-story restaurant building connected by a covered/screened portico providing seasonal seating for patrons of the coffee shop and restaurant operations. and a 4-unit multi-family townhouse.

The re-development is intended to be compatible with adjacent and surrounding residential development and enhance the economic stability and quality of life in the Village of Germantown. These projects are aligned with the vision for the Victory Center Corridor and in particular with regard to the proposed 2050

Comprehensive Plan which allows for multi-family residential development in a traditional design pattern in densities up to 10.0 DU/acre (which is in keeping with what is proposed (6.0 DU on a .74 ac parcel).

2. **GENERAL DEVELOPMENT PLAN (GDP).** The General Development Plan (Sheet C1.02 dated July 20, 2023) (Exhibit B on Sheet GD100 dated February 23, 2018) establishes the basic parameters for development within the Kuhburg District PDD and all additional parcels now in the development for including the approximate size and orientation of buildings, density of development, setbacks, location of access roadways and driveways, and the general location and extent of landscaping and buffering. While all re-development within the PDD shall be generally consistent with the GDP, the GDP does not grant specific site development or building approval. Proposed modifications and/or revisions to the GDP shall be reviewed consistent with Section 17.27(9) of the Zoning Code.
3. **PERMITTED LAND USES.** Permitted Principal, Accessory, Conditional and Temporary Uses allowed within the Kuhburg District PDD shall be as set forth in Section 17.22(1)(a) and 17.30 of the Zoning Code.
7. **SITE DEVELOPMENT AND BUILDING REQUIREMENTS.** Unless otherwise set forth below, all site development and building associated with the two commercial buildings shall be in accordance with the lot, building and other applicable bulk requirements set forth in the underlying B-3: General Business Zoning District and other applicable Zoning Code regulations.
 - a. **LOT AND BUILDING REQUIREMENTS**
 - i. Lot Area (minimum) 0 acres
 - ii. Principal Building Setbacks (minimum)
 1. Front/Street yard 0 feet
 - iii. Parking Setbacks (minimum)
 1. Front/Street yard 0 feet
 2. Side yard 0 feet
 3. Rear yard 0 feet

Unless otherwise set forth below, all site development and building associated with the residential townhouse development shall be in accordance with the lot, building and other applicable bulk requirements set forth in the underlying Rm-1: Multi-Family Zoning District (Section 17.22) and other applicable Zoning Code regulations

- b. **LOT AND BUILDING REQUIREMENTS**
 - i. Lot Area (minimum) 0.5 acres
 - ii. Principal Building Setbacks (minimum)
 1. Front/Street yard 27 feet
 2. Side yard 5 feet
 3. Rear yard 35 feet

[NOTE: A separate PDD Conditions & Restrictions resolution containing these development-specific allowances, references to the detailed general development plan, and any other conditions of approval deemed appropriate by the Village, will be prepared by Village staff at the time the PDD is considered by the Village Board].

Site Development & Building Plans

The Developer applicant has submitted site development and building plans for redevelopment of the .34-acre site into a 33-stall parking lot. As presented in the plan set, the parking includes the following features:

- Access to/from the commercial property to the north; no direct access to Fond du Lac Avenue;
- Off-site storm water management shared with the townhouse development to the south;
- Landscaping buffer along the west, south and east perimeter of the parking lot

The Developer has also submitted detailed plans for the development of a 4-unit walk-up townhouse-style multi-family building with the following features:

- Four (4) two-story dwelling units with 2-car underneath garage parking (effectively 3 stories with a maximum building height of 35 feet)
- (8) additional open lot parking stalls
- 2-Bed/2-bath dwelling units w/ 1,120 sqft living area (plus 105 sqft porch & 680 sqft garage & garage level storage) w/ partial covered stairway/stoop @ front door and rear deck/porch w/ railing
- Lap siding, standing seam metal gable roof

Parking and Access

Access will be one 16' wide driveway to Fond du Lac Avenue serving an open parking area at the rear of the building and underneath garages.

Utilities

Public water and sanitary sewer lateral lines will be extended to the site from existing laterals mains in Fond du Lac Ave/STH 145 (water & sanitary sewer). All other essential utility services that exist, including gas, electricity will be replaced and installed underground.

Storm Water Management

Impervious area on the 1.1 acre site (combination of the two parcels) will be 20,222 sqft (46%) leaving 54% open space. As shown on the Grading & Erosion Control plan (Sheet C1.04), the parking area will be graded and paved with asphalt, curb, and gutter to re-route storm water run-off from the parking lot to the proposed storm water basin in the rear of the townhouse parcel with connection to the existing storm sewer located within the Fond du Lac Ave/STH145 right-of-way.

Landscaping

A preliminary landscaping plan (Sheet AS102) shows unidentified landscape items comprised of ornamental trees, shrubs, perennials, and grasses installed around the parking lot, west and south perimeter of the townhouse parcel and foundation plantings along the east and south sides of the townhouse building. north and east perimeter of the two buildings. It's also unclear if the existing 6' high wood privacy fence along the west side of the parking lot to the north will be continued along the west side of the proposed parking lot.

Lighting

External lighting is proposed for the commercial parking lot:

- Four (4) 93W LED pole-mounted cut-off fixtures (with back light control & motion-controlled dimmers) mounted at 23' on steel light poles (20' pole height on 3' concrete base) located along the west and east edges of the lot;

External lighting is proposed for the townhouse building:

- Two (2) 93W LED pole-mounted cut-off fixtures (with back light control & motion-controlled dimmers) mounted at 23' on steel light poles (20' pole height on 3' concrete base) located along the west edge of the parking stalls and along the driveway

Trash/Recycling

A single dumpster pad is proposed along the south property line in the open parking stall area. No details are provided for the proposed trash enclosure.

Staff Comments

Planning & Zoning

A certified survey map (CSM) will be required to attach the proposed parking lot to the commercial building property (unless the parking lot is treated as an "off-site" parking lot that requires conditional use permit approval). The proposed storm water basin on the .74-ac parcel is intended to serve both the parking lot and the 4-unit townhouse development, so a storm water management agreement and appropriate easement document will be required.

The proposed 4-unit multi-family residential building and storm water management basin are components not originally discussed or reflected in the original Kuhburg PDD plans in 2018. However, the "Victory Center Corridor" under the 2050 Plan does include multi-family residential as an "allowable" use with a maximum density allowance up to 10 dwelling units/acre. Although the Zoning Code has not yet been reviewed and possibly revised to reflect specific provisions for the Victory Center District, the Rm-1 District regulations are a suitable "underlying" zoning district to use for this proposal. A 4-unit building of this type on .74 acres is the equivalent of 5.4 dwelling units/acre (maximum allowed under Rm-1 District is 6 DUs/acre).

As was the case back in October, Staff remains concerned with the townhouse component of the proposal with respect to the amount of development proposed on a parcel that is longer (338 feet) than it is wider (94 feet), and the transition to the existing single-family uses to the south. Given the size of the shared storm water basin within the boundaries of the .74-acre parcel (which is really .64 acres after discounting for the 33' of right-of-way required for Fond du Lac Avenue), the residential development component is an extremely "tight fit" within the remaining buildable area, particularly along the south property line.

From the south property line (single-family property), the proposed building setback is 24 feet with a 16' wide driveway in between (paved w/ curb & gutter), but the driveway setback is only 5 feet leaving little space available to provide an adequate landscape buffer to the existing single-family property to the south (unless a privacy fence is installed). I believe there was some expectation that, in addition to reducing the total number of dwelling units, the number of buildings and/or orientation on the site would be revised to increase the distance/setback from the single-family property to the south.

As shown on Sheet C1.02, the proposed setback from the townhouse building to the north property line (proposed parking lot property line) is only 5 feet. Again, a building setback of only 5 from the property (an additional 7 feet to the parking lot pavement edge) leaves little space to provide an adequate landscape buffer to the proposed commercial parking lot serving the proposed renovated restaurant (existing bar).

The Developer is strongly encouraged to consider reducing the size of the parking lot by eliminating the (7) stalls along the south side (closest to the townhouse building) and reconfiguring the two parcels by reducing the size of the parking lot parcel and increasing the size of the townhouse parcel. Since a CSM is required anyway to attach the parking to the retail building parcel, more land could be added to the townhouse parcel to allow the building to be shifted 10-15 feet north to allow more building and driveway setback (and more landscaping buffer and/or fencing) between the townhouse and the single-family property to the south. Doing so could also create more separation between the townhouse and the parking stalls to the north.

With that said, Staff recommends increasing the building and driveway setbacks along the south property line as follows:

- The minimum building setback from the nearest point of any townhouse building to the south property line shall be 30 feet
- The minimum parking lot/driveway setback from the nearest edge of the driveway curb to the south property line shall be 15 feet if a significant landscape screen/buffer is installed along the entire length of the paved driveway and parking stall area, or, 10 feet if a decorative privacy fence and landscape screen/buffer is installed along the entire length of the paved driveway and parking stall area

Staff supports the proposed commercial parking lot provided additional setback and/or landscaping is provided along the south property line (particularly if the townhouse component moves forward), additional landscaping along the west property line including possible continuation of the privacy fence from the north, and landscaping along Fond du Lac Avenue. The current proposal shown on the site plan indicates only a 7' setback for the parking lot with much of the landscaping in the road right-of-way.

Village Forester

The landscaping plan is incomplete. The plan lacks a completed tree survey as required under Section 17.43(5) of the Zoning Code. There are no trees surveyed, identified tree removals across the entire development site, nor a complete replanting or landscaping plan that indicates the proposed tree species, quantities, and planting sizes. The plan should also include the Village's street tree requirements for both the commercial parking lot and the townhouse development. This information should be provided for review and approval by staff (or the Plan Commission).

Public Works/ Village Engineer

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

- July 31, 2023, memo from Brad Seubert, Harwood Engineering

Inspection Services

State agency (DSPS) approved plans and a \$20,000 occupancy bond are required by Inspection Services at the time of building permit application for the townhouse building. 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.

Fire & Police Departments

No comment. Previous concerns have been incorporated into the latest plans.

VILLAGE STAFF RECOMMENDATIONS

APPROVE amending and expanding the “Kuhburg Planned Development District” to include two additional parcels totaling approximately 1.1 acres located in the southwest corner of the Donges Bay Road @ Fond du Lac Ave/STH145 intersection subject to the following requirements and conditions:

1. The following sections of conditions & restrictions for the Kuhburg PDD as set forth in Resolution No. 16-2018 shall be revised as follows:

SECTION 1. PURPOSE AND INTENT. The Kuhburg District PDD is intended to provide for the orderly and attractive re-development and operation of commercial retail uses, as well as multi-family dwelling uses, where such activities are conducted within the two existing buildings located at the Donges Bay Road @ Fond du Lac Ave/STH145 intersection, including a vacant schoolhouse and 2-story tavern, and a 4-unit multi-family townhouse. The Kuhburg District PDD will be comprised of a 1-story coffee shop building and a 2-story restaurant building connected by a covered/screened portico providing seasonal seating for patrons of the coffee shop and restaurant operations . and a 4-unit multi-family townhouse.

The re-development is intended to be compatible with adjacent and surrounding residential development and enhance the economic stability and quality of life in the Village of Germantown. These projects are aligned with the vision for the Victory Center Corridor and in particular with regard to the proposed 2050 Comprehensive Plan which allows for multi-family residential development in a traditional design pattern in densities up to 10.0 DU/acre (which is in keeping with what is proposed (6.0 DU on a .74 ac parcel).

SECTION 2. GENERAL DEVELOPMENT PLAN (GDP). The General Development Plan (Sheet C1.02 dated July 20, 2023) (Exhibit B on Sheet GD100 dated February 23, 2018) establishes the basic parameters for development within the Kuhburg District PDD and all additional parcels now in the development for including the approximate size and orientation of buildings, density of development, setbacks, location of access roadways and driveways, and the general location and extent of landscaping and buffering. While all re-development within the PDD shall be generally consistent with the GDP, the GDP does not grant specific site development or building approval. Proposed modifications and/or revisions to the GDP shall be reviewed consistent with Section 17.27(9) of the Zoning Code.

SECTION 3. PERMITTED LAND USES. Permitted Principal, Accessory, Conditional and Temporary Uses allowed within the Kuhburg District PDD shall be as set forth in Section 17.22(1)(a) and 17.30 of the Zoning Code.

SECTION 7. SITE DEVELOPMENT AND BUILDING REQUIREMENTS.

Unless otherwise set forth below, all site development and building associated with the two commercial buildings shall be in accordance with the lot, building and other applicable bulk requirements set forth in the underlying B-3: General Business Zoning District and other applicable Zoning Code regulations.

c. LOT AND BUILDING REQUIREMENTS

- i. Lot Area (minimum) 0 acres
- ii. Principal Building Setbacks (minimum)
 - 1. Front/Street yard 0 feet
- iii. Parking Setbacks (minimum)
 - 1. Front/Street yard 0 feet
 - 2. Side yard 0 feet
 - 3. Rear yard 0 feet

Unless otherwise set forth below, all site development and building associated with the residential townhouse development shall be in accordance with the lot, building and other applicable bulk requirements set forth in the underlying Rm-1: Multi-Family Zoning District (Section 17.22) and other applicable Zoning Code regulations

d. LOT AND BUILDING REQUIREMENTS

- i. Lot Area (minimum) 0.5 acres
- ii. Principal Building Setbacks (minimum)
 - 1. Front/Street yard 27 feet
 - 2. Side yard 5 feet
 - 3. Rear yard 35 feet

e. Notwithstanding the above, the minimum building setback from the nearest point of any townhouse building to the south property line shall be 30 feet;

f. The minimum parking lot/driveway setback from the nearest edge of the driveway curb to the south property line shall be 15 feet if a significant landscape screen/buffer is installed along the entire length of the paved driveway and parking stall area, or, 10 feet if a decorative privacy fence and landscape screen/buffer is installed along the entire length of the paved driveway and parking stall area

- 2. The Developer shall provide one complete and accurate legal description for all the land to be included in the PDD boundary prior to review of the PDD application by the Village Board.
- 3. The PDD conditions & restrictions resolution shall contain a requirement that a certified survey map (CSM) be completed and approved to combine the parcel with the two retail buildings to the parcel with the proposed parking lot prior to issuance of any construction permit(s) required for the parking lot. And right-of-way dedication requirement for Fond du Lac Avenue shall be reflected in the CSM.

APPROVE the site development & building plans for the commercial parking lot and 4-unit multi-family townhouse development proposed by Victory Center LLC subject to the following conditions:

1. This approval is subject to all the conditions and requirements set forth herein and adopted by the Plan Commission. Approval is granted for the following plans unless superseded by subsequent plan sheets approved by Village Staff pursuant to revisions required herein and/or by the Plan Commission:
 - a. *Architectural plans dated July 20, 2023;*
 - b. *Civil Engineering plans July 20, 2023;*
 - c. *Lighting plans (photometric plan) dated July 18, 2023;*
 - d. *Storm Water Management Report dated July 21, 2023*

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

2. Site Plan approval is subject to creation of the "Kuhberg District" Planned Development District as proposed by Victory Center LLC.
3. The Developer shall reduce the size of the commercial parking lot by eliminating or reconfiguring stalls along the south side (closest to the townhouse building) in order to reconfigure the size of the two parcels to allow the townhouse building to be shifted up to 15 feet north. The goal is to create more building and driveway setback (and in turn more landscaping buffer and/or fencing) between the townhouse and the single-family property to the south meeting the following minimum requirement:
 - a. The minimum building setback from the nearest point of any townhouse building to the south property line shall be 30 feet;
 - b. The minimum parking lot/driveway setback from the nearest edge of the driveway curb to the south property line shall be 15 feet if a significant landscape screen/buffer is installed along the entire length of the paved driveway and parking stall area, or, 10 feet if a decorative privacy fence and landscape screen/buffer is installed along the entire length of the paved driveway and parking stall area
4. All landscaping, screening, grading, and paving improvements shown on the approved site plans shall be installed as proposed prior to issuance of an occupancy permit unless a cash bond or letter of credit in an amount equal to 120 percent of the estimated installation and material costs reviewed and approved by the Village is submitted to the Village as necessary to ensure that installation of the proposed features and improvements will be completed within one (1) year after issuance of the occupancy permit for the shell building.

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5. All outstanding items and issues identified by Village Staff in the following review memos shall be resolved and reflected in additional information and/or revised plans submitted to Staff for further review, comment, and approval prior to commencing construction or issuance of building permits (excluding “early start” site clearing and footing/foundation work approved by the Village and/or WI DSPS):
 - a. July 31, 2023, memo from Brad Seubert, Harwood Engineering
 6. 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.
 7. Dumpster enclosures shall be designed to meet the Village’s dumpster enclosure guidelines. The Developer shall provide dumpster enclosure plans for review and approval by the Village Planner prior to issuance of an occupancy permit for the townhouse building.
 8. A complete landscape plan for both the commercial parking lot and townhouse development shall be reviewed and approved by the Village Forester and Plan Commission prior to final site grading or issuance of an occupancy permit for the townhouse building. Said plan shall include a tree survey as required under Section 17.43(5) of the Zoning Code and a complete landscaping plan that indicates the proposed species, quantities, and planting sizes. The plan should include the Village’s street tree requirements for both the commercial parking lot and the townhouse development.
 9. Right-of-way permits are required for any/all construction conducted in the Donges Bay, Wasaukee Road and Town 9 Parkway rights-of-way. Contact the Public Works Department/Highway Superintendent for permit submittal requirements.
 10. The Developer shall install a privacy fence along the west property line adjacent to the commercial parking lot and connect to the existing privacy fence to the north.

PLAN COMMISSION MINUTES

October 10, 2022

CALL TO ORDER: Planning Assistant Lori Johnson called the meeting to order at 6:30 pm.

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

MOTION Shadid second Laszewski to Appoint Trustee Baum as Chairman Pro-Tem.

MOTION carried unanimously.

PUBLIC INPUT:

- Trustee Baum read comments into the record from Tammy Schneider, W204 N9699 Lannon Road – She expressed their neighborhoods displeasure with what the Plan Commission wants to do with the corner of Lannon and County Line Road.
- Melanie Smythe, N140 W17938 Cedar Lane – said a fire station should be considered as part of the new DPW site, there should be consideration for land use for parks, and Plan Commission should consider residents concerns.

APPROVAL OF MINUTES:

MOTION Baum second Laszewski to Approve the minutes from August 22, 2022.

MOTION carried. Commissioner Williams and Shadid abstained.

Gehl Food & Beverage – N116 W159970 Main Street. The property owner is requesting approval for a wall sign permit and modification to the previously approved 42' x 33' vinyl wrap for the silo. Associate Planner Zandt summarized the proposal.

MOTION Laszewski second Shadid to Approve the proposed wall sign for Gehl Food and Beverage located at N116 W15970 Main Street as proposed.

MOTION carried unanimously.

Resolution No. 03-2022 to Revise Resolution No. 02-2022 approving the Village of Germantown 2050 Comprehensive Plan. Director Retzlaff summarized the revisions the Village Board made to the 2050 Plan. He explained the County provided their comments on the Comprehensive Plan after the public hearing and the Village Board accepted the revisions. He said the changes are factual and were minor and he adopted them into the language. Discussion continued. Commissioner Nilles pointed out a spelling error.

MOTION Shadid second Williams to Approve Resolution 03-2022 as presented.

MOTION carried unanimously.

Virtus Development, Agent for District One and Robert and Elizabeth Hacker Trust – W140 N10363 Fond du Lac Avenue and Parcel GTNV 351-984.

The request is for approval of a Rezoning application to amend and expand the "Kuhburg Planned Development Zoning District" and a revised General Development Plan to add parking, storm water management and a 6-unit multi-family residential building. Director Retzlaff summarized the proposal and Greg Nagel, Virtus Development, presented the plan.

Public Hearing opened at 7:17 pm.

- John Figie, W140 N10323 Fond du Lac Avenue, was not in favor of the rezoning, the lot is too small for multi-family development, 3-story building is too high, feature needed to block the view, has not problem with parking lot expansion.
- David LaLlave, N140 W10259 Fond du Lac Avenue, had a problem with the 6-family development and height, where would guests park, did not have a problem with the parking lot.
- William Junker, N101 W14230 Sunberry Road, wait to see what else may come in for development, asked where guest would park, against 6-family development.
- Adam Gratz, N104 W14085 Donges Bay Road, Did not want to be around multi-family housing or look at a 3-story building, what will the development do to the property values.
- Brian Depies, W143 N9867 Ridgewood Drive, spoke in favor of the development, he promotes density where it makes sense and there is sewer and water, he knows Greg Nagel who is vested in this corner.
- Greg Nagel, Virtus Development, guest parking would be shared with the parking lot, the turning distance is 22-foot aisle, the detention pond obtains water and will not be permanent wet.
- Jan Miller, W151 N10297 Windsong Circle W, liked the concept of the coffee shop, restaurant and parking lot, spoke in favor of the multi-family development if owner occupied, does not think a single-family dwelling will go there, it's a good concept but would like to see a duplex or 4 units in that space.

Public Hearing closed 7:43 pm.

MOTION Shadid second Williams to Table with some direction.

Discussion ensued. Comments included:

- Likes the idea of the transition, agrees with some of the comments, tight, height seems high, doesn't think this plan works but the overall idea is good,
- Generally in favor of the concept, agrees with some of the other thoughts, is it really a traditional neighborhood design, some adjustments needed, reduce the number of units.
- Don't like what was presented, agrees with Trustee Miller's comment about being owner occupied.
- Works well as a buffer between business and residential, reduce the number of units, take the garage and put next to the units and elongate the building and bring down the height, sees problems with shared parking lot, access to the road a problem right in right out only, have driveway connect to the parking lot, no problem with multi-family but too dense.
- Idea to propose duplex with garages on the outside, facing the pond with outdoor courtyard area and then another 2-unit building, drive width to one lane not against single-family.
- 6-units too many for the lot size but could work and will look at other options.

MOTION carried unanimously.

Elwood & Susan Meissner, N96 W16248 County Line Road and W162 N9632 Mayflower Drive.

The property owners are requesting approval of a rezoning application and 2-lot certified survey map in order to divide an existing .62-acre residential property containing two existing multi-family dwelling units. Associate Planner Zandt summarized the proposal.

**Fee must accompany application**

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

PAID _____ DATE 7/21/23

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

Virtus Development LLC
13290 Bishops Drive
Suite 250
Brookfield, WI 53005

Phone (262) 641-0746E-Mail greg.nagel@virtusdevelopment.us**PROPERTY OWNER**

District One, LLC
13290 Bishops Drive
Suite 250
Brookfield, WI 53005

Phone (262) 641-0746E-Mail greg.nagel@virtusdevelopment.us**2 PROPERTY ADDRESS**

1. Lot 0 Fond du Lac Ave, and 2. W140 N10363 Fond du Lac Ave,
Germantown, WI (Tax Keys GTNV351984 and GTNV351965)

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

North <u>Commercial</u> <u>restaurant & parking</u>	South <u>Residential</u>	East <u>Industrial</u>	West <u>church</u>
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4 READ AND INITIAL THE FOLLOWING:GNN I am aware of the Village of Germantown ordinance requiring fire sprinklers in most new construction.GNN I understand that all new development is subject to Impact and/or Connection Fees that must be paid before building permits will be issued.GNN I understand that an incomplete application will be withdrawn from the Plan Commission agenda and that all resubmissions to the Plan Commission are subject to a new application fee.**5 SIGNATURES** - ALL APPLICATION MUST BE SIGNED BY OWNER!

[Signature] 7/21/2023
Applicant Date

[Signature] 7/21/2023
Owner Date

July 21, 2023

Greg Nagel, Owner
Virtus Development LLC
13890 Bishops Drive
Suite 250
Brookfield, WI 53005

Village of Germantown
Attn: Jeff Retzlaff
Planning Department
N112 W17001 Mequon Road
Germantown, WI 53022



Dear Mr. Retzlaff,

Virtus Development is submitting this Statement of Design Intent as it applies to the Site Plan Review application we are submitting for the Germantown Townhouse project.

The Intent of this design is for the Townhouse project to be a small-scale multi-family building that acts as a buffer between the commercial buildings to the north (coffee shop and restaurant), as well as a transition to the residential single-family properties to the south. The design itself is in keeping with the traditional style of homes that currently exist in the area. This parcel, which is zoned R-2 Residential, will also contain a detention pond for stormwater management from the sites, and from the adjacent parcels. We believe the scale and density of this project is aligned with the vision for the Victory Center Corridor, particularly with regard to the proposed 2050 Comprehensive Plan, which allows for multi-family residential development in a traditional design pattern in densities up to 8.0 DU/acre, which is in keeping with what is proposed (4.0 DU on a .74 AC parcel).

We are further proposing the following revisions to Resolution 16-2018 Adopting Conditions and Restrictions for Kuhburg District PDD:

1) Section 1: **PURPOSE AND INTENT**

The Kuhburg District PDD is intended to provide for the orderly and attractive re-development and operation of commercial retail uses, as well as multi-family dwelling use, where such activities are conducted within the two existing buildings located at the Donges Bay Road@ Fond du Lac Ave/STH145 intersection, including a vacant school house and 2-story tavern, and a new 4-unit multi-family townhouse. The Kuhburg District PDD will be comprised of a 1-story coffee shop building, a 2-story restaurant building connected by a covered/screened portico providing seasonal seating for patrons of the coffee shop and restaurant operations, and a new 4-unit multi-family townhouse.

The re-development is intended to be compatible with adjacent and surrounding residential development and enhance the economic stability and quality of life in the Village of Germantown. These projects are aligned with the vision for the Victory Center Corridor, in particular with regard to the proposed 2050 Comprehensive Plan, which allows for multi-family residential development in a traditional design pattern in densities up to 8.0 DU/acre, which is in keeping with what is proposed (6.0 DU on a .74 AC parcel).

2) Section 2: **GENERAL DEVELOPMENT PLAN (GDP)**

The General Development Plan (Exhibit B on Sheet GD100 dated February 23, 2018) establishes the basic parameters for development within the Kuhburg District PDD and all additional parcels now in the development for the approximate size and orientation of buildings, density of development, setbacks, location of access roadways and driveways, and the general location and extent of landscaping and buffering. While all re-development within the PDD shall be generally consistent with the GDP, the GDP does not grant specific site development or building approval. Proposed modifications and/or revisions to the GDP shall be reviewed consistent with Section 17.27(9) of the Zoning Code.

3) Section 3: **PERMITTED LAND USES**

Permitted Principal, Accessory, Conditional and Temporary Uses allowed within the Kuhburg District PDD shall be as set forth in Sections 17.22(1)(a) and 17.30 of the Zoning Code.

4) Section 7: **SITE DEVELOPMENT AND BUILDING REQUIREMENTS**

Unless otherwise set forth below, all site development and building shall be in accordance with the lot, building and other applicable bulk requirements set forth in the underlying B-3: General Business Zoning District regulations:

a. LOT AND BUILDING REQUIREMENTS

- i. Lot Area (minimum) 0 acres
- ii. Principal Building Setbacks (minimum)
 1. Front/Street yard 0 feet
- iii. Parking Setbacks (minimum)
 1. Front/Street yard 4 feet
 2. Side yard 4 feet
 3. Rear yard 4 feet

and 17.22 Rm-1 Zoning Code regulations

a. LOT AND BUILDING REQUIREMENTS

i. Lot Area (minimum) 0.5 acres

ii. Principal Building Setbacks (minimum)

1. Front/Street yard 27 feet

2. Side yard 25 feet

3. Rear yard 35 feet

Thank you for considering our modification request. We are looking forward to working with the Village in the successful completion of this project.

Sincerely,



Gregory V. Nagel

PLAT OF SURVEY

OWNER, PARCEL A:
DISTRICT ONE LLC
13100 WATERTOWN PLANK RD 200
ELM GROVE, WI 53122

OWNER, PARCEL B:
ROBERT J. HACKER TRUST
MARY ELIZABETH HACKER TRUST
W140 N10363 FOND DU LAC
GERMANTOWN, WI 53022

LEGAL DESCRIPTION – PARCEL A

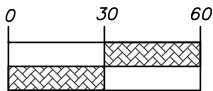
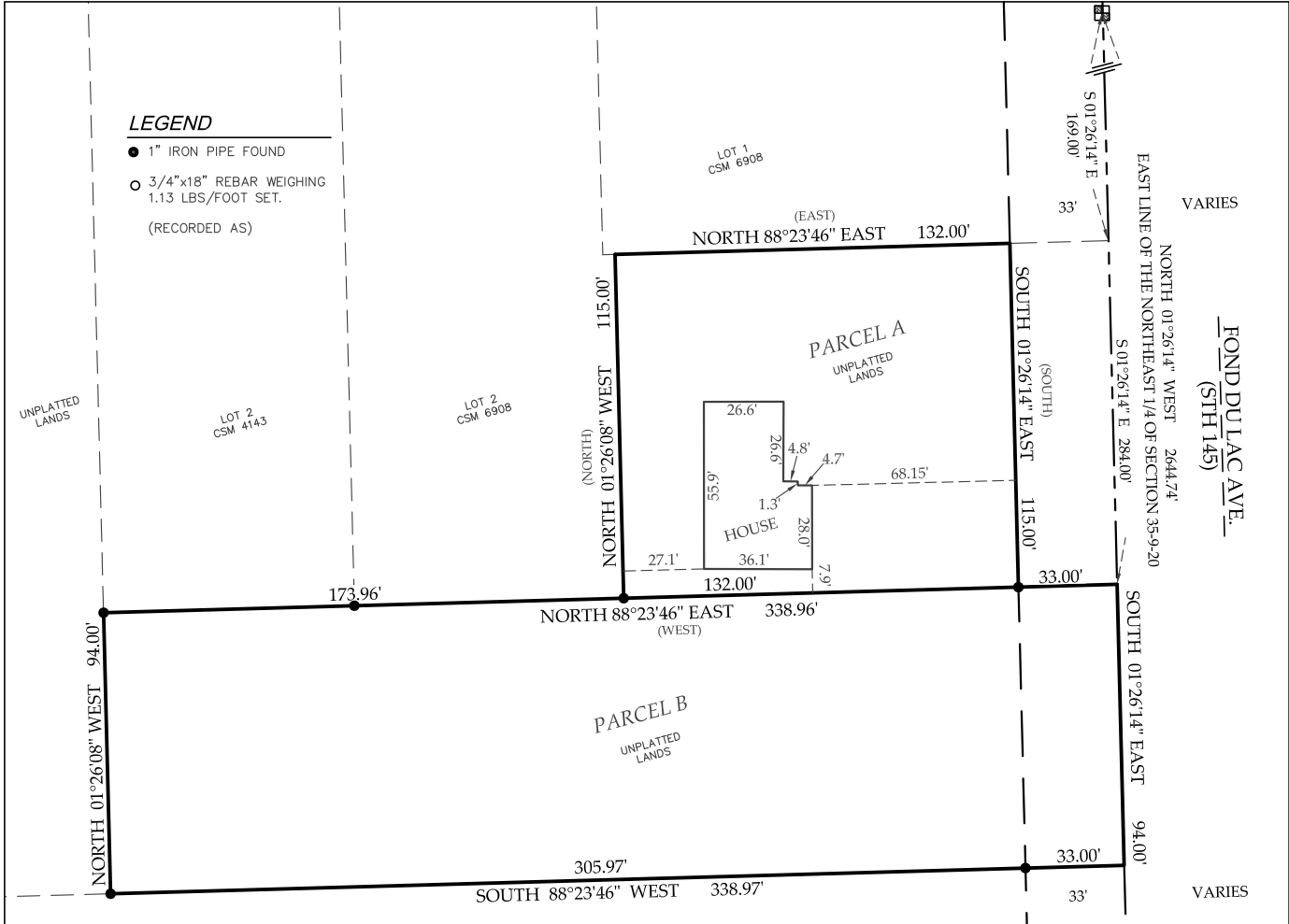
A PARCEL OF LAND SITUATED IN THE NORTHEAST 1/4 OF THE NORTHEAST 1/4 OF SECTION 35, TOWNSHIP 9 NORTH, RANGE 2 EAST, IN THE VILLAGE OF GERMANTOWN, COUNTY OF WASHINGTON, STATE OF WISCONSIN, MORE PARTICULARLY DESCRIBED AS FOLLOWS: COMMENCING AT A POINT WHICH IS 169 FEET SOUTH OF THE NORTHEAST CORNER OF THE NORTHEAST 1/4 OF THE NORTHEAST 1/4 RUNNING FROM THENCE SOUTH 115 FEET, THENCE WEST PARALLEL TO THE NORTH LINE OF THE SAID QUARTER SECTION 165 FEET TO A POINT, THENCE NORTH PARALLEL TO THE EAST LINE OF SAID QUARTER SECTION 115 FEET TO A POINT; THENCE EAST AND PARALLEL TO THE NORTH LINE OF SAID QUARTER SECTION 165 FEET TO THE PLACE OF BEGINNING, LESS AND EXCEPT THAT PART CONVEYED IN THE TRUSTEE’S DEED RECORDED DECEMBER 10, 2014 AS DOCUMENT NO. 1372068.

LEGAL DESCRIPTION – PARCEL B

THAT PART OF THE NORTHEAST QUARTER OF THE NORTHEAST QUARTER (NE1/4 NE1/4) OF SECTION THIRTY FIVE (35), TOWNSHIP NINE (9) NORTH OF RANGE TWENTY (20) EAST, WASHINGTON COUNTY, WISCONSIN, DESCRIBED AS FOLLOWS, VIZ: COMMENCING AT A POINT 284.00 FEET SOUTH OF THE NORTHEAST CORNER OF SAID NE 1/4 OF THE NE 1/4; THENCE WEST, 495.00 FEET; THENCE SOUTH, 94.00 FEET; THENCE EAST, 495.00 FEET; THENCE NORTH 94.00 FEET TO THE PLACE OF BEGINNING. EXCEPTING THEREFROM THAT PART AS DESCRIBED IN WARRANTY DEED RECORDED AS DOCUMENT NO. 549640:

ALL THAT PART OF THE NORTHEAST 1/4 OF THE NORTHEAST 1/4 OF SECTION 35 OF TOWNSHIP 9 NORTH, RANGE 20 EAST, VILLAGE OF GERMANTOWN, WASHINGTON COUNTY, WISCONSIN AND DESCRIBED AS FOLLOWS:

COMMENCING AT THE NORTHEAST CORNER OF SAID NE 1/4 OF SAID SECTION 36; THENCE S 88°23’32” W ALONG THE NORTH LINE OF SAID NE 1/4 , A DISTANCE OF 495.00 FEET; THENCE S 01°26’22” E, PARALLEL WITH THE EAST LINE OF SAID NE 1/4, A DISTANCE OF 284.00 FEET TO A SET 1 INCH BY 24 INCH IRON PIPE (SET IRON PIPE) AND THE POINT OF BEGINNING OF THE LANDS TO BE DESCRIBED; THENCE CONTINUE S 01°26’22” E, PARALLEL WITH SAID EAST LINE A DISTANCE OF 94.00 FEET TO A SET IRON PIPE; THENCE N 88°23’32” E PARALLEL WITH SAID NORTH LINE A DISTANCE OF 156.05 FEET TO A SET IRON PIPE; THENCE N 01°26’22” W PARALLEL WITH SAID EAST LINE A DISTANCE OF 94.00 FEET TO A FOUND 1 INCH BY 24 INCH IRON PIPE; THENCE S 88°23’32” W PARALLEL WITH SAID NORTH LINE A DISTANCE OF 156.05 FEET TO THE POINT OF BEGINNING.



THIS SURVEY IS MADE FOR THE EXCLUSIVE USE OF THE PRESENT OWNER OF THE PROPERTY, AND ALSO THOSE WHO PURCHASE, MORTGAGE OR GUARANTEE THE TITLE THERETO WITHIN 1 YEAR FROM THE DATE HEREON.

I HEREBY CERTIFY THAT I HAVE SURVEYED THE ABOVE DESCRIBED PROPERTY AND THE ABOVE MAP IS A TRUE REPRESENTATION THEREOF AND SHOWS THE SIZE AND LOCATION OF THE PROPERTY, ITS EXTERIOR BOUNDARIES, THE LOCATION AND DIMENSION OF ALL VISIBLE STRUCTURES THEREON, FENCES, APPARENT EASEMENTS, ROADWAYS AND VISIBLE ENCROACHMENT, IF ANY, AND THAT I HAVE COMPLIED WITH WISCONSIN CHAPTER A-E 7.



BEARINGS ARE REFERENCED TO THE WISCONSIN STATE PLANE COORDINATE SYSTEM, SOUTH ZONE, (NAD83). THE EAST LINE OF NE 1/4 OF SECTION 35-9-20 BEARS NORTH 01°26'14" WEST.



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

FN: NA-01B-17

Date: 7/21/23

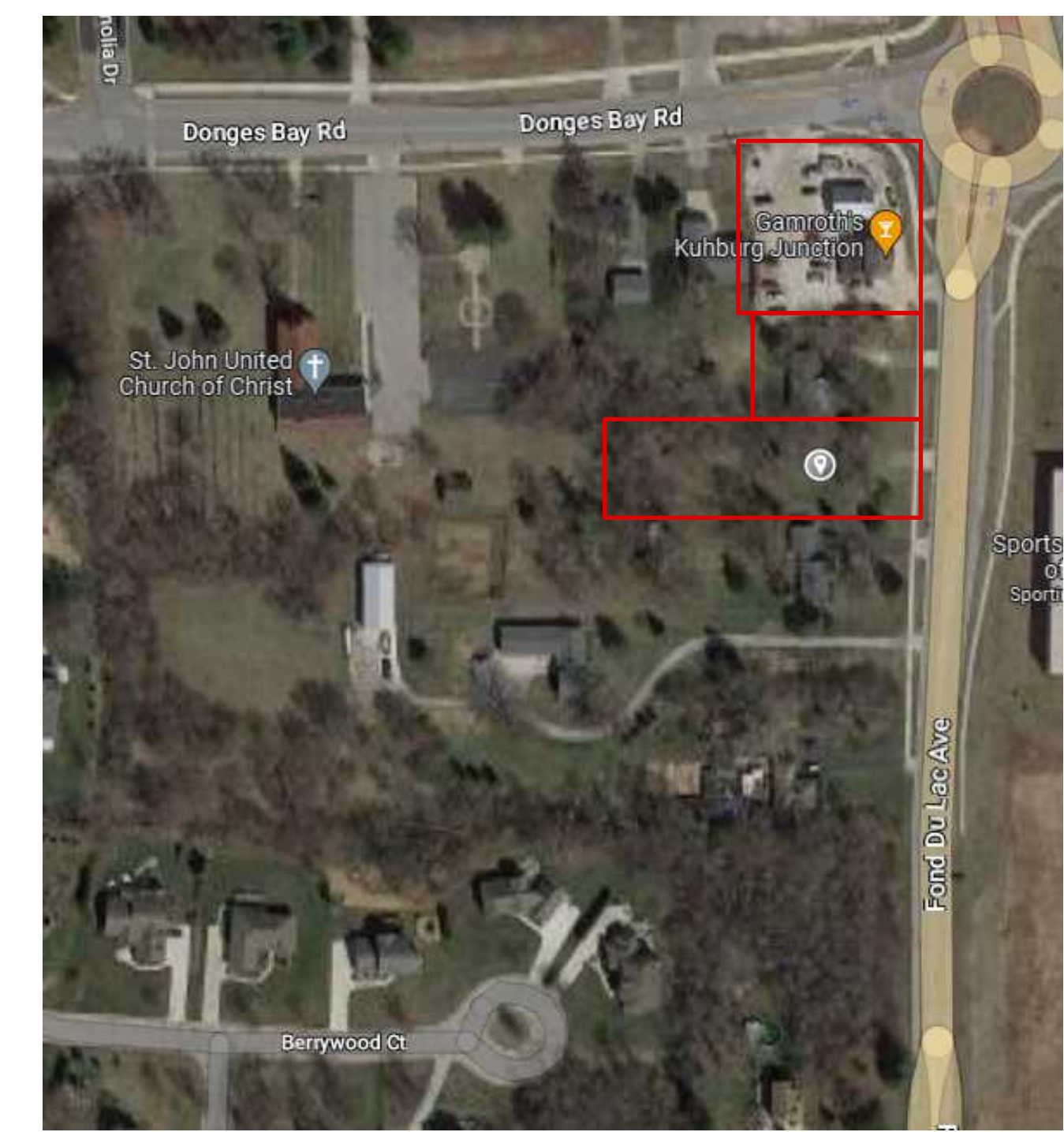
SURVEYED BY JOSEPH W. DAVID
MAPPED BY J. SCOTT HENKEL, PLS

JULY 21, 2023

GERMANTOWN TOWNHOUSES

W140 N10385 FOND DU LAC AVE GERMANTOWN, WI 53022

PROJECT LOCATION MAP



SHEET LIST

G001:	COVER SHEET
G002:	PERSPECTIVES
C1.01:	EXISTING CONDITIONS SURVEY
C1.02:	PURPOSED SITE PLAN
C1.03:	EROSION CONTROL PLAN
C1.04:	GRADING PLAN
C1.05:	UTILITY PLAN
C1.06:	STORMWATER MANAGEMENT DETAILS
C1.07:	STORMWATER MANAGEMENT DETAILS
C1.08:	EROSION CONTROL DETAILS
C1.09:	UTILITY DETAILS
AS101:	SITE PLAN
AS102:	LANDSCAPE PLAN
A101:	PLANS
A102:	UNIT PLANS
A201:	SECTIONS
A202:	SECTIONS
A203:	SECTIONS
A301:	ELEVATIONS
A302:	ELEVATIONS
A303:	ELEVATIONS
A304:	ELEVATIONS
A401:	WALL SECTIONS
A402:	WALL SECTIONS
E1.0:	ELECTRICAL SITE PLAN
E1.1:	PHOTOMETRIC SITE PLAN
E2.0:	SCHEDULES & DETAILS



GERMANTOWN TOWNHOUSES

W140 N10385 FOND DU LAC AVE
GERMANTOWN, WI 53022

Project Title



Architect

NAGEL ARCHITECTS
+ ENGINEERS

Consultant

REV.	DATE	DESCRIPTION
------	------	-------------

NO.	DATE	ISSUE NOTE
-----	------	------------

Project Manager	Drawn By
-----------------	----------

Date	Reviewed By
------	-------------

Project ID	22006
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Sheet Title

COVER SHEET

Sheet No.

G001



1 PERSPECTIVE 1
Scale: 1/4" = 1'-0"



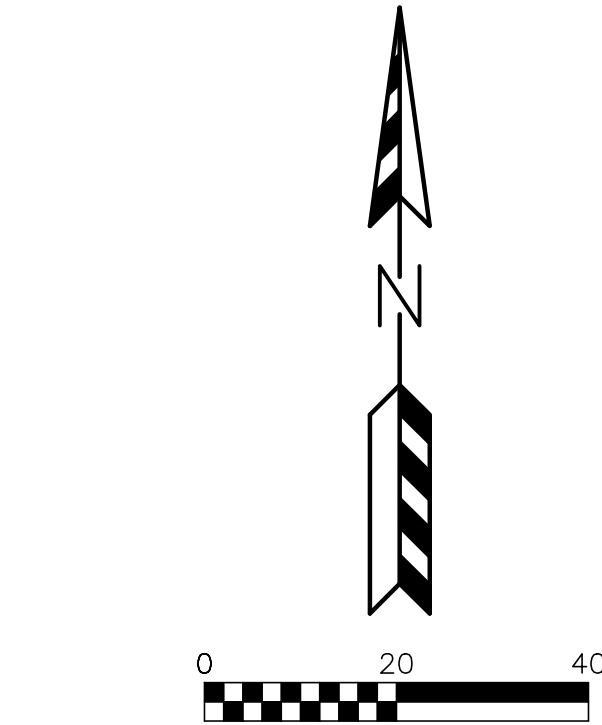
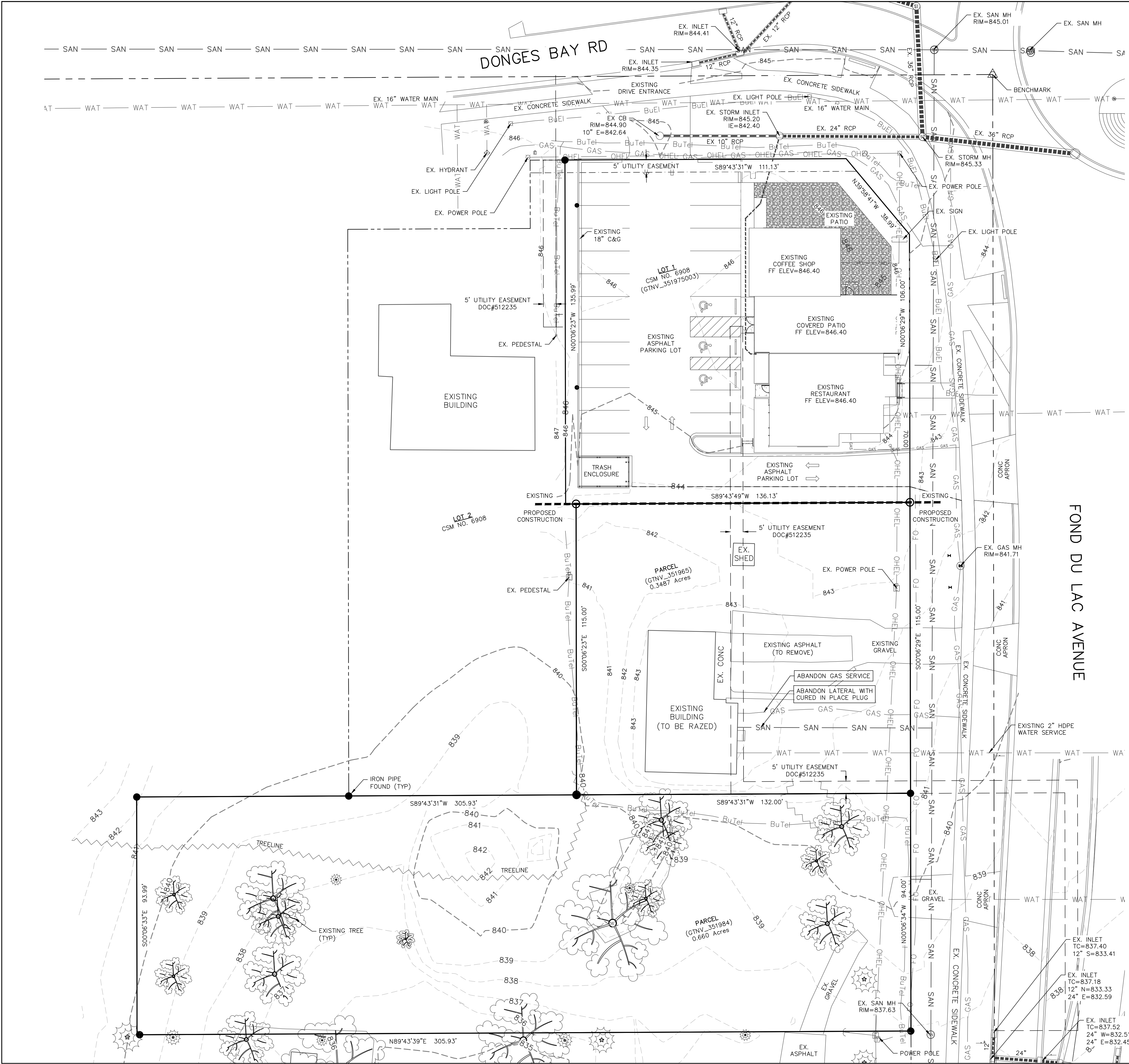
2 PERSPECTIVE 2
Scale: 1/4" = 1'-0"



3 PERSPECTIVE 3
Scale: 1/4" = 1'-0"



4 PERSPECTIVE 4
Scale: 1/4" = 1'-0"



△ BENCHMARK: SECTION CORNER, ELEV=845.04, NAVD88

- LEGEND:**
- 896 --- EXISTING MINOR CONTOUR.
 - 895 --- EXISTING MAJOR CONTOUR.
 - OHEL — OVERHEAD ELECTRIC LINE.
 - BuEl — BURIED ELECTRIC LINE.
 - BuTel — BURIED TELEPHONE LINE.
 - FO — FIBER OPTIC LINE.
 - GAS — GAS LINE.
 - SAN — SANITARY SEWER MAIN OR LATERAL.
 - WAT — WATER MAIN OR SERVICE.
 - ===== STORM SEWER LINE.
 - [ELEC] — ELECTRIC METER.
 - [GAS] — GAS METER.
 - [GAS VALVE] — GAS VALVE.
 - [FIRE HYDRANT] — FIRE HYDRANT.
 - [POWER POLE] — POWER POLE.
 - [SN] — SANITARY SEWER MANHOLE.
 - [ST] — STORM SEWER MANHOLE.
 - [SSEW INLET] — STORM SEWER INLET.
 - [TEL PED] — TELEPHONE PEDESTAL.
 - [TRANS] — TRANSFORMER.
 - [W VALVE] — WATER VALVE.

REVISIONS:		
NO.	DATE	DESCRIPTION
1	6.24.22	Shorten driveways to 5 feet.

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

PROJECT TITLE:
**GERMANTOWN TOWNHOUSES
W140 N10385 FOND DU LAC AVE
GERMANTOWN, WI 53022**

PLAN TITLE:
**EXISTING
CONDITIONS
SURVEY**

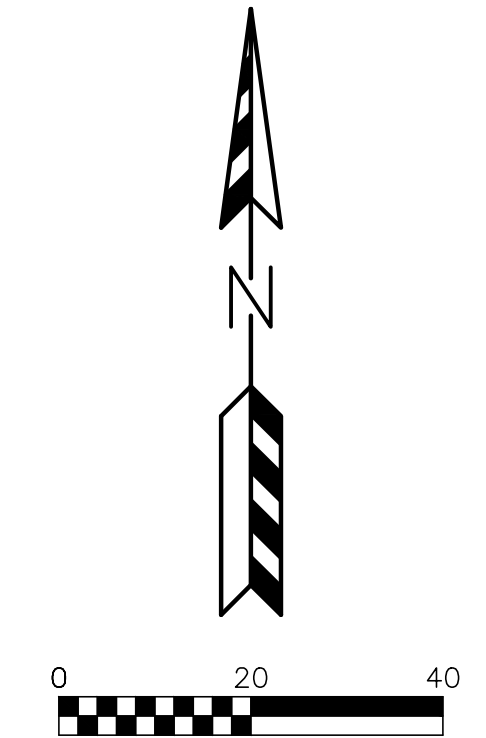
DRAWN BY:
KJP
DESIGNED BY:
KJP
CHECKED BY:
KJP

PLAN DATE:
7-21-2023

PROJECT NO:
\NA-01-17

**VILLAGE
SUBMITTAL**

SHEET NO:
C1.01



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

 CONCRETE SIDEWALK
4" CRUSHED AGGREGATE BASE COURSE
5" CONCRETE

SITE PLAN NOTES:	
1.	DIMENSIONS ARE TO FACE OF CURB AND FACE OF BUILDING UNLESS OTHERWISE NOTED.
2.	WHERE CURB ENDS AT CONNECTIONS SMOOTHLY TRANSITION FROM FULL CURB HEIGHT TO ZERO CURB HEIGHT WITHIN A 3' LENGTH.
3.	ALL STRIPING AND SIGNAGE SHALL COMPLY WITH THE WISCONSIN MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION.

[illegible]

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PROJECT TITLE:
**GERMANTOWN TOWNHOUSES
W140 N10385 FOND DU LAC AVE
GERMANTOWN, WI 53022**

PLAN TITLE:

**PROPOSED
SITE PLAN**

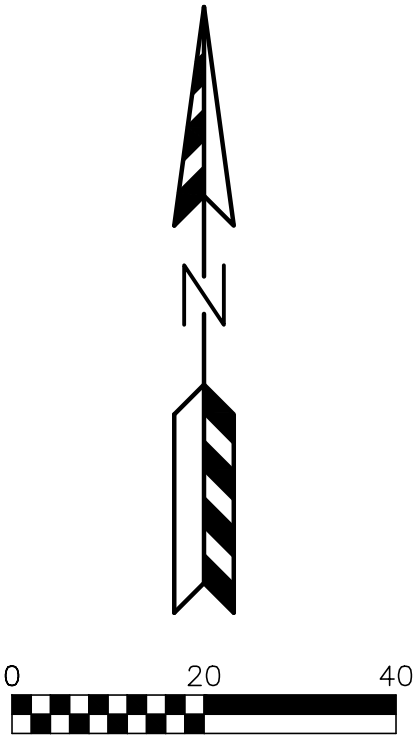
DRAWN BY: **KJP**
DESIGNED BY: **KJP**
CHECKED BY: **KJP**

PLAN DATE:	7-20-2023
PROJECT NO:	\NA-01-17\

VILLAGE SUBMITTAL

SHEET NO:

C1.02



LEGEND:

-- 936 -- -- EXISTING MINOR CONTOUR.

-- 935 -- -- EXISTING MAJOR CONTOUR.

—— 936 —— PROPOSED MINOR CONTOUR.

—— 935 —— PROPOSED MAJOR CONTOUR.

- EX 934.23 - EXISTING SPOT ELEVATION.

- 934.23 - PROPOSED CURB FLANGE ELEVATION.

- TC 934.23 - PROPOSED TOP OF CURB ELEVATION.

- SW 934.23 - PROPOSED SIDEWALK ELEVATION.

- EP 934.23 - PROPOSED EDGE OF PAVEMENT ELEVATION.

- EXP 934.23 - PROPOSED BUILDING EXPOSURE ELEVATION.

- FFE 934.23 - PROPOSED BUILDING FIRST FLOOR ELEVATION

■■■■■■■■■■ PROPOSED STORM SEWER.

■■■■■■■■■■ EXISTING STORM SEWER.

[illegible]

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PROJECT TITLE:
GERMANTOWN TOWNHOUSES
W140 N10385 FOND DU LAC AVE
GERMANTOWN, WI 53022

PLAN TITLE:

**GRADING
PLAN**

DRAWN BY: **KJP**
DESIGNED BY: **KJP**
CHECKED BY: **KJP**

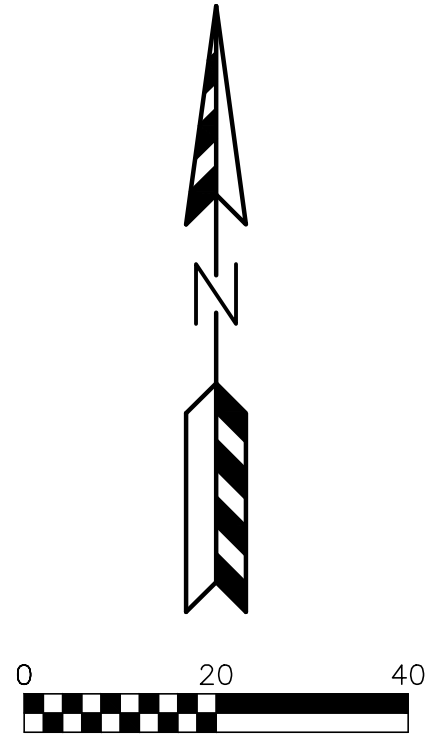
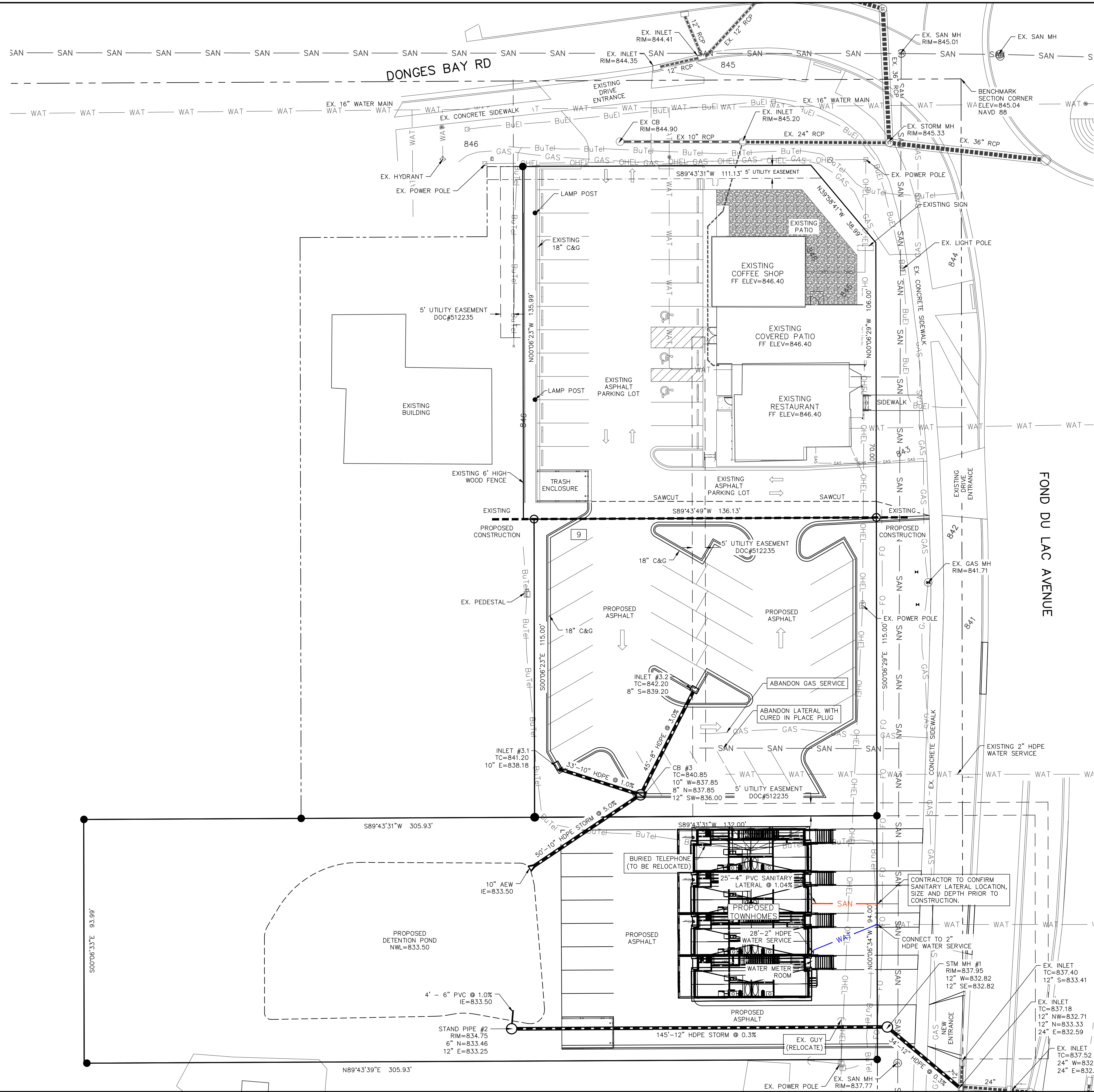
PLAN DATE:
7-20-2023

PROJECT NO:
\\NA-01-17\\

VILLAGE
SUBMITTAL

SHEET NO:

C1.04



STORM SEWER CASTINGS:		
STRUCTURE	STRUCTURE DIAMETER	NEENAH CASTING OR EQUIVALENT
INLET #3.2	2' x 3'	R-3067
INLET #3.1	2' x 3'	R-3067
CB #3	4' DIA.	R-3067
STAND PIPE #2	3' DIA.	R-2561
STM MH #1	4' DIA.	R-1661

- LEGEND:**
- OHEL — OVERHEAD ELECTRIC LINE.
 - BuEl — BURIED ELECTRIC LINE.
 - BuTel — BURIED TELEPHONE LINE.
 - FO — FIBER OPTIC LINE.
 - GAS — GAS LINE.
 - SAN — SANITARY SEWER MAIN OR LATERAL.
 - WAT — WATER MAIN OR SERVICE.
 - STORM SEWER LINE.
 - ⊗ — GAS VALVE.
 - ⊙ — FIRE HYDRANT.
 - ⊞ — POWER POLE.
 - ⊞ — SANITARY SEWER MANHOLE.
 - ⊞ — STORM SEWER MANHOLE.
 - — STORM SEWER INLET.
 - ⊞ — TELEPHONE PEDESTAL.
 - ⊞ — TRANSFORMER.
 - ⊞ — WATER VALVE.
 - SAN — PROPOSED SANITARY SEWER
 - WAT — PROPOSED WATER MAIN
 - PROPOSED STORM SEWER.

UTILITY NOTE:
ABANDON EXISTING WATER SERVICE FROM RESTAURANT TO THE EXISTING RESIDENTIAL HOME TO THE SOUTH.

REVISIONS:	
NO.	DATE DESCRIPTION
1	XX-XX-XX XXXXXXXXXXXXXXXXXX

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GERMANTOWN TOWNHOUSES
W140 N10385 FOND DU LAC AVE
GERMANTOWN, WI 53022

UTILITY PLAN

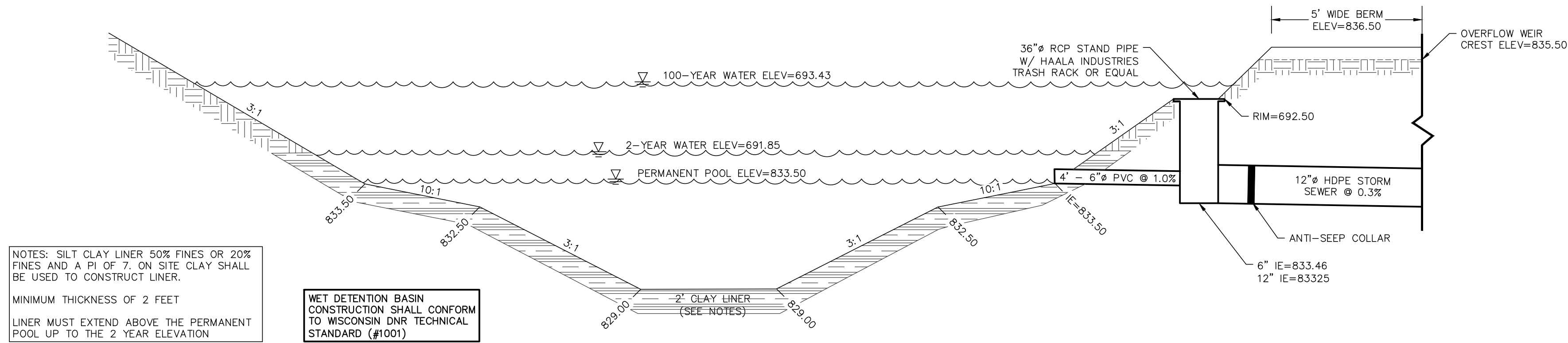
DRAWN BY:
KJP
DESIGNED BY:
KJP
CHECKED BY:
KJP

PLAN DATE:
7-20-2023

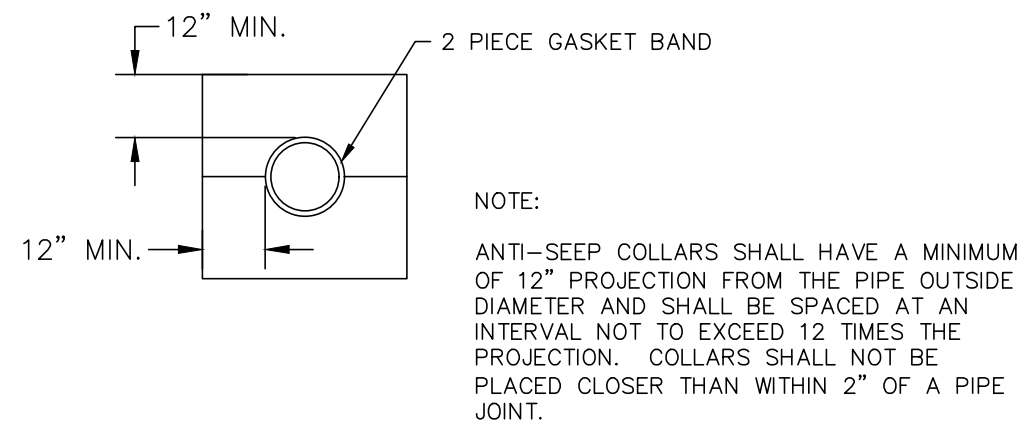
PROJECT NO:
\NA-01-17

VILLAGE SUBMITTAL

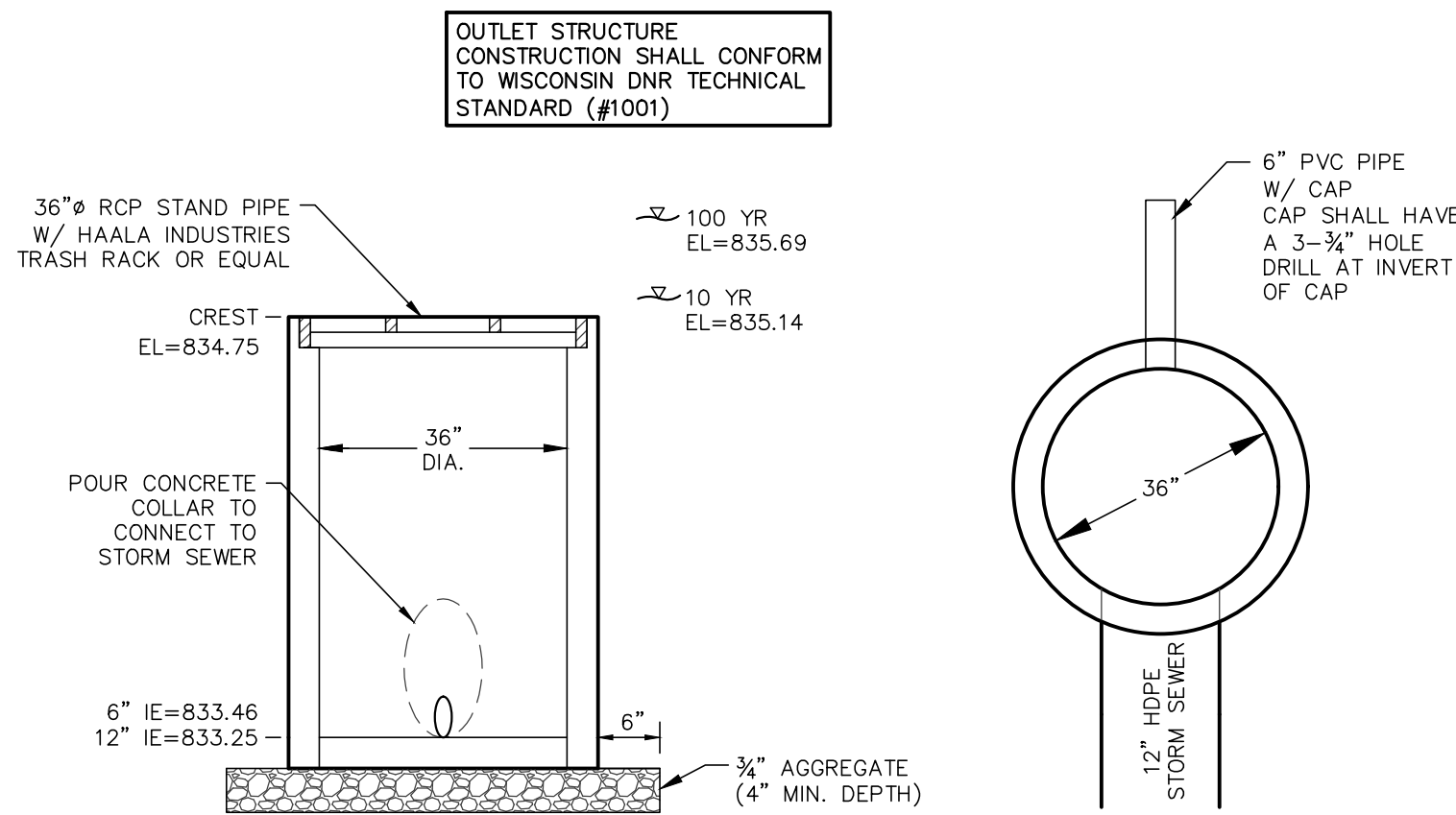
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C1.05



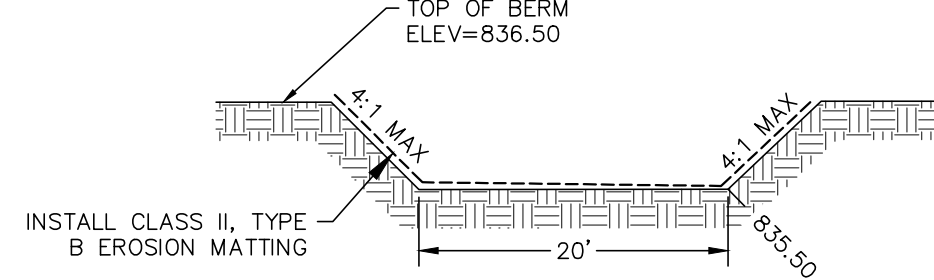
WET DETENTION POND CROSS SECTION



ANTI-SEEP COLLAR DETAIL



STAND PIPE DETAIL



OVERFLOW WEIR CROSS SECTION

REVISIONS:

NO.	DATE	DESCRIPTION
1	XX-XX-XX	XXXXXXXXXXXXXXXXXXXX

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www.parishse.com

PROJECT TITLE:

GERMANTOWN TOWNHOUSES
W140 N10385 FOND DU LAC AVE
GERMANTOWN, WI 53022

PLAN TITLE:

STORMWATER
MANAGEMENT
DETAILS

DRAWN BY:

KJP

DESIGNED BY:

KJP

CHECKED BY:

KJP

PLAN DATE:

7-20-2023

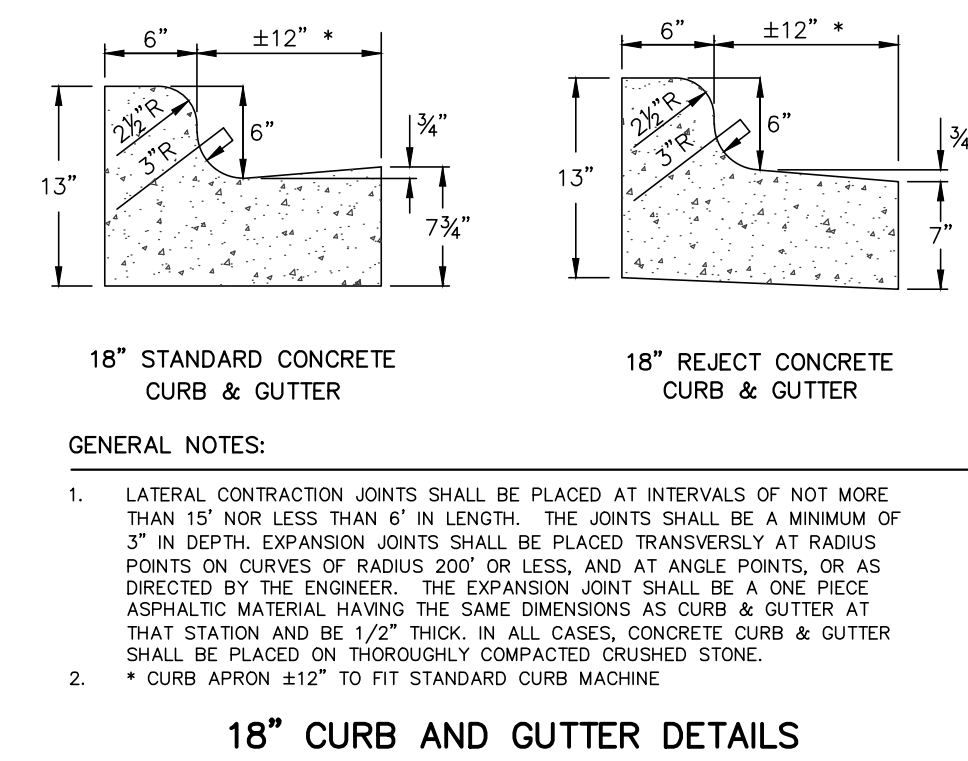
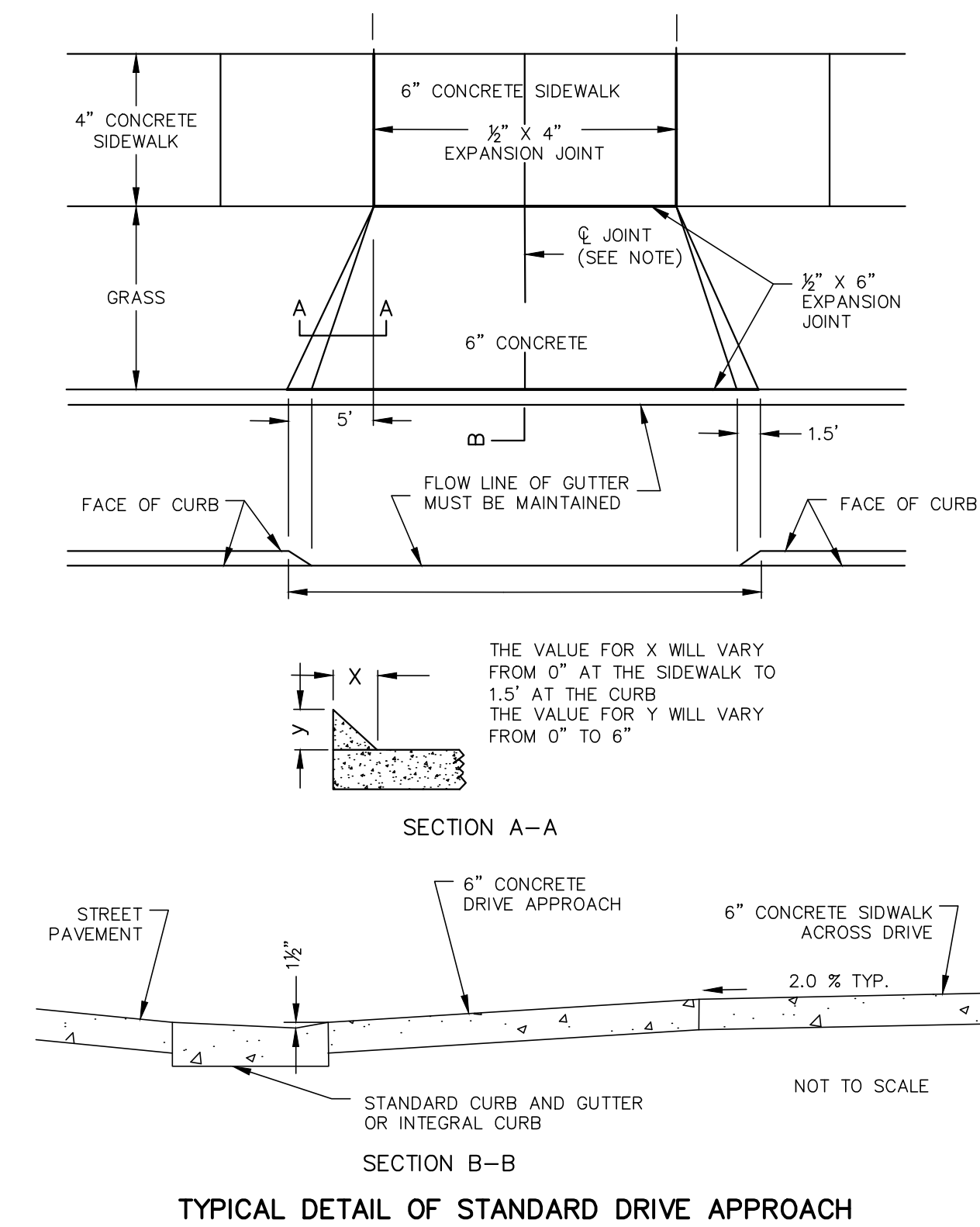
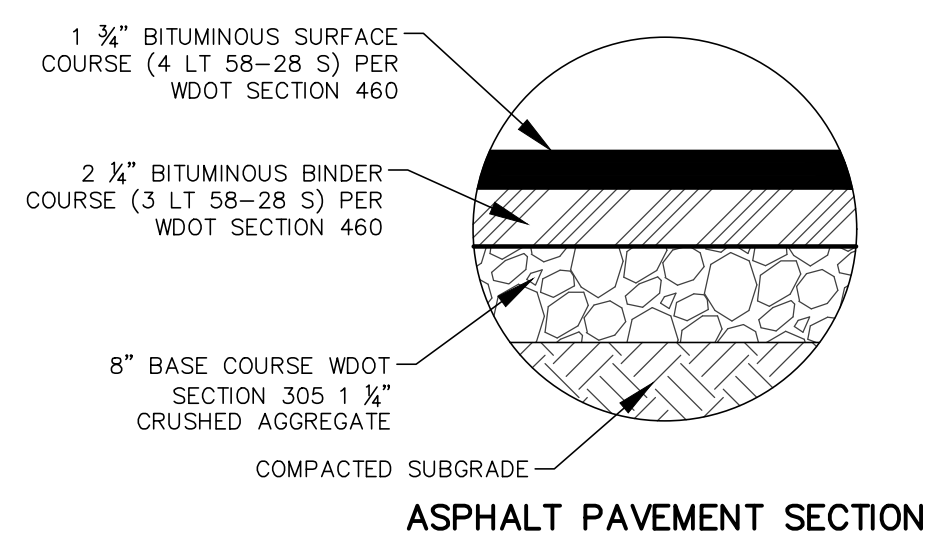
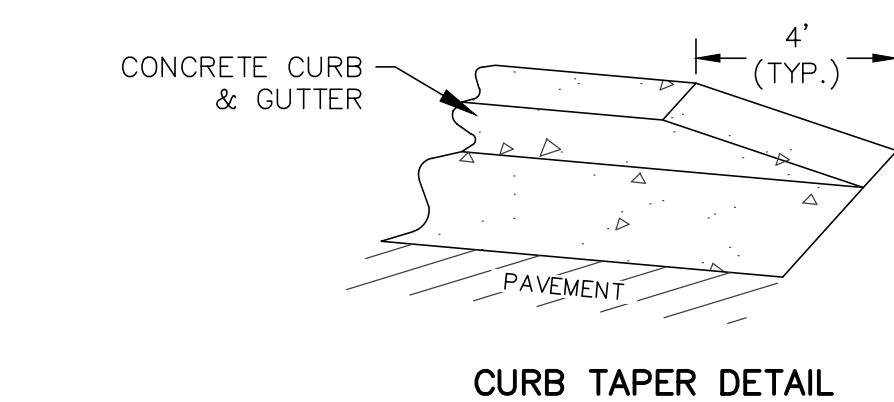
PROJECT NO:

\NA-01-17\

VILLAGE
SUBMITTAL

SHEET NO:

C1.06

[illegible]

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122 Wisconsin Street, West Bend, WI 53095
262.346.7800
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PROJECT TITLE:
**GERMANTOWN TOWNHOUSES
W140 N10385 FOND DU LAC AVE
GERMANTOWN, WI 53022**

PLAN TITLE:
**STORMWATER
MANAGEMENT
DETAILS**

DRAWN BY:
KJP

DESIGNED BY:
KJP

CHECKED BY:
KJP

PLAN DATE:
7-20-2023

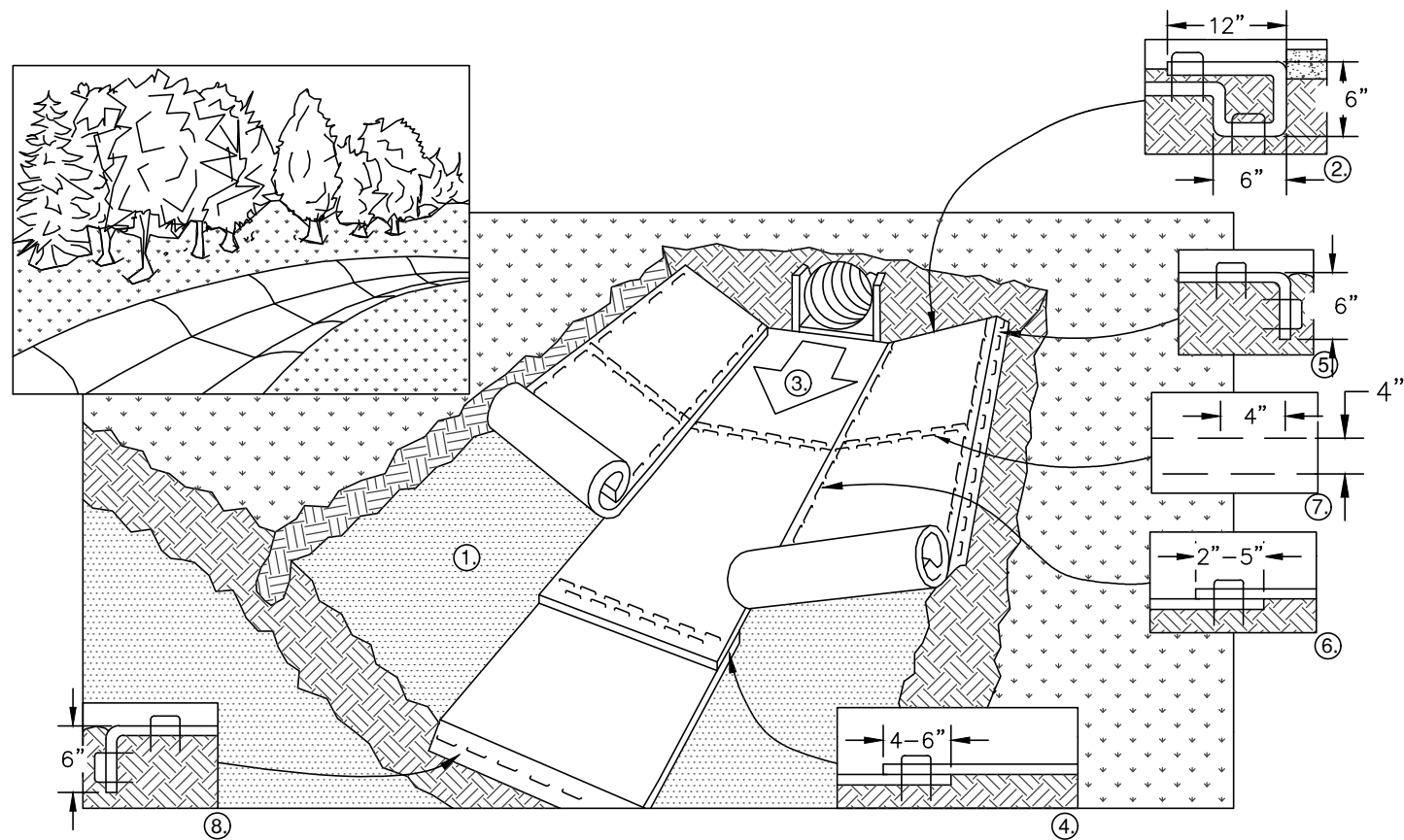
PROJECT NO:
\\NA-01-17\\

VILLAGE
SUBMITTAL

SHEET NO:

C1.07

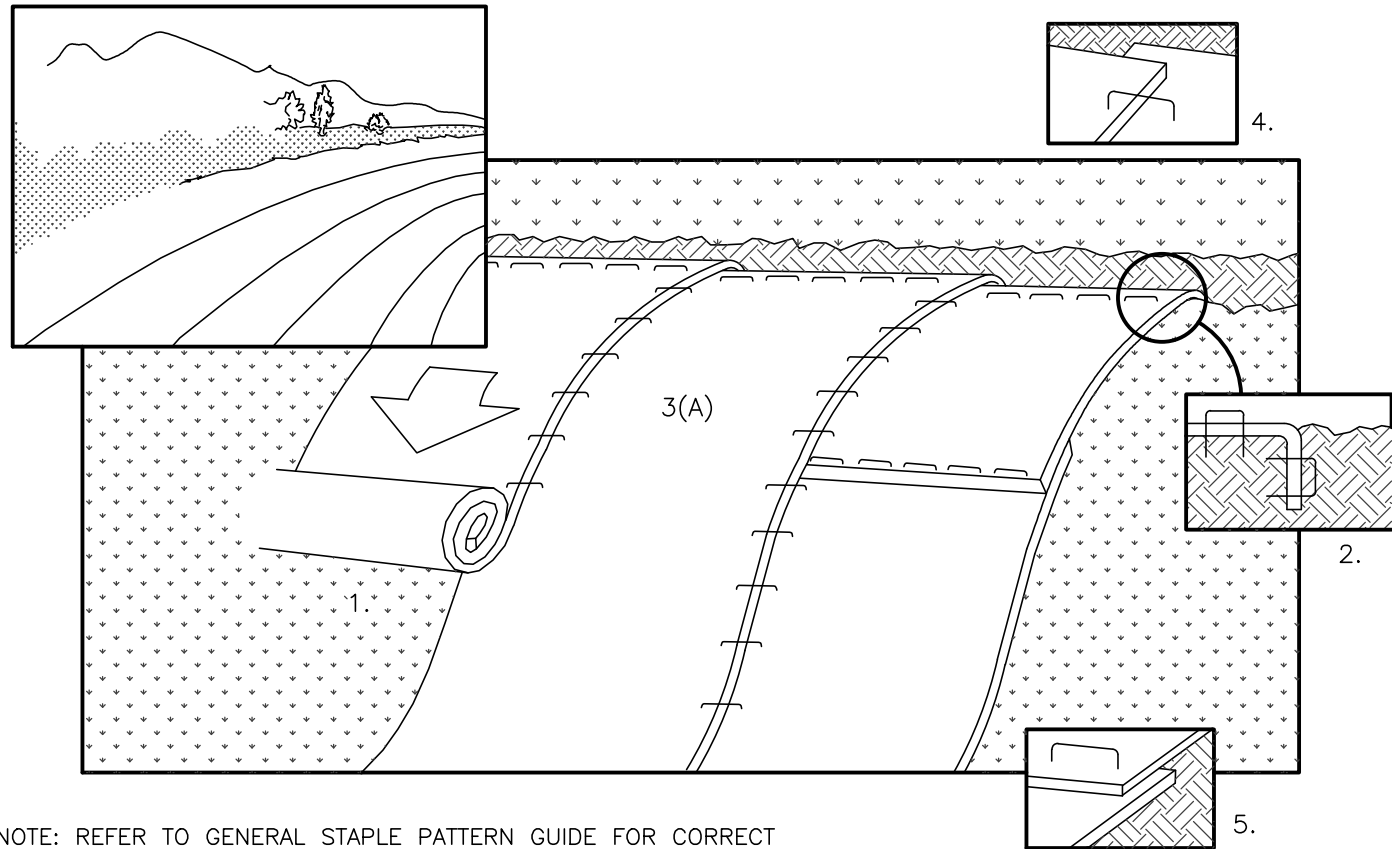
MAXIMUM PERIOD OF BARE SOIL FOR SLOPES > 20%		
SLOPE AREA DRAINS TO SEDIMENT BASIN OR SEDIMENT TRAP?	MAXIMUM PERIOD OF BARE SOIL EXPOSURE (CALENDAR DAYS)	
	LAND DISTURBANCE BETWEEN SEPTEMBER 16TH AND MAY 1ST	LAND DISTURBANCE BETWEEN MAY 2ND AND SEPTEMBER 15TH
YES	90	90
NO	60	30



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

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

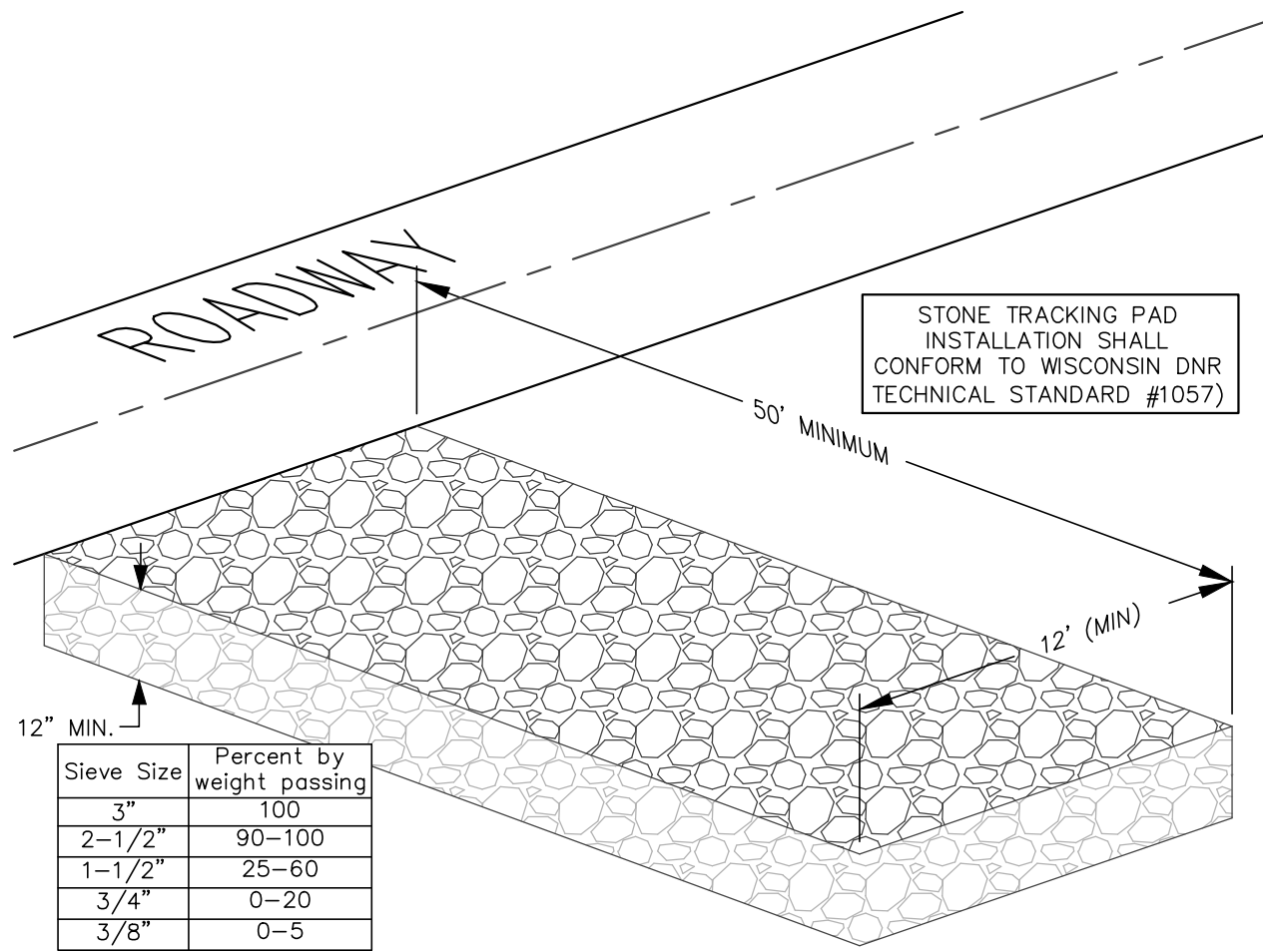
EROSION CONTROL MAT – CHANNEL INSTALLATION



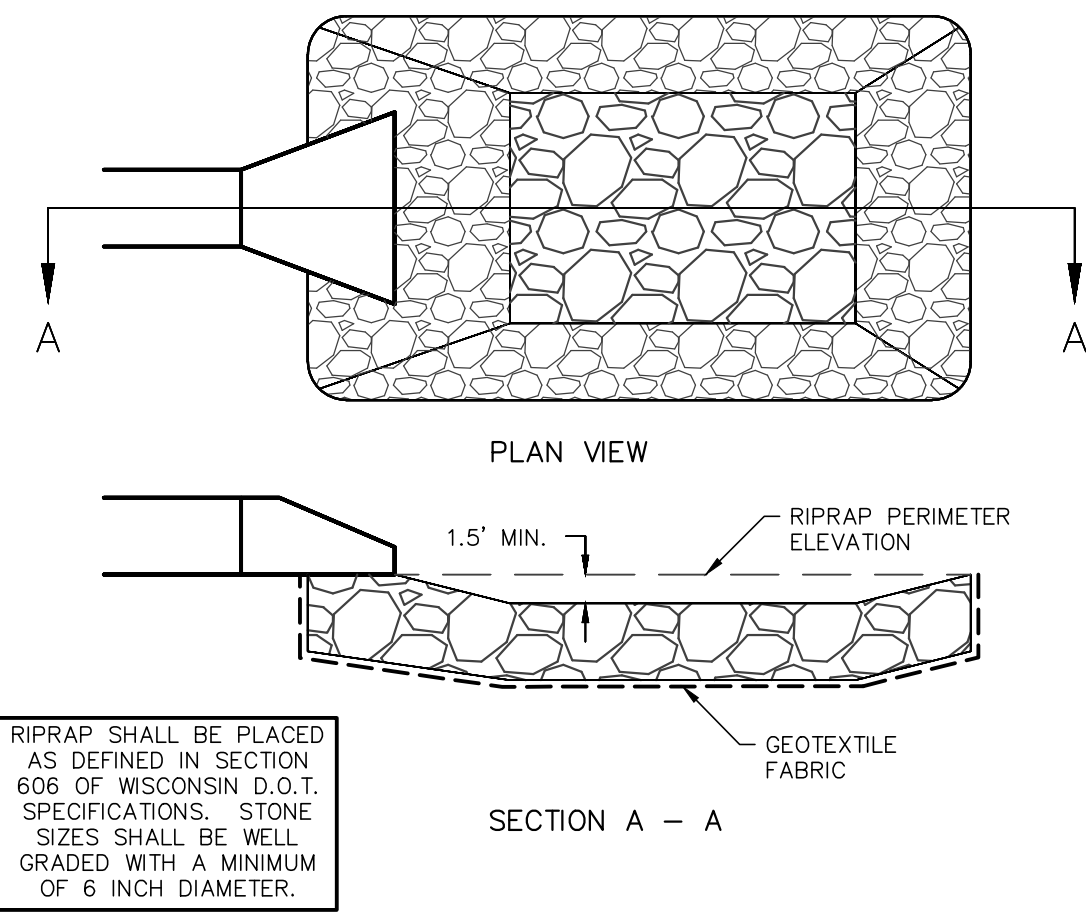
NOTE: REFER TO GENERAL STAPLE PATTERN GUIDE FOR CORRECT STAPLE PATTERN RECOMMENDATIONS FOR SLOPE INSTALLATIONS.

1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING APPLICATION OF FERTILIZER AND SEED.
NOTE: WHEN USING CELL-O-SEED DO NOT SEED PREPARED AREA. CELL-O-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN 6" DEEP X 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
3. ROLL THE BLANKETS (A.) DOWN OR (B.) HORIZONTALLY ACROSS THE SLOPE.
4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2" OVERLAP.
5. WHEN BLANKETS MUST BE SPICED DOWN THE SLOPE, PLACE BLANKETS END OVER END (SHINGLE STYLE) WITH APPROXIMATELY 4" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY
6. ALL BLANKETS MUST BE SECURELY FASTENED TO THE SLOPE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS RECOMMENDED BY THE MANUFACTURER.

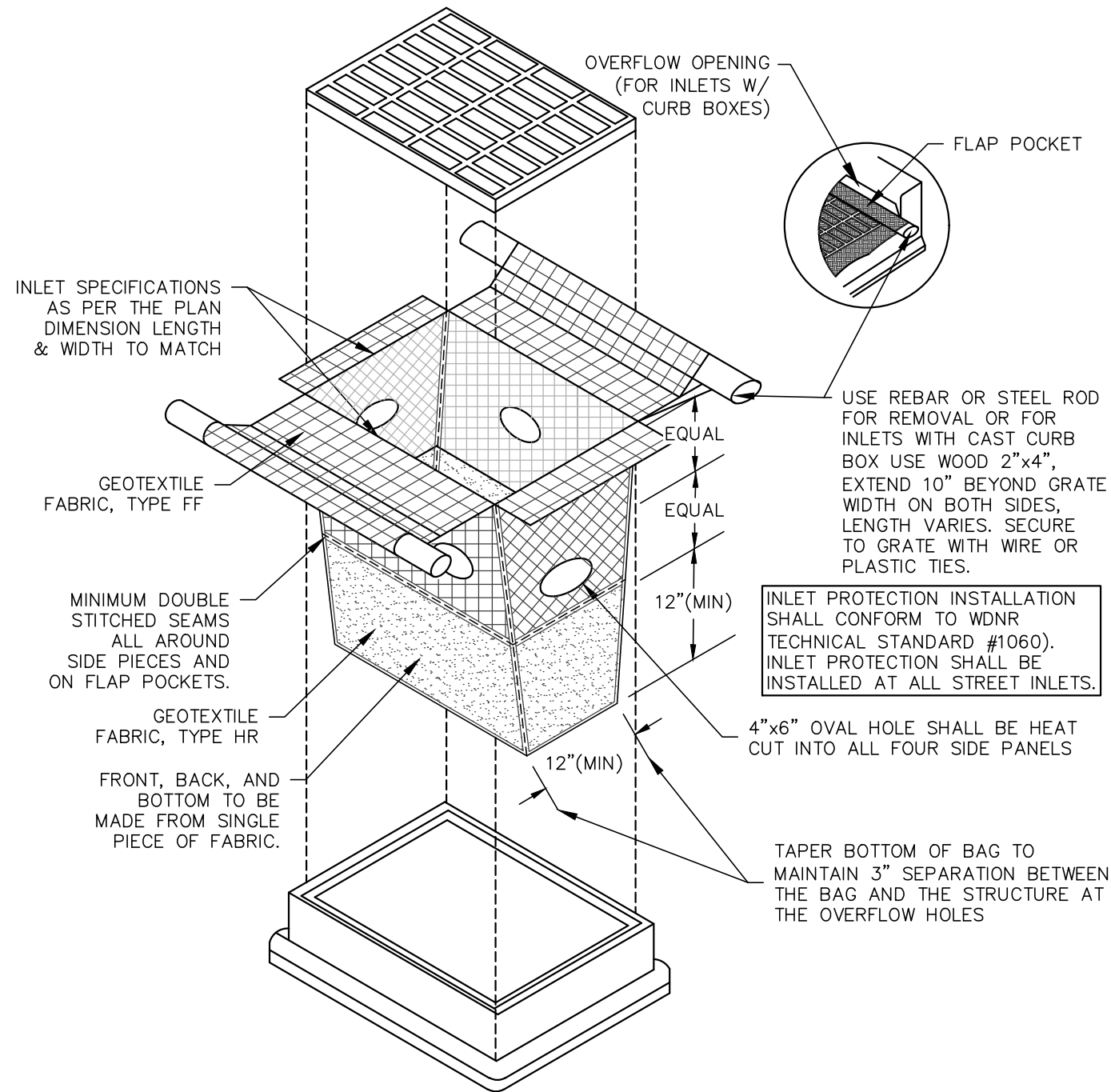
EROSION CONTROL MAT – SLOPE INSTALLATION



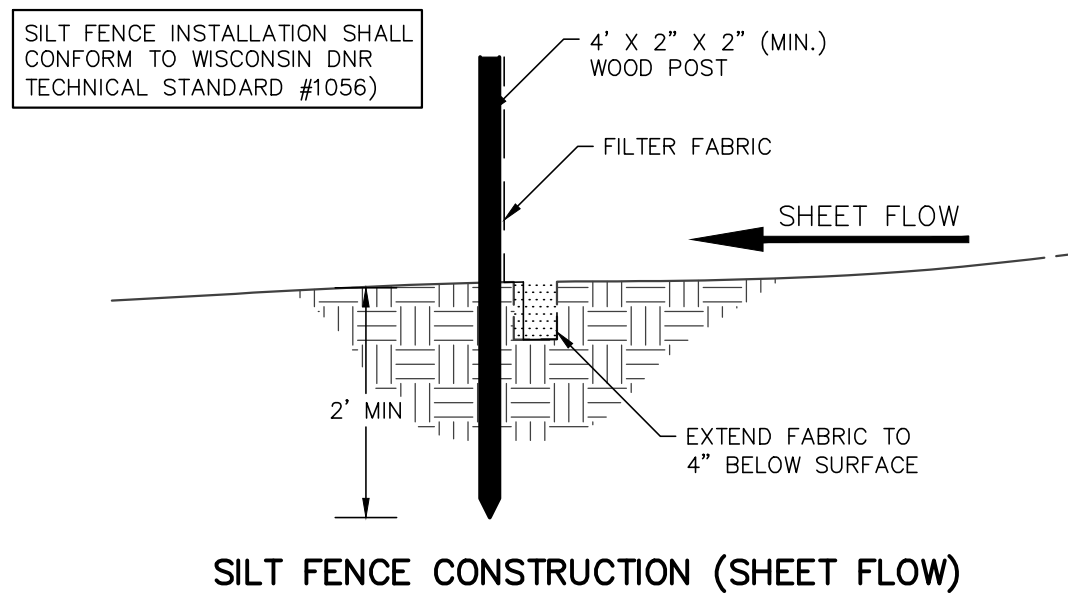
STONE TRACKING PAD DETAIL



RIPRAP/STILLING BASIN DETAIL



TYPE D-HR INLET PROTECTION DETAIL



SILT FENCE CONSTRUCTION (SHEET FLOW)

REVISIONS:	
NO.	DATE DESCRIPTION
1	XX-XX-XX XXXXXXXXXXXXXXXXXXXX

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

PROJECT TITLE:
**GERMANTOWN TOWNHOUSES
W140 N10385 FOND DU LAC AVE
GERMANTOWN, WI 53022**

PLAN TITLE:
**EROSION
CONTROL
DETAILS**

DRAWN BY:
KJP
DESIGNED BY:
KJP
CHECKED BY:
KJP

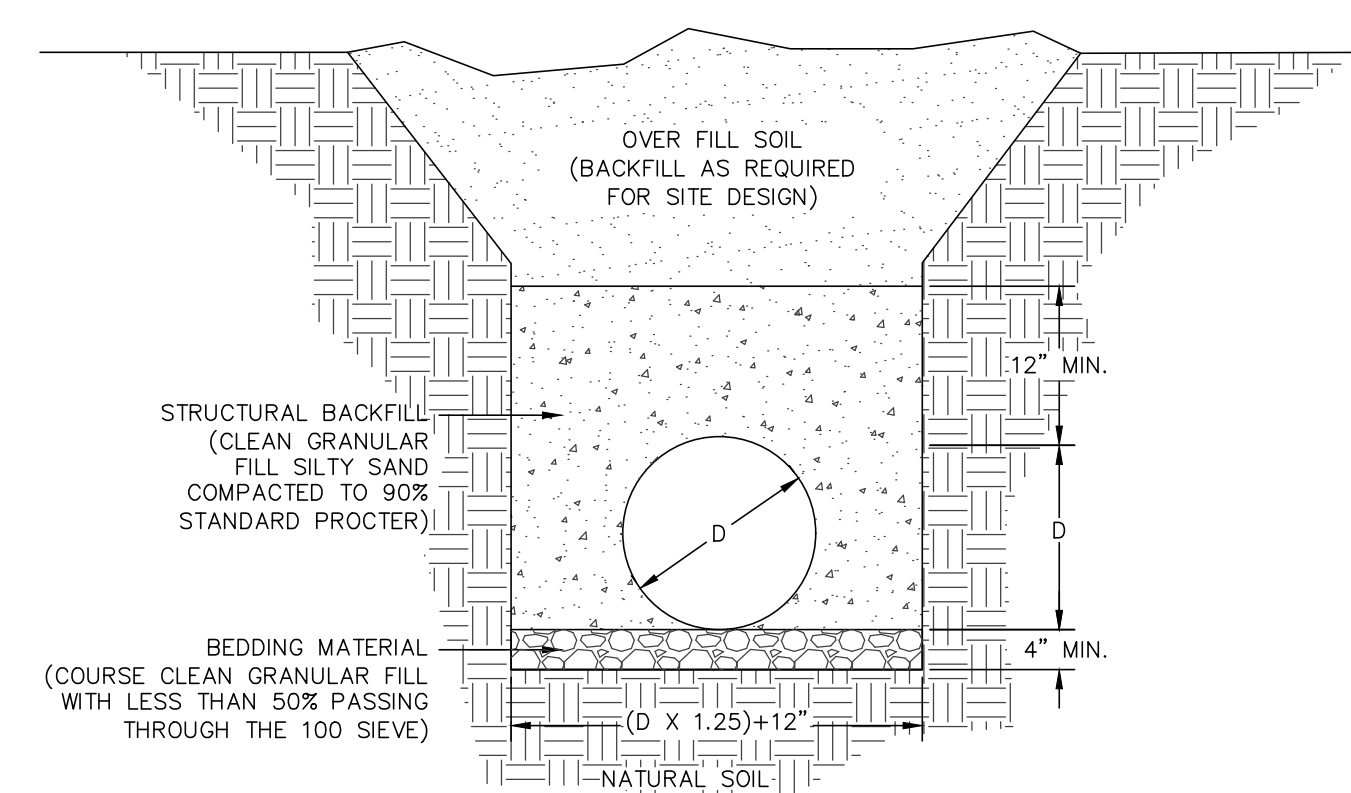
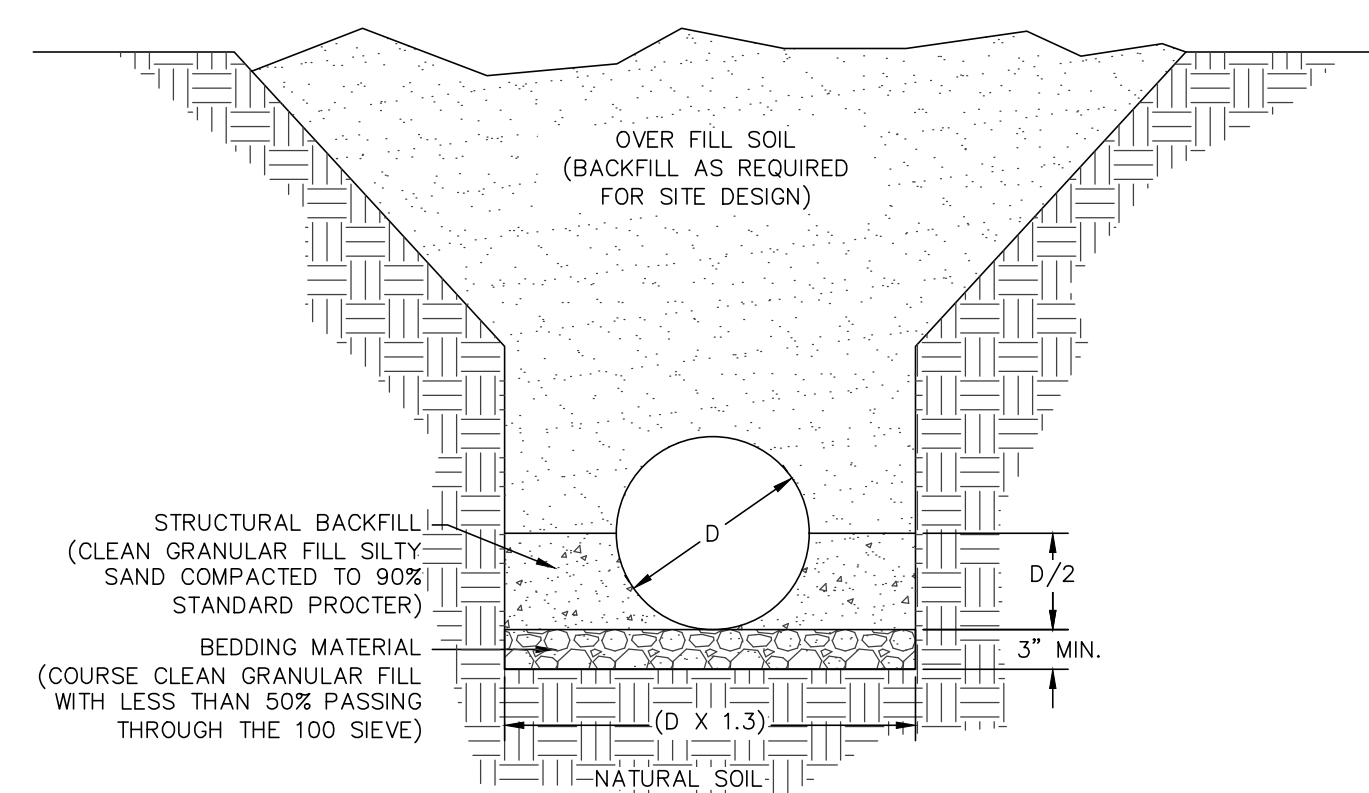
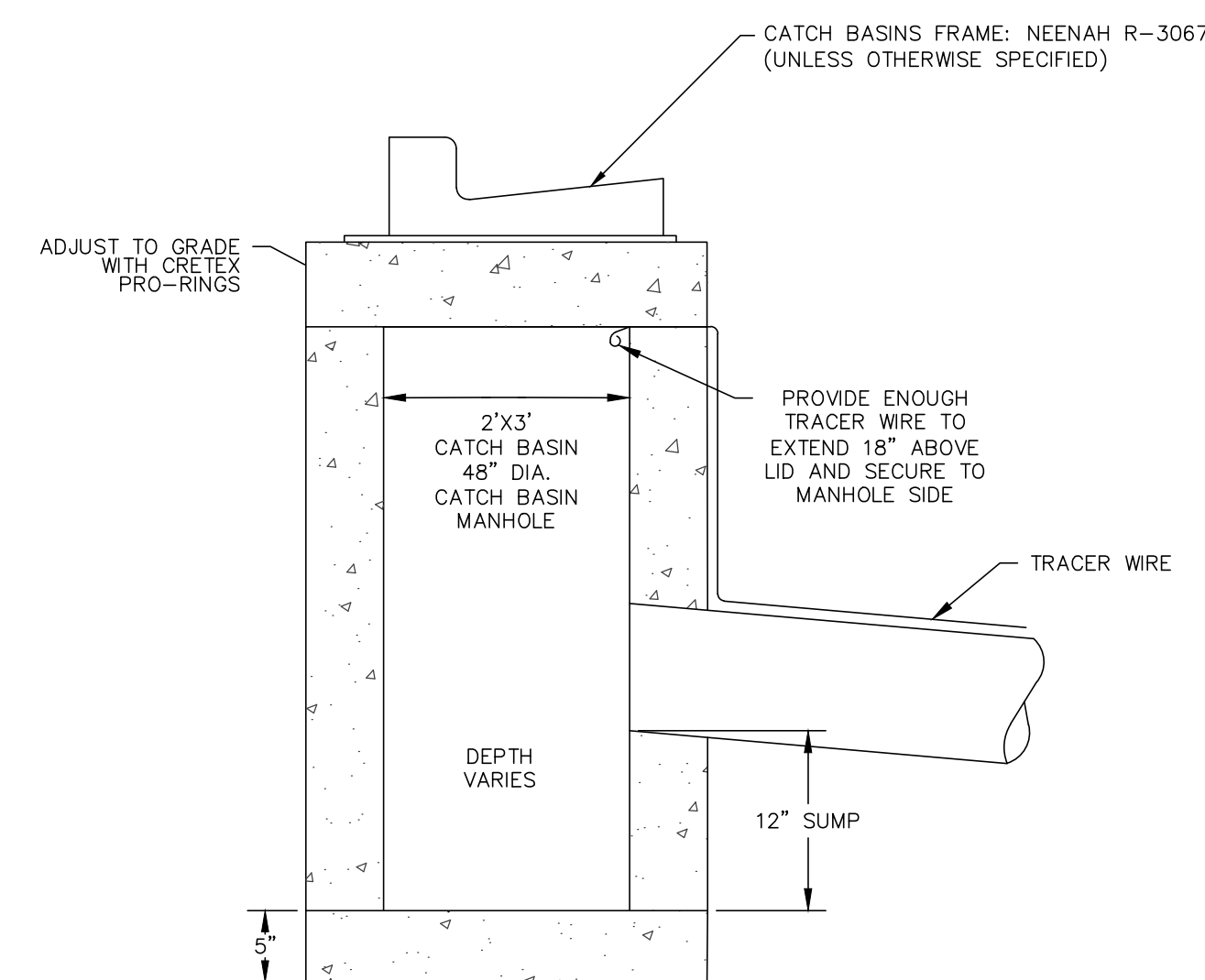
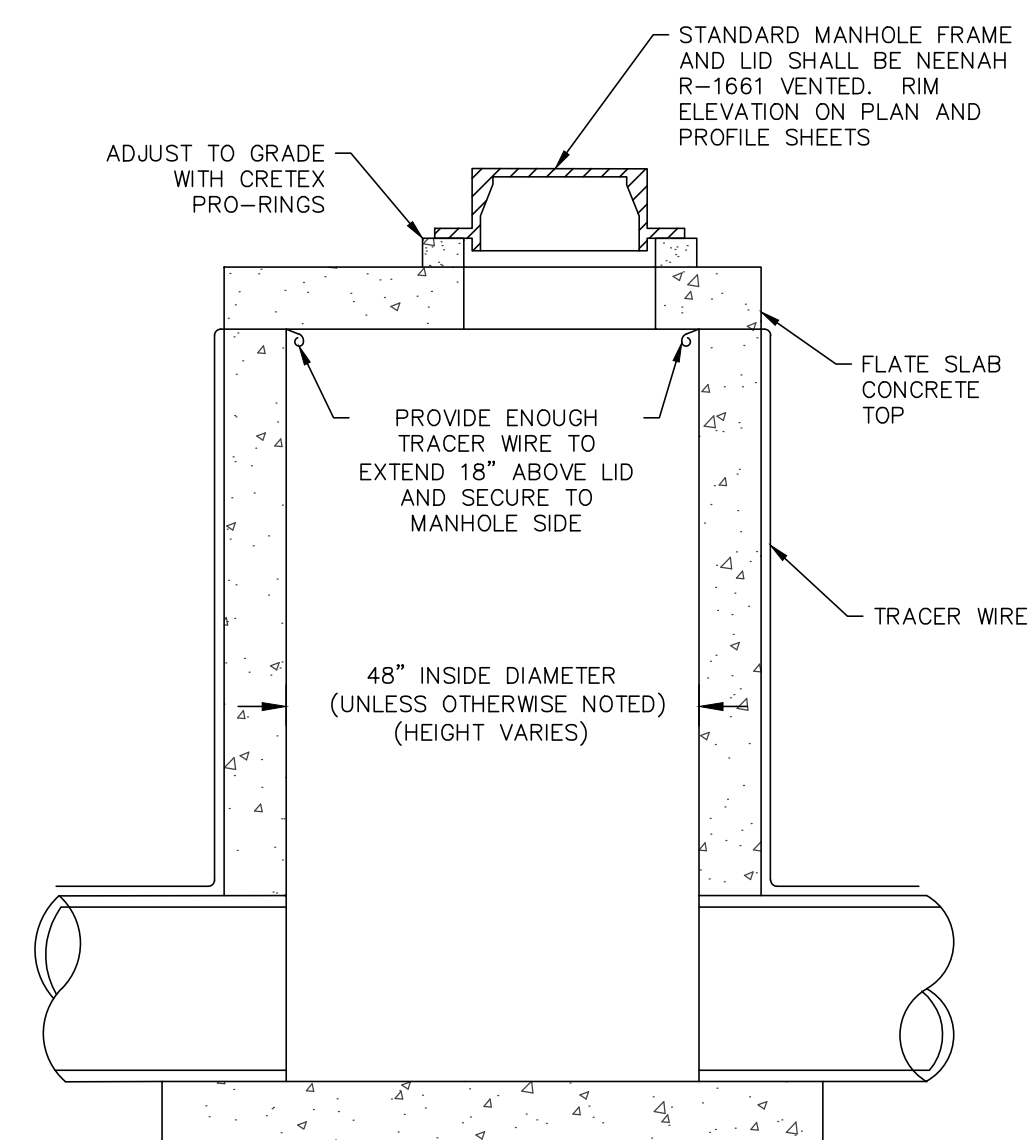
PLAN DATE:
7-20-2023

PROJECT NO:
\NA-01-17

**VILLAGE
SUBMITTAL**

SHEET NO:

C1.08

[illegible]

PSE
PARISH SURVEY & ENGINEERING
122 Wisconsin Street, West Bend, WI 53095
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PROJECT TITLE:
**GERMANTOWN TOWNHOUSES
W140 N10385 FOND DU LAC AVE
GERMANTOWN, WI 53022**

UTILITY DETAILS

DRAWN BY:
KJP

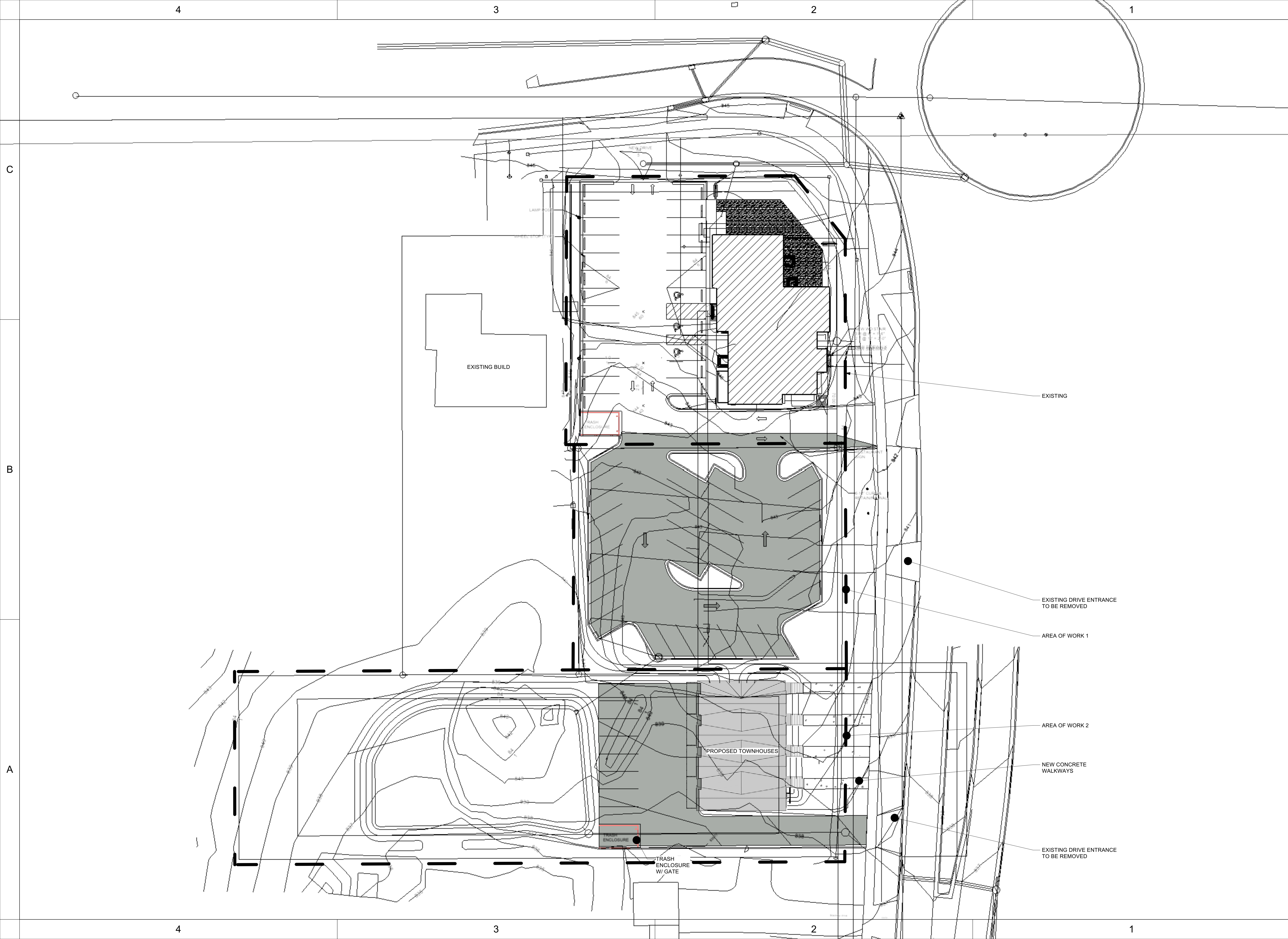
DESIGNED BY:
KJP

CHECKED BY:
KJP

PLAN DATE:
7-20-2023

PROJECT NO:
\\NA-01-17\\

C1.09



GERMANTOWN TOWNHOUSES

W140 N10385 FOND DU LAC AVE
GERMANTOWN, WI 53022

Project Title

Architect

NAGEL ARCHITECTS
+ ENGINEERS

Consultant

REV.	DATE	DESCRIPTION

NO.	DATE	ISSUE NOTE

Project Manager	Drawn By JP
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Date JULY 2023	Reviewed By GN
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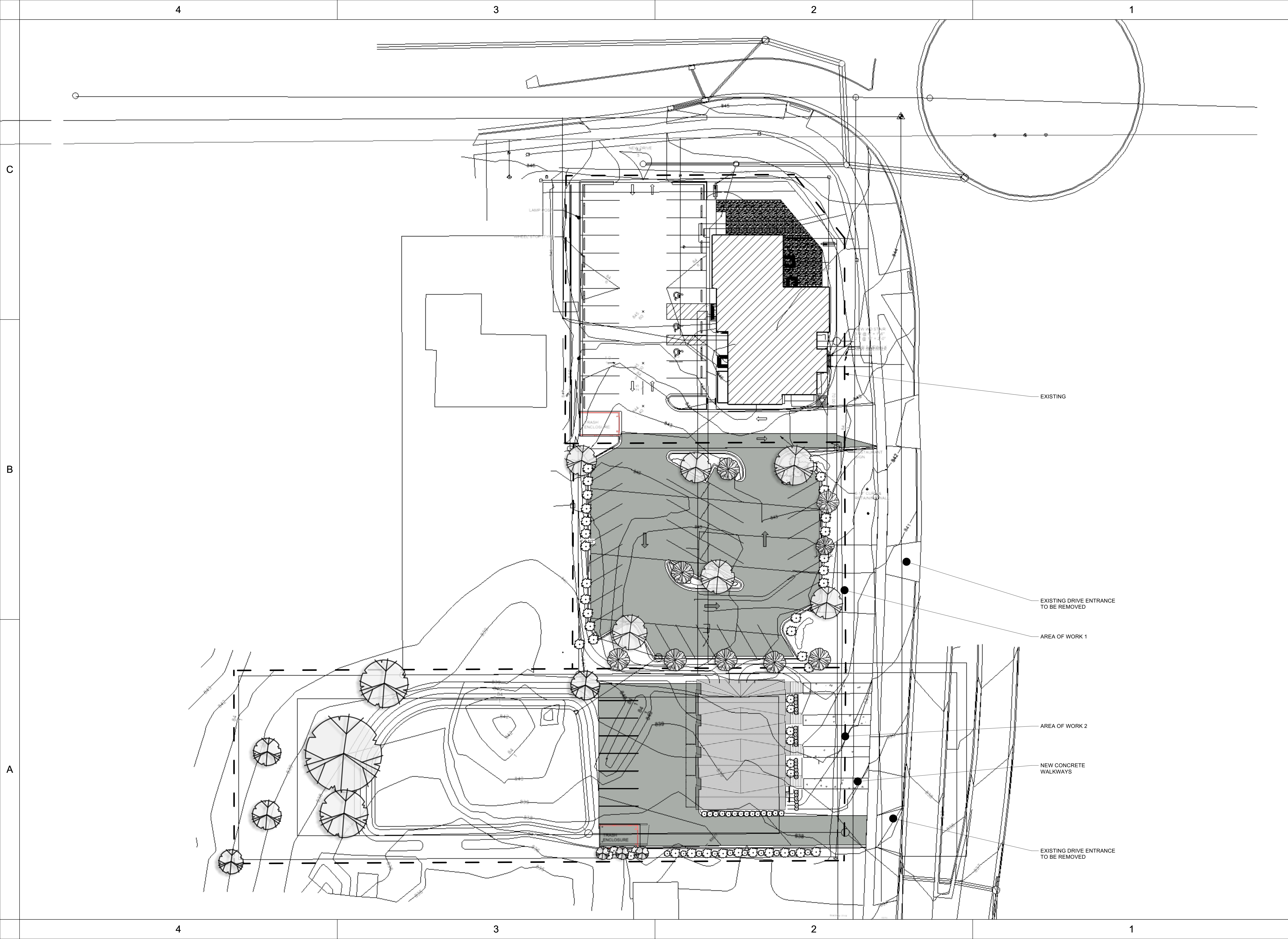
Project ID 22006

Sheet Title

PROPOSED SITE
PLAN

Sheet No.

AS101



GERMANTOWN TOWNHOUSES

W140 N10385 FOND DU LAC AVE
GERMANTOWN, WI 53022

Project Title



Architect

**NAGEL ARCHITECTS
+ ENGINEERS**

Consultant

REV.	DATE	DESCRIPTION

NO.	DATE	ISSUE NOTE

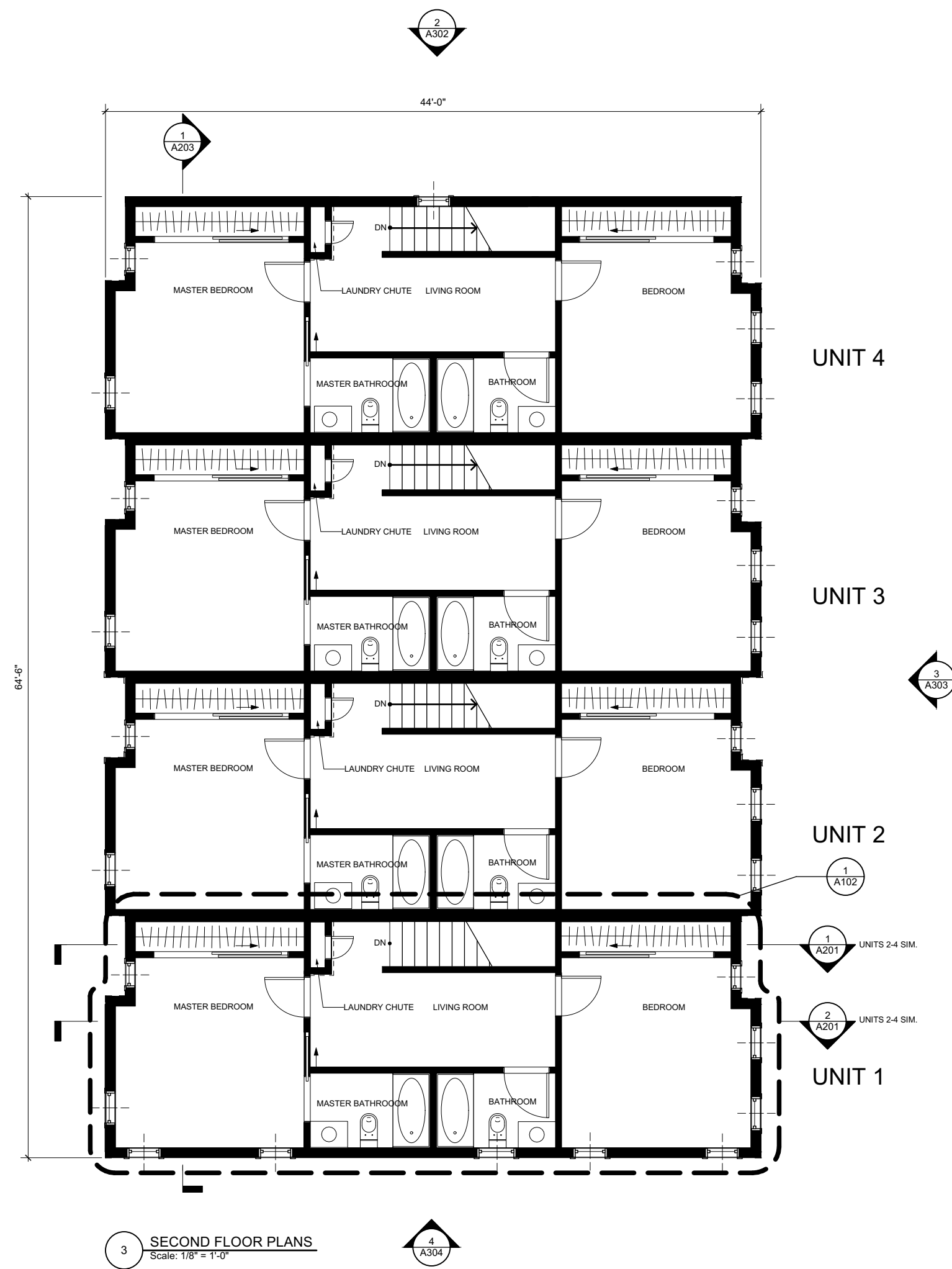
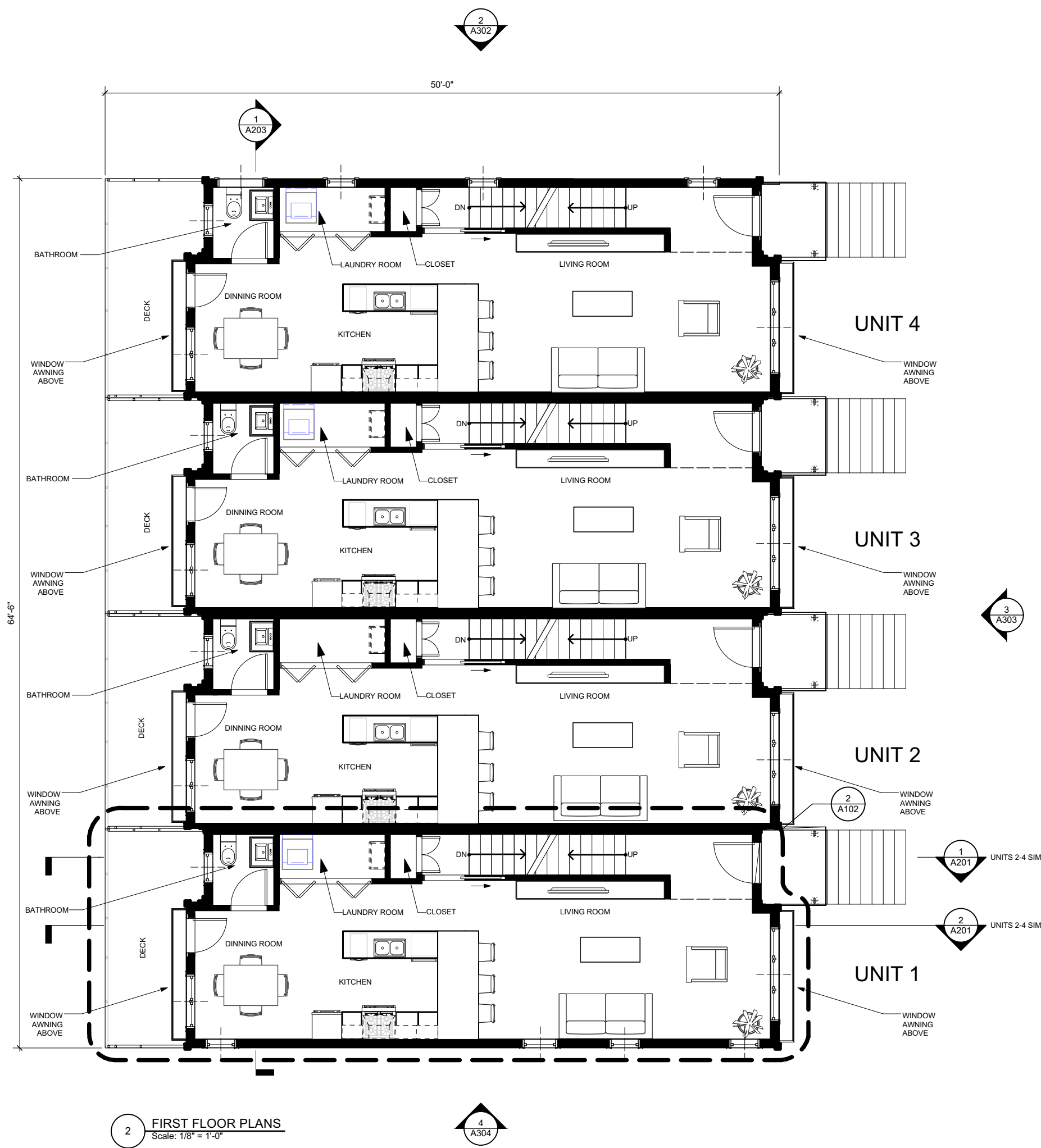
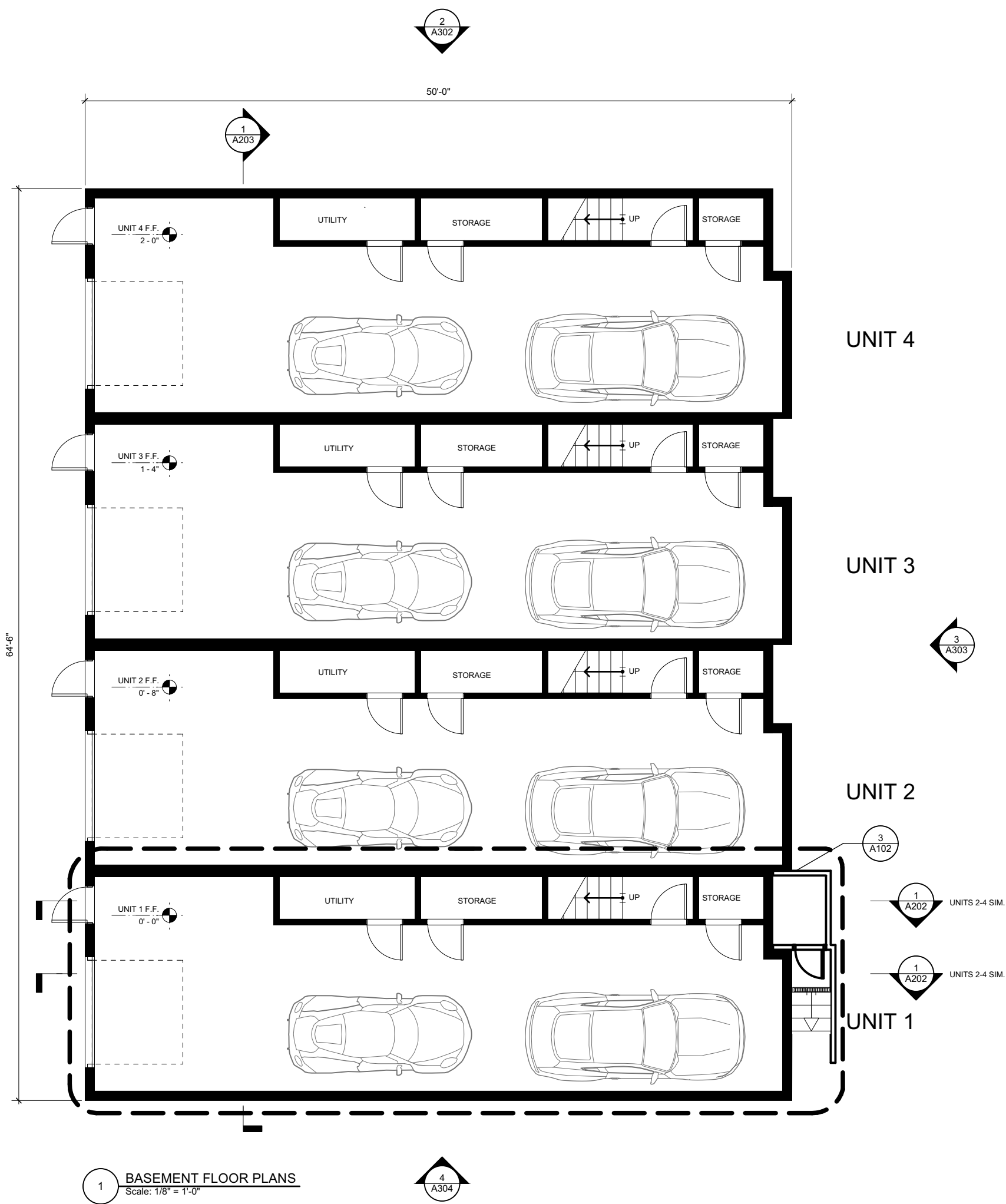
Project Manager	Drawn By JP
Date JULY 2023	Reviewed By GN
Project ID 22006	

Sheet Title

**PROPOSED
PRELIMINARY
LANDSCAPE PLAN**

Sheet No.

AS102



GERMANTOWN TOWNHOUSES

Project Title



Architect

NAGEL ARCHITECTS
+ ENGINEERS

Consultant

REV.	DATE	DESCRIPTION
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NO.	DATE	ISSUE NOTE
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Project Manager	Drawn By
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Date	Reviewed By
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Project ID	22006
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Sheet Title

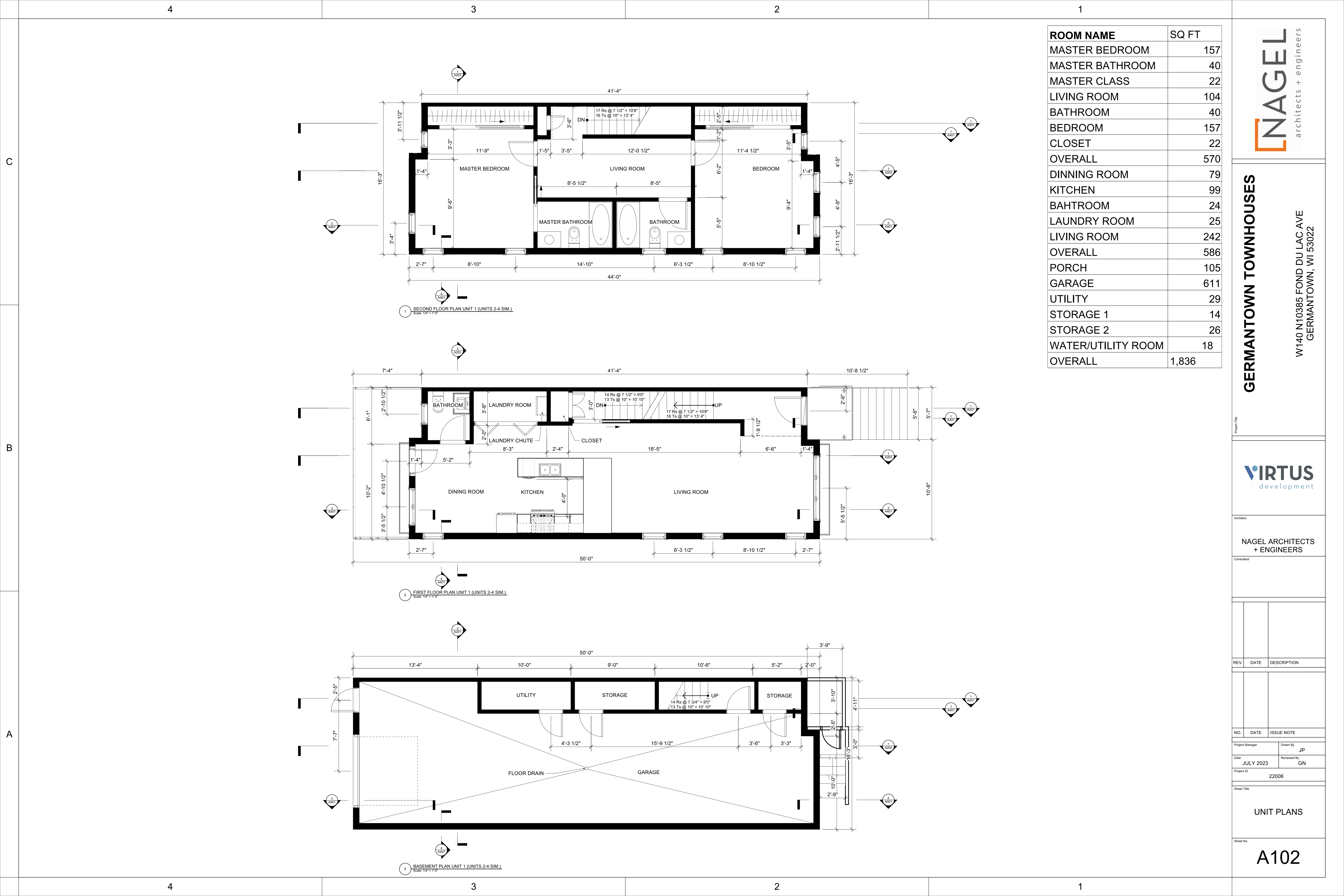
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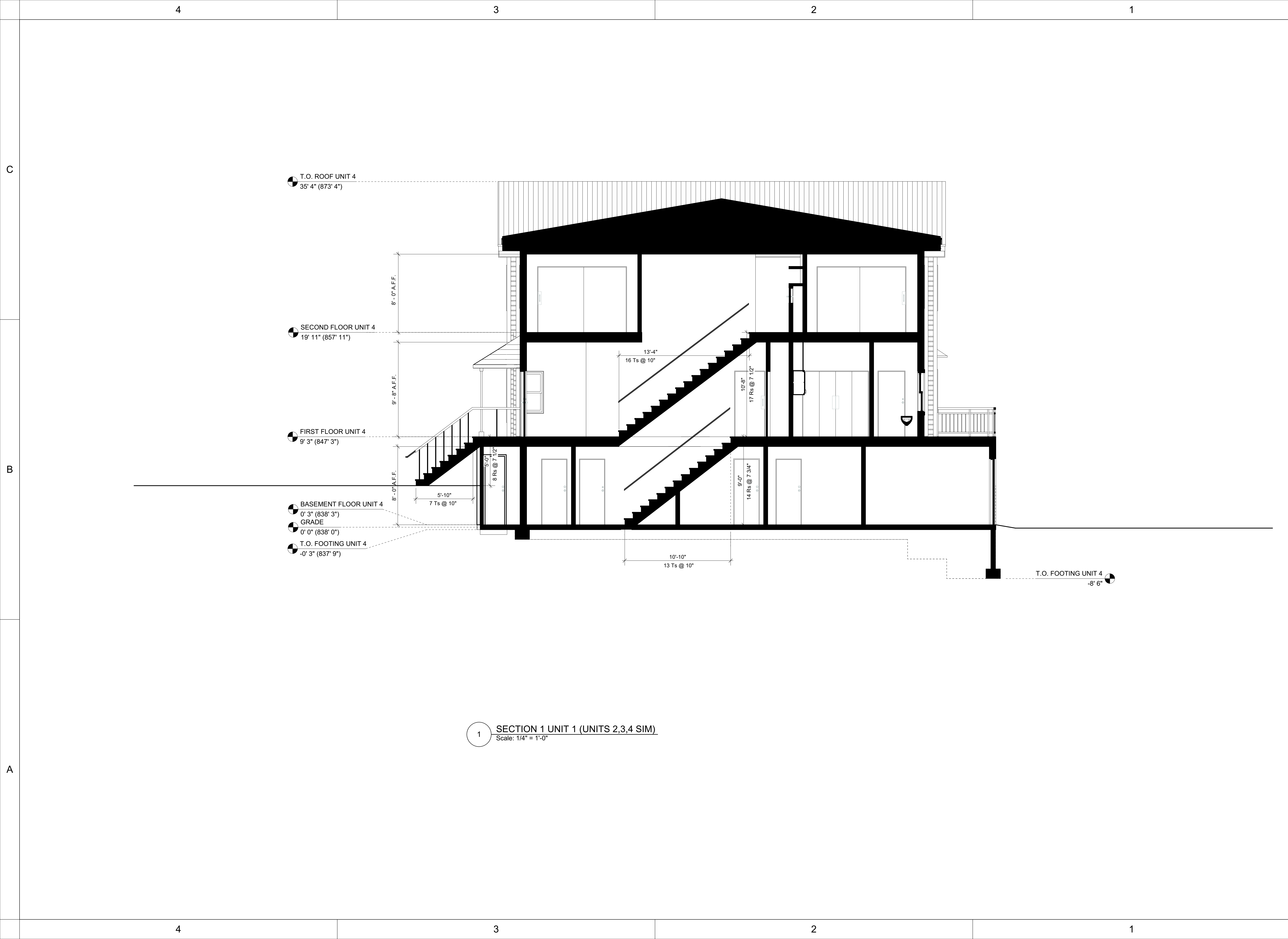
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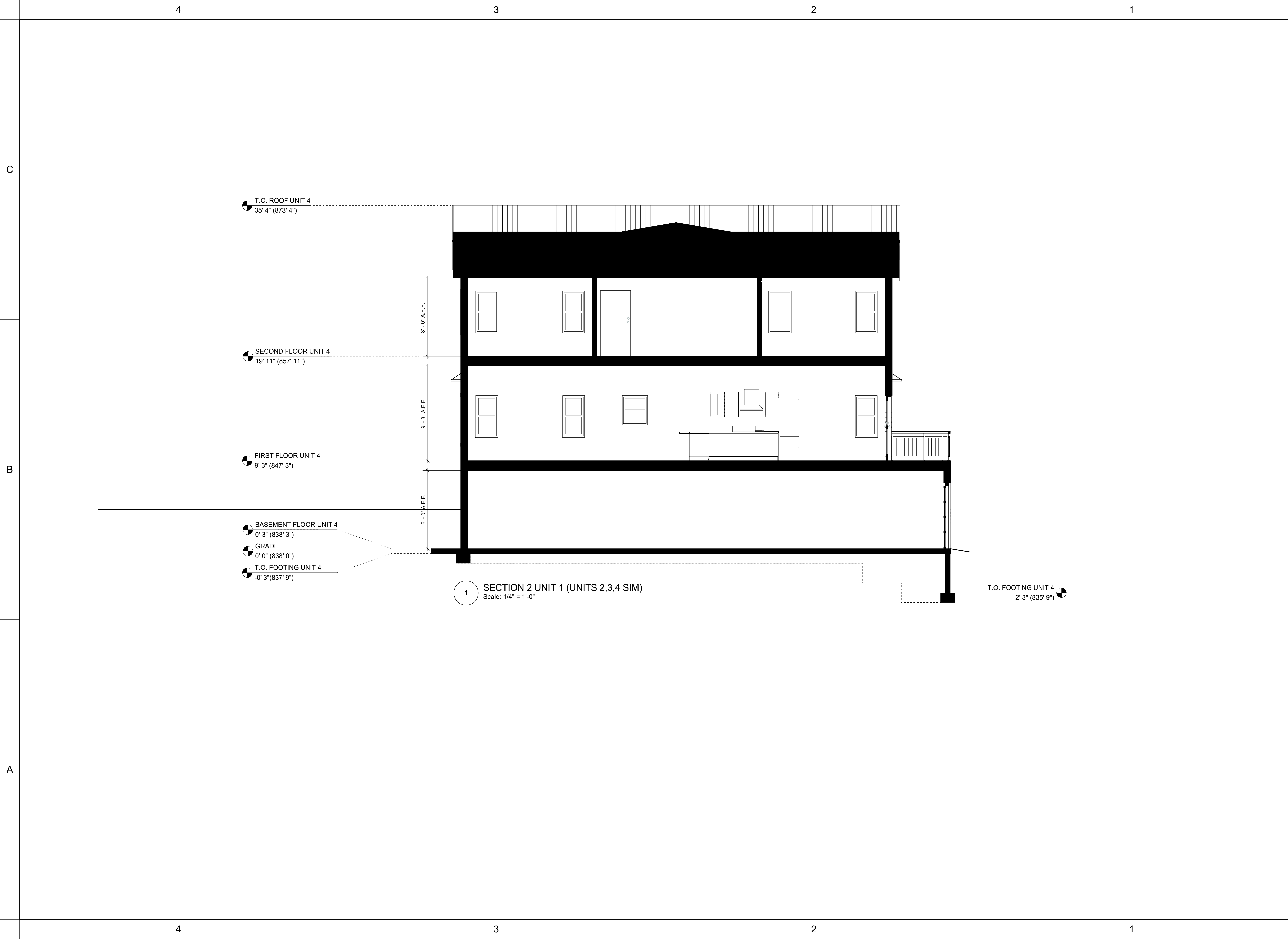


W140 N10385 FOND DU LAC AVE
GERMANTOWN, WI 53022





1 SECTION 1 UNIT 1 (UNITS 2,3,4 SIM)
Scale: 1/4" = 1'-0"



NAGEL

architects + engineers

GERMANTOWN TOWNHOUSES

W140 N10385 FOND DU LAC AVE
GERMANTOWN, WI 53022

VIRTUS

development

Architect

NAGEL ARCHITECTS
+ ENGINEERS

Consultant

REV.	DATE	DESCRIPTION

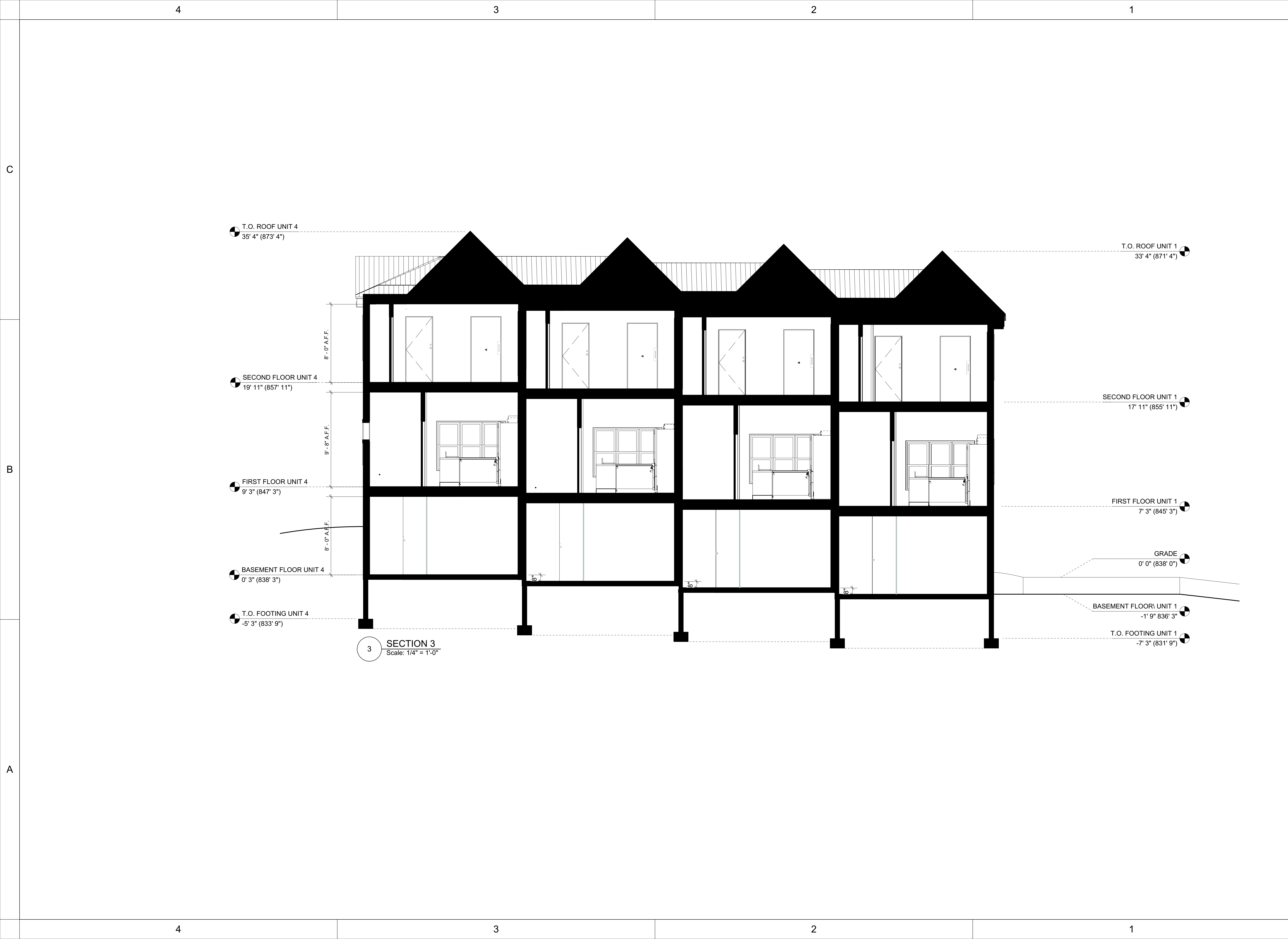
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Project Manager		
Date		Drawn By
JULY 2023		JP
Project ID		Reviewed By
22006		GN

Sheet Title

SECTIONS

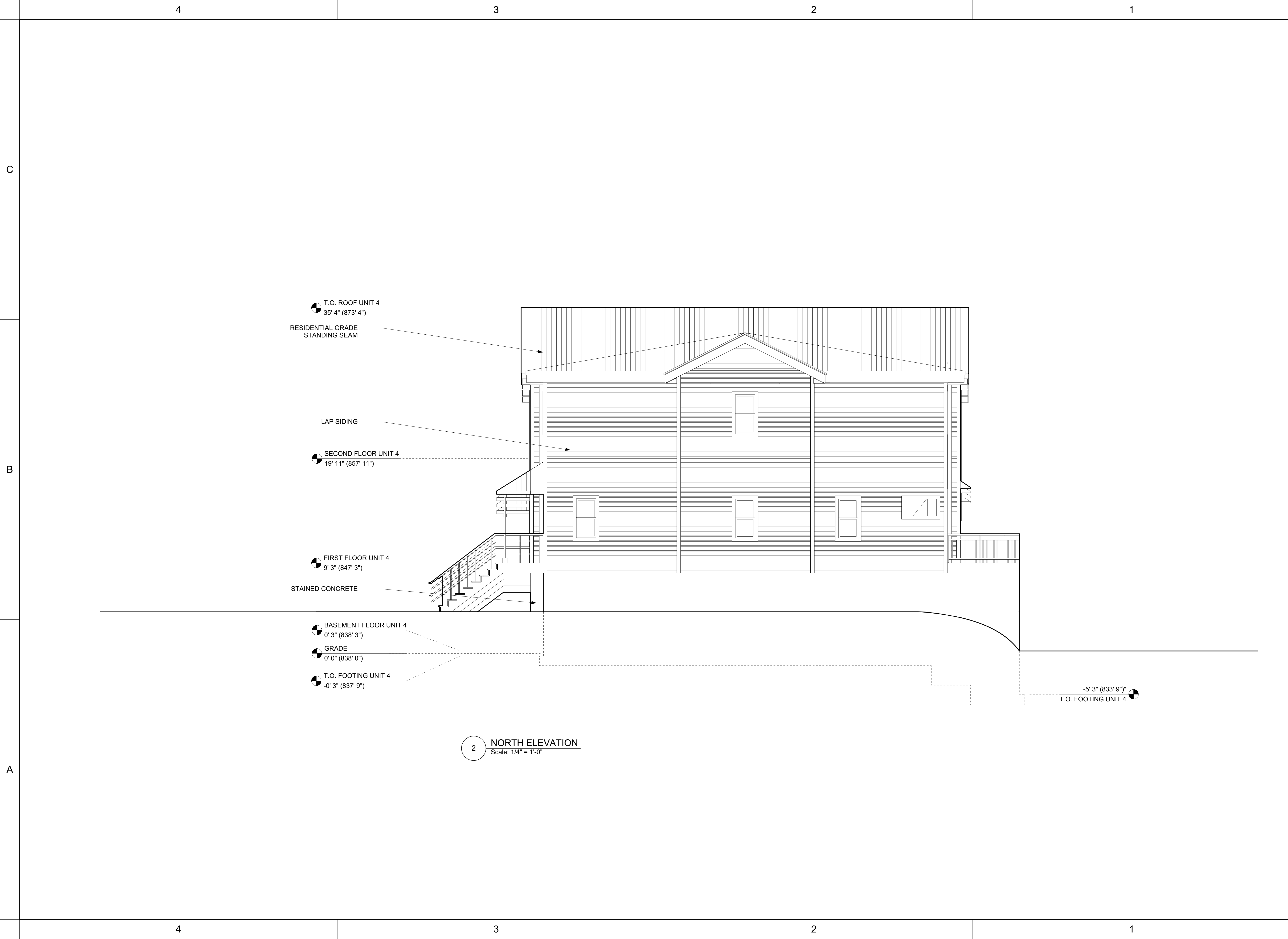
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A202





REV.	DATE	DESCRIPTION
NO.	DATE	ISSUE NOTE
Project Manager		Drawn By JP
Date	JULY 2023	Reviewed By GN
Project ID		22006



2 NORTH ELEVATION
Scale: 1/4" = 1'-0"



GERMANTOWN TOWNHOUSES

W140 N10385 FOND DU LAC AVE
GERMANTOWN, WI 53022

Project Title



Architect

**NAGEL ARCHITECTS
+ ENGINEERS**

Consultant

REV.	DATE	DESCRIPTION
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NO.	DATE	ISSUE NOTE
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Project Manager	Drawn By JP
Date JULY 2023	Reviewed By GN

Project ID	22006
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Sheet Title

ELEVATIONS

Sheet No.

A303

GERMANTOWN TOWNHOUSES

W140 N10385 FOND DU LAC AVE
GERMANTOWN, WI 53022



Architect

NAGEL ARCHITECTS
+ ENGINEERS

Consultant	
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REV.	DATE	DESCRIPTION
NO.	DATE	ISSUE NOTE

Project Manager	Drawn By JP
Date JULY 2023	Reviewed By GN
Project ID 22006	

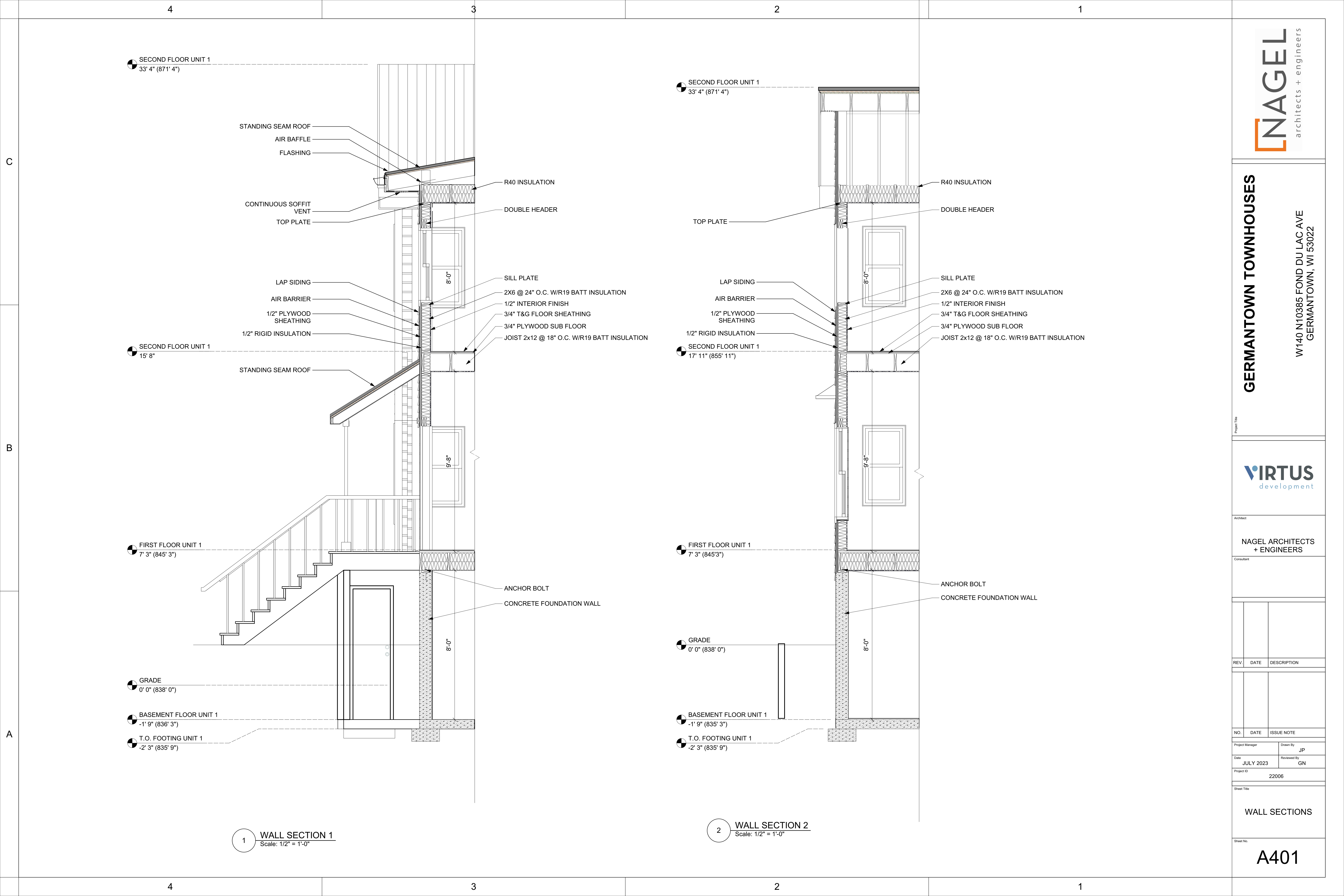
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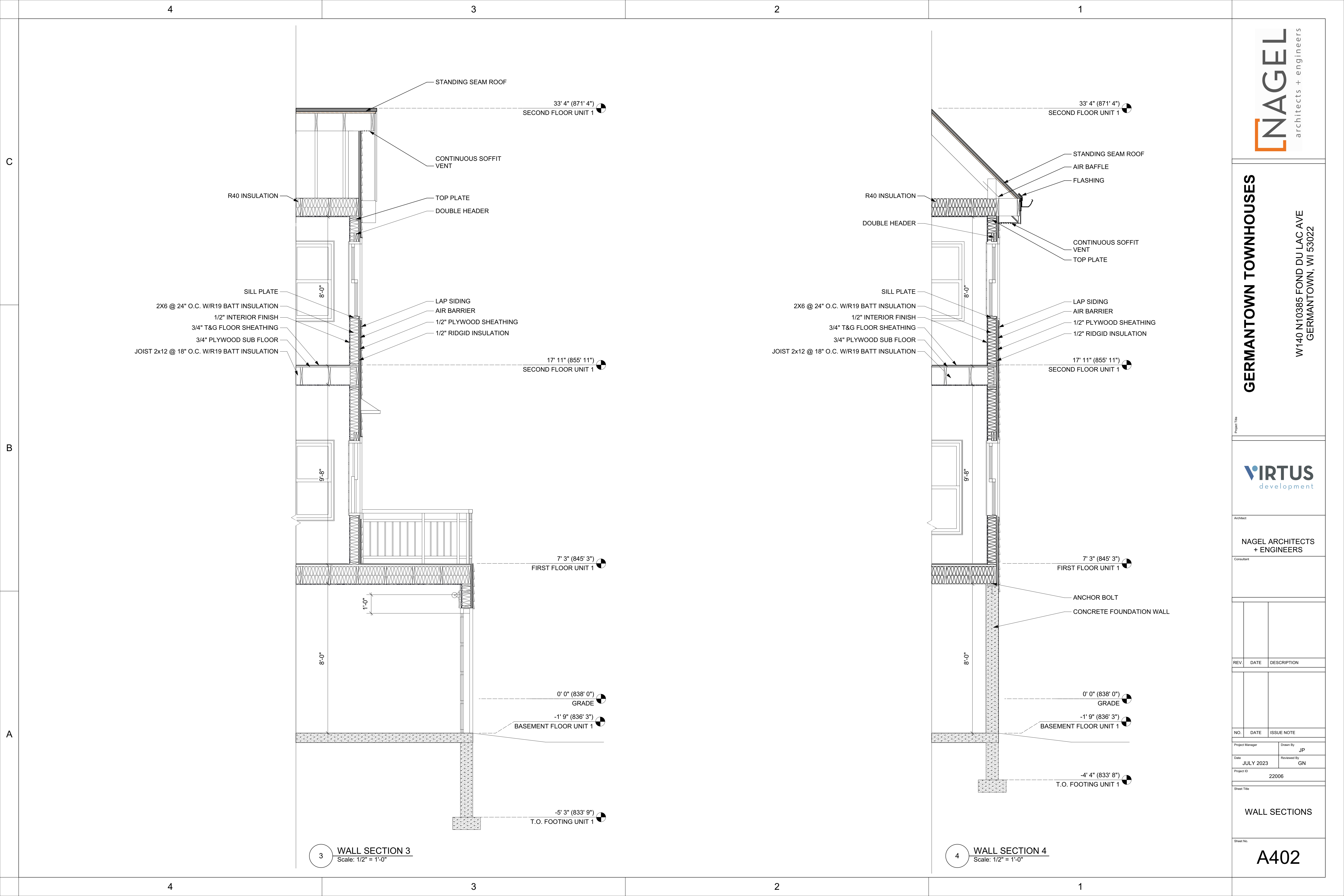
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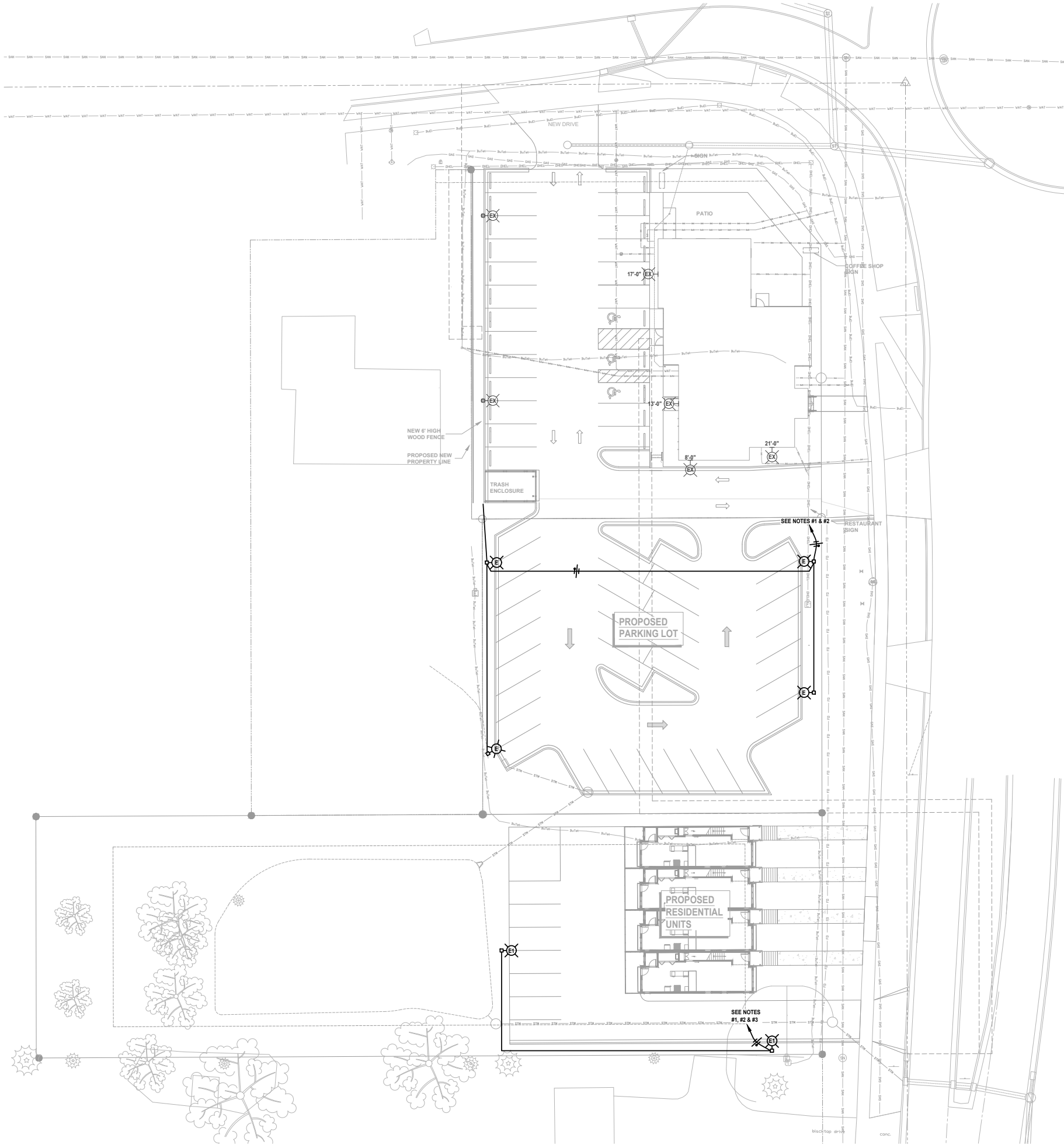
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REV.	DATE	DESCRIPTION
NO.	DATE	ISSUE NOTE
Project Manager	Drawn By	JP
Date	Reviewed By	GN
Project ID	22006	





ELECTRICAL SITE PLAN
SCALE: 1"=20'-0"

- NOTES:**
1. EACH LIGHT FIXTURE TO HAVE MOTION SENSOR CONTROL. LIGHT FIXTURES TO DIM TO 33% AFTER 15 MINUTES OF NO MOTION DETECTED. ALL LIGHTS TO COME TO FULL BRIGHTNESS WHEN ONE MOTION SENSOR IS ACTIVATED.
 2. 2 #8 THWN & 1 #8 GND. IN 3/4" C. TO LIGHTING PANEL VIA PHOTOCELL-ON, TIMECLOCK-OFF.
 3. TO ELECTRICAL PANEL IN RESIDENTIAL BUILDING IN UTILITY ROOM UNDER STAIRS.

SYMBOLS / ABBREVIATIONS

	WALL BRACKET/WALL SCONCE FIXTURE - SEE FIXTURE SCHEDULE
	SURFACE/PENDANT FIXTURE - SEE FIXTURE SCHEDULE
	RECESSED DOWNLIGHT FIXTURE - SEE FIXTURE SCHEDULE
	POLE & LUMINAIRE(S) FIXTURE - SEE FIXTURE SCHEDULE
	SWITCHED CIRCUIT
	BRANCH CIRCUIT
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AFI	ARC FAULT INTERRUPTER
AMP	AMPERES/AMPERAGE
AV	AUDIO VISUAL
BB	BATTERY BACKUP
BFC	BELOW FINISHED CEILING
BOL	BUILT-IN OVERLOAD
BRKR	BREAKER
BWE	BAKED WHITE ENAMEL
CBA	COLOR BY ARCHITECT
CP	CONTROL PANEL
CRCT	CIRCUIT
CTL	CONTROL
DCP	DOCK EQUIPMENT CONTROL PANEL
DISC	DISCONNECT
EC	ELECTRICAL CONTRACTOR
EM	EMERGENCY
ER	EXISTING RELOCATED
ETC	ELECTRONIC TIME CLOCK CONTROL
EX	EXISTING TO REMAIN
EXD	EXISTING TO BE DEMO'D
EXR	EXISTING TO BE RELOCATED
EWC	ELECTRIC WATER COOLER
FAAP	FIRE ALARM ANNUNCIATOR PANEL
FACP	FIRE ALARM CONTROL PANEL
FLA	FULL LOAD AMPS
FLSW	FLOAT SWITCH
FPC	FIRE PROTECTION CONTRACTOR
FURN	FURNISHED
GC	GENERAL CONTRACTOR
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GND	GROUND
HOA	HAND-OFF-AUTOMATIC SWITCH
HP	HORSEPOWER
HVAC	HEATING AND VENTILATING CONTRACTOR
IG	ISOLATED GROUND
INT	INTEGRAL
IR	IN ROOM
IU	IN UNIT
JB	JUNCTION BOX
KW	KILOWATTS
LCP	LIGHTING CONTROL PANEL
LOC	LOCATION
LT	LOW TEMPERATURE
LTSW	LIGHT SWITCH
LVT	LOW VOLTAGE THERMOSTAT
MAG	MAGNETIC STARTER
MAN	MANUAL STARTER
MCA	MINIMUM CIRCUIT AMPS
MSPL	MANUAL STARTER WITH PILOT LIGHT
NL	NIGHT LIGHT
NU	NEAR UNIT
OHP	OVERHEAT PROTECTION
OS	OCCUPANCY SENSOR
OU	ON UNIT
PB	PUSH BUTTON
PC	PLUMBING CONTRACTOR
PESW	PNEUMATIC ELECTRIC SWITCH
PHOTO	PHOTOCELL
PW	PREWIRED
RC	REFRIGERATION CONTRACTOR
RCC	REFRIGERATION CONTROL CONTRACTOR
RECEPT	RECEPTACLE
SC	SELECTED BY ARCHITECT
SC	SEPARATE CIRCUIT
SPSW	SPEED SWITCH
SS	SOFT START
ST	SHUNT TRIP
SW	SWITCH
T	LINE VOLTAGE THERMOSTAT
TBD	TO BE DETERMINED
TC	TIME CLOCK
TCC	TEMPERATURE CONTROL CONTRACTOR
TCP	TEMPERATURE CONTROL PANEL
UM	UNIT MANUFACTURER
UNO	UNLESS NOTED OTHERWISE
VFD	VARIABLE FREQUENCY DRIVE
W	WATTS
WP	WEATHER PROOF ("WHILE-IN-USE")
XFMR	TRANSFORMER

REVISIONS	DESCRIPTION
DATE	

PROJECT: **Germantown Townhouses**
W140 N10385 Fond du Lac Avenue
Germantown, WI 53022

Corp of the State of Wisconsin
KORNACKI & ASSOCIATES, INC.
Electrical Design Consultants
262-784-3323
2845 S. Mooland Rd., New Berlin, WI 53151

WISCONSIN
DAVID B. KORNACKI
E-33120-6
NEW BERLIN, WI
PROFESSIONAL ENGINEER
Date: 07/18/23

DATE ISSUED
07/18/23
PROJECT NO.
23124
PROJECT MANAGER
D.B.K.
DRAWN BY
S.M.B.
CHECKED BY
D.B.K.
APPROVED BY
D.B.K.

SHEET NO.

E1.0



**LIGHTING ANALYSIS NOTES:
(TOWNHOUSE LOT)**

- 1. AVERAGE FOOTCANDLES: 1.43**
- 2. MAXIMUM FOOTCANDLES: 2.60**
- 3. MINIMUM FOOTCANDLES: 0.51**
- 4. MAXIMUM/MINIMUM RATIO: 5.1:1**
- 5. AVERAGE/MINIMUM RATIO: 2.8:1**

DATE ISSUED 07/18/23
PROJECT NO. 23124
PROJECT MANAGER D.B.K.
DRAWN BY S.M.B.
CHECKED BY D.B.K.
APPROVED BY D.B.K.
SHEET NO. E1.1

Date: 07/18/23

E1.1

FIXTURE SCHEDULE																23124	
TYPE	INPUT WATTS	VOLTS	LUMENS	COLOR TEMP	CRI			DESCRIPTION	MANUFACTURER	CATALOG NUMBER	BUG RATING	SHIELDING	FINISH	MOUNTING	CONTROLS		SEE NOTES
					70+	80+	90+								INTEGRAL	REMOTE	
E	93	120	8362	4000K		●		POLE & LUMINAIRE	LITHONIA	DSX0 LED-P4-40K-80CRI-BLC4-MVOLT-SPA-NLTAIR2 PIRHN	003	ACRYLIC	SBA	SEE DETAIL 1/E2.0	OS	PHOTO ON TC OFF	#1
E1	93	120	8096	4000K		●		POLE & LUMINAIRE	LITHONIA	DSX0 LED-P4-40K-80CRI-BLC3-MVOLT-SPA-NLTAIR2 PIRHN	002	ACRYLIC	SBA	SEE DETAIL 1/E2.0	OS	PHOTO ON TC OFF	#1

FIXTURE SCHEDULE NOTES:

1. EACH LIGHT FIXTURE TO HAVE MOTION SENSOR CONTROL. LIGHT FIXTURES TO DIM TO 33% AFTER 15 MINUTES OF NO MOTION DETECTED. ALL LIGHTS TO COME TO FULL BRIGHTNESS WHEN ONE MOTION SENSOR IS ACTIVATED.



D-Series Size 0
LED Area Luminaire

d-series

Specifications

EPA: 0.44 ft² (0.04 m²)

Length: 26.18" (66.5 cm)

Width: 14.06" (35.7 cm)

Height H1: 2.26" (5.7 cm)

Height H2: 7.46" (18.9 cm)

Weight: 23 lbs (10.4 kg)

Introduction

The modern styling of the D-Series features a highly refined aesthetic that blends seamlessly with its environment. The D-Series offers the benefits of the latest in LED technology into a high performance, high efficacy, long-life luminaire.

The photometric performance results in sites with excellent uniformity, greater pole spacing and lower power density. D-Series outstanding photometry aids in reducing the number of poles required in area lighting applications, with typical energy savings of 70% and expected service life of over 100,000 hours.

Ordering Information				EXAMPLE: DSX0 LED P6 40K 70CRI T3M MVOLT SPA NLTAIR2 PIRHN DDBXD			
DSX0 LED							
Series	LEDs	Color Temperature	Color Rendering Index	Beam/Options	Wattage	Mounting	
DSX0 LED	Forward optics		(this section 70CRI only)	AFR Automotive front row	T3M Type 3 medium	MVOLT (120V-277V) 1	Shipped included
	P1 P5	30K 3000K	70CRI	T1S Type I short	TS6L Type 1V low	HVOLT (347V-480V) 1A	
	P2 P6	40K 4000K	70CRI	T2M Type II medium	TSW Type 1V wide	XVOLT (277V-480V) 1A	SPA Square pole mounting (48" drilling, 3.5" min. S2 pole)
	P3 P7	50K 5000K	70CRI	T3M Type III medium	BC1C Type II backlight corner		RPA Round pole mounting (48" drilling, 3" min. R60 pole)
	P4	(this section 80CRI only, extended lead times apply)		T4LG Type IV low glare	BC4C Type II backlight corner		SPAS Square pole mounting (45" drilling, 3" min. S2 pole)
	P10 P12	27K 2700K	80CRI	T4M Type IV medium	LCCO Left corner cutoff		RPA5 Round pole mounting (45" drilling, 3" min. R60 pole)
	P11 P13	30K 3000K	80CRI	T4LG Type IV low glare	RCCO Right corner cutoff		SPAS5 Square narrow pole mounting (48" drilling, 3" min. S2 pole)
		35K 3500K	80CRI				WBA Wall bracket
		40K 4000K	80CRI	TF1TM Forward throw medium			MA Mast arm adapter (mounts on 2.5" OD horizontal beam)
		50K 5000K	80CRI				
Control options				Other options		Finish options	
Shipped installed				Shipped installed			
NLTAIR2 PIRHN All light AIR gsm 2 enabled with bi-level motion / ambient sensor, 8-40" mounting height, ambient sensor enabled at 20% ± 1% *				HS Holesize shield (black finish standard) 3		DDBXD Dark bronze	
PIR High-flow, motion/ambient sensor, 8-40" mounting height, ambient sensor enabled at 20% ± 1% *				LSE Low level sensor		DBLXD Black	
PER NEMA 3 waterproof replace only (controls ordered separately) *				RCE Right angled sensor		DNALD Natural Aluminum	
PERS Fine-pin receptacle only (controls ordered separately) *				CCE Castal (construction) 3		DNWHD White	
				HA 50° Ambient operation 3		DNBTD Textured dark bronze	
				Shipped separately		DNLND Textured black	
				EGCR External Glass Shield (permissible, field install required, machined housing finish)		DNATD Textured natural aluminum	
				BSDB Bird Spikes (field install required)		DNWGD Textured white	

STORMWATER
MANAGEMENT REPORT

**Germantown Townhouses
W140 N10385 Fond du Lac Avenue
Germantown, Wisconsin**

July 21, 2023

PREPARED FOR:

District One, LLC
13100 Watertown Plank Rd., Suite 200
Elm Grove, WI 53122

PREPARED BY:

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

NA-01-17



PARISH SURVEY & ENGINEERING

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

Contents

Introduction	1
Design Standards	1
Existing Site Conditions	2
Subsurface Soil Conditions.....	2
Proposed Site Conditions	3
Storm water mangment design	3
Conclusion.....	4

APPENDICES

- A. Location Map
- B. Soils Information
- C. Existing Site Conditions
 - 1) Drainage Map
 - 2) HydroCAD Reports
- D. Proposed Site Conditions
 - 1) Drainage Map
 - 2) HydroCAD Reports
- E. TSS Reduction Calculations
- F. Storm Sewer Calculations
- G. Design Plans
- H. Stormwater Management Maintenance Agreement

INTRODUCTION

This project is located at W140 N10363 Fond du Lac Ave in the Village of Germantown, WI (Village). The primary property is 0.66 acres fronting on Fond du Lac Ave however the project also includes two properties to the north on the southwest quadrant of the intersection of Fond du Lac Ave. with Donges Bay Rd. The other two properties, having 0.28 acres and 0.416 acres, for a total area of 1.356 acres. The redevelopment area will occur primarily on the southern two parcels and will cover less than the total 0.94 acres for the two properties.

The proposed project is to construct four townhouses on the south parcel fronting along Fond du Lac Ave. with parking in the rear and a single driveway connection to Fond du Lac Ave. on the south side of the development. There will be a stormwater management basin located west of the townhouses development. North of the townhouses, there will be a parking facility constructed to provide additional parking for the two commercial buildings (coffee shop and bar/restaurant) on the corner of the intersection.

The existing grading for these parcels drains roughly north to south therefore the stormwater basin will be located on the south side, west of the townhouses. The primary stormwater discharge will be directed through a storm sewer to the Fond du Lac Ave. right of way connecting to a storm sewer in the roadway. The proposed basin will be designed to meet the Village of Germantown and MMSD requirements for the volume of discharge along with water quantity requirements.

DESIGN STANDARDS

The stormwater management system for the proposed site will meet the post-construction stormwater requirements for the Village of Germantown (Village), Milwaukee Metropolitan Sewerage District (MMSD), and the Wisconsin Department of Natural Resources (WDNR).

Peak Discharge

The target design criteria for the stormwater management facilities proposed in this report follow the Village, MMSD Chapter 13 Surface Water and Stormwater Rule, and NR 151 of the WI Administrative Code. MMSD allows for two methods for calculating storm water discharge for a developed site. The volumetric design procedure will be used to demonstrate compliance with the water quantity requirements for both MMSD and the Village. The volumetric procedure requires that existing runoff volume not be exceeded during the critical time period for a given basin. This site is located in the Menomonee River basin and has a length of critical period of 9.5 hours. The critical time period for this project starts at 11:45 and ends at 21:15. The modeling is required to occur for a 24-hour period with the calculations based on the required reporting period.

Stormwater Quality

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

Infiltration

For development over 40% connected imperviousness and under 80%, infiltrate sufficient runoff volume so that the post-development infiltration volume shall be at least 60% of the pre-development infiltration volume, based on an average annual rainfall. However, when designing appropriate infiltration systems to meet this requirement, no more than 2% of the project site is required as an effective infiltration area. Or infiltrate 10% of the post-development runoff from the 2-year, 24-hour design storm. If there are clay or silt soils, as defined by the WDNR.

Method of Analysis

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

The selected design storms were based on NOAA Atlas 14.

Rainfall	
Recurrence Interval (Year)	Rainfall Depth (in)
1	2.35
2	2.66
100	6.31

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

EXISTING SITE CONDITIONS

As mentioned above, there are three properties comprising an overall area of 1.365 acres. The north property is mostly developed with two existing buildings and a parking lot on the west side of the buildings. The center property had an existing house that will be razed and the existing pavement removed. The south property is vacant.

There are no know wetlands, waterways, or ponds on any of the existing properties.

Offsite

West of the site there is one watershed that has been delineated which drains easterly to our site. The west off-site area (1S) is comprised of 1.697 acres of developed land including buildings (St. Johns Church), parking lot, lawn, and some wooded areas. This area flows east to our site and will ultimately contribute to the proposed stormwater basin.

SUBSURFACE SOIL CONDITIONS

Soils in the area were researched by desktop through the USDA Websoil Survey and in the field with test pits. The Table 1 below shows the soil types found on the site based on the USDA websoil survey. The area is also susceptible to instances of high bedrock or bedrock outcroppings. In this case, there are no outcroppings but the likelihood of high bedrock in the area is good.

Table 1 – South Pond Soils Information

Symbol	Soil	Hydrologic Group
MtA	Mequon silt loam	C/D
OuB2	Ozaukee silt loam	C

PROPOSED SITE CONDITIONS

Proposed Grading

The proposed grading plan along with the proposed storm sewer are designed to direct runoff from the townhouses, west parking lot, and the north parking lot to stormwater basin on the southwest side of the site. The stormwater basin will also collect the run-on to the site from areas west of the site.

STORM WATER MANGMENT DESIGN

As mentioned above, the post construction stormwater quantity requirement for this project was met using the volumetric design procedure. Below is a summary of the existing and proposed condition discharge for the development areas.

Stormwater Discharge

The post-construction stormwater quantity requirement for the Germantown Townhouses project will be met using the volumetric flow design procedure. The following information outlines the requirements for discharge from this site. The table below provides the maximum release rates from the site. The stormwater modeling is conducted over a 24-hour period while the reporting for the discharge is between the hours of 11:45 and 21:15 as required by MMSD.

The allowable volumetric release rate for the development site between 11:45 and 21:15:

Table 2 – Allowable Release Volume

Rainfall Event	Ex. Site - 2S (ac-ft)	Off-Site Runon - 1S (ac-ft)	Total Allowable Release Volume (ac-ft)
2-year	0.093	0.135	0.228
100-year	0.350	0.509	0.860

The results of the design and modeling are presented in the table below for both the 2-year and 100-year events.

Table 3 - Post-Development Design Release Volume

Rainfall Event	Total Design Release Volume (ac-ft)
2-year	0.220
100-year	0.858

Detailed watershed information can also be found in the HydroCAD computer analysis printouts found in the Appendices. As required by the Village, the total site meets the volumetric discharge requirements for the proposed development.

Stormwater Quality

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

Table 4 - Water Quality Results

Area	Total Influent Load (lbs)	Total Effluent Load (lbs)	TSS Reduction
South	458.3	68.18	85.12%

CONCLUSION

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

Appendix A

Location Map



PARISH SURVEY & ENGINEERING

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

Washington County, Wisconsin



3/25/2022, 11:12:48 AM

1:1,162



Appendix B

Soils Information



PARISH SURVEY & ENGINEERING

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

Hydrologic Soil Group—Washington County, Wisconsin



Map Scale: 1:612 if printed on A portrait (8.5" x 11") sheet.

0 5 10 20 30 Meters

0 25 50 100 150 Feet

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



**Natural Resources
Conservation Service**

Web Soil Survey
National Cooperative Soil Survey

6/13/2023
Page 1 of 4

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

Soil Rating Polygons

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

Soil Rating Lines

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

Soil Rating Points

 A
 A/D
 B
 B/D

 C
 C/D
 D
 Not rated or not available

Water Features

 Streams and Canals

Transportation

 Rails
 Interstate Highways
 US Routes
 Major Roads
 Local Roads

Background

 Aerial Photography

MAP INFORMATION

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

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

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

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

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

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

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

Soil Survey Area: 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—Jul 1, 2020

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

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
MtA	Mequon silt loam, 1 to 3 percent slopes	C/D	0.0	1.5%
OuB2	Ozaukee silt loam, high carbonate substratum, 2 to 6 percent slopes, eroded	C	1.2	98.5%
Totals for Area of Interest			1.2	100.0%

Description

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

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

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

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

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

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

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

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

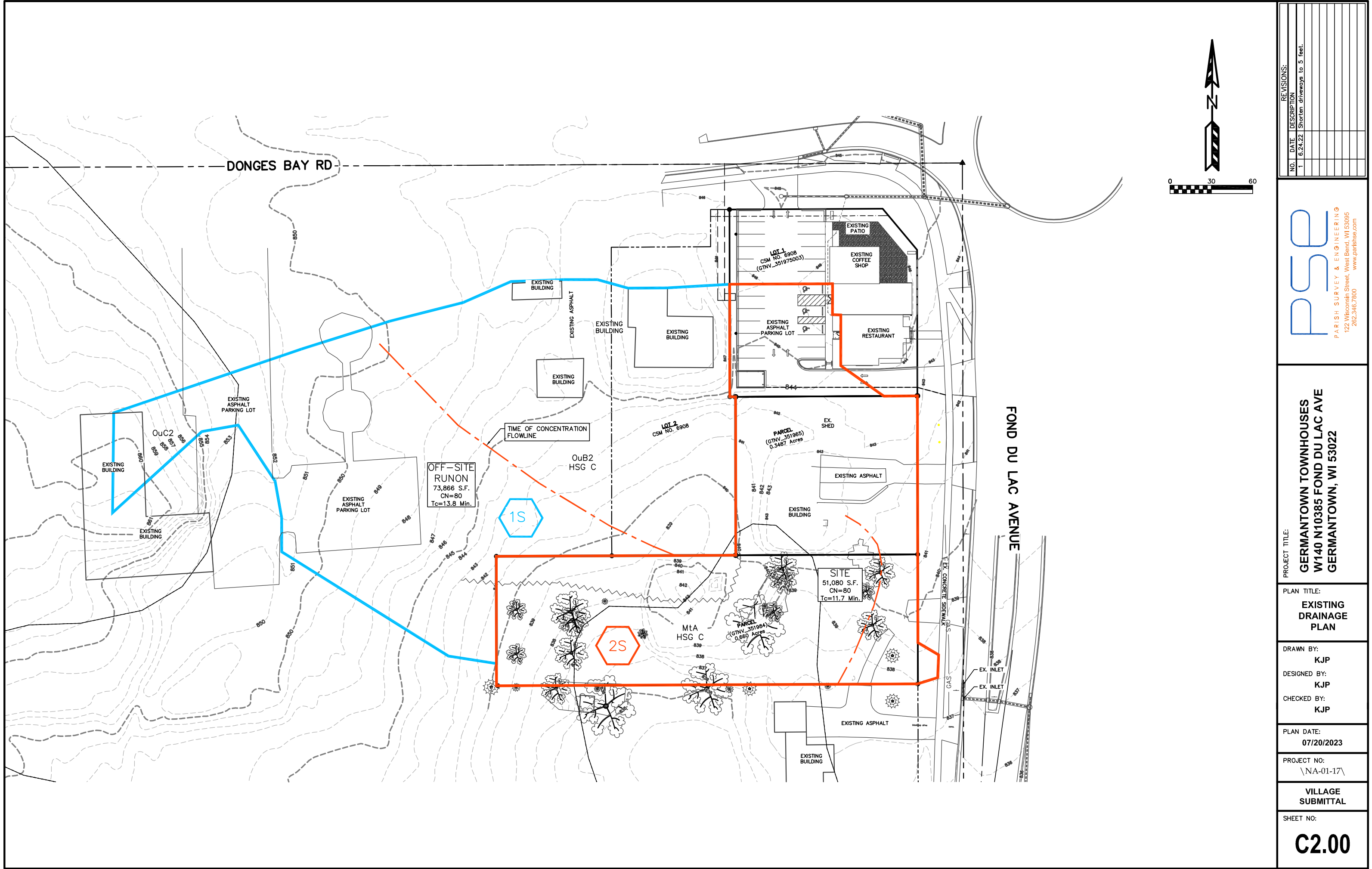
Appendix C

Existing Site Conditions



PARISH SURVEY & ENGINEERING

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REVISIONS:		
NO.	DATE	DESCRIPTION
1	6.24.22	Shorten driveways to 5 feet.

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

PROJECT TITLE:
**GERMANTOWN TOWNHOUSES
W140 N10385 FOND DU LAC AVE
GERMANTOWN, WI 53022**

PLAN TITLE:
**EXISTING
DRAINAGE
PLAN**

DRAWN BY:
KJP

DESIGNED BY:
KJP

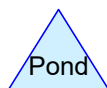
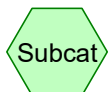
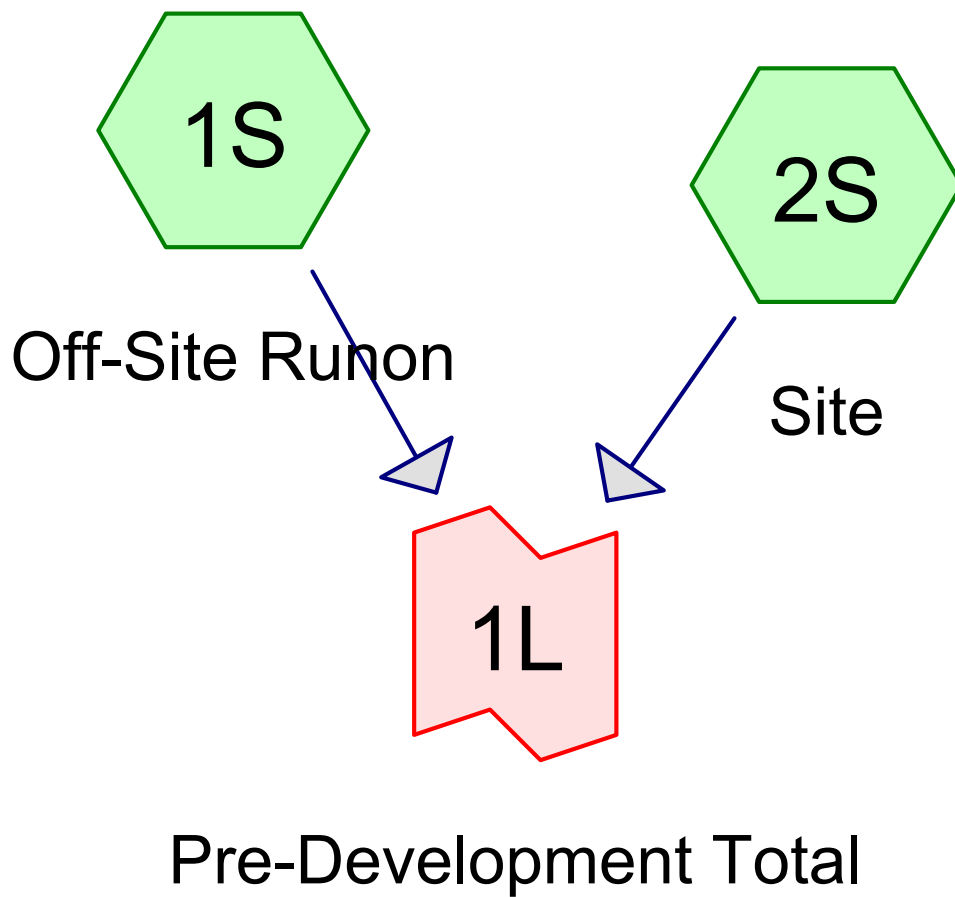
CHECKED BY:
KJP

PLAN DATE:
07/20/2023

PROJECT NO:
\NA-01-17

**VILLAGE
SUBMITTAL**

SHEET NO:
C2.00



Pre-Develop Townhomes

Prepared by Quam Engineering LLC

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NA-01-17 Stormwater
MSE 24-hr 3 2-Year Rainfall=2.66"

Printed 7/20/2023

Page 2

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points x 3
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: Off-Site Runon

Runoff Area=73,866 sf 23.73% Impervious Runoff Depth>1.00"
Flow Length=265' Tc=13.8 min CN=80 Runoff=2.22 cfs 0.141 af

Subcatchment2S: Site

Runoff Area=51,080 sf 19.00% Impervious Runoff Depth>1.00"
Flow Length=140' Tc=11.7 min CN=80 Runoff=1.66 cfs 0.098 af

Link 1L: Pre-DevelopmentTotal

Inflow=3.86 cfs 0.239 af
Primary=3.86 cfs 0.239 af

Total Runoff Area = 2.868 ac Runoff Volume = 0.239 af Average Runoff Depth = 1.00"
78.20% Pervious = 2.243 ac 21.80% Impervious = 0.625 ac

Pre-Develop Townhomes

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NA-01-17 Stormwater
MSE 24-hr 3 2-Year Rainfall=2.66"

Printed 7/20/2023

Page 3

Summary for Subcatchment 1S: Off-Site Runon

Runoff = 2.22 cfs @ 12.23 hrs, Volume= 0.141 af, Depth> 1.00"

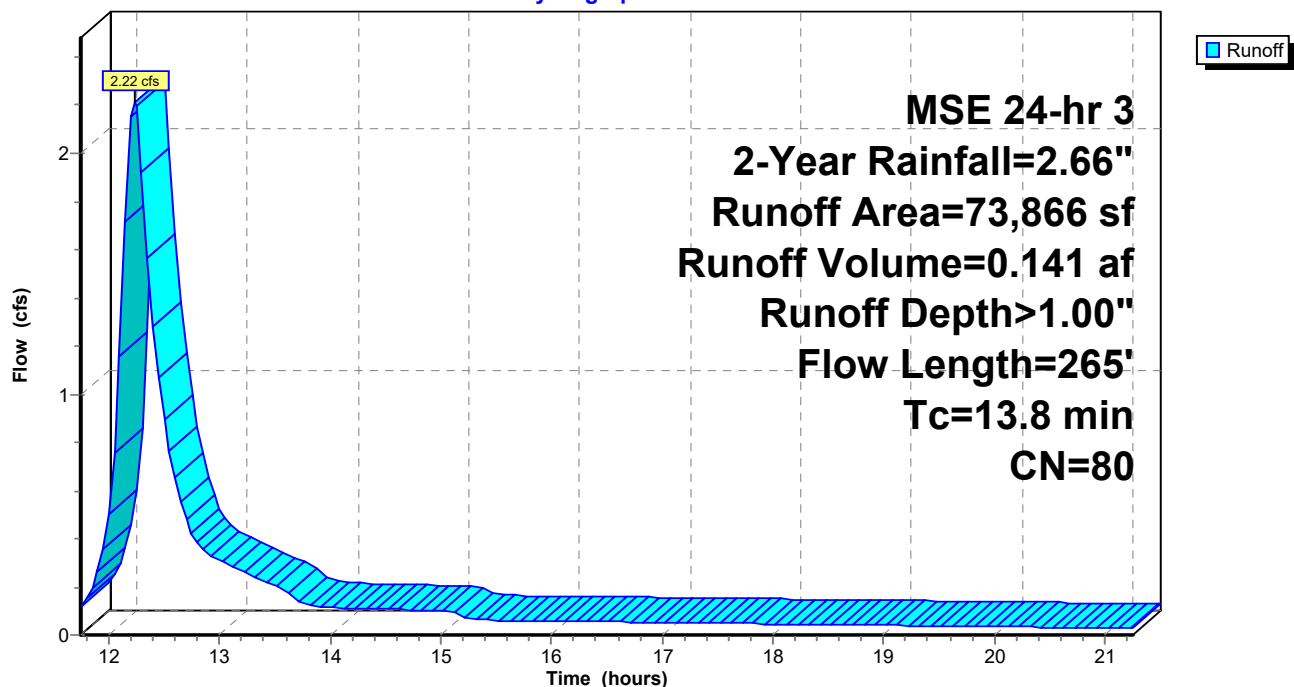
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 2-Year Rainfall=2.66"

	Area (sf)	CN	Description
*	5,175	98	Existing Roofs
*	12,350	98	Exisitng Asphalt/Concrete
*	12,533	77	Woods - Poor Cover, HSG C
*	43,808	74	Lawn, HSG C
	73,866	80	Weighted Average
	56,341		76.27% Pervious Area
	17,525		23.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.9	100	0.0400	0.14		Sheet Flow, Grass: Dense n= 0.240 P2= 2.65"
1.9	165	0.0420	1.43		Shallow Concentrated Flow, Shallow Short Grass Pasture Kv= 7.0 fps
13.8	265	Total			

Subcatchment 1S: Off-Site Runon

Hydrograph



Pre-Develop Townhomes

Prepared by Quam Engineering LLC

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MSE 24-hr 3 2-Year Rainfall=2.66"

Printed 7/20/2023

Hydrograph for Subcatchment 1S: Off-Site Runon

Time (hours)	Precip. (inches)	Runoff (cfs)	Runoff-Volume (acre-feet)
11.75	0.82	0.12	0.002
12.00	1.23	0.50	0.008
12.25	1.84	2.19	0.041
12.50	2.00	0.90	0.069
12.75	2.08	0.42	0.081
13.00	2.15	0.31	0.088
13.25	2.20	0.26	0.094
13.50	2.24	0.21	0.098
13.75	2.27	0.13	0.102
14.00	2.29	0.11	0.104
14.25	2.32	0.11	0.107
14.50	2.34	0.11	0.109
14.75	2.36	0.10	0.111
15.00	2.39	0.10	0.113
15.25	2.40	0.07	0.115
15.50	2.41	0.06	0.116
15.75	2.42	0.06	0.117
16.00	2.44	0.06	0.119
16.25	2.45	0.06	0.120
16.50	2.46	0.06	0.121
16.75	2.47	0.05	0.122
17.00	2.48	0.05	0.123
17.25	2.49	0.05	0.124
17.50	2.50	0.05	0.125
17.75	2.51	0.05	0.126
18.00	2.52	0.05	0.127
18.25	2.53	0.05	0.128
18.50	2.54	0.04	0.129
18.75	2.55	0.04	0.130
19.00	2.56	0.04	0.131
19.25	2.57	0.04	0.132
19.50	2.58	0.04	0.133
19.75	2.58	0.04	0.133
20.00	2.59	0.03	0.134
20.25	2.60	0.03	0.135
20.50	2.60	0.03	0.135
20.75	2.61	0.03	0.136
21.00	2.62	0.03	0.137
21.25	2.62	0.03	0.137

Pre-Develop Townhomes

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NA-01-17 Stormwater

MSE 24-hr 3 2-Year Rainfall=2.66"

Printed 7/20/2023

Page 4

Summary for Subcatchment 2S: Site

Runoff = 1.66 cfs @ 12.21 hrs, Volume= 0.098 af, Depth> 1.00"

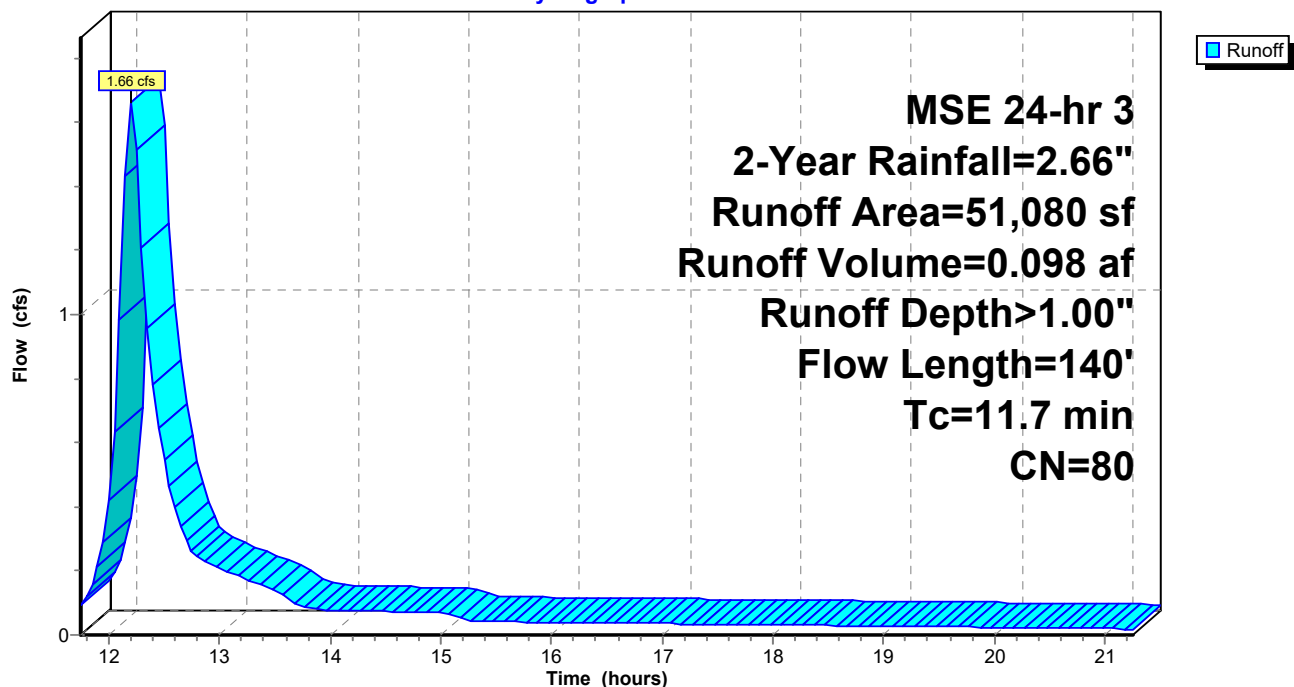
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 2-Year Rainfall=2.66"

	Area (sf)	CN	Description
*	1,762	98	Existing Roofs
*	7,945	98	Exisitng Asphalt/Concrete
*	22,700	77	Woods - Poor Cover, HSG C
*	18,673	74	Lawn, HSG C
	51,080	80	Weighted Average
	41,373		81.00% Pervious Area
	9,707		19.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.3	100	0.0450	0.15		Sheet Flow, Grass: Dense n= 0.240 P2= 2.65"
0.4	40	0.0500	1.57		Shallow Concentrated Flow, Shallow Short Grass Pasture Kv= 7.0 fps
11.7	140	Total			

Subcatchment 2S: Site

Hydrograph



Pre-Develop Townhomes

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MSE 24-hr 3 2-Year Rainfall=2.66"

Printed 7/20/2023

Hydrograph for Subcatchment 2S: Site

Time (hours)	Precip. (inches)	Runoff (cfs)	Runoff-Volume (acre-feet)
11.75	0.82	0.09	0.002
12.00	1.23	0.42	0.007
12.25	1.84	1.51	0.032
12.50	2.00	0.55	0.049
12.75	2.08	0.26	0.057
13.00	2.15	0.21	0.061
13.25	2.20	0.17	0.065
13.50	2.24	0.14	0.068
13.75	2.27	0.09	0.071
14.00	2.29	0.08	0.072
14.25	2.32	0.08	0.074
14.50	2.34	0.07	0.075
14.75	2.36	0.07	0.077
15.00	2.39	0.07	0.078
15.25	2.40	0.05	0.080
15.50	2.41	0.04	0.080
15.75	2.42	0.04	0.081
16.00	2.44	0.04	0.082
16.25	2.45	0.04	0.083
16.50	2.46	0.04	0.084
16.75	2.47	0.04	0.085
17.00	2.48	0.04	0.085
17.25	2.49	0.04	0.086
17.50	2.50	0.03	0.087
17.75	2.51	0.03	0.087
18.00	2.52	0.03	0.088
18.25	2.53	0.03	0.089
18.50	2.54	0.03	0.089
18.75	2.55	0.03	0.090
19.00	2.56	0.03	0.091
19.25	2.57	0.03	0.091
19.50	2.58	0.03	0.092
19.75	2.58	0.02	0.092
20.00	2.59	0.02	0.093
20.25	2.60	0.02	0.093
20.50	2.60	0.02	0.094
20.75	2.61	0.02	0.094
21.00	2.62	0.02	0.095
21.25	2.62	0.02	0.095

Pre-Develop Townhomes

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NA-01-17 Stormwater
MSE 24-hr 3 2-Year Rainfall=2.66"

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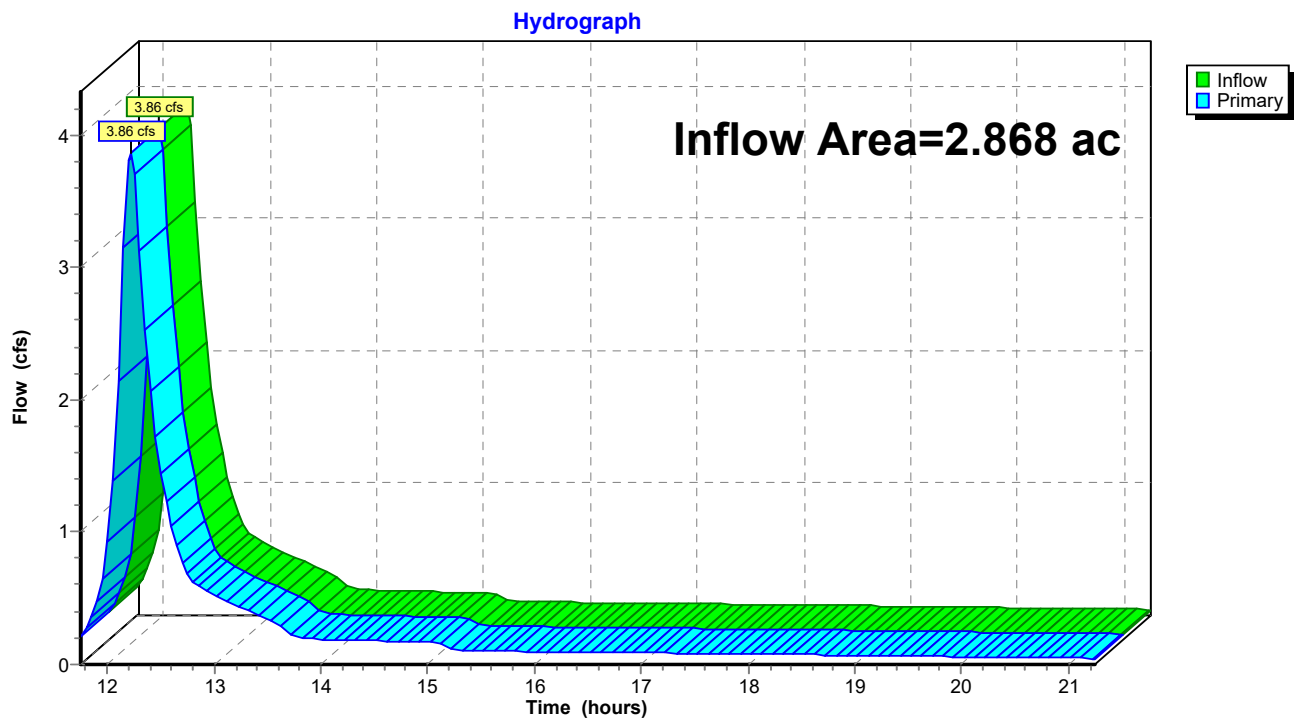
Page 5

Summary for Link 1L: Pre-Development Total

Inflow Area = 2.868 ac, 21.80% Impervious, Inflow Depth > 1.00" for 2-Year event
Inflow = 3.86 cfs @ 12.22 hrs, Volume= 0.239 af
Primary = 3.86 cfs @ 12.22 hrs, Volume= 0.239 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 1L: Pre-Development Total



Pre-Develop Townhomes*MSE 24-hr 3 2-Year Rainfall=2.66"*

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Hydrograph for Link 1L: Pre-Development Total

Time (hours)	Inflow (cfs)	Primary (cfs)	Primary-Volume (acre-feet)
11.75	0.21	0.21	0.004
12.00	0.92	0.92	0.015
12.25	3.71	3.71	0.074
12.50	1.44	1.44	0.118
12.75	0.69	0.69	0.138
13.00	0.52	0.52	0.149
13.25	0.43	0.43	0.159
13.50	0.34	0.34	0.167
13.75	0.22	0.22	0.172
14.00	0.19	0.19	0.176
14.25	0.19	0.19	0.180
14.50	0.18	0.18	0.184
14.75	0.18	0.18	0.188
15.00	0.17	0.17	0.191
15.25	0.12	0.12	0.194
15.50	0.10	0.10	0.197
15.75	0.10	0.10	0.199
16.00	0.10	0.10	0.201
16.25	0.10	0.10	0.203
16.50	0.09	0.09	0.205
16.75	0.09	0.09	0.207
17.00	0.09	0.09	0.208
17.25	0.09	0.09	0.210
17.50	0.08	0.08	0.212
17.75	0.08	0.08	0.214
18.00	0.08	0.08	0.215
18.25	0.08	0.08	0.217
18.50	0.07	0.07	0.219
18.75	0.07	0.07	0.220
19.00	0.07	0.07	0.221
19.25	0.07	0.07	0.223
19.50	0.06	0.06	0.224
19.75	0.06	0.06	0.226
20.00	0.06	0.06	0.227
20.25	0.06	0.06	0.228
20.50	0.05	0.05	0.229
20.75	0.05	0.05	0.230
21.00	0.05	0.05	0.231
21.25	0.05	0.05	0.232

Pre-Develop Townhomes

Prepared by Quam Engineering LLC

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NA-01-17 Stormwater
MSE 24-hr 3 100-Year Rainfall=6.31"

Printed 7/20/2023

Page 6

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points x 3
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: Off-Site Runon

Runoff Area=73,866 sf 23.73% Impervious Runoff Depth>4.06"
Flow Length=265' Tc=13.8 min CN=80 Runoff=9.11 cfs 0.574 af

Subcatchment2S: Site

Runoff Area=51,080 sf 19.00% Impervious Runoff Depth>4.06"
Flow Length=140' Tc=11.7 min CN=80 Runoff=6.76 cfs 0.397 af

Link 1L: Pre-DevelopmentTotal

Inflow=15.79 cfs 0.970 af
Primary=15.79 cfs 0.970 af

Total Runoff Area = 2.868 ac Runoff Volume = 0.970 af Average Runoff Depth = 4.06"
78.20% Pervious = 2.243 ac 21.80% Impervious = 0.625 ac

Pre-Develop Townhomes

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NA-01-17 Stormwater

MSE 24-hr 3 100-Year Rainfall=6.31"

Printed 7/20/2023

Page 7

Summary for Subcatchment 1S: Off-Site Runon

Runoff = 9.11 cfs @ 12.22 hrs, Volume= 0.574 af, Depth> 4.06"

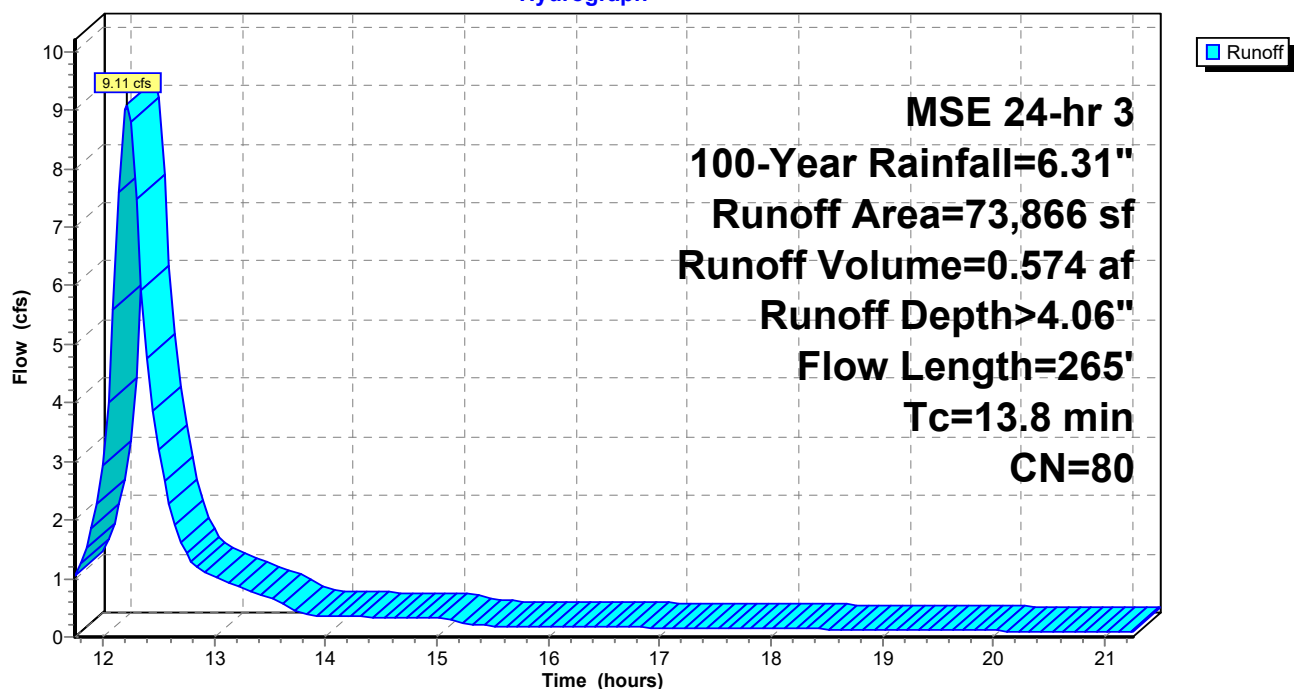
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100-Year Rainfall=6.31"

	Area (sf)	CN	Description
*	5,175	98	Existing Roofs
*	12,350	98	Exisitng Asphalt/Concrete
*	12,533	77	Woods - Poor Cover, HSG C
*	43,808	74	Lawn, HSG C
	73,866	80	Weighted Average
	56,341		76.27% Pervious Area
	17,525		23.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.9	100	0.0400	0.14		Sheet Flow, Grass: Dense n= 0.240 P2= 2.65"
1.9	165	0.0420	1.43		Shallow Concentrated Flow, Shallow Short Grass Pasture Kv= 7.0 fps
13.8	265	Total			

Subcatchment 1S: Off-Site Runon

Hydrograph



Pre-Develop Townhomes

Prepared by Quam Engineering LLC

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

MSE 24-hr 3 100-Year Rainfall=6.31"

Printed 7/20/2023

Hydrograph for Subcatchment 1S: Off-Site Runon

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Runoff-Volume (acre-feet)
11.75	1.94	0.53	1.05	0.052
12.00	2.92	1.19	2.94	0.092
12.25	4.37	2.35	8.80	0.237
12.50	4.75	2.67	3.20	0.341
12.75	4.93	2.84	1.42	0.382
13.00	5.09	2.97	1.02	0.406
13.25	5.22	3.09	0.84	0.424
13.50	5.32	3.18	0.66	0.440
13.75	5.38	3.23	0.43	0.450
14.00	5.44	3.28	0.36	0.458
14.25	5.50	3.33	0.35	0.466
14.50	5.55	3.38	0.34	0.473
14.75	5.61	3.43	0.33	0.480
15.00	5.66	3.48	0.32	0.486
15.25	5.69	3.50	0.23	0.492
15.50	5.72	3.53	0.19	0.496
15.75	5.75	3.56	0.19	0.500
16.00	5.78	3.58	0.18	0.504
16.25	5.81	3.61	0.18	0.507
16.50	5.84	3.64	0.17	0.511
16.75	5.87	3.66	0.17	0.515
17.00	5.89	3.68	0.16	0.518
17.25	5.92	3.71	0.16	0.521
17.50	5.94	3.73	0.15	0.525
17.75	5.97	3.75	0.15	0.528
18.00	5.99	3.77	0.14	0.531
18.25	6.01	3.79	0.14	0.534
18.50	6.03	3.81	0.13	0.536
18.75	6.05	3.83	0.13	0.539
19.00	6.07	3.85	0.13	0.542
19.25	6.09	3.86	0.12	0.544
19.50	6.11	3.88	0.12	0.547
19.75	6.13	3.90	0.11	0.549
20.00	6.15	3.91	0.11	0.551
20.25	6.16	3.93	0.10	0.553
20.50	6.18	3.94	0.10	0.555
20.75	6.19	3.95	0.09	0.557
21.00	6.21	3.97	0.09	0.559
21.25	6.22	3.98	0.08	0.561

Pre-Develop Townhomes

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NA-01-17 Stormwater

MSE 24-hr 3 100-Year Rainfall=6.31"

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Summary for Subcatchment 2S: Site

Runoff = 6.76 cfs @ 12.20 hrs, Volume= 0.397 af, Depth> 4.06"

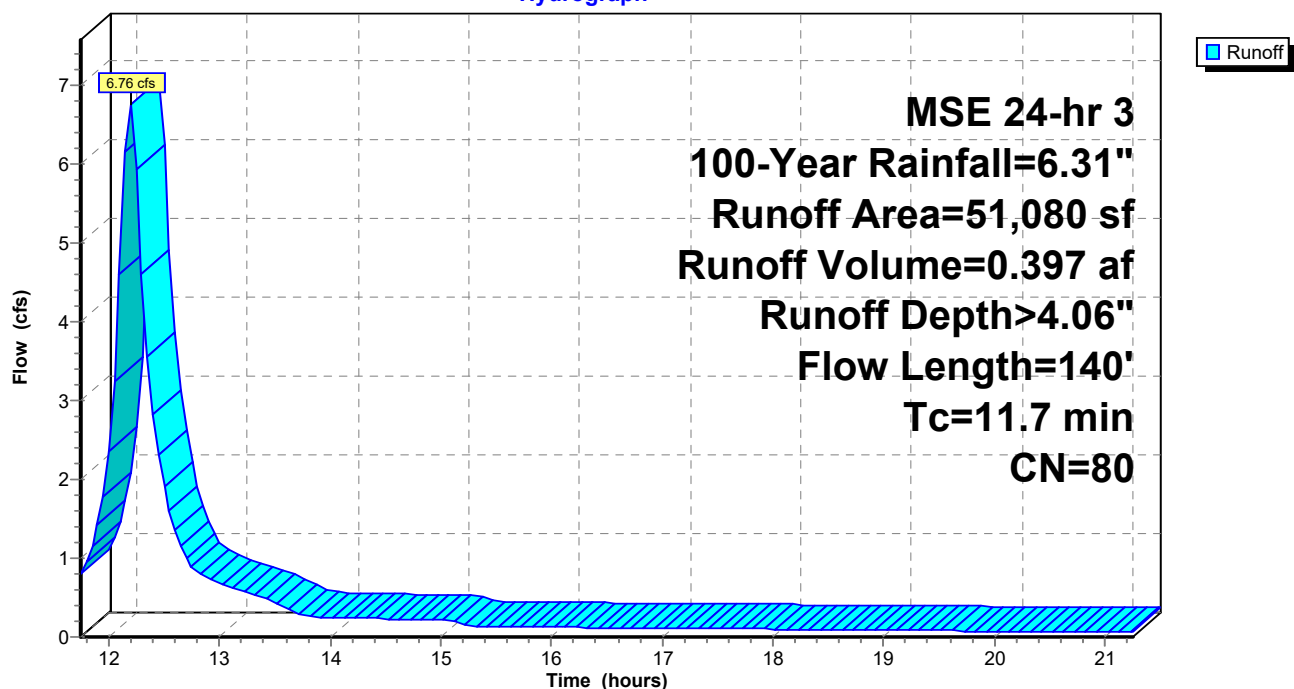
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100-Year Rainfall=6.31"

	Area (sf)	CN	Description
*	1,762	98	Existing Roofs
*	7,945	98	Exisitng Asphalt/Concrete
*	22,700	77	Woods - Poor Cover, HSG C
*	18,673	74	Lawn, HSG C
	51,080	80	Weighted Average
	41,373		81.00% Pervious Area
	9,707		19.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.3	100	0.0450	0.15		Sheet Flow, Grass: Dense n= 0.240 P2= 2.65"
0.4	40	0.0500	1.57		Shallow Concentrated Flow, Shallow Short Grass Pasture Kv= 7.0 fps
11.7	140	Total			

Subcatchment 2S: Site

Hydrograph



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Hydrograph for Subcatchment 2S: Site

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Runoff-Volume (acre-feet)
11.75	1.94	0.53	0.80	0.038
12.00	2.92	1.19	2.35	0.069
12.25	4.37	2.35	5.92	0.179
12.50	4.75	2.67	1.91	0.242
12.75	4.93	2.84	0.88	0.267
13.00	5.09	2.97	0.69	0.282
13.25	5.22	3.09	0.57	0.295
13.50	5.32	3.18	0.44	0.305
13.75	5.38	3.23	0.28	0.312
14.00	5.44	3.28	0.25	0.318
14.25	5.50	3.33	0.24	0.323
14.50	5.55	3.38	0.23	0.328
14.75	5.61	3.43	0.23	0.332
15.00	5.66	3.48	0.22	0.337
15.25	5.69	3.50	0.15	0.341
15.50	5.72	3.53	0.13	0.343
15.75	5.75	3.56	0.13	0.346
16.00	5.78	3.58	0.13	0.349
16.25	5.81	3.61	0.12	0.351
16.50	5.84	3.64	0.12	0.354
16.75	5.87	3.66	0.12	0.356
17.00	5.89	3.68	0.11	0.359
17.25	5.92	3.71	0.11	0.361
17.50	5.94	3.73	0.11	0.363
17.75	5.97	3.75	0.10	0.365
18.00	5.99	3.77	0.10	0.367
18.25	6.01	3.79	0.10	0.369
18.50	6.03	3.81	0.09	0.371
18.75	6.05	3.83	0.09	0.373
19.00	6.07	3.85	0.09	0.375
19.25	6.09	3.86	0.08	0.377
19.50	6.11	3.88	0.08	0.378
19.75	6.13	3.90	0.08	0.380
20.00	6.15	3.91	0.07	0.381
20.25	6.16	3.93	0.07	0.383
20.50	6.18	3.94	0.07	0.384
20.75	6.19	3.95	0.06	0.386
21.00	6.21	3.97	0.06	0.387
21.25	6.22	3.98	0.06	0.388

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MSE 24-hr 3 100-Year Rainfall=6.31"

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Summary for Link 1L: Pre-Development Total

Inflow Area = 2.868 ac, 21.80% Impervious, Inflow Depth > 4.06" for 100-Year event

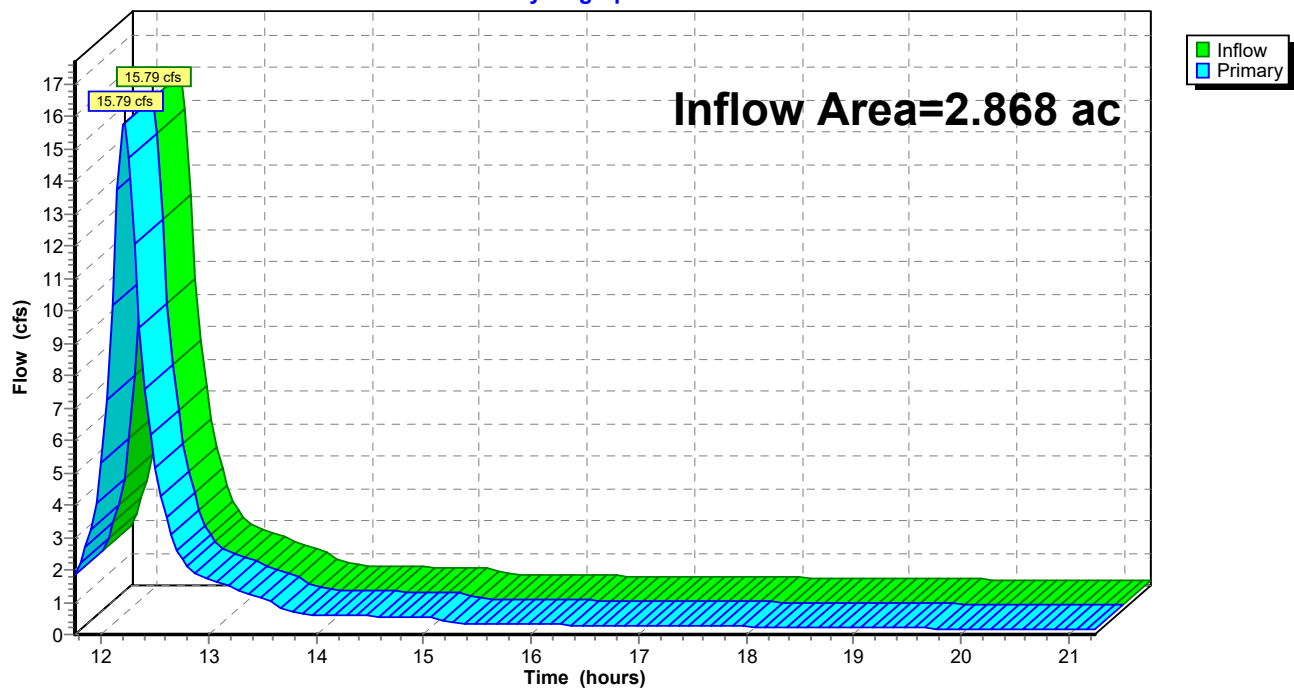
Inflow = 15.79 cfs @ 12.21 hrs, Volume= 0.970 af

Primary = 15.79 cfs @ 12.21 hrs, Volume= 0.970 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 1L: Pre-Development Total

Hydrograph



Pre-Develop Townhomes*MSE 24-hr 3 100-Year Rainfall=6.31"*

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Hydrograph for Link 1L: Pre-Development Total

Time (hours)	Inflow (cfs)	Primary (cfs)	Primary-Volume (acre-feet)
11.75	1.85	1.85	0.089
12.00	5.29	5.29	0.162
12.25	14.72	14.72	0.416
12.50	5.11	5.11	0.583
12.75	2.31	2.31	0.649
13.00	1.71	1.71	0.688
13.25	1.40	1.40	0.719
13.50	1.11	1.11	0.745
13.75	0.71	0.71	0.763
14.00	0.61	0.61	0.776
14.25	0.59	0.59	0.788
14.50	0.57	0.57	0.800
14.75	0.56	0.56	0.812
15.00	0.54	0.54	0.823
15.25	0.38	0.38	0.833
15.50	0.32	0.32	0.840
15.75	0.31	0.31	0.846
16.00	0.31	0.31	0.853
16.25	0.30	0.30	0.859
16.50	0.29	0.29	0.865
16.75	0.28	0.28	0.871
17.00	0.28	0.28	0.876
17.25	0.27	0.27	0.882
17.50	0.26	0.26	0.888
17.75	0.25	0.25	0.893
18.00	0.24	0.24	0.898
18.25	0.24	0.24	0.903
18.50	0.23	0.23	0.908
18.75	0.22	0.22	0.912
19.00	0.21	0.21	0.917
19.25	0.20	0.20	0.921
19.50	0.20	0.20	0.925
19.75	0.19	0.19	0.929
20.00	0.18	0.18	0.933
20.25	0.17	0.17	0.936
20.50	0.16	0.16	0.940
20.75	0.15	0.15	0.943
21.00	0.15	0.15	0.946
21.25	0.14	0.14	0.949

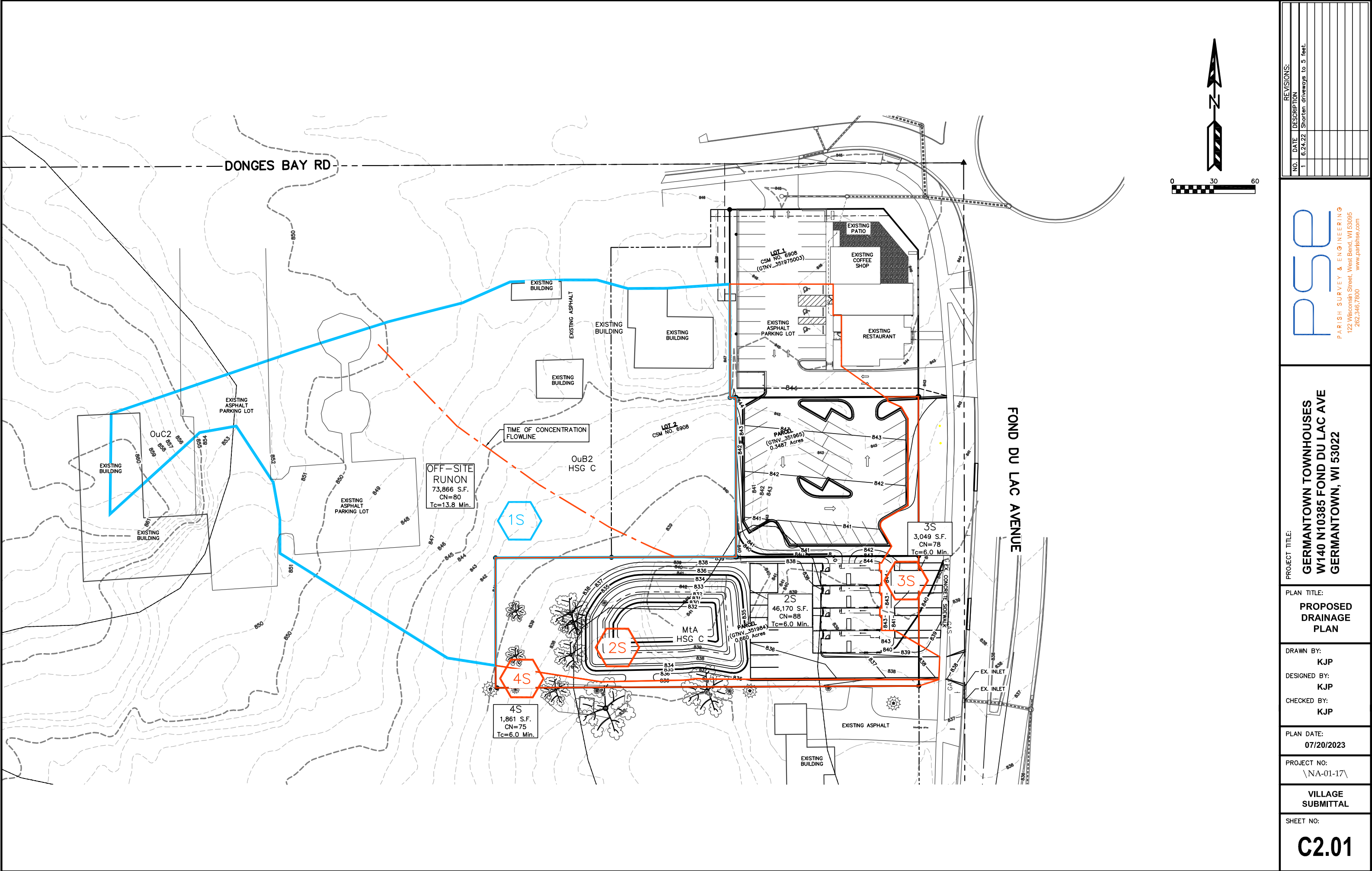
Appendix D

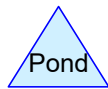
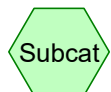
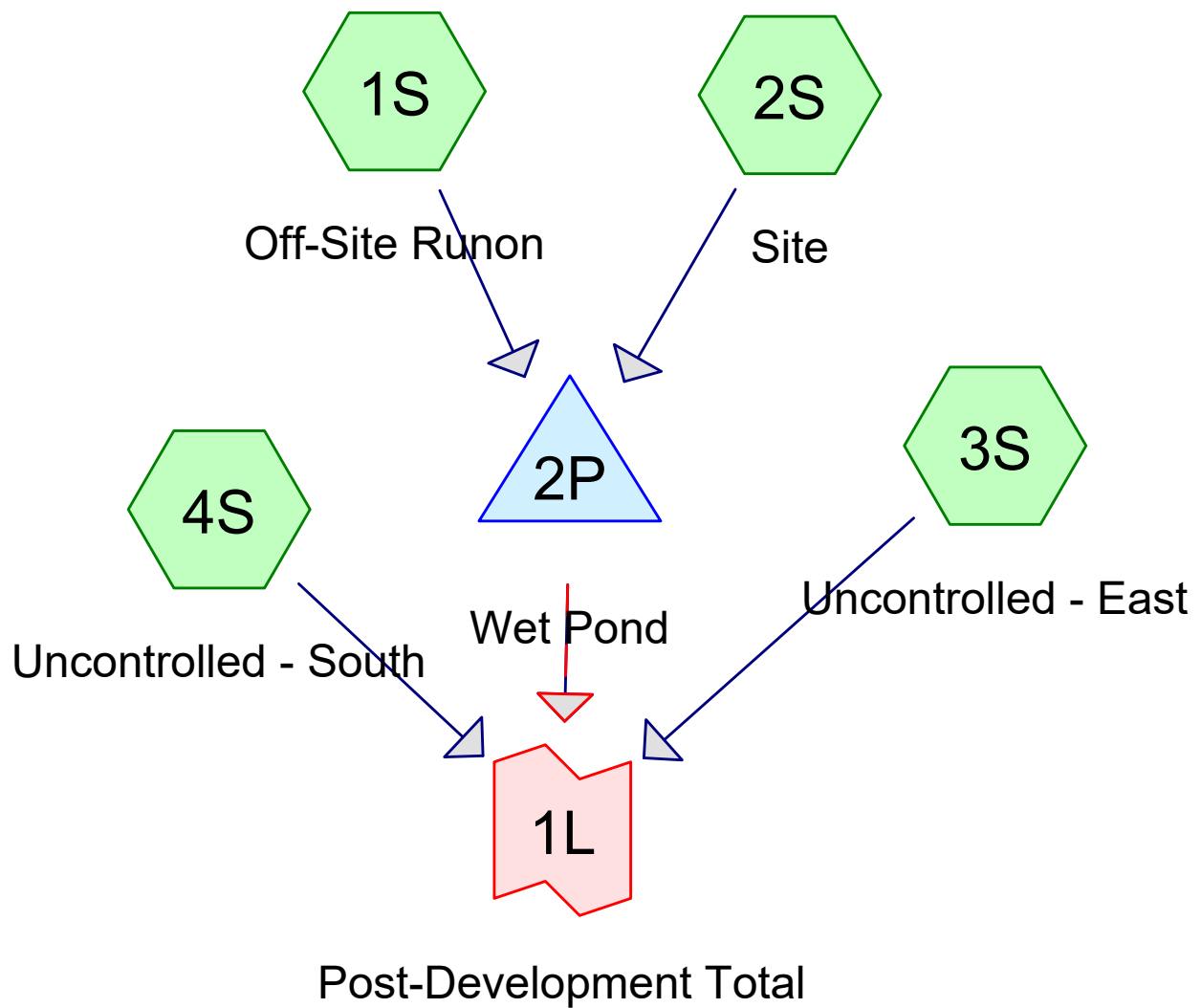
Proposed Site Conditions



PARISH SURVEY & ENGINEERING

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





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NA-01-17 Stormwater
MSE 24-hr 3 2-Year Rainfall=2.66"

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Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points x 3
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: Off-Site Runon

Runoff Area=73,866 sf 23.73% Impervious Runoff Depth>1.00"
Flow Length=265' Tc=13.8 min CN=80 Runoff=2.22 cfs 0.141 af

Subcatchment2S: Site

Runoff Area=46,170 sf 56.25% Impervious Runoff Depth>1.52"
Tc=6.0 min CN=88 Runoff=2.86 cfs 0.134 af

Subcatchment3S: Uncontrolled - East

Runoff Area=3,049 sf 14.92% Impervious Runoff Depth>0.89"
Tc=6.0 min CN=78 Runoff=0.11 cfs 0.005 af

Subcatchment4S: Uncontrolled - South

Runoff Area=1,861 sf 0.00% Impervious Runoff Depth>0.75"
Tc=6.0 min CN=75 Runoff=0.06 cfs 0.003 af

Pond 2P: Wet Pond

Peak Elev=834.57' Storage=7,014 cf Inflow=4.52 cfs 0.276 af
Primary=0.34 cfs 0.243 af Secondary=0.00 cfs 0.000 af Outflow=0.34 cfs 0.243 af

Link 1L: Post-DevelopmentTotal

Inflow=0.37 cfs 0.251 af
Primary=0.37 cfs 0.251 af

Total Runoff Area = 2.868 ac Runoff Volume = 0.283 af Average Runoff Depth = 1.19"
64.82% Pervious = 1.859 ac 35.18% Impervious = 1.009 ac

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NA-01-17 Stormwater

MSE 24-hr 3 2-Year Rainfall=2.66"

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Summary for Subcatchment 1S: Off-Site Runon

Runoff = 2.22 cfs @ 12.23 hrs, Volume= 0.141 af, Depth> 1.00"

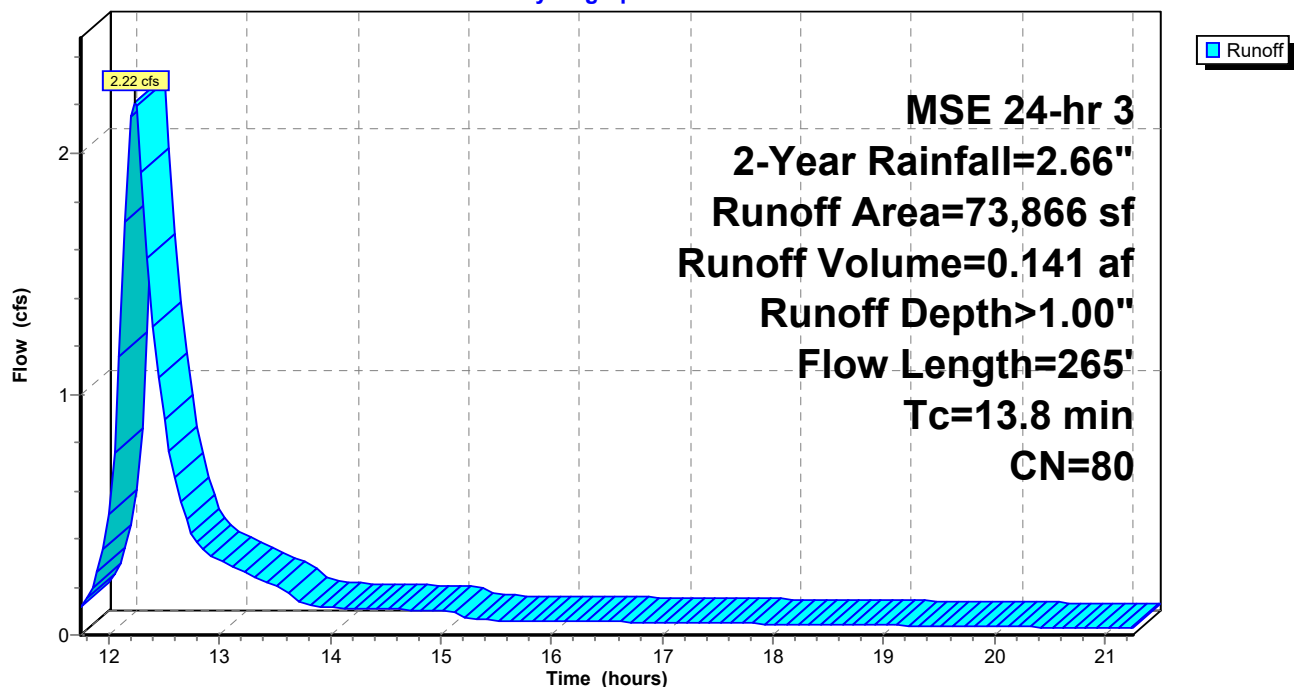
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 2-Year Rainfall=2.66"

	Area (sf)	CN	Description
*	5,175	98	Existing Roofs
*	12,350	98	Exisitng Asphalt/Concrete
*	12,533	77	Woods - Poor Cover, HSG C
*	43,808	74	Lawn, HSG C
	73,866	80	Weighted Average
	56,341		76.27% Pervious Area
	17,525		23.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.9	100	0.0400	0.14		Sheet Flow, Grass: Dense n= 0.240 P2= 2.65"
1.9	165	0.0420	1.43		Shallow Concentrated Flow, Shallow Short Grass Pasture Kv= 7.0 fps
13.8	265	Total			

Subcatchment 1S: Off-Site Runon

Hydrograph



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MSE 24-hr 3 2-Year Rainfall=2.66"

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Summary for Subcatchment 2S: Site

Runoff = 2.86 cfs @ 12.13 hrs, Volume= 0.134 af, Depth> 1.52"

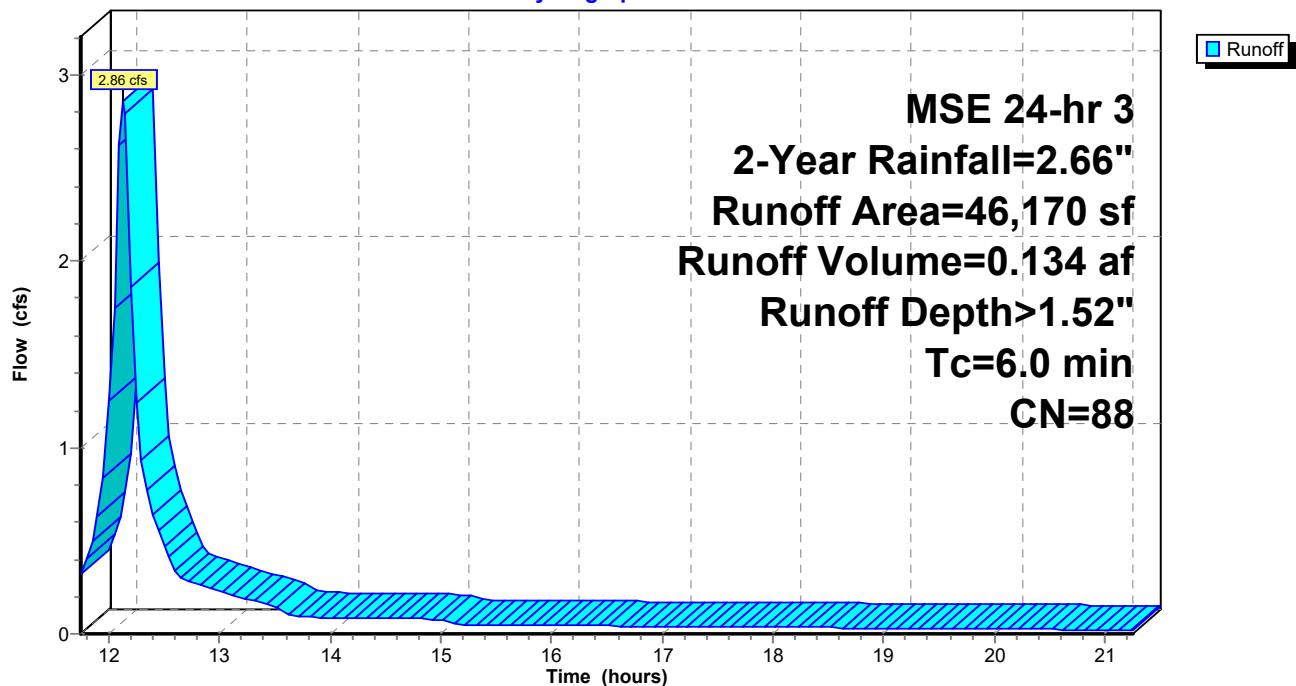
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 2-Year Rainfall=2.66"

	Area (sf)	CN	Description
*	2,915	98	Roofs
*	23,057	98	Asphalt/Concrete
*	5,500	77	Woods - Poor Cover, HSG C
*	14,698	74	Lawn, HSG C
	46,170	88	Weighted Average
	20,198		43.75% Pervious Area
	25,972		56.25% Impervious Area

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

Subcatchment 2S: Site

Hydrograph



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MSE 24-hr 3 2-Year Rainfall=2.66"

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Summary for Subcatchment 3S: Uncontrolled - East

Runoff = 0.11 cfs @ 12.14 hrs, Volume= 0.005 af, Depth> 0.89"

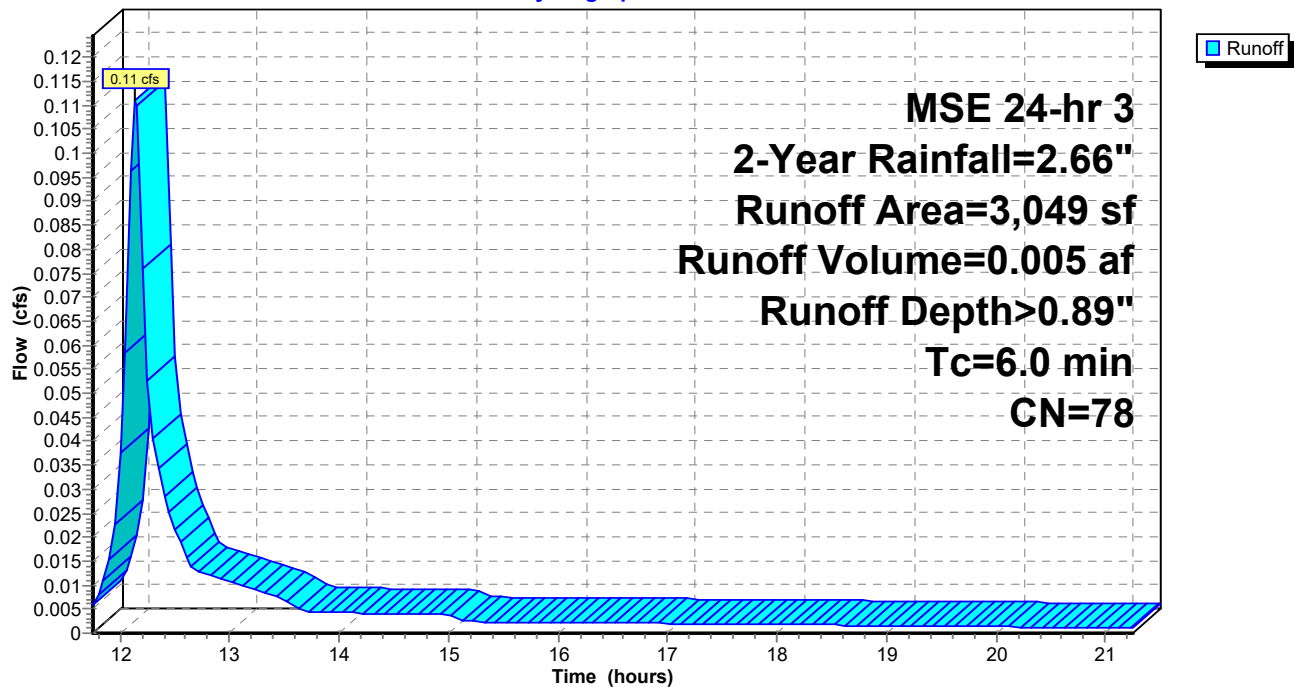
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 2-Year Rainfall=2.66"

	Area (sf)	CN	Description
*	455	98	Concrete
*	2,594	74	Lawn, HSG C
	3,049	78	Weighted Average
	2,594		85.08% Pervious Area
	455		14.92% Impervious Area

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

Subcatchment 3S: Uncontrolled - East

Hydrograph



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Summary for Subcatchment 4S: Uncontrolled - South

Runoff = 0.06 cfs @ 12.14 hrs, Volume= 0.003 af, Depth> 0.75"

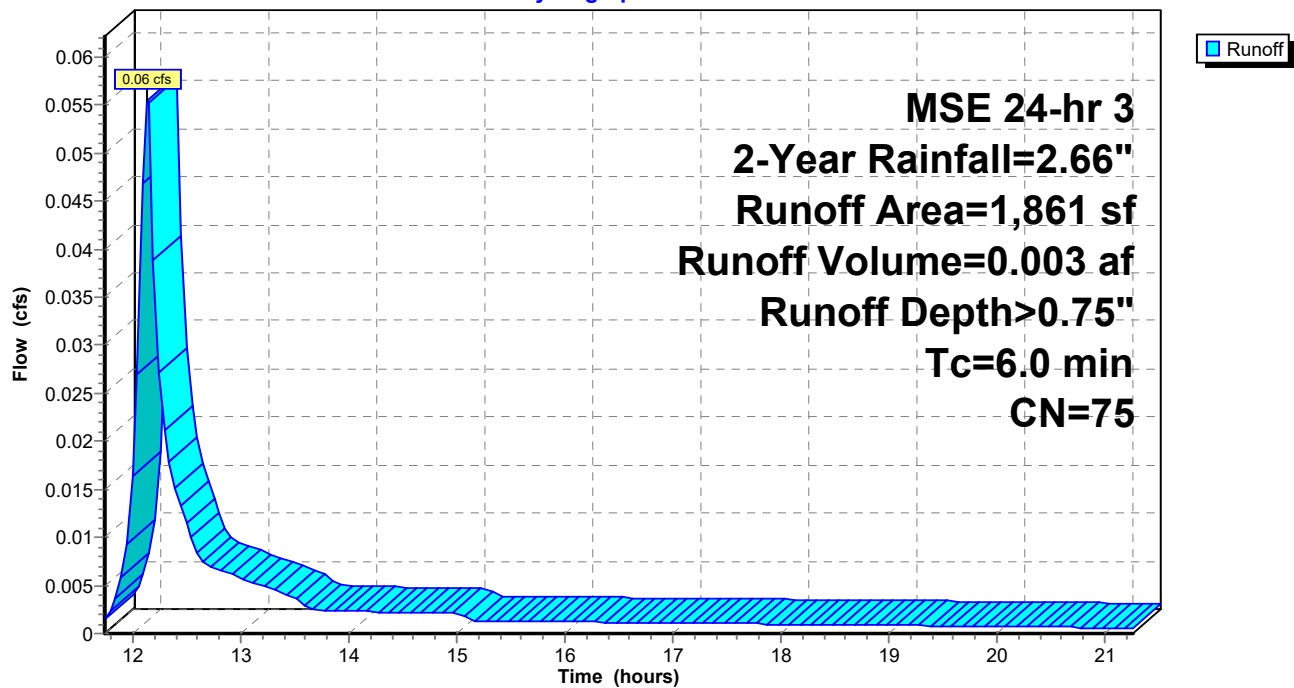
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 2-Year Rainfall=2.66"

	Area (sf)	CN	Description
*	760	77	Woods - Poor Cover, HSG C
*	1,101	74	Lawn, HSG C
	1,861	75	Weighted Average
	1,861		100.00% Pervious Area

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

Subcatchment 4S: Uncontrolled - South

Hydrograph



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MSE 24-hr 3 2-Year Rainfall=2.66"

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Summary for Pond 2P: Wet Pond

Inflow Area = 2.756 ac, 36.24% Impervious, Inflow Depth > 1.20" for 2-Year event
Inflow = 4.52 cfs @ 12.15 hrs, Volume= 0.276 af
Outflow = 0.34 cfs @ 13.51 hrs, Volume= 0.243 af, Atten= 92%, Lag= 81.3 min
Primary = 0.34 cfs @ 13.51 hrs, Volume= 0.243 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3

Peak Elev= 834.57' @ 13.51 hrs Surf.Area= 7,089 sf Storage= 7,014 cf

Plug-Flow detention time= 254.5 min calculated for 0.243 af (88% of inflow)

Center-of-Mass det. time= 206.5 min (1,021.0 - 814.5)

Volume	Invert	Avail.Storage	Storage Description
#1	833.50'	18,206 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
833.50	6,042	0	0
834.00	6,520	3,141	3,141
835.00	7,520	7,020	10,161
836.00	8,570	8,045	18,206

Device	Routing	Invert	Outlet Devices
#1	Primary	833.25'	12.0" Round Culvert L= 165.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 833.25' / 832.75' S= 0.0030 ' / Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf
#2	Device 1	833.50'	3.7" Vert. Orifice/Grate C= 0.600
#3	Device 1	834.75'	36.0" Vert. Stand Pipe C= 0.600
#4	Secondary	835.50'	50.0' long x 5.0' breadth Broad-Crested Rectangular Weir 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=0.34 cfs @ 13.51 hrs HW=834.57' TW=0.00' (Dynamic Tailwater)

↑ **1=Culvert** (Passes 0.34 cfs of 2.35 cfs potential flow)
↑ **2=Orifice/Grate** (Orifice Controls 0.34 cfs @ 4.61 fps)
↑ **3=Stand Pipe** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=833.50' TW=0.00' (Dynamic Tailwater)

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

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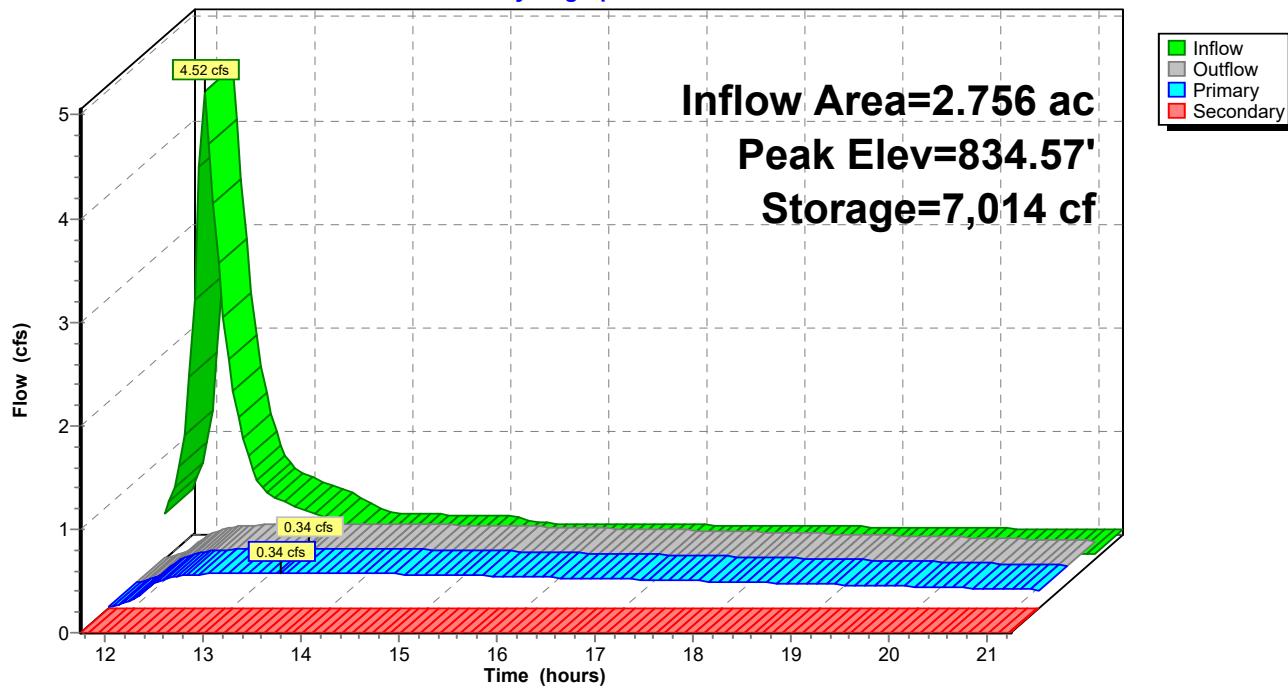
NA-01-17 Stormwater
MSE 24-hr 3 2-Year Rainfall=2.66"

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Pond 2P: Wet Pond

Hydrograph



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MSE 24-hr 3 2-Year Rainfall=2.66"

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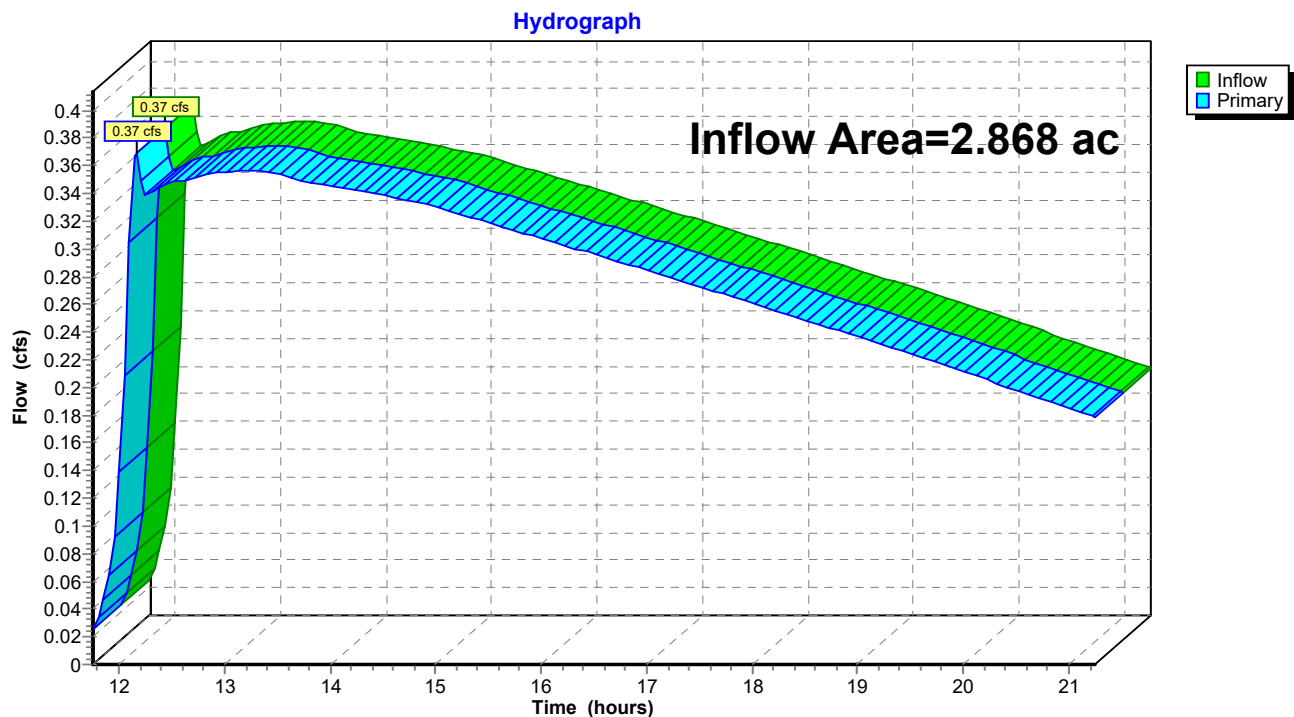
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Summary for Link 1L: Post-Development Total

Inflow Area = 2.868 ac, 35.18% Impervious, Inflow Depth > 1.05" for 2-Year event
Inflow = 0.37 cfs @ 12.16 hrs, Volume= 0.251 af
Primary = 0.37 cfs @ 12.16 hrs, Volume= 0.251 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 1L: Post-Development Total



Post-Develop Townhomes

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MSE 24-hr 3 2-Year Rainfall=2.66"

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Hydrograph for Link 1L: Post-Development Total

Time (hours)	Inflow (cfs)	Primary (cfs)	Primary-Volume (acre-feet)
11.75	0.03	0.03	0.000
12.00	0.14	0.14	0.002
12.25	0.34	0.34	0.009
12.50	0.35	0.35	0.016
12.75	0.35	0.35	0.023
13.00	0.36	0.36	0.030
13.25	0.36	0.36	0.038
13.50	0.35	0.35	0.045
13.75	0.35	0.35	0.052
14.00	0.35	0.35	0.059
14.25	0.34	0.34	0.066
14.50	0.34	0.34	0.073
14.75	0.33	0.33	0.080
15.00	0.33	0.33	0.087
15.25	0.32	0.32	0.094
15.50	0.32	0.32	0.101
15.75	0.31	0.31	0.107
16.00	0.31	0.31	0.114
16.25	0.30	0.30	0.120
16.50	0.30	0.30	0.126
16.75	0.29	0.29	0.132
17.00	0.28	0.28	0.138
17.25	0.28	0.28	0.144
17.50	0.27	0.27	0.150
17.75	0.27	0.27	0.155
18.00	0.26	0.26	0.161
18.25	0.25	0.25	0.166
18.50	0.25	0.25	0.171
18.75	0.24	0.24	0.176
19.00	0.24	0.24	0.181
19.25	0.23	0.23	0.186
19.50	0.22	0.22	0.191
19.75	0.22	0.22	0.195
20.00	0.21	0.21	0.199
20.25	0.20	0.20	0.204
20.50	0.20	0.20	0.208
20.75	0.19	0.19	0.212
21.00	0.19	0.19	0.216
21.25	0.18	0.18	0.220

Post-Develop Townhomes

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NA-01-17 Stormwater
MSE 24-hr 3 100-Year Rainfall=6.31"

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Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points x 3
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: Off-Site Runon

Runoff Area=73,866 sf 23.73% Impervious Runoff Depth>4.06"
Flow Length=265' Tc=13.8 min CN=80 Runoff=9.11 cfs 0.574 af

Subcatchment2S: Site

Runoff Area=46,170 sf 56.25% Impervious Runoff Depth>4.92"
Tc=6.0 min CN=88 Runoff=8.73 cfs 0.435 af

Subcatchment3S: Uncontrolled - East

Runoff Area=3,049 sf 14.92% Impervious Runoff Depth>3.85"
Tc=6.0 min CN=78 Runoff=0.48 cfs 0.022 af

Subcatchment4S: Uncontrolled - South

Runoff Area=1,861 sf 0.00% Impervious Runoff Depth>3.55"
Tc=6.0 min CN=75 Runoff=0.27 cfs 0.013 af

Pond 2P: Wet Pond

Peak Elev=835.69' Storage=15,583 cf Inflow=16.07 cfs 1.008 af
Primary=3.49 cfs 0.748 af Secondary=9.50 cfs 0.165 af Outflow=13.00 cfs 0.912 af

Link 1L: Post-DevelopmentTotal

Inflow=13.29 cfs 0.947 af
Primary=13.29 cfs 0.947 af

Total Runoff Area = 2.868 ac Runoff Volume = 1.044 af Average Runoff Depth = 4.37"
64.82% Pervious = 1.859 ac 35.18% Impervious = 1.009 ac

Post-Develop Townhomes

Prepared by Quam Engineering LLC

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NA-01-17 Stormwater

MSE 24-hr 3 100-Year Rainfall=6.31"

Printed 7/20/2023

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Summary for Subcatchment 1S: Off-Site Runon

Runoff = 9.11 cfs @ 12.22 hrs, Volume= 0.574 af, Depth> 4.06"

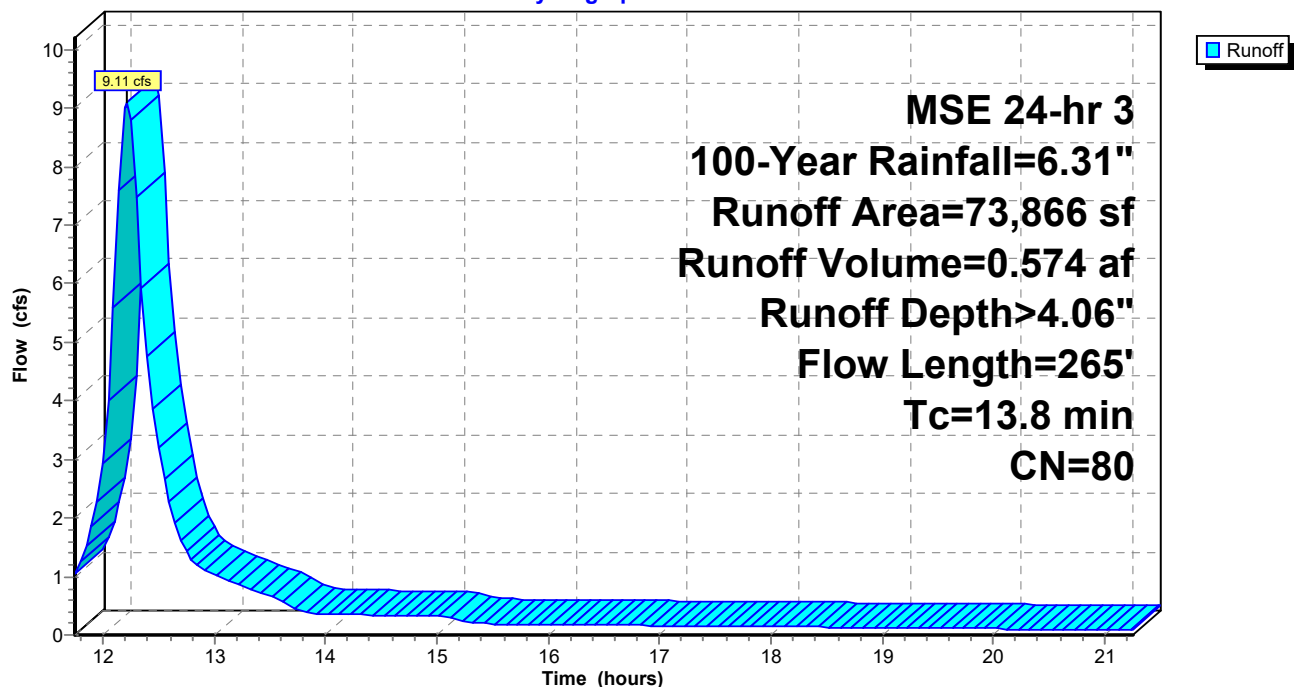
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100-Year Rainfall=6.31"

	Area (sf)	CN	Description
*	5,175	98	Existing Roofs
*	12,350	98	Exisitng Asphalt/Concrete
*	12,533	77	Woods - Poor Cover, HSG C
*	43,808	74	Lawn, HSG C
	73,866	80	Weighted Average
	56,341		76.27% Pervious Area
	17,525		23.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.9	100	0.0400	0.14		Sheet Flow, Grass: Dense n= 0.240 P2= 2.65"
1.9	165	0.0420	1.43		Shallow Concentrated Flow, Shallow Short Grass Pasture Kv= 7.0 fps
13.8	265	Total			

Subcatchment 1S: Off-Site Runon

Hydrograph



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MSE 24-hr 3 100-Year Rainfall=6.31"

Printed 7/20/2023

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Summary for Subcatchment 2S: Site

Runoff = 8.73 cfs @ 12.13 hrs, Volume= 0.435 af, Depth> 4.92"

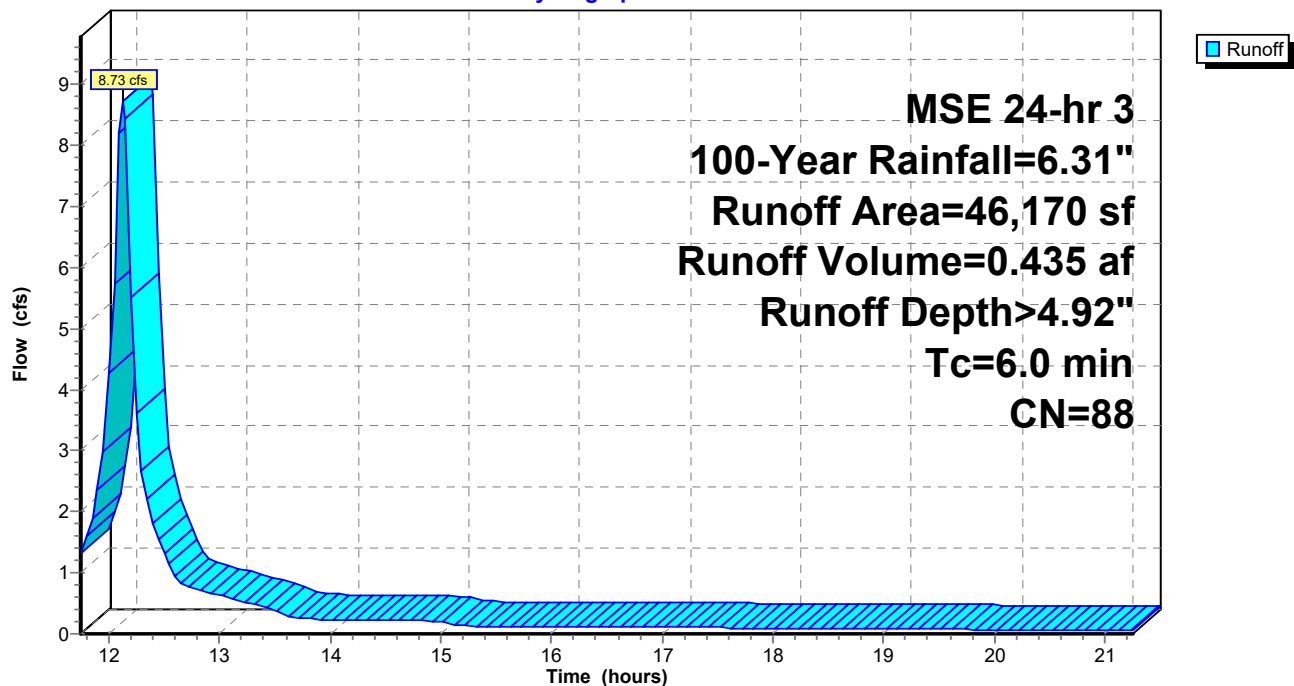
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100-Year Rainfall=6.31"

	Area (sf)	CN	Description
*	2,915	98	Roofs
*	23,057	98	Asphalt/Concrete
*	5,500	77	Woods - Poor Cover, HSG C
*	14,698	74	Lawn, HSG C
	46,170	88	Weighted Average
	20,198		43.75% Pervious Area
	25,972		56.25% Impervious Area

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

Subcatchment 2S: Site

Hydrograph



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NA-01-17 Stormwater

MSE 24-hr 3 100-Year Rainfall=6.31"

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Summary for Subcatchment 3S: Uncontrolled - East

Runoff = 0.48 cfs @ 12.13 hrs, Volume= 0.022 af, Depth> 3.85"

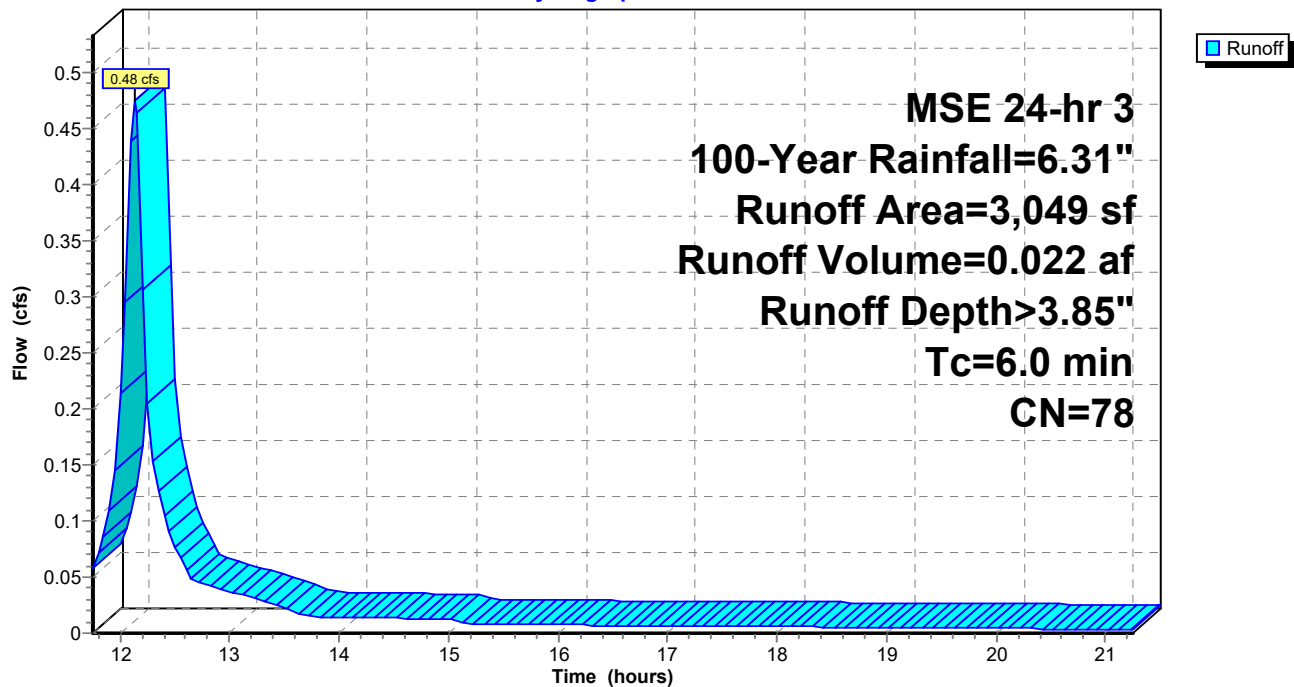
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100-Year Rainfall=6.31"

	Area (sf)	CN	Description
*	455	98	Concrete
*	2,594	74	Lawn, HSG C
	3,049	78	Weighted Average
	2,594		85.08% Pervious Area
	455		14.92% Impervious Area

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

Subcatchment 3S: Uncontrolled - East

Hydrograph



Post-Develop Townhomes

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NA-01-17 Stormwater

MSE 24-hr 3 100-Year Rainfall=6.31"

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Summary for Subcatchment 4S: Uncontrolled - South

Runoff = 0.27 cfs @ 12.13 hrs, Volume= 0.013 af, Depth> 3.55"

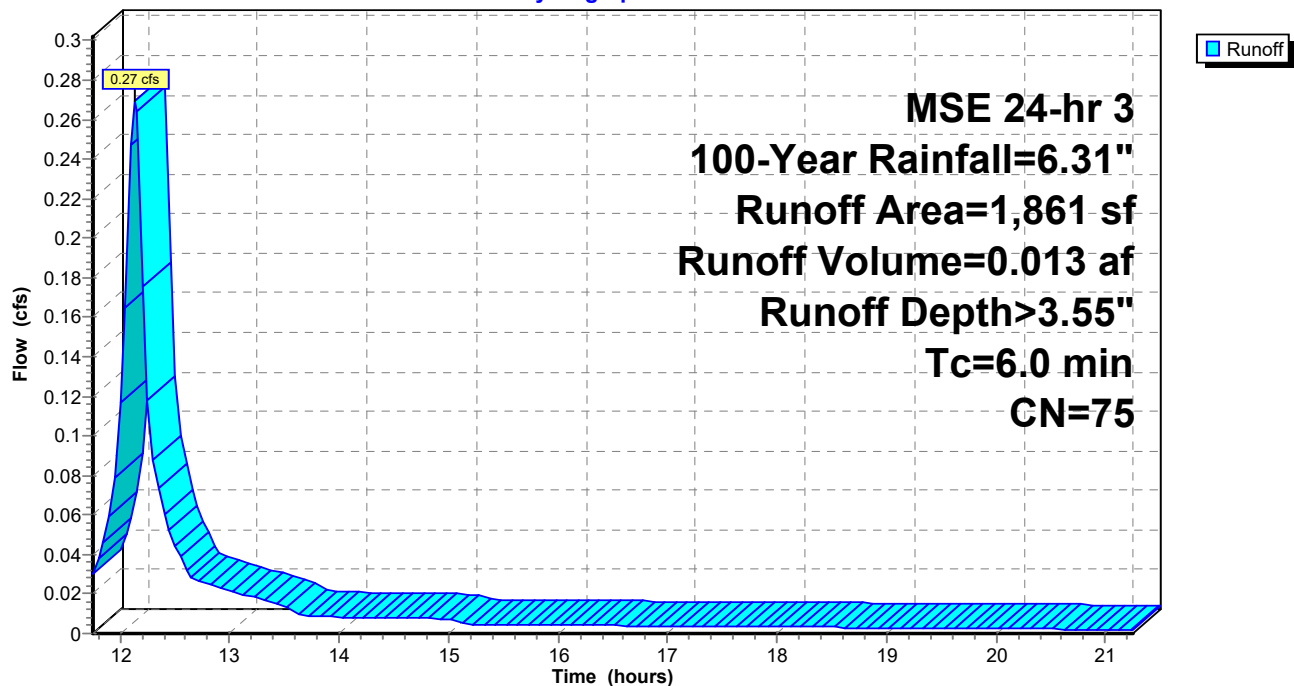
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100-Year Rainfall=6.31"

	Area (sf)	CN	Description
*	760	77	Woods - Poor Cover, HSG C
*	1,101	74	Lawn, HSG C
	1,861	75	Weighted Average
	1,861		100.00% Pervious Area

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

Subcatchment 4S: Uncontrolled - South

Hydrograph



Post-Develop Townhomes

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NA-01-17 Stormwater

MSE 24-hr 3 100-Year Rainfall=6.31"

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Summary for Pond 2P: Wet Pond

Inflow Area = 2.756 ac, 36.24% Impervious, Inflow Depth > 4.39" for 100-Year event
Inflow = 16.07 cfs @ 12.15 hrs, Volume= 1.008 af
Outflow = 13.00 cfs @ 12.26 hrs, Volume= 0.912 af, Atten= 19%, Lag= 6.5 min
Primary = 3.49 cfs @ 12.26 hrs, Volume= 0.748 af
Secondary = 9.50 cfs @ 12.26 hrs, Volume= 0.165 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3

Peak Elev= 835.69' @ 12.26 hrs Surf.Area= 8,242 sf Storage= 15,583 cf

Plug-Flow detention time= 129.2 min calculated for 0.912 af (90% of inflow)

Center-of-Mass det. time= 88.8 min (878.5 - 789.7)

Volume	Invert	Avail.Storage	Storage Description
#1	833.50'	18,206 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
833.50	6,042	0	0
834.00	6,520	3,141	3,141
835.00	7,520	7,020	10,161
836.00	8,570	8,045	18,206

Device	Routing	Invert	Outlet Devices
#1	Primary	833.25'	12.0" Round Culvert L= 165.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 833.25' / 832.75' S= 0.0030 ' / Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf
#2	Device 1	833.50'	3.7" Vert. Orifice/Grate C= 0.600
#3	Device 1	834.75'	36.0" Vert. Stand Pipe C= 0.600
#4	Secondary	835.50'	50.0' long x 5.0' breadth Broad-Crested Rectangular Weir 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=3.48 cfs @ 12.26 hrs HW=835.68' TW=0.00' (Dynamic Tailwater)

↑ **1=Culvert** (Barrel Controls 3.48 cfs @ 4.44 fps)
↑ **2=Orifice/Grate** (Passes < 0.51 cfs potential flow)
↑ **3=Stand Pipe** (Passes < 6.13 cfs potential flow)

Secondary OutFlow Max=8.98 cfs @ 12.26 hrs HW=835.68' TW=0.00' (Dynamic Tailwater)

↑ **4=Broad-Crested Rectangular Weir** (Weir Controls 8.98 cfs @ 0.99 fps)

Post-Develop Townhomes

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NA-01-17 Stormwater

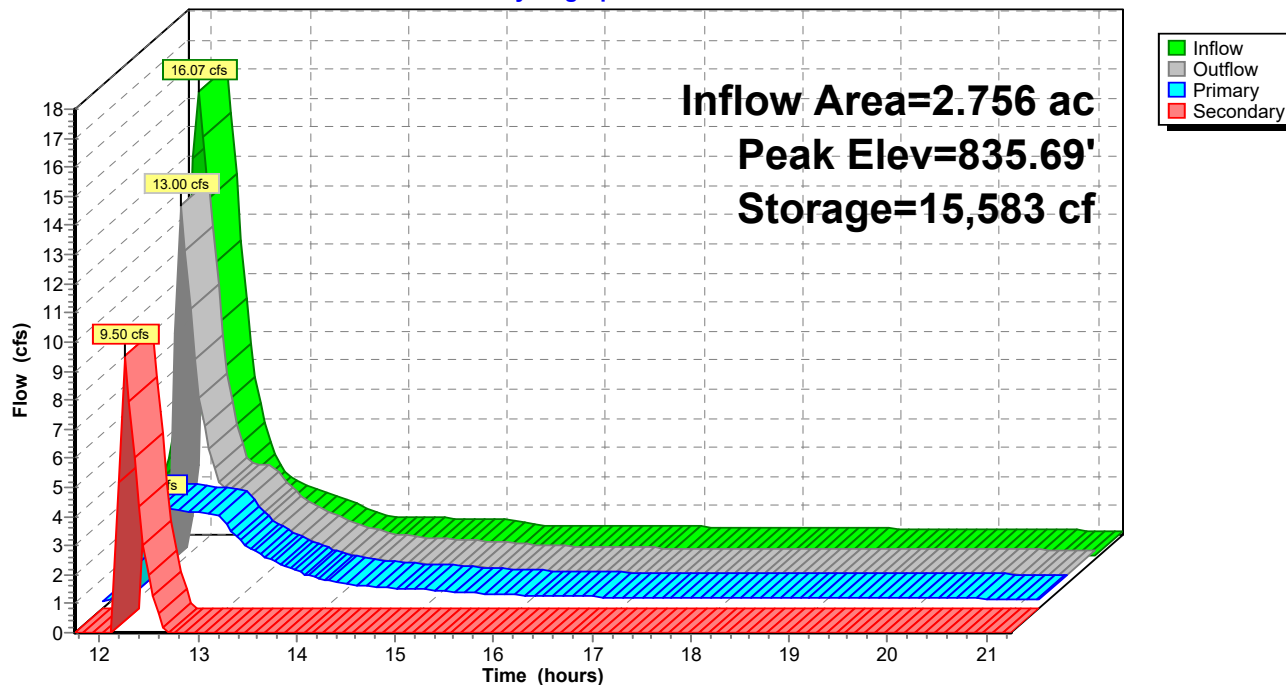
MSE 24-hr 3 100-Year Rainfall=6.31"

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Pond 2P: Wet Pond

Hydrograph



Post-Develop Townhomes

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NA-01-17 Stormwater

MSE 24-hr 3 100-Year Rainfall=6.31"

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Summary for Link 1L: Post-Development Total

Inflow Area = 2.868 ac, 35.18% Impervious, Inflow Depth > 3.96" for 100-Year event

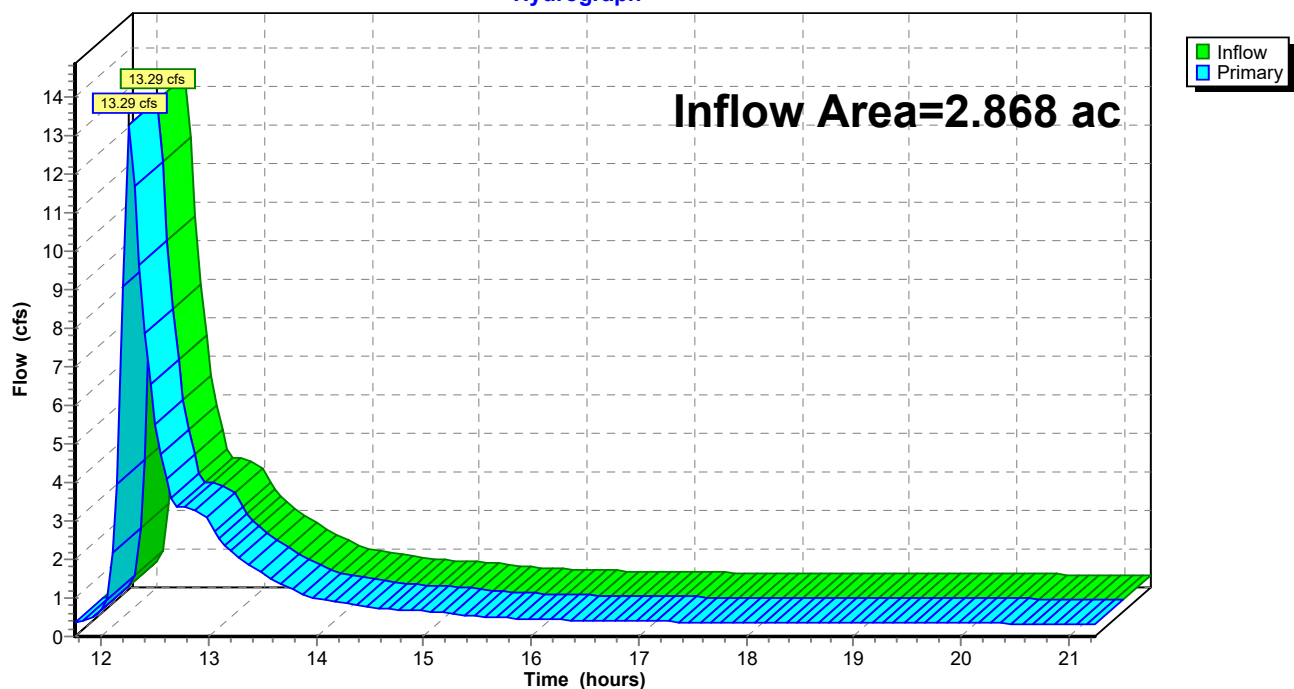
Inflow = 13.29 cfs @ 12.26 hrs, Volume= 0.947 af

Primary = 13.29 cfs @ 12.26 hrs, Volume= 0.947 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 1L: Post-Development Total

Hydrograph



Post-Develop Townhomes

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MSE 24-hr 3 100-Year Rainfall=6.31"

Printed 7/20/2023

Hydrograph for Link 1L: Post-Development Total

Time (hours)	Inflow (cfs)	Primary (cfs)	Primary-Volume (acre-feet)
11.75	0.35	0.35	0.023
12.00	0.69	0.69	0.034
12.25	13.14	13.14	0.155
12.50	5.51	5.51	0.326
12.75	3.36	3.36	0.405
13.00	2.95	2.95	0.471
13.25	2.12	2.12	0.521
13.50	1.64	1.64	0.559
13.75	1.26	1.26	0.588
14.00	1.00	1.00	0.610
14.25	0.86	0.86	0.629
14.50	0.77	0.77	0.645
14.75	0.70	0.70	0.660
15.00	0.66	0.66	0.674
15.25	0.60	0.60	0.687
15.50	0.53	0.53	0.699
15.75	0.49	0.49	0.709
16.00	0.46	0.46	0.719
16.25	0.44	0.44	0.728
16.50	0.42	0.42	0.737
16.75	0.41	0.41	0.745
17.00	0.40	0.40	0.754
17.25	0.39	0.39	0.762
17.50	0.39	0.39	0.770
17.75	0.38	0.38	0.778
18.00	0.38	0.38	0.786
18.25	0.38	0.38	0.793
18.50	0.37	0.37	0.801
18.75	0.37	0.37	0.809
19.00	0.37	0.37	0.816
19.25	0.36	0.36	0.824
19.50	0.36	0.36	0.831
19.75	0.35	0.35	0.839
20.00	0.35	0.35	0.846
20.25	0.35	0.35	0.853
20.50	0.34	0.34	0.860
20.75	0.34	0.34	0.867
21.00	0.33	0.33	0.874
21.25	0.33	0.33	0.881

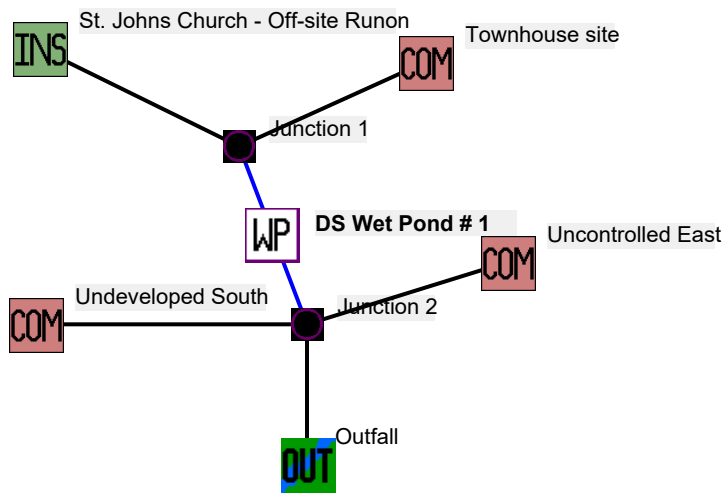
Appendix E

TSS Reduction Calculations



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Data file name: W:\Projects\NA-01-17\SWMP\NA-01 WinSLAMM.mdb
WinSLAMM Version 10.4.1
Rain file name: C:\WinSLAMM Files\Rain Files\WI Milwaukee 69.RAN
Particulate Solids Concentration file name: C:\WinSLAMM Files\v10.1 WI_AVG01.pscx
Runoff Coefficient file name: C:\WinSLAMM Files\WI_SL06 Dec06.rsvx
Residential Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Institutional Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Commercial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Industrial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Other Urban Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Freeway Street Delivery file name: C:\WinSLAMM Files\Freeway Dec06.std
Apply Street Delivery Files to Adjust the After Event Load Street Dirt Mass Balance: False
Pollutant Relative Concentration file name: C:\WinSLAMM Files\WI_GEO03.ppdx
Source Area PSD and Peak to Average Flow Ratio File: C:\WinSLAMM Files\NURP Source Area PSD Files.csv
Cost Data file name:
Seed for random number generator: -42
Study period starting date: 01/05/69 Study period ending date: 12/31/69
Start of Winter Season: 12/06 End of Winter Season: 03/28
Date: 07-20-2023 Time: 15:41:34
Site information:

LU# 1 - Institutional: St. Johns Church - Off-site Runon Total area (ac): 1.697
1 - Roofs 1: 0.119 ac. Pitched Disconnected Normal Silty PSD File: C:\WinSLAMM Files\NURP.cpz
13 - Paved Parking 1: 0.284 ac. Disconnected Normal Silty PSD File: C:\WinSLAMM Files\NURP.cpz
45 - Large Landscaped Areas 1: 1.006 ac. Normal Silty PSD File: C:\WinSLAMM Files\NURP.cpz
57 - Undeveloped Areas 1: 0.288 ac. Normal Silty PSD File: C:\WinSLAMM Files\NURP.cpz

LU# 2 - Commercial: Townhouse site Total area (ac): 1.060
1 - Roofs 1: 0.067 ac. Pitched Connected PSD File: C:\WinSLAMM Files\NURP.cpz
13 - Paved Parking 1: 0.529 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz
51 - Small Landscaped Areas 1: 0.199 ac. Normal Silty PSD File: C:\WinSLAMM Files\NURP.cpz
57 - Undeveloped Areas 1: 0.126 ac. Normal Silty PSD File: C:\WinSLAMM Files\NURP.cpz
70 - Water Body Areas: 0.139 ac. PSD File:

LU# 3 - Commercial: Undeveloped South Total area (ac): 0.042
51 - Small Landscaped Areas 1: 0.025 ac. Normal Silty PSD File: C:\WinSLAMM Files\NURP.cpz
57 - Undeveloped Areas 1: 0.017 ac. Normal Silty PSD File: C:\WinSLAMM Files\NURP.cpz

LU# 4 - Commercial: Uncontrolled East Total area (ac): 0.070
31 - Sidewalks 1: 0.010 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz
51 - Small Landscaped Areas 1: 0.060 ac. Normal Silty PSD File: C:\WinSLAMM Files\NURP.cpz

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

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

Initial stage elevation (ft): 0

Peak to Average Flow Ratio: 3.8

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

Outlet Characteristics:

Outlet type: Orifice 1

1. Orifice diameter (ft): 0.31

2. Number of orifices: 1

3. Invert elevation above datum (ft): 4.5

Outlet type: Broad Crested Weir

1. Weir crest length (ft): 50

2. Weir crest width (ft): 5

3. Height from datum to bottom of weir opening: 6.5

Outlet type: Vertical Stand Pipe

1. Stand pipe diameter (ft): 3

2. Stand pipe height above datum (ft): 5.75

Pond stage and surface area

Entry Number	Stage (ft)	Pond Area (acres)	Natural Seepage (in/hr)	Other Outflow (cfs)
0	0.00	0.0000	0.00	0.00
1	0.01	0.0335	0.00	0.00
2	1.00	0.0464	0.00	0.00
3	2.00	0.0609	0.00	0.00
4	3.00	0.0771	0.00	0.00
5	3.50	0.0859	0.00	0.00
6	4.00	0.1108	0.00	0.00
7	4.50	0.1387	0.00	0.00
8	5.00	0.1497	0.00	0.00
9	6.00	0.1726	0.00	0.00
10	7.00	0.1967	0.00	0.00

Data file name: W:\Projects\NA-01-17\SWMP\NA-01 WinSLAMM.mdb
WinSLAMM Version 10.4.1
Rain file name: C:\WinSLAMM Files\Rain Files\WI Milwaukee 69.RAN
Particulate Solids Concentration file name: C:\WinSLAMM Files\v10.1 WI_AVG01.pscx
Runoff Coefficient file name: C:\WinSLAMM Files\WI_SL06 Dec06.rsvx
Pollutant Relative Concentration file name: C:\WinSLAMM Files\WI_GEO03.ppd
Residential Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Institutional Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Commercial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Industrial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Other Urban Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Freeway Street Delivery file name: C:\WinSLAMM Files\Freeway Dec06.std
Apply Street Delivery Files to Adjust the After Event Load Street Dirt Mass Balance: False
Source Area PSD and Peak to Average Flow Ratio File: C:\WinSLAMM Files\NURP Source Area PSD Files.csv
Cost Data file name:
Seed for random number generator: -42
Study period starting date: 01/05/69 Study period ending date: 12/31/69
Start of Winter Season: 12/06 End of Winter Season: 03/28
Model Run Start Date: 01/05/69 Model Run End Date: 12/31/69
Date of run: 07-20-2023 Time of run: 15:40:56
Total Area Modeled (acres): 2.869
Years in Model Run: 0.99

	Runoff Volume (cu ft)	Percent Runoff Volume Reduction	Particulate Solids Conc. (mg/L)	Particulate Solids Yield (lbs)	Percent Particulate Solids Reduction
Total of all Land Uses without Controls:	73682	-	99.63	458.3	-
Outfall Total with Controls:	60039	18.52%	18.19	68.18	85.12%
Annualized Total After Outfall Controls:	60873			69.12	

Appendix F

Storm Sewer Calculations



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WORK SHEET FOR STORM SEWER DESIGN

PROJECT: Germantown Townhomes
DATE: 7/20/2023

Computed by: Kevin Parish
 Checked by: Kevin Parish

LOCATION		BASIN		RAINFALL - RUNOFF						SEWER			
Upstream Structure	Downstream Structure	Runoff Coeff.	Area	Design Storm	Rain Intensity	Direct Runoff	Other Runoff	Design Runoff		Sewer Size	Slope of Sewer	Capacity Flowing Full	
		(C)	(A) Acres	Yr.	(I) In./Hr.	Q=C*I*A CFS	CFS	CFS	GPM	In.	Ft./Ft.	CFS	GPM
Inlet #3.2	CB #3	0.72	0.05	10	7.27	0.26	0.00	0.26	119	8	0.0300	2.3	1020
Inlet #3.1	CB #3	0.72	0.20	10	7.27	1.04	0.00	1.04	469	10	0.0100	2.4	1068
CB #3	Outfall	0.72	0.13	10	7.27	0.70	1.31	2.01	900	10	0.0500	5.3	2388
* C ₁₀ = 0.72 = Commercial Soil C, Slope 2-6% from the FDM Procedure 13-10-5 Figure 2.									Manning's Roughness Coefficient				
* C ₁₀₀ = 0.89 = Commercial Soil C, Slope 2-6% from the FDM Procedure 13-10-5 Figure 2.									n= 0.012				
A = Drainage area to structure.									10 Year Storm		100 Year Storm		
I = rainfall intensity for West Bend, Wisconsin from NOAA Atlas 14, Vol. 8, Ver. 2									7.27		10.8		

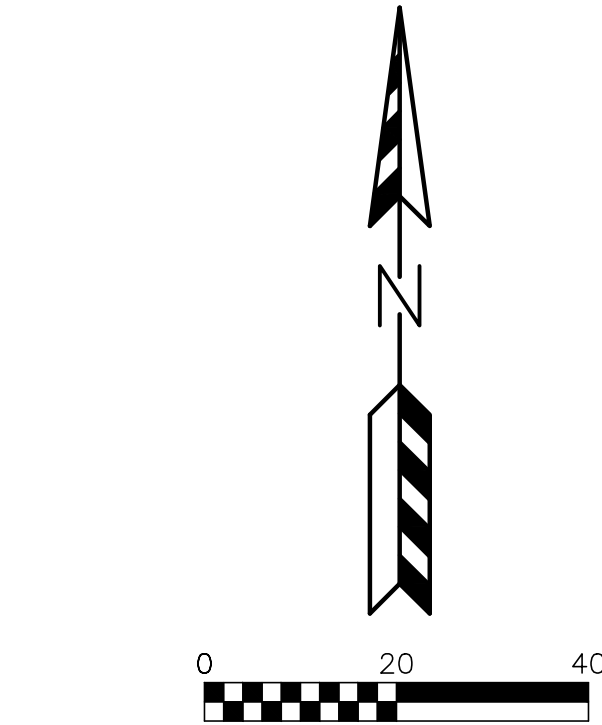
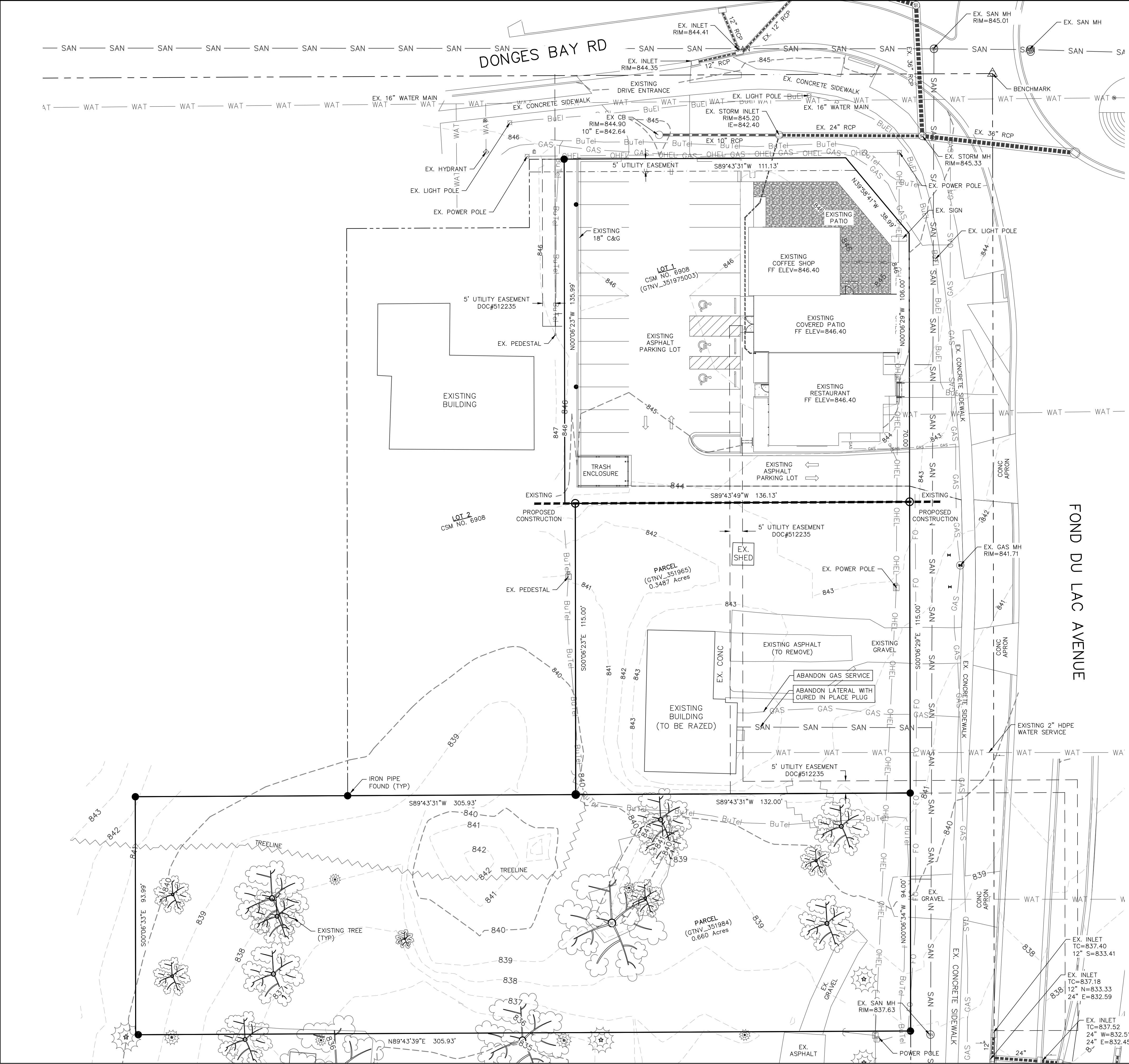
Appendix G

Design Plans



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△ BENCHMARK: SECTION CORNER, ELEV=845.04, NAVD88

- LEGEND:**
- 896 --- EXISTING MINOR CONTOUR.
 - 895 --- EXISTING MAJOR CONTOUR.
 - OHEL — OVERHEAD ELECTRIC LINE.
 - BuEl — BURIED ELECTRIC LINE.
 - BuTel — BURIED TELEPHONE LINE.
 - FO — FIBER OPTIC LINE.
 - GAS — GAS LINE.
 - SAN — SANITARY SEWER MAIN OR LATERAL.
 - WAT — WATER MAIN OR SERVICE.
 - ===== STORM SEWER LINE.
 - [ELEC] — ELECTRIC METER.
 - [GAS] — GAS METER.
 - [VALVE] — GAS VALVE.
 - [HYDRANT] — FIRE HYDRANT.
 - [POLE] — POWER POLE.
 - [SM] — SANITARY SEWER MANHOLE.
 - [STM] — STORM SEWER MANHOLE.
 - [SINLET] — STORM SEWER INLET.
 - [TELPEST] — TELEPHONE PEDESTAL.
 - [TRANS] — TRANSFORMER.
 - [WVALVE] — WATER VALVE.

REVISIONS:		
NO.	DATE	DESCRIPTION
1	6.24.22	Shorten driveways to 5 feet.

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

PROJECT TITLE:
**GERMANTOWN TOWNHOUSES
W140 N10385 FOND DU LAC AVE
GERMANTOWN, WI 53022**

PLAN TITLE:
**EXISTING
CONDITIONS
SURVEY**

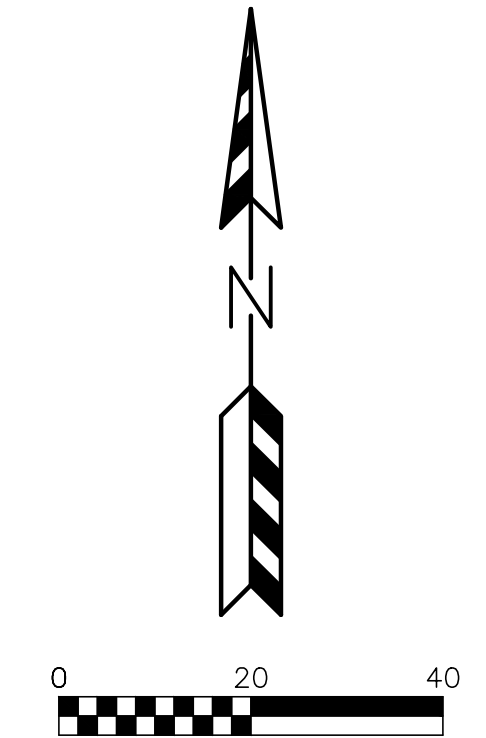
DRAWN BY:
KJP
DESIGNED BY:
KJP
CHECKED BY:
KJP

PLAN DATE:
7-21-2023

PROJECT NO:
\NA-01-17

**VILLAGE
SUBMITTAL**

SHEET NO:
C1.01



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

 CONCRETE SIDEWALK
4" CRUSHED AGGREGATE BASE COURSE
5" CONCRETE

SITE PLAN NOTES:	
1.	DIMENSIONS ARE TO FACE OF CURB AND FACE OF BUILDING UNLESS OTHERWISE NOTED.
2.	WHERE CURB ENDS AT CONNECTIONS SMOOTHLY TRANSITION FROM FULL CURB HEIGHT TO ZERO CURB HEIGHT WITHIN A 3' LENGTH.
3.	ALL STRIPING AND SIGNAGE SHALL COMPLY WITH THE WISCONSIN MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION.

[illegible]

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122 Wisconsin Street, West Bend, WI 53095
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PROJECT TITLE:
**GERMANTOWN TOWNHOUSES
W140 N10385 FOND DU LAC AVE
GERMANTOWN, WI 53022**

PLAN TITLE:

**PROPOSED
SITE PLAN**

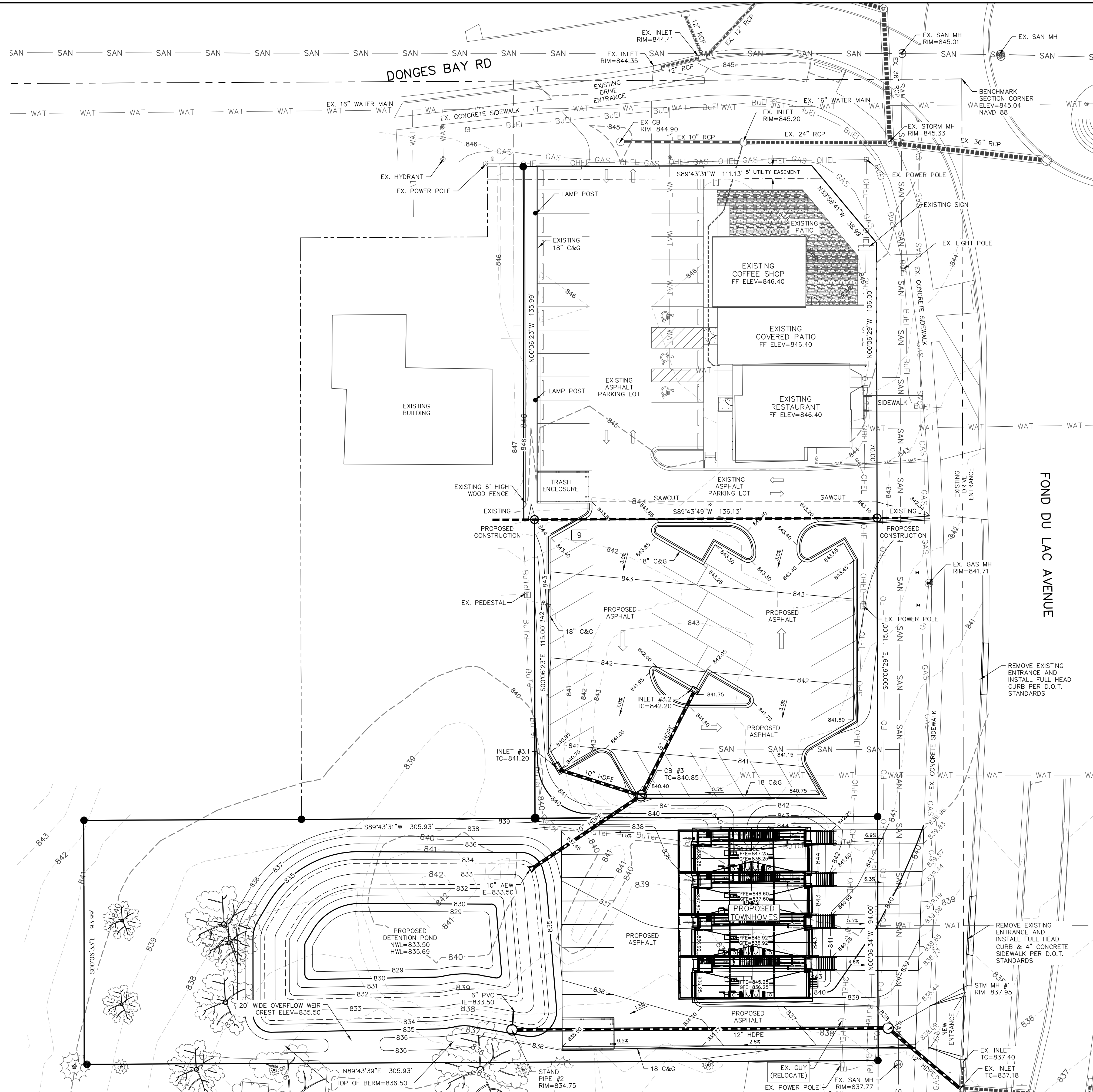
DRAWN BY: **KJP**
DESIGNED BY: **KJP**
CHECKED BY: **KJP**

PLAN DATE:	7-20-2023
PROJECT NO:	\NA-01-17\

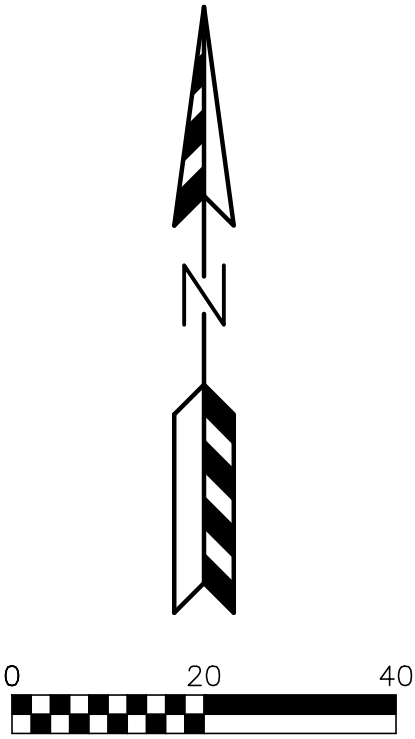
VILLAGE SUBMITTAL

SHEET NO:

C1.02



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



REVISIONS:	
NO.	DATE DESCRIPTION
1	XX-XX-XX XXXXXXXXXXXXXXXXXXXX

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

PROJECT TITLE:
**GERMANTOWN TOWNHOUSES
W140 N10385 FOND DU LAC AVE
GERMANTOWN, WI 53022**

PLAN TITLE:
**GRADING
PLAN**

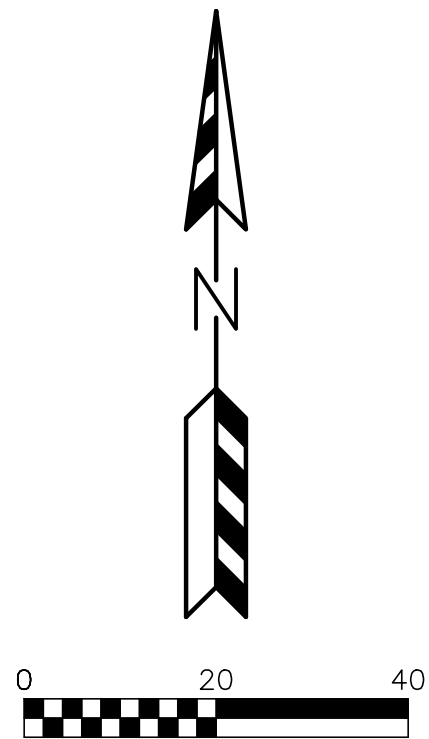
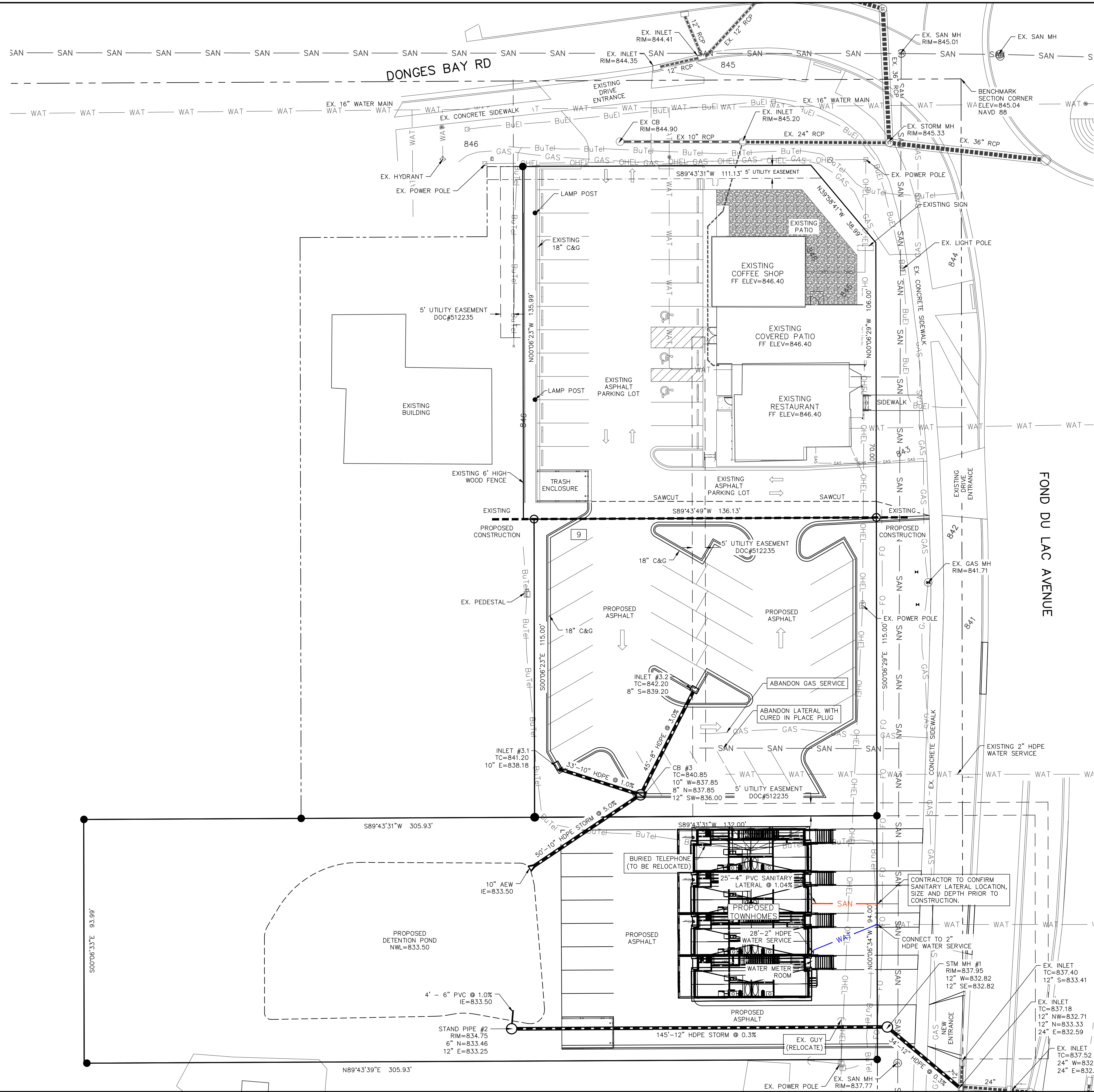
DRAWN BY:
KJP
DESIGNED BY:
KJP
CHECKED BY:
KJP

PLAN DATE:
7-20-2023

PROJECT NO:
\NA-01-17

**VILLAGE
SUBMITTAL**

SHEET NO:
C1.04



STORM SEWER CASTINGS:		
STRUCTURE	STRUCTURE DIAMETER	NEENAH CASTING OR EQUIVALENT
INLET #3.2	2' x 3'	R-3067
INLET #3.1	2' x 3'	R-3067
CB #3	4' DIA.	R-3067
STAND PIPE #2	3' DIA.	R-2561
STM MH #1	4' DIA.	R-1661

- LEGEND:**
- OHEL — OVERHEAD ELECTRIC LINE.
 - BuEl — BURIED ELECTRIC LINE.
 - BuTel — BURIED TELEPHONE LINE.
 - FO — FIBER OPTIC LINE.
 - GAS — GAS LINE.
 - SAN — SANITARY SEWER MAIN OR LATERAL.
 - WAT — WATER MAIN OR SERVICE.
 - STORM SEWER LINE.
 - ⊗ — GAS VALVE.
 - ⊙ — FIRE HYDRANT.
 - ⊞ — POWER POLE.
 - ⊞ — SANITARY SEWER MANHOLE.
 - ⊞ — STORM SEWER MANHOLE.
 - — STORM SEWER INLET.
 - ⊞ — TELEPHONE PEDESTAL.
 - ⊞ — TRANSFORMER.
 - ⊞ — WATER VALVE.
 - SAN — PROPOSED SANITARY SEWER
 - WAT — PROPOSED WATER MAIN
 - PROPOSED STORM SEWER.

UTILITY NOTE:
ABANDON EXISTING WATER SERVICE FROM RESTAURANT TO THE EXISTING RESIDENTIAL HOME TO THE SOUTH.

REVISIONS:	
NO.	DESCRIPTION
1	XX-XX-XX XXXXXXXXXXXXXXXXXXXX

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GERMANTOWN TOWNHOUSES
W140 N10385 FOND DU LAC AVE
GERMANTOWN, WI 53022

UTILITY PLAN

DRAWN BY:
KJP
DESIGNED BY:
KJP
CHECKED BY:
KJP

PLAN DATE:
7-20-2023

PROJECT NO:
\NA-01-17

VILLAGE SUBMITTAL

SHEET NO:
C1.05



NOTE:

ANTI-SEEP COLLARS SHALL HAVE A MINIMUM OF 12" PROJECTION FROM THE PIPE OUTSIDE DIAMETER AND SHALL BE SPACED AT AN INTERVAL NOT TO EXCEED 12 TIMES THE PROJECTION. COLLARS SHALL NOT BE PLACED CLOSER THAN WITHIN 2" OF A PIPE JOINT.

[illegible]

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PROJECT TITLE:

**GERMANTOWN TOWNHOUSES
W140 N10385 FOND DU LAC AVE
GERMANTOWN, WI 53022**

PLAN TITLE:

STORMWATER MANAGEMENT DETAILS

DRAWN BY:

KJP

DESIGNED BY:

KJP

CHECKED BY:

KJP

PLAN DATE:

7-20-2023

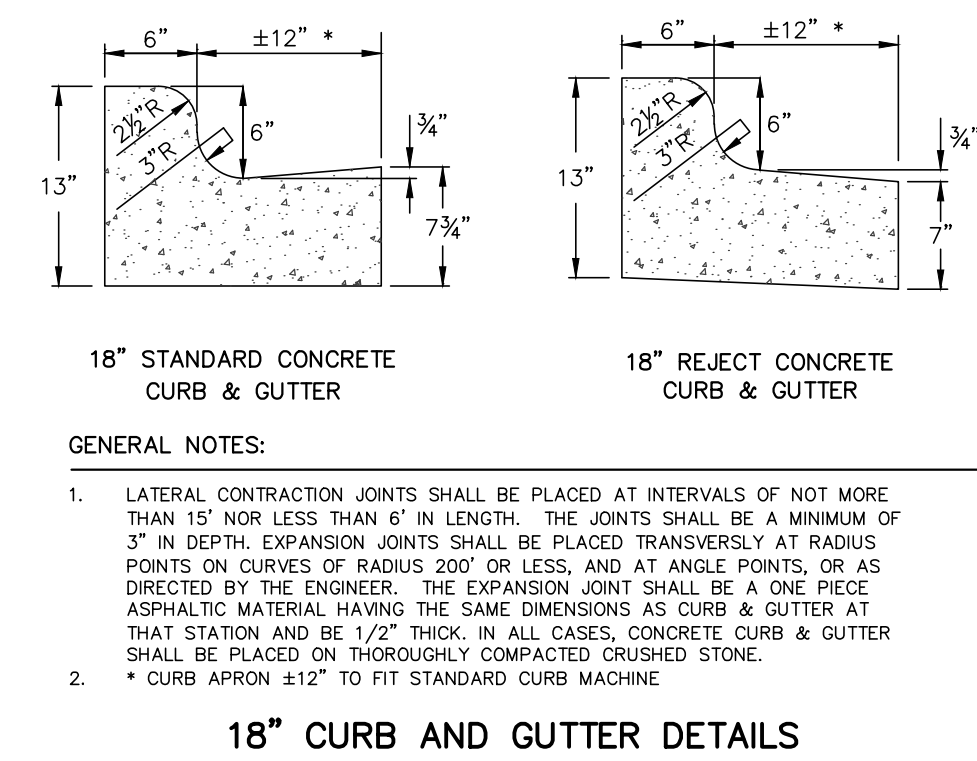
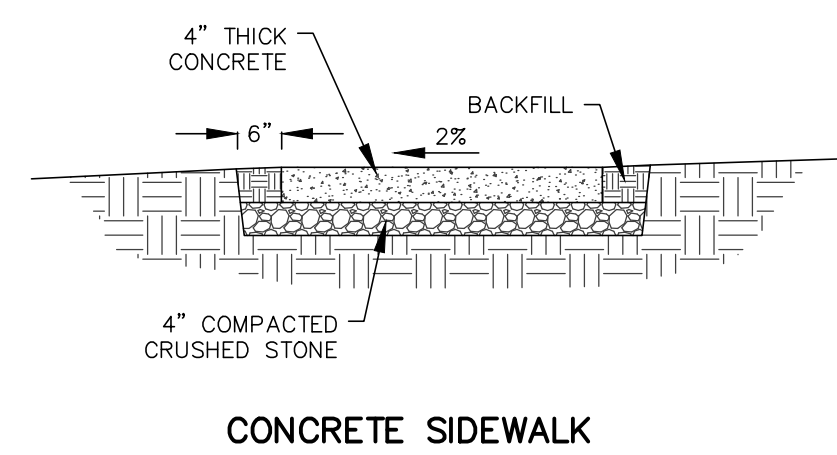
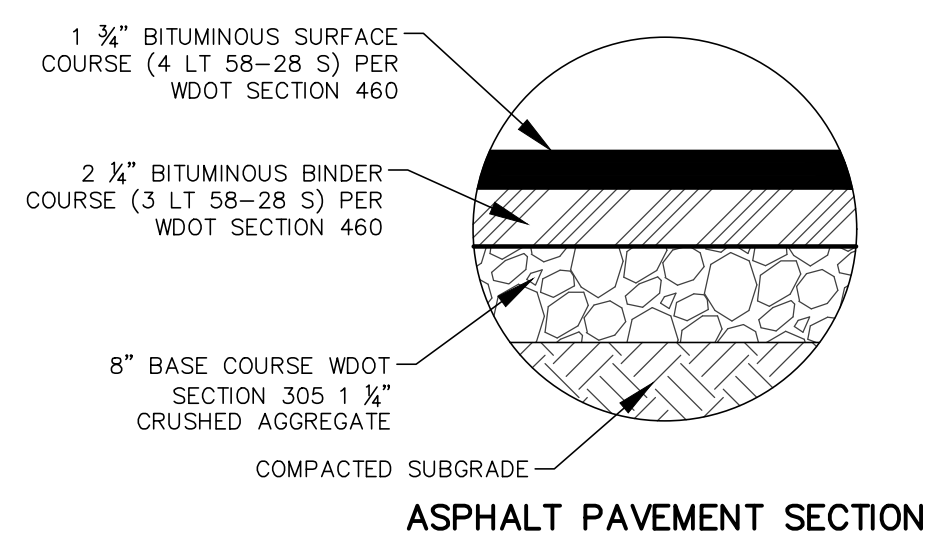
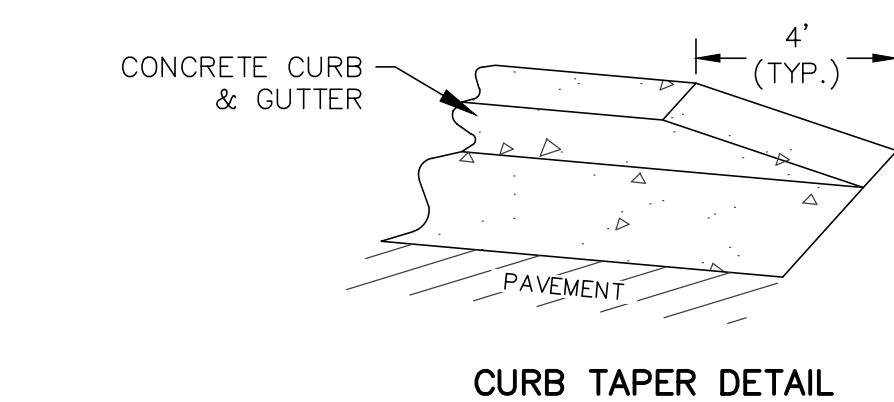
PROJECT NO:

\NA-01-17\

VILLAGE SUBMITTAL

SHEET NO:

C1.06

[illegible]

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PROJECT TITLE:
**GERMANTOWN TOWNHOUSES
W140 N10385 FOND DU LAC AVE
GERMANTOWN, WI 53022**

PLAN TITLE:

**STORMWATER
MANAGEMENT
DETAILS**

DRAWN BY:
KJP

DESIGNED BY:
KJP

CHECKED BY:
KJP

PLAN DATE:
7-20-2023

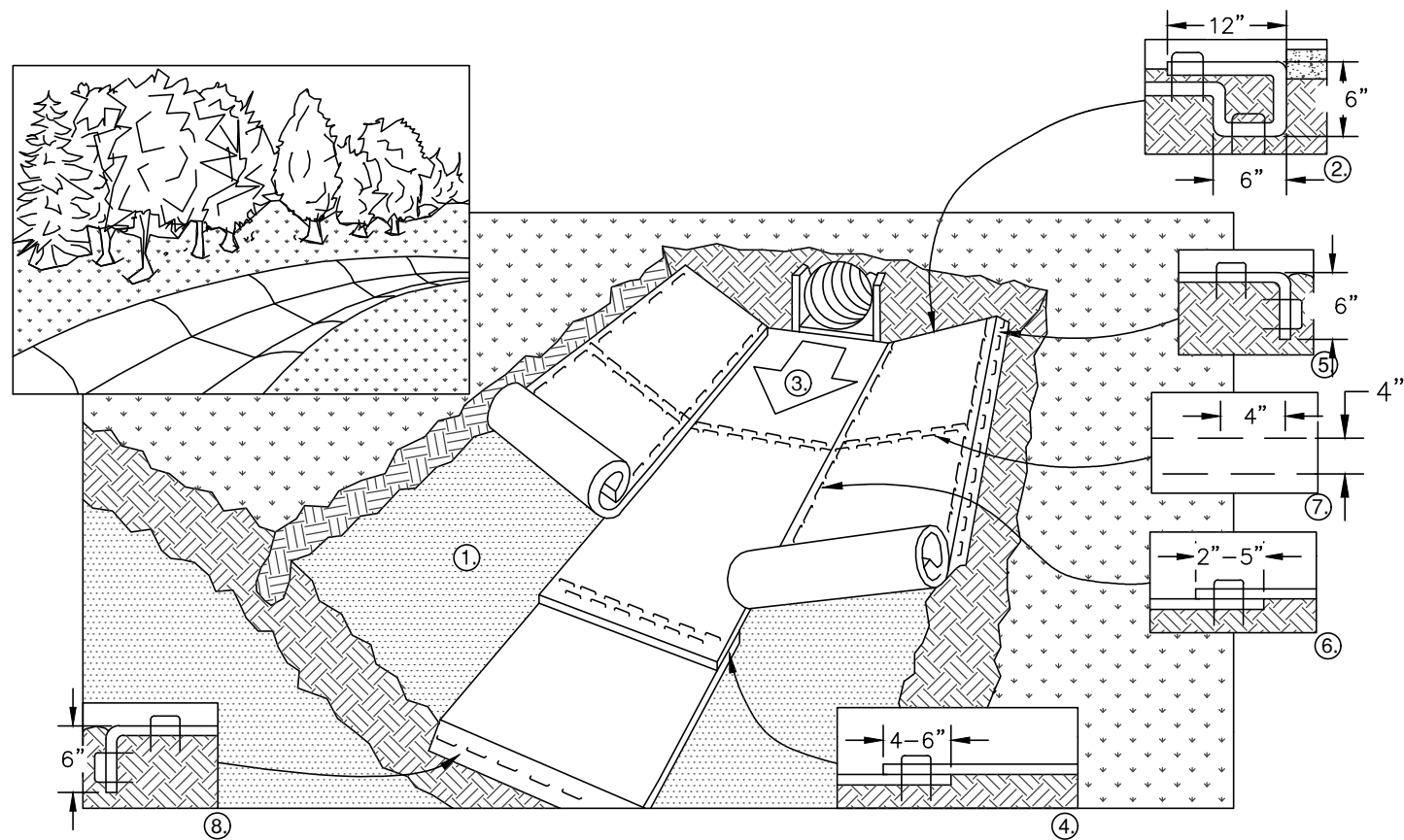
PROJECT NO:
\\NA-01-17\\

**VILLAGE
SUBMITTAL**

SHEET NO:

C1.07

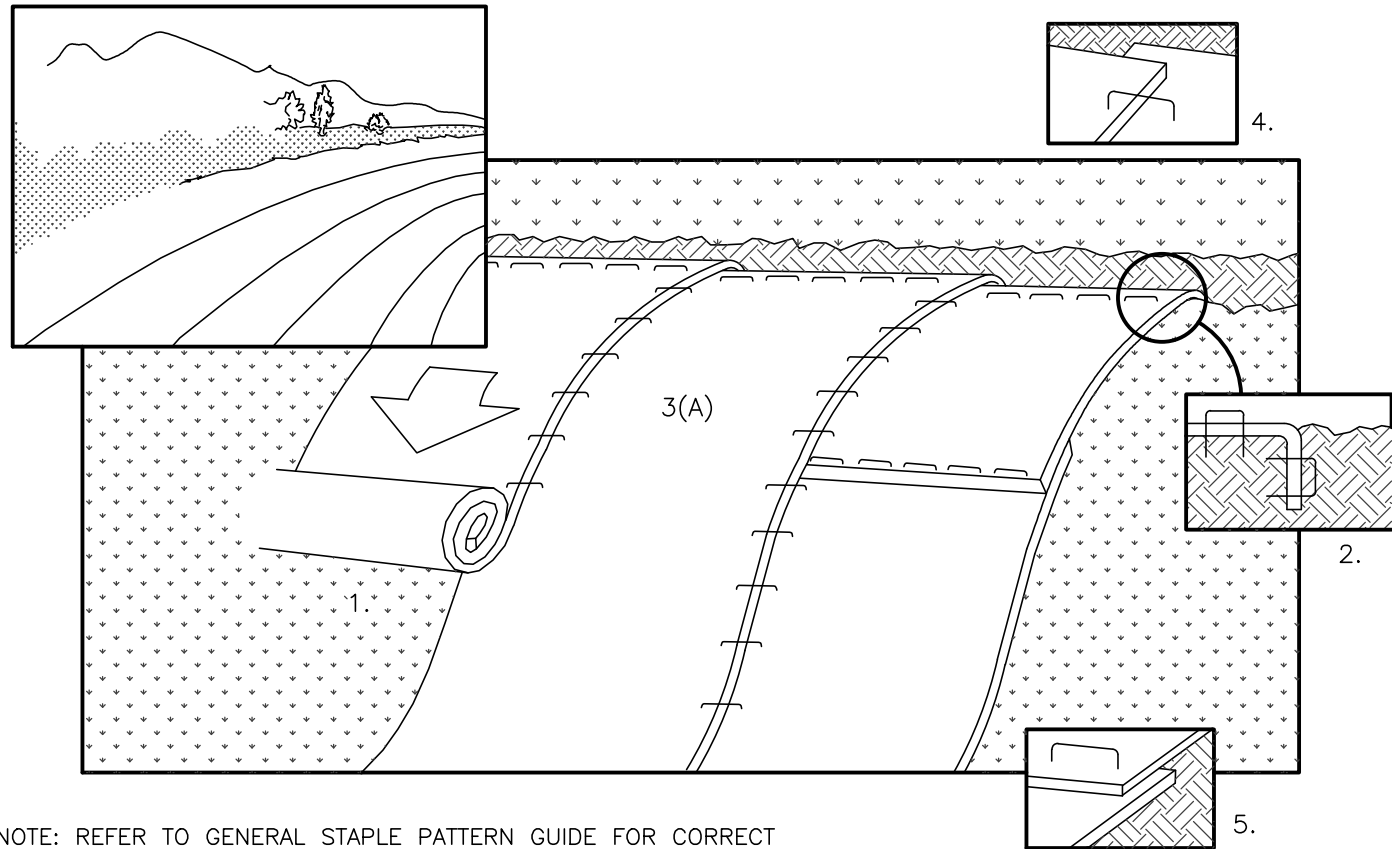
MAXIMUM PERIOD OF BARE SOIL FOR SLOPES > 20%		
SLOPE AREA DRAINS TO SEDIMENT BASIN OR SEDIMENT TRAP?	MAXIMUM PERIOD OF BARE SOIL EXPOSURE (CALENDAR DAYS)	
	LAND DISTURBANCE BETWEEN SEPTEMBER 16TH AND MAY 1ST	LAND DISTURBANCE BETWEEN MAY 2ND AND SEPTEMBER 15TH
YES	90	90
NO	60	30



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

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

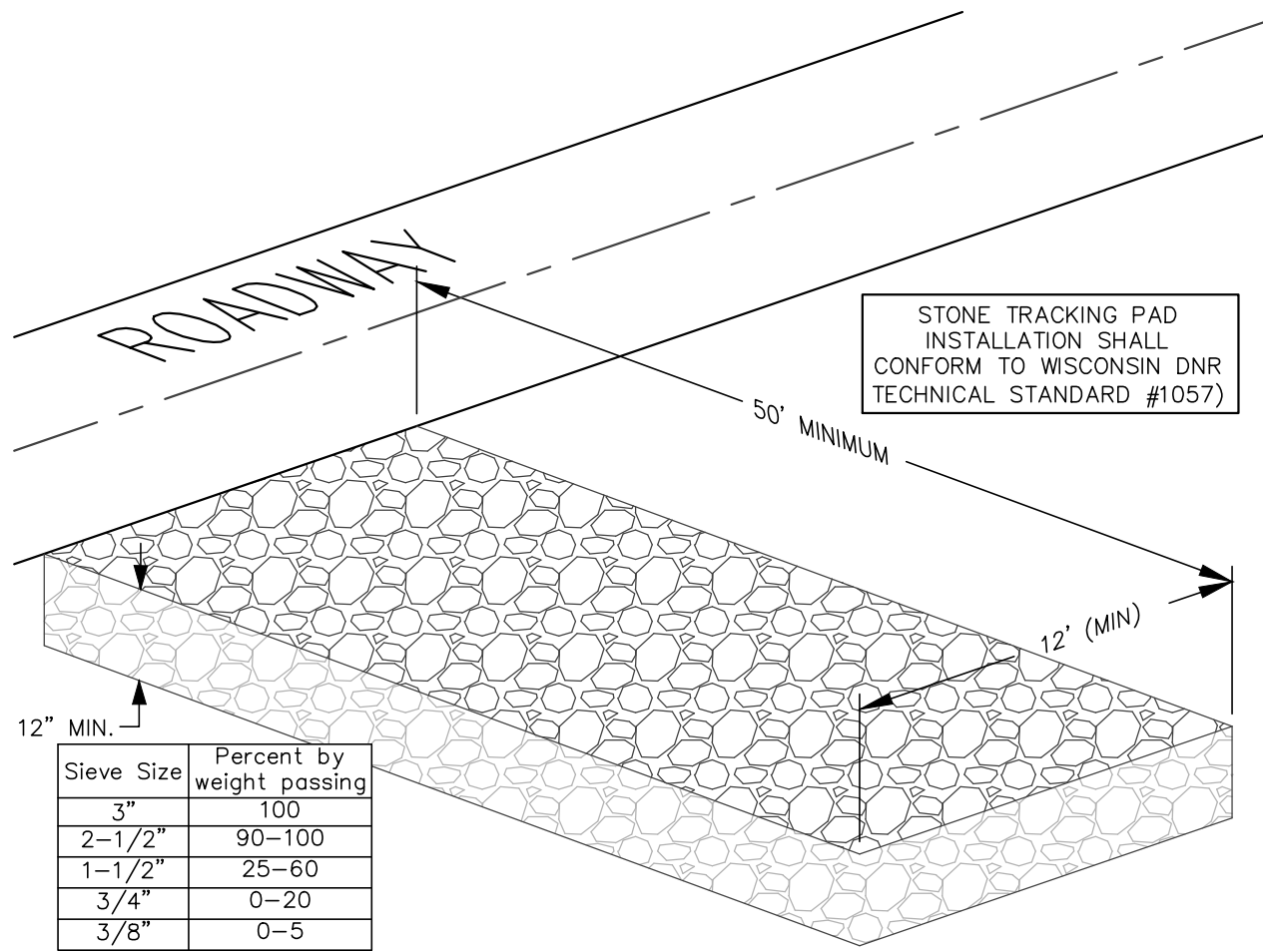
EROSION CONTROL MAT – CHANNEL INSTALLATION



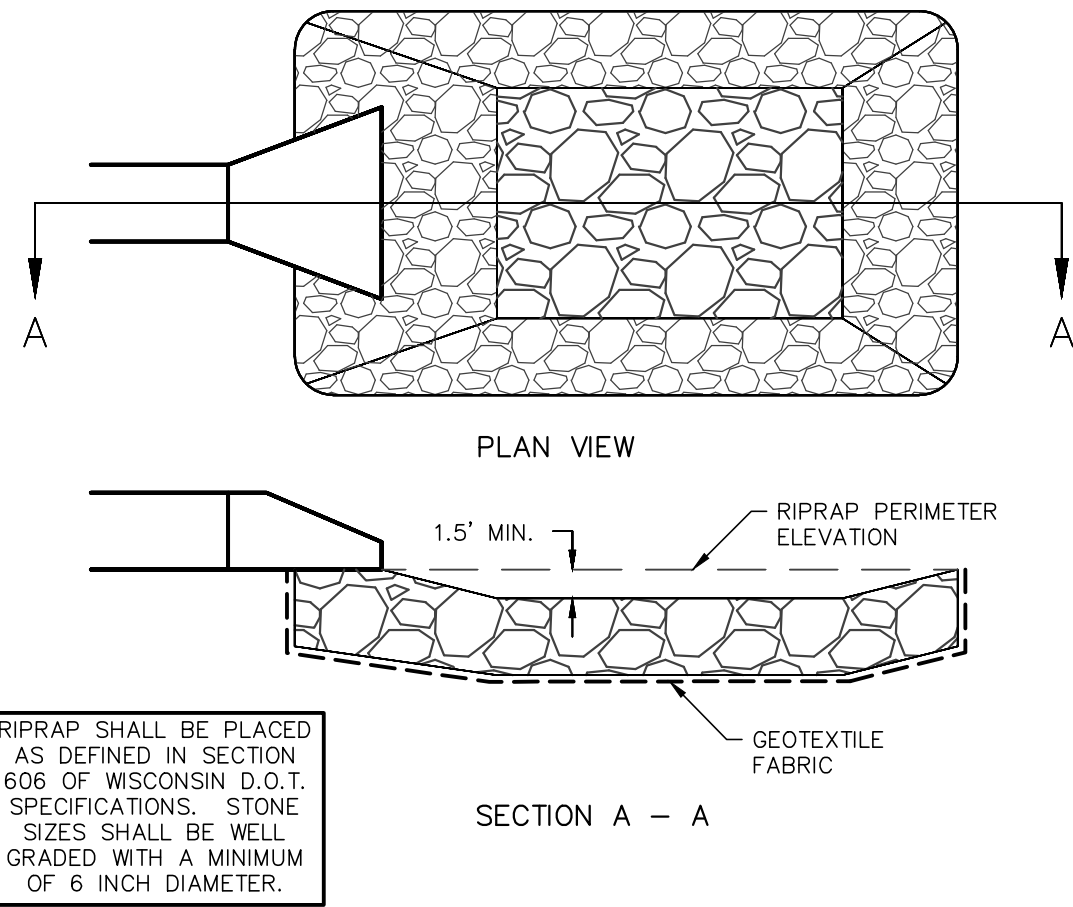
NOTE: REFER TO GENERAL STAPLE PATTERN GUIDE FOR CORRECT STAPLE PATTERN RECOMMENDATIONS FOR SLOPE INSTALLATIONS.

1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING APPLICATION OF FERTILIZER AND SEED.
NOTE: WHEN USING CELL-O-SEED DO NOT SEED PREPARED AREA. CELL-O-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN 6" DEEP X 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
3. ROLL THE BLANKETS (A.) DOWN OR (B.) HORIZONTALLY ACROSS THE SLOPE.
4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2" OVERLAP.
5. WHEN BLANKETS MUST BE SPICED DOWN THE SLOPE, PLACE BLANKETS END OVER END (SHINGLE STYLE) WITH APPROXIMATELY 4" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY
6. ALL BLANKETS MUST BE SECURELY FASTENED TO THE SLOPE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS RECOMMENDED BY THE MANUFACTURER.

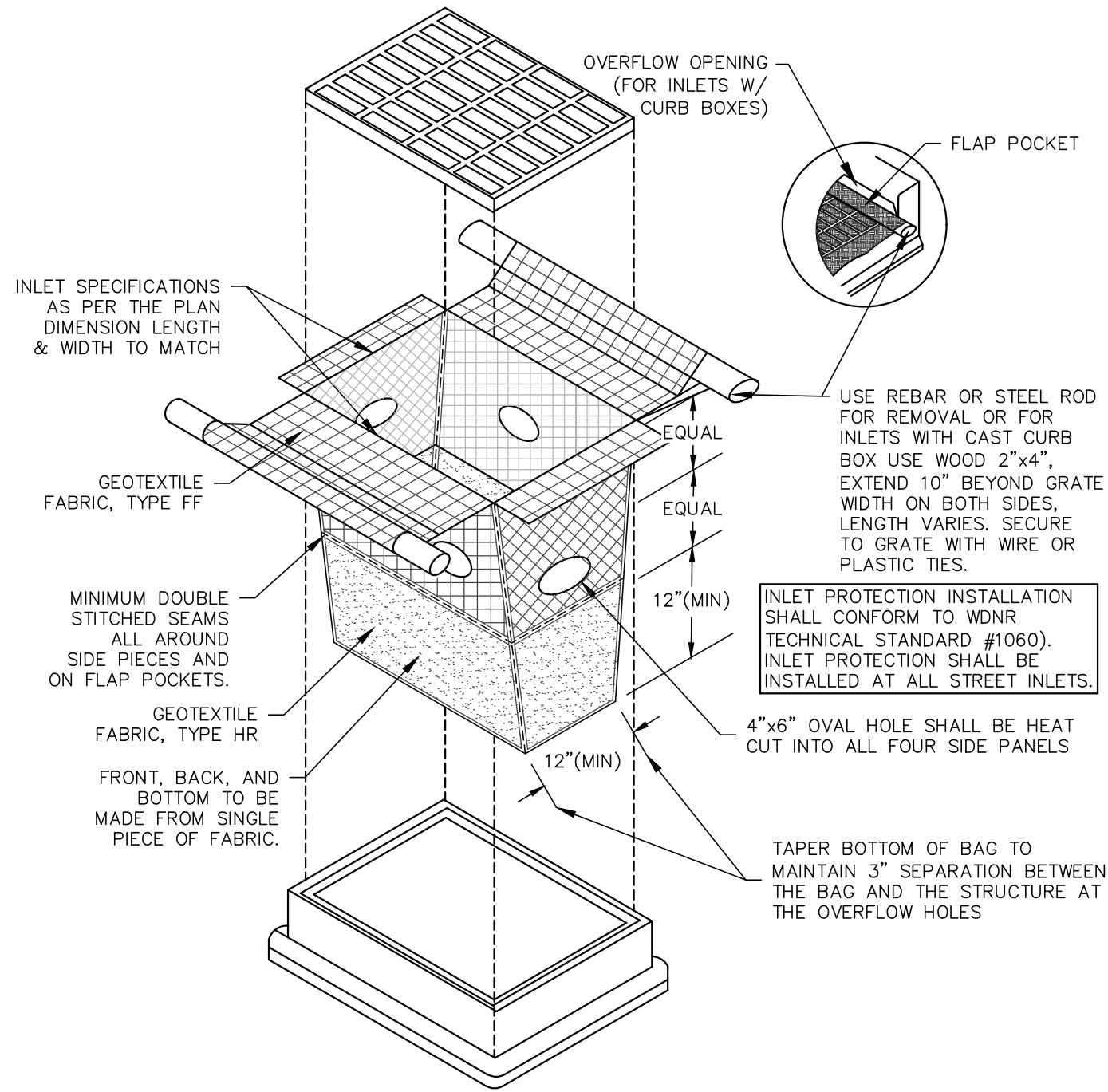
EROSION CONTROL MAT – SLOPE INSTALLATION



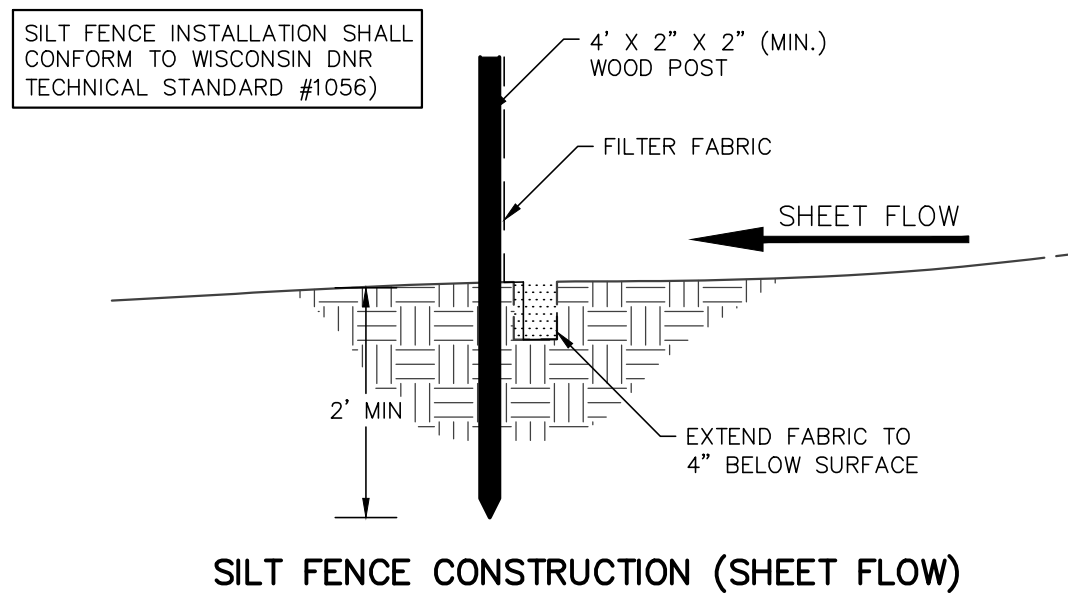
STONE TRACKING PAD DETAIL



RIPRAP/STILLING BASIN DETAIL



TYPE D-HR INLET PROTECTION DETAIL



SILT FENCE CONSTRUCTION (SHEET FLOW)

REVISIONS:	
NO.	DATE DESCRIPTION
1	XX-XX-XX XXXXXXXXXXXXXXXXXXXX

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PROJECT TITLE:
**GERMANTOWN TOWNHOUSES
W140 N10385 FOND DU LAC AVE
GERMANTOWN, WI 53022**

PLAN TITLE:
**EROSION
CONTROL
DETAILS**

DRAWN BY:
KJP
DESIGNED BY:
KJP
CHECKED BY:
KJP

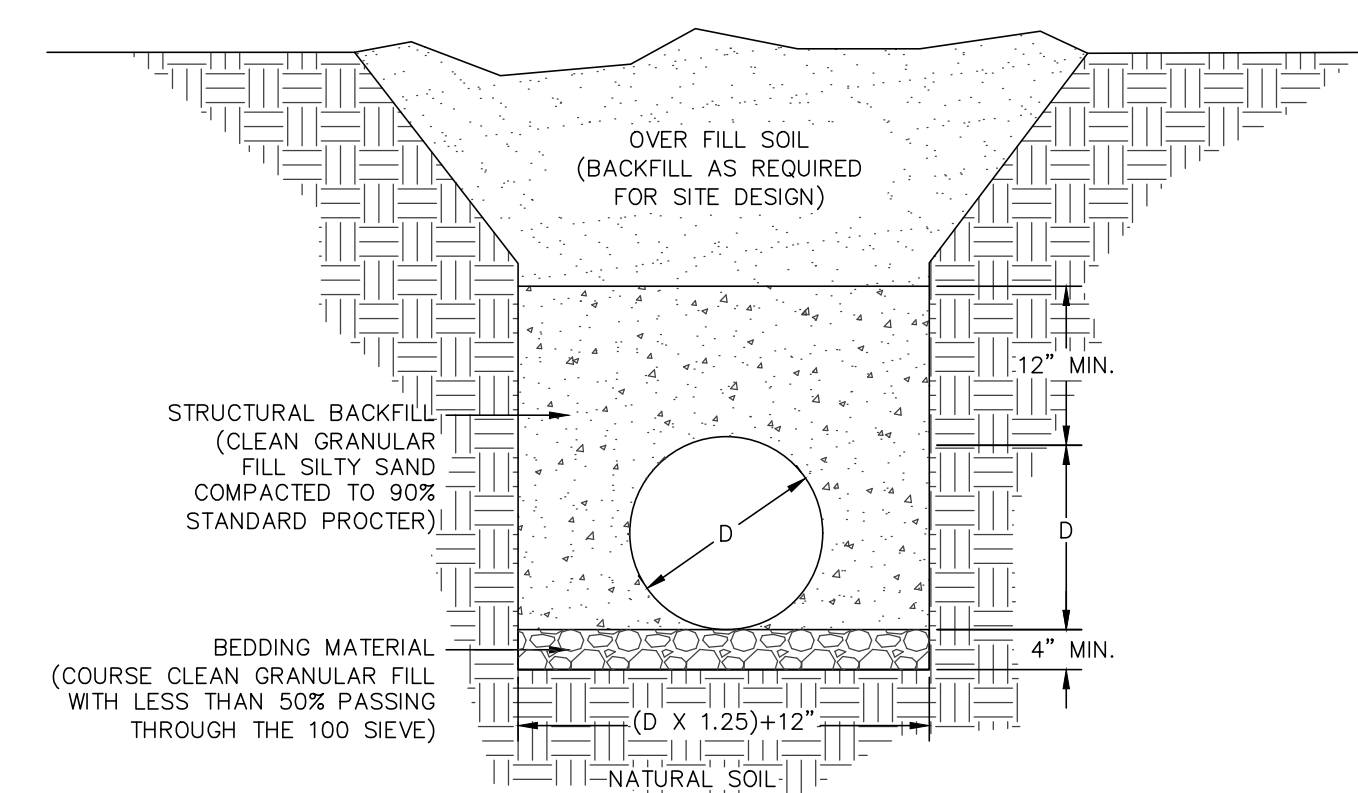
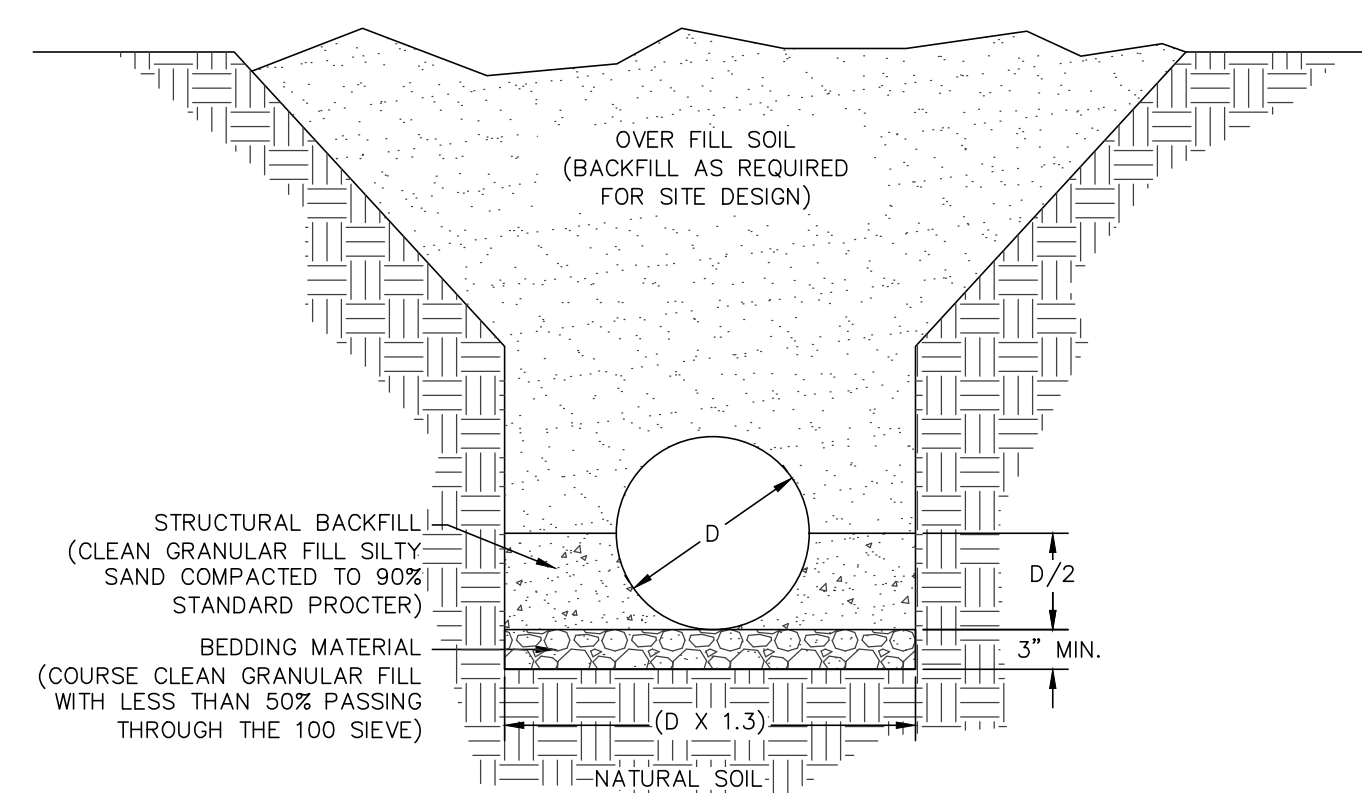
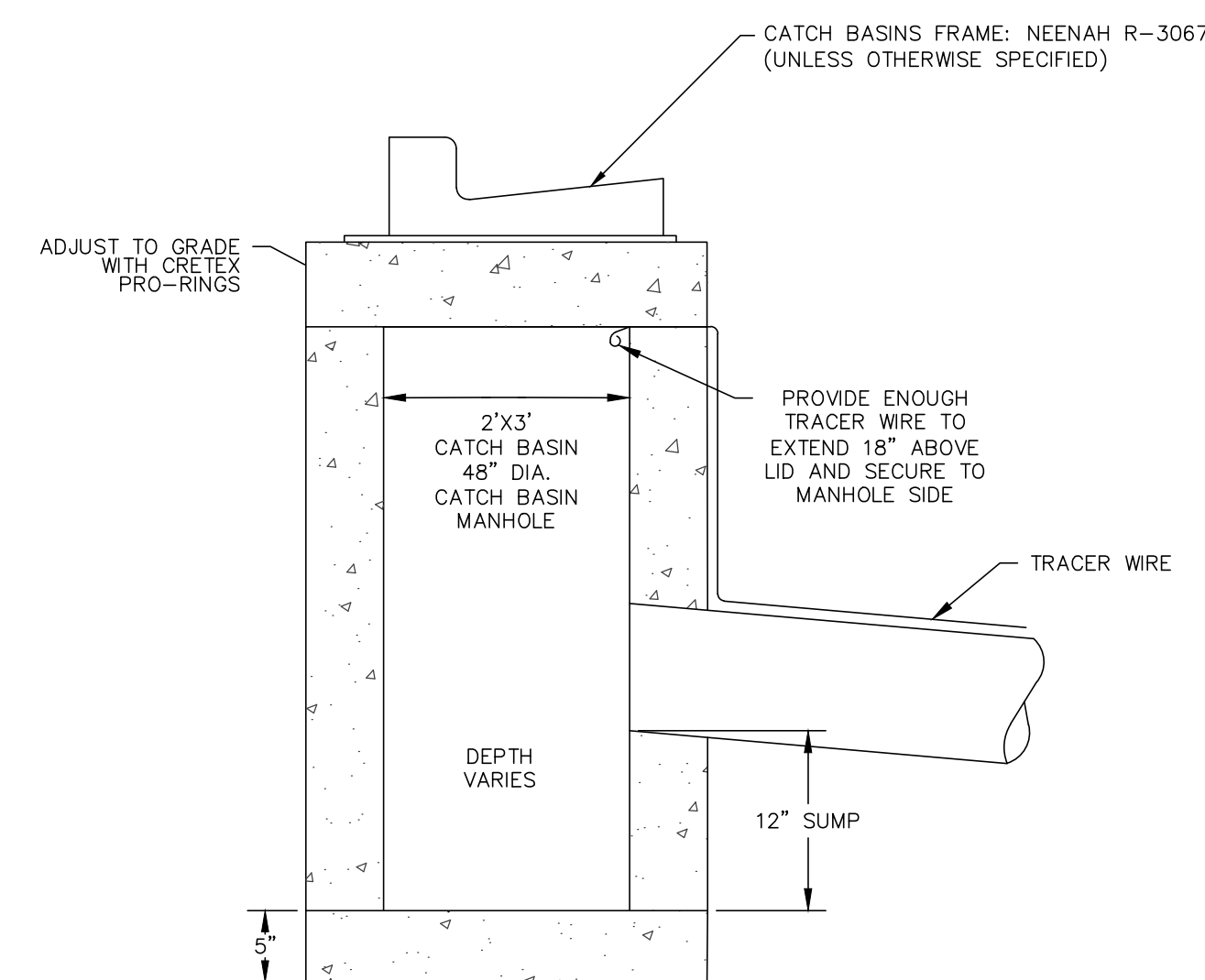
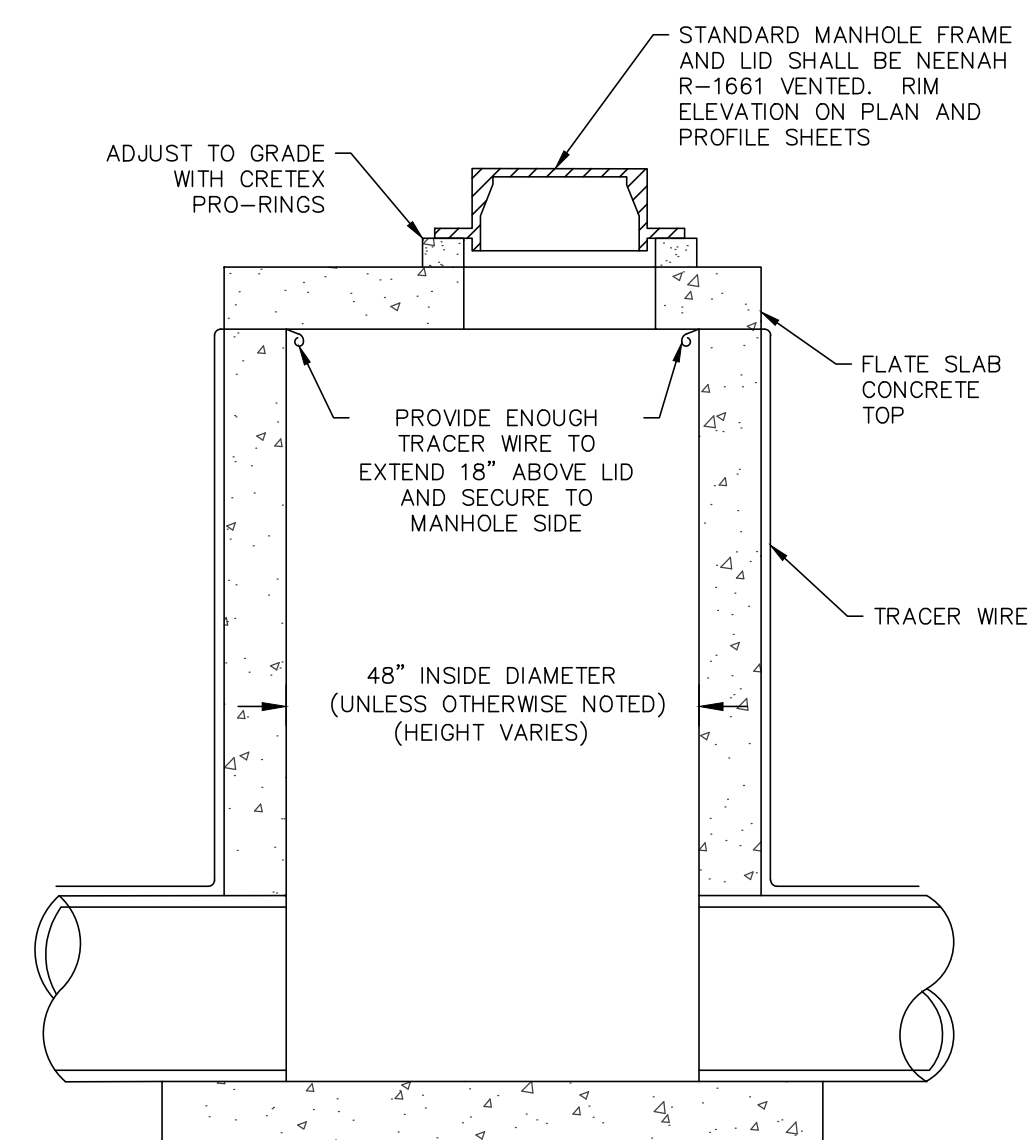
PLAN DATE:
7-20-2023

PROJECT NO:
\NA-01-17

**VILLAGE
SUBMITTAL**

SHEET NO:

C1.08

[illegible]

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PROJECT TITLE:
**GERMANTOWN TOWNHOUSES
W140 N10385 FOND DU LAC AVE
GERMANTOWN, WI 53022**

UTILITY DETAILS

DRAWN BY:
KJP

DESIGNED BY:
KJP

CHECKED BY:
KJP

PLAN DATE:
7-20-2023

PROJECT NO:
\\NA-01-17\\

SHEET NO:

C1.09

Appendix H

Stormwater Maintenance Agreement



PARISH SURVEY & ENGINEERING

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

STORM WATER MANAGEMENT PRACTICES MAINTENANCE AGREEMENT

THIS AGREEMENT, made and entered into this _____ day of _____, 2023, by and between District One, LLC, hereinafter called the "Owner," and the Village of Germantown, a municipal corporation located in Washington County, Wisconsin, hereinafter called the "Village."

WITNESSETH:

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

Being a part of the Northeast ¼ of the Northeast ¼ of Section 35, Town 9 North, Range 20 East, Village of Germantown, Washington County, Wisconsin.

hereinafter called the "Property."

WHEREAS, the Owner is developing the Property; and

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

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

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

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

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

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Village of Germantown
N112 W17001 Mequon Road
Germantown, WI 53022

Parcel No.: GTNV_193.975

for a period of 10 years. The purpose of the inspections is to assure safe and proper functioning of the facilities. The inspections shall cover all facilities including, but not limited to, berms, outlet structures, pond areas and access roads. Deficiencies shall be noted in the operation and maintenance reports.

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

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

VILLAGE OF GERMANTOWN

By: _____ Dated: _____
Steven Kreklow, Village Administrator

By: _____ Dated: _____
Erin Hirn, Village Clerk

ACKNOWLEDGMENT

STATE OF WISCONSIN)
)ss.
WASHINGTON COUNTY)

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

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

ACKNOWLEDGMENT

STATE OF WISCONSIN)
)ss.
WASHINGTON COUNTY)

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

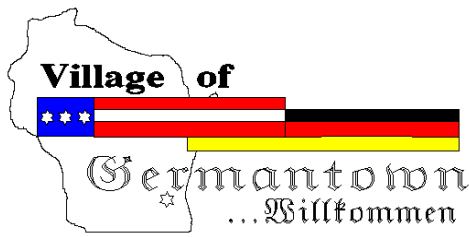
Notary Public, State of Wisconsin
Washington County.
My Commission is permanent. (If NOT, expiration date is: _____)

BUZDUM TRUST

By: _____ Dated: _____
Name, Title

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

July 20, 2023



Engineering Department Memorandum

To : Jeffrey W. Retzlaff, AICP, Planning Director/Zoning Administrator
From : Brad M. Seubert, Harwood Engineering Consultants
Date : July 31, 2023
Re : Virtus Development PDD

Items Reviewed:

1. Civil Plan Set Dated: 07-21-23
2. Stormwater Management Plan Dated: 07-21-23

General Comments:

1. Please respond to each item below. **A written response addressing each item shall be included in your submittal.**
2. The submitted plans have been reviewed for general conformance with State and Village design guidelines. Additional comments could arise as a result of the plan completion and modifications. The items listed below will need to be fully resolved before the Engineering Dept. can recommend a formal approval of the plans and permit for construction.
3. If project will disturb more than one acre an NOI from the DNR will be required. Please submit a copy of the approved permit prior to final approval.
4. As-builts prepared to Village standards shall be prepared and provided to the Village post-construction (for all applicable items).
5. A professional engineer's original seal is to be affixed, signed and dated on the final set of construction plans.
6. Utility permits and permits for work within the ROW are required. Contact the Village engineering department to obtain permits.
7. WISDOT permits are required for all work within the ROW.
8. *Clarify what is being proposed. Is work on the north parcel proposed? Plans are not clear.*
9. *Sheet AS101 does not match the site layout shown on the other plans.*
10. *Provide a site data table showing disturbed area, existing impervious area, proposed impervious area, and additional impervious added.*
11. **Provide an existing site survey stamped by a registered surveyor.**
12. *Provide detailed grading plan with spot elevations*
13. *Provide details on sewer and water laterals for proposed buildings.*
14. *Provide details on proposed storm sewer*
15. *Provide an erosion control plan.*
16. *Provide a stormwater management plan and storm sewer calculations.*
17. *Provide construction details*

Water Utility Comments

1. #4-sheet Virtus Development No. C1.05 "Utility plan" there is no 2" lateral to the Ranch house to be Razed, south of the Bar. The feed for this Ranch house is from the next north property which service comes from the center of the three buildings in a row. This lateral will be properly capped and abandoned inside the basement of the Bar. Abandonment inspection by Safe Bulit.
2. The new lot, the site of the 4 family calls out an existing 2 in HDPE water lateral to connect to. This does not exist, There is no water lateral to this site. A new water lateral will be required tapped from the main located on the east side of 145.
3. If there is to be a sprinkler meter installed it is required to be connected prior to all the meters for each livable unit.

Wastewater Utility Comments

1. Sheet C1.05 – Lateral to be abandoned at the main with a cured in place plug. Owner to verify integrity of existing lateral at vacant lot and provide village with documentation of condition before reuse.

Sheet C1.02

1. Dimension the angle of the angled parking spaces.
2. Does the site data table apply to all three lots or just the south two? Please clarify.
3. Provide documentation that WisDOT is approving of the work within the ROW.
4. The pavement hatching and curb appears to encroach on the proposed townhomes. Does the second floor overhang the driveway? Please clarify.

Sheet C1.03

1. Provide construction sequence.
2. Revise silt fence to contain all flow off the site.
3. Provide erosion control matting on all slopes 4:1 and greater.
4. Provide erosion control notes that specify the late season stabilization requirements and amount of time between areas of no activity and stabilization.
5. Provide permanent erosion control for the basin overflow weir.

Sheet C1.04

1. Provide elevations for the top and bottom of the proposed steps.
2. Recommend adding addition steps to get the slope of the sidewalks under 5%

Sheet C1.06

1. 2 year and 100 year elevations on the basin detail are incorrect.
2. Is the cap on the 6" PVC pipe on the pond size or structure side. How will it be protected from clogging?

Stormwater Management Plan

1. Revise the start and end times to 11.75 hours and 21.25 hours.
2. The soils section of the report references test pit. Provide information on the results of the test pits.
3. WinSLAMM Comments
 - a. Revise soils to clayey for type C and D soils per WDNR guidance.
 - b. Initial stage elevation of basin should be 5 ft.
 - c. Adjust calcs to account for water volume from offsite flow but not treatment credit per WN