Public Notice of the Village of Cambridge, pursuant to Section 19.84, Wisconsin Statutes, is hereby given to the public and to the news media, that the following meeting will be held:

PLAN COMMISSION

DATE: MONDAY, JUNE 8, 2026 **TIME:** 6:30 PM

LOCATION: AMUNDSON COMMUNITY CENTER
200 SPRING ST.
CAMBRIDGE, WI 53523

1. **CALL TO ORDER / ROLL CALL**
2. **PROOF OF POSTING**
3. **PUBLIC COMMENTS (LIMIT OF THREE MINUTES PER PERSON)**
4. **APPROVAL OF MINUTES: None**
5. **PUBLIC HEARINGS**
   - **a.** Comp Plan Amendment for Lot 2 CSM 13839 (Melster site - Parcel 111/0612-121-2220-1) to change the future land use designation to Neighborhood Residential with High-Intensity Overlay.
   - **b.** Conditional Use Permit for 708 Katie Court (Parcel 0612-013-2014-1) allowing commercial condos.
   - **c.** Rezone 230 Bilstad Road (Palmer Meadows Plat) to R-L zoning district. Amendments to the Subdivision Ordinance sections 16.24.040 and 16.32. site plan.
6. **NEW BUSINESS – ACTION REQUIRED**
   - **a.** Consider recommending to the Village Board approving a Comp Plan Amendment for Lot 2 CSM 13839 (Melster site - Parcel 111/0612-121-2220-1) to change the future land use designation to Neighborhood Residential with High-Intensity Overlay.
   - **b.** Consider recommending to the Village Board approving a Conditional Use Permit for 708 Katie Court (Parcel 0612-013-2014-1) allowing commercial condos.
   - **c.** Consider approval of a Site, Architectural and Operations Plan Review for 708 Katie Court (Parcel 0612-013-2014-1).
   - **d.** Consider recommending to the Village Board approving a Palmer Meadows Preliminary Plat for 230 Bilstad Road (Parcel 0612-124-0010-2).
   - **e.** Consider recommending to the Village Board approving a Rezone at 230 Bilstad Road (Palmer Meadows Plat) to R-L zoning district.
   - **f.** Discuss consideration of “minimum lot size” requirement for a potential planned unit development at 225 Jefferson Street. Discussion and potential recommendation to the Village Board to adopt an ordinance amending the Village’s Subdivision Ordinance sections 16.24.040 and 16.32.
7. **QUESTIONS, STAFF REFERRALS, AND FUTURE AGENDA ITEMS**
8. **ADJOURNMENT**

Posted: June 5, 2026

NOTE:
Individuals who need special accommodations are encouraged to call (608) 423-3712 at least 24 hours before the meeting. A quorum of the Village Board may be present to gather information related to their duties as Village Trustees; however, no official business will be conducted, and no action will be taken by the Board at this meeting. For more detailed information about agenda items, please contact (608) 423-3712.

MSA Memo

To:	Village of Cambridge Plan Commission
From:	Steve Tremlett, AICP, Zoning Administrator
Subject:	708 Katie Court – Conditional Use Permit Application
Date:	June 4th, 2026

Overview of Request

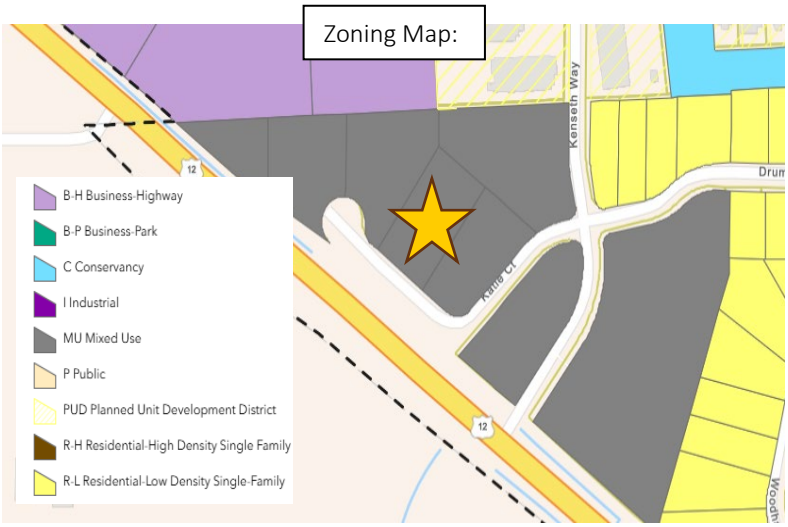
The applicant has submitted a Conditional Use Permit (CUP) to develop commercial condos in the Mixed Business Zoning District. The CUP will determine if this use is appropriate for this site based on its context or if there are conditions setting requirements more stringent than village ordinances that allow this use to be appropriate. Appropriate conditions shall resolve issues/concerns/impacts identified through CUP criteria (outlined in the code) and that is supported by substantial evidence.

Note: Granting Commercial Condos a CUP is a prerequisite to reviewing any specific site plan. A proposed site plan has also been submitted and will require a separate motio3n.

Background of the Request

Late last year, applicant Kjell Kaashagen has expressed interest in developing a commercial condo building on 708 Katie Court (Parcel # 061201320141). Since that wasn't allowed as a use in the Mixed Business zoning district, the applicant applied for an amendment to the zoning ordinance adding it as a conditional use that he can apply for in the future. This amendment was approved in February 2026.

Zoning Map:



The Mixed-Use Business district now contains:

Permitted By Right (17.28.060):

- *General office.*

Conditional Use Permit (17.28.070):

- *Retail sales and service uses under 30,000 square feet GLA*
- *Restaurants, with or without drive-through*
- *Offices and clinics, including veterinary clinics (subject to setback standards)*
- *Lodging (hotels and motels)*
- ***Commercial Condos***

Commercial condos are privately owned units within a business-focused building, offering an alternative to leasing by allowing businesses to build equity in their office, retail, or warehouse with HOA rules and fees, and shared responsibilities for common maintenance, providing affordability and control. This use is becoming more prevalent in communities as a low-cost option to run a small business. Commercial condos can provide space for a range of commercial uses, such as home services (e.g., cleaning), consumer tradesman (e.g., flooring, electrician), professional services, office space, and storage.

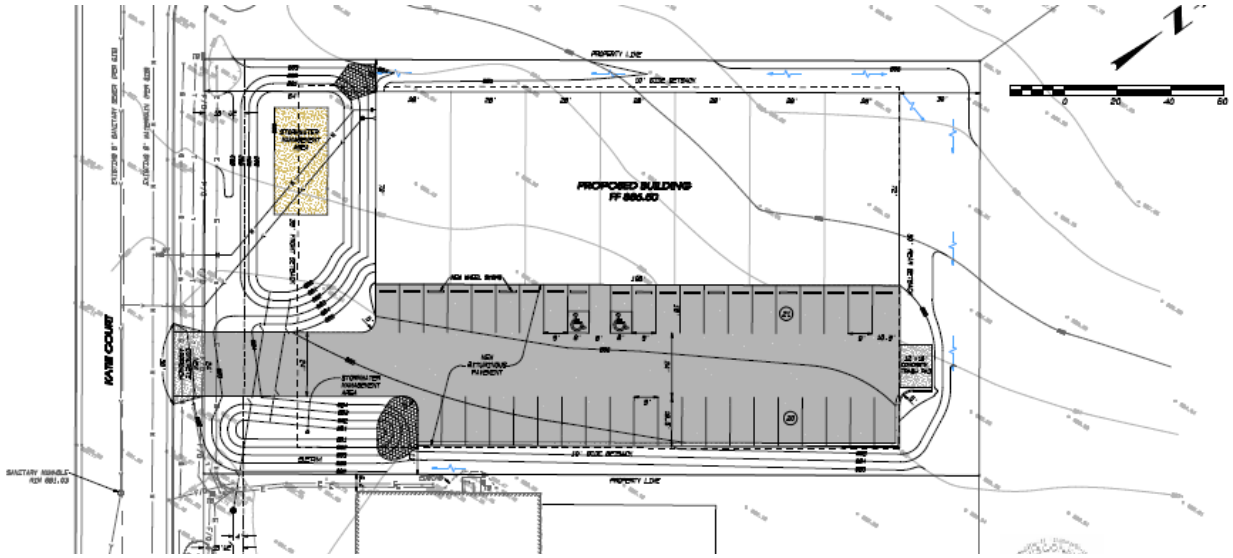
Consistency with the Comprehensive Plan

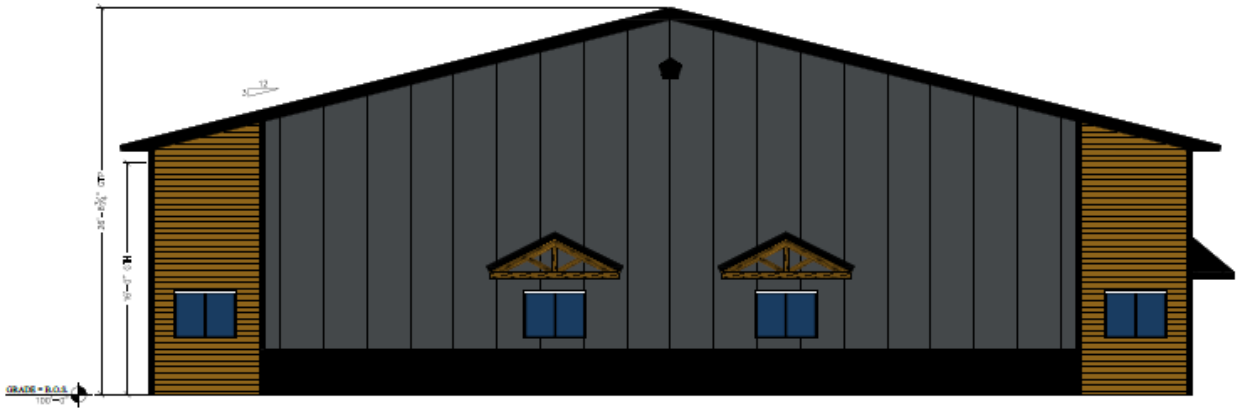
Cambridge's 2040 Comprehensive Plan designates this parcel to have a 'General Commercial' Future Land Use. The proposed development is consistent with this FLU Category.

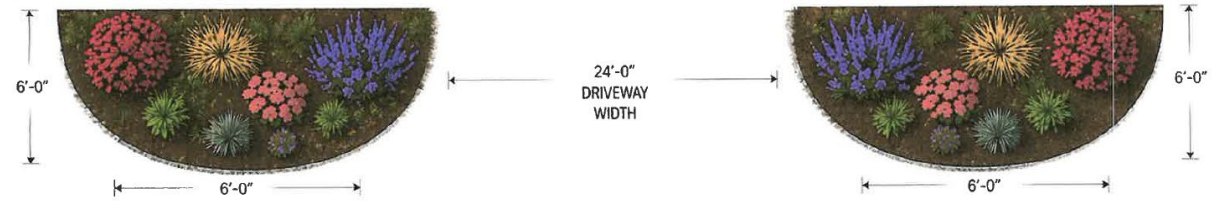
Surrounding Context

Plans for the Property

The applicant is proposing 14,112 square foot 1-story commercial condo building with 7 units and a surface parking lot with 41 stalls. The intended uses are office/commercial storage units for small businesses and hobbyists. Stormwater management along the front of the building with 6-ft by 6-ft planting beds flanking entry driveway. ***The inclusion of the applicant's general plans below are to evaluate impacts towards allowing their use. Approval of specific plan improvements will be determined in the Site Plan review, which is a separate agenda item.***


PROPOSED BUILDING
FF 885.60
KAYA COURT
STORMWATER MANAGEMENT AREA
PROPERTY LINE
10' SIDE SETBACK


GRADE - R.O.S.



HEDULE (Per Bed)

QTY	BOTANICAL NAME	COMMON NAME	SIZE	MATURE SIZE	SPACING ON CENTER	LOCATION IN BED
1	Euonymus alatus 'Compactus'	Compact Burning Bush	#2 Cont.	4–6' H x 4–6' W	–	Back corner (focal)
1	Calamagrostis x acutiflora 'Karl Foerster'	Karl Foerster Feather Reed Grass	#1 Cont.	36–48" H x 18–24" W	24"	Back center
2	Hylotelephium 'Autumn Joy'	Autumn Joy Sedum	#1 Cont.	18–20" H x 18–24" W	18"	Middle
2	Nepeta x faassenii 'Walker's Low'	Walker's Low Catmint	#1 Cont.	18–24" H x 24–30" W	24"	Middle
2	Festuca glauca 'Elijah Blue'	Blue Fescue	#1 Cont.	8–12" H x 12–15" W	15"	Front
2	Sesleria autumnalis	Autumn Moor Grass	#1 Cont.	12–16" H x 12–18" W	18"	Front

NTS PER BED: 10 | TOTAL PLANTS FOR BOTH BEDS: 20

PLANTING NOTES

- Beds are quarter circle shape with a 6'-0" r
- All perennials and grasses are hardy to USI and selected for low maintenance and drou
- Use 2–3" shredded hardwood mulch.
- Water thoroughly after planting and during
- Cut back all perennials and grasses to 4–6 in early spring (March/April).
- Burning bush provides excellent fall color and winter interest.

BED DIMENSIONS

- **Shape:** Quarter Circle
- **Radius:** 6'-0"
- **Depth** (from curb): 6'-0"
- Area per bed: ~28 sq ft

Conditional Use Permit Review

Conditional Use Permits are for land uses that the Code deems are acceptable in a given zoning district, but only if Plan Commission is given the ability to review and impose conditions on the use's function and operation. The Village's Ordinance outlines a series of topics to review for any conditional use permit application. If the applicant is deemed to have met the standards, they should be granted the conditional use permit. If they are failing to meet any standards, Plan Commission should consider imposing conditions to resolve the issue or denying the permit.

Note that the checkmark symbols mark MSA's opinion and recommendation. Additional context is provided by green (met) or red (potential concern) text.

17.68.070 - Standards—Conditional uses. Standards. No application for a conditional use shall be recommended for approval by the plan commission, or granted by the village board, unless the commission shall find all of the following conditions are present:

✓ *That the establishment, maintenance or operation of the conditional use will not be detrimental to or endanger the public health, safety, morals, comfort or general welfare.*

The use is intended towards small businesses and is low intensity in nature.

➢ *That the uses, values and enjoyment of other property in the neighborhood for purposes already permitted shall be in no foreseeable manner substantially impaired or diminished by the establishment, maintenance or operation of the conditional use and the proposed use is compatible with the use of adjacent land.*

Since the property abutting the rear yard is planned for residential use, care must be taken to ensure compatibility. Adjacent office uses include plantings in yards and along the foundation of the buildings. Commercial condos are not expected to generate significant noise, odor, or activity that would disturb adjacent uses. However, to further protect neighboring properties and match quality of surrounding developments, it may be warranted to include a condition requiring vegetative screening along the rear and side yard, and inclusion of building foundational plantings (along the front of the building at minimum).

To ensure compatibility between adjacent land uses and preserve the character and enjoyment of the area, future development on this site should reflect the commercial and professional aesthetic of the surrounding corridor. Given the industrial functional elements inherent to the commercial condo use, such as large garage doors and open floor plans, care should be taken to ensure the building's design and material quality do not

skew too heavily toward an industrial appearance. Conditions should be established to hold any future site plan submitted for this parcel to a standard of design and material quality befitting commercial development, consistent with the character of the surrounding area.

Finally, because commercial condo developments involve privately owned units that share common walls, maintenance and repair of those shared structural elements cannot be left solely to the discretion of any individual unit owner. There is concern over disputes between unit owners resulting in deferred maintenance, deterioration, or litigation. Recording the agreement with the County would ensure that all current and future property owners are bound by its terms and that the Village has documentation confirming shared maintenance obligations are formally established.

✓ *That the establishment of the conditional use will not impede the normal and orderly development and improvement of the surrounding property for uses permitted in the district.*

The future land use for this area has been designated as general commercial, meaning that the long-term vision for the area is to further develop as a business corridor. This scale of commercial development will serve as an appropriate buffer between the highway to the southwest and the residential to the northeast.

✓ *That adequate utilities, access roads, drainage and other necessary site improvements have been or are being provided.*

The site is served by municipal utilities and is located on a 36' wide commercial road. There is no concern of runoff coming from adjacent sites, as there is very gentle sloping on surrounding sites and minimal impervious surface. The flatness of the lot may pose risk of stormwater pooling, but there is plenty of space to implement measures that would improve drainage such as rain gardens or detention basins.

- Parking Spaces. There is no comparable parking standard in Section 17.76.030 that fits this type of use. Village requirement of 1 stall for each 200 square feet of floor area for retail and service stores, as well as repair shops does not match the use. A comparable development in Madison (shown in the images below and to the right) include roughly 5 spaces per 2,400 square foot building. This matches roughly 1 space per 500 square feet. This example might be a bit too low considering uses considered for the 708 Katie Court site. I would recommend 1 space per 400 spaces.

- *That adequate measures have been or will be taken to provide ingress and egress so designed as to minimize traffic congestion in the public streets.*

Commercial condos are typically intended for businesses that do not require a strong public-facing presence and are not anticipated to generate heavy customer traffic. Tenants are generally operating on an appointment or project basis rather than attracting walk-in retail traffic. To ensure this low-traffic character is maintained and to limit potential noise and nuisance impacts on nearby commercial and residential uses, a

condition is recommended restricting the permitted business types and operational activities within the commercial condo units to uses consistent with the low-intensity nature of the district (excluding businesses like high-traffic retail, food service, or industrial operations).

✓ *That the conditional use shall, except for yard requirements, conform to all applicable regulations of the district in which it is located.*

The proposed use and lot conforms to the standards of the Mixed Business District.

✓ *That the proposed use does not violate flood plain regulations governing the site.*

Parcel is not in the floodplain.

✓ *That adequate measures have been or will be taken to prevent and control water pollution, including sedimentation, erosion and runoff.*

Any proposed development will be subject to Dane County Stormwater review and will be held to county standards for water pollution prevention and control

✓ *Application of Standards. When applying the above standards to any new construction of a building or an addition to an existing building, the village board and plan commission shall bear in mind the statement of purpose for the zoning district such that the proposed building or addition at its location does not defeat the purposes and objective of the zoning district.*

Use is within the scope and intent of the Mixed Business District.

Additional considerations. In addition, in passing upon a conditional use permit, the plan commission shall also evaluate the effect of the proposed use upon:

- ✓ *The maintenance of safe and healthful conditions.*
- ✓ *The prevention and control of water pollution including sedimentation.*
- ✓ *Existing topographic and drainage features and vegetative cover on the site.*
- ✓ *The location of the site with respect to floodplains and floodways of rivers and streams.*
- ✓ *The erosion potential of the site based upon degree and direction of slope, soil type and vegetative cover*
- ✓ *The location of the site with respect to existing or future access roads.*
- ✓ *The need of the proposed use for a shoreland location.*
- ✓ *Its compatibility with uses on adjacent land.*
- ✓ *The amount of liquid wastes to be generated and the adequacy of the proposed disposal systems.*

Potential Action

Staff recommends the Plan Commission recommend approval of the Conditional Use Permit for Commercial Condos at 708 Katie Court, subject to the following conditions:

1. Occupancy of commercial condo units shall be limited to low-intensity business uses, including but not limited to professional services, office space, home services, and consumer trade businesses (e.g., flooring, electrical, cleaning). Uses that generate high customer traffic volumes, food service operations, or industrial activity are expressly prohibited without further Plan Commission review.
2. The required parking spaces shall be 1 space per 400 square feet of building, plus the required ADA stalls per code.

3. The development shall include vegetative screening, fencing, or a combination thereof along the rear yard boundary adjacent to properties designated for residential use, subject to staff review and approval, to provide adequate visual buffering. Additionally, a minimum planting area shall be established along both side yards, consisting of at least one deciduous or evergreen shrub per 10 linear feet of side yard frontage. All plantings shall be maintained in healthy condition by the property owner or HOA in perpetuity. Dead or diseased plantings shall be replaced within one growing season.
4. All buildings on the site shall meet the following minimum design standards to ensure compatibility with the character of surrounding development:
    a) A minimum of 25% of the front façade shall consist of non-metal materials (excludes roofing area).
    b) At least 90% of the street-facing frontage shall feature a high-quality base material extending a minimum of three (3) feet from grade.
    c) Roof pitch shall be no less/flatter than 3:12.
    d) Garage doors are prohibited on the front/street-facing façade. Garage doors on any other elevation shall be screened from view of public rights-of-way by opaque plantings or fencing, subject to staff approval.
5. The applicant shall record a common wall maintenance agreement with Dane County. A copy of the recorded agreement shall be provided to the Village of Cambridge upon recording.

Sincerely,

Stephen Tremlett, AICP, CNU-A
Zoning Administrator

SITE DATA:	
LOT AREA:	44,976 SF
TOTAL PROPOSED IMPERVIOUS AREA:	27,462 SF
TOTAL PROPOSED NON-IMPERVIOUS AREA:	17,514 SF (38.9%)

PARKING REQUIREMENT:
RESTAURANTS, BARS, PLACES OF ENTERTAINMENT, REPAIR SHOPS, RETAIL AND SERVICE STORES
(1 STALL PER EACH 200 SqFt OF FLOOR AREA)

TOTAL BUILDING SqFt: 16,128 SqFt
TOTAL FLOOR AREA: 8,060 SqFt
STALLS REQUIRED: 8,060 SqFt / 200 SqFt x 1 = 41 STALLS REQUIRED
TOTAL PARKING STALLS ON-SITE: 41 STALLS

CAMBRIDGE FAMILY DENTAL
710 KATIE COURT

15" STORM SEWER
STORM INLET TC 882.86 INV 879.79
12" STORM PIPE (FILLED WITH STONE PER TELEVISE COMPLETED ON APRIL 3rd, 2026.) ESTIMATED INV 880.1±
TRANS
TB
PROPERTY LINE
10' SIDE SETBACK
15' UE
STORMWATER MANAGEMENT AREA
PROPOSED BUILDING
FF 886.50
35' FRONT SETBACK
30' REAR SETBACK
NEW WHEEL STOPS
NEW BITUMINOUS PAVEMENT
STORMWATER MANAGEMENT AREA
12'x16' CONCRETE TRASH PAD
BERM
EDGING
EXISTING 8" SANITARY SEWER (PER GIS)
EXISTING 8" WATERMAIN (PER GIS)
KATIE COURT
CONCRETE APPROACH
SANITARY MANHOLE RIM 881.03
NEW STORM SEWER (OWNER TO SECURE RIGHTS ACROSS PRIVATE PROPERTY)
FORT HEALTH CARE CAMBRIDGE CLINIC
704 KATIE COURT
SIGN
EX. TREE
EXISTING OPEN GRATE MH RIM 878.65 INV 875.45
STORM INLET TCAST 878.62 INV 875.41
EXISTING FIRE HYDRANT
CATCH BASIN TCAST 879.86

0 20 40 60

LEGEND:

- EASEMENT LINE
- BUILDING SETBACK LINE
- SANITARY SEWER
- SANITARY SERVICE
- STORM SEWER
- WATER MAIN
- WATER SERVICE
- PROPERTY LINE
- FENCE LINE
- CONSTRUCTION LIMITS
- PROPOSED SILT FENCE
- 825 CONTOUR LINE
- CENTER LINE
- BUILDING LINE
- T TELEPHONE LINE
- G GAS LINE
- E ELECTRIC LINE
- PROPOSED SURFACE DRAINAGE DIRECTION
- DE DRAINAGE EASEMENT
- UE UTILITY EASEMENT
- F/O TELECOMMUNICATIONS LINE
- E ELECTRIC BOX
- EM ELECTRIC METER
- GM GAS METER
- T TELEPHONE BOX
- GC GUY CABLE ANCHOR
- LIGHT POLE
- UTILITY POLE
- EXISTING SPOT ELEVATION

INDEX OF SHEETS

LOCATION SKETCH

WISCONSIN
ADAM F. GRIFFIN #36880
PROFESSIONAL ENGINEER

FOR TOWN REVIEW
NOT FOR CONSTRUCTION

Member One Call System International

To Obtain Location of Participating Underground Facilities Before You Dig In Wisconsin
CALL DIGGERS HOTLINE 1-800-242-8511
Wis Statute 182.0175 (1974) Requires Min. 3 Work Days Notice Before You Excavate

SITE PLAN FOR KJELL KAASHAGEN A NEW COMMERCIAL BUILDING

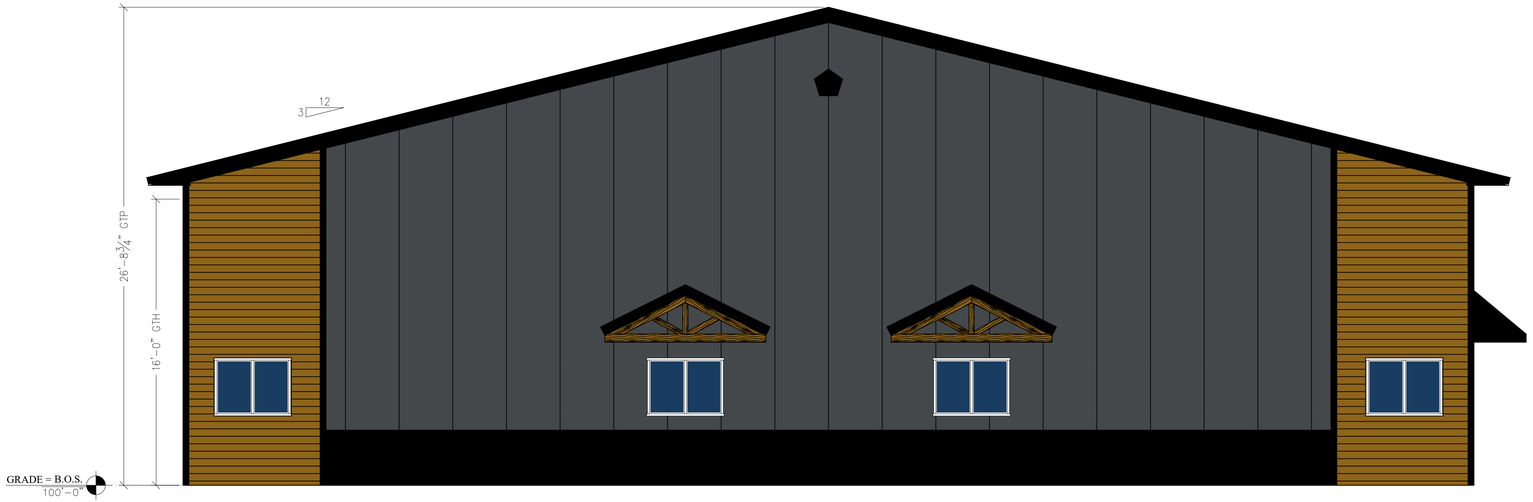
LOT 4 OF MATT'S PLAT TO THE VILLAGE OF CAMBRIDGE, BEING PART OF SECTION 1, T.6N., R.12E. OF THE 4TH P.M. VILLAGE OF CAMBRIDGE, DANE COUNTY, WISCONSIN.

Combs & ASSOCIATES
- LAND SURVEYING
- LAND PLANNING
- CIVIL ENGINEERING

109 W. Milwaukee St.
Janesville, WI 53548
www.combssurvey.com
tel: 608 752-0575
fax: 608 752-0534

DATE	REVISIONS
05/05/26	
BY	
BFG	
APPROVED	
AFG	
PROJECT NO.	
125-555	

DIMENSION PLAN



1 / A1 LEFT END ELEVATION
SCALE: 1/4" = 1'-0"

2 / A1 FRONT SIDE ELEVATION
SCALE: 1/8" = 1'-0"

Walters Buildings
Jack Walters & Sons, Corp.
P.O. Box 388
6600 Midland Ct.
Allenton, WI 53002
1-800-558-7800
www.waltersbuildings.com

PRELIMINARY PLANS - NOT FOR CONSTRUCTION

OWNER NAME:
Kjell Kaashagen

OWNER ADDRESS:
Cambridge, WI, 53523

PROJECT NAME:
Kaashagen Building - Original Quote

PROJECT ADDRESS:
East North Street, Cambridge, WI, 53523

SALES REP / DEALER:
CHAD OLSON

DRAFTER:
ROSS NEUMANN

ESTIMATOR:

LAST SAVED BY:
RNEUMANN ON: 5/5/2026

PAPER SIZE:
ARCH FULL BLEED D (24.00 X 36.00 INCHES)

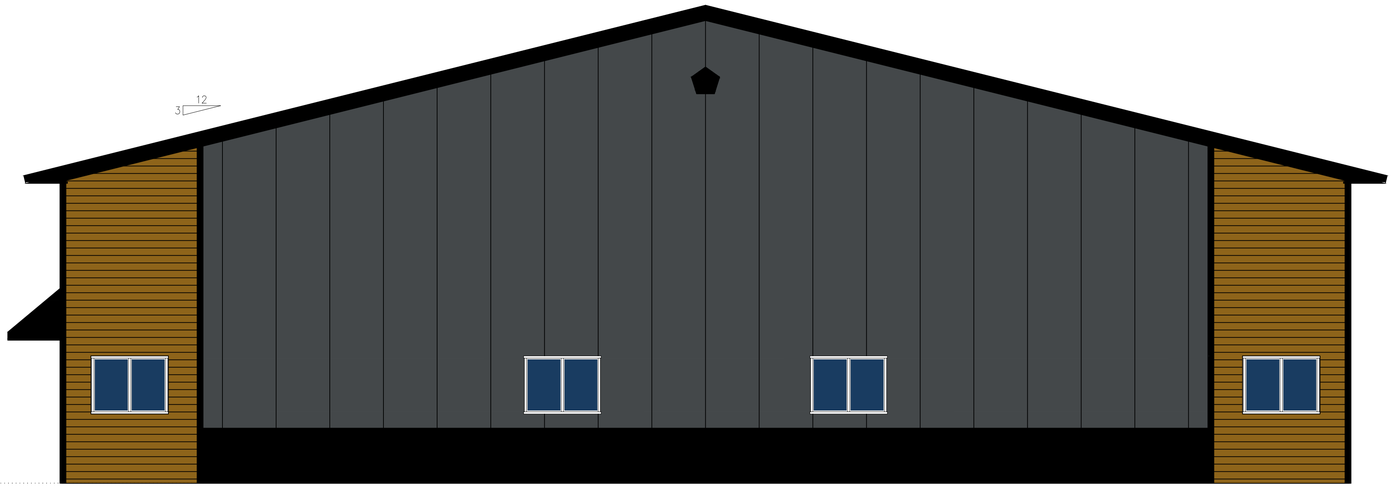
SCALE:
AS NOTED

ENGINEER:

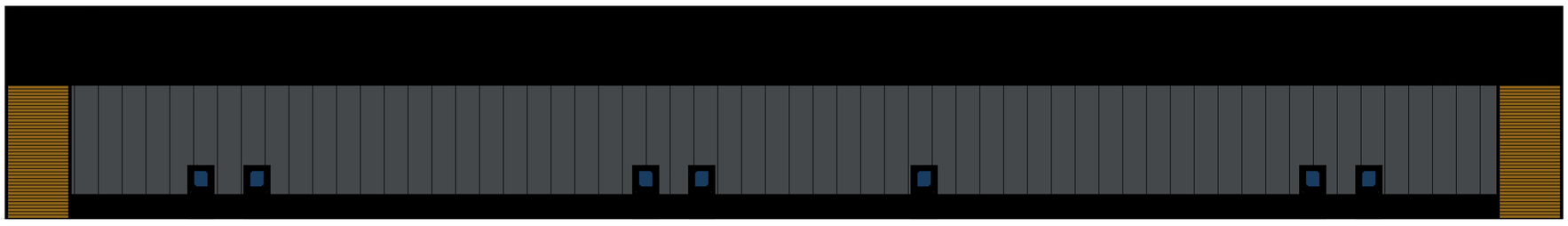
JOB NUMBER:
94-0855

PROJECT ID:
2025001364

SHEET NUMBER:
A1



1 A1.1 RIGHT END ELEVATION
SCALE: 1/4" = 1'-0"



2 A1.1 BACK SIDE ELEVATION
SCALE: 1/8" = 1'-0"

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East North Street, Cambridge, WI, 53523

SALES REP / DEALER:
CHAD OLSON

DRAFTER:
ROSS NEUMANN

ESTIMATOR:

LAST SAVED BY:
RNEUMANN ON: 5/5/2026

PAPER SIZE:
ARCH FULL BLEED D (24.00 X 36.00 INCHES)

SCALE:
AS NOTED

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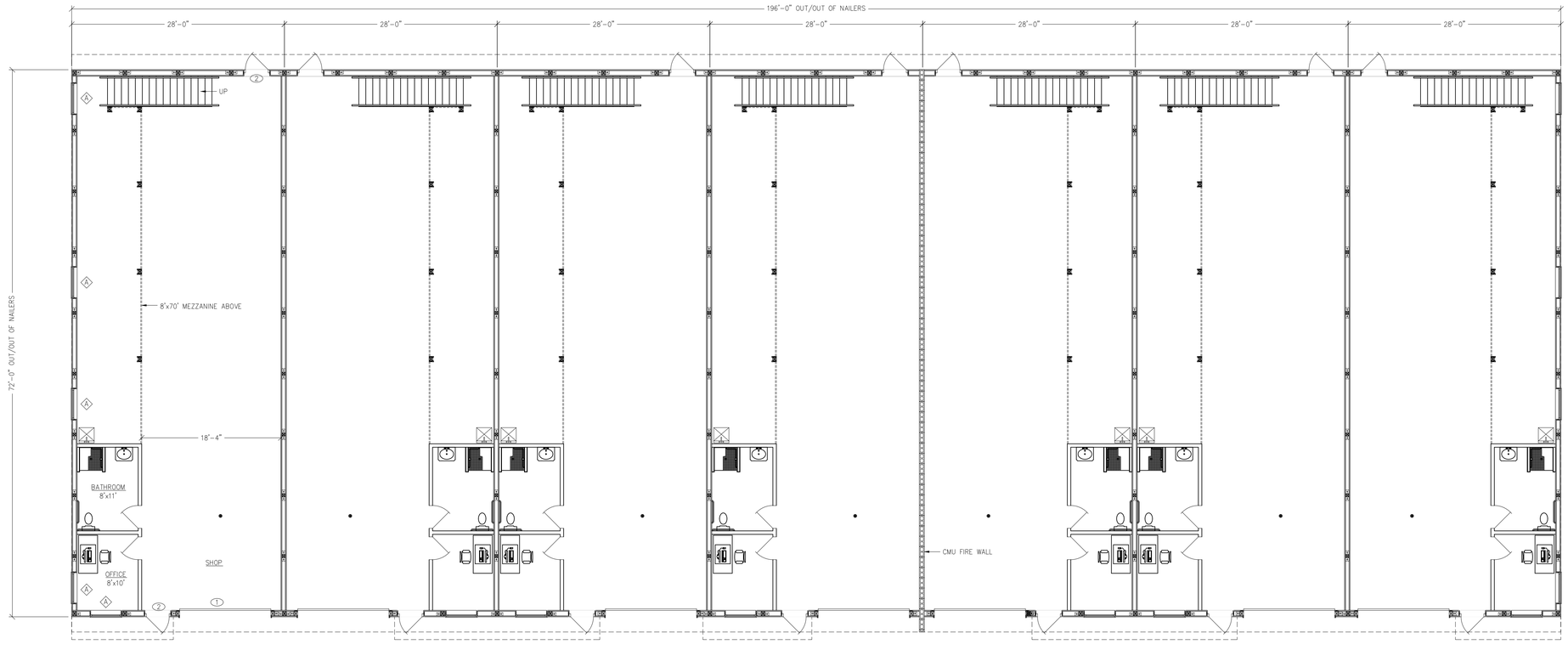
SHEET NUMBER:
A1.1

DOOR & WINDOW SCHEDULE

MAINTAIN LEVEL APPROACH TO ALL WALKDOORS *FIELD VERIFY ALL WINDOW SILL HEIGHTS*
SEE PAGE G1 FOR PLYCO ROUGH OPENING SIZES

TAG	TYPE	QUANTITY
1	12'x14' OHD	X
2	THERMAL BREAK – PLYCO 92 SERIES 3068 BRONZE WALK DOOR W/ 20X24 WINDOW AND LEVERSET WITH DEADBOLT	X
A	PLYCO 4030 HORIZONTAL SLIDE WINDOW	X



EACH UNIT: 1900 SQ. FT.
MEZZANINE: 598 SQ FT.

1 / A2 FLOOR LAYOUT PLAN
SCALE: 1/8" = 1'-0"

Walters Buildings

Jack Walters & Sons, Corp.
P.O. Box 388
6600 Midland Ct.
Allenton, WI 53002
1-800-558-7800
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PRELIMINARY PLANS - NOT FOR CONSTRUCTION

OWNER NAME:
Kjell Kaashagen

OWNER ADDRESS:
Cambridge, WI, 53523

PROJECT NAME:
Kaashagen Building - Original Quote

PROJECT ADDRESS:
East North Street, Cambridge, WI, 53523

SALES REP / DEALER:
CHAD OLSON

DRAFTER:
ROSS NEUMANN

ESTIMATOR:

LAST SAVED BY:
RNEUMANN ON: 5/5/2026

PAPER SIZE:
ARCH FULL BLEED D (24.00 X 36.00 INCHES)

SCALE: 1/8" = 1'-0"
0 5' 8' 10'

ENGINEER:

JOB NUMBER:
94-0855

PROJECT ID:
2025001364

SHEET NUMBER:
A2

MSA Memo

To:	Village of Cambridge Plan Commission
From:	Steve Tremlett, AICP, Zoning Administrator
Subject:	708 Katie Court – Site Plan Review Application
Date:	June 4th, 2026

Overview of Request

The applicant has submitted a site plan for review and comment by the Plan Commission. The construction plans were provided to MSA for engineering review as well. Attached to this memo is the engineering review.

This site plan review is a separate and distinct approval from the Conditional Use Permit (CUP) considered under a separate agenda item. This site plan review is based on meeting village ordinance regulations and any conditions approved through the CUP. If the CUP was not granted, consideration of this site plan should be tabled until such time as the CUP is approved.

Context

The subject property is located at 708 Katie Court, identified by Parcel #061201320141. The lot is approximately 45,000 square feet and has approximately 155 feet of frontage along Katie Court. The parcel is zoned Mixed Business District and is designated 'General Commercial' in the Village's 2040 Comprehensive Plan. Additional background on the property and surrounding context is provided in the accompanying CUP staff report.

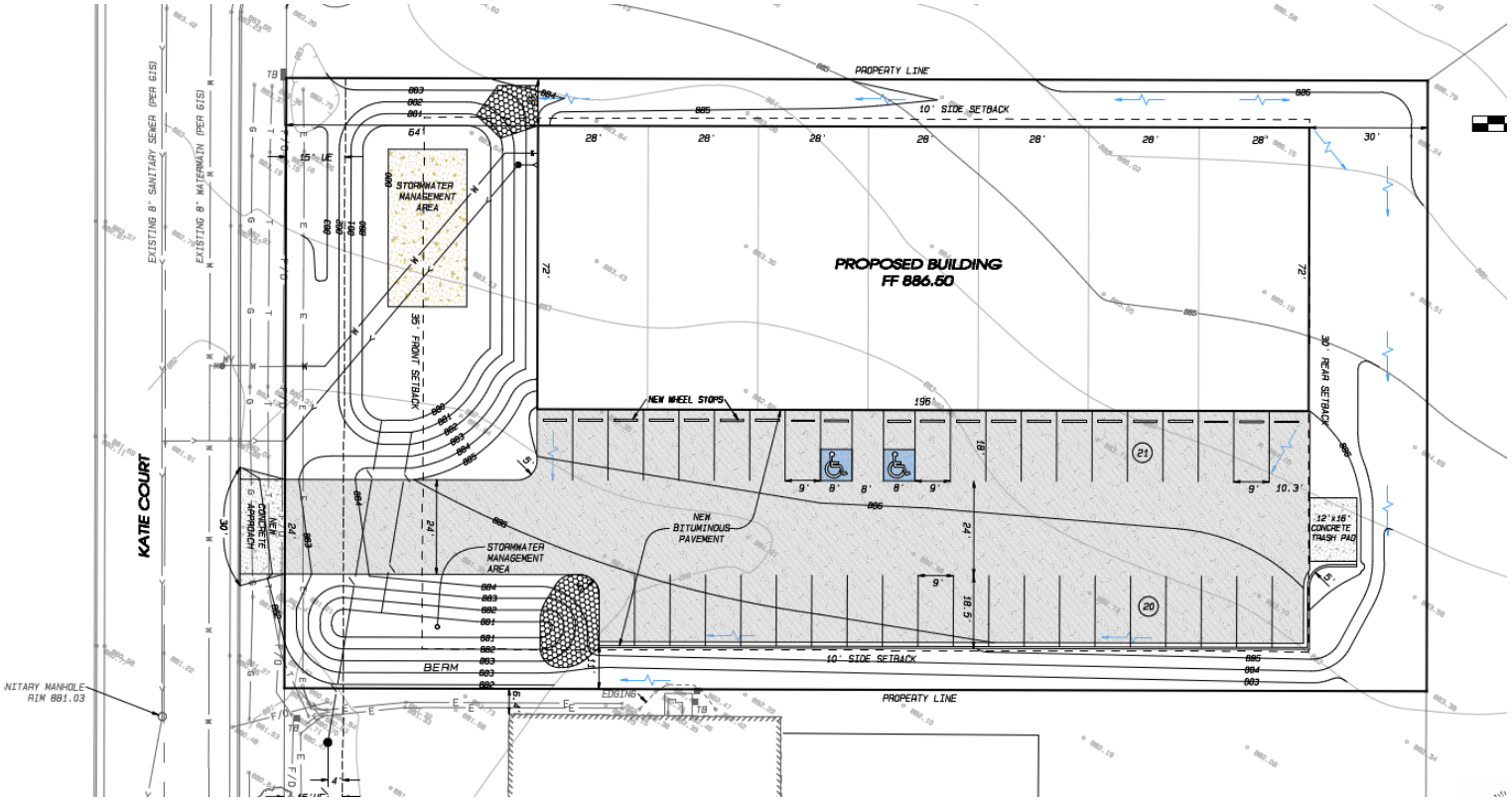
Site plan review exists to promote compatible development, protect property values, and prevent the impairment or depreciation of neighboring properties. No person may commence any non-agricultural use or erect any structure except conventional one- and two-family dwellings without first obtaining Plan Commission approval of a detailed site, architectural, and operations plan. The Plan Commission should familiarize itself with the site and evaluate existing and proposed structures, architecture, neighboring uses, parking areas, driveway locations, loading and unloading areas, highway access, traffic generation and circulation, drainage, landscaping, and sewerage and water systems, as well as the applicant's plans for operation.

Development Plans

The applicant is proposing 14,112 square foot 1-story commercial condo building with 7 units and a surface parking lot with 41 stalls. The intended uses are office/commercial storage units for small businesses and hobbyists. Stormwater management along the front of the building with 6-ft by 6-ft planting beds flanking entry driveway.

The following plans were submitted on May 5th, 2026:

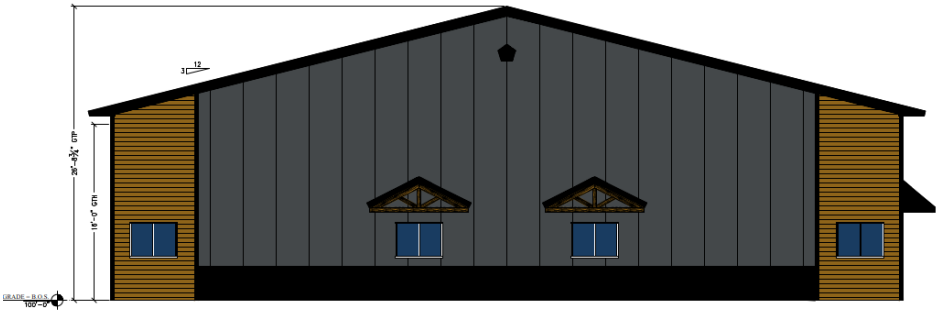
- ✓ Representative Image (Harvest building)
- ✓ Dimension Plan (Site Plan)
- ✓ Floor Plan
- ✓ Building Elevations
- ✓ Details and Specs
- ✓ Site Utility, Grading, and Drainage Plan
- ✓ Erosion Control Plan
- ✓ Landscaping Plan
- ✓ Stormwater Management and Erosion Control Plan
- ✗ Landscaping Plan
- ✗ Lighting Plan with Photometrics
- ✗ Signage Plan (if providing a group sign)



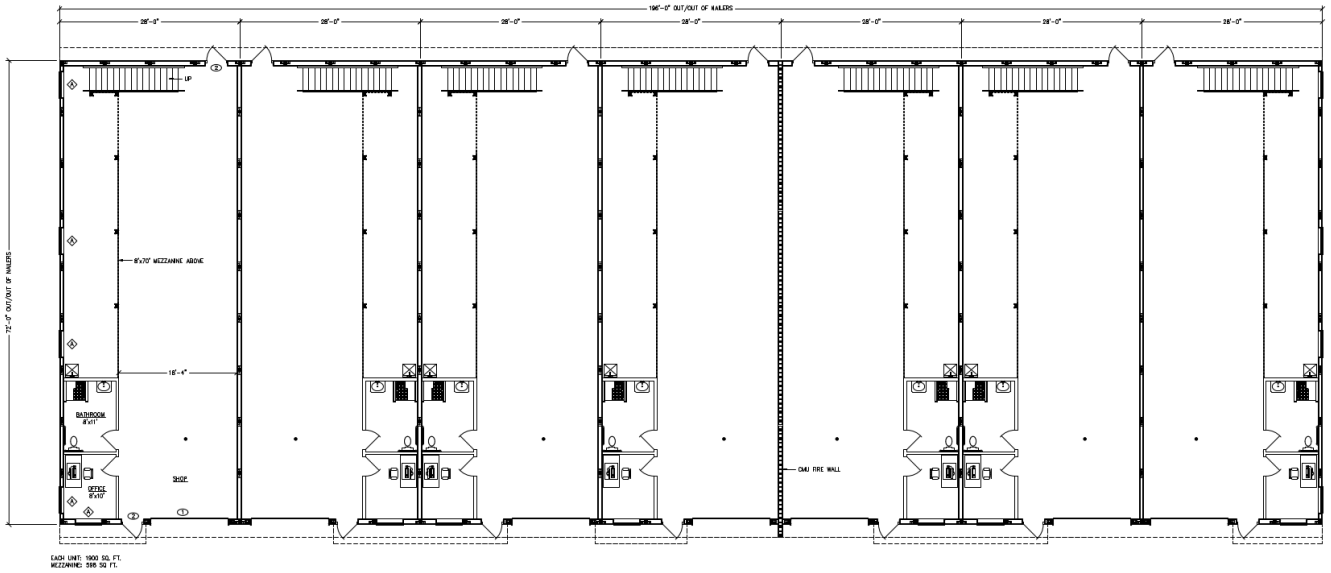
Proposed layout

2 FRONT SIDE ELEVATION

2 BACK SIDE ELEVATION
A1.1 SCALE: 1/8" = 1'-0"



LEFT END ELEVATION
SCALE: 1/4" = 1'-0"



Proposed layout

Consistency with the Zoning Code

The proposed development meets nearly all applicable bulk and dimensional standards of the Mixed Business District, with one exception noted below:

17.28.080 - Lot, yard, and building requirements.

- ✓ *Lot Frontage. Minimum eighty (80) feet.* (155 ft)
- ✓ *Lot Area. Minimum twelve thousand (12,000) square feet.* (~45,000 ft)
- ✓ *Front Yard. Minimum thirty-five (35) feet.* (64 ft)
- ✓ *Side Yards. Minimum ten (10) feet.* (13 ft)
- ✓ *Rear Yard. Minimum thirty (30) feet.* (30 ft)
- ✓ *Building Height. Maximum thirty-five (35) feet.* (~27 ft)

✘ *Percentage of Lot Coverage. Maximum forty (40) percent.* (MSA Evaluation:61.1%)
Per Mixed Business zoning district bulk standards, lots shall not exceed 40% of lot coverage. While the plans state 38.9% lot coverage (on dimensional plan), MSA calculated 61.1%. This will require a reduction in impervious area (i.e., building and/or pavement) by over 20% of the site. The alternative is the applicant can consider submitting a zoning amendment that would be a global change to the zoning district bulk standards.

Plan Review

The Village of Cambridge's ordinance provides two sets of guidelines for site plan review. The first, found in Chapter 17.56, is concerned primarily with the architectural and operational design of the proposed structure: its appearance, materials, massing, and compatibility with surrounding buildings. The second, found in Chapter 17.100, addresses the broader site layout and exterior features, including parking, access, drainage, screening, and landscaping. Both sets of criteria are addressed below.

Chapter 17.56 - SITE, ARCHITECTURAL AND OPERATIONS PLAN REVIEW [Building Review]

The following guidelines are outlined within Cambridge's Municipal Code to guide site plan review.

17.56.040(b) - Plan Review Guidelines. The plan commission and the subcommittee shall use the following guidelines for reviewing proposed development activities to assure compliance with the subsection:

1. *The mass, volume, and height or setback of proposed structures should appear to be compatible with existing buildings in the immediate area;*

   ✓ **The proposed building would be somewhat larger in footprint and slightly taller than the clinic buildings that currently occupy Katie Court. However, given the generous lot size, the site's proximity to the highway corridor, and the incorporation of natural wood elements into the façade, the structure is not expected to appear imposing or out of character with its surroundings. The screening and buffering conditions outlined in the CUP would further soften the building's presence relative to neighboring properties. In MSA's opinion, the proposed massing is compatible with the immediate area.**

2. ***NOT APPLICABLE (no existing buildings on site to complement)*** *- The facade of new or remodeled structures should maintain a compatible relationship with those of existing structures in terms of window sill or header lines, proportion of window and door openings, horizontal or vertical emphasis or major building elements, and extent of architectural detail*

3. ***NOT APPLICABLE (not a remodel)*** *- Exterior remodeling should be designed to take into account the entire building facade. The ground floor exterior should be designed to harmonize with the upper stories*

4. *The building materials and colors used should complement and be compatible with other buildings in the immediate area;*

   ✓ **The proposed façade features smaller window openings concentrated along the first story, lending a horizontal emphasis consistent with the commercial character of the corridor. The roofline incorporates a gentle pitch with a central ridge, providing visual interest without introducing an incongruous form. The material changes and amount of glazing help reduce the visual scale of the oversized garage door bays on each unit.**

5. **NOT APPLICABLE (Not retail area) -** *Storefront window display areas should be considered an important part of the retail marketing strategy of the community. Large glass windows and street-level display areas should be retained or planned into new construction;*

6. **NOT APPLICABLE (Not a historic structure) -** *E*xisting buildings and structures should be recognized as products of their own time. Alterations which have no historical basis should be discouraged;

7. **NOT APPLICABLE (No demo) -** Demolition should occur only where it is found that the structure is structurally unsound or physically incapable of supporting a viable use;

8. The sizing and placement of signs should fit the buildings; No signage plan was provided. This will be reviewed per sign permit at a later date.

9. All off-street parking and service areas should be landscaped and screened as viewed from public rights-of-way;

   ✘ The 6-ft by 6-ft landscaping bed flanking the entry will not properly screen the parking lot from view. Does not appear that plantings will be possible in right-of-way due to utilities and limited at least to the south planting bed due to the stormwater basin. A landscaping plan shall be submitted that helps to screen the parking lot, as well as meet other landscaping requirements described in Chapter 17.100 (below). Plus, any conditions approved through the CUP.

10. Exterior lighting is intended to promote a safe and attractive character throughout Cambridge without creating a nuisance to adjacent properties.

    ✘ No lighting plan was provided. Verification of any lights in the parking will not negatively impact surrounding uses through photometrics analysis should be submitted. Building lights shall be included in updated elevation plans to confirm it complements the building style and character.

Chapter 17.100 - ADMINISTRATION AND ENFORCEMENT [Layout Review]

The following additional guidelines apply to site plan review. Further technical comments are provided in the accompanying engineer's memo. *17.100.050 D. Requirements. In acting on any site plan, the plan commission may impose conditions upon the issuance of site plan approval as it deems necessary to address the following issues:*

1.The appropriateness of the site plan and buildings in relation to the physical character of the site and the usage of adjoining land areas.

✓ **Site Character: The current site is vacant open space, flat with no trees or shrubs. There are no major site constraints that would prevent building, grading, or planting.**

✓ **Land Use: Neighboring sites on Katie Court are clinics (one medical, one dental, and one veterinary). Residential is planned for behind the lot. This is use is more industrial in nature, so the conditions of the CUP approval will support this use/building to fit into the area.**

2.The layout of the site with regard to entrances and exits to public streets; the arrangement and improvement of interior roadways; the location, adequacy and improvement of areas for parking and for loading and unloading and shall, in this connection, satisfy itself that the traffic pattern generated by the proposed construction or use shall be developed in a manner consistent with the safety of residents and the community, and the applicant shall so design the construction or use as to minimize any traffic hazard created thereby.

- ✓ **Access: The proposed driveway is 30 feet wide, consistent with Cambridge's maximum commercial driveway width.**
- ✓ **Parking Spaces. The 7 units would split 41 parking spaces with two ADA stalls (5.86 spaces per unit). The 14,112 square foot building would require 35 parking spaces should the 1 space per 400 square feet of building be used (per CUP potential condition to be determined).** However, the engineering review did question use of overhead doors with wheel stops identified in the parking spots fronting the building. Clarify use of the overhead doors and if parking in front is going to be handled if parking remains. Recommendation would be bumpers on building (or safety bollards in the ground) with no wheel stops and signage restricting parking use to tenants/visitors of each unit.
- ✓ **Parking Space and Driveway Design: The parking lot has single street access, a 24' wide drive aisle, and 9' by 18' stalls.**

Parking Lot Design:

- ✘ The furthest east spaces (shown in red boxes on the right) do not allow backing maneuverability. There should be at least 3 feet of pavement extended in the drive aisle prior to the trash concrete pad.
- ✘ ADA access route does not meet standards, allowing safe access to all units. The recommended design is to have at least a 4-foot concrete walkway in front of parking stalls that front the building (concrete walk can be at grade of asphalt parking area). Also, the accessible aisle should be marked appropriately in plans.

3. The adequacy of the proposed water supply, drainage facilities and sanitary and waste disposal.

- **Drainage:** Stormwater management plans are reviewed by Dane County and a copy of the plan has not been reviewed by MSA. **Site plan approval should be conditioned on receipt of Dane County stormwater approval.** The developed site will surface-drain southerly but will flow into the new stormwater management areas along the low side of the lot (near Katie Court). There are two ponds planned on each side of the driveway. Stormwater plan suggests discharging pipe through the adjacent private property and to an existing storm manhole which drains to public storm sewer. As stated in the engineering review memo, the basins should discharge into a storm lateral (to be added).

4. The landscaping and appearance of the completed site*. The plan commission may require that those portions of all front, rear and side yards not used for off-street parking shall be attractively planted with trees, shrubs, plants or grass lawns and that the site be effectively screened so as not to impair the value of adjacent properties nor impair the intent or purposes of this section.*

- The developer has provided a planting plan for the driveway entrance. **Section 17.76.030(E)(1) requires** all public and private off-street parking areas which serve five vehicles or more…shall be provided with accessory landscape areas totaling not less than ten (10) percent of the surfaced area. The minimum size of each landscape area shall not be less than one hundred (100) square feet. This is not provided.

5. Effect on Municipal Services. Before granting any site approval, the plan commission may, besides obtaining advice from consultants, secure such advice as may be deemed necessary from the village engineer or other municipal officials, with special attention to the effect of such approval upon existing municipal services and utilities. Should additional facilities be needed, the plan commission shall forward its recommendations to the village board and shall not issue final approval until the village board has entered into an agreement with the applicant regarding the development of such facilities. **Attached to this staff report is the engineering review memo. There are a list of items for the applicant to update and provide prior to acceptance of the construction plans. Some items are discussed above and further items are noted below. Not all items are discussed in this staff report, as they are technical to engineering approvals.**

- Utilities: information regarding sewer and water main connections has not yet been received. **Site plan approval should be conditioned on satisfactory resolution of outstanding utility information requests.**
-

- **Lighting: A lighting plan has not been submitted. Site plan approval should be conditioned on approval of a lighting plan meeting the following standards:** Section 17.76.070 requires low activity uses to maintain a minimum of 0.2 footcandles at a 4:1 average uniformity. This regulation also requires entrance to all types of commercial buildings require a maintained light of 5.0 Footcandles.

Parking, industrial/commercial/institutional/municipal	**Maintained Footcandles**	**Uniformity Ratio**
• High activity, e.g., regional shopping centers/fast food facilities, major athletic/civic/cultural events	0.9 min.	4:1 avg.:min.
• Medium activity, e.g., community shopping centers, office parks, hospitals, commuter lots, cultural/civic/recreational events	0.6 min.	4:1 avg.:min.
• Low activity, e.g., neighborhood shopping, industrial employee parking, schools, church parking	0.2 min.	4:1 avg.:min.
Parking, industrial/commercial/institutional/municipal		

Potential Action

Plan Commission may postpone the agenda until the outstanding items are submitted (landscaping plan, lighting plan, and unresolved utility and stormwater information), and incorporation of the CUP conditions (if approved). Should Plan Commission consider approval tonight the following conditions should be considered.

1. Applicant shall revise the site plan and corresponding documents to resolve the issues outlined below and submit to zoning administrator for approval of meeting compliance.
    a) Submit a landscaping plan, lighting plan (with photometrics), and signage plan for any group/site sign in accordance with village codes and CUP conditions.
    b) Achieve compliance with the 40% maximum lot coverage standard.
    c) Resolve the parking lot design issues noted in this staff report and the engineers review memo.
    d) Resolve other issues identified in the engineers review memo.
2. Applicant shall obtain Dane County stormwater approval and submit confirmation to the Village prior to building permit issuance.
3. Applicant shall provide all outstanding information and design improvements to the satisfaction of the Village Engineer prior to building permit issuance.

Sincerely,

Stephen Tremlett, AICP, CNU-A
Zoning Administrator

Encl: Engineers Review Memo, May 26th, 2026

May 26, 2026

Kjell Kaashagen
827 Vineyard Court
Cambridge WI 53523

Re: Proposed Commercial Building, Business Office Condominiums
708 Katie Court, Cambridge WI 53523
Preliminary Site Plan Review

Dear Kjell:

We have reviewed the preliminary site plans prepared by Combs & Associates, dated May 5th, 2026 for a new commercial building on Katie Court in the Village of Cambridge. The following review comments shall be addressed prior to approval of the site construction documents.

General Comments

1. Permits required from the WDNR shall be provided prior to construction. All permits to be obtained by the Developer/Contractor.
2. Utility excavations within the right of way will require slurry backfill and notation of pavement restoration

Zoning

3. Section 17.32.040 – Lot, yard and building requirements. Percentage of Lot Coverage stated is a maximum of 40% for the B-H Highway Business District. The plan shows the percentage of hard cover at 61.1% exceeding the 40%.

Site Design

4. Site plan shows wheel stops in front of the overhead doors as shown on the architectural plans. Developer to confirm use of overhead doors to determine if bumpers are appropriate. Area may need to be striped as "No Parking" if not intended for parking and access is needed for overhead doors.
5. Identify the ADA accessible route from the public street to a door to every possible tenant occupancy.
6. Show contours for the adjacent parcel to the south demonstrating that stormwater will not flow onto the adjacent parcel.
7. Will sheet drainage from the rear setback area sheet drain across the parking lot or be directed around the parking lot to the stormwater management area?

Stormwater

8. Stormwater was not reviewed by MSA.
9. Provide copy of the stormwater management plan with approval by Dane County.
10. Plans state that storm sewer is not available which in inaccurate. Connect site drainage to the Village storm sewer located in the roadway across from the site.
11. Provide a profile for the storm lateral and elevation of Village storm sewer.

1702 Pankratz Street, Madison, WI 53704
P (608) 242-7779 • TF (800) 446-0679 • F (608) 242-5664
www.msa-ps.com

12. Plans to include storm sewer pipe sizes and slopes.
13. Provide detail for method of connection to Village storm sewer.
14. Provide detail for what appears to be rip rap for drainage into the stormwater detention areas.

Sanitary Sewer

15. Provide invert elevations for connection to the Village sewer main.
16. Is there an existing wye in the sewer main that you are connecting to? If not why is the sanitary lateral not going in straight?
17. Provide detail for connection to Village sanitary sewer with elevation of city sewer.
18. Provide a profile for the sanitary lateral where it crosses the stormwater detention basin
19. Show pipe size and slope.
20. Cleanout detail on sheet 3 of 6 indicates the sanitary lateral will be 8" diameter. If this is correct it will require a manhole connection to the Village main.

Water Main

21. A 6" service has been stubbed to the property line. Shut off valve is in the street in front of the parcel. Provide detail on how and where you will transition to smaller water service.
22. Revise detail on sheet 3 of 6 to match the site plan sizes.
23. Provide a profile for the water service from the shutoff valve in the street to the building.
24. Will this building include fire sprinklers? If so, provide calculations. If not, provide WSFU calculations to properly size the remaining portion of the water service for the intended uses.

Landscaping

25. No landscaping plans were provided. Please submit.

Lighting

26. No lighting plans were provided. Please submit.

Signage

27. A sign permit will be needed from the Village.

Recommendation

MSA recommends that the Village of Cambridge request revised plans contingent on these comments. Revised final plans and approved permits shall be submitted prior to the start of construction that address these comments.

Final

Nothing set forth in this review of the construction and development documents by the Village Engineer shall be construed as, nor intended to be, a waiver or release of any obligations imposed on the Developer or relieve the Developer from compliance with the Village of Cambridge ordinances, standards and policies or any other applicable state statute or administrative rule.

Plans for future improvements and additions must be reviewed by MSA prior to construction. Future improvements and additions must be in accordance with Village requirements and ordinances in effect at the time of construction.

Please review this letter and address these issues at your earliest convenience. Contact me for clarification on any comments at (608) 421-7140. Construction shall not begin until the Village of Cambridge has approved the plan set for the proposed improvements.

Sincerely,

MSA Professional Services, Inc.

William J Pinnow, PE
Village Engineer

SITE DATA:	
LOT AREA:	44,976 SF
TOTAL PROPOSED IMPERVIOUS AREA:	27,462 SF
TOTAL PROPOSED NON-IMPERVIOUS AREA:	17,514 SF (38.9%)

PARKING REQUIREMENT:
RESTAURANTS, BARS, PLACES OF ENTERTAINMENT, REPAIR SHOPS, RETAIL AND SERVICE STORES
(1 STALL PER EACH 200 SqFt OF FLOOR AREA)

TOTAL BUILDING SqFt: 16,128 SqFt
TOTAL FLOOR AREA: 8,060 SqFt
STALLS REQUIRED: 8,060 SqFt / 200 SqFt x 1 = 41 STALLS REQUIRED
TOTAL PARKING STALLS ON-SITE: 41 STALLS

CAMBRIDGE FAMILY DENTAL
710 KATIE COURT

15" STORM SEWER
STORM INLET TC 882.86 INV 879.79
12" STORM PIPE (FILLED WITH STONE PER TELEVISE COMPLETED ON APRIL 3rd, 2026.) ESTIMATED INV 880.1±
TRANS
TB
PROPERTY LINE
10' SIDE SETBACK
15' UE
STORMWATER MANAGEMENT AREA
PROPOSED BUILDING
FF 886.50
35' FRONT SETBACK
30' REAR SETBACK
NEW WHEEL STOPS
NEW BITUMINOUS PAVEMENT
STORMWATER MANAGEMENT AREA
12'x16' CONCRETE TRASH PAD
BERM
EDGING
EXISTING 8" SANITARY SEWER (PER GIS)
EXISTING 8" WATERMAIN (PER GIS)
KATIE COURT
CONCRETE APPROACH
SANITARY MANHOLE RIM 881.03
NEW STORM SEWER (OWNER TO SECURE RIGHTS ACROSS PRIVATE PROPERTY)
FORT HEALTH CARE CAMBRIDGE CLINIC
704 KATIE COURT
SIGN
EX. TREE
EXISTING OPEN GRATE MH RIM 878.65 INV 875.45
STORM INLET TCAST 878.62 INV 875.41
EXISTING FIRE HYDRANT
CATCH BASIN TCAST 879.86

0 20 40 60

LEGEND:

- EASEMENT LINE
- BUILDING SETBACK LINE
- SANITARY SEWER
- SANITARY SERVICE
- STORM SEWER
- WATER MAIN
- WATER SERVICE
- PROPERTY LINE
- FENCE LINE
- CONSTRUCTION LIMITS
- PROPOSED SILT FENCE
- 825 CONTOUR LINE
- CENTER LINE
- BUILDING LINE
- T TELEPHONE LINE
- G GAS LINE
- E ELECTRIC LINE
- PROPOSED SURFACE DRAINAGE DIRECTION
- DE DRAINAGE EASEMENT
- UE UTILITY EASEMENT
- F/O TELECOMMUNICATIONS LINE
- E ELECTRIC BOX
- EM ELECTRIC METER
- GM GAS METER
- T TELEPHONE BOX
- GC GUY CABLE ANCHOR
- LIGHT POLE
- UTILITY POLE
- EXISTING SPOT ELEVATION

INDEX OF SHEETS

LOCATION SKETCH

WISCONSIN
ADAM F. GRIFFIN #36880
PROFESSIONAL ENGINEER

FOR TOWN REVIEW
NOT FOR CONSTRUCTION

Member One Call System International

To Obtain Location of Participating Underground Facilities Before You Dig In Wisconsin
CALL DIGGERS HOTLINE 1-800-242-8511
Wis Statute 182.0175 (1974) Requires Min. 3 Work Days Notice Before You Excavate

SITE PLAN FOR KJELL KAASHAGEN A NEW COMMERCIAL BUILDING

LOT 4 OF MATT'S PLAT TO THE VILLAGE OF CAMBRIDGE, BEING PART OF SECTION 1, T.6N., R.12E. OF THE 4TH P.M. VILLAGE OF CAMBRIDGE, DANE COUNTY, WISCONSIN.

Combs & ASSOCIATES
- LAND SURVEYING
- LAND PLANNING
- CIVIL ENGINEERING

109 W. Milwaukee St.
Janesville, WI 53548
www.combssurvey.com
tel: 608 752-0575
fax: 608 752-0534

DATE	REVISIONS
05/05/26	
BY	
BFG	
APPROVED	
AFG	
PROJECT NO.	
125-555	

DIMENSION PLAN

GENERAL NOTES

All pavement construction shall be in conformance with the typical cross section shown on the plans and in conformance with the State of Wisconsin Department of Transportation "Standard Specifications for Road and Bridge Construction".

All work shall be in accordance with Village of Cambridge Standards.

The contractor shall clear, grub, and dispose of all brush, stumps, trees, etc., within the construction limits of the subject property and within the construction limits of all sewer and water main construction. Contractor shall remove those materials from the work site and dispose of them at the contractor's option and in conformance with State and local regulations.

Contractor shall verify location of any existing utilities prior to excavation. Call Digger's Hotline before digging (1 800 242-8511).

Contractor shall backfill any utilities in structural areas using appropriate granular backfill.

Permits shall be obtained for any street openings.

All work shall be in accordance with "Wisconsin Construction Site Best Management Practices Handbook", latest edition.

Contractor shall notify the Village of Cambridge 48 hours prior to start of construction.

Contractor shall ensure drive approaches shall be in accordance with Village of Cambridge specifications (unless changes are approved by the Village).

SITE SPECIFIC NOTES

~~Parking lot striping shall be white.~~

ADA striping shall be designated with high quality epoxy BLUE surface paint.

ADA symbol shall be painted (epoxy) blue with white interior.

Other stall striping shall be painted with yellow epoxy.

All construction debris must be removed from site. In no instance shall debris be buried on-site.

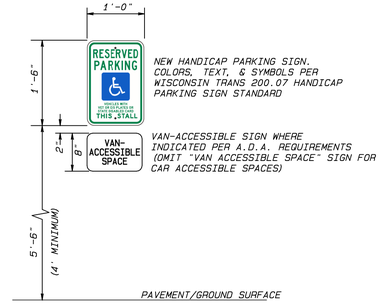
Contractor shall verify all public & private utilities are installed prior to paving.

Contractor shall provide unit prices to owner at time of bid for removal and replacement of unsuitable material under structures and pavement as approved by owner.

~~Refer to CGC soils report dated January 13, 2014 (Page 6) for aggregate/compaction requirements.~~

Refer to architect's specifications for concrete materials and workmanship conforming to the American Concrete Institute's Building Code Requirements for Structural Concrete.

Contractor to verify owner has secured rights to install & maintain offsite private storm sewer.

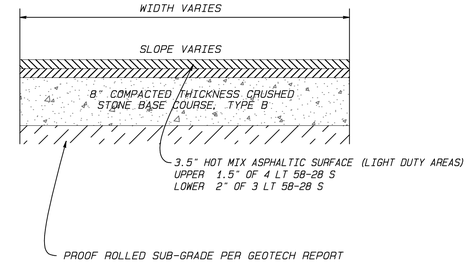


NEW HANDICAP PARKING SIGN. COLORS, TEXT, & SYMBOLS PER WISCONSIN TRANS 200.07 HANDICAP PARKING SIGN STANDARD

VAN-ACCESSIBLE SIGN WHERE INDICATED PER A.D.A. REQUIREMENTS (OMIT "VAN ACCESSIBLE SPACE" SIGN FOR CAR ACCESSIBLE SPACES)

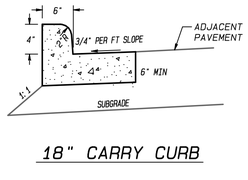
WALL-MOUNTED HANDICAP SIGN

(OR APPROVED EQUAL)

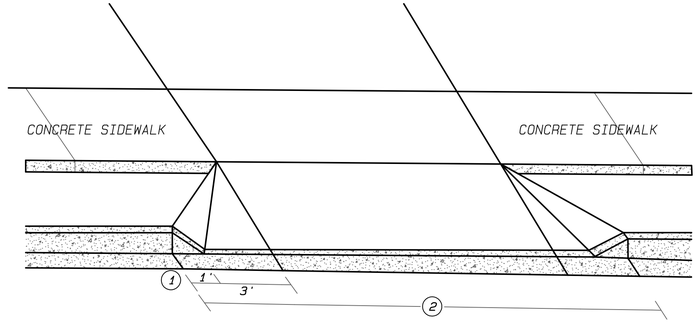


LIGHT DUTY BITUMINOUS PAVEMENT

FOR PARKING STALL AREAS ONLY



18" CARRY CURB

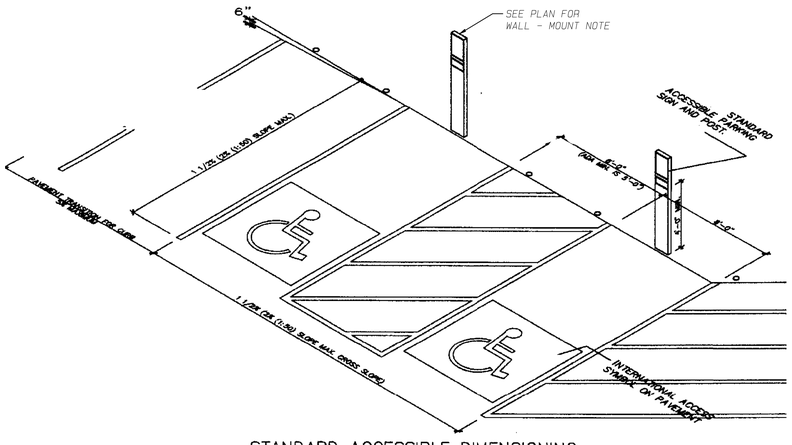


DRIVEWAY APPROACH

N.T.S.

(1) DRIVEWAY FLARE ON EACH SIDE SHALL EQUAL 0.6 TIMES THE DISTANCE BETWEEN THE WALK AND THE BACK OF CURB, BUT NOT EXCEED 3 FEET.

(2) 30' MAX RESIDENTIAL WITH 1 CAR GARAGE
36' MAX RESIDENTIAL WITH 2 OR 3 CAR GARAGE



STANDARD ACCESSIBLE DIMENSIONING

A U.S. DEPARTMENT OF TRANSPORTATION R7-8 (RESERVED PARKING) AND SUPPLEMENTAL SIGNS AS NOTED ABOVE MUST BE MOUNTED ON A PERMANENT POST NO LOWER THAN 60 INCHES FROM THE PAVEMENT. THE POST MUST BE MOUNTED IN THE CENTER OF THE 8 FOOT WIDE ACCESSIBLE PARKING SPACE. NO MORE THAN 5 FEET FROM THE FRONT OF THE PARKING SPACE. SEE ILLUSTRATION ABOVE.

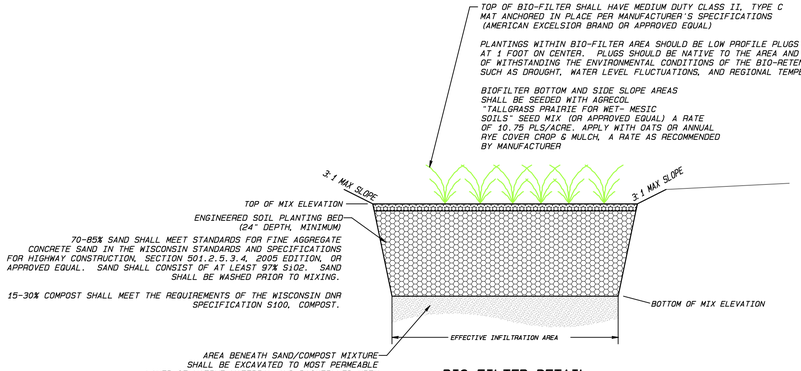
NOTES:
EACH ACCESSIBLE PARKING SPACE IS TO BE A MINIMUM OF 8 FEET WIDE AND HAVE A 96" MINIMUM ACCESS AISLE FOR VANS OR 60" ACCESS AISLE FOR CARS ADJACENT TO THE SPACE. THE ACCESS AISLE MAY BE ON EITHER THE DRIVER'S SIDE OR THE PASSENGER'S SIDE OF THE ACCESSIBLE SPACE. THIS APPLIES TO 45, 60, AND 90°PARKING.

ACCESSIBLE PARKING SPACES ARE TO BE LOCATED AS CLOSE TO THE STORE ENTRANCE AS POSSIBLE AND SHALL BE IDENTIFIED WITH A SIGN.

ACCESSIBLE PARKING SPACES AND ACCESS AISLES SHALL BE LEVEL WITH A SLOPE OF 1 1/2% (2% MAXIMUM)(EXAMPLE; 1.92 INCHES MAX. VERTICAL IN 8 FEET HORIZONTAL) OR 1:50 IN ALL DIRECTIONS. THIS INCLUDES BOTH "RUNNING SLOPES" AND "CROSS SLOPES."

THE ACCESS AISLE SHALL BE DESIGNATED WITH HIGH QUALITY YELLOW DIAGONAL SURFACE PAINT STRIPING.

ADA ALLOWS TWO PARKING SPACES TO SHARE AN ACCESS AISLE.



BIO-FILTER DETAIL

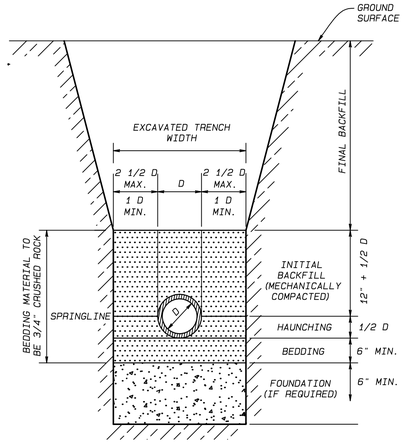
NOTE: SEE DNR TECHNICAL STANDARD 1004 FOR FURTHER DETAIL (http://dnr.wi.gov/topic/stormwater/documents/Bioretention1004.pdf)

ENSURE SITE IS ENTIRELY STABILIZED AND VEGETATED PRIOR TO EXCAVATING BOTTOM FOR ENGINEERED SOIL INSTALL

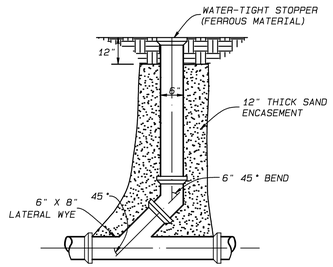
Combs & Associates LLC
109 W. Milwaukee St.
Janesville, WI 53548
www.combssurvey.com
tel: 608 752-0575
fax: 608 752-0534

- LAND SURVEYING
- LAND PLANNING
- CIVIL ENGINEERING

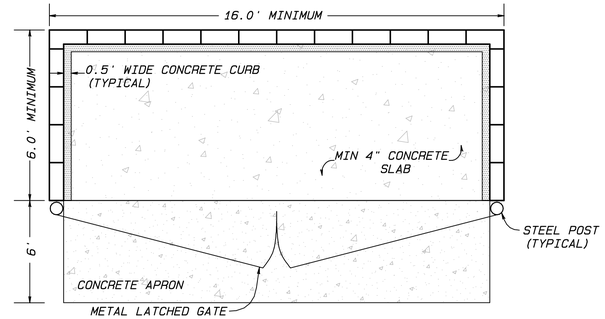
DATE	05/05/26
BY	BFG
APPROVED	AFG
PROJECT NO.	125-555
REVISIONS	



SANITARY PIPE EMBEDMENT DETAIL



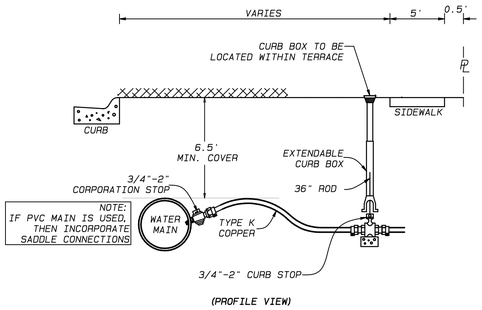
CLEANOUT DETAIL



DOUBLE BIN DUMPSTER

DUMPSTER ENCLOSURE MUST BE LOCATED WITHIN AN OPAQUE ENCLOSURE CONSTRUCTED OF FENCING OR OTHER MATERIALS THAT MATCH THE BUILDING. ENCLOSURE MUST BE A MINIMUM OF 5' TALL AND EQUIPPED WITH GATES IN ORDER TO SCREEN ALL STORAGE FROM VIEW.

(VERIFY DETAIL WITH ARCHITECT)

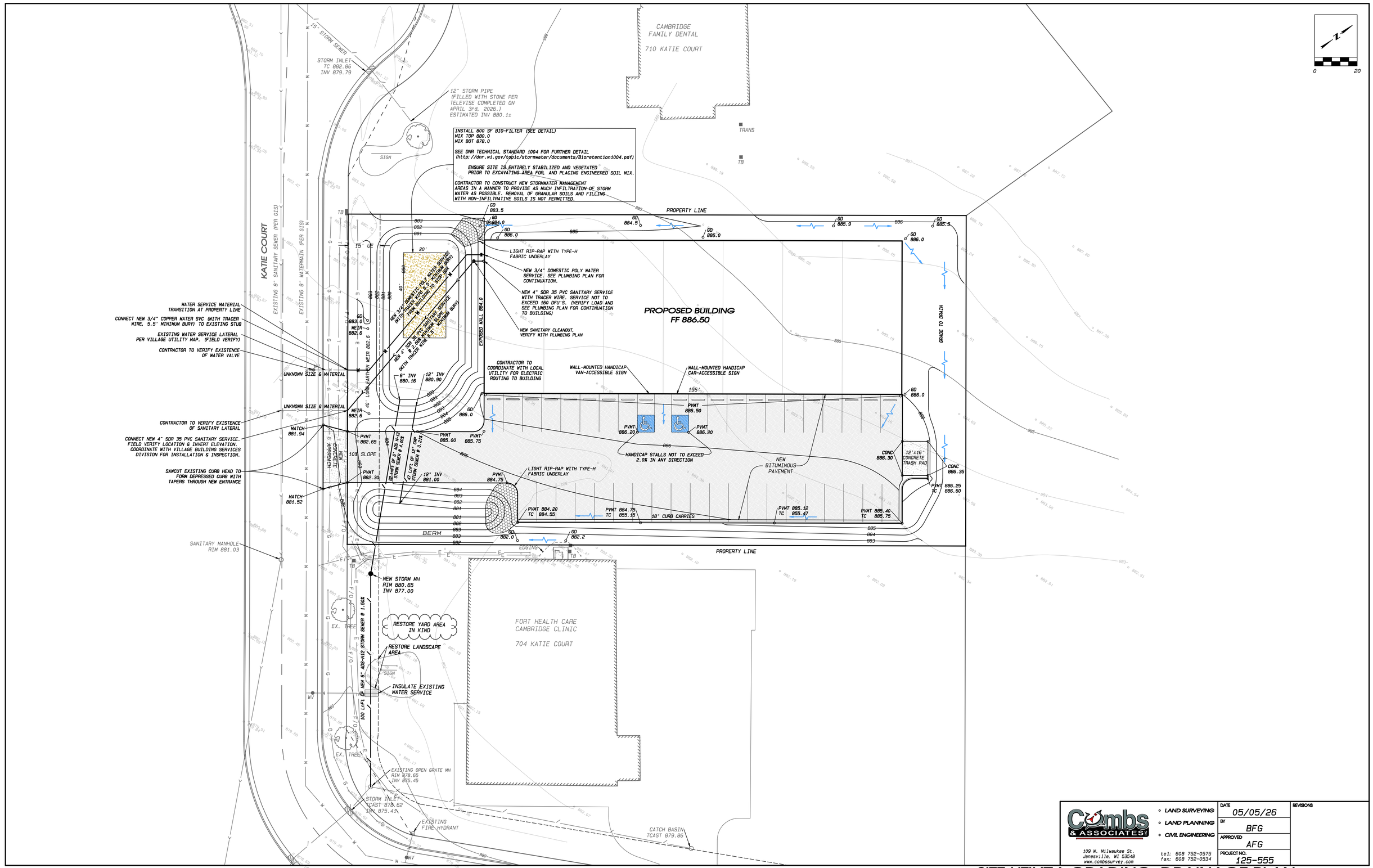


WATER SERVICE DETAIL

Combs & ASSOCIATES
109 W. Milwaukee St.
Janesville, WI 53548
www.combssurvey.com
tel: 608 752-0575
fax: 608 752-0534

- LAND SURVEYING
- LAND PLANNING
- CIVIL ENGINEERING

DATE	REVISIONS
05/05/26	
BY: BFG	
APPROVED: AFG	
PROJECT NO.: 125-555	



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DATE	05/05/26
BY	BFG
APPROVED	AFG
PROJECT NO.	125-555
REVISIONS	

SITE UTILITY, GRADING, DRAINAGE PLAN

0 20

CAMBRIDGE
FAMILY DENTAL

710 KATIE COURT

15" STORM SEWER

STORM INLET
TC 882.86
INV 879.79

12" STORM PIPE
(FILLED WITH STONE PER
TELEVISE COMPLETED ON
APRIL 3rd, 2026.)
ESTIMATED INV 880.1±

TRANS

TB

PROPERTY LINE

TEMPORARY SILT FENCE (SEE DETAIL)

SEED ALL DISTURBED
AREAS WITH TURF GRASS
AT A RATE OF 131 LBS
PER ACRE

ONCE ENGINEERED MIX IS
PLACED, SILT FENCE SHALL
REMAIN UNTIL SITE IS FULLY
VEGETATED & STABILIZED

PROPOSED BUILDING
FF 886.50

SEDIMENT LOG
INLET PROTECTION

ANY DEBRIS TRACKED ONTO THE ROADWAY
SHALL BE CLEANED UP NIGHTLY AND PLACED
IN A SUITABLE LOCATION

KATIE COURT

CLASS I, TYPE A
DOT EROSION MATTING
ON SIDE SLOPES

STONE TRACKING PAD
(SEE DETAIL)

BERM

EDGING

SANITARY MANHOLE
RIM 881.03

EXISTING 8" SANITARY SEWER (PER GIS)

EXISTING 8" WATERMAIN (PER GIS)

FORT HEALTH CARE
CAMBRIDGE CLINIC

704 KATIE COURT

EX. TREE

EX. TREE

EXISTING OPEN GRATE MH
RIM 878.65
INV 875.45

TEMPORARY INLET PROTECTION,
TYPE C (SEE DETAIL)

STORM INLET
TCAST 878.62
INV 875.42

Combs & ASSOCIATES

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www.combssurvey.com

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tel: 608 752-0575
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DATE	REVISIONS
05/05/26	
BY	
BFG	
APPROVED	
AFG	
PROJECT NO.	
125-555	

EROSION CONTROL PLAN

GENERAL EROSION NOTES

A. THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) IS COMPRISED OF THIS DRAWING, THE EROSION CONTROL DETAILS, THE NOI PERMIT, SUBSEQUENT REPORTS AND RELATED DOCUMENTS.

B. ALL CONTRACTORS AND SUBCONTRACTORS INVOLVED WITH STORM WATER POLLUTION PREVENTION SHALL OBTAIN A COPY OF THE SWPPP AND THE STATE OF WISCONSIN NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM GENERAL PERMIT (NPDES PERMIT) AND BECOME FAMILIAR WITH THEIR CONTENTS.

C. CONTRACTOR SHALL IMPLEMENT BEST MANAGEMENT PRACTICES (BMP's) AS REQUIRED BY THE SWPPP. ADDITIONAL BMP's SHALL BE IMPLEMENTED AS DICTATED BY CONDITIONS AT NO ADDITIONAL COST OF THE OWNER THROUGHOUT ALL PHASES OF CONSTRUCTION.

D. BEST MANAGEMENT PRACTICES AND CONTROLS SHALL CONFORM TO FEDERAL, STATE, OR LOCAL REQUIREMENTS, OR MANUAL OF PRACTICE, AS APPLICABLE. CONTRACTOR SHALL IMPLEMENT ADDITIONAL CONTROLS AS DIRECTED BY PERMITTING AGENCY OR OWNER.

E. THE SITE MAP MUST CLEARLY DELINEATE ALL STATE WATERS AND PERMITS FOR ANY CONSTRUCTION ACTIVITY IMPACTING STATE WATERS OR REGULATED WETLANDS, AND MUST BE MAINTAINED ON-SITE AT ALL TIMES.

F. CONTRACTOR SHALL MINIMIZE CLEARING TO THE MAXIMUM EXTENT PRACTICABLE OR AS REQUIRED BY THE GENERAL PERMIT.

G. GENERAL CONTRACTOR SHALL DENOTE ON PLAN THE TEMPORARY PARKING AND STORAGE AREA WHICH SHALL ALSO BE USED AS THE EQUIPMENT MAINTENANCE AND CLEANING AREA, EMPLOYEE PARKING AREA, AND AREA FOR LOCATING PORTABLE FACILITIES, OFFICE TRAILERS, AND TOILET FACILITIES.

H. ALL WASH WATER (CONCRETE TRUCKS, VEHICLE CLEANING, EQUIPMENT CLEANING, ETC.) SHALL BE DETAINED AND PROPERLY TREATED OR DISPOSED.

I. SUFFICIENT OIL AND GREASE ABSORBING MATERIALS AND FLOATATION BOOMS SHALL BE MAINTAINED ON-SITE OR READILY AVAILABLE TO CONTAIN AND CLEAN UP FUEL OR CHEMICAL SPILLS AND LEAKS.

J. DUST ON THE SITE SHALL BE CONTROLLED. THE USE OF MOTOR OILS AND OTHER PETROLEUM BASED OR TOXIC LIQUIDS FOR DUST SUPPRESSION OPERATIONS IS PROHIBITED.

K. RUBBISH, TRASH, GARBAGE, LITTER, OR OTHER SUCH MATERIALS SHALL BE DEPOSITED INTO SEALED CONTAINERS. MATERIALS SHALL BE PREVENTED FROM LEAVING THE PREMISES THROUGH THE ACTION OF WIND OR STORM WATER DISCHARGE INTO DRAINAGE DITCHES OR WATERS OF THE STATE.

L. ALL STORM WATER POLLUTION PREVENTION MEASURES PRESENTED ON THIS PLAN, AND IN THE SWPPP SHALL BE INITIATED AS SOON AS PRACTICABLE.

M. DISTURBED PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITY IS PLANNED TO STOP FOR MORE THAN 14 DAYS, THEN AREAS SHALL BE SEEDED IMMEDIATELY TO ANNUAL RYEGRASS.

N. DISTURBED PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITY HAS PERMANENTLY STOPPED SHALL BE SEEDED IMMEDIATELY.

O. IF THE ACTION OF VEHICLES TRAVELING OVER THE GRAVEL CONSTRUCTION ENTRANCES IS NOT SUFFICIENT TO REMOVE THE MAJORITY OF DIRT OR MUD, THEN THE TIRES MUST BE WASHED BEFORE THE VEHICLES ENTER A PUBLIC ROAD. IF WASHING IS USED, PROVISIONS MUST BE MADE TO INTERCEPT THE WASH WATER AND TRAP THE SEDIMENT BEFORE IT IS CARRIED OFF THE SITE.

P. ALL MATERIALS SPILLED, DROPPED, WASHED, OR TRACKED FROM VEHICLES ONTO ROADWAYS OR INTO STORM DRAINS MUST BE REMOVED IMMEDIATELY.

Q. CONTRACTORS OR SUBCONTRACTORS SHALL BE RESPONSIBLE FOR REMOVING SEDIMENT IN THE DETENTION PONDS AND ANY SEDIMENT THAT MAY HAVE COLLECTED IN THE STORM SEWER DRAINAGE SYSTEMS IN CONJUNCTION WITH THE STABILIZATION OF THE SITE.

R. ON-SITE & OFF-SITE SOIL STOCKPILE AND BORROW AREAS SHALL BE PROTECTED FROM EROSION AND SEDIMENTATION THROUGH IMPLEMENTATION OF BEST MANAGEMENT PRACTICES. STOCKPILE AND BORROW AREA LOCATIONS SHALL BE NOTED ON THE SITE MAP AND PERMITTED IN ACCORDANCE WITH GENERAL PERMIT REQUIREMENTS.

S. SLOPES SHALL BE LEFT IN A ROUGHENED CONDITION DURING THE GRADING PHASE TO REDUCE RUNOFF VELOCITIES AND EROSION.

T. DUE TO THE GRADE CHANGES DURING THE DEVELOPMENT OF THE PROJECT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADJUSTING THE EROSION CONTROL MEASURES (SILT FENCES, STRAW BALES, ETC.) TO PREVENT EROSION.

U. ALL CONSTRUCTION SHALL BE STABILIZED AT THE END OF EACH WORKING DAY. THIS INCLUDES BACKFILLING OF TRENCHES FOR UTILITY CONSTRUCTION AND PLACEMENT OF GRAVEL OR BITUMINOUS PAVING FOR ROAD CONSTRUCTION.

EROSION CONTROL PLAN NOTES:

1. PHASED CONSTRUCTION / STABILIZATION

TO ENSURE THAT DISTURBED AREAS ARE NOT VULNERABLE TO EROSION FOR EXTENDED PERIODS, THE SITE NEEDS TO BE BROKEN INTO ZONES OF LAND DISTURBANCE.

WITHIN EACH ZONE, STABILIZE (E.G., SEED & MULCH, COMPOST, EROSION MAT, POLYMER) ALL DISTURBED AREAS OUTSIDE OF STREET RIGHT-OF-WAY BEFORE BREAKING GROUND IN THE NEXT ZONE. STABILIZATION SHALL OCCUR WITHIN 30 DAYS OF INITIAL GROUNDBREAKING OR WITHIN 7 DAYS OF ACHIEVING FINAL GRADE, WHICH EVER OCCURS FIRST.

MULCH AS PART OF A STABILIZATION MEASURE SHALL BE APPLIED TO PRODUCE A CONTINUOUS COVER OF MULCH AND SHALL BE ANCHORED AT A RATE OF 2 TONS PER ACRE. IN ALL CASES, THE MULCH MUST BE ANCHORED INTO THE SOIL BY DISCING.

2. CONSTRUCTION ENTRANCES/EXITS

CONTRACTOR SHALL PROVIDE A STONE TRACKING PAD AT THE POINT(S) OF ACCESS AS SHOWN ON THE PLANS. INSTALL ACCORDING TO WDNR STANDARD 1057. REFER TO WDNR'S WEB PAGE OF TECHNICAL STANDARDS AT:
http://dnr.wi.gov/org/water/wm/nps/stormwater/techstds.htm#Construction

3. WATER PROVISION

FOR THE FIRST SIX WEEKS AFTER INITIAL STABILIZATION (E.G., SEED & MULCH, EROSION MAT, SOD) OF A DISTURBED AREA, PROVISION SHALL BE MADE FOR WATERING WHENEVER MORE THAN 7 DAYS OF DRY WEATHER ELAPSE.

4. TEMPORARY STABILIZATION USING ANIONIC POLYMER

ANIONIC POLYACRYLAMIDE WILL BE APPLIED TO ALL DISTURBED AREAS WHERE THE VILLAGE ENGINEER OR WDNR REPRESENTATIVES DEEM STABILIZATION AND/OR EROSION TO BE PROBLEMATIC. APPLICATION OF POLYACRYLAMIDE WILL BE ACCORDING TO WDNR CONSERVATION PRACTICE STANDARD 1050, EROSION CONTROL LAND APPLICATION OF ANIONIC POLYACRYLAMIDE. REFER TO WDNR'S STORMWATER WEB PAGE OF TECHICAL STANDARDS AT:
http://dnr.wi.gov/org/water/wm/nps/stormwater/techstds.htm

~~5. DEEP TILLING~~

~~FOLLOWING ROUGH GRADING, DEEP TILLING (A.K.A. SUBSOILING) WILL BE PERFORMED ON ALL GRADED AREAS OUTSIDE THE FOOTPRINT OF STREET FOOTPRINTS. THE OPERATION SHALL BE ACCOMPLISHED USING TWIN-STRAIGHT STEEL SHANKS DRAWN BY TRACKED MACHINERY. EACH SHANK SHALL BE 24 TO 30 INCHES LONG, POSITIONED OVER THE TRACTOR TRACKS, AND SPACED 4 TO 5 FEET APART. DEEP TILLING SHALL BE DONE ON DRY SOIL AND ACROSS THE SLOPE. REFER TO THE DANE COUNTY EROSION CONTROL AND STORMWATER MANAGEMENT MANUAL, APPENDIX I.D.1, WHICH IS ACCESSIBLE FROM THE DANE COUNTY LAKES AND WATERSHED COMMISSION WEB SITE AT:
http://www.countyofdane.com/lwrd/lakes/stormwatermanual.shtml~~

6. SOIL STOCKPILES

A ROW OF SILT FENCE PLACED DOWNSLOPE AND AT LEAST 10 FEET AWAY FROM SOIL STOCKPILES SHALL PROTECT ALL STOCKPILES. SOIL STOCKPILES THAT ARE INACTIVE FOR MORE THAN 14 CONSECUTIVE DAYS SHALL BE STABILIZED WITH SEED & MULCH, EROSION MAT, POLYMER, OR COVERED WITH TARPS OR SIMILAR MATERIAL.

~~7. DEWATERING~~

~~WATER PUMPED FROM THE SITE SHALL BE TREATED BY USING A TEMPORARY SEDIMENTATION BASIN, PORTABLE DEWATERING BASIN OR AN EQUIVALENT DEVICE.~~

~~ANY INDIVIDUAL SEDIMENTATION BASIN SHALL HAVE A DEPTH OF AT LEAST 3 FEET AND PROVIDE A MAXIMUM SURFACE SETTLING RATE OF 1500 GALLONS PER SQUARE FOOT PER DAY.~~

~~THIS WATER SHALL BE DISCHARGED IN A MANNER THAT DOES NOT INDUCE EROSION OF THE SITE OR ADJACENT PROPERTY.~~

8. STORM SEWER INLETS

PROVIDE WDOT TYPE D "CATCHALL" INLET PROTECTION OR EQUIVALENT. REFER TO WDOT PRODUCT ACCEPTABILITY LIST AT: http://www.dot.wisconsin.gov/business/engrserv/pal.htm. INLET PROTECTION SHALL BE INSTALLED PRIOR TO THE STORM SEWER SYSTEM RECEIVING SITE RUNOFF. OTHER THAN FOR PERFORMING MAINTENANCE, THESE DEVICES SHALL NOT BE REMOVED UNTIL FLAT-LEVEL STABILIZATION IS COMPLETE.

9. INSPECTIONS

ALL EROSION CONTROL MEASURES AND STRUCTURES SERVING THE SITE MUST BE INSPECTED AT LEAST WEEKLY AND WHENEVER 0.5 INCHES OF RAIN OR MORE IS PRODUCED WITHIN 24 HOURS. ALL NECESSARY MAINTENANCE SHOULD FOLLOW THE INSPECTIONS WITHIN 24 HOURS.

10. PONDS

THE STORM WATER PONDS SHALL BE CONSTRUCTED TO ALLOW SEDIMENTATION WITHIN THE POND DURING CONSTRUCTION (EXCLUDING BIO-FILTERS), AND THE CLEANING OF THE POND FROM ACCUMULATED SEDIMENT AT THE COMPLETION OF CONSTRUCTION.

MAINTENANCE

ALL MEASURES STATED ON THIS EROSION AND SEDIMENT CONTROL PLAN, AND IN SWPPP SHALL BE MAINTAINED IN FULLY FUNCTIONAL CONDITION UNTIL NO LONGER REQUIRED FOR A COMPLETED PHASE OF WORK OR FINAL STABILIZATION OF THE SITE. ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE CHECKED BY A QUALIFIED PERSON IN ACCORDANCE WITH THE CONTRACT DOCUMENTS OR THE APPLICABLE PERMIT, WHICHEVER IS MORE STRINGENT, AND REPAIRED IN ACCORDANCE WITH THE FOLLOWING:

1. INLET PROTECTION DEVICES AND BARRIERS SHALL BE REPAIRED OR REPLACED IF THEY SHOW SIGNS OF UNDERMINING, OR DETERIORATION.

2. ALL SEEDED AREAS SHALL BE CHECKED REGULARLY TO SEE THAT A GOOD STAND IS MAINTAINED. AREAS SHOULD BE FERTILIZED, WATERED, AND RESEEDED AS NEEDED.

3. SILT FENCES SHALL BE REPAIRED TO THEIR ORIGINAL CONDITIONS IF DAMAGED. SEDIMENT SHALL BE REMOVED FROM THE SILT FENCES WHEN IT REACHES ONE-HALF THE HEIGHT OF THE SILT FENCE.

4. THE CONSTRUCTION ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH SHALL PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING OF THE CONSTRUCTION ENTRANCE AS CONDITIONS DEMAND.

5. THE TEMPORARY PARKING AND STORAGE AREA SHALL BE KEPT IN GOOD CONDITION (SUITABLE FOR PARKING AND STORAGE). THIS MAY REQUIRE PERIODIC TOP DRESSING OF THE TEMPORARY PARKING AS CONDITIONS DEMAND.

6. OUTLET STRUCTURES IN THE SEDIMENTATION BASINS SHALL BE MAINTAINED IN OPERATIONAL CONDITIONS AT ALL TIMES. SEDIMENT SHALL BE REMOVED FROM SEDIMENT BASINS OR TRAPS WHEN THE DESIGN CAPACITY HAS BEEN REDUCED.

CONSTRUCTION SEQUENCE:

PHASE 1

1. Install construction entrance/exit(s).
2. Prepare temporary parking and equipment storage area.
3. Install silt fencing where indicated.
4. Construct the vegetated infiltration swales & corresponding silt fencing.

HALT ALL ACTIVITIES AND CONTACT THE CIVIL ENGINEERING CONSULTANT TO PERFORM AN INSPECTION OF BEST MANAGEMENT PRACTICES (BMP's). GENERAL CONTRACTOR SHALL SCHEDULE AND CONDUCT A STORM WATER PRE-CONSTRUCTION MEETING WITH ENGINEER AND ALL GROUND DISTURBING CONTRACTORS BEFORE PROCEEDING WITH CONSTRUCTION.

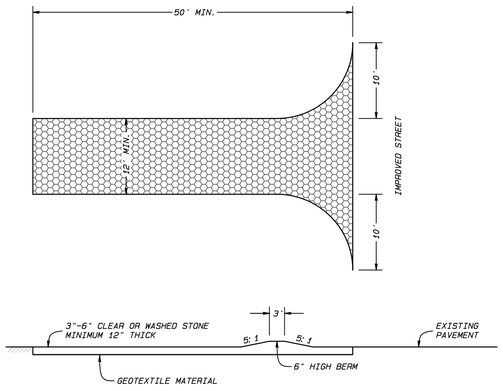
5. Clear and grub the site.
6. Begin grading the site.

PHASE 2

1. Temporarily seed denuded areas.
2. Install utilities, underdrains, storm sewers.
3. Install matting/rip-rap around outlet structures per detail.
4. Install inlet protection around indicated storm sewer inlets.
5. Stabilize all areas that are to be seeded and able to be brought to finished grade with seeding/mulch, sod, or approved equal.
6. Stabilize all areas that are to be paved and that are able to be brought to subgrade elevation with compacted base material.
7. Grade all possible areas while maintaining diversions and basins.
8. Stabilize all areas that are to be seeded and able to be brought to finished grade with seeding/mulch, sod, or approved equal.
9. Stabilize all areas that are to be paved and that are able to be brought to subgrade elevation with compacted base material.
10. Maintain 70% stabilization within disturbed areas.

PHASE 3

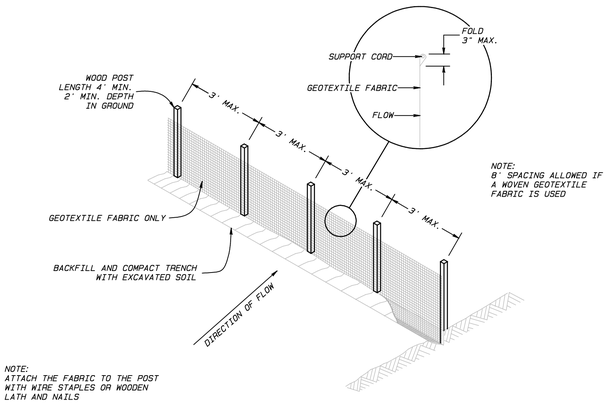
1. Backfill and stabilize diversions and swales.
2. Pave site.
3. Complete grading.
4. Remove all temporary erosion and sediment control devices (only if site is stablized).



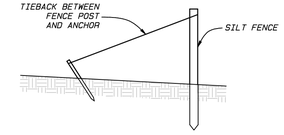
NOTE: MAINTAIN THE ROCK ENTRANCE TO PREVENT TRACKING ONTO PAVEMENT

STONE TRACKING PAD

FOR MORE INFORMATION, SEE DNR BMP TECH STANDARD 1057

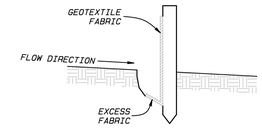


SILT FENCE

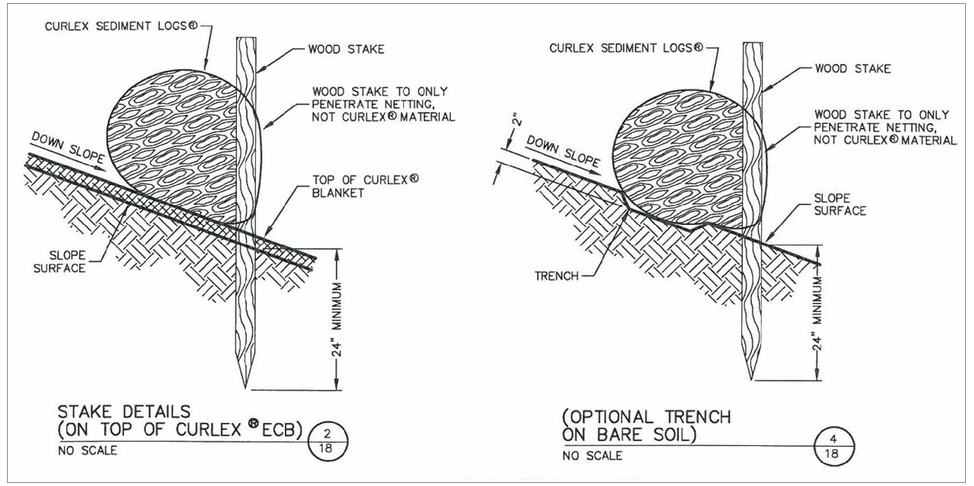


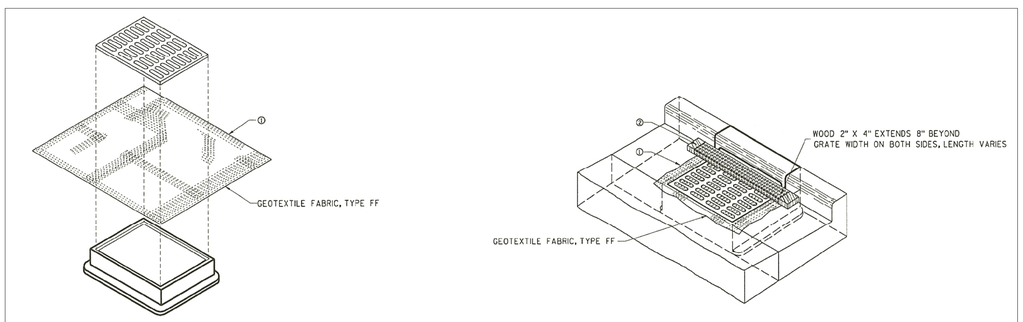
SILT FENCE TIE BACK

WHEN REQUIRED BY ENGINEER



TRENCH DETAIL





CONSTRUCTION TIMELINE

PROPOSED START DATE: JUNE 15, 2026

1.	INSTALL TEMPORARY EROSION CONTROL DEVICES AND CONSTRUCT TEMPORARY SEDIMENT TRAPS	(06/15/2026)
2.	STRIP AND STOCKPILE TOPSOIL. INSTALL PERIMETER PROTECTION AROUND STOCKPILE	(06/22/2026)
3.	BEGIN DEMOLITION (PAVEMENT REMOVALS) AND SITE GRADING	(06/29/2026)
4.	BEGIN INSTALLATION OF NEW SERVICES/UTILITIES	(07/06/2026)
5.	PREPARE NEW PAVEMENT BASE MATERIAL	(07/13/2026)
6.	CONSTRUCT NEW CURB	(07/20/2026)
7.	PAVING	(07/27/2026)
8.	FINAL TOPSOIL PLACEMENT/GRADING	(08/03/2026)
9.	PERMANANT OR TEMPORARY (WHICHEVER IS APPLICABLE IN SPECIFIC AREA) SITE STABILIZATION WITH SEED, FERTILIZER AND SURFACE PROTECTION	(08/11/2026)
10.	REMOVE ACCUMULATED SEDIMENT FROM TEMPORARY SEDIMENTATION AREAS. PREPARE & PLACE BIO-FILTER MIX	(08/18/2026)
11.	CONTACT DANE COUNTY LWRD WITHIN 10 DAYS AFTER PERMANENT EROSION CONTROL PRACTICES ARE INSTALLED	(08/25/2026)

Combs & ASSOCIATES LLC
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Janesville, WI 53548
www.combssurvey.com
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LAND PLANNING
CIVIL ENGINEERING
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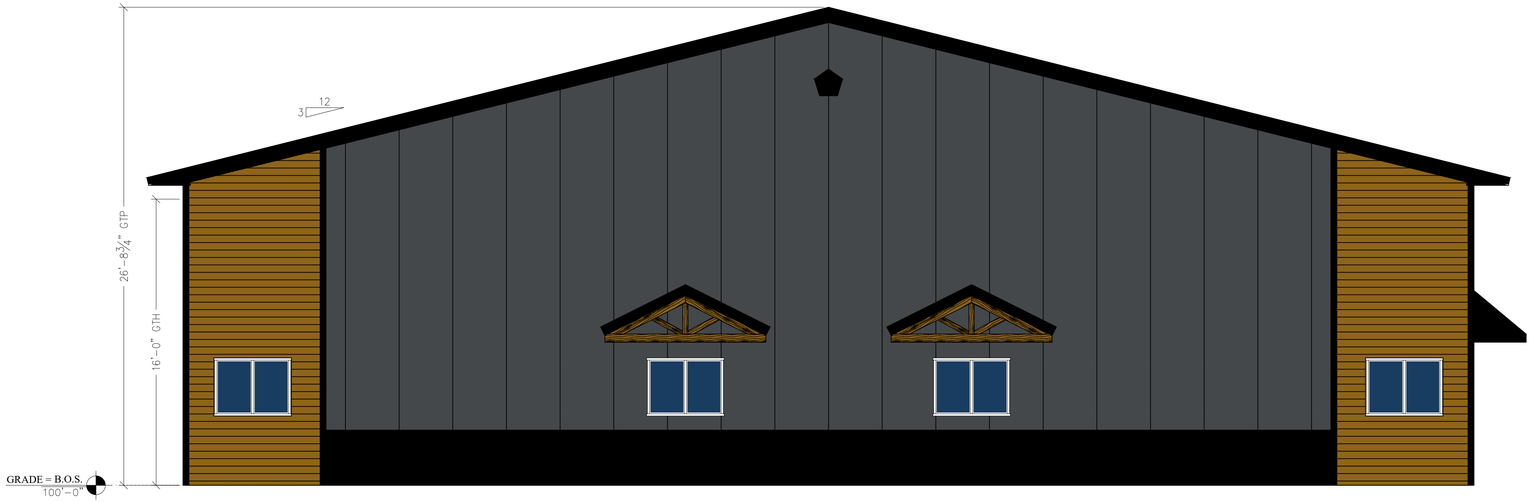
DATE	05/05/26
BY	BFG
APPROVED	AFG
PROJECT NO.	125-555
REVISIONS	

ECP NOTES AND DETAILS



1 / A1 LEFT END ELEVATION
SCALE: 1/4" = 1'-0"

2 / A1 FRONT SIDE ELEVATION
SCALE: 1/8" = 1'-0"

Walters Buildings
Jack Walters & Sons, Corp.
P.O. Box 388
6600 Midland Ct.
Allenton, WI 53002
1-800-558-7800
www.waltersbuildings.com

PRELIMINARY PLANS - NOT FOR CONSTRUCTION

OWNER NAME:
Kjell Kaashagen

OWNER ADDRESS:
Cambridge, WI, 53523

PROJECT NAME:
Kaashagen Building - Original Quote

PROJECT ADDRESS:
East North Street, Cambridge, WI, 53523

SALES REP / DEALER:
CHAD OLSON

DRAFTER:
ROSS NEUMANN

ESTIMATOR:

LAST SAVED BY:
RNEUMANN ON: 5/5/2026

PAPER SIZE:
ARCH FULL BLEED D (24.00 X 36.00 INCHES)

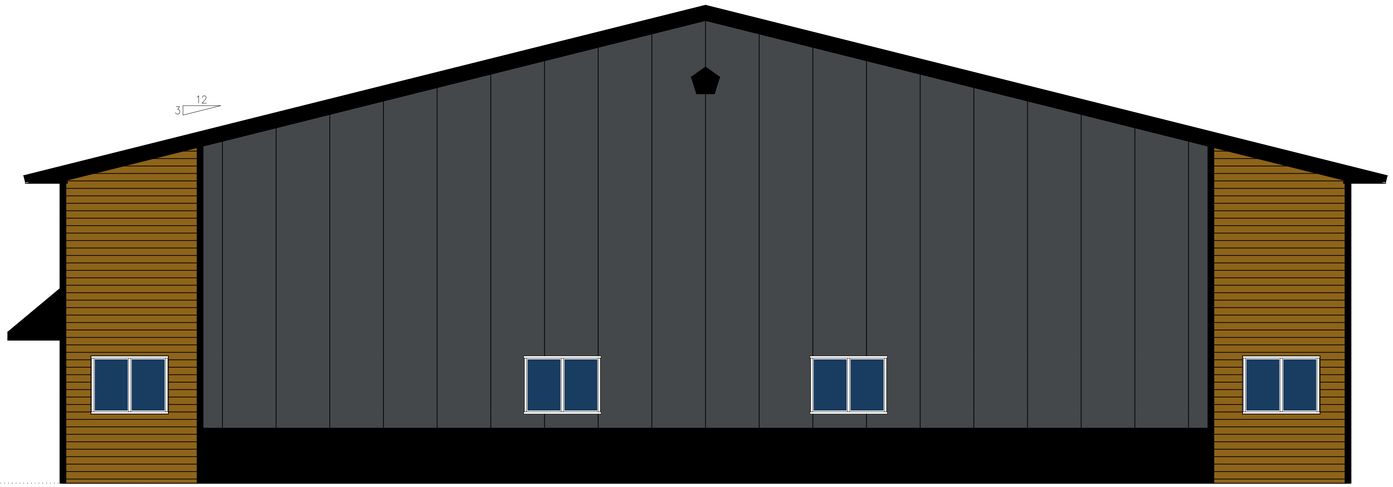
SCALE:
AS NOTED

ENGINEER:

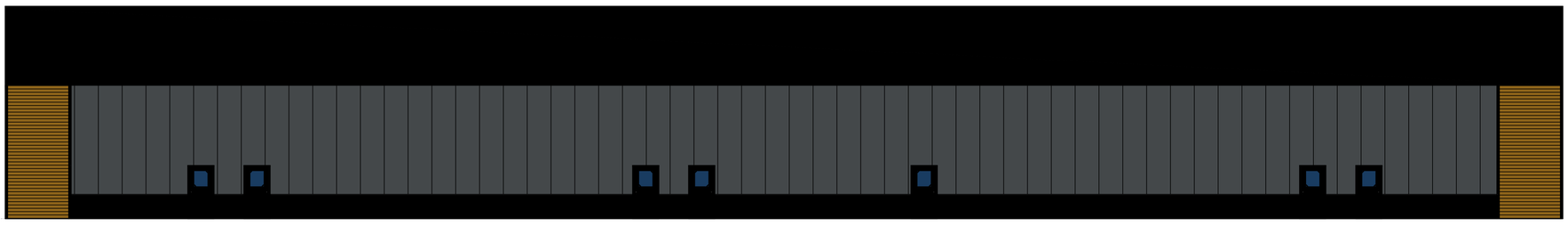
JOB NUMBER:
94-0855

PROJECT ID:
2025001364

SHEET NUMBER:
A1



1 A1.1 RIGHT END ELEVATION
SCALE: 1/4" = 1'-0"



2 A1.1 BACK SIDE ELEVATION
SCALE: 1/8" = 1'-0"

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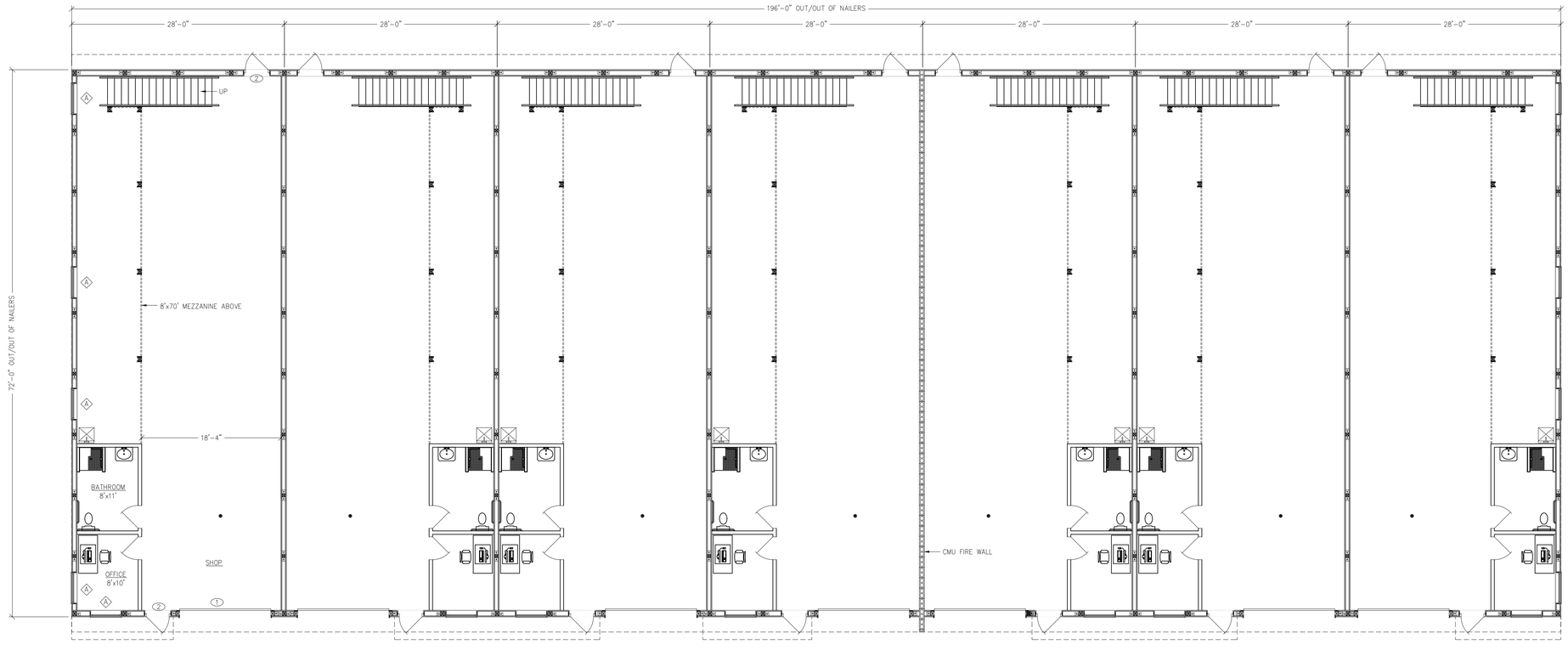
SHEET NUMBER:
A1.1

DOOR & WINDOW SCHEDULE

MAINTAIN LEVEL APPROACH TO ALL WALKDOORS *FIELD VERIFY ALL WINDOW SILL HEIGHTS*
SEE PAGE G1 FOR PLYCO ROUGH OPENING SIZES

TAG	TYPE	QUANTITY
1	12'x14' OHD	X
2	THERMAL BREAK – PLYCO 92 SERIES 3068 BRONZE WALK DOOR W/ 20X24 WINDOW AND LEVERSET WITH DEADBOLT	X
A	PLYCO 4030 HORIZONTAL SLIDE WINDOW	X



EACH UNIT: 1900 SQ. FT.
MEZZANINE: 598 SQ FT.

1 / A2 FLOOR LAYOUT PLAN
SCALE: 1/8" = 1'-0"

Walters Buildings

Jack Walters & Sons, Corp.
P.O. Box 388
6600 Midland Ct.
Allenton, WI 53002
1-800-558-7800
www.waltersbuildings.com

PRELIMINARY PLANS - NOT FOR CONSTRUCTION

OWNER NAME:
Kjell Kaashagen

OWNER ADDRESS:
Cambridge, WI, 53523

PROJECT NAME:
Kaashagen Building - Original Quote

PROJECT ADDRESS:
East North Street, Cambridge, WI, 53523

SALES REP / DEALER:
CHAD OLSON

DRAFTER:
ROSS NEUMANN

ESTIMATOR:

LAST SAVED BY:
RNEUMANN ON: 5/5/2026

PAPER SIZE:
ARCH FULL BLEED D (24.00 X 36.00 INCHES)

SCALE: 1/8" = 1'-0"
0 5' 8' 10'

ENGINEER:

JOB NUMBER:
94-0855

PROJECT ID:
2025001364

SHEET NUMBER:
A2

Combs & ASSOCIATES INC

• Land Surveying
• Land Planning
• Civil Engineering

STORM WATER MANAGEMENT

and

EROSION CONTROL PLAN

Kjell Kaashagen Site
(A New Commercial Building)

Lot 4 of Matt's Plat to the Village of Cambridge, Cambridge, Wisconsin

May 5, 2026

(pending test pit/soils data)

109 W. Milwaukee St. • Janesville, WI 53548 • 608-752-0575 • Fax 608-752-0534
CombsSurvey.com

NARRATIVE

PROJECT DESCRIPTION

This project is a proposed new building and parking lot on a 1.03-acre platted parcel in the Village of Cambridge. The project will be considered a "new" development as it relates to stormwater requirements and is anticipated to disturb approximately 1.0 acre of land. Stormwater management will be implemented to achieve peak flow control, at least an 80% TSS reduction, and at least 75% infiltration. The parcel is located along the northeast side of Katie Court, approximately 500 feet northwesterly of the intersection of Highway 18 and Kenseth Way.

EXISTING CONDITIONS

The site is actively tilled agricultural field and has frontage along Katie Court. On-site soils as depicted in the Soil Survey of Dane County, are 7124B (Dodge Silt Loam), and 7199A (Plano Silt Loam).

The property is surrounded by developed commercial sites to the northwest (Family Dental) and southeast (Cambridge Clinic), public road (Katie Court) to the southwest, and undeveloped agricultural field to the northeast.

The site generally flows overland to the southeast toward Katie Court. Some northerly offsite water drains to and through this property. Although no public storm sewer fronts this property, once surface water reaches Katie Court, it is directed southeasterly to storm sewer along the Cambridge Clinic frontage.

DEVELOPED CONDITIONS

The proposed commercial building and associated paved parking area will be constructed along with new water and sanitary service extensions. Anticipated new impervious surfaces total 0.61 acres (59.0%). New stormwater facilities will be constructed to handle required stormwater standards for DNR, Dane County, and the Village of Cambridge.

Storm water management

The developed site will continue to surface-drain southerly but will flow into the new stormwater management areas along the low side of the lot (near Katie Court). More specifically, the building roof will drain either to the northerly swale, or to the new parking area, and to the ponds. The ponds will be connected by a "free-flow" pipe which effectively allows each pond area to function as a single pond. An earthen weir and small diameter pipe will allow the pond to draw down in a controlled fashion. The stormwater areas will be designed to meet Peak, TSS, and Infiltration requirements. Note that since public storm sewer isn't

directly available along the site frontage, the discharge pipe will be routed through the adjacent private property and to an existing storm manhole which drains to public storm sewer.

A minor untreated area (at the new paved entrance) will be accounted for in the storm water management modeling (Winslamm and Hydrocad). Each runoff basin is depicted on the attached basin exhibits. Overflow from the pond will be directed to the Katie Court right-of-way.

SITE EVALUATION FOR STORM WATER INFILTRATION

This project will be considered a "new" development due to the construction of more than 20,000 sf of impervious surfaces (since 2001). As such, infiltration will be a requirement. Per DNR BMP 1002, a site evaluation for storm water infiltration follows:

Step A: Initial Site Screening

There are no prohibitions per NR151.124 (3)(a) or (4). A wetland delineation is not anticipated due to lack of indicative soils per the attached DNR SWDV map. There are no native ground surfaces greater than a 20% slope. Soils south of the existing improvements are shown as 7124B (Dodge Silt Loam), and 7199A (Plano Silt Loam) noted as "well drained". Hydrologic soils group B (see attached USDA soil report for reference) lay on the southern portion of the property, with some HSG C areas to the north.

Per the WRRD web mapping application, no contaminated properties exist within 500 feet of this project. No endangered resources occur on this site (see attached NHI map). No mapped wetlands or hydric soils occur near this project. No karst features or other conduits direct to groundwater exist. No exemptions per NR 151.124(3)(b) or (4)(c) are anticipated. No adverse potential impacts to adjacent properties are anticipated, however it is noted that some surface flow will occur along the common side lot lines. This will be mitigated with the proposed stormwater improvements.

Step B: Preliminary Field Verification of the Initial Site Screening

Site visits and collection of various survey data confirms initial screening data mentioned above. The obvious location for stormwater management improvements lay along the Katie Court (low) side of the property.

Step C.1: Field Evaluation of Specific Infiltration Areas:

Test pit data is being obtained/pending for the area anticipated to have a bio-infiltration device. Until infiltration rates are known, a conservative rate of 0.50" per hour is modeled. See attached form SBD-10793 for results.

Step C.2: Infiltration Rate Exemption:

No exemption is requested.

Step C.3: Infiltration Rate Determination:
See attached form SBD-10793.

Step D: Soil and Site Evaluation Report:
See attached form SBD-10793, the attached construction plans, and the attached soils data & maps.

Storm water performance standards

Dane County, Village of Cambridge, and WDNR require storm water management performance standards for new development sites as follows for peak flow, infiltration, and total suspended solids removal.

Peak Discharge: Per NR 151.123(1), peak discharge for a new development site "shall be employed to maintain or reduce the 1-year, 24-hour and the 2-year, 24-hour post-construction peak runoff rates…". Note that Dane County also requires peak discharge control for the 1, 2, 10, 100, and 200-year storm events.

24-hour storm totals used are as follows:

(Atlas 14 precipitation	depths):
1-year event	2.47 inches
2-year event	2.85 inches
10-year event	4.12 inches
100-year event	6.57 inches
200-year event	7.53 inches

Methodology:
Hydrocad software will be used to model peak discharge performance.

Infiltration: Per NR 151.124(1)(b), the pre-development infiltration volume for a new development site is 75%.

Methodology:
WinSlamm software along with an "Infiltration Summary"worksheet is used to determine infiltration and Total Suspended Solids (TSS) removal.

Average Annual Rainfall: 28.81 inches, Madison, 1981
(March 12 to December 2)

Total Suspended Solids (TSS) removal: Per NR151.122(1) Table 1, reduce TSS load by 40% based on an average annual rainfall, as compared to no runoff management controls for a redevelopment site.

Methodology:
WinSlamm software is used to determine infiltration and Total Suspended Solids (TSS) removal.

Average Annual Rainfall: 28.81 inches, Madison, 1981
(March 12 to December 2)

Peak Flow Summary
The site was modeled using *HydroCAD* software.

Node descriptions as presented in the attached *HydroCAD Report* follow:

1E Existing Basin (On and Offsite) flowing to future SWM area
3ES Existing Basin discharge summary

1P Developed Basin (On and Offsite) flowing to new SWM area
2P Developed East Basin (Onsite) bypassing new SWM area
1Po Developed bio-filter/pond area (2 areas combined via 12" pipe)
4Z Developed bio-filter discharge summary (infiltration to ground)
3PS Developed Basin discharge summary

The peak flow summaries can be found in the attached *HydroCAD Report*. The total peak flow summary is presented in the table below:

New Stormwater Management Area:

Storm	Pre-Dev flow	Discharge from pond (1Po)	Total Site Discharge
1-yr	0.54cfs	**0.36cfs**	**0.38cfs**
2-yr	0.78cfs	**0.45cfs**	**0.49cfs**
10-yr	1.75cfs	**0.72cfs**	**0.80cfs**
100-yr	4.08cfs	**1.05cfs**	**1.33cfs**
200-yr	4.92cfs	**1.76cfs**	**1.92cfs**

Infiltration Summary
WinSLAMM modeling performed for this project indicates ***102%*** of pre-development infiltration will be achieved (see attached *Infiltration Summary* worksheet and supporting data). Note that infiltration of offsite areas is excluded from the calculations

Total Suspended Solids Summary
A project specific SLAMM model was then performed using anticipated land uses for TSS removal in this development. The results of the modeling indicate a ***99.11%*** reduction.

Worksheets including input and output data for the SLAMM modeling are included with this report.

24-Hour (maximum) Drawdown calculations for 1-year storm:
For each bio-filter area, a drawdown calculation was modeled with Hydrocad. The following results are reported.

Bio-filter (node 1Po):
Per attached hydrograph table, the Northeast Bio drawdown time is calculated as the difference between time at peak water elevation and the time at zero water elevation, so:

Time to Peak = 14.00 hr
Time to Zero = 38.00 hr
Drawdown = 24 hours

CONSTRUCTION SITE EROSION CONTROL

Erosion control best management practices (BMPs) will be implemented to control soil erosion during construction.

Silt fencing, a tracking pad, erosion matting, inlet protection, and rip-rap will be implemented, and construction runoff will be directed to the stormwater management areas.

ANTICIPATED CONSTRUCTION SCHEDULE

June 2026 - Begin construction. Install initial erosion control BMP's & excavate portion of pond areas so they can act as a sediment traps during construction. Begin new utility installation.

August 2026 – Finalize construction, paving, topsoil placement, seeding, matting, placement of bio-filter mix. Continue to monitor site for problematic area erosion to ensure continued compliance.

*Schedule may need to be adjusted depending on permits/approvals, project bidding, weather, or unforeseen circumstances. Erosion control/stabilization procedures may need to be adjusted with any scheduling changes. Notify Dane County of any significant adjustments to anticipated construction timing or permit extensions.

MAINTENANCE SCHEDULE AND REQUIREMENTS

Construction Site

The landowner's representative shall inspect and maintain all construction site erosion control measures weekly during construction, and after each rainfall of 0.5" or more per DNR guidance.

Post Construction

Post-construction maintenance of the storm water management facilities will be provided by the individual landowner. Drafts of the long-term maintenance requirement documents are attached for County review. Upon approval & final construction of facilities, documents shall be recorded per County requirements.

EXISTING SITE IMAGES

Located in Section 1, T.6N., R.12E. of the 4th P.M.,
Village of Cambridge, Dane County, WI

2024 Aerial Photo

Looking northeast from south lot line 2025-05-01

Endangered Resources Preliminary Assessment

Created on **2/19/2026**. This report is good for one year after the created date.

DNR staff will be reviewing the ER Preliminary Assessments to verify the results provided by the Public Portal. ER Preliminary Assessments are only valid if the project habitat and waterway-related questions are answered accurately based on current site conditions. If an assessment is deemed invalid, a full ER review may be required even if the assessment indicated otherwise.

Results

A search was conducted of the NHI Portal within a 1-mile buffer (for terrestrial and wetland species) and a 2-mile buffer (for aquatic species) of the project area. Based on these search results, below are your follow-up actions.

This project is covered by the Broad Incidental Take Permit/Authorization for No/Low Impact Activities (No/Low BITP/A) (https://dnr.wi.gov/topic/ERReview/ITNoLowImpact.html) **provided that the follow-up actions below are implemented**. This BITP/A covers projects that the DNR has determined will have no impact or a minimal impact to endangered and threatened species in the state. Due to this coverage under the No/Low BITP/A, a formal review letter is not needed and only the actions listed below need to be followed to comply with state and/or federal endangered species laws, any take that may result from the proposed project is permitted/authorized for state-listed species.

Follow up actions:

The Bald Eagle (*Haliaeetus leucocephalus*) is Federally protected by the Bald & Golden Eagle Protection Act. An eagle nest has been recorded within 1 mile of the project area. Visit the USFWS Bald Eagle Management website (https://fws.gov/story/do-i-need-eagle-take-permit) for detailed guidelines and conservation measures for your specific project activity.

Visiting the website and following USFWS guidance will satisfy the project's Endangered Resources requirements.

A copy of this document can be kept on file and submitted with any other necessary DNR permit applications to show that the need for an ER Review has been met. This notice only addresses endangered resources issues. This notice does not constitute DNR authorization of the proposed project and does not exempt the project from securing necessary permits and approvals from the DNR and/or other permitting authorities.

Project Information

Landowner name	**Kjell Kaashagen**
Project address	**Twelve Condominiums buildings with paved parking and stormwater management.**
Project description	**Lot 4 of Matts Plat of the Village of Cambridge**

Project Questions

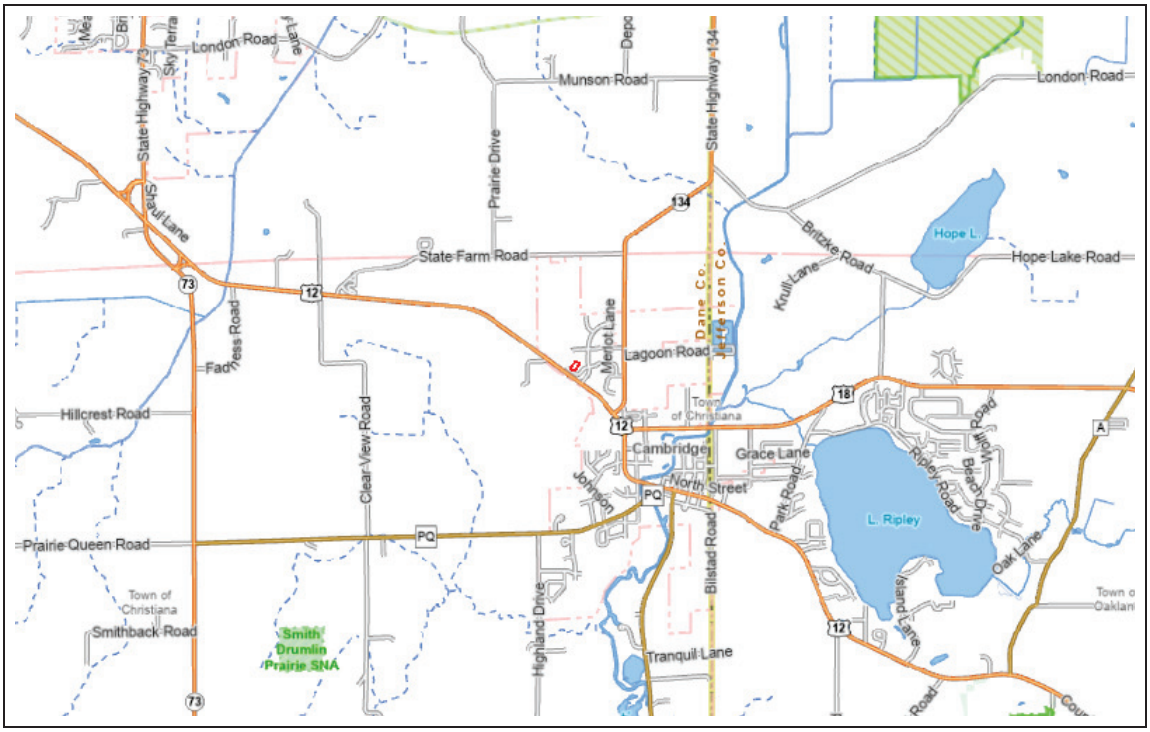
Does the project involve a public property?	**Yes**
Is there any federal involvement with the project?	**No**
Is the project a utility, agricultural, forestry or bulk sampling (associated with mining) project?	**Yes**
Is the project property in Managed Forest Law or Managed Forest Tax Law?	**No**
Project involves tree or shrub removal?	**No**

Is project near (within 300 ft) a waterbody or a shoreline?	**No**
Is project within a waterbody or along the shoreline?	**No**

Does the project area (including access routes, staging areas, laydown yards, select sites, source/fill sites, etc.) occur **entirely within** one or more of the following habitats?

Urban/residential	**No**
Manicured lawn	**Yes**
Artificial/paved surface	**No**
Agricultural land	**No**
Areas covered in crushed stone or gravel	**No**

Project Area Maps



WISCONSIN DEPARTMENT OF NATURAL RESOURCES

WY: Surface Water Data Viewer (SWDV_VS_App)

Legend: (some map layers may not be displayed)

- Wetland Indicators

NRCS Wisconsin Soils

- Soil Mapping Unit

NRCS Soil Hydric Ratings

- Predominantly Non-Hydric
- Latest Leaf Off Index
- Latest Leaf Off Imagery

Notes:

Map projection: NAD 1983 HARN Wisconsin TM

N

Map: 0 110 220 Feet
0 30 60 Meters

Service Layer Credits:
Wetland Indicators & Soils^: Surface Water Data Viewer Team, DNR Basic Feature VTL (WTM): Wisconsin Department of Natural Resources, GIS Section, Latest Leaf Off: , Surface Water: WiDNR, USGS, and other data, Wetland Inventory NWI (Dynamic): Calvin Lawrence, Dennis Weise, Nina Rihn

Date Printed: 2/19/2026 3:54 PM

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Dane County, Wisconsin

Kjell K.

February 19, 2026

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map

Map Scale: 1:698 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 10 20 40 60

Feet: 0 30 60 120 180

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

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

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

Background
- Aerial Photography

MAP INFORMATION

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

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

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

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

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

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

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

Soil Survey Area: Dane County, Wisconsin
Survey Area Data: Version 24, Sep 10, 2025

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

Date(s) aerial images were photographed: Jul 30, 2022—Sep 13, 2022

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
7124B	Dodge silt loam, 2 to 6 percent slopes	0.5	49.0%
7199A	Plano silt loam, till substratum, 0 to 2 percent slopes	0.5	51.0%
Totals for Area of Interest		**1.0**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however,

onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Dane County, Wisconsin

7124B—Dodge silt loam, 2 to 6 percent slopes

Map Unit Setting

National map unit symbol: 2szfp
Landscape: Drumlin fields
Elevation: 830 to 1,090 feet
Mean annual precipitation: 31 to 35 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 127 to 181 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Dodge and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Dodge

Setting

Landscape: Drumlin fields
Landform: Drumlins
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loess over calcareous loamy till

Typical profile

Ap - 0 to 6 inches: silt loam
BE - 6 to 9 inches: silt loam
Bt1 - 9 to 29 inches: silty clay loam
2Bt2 - 29 to 40 inches: clay loam
2C - 40 to 79 inches: gravelly sandy loam

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 40 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 9.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C
Ecological site: F095XB007WI - Loamy Upland with Carbonates
Forage suitability group: High AWC, adequately drained (G095BY008WI)

Other vegetative classification: High AWC, adequately drained (G095BY008WI)
Hydric soil rating: No

Minor Components

St. charles
Percent of map unit: 8 percent
Landscape: Drumlin fields
Landform: Drumlins
Ecological site: F095XB010WI - Loamy and Clayey Upland
Hydric soil rating: No

Mayville
Percent of map unit: 5 percent
Landscape: Drumlin fields
Landform: Drumlins
Ecological site: F095XB010WI - Loamy and Clayey Upland
Hydric soil rating: No

Lamartine
Percent of map unit: 2 percent
Landscape: Drumlin fields
Landform: Drumlins
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Concave
Across-slope shape: Linear
Ecological site: F095XB005WI - Moist Loamy or Clayey Lowland
Hydric soil rating: No

7199A—Plano silt loam, till substratum, 0 to 2 percent slopes

Map Unit Setting
National map unit symbol: 2tjwr
Landscape: Plains
Elevation: 640 to 1,070 feet
Mean annual precipitation: 31 to 37 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 127 to 178 days
Farmland classification: All areas are prime farmland

Map Unit Composition
Plano, till substratum, and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Plano, Till Substratum

Setting
Landscape: Plains
Landform: Till plains

Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loess over glacial loamy till

Typical profile

Ap - 0 to 11 inches: silt loam
Bt1 - 11 to 41 inches: silty clay loam
2Bt2 - 41 to 46 inches: loam
2C - 46 to 79 inches: sandy loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: About 40 to 45 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 35 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 10.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 1
Hydrologic Soil Group: B
Ecological site: F095XB010WI - Loamy and Clayey Upland
Forage suitability group: High AWC, adequately drained (G095BY008WI)
Other vegetative classification: High AWC, adequately drained (G095BY008WI)
Hydric soil rating: No

Minor Components

Elburn

Percent of map unit: 10 percent
Landscape: Plains
Landform: Till plains
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Linear
Ecological site: F095XB002WI - Wet Floodplain
Hydric soil rating: No

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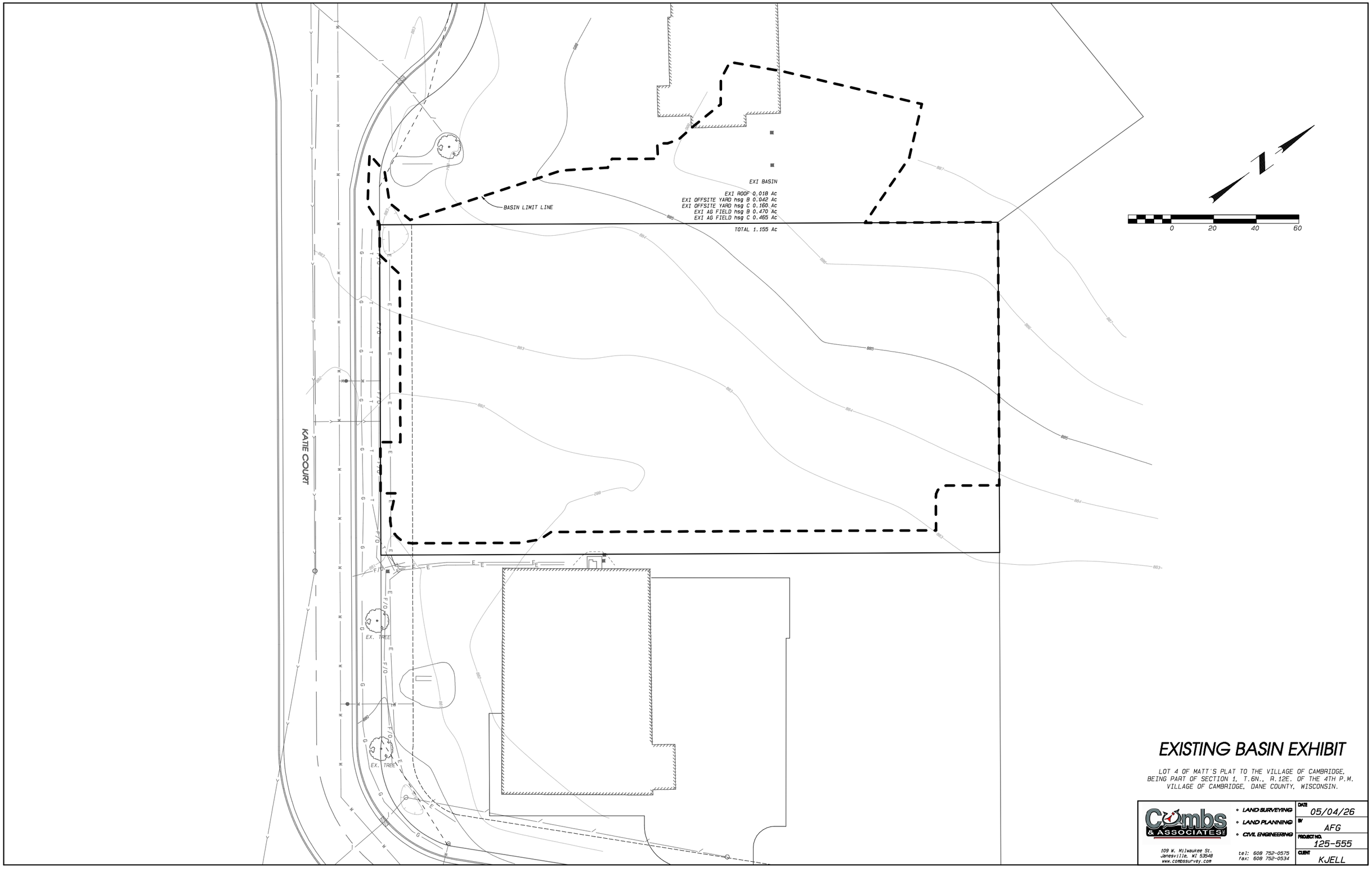

EXISTING BASIN EXHIBIT

LOT 4 OF MATT'S PLAT TO THE VILLAGE OF CAMBRIDGE,
BEING PART OF SECTION 1, T.6N., R.12E. OF THE 4TH P.M.
VILLAGE OF CAMBRIDGE, DANE COUNTY, WISCONSIN.

Combs & Associates
• LAND SURVEYING
• LAND PLANNING
• CIVIL ENGINEERING
109 W. Milwaukee St.
Janesville, WI 53548
www.combssurvey.com
tel: 608 752-0575
fax: 608 752-0534

DATE	05/04/26
BY	AFG
PROJECT NO.	125-555
CLIENT	KJELL

CAMBRIDGE
FAMILY DENTAL

710 KATIE COURT

BASIN LIMIT LINE

DEVELOPED BASIN

EXI ROOF 0.018 Ac
EXI OFFSITE YARD hsg B 0.042 Ac
EXI OFFSITE YARD hsg C 0.160 Ac
NEW ROOF 0.324 Ac
NEW PVMT 0.285 Ac
NEW YARD, hsg B 0.186 Ac
NEW YARD, hsg C 0.030 Ac

TOTAL 1.045 Ac

PROPOSED BUILDING

EAST BASIN-UNTREATED
grass 0.089 ac

WEST BASIN-UNTREATED
PVMT 0.021 ac

KATIE COURT

EX. TREE

EX. TREE

FORT HEALTH CARE
CAMBRIDGE CLINIC

704 KATIE COURT

0 20 40 60

DEVELOPED BASIN EXHIBIT

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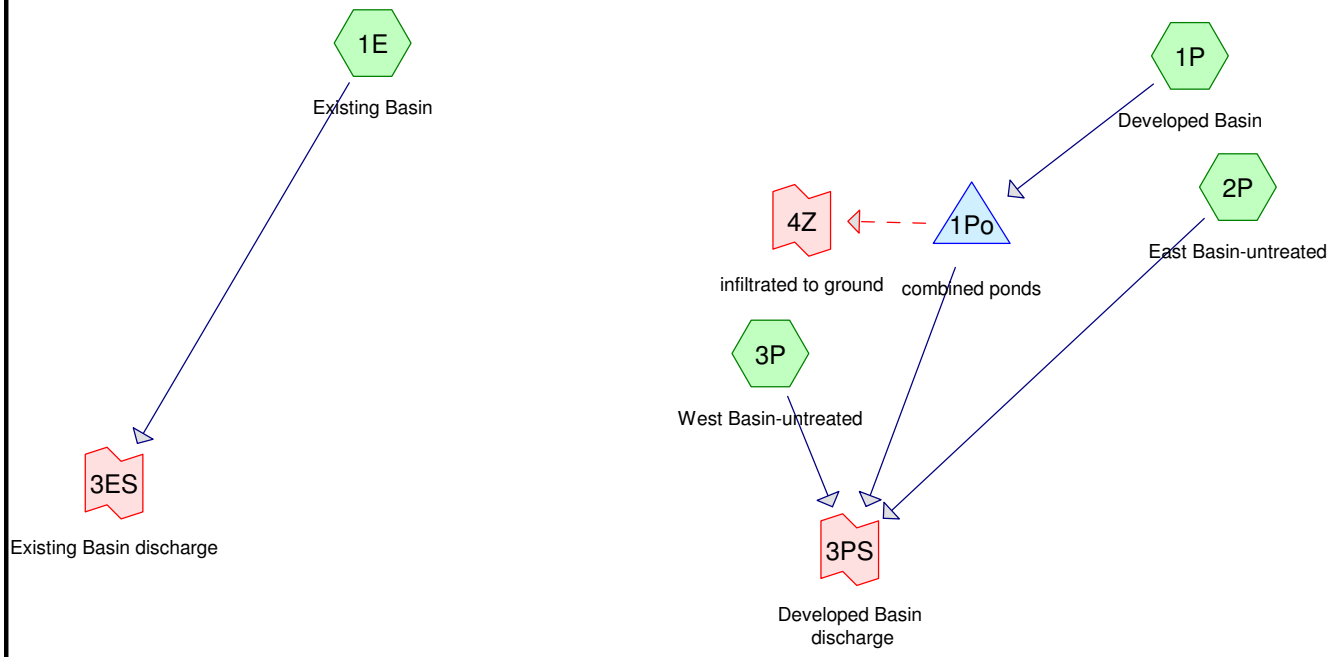


Subcat Reach Pond Link

Routing Diagram for 2026-05-04 Commercial Building
Prepared by Combs & Associates, Printed 5/6/2026

Rainfall Events Listing

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1 year	MSE 24-hr	4	Default	24.00	1	2.49	2
2	2 year	MSE 24-hr	4	Default	24.00	1	2.84	2
3	10 year	MSE 24-hr	4	Default	24.00	1	4.09	2
4	100 year	MSE 24-hr	4	Default	24.00	1	6.66	2
5	200 year	MSE 24-hr	4	Default	24.00	1	7.53	2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.470	68	Exi ag field, HSG B (1E)
0.465	78	Exi ag field, HSG C (1E)
0.036	98	Exi offsite Roof (1E, 1P)
0.084	61	Exi offsite yard, HSG B (1E, 1P)
0.320	71	Exi offsite yard, HSG C (1E, 1P)
0.306	98	New pvmt (1P, 3P)
0.324	98	New roof (1P)
0.186	61	New yard, HSG B (1P)
0.119	68	New yard, HSG C (1P, 2P)
2.310	**78**	**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.470	0.465	0.000	0.000	0.935	Exi ag field	1E
0.000	0.000	0.000	0.000	0.036	0.036	Exi offsite Roof	1E, 1P
0.000	0.084	0.320	0.000	0.000	0.404	Exi offsite yard	1E, 1P
0.000	0.000	0.000	0.000	0.306	0.306	New pvmt	1P, 3P
0.000	0.000	0.000	0.000	0.324	0.324	New roof	1P
0.000	0.186	0.119	0.000	0.000	0.305	New yard	1P, 2P
0.000	**0.740**	**0.904**	**0.000**	**0.666**	**2.310**	**TOTAL AREA**	

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Width (inches)	Diam/Height (inches)	Inside-Fill (inches)	Node Name
1	1Po	880.16	877.00	82.0	0.0385	0.012	0.0	6.0	0.0	

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1E: Existing Basin Runoff Area=1.155 ac 1.56% Impervious Runoff Depth=0.56"
Flow Length=270' Tc=21.2 min CN=73 Runoff=0.54 cfs 0.054 af

Subcatchment 1P: Developed Basin Runoff Area=1.045 ac 60.00% Impervious Runoff Depth=1.17"
Flow Length=245' Tc=13.6 min CN=85 Runoff=1.46 cfs 0.102 af

Subcatchment 2P: East Basin-untreated Runoff Area=0.089 ac 0.00% Impervious Runoff Depth=0.38"
Flow Length=245' Tc=13.6 min CN=68 Runoff=0.03 cfs 0.003 af

Subcatchment 3P: West Basin-untreated Runoff Area=0.021 ac 100.00% Impervious Runoff Depth=2.26"
Flow Length=245' Tc=13.6 min CN=98 Runoff=0.05 cfs 0.004 af

Pond 1Po: combined ponds Peak Elev=880.64' Storage=1,655 cf Inflow=1.46 cfs 0.102 af
Primary=0.36 cfs 0.053 af Secondary=0.05 cfs 0.049 af Outflow=0.40 cfs 0.102 af

Link 3ES: Existing Basin discharge Inflow=0.54 cfs 0.054 af
Primary=0.54 cfs 0.054 af

Link 3PS: Developed Basin discharge Inflow=0.38 cfs 0.060 af
Primary=0.38 cfs 0.060 af

Link 4Z: infiltrated to ground Inflow=0.05 cfs 0.049 af
Primary=0.05 cfs 0.049 af

Total Runoff Area = 2.310 ac Runoff Volume = 0.163 af Average Runoff Depth = 0.85"
71.17% Pervious = 1.644 ac 28.83% Impervious = 0.666 ac

Summary for Subcatchment 1E: Existing Basin

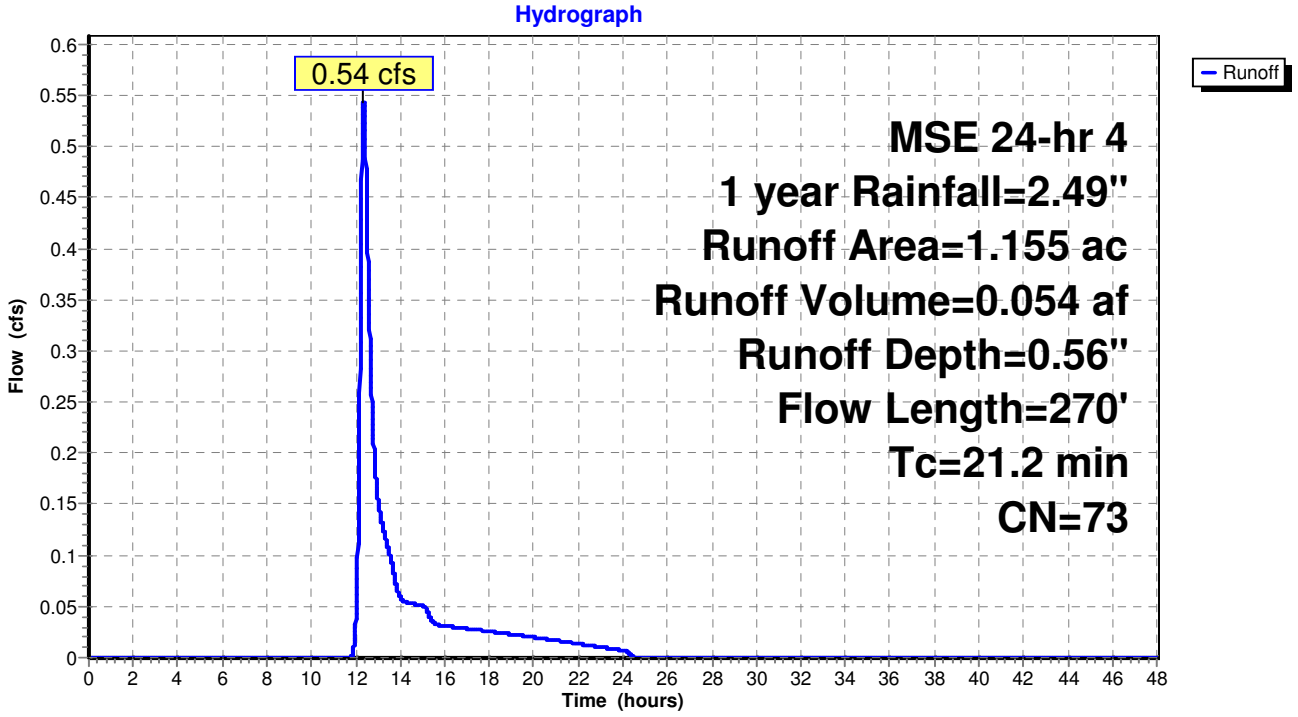
Runoff = 0.54 cfs @ 12.35 hrs, Volume= 0.054 af, Depth= 0.56"
Routed to Link 3ES : Existing Basin discharge

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 1 year Rainfall=2.49"

	Area (ac)	CN	Description
*	0.018	98	Exi offsite Roof
*	0.042	61	Exi offsite yard, HSG B
*	0.160	71	Exi offsite yard, HSG C
*	0.470	68	Exi ag field, HSG B
*	0.465	78	Exi ag field, HSG C
	1.155	73	Weighted Average
	1.137		98.44% Pervious Area
	0.018		1.56% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.1	100	0.0240	0.12		**Sheet Flow, First 100'** Grass: Dense n= 0.240 P2= 2.84"
7.1	170	0.0100	0.40		**Shallow Concentrated Flow, to sw corner of site** Kv= 4.0 fps
21.2	270	Total			

Subcatchment 1E: Existing Basin



Summary for Subcatchment 1P: Developed Basin

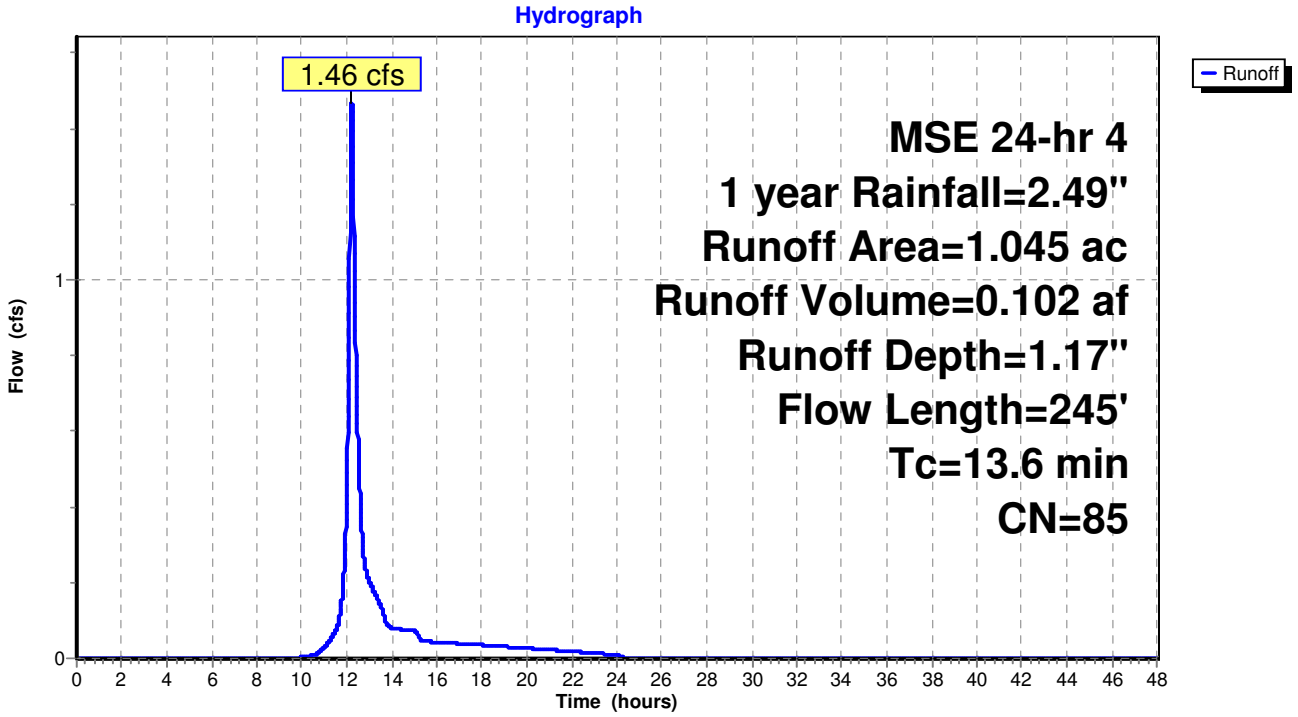
Runoff = 1.46 cfs @ 12.22 hrs, Volume= 0.102 af, Depth= 1.17"
Routed to Pond 1Po : combined ponds

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 1 year Rainfall=2.49"

	Area (ac)	CN	Description
*	0.018	98	Exi offsite Roof
*	0.042	61	Exi offsite yard, HSG B
*	0.160	71	Exi offsite yard, HSG C
*	0.324	98	New roof
*	0.285	98	New pvmt
*	0.186	61	New yard, HSG B
*	0.030	68	New yard, HSG C
	1.045	85	Weighted Average
	0.418		40.00% Pervious Area
	0.627		60.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	45	0.0200	0.09		**Sheet Flow, offsite to north swale along bldg** Grass: Dense n= 0.240 P2= 2.84"
5.6	200	0.0100	0.60		**Shallow Concentrated Flow, along north side of bldg to nw pond** Kv= 6.0 fps
13.6	245	Total			

Subcatchment 1P: Developed Basin



Summary for Subcatchment 2P: East Basin-untreated

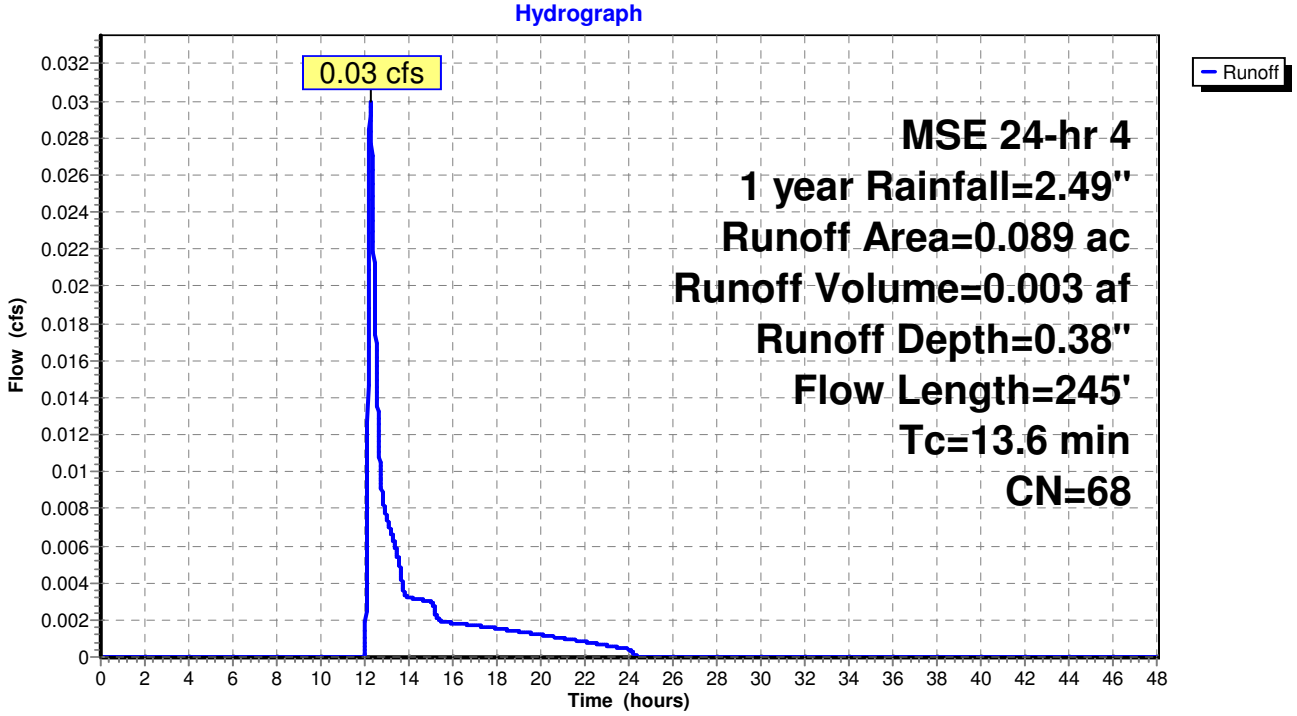
Runoff = 0.03 cfs @ 12.26 hrs, Volume= 0.003 af, Depth= 0.38"
Routed to Link 3PS : Developed Basin discharge

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 1 year Rainfall=2.49"

	Area (ac)	CN	Description
*	0.089	68	New yard, HSG C
	0.089		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	45	0.0200	0.09		**Sheet Flow, offsite to north swale along bldg** Grass: Dense n= 0.240 P2= 2.84"
5.6	200	0.0100	0.60		**Shallow Concentrated Flow, along north side of bldg to nw pond** Kv= 6.0 fps
13.6	245	Total			

Subcatchment 2P: East Basin-untreated



Summary for Subcatchment 3P: West Basin-untreated

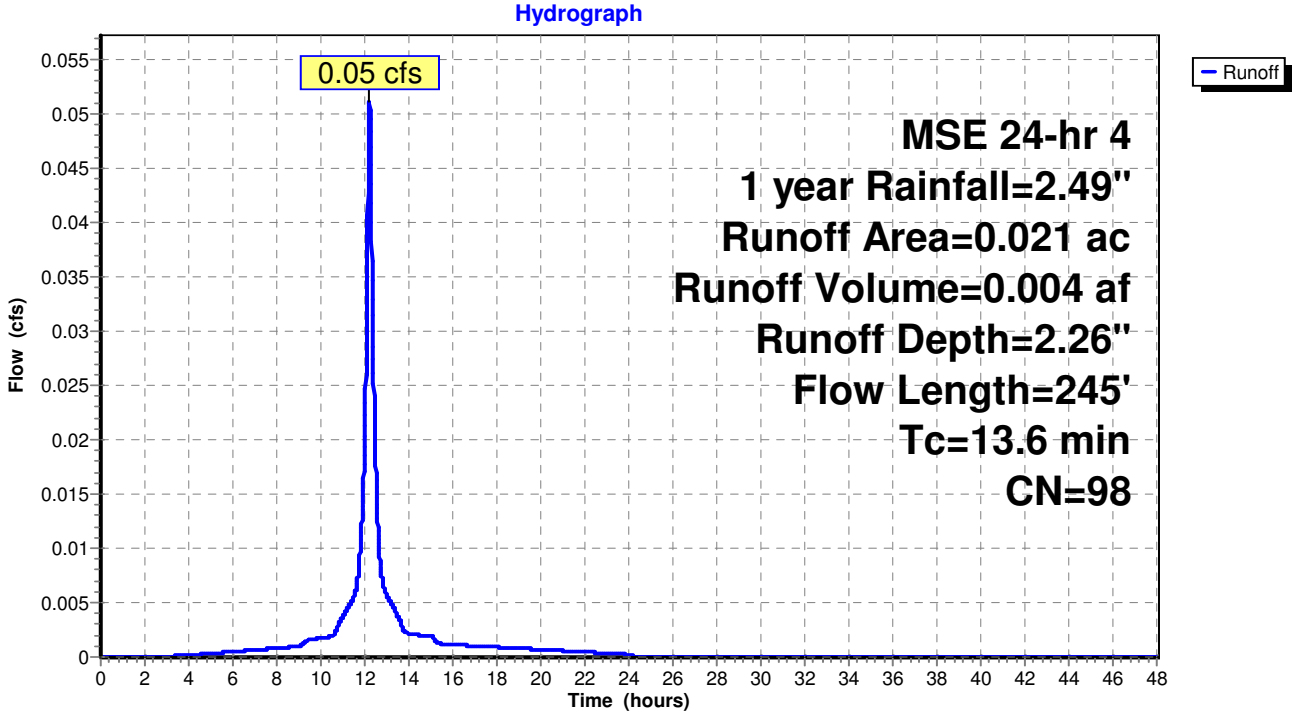
Runoff = 0.05 cfs @ 12.21 hrs, Volume= 0.004 af, Depth= 2.26"
Routed to Link 3PS : Developed Basin discharge

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 1 year Rainfall=2.49"

	Area (ac)	CN	Description
*	0.021	98	New pvmt
	0.021		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	45	0.0200	0.09		**Sheet Flow, offsite to north swale along bldg** Grass: Dense n= 0.240 P2= 2.84"
5.6	200	0.0100	0.60		**Shallow Concentrated Flow, along north side of bldg to nw pond** Kv= 6.0 fps
13.6	245	Total			

Subcatchment 3P: West Basin-untreated



Summary for Pond 1Po: combined ponds

Inflow Area = 1.045 ac, 60.00% Impervious, Inflow Depth = 1.17" for 1 year event
Inflow = 1.46 cfs @ 12.22 hrs, Volume= 0.102 af
Outflow = 0.40 cfs @ 12.60 hrs, Volume= 0.102 af, Atten= 72%, Lag= 22.9 min
Primary = 0.36 cfs @ 12.60 hrs, Volume= 0.053 af
Routed to Link 3PS : Developed Basin discharge
Secondary = 0.05 cfs @ 12.60 hrs, Volume= 0.049 af
Routed to Link 4Z : infiltrated to ground

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 880.64' @ 12.60 hrs Surf.Area= 4,091 sf Storage= 1,655 cf

Plug-Flow detention time= 99.8 min calculated for 0.102 af (100% of inflow)
Center-of-Mass det. time= 99.9 min (929.7 - 829.8)

Volume	Invert	Avail.Storage	Storage Description
#1	880.00'	14,215 cf	**Pond Storage (Combined) (Prismatic)** Listed below (Recalc)
#2	878.00'	0 cf	**20.00'W x 60.00'L x 2.00'H Bio-Filter mix voids** 2,400 cf Overall x 0.0% Voids
		14,215 cf	Total Available Storage

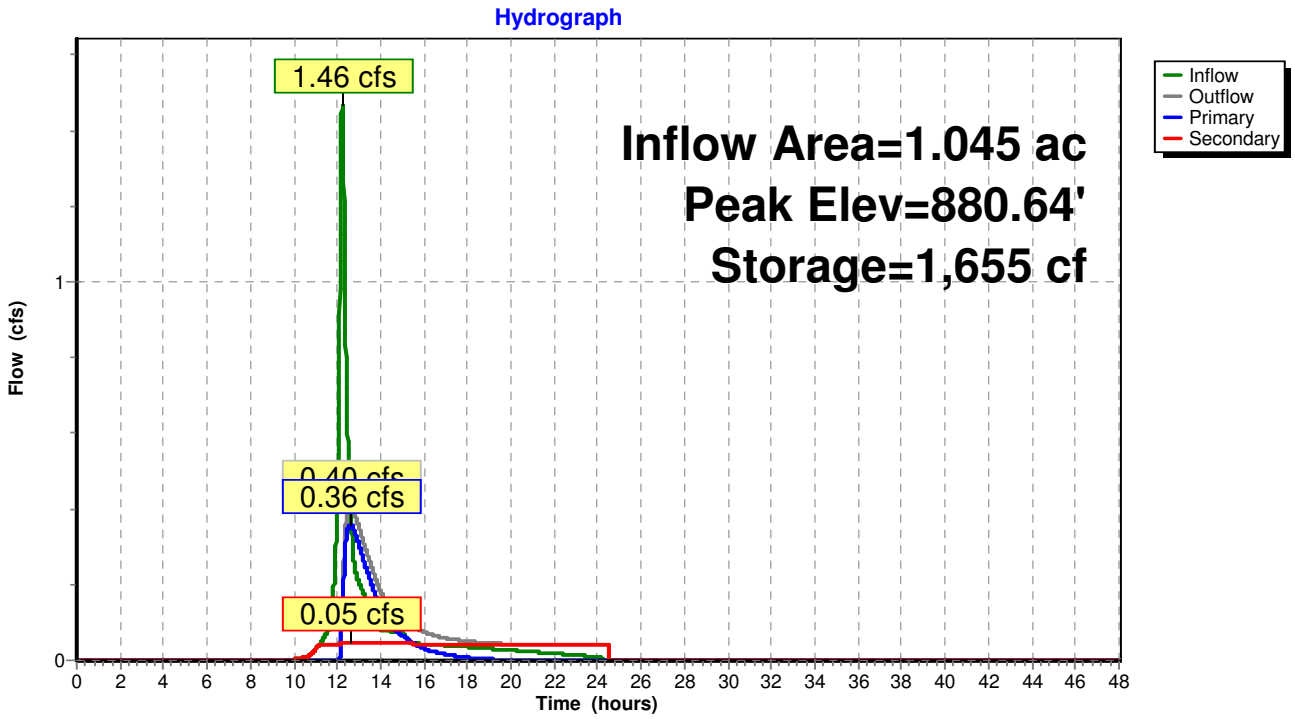
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
880.00	2,318	0	0
881.00	3,220	2,769	2,769
882.00	4,285	3,753	6,522
883.00	5,461	4,873	11,395
883.50	5,821	2,821	14,215

Device	Routing	Invert	Outlet Devices
#1	Secondary	878.00'	**0.500 in/hr Bio-filter Infiltration to native ground over Surface area** Phase-In= 0.01'
#2	Primary	880.16'	**6.0" Round Pond discharge pipe** L= 82.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 880.16' / 877.00' S= 0.0385 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf
#3	Primary	882.60'	**40.0' long + 3.0 '/' SideZ x 2.0' breadth Overflow Weir to street** 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 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32

Primary OutFlow Max=0.36 cfs @ 12.60 hrs HW=880.64' TW=0.00' (Dynamic Tailwater)
└─**2=Pond discharge pipe** (Inlet Controls 0.36 cfs @ 1.85 fps)
└─**3=Overflow Weir to street** (Controls 0.00 cfs)

Secondary OutFlow Max=0.05 cfs @ 12.60 hrs HW=880.64' TW=0.00' (Dynamic Tailwater)
└─**1=Bio-filter Infiltration to native ground** (Exfiltration Controls 0.05 cfs)

Pond 1Po: combined ponds

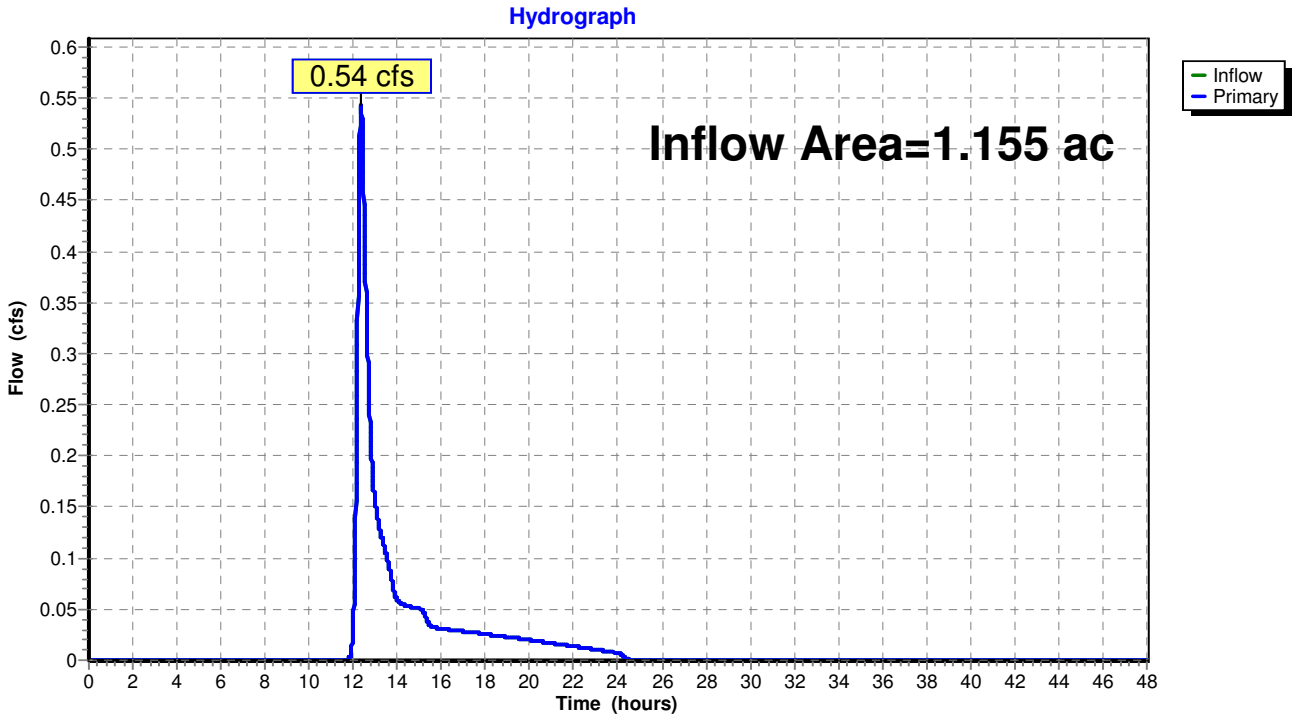


Summary for Link 3ES: Existing Basin discharge

Inflow Area = 1.155 ac, 1.56% Impervious, Inflow Depth = 0.56" for 1 year event
Inflow = 0.54 cfs @ 12.35 hrs, Volume= 0.054 af
Primary = 0.54 cfs @ 12.35 hrs, Volume= 0.054 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 3ES: Existing Basin discharge

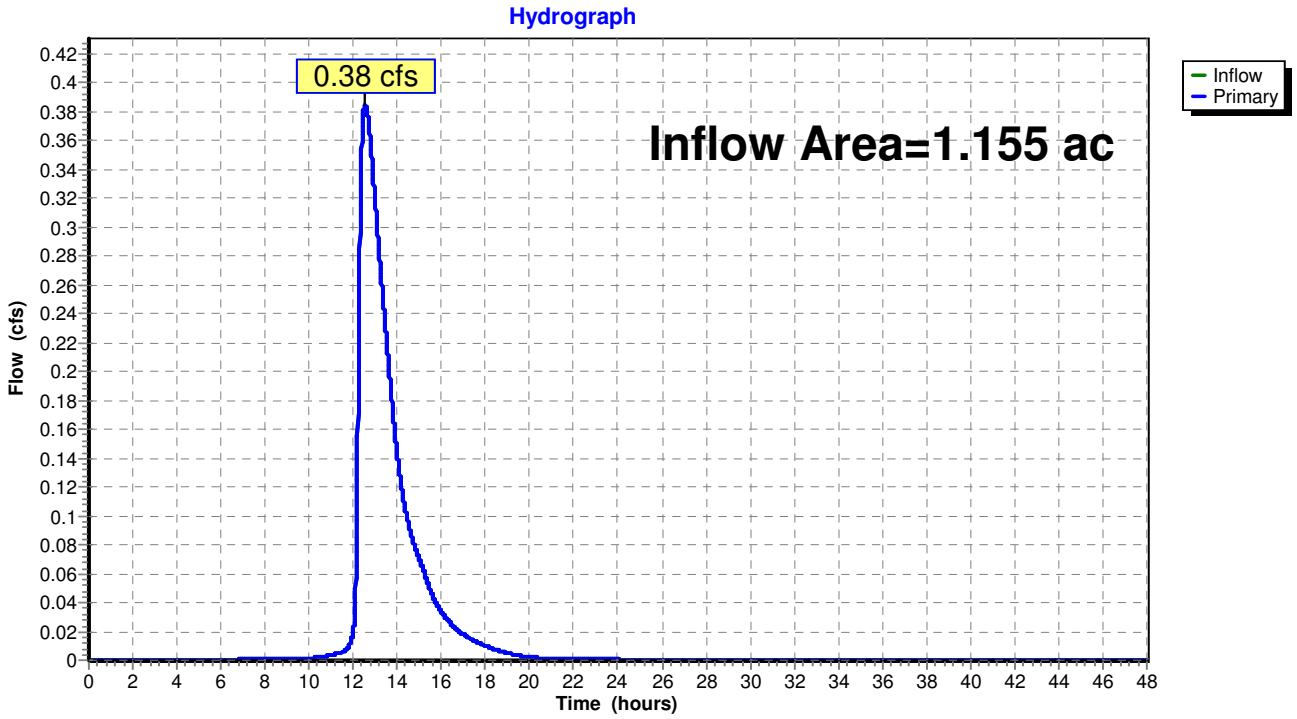


Summary for Link 3PS: Developed Basin discharge

Inflow Area = 1.155 ac, 56.10% Impervious, Inflow Depth = 0.62" for 1 year event
Inflow = 0.38 cfs @ 12.54 hrs, Volume= 0.060 af
Primary = 0.38 cfs @ 12.54 hrs, Volume= 0.060 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 3PS: Developed Basin discharge

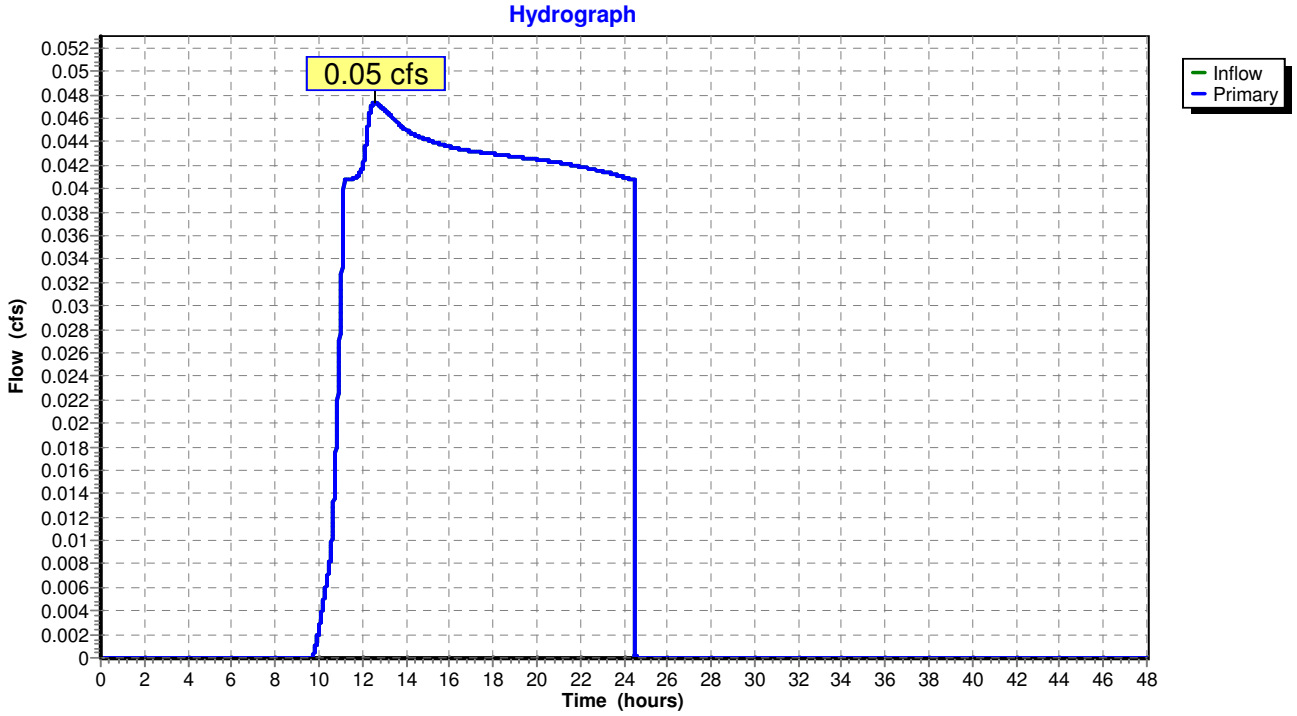


Summary for Link 4Z: infiltrated to ground

Inflow	=	0.05 cfs @ 12.60 hrs,	Volume=	0.049 af
Primary	=	0.05 cfs @ 12.60 hrs,	Volume=	0.049 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 4Z: infiltrated to ground



Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1E: Existing Basin Runoff Area=1.155 ac 1.56% Impervious Runoff Depth=0.76"
Flow Length=270' Tc=21.2 min CN=73 Runoff=0.78 cfs 0.073 af

Subcatchment 1P: Developed Basin Runoff Area=1.045 ac 60.00% Impervious Runoff Depth=1.45"
Flow Length=245' Tc=13.6 min CN=85 Runoff=1.82 cfs 0.127 af

Subcatchment 2P: East Basin-untreated Runoff Area=0.089 ac 0.00% Impervious Runoff Depth=0.55"
Flow Length=245' Tc=13.6 min CN=68 Runoff=0.05 cfs 0.004 af

Subcatchment 3P: West Basin-untreated Runoff Area=0.021 ac 100.00% Impervious Runoff Depth=2.61"
Flow Length=245' Tc=13.6 min CN=98 Runoff=0.06 cfs 0.005 af

Pond 1Po: combined ponds Peak Elev=880.78' Storage=2,084 cf Inflow=1.82 cfs 0.127 af
Primary=0.45 cfs 0.074 af Secondary=0.05 cfs 0.053 af Outflow=0.50 cfs 0.127 af

Link 3ES: Existing Basin discharge Inflow=0.78 cfs 0.073 af
Primary=0.78 cfs 0.073 af

Link 3PS: Developed Basin discharge Inflow=0.49 cfs 0.083 af
Primary=0.49 cfs 0.083 af

Link 4Z: infiltrated to ground Inflow=0.05 cfs 0.053 af
Primary=0.05 cfs 0.053 af

Total Runoff Area = 2.310 ac Runoff Volume = 0.209 af Average Runoff Depth = 1.08"
71.17% Pervious = 1.644 ac 28.83% Impervious = 0.666 ac

Summary for Subcatchment 1E: Existing Basin

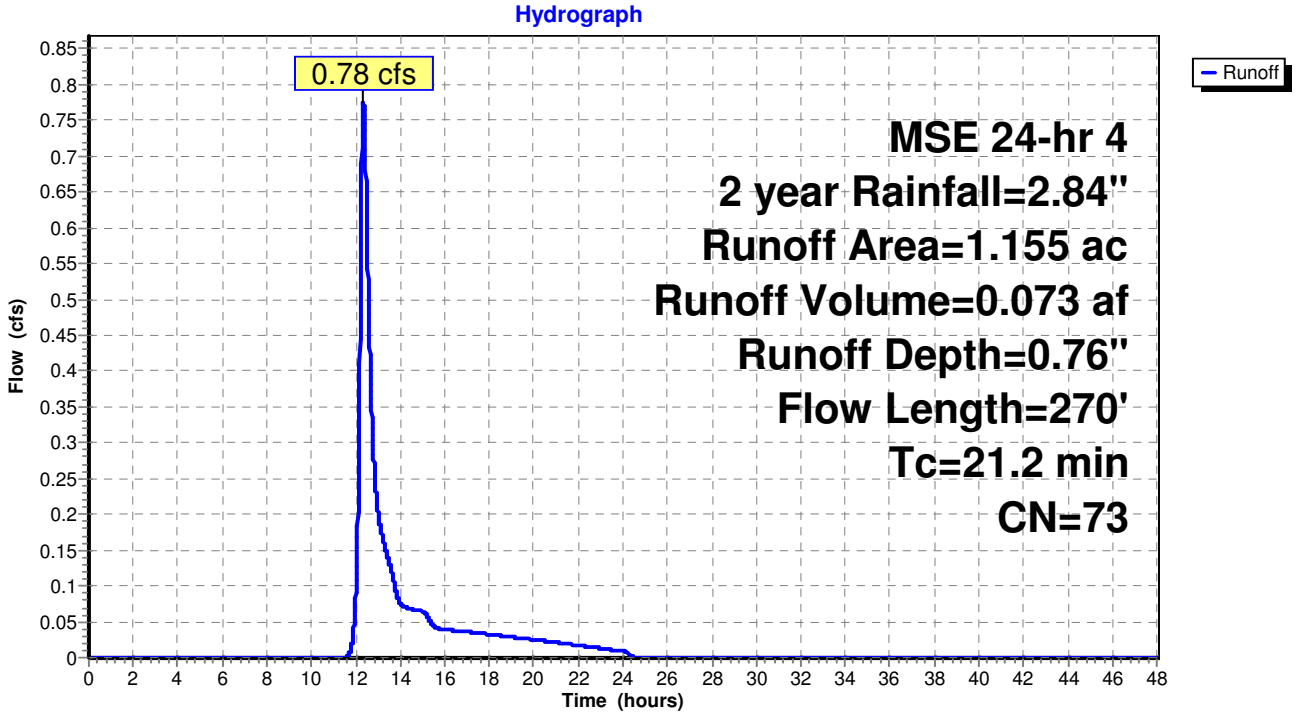
Runoff = 0.78 cfs @ 12.34 hrs, Volume= 0.073 af, Depth= 0.76"
Routed to Link 3ES : Existing Basin discharge

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 2 year Rainfall=2.84"

	Area (ac)	CN	Description
*	0.018	98	Exi offsite Roof
*	0.042	61	Exi offsite yard, HSG B
*	0.160	71	Exi offsite yard, HSG C
*	0.470	68	Exi ag field, HSG B
*	0.465	78	Exi ag field, HSG C
	1.155	73	Weighted Average
	1.137		98.44% Pervious Area
	0.018		1.56% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.1	100	0.0240	0.12		**Sheet Flow, First 100'** Grass: Dense n= 0.240 P2= 2.84"
7.1	170	0.0100	0.40		**Shallow Concentrated Flow, to sw corner of site** Kv= 4.0 fps
21.2	270	Total			

Subcatchment 1E: Existing Basin



Summary for Subcatchment 1P: Developed Basin

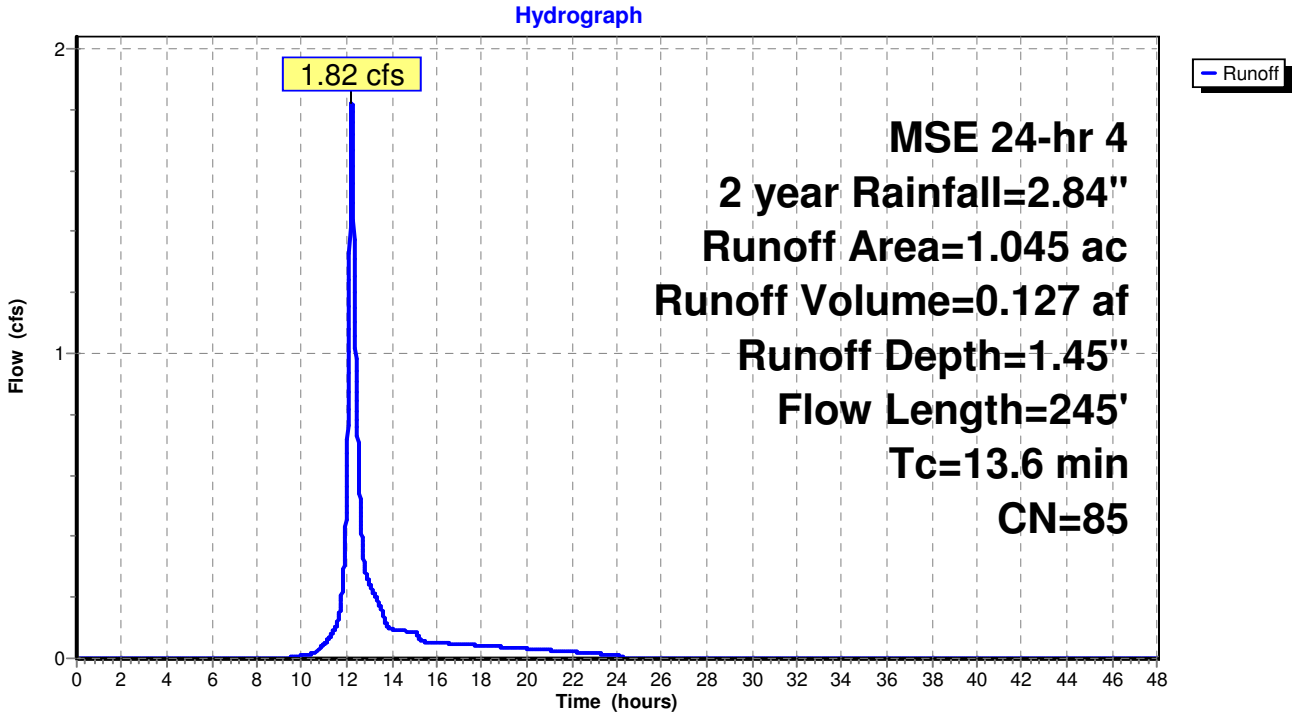
Runoff = 1.82 cfs @ 12.22 hrs, Volume= 0.127 af, Depth= 1.45"
Routed to Pond 1Po : combined ponds

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 2 year Rainfall=2.84"

	Area (ac)	CN	Description
*	0.018	98	Exi offsite Roof
*	0.042	61	Exi offsite yard, HSG B
*	0.160	71	Exi offsite yard, HSG C
*	0.324	98	New roof
*	0.285	98	New pvmt
*	0.186	61	New yard, HSG B
*	0.030	68	New yard, HSG C
	1.045	85	Weighted Average
	0.418		40.00% Pervious Area
	0.627		60.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	45	0.0200	0.09		**Sheet Flow, offsite to north swale along bldg** Grass: Dense n= 0.240 P2= 2.84"
5.6	200	0.0100	0.60		**Shallow Concentrated Flow, along north side of bldg to nw pond** Kv= 6.0 fps
13.6	245	Total			

Subcatchment 1P: Developed Basin



Summary for Subcatchment 2P: East Basin-untreated

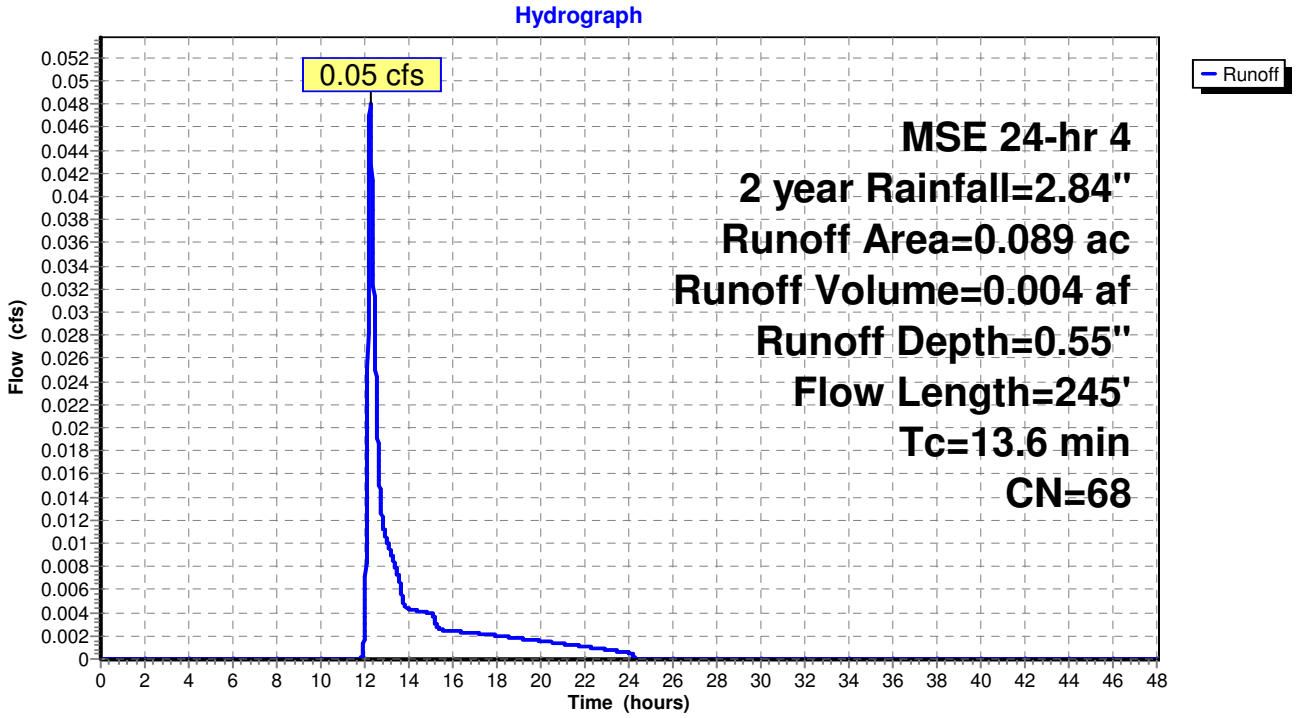
Runoff = 0.05 cfs @ 12.25 hrs, Volume= 0.004 af, Depth= 0.55"
Routed to Link 3PS : Developed Basin discharge

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 2 year Rainfall=2.84"

	Area (ac)	CN	Description
*	0.089	68	New yard, HSG C
	0.089		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	45	0.0200	0.09		**Sheet Flow, offsite to north swale along bldg** Grass: Dense n= 0.240 P2= 2.84"
5.6	200	0.0100	0.60		**Shallow Concentrated Flow, along north side of bldg to nw pond** Kv= 6.0 fps
13.6	245	Total			

Subcatchment 2P: East Basin-untreated



Summary for Subcatchment 3P: West Basin-untreated

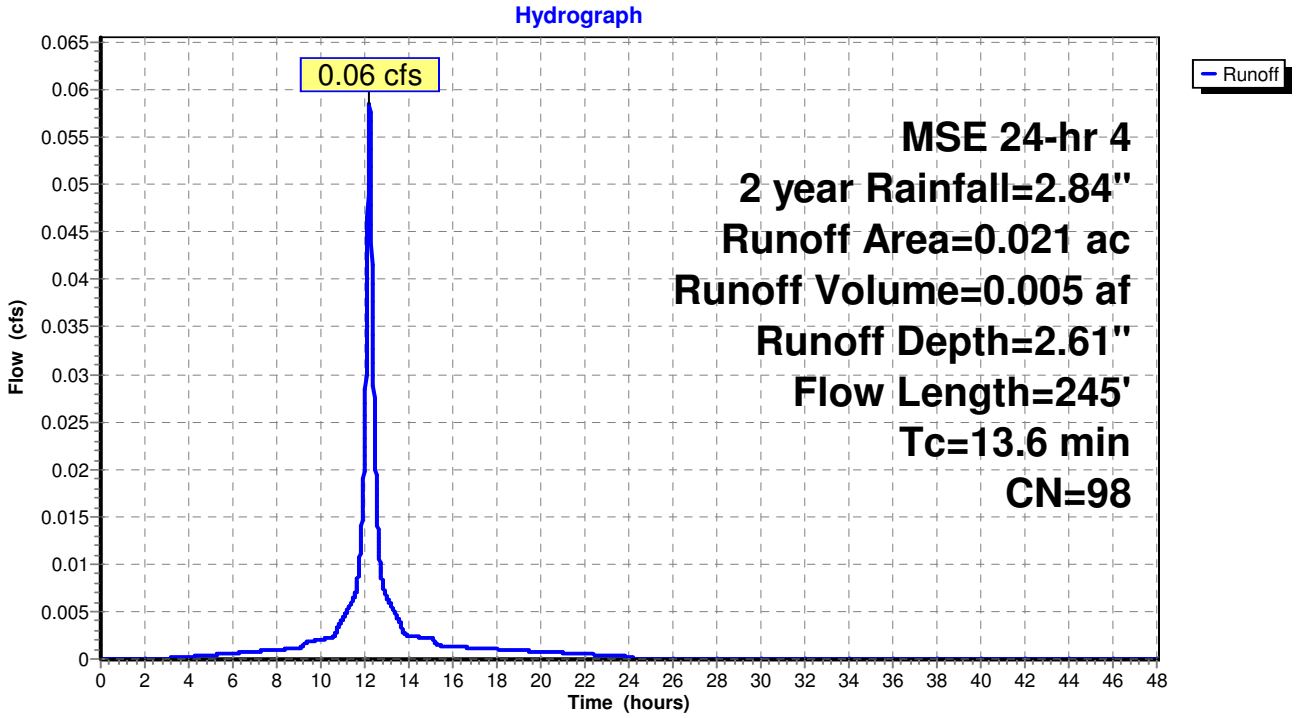
Runoff = 0.06 cfs @ 12.21 hrs, Volume= 0.005 af, Depth= 2.61"
Routed to Link 3PS : Developed Basin discharge

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 2 year Rainfall=2.84"

	Area (ac)	CN	Description
*	0.021	98	New pvmt
	0.021		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	45	0.0200	0.09		**Sheet Flow, offsite to north swale along bldg** Grass: Dense n= 0.240 P2= 2.84"
5.6	200	0.0100	0.60		**Shallow Concentrated Flow, along north side of bldg to nw pond** Kv= 6.0 fps
13.6	245	Total			

Subcatchment 3P: West Basin-untreated



Summary for Pond 1Po: combined ponds

Inflow Area = 1.045 ac, 60.00% Impervious, Inflow Depth = 1.45" for 2 year event
Inflow = 1.82 cfs @ 12.22 hrs, Volume= 0.127 af
Outflow = 0.50 cfs @ 12.59 hrs, Volume= 0.127 af, Atten= 72%, Lag= 22.5 min
Primary = 0.45 cfs @ 12.59 hrs, Volume= 0.074 af
Routed to Link 3PS : Developed Basin discharge
Secondary = 0.05 cfs @ 12.59 hrs, Volume= 0.053 af
Routed to Link 4Z : infiltrated to ground

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 880.78' @ 12.59 hrs Surf.Area= 4,222 sf Storage= 2,084 cf

Plug-Flow detention time= 95.8 min calculated for 0.127 af (100% of inflow)
Center-of-Mass det. time= 95.8 min (920.4 - 824.6)

Volume	Invert	Avail.Storage	Storage Description
#1	880.00'	14,215 cf	**Pond Storage (Combined) (Prismatic)** Listed below (Recalc)
#2	878.00'	0 cf	**20.00'W x 60.00'L x 2.00'H Bio-Filter mix voids** 2,400 cf Overall x 0.0% Voids
		14,215 cf	Total Available Storage

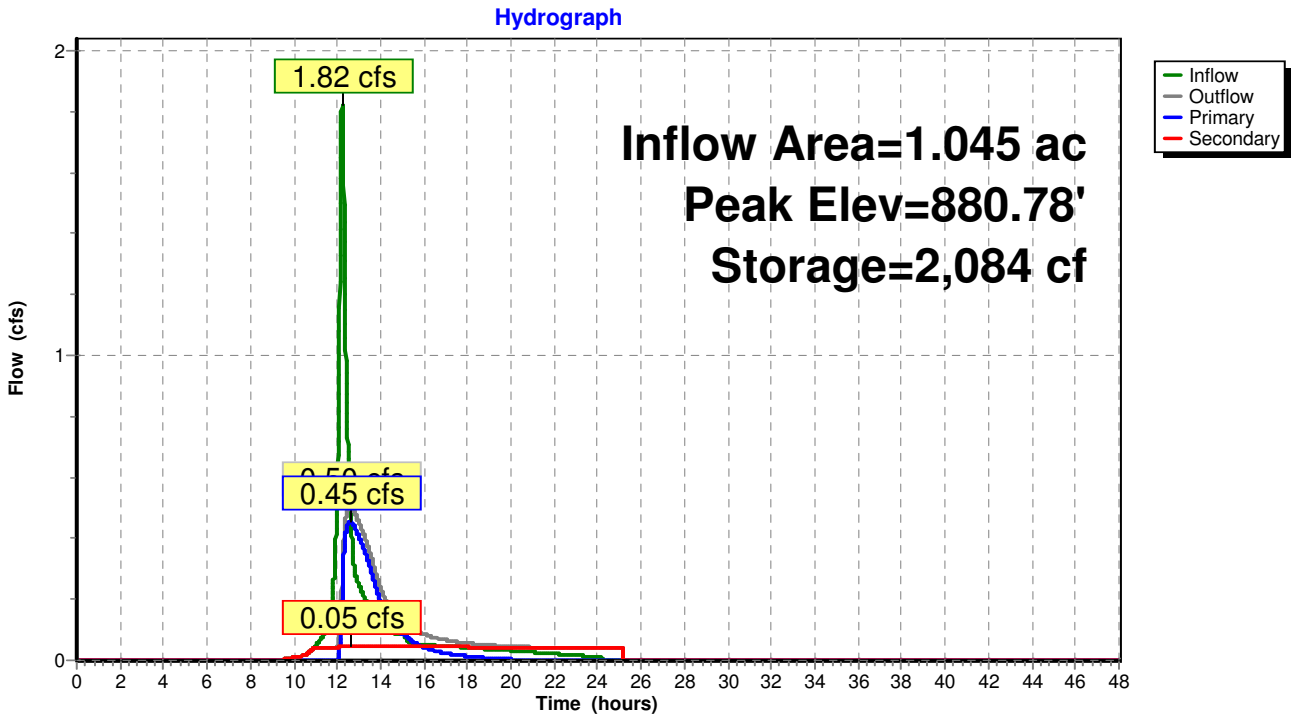
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
880.00	2,318	0	0
881.00	3,220	2,769	2,769
882.00	4,285	3,753	6,522
883.00	5,461	4,873	11,395
883.50	5,821	2,821	14,215

Device	Routing	Invert	Outlet Devices
#1	Secondary	878.00'	**0.500 in/hr Bio-filter Infiltration to native ground over Surface area** Phase-In= 0.01'
#2	Primary	880.16'	**6.0" Round Pond discharge pipe** L= 82.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 880.16' / 877.00' S= 0.0385 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf
#3	Primary	882.60'	**40.0' long + 3.0 '/' SideZ x 2.0' breadth Overflow Weir to street** 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 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32

Primary OutFlow Max=0.45 cfs @ 12.59 hrs HW=880.78' TW=0.00' (Dynamic Tailwater)
└─**2=Pond discharge pipe** (Inlet Controls 0.45 cfs @ 2.31 fps)
└─**3=Overflow Weir to street** (Controls 0.00 cfs)

Secondary OutFlow Max=0.05 cfs @ 12.59 hrs HW=880.78' TW=0.00' (Dynamic Tailwater)
└─**1=Bio-filter Infiltration to native ground** (Exfiltration Controls 0.05 cfs)

Pond 1Po: combined ponds

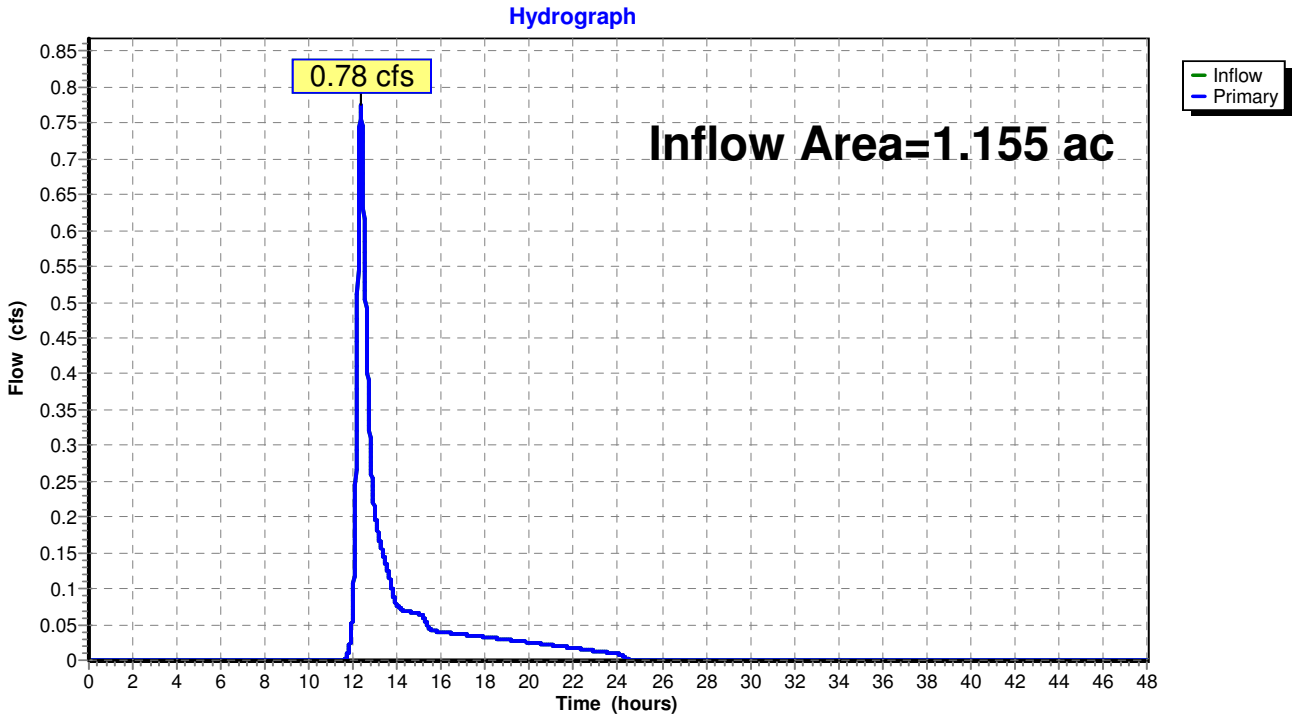


Summary for Link 3ES: Existing Basin discharge

Inflow Area = 1.155 ac, 1.56% Impervious, Inflow Depth = 0.76" for 2 year event
Inflow = 0.78 cfs @ 12.34 hrs, Volume= 0.073 af
Primary = 0.78 cfs @ 12.34 hrs, Volume= 0.073 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 3ES: Existing Basin discharge

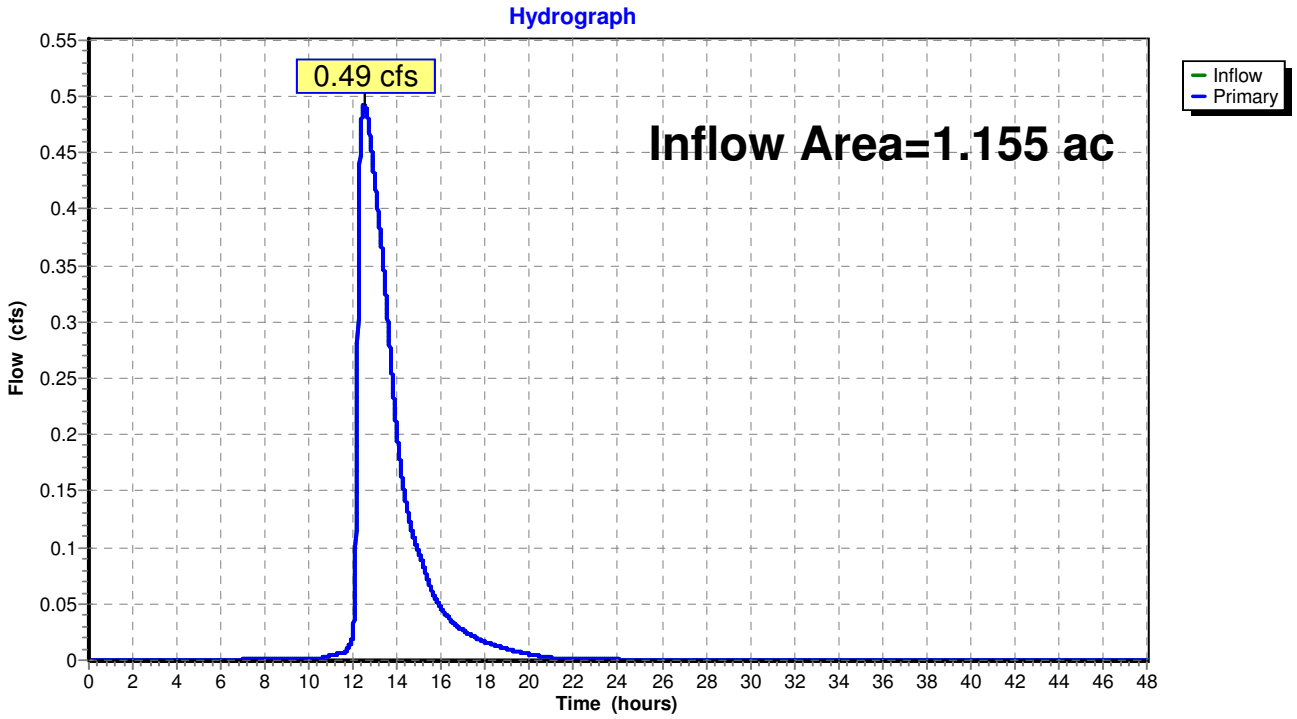


Summary for Link 3PS: Developed Basin discharge

Inflow Area = 1.155 ac, 56.10% Impervious, Inflow Depth = 0.86" for 2 year event
Inflow = 0.49 cfs @ 12.50 hrs, Volume= 0.083 af
Primary = 0.49 cfs @ 12.50 hrs, Volume= 0.083 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 3PS: Developed Basin discharge

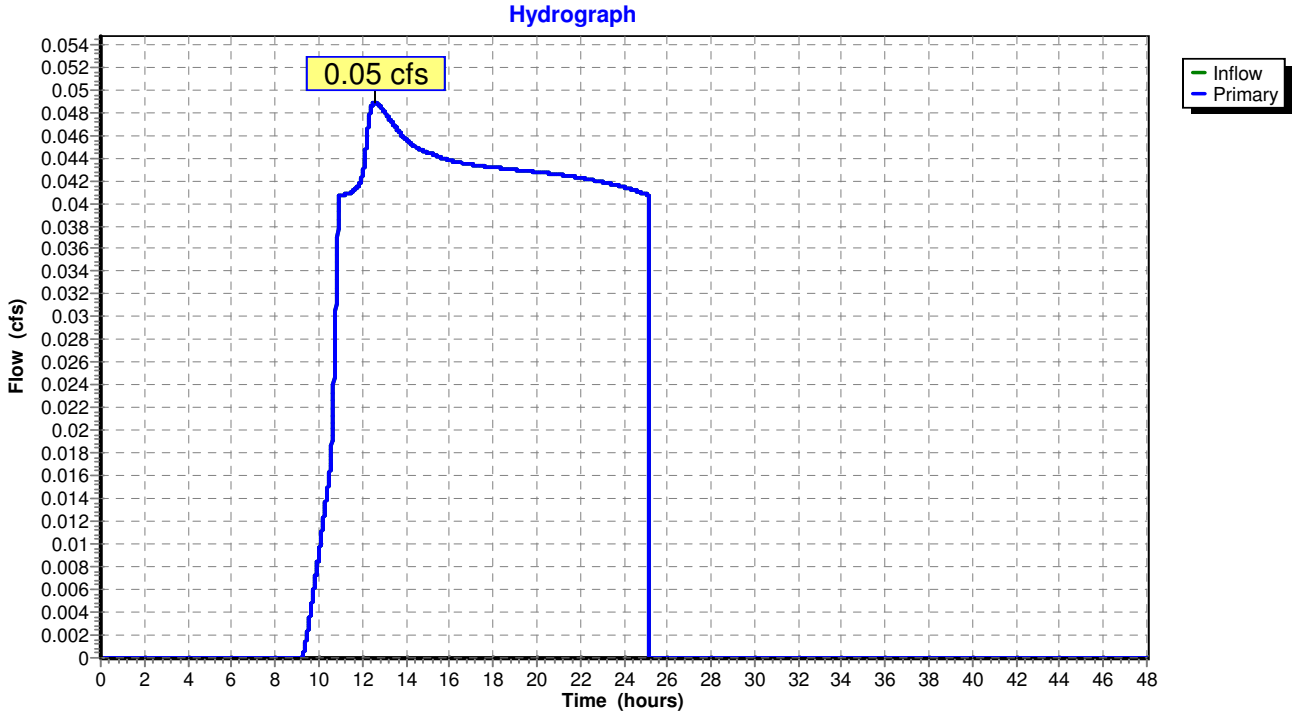


Summary for Link 4Z: infiltrated to ground

Inflow	=	0.05 cfs @ 12.59 hrs,	Volume=	0.053 af
Primary	=	0.05 cfs @ 12.59 hrs,	Volume=	0.053 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 4Z: infiltrated to ground



Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1E: Existing Basin Runoff Area=1.155 ac 1.56% Impervious Runoff Depth=1.59"
Flow Length=270' Tc=21.2 min CN=73 Runoff=1.75 cfs 0.153 af

Subcatchment 1P: Developed Basin Runoff Area=1.045 ac 60.00% Impervious Runoff Depth=2.54"
Flow Length=245' Tc=13.6 min CN=85 Runoff=3.16 cfs 0.221 af

Subcatchment 2P: East Basin-untreated Runoff Area=0.089 ac 0.00% Impervious Runoff Depth=1.26"
Flow Length=245' Tc=13.6 min CN=68 Runoff=0.13 cfs 0.009 af

Subcatchment 3P: West Basin-untreated Runoff Area=0.021 ac 100.00% Impervious Runoff Depth=3.85"
Flow Length=245' Tc=13.6 min CN=98 Runoff=0.09 cfs 0.007 af

Pond 1Po: combined ponds Peak Elev=881.33' Storage=3,889 cf Inflow=3.16 cfs 0.221 af
Primary=0.72 cfs 0.158 af Secondary=0.06 cfs 0.063 af Outflow=0.77 cfs 0.221 af

Link 3ES: Existing Basin discharge Inflow=1.75 cfs 0.153 af
Primary=1.75 cfs 0.153 af

Link 3PS: Developed Basin discharge Inflow=0.80 cfs 0.174 af
Primary=0.80 cfs 0.174 af

Link 4Z: infiltrated to ground Inflow=0.06 cfs 0.063 af
Primary=0.06 cfs 0.063 af

Total Runoff Area = 2.310 ac Runoff Volume = 0.390 af Average Runoff Depth = 2.03"
71.17% Pervious = 1.644 ac 28.83% Impervious = 0.666 ac

Summary for Subcatchment 1E: Existing Basin

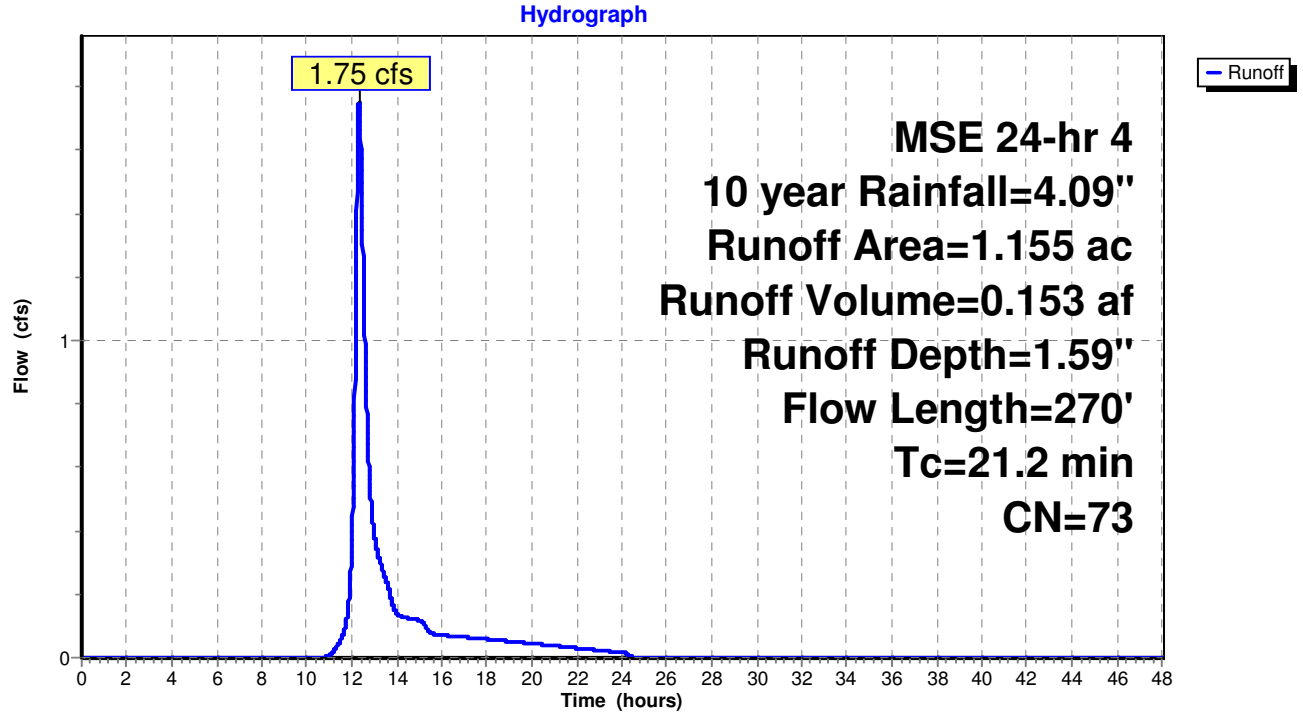
Runoff = 1.75 cfs @ 12.32 hrs, Volume= 0.153 af, Depth= 1.59"
Routed to Link 3ES : Existing Basin discharge

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 10 year Rainfall=4.09"

	Area (ac)	CN	Description
*	0.018	98	Exi offsite Roof
*	0.042	61	Exi offsite yard, HSG B
*	0.160	71	Exi offsite yard, HSG C
*	0.470	68	Exi ag field, HSG B
*	0.465	78	Exi ag field, HSG C
	1.155	73	Weighted Average
	1.137		98.44% Pervious Area
	0.018		1.56% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.1	100	0.0240	0.12		**Sheet Flow, First 100'** Grass: Dense n= 0.240 P2= 2.84"
7.1	170	0.0100	0.40		**Shallow Concentrated Flow, to sw corner of site** Kv= 4.0 fps
21.2	270	Total			

Subcatchment 1E: Existing Basin



Summary for Subcatchment 1P: Developed Basin

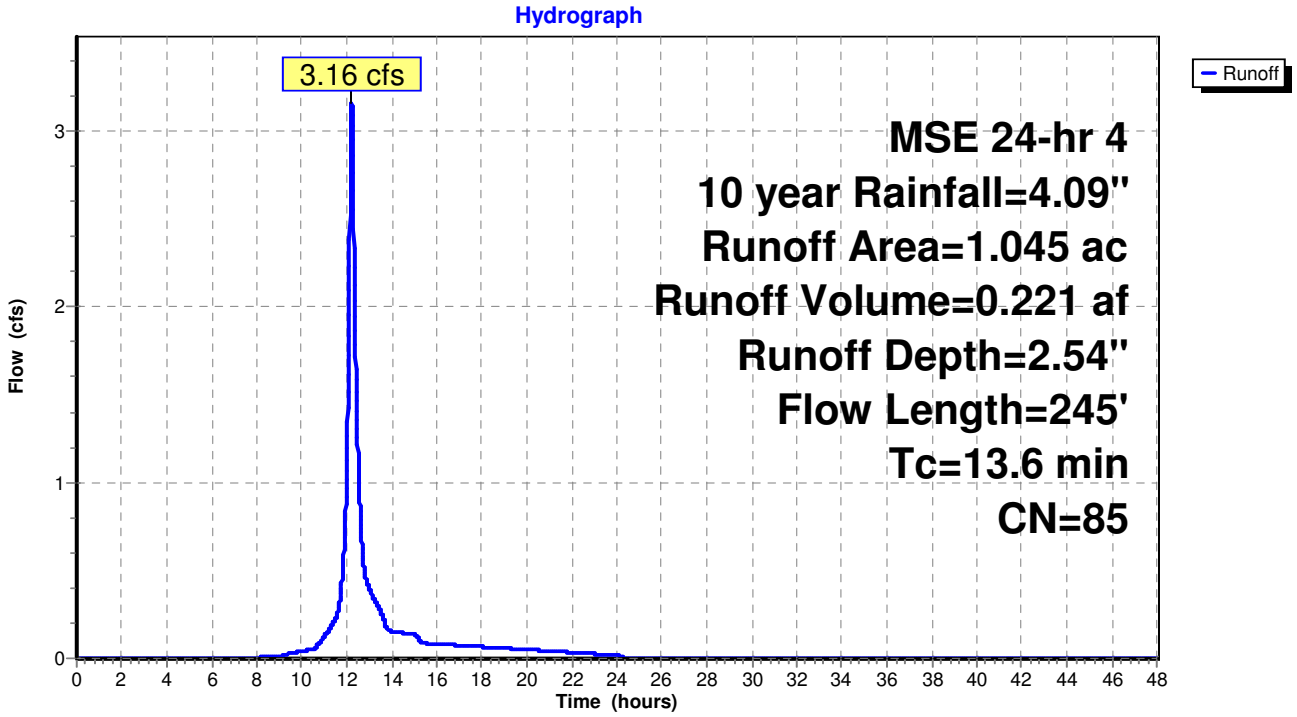
Runoff = 3.16 cfs @ 12.22 hrs, Volume= 0.221 af, Depth= 2.54"
Routed to Pond 1Po : combined ponds

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 10 year Rainfall=4.09"

	Area (ac)	CN	Description
*	0.018	98	Exi offsite Roof
*	0.042	61	Exi offsite yard, HSG B
*	0.160	71	Exi offsite yard, HSG C
*	0.324	98	New roof
*	0.285	98	New pvmt
*	0.186	61	New yard, HSG B
*	0.030	68	New yard, HSG C
	1.045	85	Weighted Average
	0.418		40.00% Pervious Area
	0.627		60.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	45	0.0200	0.09		**Sheet Flow, offsite to north swale along bldg** Grass: Dense n= 0.240 P2= 2.84"
5.6	200	0.0100	0.60		**Shallow Concentrated Flow, along north side of bldg to nw pond** Kv= 6.0 fps
13.6	245	Total			

Subcatchment 1P: Developed Basin



Summary for Subcatchment 2P: East Basin-untreated

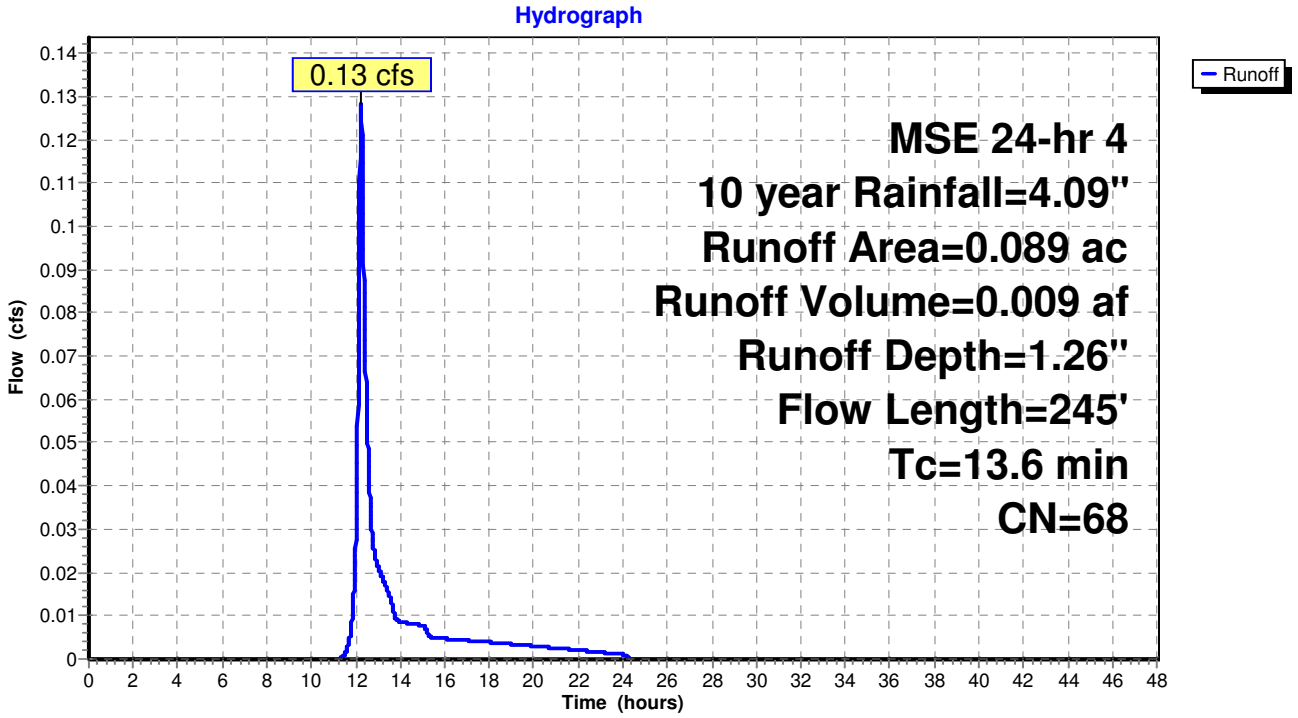
Runoff = 0.13 cfs @ 12.23 hrs, Volume= 0.009 af, Depth= 1.26"
Routed to Link 3PS : Developed Basin discharge

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 10 year Rainfall=4.09"

	Area (ac)	CN	Description
*	0.089	68	New yard, HSG C
	0.089		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	45	0.0200	0.09		**Sheet Flow, offsite to north swale along bldg** Grass: Dense n= 0.240 P2= 2.84"
5.6	200	0.0100	0.60		**Shallow Concentrated Flow, along north side of bldg to nw pond** Kv= 6.0 fps
13.6	245	Total			

Subcatchment 2P: East Basin-untreated



Summary for Subcatchment 3P: West Basin-untreated

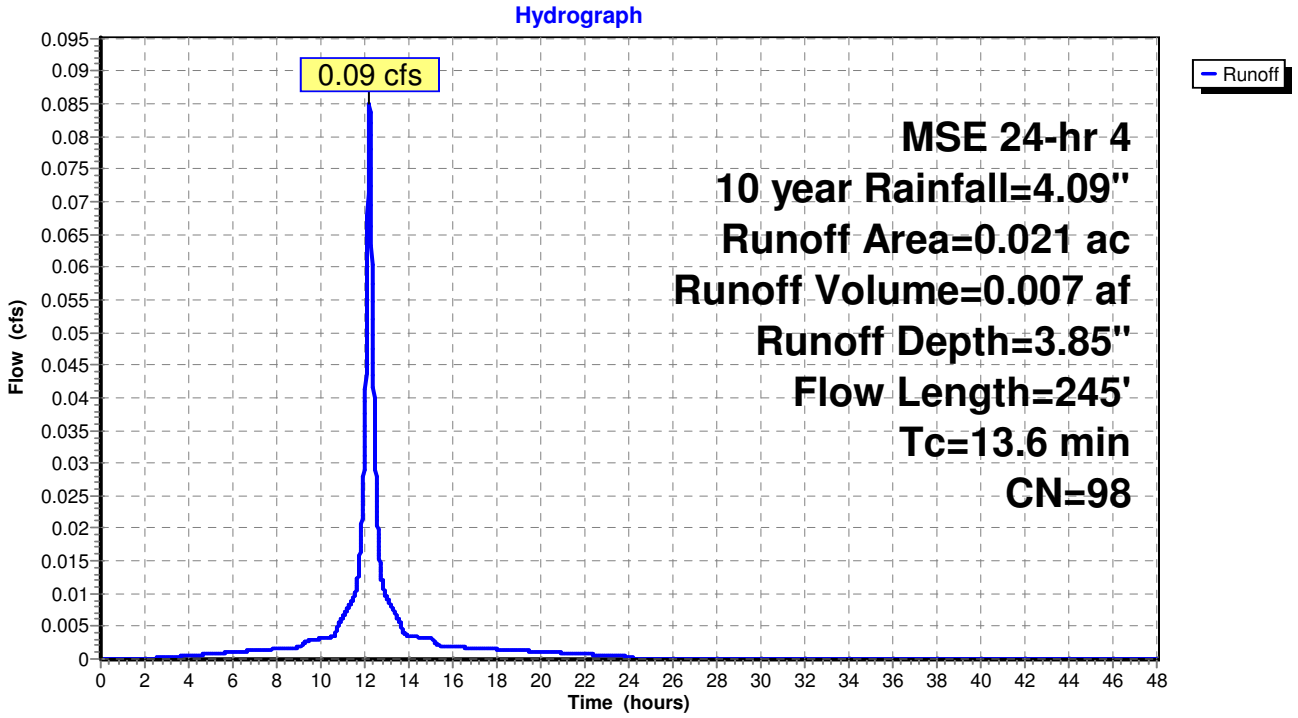
Runoff = 0.09 cfs @ 12.21 hrs, Volume= 0.007 af, Depth= 3.85"
Routed to Link 3PS : Developed Basin discharge

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 10 year Rainfall=4.09"

	Area (ac)	CN	Description
*	0.021	98	New pvmt
	0.021		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	45	0.0200	0.09		**Sheet Flow, offsite to north swale along bldg** Grass: Dense n= 0.240 P2= 2.84"
5.6	200	0.0100	0.60		**Shallow Concentrated Flow, along north side of bldg to nw pond** Kv= 6.0 fps
13.6	245	Total			

Subcatchment 3P: West Basin-untreated



Summary for Pond 1Po: combined ponds

Inflow Area = 1.045 ac, 60.00% Impervious, Inflow Depth = 2.54" for 10 year event
Inflow = 3.16 cfs @ 12.22 hrs, Volume= 0.221 af
Outflow = 0.77 cfs @ 12.62 hrs, Volume= 0.221 af, Atten= 76%, Lag= 24.0 min
Primary = 0.72 cfs @ 12.62 hrs, Volume= 0.158 af
Routed to Link 3PS : Developed Basin discharge
Secondary = 0.06 cfs @ 12.62 hrs, Volume= 0.063 af
Routed to Link 4Z : infiltrated to ground

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 881.33' @ 12.62 hrs Surf.Area= 4,771 sf Storage= 3,889 cf

Plug-Flow detention time= 90.8 min calculated for 0.221 af (100% of inflow)
Center-of-Mass det. time= 90.8 min (902.2 - 811.4)

Volume	Invert	Avail.Storage	Storage Description
#1	880.00'	14,215 cf	**Pond Storage (Combined) (Prismatic)** Listed below (Recalc)
#2	878.00'	0 cf	**20.00'W x 60.00'L x 2.00'H Bio-Filter mix voids** 2,400 cf Overall x 0.0% Voids
		14,215 cf	Total Available Storage

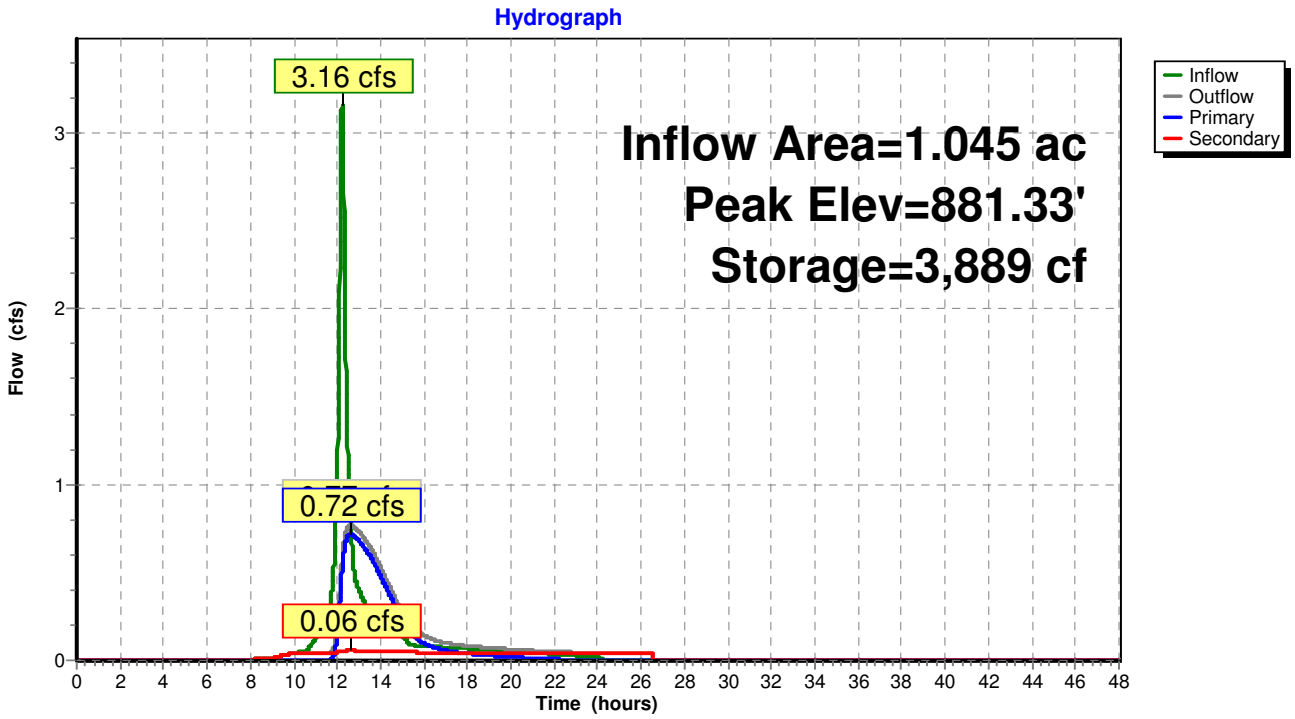
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
880.00	2,318	0	0
881.00	3,220	2,769	2,769
882.00	4,285	3,753	6,522
883.00	5,461	4,873	11,395
883.50	5,821	2,821	14,215

Device	Routing	Invert	Outlet Devices
#1	Secondary	878.00'	**0.500 in/hr Bio-filter Infiltration to native ground over Surface area** Phase-In= 0.01'
#2	Primary	880.16'	**6.0" Round Pond discharge pipe** L= 82.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 880.16' / 877.00' S= 0.0385 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf
#3	Primary	882.60'	**40.0' long + 3.0 '/' SideZ x 2.0' breadth Overflow Weir to street** 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 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32

Primary OutFlow Max=0.72 cfs @ 12.62 hrs HW=881.33' TW=0.00' (Dynamic Tailwater)
└─**2=Pond discharge pipe** (Inlet Controls 0.72 cfs @ 3.65 fps)
└─**3=Overflow Weir to street** (Controls 0.00 cfs)

Secondary OutFlow Max=0.06 cfs @ 12.62 hrs HW=881.33' TW=0.00' (Dynamic Tailwater)
└─**1=Bio-filter Infiltration to native ground** (Exfiltration Controls 0.06 cfs)

Pond 1Po: combined ponds

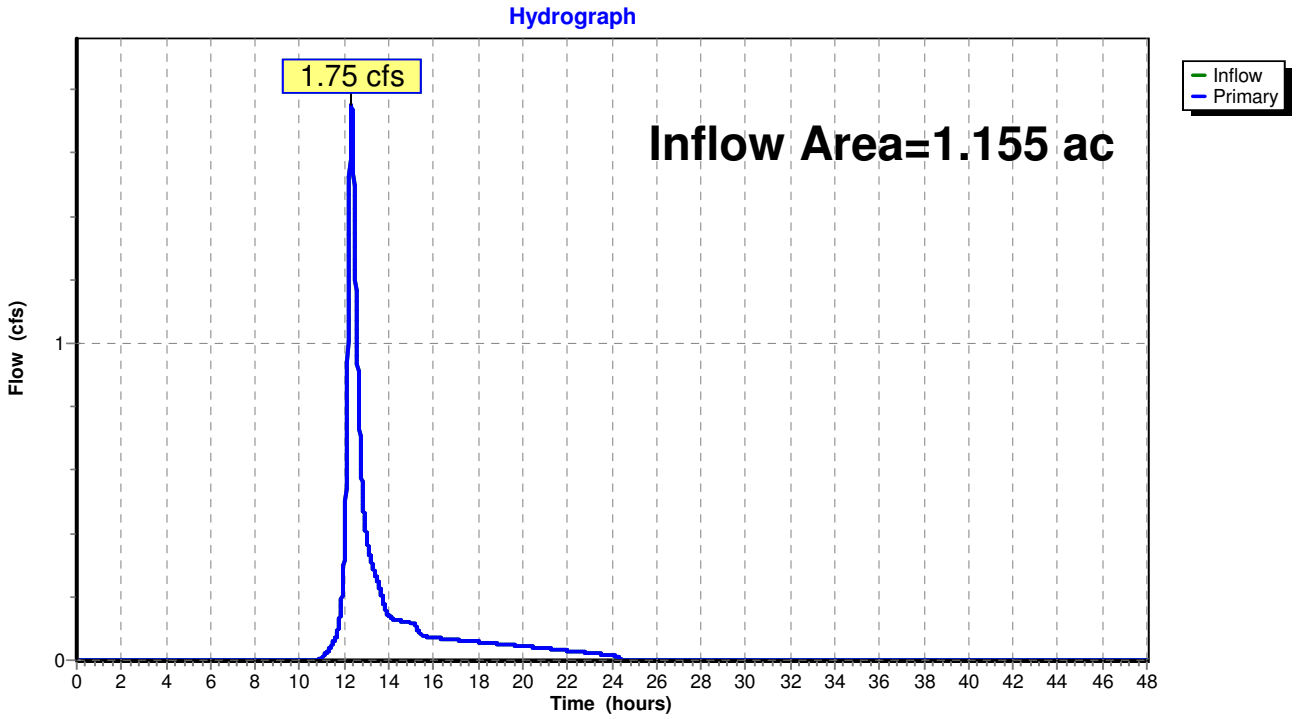


Summary for Link 3ES: Existing Basin discharge

Inflow Area = 1.155 ac, 1.56% Impervious, Inflow Depth = 1.59" for 10 year event
Inflow = 1.75 cfs @ 12.32 hrs, Volume= 0.153 af
Primary = 1.75 cfs @ 12.32 hrs, Volume= 0.153 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 3ES: Existing Basin discharge

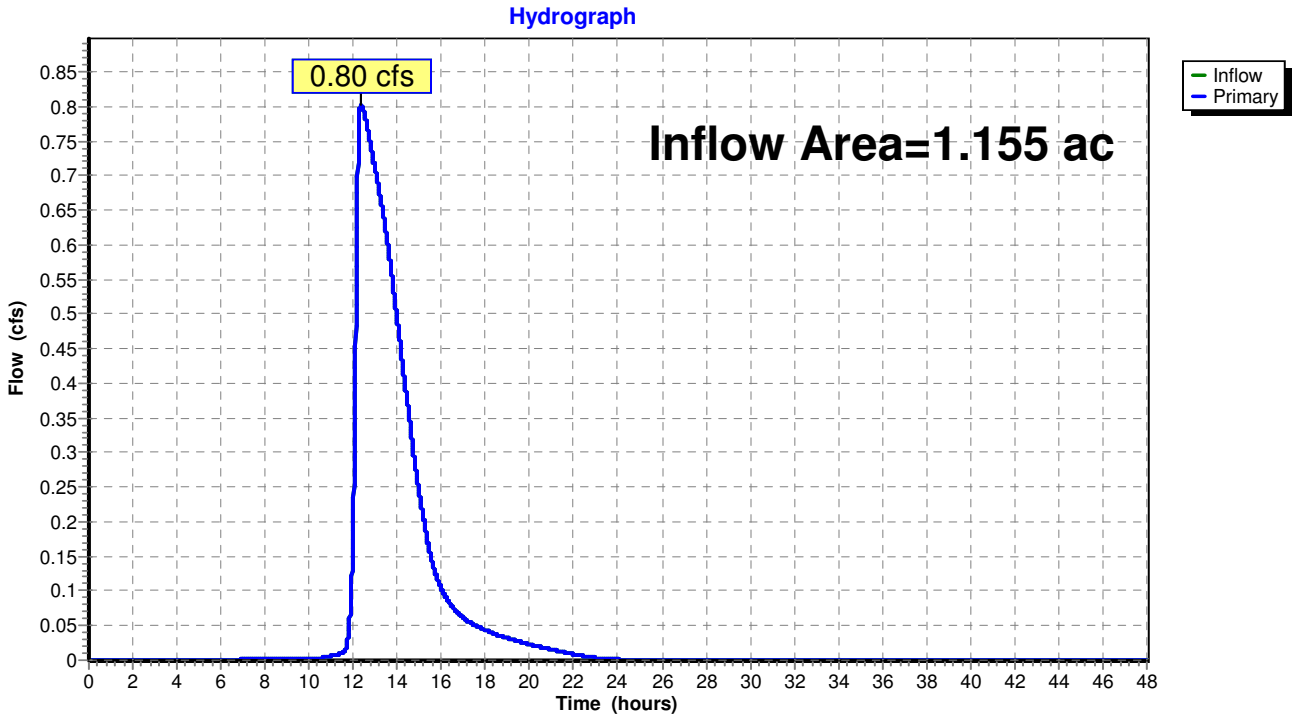


Summary for Link 3PS: Developed Basin discharge

Inflow Area = 1.155 ac, 56.10% Impervious, Inflow Depth = 1.81" for 10 year event
Inflow = 0.80 cfs @ 12.34 hrs, Volume= 0.174 af
Primary = 0.80 cfs @ 12.34 hrs, Volume= 0.174 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 3PS: Developed Basin discharge

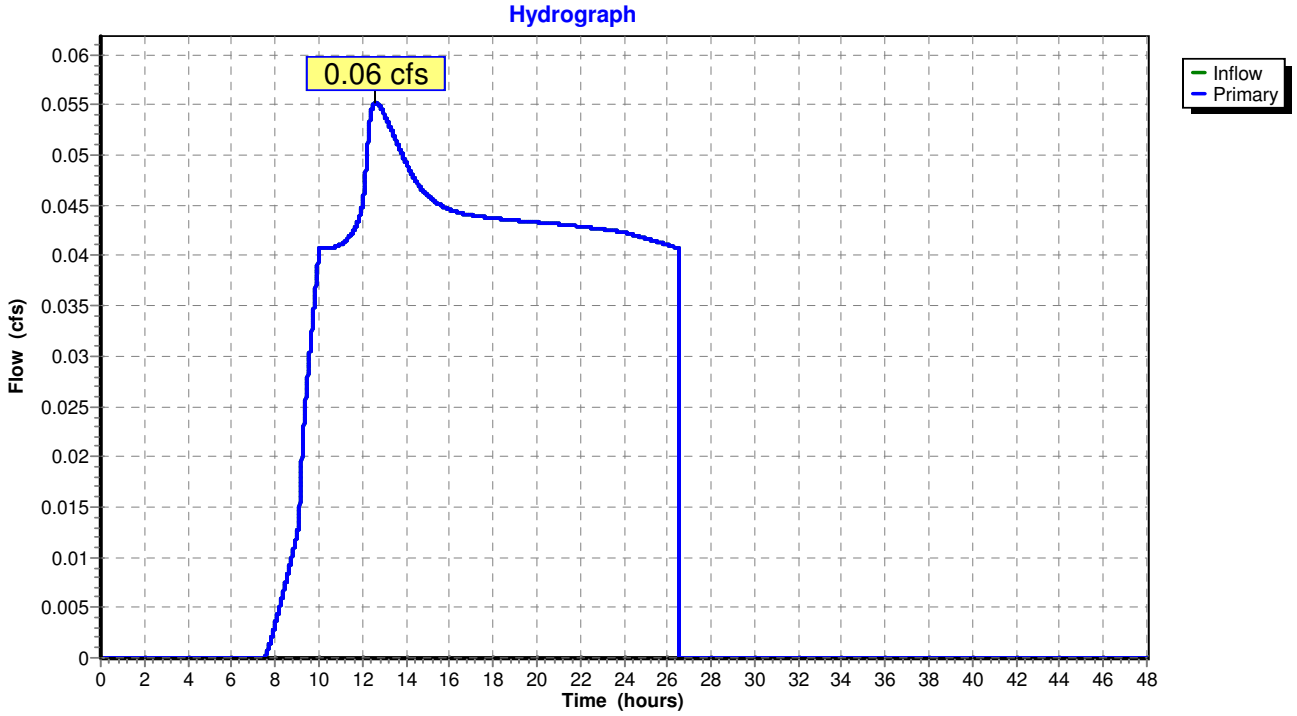


Summary for Link 4Z: infiltrated to ground

Inflow	=	0.06 cfs @ 12.62 hrs,	Volume=	0.063 af
Primary	=	0.06 cfs @ 12.62 hrs,	Volume=	0.063 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 4Z: infiltrated to ground



Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1E: Existing Basin Runoff Area=1.155 ac 1.56% Impervious Runoff Depth=3.64"
Flow Length=270' Tc=21.2 min CN=73 Runoff=4.08 cfs 0.351 af

Subcatchment 1P: Developed Basin Runoff Area=1.045 ac 60.00% Impervious Runoff Depth=4.93"
Flow Length=245' Tc=13.6 min CN=85 Runoff=5.98 cfs 0.429 af

Subcatchment 2P: East Basin-untreated Runoff Area=0.089 ac 0.00% Impervious Runoff Depth=3.14"
Flow Length=245' Tc=13.6 min CN=68 Runoff=0.33 cfs 0.023 af

Subcatchment 3P: West Basin-untreated Runoff Area=0.021 ac 100.00% Impervious Runoff Depth=6.42"
Flow Length=245' Tc=13.6 min CN=98 Runoff=0.14 cfs 0.011 af

Pond 1Po: combined ponds Peak Elev=882.37' Storage=8,199 cf Inflow=5.98 cfs 0.429 af
Primary=1.05 cfs 0.350 af Secondary=0.07 cfs 0.079 af Outflow=1.11 cfs 0.429 af

Link 3ES: Existing Basin discharge Inflow=4.08 cfs 0.351 af
Primary=4.08 cfs 0.351 af

Link 3PS: Developed Basin discharge Inflow=1.33 cfs 0.385 af
Primary=1.33 cfs 0.385 af

Link 4Z: infiltrated to ground Inflow=0.07 cfs 0.079 af
Primary=0.07 cfs 0.079 af

Total Runoff Area = 2.310 ac Runoff Volume = 0.814 af Average Runoff Depth = 4.23"
71.17% Pervious = 1.644 ac 28.83% Impervious = 0.666 ac

Summary for Subcatchment 1E: Existing Basin

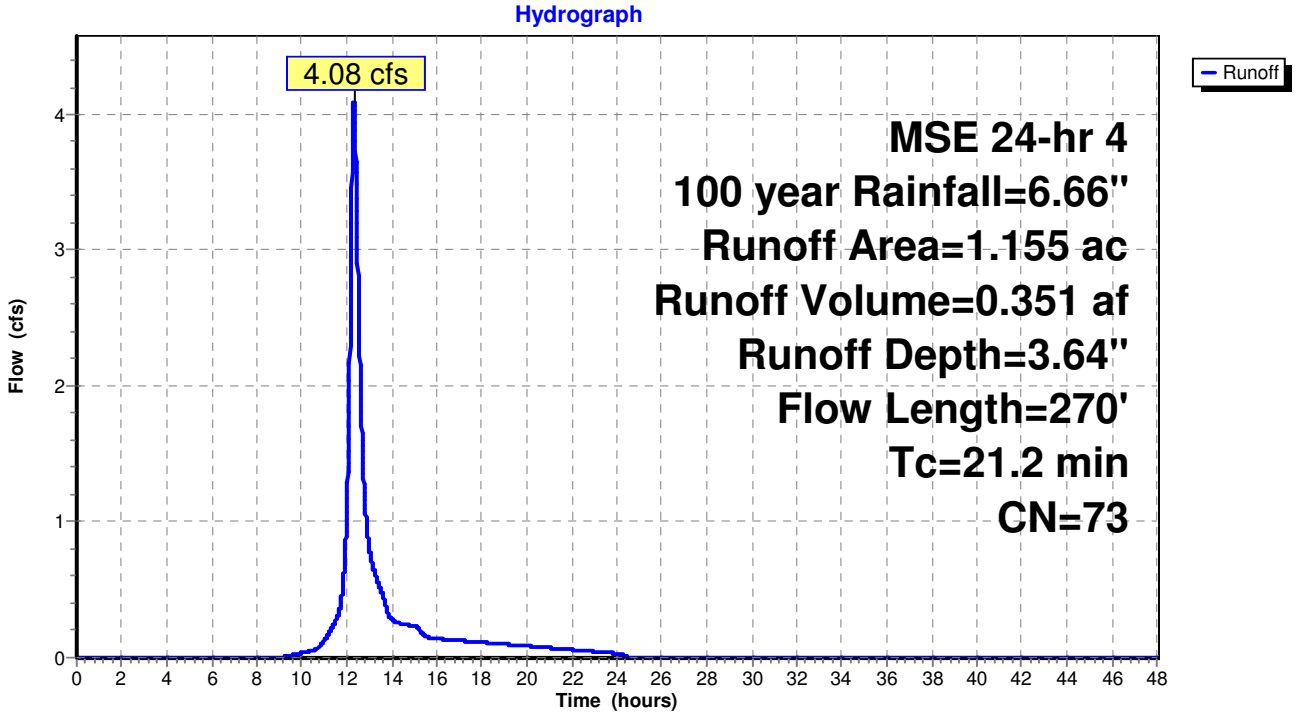
Runoff = 4.08 cfs @ 12.32 hrs, Volume= 0.351 af, Depth= 3.64"
Routed to Link 3ES : Existing Basin discharge

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 100 year Rainfall=6.66"

	Area (ac)	CN	Description
*	0.018	98	Exi offsite Roof
*	0.042	61	Exi offsite yard, HSG B
*	0.160	71	Exi offsite yard, HSG C
*	0.470	68	Exi ag field, HSG B
*	0.465	78	Exi ag field, HSG C
	1.155	73	Weighted Average
	1.137		98.44% Pervious Area
	0.018		1.56% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.1	100	0.0240	0.12		**Sheet Flow, First 100'** Grass: Dense n= 0.240 P2= 2.84"
7.1	170	0.0100	0.40		**Shallow Concentrated Flow, to sw corner of site** Kv= 4.0 fps
21.2	270	Total			

Subcatchment 1E: Existing Basin



Summary for Subcatchment 1P: Developed Basin

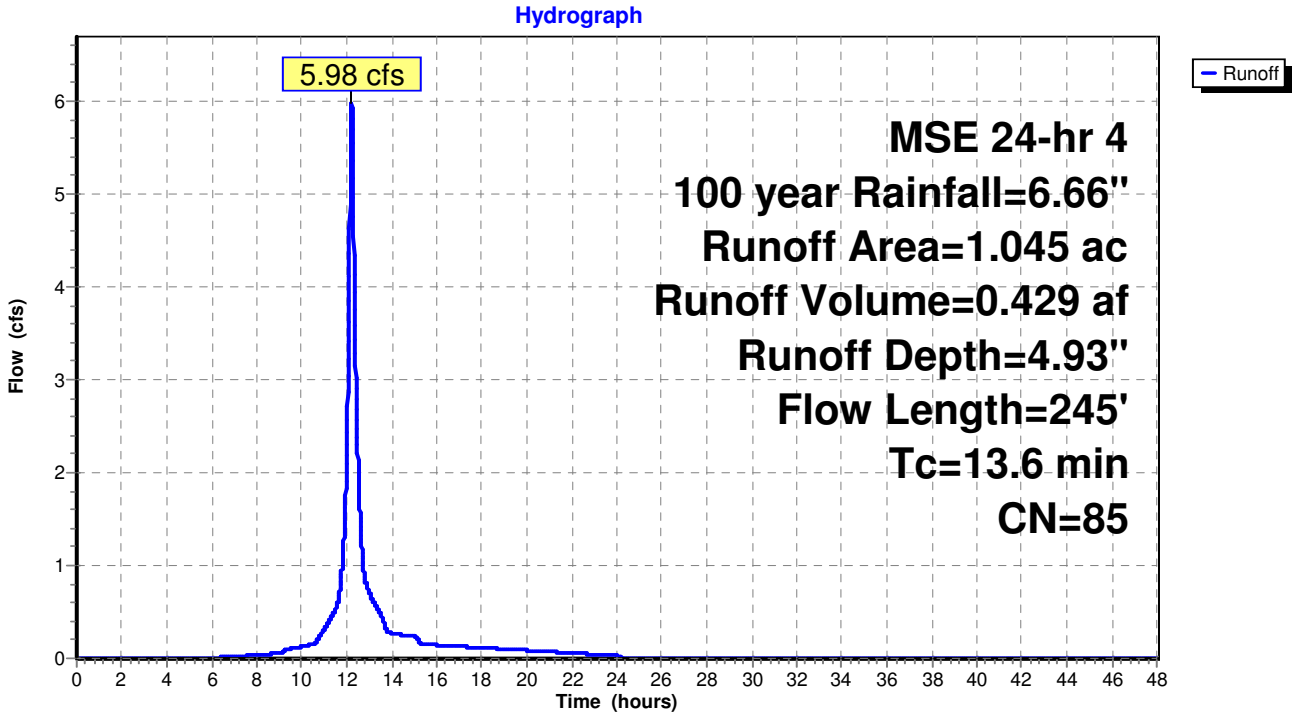
Runoff = 5.98 cfs @ 12.21 hrs, Volume= 0.429 af, Depth= 4.93"
Routed to Pond 1Po : combined ponds

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 100 year Rainfall=6.66"

	Area (ac)	CN	Description
*	0.018	98	Exi offsite Roof
*	0.042	61	Exi offsite yard, HSG B
*	0.160	71	Exi offsite yard, HSG C
*	0.324	98	New roof
*	0.285	98	New pvmt
*	0.186	61	New yard, HSG B
*	0.030	68	New yard, HSG C
	1.045	85	Weighted Average
	0.418		40.00% Pervious Area
	0.627		60.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	45	0.0200	0.09		**Sheet Flow, offsite to north swale along bldg** Grass: Dense n= 0.240 P2= 2.84"
5.6	200	0.0100	0.60		**Shallow Concentrated Flow, along north side of bldg to nw pond** Kv= 6.0 fps
13.6	245	Total			

Subcatchment 1P: Developed Basin



Summary for Subcatchment 2P: East Basin-untreated

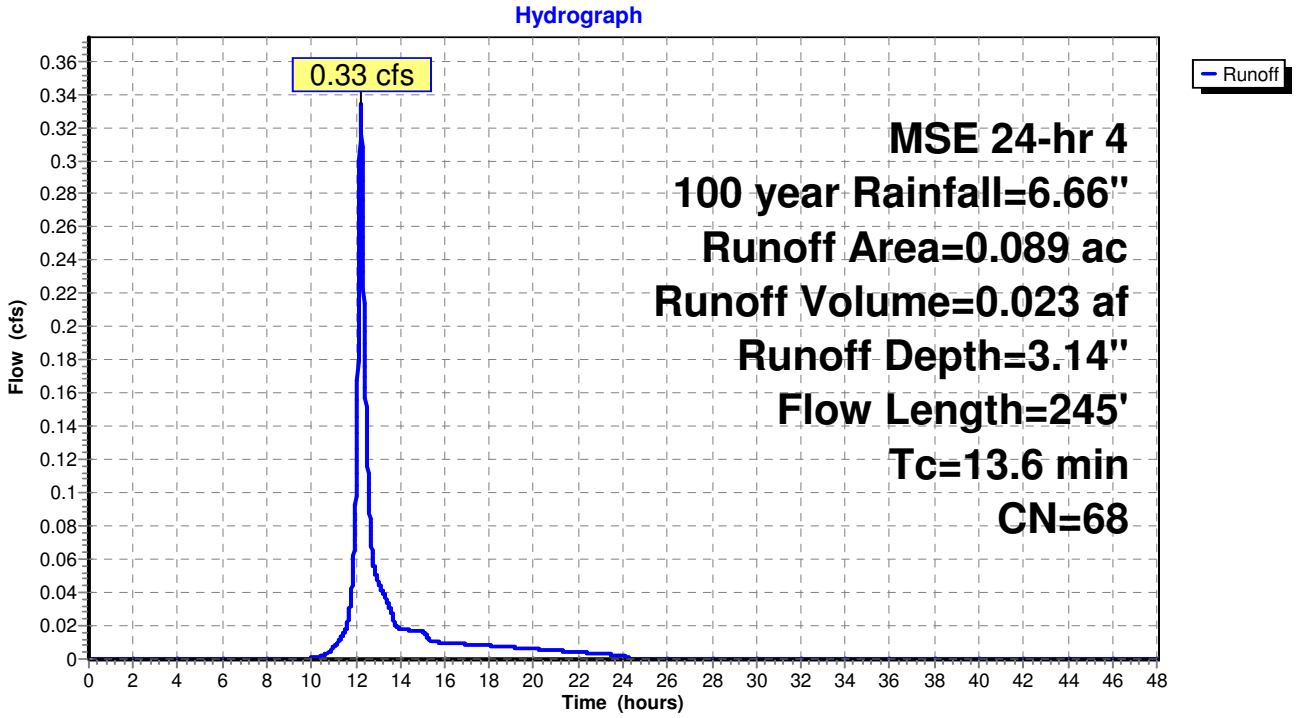
Runoff = 0.33 cfs @ 12.22 hrs, Volume= 0.023 af, Depth= 3.14"
Routed to Link 3PS : Developed Basin discharge

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 100 year Rainfall=6.66"

	Area (ac)	CN	Description
*	0.089	68	New yard, HSG C
	0.089		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	45	0.0200	0.09		**Sheet Flow, offsite to north swale along bldg** Grass: Dense n= 0.240 P2= 2.84"
5.6	200	0.0100	0.60		**Shallow Concentrated Flow, along north side of bldg to nw pond** Kv= 6.0 fps
13.6	245	Total			

Subcatchment 2P: East Basin-untreated



Summary for Subcatchment 3P: West Basin-untreated

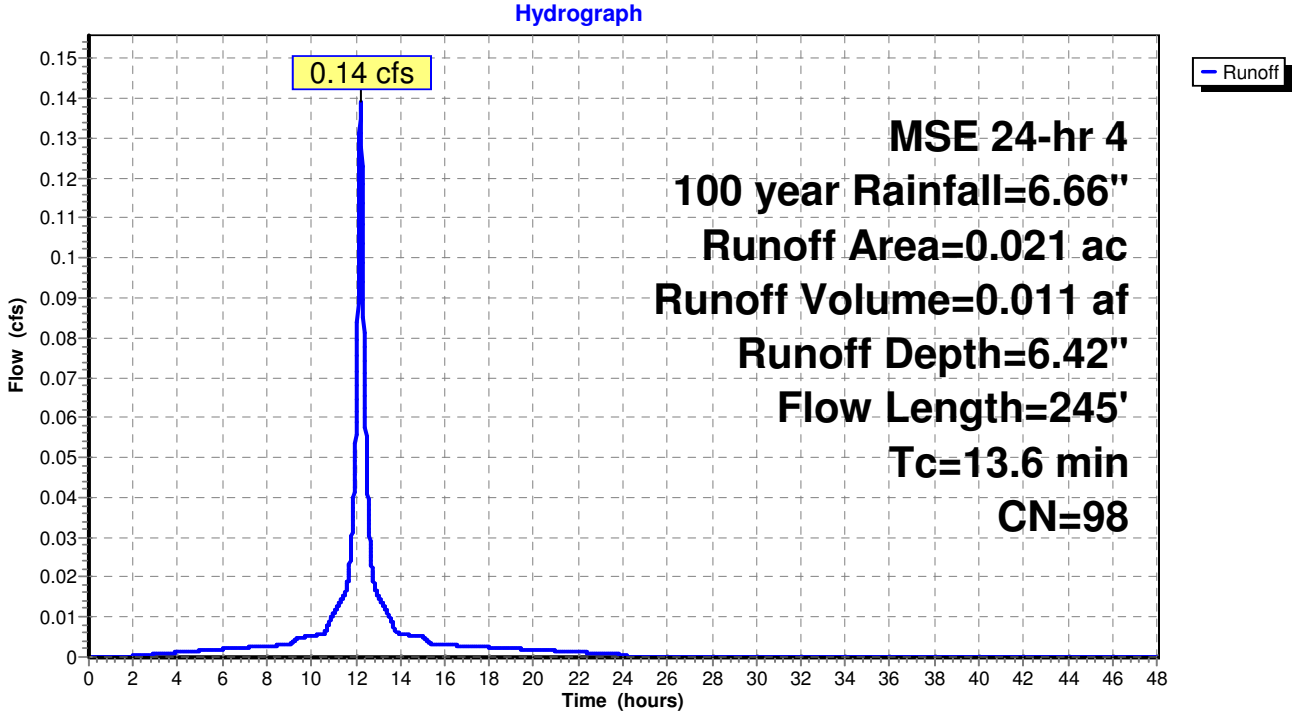
Runoff = 0.14 cfs @ 12.21 hrs, Volume= 0.011 af, Depth= 6.42"
Routed to Link 3PS : Developed Basin discharge

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 100 year Rainfall=6.66"

	Area (ac)	CN	Description
*	0.021	98	New pvmt
	0.021		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	45	0.0200	0.09		**Sheet Flow, offsite to north swale along bldg** Grass: Dense n= 0.240 P2= 2.84"
5.6	200	0.0100	0.60		**Shallow Concentrated Flow, along north side of bldg to nw pond** Kv= 6.0 fps
13.6	245	Total			

Subcatchment 3P: West Basin-untreated



Summary for Pond 1Po: combined ponds

Inflow Area = 1.045 ac, 60.00% Impervious, Inflow Depth = 4.93" for 100 year event
Inflow = 5.98 cfs @ 12.21 hrs, Volume= 0.429 af
Outflow = 1.11 cfs @ 12.69 hrs, Volume= 0.429 af, Atten= 81%, Lag= 28.4 min
Primary = 1.05 cfs @ 12.69 hrs, Volume= 0.350 af
Routed to Link 3PS : Developed Basin discharge
Secondary = 0.07 cfs @ 12.69 hrs, Volume= 0.079 af
Routed to Link 4Z : infiltrated to ground

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 882.37' @ 12.69 hrs Surf.Area= 5,923 sf Storage= 8,199 cf

Plug-Flow detention time= 99.4 min calculated for 0.429 af (100% of inflow)
Center-of-Mass det. time= 99.5 min (895.2 - 795.7)

Volume	Invert	Avail.Storage	Storage Description
#1	880.00'	14,215 cf	**Pond Storage (Combined) (Prismatic)** Listed below (Recalc)
#2	878.00'	0 cf	**20.00'W x 60.00'L x 2.00'H Bio-Filter mix voids** 2,400 cf Overall x 0.0% Voids
		14,215 cf	Total Available Storage

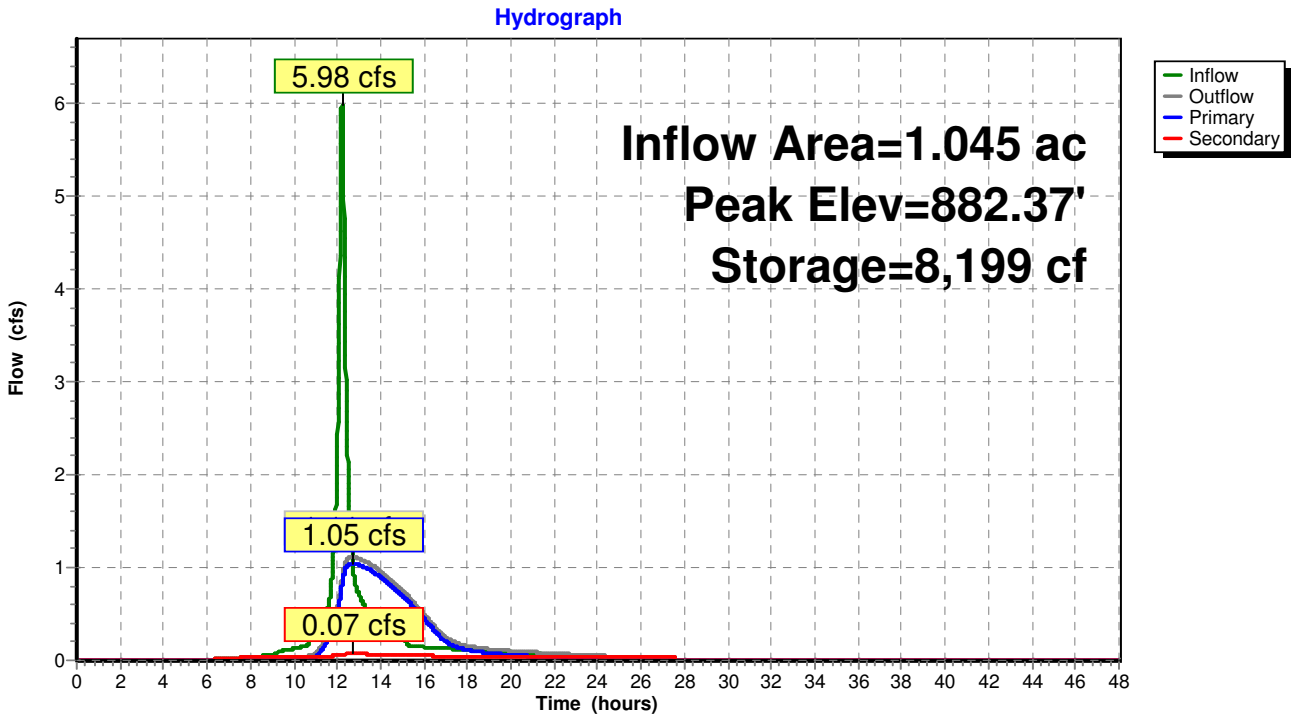
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
880.00	2,318	0	0
881.00	3,220	2,769	2,769
882.00	4,285	3,753	6,522
883.00	5,461	4,873	11,395
883.50	5,821	2,821	14,215

Device	Routing	Invert	Outlet Devices
#1	Secondary	878.00'	**0.500 in/hr Bio-filter Infiltration to native ground over Surface area** Phase-In= 0.01'
#2	Primary	880.16'	**6.0" Round Pond discharge pipe** L= 82.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 880.16' / 877.00' S= 0.0385 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf
#3	Primary	882.60'	**40.0' long + 3.0 '/' SideZ x 2.0' breadth Overflow Weir to street** 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 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32

Primary OutFlow Max=1.05 cfs @ 12.69 hrs HW=882.37' TW=0.00' (Dynamic Tailwater)
└─**2=Pond discharge pipe** (Inlet Controls 1.05 cfs @ 5.33 fps)
└─**3=Overflow Weir to street** (Controls 0.00 cfs)

Secondary OutFlow Max=0.07 cfs @ 12.69 hrs HW=882.37' TW=0.00' (Dynamic Tailwater)
└─**1=Bio-filter Infiltration to native ground** (Exfiltration Controls 0.07 cfs)

Pond 1Po: combined ponds

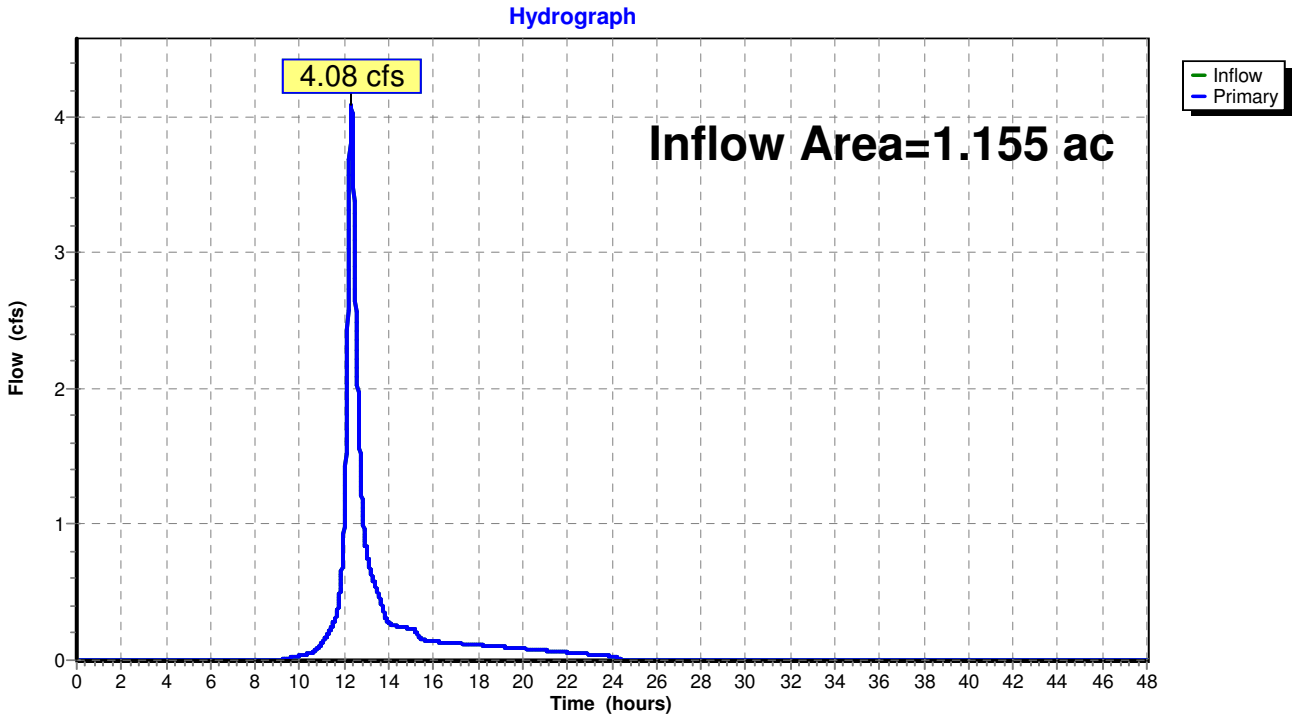


Summary for Link 3ES: Existing Basin discharge

Inflow Area = 1.155 ac, 1.56% Impervious, Inflow Depth = 3.64" for 100 year event
Inflow = 4.08 cfs @ 12.32 hrs, Volume= 0.351 af
Primary = 4.08 cfs @ 12.32 hrs, Volume= 0.351 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 3ES: Existing Basin discharge

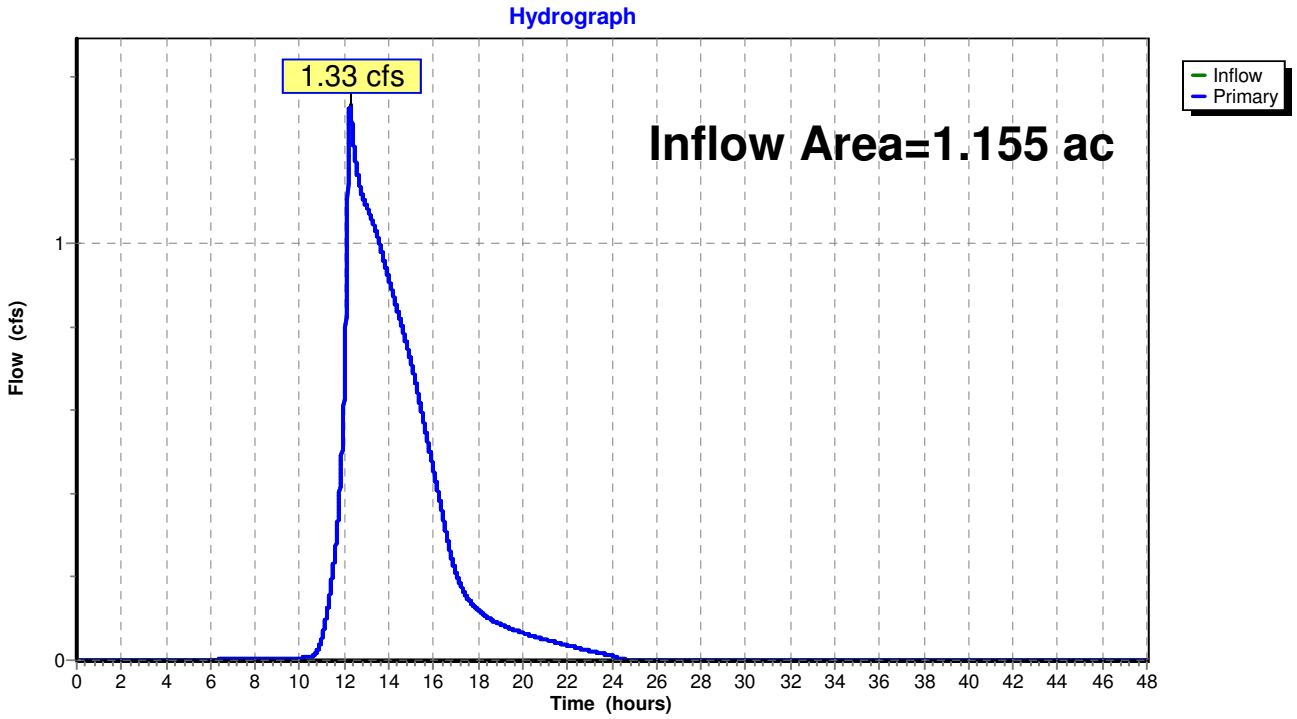


Summary for Link 3PS: Developed Basin discharge

Inflow Area = 1.155 ac, 56.10% Impervious, Inflow Depth = 4.00" for 100 year event
Inflow = 1.33 cfs @ 12.26 hrs, Volume= 0.385 af
Primary = 1.33 cfs @ 12.26 hrs, Volume= 0.385 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 3PS: Developed Basin discharge

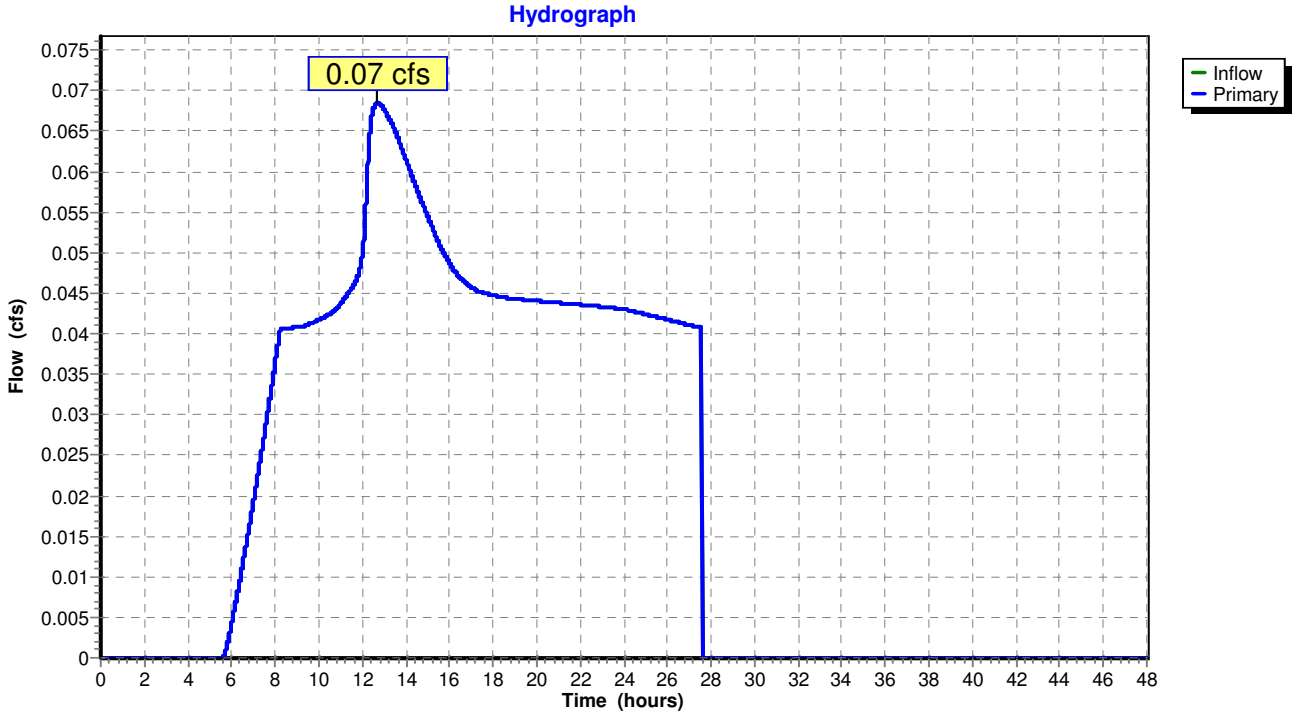


Summary for Link 4Z: infiltrated to ground

Inflow	=	0.07 cfs @ 12.69 hrs,	Volume=	0.079 af
Primary	=	0.07 cfs @ 12.69 hrs,	Volume=	0.079 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 4Z: infiltrated to ground



Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1E: Existing Basin Runoff Area=1.155 ac 1.56% Impervious Runoff Depth=4.40"
Flow Length=270' Tc=21.2 min CN=73 Runoff=4.92 cfs 0.423 af

Subcatchment 1P: Developed Basin Runoff Area=1.045 ac 60.00% Impervious Runoff Depth=5.76"
Flow Length=245' Tc=13.6 min CN=85 Runoff=6.94 cfs 0.502 af

Subcatchment 2P: East Basin-untreated Runoff Area=0.089 ac 0.00% Impervious Runoff Depth=3.84"
Flow Length=245' Tc=13.6 min CN=68 Runoff=0.41 cfs 0.029 af

Subcatchment 3P: West Basin-untreated Runoff Area=0.021 ac 100.00% Impervious Runoff Depth=7.29"
Flow Length=245' Tc=13.6 min CN=98 Runoff=0.16 cfs 0.013 af

Pond 1Po: combined ponds Peak Elev=882.63' Storage=9,477 cf Inflow=6.94 cfs 0.502 af
Primary=1.76 cfs 0.419 af Secondary=0.07 cfs 0.083 af Outflow=1.83 cfs 0.502 af

Link 3ES: Existing Basin discharge Inflow=4.92 cfs 0.423 af
Primary=4.92 cfs 0.423 af

Link 3PS: Developed Basin discharge Inflow=1.92 cfs 0.460 af
Primary=1.92 cfs 0.460 af

Link 4Z: infiltrated to ground Inflow=0.07 cfs 0.083 af
Primary=0.07 cfs 0.083 af

Total Runoff Area = 2.310 ac Runoff Volume = 0.966 af Average Runoff Depth = 5.02"
71.17% Pervious = 1.644 ac 28.83% Impervious = 0.666 ac

Summary for Subcatchment 1E: Existing Basin

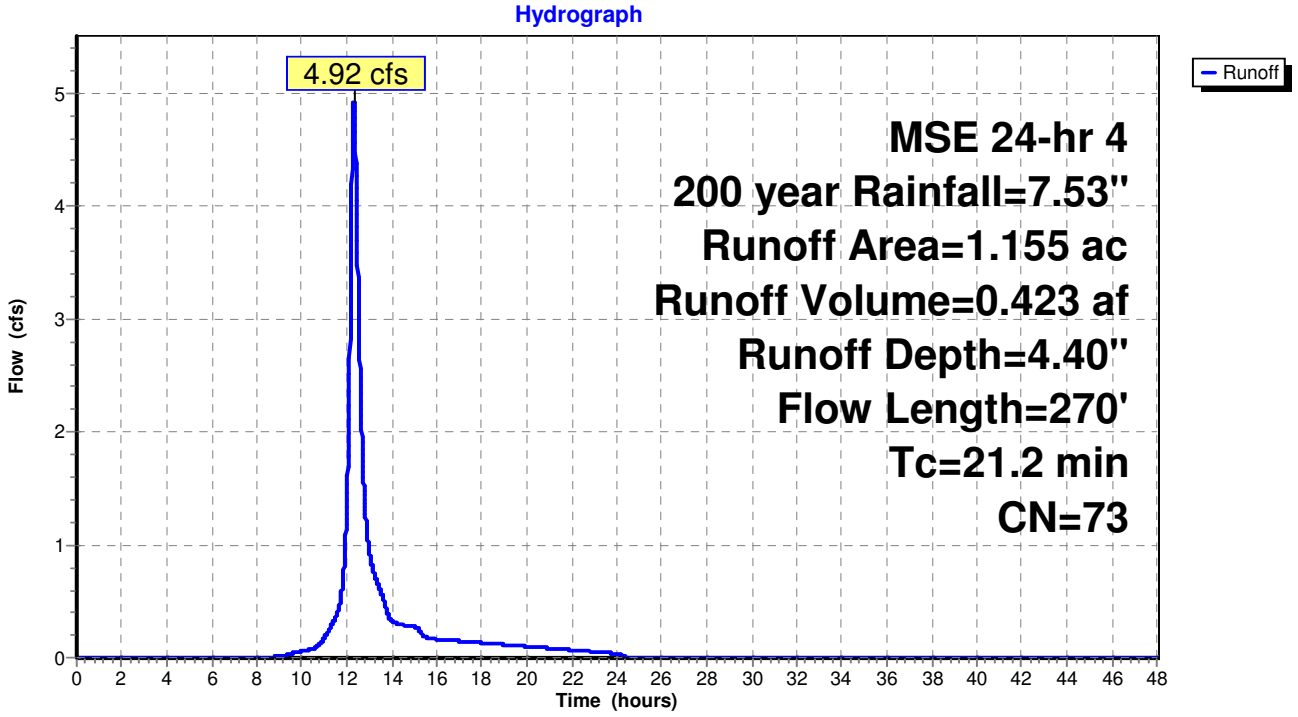
Runoff = 4.92 cfs @ 12.32 hrs, Volume= 0.423 af, Depth= 4.40"
Routed to Link 3ES : Existing Basin discharge

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 200 year Rainfall=7.53"

	Area (ac)	CN	Description
*	0.018	98	Exi offsite Roof
*	0.042	61	Exi offsite yard, HSG B
*	0.160	71	Exi offsite yard, HSG C
*	0.470	68	Exi ag field, HSG B
*	0.465	78	Exi ag field, HSG C
	1.155	73	Weighted Average
	1.137		98.44% Pervious Area
	0.018		1.56% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.1	100	0.0240	0.12		**Sheet Flow, First 100'** Grass: Dense n= 0.240 P2= 2.84"
7.1	170	0.0100	0.40		**Shallow Concentrated Flow, to sw corner of site** Kv= 4.0 fps
21.2	270	Total			

Subcatchment 1E: Existing Basin



Summary for Subcatchment 1P: Developed Basin

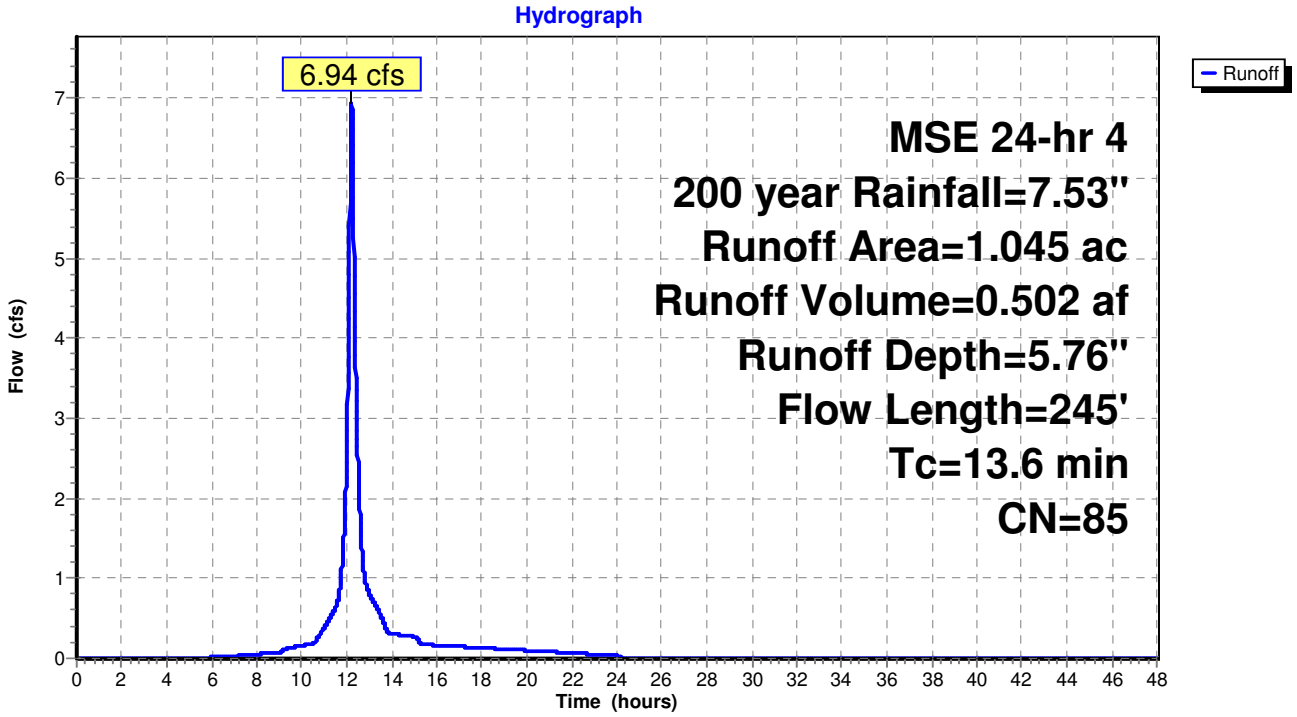
Runoff = 6.94 cfs @ 12.21 hrs, Volume= 0.502 af, Depth= 5.76"
Routed to Pond 1Po : combined ponds

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 200 year Rainfall=7.53"

	Area (ac)	CN	Description
*	0.018	98	Exi offsite Roof
*	0.042	61	Exi offsite yard, HSG B
*	0.160	71	Exi offsite yard, HSG C
*	0.324	98	New roof
*	0.285	98	New pvmt
*	0.186	61	New yard, HSG B
*	0.030	68	New yard, HSG C
	1.045	85	Weighted Average
	0.418		40.00% Pervious Area
	0.627		60.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	45	0.0200	0.09		**Sheet Flow, offsite to north swale along bldg** Grass: Dense n= 0.240 P2= 2.84"
5.6	200	0.0100	0.60		**Shallow Concentrated Flow, along north side of bldg to nw pond** Kv= 6.0 fps
13.6	245	Total			

Subcatchment 1P: Developed Basin



Summary for Subcatchment 2P: East Basin-untreated

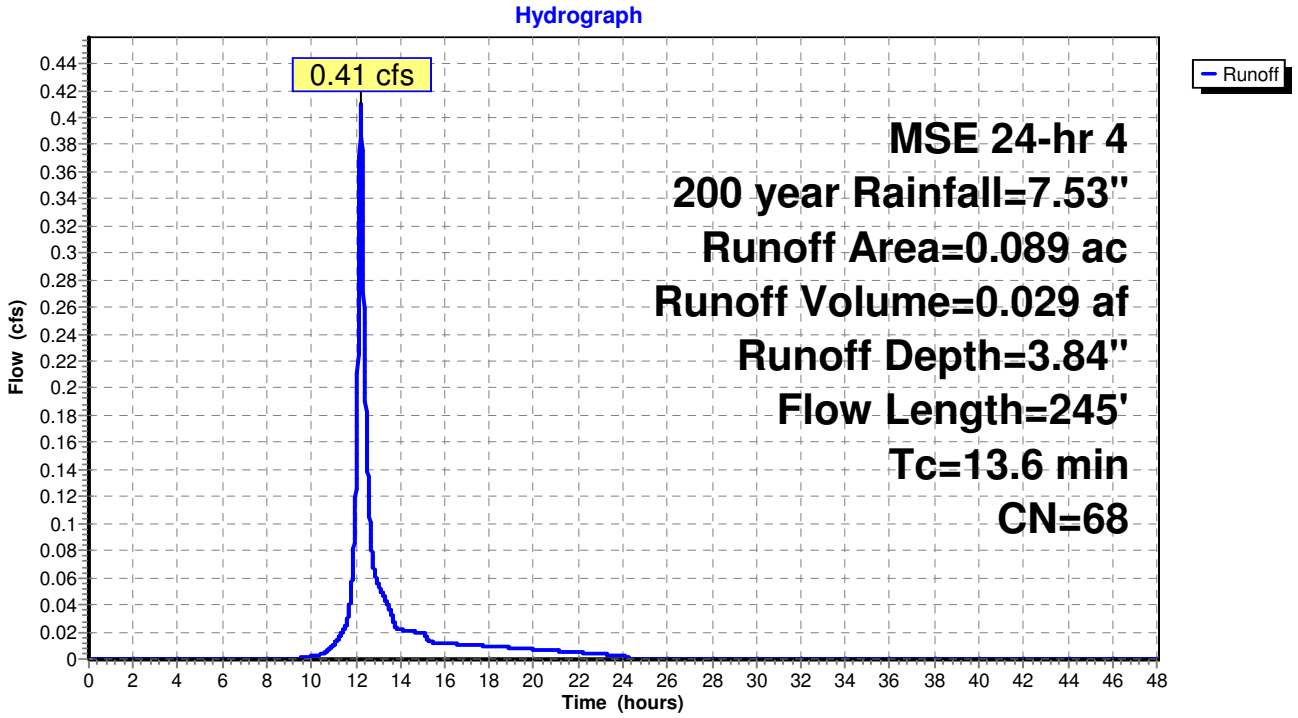
Runoff = 0.41 cfs @ 12.22 hrs, Volume= 0.029 af, Depth= 3.84"
Routed to Link 3PS : Developed Basin discharge

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 200 year Rainfall=7.53"

	Area (ac)	CN	Description
*	0.089	68	New yard, HSG C
	0.089		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	45	0.0200	0.09		**Sheet Flow, offsite to north swale along bldg** Grass: Dense n= 0.240 P2= 2.84"
5.6	200	0.0100	0.60		**Shallow Concentrated Flow, along north side of bldg to nw pond** Kv= 6.0 fps
13.6	245	Total			

Subcatchment 2P: East Basin-untreated



Summary for Subcatchment 3P: West Basin-untreated

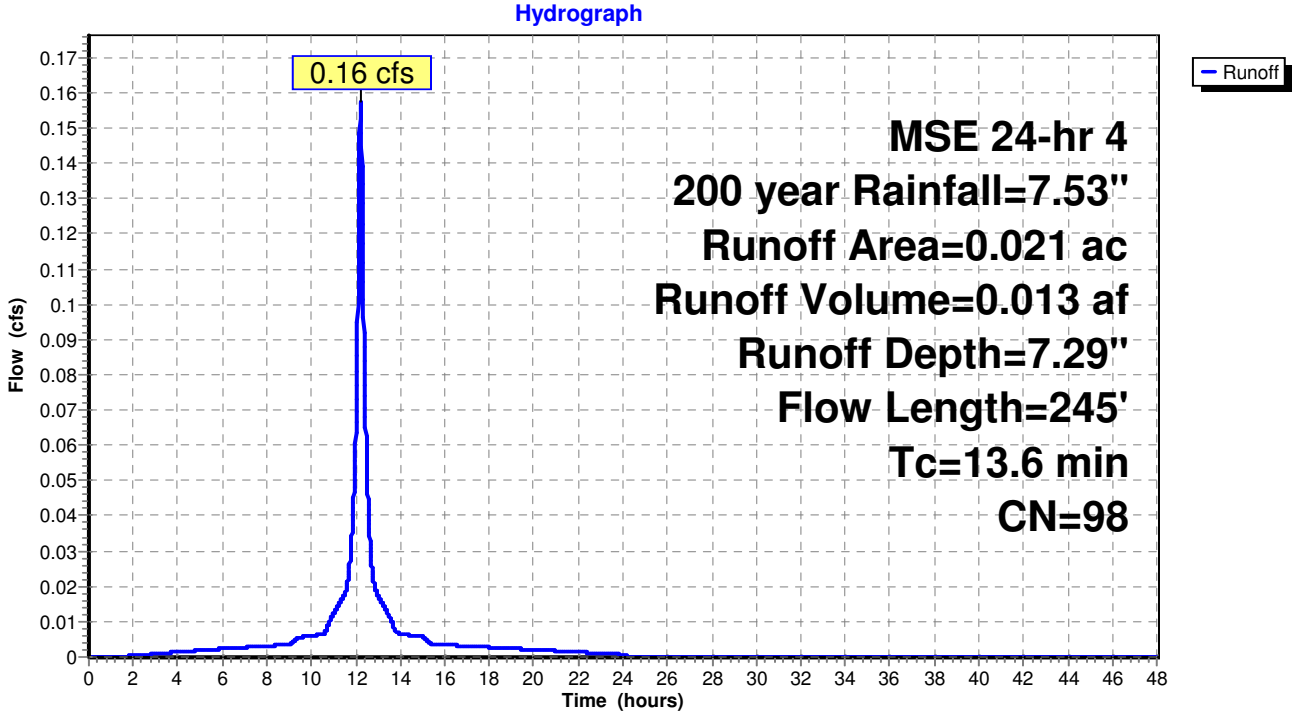
Runoff = 0.16 cfs @ 12.21 hrs, Volume= 0.013 af, Depth= 7.29"
Routed to Link 3PS : Developed Basin discharge

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 200 year Rainfall=7.53"

	Area (ac)	CN	Description
*	0.021	98	New pvmt
	0.021		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	45	0.0200	0.09		**Sheet Flow, offsite to north swale along bldg** Grass: Dense n= 0.240 P2= 2.84"
5.6	200	0.0100	0.60		**Shallow Concentrated Flow, along north side of bldg to nw pond** Kv= 6.0 fps
13.6	245	Total			

Subcatchment 3P: West Basin-untreated



Summary for Pond 1Po: combined ponds

Inflow Area = 1.045 ac, 60.00% Impervious, Inflow Depth = 5.76" for 200 year event
Inflow = 6.94 cfs @ 12.21 hrs, Volume= 0.502 af
Outflow = 1.83 cfs @ 12.57 hrs, Volume= 0.502 af, Atten= 74%, Lag= 21.7 min
Primary = 1.76 cfs @ 12.57 hrs, Volume= 0.419 af
Routed to Link 3PS : Developed Basin discharge
Secondary = 0.07 cfs @ 12.57 hrs, Volume= 0.083 af
Routed to Link 4Z : infiltrated to ground

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 882.63' @ 12.57 hrs Surf.Area= 6,231 sf Storage= 9,477 cf

Plug-Flow detention time= 101.3 min calculated for 0.502 af (100% of inflow)
Center-of-Mass det. time= 101.3 min (893.4 - 792.1)

Volume	Invert	Avail.Storage	Storage Description
#1	880.00'	14,215 cf	**Pond Storage (Combined) (Prismatic)** Listed below (Recalc)
#2	878.00'	0 cf	**20.00'W x 60.00'L x 2.00'H Bio-Filter mix voids** 2,400 cf Overall x 0.0% Voids
		14,215 cf	Total Available Storage

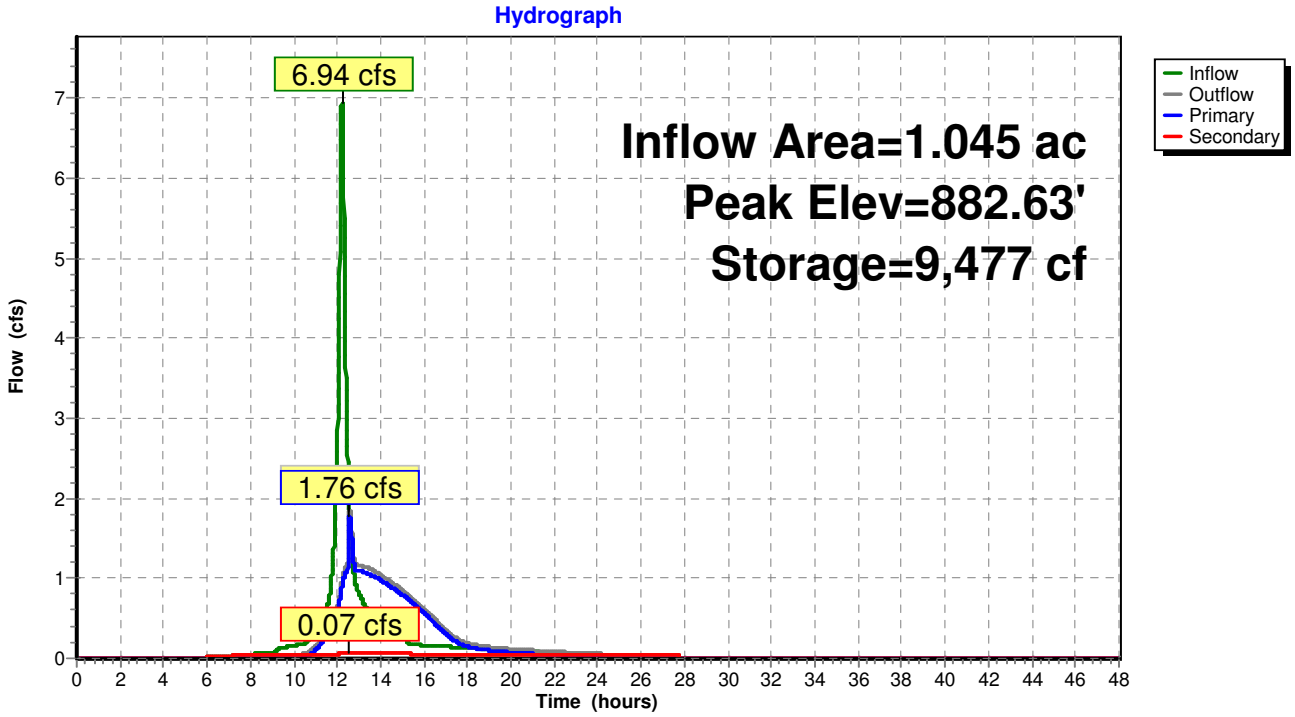
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
880.00	2,318	0	0
881.00	3,220	2,769	2,769
882.00	4,285	3,753	6,522
883.00	5,461	4,873	11,395
883.50	5,821	2,821	14,215

Device	Routing	Invert	Outlet Devices
#1	Secondary	878.00'	**0.500 in/hr Bio-filter Infiltration to native ground over Surface area** Phase-In= 0.01'
#2	Primary	880.16'	**6.0" Round Pond discharge pipe** L= 82.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 880.16' / 877.00' S= 0.0385 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf
#3	Primary	882.60'	**40.0' long + 3.0 '/' SideZ x 2.0' breadth Overflow Weir to street** 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 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32

Primary OutFlow Max=1.76 cfs @ 12.57 hrs HW=882.63' TW=0.00' (Dynamic Tailwater)
└─**2=Pond discharge pipe** (Inlet Controls 1.11 cfs @ 5.67 fps)
└─**3=Overflow Weir to street** (Weir Controls 0.65 cfs @ 0.47 fps)

Secondary OutFlow Max=0.07 cfs @ 12.57 hrs HW=882.63' TW=0.00' (Dynamic Tailwater)
└─**1=Bio-filter Infiltration to native ground** (Exfiltration Controls 0.07 cfs)

Pond 1Po: combined ponds

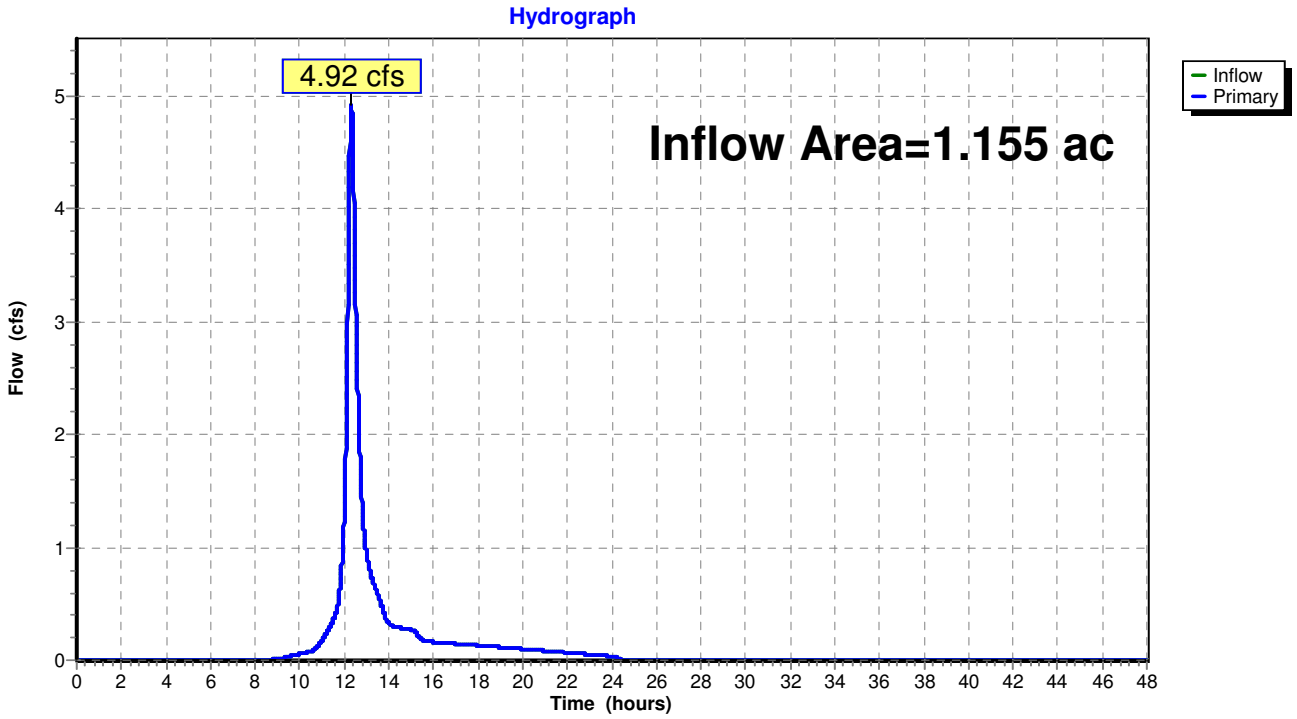


Summary for Link 3ES: Existing Basin discharge

Inflow Area = 1.155 ac, 1.56% Impervious, Inflow Depth = 4.40" for 200 year event
Inflow = 4.92 cfs @ 12.32 hrs, Volume= 0.423 af
Primary = 4.92 cfs @ 12.32 hrs, Volume= 0.423 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 3ES: Existing Basin discharge

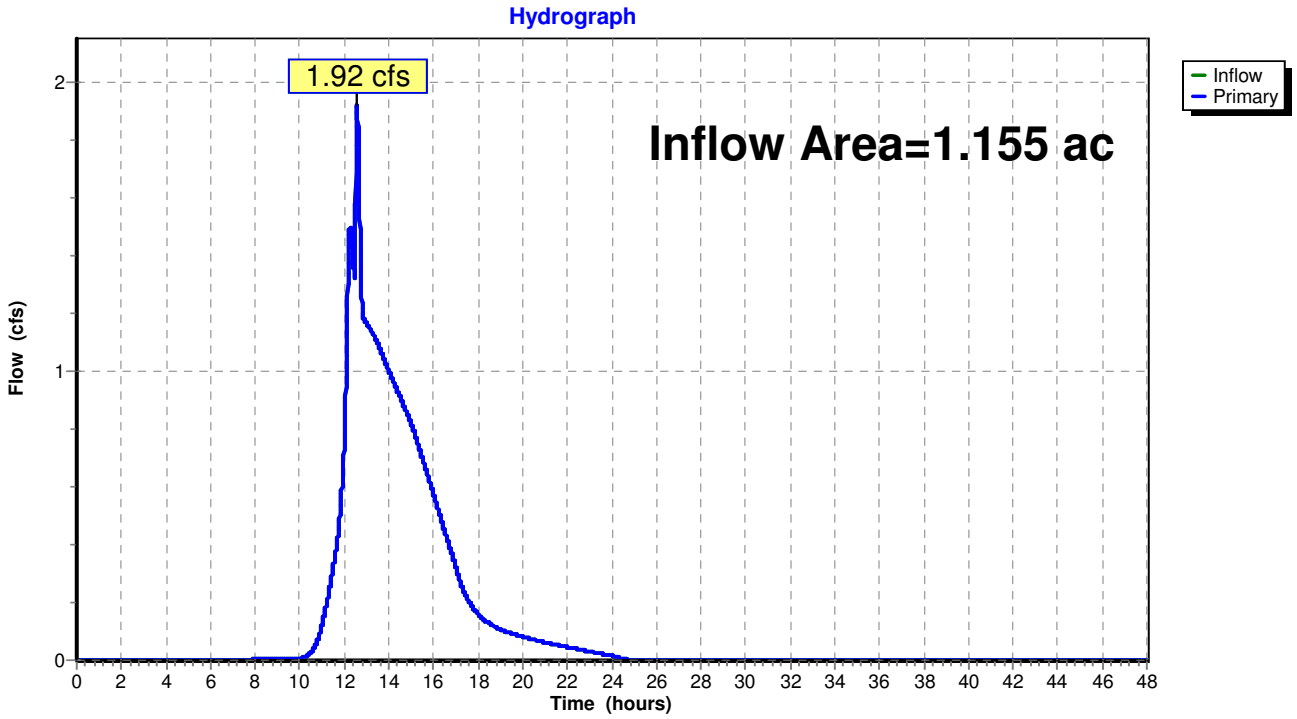


Summary for Link 3PS: Developed Basin discharge

Inflow Area = 1.155 ac, 56.10% Impervious, Inflow Depth = 4.78" for 200 year event
Inflow = 1.92 cfs @ 12.57 hrs, Volume= 0.460 af
Primary = 1.92 cfs @ 12.57 hrs, Volume= 0.460 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 3PS: Developed Basin discharge

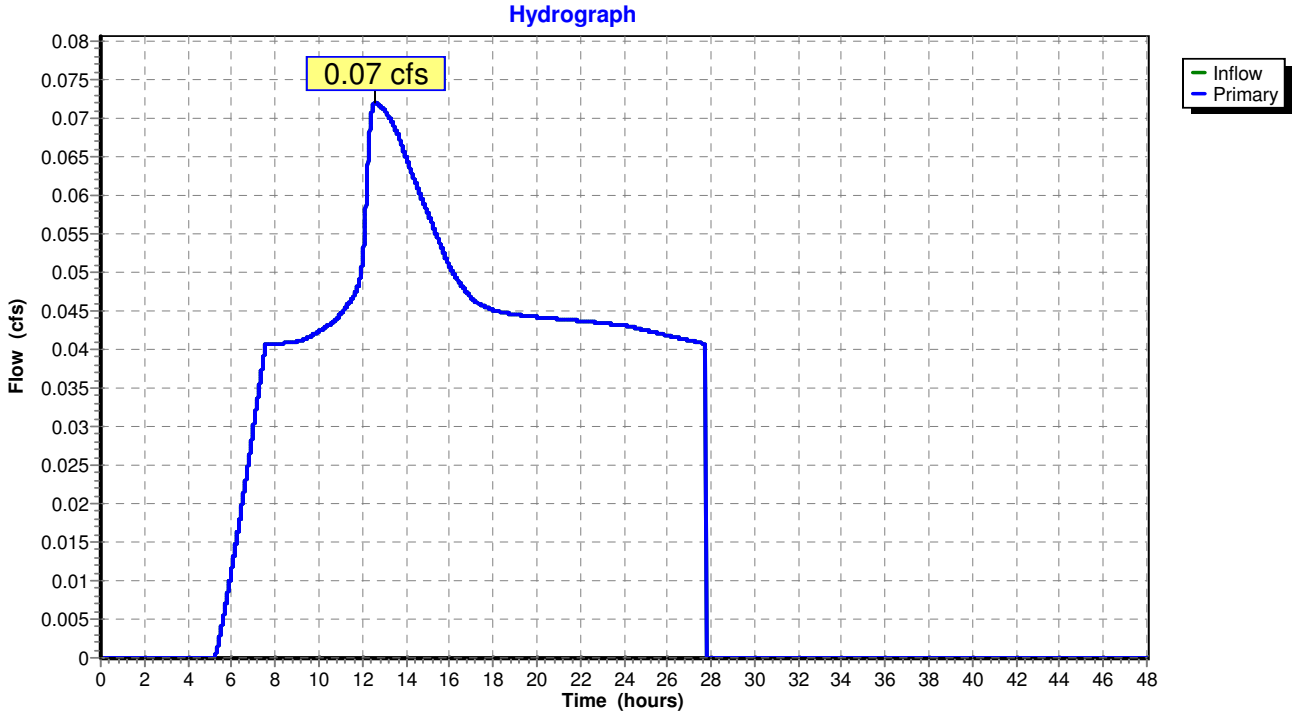


Summary for Link 4Z: infiltrated to ground

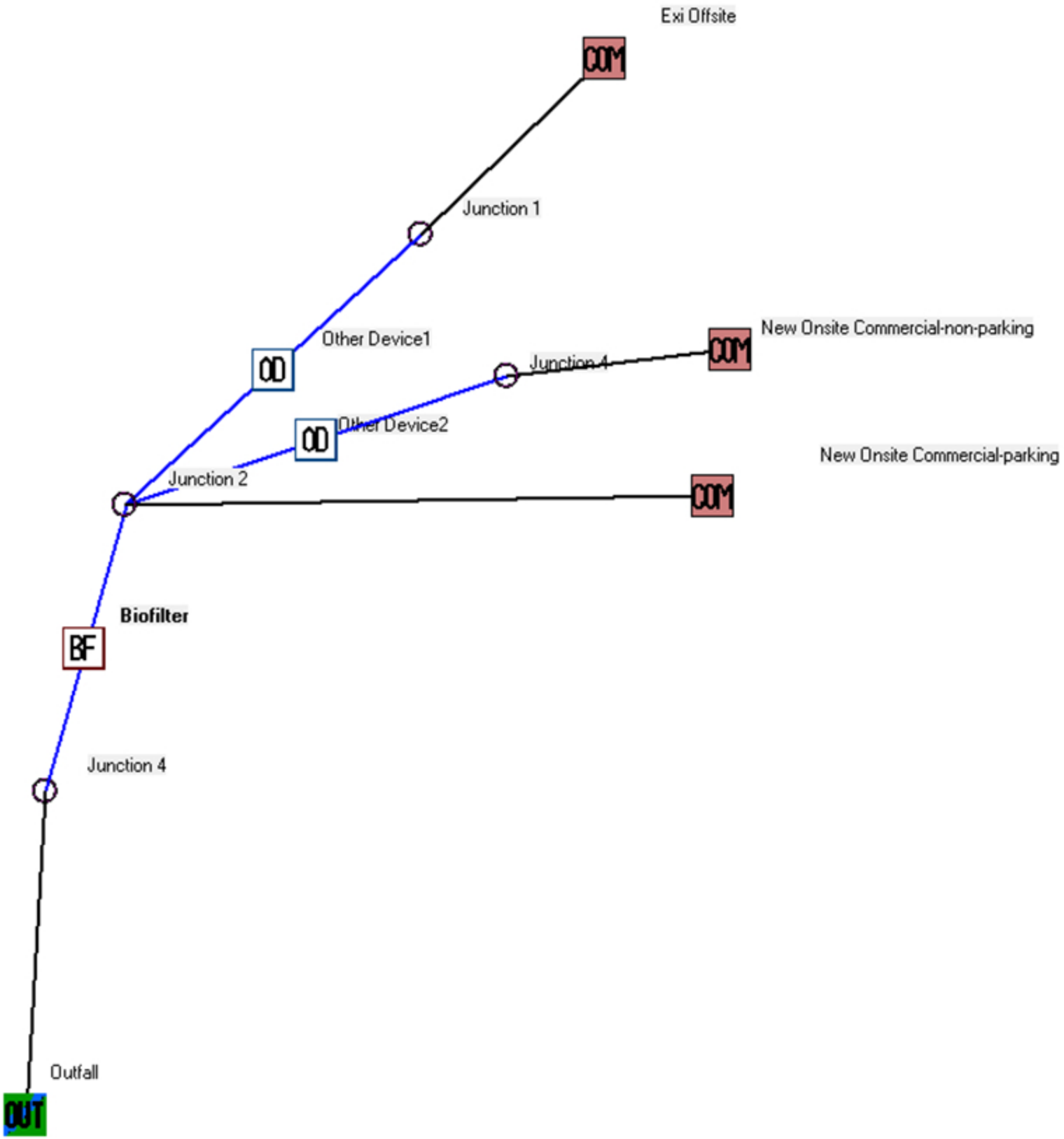
Inflow	=	0.07 cfs @ 12.57 hrs,	Volume=	0.083 af
Primary	=	0.07 cfs @ 12.57 hrs,	Volume=	0.083 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 4Z: infiltrated to ground



Winslamm Routing Diagram



Winslamm-Input Data

Data file name: T:\PROJECTS\2025 Projects\125-555 Kaashagen\Engineering\Drainage\Winslamm\2026-05-05 Commercial Building.mdb
WinSLAMM Version 10.5.1
Rain file name: C:\WinSLAMM Files\Rain Files\WisReg - Madison WI 1981.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:
If Other Device Pollutant Load Reduction Values = 1, Off-site Pollutant Loads are Removed from Pollutant Load % Reduction calculations
Seed for random number generator: -42
Study period starting date: 01/01/81 Study period ending date: 12/31/81
Start of Winter Season: 12/02 End of Winter Season: 03/12
Date: 05-06-2026 Time: 07:31:44
Site information:
New Commercial Building

Pre-Development Area Description	Pre-Development Area (ac)	Pre-Development CN
Exi Offsite Roo	.018	98
Exi Offsite Yar	.042	61
Exi Offiste Yar	.160	71
Exi Ag Field,hs	.470	68
Exi Ag Field,hs	.465	78
Total Area (ac)/Composite CN	1.155	73

LU# 1 - Commercial: Exi Offsite Total area (ac): 0.220
1 - Roofs 1: 0.018 ac. Pitched Disconnected Normal Silty Source Area PSD File: C:\WinSLAMM Files\NURP.cpz

```
     45 - Large Landscaped Areas 1:  0.042 ac.    Normal Silty    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     46 - Large Landscaped Areas 2:  0.160 ac.    Moderately Compacted Silty    Source Area PSD File: C:\WinSLAMM
Files\NURP.cpz

LU# 2 - Commercial:  New Onsite Commercial-parking     Total area (ac):  0.285
     13 - Paved Parking 1:  0.285 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz

LU# 3 - Commercial:  New Onsite Commercial-non-parking     Total area (ac):  0.540
     1 - Roofs 1:  0.324 ac.    Pitched    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     45 - Large Landscaped Areas 1:  0.186 ac.    Normal Silty    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     46 - Large Landscaped Areas 2:  0.030 ac.    Moderately Compacted Silty    Source Area PSD File: C:\WinSLAMM
Files\NURP.cpz


      Control Practice 1:  Biofilter CP# 1 (DS) - Biofilter
         1.  Top area (square feet) =  5120
         2.  Bottom area (square feet) =  800
         3.  Depth (ft):   5
         4.  Biofilter width (ft) - for Cost Purposes Only:   20
         5.  Infiltration rate (in/hr) =  0.5
         6.  Random infiltration rate generation?  No
         7.  Infiltration rate fraction (side):   0.001
         8.  Infiltration rate fraction (bottom):   1
         9.  Depth of biofilter that is rock filled (ft) 0
         10.  Porosity of rock filled volume =  0
         11.  Treatment media infiltration rate:   3.6
         12.  Treatment media depth (ft) =  2
         13.  Treatment media porosity =  0.27
         14. Percent solids reduction due to flow through treatment media =  80
         17. Particle size distribution file:  Not needed - calculated by program
         18. Initial water surface elevation (ft):   0
         Estimated Surface Drain Time = 3.84 hrs.
         Estimated Subsurface Drain Time = 5.64 hrs.
              Soil Data                        Soil Type Fraction in Eng. Soil
             User-Defined Media Type                  1.000
              Biofilter Outlet/Discharge Characteristics:
```

```
        Outlet type:  Broad Crested Weir
                1.  Weir crest length (ft):   40
                2.  Weir crest width (ft):   2
                3.  Height of datum to bottom of weir opening:   4.6
        Outlet type:  Surface Discharge Pipe
                1.  Surface discharge pipe outlet diameter (ft):   0.5
                2.  Pipe invert elevation above datum (ft):   2.16
                3.  Number of surface pipe outlets:   1

Control Practice 2:  Other Device CP# 1 (DS) - Other Device1
   Fraction of drainage area served by device (ac) = 1.00
   Particulate Concentration reduction fraction = 1.00
   Filterable Concentration reduction fraction = 1.00
   Runoff volume reduction fraction = 0

Control Practice 3:  Other Device CP# 2 (DS) - Other Device2
   Fraction of drainage area served by device (ac) = 1.00
   Particulate Concentration reduction fraction = 1.00
   Filterable Concentration reduction fraction = 1.00
   Runoff volume reduction fraction = 0
```

Winslamm-Output Summary

SLAMM for Windows Version 10.5.1
(c) Copyright Robert Pitt and John Voorhees 2025, All Rights Reserved

Data file name: T:\PROJECTS\2025 Projects\125-555 Kaashagen\Engineering\Drainage\Winslamm\2026-05-05 Commercial Building.mdb
Data file description: New Commercial Building

Rain file name: C:\WinSLAMM Files\Rain Files\WisReg - Madison WI 1981.RAN
Particulate Solids Concentration file name: C:\WinSLAMM Files\v10.1 WI_AVG01.pscx
Runoff Coefficient file name: C:\WinSLAMM Files\WI_SL06 Dec06.rsvx
Pollutant Relative Concentration file name: C:\WinSLAMM Files\WI_GEO03.ppdx
Residential Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Institutional Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Commercial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Industrial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Other Urban Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Freeway Street Delivery file name: C:\WinSLAMM Files\Freeway Dec06.std
Apply Street Delivery Files to Adjust the After Event Load Street Dirt Mass Balance: False
Source Area PSD and Peak to Average Flow Ratio File: C:\WinSLAMM Files\NURP Source Area PSD Files.csv
Cost Data file name:
If Other Device Pollutant Load Reduction Values = 1, Off-site Pollutant Loads are Removed from Pollutant Load % Reduction calculations
Seed for random number generator: -42
Start of Winter Season: 12/02 End of Winter Season: 03/12
Model Run Start Date: 01/01/81 Model Run End Date: 12/31/81
Date of run: 05-06-2026 Time of run: 07:32:05
Total Area Modeled (acres): 1.045
Years in Model Run: 1.00

	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:	68323	-	41.16	175.6	-
Outfall Total with Controls:	582.1	99.15%	42.93	1.560	99.11%

Annualized Total After Outfall Controls: 583.7 1.564

Biofilter # 1 is expected to clog in 9.43 years.. Percent Solids Reduction due to Treatment Media = 80

Data File: T:\PROJECTS\2025 Projects\125-555 Kaashagen\Engineering\
Drainage\Winslamm\2026-05-04 Commercial Building.mdb
Rain File: WisReg - Madison WI 1981.RAN
Date: 05-02-26 Time: 9:51:54 AM
Site Description: New Commercial Building

Runoff Volume Total (cf) at the Outfall

Rain Numb	Start Date	Rain Total (in)	Outfall Total (cf)	Rv	Total Losses (in.)	Calculated CN*	Event Peak Flow (cfs)	Pre-Dev Runoff Vol. (cf)
1	1/1/1981	-	-	-	-	-	-	-
2	1/6/1981	-	-	-	-	-	-	-
3	1/6/1981	-	-	-	-	-	-	-
4	1/15/1981	-	-	-	-	-	-	-
5	1/31/1981	-	-	-	-	-	-	-
6	2/5/1981	-	-	-	-	-	-	-
7	2/6/1981	-	-	-	-	-	-	-
8	2/8/1981	-	-	-	-	-	-	-
9	2/9/1981	-	-	-	-	-	-	-
10	2/10/1981	-	-	-	-	-	-	-
11	2/21/1981	-	-	-	-	-	-	-
12	2/23/1981	-	-	-	-	-	-	-
13	2/27/1981	-	-	-	-	-	-	-
14	3/10/1981	-	-	-	-	-	-	-
15	3/25/1981	0.07	0	0	0.07	n/a	0	n/a
16	3/29/1981	0.05	0	0	0.05	n/a	0	n/a
17	3/29/1981	0.06	0	0	0.06	n/a	0	n/a
18	3/29/1981	0.07	0	0	0.07	n/a	0	n/a
19	4/3/1981	0.02	0	0	0.02	n/a	0	n/a
20	4/3/1981	0.26	0	0	0.26	n/a	0	n/a
21	4/7/1981	0.71	0	0	0.71	n/a	0	n/a
22	4/8/1981	0.41	0	0	0.41	n/a	0	n/a
23	4/10/1981	1.06	0	0	1.06	n/a	0	n/a
24	4/12/1981	0.13	0	0	0.13	n/a	0	n/a
25	4/13/1981	0.32	0	0	0.32	n/a	0	n/a
26	4/16/1981	0.01	0	0	0.01	n/a	0	n/a
27	4/19/1981	0.04	0	0	0.04	n/a	0	n/a
28	4/22/1981	0.01	0	0	0.01	n/a	0	n/a
29	4/22/1981	0.02	0	0	0.02	n/a	0	n/a
30	4/23/1981	0.05	0	0	0.05	n/a	0	n/a
31	4/28/1981	0.3	0	0	0.3	n/a	0	n/a
32	4/28/1981	0.06	0	0	0.06	n/a	0	n/a
33	4/30/1981	0.02	0	0	0.02	n/a	0	n/a

34	5/4/1981	0.09	0	0	0.09	n/a		0	n/a	
35	5/10/1981	0.08	0	0	0.08	n/a		0	n/a	
36	5/13/1981	0.01	0	0	0.01	n/a		0	n/a	
37	5/23/1981	0.02	0	0	0.02	n/a		0	n/a	
38	5/24/1981	0.1	0	0	0.1	n/a		0	n/a	
39	5/29/1981	0.34	0	0	0.34	n/a		0	n/a	
40	6/2/1981	0.01	0	0	0.01	n/a		0	n/a	
41	6/3/1981	0.01	0	0	0.01	n/a		0	n/a	
42	6/8/1981	0.01	0	0	0.01	n/a		0	n/a	
43	6/8/1981	0.33	0	0	0.33	n/a		0	n/a	
44	6/9/1981	0.07	0	0	0.07	n/a		0	n/a	
45	6/12/1981	0.43	0	0	0.43	n/a		0	n/a	
46	6/15/1981	2.59	589	0.06	2.43		58	0.121		2587
47	6/20/1981	0.34	0	0	0.34	n/a		0	n/a	
48	6/21/1981	0.32	0	0	0.32	n/a		0	n/a	
49	6/23/1981	0.51	0	0	0.51	n/a		0	n/a	
50	6/25/1981	0.13	0	0	0.13	n/a		0	n/a	
51	6/28/1981	0.24	0	0	0.24	n/a		0	n/a	
52	7/4/1981	0.05	0	0	0.05	n/a		0	n/a	
53	7/11/1981	0.5	0	0	0.5	n/a		0	n/a	
54	7/12/1981	0.14	0	0	0.14	n/a		0	n/a	
55	7/12/1981	0.86	0	0	0.86	n/a		0	n/a	
56	7/13/1981	1.32	0	0	1.32	n/a		0	n/a	
57	7/14/1981	0.12	0	0	0.12	n/a		0	n/a	
58	7/15/1981	0.07	0	0	0.07	n/a		0	n/a	
59	7/18/1981	0.12	0	0	0.12	n/a		0	n/a	
60	7/20/1981	0.54	0	0	0.54	n/a		0	n/a	
61	7/20/1981	0.1	0	0	0.1	n/a		0	n/a	
62	7/23/1981	0.09	0	0	0.09	n/a		0	n/a	
63	7/25/1981	0.24	0	0	0.24	n/a		0	n/a	
64	7/27/1981	0.66	0	0	0.66	n/a		0	n/a	
65	8/2/1981	0.58	0	0	0.58	n/a		0	n/a	
66	8/3/1981	0.04	0	0	0.04	n/a		0	n/a	
67	8/5/1981	0.01	0	0	0.01	n/a		0	n/a	
68	8/7/1981	0.02	0	0	0.02	n/a		0	n/a	
69	8/14/1981	2.09	0	0	2.09	n/a		0	n/a	
70	8/26/1981	0.49	0	0	0.49	n/a		0	n/a	
71	8/26/1981	1.63	0	0	1.63	n/a		0	n/a	
72	8/28/1981	0.62	0	0	0.62	n/a		0	n/a	
73	8/28/1981	0.04	0	0	0.04	n/a		0	n/a	
74	8/31/1981	0.03	0	0	0.03	n/a		0	n/a	
75	8/31/1981	1.52	61.17	0.011	1.5		62.5	0.022		570
76	9/7/1981	0.89	0	0	0.89	n/a		0	n/a	
77	9/11/1981	0.08	0	0	0.08	n/a		0	n/a	

78	9/16/1981	0.03	0	0	0.03	n/a		0	n/a
79	9/21/1981	0.45	0	0	0.45	n/a		0	n/a
80	9/24/1981	0.9	0	0	0.9	n/a		0	n/a
81	9/26/1981	0.12	0	0	0.12	n/a		0	n/a
82	9/28/1981	0.1	0	0	0.1	n/a		0	n/a
83	9/29/1981	0.16	0	0	0.16	n/a		0	n/a
84	9/30/1981	0.36	0	0	0.36	n/a		0	n/a
85	10/1/1981	0.01	0	0	0.01	n/a		0	n/a
86	10/4/1981	0.15	0	0	0.15	n/a		0	n/a
87	10/5/1981	0.04	0	0	0.04	n/a		0	n/a
88	10/5/1981	0.02	0	0	0.02	n/a		0	n/a
89	10/9/1981	0.14	0	0	0.14	n/a		0	n/a
90	10/13/1981	1.2	0	0	1.2	n/a		0	n/a
91	10/15/1981	0.02	0	0	0.02	n/a		0	n/a
92	10/17/1981	0.95	0	0	0.95	n/a		0	n/a
93	10/18/1981	0.06	0	0	0.06	n/a		0	n/a
94	10/21/1981	0.06	0	0	0.06	n/a		0	n/a
95	10/21/1981	0.01	0	0	0.01	n/a		0	n/a
96	10/24/1981	0.01	0	0	0.01	n/a		0	n/a
97	10/31/1981	0.01	0	0	0.01	n/a		0	n/a
98	11/5/1981	0.04	0	0	0.04	n/a		0	n/a
99	11/15/1981	0.07	0	0	0.07	n/a		0	n/a
100	11/18/1981	0.05	0	0	0.05	n/a		0	n/a
101	11/19/1981	0.26	0	0	0.26	n/a		0	n/a
102	11/23/1981	0.18	0	0	0.18	n/a		0	n/a
103	11/25/1981	0.89	0	0	0.89	n/a		0	n/a
104	11/30/1981	0.37	0	0	0.37	n/a		0	n/a
105	12/3/1981	-	-	-	-	-	-	-	
106	12/14/1981	-	-	-	-	-	-	-	
107	12/20/1981	-	-	-	-	-	-	-	
108	12/26/1981	-	-	-	-	-	-	-	
109	12/31/1981	-	-	-	-	-	-	-	
Minimum:		0	0	0	0.01		58	0	570
Maximum:		2.59	589	0.06	2.43		62.5	0.121	2587
Average:		0.26	5.965	0.001	0.26		58.4	0.112	1578.5
Total:		28.81	650.2		28.63				3157

* Note: NRCS does not recommend using CN method for rains < 0.5 in.

See 'PreDevelopment Areas and CN' Help for more info.

Infiltration Summary -	***Kjell Kaashagen - New Commercial Building***	
Select level of imperviousness --------->	***(b) Moderate imperviousness (up to 80% connected imperviousness)***	
So the site must achieve this level ------> of pre-development infiltration volume based on average annual rainfall	*75%*	*NR151.124(1)(b)*
Annual Rainfall, Madison, 1981 (March 12 to December 2)	***28.81***	in
Enter **Site Basin** Area	1.155	
Calculated Volume of Annual **Rainfall** (site area x 28.81 in)	120,790	cf
Enter Pre-development **Runoff** (from Slamm Output) "Outfall" tab then "Runoff Volume (cf)" tab	2,587	cf
Calculated Pre-development "Stay-on" (infiltration) (**Rainfall - Runoff**)	118,203	cf
Calculated Post-development "Stay-on" ***required*** based on Level of Imperviousness	***88,652***	cf or more required to stay-on
Enter **Post-development runoff** (from Slamm "Outfall Total with Controls")	582	cf
Calculated Post-development "Stay-on" (infiltration) (**Rainfall - Post-development runoff**)	***120,208***	cf
Post-Construction Infiltration =	***102%***	of pre-development infiltration volume

Soil Loss & Sediment Discharge Calculation Tool

for use on Construction Sites in the State of Wisconsin

WDNR Version 2.1 (12-05-2024)

WISCONSIN DEPT. OF NATURAL RESOURCES

YEAR 1

Developer: Kjell Kaashagen

Project: A new Commercial building

Date: 05/04/26

County: Dane

Version 2.1

Activity (1)	Begin Date (2)	End Date (3)	Period % R (4)	Annual R Factor (5)	Sub Soil Texture (6)	Soil Erodibility K Factor (7)	Slope (%) (8)	Slope Length (ft) (9)	LS Factor (10)	Land Cover C Factor (11)	Soil loss A (tons/acre) (12)	SDF (13)	Sediment Control Practice (14)	Sediment Discharge (t/ac) (15)
Bare Ground	06/15/26	06/22/26	4.8%	150	Silt Loam	0.43	1.8%	300	0.26	1.00	0.8	1.154	Sediment Trap	0.2
Bare Ground	06/22/26	08/11/26	36.6%	150	Silt Loam	0.43	1.8%	300	0.26	1.00	6.1	1.154	Sediment Trap	1.4
Mulch or Erosion Mat	08/11/26	10/25/26	25.9%	150	Silt Loam	0.43	1.8%	300	0.26	0.20	0.9	1.154	Sediment Trap	0.2
End	10/25/26	-----	-----	-----	-------	-----	1.8%	300	0.26	------	-----	0.000	Sediment Trap	0.0
		-----	-----	-----	-------	-----			-----	-----	-----	0.000		0.0
		-----	-----	-----	-------	-----	0.0%	0	-----	-----	-----	0.000		0.0
										TOTAL	**7.7**		**TOTAL**	**1.8**
													% Reduction Required	**NONE**

Notes:

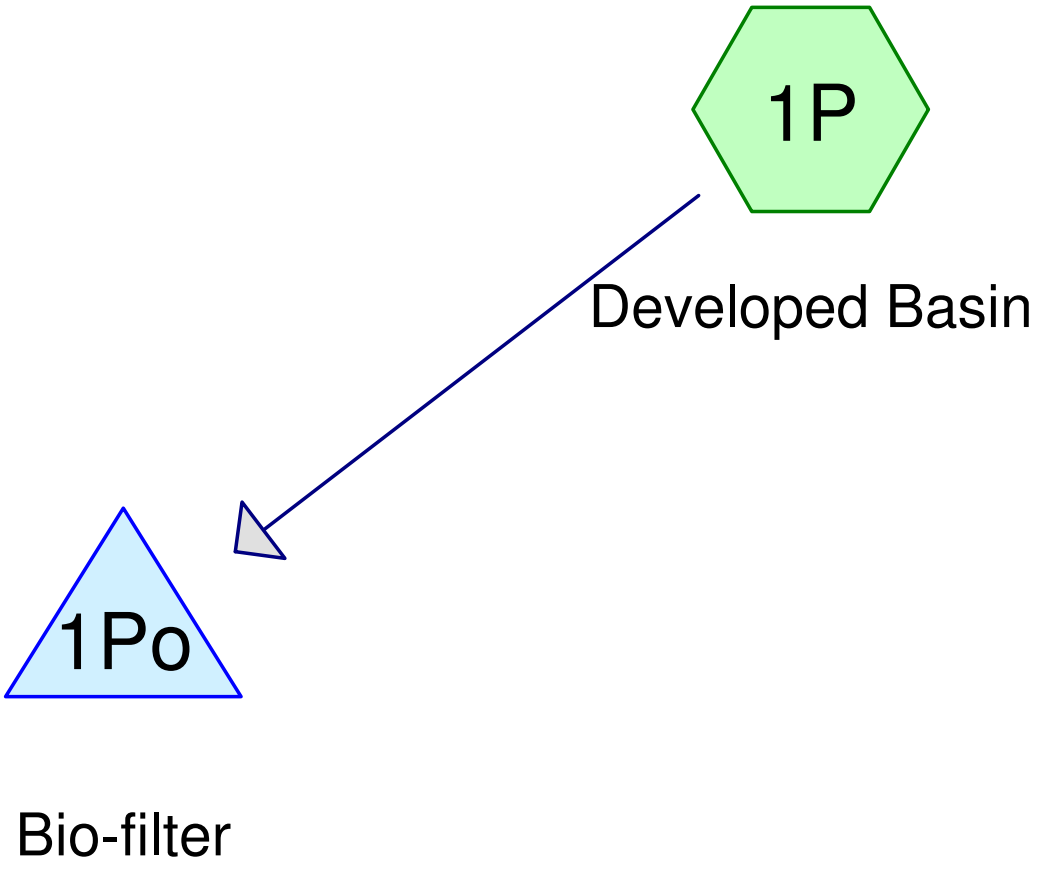
See Help Page for further descriptions of variables and items in drop-down boxes.
The last land disturbing activity on each sheet must be 'End'. This is either 12 months from the start of construction or final stabilization.
For periods of construction that exceed 12 months, please demonstrate that 5 tons/acre/year is not exceeded in any given 12 month period.

NOTE: THIS TOOL ONLY ADDRESSED SOIL EROSION DUE TO SHEET FLOW. MEASURES TO CONTROL CHANNEL EROSION MAY ALSO BE REQUIRED TO MEET SEDIMENT DISCHARGE REQUIREMENTS.

Recommended Permanent Seeding Dates:

4/1-5/15	and	8/7-8/29	Turf, introduced grasses and legumes
Thaw-6/30			Native Grasses, forbs, and legumes

Designed By:	AFG
Date	5/4/2026



Subcat Reach Pond Link

Routing Diagram for 2026-05-05 24-hour drawdown
Prepared by Combs & Associates, Printed 5/5/2026

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.042	61	Exi Offsite Yard,hsgB (1P)
0.160	71	Exi Offsite Yard,hsgC (1P)
0.018	98	Exi Roof (1P)
0.186	61	New Yard,hsg B (1P)
0.030	68	New Yard,hsg C (1P)
0.285	98	New pvmt/conc (1P)
0.324	98	New roof (1P)
1.045	**85**	**TOTAL AREA**

Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1P: Developed Basin Runoff Area=1.045 ac 60.00% Impervious Runoff Depth=1.17"
Flow Length=245' Tc=13.6 min CN=85 Runoff=1.46 cfs 0.102 af

Pond 1Po: Bio-filter Peak Elev=880.68' Storage=1,791 cf Inflow=1.46 cfs 0.102 af
Outflow=0.40 cfs 0.102 af

Total Runoff Area = 1.045 ac Runoff Volume = 0.102 af Average Runoff Depth = 1.17"
40.00% Pervious = 0.418 ac 60.00% Impervious = 0.627 ac

Summary for Subcatchment 1P: Developed Basin

Runoff = 1.46 cfs @ 12.22 hrs, Volume= 0.102 af, Depth= 1.17"
Routed to Pond 1Po : Bio-filter

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 1 year Rainfall=2.49"

	Area (ac)	CN	Description
*	0.018	98	Exi Roof
*	0.042	61	Exi Offsite Yard,hsgB
*	0.160	71	Exi Offsite Yard,hsgC
*	0.324	98	New roof
*	0.285	98	New pvmt/conc
*	0.186	61	New Yard,hsg B
*	0.030	68	New Yard,hsg C
	1.045	85	Weighted Average
	0.418		40.00% Pervious Area
	0.627		60.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	45	0.0200	0.09		**Sheet Flow, to north swale along bldg** Grass: Dense n= 0.240 P2= 2.84"
5.6	200	0.0100	0.60		**Shallow Concentrated Flow, along north side of bldg to nw pond** Kv= 6.0 fps
13.6	245	Total			

Hydrograph for Subcatchment 1P: Developed Basin

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.01	0.00	0.00
2.00	0.03	0.00	0.00
3.00	0.05	0.00	0.00
4.00	0.08	0.00	0.00
5.00	0.11	0.00	0.00
6.00	0.15	0.00	0.00
7.00	0.20	0.00	0.00
8.00	0.25	0.00	0.00
9.00	0.30	0.00	0.00
10.00	0.39	0.00	0.00
11.00	0.54	0.02	0.03
12.00	1.17	0.26	**0.43**
13.00	1.95	0.76	**0.20**
14.00	2.10	0.87	0.08
15.00	2.19	0.94	0.07
16.00	2.24	0.98	0.04
17.00	2.29	1.02	0.04
18.00	2.34	1.05	0.03
19.00	2.38	1.08	0.03
20.00	2.41	1.11	0.03
21.00	2.44	1.13	0.02
22.00	2.46	1.15	0.02
23.00	2.48	1.16	0.01
24.00	**2.49**	**1.17**	0.01
25.00	2.49	1.17	0.00
26.00	2.49	1.17	0.00
27.00	2.49	1.17	0.00
28.00	2.49	1.17	0.00
29.00	2.49	1.17	0.00
30.00	2.49	1.17	0.00
31.00	2.49	1.17	0.00
32.00	2.49	1.17	0.00
33.00	2.49	1.17	0.00
34.00	2.49	1.17	0.00
35.00	2.49	1.17	0.00
36.00	2.49	1.17	0.00
37.00	2.49	1.17	0.00
38.00	2.49	1.17	0.00
39.00	2.49	1.17	0.00
40.00	2.49	1.17	0.00
41.00	2.49	1.17	0.00
42.00	2.49	1.17	0.00
43.00	2.49	1.17	0.00
44.00	2.49	1.17	0.00
45.00	2.49	1.17	0.00
46.00	2.49	1.17	0.00
47.00	2.49	1.17	0.00
48.00	2.49	1.17	0.00
49.00	2.49	1.17	0.00
50.00	2.49	1.17	0.00
51.00	2.49	1.17	0.00
52.00	2.49	1.17	0.00
53.00	2.49	1.17	0.00
54.00	2.49	1.17	0.00
55.00	2.49	1.17	0.00
56.00	2.49	1.17	0.00
57.00	2.49	1.17	0.00
58.00	2.49	1.17	0.00
59.00	2.49	1.17	0.00
60.00	2.49	1.17	0.00

Summary for Pond 1Po: Bio-filter

Inflow Area = 1.045 ac, 60.00% Impervious, Inflow Depth = 1.17" for 1 year event
Inflow = 1.46 cfs @ 12.22 hrs, Volume= 0.102 af
Outflow = 0.40 cfs @ 12.61 hrs, Volume= 0.102 af, Atten= 73%, Lag= 23.1 min
Primary = 0.40 cfs @ 12.61 hrs, Volume= 0.102 af
Routed to nonexistent node 3PS

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 880.68' @ 12.61 hrs Surf.Area= 2,933 sf Storage= 1,791 cf

Plug-Flow detention time= 181.1 min calculated for 0.102 af (100% of inflow)
Center-of-Mass det. time= 181.2 min (1,011.0 - 829.8)

Volume	Invert	Avail.Storage	Storage Description
#1	880.00'	14,215 cf	**Storage Area (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
880.00	2,318	0	0
881.00	3,220	2,769	2,769
882.00	4,285	3,753	6,522
883.00	5,461	4,873	11,395
883.50	5,821	2,821	14,215

Device	Routing	Invert	Outlet Devices
#1	Primary	880.00'	**0.01 cfs Bio-filter Infiltration to native ground at all elevations** Phase-In= 0.01'
#2	Primary	880.16'	**6.0" Round Pond discharge pipe** L= 82.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 880.16' / 877.00' S= 0.0385 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf
#3	Primary	882.60'	**40.0' long + 3.0 '/' SideZ x 2.0' breadth Overflow Weir to street** 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 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32

Primary OutFlow Max=0.40 cfs @ 12.61 hrs HW=880.68' (Free Discharge)
- **1=Bio-filter Infiltration to native ground** (Exfiltration Controls 0.01 cfs)
- **2=Pond discharge pipe** (Inlet Controls 0.39 cfs @ 1.98 fps)
- **3=Overflow Weir to street** (Controls 0.00 cfs)

Hydrograph for Pond 1Po: Bio-filter

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	880.00	0.00
2.00	0.00	0	880.00	0.00
4.00	0.00	0	880.00	0.00
6.00	0.00	0	880.00	0.00
8.00	0.00	0	880.00	0.00
10.00	0.00	1	880.00	0.00
12.00	**0.43**	**391**	**880.16**	**0.01**
14.00	**0.08**	**1,142**	**880.45**	**0.18**
16.00	0.04	790	880.32	0.07
18.00	0.03	685	880.28	0.04
20.00	0.03	631	880.26	0.03
22.00	0.02	580	880.24	0.03
24.00	0.01	523	880.22	0.02
26.00	0.00	430	880.18	0.01
28.00	0.00	357	880.15	0.01
30.00	0.00	285	880.12	0.01
32.00	0.00	213	880.09	0.01
34.00	0.00	141	880.06	0.01
36.00	0.00	69	880.03	0.01
38.00	0.00	7	880.00	0.00
40.00	0.00	0	880.00	0.00
42.00	0.00	0	880.00	0.00
44.00	0.00	0	880.00	0.00
46.00	0.00	0	880.00	0.00
48.00	0.00	0	880.00	0.00
50.00	0.00	0	880.00	0.00
52.00	0.00	0	880.00	0.00
54.00	0.00	0	880.00	0.00
56.00	0.00	0	880.00	0.00
58.00	0.00	0	880.00	0.00
60.00	0.00	0	880.00	0.00

Combs & Associates Inc.
Land Surveying
Land Planning
Civil Engineering

JOB 125-555 KJELL
SHEET NO. _____ OF _____
CALCULATED BY BFG DATE 2026-04-29
CHECKED BY _____ DATE _____
SCALE _____

E.C. ESTIMATE

STONE TRACKING PAD	1@ $1200	$1200
INLET PROTECTION	1@ $200	$200
RIP RAP W/ UNDERLAY	$500	$500
SEED - TURF	$275/AC * 0.50AC	$140
CURLEX LOG	2 @ $50	$100
MATTING, CLASS I, TYPE A	790SY * $1.08 (per SY)	$853
UNFORESEEN 10%		$320
TOTAL		$3313

109 W. Milwaukee St. • Janesville, WI 53548 • (608) 752-0575 • FAX (608) 752-0534 • www.combssurvey.com

AGREEMENT FOR MAINTENANCE OF STORMWATER MANAGEMENT MEASURES

This space is reserved for recording data

Return to:
Village of Cambridge
P.O. Box 99
Cambridge, WI 53523-0099

Parcel Number(s):
061201320141

RECITALS:

A. Gott Mobile Storage, LLC, is*(are)* the owner*(s)* of property in the Village of Cambridge, County of Dane, State of Wisconsin, more particularly described on Exhibit A attached hereto ("Property").

B. The Village requires Owner to record this Agreement regarding maintenance of stormwater management measures to be located on the Property. Owner agrees to maintain the stormwater management measures and to grant to the Village the rights set forth below.

NOW, THEREFORE, in consideration of the agreement herein and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the owner agrees as follows:

1. Maintenance. Owner and its successors and assigns shall be responsible to repair and maintain the stormwater management measures located on the Property in good condition and in working order and such that the measures comply with approved plans on file with the Village of Cambridge. Said maintenance shall be at the Owner's sole cost and expense. Owner will conduct such maintenance or repair work in accordance with all applicable laws, codes, regulations, and similar requirements. Specific maintenance task are more particularly described on Exhibit A.

2. Easement to Village. If Owner fails to maintain the stormwater management measures as required in Section 1, then Village shall have the right, after providing Owner with written notice of the maintenance issue ("Maintenance Notice") and thirty (30) days to comply with the Village's maintenance request, to enter the Property in order to conduct the maintenance specified in the Maintenance Notice. Village will conduct such maintenance work in accordance with all applicable laws, codes, regulations, and similar requirements and will not unreasonably interfere with Owner's use of the Property. All costs and expenses incurred by the Village in conducting such maintenance may be charged to the owner of the Property by placing the amount on the tax roll for the Property as a special assessment in accordance with Section 66.0703, Wis. Stats. and applicable portions of the Village of Cambridge Ordinances.

3. Term/Termination. The term of this Agreement shall commence on the date that this Agreement is recorded with the Register of Deeds Office for Dane County, Wisconsin, and except as otherwise herein specifically provided, shall continue in perpetuity. Notwithstanding the foregoing, this Agreement may be terminated by recording with the Register of Deeds Office for Dane County, Wisconsin, a written instrument of termination signed by the Village and all of the then-owners of the Property.

4. Miscellaneous.

   (a) Notices. Any notice, request or demand required or permitted under this Agreement shall be in writing and shall be deemed given when personally served or three (3) days after the same has been deposited with the United States Post Office, registered or certified mail, return receipt requested, postage prepaid and addressed as follows:

   If to Owner: Gott Mobile Storage, LLC
   c/o Kjell Kaashagen
   N6672 County Rd. O
   Marshall, WI 53559

If to Village: Village of Cambridge
P.O. Box 99
Cambridge, WI 53523-0099

Any party may change its address for the receipt of notice by written notice to the other.

(b) Governing Law. This Agreement shall be governed and construed in accordance with the laws of the State of Wisconsin.

(c) Amendments or Further Agreements to be in Writing. This Agreement may not be modified in whole or in part unless such agreement is in writing and signed by all parties bound hereby.

(d) Covenants Running with the Land. All of the easements, restrictions, covenants and agreements set forth in this Agreement are intended to be and shall be construed as covenants running with the land, binding upon, inuring to the benefit of, and enforceable by the parties hereto and their respective successors and assigns.

(e) Partial Invalidity. If any provisions, or portions thereof, of this Agreement or the application thereof to any person or circumstance shall, to any extent, be invalid or unenforceable, the remainder of this Agreement, or the application of such provision, or portion thereof, to any other persons or circumstances shall not be affected thereby and each provision of this Agreement shall be valid and enforceable to the fullest extent permitted by law.

X_____
Village Clerk Signature (or authorized representative)

_____
Print or type name

State of WI, County of _____; Subscribed and sworn before me on _____ by the above-named person(s).

_____
Notary Public

Print or type name: _____

My Commission Expires: _____

X_____
Owner Signature

_____
Print or type name

State of WI, County of _____; Subscribed and sworn before me on _____ by the above-named person(s).

_____
Notary Public

Print or type name: _____

My Commission Expires: _____

DRAFTED BY: Combs & Associates
Adam F. Griffin
109 W. Milwaukee St.
Janesville, WI 53548

EXHIBIT A

GOTT MOBILE STORAGE, LLC
LOT 4 OF MATT'S PLAT TO THE VILLAGE OF CAMBRIDGE,
KATIE COURT, CAMBRIDGE, WI 53523

LEGAL DESCRIPTION:

LOT 4 OF MATT'S PLAT TO THE VILLAGE OF CAMBRIDGE, A RECORDED SUBDIVISION, VILLAGE OF CAMBRIDGE, DANE COUNTY, WISCONSIN.

SPECIFIC MAINTENANCE REQUIREMENTS:

Bioretention Devices

-Inspect quarterly to ensure proper function and check for any potential problems. If standing water is observed 24 hours after rainfall, the basin is failed and must be restored according to the approved plan design.

-Maintain vegetation type specified in approved plan. Remove all other vegetation from device as needed.

-Repair eroded areas as needed.

-Remove litter and debris regularly.

-Re-mulch voids areas as needed.

-Water plants as needed during first growing season and during dry periods after first growing season.

-Treat diseased trees and shrubs as needed.

-Do not be dump snow into device.

-Once a dense vegetation layer is formed, additional mulch does not need to be added.

-Repairs must restore the practice to the approved plan design.

Storm Sewer

-Inspect storm sewer after rainfall and remove debris from inlets and outfalls.

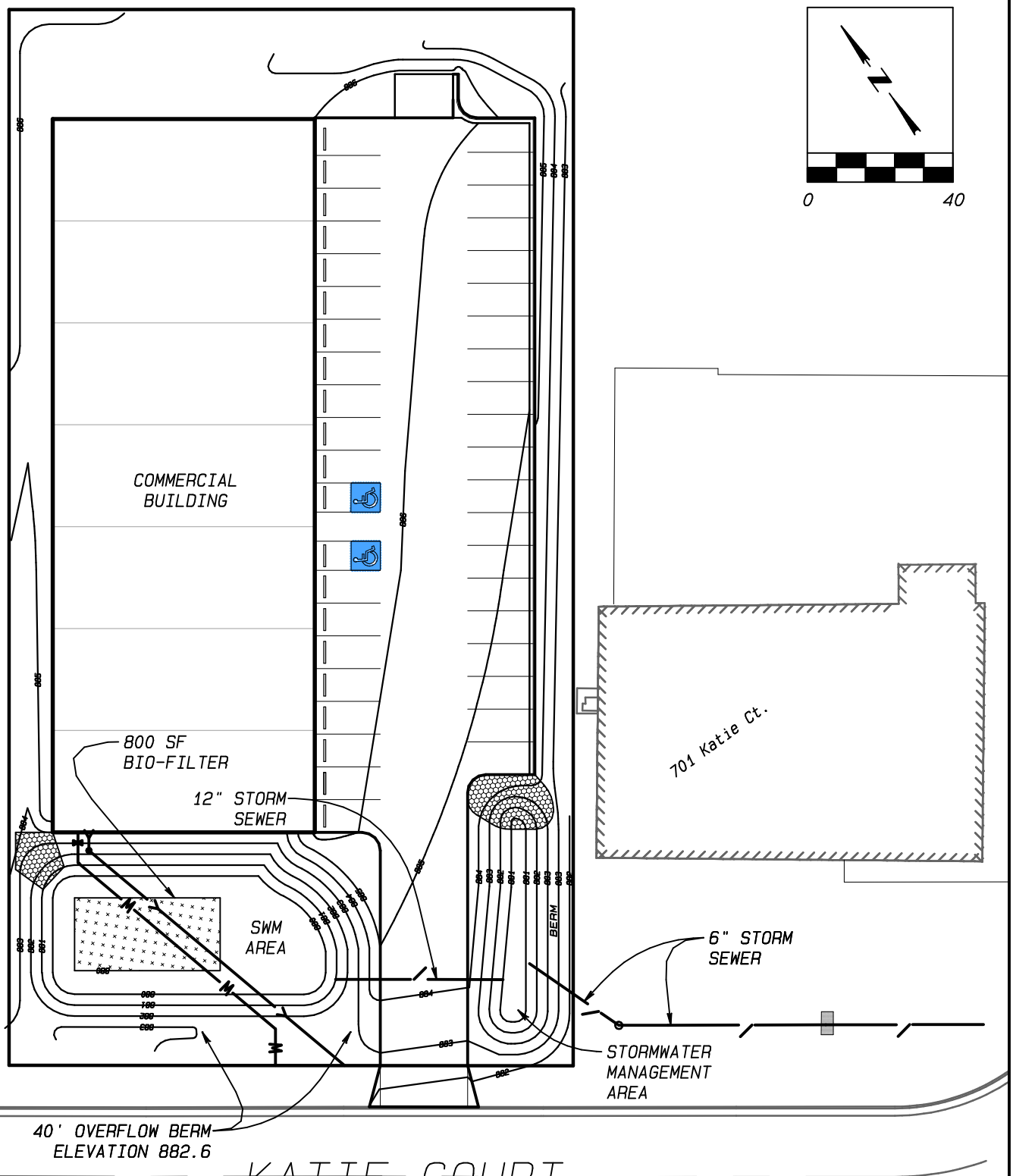
-Repair inlets and outfalls that are damaged or show signs of erosion.

-Replace rip-rap as necessary.

-Repairs must restore the system to the approved plan design.

EXHIBIT B

GOTT MOBILE STORAGE, LLC
LOT 4 OF MATT'S PLAT TO THE VILLAGE OF CAMBRIDGE,
KATIE COURT, CAMBRIDGE, WI 53523



COORDINATE SYSTEM: NAD 1983 (2011) WISCRS DANE (US FEET)

MSA Memo

To:	Village of Cambridge Plan Commission
From:	Steve Tremlett, AICP, Zoning Administrator
Subject:	230 Bilstad Road Development Preliminary Plat Staff Report
Date:	June 4th, 2026

Overview of Request

The applicant has submitted a preliminary plat for their parcel (230 Bilstad Rd, Parcel No. 111/0612-124-0010-2) for review and comment by the plan commission. The applicant has also submitted a rezone request from 'A' Agriculture to 'R-L' Low Density Residential. The is site on the southeast end of Cambridge across from the Lake Ripley Golf Course, on a dead-end road. There is public infrastructure improvements proposed as part of this request.

These are two separate items, each requiring an independent motion. Approval of the Preliminary Plat will be conditioned upon the eventual adoption of the Rezone, meaning the plat cannot be finalized until the rezoning is complete.

Background of the Request

Overview of Preliminary Plats

Preliminary Plats provide the layout for lots, right-of-way, easements, etc. The Preliminary Plat is required prior to the Final Plat review, approval and recording. The Final Plat shall be in conformance with the approved preliminary plat as well as any conditions required with that approval, and any other applicable laws and regulations.

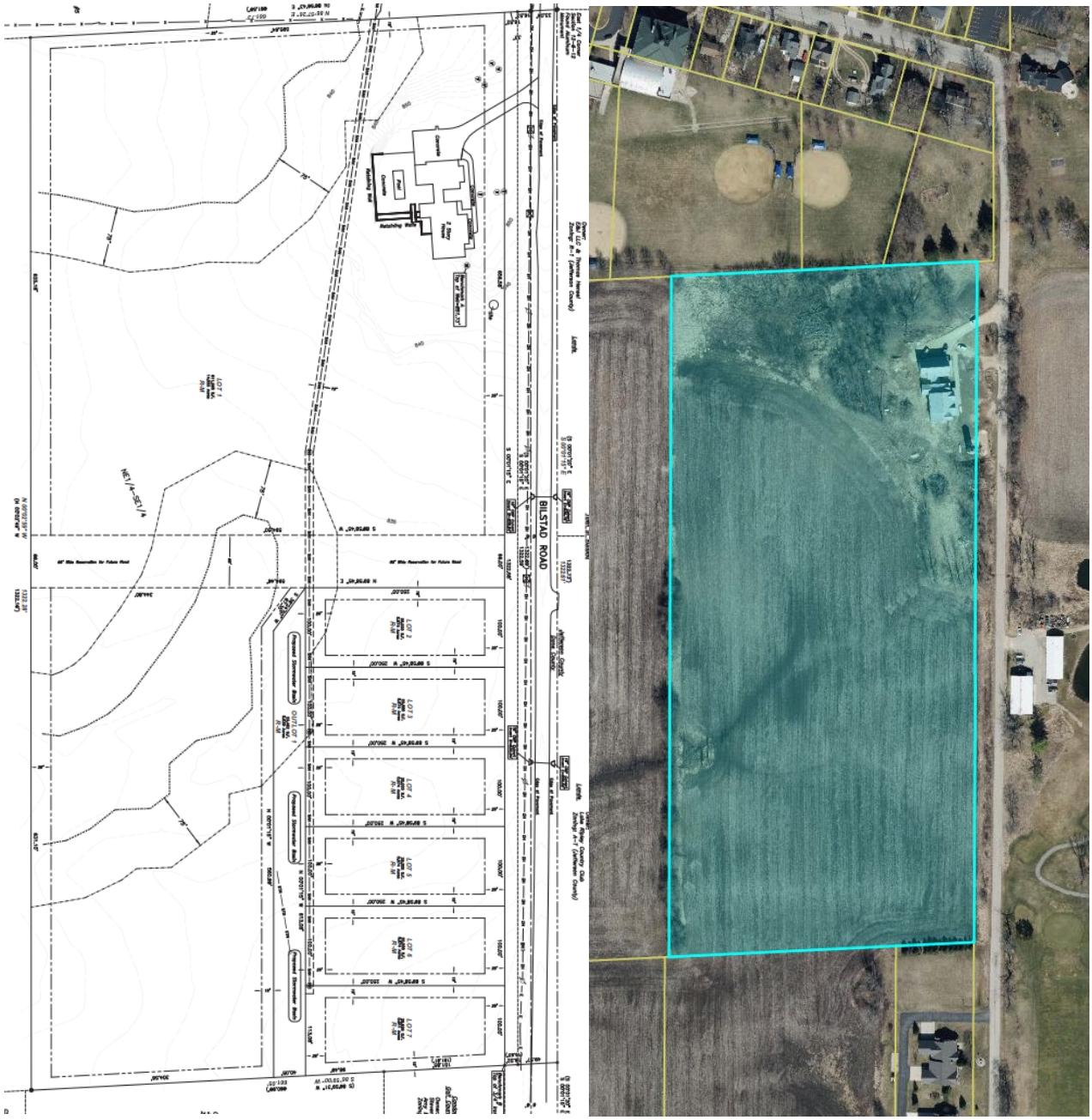
Context for the Proposed Development

Located at 230 Bilstad Road, the owner intends to subdivide the site to create six additional ~0.5-acre residential lots on the southeastern end of the lot, and a stormwater outlot. In total, there would be seven lots, inclusive of the parent lot. The applicant owns the home that was recently built on the remaining parent lot, which would include the undeveloped portions behind these potential six single-family lots. The home on the ~20-acre parent lot was completed in 2024, while the majority of the lot was still used for farmland. There is a delineated wetland on the southwestern end of the lot that was farmed.

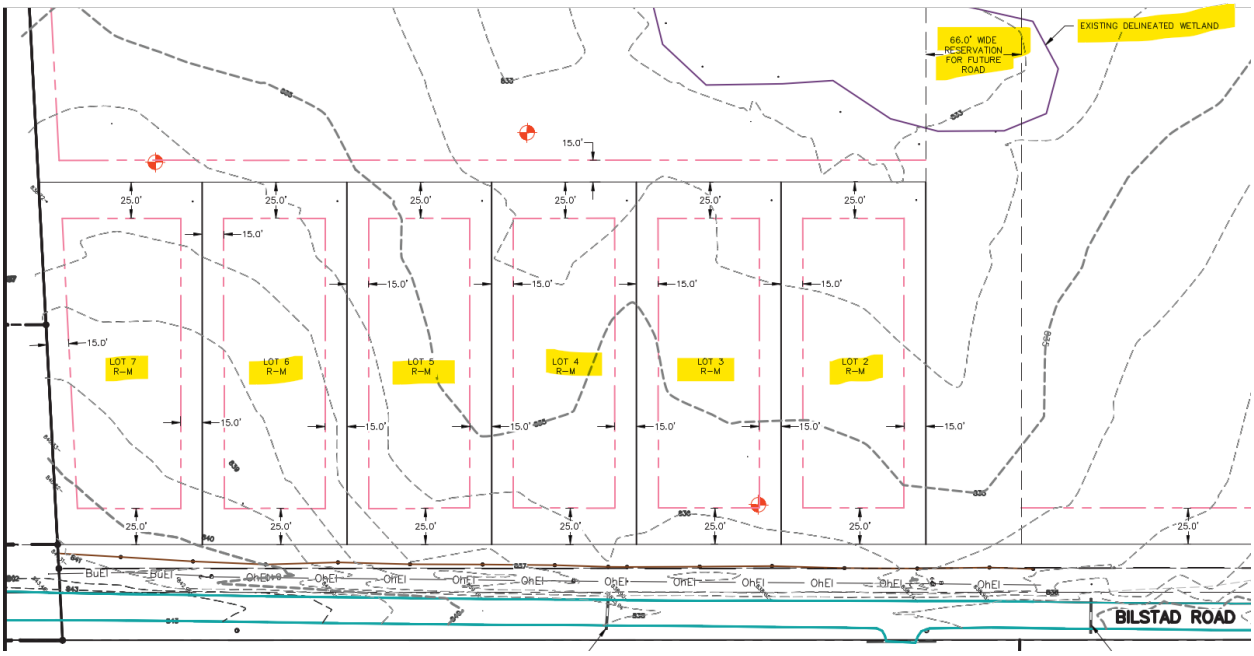
In November 2025, applicant Michael Coughlin successfully applied to amend the Future Land Use map in the Comprehensive Plan to be 'Neighborhood Residential'. This was done to enable a future rezone and land division, since they would now be consistent with the Comprehensive Plan. Although the land use category recommends 3-10 units density in most places, the consensus when the FLU amendment was passed was that the language "most places" does allow for deviation from that range (the future request for this development is 2 units per acre).

Submitted Plans

The following graphics were submitted as a part of the site plan submitted on April 17th, 2026:



Proposed layout, and recent aerial view of site



Proposed layout – zoomed in on new lots, wetland boundary, and dedicated future roadway.

Ordinance Requirements

General Overview of Proposal

- Total number of lots: 7 single-family lots, plus one Stormwater Outlot
- Total Lot Size: 19.46 acres. Lot breakdown:
  - Parent lot: 14.033 Acres
  - Lots 2-6: .574 acres (25,000 sq. ft.)
  - Lot 7: .611 acres (26,636 sq. ft.)
- Existing Use: Majority farmland
- Existing Zoning: Agriculture
- Proposed Uses: 7 Single Family Residential (including current home)
- Proposed Zoning: R-L. Low Density Residential.

Applicable Zoning & Development Code Regulations

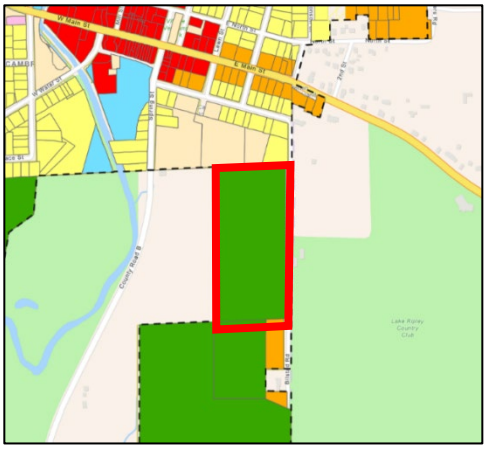
- Title 16, Subdivision.
- Title 17, Zoning

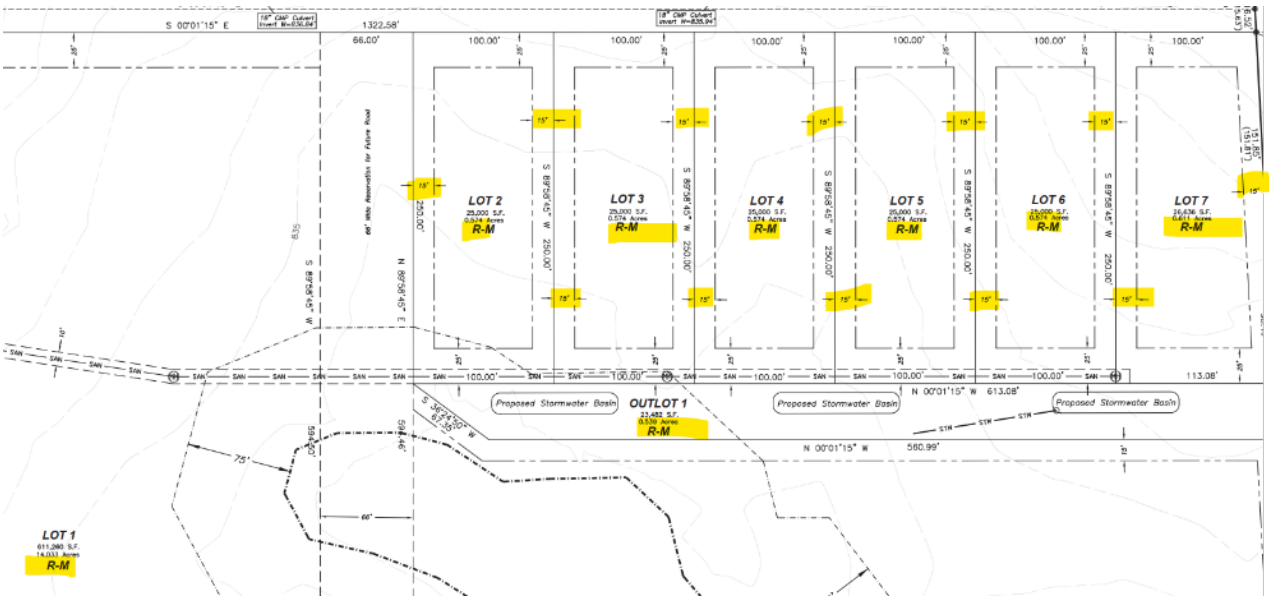
Detailed Review:

Zoning

A rezone application has been submitted by the applicant as directed by staff, as the intended zoning district for housing of this nature is R-L Low Density residential. The submitted plat has zoning issues pertaining to the plan, but the general layout and lot lines are compatible with the R-L district. Further review of the rezoning is provided in the following staff report. See the Zoning Map located on the next page.

Plan comments - The lots within the survey map currently show R-L, since that is what they are applying to rezone their lots to (they currently show R-M). The side setbacks shown are also incorrect. They are currently shown as 15 feet, and need to be changed to either 10 feet (side yards next to other lots) or 25 feet (side yards next to dedicated right of way).





Land Use and Lots

The proposed land use is 7 residential homes (including the home on the parent lot). The lots of lines are generally shaped to maximize buildable area and are laid out in an orderly arrangement. All lots conform to the minimum standards of the R-L district (at least 10,800 square feet in area and 80 feet in frontage width).

Surrounding uses include farmland to the west, single family housing to the north, attached housing to the south, and the golf course to the east. Directly across from the proposed lots on Bilstad, there is a storage structure owned and operate by the Country Club. These surrounding uses are generally considered compatible with Rural residential development and do not raise concern.

Access and Road

All proposed homes would be served only by Bilstad Road, a narrow (18-foot) two-lane residential road that terminates roughly 1,300 feet past the edge of the applicant's parcel. The applicant's parcel is largely separated

from higher intensity corridors and commercial nodes. As part of the project, Bilstad Road will be widened by 4-ft for 1,300 feet of the property frontage. This improvement will reduce concerns regarding doubling the potential traffic, and improve snowplowing the current road. It does not fully resolve turning around within the right-of-way. And no sidewalk is provided (Plan Commission recommends and Village Board approves sidewalk per requirement below). Without sidewalk, this additional width will make it better for walking the edge of the road.

> ***Section 16.20.060(G)****. The subdivider shall be required to install, as directed by the village board, sidewalks and/or bikeways in accordance with the following:*
>
> *1. All "through highways," or extensions thereof, shall have sidewalks and/or bikeways installed in any number of block-long increments between consecutive intersections (one block being from one intersection to the next consecutive intersection) regardless of length or location within or outside of plat boundaries.*
>
> *2. Other streets, both major and minor, which serve as major pedestrian access routes to and from such pedestrian traffic generators as business establishments, restaurants, schools, neighborhood parks, high density multi-family developments, etc.*
>
> *3. All streets which currently have sidewalks along only a portion of street between consecutive intersections shall be completed from intersection to intersection.*

Plan Comments: The plans don't clearly show the existing and proposed road right-of-way widths, and the Village needs detailed engineering drawings for any new or improved roadway, including pavement thickness, drainage ditches, and culverts. Any work done within the public road right-of-way like installing driveway culverts will require a street opening permit from the Village, and trees in that area need to be identified.

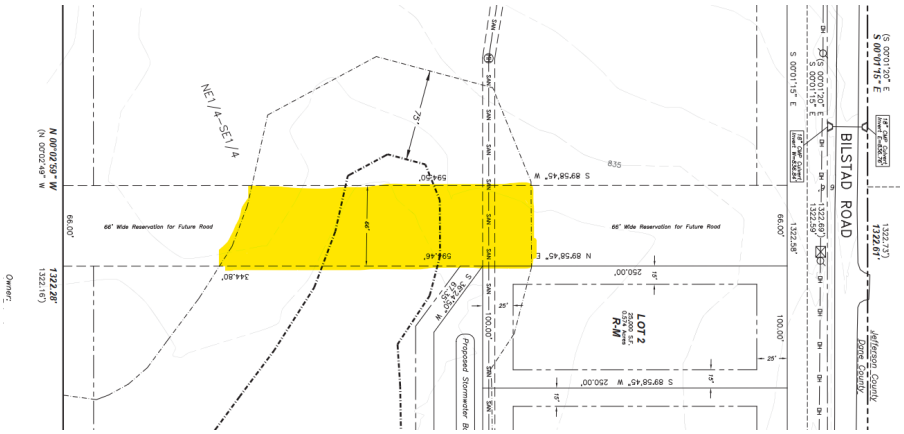
Stormwater Management

The outlot behind the new lots will have a bio-rentention pond that will effectively maintain pre-development peak runoff rates for the 1, 2, 10, 100, and 200 year, 24-hour storm event. A stormwater management report was provided, dated May 15th. This information will be shared with Dane County for review. Confirmation on if this outlot will be remain private or be dedicated to the public.

Right Of Way Dedication

The developer has agreed to dedicate land for a future connection with County Rd B. In combination with the improvements made to Bilstad Road. However, the current proposal passes through wetlands, and it has been

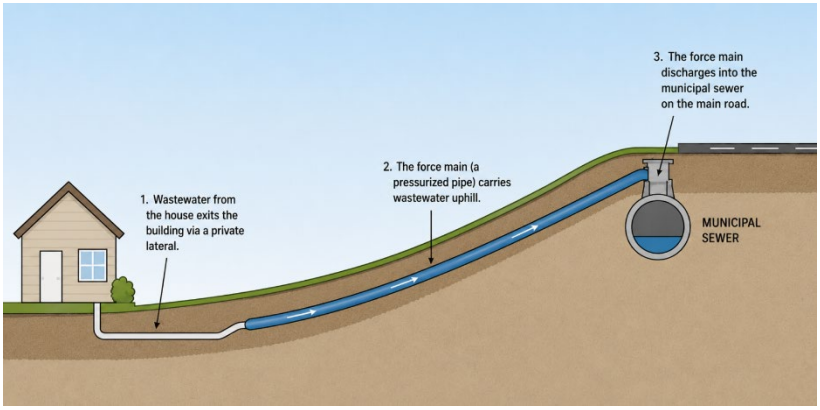
asked whether it can be rerouted to avoid them. The graphic below shows the portion of the dedicated Right of Way that intersects delineated wetland or encroaches on the 75ft wetland setback area:



The applicant should provide a revised alignment that avoids delineated wetlands and ideally is outside of the 75-foot wetland setback, but can likely accept beyond the wetland if shown to not be feasible to design it outside the wetland setback. If wetland impacts cannot be avoided, the applicant will need to obtain applicable state and federal permits prior to final plat approval.

Utilities

Sewage from the new lots will be handled through a E-One grinder pump system but the applicant hasn't yet provided the engineering calculations and design details MSA needs to evaluate it. The lots will be served by wells for water and will be connected to the municipal sanitary sewer system via a force main. The force main will connect the new homes to existing sewer (located uphill of the homes) without the need for a lift station. A diagram generated with AI is shown below to add context. **The use of this system has been approved by the Village for this development.**



Plan Comments: There are open questions about who will own and maintain the force main (the pressurized sewer pipe), and it will need formal easements, tracer wire for locating it underground, and sufficient capacity to serve potential future development in the area. Further revisions of the submitted plat will also need to show the locations of the existing home's well and septic system to confirm proper setback distances from the new force main.

Since the new lots will rely on private wells rather than a municipal water system, the applicant will need to show on the plans where each well can be located in compliance with Wisconsin DNR setback requirements. These setbacks ensure wells are placed a safe distance from septic systems, property lines, and other potential sources of contamination.

Homeowners Association

The Applicant is not proposing to establish a Homeowner's Association (HOA) for this development.

Parkland Dedication

Per Sec. 16.28.020, the subdivider is required to dedicate land for park, recreational, and open space purposes. The requirement is 0.032 acres (1,423 sq. ft.) per new residential dwelling unit. This development proposes 6 new dwelling units (excluding the existing home), yielding a total dedication requirement of 0.192 acres (8,538 sq. ft.).

Because the dedicated area would fall well below the 3-acre minimum threshold for standalone park dedication, and because the stormwater outlot, wetlands, and right-of-way areas are explicitly excluded from satisfying this requirement. Consideration shall be given to requiring a fee-in-lieu-of-land payment rather than a physical dedication.

Per Sec. 16.28.030, the applicable fees per new dwelling unit are:

Park impact fee: $791.00
Fee-in-lieu-of-land: $733.00
Total: $1,524.00 per unit

For 6 new units, the total park fee obligation would be $9,144.00, subject to annual CPI adjustment. Fees are due within 14 days of building permit or occupancy permit issuance per unit.

Potential Action

Planning staff recommends that the Village of Cambridge Plan Commission Approve the Preliminary Plat, conditioned upon the following:

a. The applicant shall address all comments and requirements outlined in the MSA Engineering Report and obtain MSA's written approval of revised plans prior to Final Plat submission.
b. Pay park all impact fees and the parkland fee-in-lieu-of-land totaling $1,524.00 per new dwelling unit, due within 14 days of building permit or occupancy permit issuance per lot.
c. Final Plat approval is contingent upon adoption of the rezone from A Agriculture to R-L Low Density Residential.

Sincerely,

Stephen Tremlett, AICP, CNU-A
Zoning Administrator

May 3rd, 2026

Michael Coughlin
230 Bilstad Road
Cambridge, WI 53523

Re: Bilstad Road Development preliminary plat review

Dear Michael,

We have reviewed the preliminary construction documents consisting of three pages prepared by Quam Engineering, dated April 17th, 2026, and a preliminary plat prepared by Birrenkott Surveying dated April 17th 2026.

Plans are considered to be preliminary and will need to be revised and resubmitted for review.

Project Description

The preliminary plat includes seven residential lots and one outlot. The construction plans include installation of sanitary sewer and stormwater management features.

The following review comments shall be addressed prior to approval of the Preliminary Bilstad Road Development plans and reproduced in a Final Plat.

General

1. Quam's plans submitted at 1"=100' scale when printed on 11"x17" paper. Resubmit at 1"=40' formatted for 11" x17" paper
2. Outlot 1 not shown on Quam's plans
3. Identify the datum used
4. Show tax key numbers for all parcels
5. Show owners name and addresses for all parcels
6. Show easements for future private utilities such as power, telecommunications, gas, etc.
7. Need to provide erosion control plans
8. Need to provide traffic control plans
9. Final plans will need to be stamped by a Wisconsin licensed engineer

Grading

10. Right of way draining across private property will require a drainage easement

1702 Pankratz Street, Madison, WI 53704
P (608) 242-7779 • TF (800) 446-0679 • F (608) 242-5664
www.msa-ps.com

11. What are the “mounds” in the front yards of the lots as shown on Sheet 3? How will driveways navigate these mounds?
12. Draining into the outlot and onto the adjacent parcel will require a drainage easement
13. Outlot 1 and Lot 2 appear to encroach on the wetland buffer. This will need additional permitting/review
14. Provide finished floor elevations, property corner elevations and driveway grades for review. As-builts will be required post-construction.
15. Excess onsite material shall not be used as fill material within the Public Right-of-Way.
16.

Streets

17. Existing right of way not labelled and dimensioned.
18. Proposed right of way dedication not labeled and dimensioned.
19. We will need engineered roadway drawings showing the new pavement thickness design, widths & grades, cross culvert improvements, regrading of the drainage ditches, etc
20. Need to show preliminary road layout for the future road reservation located north of lot 2 showing how it fits with the proposed grading shown within the future right of way.
21. Future road right of way goes through wetlands. Can this be relocation to go around the wetlands?
22. Driveway culverts will need to be located and calculations for slopes and sizes provided
23. Any trees located in the right of way should be identified on the drawings
24. Any work within the right of way requires a street opening permit from the Village

Sanitary Sewer

25. Provide calculations and designs for the E-One system
26. Who will own and operate the force main? If by the Village then it should be located within Village right of way. If private it will need a long-term maintenance agreement
27. Force main will require easements where located on private property.
28. Force main will require tracer wire
29. Easements to be minimum 20-feet wide. Show how to access any manhole located within an easement
30. Force main sizing should incorporate accommodations for future development
31. Sheet 1 has contour line labeled as a force main
32. Show location of well for existing house and dimension setback from that well to the force main

33. Show location of septic system existing house and dimension setback from that system to the force main. Will that house be connecting to the force main?
34. Provide plan and profile sheets for the force main, details on proposed sanitary manholes, and connection to existing manhole
35. Force main appears to impact the wetland buffer. This will require additional permitting and review.

Water Supply

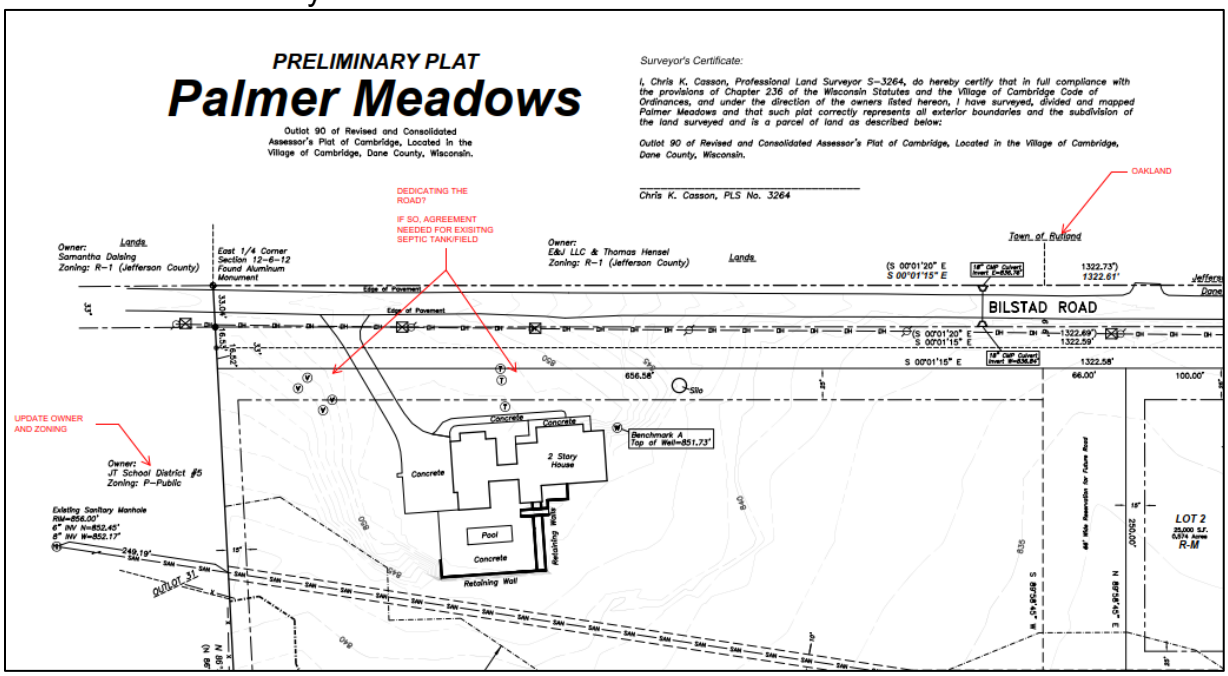
36. Provide location or allowable areas to locate each of the proposed residential wells, meeting DNR well setback requirements

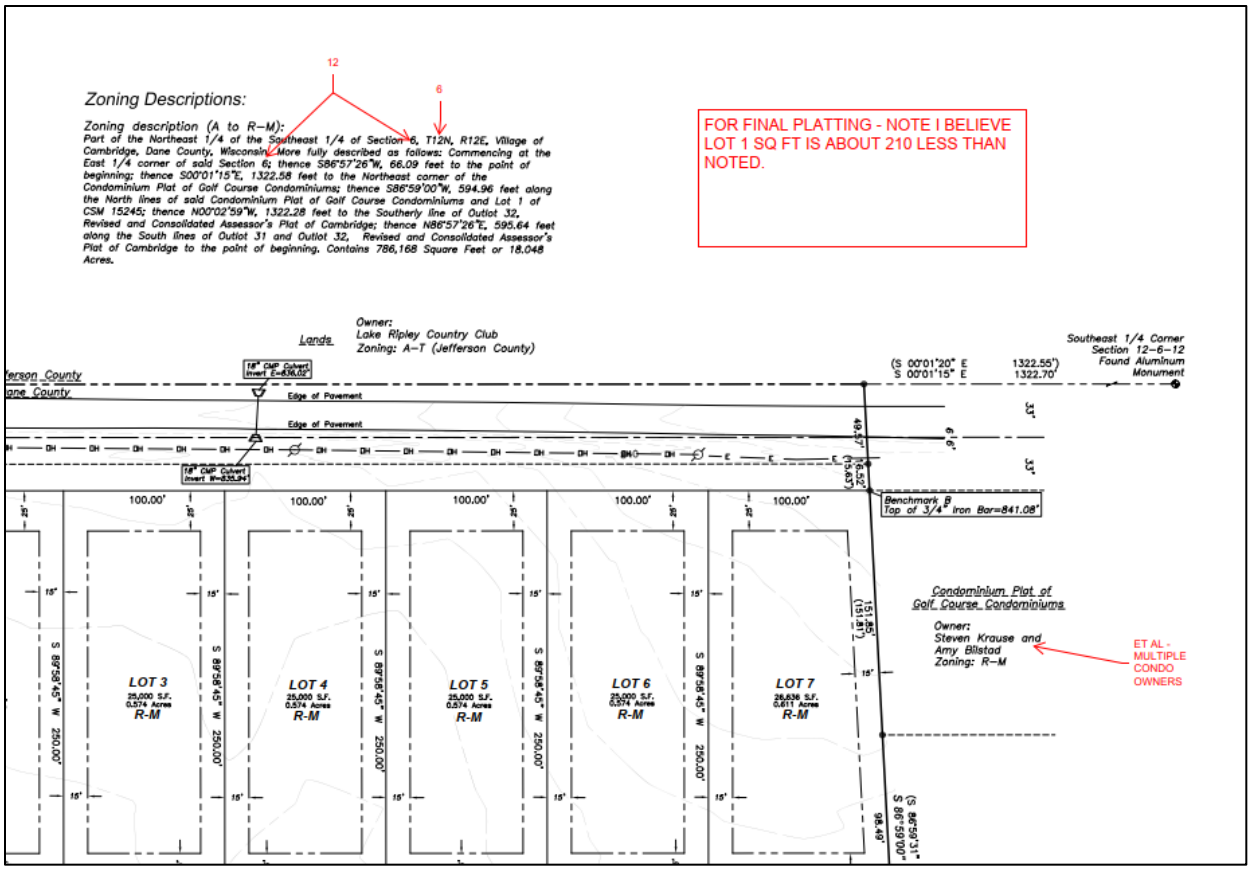
Storm Sewer and Drainage

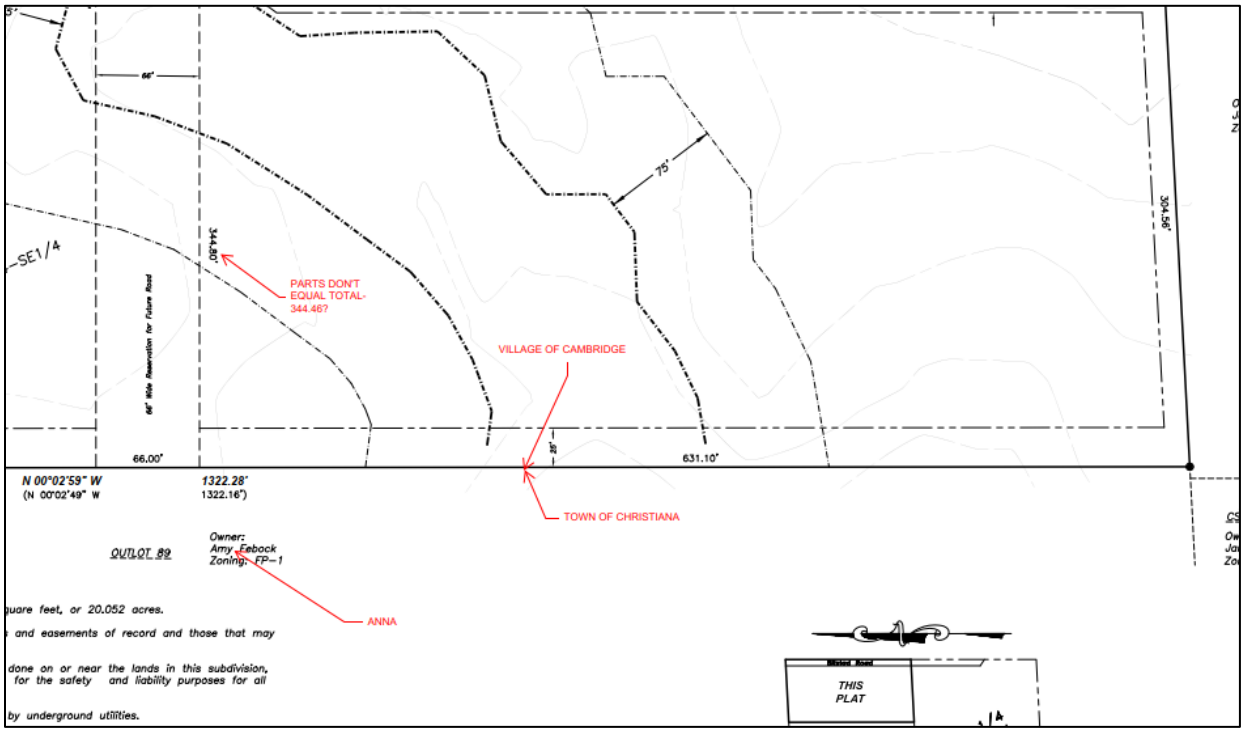
37. Provide copy of stormwater management plan approved by Dane County
38. Provide details and calculations for the bio-basins
39. Provide details and calculations for the storm sewers
40. Provide long term maintenance agreement(s) for the biobasins, drainage ditches on private property, and storm sewers
41. Provide 4H:1V slopes on side slopes of proposed drainage ditches to make them mowable.
42. Show rip rap at outfalls.

Platting

43. The following edits, shown in red text on the images below, were noted as corrections by MSA:




12
6
Zoning Descriptions:
Zoning description (A to R–M):
Part of the Northeast 1/4 of the Southeast 1/4 of Section 6, T12N, R12E, Village of Cambridge, Dane County, Wisconsin more fully described as follows: Commencing at the East 1/4 corner of said Section 6; thence S86°57'26"W, 66.09 feet to the point of beginning; thence S00°01'15"E, 1322.58 feet to the Northeast corner of the Condominium Plat of Golf Course Condominiums; thence S86°59'00"W, 594.96 feet along the North lines of said Condominium Plat of Golf Course Condominiums and Lot 1 of CSM 15245; thence N00°02'59"W, 1322.28 feet to the Southerly line of Outlot 32, Revised and Consolidated Assessor's Plat of Cambridge; thence N86°57'26"E, 595.64 feet along the South lines of Outlot 31 and Outlot 32, Revised and Consolidated Assessor's Plat of Cambridge to the point of beginning. Contains 786,168 Square Feet or 18.048 Acres.
FOR FINAL PLATTING - NOTE I BELIEVE LOT 1 SQ FT IS ABOUT 210 LESS THAN NOTED.
Lands
Owner:
Lake Ripley Country Club
Zoning: A–T (Jefferson County)
Southeast 1/4 Corner
Section 12–6–12
Found Aluminum
Monument
(S 00°01'20" E
S 00°01'15" E
1322.55')
1322.70'
Edge of Pavement
Edge of Pavement
100.00'
Benchmark B
Top of 3/4" Iron Bar=841.08'
Condominium Plat of
Golf Course Condominiums
Owner:
Steven Krause and
Amy Bilstad
Zoning: R–M
ET AL -
MULTIPLE
CONDO
OWNERS
LOT 3
25,000 S.F.
0.574 Acres
R-M
LOT 4
25,000 S.F.
0.574 Acres
R-M
LOT 5
25,000 S.F.
0.574 Acres
R-M
LOT 6
25,000 S.F.
0.574 Acres
R-M
LOT 7
26,636 S.F.
0.611 Acres
R-M
S 89°58'45" W 250.00'
S 89°59'31" W
98.49'
S 89°59'00" W
151.55'
(151.81')


66'
75'
344.80'
PARTS DONT
EQUAL TOTAL-
344.46?
SE1/4
64' Wide Reservation for Future Road
VILLAGE OF CAMBRIDGE
304.56'
66.00'
631.10'
N 00°02'59" W
(N 00°02'49" W
1322.28'
1322.16')
TOWN OF CHRISTIANA
OUTLOT 89
Owner:
Amy Eebock
Zoning: FP–1
ANNA
uare feet, or 20.052 acres.
and easements of record and those that may
done on or near the lands in this subdivision,
for the safety and liability purposes for all
by underground utilities.
THIS
PLAT

Final
Nothing set forth in this review of the construction and development documents by the Village Engineer shall be construed as, nor intended to be, a waiver or release of any obligations imposed on the Developer or relieve the Developer from compliance with the Village ordinances, standards and policies or any other applicable state statute or administrative rule.

Plans for future improvements and additions must be reviewed by MSA prior to construction. Future improvements and additions must be in accordance with village requirements and ordinances in effect at the time of construction.

Please review this letter and address these issues at your earliest convenience. Contact me for clarification on any comments at (608) 421-7140. Construction shall not begin until the Village of Cambridge has approved the plan set for the proposed improvements.

Sincerely,

MSA Professional Services, Inc.

William Pinnow, P.E.
Senior Project Manager

Cc: Village of Cambridge

Village of Cambridge Land Division Application

200 Spring Street, PO Box 99, Cambridge, WI 53523 ♦ Phone (608) 423- 3712
https://cambridgewi.gov

Application Information

The Plan Commission meets on the second Monday of each month at 6:30 p.m. in the Amundson Community Center. To be considered for the meeting agenda, submit your complete application (including fee) at least 25 days in advance. Include: 5 hard copies and 1 digital copy of all materials and Environmental Assessment Checklist (required for all land divisions).

If your proposal affects land outside the plat or changes the Village's official zoning map, a public hearing may be required. In that case, the Village will publish a Class 2 notice per §15.08.040 of the Municipal Code. **If you have any questions about the requirements, please contact Steve Tremlett, Zoning Administrator, at (608) 242-4828 or stremlett@msa-ps.com.**

Owner Name(s): Michael Coughlin	
Applicant Name (if different than above):	
Project Address: 230 Bilstad Road	***Parcel #(s):***
Applicant Address (if different than above):	
Applicant Email: Michael@coughlingrp.com	***Surveyor:*** Birrenkott Surveying
Surveyor Phone:	***Surveyor Email:***
Current Zoning: AG	***Existing Use of Property:*** Farm Land
Development Size: 4 *acres and* 6 *lots*	***Acres Remaining in Parent Parcel:*** 16
Proposed Zoning: R-1 for ea lot	***Plat Name:*** Palmer Meadows

Land Division Submittal Checklist:		
	Fee (see information at right)	• Sketch Plan: No fee. • CSM: $350 plus $50 per lot over 2 lots. • Preliminary Plat: $350 plus $50 per lot. • Final Plat: $350 plus $50 per lot.
	Complete Application (this page)	
	Sketch plan/CSM/Plat (one hard copy)	
	Environmental Assessment Checklist (Appendix A under Section 16.12)	
	Project Description & Intent Form (attached)	

Applicant Signature: Michael Coughlin ***Date:*** 3-3-26

Owner Signature: Michael Coughlin ***Date:*** 3-3-26

For Staff Use Only		
Date Received:	***Fee Amount:***	***Paid?***
Project to Appear before Plan Commission on:		***PH Publication Dates:***
Plan Commission Recommendation: ☐ Denied ☐ Approved ***Subject to:***		
Village Board Decision: ☐ Denied ☐ Approved (Res #_____) ***Subject to:***		

Project Description & Intent – Land Division Application
Please complete the following sections to describe your proposed land division. This form replaces the need for a separate letter of intent.

1. **Project Overview**:
   Summarize the proposed land division, including the number of lots, intended use, and any phasing plans.

   There will be six lots roughly 1/2 acre in size developed for single family homes as part of this project. The project will take place in one phase.

2. **Purpose of the Land Division**:
   Explain why the division is being requested and how it supports the goals of the property owner or developer.

   The land division will provide the developer with saleable single family lots on his currently owned land.

3. **Infrastructure and Utility Needs**:
   Identify any new or modified infrastructure (roads, water/sewer, stormwater) required for the development. Provide preliminary engineering, inclusive of conceptual stormwater management plan, for Preliminary Plat review. Provide final engineering plans for Final Plat review.

   As part of this project, Bilstad Road will be widened by 4-ft for 1,300 feet of the property frontage. The developed lots will have their own stormwater management basins, and these lots will be connected to the community sanitary sewer system via force main. The lots will be served by wells for water.

4. **Environmental Features and Considerations**:
   Note any known environmental constraints (wetlands, floodplains, steep slopes, etc.) and how they will be addressed. Provide wetland delineation report if lands are identified with mapped or wetland type soils per Wisconsin DNR.

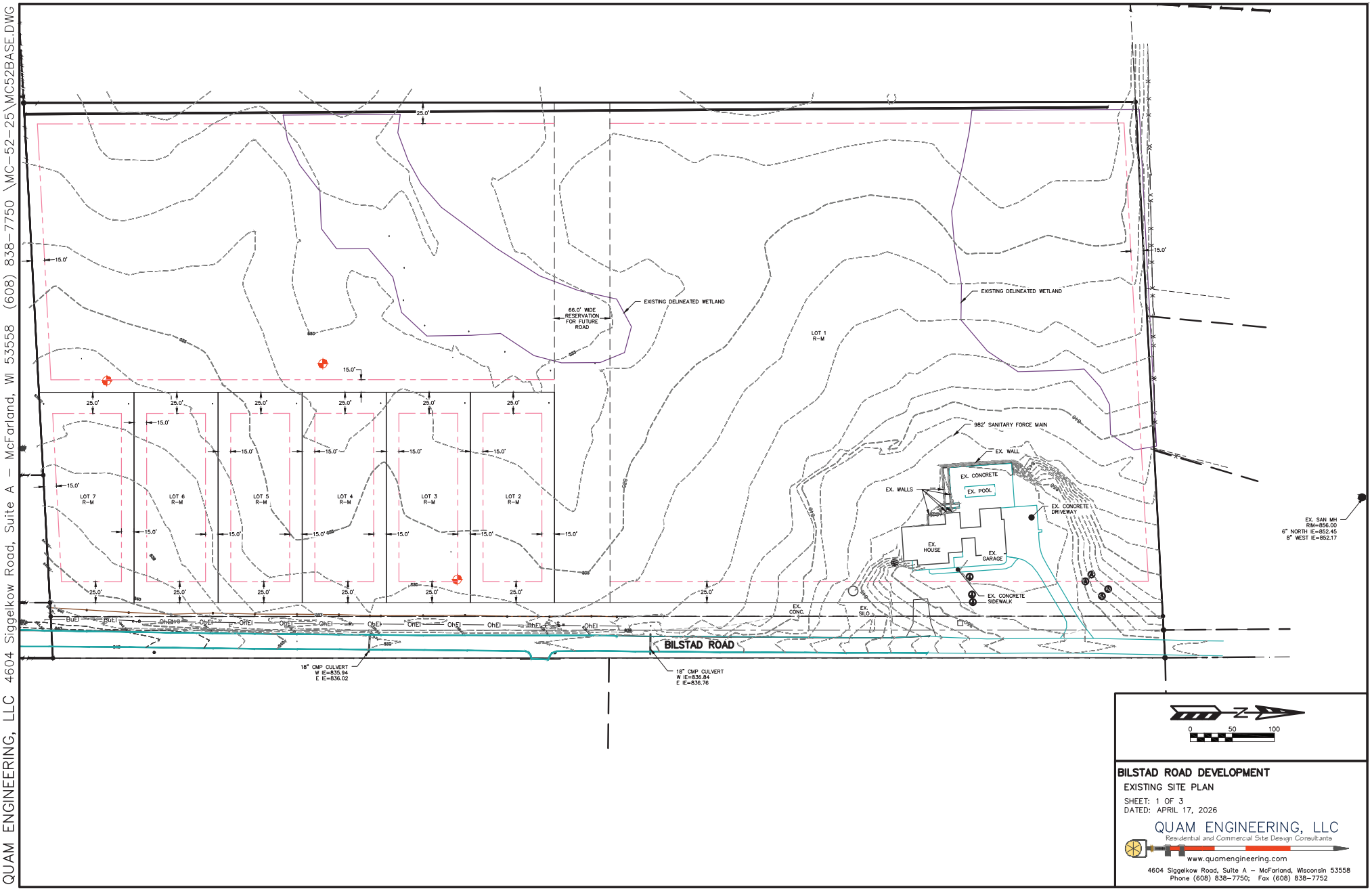
   There are existing wetlands on the property. These wetlands will not be impacted, they are mapped and are shown on the proposed plans.

5. **Additional Information or Special Considerations**:
   Include any other relevant details that may assist staff and the Plan Commission in reviewing your application.

   There are no other considerations or relevant details.

		Yes	No
Land Resources			
Does the project site involve:			
A. Changes in relief and drainage patterns (attach a topographic map showing, at a minimum, two foot contour intervals).		X	
B. A floodplain. (If yes, attach two copies of a typical stream valley cross-section showing the channel of the stream, the 100-year floodplain's limits and the floodway limits (if officially adopted), of each site of the channel and a cross-section of area to be developed).			X
C. An area of soil instability — greater than 20% slope and/or organic soils, peats or mucks at or near the surface.			X
D. Prime agricultural land (Class I, II or III soils).		X	
E. Wetlands and mapped environmental corridors.		X	
Water Resources			
Does the proposed project involve:			
A. Location within the area traversed by a navigable stream or dry run.			X
B. Lake frontage.			X

		Yes	No
Human and Scientific Interest			
Does the project site involve:			
A. An area of archeological or geological interest.		____	X
B. An area of historical interest.		____	X
C. An area of buildings or monuments with unique architecture.		____	X
Energy, Transportation and Communications			
A. Does the development encompass any future street appearing on the Village of Cambridge Official Map?		____	X
B. Is the development traversed by an existing or planned utility corridor (gas, electricity, water, sewer interceptor, communications, storm sewer)?		____	X



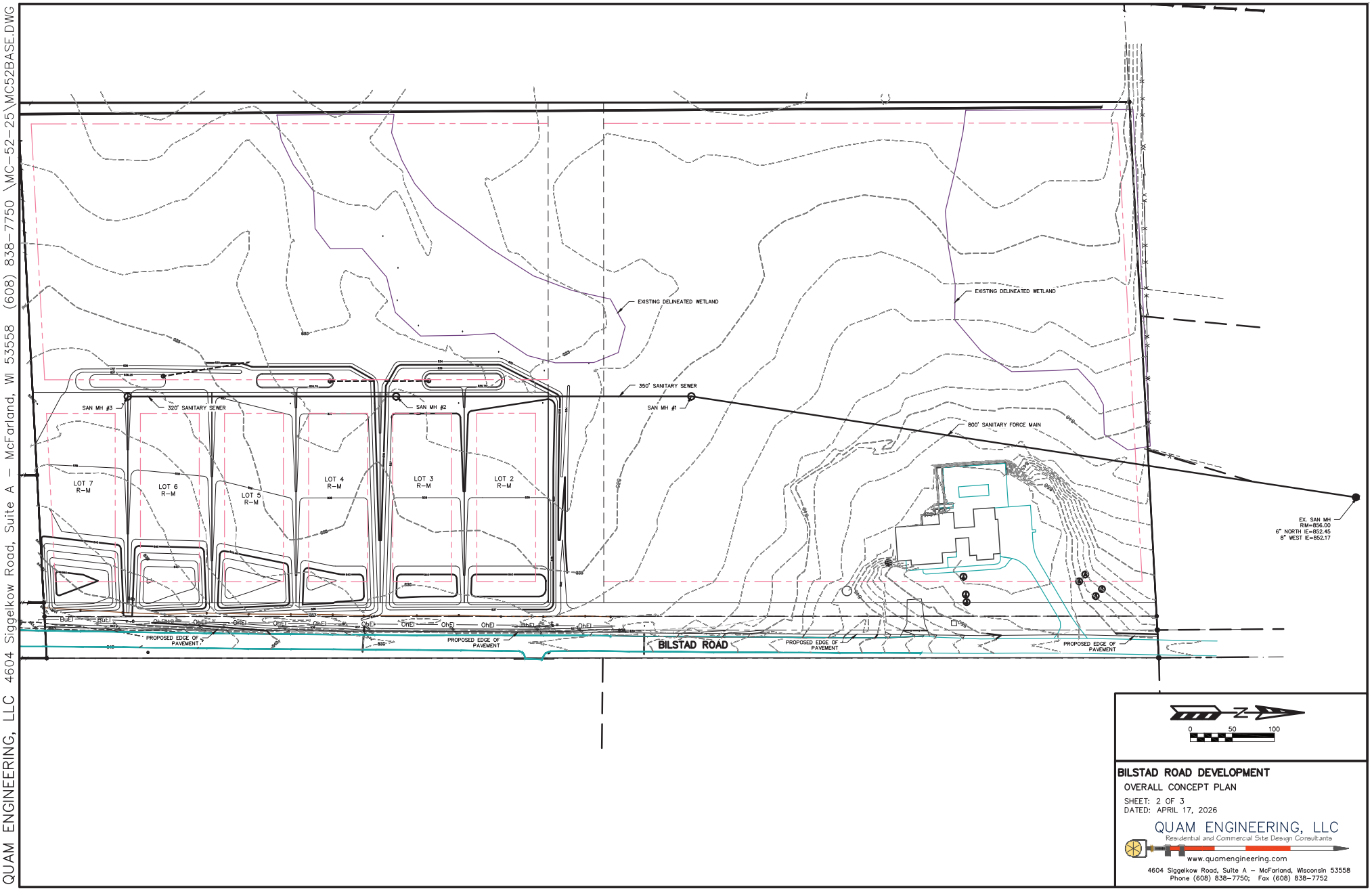
QUAM ENGINEERING, LLC 4604 Siggelkow Road, Suite A – McFarland, WI 53558 (608) 838-7750 \MC-52-25\MC52BASE.DWG

BILSTAD ROAD DEVELOPMENT

EXISTING SITE PLAN

SHEET: 1 OF 3
DATED: APRIL 17, 2026

QUAM ENGINEERING, LLC
Residential and Commercial Site Design Consultants
www.quamengineering.com
4604 Siggelkow Road, Suite A – McFarland, Wisconsin 53558
Phone (608) 838-7750; Fax (608) 838-7752



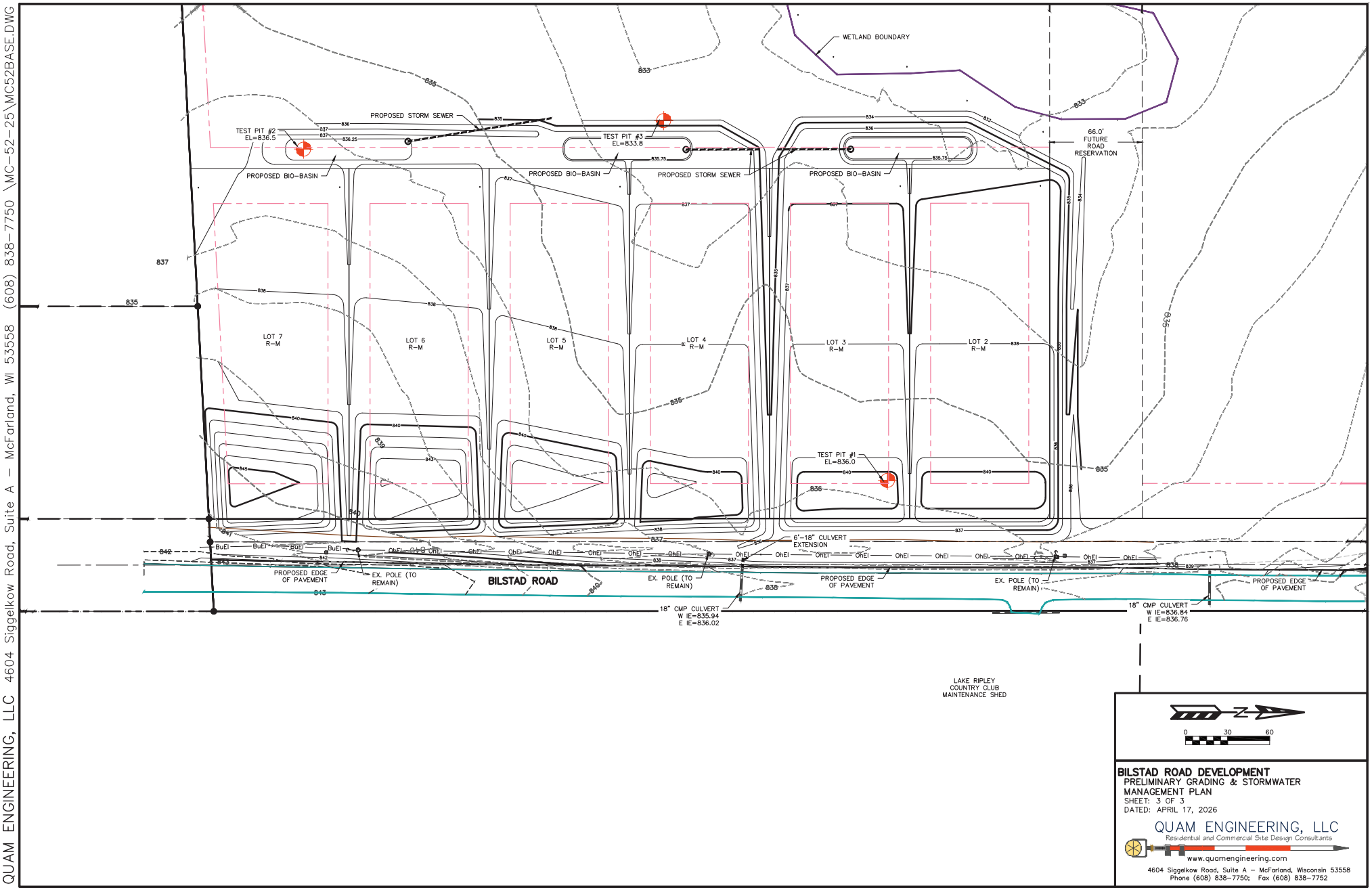
BILSTAD ROAD DEVELOPMENT

OVERALL CONCEPT PLAN

SHEET: 2 OF 3
DATED: APRIL 17, 2026

QUAM ENGINEERING, LLC
Residential and Commercial Site Design Consultants
www.quamengineering.com
4604 Siggelkow Road, Suite A – McFarland, Wisconsin 53558
Phone (608) 838-7750; Fax (608) 838-7752

QUAM ENGINEERING, LLC 4604 Siggelkow Road, Suite A – McFarland, WI 53558 (608) 838-7750 \MC-52-25\MC52BASE.DWG



QUAM ENGINEERING, LLC 4604 Siggelkow Road, Suite A – McFarland, WI 53558 (608) 838-7750 \MC-52-25\MC52BASE.DWG

BILSTAD ROAD DEVELOPMENT
PRELIMINARY GRADING & STORMWATER MANAGEMENT PLAN
SHEET: 3 OF 3
DATED: APRIL 17, 2026

QUAM ENGINEERING, LLC
Residential and Commercial Site Design Consultants
www.quamengineering.com
4604 Siggelkow Road, Suite A – McFarland, Wisconsin 53558
Phone (608) 838-7750; Fax (608) 838-7752

PRELIMINARY PLAT

Palmer Meadows

Outlot 90 of Revised and Consolidated Assessor's Plat of Cambridge, Located in the Village of Cambridge, Dane County, Wisconsin.

Surveyor's Certificate:

I, Chris K. Casson, Professional Land Surveyor S–3264, do hereby certify that in full compliance with the provisions of Chapter 236 of the Wisconsin Statutes and the Village of Cambridge Code of Ordinances, and under the direction of the owners listed hereon, I have surveyed, divided and mapped Palmer Meadows and that such plat correctly represents all exterior boundaries and the subdivision of the land surveyed and is a parcel of land as described below:

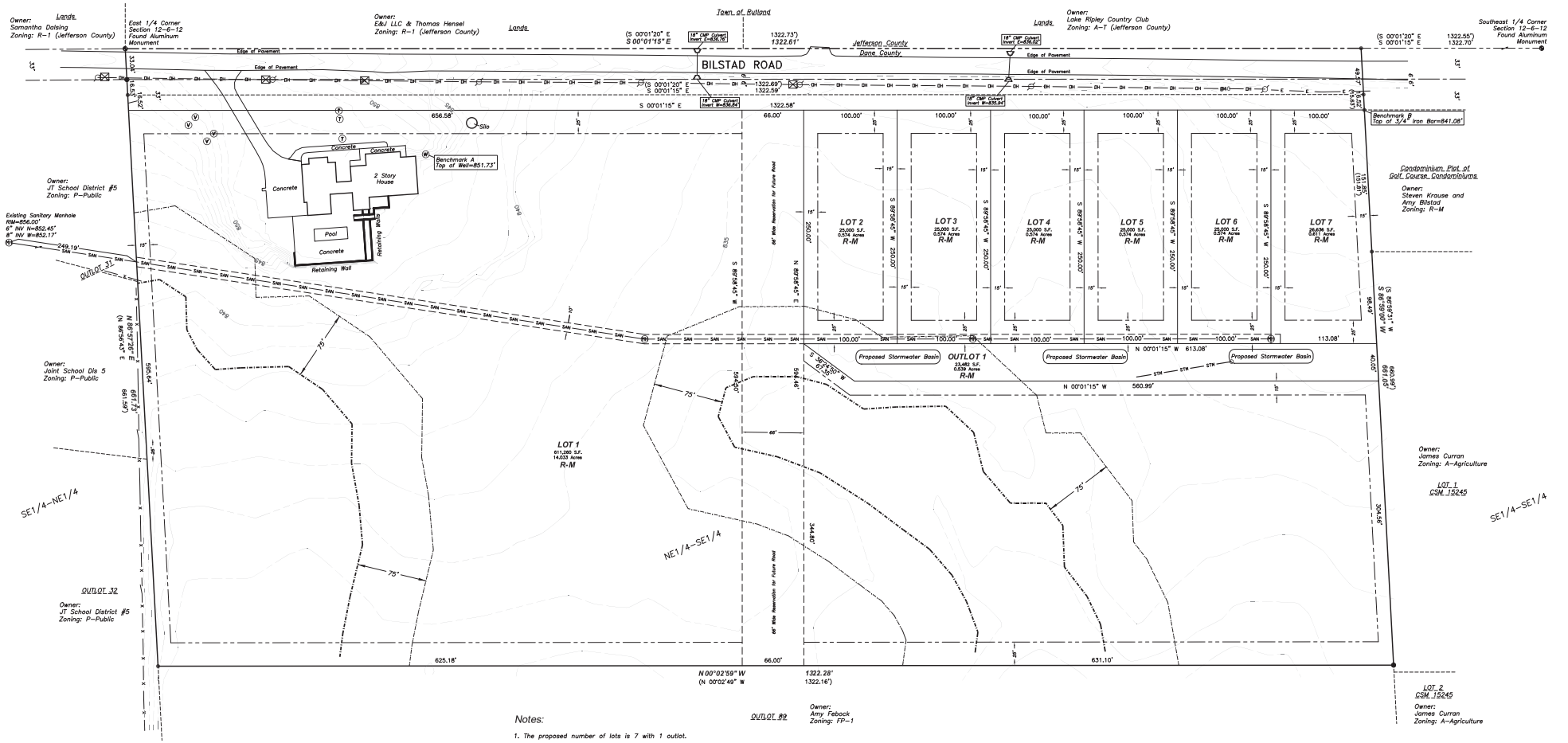
Outlot 90 of Revised and Consolidated Assessor's Plat of Cambridge, Located in the Village of Cambridge, Dane County, Wisconsin.

_____

Chris K. Casson, PLS No. 3264

Zoning Descriptions:

Zoning description (A to R–M):
Part of the Northeast 1/4 of the Southeast 1/4 of Section 6, T12N, R12E, Village of Cambridge, Dane County, Wisconsin. More fully described as follows: Commencing at the East 1/4 corner of said Section 6; thence S86°57'26"W, 66.09 feet to the point of beginning; thence S00°01'15"E, 1322.58 feet to the Northeast corner of the Condominium Plat of Golf Course Condominiums; thence S86°59'00"W, 594.96 feet along the North lines of said Condominium Plat of Golf Course Condominiums and Lot 1 of CSM 15245; thence N00°02'59"W, 1322.28 feet to the Southerly line of Outlot 32, Revised and Consolidated Assessor's Plat of Cambridge; thence N86°57'26"E, 595.64 feet along the South lines of Outlot 31 and Outlot 32, Revised and Consolidated Assessor's Plat of Cambridge to the point of beginning. Contains 786,168 Square Feet or 18.048 Acres.



Notes:

1. The proposed number of lots is 7 with 1 outlot.
2. Gross area in this preliminary plat = 873,460 square feet, or 20.052 acres.
3. This survey is subject to any and all agreements and easements of record and those that may have not been recorded.
4. Before any digging, boring, construction, etc., is done on or near the lands in this subdivision, Diggers Hotline shall be called at 1–800–242–8511 for the safety and liability purposes for all involved.
5. The lands within this subdivision shall be served by underground utilities.
6. The lands within this subdivision are located in UNSHADED ZONE X, areas determined to be outside 0.2% annual chance floodplain, per FEMA Flood Insurance Rate Map, Map No. 55025C657H, Revised September 17, 2014.
7. Property currently zoned A Agriculture, Proposed zoning R–M, Single–family residential medium–density district.
8. Contour interval = 1 foot. Vertical datum NAVD 88. Contours shown are pre–development.
9. Utility easements shall be added as required by appropriate utility companies.
10. This is a PRELIMINARY PLAT. All distances and areas are approximate and subject to change upon final platting.
11. Setbacks for R–M zoning: Front/Road, 25 feet; Side, 15 feet; Rear, 25 feet.
12. Wetland data provided by Heartland Ecological Group. Wetlands have been marked on site, but no report has been prepared as of 4/17/2026.
13. Lots 1–7 will be each be served by their own well.
14. Horizontal Datum: Dane County Coordinate System NAD83 (2011)

Legend:

- = Section Corner
- = Found 3/4" Iron Bar
- = Found 1" Iron Pipe
- ( ) = Recorded as data
- = Building Setback Line
- x = Chain Link Fence
- = Manhole
- = Well
- = Septic Tank
- = Septic Vent
- = Culvert
- = Power Pole
- = Proposed Manhole
- OH = Overhead Utilities
- E = Buried Electric
- R–M = Proposed Zoning
- = Utility Pedestal

Bearings referenced to the East line of the Southeast 1/4 of Section 12, bearing S00°01'15"E

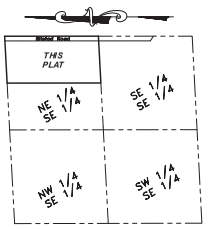
0 60 120
Scale: 1"= 60'

Wetland Boundary
75'
75' Wetland setback
This setback applies to all buildings and impervious surfaces (including gravel)

Benchmarks

Benchmark A
Top of Well=851.73'

Benchmark B
Top of 3/4" Iron Bar=841.08'



LOCATION SKETCH
Section 36, T12N, R12E
Village of Cambridge
NOT TO SCALE

OWNER/SUBDIVIDER
Coughlin Building Concepts
230 Bilstad Road
Cambridge, WI 53523
608–598–0639

ENGINEER
Quam Engineering, LLC
4604 Siggelkow Rd A
McFarland, WI 53558
608–838–7750

BIRRENKOTT SURVEYING
P.O. Box 237
1677 N. Bristol Street
Sun Prairie, WI 53590
(608) 837–7463
(608) 837–7463 (Fax)

Dated: April 17, 2026

L:\2026\260189\260189_PreliminaryPlatV2
Sheet 1 of 1
Office Map No. **260189_PreliminaryPlatV1**

EROSION CONTROL AND STORMWATER MANAGEMENT REPORT

BILSTAD ROAD DEVELOPMENT
VILLAGE OF CAMBRIDGE, DANE COUNTY

May 15, 2026

PREPARED FOR:
Coughlin Building Concepts
Attn: Mike Coughlin
230 Bilstad Road
Cambridge, WI 53523

PREPARED BY:
Quam Engineering, LLC
4604 Siggelkow Road, Suite A
McFarland, WI 53558

MC-52-25

TABLE OF CONTENTS

EXHIBITS

APPENDICES

INTRODUCTION

The proposed development is located on Bilstad Road in the Village of Cambridge, Dane County, Wisconsin. The property is part of a new plat which will separate 230 Bilstad Road from the proposed development as shown in Exhibit 2. The development is in the NE ¼ of the SW ¼ of Section 12, T06N, R12E, as shown on the Location Map included as Exhibit #1. The existing site consists of an empty agricultural field, as shown on Exhibit #3. The proposed project includes constructing seven single-family lots, as shown on Exhibit #5. Three bio-retention basins are proposed to address stormwater management standards for the full build-out of the lots. The stormwater modeling is designed for the lots to be fully built out with an average of 25% impervious area (based on HydroCAD modeling of half-acre lots) distributed between roof area, paved driveway area, and patio/walkway area.

The proposed project includes land disturbing activity exceeding 4,000 square feet and a cumulative addition of greater than 20,000 square feet of impervious surface for the full build-out of the lots. Therefore, according to Chapter 14 of the Dane County Ordinance, the site requires erosion control and stormwater management permits.

The project also includes land disturbing activity greater than one acre. Therefore, according to NR 216 the site requires a Department of Natural Resources Notice of Intent permit.

The intent of this report is to provide details on how the stormwater will be collected and managed so that it leaves the proposed project site in accordance with applicable erosion control and stormwater standards.

STANDARDS

The stormwater management system for the proposed site will meet the following development performance standards as defined in the Wisconsin Administrative Code NR 151 and Chapter 14 of the Dane County Ordinance:

Erosion Control
The proposed construction shall include erosion control measures to prevent gully and bank erosion and limit total off-site erosion to less than 5.0 tons per acre per year.

Sediment Control
The proposed construction shall include design practices to retain soil particles greater than five microns (80% reduction) on the entire site resulting from the one-year 24-hour storm event.

Oil and Grease Control
The first ½" runoff from commercial or industrial developments shall be treated using oil and grease removal technology.

Runoff Rate Control
All storm water facilities shall be designed, installed and maintained to effectively maintain pre-development peak runoff rates for the 1, 2, 10, 100, and 200 year, 24-hour storm event. The Dane County rainfall values for all storm events are as follows:

Storm Event (Year)	Rainfall Depth (inches)
1	2.49
2	2.84
10	4.09
100	6.66
200	7.53

Outlets
Discharges from the development must have a stable outlet capable of carrying designed flow at a non-erosive velocity.

Infiltration
For residential and non-residential development, design practices to infiltrate sufficient runoff volume so that post-development infiltration volume shall be at least 90 percent of the pre-development infiltration volume, based on average annual rainfall. When designing appropriate infiltration systems, if more than two percent (2%) of the site is required to be used as effective infiltration area, an alternative design to meet or exceed the estimated average annual recharge rate of 7.6 inches/year may be used.

Thermal Control
The stormwater management plan shall include provisions and practices to reduce the temperature of runoff for sites located within the watershed of a river or stream identified by the Wisconsin DNR as a cold water community.

SEDIMENTATION AND EROSION CONTROL MEASURES

Exhibit #5 contains the Grading and Erosion Control Plan. During construction, all sedimentation and erosion control items will be maintained for maximum effectiveness. Sediment trapped by the silt fence or sock will be removed when it reaches a depth of approximately one-half foot.

All pervious disturbed areas will be restored with a minimum of four inches of topsoil, seed, and mulch. Restoration will occur as soon after the disturbance as practical. The bio-retention basin will be restored per the bio-retention basin detail. Seed Mixture 40 will be used on all other pervious disturbed areas. All seed mixtures will be in accordance with Section 630 of D.O.T. Specifications. An equal amount of annual ryegrass will be added to the mix.

All pervious disturbed areas will receive fertilizer except native planting areas. Fertilizer will meet the following minimum requirements: Nitrogen, not less than 16%; Phosphoric Acid, not less than 8%; Potash, not less than 8%. Fertilizer will be applied at the rate of four (4) pounds per 1,000 square feet. The total seed mixtures will be applied at the rate of four (4) pounds per 1,000 square feet. Mulch will consist of straw or hay, applied at a rate of two (2) tons per acre.

Seeding from September 16th through November 15th will be avoided to prevent freezing of new growth. Dormant seeding, if necessary, will be completed after November 15th. Disturbed areas will have erosion matting applied over dormant seeding. Dormant seeding will not be applied on top of snow. If dormant seeding does not result in at least 70% cover by May 15th, additional seeding may be required.

All disturbed areas will be temporarily stabilized within 14 days of last activity. All disturbed areas will be stabilized within 7 days of final grading. Perimeter control will be installed around stockpiles, and stockpiles will be stabilized that will remain inactive for 7 days or longer.

All runoff during construction will be directed to flow through erosion control measures as shown on the Grading and Erosion Control Plan. Exhibit #9 contains the Universal Soil Loss Equation calculation worksheet.

STORMWATER MANAGEMENT MEASURES

Exhibit #5 is the Grading and Erosion Control Plan. The plan shows the stormwater management measures required to meet the standards listed on Page 2 of this report. The standards will be met as follows:

Sediment Control
The proposed bio-retention basins are designed to retain soil particles greater than five microns (80% reduction) on the entire site resulting from the one-year 24-hour storm event.

The sediment control calculations are included in Appendix C.

Oil and Grease Control
Oil and grease control is not required on site because the site will contain minimal vehicle parking, and the proposed use does not include drive-through or vehicle maintenance. Therefore, the site is not a significant contributor of oil and grease.

Runoff Rate Control
The proposed bio-retention basins will effectively maintain pre-development peak runoff rates for the 1, 2, 10, 100, and 200 year, 24-hour storm event. The stormwater modeling calculations are included in Appendices A and B of this report. A summary of the results is on page 6.

Outlets
The restored lawn area, bio-retention basins, riprap pads, and swales will provide a stable outlet for the site.

Infiltration
The proposed bio-retention basins provide 90 percent pre-development infiltration. The infiltration calculations are included as Appendix C of this report.

Thermal Control
This site is not located within the watershed of a river or stream identified by the Wisconsin DNR as a cold-water community.

COST ESTIMATE

The following table summarizes the estimated cost of completion and installation of all elements of erosion control and stormwater management for the proposed development.

No.	Description	Estimated Quantity	Unit	Unit Price	Amount
1.	Stone Construction Entrance	1	EA	$500.00	$500.00
2.	Silt Fence or Sock	664	LF	$2.00	$1,328.00
3.	Straw Wattle Ditch Check	6	EA	$40.00	$240.00
4.	Medium Riprap w/ Fabric	14	CY	$25.00	$350.00
5.	Bio-Retention Basin w/ 6” underdrain	5,125	SF	$15.00	$76,875.00
6.	10” PVC Storm Sewer	162	LF	$15.00	$2,430.00
7.	3’ Dia Outlet Structure w/ Haala Trash Rack	3	EA	$1,750.00	$5,250.00
8.	Restoration (Seed and WisDOT Class I, Type B, Erosion Mat)	8,700	SY	$1.50	$13,050.00
9.	Restoration (seed and mulch)	14,600	SY	$0.50	$7,300.00
	Total				**$107,323.00**

RESULTS

The following tables summarize the existing and proposed runoff curve numbers used in the rate runoff models and show how the proposed stormwater management practices meet standards for peak flow rates, sediment control, and infiltration.

Runoff Curve Numbers Table				
Runoff Curve Number	Hydrologic Soil Group			
	A	B	C	D
Woodland	30	55	70	77
Grassland	39	61	71	78
Cropland	51	68	78	83
Restored Lawn	39	61	74	80
Pond/Infiltration Area	100			
Impervious	98			

Peak Flow Rate Summary Table			
Storm Event (Year)	Total Existing Flow Rate (cfs)	Total Proposed Flow Rate Without bio-basins (cfs)	Total Proposed Flow Rate With bio-basins (cfs)
1	10.97	10.17	10.51
2	14.39	13.19	13.60
10	28.05	25.20	25.91
100	59.50	52.72	54.21
200	70.56	62.38	63.92

Sediment Control Summary Table	
Post Construction Sediment Load Generated	581.1 lbs
Calculated Sediment Reduction Goal (80%)	464.8 lbs
Sediment Load Removed	464.7 lbs

Infiltration Summary Table	
Pre-Development Infiltration Volume	1,789,618 cf
Calculated Volume Goal (90%)	1,610,656 cf
Post-Development Infiltration Volume	1,712,622 cf

CONCLUSIONS

Exhibit #9 contains the Universal Soil Loss Equation calculation worksheet. The worksheet indicates soil loss during development of the site will be controlled such that it does not exceed 5.0 tons per acre per year. Therefore, the erosion control measures for the proposed development meet Dane County and DNR standards. In addition, sediment control, oil and grease control, rate runoff control, stable outlet, and infiltration standards are satisfied.

Erosion Control Application Checklist

Project Name: Bilstad Road Development

Applications must include the following materials. The erosion control plan must be designed to meet all standards and requirements presented on the following page.

	Plan Materials	Specific Location of Information
1.	**Narrative describing proposed development**	See Page 1
2.	**Site plan with scale** that includes: property lines, limits of disturbance, land cover limits (existing and proposed), natural and artificial water features, 100-yr floodplain, delineated wetland boundaries, location of all erosion control practices	Exhibit #4
3.	**Construction details of erosion control practices**	Exhibit #6
4.	**Contours (existing and proposed)** Note: Grading within 5' of the property line requires department approval	Exhibits #3 & #5
5.	**Site watershed map** (including runoff draining to site)	Exhibits #7 - #8
6.	**Culvert sizes** (existing and proposed)	Exhibit #5
7.	**Cross sections and profiles of conveyance features** (existing and proposed)	Exhibit #6
8.	**Direction of runoff flow from impervious surfaces**	Exhibit #7
9.	**Design calculations of conveyance features** (velocity and capacity)	Exhibits #10 - #13, App B
10.	**Universal soil loss (USLE) calculations** (corresponding to construction schedule)	Exhibit #9
11.	**Site stabilization materials and methods**	Exhibit #6
	Permit Application Materials	——
12.	**Detailed construction schedule**	Exhibit #6
13.	**Copies of completed applications or approved permits from other regulatory bodies**	See Page 10
14.	**Itemized cost estimate of erosion control plan implementation** (Financial security instrument required if over $10,000)	See Page 5

DANE COUNTY EROSION CONTROL
APPLICATION CHECKLIST COMMENTS

The following comments supplement the Dane County Erosion Control Application Checklist on page 8. Each comment heading relates to an item on the Checklist.

1. Narrative Describing Proposed Development
   See the report introduction on page 1 and the construction schedule on the Construction Details Sheet, Exhibit #6.

2. Site Plan with scale
   The Overall Concept Plan, Exhibit #4, shows land cover type, disturbed area limits, and the location of all proposed erosion control practices for the site.

3. Construction Details of Erosion Control Practices
   The details for erosion control practices are shown on the Construction Details Sheet, Exhibit #6.

4. Contours (existing and proposed)
   The existing contours are shown on the Existing Site Plan, Exhibit #3. The proposed contours are shown on the Grading and Erosion Control Plan, Exhibit #5.

5. Watershed Size for Each Drainage Area
   The existing drainage areas are shown on the Existing Drainage Plan, Exhibit #7. The drainage areas for the bio-retention basins and swales are shown on the Proposed Drainage Plan, Exhibit #8.

6. Culvert Sizes
   The culvert sizes are shown on the Grading and Erosion Control Plan, Exhibit #5.

7. Cross Sections and Profiles of Conveyance Features
   Cross sections of the swales are shown on the on the Construction Details Sheet, Exhibit #6.

8. Direction of Flow from Impervious Surfaces
   The direction of flow is shown on the Proposed Drainage Plan, Exhibit #7.

9. Design Calculations for Conveyances Features
   Design calculations for structural measures are shown on the Rational Method Worksheet (Exhibit #11), RipRap Sizing Worksheet (Exhibit #10), Channel Velocity Worksheet (Exhibit #12), Erosion Mat Worksheet (Exhibit #13), and the Post-Development HydroCAD report (Appendix B).

10. Universal Soil Loss Equation (USLE) worksheet(s)
    A Universal Soil Loss Equation worksheet has been prepared and is included as Exhibit #9. The worksheet shows that the expected soil loss is less than 5.0 tons/acre/year for each element of the Erosion Control Plan.

11. Site Stabilization Materials and Methods

    All pervious disturbed areas will be restored with a minimum of four inches of topsoil, seed, and mulch. Restoration will occur as soon after the disturbance as practical. The bio-retention basin will be restored per the bio-retention basin detail. Seed Mixture 40 will be used on all pervious disturbed areas. All seed mixtures will be in accordance with Section 630 of D.O.T. Specifications. An equal amount of annual ryegrass will be added to the mix.

    All pervious disturbed areas will receive fertilizer except native planting areas. Fertilizer will meet the following minimum requirements: Nitrogen, not less than 16%; Phosphoric Acid, not less than 8%; Potash, not less than 8%. Fertilizer will be applied at the rate of four (4) pounds per 1,000 square feet. The total seed mixtures will be applied at the rate of four (4) pounds per 1,000 square feet. Mulch will consist of straw or hay, applied at a rate of two (2) tons per acre.

    Seeding from September 16th through November 15th will be avoided to prevent freezing of new growth. Dormant seeding, if necessary, will be completed after November 15th. Disturbed area will have erosion matting applied over dormant seeding. Dormant seeding will not be applied on top of snow. If dormant seeding does not result in at least 70% cover by May 15th, additional seeding may be required.

    All disturbed areas will be temporarily stabilized within 14 days of last activity. All disturbed areas will be stabilized within 7 days of final grading. Perimeter control will be installed around stockpiles, and stockpiles will be stabilized that will remain inactive for 7 days or longer.

12. Timetable and Construction Schedule

    The construction schedule is included on the Construction Details Sheet, Exhibit #6. All erosion control measures will be installed prior to land disturbance.

13. Copy of Permits or Approvals by Other Agencies

    A copy of this report will be submitted to the DNR for a DNR NOI and to the Town.

14. Itemized Estimated Cost for All Elements of the Erosion Control Plan

    The itemized estimated cost, including labor, for installation of all elements of the erosion control plan is included on Page 5 of this report. If the estimated cost of the stormwater and erosion control measures is over $10,000, a financial security instrument will be provided upon approval of this report.

Stormwater Management Application Checklist

Project Name: Bilstad Road Development

Applications must include the following materials. The stormwater management plan must be designed to meet all standards and requirements presented on the following page.

As-built certification, prepared by a professional engineer as required by Ch.14.10(5)(e) must be submitted upon completion of all permitted activity.

Plan Materials	Specific Location of Information
1. **Narrative describing proposed development and how standards are being achieved** (redevelopment must meet green infrastructure requirements of sec. 14.12(2)(a)a.)	See Page 1
2. **Summary table of existing and proposed land cover types with respective areas**	Appendices A & B
3. **Summary tables of peak rate, infiltration and sediment control modeling** (see table requirements on next page)	See Page 6
4. **Detailed model inputs and results**	Appendices A - C
5. **Site watershed map with Tc flow paths** (Including runoff draining to site)	Exhibit #7
6. **Site plan** (see detailed requirements on next page)	Exhibit #4
7. **Engineered designs of management practices**	Exhibits #10 - #13, App B
8. **Soils Information** (see detailed requirements on next page)	Appendix D
Permit Application Materials	——
9. **Detailed construction schedule**	Exhibit #6
10. **Draft maintenance agreement**	Appendix E
11. **Itemized cost estimate of stormwater management plan implementation** (Financial security instrument required if over $10,000)	See Page 5
12. **Copies of applications or permits from other regulatory bodies**	See Page 12

DANE COUNTY STORMWATER MANAGEMENT
APPLICATION CHECKLIST COMMENTS

The following comments supplement the Dane County Stormwater Management Application Checklist on page 11. Each comment heading relates to an item on the Checklist.

1. Narrative Description of the Project
   See the report introduction on page 1.

2. Summary Table of Existing and Proposed Land Cover Types with Respective Areas
   The existing land cover summary is shown in the Pre-Development HydroCAD report, Appendix A and the proposed land cover summary is shown in the Post-Development HydroCAD Report, Appendix B

3. Summary Table of Peak Rate, Infiltration, and Sediment Control Modeling
   The peak rate, infiltration, and sediment control modeling results are shown on page 6.

4. Detailed Modeling Inputs and Results
   Modeling inputs and results are shown in the Pre-Development HydroCAD Results (Appendix A), the Post-Development HydroCAD Results (Appendix B), and the Sediment Control and Infiltration Calculations (Appendix C).

5. Site Watershed Map with Tc Flow Paths
   The watershed map with Tc flow paths are shown on the Proposed Drainage Plan, Exhibit #7.

6. Site Plan
   The plans and specifications are included on Exhibit #4.

7. Engineered Design for Structural Management Practices
   Design calculations for structural measures are shown on the Rational Method Worksheet, Exhibit #11, RipRap Sizing Worksheet, Exhibit #10, Channel Velocity Worksheet, Exhibit #12, Erosion Mat Worksheet, Exhibit #13, and the Post-Development HydroCAD report, Appendix B.

8. Soils Information
   Soils Information is included as Appendix D.

9. Detailed Construction Schedule
   The construction schedule is shown on the on the Construction Details Sheet, Exhibit #6. All erosion control measures will be installed prior to land disturbance.

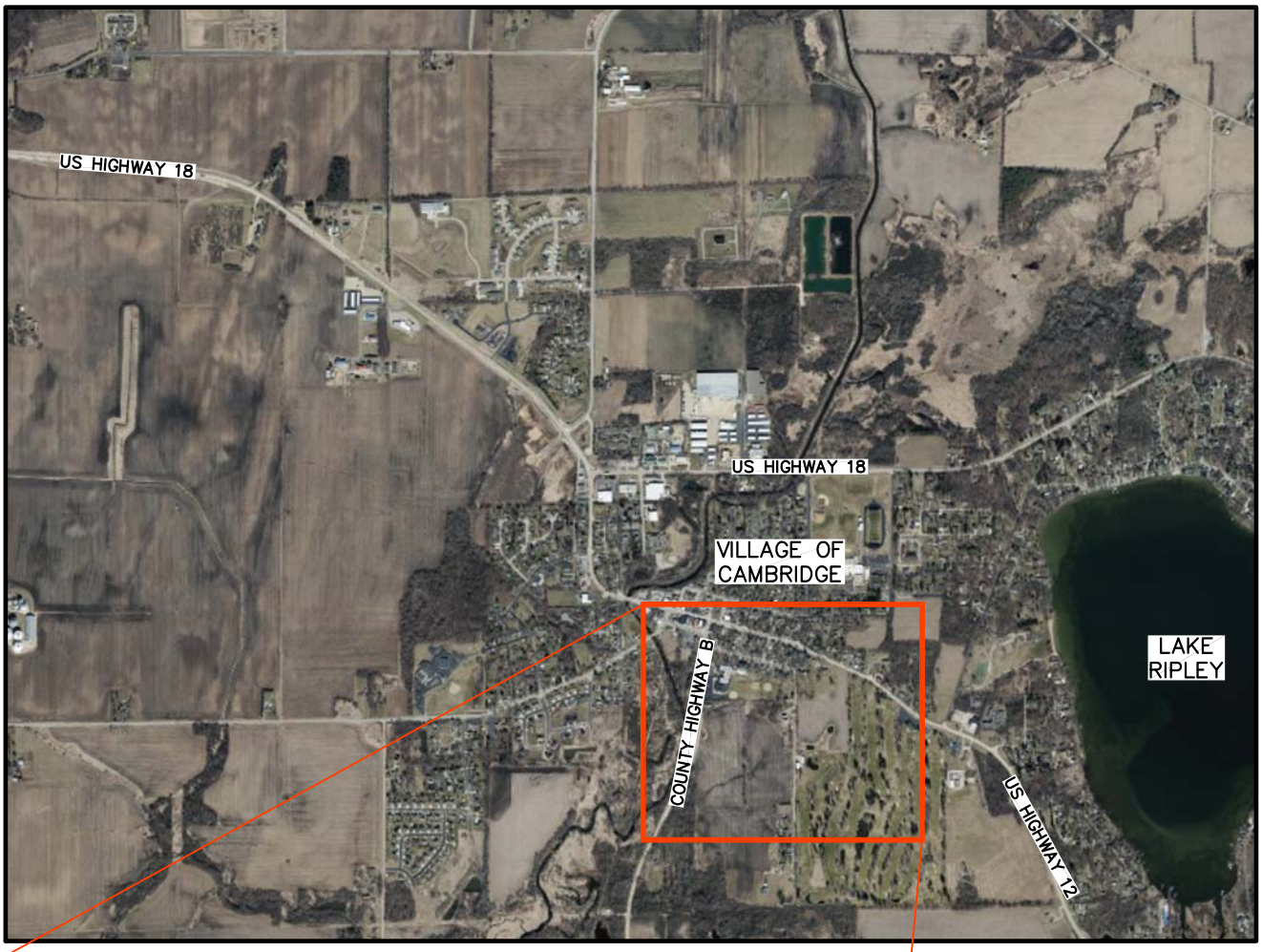
10. Draft Maintenance Agreement
    The maintenance agreement for all permanent stormwater management practices is included as Appendix E.

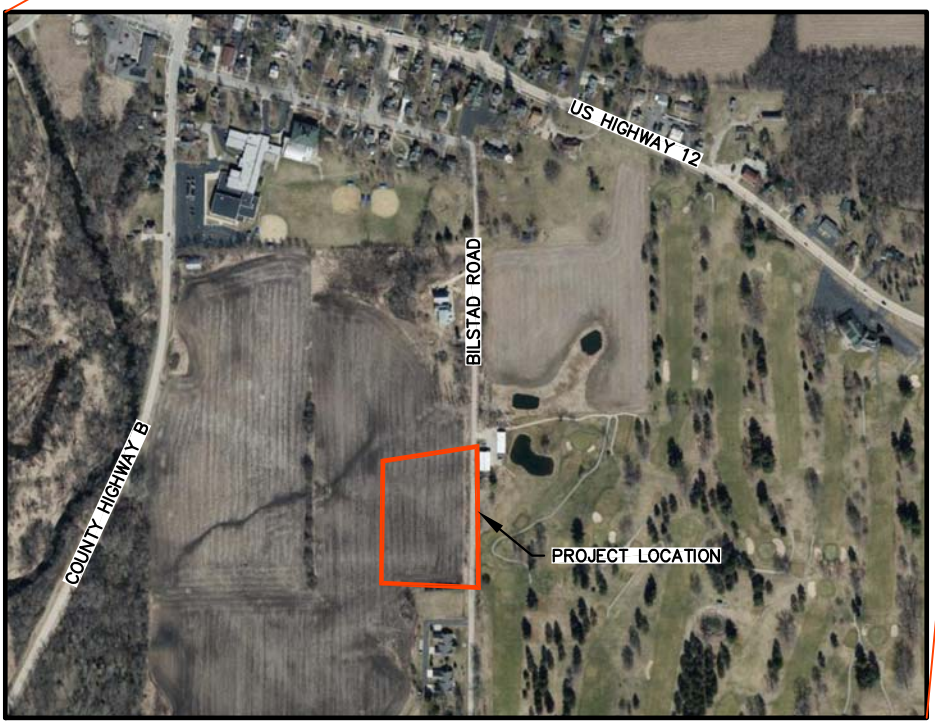
11. Itemized Cost Estimate for Stormwater Plan Implementation
    The itemized estimated cost for installation of all elements of the stormwater plan can be viewed on Page 5 of this report. If the estimated cost of the mitigation and erosion control measures is over $10,000, financial surety will be provided upon approval of this report.

12. Copies of Permits or Approvals from Other Regulatory Bodies
    A copy of this report will be submitted to the DNR for a DNR NOI.

EXHIBITS

LOCATION MAP
EXHIBIT #1





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QUAM ENGINEERING, LLC 4604 Siggelkow Road, Suite A, McFarland, WI 53558 (608) 838-7750

PRELIMINARY PLAT

Palmer Meadows

Outlot 90 of Revised and Consolidated Assessor's Plat of Cambridge, Located in the Village of Cambridge, Dane County, Wisconsin.

Surveyor's Certificate:

I, Chris K. Casson, Professional Land Surveyor S-3264, do hereby certify that in full compliance with the provisions of Chapter 236 of the Wisconsin Statutes and the Village of Cambridge Code of Ordinances, and under the direction of the owners listed hereon, I have surveyed, divided and mapped Palmer Meadows and that such plat correctly represents all exterior boundaries and the subdivision of the land surveyed and is a parcel of land as described below:

Outlot 90 of Revised and Consolidated Assessor's Plat of Cambridge, Located in the Village of Cambridge, Dane County, Wisconsin.

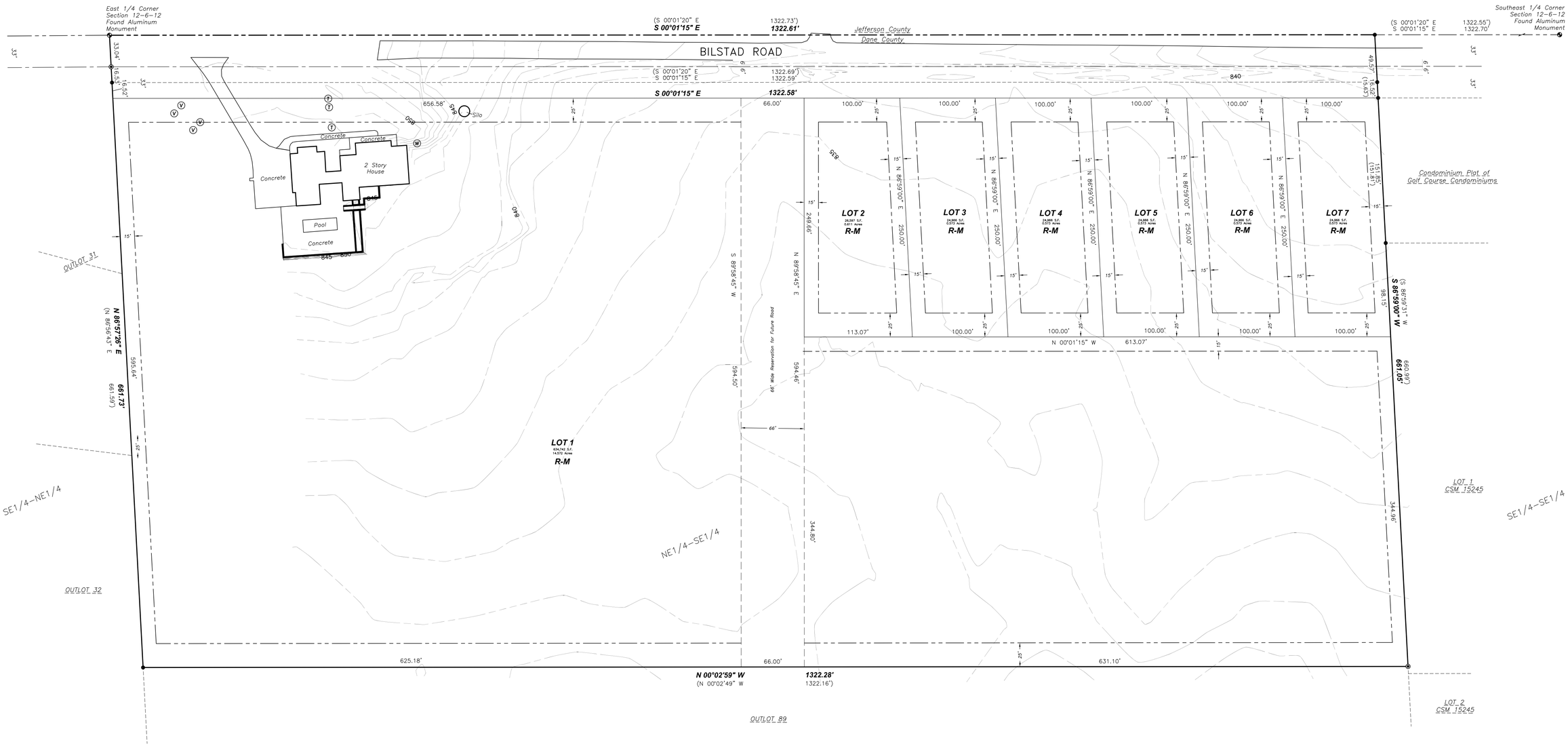
_____

Chris K. Casson, PLS No. 3264

Zoning Descriptions:

Zoning description (A to R-M):

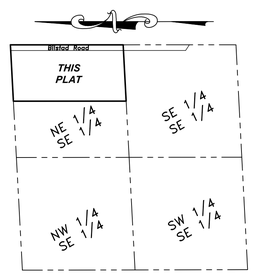
Part of the Northeast 1/4 of the Southeast 1/4 of Section 6, T12N, R12E, Village of Cambridge, Dane County, Wisconsin. More fully described as follows: Commencing at the East 1/4 corner of said Section 6; thence S86°57'26"W, 66.09 feet to the point of beginning; thence S00°01'15"E, 1322.58 feet to the Northeast corner of the Condominium Plat of Golf Course Condominiums; thence S86°59'00"W, 594.96 feet along the North lines of said Condominium Plat of Golf Course Condominiums and Lot 1 of CSM 15245; thence N00°02'59"W, 1322.28 feet to the Southerly line of Outlot 32, Revised and Consolidated Assessor's Plat of Cambridge; thence N86°57'26"E, 595.64 feet along the South lines of Outlot 31 and Outlot 32, Revised and Consolidated Assessor's Plat of Cambridge to the point of beginning. Contains 786,168 Square Feet or 18.048 Acres.



Bearings referenced to the East line of the Southeast 1/4 of Section 12, bearing S00°01'15"E

0 60 120

Scale: 1"= 60'



LOCATION SKETCH
Section 36, T12N, R12E
Village of Cambridge
NOT TO SCALE

Notes:

1. *The proposed number of lots is 7.*
2. *Gross area in this preliminary plat = 873,460 square feet, or 20.052 acres.*
3. *This survey is subject to any and all agreements and easements of record and those that may have not been recorded.*
4. *Before any digging, boring, construction, etc., is done on or near the lands in this subdivision, Diggers Hotline shall be called at 1-800-242-8511 for the safety and liability purposes for all involved.*
5. *The lands within this subdivision shall be served by underground utilities.*
6. *The lands within this subdivision are located in UNSHADED ZONE X, areas determined to be outside 0.2% annual chance floodplain, per FEMA Flood Insurance Rate Map, Map No. 55025C657H, Revised September 17, 2014.*
7. *Property currently zoned A Agriculture, Proposed zoning R-M, Single-family residential medium-density district.*
8. *Contour interval = 1 foot. Vertical datum NAVD 88. Contours shown are pre-development.*
9. *Utility easements shall be added as required by appropriate utility companies.*
10. *This is a PRELIMINARY PLAT. All distances and areas are approximate and subject to change upon final platting.*
11. *Setbacks for R-M zoning: Front/Road, 25 feet; Side, 15 feet; Rear, 25 feet.*

OWNER/SUBDIVIDER
Coughlin Building Concepts
230 Bilstad Road
Cambridge, WI 53523
608-598-0639

ENGINEER
Quam Engineering, LLC
4604 Siggelkow Rd A
McFarland, WI 53558
608-838-7750

BIRRENKOTT SURVEYING
P.O. Box 237
1677 N. Bristol Street
Sun Prairie, WI 53590
(608) 837-7463
(608) 837-7463 (Fax)

Dated: April 8, 2026

L:\2026\260189\260189_PreliminaryPlatV1
Sheet 1 of 1
Office Map No. ***260189_PreliminaryPlatV1***

QUAM ENGINEERING, LLC 4604 Siggelkow Road, Suite A – McFarland, WI 53558 (608) 838-7750 \MC-52-25\MC52BASE.DWG

EXISTING DELINEATED WETLAND

66.0' WIDE RESERVATION FOR FUTURE ROAD

TEST PIT #2 EL=836.5

USLE SLOPE LINE (350' @ 1.5%)

TEST PIT #3 EL=833.8

LOT 7 R-M

LOT 6 R-M

LOT 5 R-M

LOT 4 R-M

LOT 3 R-M

LOT 2 R-M

LOT 1 R-M

982' SANITARY FORCE MAIN

EX. WALL

EX. CONCRETE

EX. POOL

EX. WALLS

EX. CONCRETE DRIVEWAY

EX. HOUSE

EX. GARAGE

EX. CONCRETE SIDEWALK

EX. CONC.

EX. SILO

EX. SAN MH
RIM=856.00
6" NORTH IE=852.45
8" WEST IE=852.17

BuEl OhEl

BILSTAD ROAD

18" CMP CULVERT
W IE=835.94
E IE=836.02

18" CMP CULVERT
W IE=836.84
E IE=836.76

0 50 100

BILSTAD ROAD DEVELOPMENT

EXISTING SITE PLAN

SHEET: C-1
DATED: MAY 15, 2026

QUAM ENGINEERING, LLC
Residential and Commercial Site Design Consultants
www.quamengineering.com
4604 Siggelkow Road, Suite A – McFarland, Wisconsin 53558
Phone (608) 838-7750; Fax (608) 838-7752

EXISTING DELINEATED WETLAND

EXISTING DELINEATED WETLAND

TERMINAL FLUSHING CONNECTION

495'–2" SANITARY FORCE MAIN

975'–2" SANITARY FORCE MAIN

LOT 7 R–M

LOT 6 R–M

LOT 5 R–M

LOT 4 R–M

LOT 3 R–M

LOT 2 R–M

EX. SAN MH
RIM=856.00
6" NORTH IE=852.45
8" WEST IE=852.17

PROPOSED EDGE OF PAVEMENT

PROPOSED EDGE OF PAVEMENT

BILSTAD ROAD

PROPOSED EDGE OF PAVEMENT

PROPOSED EDGE OF PAVEMENT

SANITARY SEWER NOTES:

THE SIX PROPOSED LOTS WILL CONVEY THE PROPOSED WASTE WATER VIA SHARED 2–INCH FORCE MAIN TO THE PUBLIC MANHOLE. EACH LOT WILL HAVE A 1.25–INCH CURB STOP AND TIE INTO THE 2–INCH FORCE MAIN WITH A 2X1.25–INCH TEE OR SADDLE. THERE WILL BE A TERMINAL FLUSHING CONNECTION AT THE NORTHWEST CORNER OF LOT 2.

0 50 100

TO OBTAIN LOCATION OF PARTICIPANTS' UNDERGROUND FACILITIES BEFORE YOU DIG IN WISCONSIN

CALL DIGGERS HOTLINE
1–800–242–8511
TOLL FREE

TDD(FOR THE HEARING IMPAIRED)(800)542–2289

WIS. STATUTE 182.0175 (1974) REQUIRES MIN. OF 3 WORK DAYS NOTICE BEFORE YOU EXCAVATE

BILSTAD ROAD DEVELOPMENT

OVERALL CONCEPT PLAN

SHEET: C–2
DATED: MAY 15, 2026

QUAM ENGINEERING, LLC
Residential and Commercial Site Design Consultants
www.quamengineering.com
4604 Siggelkow Road, Suite A – McFarland, Wisconsin 53558
Phone (608) 838–7750; Fax (608) 838–7752

WETLAND BOUNDARY

32'-10" HDPE STORM SEWER @ 0.78% – NORTH IE=833.50

3' WIDE BIO-BASIN #2 BERM EL=836.75

100'-10" HDPE STORM SEWER @ 0.25% – NORTH IE=834.00

STANDPIPE #2 (SEE DETAILS) RIM=836.25 6" IE=833.75 10" IE=833.75

30'-10" HDPE STORM SEWER @ 0.83% – SOUTH IE=833.50

PROPOSED BIO-BASIN #1 PLANTING AREA: 1,650 SQFT

3' WIDE BIO #1 OVERFLOW EL=836.50

SILT FENCE OR SILT SOCK (SEE DETAIL)

115'-6" PERFORATED UNDERDRAIN (SEE DETAIL)

STANDPIPE #3 (SEE DETAILS) RIM=836.75 6" IE=834.25 10" IE=834.25

TEST PIT #3 EL=833.8

3' WIDE BIO-BASIN #3 BERM EL=837.25

TEST PIT #2 EL=836.5

CLEANOUT

OVERFLOW FROM BIO #3 EL=837.00

OVERFLOW FROM BIO #2 EL=836.50

PROPOSED BIO-BASIN #3 PLANTING AREA: 1,800 SQFT

PROPOSED BIO-BASIN #2 PLANTING AREA: 1,675 SQFT

STANDPIPE #1 (SEE DETAILS) RIM=836.25 6" IE=833.75 10" IE=833.75

LIMITS OF DISTURBANCE (210,000 SQFT)

66.0' FUTURE ROAD RESERVATION

STRAW WATTLE DITCH CHECK (TYP) (SEE DETAIL)

LOT 7 R-M

LOT 6 R-M

LOT 5 R-M

LOT 4 R-M

LOT 3 R-M

LOT 2 R-M

USLE FINAL SLOPE LINE (32' @ 12%)

TEST PIT #1 EL=836.0

6'-18" CULVERT EXTENSION

PROPOSED EDGE OF PAVEMENT

EX. POLE (TO REMAIN)

BILSTAD ROAD

STONE CONSTRUCTION ENTRANCE (SEE DETAIL)

18" CMP CULVERT W IE=835.94 E IE=836.02

18" CMP CULVERT W IE=836.84 E IE=836.76

LAKE RIPLEY COUNTRY CLUB MAINTENANCE SHED

EROSION CONTROL LEGEND

INSTALL WISDOT CLASS I TYPE B UBRAN EROSION MAT

0 30 60

TO OBTAIN LOCATION OF PARTICIPANTS' UNDERGROUND FACILITIES BEFORE YOU DIG IN WISCONSIN

CALL DIGGERS HOTLINE 1-800-242-8511 TOLL FREE

TDD(FOR THE HEARING IMPAIRED)(800)542-2289

WIS. STATUTE 182.0175 (1974) REQUIRES MIN. OF 3 WORK DAYS NOTICE BEFORE YOU EXCAVATE

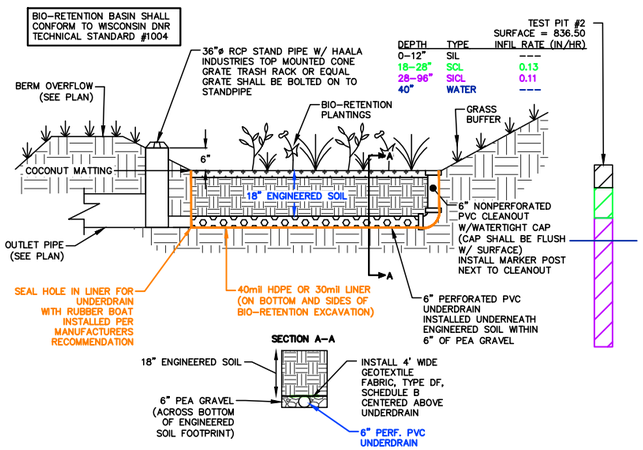
BILSTAD ROAD DEVELOPMENT

GRADING & EROSION CONTROL PLAN

SHEET: C-3
DATED: MAY 15, 2026

QUAM ENGINEERING, LLC
Residential and Commercial Site Design Consultants
www.quamengineering.com
4604 Siggelkow Road, Suite A – McFarland, Wisconsin 53558
Phone (608) 838-7750; Fax (608) 838-7752

QUAM ENGINEERING, LLC 4604 Siggelkow Road, Suite A – McFarland, WI 53558 (608) 838-7750 \MC-52-25\MC52BASE.DWG



SEE PLAN VIEW FOR SURFACE ELEVATIONS AND OTHER INFORMATION.

ENGINEERED SOIL SHALL CONSIST OF THE FOLLOWING:
70% SILICA SAND; 30% COMPOST W/ PH 5.5–6.5
COMPOST SHALL MEET WDNR SPECIFICATION S100.

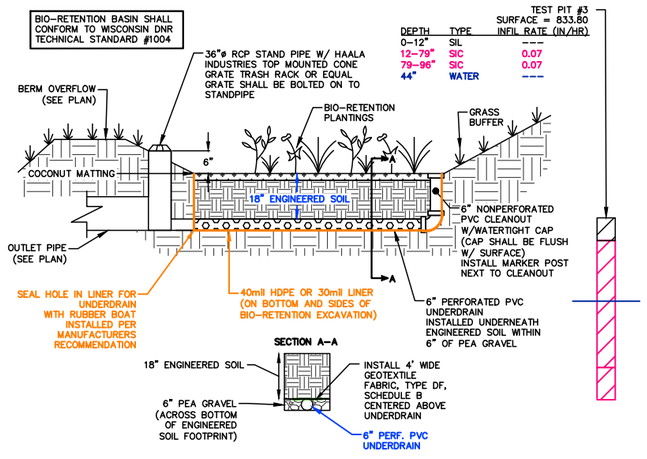
BIO–RETENTION PLANTINGS TO BE PLANTED AT ONE PLUG PER SQUARE FOOT UNLESS SPECIES SELECTED REQUIRES GREATER SPACING. PLUGS TO BE PLANT STOCK NAMED IN THE RAINWATER RENEWAL MIX FROM AGRECOL CORPORATION OR APPROVED EQUIVALENT. A MINIMUM OF 10 DIFFERENT PLANT STOCK NAMES SHALL BE SELECTED.

TO PREVENT COMPACTION OF ENGINEERED SOIL AND SUBSOILS, CONTRACTOR SHALL PROTECT AGAINST MACHINERY ENTERING OR COMPACTING THE BIO–RETENTION AREA.

CONTRACTOR SHALL PROVIDE COPY OF DELIVERY TICKET OR INVOICE FOR ENGINEERED SOIL, 4' WIDE GEOTEXTILE FABRIC, PEA GRAVEL, AND LINER FOR AS–BUILT CERTIFICATION PURPOSES.

CONTRACTOR SHALL PROVIDE PICTURES OF EXCAVATED BASIN PRIOR TO BACKFILLING WITH PEA GRAVEL, AND AGAIN PRIOR TO BACKFILLING WITH ENGINEERED SOIL (SHOWING THE 4' WIDE GEOTEXTILE FABRIC).

BIO–RETENTION BASIN #3 DETAIL



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CONTRACTOR SHALL PROVIDE PICTURES OF EXCAVATED BASIN PRIOR TO BACKFILLING WITH PEA GRAVEL, AND AGAIN PRIOR TO BACKFILLING WITH ENGINEERED SOIL (SHOWING THE 4' WIDE GEOTEXTILE FABRIC).

BIO–RETENTION BASIN #1 & #2 DETAIL

EROSION CONTROL NOTES:

1. CONSTRUCT AND MAINTAIN EROSION CONTROL MEASURES IN ACCORDANCE WITH WISCONSIN DNR AND DANE COUNTY REQUIREMENTS.
2. INSTALL EROSION CONTROL PRACTICES PRIOR TO INITIATING OTHER LAND DISTURBING ACTIVITIES.
3. INSPECT EROSION CONTROL MEASURES WEEKLY AND AFTER EVERY RAINFALL EVENT EXCEEDING 0.5 INCHES WITHIN 24 HOURS. REPAIR TO EROSION CONTROL MEASURES SHALL OCCUR WITHIN 24 HOURS OF INSPECTION.
4. EROSION CONTROL IS THE RESPONSIBILITY OF THE CONTRACTOR OR LANDOWNER UNTIL SITE IS STABILIZED. ADDITIONAL EROSION CONTROL MEASURES, AS REQUESTED BY REGULATORY AGENTS OR OWNER'S ENGINEER, SHALL BE INSTALLED WITHIN 24 HOURS.
5. INSTALL TRACKING CONTROLS TO PREVENT SEDIMENT FROM BEING TRACKED ONTO ADJACENT ROADWAYS. SEDIMENT IN THE ROADWAY SHALL BE REMOVED BY STREET CLEANING (NOT HYDRAULIC FLUSHING) BEFORE THE END OF EACH WORK DAY.
6. DIVERT CHANNELIZED RUNOFF FROM ADJACENT LAND AROUND DISTURBED AREAS.
7. INSTALL PERIMETER CONTROL AROUND STOCKPILES AND STABILIZE STOCKPILES THAT WILL REMAIN INACTIVE FOR 7 DAYS OR LONGER.
8. TEMPORARILY STABILIZE DISTURBED AREAS THAT WILL REMAIN INACTIVE FOR 14 DAYS.
9. PERMANENTLY STABILIZE ANY PORTION OF THE SITE WITHIN 7 DAYS OF REACHING FINAL GRADE.
10. INSTALL AND MAINTAIN A CONCRETE WASHOUT. CHUTE WASHWATER MAY NOT BE DUMPED ON THE GROUND.
11. DE–WATERING SHALL CONFORM TO DNR TECHNICAL STANDARD 1061 AND MAY NOT INCREASE EROSION.
12. REMOVE ACCUMULATED SEDIMENT FROM DITCH CHECKS AND STONE WEEPERS WHEN IT REACHES 1/2 OF THE DEVICE HEIGHT.
13. NOTIFY THE DANE COUNTY WATER RESOURCES ENGINEERING DEPARTMENT WITHIN 10 DAYS OF INSTALLING ALL EROSION CONTROL PRACTICES AND UPON SITE STABILIZATION.
14. REMOVE ALL EROSION CONTROL MEASURES ONCE ALL DISTURBED AREAS ARE VEGETATED.

TIME SCHEDULE:

JUNE 15, 2026	INSTALL INITIAL EROSION CONTROL DEVICES.
JUNE 15 – 19, 2026	INSTALL FORCE MAIN.
JUNE 19 – JULY 10, 2026	ROUGH GRADE SITE.
JULY 6 – JULY 10, 2026	RESTORE ALL PERVIOUS DISTURBED AREAS, AND CONSTRUCT THE BIO–BASINS PER DETAILS.

RESTORATION NOTES:

RESTORATION SHALL OCCUR AS SOON AFTER THE DISTURBANCE AS PRACTICAL.

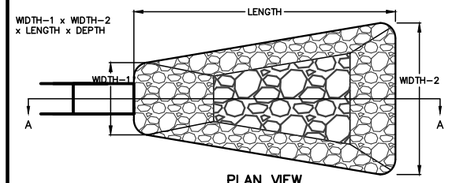
ALL PERVIOUS DISTURBED AREAS SHALL RECEIVE A MINIMUM OF FOUR (4) INCHES OF TOPSOIL, SEED, AND MULCH OR EROSION MAT. EROSION MAT LIMITS ARE SHOWN ON THE GRADING & EROSION CONTROL PLAN. RESTORATION WILL OCCUR AS SOON AFTER THE DISTURBANCE AS PRACTICAL. THE BIO–RETENTION BASIN SHALL BE RESTORED PER THE BIO–RETENTION BASIN DETAIL. SEED MIXTURE 40 SHALL BE USED ON ALL OTHER DISTURBED AREAS. ALL SEED MIXTURES SHALL BE IN ACCORDANCE WITH SECTION 630 OF D.O.T. SPECIFICATIONS. AN EQUAL AMOUNT OF ANNUAL RYEGRASS SHALL BE ADDED TO THE MIX.

ALL PERVIOUS DISTURBED AREAS SHALL RECEIVE FERTILIZER EXCEPT NATIVE PLANTING AREAS. FERTILIZER SHALL MEET THE FOLLOWING MINIMUM REQUIREMENTS: NITROGEN, NOT LESS THAN 16%; PHOSPHORIC ACID, NOT LESS THAN 8%; POTASH, NOT LESS THAN 8%. FERTILIZER SHALL BE APPLIED AT THE RATE OF FOUR (4) POUNDS PER 1,000 SQUARE FEET. SEED MIXTURE 40 SHALL BE APPLIED AT THE RATE OF FOUR (4) POUNDS PER 1,000 SQUARE FEET. MULCH SHALL CONSIST OF HAY OR STRAW APPLIED AT THE RATE OF TWO (2) TONS PER ACRE.

SEEDING FROM SEPTEMBER 16 THROUGH NOVEMBER 15 IS TO BE AVOIDED TO PREVENT FREEZING OF NEW GROWTH. DORMANT SEEDING, IF NECESSARY, SHALL BE COMPLETED AFTER NOVEMBER 15. DORMANT SEEDING SHALL NOT BE APPLIED ON TOP OF SNOW. DISTURBED AREAS SHALL HAVE EROSION MAT APPLIED OVER DORMANT SEEDING. IF DORMANT SEEDING DOES NOT RESULT IN AT LEAST 70% COVER BY MAY 15, ADDITIONAL SEEDING SHALL BE REQUIRED.

OWNER:
COUGHLIN BUILDING CONCEPTS
ATTN: MIKE COUGHLIN
230 BILSTAD ROAD
CAMBRIDGE, WI 53523

ENGINEER:
QUAM ENGINEERING, LLC
ATTN: RYAN QUAM
4604 SIGGELKOW ROAD, SUITE A
MCFARLAND, WI 53558

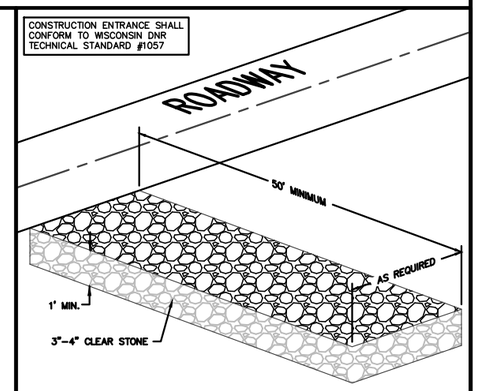


% PASSING BY WEIGHT	SIZE (INCHES)
100	20
50–85	15
20–50	10
5–20	5
0–5	2

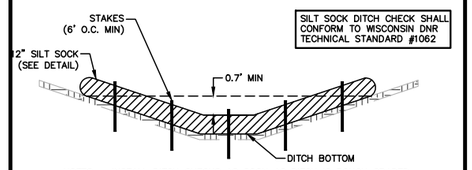
SIZES CALCULATED IN BEST D.5.2

RIPRAP SHALL BE PLACED AS DEFINED IN SECTION 606 OF WISCONSIN D.O.T. SPECIFICATIONS. STONE PIECES SHALL BE WELL GRADED, RANGING IN DIAMETER AS DESCRIBED IN THE ADJACENT CHART.

RIPRAP DETAIL

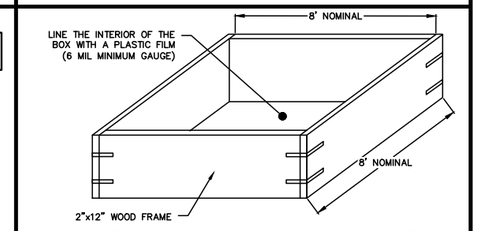


STONE CONSTRUCTION ENTRANCE



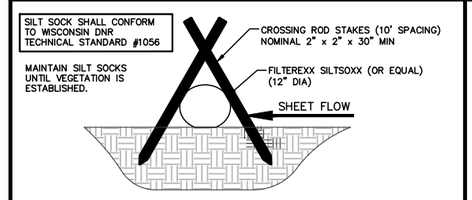
NOTES: INSTALL DITCH CHECKS AS SOON AS DITCH IS ROUGH GRADED
REMOVE DITCH CHECKS DURING PERMANENT SEEDING.
REFER TO THE WISDOT PAL FOR ACCEPTABLE PRODUCTS

TEMPORARY SILT SOCK DITCH CHECK

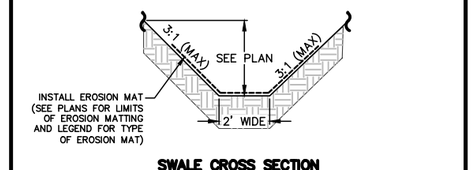


CONTENTS OF THE WASHOUT BOX SHALL BE DISPOSED OF OFF–SITE

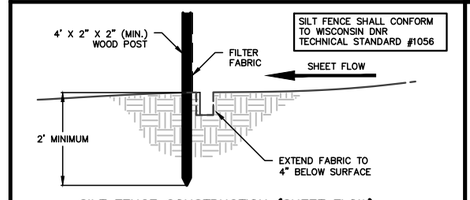
CONCRETE WASHOUT BOX DETAIL



SILT SOCK DETAIL



SWALE CROSS SECTION



SILT FENCE CONSTRUCTION (SHEET FLOW)

BILSTAD ROAD DEVELOPMENT

CONSTRUCTION DETAILS

SHEET: C–4
DATED: MAY 15, 2026

QUAM ENGINEERING, LLC
Residential and Commercial Site Design Consultants
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4604 Siggelkow Road, Suite A – McFarland, Wisconsin 53558
Phone (608) 838–7750; Fax (608) 838–7752

QUAM ENGINEERING, LLC 4604 Siggelkow Road, Suite A – McFarland, WI 53558 (608) 838-7750 \MC-52-25\MC52STORM.DWG

0 50 100

LEGEND FOR DRAINAGE AREAS:

SOUTH DRAINAGE AREA
AREA = 18.545 ACRES
TC = 31.2 MINUTES

TIME OF CONCENTRATION FLOWLINE

EX. WETLAND

EX. WETLAND

LOT 7 R-M

LOT 6 R-M

LOT 5 R-M

LOT 4 R-M

LOT 3 R-M

LOT 2 R-M

230 BILSTAD ROAD

BILSTAD ROAD

EXISTING EDGE OF PAVEMENT

EX. CULVERT

EX. CULVERT

EX. CULVERT

EXISTING EDGE OF PAVEMENT

BILSTAD ROAD DEVELOPMENT

EXISTING DRAINAGE PLAN

SHEET: C-5
DATED: MAY 15, 2026

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Residential and Commercial Site Design Consultants
www.quamengineering.com
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Phone (608) 838-7750; Fax (608) 838-7752

0 50 100

LEGEND FOR DRAINAGE AREAS:

- UNCONTROLLED DRAINAGE AREA
  AREA = 14.481 ACRES
  TC = 31.2 MINUTES
- BIO #1 DRAINAGE AREA
  AREA = 1.196 ACRES
  TC = 6 MINUTES
- BIO #2 DRAINAGE AREA
  AREA = 1.213 ACRES
  TC = 6 MINUTES
- BIO #3 DRAINAGE AREA
  AREA = 1.326 ACRES
  TC = 6 MINUTES

EX. WETLAND

EX. WETLAND

TIME OF CONCENTRATION FLOWLINE

BIO #3

BIO #2

BIO #1

LOT 7 R-M

LOT 6 R-M

LOT 5 R-M

LOT 4 R-M

LOT 3 R-M

LOT 2 R-M

BYPASS SWALE

230 BILSTAD ROAD

PROPOSED EDGE OF PAVEMENT

EXISTING EDGE OF PAVEMENT

EX. CULVERT (BYPASS SWALE SIZED BASED ON CULVERT CAPACITY)

EX. CULVERT

EX. CULVERT

BILSTAD ROAD

PROPOSED EDGE OF PAVEMENT

EXISTING EDGE OF PAVEMENT

BILSTAD ROAD DEVELOPMENT

PROPOSED DRAINAGE PLAN

SHEET: C-6
DATED: MAY 15, 2026

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Residential and Commercial Site Design Consultants
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Phone (608) 838-7750; Fax (608) 838-7752

Soil Loss & Sediment Discharge Calculation Tool

for use on Construction Sites in the State of Wisconsin

WDNR Version 2.1 (12-05-2024)

YEAR 1

Developer: Coughlin Building Concepts

Project: Bilstad Road Development

Date: 05/15/26

County: Dane

Version 2.1

Activity (1)	Begin Date (2)	End Date (3)	Period % R (4)	Annual R Factor (5)	Sub Soil Texture (6)	Soil Erodibility K Factor (7)	Slope (%) (8)	Slope Length (ft) (9)	LS Factor (10)	Land Cover C Factor (11)	Soil loss A (tons/acre) (12)	SDF (13)	Sediment Control Practice (14)	Sediment Discharge (t/ac) (15)
Bare Ground	06/15/26	06/29/26	9.6%	150	Silt Loam	0.43	1.5%	350	0.24	1.00	1.5	1.181	Silt Fence	1.0
Bare Ground	06/29/26	07/10/26	10.0%	150	Silt Loam	0.43	12.0%	32	1.03	1.00	6.6	0.652	Silt Fence	2.6
Seed with Mulch or Er	07/10/26	09/08/26	35.7%	150	Silt Loam	0.43	12.0%	32	1.03	0.10	2.4	0.652	Silt Fence	0.9
End	09/08/26	-----	-----	-----	-------	-----			-----	------	-----	0.000		0.0
		-----	-----	-----	-------	-----			-----	-----	-----	0.000		0.0
		-----	-----	-----	-------	-----			-----	-----	-----	0.000		0.0
										TOTAL	**10.5**		**TOTAL**	**4.6**
													% Reduction Required	**NONE**

Notes:

See Help Page for further descriptions of variables and items in drop-down boxes.
The last land disturbing activity on each sheet must be 'End'. This is either 12 months from the start of construction or final stabilization.
For periods of construction that exceed 12 months, please demonstrate that 5 tons/acre/year is not exceeded in any given 12 month period.

NOTE: THIS TOOL ONLY ADDRESSED SOIL EROSION DUE TO SHEET FLOW. MEASURES TO CONTROL CHANNEL EROSION MAY ALSO BE REQUIRED TO MEET SEDIMENT DISCHARGE REQUIREMENTS.

Recommended Permanent Seeding Dates:

4/1-5/15	and	8/7-8/29	Turf, introduced grasses and legumes
Thaw-6/30			Native Grasses, forbs, and legumes

Designed By:	MAF
Date	5/15/2026

Riprap Sizing Worksheet

PROJECT: Bilstad Road Development Computed by: MAF
DATE: 5/15/2026

LOCATION	SEWER		LENGTH		WIDTH		
Outfall Location	**Storm Sewer Diameter** (in)	**Design Discharge** (cfs)	**Calculated Length** (ft)	**Design Length** (ft)	**Calculated Width** (ft)	**Design Width at Riprap End** (ft)*	**Design Width at Culvert End** (ft)
	(D_0)	Q_{10}	Lsp		Wsp		$W_{culvert}$
Bio #1	10	3.96	15.5	**16**	8.7	**9**	**3**
Bio #2	10	3.94	15.5	**16**	8.7	**9**	**3**
Bio #3	10	2.82	13.0	**13**	7.7	**8**	**3**

$Lsp = D_O/12\,(1.7\,(Q_{10} / (D_O/12)^{5/2}) + 8)$

$Wsp = 2\,(1.5\,(D_O/12) + 0.2\,Lsp)$

$W_{culvert} = 3 * D_0$

Riprap blanket design based on W.D.O.T Facilities Development Manual (FDM)

Rational Method Worksheet - Culvert Sizing

PROJECT: Bilstad Road Development Computed by: MAF
DATE: 5/15/2026

LOCATION	BASIN		RAINFALL - RUNOFF				CULVERT INFO				CAPACITY CALCULATION				
Location	**Runoff Coefficient**	**Area** (acres)	**Rain Intensity** (in/hr)	**Direct Runoff** (cfs)	**Other Runoff** (cfs)	**Design Runoff** (cfs)	**Culvert Size** (in)	**Culvert Slope** (ft/ft)	**Culvert Invert Elevation**	**Overflow Elevation**	**HW/D** (ft/ft)	**Inlet Control Capacity** (cfs)	**Manning's n**	**Barrel Control Capacity** (cfs)	**Culvert Capacity** (cfs)
	C	A	I	Q=C*I*A											
	----	----	----	----	----	----	18	0.3%	836.02	838.50	1.7	11.4	0.025	3.0	3.0
Inlet Control Capacity from Facilities Development Manual (FDM) Procedure 13-10, Attachment 10.4, based on HW/D (Headwater / Diameter of Pipe															
Barrel Control Capacity calculated using Manning's equation.															
Culvert Capacity calculated as minimum of Inlet Control Capacity and Barrel Control Capacity.															

Channel Velocity Worksheet

PROJECT: Bilstad Road Development
DATE: 5/15/2026
LOCATION: Bypass Swale

Computed by: MAF

Channel Characteristics (see Diagram 1):

Channel Slope (S):	0.8%	feet/feet
2-Year Design Flow (Q_2):	11.40	CFS
10-Year Design Flow (Q_{10}):	11.40	CFS
100-Year Design Flow (Q_{100}):	11.40	CFS
Bottom Width (W):	2.0	feet
Avg. Side Slope (X):	3	horiz./vert.
Min. Depth of Channel (Y):	4	feet
Retardance Class:	D	
Manning's Number (N):	0.03	

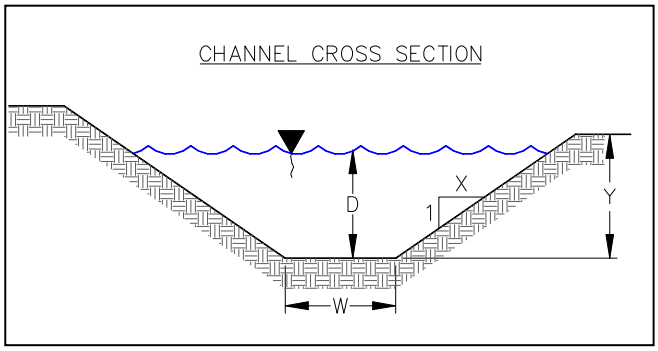


Diagram 1

The channel will behave as follows:

	2-Year	10-Year	100-Year
Hydraulic Radius (R):	**0.53 ft**	**0.53 ft**	**0.53 ft**
Depth (D):	**0.86 ft**	**0.86 ft**	**0.86 ft**
Velocity (V):	**2.90 ft/s**	**2.90 ft/s**	**2.90 ft/s**
	Shear Stress:	**0.43 psf**	

2-Year Peak Flow Rate (Using the Rational Method):

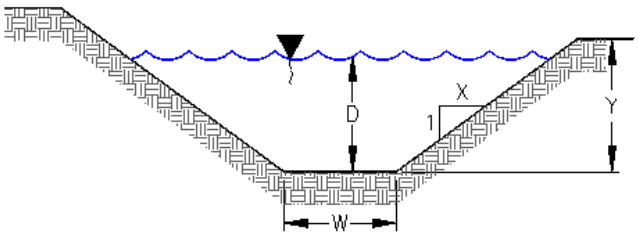
The peak flow of the swale is designed using the maximum flow of water through the upstream culvert immediate east of the swale.

EROSION MAT DESIGN

PROJECT: Bilstad Road Development
DATE: 5/15/2026
LOCATION: Bypass Swale

GIVEN:

CHANNEL CROSS SECTION



Width (W) = 2 feet
Depth (D_{10}) = 0.86 feet
Slope (S) = 0.008 ft/ft

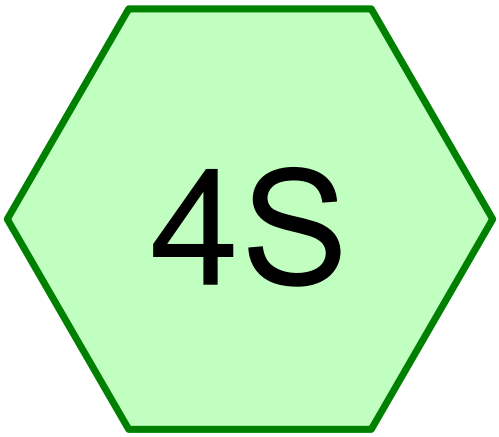
Calculate maximum shear stress in the swale, τ_m:

$\tau_m = \gamma ds = (62.4\ lb/ft^3)(0.86\ ft)(0.008\ ft/ft) = 0.43\ lb/ft^2$

Double Netted Light Duty (WisDOT Class I Type B) erosion mat: $\tau_{m(permissible)} = 1.5\ lb/ft^2$
(Permissible Shear Stress per Facilities Development Manual 10-5-35 Figure 1)

APPENDIX A

PRE-DEVELOPMENT HYDROCAD CALCULATIONS



Pre-Development

Subcat Reach Pond Link

Routing Diagram for PreDevelopment HydroCAD
Prepared by Quam Engineering, LLC, Printed 5/13/2026

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
9.963	78	Ag, HSG C (4S)
3.726	83	Ag, HSG D (4S)
0.390	61	Grass, HSG B (4S)
1.632	78	Grass, HSG D (4S)
0.328	98	Impervious (4S)
1.168	55	Woods, HSG B (4S)
1.338	77	Woods, HSG D (4S)
18.545	**77**	**TOTAL AREA**

Summary for Subcatchment 4S: Pre-Development

Runoff = 10.97 cfs @ 12.47 hrs, Volume= 1.238 af, Depth= 0.80"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 1-Year Rainfall=2.49"

	Area (ac)	CN	Description
*	0.328	98	Impervious
*	0.390	61	Grass, HSG B
*	1.632	78	Grass, HSG D
*	1.168	55	Woods, HSG B
*	1.338	77	Woods, HSG D
*	9.963	78	Ag, HSG C
*	3.726	83	Ag, HSG D
	18.545		Weighted Average
	18.217		98.23% Pervious Area
	0.328		1.77% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.4	100	0.0300	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.84"
11.8	500	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
31.2	600	Total			

Summary for Subcatchment 4S: Pre-Development

Runoff = 14.39 cfs @ 12.46 hrs, Volume= 1.595 af, Depth= 1.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 2-Year Rainfall=2.84"

	Area (ac)	CN	Description
*	0.328	98	Impervious
*	0.390	61	Grass, HSG B
*	1.632	78	Grass, HSG D
*	1.168	55	Woods, HSG B
*	1.338	77	Woods, HSG D
*	9.963	78	Ag, HSG C
*	3.726	83	Ag, HSG D
	18.545		Weighted Average
	18.217		98.23% Pervious Area
	0.328		1.77% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.4	100	0.0300	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.84"
11.8	500	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
31.2	600	Total			

Summary for Subcatchment 4S: Pre-Development

Runoff = 28.05 cfs @ 12.45 hrs, Volume= 3.025 af, Depth= 1.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 10-Year Rainfall=4.09"

	Area (ac)	CN	Description
*	0.328	98	Impervious
*	0.390	61	Grass, HSG B
*	1.632	78	Grass, HSG D
*	1.168	55	Woods, HSG B
*	1.338	77	Woods, HSG D
*	9.963	78	Ag, HSG C
*	3.726	83	Ag, HSG D
	18.545		Weighted Average
	18.217		98.23% Pervious Area
	0.328		1.77% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.4	100	0.0300	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.84"
11.8	500	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
31.2	600	Total			

Summary for Subcatchment 4S: Pre-Development

Runoff = 59.50 cfs @ 12.44 hrs, Volume= 6.383 af, Depth= 4.13"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 100-Year Rainfall=6.66"

	Area (ac)	CN	Description
*	0.328	98	Impervious
*	0.390	61	Grass, HSG B
*	1.632	78	Grass, HSG D
*	1.168	55	Woods, HSG B
*	1.338	77	Woods, HSG D
*	9.963	78	Ag, HSG C
*	3.726	83	Ag, HSG D
	18.545		Weighted Average
	18.217		98.23% Pervious Area
	0.328		1.77% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.4	100	0.0300	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.84"
11.8	500	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
31.2	600	Total			

Summary for Subcatchment 4S: Pre-Development

Runoff = 70.56 cfs @ 12.44 hrs, Volume= 7.588 af, Depth= 4.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 200-Year Rainfall=7.53"

	Area (ac)	CN	Description
*	0.328	98	Impervious
*	0.390	61	Grass, HSG B
*	1.632	78	Grass, HSG D
*	1.168	55	Woods, HSG B
*	1.338	77	Woods, HSG D
*	9.963	78	Ag, HSG C
*	3.726	83	Ag, HSG D
	18.545		Weighted Average
	18.217		98.23% Pervious Area
	0.328		1.77% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.4	100	0.0300	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.84"
11.8	500	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
31.2	600	Total			

Summary for Subcatchment 4S: Pre-Development

Runoff = 88.64 cfs @ 12.43 hrs, Volume= 9.584 af, Depth= 6.20"

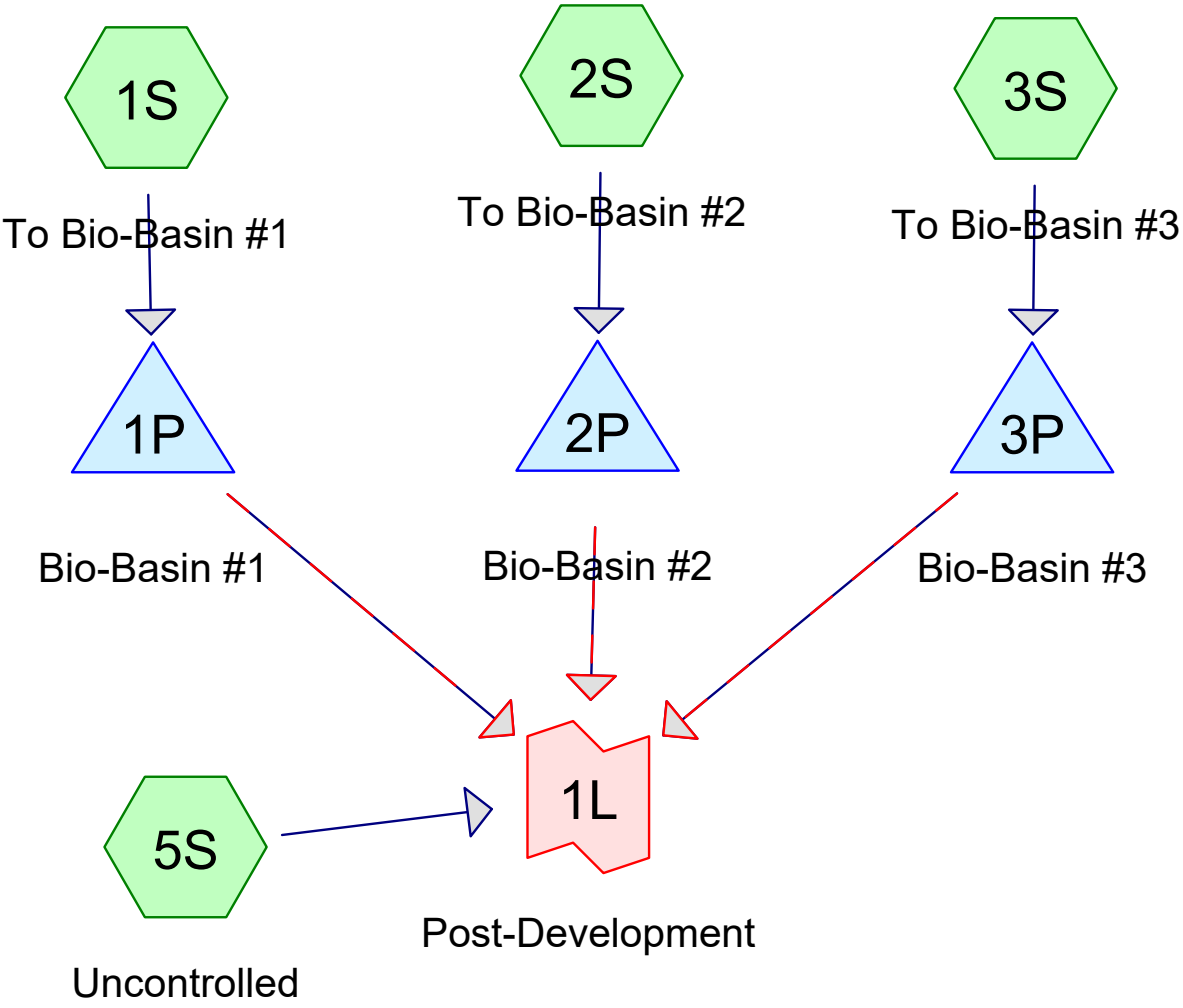
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 500-Year Rainfall=8.94"

	Area (ac)	CN	Description
*	0.328	98	Impervious
*	0.390	61	Grass, HSG B
*	1.632	78	Grass, HSG D
*	1.168	55	Woods, HSG B
*	1.338	77	Woods, HSG D
*	9.963	78	Ag, HSG C
*	3.726	83	Ag, HSG D
	18.545		Weighted Average
	18.217		98.23% Pervious Area
	0.328		1.77% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.4	100	0.0300	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.84"
11.8	500	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
31.2	600	Total			

APPENDIX B

POST-DEVELOPMENT HYDROCAD CALCULATIONS



Subcat Reach Pond Link

Routing Diagram for PostDevelopment HydroCAD
Prepared by Quam Engineering, LLC, Printed 5/14/2026

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
3.030	80	>75% Grass cover, Good, HSG D (1S, 2S, 3S)
5.935	78	Ag, HSG C (5S)
3.690	83	Ag, HSG D (5S)
0.120	100	Bio-Basin Area (1S, 2S, 3S)
0.390	61	Grass, HSG B (5S)
1.961	78	Grass, HSG D (5S)
0.913	98	Impervious (1S, 2S, 3S, 5S)
1.168	55	Woods, HSG B (5S)
1.338	77	Woods, HSG D (5S)
18.545	**79**	**TOTAL AREA**

Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Link 1L: Post-Development Inflow=10.51 cfs 1.352 af
Primary=10.51 cfs 1.352 af

Pond 1P: Bio-Basin #1 Peak Elev=836.35' Storage=1,310 cf Inflow=2.04 cfs 0.116 af
Primary=1.05 cfs 0.116 af Secondary=0.00 cfs 0.000 af Outflow=1.05 cfs 0.116 af

Subcatchment 1S: To Bio-Basin #1 Runoff Area=1.196 ac 19.65% Impervious Runoff Depth=1.16"
Tc=6.0 min CN=WQ Runoff=2.04 cfs 0.116 af

Pond 2P: Bio-Basin #2 Peak Elev=836.35' Storage=1,322 cf Inflow=2.06 cfs 0.117 af
Primary=1.06 cfs 0.117 af Secondary=0.00 cfs 0.000 af Outflow=1.06 cfs 0.117 af

Subcatchment 2S: To Bio-Basin #2 Runoff Area=1.213 ac 19.37% Impervious Runoff Depth=1.16"
Tc=6.0 min CN=WQ Runoff=2.06 cfs 0.117 af

Pond 3P: Bio-Basin #3 Peak Elev=836.86' Storage=1,345 cf Inflow=2.22 cfs 0.125 af
Primary=1.24 cfs 0.125 af Secondary=0.00 cfs 0.000 af Outflow=1.24 cfs 0.125 af

Subcatchment 3S: To Bio-Basin #3 Runoff Area=1.326 ac 17.72% Impervious Runoff Depth=1.13"
Tc=6.0 min CN=WQ Runoff=2.22 cfs 0.125 af

Subcatchment 5S: Uncontrolled Runoff Area=14.810 ac 2.21% Impervious Runoff Depth=0.81"
Flow Length=600' Tc=31.2 min CN=WQ Runoff=8.81 cfs 0.994 af

Total Runoff Area = 18.545 ac Runoff Volume = 1.352 af Average Runoff Depth = 0.87"
94.43% Pervious = 17.512 ac 5.57% Impervious = 1.033 ac

Summary for Link 1L: Post-Development

Inflow Area = 18.545 ac, 5.57% Impervious, Inflow Depth = 0.87" for 1-Year event
Inflow = 10.51 cfs @ 12.43 hrs, Volume= 1.352 af
Primary = 10.51 cfs @ 12.43 hrs, Volume= 1.352 af, Atten= 0%, Lag= 0.0 min

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

Summary for Pond 1P: Bio-Basin #1

Inflow Area = 1.196 ac, 19.65% Impervious, Inflow Depth = 1.16" for 1-Year event
Inflow = 2.04 cfs @ 12.13 hrs, Volume= 0.116 af
Outflow = 1.05 cfs @ 12.25 hrs, Volume= 0.116 af, Atten= 49%, Lag= 7.1 min
Primary = 1.05 cfs @ 12.25 hrs, Volume= 0.116 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 836.35' @ 12.25 hrs Surf.Area= 2,751 sf Storage= 1,310 cf

Plug-Flow detention time= 48.1 min calculated for 0.116 af (100% of inflow)
Center-of-Mass det. time= 48.1 min (853.1 - 805.0)

Volume	Invert	Avail.Storage	Storage Description
#1	835.75'	2,575 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
835.75	1,650	0	0
836.75	3,500	2,575	2,575

Device	Routing	Invert	Outlet Devices
#1	Primary	833.75'	**10.0" Round Culvert** L= 30.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 833.75' / 833.50' S= 0.0083 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.55 sf
#2	Device 1	835.75'	**3.600 in/hr Exfiltration over Surface area from 835.74' - 835.76'** Excluded Surface area = 0 sf Phase-In= 0.01'
#3	Device 1	836.25'	**36.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Secondary	836.50'	**170.0' long x 3.0' 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 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Primary OutFlow Max=1.04 cfs @ 12.25 hrs HW=836.34' TW=0.00' (Dynamic Tailwater)
└**1=Culvert** (Passes 1.04 cfs of 3.78 cfs potential flow)
└**2=Exfiltration** (Exfiltration Controls 0.14 cfs)
└**3=Orifice/Grate** (Weir Controls 0.90 cfs @ 1.01 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=835.75' TW=0.00' (Dynamic Tailwater)
└**4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Subcatchment 1S: To Bio-Basin #1

Runoff = 2.04 cfs @ 12.13 hrs, Volume= 0.116 af, Depth= 1.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 1-Year Rainfall=2.49"

	Area (ac)	CN	Description
*	0.195	98	Impervious
	0.961	80	>75% Grass cover, Good, HSG D
*	0.040	100	Bio-Basin Area
	1.196		Weighted Average
	0.961		80.35% Pervious Area
	0.235		19.65% Impervious Area

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

Summary for Pond 2P: Bio-Basin #2

Inflow Area = 1.213 ac, 19.37% Impervious, Inflow Depth = 1.16" for 1-Year event
Inflow = 2.06 cfs @ 12.13 hrs, Volume= 0.117 af
Outflow = 1.06 cfs @ 12.25 hrs, Volume= 0.117 af, Atten= 49%, Lag= 7.1 min
Primary = 1.06 cfs @ 12.25 hrs, Volume= 0.117 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 836.35' @ 12.25 hrs Surf.Area= 2,763 sf Storage= 1,322 cf

Plug-Flow detention time= 47.8 min calculated for 0.117 af (100% of inflow)
Center-of-Mass det. time= 47.8 min (853.2 - 805.4)

Volume	Invert	Avail.Storage	Storage Description
#1	835.75'	2,588 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
835.75	1,675	0	0
836.75	3,500	2,588	2,588

Device	Routing	Invert	Outlet Devices
#1	Primary	833.75'	**10.0" Round Culvert** L= 32.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 833.75' / 833.50' S= 0.0078 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.55 sf
#2	Device 1	835.75'	**3.600 in/hr Exfiltration over Surface area from 835.74' - 835.76'** Excluded Surface area = 0 sf Phase-In= 0.01'
#3	Device 1	836.25'	**36.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Secondary	836.50'	**20.0' long x 3.0' 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
Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Primary OutFlow Max=1.05 cfs @ 12.25 hrs HW=836.35' TW=0.00' (Dynamic Tailwater)
- **1=Culvert** (Passes 1.05 cfs of 3.72 cfs potential flow)
- **2=Exfiltration** (Exfiltration Controls 0.14 cfs)
- **3=Orifice/Grate** (Weir Controls 0.91 cfs @ 1.01 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=835.75' TW=0.00' (Dynamic Tailwater)
- **4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Subcatchment 2S: To Bio-Basin #2

Runoff = 2.06 cfs @ 12.13 hrs, Volume= 0.117 af, Depth= 1.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 1-Year Rainfall=2.49"

	Area (ac)	CN	Description
*	0.195	98	Impervious
	0.978	80	>75% Grass cover, Good, HSG D
*	0.040	100	Bio-Basin Area
	1.213		Weighted Average
	0.978		80.63% Pervious Area
	0.235		19.37% Impervious Area

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

Summary for Pond 3P: Bio-Basin #3

Inflow Area = 1.326 ac, 17.72% Impervious, Inflow Depth = 1.13" for 1-Year event
Inflow = 2.22 cfs @ 12.13 hrs, Volume= 0.125 af
Outflow = 1.24 cfs @ 12.24 hrs, Volume= 0.125 af, Atten= 44%, Lag= 6.1 min
Primary = 1.24 cfs @ 12.24 hrs, Volume= 0.125 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 836.86' @ 12.24 hrs Surf.Area= 2,626 sf Storage= 1,345 cf

Plug-Flow detention time= 44.0 min calculated for 0.125 af (100% of inflow)
Center-of-Mass det. time= 44.0 min (851.6 - 807.6)

Volume	Invert	Avail.Storage	Storage Description
#1	836.25'	3,313 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
836.25	1,800	0	0
837.50	3,500	3,313	3,313

Device	Routing	Invert	Outlet Devices
#1	Primary	834.25'	**10.0" Round Culvert** L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 834.25' / 834.00' S= 0.0025 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.55 sf
#2	Device 1	836.25'	**3.600 in/hr Exfiltration over Surface area from 836.24' - 836.26'** Excluded Surface area = 0 sf Phase-In= 0.01'
#3	Device 1	836.75'	**36.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Secondary	837.00'	**10.0' long x 3.0' 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 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Primary OutFlow Max=1.21 cfs @ 12.24 hrs HW=836.86' TW=0.00' (Dynamic Tailwater)
└─**1=Culvert** (Passes 1.21 cfs of 2.65 cfs potential flow)
  ├─**2=Exfiltration** (Exfiltration Controls 0.15 cfs)
  └─**3=Orifice/Grate** (Weir Controls 1.06 cfs @ 1.06 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=836.25' TW=0.00' (Dynamic Tailwater)
└─**4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Subcatchment 3S: To Bio-Basin #3

Runoff = 2.22 cfs @ 12.13 hrs, Volume= 0.125 af, Depth= 1.13"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 1-Year Rainfall=2.49"

	Area (ac)	CN	Description
*	0.195	98	Impervious
	1.091	80	>75% Grass cover, Good, HSG D
*	0.040	100	Bio-Basin Area
	1.326		Weighted Average
	1.091		82.28% Pervious Area
	0.235		17.72% Impervious Area

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

Summary for Subcatchment 5S: Uncontrolled

Runoff = 8.81 cfs @ 12.47 hrs, Volume= 0.994 af, Depth= 0.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 1-Year Rainfall=2.49"

	Area (ac)	CN	Description
*	0.328	98	Impervious
*	0.390	61	Grass, HSG B
*	1.961	78	Grass, HSG D
*	1.168	55	Woods, HSG B
*	1.338	77	Woods, HSG D
*	5.935	78	Ag, HSG C
*	3.690	83	Ag, HSG D
	14.810		Weighted Average
	14.482		97.79% Pervious Area
	0.328		2.21% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.4	100	0.0300	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.84"
11.8	500	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
31.2	600	Total			

Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Link 1L: Post-Development Inflow=13.60 cfs 1.719 af
Primary=13.60 cfs 1.719 af

Pond 1P: Bio-Basin #1 Peak Elev=836.39' Storage=1,444 cf Inflow=2.53 cfs 0.142 af
Primary=1.81 cfs 0.142 af Secondary=0.00 cfs 0.000 af Outflow=1.81 cfs 0.142 af

Subcatchment 1S: To Bio-Basin #1 Runoff Area=1.196 ac 19.65% Impervious Runoff Depth=1.43"
Tc=6.0 min CN=WQ Runoff=2.53 cfs 0.142 af

Pond 2P: Bio-Basin #2 Peak Elev=836.39' Storage=1,458 cf Inflow=2.56 cfs 0.144 af
Primary=1.83 cfs 0.144 af Secondary=0.00 cfs 0.000 af Outflow=1.83 cfs 0.144 af

Subcatchment 2S: To Bio-Basin #2 Runoff Area=1.213 ac 19.37% Impervious Runoff Depth=1.43"
Tc=6.0 min CN=WQ Runoff=2.56 cfs 0.144 af

Pond 3P: Bio-Basin #3 Peak Elev=836.91' Storage=1,480 cf Inflow=2.76 cfs 0.155 af
Primary=2.10 cfs 0.155 af Secondary=0.00 cfs 0.000 af Outflow=2.10 cfs 0.155 af

Subcatchment 3S: To Bio-Basin #3 Runoff Area=1.326 ac 17.72% Impervious Runoff Depth=1.40"
Tc=6.0 min CN=WQ Runoff=2.76 cfs 0.155 af

Subcatchment 5S: Uncontrolled Runoff Area=14.810 ac 2.21% Impervious Runoff Depth=1.04"
Flow Length=600' Tc=31.2 min CN=WQ Runoff=11.51 cfs 1.278 af

Total Runoff Area = 18.545 ac Runoff Volume = 1.719 af Average Runoff Depth = 1.11"
94.43% Pervious = 17.512 ac 5.57% Impervious = 1.033 ac

Summary for Link 1L: Post-Development

Inflow Area = 18.545 ac, 5.57% Impervious, Inflow Depth = 1.11" for 2-Year event
Inflow = 13.60 cfs @ 12.43 hrs, Volume= 1.719 af
Primary = 13.60 cfs @ 12.43 hrs, Volume= 1.719 af, Atten= 0%, Lag= 0.0 min

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

Summary for Pond 1P: Bio-Basin #1

Inflow Area = 1.196 ac, 19.65% Impervious, Inflow Depth = 1.43" for 2-Year event
Inflow = 2.53 cfs @ 12.13 hrs, Volume= 0.142 af
Outflow = 1.81 cfs @ 12.21 hrs, Volume= 0.142 af, Atten= 29%, Lag= 4.6 min
Primary = 1.81 cfs @ 12.21 hrs, Volume= 0.142 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 836.39' @ 12.21 hrs Surf.Area= 2,840 sf Storage= 1,444 cf

Plug-Flow detention time= 44.3 min calculated for 0.142 af (100% of inflow)
Center-of-Mass det. time= 44.3 min (846.7 - 802.4)

Volume	Invert	Avail.Storage	Storage Description
#1	835.75'	2,575 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
835.75	1,650	0	0
836.75	3,500	2,575	2,575

Device	Routing	Invert	Outlet Devices
#1	Primary	833.75'	**10.0" Round Culvert** L= 30.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 833.75' / 833.50' S= 0.0083 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.55 sf
#2	Device 1	835.75'	**3.600 in/hr Exfiltration over Surface area from 835.74' - 835.76'** Excluded Surface area = 0 sf Phase-In= 0.01'
#3	Device 1	836.25'	**36.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Secondary	836.50'	**170.0' long x 3.0' 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 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Primary OutFlow Max=1.73 cfs @ 12.21 hrs HW=836.39' TW=0.00' (Dynamic Tailwater)
└**1=Culvert** (Passes 1.73 cfs of 3.82 cfs potential flow)
  ├**2=Exfiltration** (Exfiltration Controls 0.14 cfs)
  └**3=Orifice/Grate** (Weir Controls 1.59 cfs @ 1.22 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=835.75' TW=0.00' (Dynamic Tailwater)
└**4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Subcatchment 1S: To Bio-Basin #1

Runoff = 2.53 cfs @ 12.13 hrs, Volume= 0.142 af, Depth= 1.43"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 2-Year Rainfall=2.84"

	Area (ac)	CN	Description
*	0.195	98	Impervious
	0.961	80	>75% Grass cover, Good, HSG D
*	0.040	100	Bio-Basin Area
	1.196		Weighted Average
	0.961		80.35% Pervious Area
	0.235		19.65% Impervious Area

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

Summary for Pond 2P: Bio-Basin #2

Inflow Area = 1.213 ac, 19.37% Impervious, Inflow Depth = 1.43" for 2-Year event
Inflow = 2.56 cfs @ 12.13 hrs, Volume= 0.144 af
Outflow = 1.83 cfs @ 12.21 hrs, Volume= 0.144 af, Atten= 29%, Lag= 4.6 min
Primary = 1.83 cfs @ 12.21 hrs, Volume= 0.144 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 836.39' @ 12.21 hrs Surf.Area= 2,851 sf Storage= 1,458 cf

Plug-Flow detention time= 44.0 min calculated for 0.144 af (100% of inflow)
Center-of-Mass det. time= 44.0 min (846.8 - 802.8)

Volume	Invert	Avail.Storage	Storage Description
#1	835.75'	2,588 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
835.75	1,675	0	0
836.75	3,500	2,588	2,588

Device	Routing	Invert	Outlet Devices
#1	Primary	833.75'	**10.0" Round Culvert** L= 32.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 833.75' / 833.50' S= 0.0078 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.55 sf
#2	Device 1	835.75'	**3.600 in/hr Exfiltration over Surface area from 835.74' - 835.76'** Excluded Surface area = 0 sf Phase-In= 0.01'
#3	Device 1	836.25'	**36.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Secondary	836.50'	**20.0' long x 3.0' 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
Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Primary OutFlow Max=1.75 cfs @ 12.21 hrs HW=836.39' TW=0.00' (Dynamic Tailwater)
- **1=Culvert** (Passes 1.75 cfs of 3.76 cfs potential flow)
- **2=Exfiltration** (Exfiltration Controls 0.14 cfs)
- **3=Orifice/Grate** (Weir Controls 1.61 cfs @ 1.22 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=835.75' TW=0.00' (Dynamic Tailwater)
- **4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Subcatchment 2S: To Bio-Basin #2

Runoff = 2.56 cfs @ 12.13 hrs, Volume= 0.144 af, Depth= 1.43"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 2-Year Rainfall=2.84"

	Area (ac)	CN	Description
*	0.195	98	Impervious
	0.978	80	>75% Grass cover, Good, HSG D
*	0.040	100	Bio-Basin Area
	1.213		Weighted Average
	0.978		80.63% Pervious Area
	0.235		19.37% Impervious Area

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

Summary for Pond 3P: Bio-Basin #3

Inflow Area = 1.326 ac, 17.72% Impervious, Inflow Depth = 1.40" for 2-Year event
Inflow = 2.76 cfs @ 12.13 hrs, Volume= 0.155 af
Outflow = 2.10 cfs @ 12.20 hrs, Volume= 0.155 af, Atten= 24%, Lag= 4.1 min
Primary = 2.10 cfs @ 12.20 hrs, Volume= 0.155 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 836.91' @ 12.20 hrs Surf.Area= 2,696 sf Storage= 1,480 cf

Plug-Flow detention time= 40.6 min calculated for 0.155 af (100% of inflow)
Center-of-Mass det. time= 40.6 min (845.3 - 804.8)

Volume	Invert	Avail.Storage	Storage Description
#1	836.25'	3,313 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
836.25	1,800	0	0
837.50	3,500	3,313	3,313

Device	Routing	Invert	Outlet Devices
#1	Primary	834.25'	**10.0" Round Culvert** L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 834.25' / 834.00' S= 0.0025 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.55 sf
#2	Device 1	836.25'	**3.600 in/hr Exfiltration over Surface area from 836.24' - 836.26'** Excluded Surface area = 0 sf Phase-In= 0.01'
#3	Device 1	836.75'	**36.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Secondary	837.00'	**10.0' long x 3.0' 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 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Primary OutFlow Max=2.07 cfs @ 12.20 hrs HW=836.91' TW=0.00' (Dynamic Tailwater)
└─**1=Culvert** (Passes 2.07 cfs of 2.69 cfs potential flow)
  ├─**2=Exfiltration** (Exfiltration Controls 0.15 cfs)
  └─**3=Orifice/Grate** (Weir Controls 1.92 cfs @ 1.30 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=836.25' TW=0.00' (Dynamic Tailwater)
└─**4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Subcatchment 3S: To Bio-Basin #3

Runoff = 2.76 cfs @ 12.13 hrs, Volume= 0.155 af, Depth= 1.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 2-Year Rainfall=2.84"

	Area (ac)	CN	Description
*	0.195	98	Impervious
	1.091	80	>75% Grass cover, Good, HSG D
*	0.040	100	Bio-Basin Area
	1.326		Weighted Average
	1.091		82.28% Pervious Area
	0.235		17.72% Impervious Area

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

Summary for Subcatchment 5S: Uncontrolled

Runoff = 11.51 cfs @ 12.46 hrs, Volume= 1.278 af, Depth= 1.04"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 2-Year Rainfall=2.84"

	Area (ac)	CN	Description
*	0.328	98	Impervious
*	0.390	61	Grass, HSG B
*	1.961	78	Grass, HSG D
*	1.168	55	Woods, HSG B
*	1.338	77	Woods, HSG D
*	5.935	78	Ag, HSG C
*	3.690	83	Ag, HSG D
	14.810		Weighted Average
	14.482		97.79% Pervious Area
	0.328		2.21% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.4	100	0.0300	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.84"
11.8	500	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
31.2	600	Total			

Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Link 1L: Post-Development Inflow=25.91 cfs 3.177 af
Primary=25.91 cfs 3.177 af

Pond 1P: Bio-Basin #1 Peak Elev=836.50' Storage=1,758 cf Inflow=4.39 cfs 0.246 af
Primary=3.96 cfs 0.246 af Secondary=0.00 cfs 0.000 af Outflow=3.96 cfs 0.246 af

Subcatchment 1S: To Bio-Basin #1 Runoff Area=1.196 ac 19.65% Impervious Runoff Depth=2.47"
Tc=6.0 min CN=WQ Runoff=4.39 cfs 0.246 af

Pond 2P: Bio-Basin #2 Peak Elev=836.51' Storage=1,786 cf Inflow=4.44 cfs 0.249 af
Primary=3.94 cfs 0.249 af Secondary=0.01 cfs 0.000 af Outflow=3.95 cfs 0.249 af

Subcatchment 2S: To Bio-Basin #2 Runoff Area=1.213 ac 19.37% Impervious Runoff Depth=2.46"
Tc=6.0 min CN=WQ Runoff=4.44 cfs 0.249 af

Pond 3P: Bio-Basin #3 Peak Elev=837.11' Storage=2,057 cf Inflow=4.82 cfs 0.269 af
Primary=2.82 cfs 0.261 af Secondary=0.91 cfs 0.008 af Outflow=3.73 cfs 0.269 af

Subcatchment 3S: To Bio-Basin #3 Runoff Area=1.326 ac 17.72% Impervious Runoff Depth=2.43"
Tc=6.0 min CN=WQ Runoff=4.82 cfs 0.269 af

Subcatchment 5S: Uncontrolled Runoff Area=14.810 ac 2.21% Impervious Runoff Depth=1.96"
Flow Length=600' Tc=31.2 min CN=WQ Runoff=22.32 cfs 2.414 af

Total Runoff Area = 18.545 ac Runoff Volume = 3.177 af Average Runoff Depth = 2.06"
94.43% Pervious = 17.512 ac 5.57% Impervious = 1.033 ac

Summary for Link 1L: Post-Development

Inflow Area = 18.545 ac, 5.57% Impervious, Inflow Depth = 2.06" for 10-Year event
Inflow = 25.91 cfs @ 12.39 hrs, Volume= 3.177 af
Primary = 25.91 cfs @ 12.39 hrs, Volume= 3.177 af, Atten= 0%, Lag= 0.0 min

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

Summary for Pond 1P: Bio-Basin #1

Inflow Area = 1.196 ac, 19.65% Impervious, Inflow Depth = 2.47" for 10-Year event
Inflow = 4.39 cfs @ 12.13 hrs, Volume= 0.246 af
Outflow = 3.96 cfs @ 12.16 hrs, Volume= 0.246 af, Atten= 10%, Lag= 1.9 min
Primary = 3.96 cfs @ 12.16 hrs, Volume= 0.246 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 836.50' @ 12.16 hrs Surf.Area= 3,038 sf Storage= 1,758 cf

Plug-Flow detention time= 37.7 min calculated for 0.246 af (100% of inflow)
Center-of-Mass det. time= 37.7 min (832.4 - 794.7)

Volume	Invert	Avail.Storage	Storage Description
#1	835.75'	2,575 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
835.75	1,650	0	0
836.75	3,500	2,575	2,575

Device	Routing	Invert	Outlet Devices
#1	Primary	833.75'	**10.0" Round Culvert** L= 30.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 833.75' / 833.50' S= 0.0083 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.55 sf
#2	Device 1	835.75'	**3.600 in/hr Exfiltration over Surface area from 835.74' - 835.76'** Excluded Surface area = 0 sf Phase-In= 0.01'
#3	Device 1	836.25'	**36.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Secondary	836.50'	**170.0' long x 3.0' 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 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Primary OutFlow Max=3.87 cfs @ 12.16 hrs HW=836.49' TW=0.00' (Dynamic Tailwater)
└**1=Culvert** (Passes 3.87 cfs of 3.92 cfs potential flow)
  ├**2=Exfiltration** (Exfiltration Controls 0.14 cfs)
  └**3=Orifice/Grate** (Weir Controls 3.73 cfs @ 1.62 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=835.75' TW=0.00' (Dynamic Tailwater)
└**4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Subcatchment 1S: To Bio-Basin #1

Runoff = 4.39 cfs @ 12.13 hrs, Volume= 0.246 af, Depth= 2.47"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 10-Year Rainfall=4.09"

	Area (ac)	CN	Description
*	0.195	98	Impervious
	0.961	80	>75% Grass cover, Good, HSG D
*	0.040	100	Bio-Basin Area
	1.196		Weighted Average
	0.961		80.35% Pervious Area
	0.235		19.65% Impervious Area

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

Summary for Pond 2P: Bio-Basin #2

Inflow Area = 1.213 ac, 19.37% Impervious, Inflow Depth = 2.46" for 10-Year event
Inflow = 4.44 cfs @ 12.13 hrs, Volume= 0.249 af
Outflow = 3.95 cfs @ 12.17 hrs, Volume= 0.249 af, Atten= 11%, Lag= 2.3 min
Primary = 3.94 cfs @ 12.17 hrs, Volume= 0.249 af
Secondary = 0.01 cfs @ 12.15 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 836.51' @ 12.16 hrs Surf.Area= 3,054 sf Storage= 1,786 cf

Plug-Flow detention time= 37.5 min calculated for 0.249 af (100% of inflow)
Center-of-Mass det. time= 37.5 min (832.5 - 795.0)

Volume	Invert	Avail.Storage	Storage Description
#1	835.75'	2,588 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
835.75	1,675	0	0
836.75	3,500	2,588	2,588

Device	Routing	Invert	Outlet Devices
#1	Primary	833.75'	**10.0" Round Culvert** L= 32.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 833.75' / 833.50' S= 0.0078 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.55 sf
#2	Device 1	835.75'	**3.600 in/hr Exfiltration over Surface area from 835.74' - 835.76'** Excluded Surface area = 0 sf Phase-In= 0.01'
#3	Device 1	836.25'	**36.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Secondary	836.50'	**20.0' long x 3.0' 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
Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Primary OutFlow Max=3.86 cfs @ 12.17 hrs HW=836.50' TW=0.00' (Dynamic Tailwater)
- **1=Culvert** (Barrel Controls 3.86 cfs @ 7.08 fps)
- **2=Exfiltration** (Passes < 0.14 cfs potential flow)
- **3=Orifice/Grate** (Passes < 3.81 cfs potential flow)

Secondary OutFlow Max=0.01 cfs @ 12.15 hrs HW=836.50' TW=0.00' (Dynamic Tailwater)
- **4=Broad-Crested Rectangular Weir** (Weir Controls 0.01 cfs @ 0.13 fps)

Summary for Subcatchment 2S: To Bio-Basin #2

Runoff = 4.44 cfs @ 12.13 hrs, Volume= 0.249 af, Depth= 2.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 10-Year Rainfall=4.09"

	Area (ac)	CN	Description
*	0.195	98	Impervious
	0.978	80	>75% Grass cover, Good, HSG D
*	0.040	100	Bio-Basin Area
	1.213		Weighted Average
	0.978		80.63% Pervious Area
	0.235		19.37% Impervious Area

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

Summary for Pond 3P: Bio-Basin #3

Inflow Area = 1.326 ac, 17.72% Impervious, Inflow Depth = 2.43" for 10-Year event
Inflow = 4.82 cfs @ 12.13 hrs, Volume= 0.269 af
Outflow = 3.73 cfs @ 12.19 hrs, Volume= 0.269 af, Atten= 23%, Lag= 3.5 min
Primary = 2.82 cfs @ 12.19 hrs, Volume= 0.261 af
Secondary = 0.91 cfs @ 12.19 hrs, Volume= 0.008 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 837.11' @ 12.19 hrs Surf.Area= 2,972 sf Storage= 2,057 cf

Plug-Flow detention time= 34.9 min calculated for 0.268 af (100% of inflow)
Center-of-Mass det. time= 34.9 min (831.5 - 796.6)

Volume	Invert	Avail.Storage	Storage Description
#1	836.25'	3,313 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
836.25	1,800	0	0
837.50	3,500	3,313	3,313

Device	Routing	Invert	Outlet Devices
#1	Primary	834.25'	**10.0" Round Culvert** L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 834.25' / 834.00' S= 0.0025 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.55 sf
#2	Device 1	836.25'	**3.600 in/hr Exfiltration over Surface area from 836.24' - 836.26'** Excluded Surface area = 0 sf Phase-In= 0.01'
#3	Device 1	836.75'	**36.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Secondary	837.00'	**10.0' long x 3.0' 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 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Primary OutFlow Max=2.81 cfs @ 12.19 hrs HW=837.11' TW=0.00' (Dynamic Tailwater)
└─**1=Culvert** (Barrel Controls 2.81 cfs @ 5.16 fps)
└─**2=Exfiltration** (Passes < 0.15 cfs potential flow)
└─**3=Orifice/Grate** (Passes < 6.55 cfs potential flow)

Secondary OutFlow Max=0.85 cfs @ 12.19 hrs HW=837.11' TW=0.00' (Dynamic Tailwater)
└─**4=Broad-Crested Rectangular Weir** (Weir Controls 0.85 cfs @ 0.80 fps)

Summary for Subcatchment 3S: To Bio-Basin #3

Runoff = 4.82 cfs @ 12.13 hrs, Volume= 0.269 af, Depth= 2.43"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 10-Year Rainfall=4.09"

	Area (ac)	CN	Description
*	0.195	98	Impervious
	1.091	80	>75% Grass cover, Good, HSG D
*	0.040	100	Bio-Basin Area
	1.326		Weighted Average
	1.091		82.28% Pervious Area
	0.235		17.72% Impervious Area

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

Summary for Subcatchment 5S: Uncontrolled

Runoff = 22.32 cfs @ 12.45 hrs, Volume= 2.414 af, Depth= 1.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 10-Year Rainfall=4.09"

	Area (ac)	CN	Description
*	0.328	98	Impervious
*	0.390	61	Grass, HSG B
*	1.961	78	Grass, HSG D
*	1.168	55	Woods, HSG B
*	1.338	77	Woods, HSG D
*	5.935	78	Ag, HSG C
*	3.690	83	Ag, HSG D
	14.810		Weighted Average
	14.482		97.79% Pervious Area
	0.328		2.21% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.4	100	0.0300	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.84"
11.8	500	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
31.2	600	Total			

Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Link 1L: Post-Development Inflow=54.21 cfs 6.570 af
Primary=54.21 cfs 6.570 af

Pond 1P: Bio-Basin #1 Peak Elev=836.55' Storage=1,907 cf Inflow=8.41 cfs 0.477 af
Primary=3.96 cfs 0.432 af Secondary=4.38 cfs 0.045 af Outflow=8.34 cfs 0.477 af

Subcatchment 1S: To Bio-Basin #1 Runoff Area=1.196 ac 19.65% Impervious Runoff Depth=4.79"
Tc=6.0 min CN=WQ Runoff=8.41 cfs 0.477 af

Pond 2P: Bio-Basin #2 Peak Elev=836.69' Storage=2,368 cf Inflow=8.52 cfs 0.484 af
Primary=4.03 cfs 0.440 af Secondary=3.92 cfs 0.043 af Outflow=7.94 cfs 0.484 af

Subcatchment 2S: To Bio-Basin #2 Runoff Area=1.213 ac 19.37% Impervious Runoff Depth=4.78"
Tc=6.0 min CN=WQ Runoff=8.52 cfs 0.484 af

Pond 3P: Bio-Basin #3 Peak Elev=837.36' Storage=2,822 cf Inflow=9.28 cfs 0.525 af
Primary=2.96 cfs 0.444 af Secondary=5.39 cfs 0.081 af Outflow=8.36 cfs 0.525 af

Subcatchment 3S: To Bio-Basin #3 Runoff Area=1.326 ac 17.72% Impervious Runoff Depth=4.75"
Tc=6.0 min CN=WQ Runoff=9.28 cfs 0.525 af

Subcatchment 5S: Uncontrolled Runoff Area=14.810 ac 2.21% Impervious Runoff Depth=4.12"
Flow Length=600' Tc=31.2 min CN=WQ Runoff=47.29 cfs 5.084 af

Total Runoff Area = 18.545 ac Runoff Volume = 6.570 af Average Runoff Depth = 4.25"
94.43% Pervious = 17.512 ac 5.57% Impervious = 1.033 ac

Summary for Link 1L: Post-Development

Inflow Area = 18.545 ac, 5.57% Impervious, Inflow Depth = 4.25" for 100-Year event
Inflow = 54.21 cfs @ 12.41 hrs, Volume= 6.570 af
Primary = 54.21 cfs @ 12.41 hrs, Volume= 6.570 af, Atten= 0%, Lag= 0.0 min

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

Summary for Pond 1P: Bio-Basin #1

Inflow Area = 1.196 ac, 19.65% Impervious, Inflow Depth = 4.79" for 100-Year event
Inflow = 8.41 cfs @ 12.13 hrs, Volume= 0.477 af
Outflow = 8.34 cfs @ 12.13 hrs, Volume= 0.477 af, Atten= 1%, Lag= 0.3 min
Primary = 3.96 cfs @ 12.13 hrs, Volume= 0.432 af
Secondary = 4.38 cfs @ 12.13 hrs, Volume= 0.045 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 836.55' @ 12.13 hrs Surf.Area= 3,127 sf Storage= 1,907 cf

Plug-Flow detention time= 33.2 min calculated for 0.477 af (100% of inflow)
Center-of-Mass det. time= 33.2 min (816.9 - 783.7)

Volume	Invert	Avail.Storage	Storage Description
#1	835.75'	2,575 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
835.75	1,650	0	0
836.75	3,500	2,575	2,575

Device	Routing	Invert	Outlet Devices
#1	Primary	833.75'	**10.0" Round Culvert** L= 30.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 833.75' / 833.50' S= 0.0083 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.55 sf
#2	Device 1	835.75'	**3.600 in/hr Exfiltration over Surface area from 835.74' - 835.76'** Excluded Surface area = 0 sf Phase-In= 0.01'
#3	Device 1	836.25'	**36.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Secondary	836.50'	**170.0' long x 3.0' 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 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Primary OutFlow Max=3.96 cfs @ 12.13 hrs HW=836.55' TW=0.00' (Dynamic Tailwater)
└**1=Culvert** (Barrel Controls 3.96 cfs @ 7.26 fps)
└**2=Exfiltration** (Passes < 0.14 cfs potential flow)
└**3=Orifice/Grate** (Passes < 4.96 cfs potential flow)

Secondary OutFlow Max=4.08 cfs @ 12.13 hrs HW=836.55' TW=0.00' (Dynamic Tailwater)
└**4=Broad-Crested Rectangular Weir** (Weir Controls 4.08 cfs @ 0.52 fps)

Summary for Subcatchment 1S: To Bio-Basin #1

Runoff = 8.41 cfs @ 12.13 hrs, Volume= 0.477 af, Depth= 4.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 100-Year Rainfall=6.66"

	Area (ac)	CN	Description
*	0.195	98	Impervious
	0.961	80	>75% Grass cover, Good, HSG D
*	0.040	100	Bio-Basin Area
	1.196		Weighted Average
	0.961		80.35% Pervious Area
	0.235		19.65% Impervious Area

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

Summary for Pond 2P: Bio-Basin #2

Inflow Area = 1.213 ac, 19.37% Impervious, Inflow Depth = 4.78" for 100-Year event
Inflow = 8.52 cfs @ 12.13 hrs, Volume= 0.484 af
Outflow = 7.94 cfs @ 12.16 hrs, Volume= 0.484 af, Atten= 7%, Lag= 1.7 min
Primary = 4.03 cfs @ 12.16 hrs, Volume= 0.440 af
Secondary = 3.92 cfs @ 12.16 hrs, Volume= 0.043 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 836.69' @ 12.16 hrs Surf.Area= 3,384 sf Storage= 2,368 cf

Plug-Flow detention time= 33.2 min calculated for 0.483 af (100% of inflow)
Center-of-Mass det. time= 33.2 min (817.2 - 783.9)

Volume	Invert	Avail.Storage	Storage Description
#1	835.75'	2,588 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
835.75	1,675	0	0
836.75	3,500	2,588	2,588

Device	Routing	Invert	Outlet Devices
#1	Primary	833.75'	**10.0" Round Culvert** L= 32.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 833.75' / 833.50' S= 0.0078 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.55 sf
#2	Device 1	835.75'	**3.600 in/hr Exfiltration over Surface area from 835.74' - 835.76'** Excluded Surface area = 0 sf Phase-In= 0.01'
#3	Device 1	836.25'	**36.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Secondary	836.50'	**20.0' long x 3.0' 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
Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Primary OutFlow Max=4.02 cfs @ 12.16 hrs HW=836.68' TW=0.00' (Dynamic Tailwater)
- **1=Culvert** (Barrel Controls 4.02 cfs @ 7.37 fps)
- **2=Exfiltration** (Passes < 0.14 cfs potential flow)
- **3=Orifice/Grate** (Passes < 8.70 cfs potential flow)

Secondary OutFlow Max=3.75 cfs @ 12.16 hrs HW=836.68' TW=0.00' (Dynamic Tailwater)
- **4=Broad-Crested Rectangular Weir** (Weir Controls 3.75 cfs @ 1.04 fps)

Summary for Subcatchment 2S: To Bio-Basin #2

Runoff = 8.52 cfs @ 12.13 hrs, Volume= 0.484 af, Depth= 4.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 100-Year Rainfall=6.66"

	Area (ac)	CN	Description
*	0.195	98	Impervious
	0.978	80	>75% Grass cover, Good, HSG D
*	0.040	100	Bio-Basin Area
	1.213		Weighted Average
	0.978		80.63% Pervious Area
	0.235		19.37% Impervious Area

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

Summary for Pond 3P: Bio-Basin #3

Inflow Area = 1.326 ac, 17.72% Impervious, Inflow Depth = 4.75" for 100-Year event
Inflow = 9.28 cfs @ 12.13 hrs, Volume= 0.525 af
Outflow = 8.36 cfs @ 12.16 hrs, Volume= 0.525 af, Atten= 10%, Lag= 2.0 min
Primary = 2.96 cfs @ 12.16 hrs, Volume= 0.444 af
Secondary = 5.39 cfs @ 12.16 hrs, Volume= 0.081 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 837.36' @ 12.16 hrs Surf.Area= 3,304 sf Storage= 2,822 cf

Plug-Flow detention time= 31.3 min calculated for 0.525 af (100% of inflow)
Center-of-Mass det. time= 31.3 min (816.5 - 785.2)

Volume	Invert	Avail.Storage	Storage Description
#1	836.25'	3,313 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
836.25	1,800	0	0
837.50	3,500	3,313	3,313

Device	Routing	Invert	Outlet Devices
#1	Primary	834.25'	**10.0" Round Culvert** L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 834.25' / 834.00' S= 0.0025 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.55 sf
#2	Device 1	836.25'	**3.600 in/hr Exfiltration over Surface area from 836.24' - 836.26'** Excluded Surface area = 0 sf Phase-In= 0.01'
#3	Device 1	836.75'	**36.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Secondary	837.00'	**10.0' long x 3.0' 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 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Primary OutFlow Max=2.96 cfs @ 12.16 hrs HW=837.34' TW=0.00' (Dynamic Tailwater)
└─**1=Culvert** (Barrel Controls 2.96 cfs @ 5.42 fps)
└─**2=Exfiltration** (Passes < 0.15 cfs potential flow)
└─**3=Orifice/Grate** (Passes < 14.13 cfs potential flow)

Secondary OutFlow Max=5.15 cfs @ 12.16 hrs HW=837.34' TW=0.00' (Dynamic Tailwater)
└─**4=Broad-Crested Rectangular Weir** (Weir Controls 5.15 cfs @ 1.49 fps)

Summary for Subcatchment 3S: To Bio-Basin #3

Runoff = 9.28 cfs @ 12.13 hrs, Volume= 0.525 af, Depth= 4.75"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 100-Year Rainfall=6.66"

	Area (ac)	CN	Description
*	0.195	98	Impervious
	1.091	80	>75% Grass cover, Good, HSG D
*	0.040	100	Bio-Basin Area
	1.326		Weighted Average
	1.091		82.28% Pervious Area
	0.235		17.72% Impervious Area

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

Summary for Subcatchment 5S: Uncontrolled

Runoff = 47.29 cfs @ 12.44 hrs, Volume= 5.084 af, Depth= 4.12"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 100-Year Rainfall=6.66"

	Area (ac)	CN	Description
*	0.328	98	Impervious
*	0.390	61	Grass, HSG B
*	1.961	78	Grass, HSG D
*	1.168	55	Woods, HSG B
*	1.338	77	Woods, HSG D
*	5.935	78	Ag, HSG C
*	3.690	83	Ag, HSG D
	14.810		Weighted Average
	14.482		97.79% Pervious Area
	0.328		2.21% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.4	100	0.0300	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.84"
11.8	500	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
31.2	600	Total			

Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Link 1L: Post-Development Inflow=63.92 cfs 7.783 af
Primary=63.92 cfs 7.783 af

Pond 1P: Bio-Basin #1 Peak Elev=836.56' Storage=1,939 cf Inflow=9.78 cfs 0.559 af
Primary=3.97 cfs 0.492 af Secondary=5.85 cfs 0.067 af Outflow=9.82 cfs 0.559 af

Subcatchment 1S: To Bio-Basin #1 Runoff Area=1.196 ac 19.65% Impervious Runoff Depth=5.61"
Tc=6.0 min CN=WQ Runoff=9.78 cfs 0.559 af

Pond 2P: Bio-Basin #2 Peak Elev=836.73' Storage=2,507 cf Inflow=9.92 cfs 0.566 af
Primary=4.06 cfs 0.501 af Secondary=5.31 cfs 0.066 af Outflow=9.37 cfs 0.566 af

Subcatchment 2S: To Bio-Basin #2 Runoff Area=1.213 ac 19.37% Impervious Runoff Depth=5.60"
Tc=6.0 min CN=WQ Runoff=9.92 cfs 0.566 af

Pond 3P: Bio-Basin #3 Peak Elev=837.41' Storage=3,017 cf Inflow=10.81 cfs 0.615 af
Primary=3.00 cfs 0.502 af Secondary=6.89 cfs 0.113 af Outflow=9.89 cfs 0.615 af

Subcatchment 3S: To Bio-Basin #3 Runoff Area=1.326 ac 17.72% Impervious Runoff Depth=5.57"
Tc=6.0 min CN=WQ Runoff=10.81 cfs 0.615 af

Subcatchment 5S: Uncontrolled Runoff Area=14.810 ac 2.21% Impervious Runoff Depth=4.90"
Flow Length=600' Tc=31.2 min CN=WQ Runoff=56.08 cfs 6.043 af

Total Runoff Area = 18.545 ac Runoff Volume = 7.783 af Average Runoff Depth = 5.04"
94.43% Pervious = 17.512 ac 5.57% Impervious = 1.033 ac

Summary for Link 1L: Post-Development

Inflow Area = 18.545 ac, 5.57% Impervious, Inflow Depth = 5.04" for 200-Year event
Inflow = 63.92 cfs @ 12.41 hrs, Volume= 7.783 af
Primary = 63.92 cfs @ 12.41 hrs, Volume= 7.783 af, Atten= 0%, Lag= 0.0 min

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

Summary for Pond 1P: Bio-Basin #1

Inflow Area = 1.196 ac, 19.65% Impervious, Inflow Depth = 5.61" for 200-Year event
Inflow = 9.78 cfs @ 12.13 hrs, Volume= 0.559 af
Outflow = 9.82 cfs @ 12.14 hrs, Volume= 0.559 af, Atten= 0%, Lag= 0.5 min
Primary = 3.97 cfs @ 12.14 hrs, Volume= 0.492 af
Secondary = 5.85 cfs @ 12.14 hrs, Volume= 0.067 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 836.56' @ 12.14 hrs Surf.Area= 3,146 sf Storage= 1,939 cf

Plug-Flow detention time= 31.7 min calculated for 0.559 af (100% of inflow)
Center-of-Mass det. time= 31.7 min (812.6 - 781.0)

Volume	Invert	Avail.Storage	Storage Description
#1	835.75'	2,575 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
835.75	1,650	0	0
836.75	3,500	2,575	2,575

Device	Routing	Invert	Outlet Devices
#1	Primary	833.75'	**10.0" Round Culvert** L= 30.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 833.75' / 833.50' S= 0.0083 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.55 sf
#2	Device 1	835.75'	**3.600 in/hr Exfiltration over Surface area from 835.74' - 835.76'** Excluded Surface area = 0 sf Phase-In= 0.01'
#3	Device 1	836.25'	**36.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Secondary	836.50'	**170.0' long x 3.0' 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 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Primary OutFlow Max=3.97 cfs @ 12.14 hrs HW=836.56' TW=0.00' (Dynamic Tailwater)
└**1=Culvert** (Barrel Controls 3.97 cfs @ 7.28 fps)
└**2=Exfiltration** (Passes < 0.14 cfs potential flow)
└**3=Orifice/Grate** (Passes < 5.21 cfs potential flow)

Secondary OutFlow Max=5.48 cfs @ 12.14 hrs HW=836.56' TW=0.00' (Dynamic Tailwater)
└**4=Broad-Crested Rectangular Weir** (Weir Controls 5.48 cfs @ 0.58 fps)

Summary for Subcatchment 1S: To Bio-Basin #1

Runoff = 9.78 cfs @ 12.13 hrs, Volume= 0.559 af, Depth= 5.61"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 200-Year Rainfall=7.53"

	Area (ac)	CN	Description
*	0.195	98	Impervious
	0.961	80	>75% Grass cover, Good, HSG D
*	0.040	100	Bio-Basin Area
	1.196		Weighted Average
	0.961		80.35% Pervious Area
	0.235		19.65% Impervious Area

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

Summary for Pond 2P: Bio-Basin #2

Inflow Area = 1.213 ac, 19.37% Impervious, Inflow Depth = 5.60" for 200-Year event
Inflow = 9.92 cfs @ 12.13 hrs, Volume= 0.566 af
Outflow = 9.37 cfs @ 12.15 hrs, Volume= 0.566 af, Atten= 5%, Lag= 1.5 min
Primary = 4.06 cfs @ 12.15 hrs, Volume= 0.501 af
Secondary = 5.31 cfs @ 12.15 hrs, Volume= 0.066 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 836.73' @ 12.15 hrs Surf.Area= 3,458 sf Storage= 2,507 cf

Plug-Flow detention time= 31.8 min calculated for 0.566 af (100% of inflow)
Center-of-Mass det. time= 31.7 min (812.9 - 781.1)

Volume	Invert	Avail.Storage	Storage Description
#1	835.75'	2,588 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
835.75	1,675	0	0
836.75	3,500	2,588	2,588

Device	Routing	Invert	Outlet Devices
#1	Primary	833.75'	**10.0" Round Culvert** L= 32.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 833.75' / 833.50' S= 0.0078 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.55 sf
#2	Device 1	835.75'	**3.600 in/hr Exfiltration over Surface area from 835.74' - 835.76'** Excluded Surface area = 0 sf Phase-In= 0.01'
#3	Device 1	836.25'	**36.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Secondary	836.50'	**20.0' long x 3.0' 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
Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Primary OutFlow Max=4.06 cfs @ 12.15 hrs HW=836.72' TW=0.00' (Dynamic Tailwater)
- **1=Culvert** (Barrel Controls 4.06 cfs @ 7.44 fps)
- **2=Exfiltration** (Passes < 0.14 cfs potential flow)
- **3=Orifice/Grate** (Passes < 10.03 cfs potential flow)

Secondary OutFlow Max=5.19 cfs @ 12.15 hrs HW=836.72' TW=0.00' (Dynamic Tailwater)
- **4=Broad-Crested Rectangular Weir** (Weir Controls 5.19 cfs @ 1.16 fps)

Summary for Subcatchment 2S: To Bio-Basin #2

Runoff = 9.92 cfs @ 12.13 hrs, Volume= 0.566 af, Depth= 5.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 200-Year Rainfall=7.53"

	Area (ac)	CN	Description
*	0.195	98	Impervious
	0.978	80	>75% Grass cover, Good, HSG D
*	0.040	100	Bio-Basin Area
	1.213		Weighted Average
	0.978		80.63% Pervious Area
	0.235		19.37% Impervious Area

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

Summary for Pond 3P: Bio-Basin #3

Inflow Area = 1.326 ac, 17.72% Impervious, Inflow Depth = 5.57" for 200-Year event
Inflow = 10.81 cfs @ 12.13 hrs, Volume= 0.615 af
Outflow = 9.89 cfs @ 12.16 hrs, Volume= 0.615 af, Atten= 8%, Lag= 1.8 min
Primary = 3.00 cfs @ 12.16 hrs, Volume= 0.502 af
Secondary = 6.89 cfs @ 12.16 hrs, Volume= 0.113 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 837.41' @ 12.16 hrs Surf.Area= 3,383 sf Storage= 3,017 cf

Plug-Flow detention time= 29.9 min calculated for 0.615 af (100% of inflow)
Center-of-Mass det. time= 29.9 min (812.2 - 782.3)

Volume	Invert	Avail.Storage	Storage Description
#1	836.25'	3,313 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
836.25	1,800	0	0
837.50	3,500	3,313	3,313

Device	Routing	Invert	Outlet Devices
#1	Primary	834.25'	**10.0" Round Culvert** L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 834.25' / 834.00' S= 0.0025 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.55 sf
#2	Device 1	836.25'	**3.600 in/hr Exfiltration over Surface area from 836.24' - 836.26'** Excluded Surface area = 0 sf Phase-In= 0.01'
#3	Device 1	836.75'	**36.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Secondary	837.00'	**10.0' long x 3.0' 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 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Primary OutFlow Max=2.99 cfs @ 12.16 hrs HW=837.40' TW=0.00' (Dynamic Tailwater)
└─**1=Culvert** (Barrel Controls 2.99 cfs @ 5.49 fps)
└─**2=Exfiltration** (Passes < 0.15 cfs potential flow)
└─**3=Orifice/Grate** (Passes < 16.33 cfs potential flow)

Secondary OutFlow Max=6.66 cfs @ 12.16 hrs HW=837.41' TW=0.00' (Dynamic Tailwater)
└─**4=Broad-Crested Rectangular Weir** (Weir Controls 6.66 cfs @ 1.64 fps)

Summary for Subcatchment 3S: To Bio-Basin #3

Runoff = 10.81 cfs @ 12.13 hrs, Volume= 0.615 af, Depth= 5.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 200-Year Rainfall=7.53"

	Area (ac)	CN	Description
*	0.195	98	Impervious
	1.091	80	>75% Grass cover, Good, HSG D
*	0.040	100	Bio-Basin Area
	1.326		Weighted Average
	1.091		82.28% Pervious Area
	0.235		17.72% Impervious Area

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

Summary for Subcatchment 5S: Uncontrolled

Runoff = 56.08 cfs @ 12.44 hrs, Volume= 6.043 af, Depth= 4.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 200-Year Rainfall=7.53"

	Area (ac)	CN	Description
*	0.328	98	Impervious
*	0.390	61	Grass, HSG B
*	1.961	78	Grass, HSG D
*	1.168	55	Woods, HSG B
*	1.338	77	Woods, HSG D
*	5.935	78	Ag, HSG C
*	3.690	83	Ag, HSG D
	14.810		Weighted Average
	14.482		97.79% Pervious Area
	0.328		2.21% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.4	100	0.0300	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.84"
11.8	500	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
31.2	600	Total			

APPENDIX C

SEDIMENT CONTROL AND INFILTRATION CALCULATIONS

SEDIMENT CONTROL & INFILTRATION CALCULATIONS

The following calculations using the WinSLAMM output indicates that the proposed development will infiltrate greater than 90% of the pre-development infiltration volume for the site and will remove 80% of total suspended solids (TSS).

Pre-development Infiltration results:

Development	Area (Acres)	SLAMM Soil Type	Average Annual Rainfall Volume (cuft)	Pre-Development Runoff Volume (cuft)	Pre-Development Infiltration Volume (cuft)
Residential	18.545	Silty	1,939,442[1]	149,824	1,789,618

1: Total Rainfall x Drainage Area = Avg. Annual Rainfall Volume
28.81 in (1 ft/12 in) x 18.545 acres (43,560 sq ft/ 1 acre) = 1,939,442 cuft

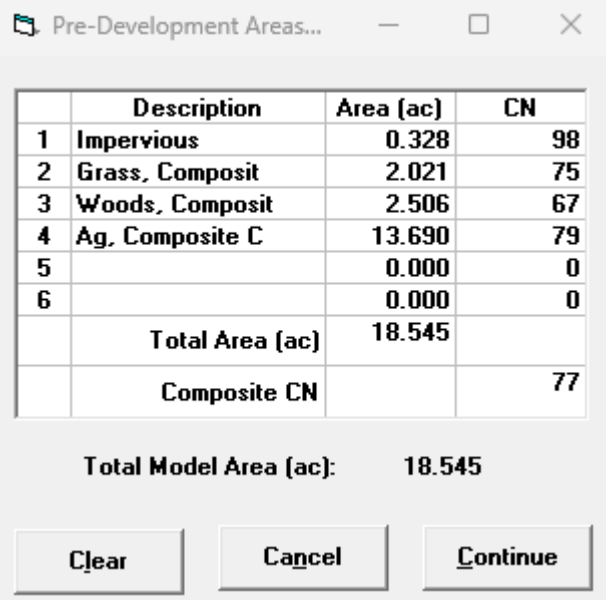
Minimum required post-development infiltration volume: 1,789,618 cuft x 0.9 = **1,610,656 cuft**

Post-Development Infiltration results:

Description	Area (Acres)	SLAMM Soil Type	Average Annual Rainfall Volume (cuft)	Post-Development Runoff Volume (cuft)	Post-Development Infiltration Volume (cuft)
Residential	18.545	Silty	1,939,442[1]	226,820	**1,712,622**

Infiltration Summary
1,712,622 cuft (Post-Development) > **1,610,656 cuft** (90% Pre-Development)

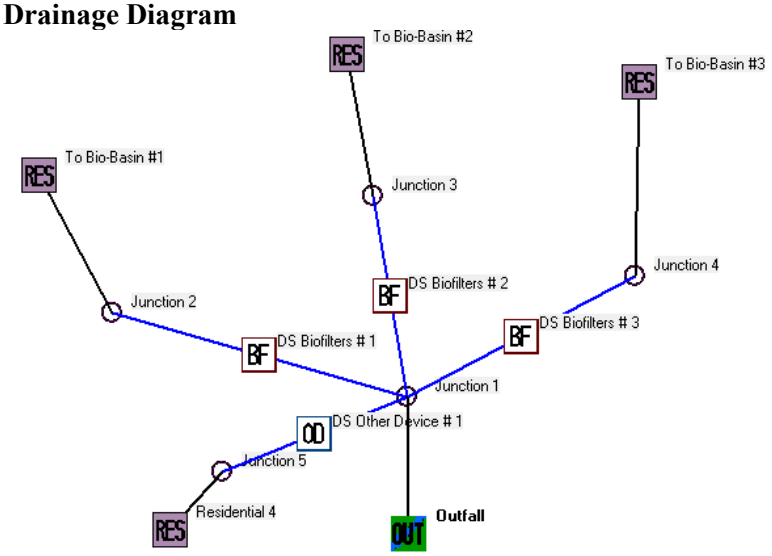
Pre-Development WinSLAMM Model Summary:



Rain Number	Start Date	Rain Total (in)	Outfall Total (cf)	Rv	Total Losses (in.)	Calculated CN*	Event Peak Flow (cfs)	Pre-Dev Runoff Vol.
Minimum:		0.00	0	0.009	0.01	73.3	0.00	0.0
Maximum:		2.59	42261	0.242	1.96	99.7	3.70	53676.0
Average:		0.26	2081	0.043	0.23	80.7	1.55	1664.7
Total:		28.81	226820		25.47			149824.00

Post-Development WinSLAMM Model Summary:

Drainage Diagram



Drainage Areas

Land Use: To Bio-Basin #1

Source Area #	Source Area	Area (acres)	Source Area Parameters	First Control Practice	Second Control Practice
	Roofs	0.103			
1	Roofs 1	0.103	Entered	--	--
	Parking	0.000			
	Driveways/Sidewalks	0.092			
25	Driveways 1	0.069	Entered	--	--
31	Sidewalks 1	0.023	Entered	--	--
	Streets	0.000			
	Landscaped Areas	0.961			
51	Small Landscaped Areas 1	0.961	Entered	--	--
	Other Areas	0.040			
70	Water Body Areas	0.040	Entered	--	--

Land Use: To Bio-Basin #3

Source Area #	Source Area	Area (acres)	Source Area Parameters	First Control Practice	Second Control Practice
	Roofs	0.103			
1	Roofs 1	0.103	Entered	--	--
	Parking	0.000			
	Driveways/Sidewalks	0.092			
25	Driveways 1	0.069	Entered	--	--
31	Sidewalks 1	0.023	Entered	--	--
	Streets	0.000			
	Landscaped Areas	1.091			
51	Small Landscaped Areas 1	1.091	Entered	--	--
	Other Areas	0.040			
70	Water Body Areas	0.040	Entered	--	--

Land Use: To Bio-Basin #2

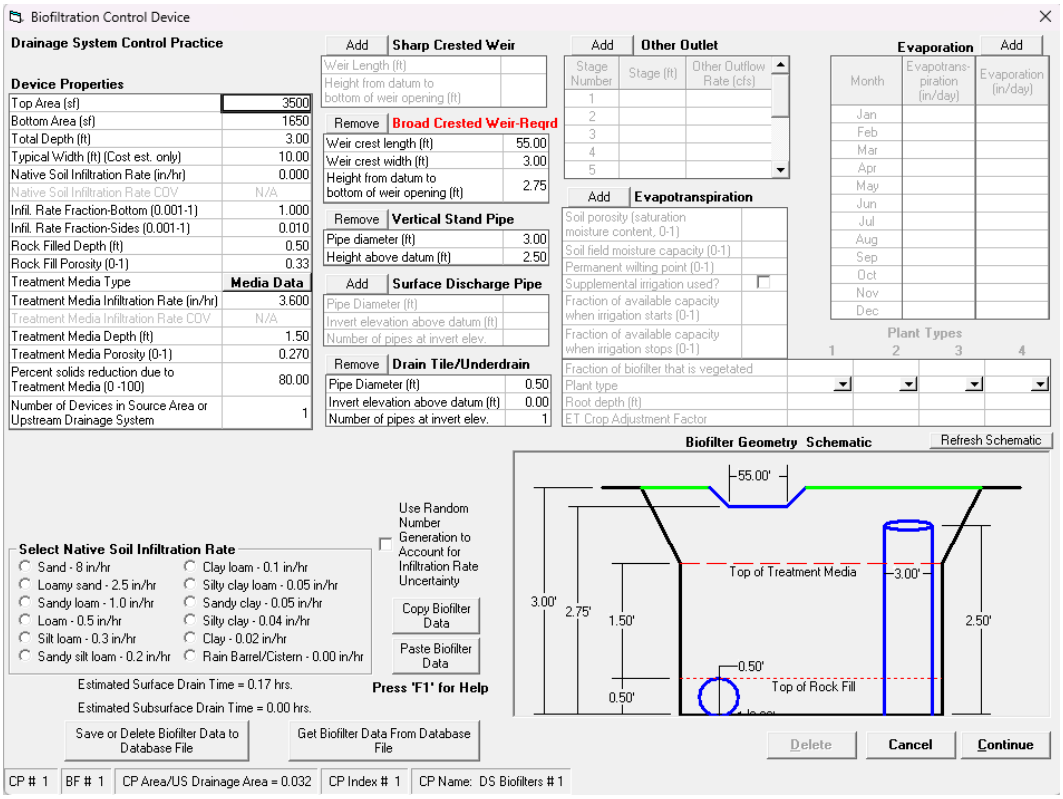
Source Area #	Source Area	Area (acres)	Source Area Parameters	First Control Practice	Second Control Practice
	Roofs	0.103			
1	Roofs 1	0.103	Entered	--	--
	Parking	0.000			
	Driveways/Sidewalks	0.092			
25	Driveways 1	0.069	Entered	--	--
31	Sidewalks 1	0.023	Entered	--	--
	Streets	0.000			
	Landscaped Areas	0.978			
51	Small Landscaped Areas 1	0.978	Entered	--	--
	Other Areas	0.040			
70	Water Body Areas	0.040	Entered	--	--

Land Use: Residential 4

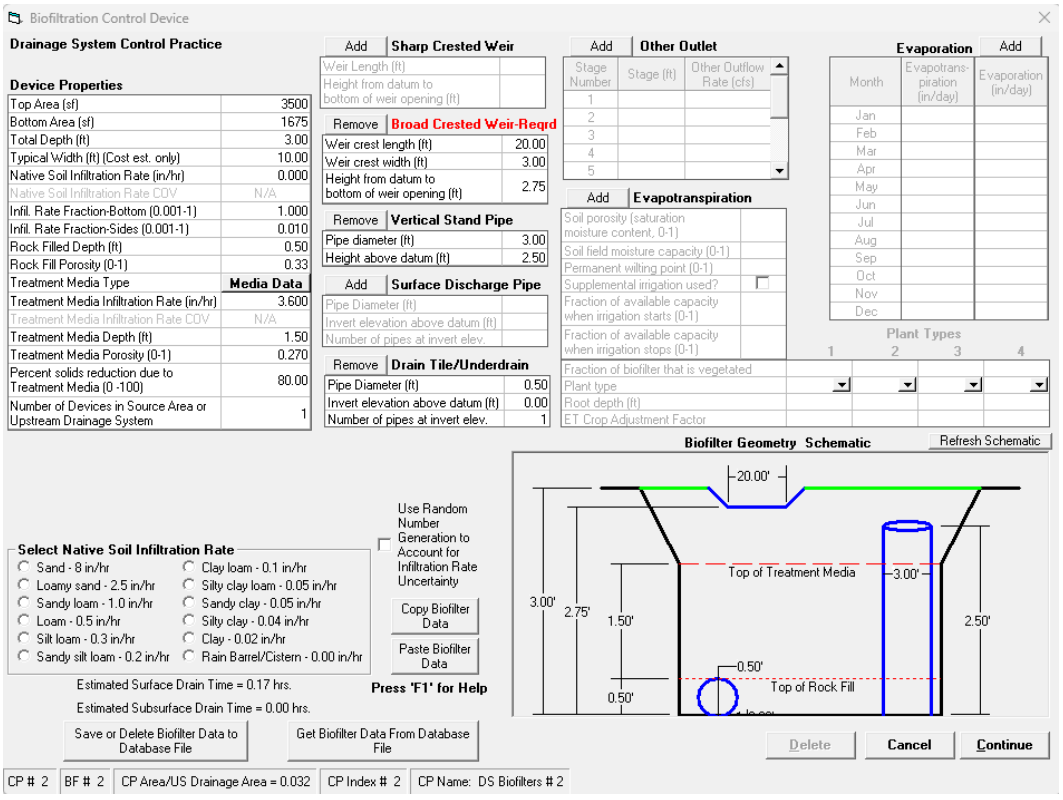
Source Area #	Source Area	Area (acres)	Source Area Parameters	First Control Practice	Second Control Practice
	Roofs	0.179			
1	Roofs 1	0.179	Entered	--	--
	Parking	0.000			
	Driveways/Sidewalks	0.149			
25	Driveways 1	0.149	Entered	--	--
	Streets	0.000			
	Landscaped Areas	14.482			
57	Undeveloped Areas 1	1.558	Entered	--	--
58	Undeveloped Areas 2	5.935	Entered	--	--
59	Undeveloped Areas 3	6.989	Entered	--	--
	Other Areas	0.000			

Land Use #	Land Use Type	Land Use Label	Land Use Area (acres)
1	Residential	To Bio-Basin #1	1.196
2	Residential	To Bio-Basin #2	1.213
3	Residential	To Bio-Basin #3	1.326
4	Residential	Residential 4	14.810

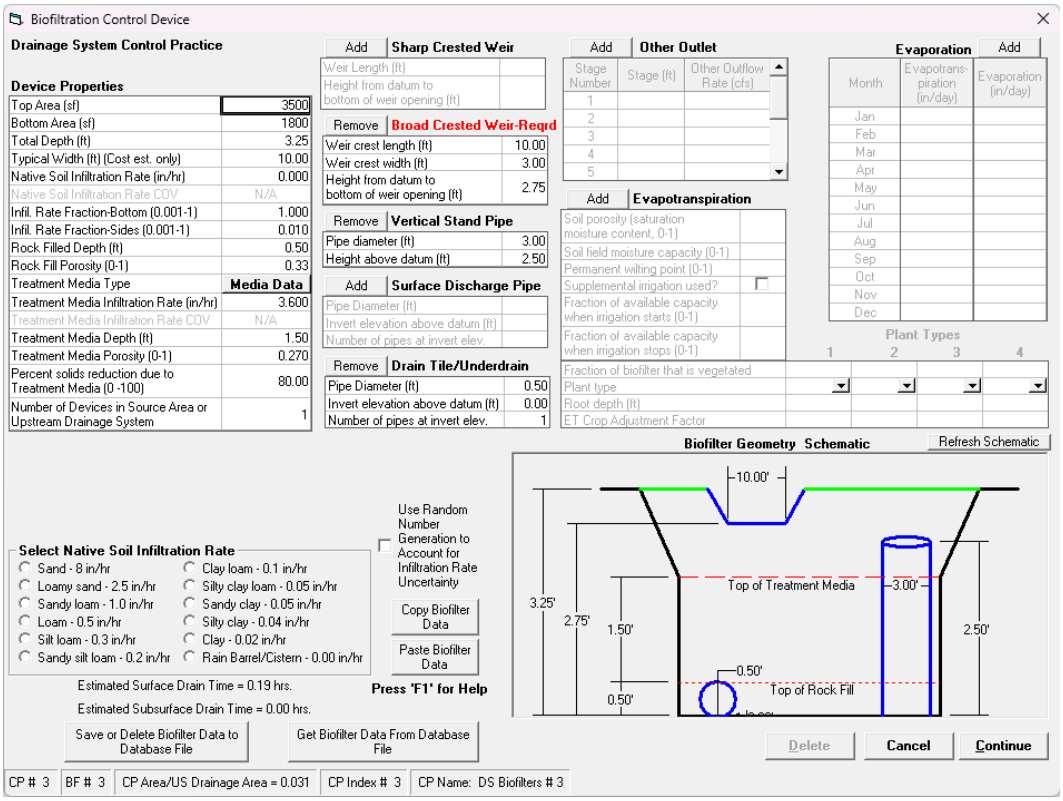
Bio-Retention #1



Bio-Retention #2



Bio-Retention #3



WinSLAMM Output Summary:

File Name:
Q:\Projects\MC-52-25\ECS\WM\WinSLAMM.mdb

Outfall Output Summary

	Runoff Volume (cu. ft.)	Percent Runoff Reduction	Runoff Coefficient (Rv)	Particulate Solids Conc. (mg/L)	Particulate Solids Yield (lbs)	Percent Particulate Solids Reduction
Total of All Land Uses without Controls	226608		0.10	41.07 (1)	581.1 (1)	
Outfall Total with Controls	226820	-0.09 %	0.10	8.222	116.4	79.97 %
Current File Output: Annualized Total After Outfall Controls	227443	Years in Model Run:	1.00		116.7	

(1) Values reduced to remove off-site loadings due to setting Other Control Device Concentration Reduction values to 1.

Print Output Summary to .csv File
Print Output Summary to Text File
Print Output Summary to Printer

Total Area Modeled (ac) 18.545

A biofilter will clog. Review biofilter control practice summary tab to determine which biofilter it is.

Total Control Practice Costs

Capital Cost	N/A
Land Cost	N/A
Annual Maintenance Cost	N/A
Present Value of All Costs	N/A
Annualized Value of All Costs	N/A

Outfall Median Particle Size (um)

No Controls	With Controls
7.80	1.67

Perform Outfall Flow Duration Curve Calculations

Receiving Water Impacts Due To Stormwater Runoff

(CWP Impervious Cover Model)

	Calculated Rv	Approximate Urban Stream Classification
Without Controls	0.10	Good
With Controls	0.10	Good

9	10	11	12	13	14	15	18	19	23	27	28	29	30	31	32	33
Percent Load Reduction	Flow Weighted Influent Conc (mg/L)	Flow Weighted Effluent Conc (mg/L)	Percent Conc. Reduction	Influent Median Part. Size (microns)	Effluent Median Part. Size (microns)	Notes	Maximum Stage (ft)	Hydraulic Volume Out (cf)	Treated Volume (cf)	Maximum Surface Ponding Time (hrs)	Maximum Subsurface Ponding Time (hrs)	Volume Infiltrated (cf)	Underdrain Discharge Vol. (cf)	Evapo-Transpir. Vol. (cf)	Minimum Soil Moist. (frac)	Surface Discharge Bypass Vol. (cf)
79.96	105.5	21.08	80.014	7.80	1.67	No Biofilter Overflows	2.49	28654	28584	6.1	8.15	0.00	28654		0.00	0.00
79.96	106.1	21.20	80.014	7.80	1.67	No Biofilter Overflows	2.49	28788	28717	6.0	8.20	0.00	28788		0.00	0.00
79.97	109.7	21.92	80.015	7.80	1.67	No Biofilter Overflows	2.50	29676	29604	5.9	8.53	0.00	29676		0.00	0.00

The TSS modeled removed is 79.97 because the 10.5.1 version of the WinSLAMM shows only 79.96 TSS reduction from bio basins even when there is no surface discharge bypassing.

WinSLAMM Input Data:

Data file name: Q:\Projects\MC-52-25\ECSWM\WinSLAMM.mdb
WinSLAMM Version 10.5.1
Rain file name: C:\WinSLAMM Files\Rain Files\WisReg - Madison WI 1981.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:
If Other Device Pollutant Load Reduction Values = 1, Off-site Pollutant Loads are Removed from Pollutant Load % Reduction calculations
Seed for random number generator: -42
Study period starting date: 01/01/81 Study period ending date: 12/31/81
Start of Winter Season: 12/02 End of Winter Season: 03/12
Date: 05-13-2026 Time: 14:41:34
Site information:

Pre-Development Area Description	Pre-Development Area (ac)	Pre-Development CN
Impervious	.328	98
Grass, Composit	2.021	75
Woods, Composit	2.506	67
Ag, Composite C	13.690	79
Total Area (ac)/Composite CN	18.545	77

LU# 1 - Residential: To Bio-Basin #1 Total area (ac): 1.196
1 - Roofs 1: 0.103 ac. Pitched Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
25 - Driveways 1: 0.069 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
31 - Sidewalks 1: 0.023 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
51 - Small Landscaped Areas 1: 0.961 ac. Normal Clayey Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
70 - Water Body Areas: 0.040 ac. Source Area PSD File:

LU# 2 - Residential: To Bio-Basin #2 Total area (ac): 1.213
1 - Roofs 1: 0.103 ac. Pitched Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
25 - Driveways 1: 0.069 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
31 - Sidewalks 1: 0.023 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz

51 - Small Landscaped Areas 1: 0.978 ac. Normal Clayey Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
70 - Water Body Areas: 0.040 ac. Source Area PSD File:

LU# 3 - Residential: To Bio-Basin #3 Total area (ac): 1.326
1 - Roofs 1: 0.103 ac. Pitched Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
25 - Driveways 1: 0.069 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
31 - Sidewalks 1: 0.023 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
51 - Small Landscaped Areas 1: 1.091 ac. Normal Clayey Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
70 - Water Body Areas: 0.040 ac. Source Area PSD File:

LU# 4 - Residential: Residential 4 Total area (ac): 14.810
1 - Roofs 1: 0.179 ac. Pitched Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
25 - Driveways 1: 0.149 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
57 - Undeveloped Areas 1: 1.558 ac. Normal Silty Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
58 - Undeveloped Areas 2: 5.935 ac. Normal Clayey Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
59 - Undeveloped Areas 3: 6.989 ac. Normal Clayey Source Area PSD File: C:\WinSLAMM Files\NURP.cpz

Control Practice 1: Biofilter CP# 1 (DS) - DS Biofilters # 1
1. Top area (square feet) = 3500
2. Bottom area (square feet) = 1650
3. Depth (ft): 3
4. Biofilter width (ft) - for Cost Purposes Only: 10
5. Infiltration rate (in/hr) = 0
6. Random infiltration rate generation? No
7. Infiltration rate fraction (side): 0.01
8. Infiltration rate fraction (bottom): 1
9. Depth of biofilter that is rock filled (ft) 0.5
10. Porosity of rock filled volume = 0.33
11. Treatment media infiltration rate: 3.6
12. Treatment media depth (ft) = 1.5
13. Treatment media porosity = 0.27
14. Percent solids reduction due to flow through treatment media = 80
17. Particle size distribution file: Not needed - calculated by program
18. Initial water surface elevation (ft): 0

Estimated Surface Drain Time = 0.17 hrs.
Estimated Subsurface Drain Time = 0.00 hrs.

Soil Data	Soil Type Fraction in Eng. Soil
User-Defined Media Type	1.000

Biofilter Outlet/Discharge Characteristics:
Outlet type: Broad Crested Weir
1. Weir crest length (ft): 55
2. Weir crest width (ft): 3
3. Height of datum to bottom of weir opening: 2.75

Outlet type: Vertical Stand Pipe
1. Stand pipe diameter (ft): 3
2. Stand pipe height above datum (ft): 2.5

Outlet type: Drain Tile/Underdrain
1. Underdrain outlet diameter (ft): 0.5
2. Invert elevation above datum (ft): 0
3. Number of underdrain outlets: 1

Control Practice 2: Biofilter CP# 2 (DS) - DS Biofilters # 2
1. Top area (square feet) = 3500
2. Bottom area (square feet) = 1675
3. Depth (ft): 3
4. Biofilter width (ft) - for Cost Purposes Only: 10
5. Infiltration rate (in/hr) = 0
6. Random infiltration rate generation? No
7. Infiltration rate fraction (side): 0.01
8. Infiltration rate fraction (bottom): 1
9. Depth of biofilter that is rock filled (ft) 0.5
10. Porosity of rock filled volume = 0.33
11. Treatment media infiltration rate: 3.6
12. Treatment media depth (ft) = 1.5
13. Treatment media porosity = 0.27
14. Percent solids reduction due to flow through treatment media = 80
17. Particle size distribution file: Not needed - calculated by program
18. Initial water surface elevation (ft): 0

Estimated Surface Drain Time = 0.17 hrs.
Estimated Subsurface Drain Time = 0.00 hrs.

Soil Data	Soil Type Fraction in Eng. Soil
User-Defined Media Type	1.000

Biofilter Outlet/Discharge Characteristics:
Outlet type: Broad Crested Weir
1. Weir crest length (ft): 20
2. Weir crest width (ft): 3
3. Height of datum to bottom of weir opening: 2.75

Outlet type: Vertical Stand Pipe
1. Stand pipe diameter (ft): 3
2. Stand pipe height above datum (ft): 2.5

Outlet type: Drain Tile/Underdrain
1. Underdrain outlet diameter (ft): 0.5
2. Invert elevation above datum (ft): 0
3. Number of underdrain outlets: 1

Control Practice 3: Biofilter CP# 3 (DS) - DS Biofilters # 3
1. Top area (square feet) = 3500
2. Bottom area (square feet) = 1800
3. Depth (ft): 3.25
4. Biofilter width (ft) - for Cost Purposes Only: 10
5. Infiltration rate (in/hr) = 0
6. Random infiltration rate generation? No
7. Infiltration rate fraction (side): 0.01
8. Infiltration rate fraction (bottom): 1
9. Depth of biofilter that is rock filled (ft) 0.5
10. Porosity of rock filled volume = 0.33
11. Treatment media infiltration rate: 3.6
12. Treatment media depth (ft) = 1.5
13. Treatment media porosity = 0.27
14. Percent solids reduction due to flow through treatment media = 80

17. Particle size distribution file: Not needed - calculated by program
18. Initial water surface elevation (ft): 0

Estimated Surface Drain Time = 0.19 hrs.
Estimated Subsurface Drain Time = 0.00 hrs.

Soil Data	Soil Type Fraction in Eng. Soil
User-Defined Media Type	1.000

Biofilter Outlet/Discharge Characteristics:

Outlet type: Broad Crested Weir
1. Weir crest length (ft): 10
2. Weir crest width (ft): 3
3. Height of datum to bottom of weir opening: 2.75

Outlet type: Vertical Stand Pipe
1. Stand pipe diameter (ft): 3
2. Stand pipe height above datum (ft): 2.5

Outlet type: Drain Tile/Underdrain
1. Underdrain outlet diameter (ft): 0.5
2. Invert elevation above datum (ft): 0
3. Number of underdrain outlets: 1

Control Practice 4: Other Device CP# 1 (DS) - DS Other Device # 1
Fraction of drainage area served by device (ac) = 1.00
Particulate Concentration reduction fraction = 1.00
Filterable Concentration reduction fraction = 1.00
Runoff volume reduction fraction = 0

APPENDIX D

SOIL INFORMATION


89° 0' 58" W
89° 0' 41" W
335660
335720
335780
335840
335900
335960
336020
43° 0' 4" N
42° 59' 48" N
4762910
4762850
4762790
4762730
4762670
4762610
4762550
4762490
4762430
UL
489A
7706B
7706B
7192A
7192A
7263A
7379A
7697B
7192A
Soil Map may not be valid at this scale.
Map Scale: 1:2,470 if printed on A portrait (8.5" x 11") sheet.
N
Meters
0 35 70 140 210
Feet
0 100 200 400 600
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 16N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil 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: Dane County, Wisconsin
Survey Area Data: Version 24, Sep 10, 2025

Soil Survey Area: Jefferson County, Wisconsin
Survey Area Data: Version 24, Sep 10, 2025

Your area of interest (AOI) includes more than one soil survey area. These survey areas may have been mapped at different scales, with a different land use in mind, at different times, or at different levels of detail. This may result in map unit symbols, soil properties, and interpretations that do not completely agree across soil survey area boundaries.

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

Date(s) aerial images were photographed: Jul 30, 2022—Aug 18, 2022

MAP LEGEND

MAP INFORMATION

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
489A	Marshan silt loam	B/D	1.2	5.8%
7192A	Del Rey silt loam, 0 to 3 percent slopes	D	7.0	33.4%
7379A	Colwood silt loam, 0 to 2 percent slopes	C/D	11.3	54.4%
7706B	Boyer sandy loam, 2 to 6 percent slopes	B	1.0	4.9%
UL	Made land		0.2	0.8%
Subtotals for Soil Survey Area			**20.7**	**99.4%**
Totals for Area of Interest			**20.8**	**100.0%**

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
7192A	Del Rey silt loam, 0 to 3 percent slopes	D	0.0	0.1%
7263A	Keowns silt loam, 0 to 2 percent slopes	B/D	0.0	0.2%
7697B	Wauconda silt loam, 2 to 6 percent slopes	C	0.0	0.0%
7706B	Boyer sandy loam, 2 to 6 percent slopes	B	0.1	0.3%
Subtotals for Soil Survey Area			**0.1**	**0.6%**
Totals for Area of Interest			**20.8**	**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

1002-CPS-23
Division of Industry Services
P. O. Box 2658
Madison, Wisconsin 53701
Scott Walker, Governor
Laura Gutierrez, Secretary

Attachment 2:

SOIL AND SITE EVALUATION – STORM

In accordance with SPS 382.365, 385, Wis. Adm. Code, and WDNR Standard 1002

Attach a complete site plan on paper not less than 8 ½ x 11 inches in size. Plan must include, but not limited to: vertical and horizontal reference point (BM), direction and percent of slope, scale or dimensions, north arrow, and BM referenced to nearest road

Please print all information

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

County: Dane

Parcel I.D.: 0612-174-0010-2

Reviewed by:

Date:

Property Owner: Mike Coughlin

Property Owner' Mail Address: 230 Bilstad Rd.

City / State / Zip Code / Phone Number: Cambridge, WI 53523

Property Location: Govt. Lot NE ¼ SE ¼ S 12 T 6 N R 12 (E) or W

Lot # | Block # | Subd. Name or CSM #

☐ City ☒ Village ☐ Town — Nearest Road: Cambridge — 230 Bilstad Rd.

Drainage area _____ ☐ sq .ft ☐ acres

Test site suitable for (check all that apply): ☐ Site not suitable;

☐ Bioretention; ☐ Subsurface Dispersal System;

☐ Reuse; ☐ Irrigation; ☐ Other _____

Hydraulic Application Test Method

☒ Morphological Evaluation

☐ Double Ring Infiltrometer

☐ Other: (specify) _____

Soil Moisture
Date of soil borings: 12-30-25

USDA-NRCS WETS Value:
☐ Dry =1;
☒ Normal = 2;
☐ Wet = 3.

TP1 #OBS. ☒ Pit ☐ Boring Ground surface elevation. 836 ft. Elevation of limiting factor 836 ft.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frags.	% Fines	Hydraulic App Rate Inches/Hr
1	0-12	10YR 3/2	f1f 7.5YR 5/8	sil	2mgr	mfr	cs	5	–	.13
2	12-92	10YR 5/6	c2d 10YR 6/2 7.5YR 5/8	sicl	1fsbk	mfr	cs	5	–	.09
3	92-102	10YR 4/2	" "	sic	0m	mfr	–	5	–	.07

Comments: Water observed @ 39"

TP2 #OBS. ☒ Pit ☐ Boring Ground surface elevation. 836.5 ft. Elevation of limiting factor 835.5 ft.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frags.	% Fines	Hydraulic App Rate Inches/Hr
1	0-12	10YR 3/2	—	sil	2mgr	mfr	cs	5	–	.13
2	12-28	7.5YR 4/6	c2d 7.5YR 5/8 10YR 3/2	scl	1msbk	mfr	cs	5	–	.11
3	28-96	10YR 4/2	" "	sicl	1fsbk	mfr	–	5	–	.04

Comments: Water observed @ 40"

Name (Please Print): Jeffrey T. Levake

Signature: Jeffrey T. Levake

Credential Number: CST #223322

Address: P.O. Box 568 Lake Mills, WI 53551

Date Evaluation Conducted: 12-30-25

Telephone Number: 920-988-7567

SBD-10793 (R01/17)

WDNR
September 2017

TB #OBS. ☒ Pit ☐ Boring Ground surface elevation. 833.8 ft. Elevation of limiting factor 833.8 ft.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frags.	% Fines	Hydraulic App Rate Inches/Hr
1	0-12	10YR 3/2	f1f 7.5YR 5/8	sil	2mgr	mfr	cs	5	–	.13
2	12-76	10YR 5/6	c2d 10YR 7/2 7.5YR 5/8	*sic	0m	mfr	cs	5	–	.07
3	76-96	10YR 4/2	" "	sic	0m	mfr	–	5	–	.07

Comments: * Pockets vfs Water observed @ 44"

☐ #OBS. ☐ Pit ☐ Boring Ground surface elevation. ______ ft. Elevation of limiting factor ______ ft.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frags.	% Fines	Hydraulic App Rate Inches/Hr

Comments:

☐ #OBS. ☐ Pit ☐ Boring Ground surface elevation. ______ ft. Elevation of limiting factor ______ ft.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frags.	% Fines	Hydraulic App Rate Inches/Hr

Comments:

☐ #OBS. ☐ Pit ☐ Boring Ground surface elevation. ______ ft. Elevation of limiting factor ______ ft.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frags.	% Fines	Hydraulic App Rate Inches/Hr

Comments:

Overall Site Comments:

APPENDIX E

MAINTENANCE AGREEMENT

AGREEMENT FOR MAINTENANCE OF STORMWATER MANAGEMENT MEASURES

This space is reserved for recording data

Return to:
Dane County Land & Water Resources
5201 Fen Oak Dr., Rm. 208
Madison, Wisconsin 53718

Parcel Number(s):
_____

RECITALS:

A. _____ is the owner of property in the Village of Cambridge, County of Dane, State of Wisconsin, more particularly described on Exhibit A attached hereto ("Property").

B. The County requires Owner to record this Agreement regarding maintenance of stormwater management measures to be located on the Property. Owner agrees to maintain the stormwater management measures and to grant to the County the rights set forth below.

NOW, THEREFORE, in consideration of the agreement herein and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the owner agrees as follows:

1. Maintenance. Owner and its successors and assigns shall be responsible to repair and maintain the stormwater management measures located on the Property in good condition and in working order and such that the measures comply with approved plans on file with Dane County. Said maintenance shall be at the Owner's sole cost and expense. Owner will conduct such maintenance or repair work in accordance with all applicable laws, codes, regulations, and similar requirements. Specific maintenance task are more particularly described on Exhibit A. The location of each stormwater management practice is shown on Exhibit B.

2. Easement to County. If Owner fails to maintain the stormwater management measures as required in Section 1, then County shall have the right, after providing Owner with written notice of the maintenance issue ("Maintenance Notice") and thirty (30) days to comply with the County's maintenance request, to enter the Property in order to conduct the maintenance specified in the Maintenance Notice. County will conduct such maintenance work in accordance with all applicable laws, codes, regulations, and similar requirements and will not unreasonably interfere with Owner's use of the Property. All costs and expenses incurred by the County in conducting such maintenance may be charged to the owner of the Property by placing the amount on the tax roll for the Property as a special assessment in accordance with Section 66.0703, Wis. Stats. and applicable portions of the Dane County Ordinances.

3. Term/Termination. The term of this Agreement shall commence on the date that this Agreement is recorded with the Register of Deeds Office for Dane County, Wisconsin, and except as otherwise herein specifically provided, shall continue in perpetuity. Notwithstanding the foregoing, this Agreement may be terminated by recording with the Register of Deeds Office for Dane County, Wisconsin, a written instrument of termination signed by the County and all of the then-owners of the Property.

4. Miscellaneous.

   (a) Notices. Any notice, request or demand required or permitted under this Agreement shall be in writing and shall be deemed given when personally served or three (3) days after the same has been deposited with the United States Post Office, registered or certified mail, return receipt requested, postage prepaid and addressed as follows:

   If to Owner: _____
   _____
   _____

   If to County: Dane County Land & Water Resources Department
   Water Resource Engineering Division
   5201 Fen Oak Drive, Room 208
   Madison, WI 53718

   Any party may change its address for the receipt of notice by written notice to the other.

(b) Governing Law. This Agreement shall be governed and construed in accordance with the laws of the State of Wisconsin.

(c) Amendments or Further Agreements to be in Writing. This Agreement may not be modified in whole or in part unless such agreement is in writing and signed by all parties bound hereby.

(d) Covenants Running with the Land. All of the easements, restrictions, covenants and agreements set forth in this Agreement are intended to be and shall be construed as covenants running with the land, binding upon, inuring to the benefit of, and enforceable by the parties hereto and their respective successors and assigns.

(e) Partial Invalidity. If any provisions, or portions thereof, of this Agreement or the application thereof to any person or circumstance shall, to any extent, be invalid or unenforceable, the remainder of this Agreement, or the application of such provision, or portion thereof, to any other persons or circumstances shall not be affected thereby and each provision of this Agreement shall be valid and enforceable to the fullest extent permitted by law.

X_____
Water Resource Engineering Division Staff Signature

_____
Print or type name

State of WI, County of _____; Subscribed and sworn before me on _____ by the above named person(s).

_____
Notary Public

Print or type name: _____

My Commission Expires:_____

X_____
Owner Signature

_____
Print or type name

State of WI, County of _____; Subscribed and sworn before me on _____ by the above named person(s).

_____
Notary Public

Print or type name: _____

My Commission Expires:_____

DRAFTED BY: Quam Engineering, LLC
Mark Fendry, P.E.

EXHIBIT A

Legal Description of Property:

_____

PN: _____

Maintenance Provisions:

General

- All stormwater practices constructed as part of this project are permanent and must be maintained in a functional state.
- Land use, impervious areas and stormwater practices shall not be significantly altered without written permission from the County's Water Resources Engineering Division.
- Owner shall maintain records of inspections and maintenance as described below, in accordance with Dane County Ordinance, Chapter 14.
- Repairs must restore the system to the approved plan design.

Storm Sewer

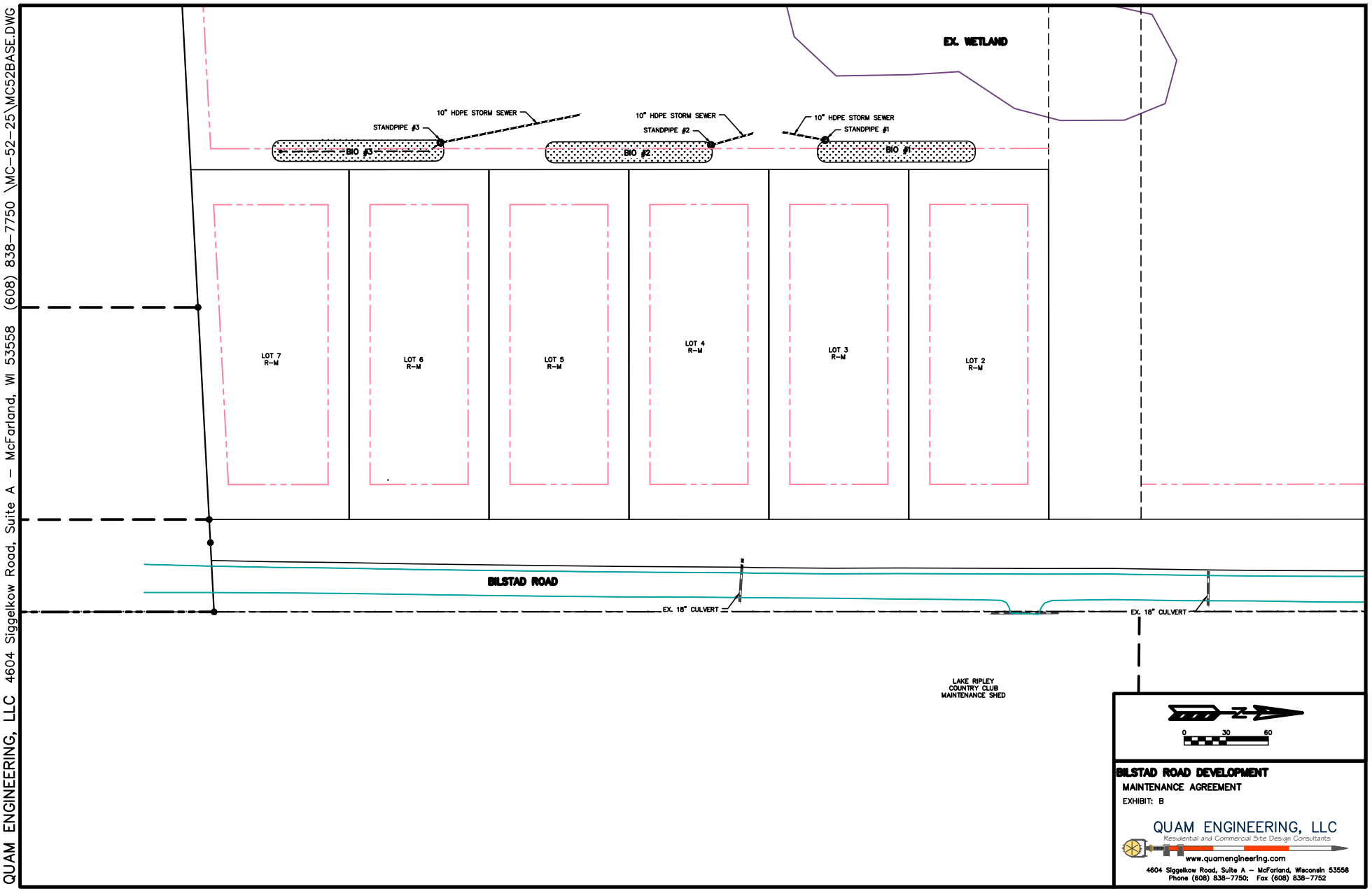
- Inspect storm sewer after rainfall and remove debris from inlets and outfalls.
- Repair inlets and outfalls that are damaged or show signs of erosion.
- Replace rip-rap as necessary.

Grassed Swale

- Inspect swales annually to detect and remedy nuisance conditions such as standing water or trash dumping.
- Maintain vegetation type and height specified in approved plan.
- Repair areas of swale showing signs of erosion.
- Limit off-street parking or other activities that may cause rutting or soil compaction in swales.
- Limit the use of pesticides and fertilizer.
- Remove sediment when visible or if standing water exists for 24 hours after a rainfall/runoff event. After sediment removal, repair any damaged or eroded areas by filling with topsoil, reseeding and matting to reestablish vegetation.

Bioretention Basin

- Inspect quarterly to ensure proper function and check for any potential problems. If standing water is observed 24 hours after rainfall, the basin is failed and must be restored according to the approved plan design.
- Maintain vegetation type specified in approved plan. Remove all other vegetation from basin as needed.
- Repair eroded areas as needed.
- Remove litter and debris regularly.
- Re-mulch voids areas as needed.
- Water plants as needed during first growing season and during dry periods after first growing season.
- Treat diseased trees and shrubs as needed.
- Do not dump snow into basin.
- Once a dense vegetation layer is formed, additional mulch does not need to be added.



QUAM ENGINEERING, LLC 4604 Siggelkow Road, Suite A – McFarland, WI 53558 (608) 838-7750 \MC-52-25\MC52BASE.DWG

MSA Memo

To: Village of Cambridge Plan Commission

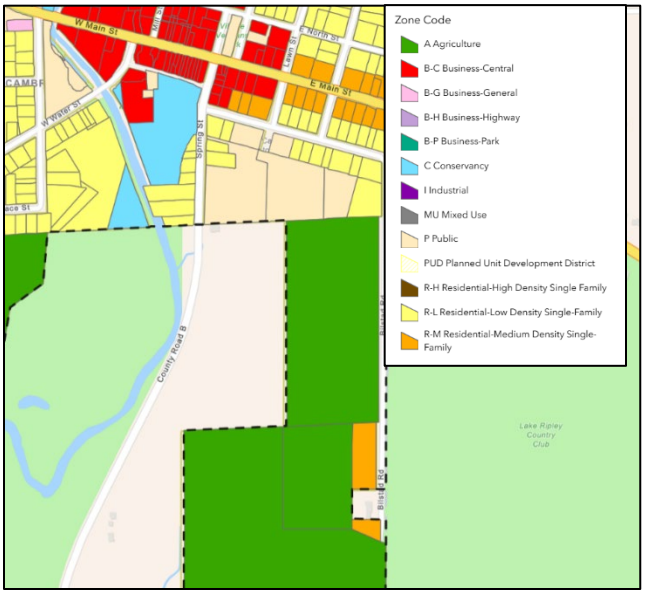
From: Steve Tremlett, AICP, Zoning Administrator

Subject: 230 Bilstad Rezoning Staff Report

Date: June 4th, 2026

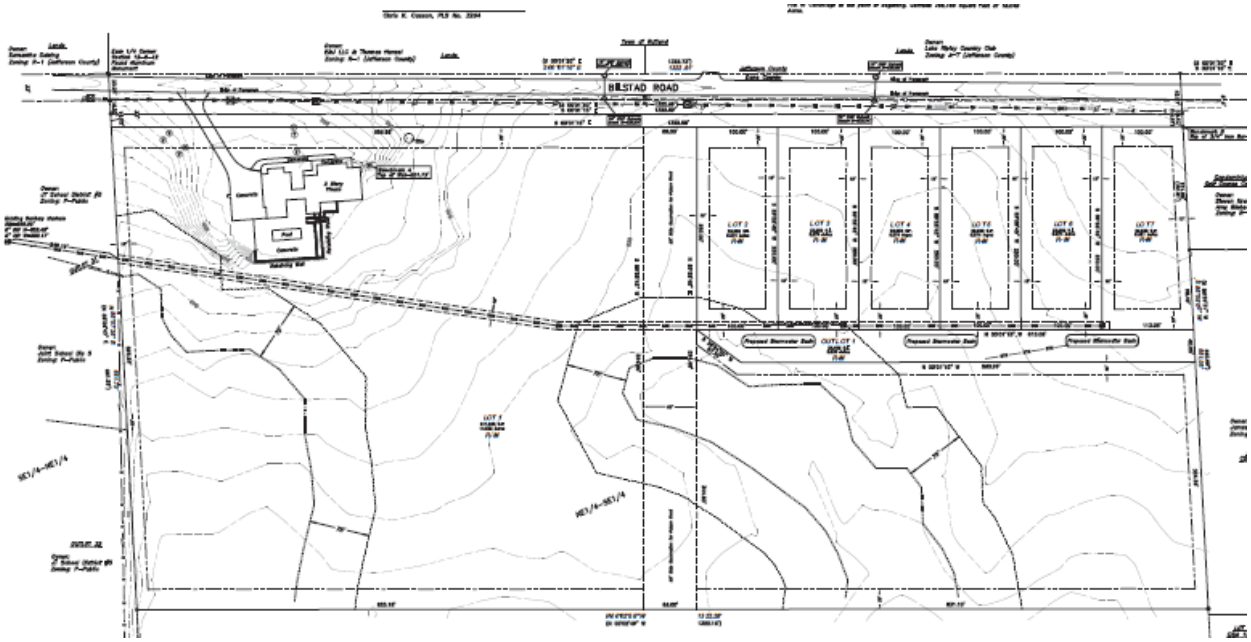
Overview of Request

The applicant has submitted a Rezone request for their parcel (230 Bilstad Rd, Parcel No. 111/0612-124-0010-2) from A Agriculture to R-L Low Density Residential. The applicant has also submitted a preliminary plat for review and comment by the Plan Commission. These are two separate items, each requiring an independent motion.



Context

This rezoning request has been submitted alongside a Preliminary Plat creating 6 additional lots and an outlot on the parent site. This rezoning will encompass the entire area within the preliminary plat, including the parent lot, all new lots, and the outlot. Please refer to the companion Preliminary Plat staff report for additional background on the site, proposed layout, and infrastructure improvements.



Review Criteria

Consistency with the Village's Comprehensive plan

All rezonings must be consistent with the Future Land Use (FLU) map designation shown in the Village of Cambridge Comprehensive Plan. In November 2025, applicant Michael Coughlin successfully applied to amend the FLU map designation for this parcel to 'Neighborhood Residential,' specifically to enable a future rezone and land division consistent with the Comprehensive Plan. Although the Neighborhood Residential land use category recommends a density of 3–10 units per acre in most places, the consensus at the time the FLU amendment was adopted was that the phrase "most places" permits deviation from that range where circumstances warrant. The proposed development density of approximately 2 units per acre is modestly below that range and is considered consistent with the intent of the designation given the site's location on a dead-end road adjacent to wetlands, farmland, and a golf course.

Impacts on Adjacent Uses

The proposed lots are bordered by wetlands to the west, single-family housing to the north, farmland to the south and west, and the Lake Ripley Golf Course to the east. The applicant has stated that all farming activity on the parcel will cease upon development, bringing the site into full compliance with the permitted uses of the R-L Low Density Residential zoning district.

The proposed single-family lots represent a modest and orderly transition from agricultural use, consistent with the rural residential character of the surrounding area. The rezoning is unlikely to negatively impact adjacent parcels, as neighboring properties along Bilstad Road share a Neighborhood Residential Future Land Use designation. The transition to residential use may modestly increase the Village's property tax base without introducing commercial traffic or incompatible uses.

Other Factors

Since the proposed zoning is a residential district, the lots must also be evaluated for developability. All proposed lots are reasonably feasible for development, with adequate area, frontage, and access. A concern was raised regarding Bilstad Road's capacity to accommodate increased traffic. To address this, the applicant has agreed to widen Bilstad Road by 4 feet along approximately 1,300 feet of property frontage as part of the project.

Potential Action

Planning staff recommends that the Village of Cambridge Plan Commission **recommend Village Board conditionally approve the rezone** from 'A' Agriculture to 'R-L' Low Density Residential for the lots in the Palmer Meadows Plat with the following conditions.

1. The preliminary and final plat for the Palmer Meadows Plat are approved by the Village Board with the R-L zoning noted for all lots and outlot.

Sincerely,

Stephen Tremlett, AICP, CNU-A
Zoning Administrator

PRELIMINARY PLAT

Palmer Meadows

Outlot 90 of Revised and Consolidated Assessor's Plat of Cambridge, Located in the Village of Cambridge, Dane County, Wisconsin.

Surveyor's Certificate:

I, Chris K. Casson, Professional Land Surveyor S–3264, do hereby certify that in full compliance with the provisions of Chapter 236 of the Wisconsin Statutes and the Village of Cambridge Code of Ordinances, and under the direction of the owners listed hereon, I have surveyed, divided and mapped Palmer Meadows and that such plat correctly represents all exterior boundaries and the subdivision of the land surveyed and is a parcel of land as described below:

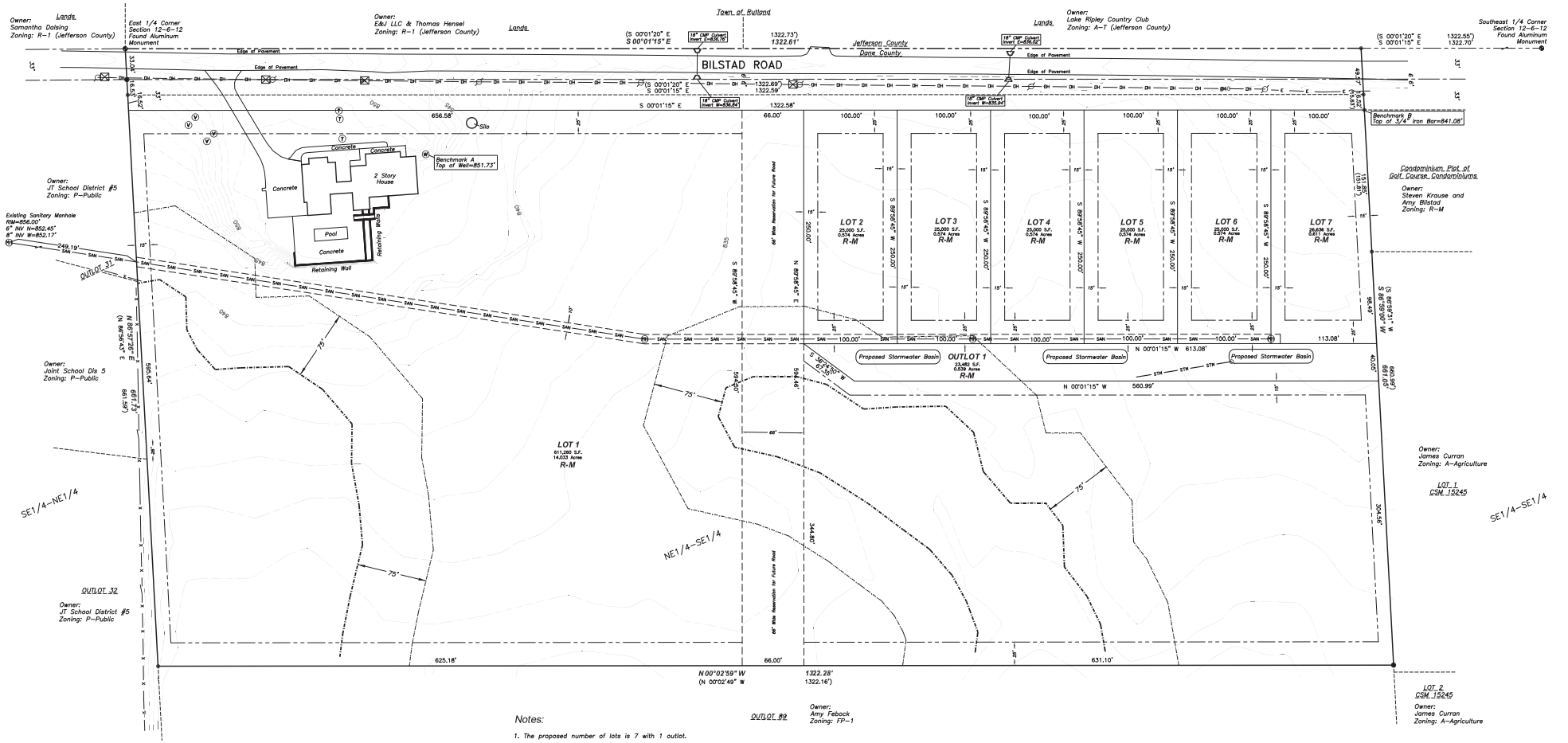
Outlot 90 of Revised and Consolidated Assessor's Plat of Cambridge, Located in the Village of Cambridge, Dane County, Wisconsin.

_____

Chris K. Casson, PLS No. 3264

Zoning Descriptions:

Zoning description (A to R–M):
Part of the Northeast 1/4 of the Southeast 1/4 of Section 6, T12N, R12E, Village of Cambridge, Dane County, Wisconsin. More fully described as follows: Commencing at the East 1/4 corner of said Section 6; thence S86°57'26"W, 66.09 feet to the point of beginning; thence S00°01'15"E, 1322.58 feet to the Northeast corner of the Condominium Plat of Golf Course Condominiums; thence S86°59'00"W, 594.96 feet along the North lines of said Condominium Plat of Golf Course Condominiums and Lot 1 of CSM 15245; thence N00°02'59"W, 1322.28 feet to the Southerly line of Outlot 32, Revised and Consolidated Assessor's Plat of Cambridge; thence N86°57'26"E, 595.64 feet along the South lines of Outlot 31 and Outlot 32, Revised and Consolidated Assessor's Plat of Cambridge to the point of beginning. Contains 786,168 Square Feet or 18.048 Acres.



Notes:

1. The proposed number of lots is 7 with 1 outlot.
2. Gross area in this preliminary plat = 873,460 square feet, or 20.052 acres.
3. This survey is subject to any and all agreements and easements of record and those that may have not been recorded.
4. Before any digging, boring, construction, etc., is done on or near the lands in this subdivision, Diggers Hotline shall be called at 1–800–242–8511 for the safety and liability purposes for all involved.
5. The lands within this subdivision shall be served by underground utilities.
6. The lands within this subdivision are located in UNSHADED ZONE X, areas determined to be outside 0.2% annual chance floodplain, per FEMA Flood Insurance Rate Map, Map No. 55025C657H, Revised September 17, 2014.
7. Property currently zoned A Agriculture, Proposed zoning R–M, Single–family residential medium–density district.
8. Contour interval = 1 foot. Vertical datum NAVD 88. Contours shown are pre–development.
9. Utility easements shall be added as required by appropriate utility companies.
10. This is a PRELIMINARY PLAT. All distances and areas are approximate and subject to change upon final platting.
11. Setbacks for R–M zoning: Front/Road, 25 feet; Side, 15 feet; Rear, 25 feet.
12. Wetland data provided by Heartland Ecological Group. Wetlands have been marked on site, but no report has been prepared as of 4/17/2026.
13. Lots 1–7 will be each be served by their own well.
14. Horizontal Datum: Dane County Coordinate System NAD83 (2011)

Legend:

- = Section Corner
- = Found 3/4" Iron Bar
- = Found 1" Iron Pipe
- ( ) = Recorded as data
- = Building Setback Line
- x = Chain Link Fence
- = Manhole
- = Well
- = Septic Tank
- = Septic Vent
- = Culvert
- = Power Pole
- = Proposed Manhole
- OH = Overhead Utilities
- E = Buried Electric
- R–M = Proposed Zoning
- = Utility Pedestal

Bearings referenced to the East line of the Southeast 1/4 of Section 12, bearing S00°01'15"E

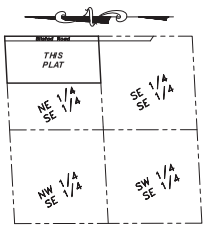
0 60 120
Scale: 1"= 60'

Wetland Boundary
75'
75' Wetland setback
This setback applies to all buildings and impervious surfaces (including gravel)

Benchmarks

Benchmark A
Top of Well=851.73'

Benchmark B
Top of 3/4" Iron Bar=841.08'



LOCATION SKETCH
Section 36, T12N, R12E
Village of Cambridge
NOT TO SCALE

OWNER/SUBDIVIDER
Coughlin Building Concepts
230 Bilstad Road
Cambridge, WI 53523
608–598–0639

ENGINEER
Quam Engineering, LLC
4604 Siggelkow Rd A
McFarland, WI 53558
608–838–7750

BIRRENKOTT SURVEYING
P.O. Box 237
1677 N. Bristol Street
Sun Prairie, WI 53590
(608) 837–7463
(608) 837–7463 (Fax)

Dated: April 17, 2026

L:\2026\260189\260189_PreliminaryPlatV2
Sheet 1 of 1
Office Map No. **260189_PreliminaryPlatV1**

MSA Memo

To:	Village of Cambridge Plan Commission
From:	Steve Tremlett, AICP, Zoning Administrator
Subject:	PUD Minimum Lot Size Discussion
Date:	June 5th, 2026

Overview

This is a discussion item only. No action is requested. Staff is seeking the Plan Commission's preliminary thoughts ahead of a potential future PUD application.

Request

A Planned Unit Development (PUD) is a zoning overlay that allows exceptions to standard bulk requirements — such as setbacks — in exchange for a demonstrable public benefit. The Village's code gives the Plan Commission broad discretion on minimum size thresholds (Sec. 17.64.030(A)), which is intentional. Many communities set a minimum acreage to ensure the administrative effort of reviewing a PUD is proportionate to the benefit received and that meaningful public benefit can reasonably be expected in exchange for granting exceptions. Staff welcomes the Commission's thoughts on where that balance should sit — protecting code integrity while remaining business-friendly.

Background

The subject parcel is 225 Jefferson Street. The lot is nearly entirely paved and shares access with adjacent industrial uses; it would be nonconforming under current zoning. A prospective buyer is interested in opening an auto sales and repair business. Auto repair requires a Conditional Use Permit, and the buyer's proposed building expansion (an additional bay) would encroach on setbacks — making a PUD the only viable path forward. As a potential public benefit, staff has discussed requiring enhanced stormwater filtration and runoff controls beyond what would otherwise apply to the nonconforming lot.

Next steps

No action is required at this time. Any direction or feedback the Plan Commission can provide will be useful in discussing with the landowner what his options are to consider is intended reuse of the site.

Sincerely,

Stephen Tremlett, AICP, CNU-A
Zoning Administrator