**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, JULY 13, 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:** Minutes of June 8, 2026
5. **PUBLIC HEARINGS**

   The Plan Commission will hold a combined public hearing to consider the following items:

   a. Zoning Text Amendment to add a definition of lot coverage to the Definitions section, add lot coverage calculation methodology to the Site Regulations section, increase the maximum lot coverage percentage in the Lot, Yard, and Building Requirements of the MU Mixed Use Business District and the B-H Highway Business District, and clarify related phrasing in the Accessory Uses and Structures section.

   b. Conditional Use Permit for 708 Katie Court (Parcel 0612-013-2014-1) allowing commercial condos.

6. **NEW BUSINESS – ACTION REQUIRED**

   a. Consider recommending to the Village Board approving a text amendment regarding lot coverage in sections 17.04.09 (definitions), 17.08.030 (site regulations), 17.92.010(6) (Accessory Uses and Structures), Section 17.28.080(G) and Section 17.32.040(G).

   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).

7. **QUESTIONS, STAFF REFERRALS, AND FUTURE AGENDA ITEMS**
8. **ADJOURNMENT**

Brian Wilson, Village Clerk/Treasurer

**Posted:** July 10, 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.

**MINUTES**

***PLAN COMMISSION***
AMUNDSON COMMUNITY CENTER
200 SPRING ST., CAMBRIDGE, WI 53523
MONDAY, JUNE 8, 2026, 6:30 PM

1. **CALL TO ORDER / ROLL CALL:** President Hollenbeck called the meeting to order at 6:30 p.m.

   Members Present – President Hollenbeck, Trustee Jankowski, D. Hollenbeck, C. Krueger, and J. Landowski.

   Members Absent – J. Milsap

   Others Present – Angela Bauer Williams, Michael Coughlin, and Village Administrator Kris Breunig.

2. **PROOF OF POSTING:** Upper and Lower levels of the Amundson Center, Cambridge Post Office, Badger Bank, Bank First, and the Village website.
3. **PUBLIC COMMENTS (LIMIT OF THREE MINUTES PER PERSON):** None
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.

   President Hollenbeck opened the Public Hearing. The item was tabled as there is no current developer request and this would be premature.

   b. Conditional Use Permit for 708 Katie Court (Parcel 0612-013-2014-1) allowing commercial condos.

   A public hearing was opened for a conditional use permit (CUP) to allow commercial condos at 708 Katie Court.

   Angela Bauer Williams, owner of the adjacent Cambridge Family Dental at 710 Katie Court, received the meeting notice on the day of the meeting, which is less than the required 10-day notice period. She requested a continuance to properly prepare, but she did provide the following concerns regarding the application:

   - **Traffic & Access**
     - Potential for heavy traffic to block the road, creating hardship for her business, staff, and patients.
   - **Visibility & Setbacks**
     - The proposed building would block the view from her waiting room and reduce her business's visibility from Highway 12/18.
   - **Stormwater & Runoff**
     - The high percentage of hard surface area raises concerns about potential flash flooding.
   - **Aesthetics & Compatibility**
     - The proposed building's size and industrial materials are not compatible with the professional and aesthetic intent of the area, potentially diminishing property values.

   The applicant was not present at the meeting despite confirming attendance, preventing direct discussion of concerns.

   The public hearing was closed, and the item was postponed for a future meeting, which will require a new public hearing.

DRAFT

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.

A public hearing was held for the rezone of the Palmer Meadows plat from agricultural to RL (Low-Density Residential) to create six half-acre, single-family lots, plus an outlot for stormwater. No public comments were made.

A key issue was the long, dead-end street. The plan includes a four-foot road expansion on the western side to improve access for emergency services. A reservation of right-of-way is included for a potential future road connection.

A sidewalk was deemed not required as it would be isolated.

The village will not take ownership of the private stormwater management area.

**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.

No action taken as the Public Hearing was tabled.

b. Consider recommending to the Village Board approving a Conditional Use Permit for 708 Katie Court (Parcel 0612-013-2014-1) allowing commercial condos.

Due to the insufficient notice regarding the Public Hearing no formal action could be taken. The commission decided to provide high-level feedback to the applicant for a stronger future application which included:

- **Site Plan & Lot Coverage**

- The proposed impervious coverage is 61%, far exceeding the 40% maximum standard. The design must reduce impervious surfaces by approximately 20%.

- Options include reducing the building footprint, breaking it into two smaller structures, or reducing parking.

- Missing items from the plan include a compliant landscaping plan, a lighting plan, and a signage plan.

- The stormwater plan is still under county review. A direct lateral connection from the basin to the road's stormwater pipe is required.

- **Architectural Design & Materiality**

- The proposed industrial design (metal siding, small windows, garage door facades) is inconsistent with the higher aesthetic standards of adjacent buildings on the corridor, which feature stone/brick elements.

- The commission recommended incorporating stone or brick on the front (Highway 12-facing) facade, potentially up to the window sills. A minimum of 25% non-metal material is required for the front facade.

- The developer is open to adding stone/brick, adjusting windows, and using matte steel siding and wood-like trim. The applicant must provide physical material samples for review.

- **Parking and Access**

- The plan shows 41 parking spaces, while only 35 are required based on a proposed 1 space per 400 sq. ft. ratio (a property-specific condition).

- On-street parking controls on Katie Court (e.g., no overnight parking, 2-hour limit) were discussed to prevent overflow.

- The plan lacks a safe, clear ADA-accessible path from parking spaces to unit doors. A concrete walkway in front of the building was recommended.

- Each of the 7 units will have its own separately metered utilities.

- **Landscaping & Screening**

- The current landscaping plan is minimal. It must be enhanced to cover at least 10% of the service area and include heavier plantings (including evergreens) to buffer adjacent residential properties.

- The trash/refuse enclosure must be screened from Highway 12 view with fencing or plantings.

DRAFT

- **HOA and Maintenance**

- An HOA will control exterior elements to maintain uniformity.

- A recorded shared wall/structure maintenance agreement is required to govern repairs and maintenance for the condo units.

c. Consider approval of a Site, Architectural and Operations Plan Review for 708 Katie Court (Parcel 0612-013-2014-1).

Due to the insufficient notice regarding the Public Hearing no formal action could be taken.

d. Consider recommending to the Village Board approving a Palmer Meadows Preliminary Plat for 230 Bilstad Road (Parcel 0612-124-0010-2).

Motion by Trustee Jankowski to recommend to the Village Board approval of a Palmer Meadows Preliminary Plat for 230 Bilstad Road (Parcel 0612-124-0010-2) subject to the applicant addressing all comments and requirements of the engineering report, obtaining written approval of revised plans prior to final plat submission, paying all park impact fees and parkland in-lieu-of fees within 14 days of building permit or occupancy permit issuance per lot, and final plat approval contingent upon adoption of the rezone from agricultural to R-L (low-density residential). Second by J. Landowski. Motion carried on a roll call vote.

Yes – President Hollenbeck, Trustee Jankowski, D. Hollenbeck, C. Krueger, and J. Landowski

No – None

e. Consider recommending to the Village Board approving a Rezone at 230 Bilstad Road (Palmer Meadows Plat) to R-L zoning district.

Motion by J. Landowski to recommend to the Village Board approval of a Rezone at 230 Bilstad Road (Palmer Meadows Plat) to R-L zoning district. Second by Trustee Jankowski. Motion carried on a roll call vote.

Yes – President Hollenbeck, Trustee Jankowski, D. Hollenbeck, C. Krueger, and J. Landowski

No – None

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.

Staff sought preliminary feedback on using a Planned Unit Development (PUD) to allow expansion of a legally non-conforming structure on a small lot (<1 acre).

Commissioners discussed the precedent of allowing a PUD on a small lot and the potential need to establish a minimum PUD size (e.g., 2 acres) via an ordinance amendment.

No action was taken.

**7. QUESTIONS, STAFF REFERRALS, AND FUTURE AGENDA ITEMS**

Administrator Breunig reported that he is meeting with an excavation contractor on June 9 regarding the sidewalk construction starting at Kwik Trip as part of a development agreement.

He also reported that work on Lagoon Road should be starting in July.

**8. ADJOURNMENT:** J. Landowski made a motion to adjourn the meeting. Second by Trustee Jankowski. Motion carried by voice vote.

Meeting adjourned at 8:20 p.m.

Respectfully submitted by Brian Wilson, Clerk/Treasurer

These minutes are not official until approved by the Plan Commission.

DRAFT

# MSA Memo

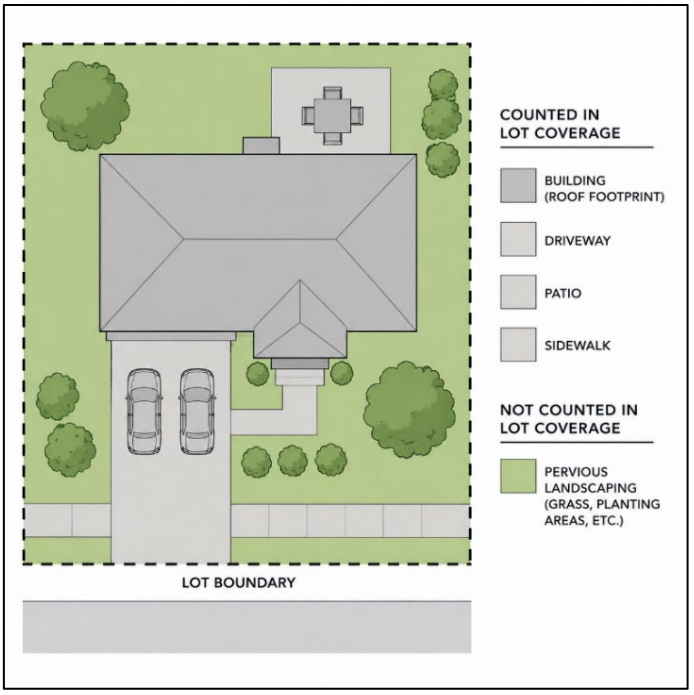
| | |
|---|---|
| **To:** | Village of Cambridge Plan Commission |
| **From:** | Steve Tremlett, AICP, Zoning Administrator |
| **Subject:** | Lot Coverage Amendment Staff Report |
| **Date:** | June 26th, 2026 |

## Request

Approval of amendments to the zoning code to clarify standards regarding lot coverage in the Village and increase the maximum lot coverage percentage allowed in select zoning districts.

## Background

Recent development activity in the Village has surfaced a potential operational gap in zoning district dimensional standards. Many districts reference lot coverage as a regulatory standard, but the Code does not define the term or establish a methodology for calculating it. In the absence of a definition, applicants have applied the standard incorrectly based on typical meaning and calculations used for "lot coverage" (per current staff's interpretation using best practices with lacking information in Cambridge Code), and previously approved development reflects varying interpretations of what counts toward lot coverage and how it is measured. This has created procedural uncertainty for applicants, staff, and the Plan Commission.




*Created with AI*

Inconsistency in maximum allowed lot coverage across Cambridge's commercial zoning districts is likely due to this definitional gap. Without a shared understanding of what counts toward lot coverage, maximum figures have been applied and calibrated differently over time. If the Plan Commission agrees that establishing a clear definition and uniform calculation methodology is appropriate, it should also verify and potentially reconsider the maximum lot coverage amounts applicable under that new definition.

The proposed amendment will address these gaps by:

(1) establishing a clear definition of lot coverage;

(2) establishing a uniform calculation methodology; and

(3) increasing the maximum allowed lot coverage in the Mixed-Use Business (MB) and Highway Business (B-H) districts in accordance with their purpose and the pattern of previously approved development.

## Code Analysis

### Section 17.04.09 – Definitions.

Existing Code: Lot coverage is not defined

Proposed Edit:

*For the purposes of this title, the following definitions shall be used:*

*[. . .]*

*"Lot" means a parcel of land having frontage on a public street, occupied or intended to be occupied by a principal structure or use, and sufficient in size to meet the lot width, lot frontage, lot area, yard, parking area and other open space provisions of this title.*

***"Lot Coverage" means the percentage of total lot area covered that is occupied by buildings, structures, and other impervious surfaces (i.e., driveways, parking areas, sidewalks, patios, and similar hard-surfaced areas that prevent the infiltration of stormwater).***

*"Lot lines and area" means the peripheral boundaries of a parcel of land and the total area lying within such boundaries.*

*[. . .]*

### Section 17.08.030 –Site regulations.

Existing Code: Lot coverage is not regulated. This section lists general standards on building placement, site suitability rules, access rules, and the like.

Proposed Edit:

*[Subpoints A through G skipped]*

*H. Lots Abutting Two Streets. Where a lot abuts on two (2) or more streets or alleys having different average established grades, the higher of such grades shall control only for a depth of one hundred twenty (120) feet from the line of the higher average established grade.*

*I. Double-Frontage Lots. Buildings on through lots and extending from street to street may have waived the requirements for a rear yard by furnishing an equivalent open space on the same lot in lieu of the required rear yard provided that the setback requirements on both streets be complied with.*

*J. Pre-Existing Lots. Where a lot has an area less than the minimum number of square feet per family required for the district in which it is located and was of record as such at the time of the passage of this title, such lot may be occupied by one (1) family.*

*K. Open Yards. Every part of a required yard shall be open to the sky, unobstructed, except for accessory buildings in a rear yard, and the ordinary projections of sills, belt courses, cornices and ornamental features projecting not more than twelve (12) inches.*

***L. Lot Coverage Calculation. Lot coverage shall be measured using the horizontal area occupied by buildings, structures, and impervious surfaces (e.g., swimming pools, decks, patios, driveways, parking areas). Permeable paving shall also be included in the calculated percentage. Public street rights-of-way and building/structure roof overhangs shall not be included in lot area used for lot coverage calculations.***

### Section 17.92.010 (6) – Accessory Uses and Structures.

Existing Code: This section regulates accessory uses across all zoning districts, and the subsection on standards for detached garages refers to lot coverage. It states that lot coverage should include all buildings

on the lot, which is a vague statement with unclear intent that can be interpreted in multiple ways. This section should be edited to add clarity

Proposed Edit:

> *Detached Garages. Detached garages are permitted in the rear yard and side yards only. They shall not exceed eight hundred (800) square feet in total area and the roof pitch shall not exceed the steepest pitch of the principal structure. The total height shall not exceed the total allowed as set forth in the zoning district where the garage will be located.* ~~*Total lot coverage shall include all buildings located on the lot.*~~ ***Lot coverage, including all buildings, structures, and impervious surfaces on the lot, shall be calculated in accordance with Section 17.08.030(L).*** *Detached garages shall not be any closer than three feet to any side or rear lot line nor closer than fifteen (15) feet to any alley line. A detached garage shall not be closer than ten (10) feet to the principal structure, unless the applicable building code regulations in regard to fire resistive construction are complied with and such is approved by the building inspector.*

## District Requirements

As part of this amendment, staff reviewed the purpose of all commercial zoning districts, the character of existing and recently approved development, and whether current or proposed maximum lot coverage figures are consistent with development expectations in each district.

A community comparison was completed to guide changes made:

| | Central/Downtown Business | General Business | Highway Business | Mixed Use Business |
|---|---|---|---|---|
| Cambridge | 90% | 90% | 40% | 40% |
| Marshall* | 90% | 70% | 80% | No 1:1 zoning district to compare to |
| Palmyra* | 85% | 90% | 80% | |
| McFarland | 100% | 90% | 70% | |
| Cottage Grove* | 100% | 75% | N/A | |

** Community uses minimum landscaped surface, or some other inverse of lot coverage*

***Chapter 17.28, Article I - General Business (B-G).***

The General Business district is intended to accommodate a concentrated, commercial environment. Development in this district is typically built to or near the lot line, with minimal setbacks and often having shared walls. A maximum of ninety percent (90%) lot coverage is consistent with the compact, urban character intended for this district and reflects development patterns already present.

- Maximum lot coverage remains 90%

***Chapter 17.32 - Highway Business (B-H).***

The Highway Business district is intended for auto-oriented commercial uses along major corridors. Development in this district typically includes significant surface parking. Current businesses in this design vary widely in lot coverage, with most exceeding the 40% maximum currently in place, which could have been due to parking lots being excluded

from this calculation in the past. Raising this threshold to 70% would preserve Cambridge's value of protecting green space while bringing the requirement in line with surrounding communities.

- Current maximum lot coverage: 40%
- **Proposed maximum lot coverage: 70%**

***Chapter 17.28, Article II - Mixed Use Business (MB).***

The Mixed Use Business district anticipates a blend of commercial, and office uses at a scale and intensity lower than General Business. Staff recommend a maximum of 50%, for the following reasons:

1. A review of properties currently assigned the MB district shows lot coverage just under 50% for most existing development. A maximum of 50% would allow new development to achieve a similar intensity to nearby properties while remaining consistent with the district's character.
2. The current requirement of 40% makes meeting Cambridge's parking minimums difficult for higher-demand uses such as office and restaurant. Allowing up to 50% provides meaningful flexibility without significantly increasing overall site intensity.
3. Exceeding 50% would risk diminishing the landscaped character that distinguishes the MB district from more intensive commercial zones and that contributes to the compatibility of uses within it.

- Current maximum lot coverage: 40%
- **Proposed maximum lot coverage: 50%**

***Chapter 17.28* - Central Business District (B-C)**

Follows the General Business district review. Maximum lot coverage remains 90%. This matches current conditions and similar to other communities noted in the table above.

***Chapter 17.36 - Business Park (B-P).***

No current lot coverage requirement but does include a building coverage requirement of not less than 25% and no more than 55% of the lot. No change proposed at this time.

## Potential Action

Consider recommending adoption of the following proposed amendments to the Village of Cambridge Zoning Code, as outlined in this staff report, dated June 26th, 2026:

- Section 17.04.09 - Lot Coverage definition
- Section 17.08.030(L) - establishment of a lot coverage calculation methodology
- Section 17.92.010(6) - updated lot coverage language
- Section 17.28.080(G) - increase in maximum lot coverage from 40% to 70% in the Highway Business (B-H) district.
- Section 17.32.040(G) - increase from 40% to 50% in the Mixed-Use Business (MB) district.

Sincerely,

Stephen Tremlett, AICP
Zoning Administrator

# Village of Cambridge Conditional Use Permit Application

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

The Plan Commission meets on the second Monday of each month at 6:30 p.m. in the Amundson Community Center. To be placed on the agenda, submit your complete CUP application (with fee) at least 30 days before the desired meeting. The review will begin once the application is complete and the fee is paid to the Village Clerk. Applicants or their representatives should attend the meeting to present the request and answer questions.

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):*** KC 708, LLC | |
| ***Applicant Name (if different than above):*** Kjell Kaasbraten | |
| ***Project Address:*** 708 Katie Court Cambridge | ***Parcel #:*** LOT #4 Matts Plat |
| ***Applicant Address (if different than above):*** | |
| ***Applicant Phone:*** 608-575-1011 | ***Applicant Email:*** Kjell@greatplainsconsultant.com |
| ***Property Zoning Designation:*** | ***Current Property Use:*** Vacant land |
| ***Conditional Use Request:*** | |

A $800 application fee is required. Fees are subject to change by Village resolution. Please provide the following submittals:

1. A site plan that includes:
   - Parcel boundaries
   - Existing and proposed structures
   - Setbacks from property lines
   - Locations of buildings on adjoining properties
   - North arrow and street names
2. Complete the Conditional Use Standards – Applicant Response Form on the following pages.

I (we) certify that all of the above statement and the statements contained in any papers or plans submitted herewith are true to the best of my (our) knowledge and belief. I (we) consent to the entry in or upon the premises described in this application by any authorized official of the Village of Cambridge for the purpose of securing information posting, maintaining and removing such notices as may be required by law.

***Applicant Signature:*** Kjell Kaasbraten ***Date:*** 5-6-26

***Owner Signature:*** Kjell Kaasbraten ***Date:*** 5-6-26

| ***For Staff Use Only*** | |
|---|---|
| ***Date Received:*** | ***Fee Paid?*** |
| ***Public Hearing Date:*** | ***Public Hearing Publication Dates:*** |
| ***Date Public Hearing Notices Mailed to Adjoining Property Owners:*** | |
| ***Plan Commission Recommendation:*** ☐ Denied ☐ Approved ***Subject to:*** | |
| ***Village Board Decision:*** ☐ Denied ☐ Approved (Res #:_____) ***Subject to:*** | |

# Village of Cambridge Conditional Use Permit Application

## Conditional Use Standards – Applicant Response Form

Please respond to each of the following questions. Your answers will help the Plan Commission and Village Board evaluate your request under §17.68.070 of the Cambridge Municipal Code.

### Purpose of Request

What is the purpose of the conditional use request? Are there any characteristics of your parcel or location that influence the need for this request?

So we can build OFFICE / commercial Storage units For Small Businesses and Hobbyist's.

### Adjacent Property Uses

What are the existing uses of all adjacent properties?

Healthcare clinic
Dental clinic
Pizza Pit
Veterinary Clinic

### Compatibility with Surrounding Area

How is the proposed conditional use compatible with surrounding development and land uses?

Business across highway landscaping / Excavator Storage units, Winery

### Additional Considerations

Are there any other factors related to the proposed use, site conditions, or surrounding area that the Plan Commission should consider?

| SITE DATA: | |
|---|---|
| LOT AREA: | 44,976 SF |
| TOTAL PROPOSED IMPERVIOUS AREA: | 21,506 SF (49.6%) |
| TOTAL PROPOSED NON-IMPERVIOUS AREA: | 23,470 SF (50.4%) |

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: 10,368 SqFt
STALLS REQUIRED: 10,368 SqFt / 400 SqFt x 1 = 26 STALLS REQUIRED
TOTAL PARKING STALLS ON-SITE: 27 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
EXISTING 8" SANITARY SEWER (PER GIS)
EXISTING 8" WATERMAIN (PER GIS)
KATIE COURT
PROPERTY LINE
10' SIDE SETBACK
15' UE
67'
STORMWATER MANAGEMENT AREA
PROPOSED BUILDING
FF 886.50
54'
35' FRONT SETBACK
192'
31'
30' REAR SETBACK
NEW WHEEL STOPS
4' FLUSH CONCRETE WALK
NEW BITUMINOUS PAVEMENT
12'x16' CONCRETE TRASH PAD
STORMWATER MANAGEMENT AREA
BERM
EDGING
10' SIDE SETBACK
PROPERTY LINE
SANITARY MANHOLE RIM 881.03
NEW STORM SEWER (OWNER TO SECURE RIGHTS ACROSS PRIVATE PROPERTY)
EX. TREE
SIGN
FORT HEALTH CARE
CAMBRIDGE CLINIC
704 KATIE COURT
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


1. DIMENSION PLAN
2. GENERAL NOTES & DETAILS
3. GENERAL NOTES & DETAILS CONTINUED
4. SITE UTILITY, GRADING, DRAINAGE PLAN
5. EROSION CONTROL PLAN
6. ECP NOTES AND DETAILS
7. LANDSCAPE PLAN





LOCATION SKETCH

# 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.

Member One Call System International

To Obtain Location of Participants Underground Facilities Before You Dig in Wisconsin

CALL DIGGERS HOTLINE 1-800-242-8511

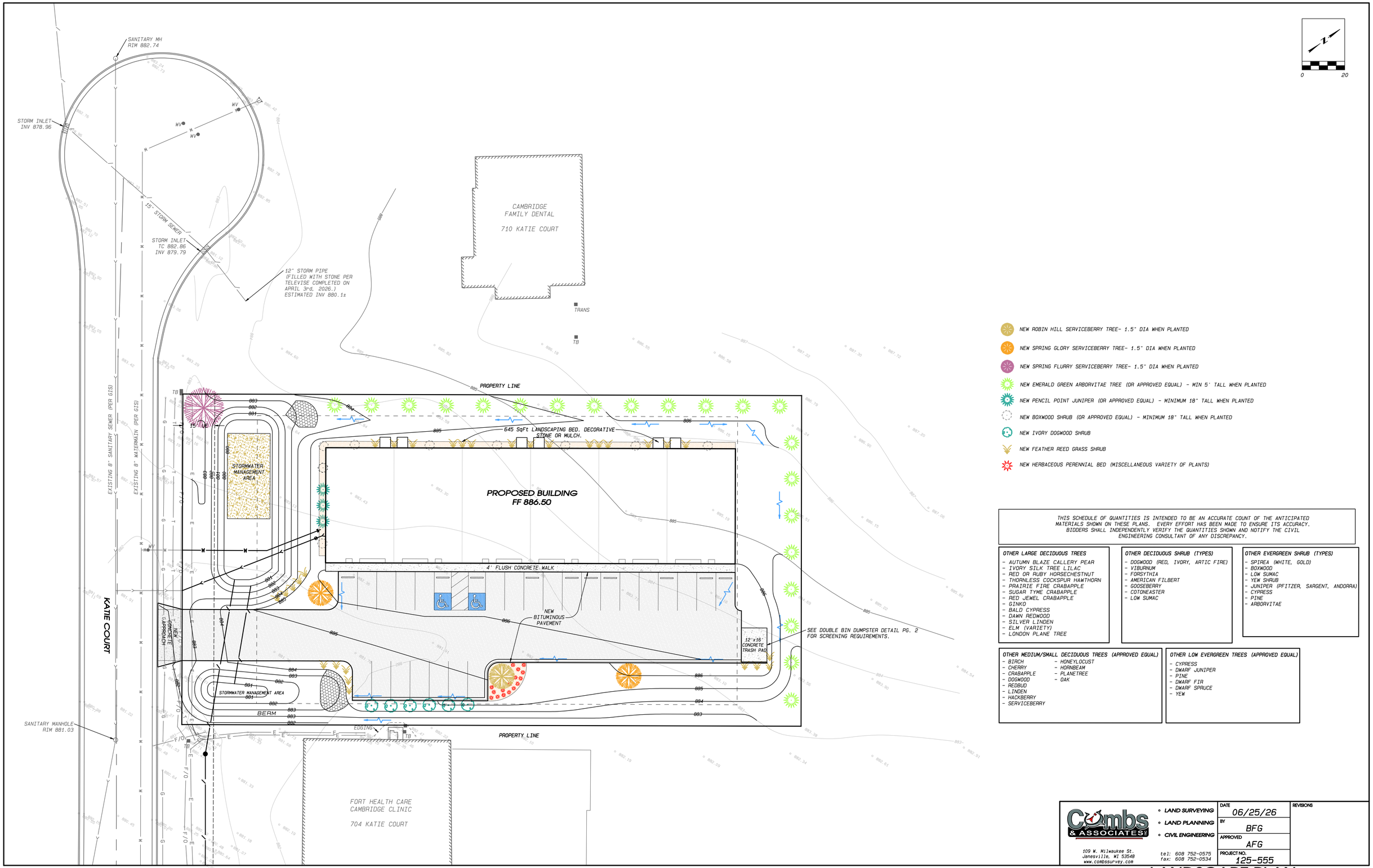
Wis Statute 182.0175 (1974) Requires Min. 3 Work Days Notice Before You Excavate


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 | 06/25/26 |
| BY | BFG |
| APPROVED | AFG |
| PROJECT NO. | 125-555 |
| REVISIONS | |

DIMENSION PLAN




- NEW ROBIN HILL SERVICEBERRY TREE- 1.5" DIA WHEN PLANTED
- NEW SPRING GLORY SERVICEBERRY TREE- 1.5" DIA WHEN PLANTED
- NEW SPRING FLURRY SERVICEBERRY TREE- 1.5" DIA WHEN PLANTED
- NEW EMERALD GREEN ARBORVITAE TREE (OR APPROVED EQUAL) - MIN 5' TALL WHEN PLANTED
- NEW PENCIL POINT JUNIPER (OR APPROVED EQUAL) - MINIMUM 18" TALL WHEN PLANTED
- NEW BOXWOOD SHRUB (OR APPROVED EQUAL) - MINIMUM 18" TALL WHEN PLANTED
- NEW IVORY DOGWOOD SHRUB
- NEW FEATHER REED GRASS SHRUB
- NEW HERBACEOUS PERENNIAL BED (MISCELLANEOUS VARIETY OF PLANTS)

THIS SCHEDULE OF QUANTITIES IS INTENDED TO BE AN ACCURATE COUNT OF THE ANTICIPATED MATERIALS SHOWN ON THESE PLANS. EVERY EFFORT HAS BEEN MADE TO ENSURE ITS ACCURACY. BIDDERS SHALL INDEPENDENTLY VERIFY THE QUANTITIES SHOWN AND NOTIFY THE CIVIL ENGINEERING CONSULTANT OF ANY DISCREPANCY.

**OTHER LARGE DECIDUOUS TREES**
- AUTUMN BLAZE CALLERY PEAR
- IVORY SILK TREE LILAC
- RED OR RUBY HORSECHESTNUT
- THORNLESS COCKSPUR HAWTHORN
- PRAIRIE FIRE CRABAPPLE
- SUGAR TYME CRABAPPLE
- RED JEWEL CRABAPPLE
- GINKO
- BALD CYPRESS
- DAWN REDWOOD
- SILVER LINDEN
- ELM (VARIETY)
- LONDON PLANE TREE

**OTHER DECIDUOUS SHRUB (TYPES)**
- DOGWOOD (RED, IVORY, ARTIC FIRE)
- VIBURNUM
- FORSYTHIA
- AMERICAN FILBERT
- GOOSEBERRY
- COTONEASTER
- LOW SUMAC

**OTHER EVERGREEN SHRUB (TYPES)**
- SPIREA (WHITE, GOLD)
- BOXWOOD
- LOW SUMAC
- YEW SHRUB
- JUNIPER (PFITZER, SARGENT, ANDORRA)
- CYPRESS
- PINE
- ARBORVITAE

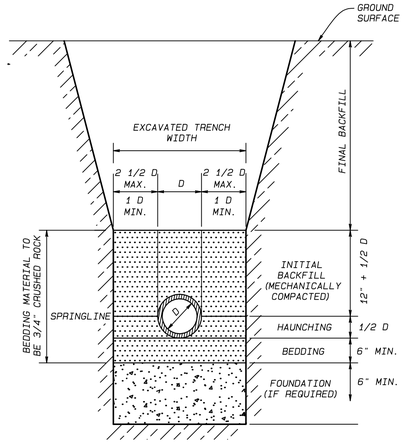
**OTHER MEDIUM/SMALL DECIDUOUS TREES (APPROVED EQUAL)**
- BIRCH
- CHERRY
- CRABAPPLE
- DOGWOOD
- REDBUD
- LINDEN
- HACKBERRY
- SERVICEBERRY
- HONEYLOCUST
- HORNBEAM
- PLANETREE
- OAK

**OTHER LOW EVERGREEN TREES (APPROVED EQUAL)**
- CYPRESS
- DWARF JUNIPER
- PINE
- DWARF FIR
- DWARF SPRUCE
- YEW

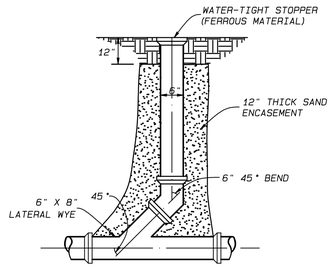

Combs & Associates LLC
109 W. Milwaukee St.
Janesville, WI 53548
www.combssurvey.com
- LAND SURVEYING
- LAND PLANNING
- CIVIL ENGINEERING
tel: 608 752-0575
fax: 608 752-0534


| | |
|---|---|
| DATE | 06/25/26 |
| BY | BFG |
| APPROVED | AFG |
| PROJECT NO. | 125-555 |
| REVISIONS | |

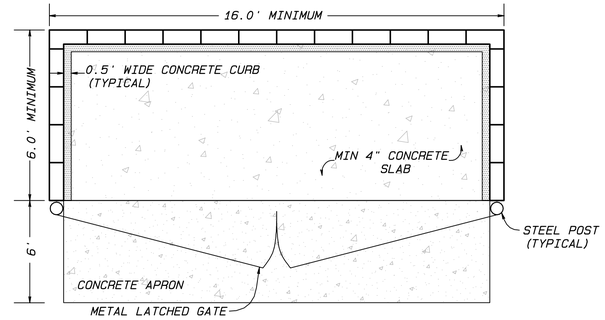
# LANDSCAPE PLAN




SANITARY PIPE EMBEDMENT DETAIL



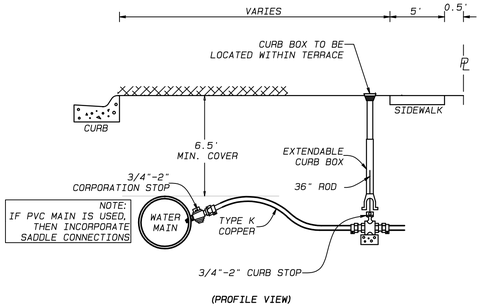

CLEANOUT DETAIL




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)



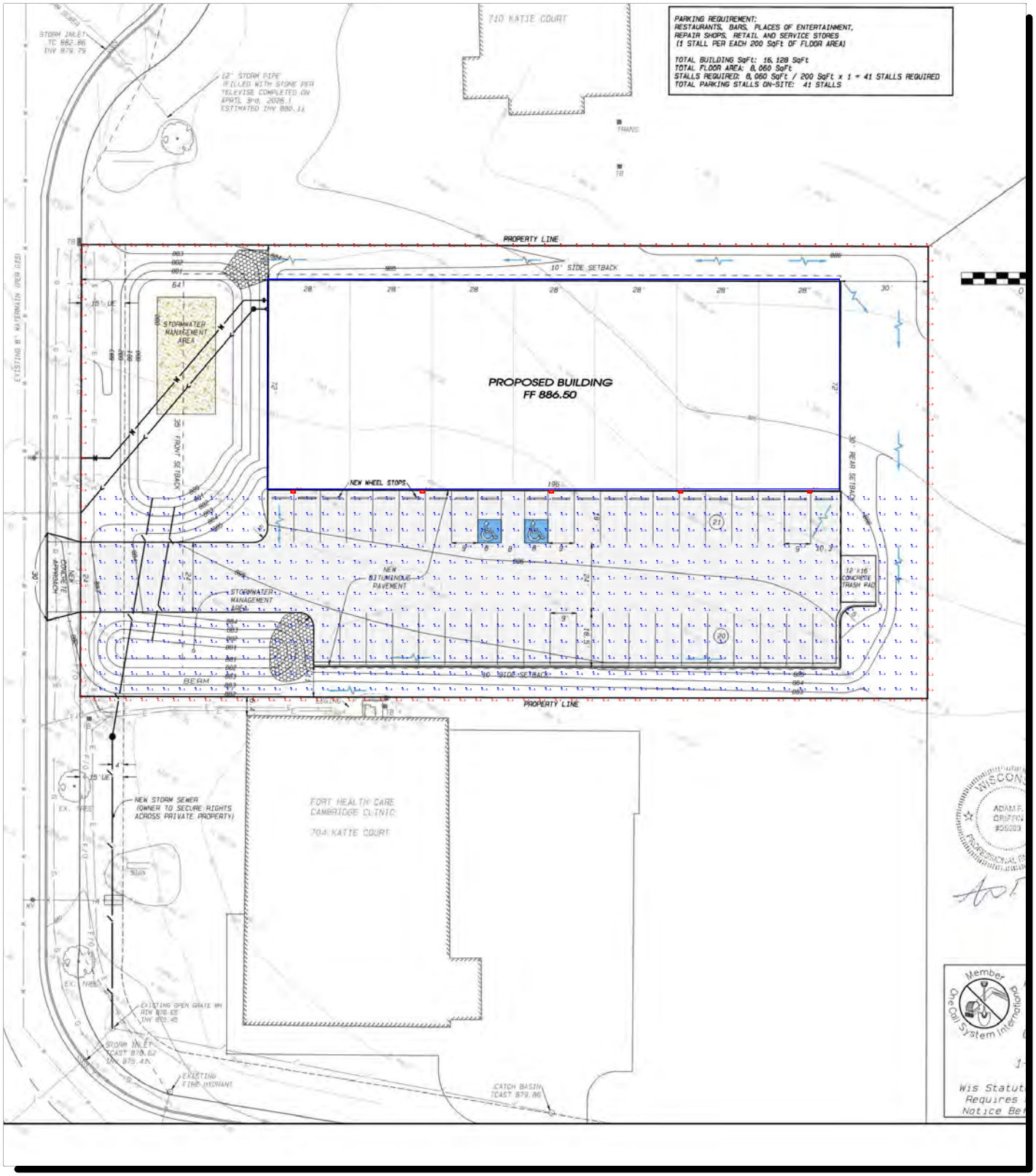

WATER SERVICE DETAIL

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 |
|---|---|
| 06/25/26 | |
| BY: BFG | |
| APPROVED: AFG | |
| PROJECT NO.: 125-555 | |

GENERAL NOTES & DETAILS CONTINUED




Calculation Summary

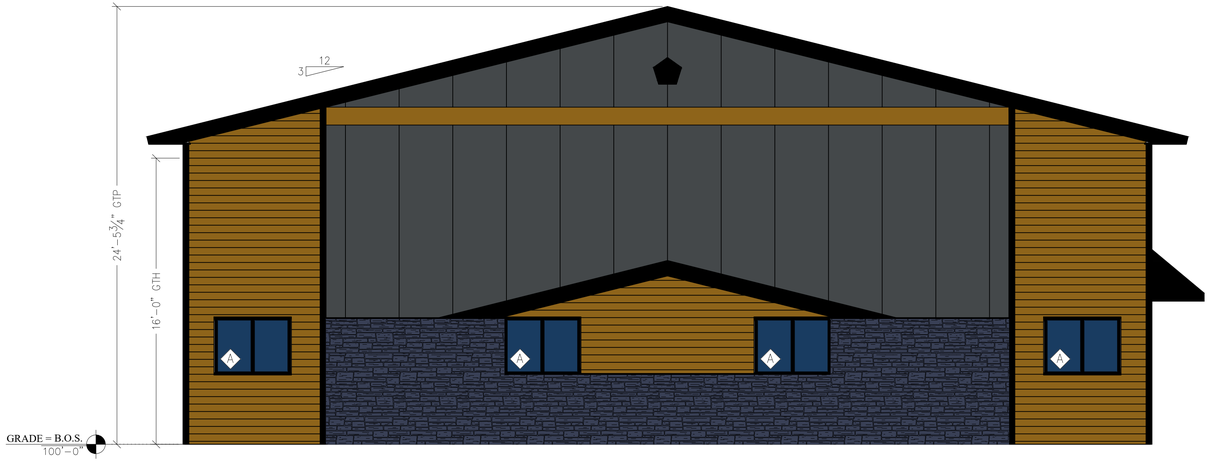
| Label | CalcType | Avg | Avg/Min | Max | Min |
|---|---|---|---|---|---|
| Property Line | Illuminance | 0.12 | N.A. | 0.4 | 0.0 |
| Site Lighting | Illuminance | 1.64 | N.A. | 8.3 | 0.0 |

Luminaire Schedule

| Symbol | Qty | Label | Luminaire Lumens | Luminaire Watts |
|---|---|---|---|---|
| [redacted] | 5 | w22-m-60-60w-4000k-45deg_ dlf2311107-71a | 8970 | 58.6 |

VISION IMAGE - GENERAL CHARACTER EXAMPLE






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: 6/23/2025

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

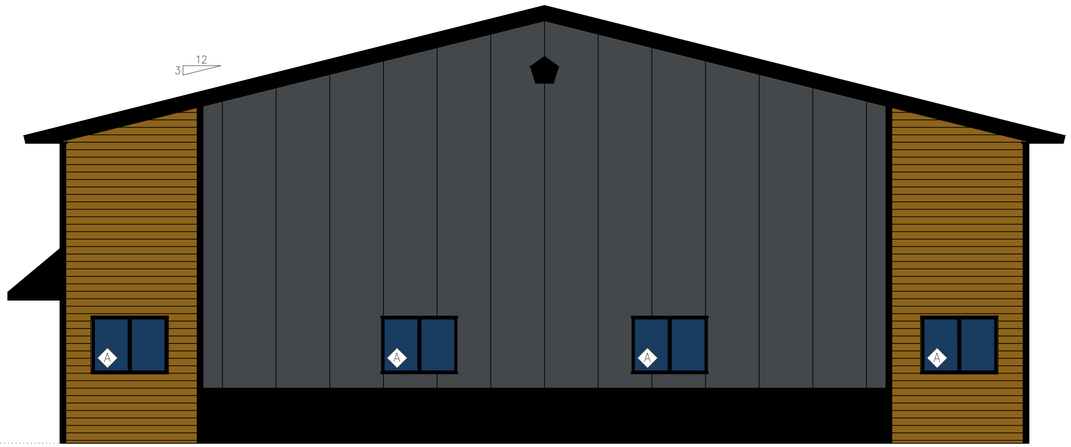
SCALE:
AS NOTED

ENGINEER:

JOB NUMBER:
94-0855 54FT WIDE

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"

Walters Buildings
Jack Walters & Sons, Corp.
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ROSS NEUMANN

ESTIMATOR:

LAST SAVED BY:
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ARCH FULL BLEED D (24.00 X 36.00 INCHES)

SCALE:
AS NOTED

ENGINEER:

JOB NUMBER:
94-0855 54FT WIDE

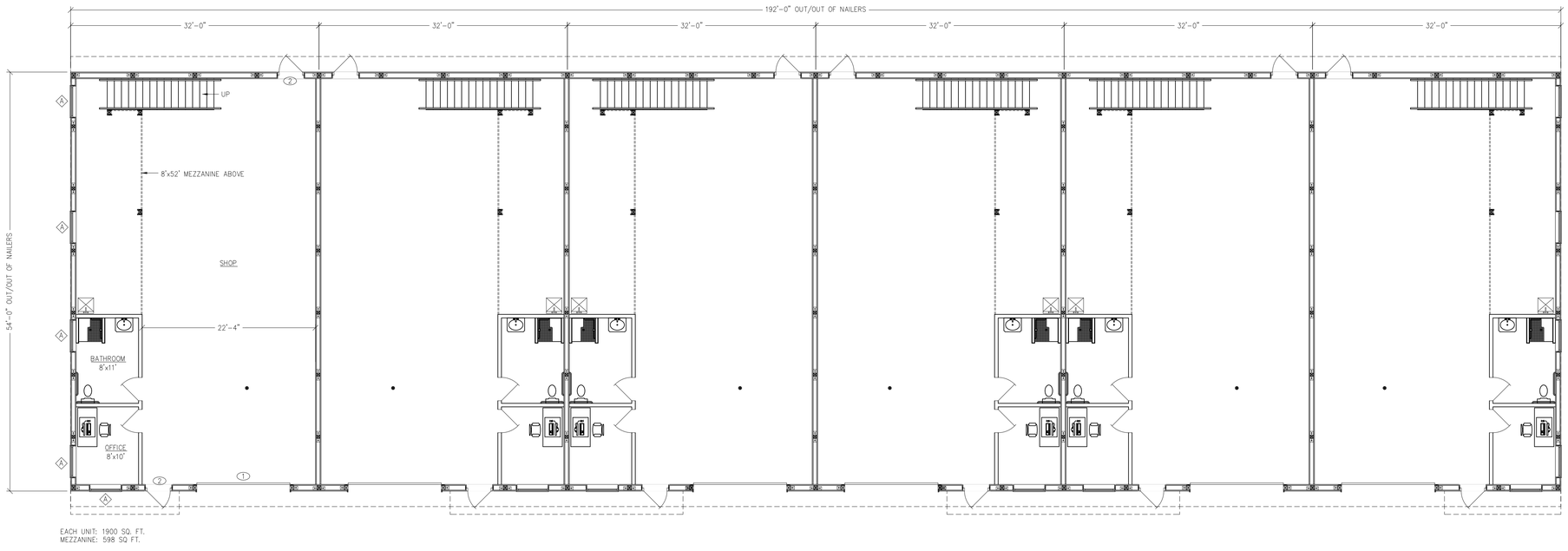
PROJECT ID:
2025001364

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 |




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


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6600 Midland Ct.
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PRELIMINARY PLANS - NOT FOR CONSTRUCTION

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Kaashagen Building - Original Quote

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East North Street, Cambridge, WI, 53523

SALES REP / DEALER:
CHAD OLSON

DRAFTER:
ROSS NEUMANN

ESTIMATOR:

LAST SAVED BY:
RNEUMANN ON: 6/23/2025

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

SCALE: 1/8" = 1'-0"
0 3 5 10

ENGINEER:

JOB NUMBER:
94-0855 54FT WIDE

PROJECT ID:
2025001364

SHEET NUMBER:
A2

# 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 **(July 8th, 2026 – updated)** |

## Overview of Request

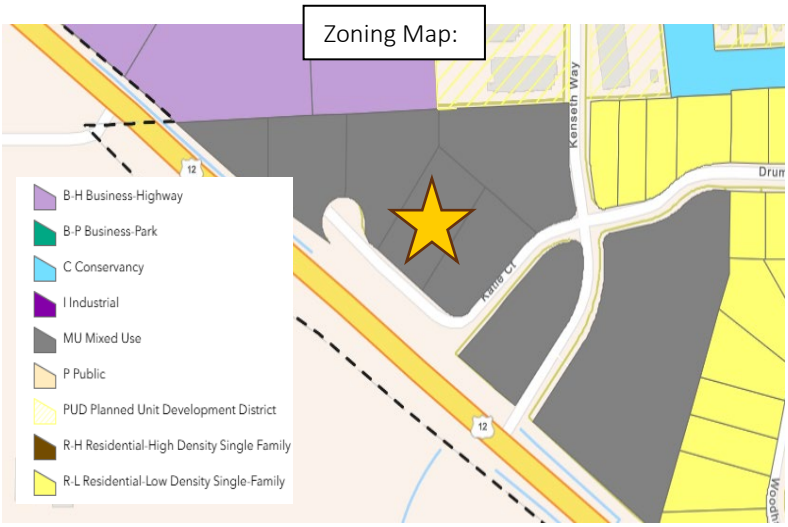
The applicant has submitted a Conditional Use Permit (CUP) to develop commercial condos in the Mixed Business Zoning District. The CUP will determine if this use is appropriate for this site based on its context or if there are conditions setting requirements more stringent than village ordinances that 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 motion.**

## 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***

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. 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.

For clarity on intent of allowing this use in the MB Zoning District, the following description should be added to the definitions section of the zoning ordinance (which will require a text amendment and public hearing to adopt into the code):

- Commercial condos (also known as Multi-Tenant Business (non-retail)) are standardized units within a business-focused building that provide office space with an open floor plan that typically includes an overhead door and a secondary pedestrian door to each unit.

## 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



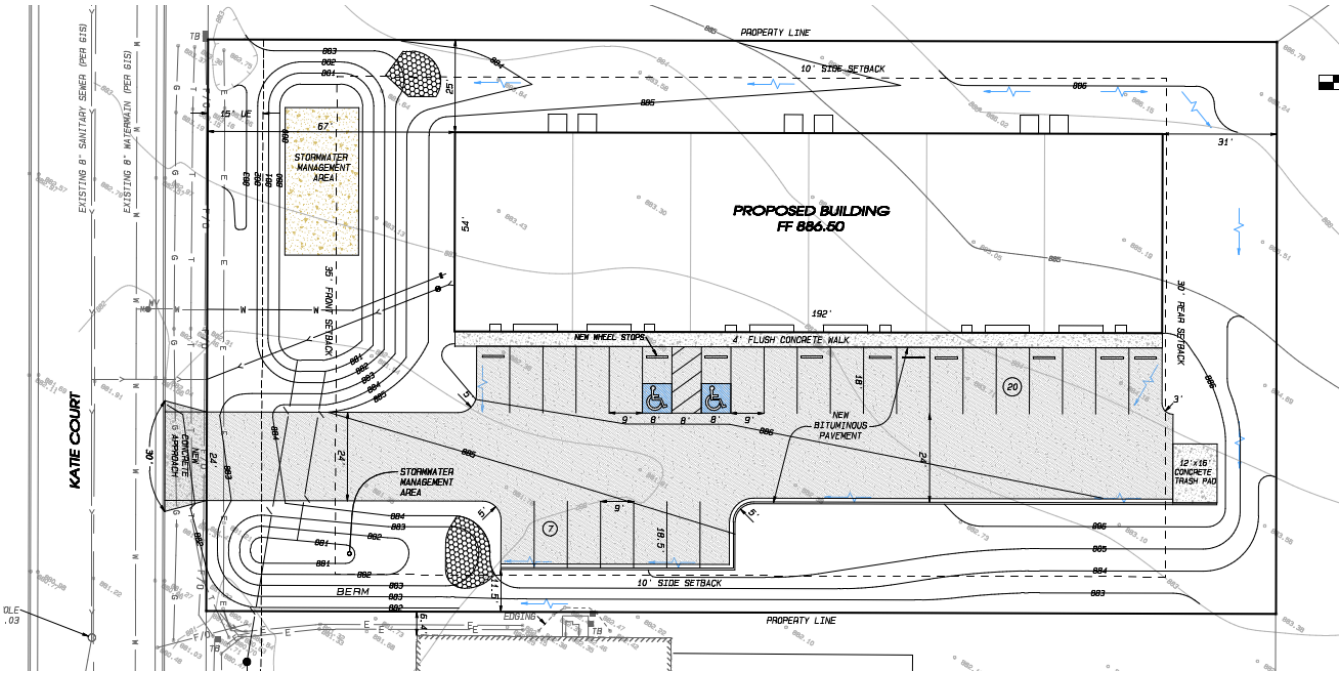


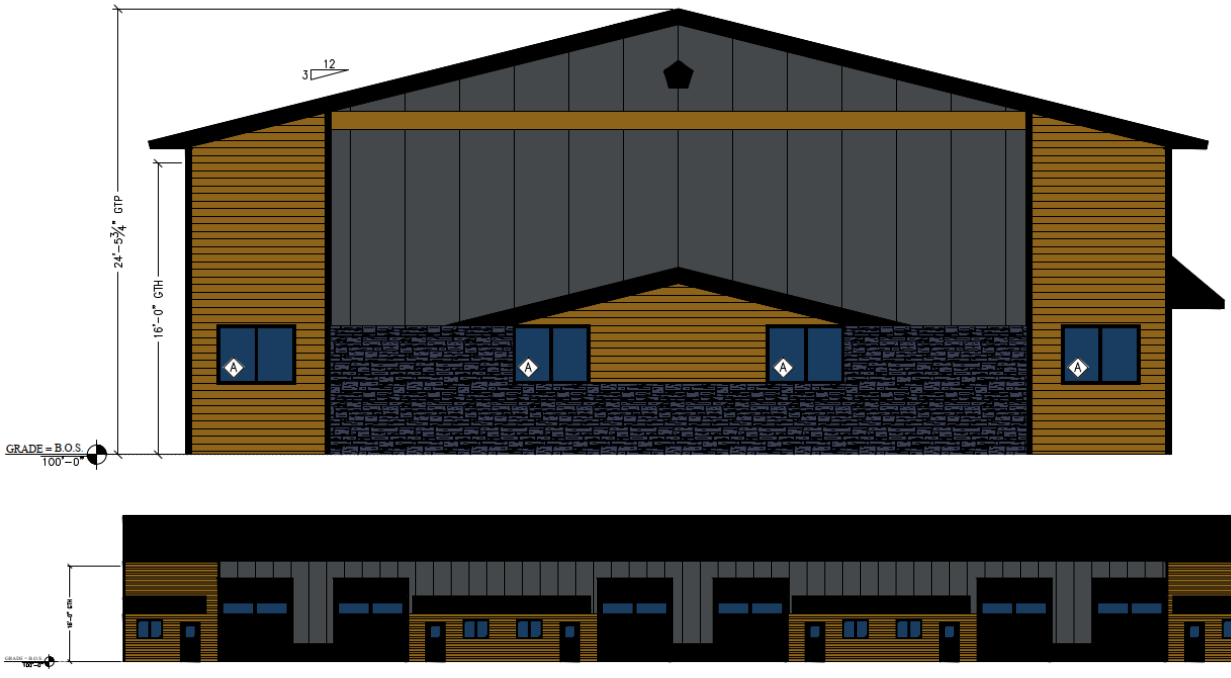



## Plans for the Property

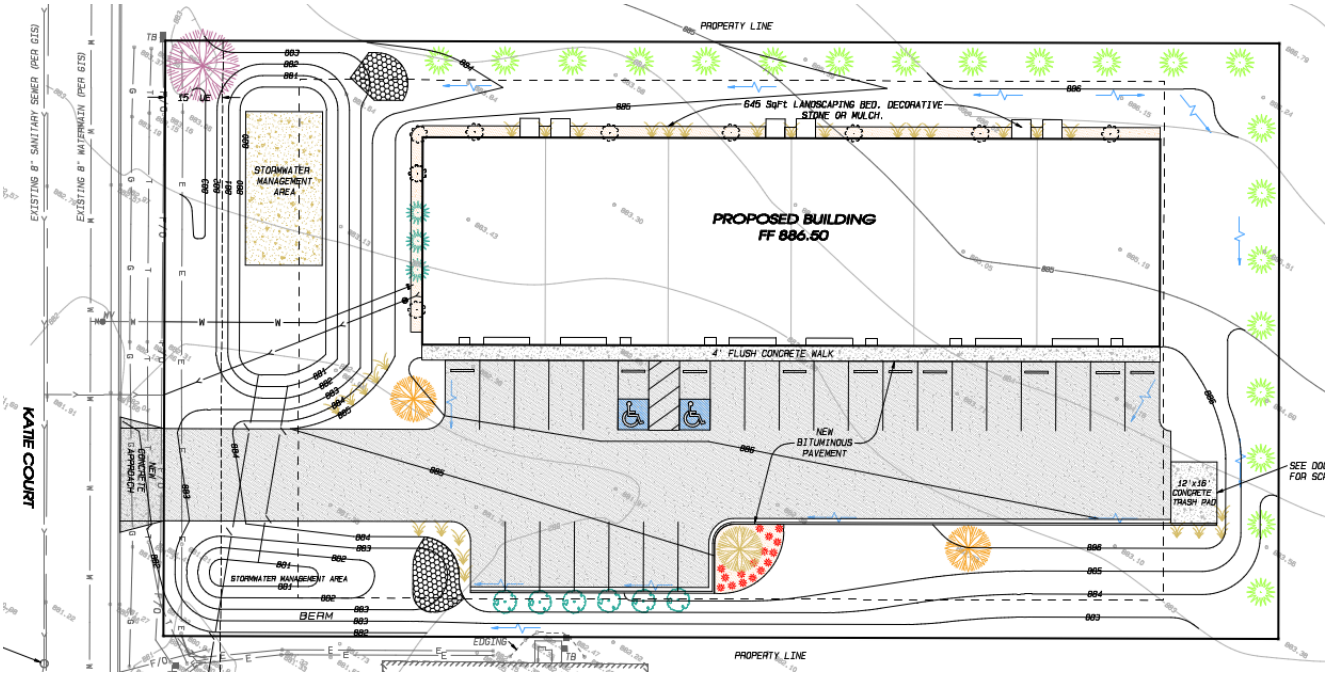
**The applicant is proposing 10,351 square foot** 1-story commercial condo building with **6 units** and a surface parking lot with **27 stalls, 2 of which are ADA/accessible.** The intended uses are office/commercial storage units for small businesses and hobbyists. **Stormwater management basins are located along the front of the building.** ***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.***








## 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 fail 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 have large windows and include plantings in yards and along with 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). The revised site plan submitted includes a landscaping plan that can be evaluated for compliance with planting-related conditions set by the CUP.

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 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 units that share common walls that can be privately owned, in that situation maintenance and repair of those shared structural elements cannot be left solely to 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. The 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 square feet. In the submitted site plan, for context, that would equate to 26 required 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.
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. The dumpster enclosure shall be screened with a solid enclosure with a gate with opaque screening, or substantial landscaped with evergreen trees and shrubs on sides and rear with plant height at maturity of four (4) feet. Enclosure materials shall be compatible with the principal building's exterior materials, subject to staff review and approval.
5. 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) Building walls over 50 feet in length shall be broken up through material changes, offsetting façade (by at least one foot), varying building height (by more than two feet), or other modifications that in accumulation of mass in the form of smaller related units.
    d) Roof pitch shall be no less/flatter than 3:12.

e) 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.

6. 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

# Village of Cambridge Site, Architectural, and Operations Plan Application

**200 Spring Street, PO Box 99, Cambridge, WI 53523 ♦ Phone (608) 423- 3712**

https://cambridgewi.gov

Requirements for site, architectural, and operations plan review shall be applied to any development, new or remodeled, in the following zoning districts: B-C central business, B-G general business, B-H highway business, mixed-use business, I industrial, and B-P business park district. This ensures the proposal meets Village Ordinance Standards.

- Development includes new construction, site changes, or changes in land/building use or appearance.
- Submit a complete application and pay the required fee to begin the review.
- The Zoning Administrator typically reviews the application to ensure completion before sending to Plan Commission at least fourteen (14) days prior to the plan commission meeting at which approval is being requested.

If you have any questions about Development requirements, please contact Stephen Tremlett, Zoning Administrator, at (608) 242-6605 or stremlett@msa-ps.com.

| | | |
|---|---|---|
| ***Owner Name(s):*** KC708, LLC | | |
| ***Applicant Name (if different than above):*** Kjell Kaashagen | | |
| ***Project Address:*** 708 Katie Ct, Cambridge, WI 53523 | ***Zoning:*** General Office | |
| ***Applicant Address (if different than above):*** 827 Vineyard Ct Cambridge, WI 53523 | | |
| ***Applicant Phone:*** 608-575-1011 | ***Applicant Email:*** Kjell@greatplainsconsultant.com | |

Project Description: Business office condos

| ***Development Submittal Checklist*** | | | |
|---|---|---|---|
| | Completed Application (this page) | If any of the items below are not applicable to your project, please mark "n/a" in the checkbox and explain why the item does not apply to your project in the project description above.<br><br>Other information may be necessary for the enforcement of this chapter when requested by the Zoning Administrator. | |
| X | ***$250.00 Fee, plus technical staff review costs*** | | |
| X | Legal Description of the property | **If Applicable:** | |
| X | Site plan drawn to scale showing parcel boundaries, existing and proposed structures, setbacks, and access points | X | *Landscape Plan* |
| X | Reference sketch of site location to two intersecting streets | X | *Sign Plan* |
| X | Exact location, nature, dimensions, and elevations of existing and proposed development | | *Stormwater Management & Erosion Control Plan* |
| X | Proposed occupancy (if applicable) with dimensioned and numbered parking spaces | | *Grading and Drainage Plan* |

***Applicant Signature:*** Kjell Kaashagen ***Date:*** 1-20-26

***Owner Signature:*** Kjell Kaashagen ***Date:*** 1-20-26

| ***For Staff Use Only*** | | |
|---|---|---|
| ***Date Received:*** | ***To Appear before Plan Commission on:*** | ***Paid Yes No Date:*** |
| ***Application Approved by Zoning Administrator:*** | | ***Date:*** |

**17.56.050 - Administration.**

**The following plan data shall be submitted to the zoning administrator who shall transmit all applications and their accompanying plans to the plan commission for the review fourteen (14) days prior to the plan commission meeting at which approval is being requested.**

1.Site plan draw to scale (including scale and north point);

2.Name of project;

3.Owner's and/or developer's name and address;

4.Architect and/or engineer's name and address;

5.Date of plan submittal;

6.Existing topography shown at a contour interval not less than two feet (or where not readily available, elevations at appropriate locations);

7.Proposed changes to topography;

8.The characteristics of soils related to contemplated uses;

9.The type, size, location and dimensions of all structures including fences and walls;

10.Location and number of parking, loading, and storage areas;

11.Primary building materials used in construction of all structures;

12.Height of building(s);

13.Location and size of existing and proposed sanitary sewers, septic tanks and disposal fields, holding tanks, storm sewers, and water mains;

14.Location, size and capacity of proposed storm water detention/retention areas;

15.Location of proposed solid waste (refuse) storage area;16.Location of pedestrian sidewalks and walkways;

17.Existing and proposed public right-of-way widths;

18.Illustrations and sizes of any signage to be placed in proposed structures or any free-standing signs;

19.Location, type, height and intensity of proposed lighting;

20.Site entrance, drive dimensions such as widths, radii, and visibility triangles;

21.Location and dimensions of all existing or planned easements, lands subject to deed restrictions or protective covenants, right-of-way, and required emergency access ways;

22.Location of existing trees and extent and type of proposed plantings including type and extent of erosion control;

23.A graphic delineation of any planned development staging;

24.Architectural plans, elevations, and perspective drawings and sketches illustrating the design and character of proposed structures;

25.Any other site or use information which will assist the plan commission in making a determination and recommendation on the proposal.

**B. In addition, operations plan data to be submitted with all plan review applications (fourteen (14) days prior to the plan commission meeting) shall include at least the following:**

1.Specific use of site and building(s);

2.Hours of operations;

3.Number of full and part time employees;

4.Estimate of daily truck and auto trips to the site;

5.Type of materials and equipment to be stored on site;

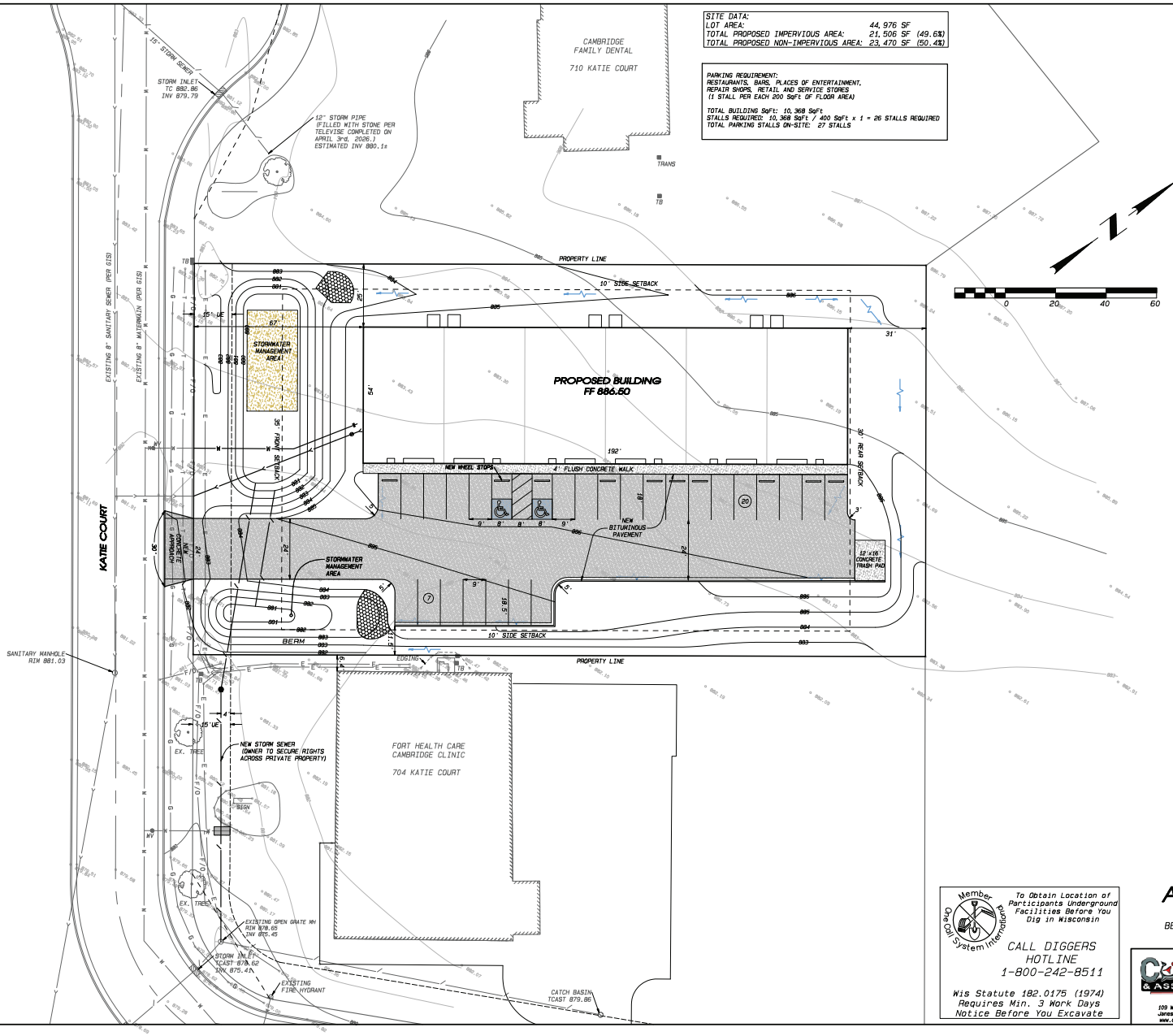
6.Method of handling solid and liquid waste disposal;

7.Method of exterior maintenance (site and buildings);

8.Method of site and building security other than local police;

9.Any other information which will assist the plan commission in making a determination and recommendation of the proposal.

(Ord. 2004-03 § 4 (part): prior code § 13-1-52(f))




## 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
- 885 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
- 885.57 EXISTING SPOT ELEVATION

## INDEX OF SHEETS


1. DIMENSION PLAN
2. GENERAL NOTES & DETAILS
3. GENERAL NOTES & DETAILS CONTINUED
4. SITE UTILITY, GRADING, DRAINAGE PLAN
5. EROSION CONTROL PLAN
6. ECP NOTES AND DETAILS
7. LANDSCAPE PLAN





LOCATION SKETCH

# 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.

Member One Call System International

To Obtain Location of Participants 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


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


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- LAND PLANNING
- CIVIL ENGINEERING

| | |
|---|---|
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| BY | BFG |
| APPROVED | AFG |
| PROJECT NO. | 125-555 |
| REVISIONS | |

## 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.

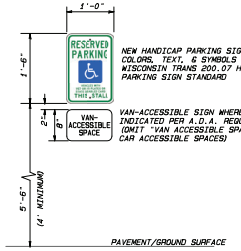
Contractor shall verify all public & private utilities are installed prior to paving.

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 GGC 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.

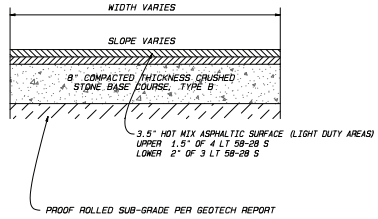



NEW HANDICAP PARKING SIGN. COLORS, TEXT, & SYMBOLS PER WISCONSIN TRANS 200.07 HANDICAP PARKING SIGN STANDARD

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

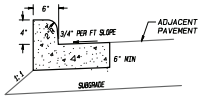
### WALL-MOUNTED HANDICAP SIGN

(OR APPROVED EQUAL)

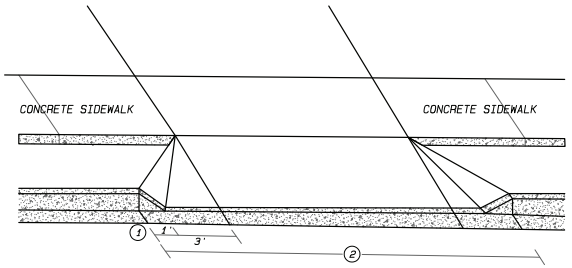



### LIGHT DUTY BITUMINOUS PAVEMENT

FOR PARKING STALL AREAS ONLY




### 18" CARRY CURB

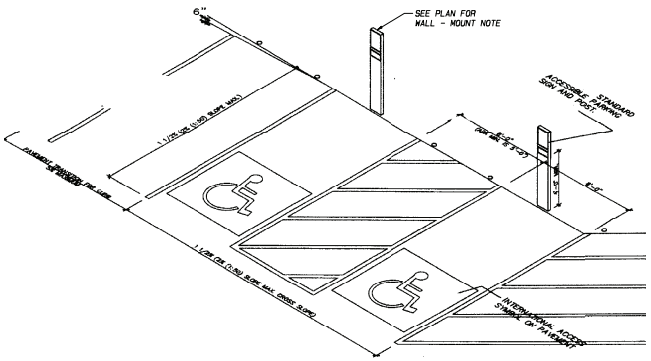



### DRIVEWAY APPROACH

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:

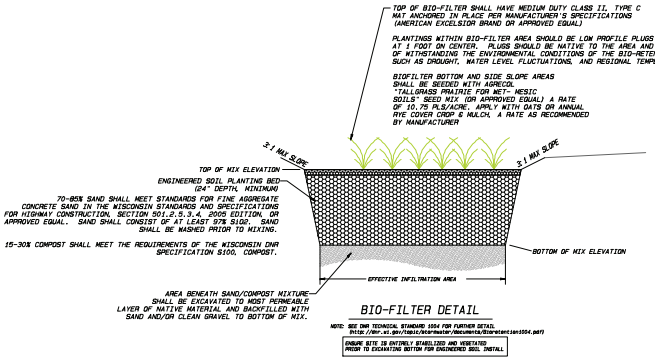
EACH ACCESSIBLE PARKING SPACE IS TO BE A MINIMUM OF 8 FEET WIDE AND HAVE A 96" MINIMUM ACCESS AISLE FOR VANS OR 60" ACCESS AISLE FOR CARS ADJACENT TO THE SPACE. THE ACCESS AISLE MAY BE ON EITHER THE DRIVER'S SIDE OR THE PASSENGER'S SIDE OF THE ACCESSIBLE SPACE. THIS APPLIES TO 45, 60, AND 90 PARKING.

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.



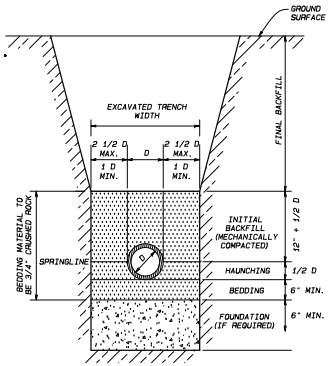

### BIO-FILTER DETAIL

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

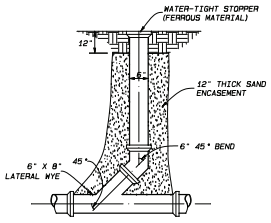
ENSURE SITE IS ENTIRELY STABILIZED AND VEGETATED PRIOR TO EXCAVATING BOTTOM FOR ENGINEERED SOIL INSTALL


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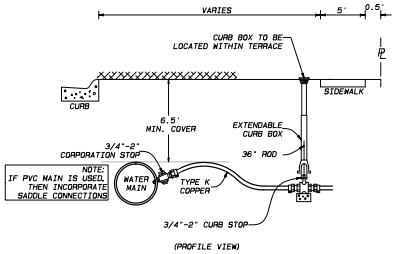

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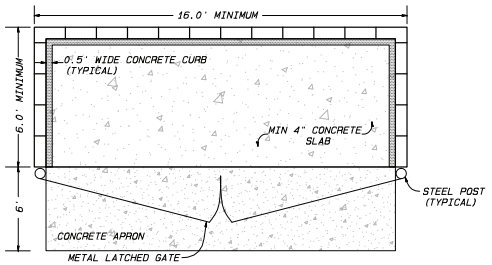

SANITARY PIPE EMBEDMENT DETAIL




CLEANOUT DETAIL




WATER SERVICE 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.

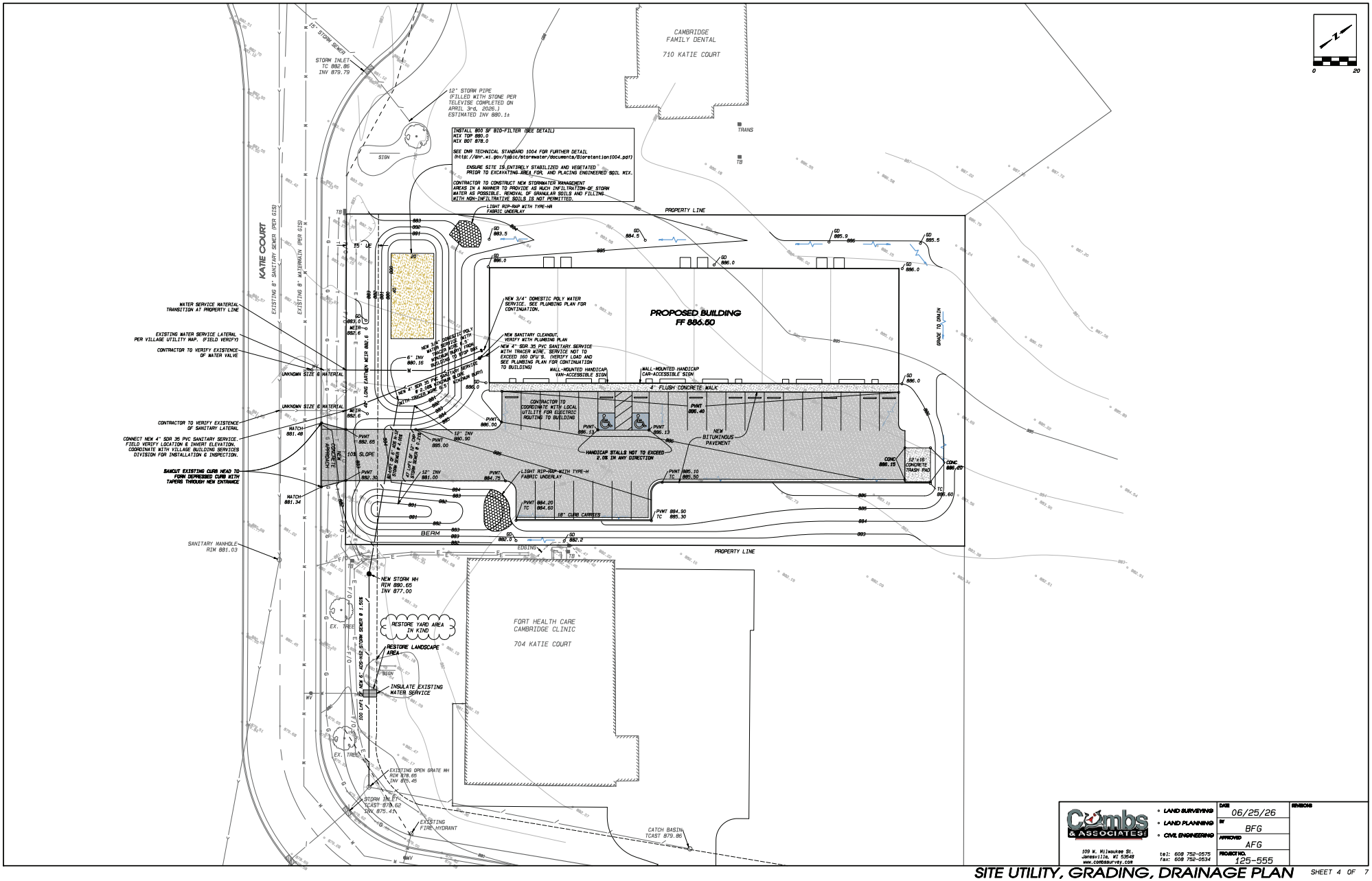
(VERIFY DETAIL WITH ARCHITECT)

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GENERAL NOTES & DETAILS CONTINUED



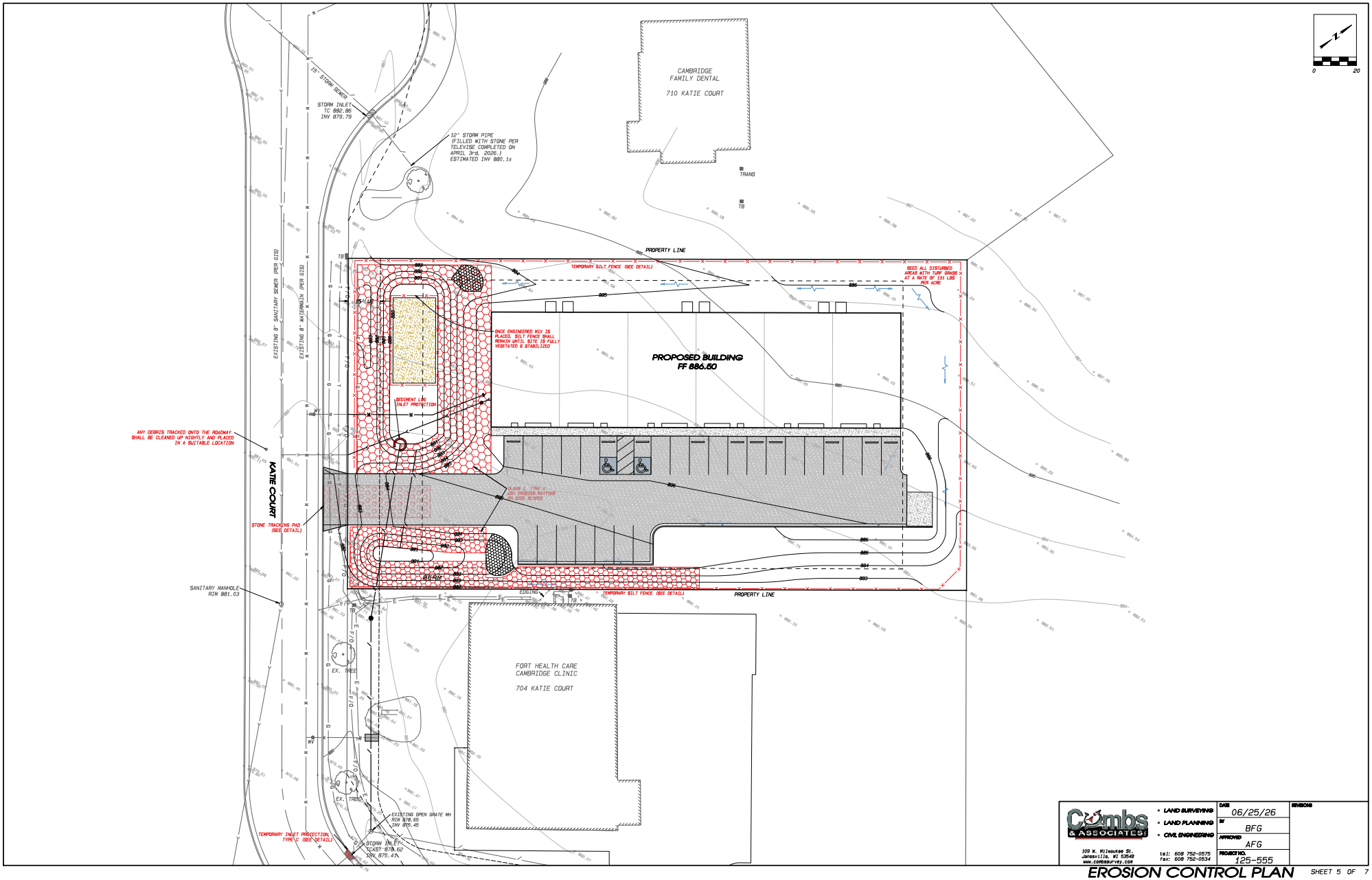


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# SITE UTILITY, GRADING, DRAINAGE PLAN




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# 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 (WPDES 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.smtml~~

~~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 SEEPING 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.

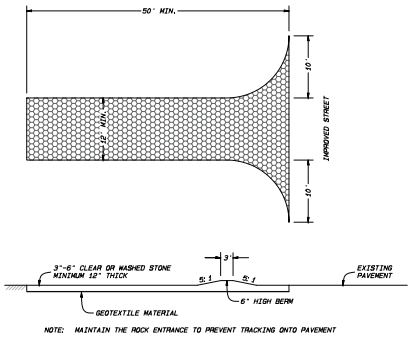
5. Clear and grub the site.
6. Begin grading the site.

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

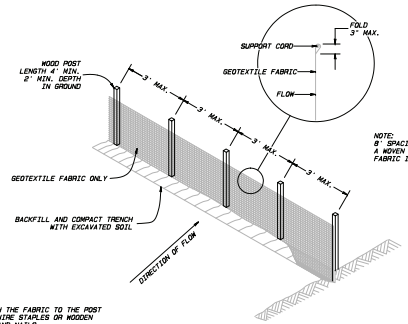
1. Backfill and stabilize diversions and swales.
2. Pave site.
3. Complete grading.
4. Remove all temporary erosion and sediment control devices (only if site is stabilized).




NOTE: MAINTAIN THE ROCK ENTRANCE TO PREVENT TRACKING ONTO PAVEMENT

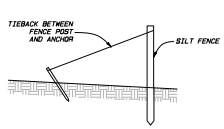
## STONE TRACKING PAD

FOR MORE INFORMATION, SEE DNR BMP TECH STANDARD 1057



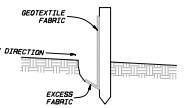

NOTE: ATTACH THE FABRIC TO THE POST WITH WIRE STAPLES OR WOODEN LATH AND NAILS

## SILT FENCE

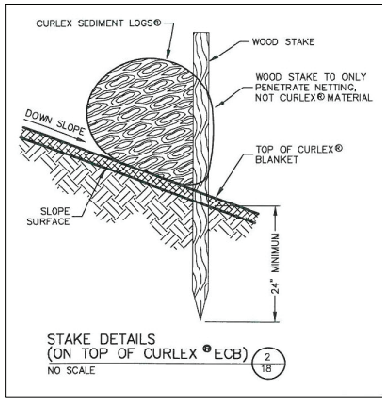



## SILT FENCE TIE BACK

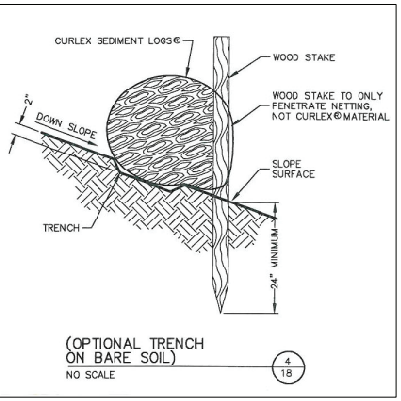
WHEN REQUIRED BY ENGINEER



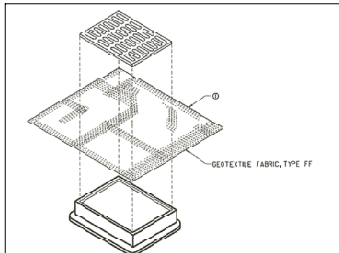

## TRENCH DETAIL



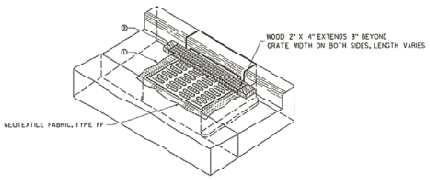

STAKE DETAILS (ON TOP OF CURLEX © ECB) 2/18
NO SCALE




(OPTIONAL TRENCH ON BARE SOIL) 4/18
NO SCALE




INLET PROTECTION, TYPE B (WITHOUT CURB BOX)
(CAN BE INSTALLED ON ANY INLET TYPE)

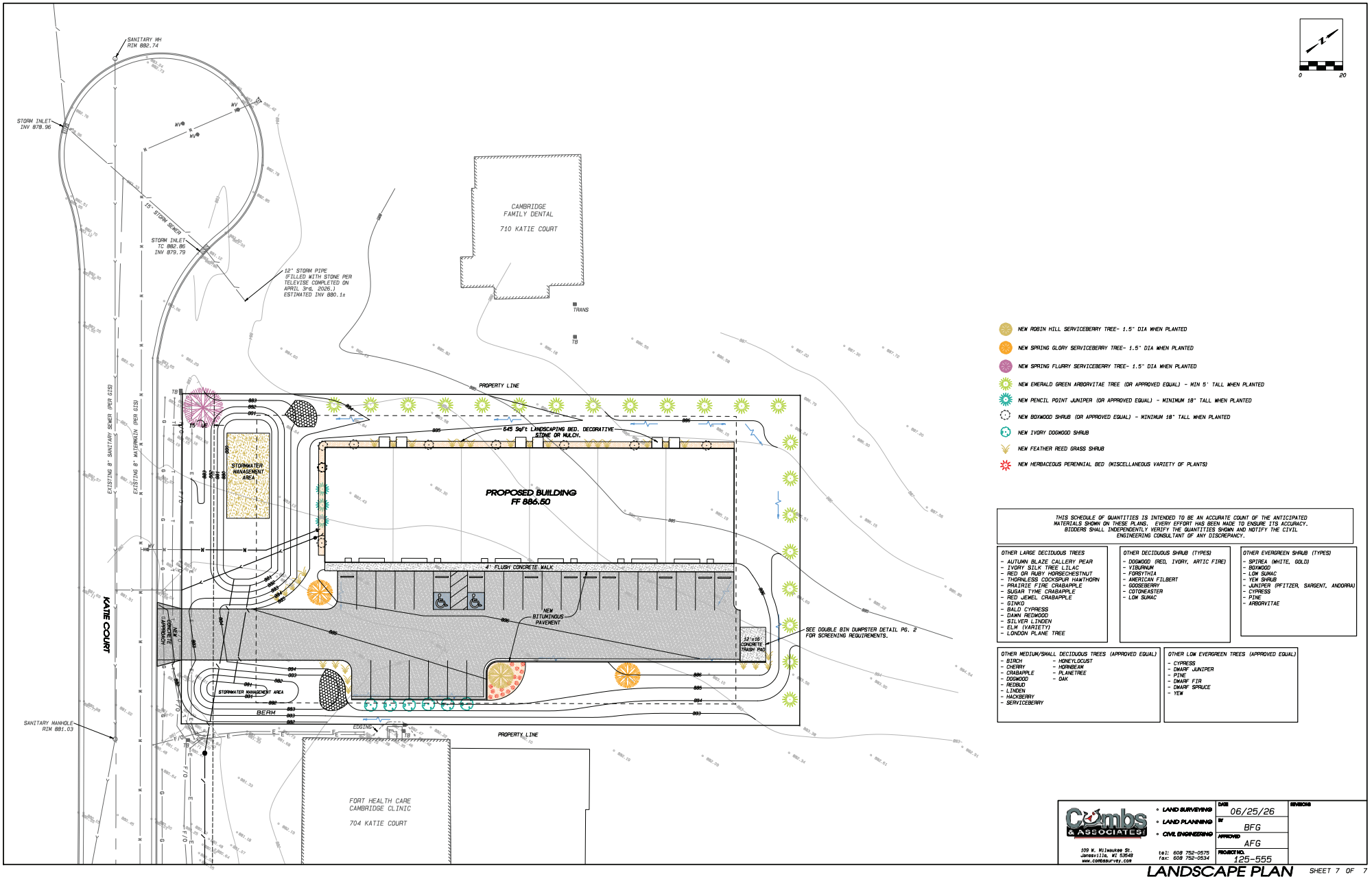



INLET PROTECTION, TYPE C WITH CURB BOX


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


DATE 06/25/26
BY BFG
APPROVED AFG
PROJECT NO. 125-555
REVISIONS

# ECP NOTES AND DETAILS




- NEW ROBIN HILL SERVICEBERRY TREE- 1.5" DIA WHEN PLANTED
- NEW SPRING GLORY SERVICEBERRY TREE- 1.5" DIA WHEN PLANTED
- NEW SPRING FLURRY SERVICEBERRY TREE- 1.5" DIA WHEN PLANTED
- NEW EMERALD GREEN ARBORVITAE TREE (OR APPROVED EQUAL) - MIN 5' TALL WHEN PLANTED
- NEW PENCIL POINT JUNIPER (OR APPROVED EQUAL) - MINIMUM 18" TALL WHEN PLANTED
- NEW BOXWOOD SHRUB (OR APPROVED EQUAL) - MINIMUM 18" TALL WHEN PLANTED
- NEW IVORY DOGWOOD SHRUB
- NEW FEATHER REED GRASS SHRUB
- NEW HERBACEOUS PERENNIAL BED (MISCELLANEOUS VARIETY OF PLANTS)

THIS SCHEDULE OF QUANTITIES IS INTENDED TO BE AN ACCURATE COUNT OF THE ANTICIPATED MATERIALS SHOWN ON THESE PLANS. EVERY EFFORT HAS BEEN MADE TO ENSURE ITS ACCURACY. BIDDERS SHALL INDEPENDENTLY VERIFY THE QUANTITIES SHOWN AND NOTIFY THE CIVIL ENGINEERING CONSULTANT OF ANY DISCREPANCY.

**OTHER LARGE DECIDUOUS TREES**
- AUTUMN BLAZE CALLERY PEAR
- IVORY SILK TREE LILAC
- RED OR RUBY HORSECHESTNUT
- THORNLESS COCKSPUR HAWTHORN
- PRAIRIE FIRE CRABAPPLE
- SUGAR TYME CRABAPPLE
- RED JEWEL CRABAPPLE
- GINKO
- BALD CYPRESS
- DAWN REDWOOD
- SILVER LINDEN
- ELM (VARIETY)
- LONDON PLANE TREE

**OTHER DECIDUOUS SHRUB (TYPES)**
- DOGWOOD (RED, IVORY, ARTIC FIRE)
- VIBURNUM
- FORSYTHIA
- AMERICAN FILBERT
- GOOSEBERRY
- COTONEASTER
- LOW SUMAC

**OTHER EVERGREEN SHRUB (TYPES)**
- SPIREA (WHITE, GOLD)
- BOXWOOD
- LOW SUMAC
- YEW SHRUB
- JUNIPER (PFITZER, SARGENT, ANDORRA)
- CYPRESS
- PINE
- ARBORVITAE

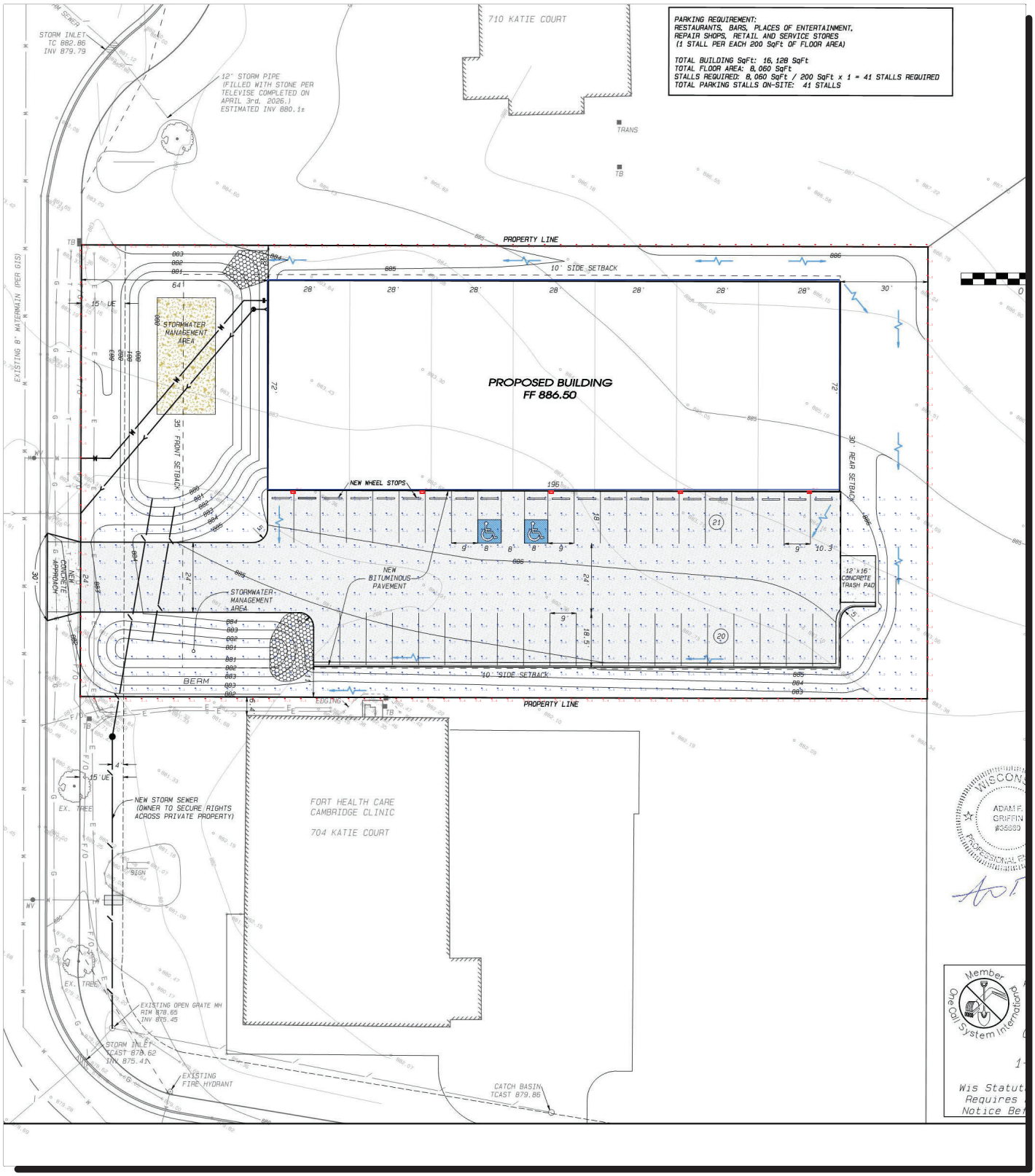
**OTHER MEDIUM/SMALL DECIDUOUS TREES (APPROVED EQUAL)**
- BIRCH
- CHERRY
- CRABAPPLE
- DOGWOOD
- REDBUD
- LINDEN
- HACKBERRY
- SERVICEBERRY
- HONEYLOCUST
- HORNBEAN
- PLANETREE
- OAK

**OTHER LOW EVERGREEN TREES (APPROVED EQUAL)**
- CYPRESS
- DWARF JUNIPER
- PINE
- DWARF FIR
- DWARF SPRUCE
- YEW


Combs & ASSOCIATES
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tel: 608 752-0575
fax: 608 752-0534


| | |
|---|---|
| DATE | 06/25/26 |
| BY | BFG |
| APPROVED | AFG |
| PROJECT NO. | 125-555 |
| REVISIONS | |

# LANDSCAPE PLAN




| Calculation Summary | | | | | |
|---|---|---|---|---|---|
| **Label** | **CalcType** | **Avg** | **Avg/Min** | **Max** | **Min** |
| Property Line | Illuminance | 0.12 | N.A. | 0.4 | 0.0 |
| Site Lighting | Illuminance | 1.64 | N.A. | 8.3 | 0.0 |

| Luminaire Schedule | | | | |
|---|---|---|---|---|
| **Symbol** | **Qty** | **Label** | **Luminaire Lumens** | **Luminaire Watts** |
| [1] | 5 | w22-m-60-60w-4000k-45deg_ dlf2311107-71a | 8970 | 58.6 |

# W22-M-60



Color: Bronze

Weight: 9.5 lbs

| | |
|---|---|
| **Project:** | **Type:** |
| **Prepared By:** | **Date:** |

### Driver Info

| | |
|---|---|
| Type | Constant |
| 120V | 0.50A |
| 208V | 0.29A |
| 240V | 0.25A |
| 277V | 0.22A |
| Input Watts | 29.3-61W |

### LED Info

| | |
|---|---|
| Watts | 60/50/40/30W |
| Color Temp | 3000/4000/5000K |
| Color Accuracy | 82-85 CRI |
| L70 Lifespan | 100,000 Hours |
| Lumens | 3,727-9,105 lm |
| Efficacy | 117.1-161.5 lm/W |

## Technical Specifications

### Field Adjustability

**Cutoff Adjustability:**
45°, 30°, 15° and 0° (factory default 45°)

**Field Adjustable:**
Field Adjustable Light Output:
60W/50W/40W/30W (factory default 60W)
Color temperature selectable 3000K, 4000K and 5000K (factory default 4000K)

### Compliance

**UL Listed:**
Suitable for wet locations

**DLC Listed:**
This product family is listed with the DesignLights Consortium (DLC). Individual SKUs within this family may carry either a DLC Standard or DLC Premium qualification. Please refer to the individual product specification sheet or the DLC Qualified Products List (QPL) at designlights.org to confirm the qualification status of a specific SKU prior to specification or purchase.

### Electrical

**Driver:**
Constant Current, Class 1, 120-277V, 50/60 Hz:
60W: 120V: 0.50A, 208V: 0.29A, 240V: 0.25A, 277V: 0.22A
50W: 120V: 0.41A, 208V: 0.24A, 240V: 0.21A, 277V: 0.19
40W: 120V: 0.34A, 208V: 0.20A, 240V: 0.18A, 277V: 0.15A
30W: 120V: 0.25A, 208V: 0.15A, 240V: 0.13A, 277V: 0.11A

**Dimming Driver:**
Driver includes dimming control wiring for 0-10V dimming systems. Requires separate 0-10V DC dimming circuit. Dims down to 10%.

**Photocell:**
Integrated photocell included with on/off switch

**Surge Protection:**
DM 4 kV+ CM 6 kV

### Performance

**Lifespan:**
100,000-Hour LED lifespan based on IESlm-80 results and TM-21 calculations

**Performance Data:**
Click here for the W22-M-60 performance data

**Wattage Equivalency:**
60W: Replaces up to 250W Metal Halide (MH) or 200W High Pressure Sodium (HPS)
50W: Replaces up to 250W Metal Halide (MH) or 200W High Pressure Sodium (HPS)
40W: Replaces up to 175W Metal Halide (MH) or 150W High Pressure Sodium (HPS)
30W: Replaces up to 150W Metal Halide (MH) or 100W High Pressure Sodium (HPS)

### LED Characteristics

**LEDs:**
Long-life, high-efficacy, surface-mount LEDs

**Color Uniformity:**
RAB's range of Correlated Color Temperature follows the guidelines of the American National Standard for Specifications for the Chromaticity of Solid State Lighting (SSL) Products, ANSI C78.377-2017.

### Construction

**Housing:**
Die-cast aluminum

**Lens:**
Glass

**Reflector:**
Aluminum


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## Technical Specifications (continued)

**Cold Weather Starting:**
The minimum starting temperature is -40°F (-40°C)

**Maximum Ambient Temperature:**
Suitable for use in up to 104°F (40°C)

**Green Technology:**
Mercury and UV free. RoHS-compliant components.

**Finish:**
Formulated for high durability and long-lasting color

### Installation

**Mounting:**
Suface mount for recessed junction box; 3 conduit entry points

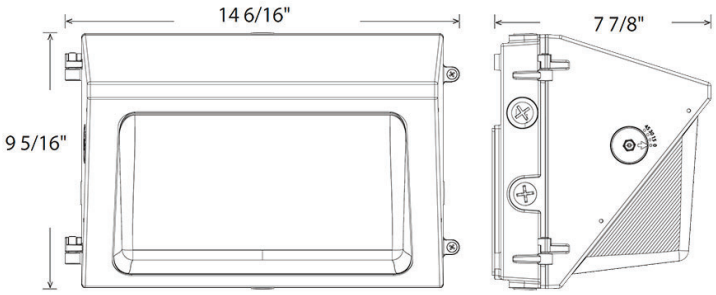
### Optical

**BUG Rating:**
60W: B2 U4 G5
50W: B2 U4 G4
40W: B1 U3 G4
30W: B1 U3 G3

### Other

**5-Year Limited Warranty:**
The RAB 5-year, limited warranty covers light output, driver performance and paint finish. RAB's warranty is subject to all terms and conditions found at rablighting.com/warranty.

## Dimensions




## Features

- 100,000-Hour LED lifespan
- 0-10V dimming standard
- 5-Year, limited warranty


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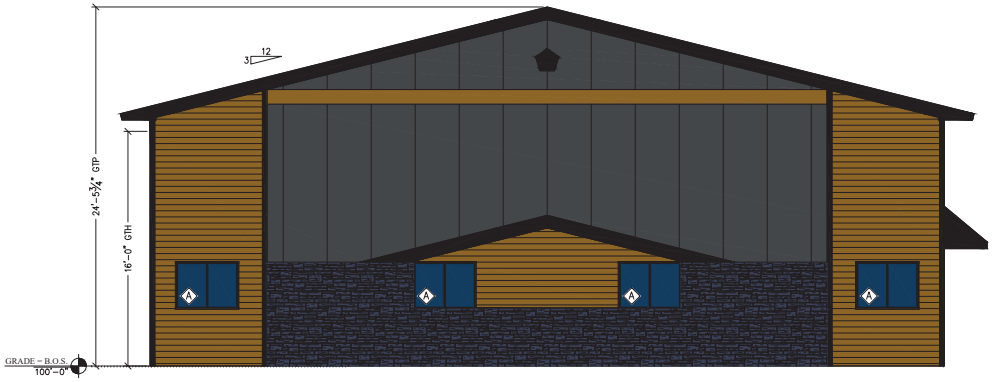
## Ordering Matrix

| Family | Housing Size | Wattage | Color Temp | Finish | Forward Throw | Driver | Controls | Battery Backup |
|---|---|---|---|---|---|---|---|---|
| W22 | M | 60 | | | | | | |
| | **M =** Medium<br>**L =** Large<br>**S =** Small | **30 =** 30/25/20/15W [1]<br>**60 =** 60/50/40/30W [2]<br>**100 =** 100/85/70/50W [2]<br>**150 =** 150/125/100/75W [3] | **Blank =** 3000/4000/5000K Adjustable | **Blank =** Bronze<br>**W =** White | **Blank =** Adjustable Throw 0°/15°/30°/45° | **Blank =** 120-277V<br>**/480 =** 480V | **Blank =** Selectable Photocell<br>**/LCBS/MVS =** Selectable Photocell w/Lightcloud Blue MVS Sensor | **Blank =** None<br>**/E =** Battery Backup |

[1] *S (Small) models only*
[2] *M (Medium) models only*
[3] *L (Large) models only*
[4] *Battery backup available only on M (Medium) and L (Large) models with 120-277V*


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VISION IMAGE - GENERAL CHARACTER EXAMPLE
2
harvest
WELCOME
WELCOME




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: 4/23/2025

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

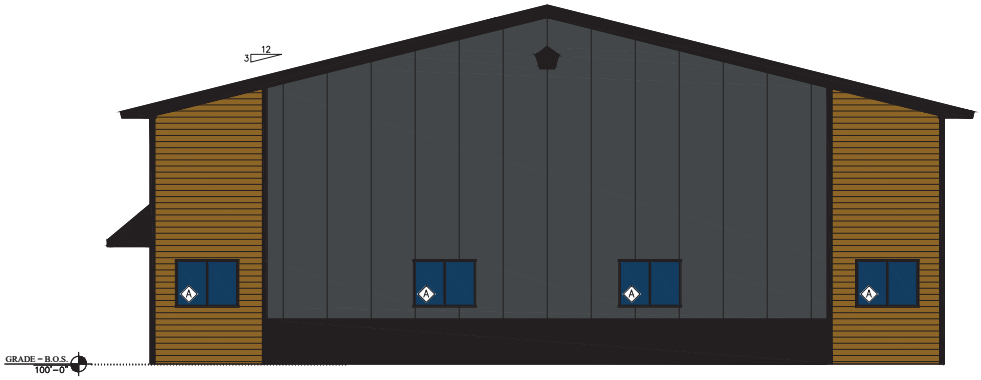
SCALE:
AS NOTED

ENGINEER:

JOB NUMBER:
94-0855 54FT WIDE

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"

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

DRAFTER:
ROSS NEUMANN

ESTIMATOR:

LAST SAVED BY:
RNEUMANN ON: 6/23/2025

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

SCALE:
AS NOTED

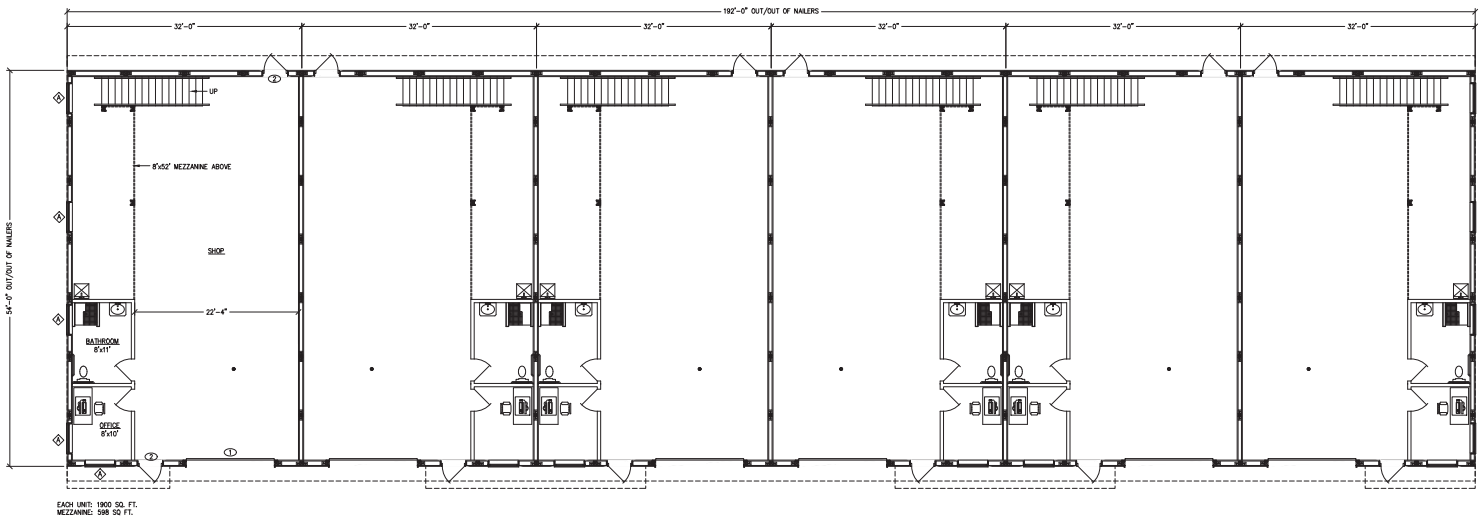
ENGINEER:

JOB NUMBER:
94-0855 54FT WIDE

PROJECT ID:
2025001364

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 |
| 3 | PLYCO 4030 HORIZONTAL SLIDE WINDOW | X |




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

Walters Buildings
Jack Walters & Sons, Corp.
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East North Street, Cambridge, WI, 53523

SALES REP / DEALER:
CHAD OLSON

DRAFTER:
ROSS NEUMANN

ESTIMATOR:

LAST SAVED BY:
RNEUMANN ON: 6/23/2025

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

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

ENGINEER:

JOB NUMBER:
94-0855 54FT WIDE

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

**June 24, 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 0.51 acres (49.4%). 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** | 0.47cfs | **0.35cfs** | **0.38cfs** |
| **2-**yr | 0.68cfs | **0.45cfs** | **0.50cfs** |
| **10-yr** | 1.59cfs | **0.73cfs** | **0.84cfs** |
| **100-yr** | 4.08cfs | **1.07cfs** | **1.40cfs** |
| **200-yr** | 3.79cfs | **2.34cfs** | **2.59cfs** |

**Infiltration Summary**
WinSLAMM modeling performed for this project indicates ***103%*** 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 ***86.86%*** 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

*August 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.

*October 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** |

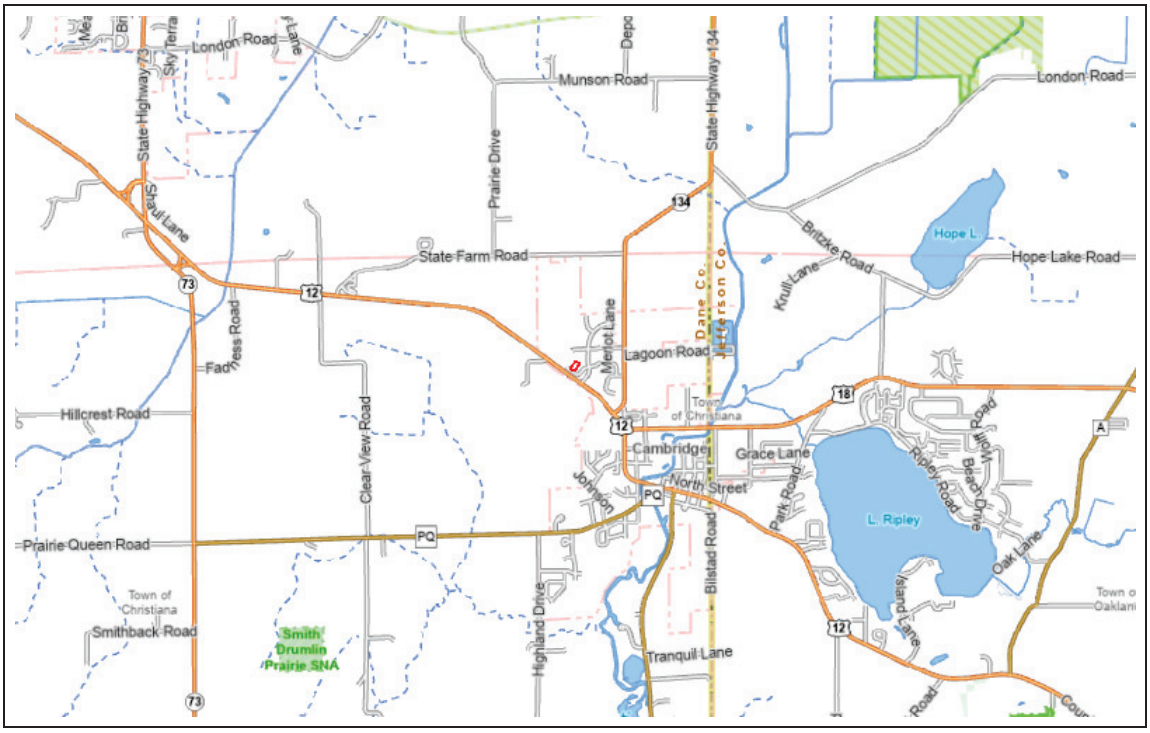
| | |
|---|---|
| Is project near (within 300 ft) a waterbody or a shoreline? | **No** |
| Is project within a waterbody or along the shoreline? | **No** |

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






The information shown on these maps has been obtained from various sources, and is of varying age, reliability and resolution. These maps are not intended to be used for navigation, nor are these maps an authoritative source of information about legal land ownership or public access. Users of these maps should confirm the ownership of land through other means in order to avoid trespassing. No warranty, expressed or implied, is made regarding accuracy, applicability for a particular use, completeness, or legality of the information depicted on this map. For more information, see the DNR Legal Notices web page: http://dnr.wi.gov/legal/.

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




This map is a product generated by a DNR web mapping application.

This map is for informational purposes only and may not have been prepared for or be suitable for legal, engineering, or surveying purposes. The user is solely responsible for verifying the accuracy of information before using for any purpose. By using this product for any purpose user agrees to be bound by all disclaimers found here: https://dnr.wisconsin.gov/legal.

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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# 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

# References

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

National Research Council. 1995. Wetlands: Characteristics and boundaries.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577

Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580

Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.

United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

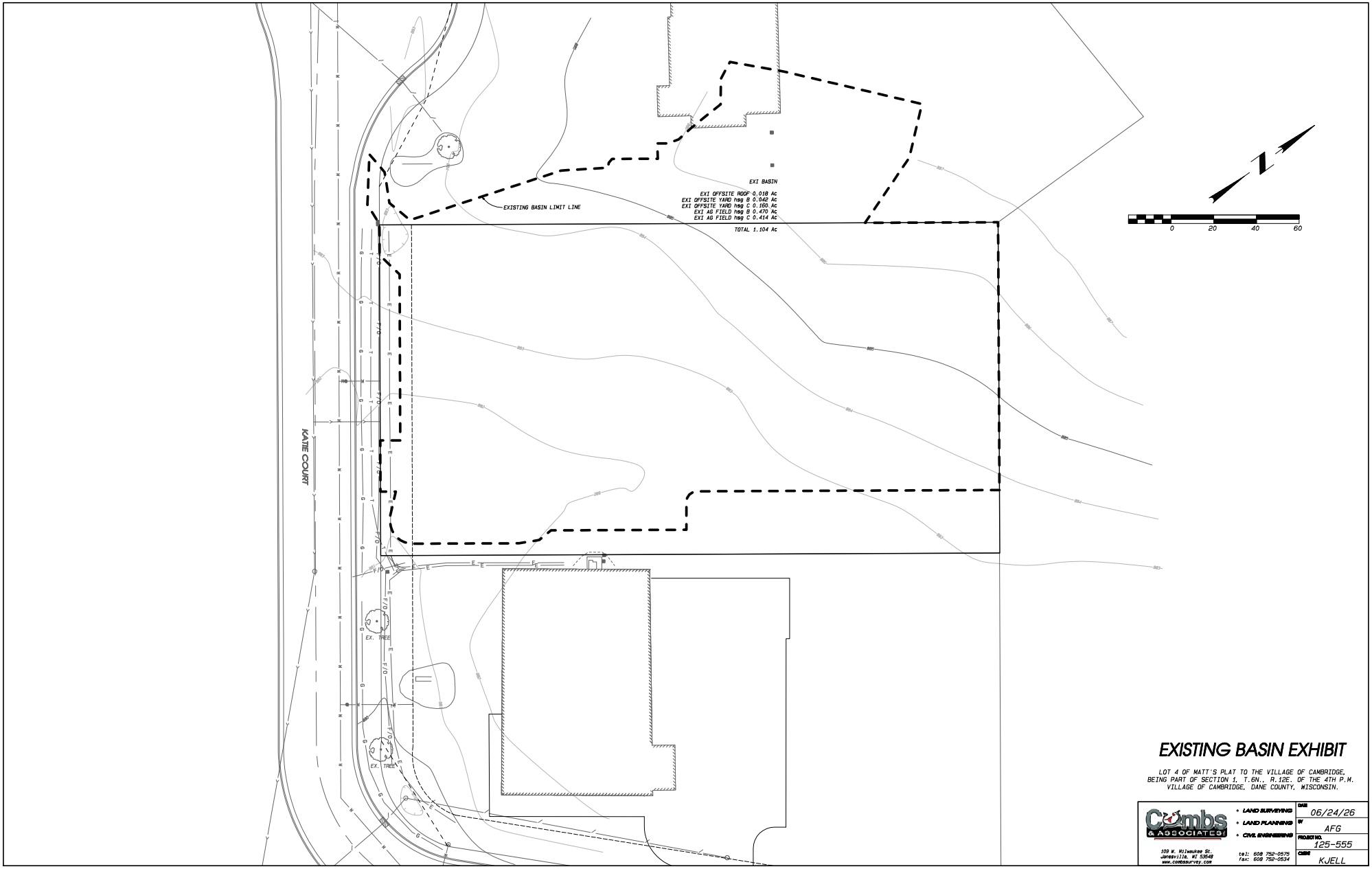
United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374

United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf

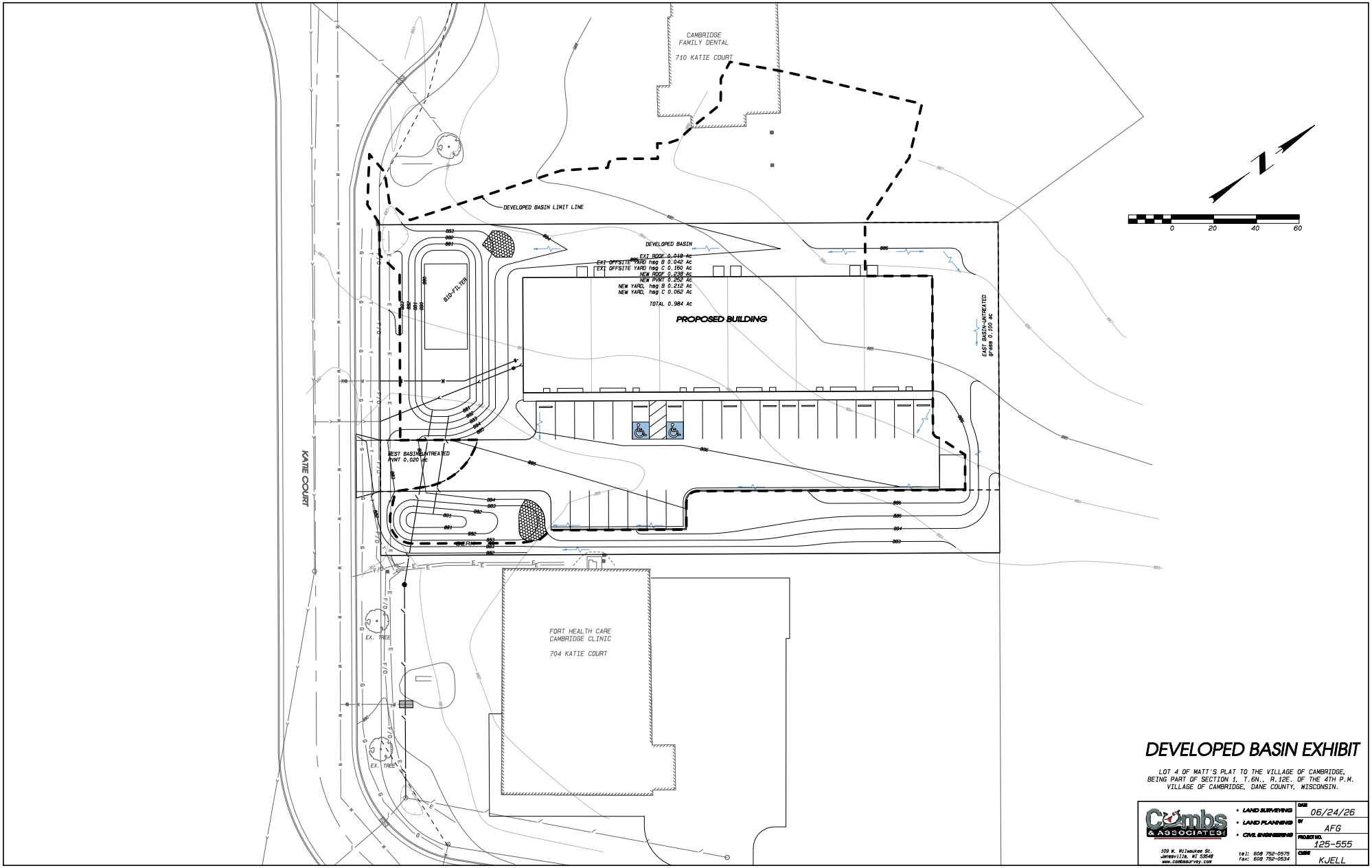



# EXISTING BASIN EXHIBIT

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


| | |
|---|---|
| DATE | 06/24/26 |
| BY | AFG |
| PROJECT NO. | 125-555 |
| CHKD | KJELL |

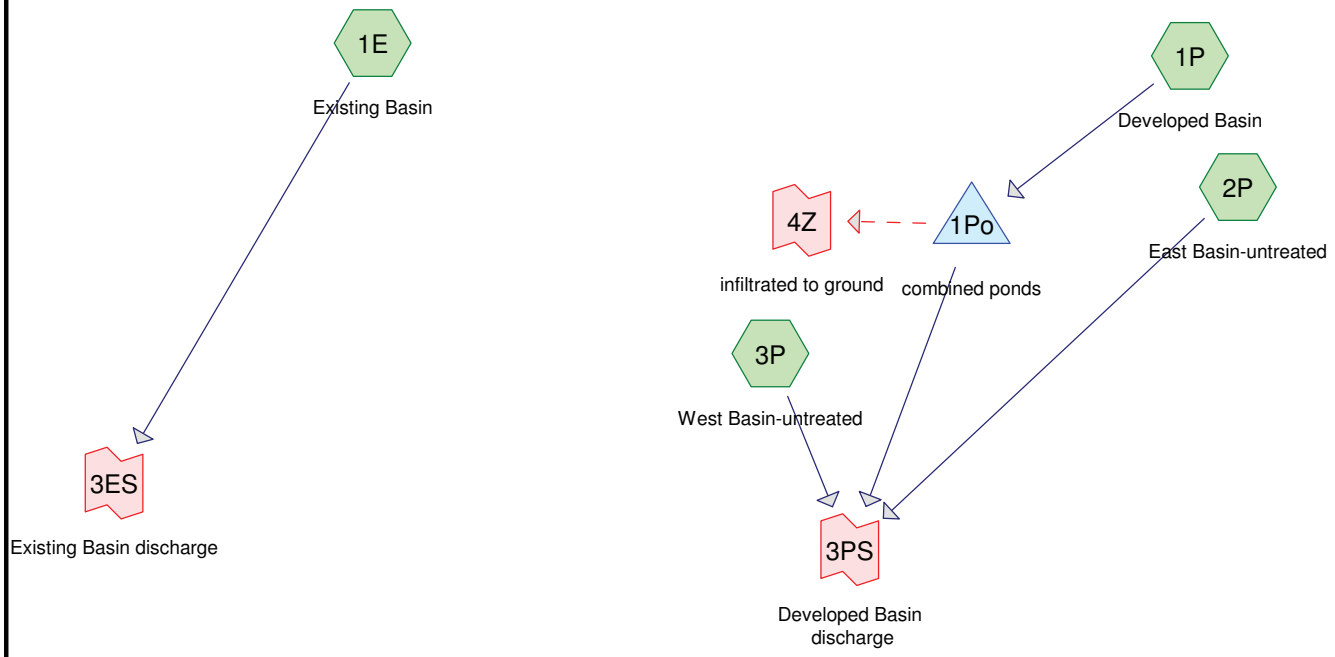



# DEVELOPED BASIN EXHIBIT

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.


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109 W. Milwaukee St.
Janesville, WI 53548
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fax: 608 752-0534


| | |
|---|---|
| DATE | 06/24/26 |
| BY | AFG |
| PROJECT NO. | 125-555 |
| CHKD | KJELL |




Subcat Reach Pond Link

**Routing Diagram for 2026-06-24 Commercial Building**
Prepared by Combs & Associates, Printed 6/25/2026
HydroCAD® 10.20-9a s/n 02820 © 2026 HydroCAD Software Solutions LLC

## Area Listing (all nodes)

| Area (acres) | CN | Description (subcatchment-numbers) |
|---|---|---|
| 0.470 | 68 | Exi ag field, HSG B (1E) |
| 0.414 | 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) |
| 0.272 | 98 | New pvmt (1P, 3P) |
| 0.238 | 98 | New roof (1P) |
| 0.212 | 61 | New yard, HSG B (1P) |
| 0.162 | 68 | New yard, HSG C (1P, 2P) |
| **2.208** | **77** | **TOTAL AREA** |

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=1.104 ac 1.63% Impervious Runoff Depth=0.52"
Flow Length=270' Tc=21.2 min CN=72 Runoff=0.47 cfs 0.048 af

**Subcatchment 1P: Developed Basin** Runoff Area=0.984 ac 51.63% Impervious Runoff Depth=0.99"
Flow Length=245' Tc=13.6 min CN=82 Runoff=1.15 cfs 0.081 af

**Subcatchment 2P: East Basin-untreated** Runoff Area=0.100 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=0.020 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=880.62' Storage=1,170 cf Inflow=1.15 cfs 0.081 af
Primary=0.35 cfs 0.044 af Secondary=0.04 cfs 0.037 af Outflow=0.39 cfs 0.081 af

**Link 3ES: Existing Basin discharge** Inflow=0.47 cfs 0.048 af
Primary=0.47 cfs 0.048 af

**Link 3PS: Developed Basin discharge** Inflow=0.38 cfs 0.051 af
Primary=0.38 cfs 0.051 af

**Link 4Z: infiltrated to ground** Inflow=0.04 cfs 0.037 af
Primary=0.04 cfs 0.037 af

**Total Runoff Area = 2.208 ac Runoff Volume = 0.136 af Average Runoff Depth = 0.74"**
**75.27% Pervious = 1.662 ac 24.73% Impervious = 0.546 ac**

## Summary for Subcatchment 1E: Existing Basin

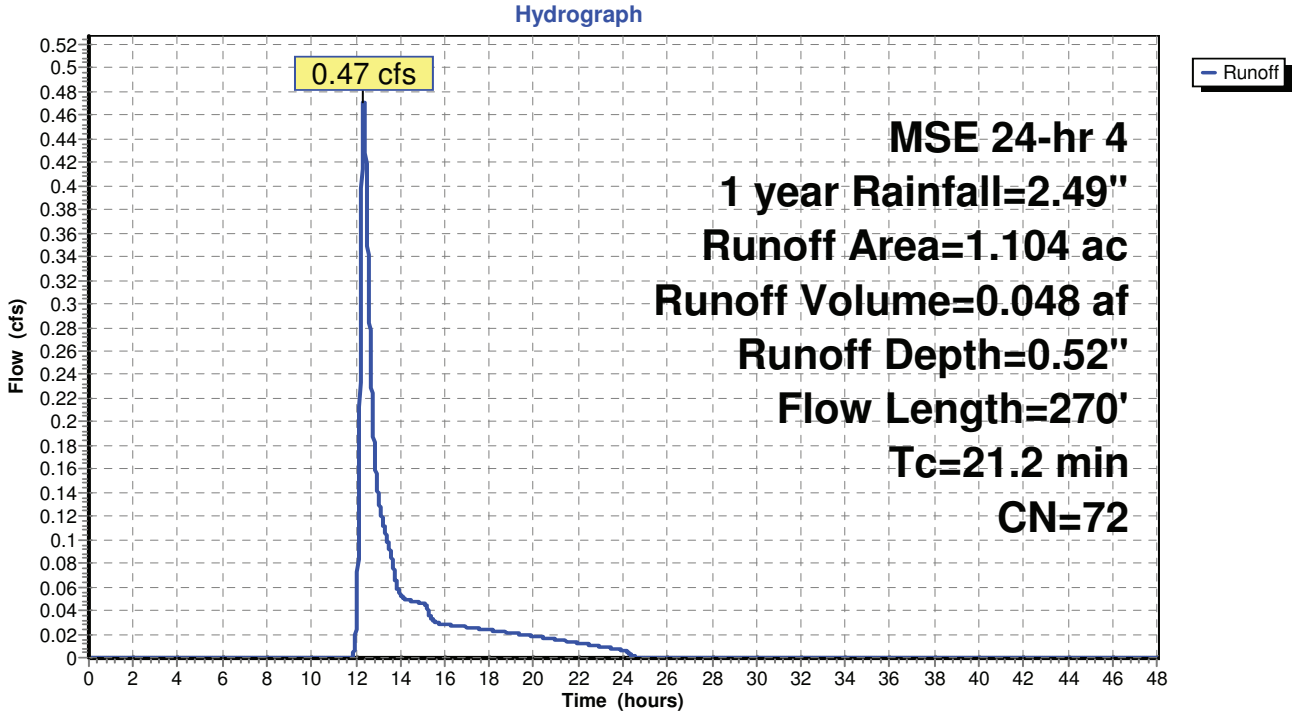
Runoff = 0.47 cfs @ 12.36 hrs, Volume= 0.048 af, Depth= 0.52"
Routed to Link 3ES : Existing Basin discharge

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 |
| * | 0.414 | 78 | Exi ag field, HSG C |
| | 1.104 | 72 | Weighted Average |
| | 1.086 | | 98.37% Pervious Area |
| | 0.018 | | 1.63% 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



## Hydrograph for Subcatchment 1E: Existing Basin

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|---|---|---|---|
| 0.00 | 0.00 | 0.00 | 0.00 |
| 0.50 | 0.01 | 0.00 | 0.00 |
| 1.00 | 0.01 | 0.00 | 0.00 |
| 1.50 | 0.02 | 0.00 | 0.00 |
| 2.00 | 0.03 | 0.00 | 0.00 |
| 2.50 | 0.04 | 0.00 | 0.00 |
| 3.00 | 0.05 | 0.00 | 0.00 |
| 3.50 | 0.07 | 0.00 | 0.00 |
| 4.00 | 0.08 | 0.00 | 0.00 |
| 4.50 | 0.10 | 0.00 | 0.00 |
| 5.00 | 0.11 | 0.00 | 0.00 |
| 5.50 | 0.13 | 0.00 | 0.00 |
| 6.00 | 0.15 | 0.00 | 0.00 |
| 6.50 | 0.17 | 0.00 | 0.00 |
| 7.00 | 0.20 | 0.00 | 0.00 |
| 7.50 | 0.22 | 0.00 | 0.00 |
| 8.00 | 0.25 | 0.00 | 0.00 |
| 8.50 | 0.27 | 0.00 | 0.00 |
| 9.00 | 0.30 | 0.00 | 0.00 |
| 9.50 | 0.35 | 0.00 | 0.00 |
| 10.00 | 0.39 | 0.00 | 0.00 |
| 10.50 | 0.45 | 0.00 | 0.00 |
| 11.00 | 0.54 | 0.00 | 0.00 |
| 11.50 | 0.68 | 0.00 | 0.00 |
| 12.00 | 1.17 | 0.04 | **0.02** |
| 12.50 | 1.81 | 0.22 | **0.37** |
| 13.00 | 1.95 | 0.27 | 0.14 |
| 13.50 | 2.04 | 0.31 | 0.09 |
| 14.00 | 2.10 | 0.33 | 0.05 |
| 14.50 | 2.14 | 0.36 | 0.05 |
| 15.00 | 2.19 | 0.38 | 0.05 |
| 15.50 | 2.22 | 0.39 | 0.03 |
| 16.00 | 2.24 | 0.40 | 0.03 |
| 16.50 | 2.27 | 0.41 | 0.03 |
| 17.00 | 2.29 | 0.42 | 0.03 |
| 17.50 | 2.32 | 0.44 | 0.02 |
| 18.00 | 2.34 | 0.45 | 0.02 |
| 18.50 | 2.36 | 0.46 | 0.02 |
| 19.00 | 2.38 | 0.47 | 0.02 |
| 19.50 | 2.39 | 0.47 | 0.02 |
| 20.00 | 2.41 | 0.48 | 0.02 |
| 20.50 | 2.42 | 0.49 | 0.02 |
| 21.00 | 2.44 | 0.50 | 0.02 |
| 21.50 | 2.45 | 0.50 | 0.01 |
| 22.00 | 2.46 | 0.51 | 0.01 |
| 22.50 | 2.47 | 0.51 | 0.01 |
| 23.00 | 2.48 | 0.52 | 0.01 |
| 23.50 | 2.48 | 0.52 | 0.01 |
| 24.00 | **2.49** | **0.52** | 0.01 |
| 24.50 | 2.49 | 0.52 | 0.00 |
| 25.00 | 2.49 | 0.52 | 0.00 |
| 25.50 | 2.49 | 0.52 | 0.00 |
| 26.00 | 2.49 | 0.52 | 0.00 |
| 26.50 | 2.49 | 0.52 | 0.00 |
| 27.00 | 2.49 | 0.52 | 0.00 |
| 27.50 | 2.49 | 0.52 | 0.00 |
| 28.00 | 2.49 | 0.52 | 0.00 |
| 28.50 | 2.49 | 0.52 | 0.00 |
| 29.00 | 2.49 | 0.52 | 0.00 |
| 29.50 | 2.49 | 0.52 | 0.00 |
| 30.00 | 2.49 | 0.52 | 0.00 |
| 30.50 | 2.49 | 0.52 | 0.00 |
| 31.00 | 2.49 | 0.52 | 0.00 |
| 31.50 | 2.49 | 0.52 | 0.00 |
| 32.00 | 2.49 | 0.52 | 0.00 |
| 32.50 | 2.49 | 0.52 | 0.00 |
| 33.00 | 2.49 | 0.52 | 0.00 |
| 33.50 | 2.49 | 0.52 | 0.00 |
| 34.00 | 2.49 | 0.52 | 0.00 |
| 34.50 | 2.49 | 0.52 | 0.00 |
| 35.00 | 2.49 | 0.52 | 0.00 |
| 35.50 | 2.49 | 0.52 | 0.00 |
| 36.00 | 2.49 | 0.52 | 0.00 |
| 36.50 | 2.49 | 0.52 | 0.00 |
| 37.00 | 2.49 | 0.52 | 0.00 |
| 37.50 | 2.49 | 0.52 | 0.00 |
| 38.00 | 2.49 | 0.52 | 0.00 |
| 38.50 | 2.49 | 0.52 | 0.00 |
| 39.00 | 2.49 | 0.52 | 0.00 |
| 39.50 | 2.49 | 0.52 | 0.00 |
| 40.00 | 2.49 | 0.52 | 0.00 |
| 40.50 | 2.49 | 0.52 | 0.00 |
| 41.00 | 2.49 | 0.52 | 0.00 |
| 41.50 | 2.49 | 0.52 | 0.00 |
| 42.00 | 2.49 | 0.52 | 0.00 |
| 42.50 | 2.49 | 0.52 | 0.00 |
| 43.00 | 2.49 | 0.52 | 0.00 |
| 43.50 | 2.49 | 0.52 | 0.00 |
| 44.00 | 2.49 | 0.52 | 0.00 |
| 44.50 | 2.49 | 0.52 | 0.00 |
| 45.00 | 2.49 | 0.52 | 0.00 |
| 45.50 | 2.49 | 0.52 | 0.00 |
| 46.00 | 2.49 | 0.52 | 0.00 |
| 46.50 | 2.49 | 0.52 | 0.00 |
| 47.00 | 2.49 | 0.52 | 0.00 |
| 47.50 | 2.49 | 0.52 | 0.00 |
| 48.00 | 2.49 | 0.52 | 0.00 |

## Summary for Subcatchment 1P: Developed Basin

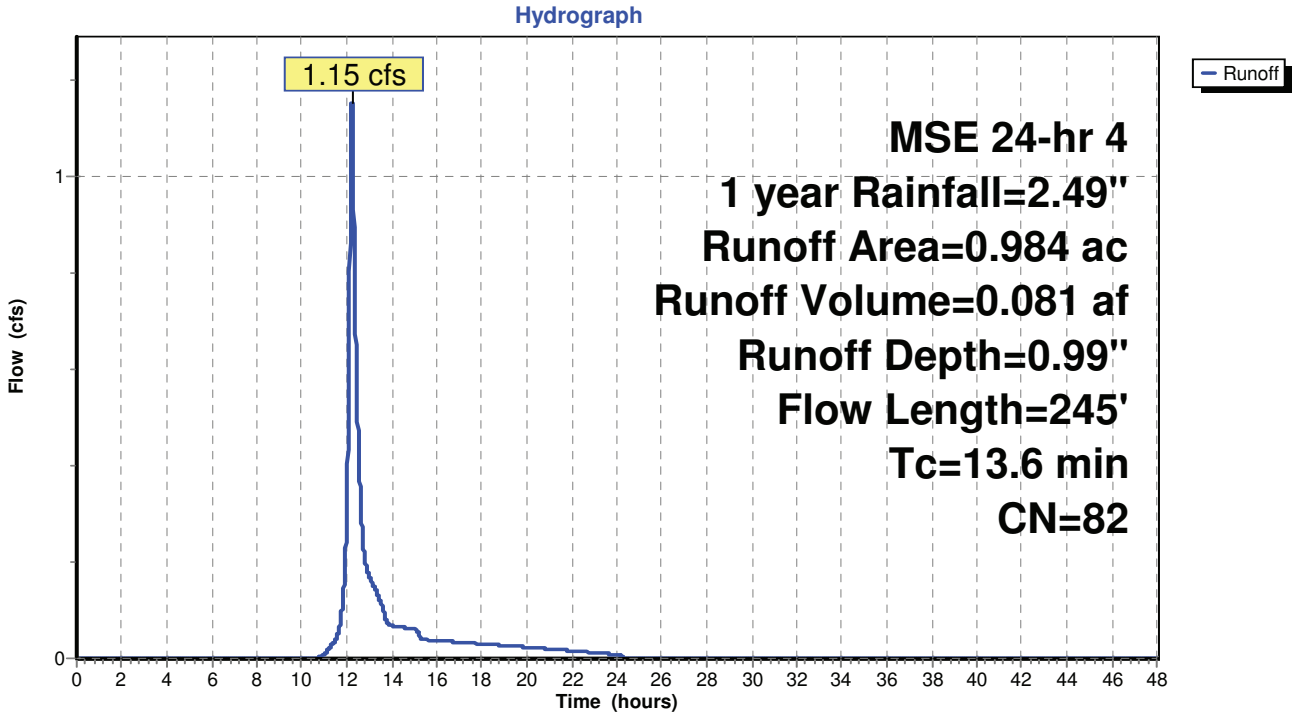
Runoff = 1.15 cfs @ 12.22 hrs, Volume= 0.081 af, Depth= 0.99"
Routed to Pond 1Po : combined ponds

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 |
| * | 0.238 | 98 | New roof |
| * | 0.252 | 98 | New pvmt |
| * | 0.212 | 61 | New yard, HSG B |
| * | 0.062 | 68 | New yard, HSG C |
| | 0.984 | 82 | Weighted Average |
| | 0.476 | | 48.37% Pervious Area |
| | 0.508 | | 51.63% 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**<br>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**<br>Kv= 6.0 fps |
| 13.6 | 245 | Total | | | |

## Subcatchment 1P: Developed Basin



## Hydrograph for Subcatchment 1P: Developed Basin

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|---|---|---|---|
| 0.00 | 0.00 | 0.00 | 0.00 |
| 0.50 | 0.01 | 0.00 | 0.00 |
| 1.00 | 0.01 | 0.00 | 0.00 |
| 1.50 | 0.02 | 0.00 | 0.00 |
| 2.00 | 0.03 | 0.00 | 0.00 |
| 2.50 | 0.04 | 0.00 | 0.00 |
| 3.00 | 0.05 | 0.00 | 0.00 |
| 3.50 | 0.07 | 0.00 | 0.00 |
| 4.00 | 0.08 | 0.00 | 0.00 |
| 4.50 | 0.10 | 0.00 | 0.00 |
| 5.00 | 0.11 | 0.00 | 0.00 |
| 5.50 | 0.13 | 0.00 | 0.00 |
| 6.00 | 0.15 | 0.00 | 0.00 |
| 6.50 | 0.17 | 0.00 | 0.00 |
| 7.00 | 0.20 | 0.00 | 0.00 |
| 7.50 | 0.22 | 0.00 | 0.00 |
| 8.00 | 0.25 | 0.00 | 0.00 |
| 8.50 | 0.27 | 0.00 | 0.00 |
| 9.00 | 0.30 | 0.00 | 0.00 |
| 9.50 | 0.35 | 0.00 | 0.00 |
| 10.00 | 0.39 | 0.00 | 0.00 |
| 10.50 | 0.45 | 0.00 | 0.00 |
| 11.00 | 0.54 | 0.00 | 0.01 |
| 11.50 | 0.68 | 0.02 | 0.04 |
| 12.00 | 1.17 | 0.18 | **0.31** |
| 12.50 | 1.81 | 0.53 | **0.46** |
| 13.00 | 1.95 | 0.62 | 0.17 |
| 13.50 | 2.04 | 0.68 | 0.12 |
| 14.00 | 2.10 | 0.71 | 0.07 |
| 14.50 | 2.14 | 0.75 | 0.06 |
| 15.00 | 2.19 | 0.78 | 0.06 |
| 15.50 | 2.22 | 0.80 | 0.04 |
| 16.00 | 2.24 | 0.81 | 0.04 |
| 16.50 | 2.27 | 0.83 | 0.04 |
| 17.00 | 2.29 | 0.85 | 0.03 |
| 17.50 | 2.32 | 0.86 | 0.03 |
| 18.00 | 2.34 | 0.88 | 0.03 |
| 18.50 | 2.36 | 0.89 | 0.03 |
| 19.00 | 2.38 | 0.91 | 0.03 |
| 19.50 | 2.39 | 0.92 | 0.02 |
| 20.00 | 2.41 | 0.93 | 0.02 |
| 20.50 | 2.42 | 0.94 | 0.02 |
| 21.00 | 2.44 | 0.95 | 0.02 |
| 21.50 | 2.45 | 0.96 | 0.02 |
| 22.00 | 2.46 | 0.97 | 0.02 |
| 22.50 | 2.47 | 0.98 | 0.01 |
| 23.00 | 2.48 | 0.98 | 0.01 |
| 23.50 | 2.48 | 0.99 | 0.01 |
| 24.00 | **2.49** | **0.99** | 0.01 |
| 24.50 | 2.49 | 0.99 | 0.00 |
| 25.00 | 2.49 | 0.99 | 0.00 |
| 25.50 | 2.49 | 0.99 | 0.00 |
| 26.00 | 2.49 | 0.99 | 0.00 |
| 26.50 | 2.49 | 0.99 | 0.00 |
| 27.00 | 2.49 | 0.99 | 0.00 |
| 27.50 | 2.49 | 0.99 | 0.00 |
| 28.00 | 2.49 | 0.99 | 0.00 |
| 28.50 | 2.49 | 0.99 | 0.00 |
| 29.00 | 2.49 | 0.99 | 0.00 |
| 29.50 | 2.49 | 0.99 | 0.00 |
| 30.00 | 2.49 | 0.99 | 0.00 |
| 30.50 | 2.49 | 0.99 | 0.00 |
| 31.00 | 2.49 | 0.99 | 0.00 |
| 31.50 | 2.49 | 0.99 | 0.00 |
| 32.00 | 2.49 | 0.99 | 0.00 |
| 32.50 | 2.49 | 0.99 | 0.00 |
| 33.00 | 2.49 | 0.99 | 0.00 |
| 33.50 | 2.49 | 0.99 | 0.00 |
| 34.00 | 2.49 | 0.99 | 0.00 |
| 34.50 | 2.49 | 0.99 | 0.00 |
| 35.00 | 2.49 | 0.99 | 0.00 |
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| 36.00 | 2.49 | 0.99 | 0.00 |
| 36.50 | 2.49 | 0.99 | 0.00 |
| 37.00 | 2.49 | 0.99 | 0.00 |
| 37.50 | 2.49 | 0.99 | 0.00 |
| 38.00 | 2.49 | 0.99 | 0.00 |
| 38.50 | 2.49 | 0.99 | 0.00 |
| 39.00 | 2.49 | 0.99 | 0.00 |
| 39.50 | 2.49 | 0.99 | 0.00 |
| 40.00 | 2.49 | 0.99 | 0.00 |
| 40.50 | 2.49 | 0.99 | 0.00 |
| 41.00 | 2.49 | 0.99 | 0.00 |
| 41.50 | 2.49 | 0.99 | 0.00 |
| 42.00 | 2.49 | 0.99 | 0.00 |
| 42.50 | 2.49 | 0.99 | 0.00 |
| 43.00 | 2.49 | 0.99 | 0.00 |
| 43.50 | 2.49 | 0.99 | 0.00 |
| 44.00 | 2.49 | 0.99 | 0.00 |
| 44.50 | 2.49 | 0.99 | 0.00 |
| 45.00 | 2.49 | 0.99 | 0.00 |
| 45.50 | 2.49 | 0.99 | 0.00 |
| 46.00 | 2.49 | 0.99 | 0.00 |
| 46.50 | 2.49 | 0.99 | 0.00 |
| 47.00 | 2.49 | 0.99 | 0.00 |
| 47.50 | 2.49 | 0.99 | 0.00 |
| 48.00 | 2.49 | 0.99 | 0.00 |

## Summary for Subcatchment 2P: East Basin-untreated

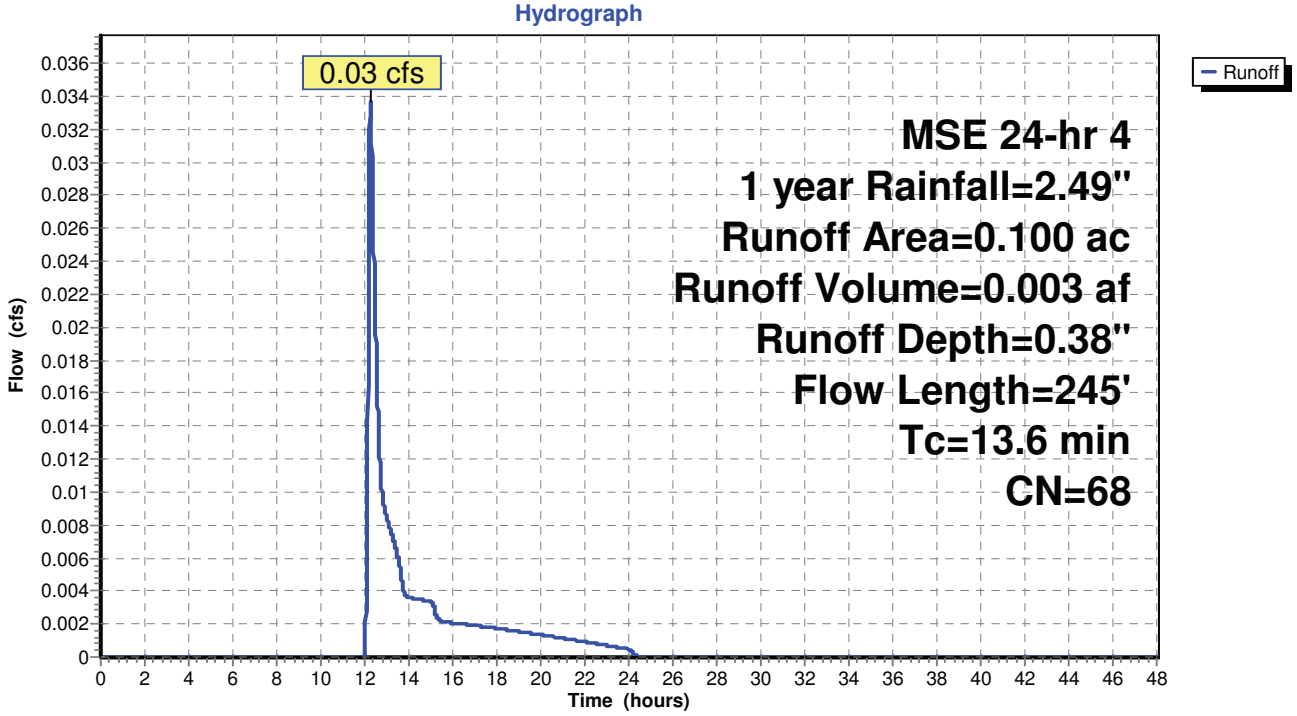
Runoff = 0.03 cfs @ 12.26 hrs, Volume= 0.003 af, Depth= 0.38"
Routed to Link 3PS : Developed Basin discharge

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 |
|---|---|---|---|
| * | 0.100 | 68 | New yard, HSG C |
| | 0.100 | | 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



## Hydrograph for Subcatchment 2P: East Basin-untreated

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|---|---|---|---|
| 0.00 | 0.00 | 0.00 | 0.00 |
| 0.50 | 0.01 | 0.00 | 0.00 |
| 1.00 | 0.01 | 0.00 | 0.00 |
| 1.50 | 0.02 | 0.00 | 0.00 |
| 2.00 | 0.03 | 0.00 | 0.00 |
| 2.50 | 0.04 | 0.00 | 0.00 |
| 3.00 | 0.05 | 0.00 | 0.00 |
| 3.50 | 0.07 | 0.00 | 0.00 |
| 4.00 | 0.08 | 0.00 | 0.00 |
| 4.50 | 0.10 | 0.00 | 0.00 |
| 5.00 | 0.11 | 0.00 | 0.00 |
| 5.50 | 0.13 | 0.00 | 0.00 |
| 6.00 | 0.15 | 0.00 | 0.00 |
| 6.50 | 0.17 | 0.00 | 0.00 |
| 7.00 | 0.20 | 0.00 | 0.00 |
| 7.50 | 0.22 | 0.00 | 0.00 |
| 8.00 | 0.25 | 0.00 | 0.00 |
| 8.50 | 0.27 | 0.00 | 0.00 |
| 9.00 | 0.30 | 0.00 | 0.00 |
| 9.50 | 0.35 | 0.00 | 0.00 |
| 10.00 | 0.39 | 0.00 | 0.00 |
| 10.50 | 0.45 | 0.00 | 0.00 |
| 11.00 | 0.54 | 0.00 | 0.00 |
| 11.50 | 0.68 | 0.00 | 0.00 |
| 12.00 | 1.17 | 0.01 | **0.00** |
| 12.50 | 1.81 | 0.14 | **0.02** |
| 13.00 | 1.95 | 0.18 | 0.01 |
| 13.50 | 2.04 | 0.21 | 0.01 |
| 14.00 | 2.10 | 0.23 | 0.00 |
| 14.50 | 2.14 | 0.24 | 0.00 |
| 15.00 | 2.19 | 0.26 | 0.00 |
| 15.50 | 2.22 | 0.27 | 0.00 |
| 16.00 | 2.24 | 0.28 | 0.00 |
| 16.50 | 2.27 | 0.29 | 0.00 |
| 17.00 | 2.29 | 0.30 | 0.00 |
| 17.50 | 2.32 | 0.31 | 0.00 |
| 18.00 | 2.34 | 0.32 | 0.00 |
| 18.50 | 2.36 | 0.33 | 0.00 |
| 19.00 | 2.38 | 0.34 | 0.00 |
| 19.50 | 2.39 | 0.34 | 0.00 |
| 20.00 | 2.41 | 0.35 | 0.00 |
| 20.50 | 2.42 | 0.36 | 0.00 |
| 21.00 | 2.44 | 0.36 | 0.00 |
| 21.50 | 2.45 | 0.37 | 0.00 |
| 22.00 | 2.46 | 0.37 | 0.00 |
| 22.50 | 2.47 | 0.37 | 0.00 |
| 23.00 | 2.48 | 0.38 | 0.00 |
| 23.50 | 2.48 | 0.38 | 0.00 |
| 24.00 | **2.49** | **0.38** | 0.00 |
| 24.50 | 2.49 | 0.38 | 0.00 |
| 25.00 | 2.49 | 0.38 | 0.00 |
| 25.50 | 2.49 | 0.38 | 0.00 |
| 26.00 | 2.49 | 0.38 | 0.00 |
| 26.50 | 2.49 | 0.38 | 0.00 |
| 27.00 | 2.49 | 0.38 | 0.00 |
| 27.50 | 2.49 | 0.38 | 0.00 |
| 28.00 | 2.49 | 0.38 | 0.00 |
| 28.50 | 2.49 | 0.38 | 0.00 |
| 29.00 | 2.49 | 0.38 | 0.00 |
| 29.50 | 2.49 | 0.38 | 0.00 |
| 30.00 | 2.49 | 0.38 | 0.00 |
| 30.50 | 2.49 | 0.38 | 0.00 |
| 31.00 | 2.49 | 0.38 | 0.00 |
| 31.50 | 2.49 | 0.38 | 0.00 |
| 32.00 | 2.49 | 0.38 | 0.00 |
| 32.50 | 2.49 | 0.38 | 0.00 |
| 33.00 | 2.49 | 0.38 | 0.00 |
| 33.50 | 2.49 | 0.38 | 0.00 |
| 34.00 | 2.49 | 0.38 | 0.00 |
| 34.50 | 2.49 | 0.38 | 0.00 |
| 35.00 | 2.49 | 0.38 | 0.00 |
| 35.50 | 2.49 | 0.38 | 0.00 |
| 36.00 | 2.49 | 0.38 | 0.00 |
| 36.50 | 2.49 | 0.38 | 0.00 |
| 37.00 | 2.49 | 0.38 | 0.00 |
| 37.50 | 2.49 | 0.38 | 0.00 |
| 38.00 | 2.49 | 0.38 | 0.00 |
| 38.50 | 2.49 | 0.38 | 0.00 |
| 39.00 | 2.49 | 0.38 | 0.00 |
| 39.50 | 2.49 | 0.38 | 0.00 |
| 40.00 | 2.49 | 0.38 | 0.00 |
| 40.50 | 2.49 | 0.38 | 0.00 |
| 41.00 | 2.49 | 0.38 | 0.00 |
| 41.50 | 2.49 | 0.38 | 0.00 |
| 42.00 | 2.49 | 0.38 | 0.00 |
| 42.50 | 2.49 | 0.38 | 0.00 |
| 43.00 | 2.49 | 0.38 | 0.00 |
| 43.50 | 2.49 | 0.38 | 0.00 |
| 44.00 | 2.49 | 0.38 | 0.00 |
| 44.50 | 2.49 | 0.38 | 0.00 |
| 45.00 | 2.49 | 0.38 | 0.00 |
| 45.50 | 2.49 | 0.38 | 0.00 |
| 46.00 | 2.49 | 0.38 | 0.00 |
| 46.50 | 2.49 | 0.38 | 0.00 |
| 47.00 | 2.49 | 0.38 | 0.00 |
| 47.50 | 2.49 | 0.38 | 0.00 |
| 48.00 | 2.49 | 0.38 | 0.00 |

## Summary for Subcatchment 3P: West Basin-untreated

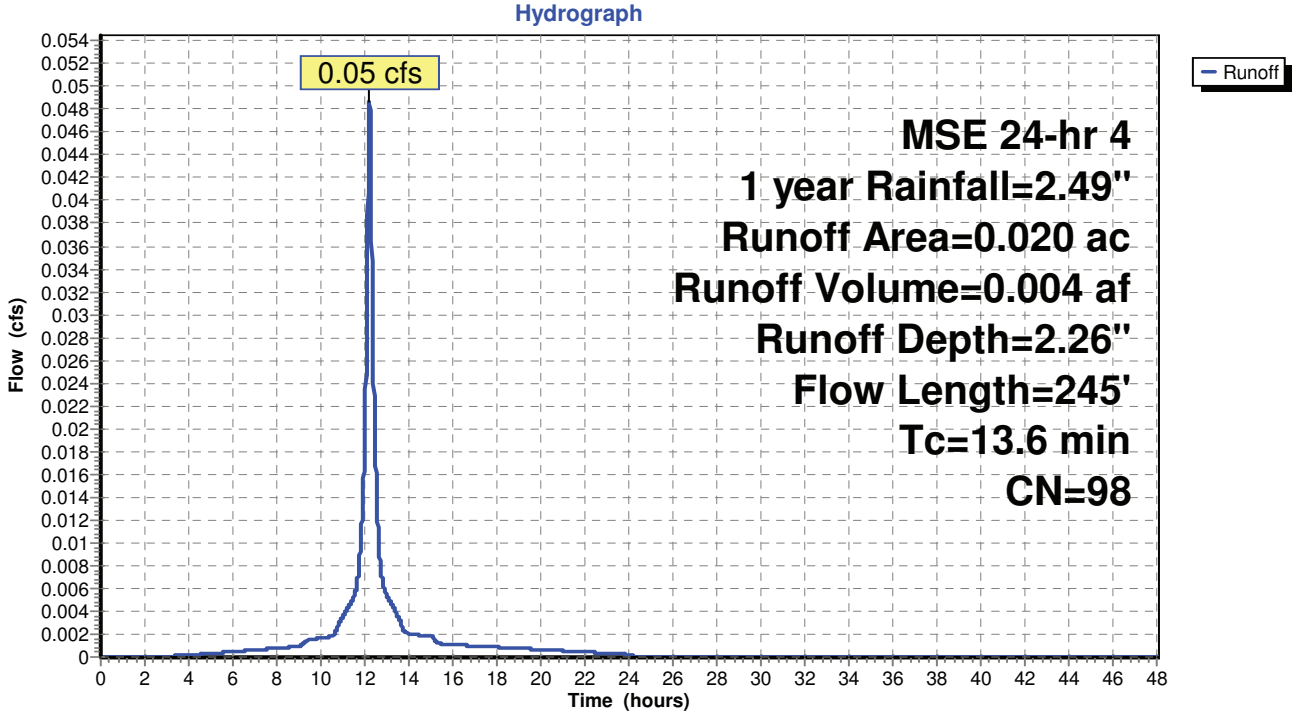
Runoff = 0.05 cfs @ 12.21 hrs, Volume= 0.004 af, Depth= 2.26"
Routed to Link 3PS : Developed Basin discharge

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 |
|---|---|---|---|
| * | 0.020 | 98 | New pvmt |
| | 0.020 | | 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



## Hydrograph for Subcatchment 3P: West Basin-untreated

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|---|---|---|---|
| 0.00 | 0.00 | 0.00 | 0.00 |
| 0.50 | 0.01 | 0.00 | 0.00 |
| 1.00 | 0.01 | 0.00 | 0.00 |
| 1.50 | 0.02 | 0.00 | 0.00 |
| 2.00 | 0.03 | 0.00 | 0.00 |
| 2.50 | 0.04 | 0.00 | 0.00 |
| 3.00 | 0.05 | 0.00 | 0.00 |
| 3.50 | 0.07 | 0.00 | 0.00 |
| 4.00 | 0.08 | 0.01 | 0.00 |
| 4.50 | 0.10 | 0.01 | 0.00 |
| 5.00 | 0.11 | 0.02 | 0.00 |
| 5.50 | 0.13 | 0.03 | 0.00 |
| 6.00 | 0.15 | 0.04 | 0.00 |
| 6.50 | 0.17 | 0.05 | 0.00 |
| 7.00 | 0.20 | 0.07 | 0.00 |
| 7.50 | 0.22 | 0.08 | 0.00 |
| 8.00 | 0.25 | 0.10 | 0.00 |
| 8.50 | 0.27 | 0.12 | 0.00 |
| 9.00 | 0.30 | 0.15 | 0.00 |
| 9.50 | 0.35 | 0.18 | 0.00 |
| 10.00 | 0.39 | 0.22 | 0.00 |
| 10.50 | 0.45 | 0.27 | 0.00 |
| 11.00 | 0.54 | 0.35 | 0.00 |
| 11.50 | 0.68 | 0.48 | 0.01 |
| 12.00 | 1.17 | 0.95 | **0.02** |
| 12.50 | 1.81 | 1.59 | **0.02** |
| 13.00 | 1.95 | 1.73 | 0.01 |
| 13.50 | 2.04 | 1.82 | 0.00 |
| 14.00 | 2.10 | 1.87 | 0.00 |
| 14.50 | 2.14 | 1.92 | 0.00 |
| 15.00 | 2.19 | 1.96 | 0.00 |
| 15.50 | 2.22 | 1.99 | 0.00 |
| 16.00 | 2.24 | 2.02 | 0.00 |
| 16.50 | 2.27 | 2.04 | 0.00 |
| 17.00 | 2.29 | 2.06 | 0.00 |
| 17.50 | 2.32 | 2.09 | 0.00 |
| 18.00 | 2.34 | 2.11 | 0.00 |
| 18.50 | 2.36 | 2.13 | 0.00 |
| 19.00 | 2.38 | 2.15 | 0.00 |
| 19.50 | 2.39 | 2.16 | 0.00 |
| 20.00 | 2.41 | 2.18 | 0.00 |
| 20.50 | 2.42 | 2.20 | 0.00 |
| 21.00 | 2.44 | 2.21 | 0.00 |
| 21.50 | 2.45 | 2.22 | 0.00 |
| 22.00 | 2.46 | 2.23 | 0.00 |
| 22.50 | 2.47 | 2.24 | 0.00 |
| 23.00 | 2.48 | 2.25 | 0.00 |
| 23.50 | 2.48 | 2.26 | 0.00 |
| 24.00 | **2.49** | **2.26** | 0.00 |
| 24.50 | 2.49 | 2.26 | 0.00 |
| 25.00 | 2.49 | 2.26 | 0.00 |
| 25.50 | 2.49 | 2.26 | 0.00 |
| 26.00 | 2.49 | 2.26 | 0.00 |
| 26.50 | 2.49 | 2.26 | 0.00 |
| 27.00 | 2.49 | 2.26 | 0.00 |
| 27.50 | 2.49 | 2.26 | 0.00 |
| 28.00 | 2.49 | 2.26 | 0.00 |
| 28.50 | 2.49 | 2.26 | 0.00 |
| 29.00 | 2.49 | 2.26 | 0.00 |
| 29.50 | 2.49 | 2.26 | 0.00 |
| 30.00 | 2.49 | 2.26 | 0.00 |
| 30.50 | 2.49 | 2.26 | 0.00 |
| 31.00 | 2.49 | 2.26 | 0.00 |
| 31.50 | 2.49 | 2.26 | 0.00 |
| 32.00 | 2.49 | 2.26 | 0.00 |
| 32.50 | 2.49 | 2.26 | 0.00 |
| 33.00 | 2.49 | 2.26 | 0.00 |
| 33.50 | 2.49 | 2.26 | 0.00 |
| 34.00 | 2.49 | 2.26 | 0.00 |
| 34.50 | 2.49 | 2.26 | 0.00 |
| 35.00 | 2.49 | 2.26 | 0.00 |
| 35.50 | 2.49 | 2.26 | 0.00 |
| 36.00 | 2.49 | 2.26 | 0.00 |
| 36.50 | 2.49 | 2.26 | 0.00 |
| 37.00 | 2.49 | 2.26 | 0.00 |
| 37.50 | 2.49 | 2.26 | 0.00 |
| 38.00 | 2.49 | 2.26 | 0.00 |
| 38.50 | 2.49 | 2.26 | 0.00 |
| 39.00 | 2.49 | 2.26 | 0.00 |
| 39.50 | 2.49 | 2.26 | 0.00 |
| 40.00 | 2.49 | 2.26 | 0.00 |
| 40.50 | 2.49 | 2.26 | 0.00 |
| 41.00 | 2.49 | 2.26 | 0.00 |
| 41.50 | 2.49 | 2.26 | 0.00 |
| 42.00 | 2.49 | 2.26 | 0.00 |
| 42.50 | 2.49 | 2.26 | 0.00 |
| 43.00 | 2.49 | 2.26 | 0.00 |
| 43.50 | 2.49 | 2.26 | 0.00 |
| 44.00 | 2.49 | 2.26 | 0.00 |
| 44.50 | 2.49 | 2.26 | 0.00 |
| 45.00 | 2.49 | 2.26 | 0.00 |
| 45.50 | 2.49 | 2.26 | 0.00 |
| 46.00 | 2.49 | 2.26 | 0.00 |
| 46.50 | 2.49 | 2.26 | 0.00 |
| 47.00 | 2.49 | 2.26 | 0.00 |
| 47.50 | 2.49 | 2.26 | 0.00 |
| 48.00 | 2.49 | 2.26 | 0.00 |

## Summary for Pond 1Po: combined ponds

[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=6)

Inflow Area = 0.984 ac, 51.63% Impervious, Inflow Depth = 0.99" for 1 year event
Inflow = 1.15 cfs @ 12.22 hrs, Volume= 0.081 af
Outflow = 0.39 cfs @ 12.55 hrs, Volume= 0.081 af, Atten= 67%, Lag= 19.9 min
Primary = 0.35 cfs @ 12.55 hrs, Volume= 0.044 af
Routed to Link 3PS : Developed Basin discharge
Secondary = 0.04 cfs @ 12.55 hrs, Volume= 0.037 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= 880.62' @ 12.55 hrs Surf.Area= 3,306 sf Storage= 1,170 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 82.6 min ( 921.8 - 839.2 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 880.00' | 11,781 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**<br>2,400 cf Overall x 0.0% Voids |
| | | 11,781 cf | Total Available Storage |

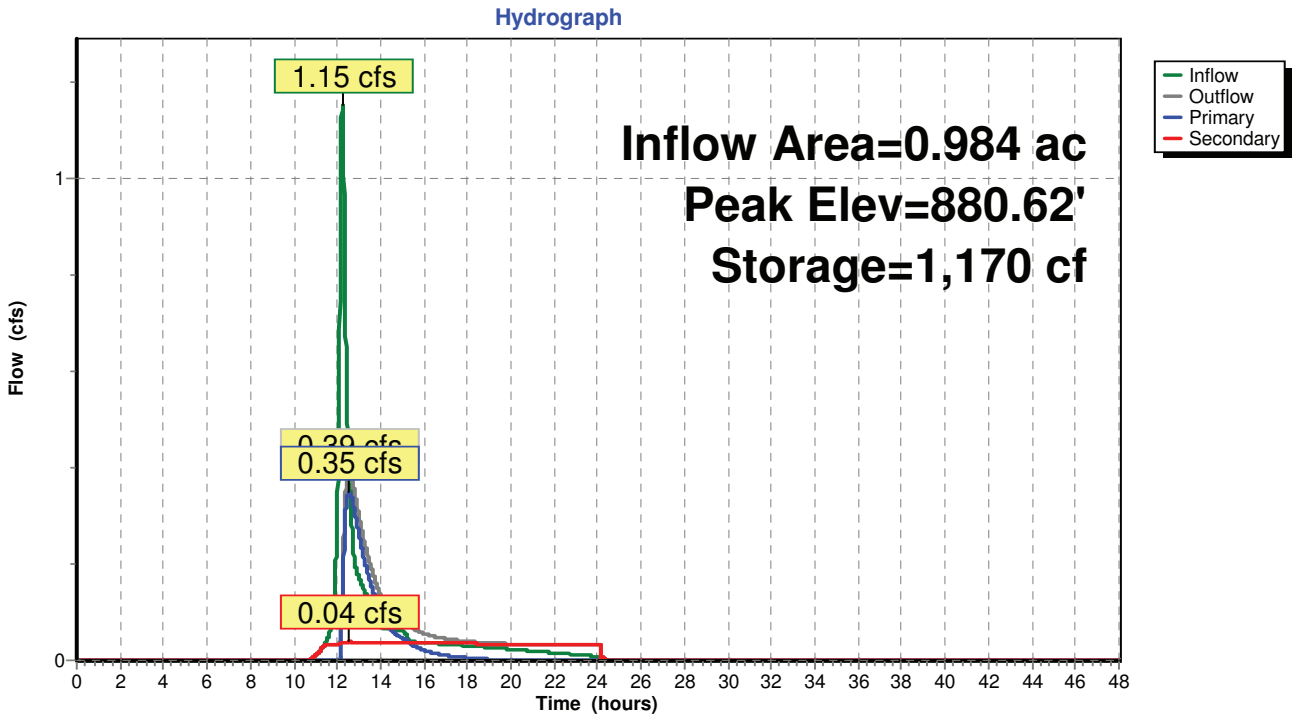
| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|---|---|---|---|
| 880.00 | 1,642 | 0 | 0 |
| 881.00 | 2,385 | 2,014 | 2,014 |
| 882.00 | 3,357 | 2,871 | 4,885 |
| 883.00 | 5,028 | 4,193 | 9,077 |
| 883.50 | 5,789 | 2,704 | 11,781 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Secondary | 878.00' | **0.500 in/hr Bio-filter Infiltration to native ground over Surface area**<br>Phase-In= 0.01' |
| #2 | Primary | 880.16' | **6.0" Round Pond discharge pipe**<br>L= 82.0' CPP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 880.16' / 877.00' S= 0.0385 '/' Cc= 0.900<br>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**<br>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<br>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=0.35 cfs @ 12.55 hrs HW=880.62' TW=0.00' (Dynamic Tailwater)
└**2=Pond discharge pipe** (Inlet Controls 0.35 cfs @ 1.83 fps)
└**3=Overflow Weir to street** ( Controls 0.00 cfs)

**Secondary OutFlow** Max=0.04 cfs @ 12.55 hrs HW=880.62' TW=0.00' (Dynamic Tailwater)
└**1=Bio-filter Infiltration to native ground** (Exfiltration Controls 0.04 cfs)

## Pond 1Po: combined ponds



## Hydrograph for Pond 1Po: combined ponds

| Time (hours) | Inflow (cfs) | Storage (cubic-feet) | Elevation (feet) | Outflow (cfs) | Primary (cfs) | Secondary (cfs) |
|---|---|---|---|---|---|---|
| 0.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 1.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 2.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 3.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 4.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 5.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 6.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 7.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 8.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 9.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 10.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 11.00 | 0.01 | 0 | 878.01 | 0.01 | 0.00 | 0.01 |
| 12.00 | **0.31** | **147** | **880.09** | **0.03** | **0.00** | **0.03** |
| 13.00 | **0.17** | **987** | **880.54** | **0.30** | **0.26** | **0.04** |
| 14.00 | 0.07 | 659 | 880.37 | 0.13 | 0.10 | 0.04 |
| 15.00 | 0.06 | 528 | 880.30 | 0.08 | 0.05 | 0.04 |
| 16.00 | 0.04 | 439 | 880.25 | 0.06 | 0.02 | 0.04 |
| 17.00 | 0.03 | 387 | 880.22 | 0.04 | 0.01 | 0.03 |
| 18.00 | 0.03 | 351 | 880.20 | 0.04 | 0.00 | 0.03 |
| 19.00 | 0.03 | 317 | 880.19 | 0.04 | 0.00 | 0.03 |
| 20.00 | 0.02 | 280 | 880.16 | 0.03 | 0.00 | 0.03 |
| 21.00 | 0.02 | 232 | 880.14 | 0.03 | 0.00 | 0.03 |
| 22.00 | 0.02 | 172 | 880.10 | 0.03 | 0.00 | 0.03 |
| 23.00 | 0.01 | 100 | 880.06 | 0.03 | 0.00 | 0.03 |
| 24.00 | 0.01 | 15 | 880.01 | 0.03 | 0.00 | 0.03 |
| 25.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 26.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 27.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 28.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 29.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 30.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 31.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 32.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 33.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 34.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 35.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 36.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 37.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 38.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 39.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 40.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 41.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 42.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 43.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 44.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 45.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 46.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 47.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 48.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |

## Stage-Discharge for Pond 1Po: combined ponds

| Elevation (feet) | Discharge (cfs) | Primary (cfs) | Secondary (cfs) |
|---|---|---|---|
| 878.00 | 0.00 | 0.00 | 0.00 |
| 878.10 | 0.01 | 0.00 | 0.01 |
| 878.20 | 0.01 | 0.00 | 0.01 |
| 878.30 | 0.01 | 0.00 | 0.01 |
| 878.40 | 0.01 | 0.00 | 0.01 |
| 878.50 | 0.01 | 0.00 | 0.01 |
| 878.60 | 0.01 | 0.00 | 0.01 |
| 878.70 | 0.01 | 0.00 | 0.01 |
| 878.80 | 0.01 | 0.00 | 0.01 |
| 878.90 | 0.01 | 0.00 | 0.01 |
| 879.00 | 0.01 | 0.00 | 0.01 |
| 879.10 | 0.01 | 0.00 | 0.01 |
| 879.20 | 0.01 | 0.00 | 0.01 |
| 879.30 | 0.01 | 0.00 | 0.01 |
| 879.40 | 0.01 | 0.00 | 0.01 |
| 879.50 | 0.01 | 0.00 | 0.01 |
| 879.60 | 0.01 | 0.00 | 0.01 |
| 879.70 | 0.01 | 0.00 | 0.01 |
| 879.80 | 0.01 | 0.00 | 0.01 |
| 879.90 | 0.01 | 0.00 | 0.01 |
| 880.00 | 0.03 | 0.00 | 0.03 |
| 880.10 | 0.03 | 0.00 | 0.03 |
| 880.20 | 0.04 | 0.00 | 0.03 |
| 880.30 | 0.08 | 0.05 | 0.04 |
| 880.40 | 0.16 | 0.12 | 0.04 |
| 880.50 | 0.26 | 0.22 | 0.04 |
| 880.60 | 0.36 | 0.33 | 0.04 |
| 880.70 | 0.44 | 0.40 | 0.04 |
| 880.80 | 0.51 | 0.47 | 0.04 |
| 880.90 | 0.56 | 0.52 | 0.04 |
| 881.00 | 0.61 | 0.57 | 0.04 |
| 881.10 | 0.66 | 0.62 | 0.04 |
| 881.20 | 0.71 | 0.66 | 0.04 |
| 881.30 | 0.75 | 0.70 | 0.04 |
| 881.40 | 0.79 | 0.74 | 0.05 |
| 881.50 | 0.83 | 0.78 | 0.05 |
| 881.60 | 0.86 | 0.81 | 0.05 |
| 881.70 | 0.90 | 0.85 | 0.05 |
| 881.80 | 0.93 | 0.88 | 0.05 |
| 881.90 | 0.96 | 0.91 | 0.05 |
| 882.00 | 0.99 | 0.94 | 0.05 |
| 882.10 | 1.02 | 0.97 | 0.05 |
| 882.20 | 1.06 | 1.00 | 0.06 |
| 882.30 | 1.08 | 1.03 | 0.06 |
| 882.40 | 1.11 | 1.05 | 0.06 |
| 882.50 | 1.14 | 1.08 | 0.06 |
| 882.60 | 1.17 | 1.10 | 0.06 |
| 882.70 | 4.43 | 4.36 | 0.07 |
| 882.80 | 10.42 | 10.35 | 0.07 |
| 882.90 | 18.48 | 18.41 | 0.07 |
| 883.00 | 28.32 | 28.25 | 0.07 |
| 883.10 | 39.32 | 39.24 | 0.07 |
| 883.20 | 51.59 | 51.51 | 0.08 |
| 883.30 | 64.94 | 64.86 | 0.08 |
| 883.40 | 79.36 | 79.28 | 0.08 |
| 883.50 | **96.06** | **95.98** | **0.08** |

## Stage-Area-Storage for Pond 1Po: combined ponds

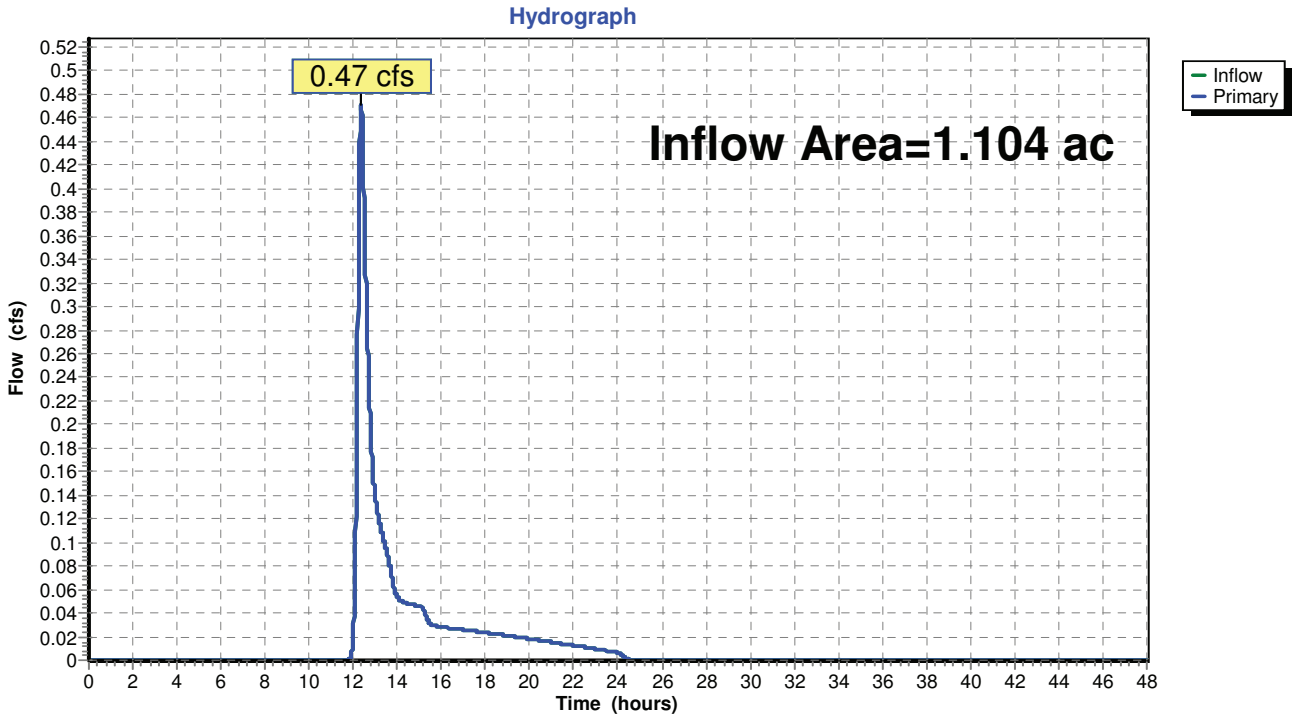
| Elevation (feet) | Surface (sq-ft) | Storage (cubic-feet) |
|---|---|---|
| 878.00 | 1,200 | 0 |
| 878.10 | 1,200 | 0 |
| 878.20 | 1,200 | 0 |
| 878.30 | 1,200 | 0 |
| 878.40 | 1,200 | 0 |
| 878.50 | 1,200 | 0 |
| 878.60 | 1,200 | 0 |
| 878.70 | 1,200 | 0 |
| 878.80 | 1,200 | 0 |
| 878.90 | 1,200 | 0 |
| 879.00 | 1,200 | 0 |
| 879.10 | 1,200 | 0 |
| 879.20 | 1,200 | 0 |
| 879.30 | 1,200 | 0 |
| 879.40 | 1,200 | 0 |
| 879.50 | 1,200 | 0 |
| 879.60 | 1,200 | 0 |
| 879.70 | 1,200 | 0 |
| 879.80 | 1,200 | 0 |
| 879.90 | 1,200 | 0 |
| 880.00 | 2,842 | 0 |
| 880.10 | 2,916 | 168 |
| 880.20 | 2,991 | 343 |
| 880.30 | 3,065 | 526 |
| 880.40 | 3,139 | 716 |
| 880.50 | 3,214 | 914 |
| 880.60 | 3,288 | 1,119 |
| 880.70 | 3,362 | 1,331 |
| 880.80 | 3,436 | 1,551 |
| 880.90 | 3,511 | 1,779 |
| 881.00 | 3,585 | 2,014 |
| 881.10 | 3,682 | 2,257 |
| 881.20 | 3,779 | 2,510 |
| 881.30 | 3,877 | 2,773 |
| 881.40 | 3,974 | 3,045 |
| 881.50 | 4,071 | 3,328 |
| 881.60 | 4,168 | 3,619 |
| 881.70 | 4,265 | 3,921 |
| 881.80 | 4,363 | 4,233 |
| 881.90 | 4,460 | 4,554 |
| 882.00 | 4,557 | 4,885 |
| 882.10 | 4,724 | 5,229 |
| 882.20 | 4,891 | 5,589 |
| 882.30 | 5,058 | 5,967 |
| 882.40 | 5,225 | 6,361 |
| 882.50 | 5,393 | 6,772 |
| 882.60 | 5,560 | 7,199 |
| 882.70 | 5,727 | 7,644 |
| 882.80 | 5,894 | 8,105 |
| 882.90 | 6,061 | 8,583 |
| 883.00 | 6,228 | 9,077 |
| 883.10 | 6,380 | 9,587 |
| 883.20 | 6,532 | 10,113 |
| 883.30 | 6,685 | 10,654 |
| 883.40 | 6,837 | 11,210 |
| 883.50 | **6,989** | **11,781** |

## Summary for Link 3ES: Existing Basin discharge

Inflow Area = 1.104 ac, 1.63% Impervious, Inflow Depth = 0.52" for 1 year event
Inflow = 0.47 cfs @ 12.36 hrs, Volume= 0.048 af
Primary = 0.47 cfs @ 12.36 hrs, Volume= 0.048 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



## Hydrograph for Link 3ES: Existing Basin discharge

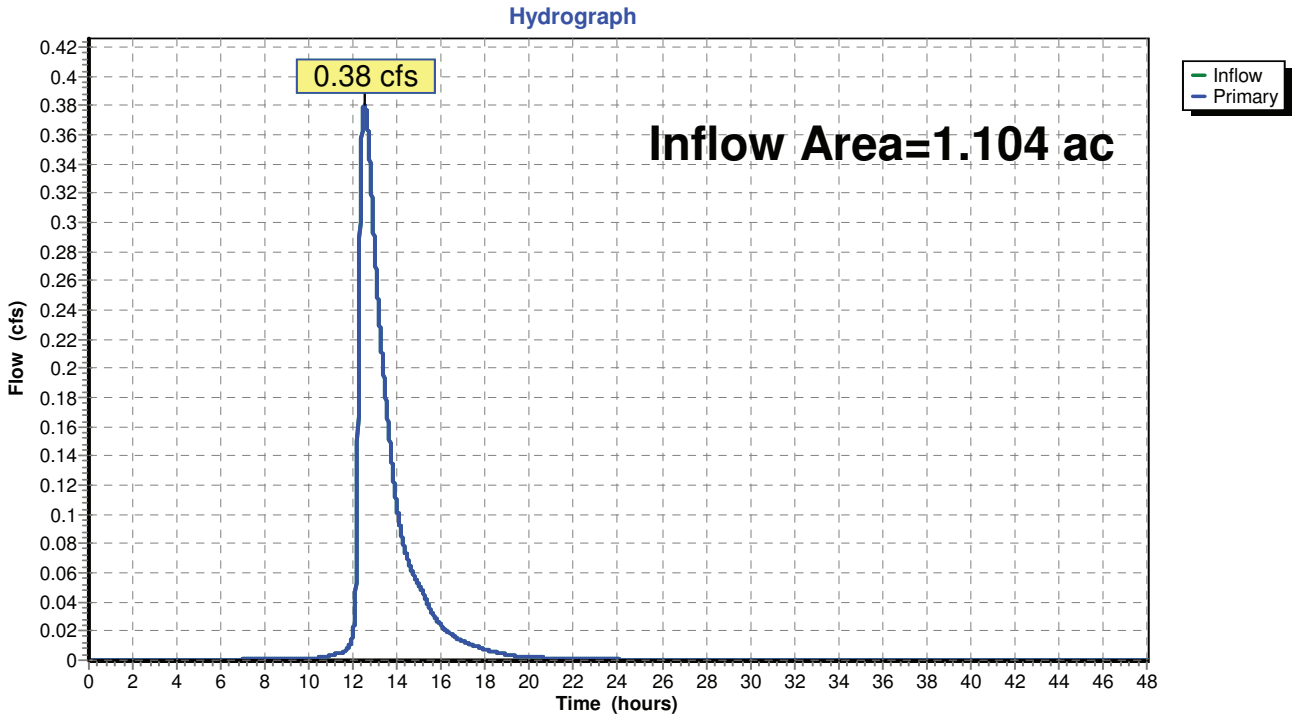
| Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) | Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) |
|---|---|---|---|---|---|---|---|
| 0.00 | 0.00 | **0.00** | 0.00 | 26.00 | 0.00 | 0.00 | 0.00 |
| 0.50 | 0.00 | 0.00 | 0.00 | 26.50 | 0.00 | 0.00 | 0.00 |
| 1.00 | 0.00 | 0.00 | 0.00 | 27.00 | 0.00 | 0.00 | 0.00 |
| 1.50 | 0.00 | 0.00 | 0.00 | 27.50 | 0.00 | 0.00 | 0.00 |
| 2.00 | 0.00 | 0.00 | 0.00 | 28.00 | 0.00 | 0.00 | 0.00 |
| 2.50 | 0.00 | 0.00 | 0.00 | 28.50 | 0.00 | 0.00 | 0.00 |
| 3.00 | 0.00 | 0.00 | 0.00 | 29.00 | 0.00 | 0.00 | 0.00 |
| 3.50 | 0.00 | 0.00 | 0.00 | 29.50 | 0.00 | 0.00 | 0.00 |
| 4.00 | 0.00 | 0.00 | 0.00 | 30.00 | 0.00 | 0.00 | 0.00 |
| 4.50 | 0.00 | 0.00 | 0.00 | 30.50 | 0.00 | 0.00 | 0.00 |
| 5.00 | 0.00 | 0.00 | 0.00 | 31.00 | 0.00 | 0.00 | 0.00 |
| 5.50 | 0.00 | 0.00 | 0.00 | 31.50 | 0.00 | 0.00 | 0.00 |
| 6.00 | 0.00 | 0.00 | 0.00 | 32.00 | 0.00 | 0.00 | 0.00 |
| 6.50 | 0.00 | 0.00 | 0.00 | 32.50 | 0.00 | 0.00 | 0.00 |
| 7.00 | 0.00 | 0.00 | 0.00 | 33.00 | 0.00 | 0.00 | 0.00 |
| 7.50 | 0.00 | 0.00 | 0.00 | 33.50 | 0.00 | 0.00 | 0.00 |
| 8.00 | 0.00 | 0.00 | 0.00 | 34.00 | 0.00 | 0.00 | 0.00 |
| 8.50 | 0.00 | 0.00 | 0.00 | 34.50 | 0.00 | 0.00 | 0.00 |
| 9.00 | 0.00 | 0.00 | 0.00 | 35.00 | 0.00 | 0.00 | 0.00 |
| 9.50 | 0.00 | 0.00 | 0.00 | 35.50 | 0.00 | 0.00 | 0.00 |
| 10.00 | 0.00 | 0.00 | 0.00 | 36.00 | 0.00 | 0.00 | 0.00 |
| 10.50 | 0.00 | 0.00 | 0.00 | 36.50 | 0.00 | 0.00 | 0.00 |
| 11.00 | 0.00 | 0.00 | 0.00 | 37.00 | 0.00 | 0.00 | 0.00 |
| 11.50 | 0.00 | 0.00 | 0.00 | 37.50 | 0.00 | 0.00 | 0.00 |
| 12.00 | **0.02** | 0.00 | **0.02** | 38.00 | 0.00 | 0.00 | 0.00 |
| 12.50 | **0.37** | 0.00 | **0.37** | 38.50 | 0.00 | 0.00 | 0.00 |
| 13.00 | 0.14 | 0.00 | 0.14 | 39.00 | 0.00 | 0.00 | 0.00 |
| 13.50 | 0.09 | 0.00 | 0.09 | 39.50 | 0.00 | 0.00 | 0.00 |
| 14.00 | 0.05 | 0.00 | 0.05 | 40.00 | 0.00 | 0.00 | 0.00 |
| 14.50 | 0.05 | 0.00 | 0.05 | 40.50 | 0.00 | 0.00 | 0.00 |
| 15.00 | 0.05 | 0.00 | 0.05 | 41.00 | 0.00 | 0.00 | 0.00 |
| 15.50 | 0.03 | 0.00 | 0.03 | 41.50 | 0.00 | 0.00 | 0.00 |
| 16.00 | 0.03 | 0.00 | 0.03 | 42.00 | 0.00 | 0.00 | 0.00 |
| 16.50 | 0.03 | 0.00 | 0.03 | 42.50 | 0.00 | 0.00 | 0.00 |
| 17.00 | 0.03 | 0.00 | 0.03 | 43.00 | 0.00 | 0.00 | 0.00 |
| 17.50 | 0.02 | 0.00 | 0.02 | 43.50 | 0.00 | 0.00 | 0.00 |
| 18.00 | 0.02 | 0.00 | 0.02 | 44.00 | 0.00 | 0.00 | 0.00 |
| 18.50 | 0.02 | 0.00 | 0.02 | 44.50 | 0.00 | 0.00 | 0.00 |
| 19.00 | 0.02 | 0.00 | 0.02 | 45.00 | 0.00 | 0.00 | 0.00 |
| 19.50 | 0.02 | 0.00 | 0.02 | 45.50 | 0.00 | 0.00 | 0.00 |
| 20.00 | 0.02 | 0.00 | 0.02 | 46.00 | 0.00 | 0.00 | 0.00 |
| 20.50 | 0.02 | 0.00 | 0.02 | 46.50 | 0.00 | 0.00 | 0.00 |
| 21.00 | 0.02 | 0.00 | 0.02 | 47.00 | 0.00 | 0.00 | 0.00 |
| 21.50 | 0.01 | 0.00 | 0.01 | 47.50 | 0.00 | 0.00 | 0.00 |
| 22.00 | 0.01 | 0.00 | 0.01 | 48.00 | 0.00 | 0.00 | 0.00 |
| 22.50 | 0.01 | 0.00 | 0.01 | | | | |
| 23.00 | 0.01 | 0.00 | 0.01 | | | | |
| 23.50 | 0.01 | 0.00 | 0.01 | | | | |
| 24.00 | 0.01 | 0.00 | 0.01 | | | | |
| 24.50 | 0.00 | 0.00 | 0.00 | | | | |
| 25.00 | 0.00 | 0.00 | 0.00 | | | | |
| 25.50 | 0.00 | 0.00 | 0.00 | | | | |

## Summary for Link 3PS: Developed Basin discharge

Inflow Area = 1.104 ac, 47.83% Impervious, Inflow Depth = 0.55" for 1 year event
Inflow = 0.38 cfs @ 12.50 hrs, Volume= 0.051 af
Primary = 0.38 cfs @ 12.50 hrs, Volume= 0.051 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



## Hydrograph for Link 3PS: Developed Basin discharge

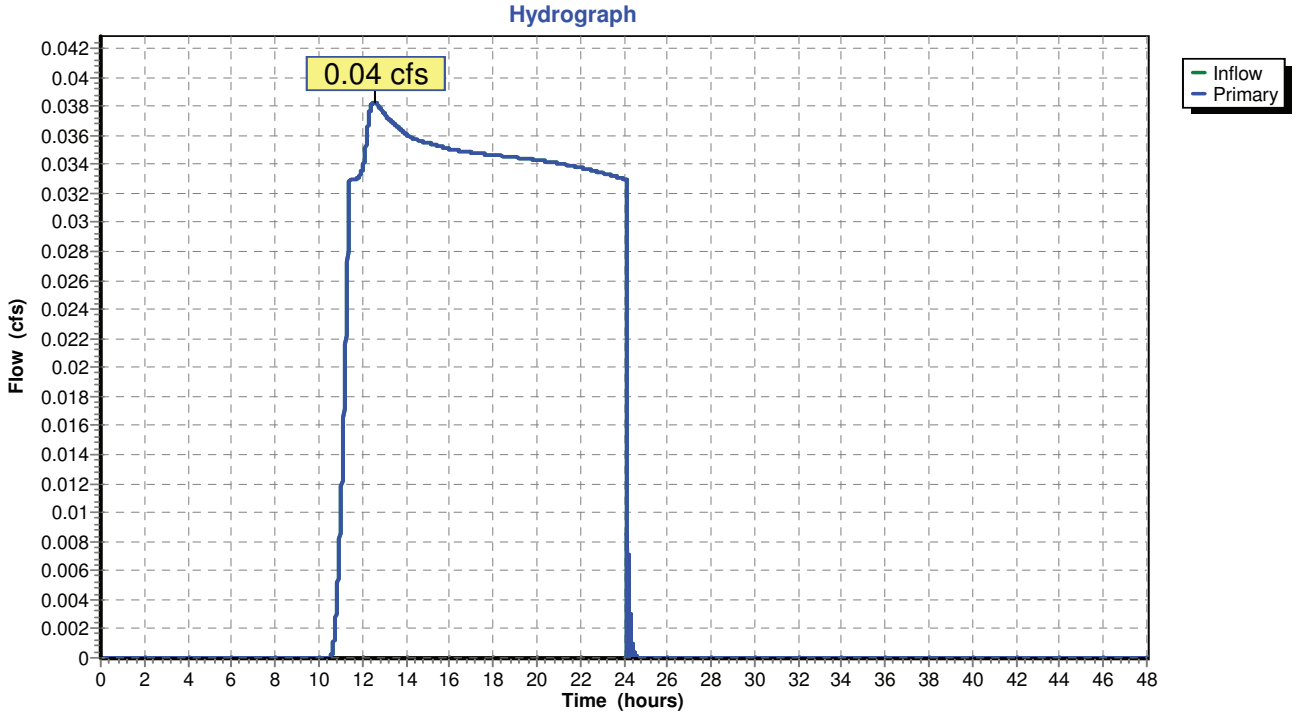
| Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) | Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) |
|---|---|---|---|---|---|---|---|
| 0.00 | 0.00 | **0.00** | 0.00 | 26.00 | 0.00 | 0.00 | 0.00 |
| 0.50 | 0.00 | 0.00 | 0.00 | 26.50 | 0.00 | 0.00 | 0.00 |
| 1.00 | 0.00 | 0.00 | 0.00 | 27.00 | 0.00 | 0.00 | 0.00 |
| 1.50 | 0.00 | 0.00 | 0.00 | 27.50 | 0.00 | 0.00 | 0.00 |
| 2.00 | 0.00 | 0.00 | 0.00 | 28.00 | 0.00 | 0.00 | 0.00 |
| 2.50 | 0.00 | 0.00 | 0.00 | 28.50 | 0.00 | 0.00 | 0.00 |
| 3.00 | 0.00 | 0.00 | 0.00 | 29.00 | 0.00 | 0.00 | 0.00 |
| 3.50 | 0.00 | 0.00 | 0.00 | 29.50 | 0.00 | 0.00 | 0.00 |
| 4.00 | 0.00 | 0.00 | 0.00 | 30.00 | 0.00 | 0.00 | 0.00 |
| 4.50 | 0.00 | 0.00 | 0.00 | 30.50 | 0.00 | 0.00 | 0.00 |
| 5.00 | 0.00 | 0.00 | 0.00 | 31.00 | 0.00 | 0.00 | 0.00 |
| 5.50 | 0.00 | 0.00 | 0.00 | 31.50 | 0.00 | 0.00 | 0.00 |
| 6.00 | 0.00 | 0.00 | 0.00 | 32.00 | 0.00 | 0.00 | 0.00 |
| 6.50 | 0.00 | 0.00 | 0.00 | 32.50 | 0.00 | 0.00 | 0.00 |
| 7.00 | 0.00 | 0.00 | 0.00 | 33.00 | 0.00 | 0.00 | 0.00 |
| 7.50 | 0.00 | 0.00 | 0.00 | 33.50 | 0.00 | 0.00 | 0.00 |
| 8.00 | 0.00 | 0.00 | 0.00 | 34.00 | 0.00 | 0.00 | 0.00 |
| 8.50 | 0.00 | 0.00 | 0.00 | 34.50 | 0.00 | 0.00 | 0.00 |
| 9.00 | 0.00 | 0.00 | 0.00 | 35.00 | 0.00 | 0.00 | 0.00 |
| 9.50 | 0.00 | 0.00 | 0.00 | 35.50 | 0.00 | 0.00 | 0.00 |
| 10.00 | 0.00 | 0.00 | 0.00 | 36.00 | 0.00 | 0.00 | 0.00 |
| 10.50 | 0.00 | 0.00 | 0.00 | 36.50 | 0.00 | 0.00 | 0.00 |
| 11.00 | 0.00 | 0.00 | 0.00 | 37.00 | 0.00 | 0.00 | 0.00 |
| 11.50 | 0.01 | 0.00 | 0.01 | 37.50 | 0.00 | 0.00 | 0.00 |
| 12.00 | 0.02 | 0.00 | 0.02 | 38.00 | 0.00 | 0.00 | 0.00 |
| 12.50 | **0.38** | 0.00 | **0.38** | 38.50 | 0.00 | 0.00 | 0.00 |
| 13.00 | 0.27 | 0.00 | 0.27 | 39.00 | 0.00 | 0.00 | 0.00 |
| 13.50 | 0.17 | 0.00 | 0.17 | 39.50 | 0.00 | 0.00 | 0.00 |
| 14.00 | 0.10 | 0.00 | 0.10 | 40.00 | 0.00 | 0.00 | 0.00 |
| 14.50 | 0.07 | 0.00 | 0.07 | 40.50 | 0.00 | 0.00 | 0.00 |
| 15.00 | 0.05 | 0.00 | 0.05 | 41.00 | 0.00 | 0.00 | 0.00 |
| 15.50 | 0.03 | 0.00 | 0.03 | 41.50 | 0.00 | 0.00 | 0.00 |
| 16.00 | 0.02 | 0.00 | 0.02 | 42.00 | 0.00 | 0.00 | 0.00 |
| 16.50 | 0.02 | 0.00 | 0.02 | 42.50 | 0.00 | 0.00 | 0.00 |
| 17.00 | 0.01 | 0.00 | 0.01 | 43.00 | 0.00 | 0.00 | 0.00 |
| 17.50 | 0.01 | 0.00 | 0.01 | 43.50 | 0.00 | 0.00 | 0.00 |
| 18.00 | 0.01 | 0.00 | 0.01 | 44.00 | 0.00 | 0.00 | 0.00 |
| 18.50 | 0.01 | 0.00 | 0.01 | 44.50 | 0.00 | 0.00 | 0.00 |
| 19.00 | 0.00 | 0.00 | 0.00 | 45.00 | 0.00 | 0.00 | 0.00 |
| 19.50 | 0.00 | 0.00 | 0.00 | 45.50 | 0.00 | 0.00 | 0.00 |
| 20.00 | 0.00 | 0.00 | 0.00 | 46.00 | 0.00 | 0.00 | 0.00 |
| 20.50 | 0.00 | 0.00 | 0.00 | 46.50 | 0.00 | 0.00 | 0.00 |
| 21.00 | 0.00 | 0.00 | 0.00 | 47.00 | 0.00 | 0.00 | 0.00 |
| 21.50 | 0.00 | 0.00 | 0.00 | 47.50 | 0.00 | 0.00 | 0.00 |
| 22.00 | 0.00 | 0.00 | 0.00 | 48.00 | 0.00 | 0.00 | 0.00 |
| 22.50 | 0.00 | 0.00 | 0.00 | | | | |
| 23.00 | 0.00 | 0.00 | 0.00 | | | | |
| 23.50 | 0.00 | 0.00 | 0.00 | | | | |
| 24.00 | 0.00 | 0.00 | 0.00 | | | | |
| 24.50 | 0.00 | 0.00 | 0.00 | | | | |
| 25.00 | 0.00 | 0.00 | 0.00 | | | | |
| 25.50 | 0.00 | 0.00 | 0.00 | | | | |

## Summary for Link 4Z: infiltrated to ground

Inflow = 0.04 cfs @ 12.55 hrs, Volume= 0.037 af
Primary = 0.04 cfs @ 12.55 hrs, Volume= 0.037 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



## Hydrograph for Link 4Z: infiltrated to ground

| Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) | Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) |
|---|---|---|---|---|---|---|---|
| 0.00 | 0.00 | **0.00** | 0.00 | 26.00 | 0.00 | 0.00 | 0.00 |
| 0.50 | 0.00 | 0.00 | 0.00 | 26.50 | 0.00 | 0.00 | 0.00 |
| 1.00 | 0.00 | 0.00 | 0.00 | 27.00 | 0.00 | 0.00 | 0.00 |
| 1.50 | 0.00 | 0.00 | 0.00 | 27.50 | 0.00 | 0.00 | 0.00 |
| 2.00 | 0.00 | 0.00 | 0.00 | 28.00 | 0.00 | 0.00 | 0.00 |
| 2.50 | 0.00 | 0.00 | 0.00 | 28.50 | 0.00 | 0.00 | 0.00 |
| 3.00 | 0.00 | 0.00 | 0.00 | 29.00 | 0.00 | 0.00 | 0.00 |
| 3.50 | 0.00 | 0.00 | 0.00 | 29.50 | 0.00 | 0.00 | 0.00 |
| 4.00 | 0.00 | 0.00 | 0.00 | 30.00 | 0.00 | 0.00 | 0.00 |
| 4.50 | 0.00 | 0.00 | 0.00 | 30.50 | 0.00 | 0.00 | 0.00 |
| 5.00 | 0.00 | 0.00 | 0.00 | 31.00 | 0.00 | 0.00 | 0.00 |
| 5.50 | 0.00 | 0.00 | 0.00 | 31.50 | 0.00 | 0.00 | 0.00 |
| 6.00 | 0.00 | 0.00 | 0.00 | 32.00 | 0.00 | 0.00 | 0.00 |
| 6.50 | 0.00 | 0.00 | 0.00 | 32.50 | 0.00 | 0.00 | 0.00 |
| 7.00 | 0.00 | 0.00 | 0.00 | 33.00 | 0.00 | 0.00 | 0.00 |
| 7.50 | 0.00 | 0.00 | 0.00 | 33.50 | 0.00 | 0.00 | 0.00 |
| 8.00 | 0.00 | 0.00 | 0.00 | 34.00 | 0.00 | 0.00 | 0.00 |
| 8.50 | 0.00 | 0.00 | 0.00 | 34.50 | 0.00 | 0.00 | 0.00 |
| 9.00 | 0.00 | 0.00 | 0.00 | 35.00 | 0.00 | 0.00 | 0.00 |
| 9.50 | 0.00 | 0.00 | 0.00 | 35.50 | 0.00 | 0.00 | 0.00 |
| 10.00 | 0.00 | 0.00 | 0.00 | 36.00 | 0.00 | 0.00 | 0.00 |
| 10.50 | 0.00 | 0.00 | 0.00 | 36.50 | 0.00 | 0.00 | 0.00 |
| 11.00 | 0.01 | 0.00 | 0.01 | 37.00 | 0.00 | 0.00 | 0.00 |
| 11.50 | 0.03 | 0.00 | 0.03 | 37.50 | 0.00 | 0.00 | 0.00 |
| 12.00 | 0.03 | 0.00 | 0.03 | 38.00 | 0.00 | 0.00 | 0.00 |
| 12.50 | **0.04** | 0.00 | **0.04** | 38.50 | 0.00 | 0.00 | 0.00 |
| 13.00 | **0.04** | 0.00 | **0.04** | 39.00 | 0.00 | 0.00 | 0.00 |
| 13.50 | 0.04 | 0.00 | 0.04 | 39.50 | 0.00 | 0.00 | 0.00 |
| 14.00 | 0.04 | 0.00 | 0.04 | 40.00 | 0.00 | 0.00 | 0.00 |
| 14.50 | 0.04 | 0.00 | 0.04 | 40.50 | 0.00 | 0.00 | 0.00 |
| 15.00 | 0.04 | 0.00 | 0.04 | 41.00 | 0.00 | 0.00 | 0.00 |
| 15.50 | 0.04 | 0.00 | 0.04 | 41.50 | 0.00 | 0.00 | 0.00 |
| 16.00 | 0.04 | 0.00 | 0.04 | 42.00 | 0.00 | 0.00 | 0.00 |
| 16.50 | 0.03 | 0.00 | 0.03 | 42.50 | 0.00 | 0.00 | 0.00 |
| 17.00 | 0.03 | 0.00 | 0.03 | 43.00 | 0.00 | 0.00 | 0.00 |
| 17.50 | 0.03 | 0.00 | 0.03 | 43.50 | 0.00 | 0.00 | 0.00 |
| 18.00 | 0.03 | 0.00 | 0.03 | 44.00 | 0.00 | 0.00 | 0.00 |
| 18.50 | 0.03 | 0.00 | 0.03 | 44.50 | 0.00 | 0.00 | 0.00 |
| 19.00 | 0.03 | 0.00 | 0.03 | 45.00 | 0.00 | 0.00 | 0.00 |
| 19.50 | 0.03 | 0.00 | 0.03 | 45.50 | 0.00 | 0.00 | 0.00 |
| 20.00 | 0.03 | 0.00 | 0.03 | 46.00 | 0.00 | 0.00 | 0.00 |
| 20.50 | 0.03 | 0.00 | 0.03 | 46.50 | 0.00 | 0.00 | 0.00 |
| 21.00 | 0.03 | 0.00 | 0.03 | 47.00 | 0.00 | 0.00 | 0.00 |
| 21.50 | 0.03 | 0.00 | 0.03 | 47.50 | 0.00 | 0.00 | 0.00 |
| 22.00 | 0.03 | 0.00 | 0.03 | 48.00 | 0.00 | 0.00 | 0.00 |
| 22.50 | 0.03 | 0.00 | 0.03 | | | | |
| 23.00 | 0.03 | 0.00 | 0.03 | | | | |
| 23.50 | 0.03 | 0.00 | 0.03 | | | | |
| 24.00 | 0.03 | 0.00 | 0.03 | | | | |
| 24.50 | 0.00 | 0.00 | 0.00 | | | | |
| 25.00 | 0.00 | 0.00 | 0.00 | | | | |
| 25.50 | 0.00 | 0.00 | 0.00 | | | | |

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=1.104 ac 1.63% Impervious Runoff Depth=0.71"
Flow Length=270' Tc=21.2 min CN=72 Runoff=0.68 cfs 0.066 af

**Subcatchment 1P: Developed Basin** Runoff Area=0.984 ac 51.63% Impervious Runoff Depth=1.25"
Flow Length=245' Tc=13.6 min CN=82 Runoff=1.47 cfs 0.103 af

**Subcatchment 2P: East Basin-untreated** Runoff Area=0.100 ac 0.00% Impervious Runoff Depth=0.55"
Flow Length=245' Tc=13.6 min CN=68 Runoff=0.05 cfs 0.005 af

**Subcatchment 3P: West Basin-untreated** Runoff Area=0.020 ac 100.00% Impervious Runoff Depth=2.61"
Flow Length=245' Tc=13.6 min CN=98 Runoff=0.06 cfs 0.004 af

**Pond 1Po: combined ponds** Peak Elev=880.78' Storage=1,500 cf Inflow=1.47 cfs 0.103 af
Primary=0.45 cfs 0.062 af Secondary=0.04 cfs 0.041 af Outflow=0.49 cfs 0.103 af

**Link 3ES: Existing Basin discharge** Inflow=0.68 cfs 0.066 af
Primary=0.68 cfs 0.066 af

**Link 3PS: Developed Basin discharge** Inflow=0.50 cfs 0.071 af
Primary=0.50 cfs 0.071 af

**Link 4Z: infiltrated to ground** Inflow=0.04 cfs 0.041 af
Primary=0.04 cfs 0.041 af

**Total Runoff Area = 2.208 ac Runoff Volume = 0.177 af Average Runoff Depth = 0.96"**
**75.27% Pervious = 1.662 ac 24.73% Impervious = 0.546 ac**

## Summary for Subcatchment 1E: Existing Basin

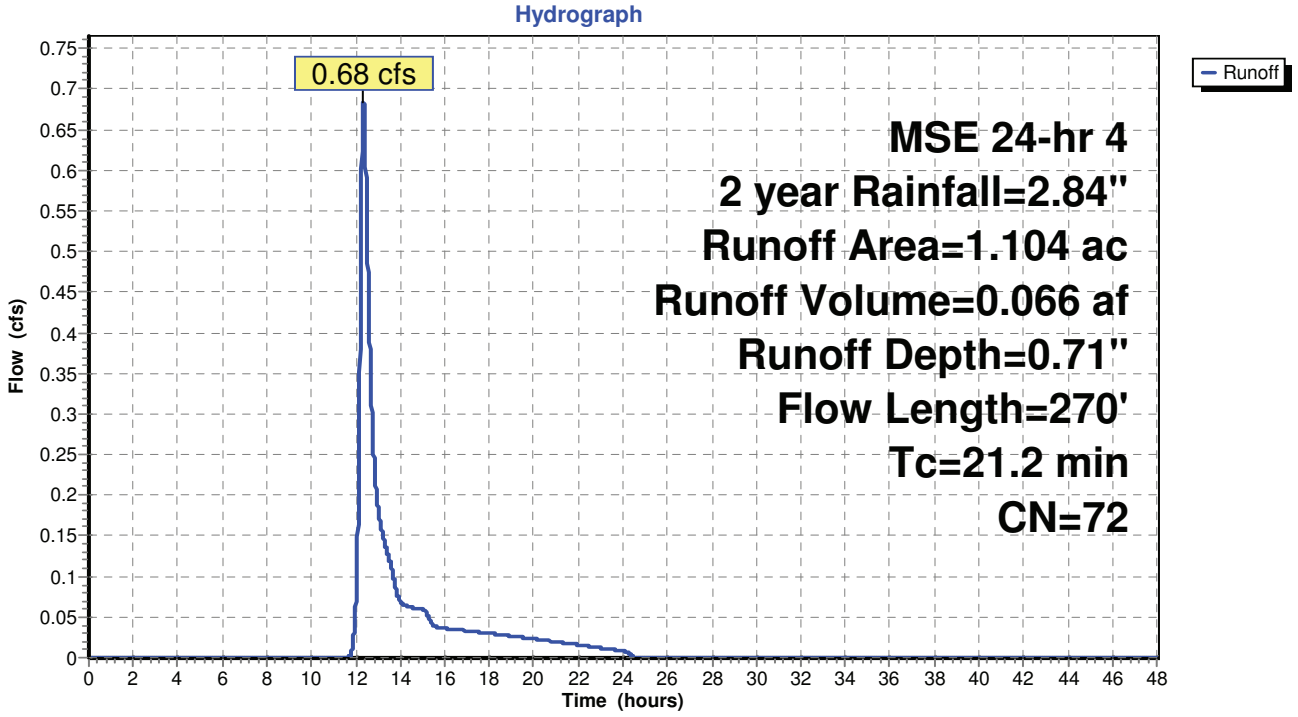
Runoff = 0.68 cfs @ 12.34 hrs, Volume= 0.066 af, Depth= 0.71"
Routed to Link 3ES : Existing Basin discharge

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 |
| * | 0.414 | 78 | Exi ag field, HSG C |
| | 1.104 | 72 | Weighted Average |
| | 1.086 | | 98.37% Pervious Area |
| | 0.018 | | 1.63% 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



## Hydrograph for Subcatchment 1E: Existing Basin

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|---|---|---|---|
| 0.00 | 0.00 | 0.00 | 0.00 |
| 0.50 | 0.01 | 0.00 | 0.00 |
| 1.00 | 0.01 | 0.00 | 0.00 |
| 1.50 | 0.02 | 0.00 | 0.00 |
| 2.00 | 0.03 | 0.00 | 0.00 |
| 2.50 | 0.05 | 0.00 | 0.00 |
| 3.00 | 0.06 | 0.00 | 0.00 |
| 3.50 | 0.08 | 0.00 | 0.00 |
| 4.00 | 0.09 | 0.00 | 0.00 |
| 4.50 | 0.11 | 0.00 | 0.00 |
| 5.00 | 0.13 | 0.00 | 0.00 |
| 5.50 | 0.15 | 0.00 | 0.00 |
| 6.00 | 0.17 | 0.00 | 0.00 |
| 6.50 | 0.20 | 0.00 | 0.00 |
| 7.00 | 0.22 | 0.00 | 0.00 |
| 7.50 | 0.25 | 0.00 | 0.00 |
| 8.00 | 0.28 | 0.00 | 0.00 |
| 8.50 | 0.31 | 0.00 | 0.00 |
| 9.00 | 0.34 | 0.00 | 0.00 |
| 9.50 | 0.40 | 0.00 | 0.00 |
| 10.00 | 0.45 | 0.00 | 0.00 |
| 10.50 | 0.51 | 0.00 | 0.00 |
| 11.00 | 0.61 | 0.00 | 0.00 |
| 11.50 | 0.77 | 0.00 | 0.00 |
| 12.00 | 1.33 | 0.07 | **0.07** |
| 12.50 | 2.07 | 0.32 | **0.52** |
| 13.00 | 2.23 | 0.39 | 0.18 |
| 13.50 | 2.33 | 0.44 | 0.12 |
| 14.00 | 2.39 | 0.47 | 0.07 |
| 14.50 | 2.44 | 0.50 | 0.06 |
| 15.00 | 2.50 | 0.53 | 0.06 |
| 15.50 | 2.53 | 0.54 | 0.04 |
| 16.00 | 2.56 | 0.56 | 0.04 |
| 16.50 | 2.59 | 0.57 | 0.03 |
| 17.00 | 2.62 | 0.59 | 0.03 |
| 17.50 | 2.64 | 0.60 | 0.03 |
| 18.00 | 2.67 | 0.62 | 0.03 |
| 18.50 | 2.69 | 0.63 | 0.03 |
| 19.00 | 2.71 | 0.64 | 0.03 |
| 19.50 | 2.73 | 0.65 | 0.02 |
| 20.00 | 2.75 | 0.66 | 0.02 |
| 20.50 | 2.76 | 0.67 | 0.02 |
| 21.00 | 2.78 | 0.68 | 0.02 |
| 21.50 | 2.79 | 0.69 | 0.02 |
| 22.00 | 2.81 | 0.70 | 0.02 |
| 22.50 | 2.82 | 0.70 | 0.01 |
| 23.00 | 2.83 | 0.71 | 0.01 |
| 23.50 | 2.83 | 0.71 | 0.01 |
| 24.00 | **2.84** | **0.71** | 0.01 |
| 24.50 | 2.84 | 0.71 | 0.00 |
| 25.00 | 2.84 | 0.71 | 0.00 |
| 25.50 | 2.84 | 0.71 | 0.00 |
| 26.00 | 2.84 | 0.71 | 0.00 |
| 26.50 | 2.84 | 0.71 | 0.00 |
| 27.00 | 2.84 | 0.71 | 0.00 |
| 27.50 | 2.84 | 0.71 | 0.00 |
| 28.00 | 2.84 | 0.71 | 0.00 |
| 28.50 | 2.84 | 0.71 | 0.00 |
| 29.00 | 2.84 | 0.71 | 0.00 |
| 29.50 | 2.84 | 0.71 | 0.00 |
| 30.00 | 2.84 | 0.71 | 0.00 |
| 30.50 | 2.84 | 0.71 | 0.00 |
| 31.00 | 2.84 | 0.71 | 0.00 |
| 31.50 | 2.84 | 0.71 | 0.00 |
| 32.00 | 2.84 | 0.71 | 0.00 |
| 32.50 | 2.84 | 0.71 | 0.00 |
| 33.00 | 2.84 | 0.71 | 0.00 |
| 33.50 | 2.84 | 0.71 | 0.00 |
| 34.00 | 2.84 | 0.71 | 0.00 |
| 34.50 | 2.84 | 0.71 | 0.00 |
| 35.00 | 2.84 | 0.71 | 0.00 |
| 35.50 | 2.84 | 0.71 | 0.00 |
| 36.00 | 2.84 | 0.71 | 0.00 |
| 36.50 | 2.84 | 0.71 | 0.00 |
| 37.00 | 2.84 | 0.71 | 0.00 |
| 37.50 | 2.84 | 0.71 | 0.00 |
| 38.00 | 2.84 | 0.71 | 0.00 |
| 38.50 | 2.84 | 0.71 | 0.00 |
| 39.00 | 2.84 | 0.71 | 0.00 |
| 39.50 | 2.84 | 0.71 | 0.00 |
| 40.00 | 2.84 | 0.71 | 0.00 |
| 40.50 | 2.84 | 0.71 | 0.00 |
| 41.00 | 2.84 | 0.71 | 0.00 |
| 41.50 | 2.84 | 0.71 | 0.00 |
| 42.00 | 2.84 | 0.71 | 0.00 |
| 42.50 | 2.84 | 0.71 | 0.00 |
| 43.00 | 2.84 | 0.71 | 0.00 |
| 43.50 | 2.84 | 0.71 | 0.00 |
| 44.00 | 2.84 | 0.71 | 0.00 |
| 44.50 | 2.84 | 0.71 | 0.00 |
| 45.00 | 2.84 | 0.71 | 0.00 |
| 45.50 | 2.84 | 0.71 | 0.00 |
| 46.00 | 2.84 | 0.71 | 0.00 |
| 46.50 | 2.84 | 0.71 | 0.00 |
| 47.00 | 2.84 | 0.71 | 0.00 |
| 47.50 | 2.84 | 0.71 | 0.00 |
| 48.00 | 2.84 | 0.71 | 0.00 |

## Summary for Subcatchment 1P: Developed Basin

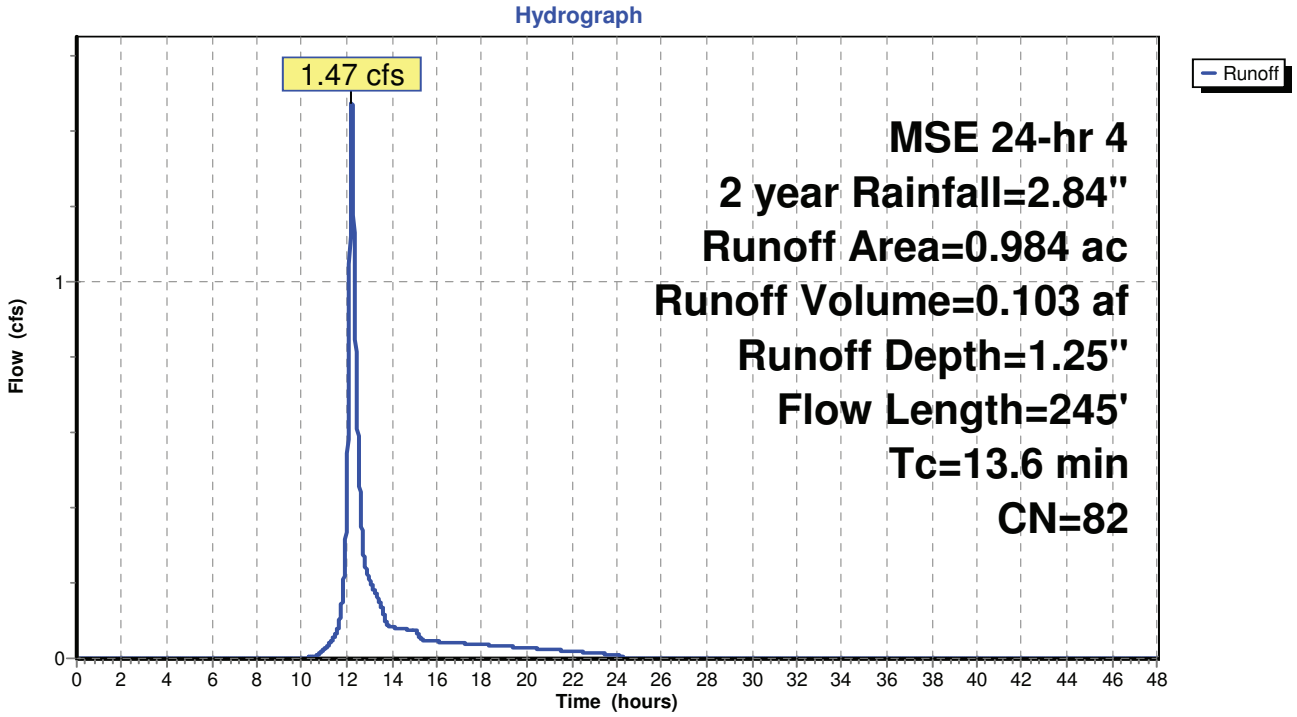
Runoff = 1.47 cfs @ 12.22 hrs, Volume= 0.103 af, Depth= 1.25"
Routed to Pond 1Po : combined ponds

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 |
| * | 0.238 | 98 | New roof |
| * | 0.252 | 98 | New pvmt |
| * | 0.212 | 61 | New yard, HSG B |
| * | 0.062 | 68 | New yard, HSG C |
| | 0.984 | 82 | Weighted Average |
| | 0.476 | | 48.37% Pervious Area |
| | 0.508 | | 51.63% 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



## Hydrograph for Subcatchment 1P: Developed Basin

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|---|---|---|---|
| 0.00 | 0.00 | 0.00 | 0.00 |
| 0.50 | 0.01 | 0.00 | 0.00 |
| 1.00 | 0.01 | 0.00 | 0.00 |
| 1.50 | 0.02 | 0.00 | 0.00 |
| 2.00 | 0.03 | 0.00 | 0.00 |
| 2.50 | 0.05 | 0.00 | 0.00 |
| 3.00 | 0.06 | 0.00 | 0.00 |
| 3.50 | 0.08 | 0.00 | 0.00 |
| 4.00 | 0.09 | 0.00 | 0.00 |
| 4.50 | 0.11 | 0.00 | 0.00 |
| 5.00 | 0.13 | 0.00 | 0.00 |
| 5.50 | 0.15 | 0.00 | 0.00 |
| 6.00 | 0.17 | 0.00 | 0.00 |
| 6.50 | 0.20 | 0.00 | 0.00 |
| 7.00 | 0.22 | 0.00 | 0.00 |
| 7.50 | 0.25 | 0.00 | 0.00 |
| 8.00 | 0.28 | 0.00 | 0.00 |
| 8.50 | 0.31 | 0.00 | 0.00 |
| 9.00 | 0.34 | 0.00 | 0.00 |
| 9.50 | 0.40 | 0.00 | 0.00 |
| 10.00 | 0.45 | 0.00 | 0.00 |
| 10.50 | 0.51 | 0.00 | 0.00 |
| 11.00 | 0.61 | 0.01 | 0.02 |
| 11.50 | 0.77 | 0.04 | 0.06 |
| 12.00 | 1.33 | 0.26 | **0.42** |
| 12.50 | 2.07 | 0.69 | **0.57** |
| 13.00 | 2.23 | 0.80 | 0.21 |
| 13.50 | 2.33 | 0.88 | 0.14 |
| 14.00 | 2.39 | 0.92 | 0.08 |
| 14.50 | 2.44 | 0.96 | 0.08 |
| 15.00 | 2.50 | 1.00 | 0.07 |
| 15.50 | 2.53 | 1.02 | 0.05 |
| 16.00 | 2.56 | 1.04 | 0.04 |
| 16.50 | 2.59 | 1.06 | 0.04 |
| 17.00 | 2.62 | 1.08 | 0.04 |
| 17.50 | 2.64 | 1.10 | 0.04 |
| 18.00 | 2.67 | 1.12 | 0.04 |
| 18.50 | 2.69 | 1.14 | 0.03 |
| 19.00 | 2.71 | 1.15 | 0.03 |
| 19.50 | 2.73 | 1.17 | 0.03 |
| 20.00 | 2.75 | 1.18 | 0.03 |
| 20.50 | 2.76 | 1.20 | 0.03 |
| 21.00 | 2.78 | 1.21 | 0.02 |
| 21.50 | 2.79 | 1.22 | 0.02 |
| 22.00 | 2.81 | 1.23 | 0.02 |
| 22.50 | 2.82 | 1.24 | 0.02 |
| 23.00 | 2.83 | 1.24 | 0.01 |
| 23.50 | 2.83 | 1.25 | 0.01 |
| 24.00 | **2.84** | **1.25** | 0.01 |
| 24.50 | 2.84 | 1.25 | 0.00 |
| 25.00 | 2.84 | 1.25 | 0.00 |
| 25.50 | 2.84 | 1.25 | 0.00 |
| 26.00 | 2.84 | 1.25 | 0.00 |
| 26.50 | 2.84 | 1.25 | 0.00 |
| 27.00 | 2.84 | 1.25 | 0.00 |
| 27.50 | 2.84 | 1.25 | 0.00 |
| 28.00 | 2.84 | 1.25 | 0.00 |
| 28.50 | 2.84 | 1.25 | 0.00 |
| 29.00 | 2.84 | 1.25 | 0.00 |
| 29.50 | 2.84 | 1.25 | 0.00 |
| 30.00 | 2.84 | 1.25 | 0.00 |
| 30.50 | 2.84 | 1.25 | 0.00 |
| 31.00 | 2.84 | 1.25 | 0.00 |
| 31.50 | 2.84 | 1.25 | 0.00 |
| 32.00 | 2.84 | 1.25 | 0.00 |
| 32.50 | 2.84 | 1.25 | 0.00 |
| 33.00 | 2.84 | 1.25 | 0.00 |
| 33.50 | 2.84 | 1.25 | 0.00 |
| 34.00 | 2.84 | 1.25 | 0.00 |
| 34.50 | 2.84 | 1.25 | 0.00 |
| 35.00 | 2.84 | 1.25 | 0.00 |
| 35.50 | 2.84 | 1.25 | 0.00 |
| 36.00 | 2.84 | 1.25 | 0.00 |
| 36.50 | 2.84 | 1.25 | 0.00 |
| 37.00 | 2.84 | 1.25 | 0.00 |
| 37.50 | 2.84 | 1.25 | 0.00 |
| 38.00 | 2.84 | 1.25 | 0.00 |
| 38.50 | 2.84 | 1.25 | 0.00 |
| 39.00 | 2.84 | 1.25 | 0.00 |
| 39.50 | 2.84 | 1.25 | 0.00 |
| 40.00 | 2.84 | 1.25 | 0.00 |
| 40.50 | 2.84 | 1.25 | 0.00 |
| 41.00 | 2.84 | 1.25 | 0.00 |
| 41.50 | 2.84 | 1.25 | 0.00 |
| 42.00 | 2.84 | 1.25 | 0.00 |
| 42.50 | 2.84 | 1.25 | 0.00 |
| 43.00 | 2.84 | 1.25 | 0.00 |
| 43.50 | 2.84 | 1.25 | 0.00 |
| 44.00 | 2.84 | 1.25 | 0.00 |
| 44.50 | 2.84 | 1.25 | 0.00 |
| 45.00 | 2.84 | 1.25 | 0.00 |
| 45.50 | 2.84 | 1.25 | 0.00 |
| 46.00 | 2.84 | 1.25 | 0.00 |
| 46.50 | 2.84 | 1.25 | 0.00 |
| 47.00 | 2.84 | 1.25 | 0.00 |
| 47.50 | 2.84 | 1.25 | 0.00 |
| 48.00 | 2.84 | 1.25 | 0.00 |

## Summary for Subcatchment 2P: East Basin-untreated

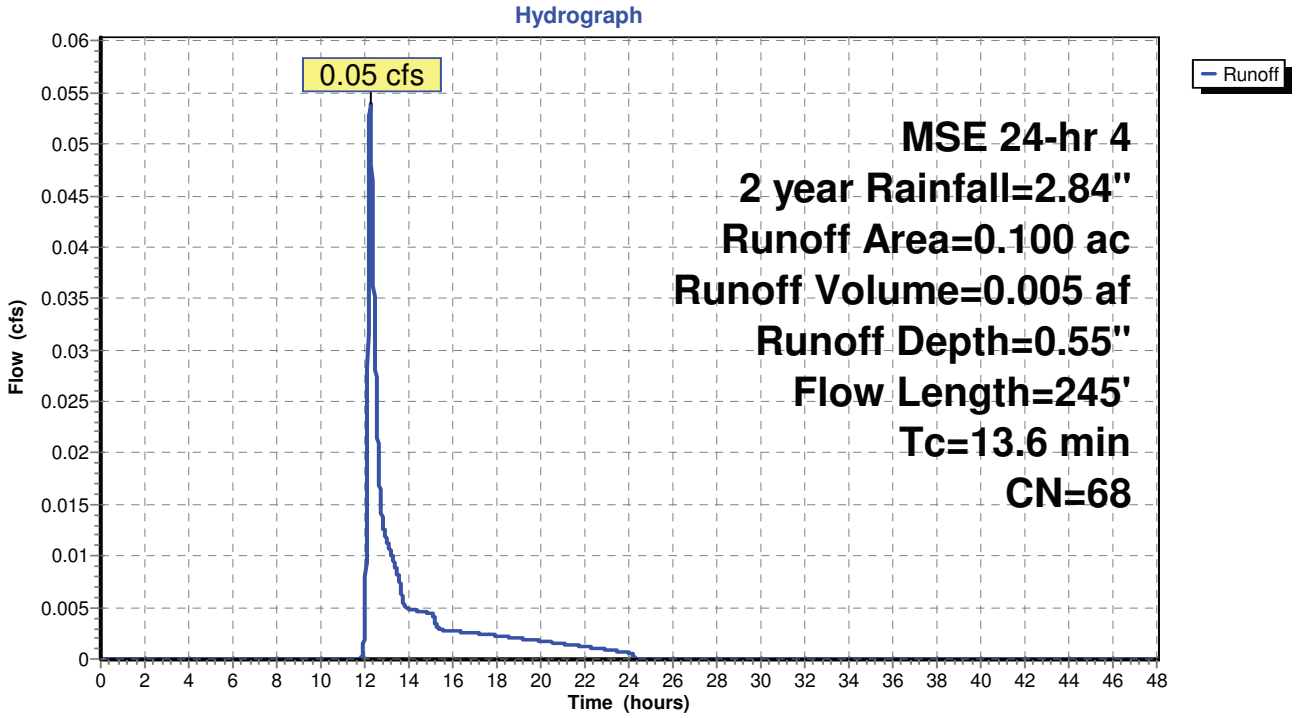
Runoff = 0.05 cfs @ 12.25 hrs, Volume= 0.005 af, Depth= 0.55"
Routed to Link 3PS : Developed Basin discharge

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 |
|---|---|---|---|
| * | 0.100 | 68 | New yard, HSG C |
| | 0.100 | | 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



## Hydrograph for Subcatchment 2P: East Basin-untreated

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|---|---|---|---|
| 0.00 | 0.00 | 0.00 | 0.00 |
| 0.50 | 0.01 | 0.00 | 0.00 |
| 1.00 | 0.01 | 0.00 | 0.00 |
| 1.50 | 0.02 | 0.00 | 0.00 |
| 2.00 | 0.03 | 0.00 | 0.00 |
| 2.50 | 0.05 | 0.00 | 0.00 |
| 3.00 | 0.06 | 0.00 | 0.00 |
| 3.50 | 0.08 | 0.00 | 0.00 |
| 4.00 | 0.09 | 0.00 | 0.00 |
| 4.50 | 0.11 | 0.00 | 0.00 |
| 5.00 | 0.13 | 0.00 | 0.00 |
| 5.50 | 0.15 | 0.00 | 0.00 |
| 6.00 | 0.17 | 0.00 | 0.00 |
| 6.50 | 0.20 | 0.00 | 0.00 |
| 7.00 | 0.22 | 0.00 | 0.00 |
| 7.50 | 0.25 | 0.00 | 0.00 |
| 8.00 | 0.28 | 0.00 | 0.00 |
| 8.50 | 0.31 | 0.00 | 0.00 |
| 9.00 | 0.34 | 0.00 | 0.00 |
| 9.50 | 0.40 | 0.00 | 0.00 |
| 10.00 | 0.45 | 0.00 | 0.00 |
| 10.50 | 0.51 | 0.00 | 0.00 |
| 11.00 | 0.61 | 0.00 | 0.00 |
| 11.50 | 0.77 | 0.00 | 0.00 |
| 12.00 | 1.33 | 0.03 | **0.00** |
| 12.50 | 2.07 | 0.22 | **0.03** |
| 13.00 | 2.23 | 0.28 | 0.01 |
| 13.50 | 2.33 | 0.32 | 0.01 |
| 14.00 | 2.39 | 0.34 | 0.00 |
| 14.50 | 2.44 | 0.36 | 0.00 |
| 15.00 | 2.50 | 0.39 | 0.00 |
| 15.50 | 2.53 | 0.40 | 0.00 |
| 16.00 | 2.56 | 0.41 | 0.00 |
| 16.50 | 2.59 | 0.43 | 0.00 |
| 17.00 | 2.62 | 0.44 | 0.00 |
| 17.50 | 2.64 | 0.45 | 0.00 |
| 18.00 | 2.67 | 0.46 | 0.00 |
| 18.50 | 2.69 | 0.47 | 0.00 |
| 19.00 | 2.71 | 0.48 | 0.00 |
| 19.50 | 2.73 | 0.49 | 0.00 |
| 20.00 | 2.75 | 0.50 | 0.00 |
| 20.50 | 2.76 | 0.51 | 0.00 |
| 21.00 | 2.78 | 0.52 | 0.00 |
| 21.50 | 2.79 | 0.52 | 0.00 |
| 22.00 | 2.81 | 0.53 | 0.00 |
| 22.50 | 2.82 | 0.53 | 0.00 |
| 23.00 | 2.83 | 0.54 | 0.00 |
| 23.50 | 2.83 | 0.54 | 0.00 |
| 24.00 | **2.84** | **0.55** | 0.00 |
| 24.50 | 2.84 | 0.55 | 0.00 |
| 25.00 | 2.84 | 0.55 | 0.00 |
| 25.50 | 2.84 | 0.55 | 0.00 |
| 26.00 | 2.84 | 0.55 | 0.00 |
| 26.50 | 2.84 | 0.55 | 0.00 |
| 27.00 | 2.84 | 0.55 | 0.00 |
| 27.50 | 2.84 | 0.55 | 0.00 |
| 28.00 | 2.84 | 0.55 | 0.00 |
| 28.50 | 2.84 | 0.55 | 0.00 |
| 29.00 | 2.84 | 0.55 | 0.00 |
| 29.50 | 2.84 | 0.55 | 0.00 |
| 30.00 | 2.84 | 0.55 | 0.00 |
| 30.50 | 2.84 | 0.55 | 0.00 |
| 31.00 | 2.84 | 0.55 | 0.00 |
| 31.50 | 2.84 | 0.55 | 0.00 |
| 32.00 | 2.84 | 0.55 | 0.00 |
| 32.50 | 2.84 | 0.55 | 0.00 |
| 33.00 | 2.84 | 0.55 | 0.00 |
| 33.50 | 2.84 | 0.55 | 0.00 |
| 34.00 | 2.84 | 0.55 | 0.00 |
| 34.50 | 2.84 | 0.55 | 0.00 |
| 35.00 | 2.84 | 0.55 | 0.00 |
| 35.50 | 2.84 | 0.55 | 0.00 |
| 36.00 | 2.84 | 0.55 | 0.00 |
| 36.50 | 2.84 | 0.55 | 0.00 |
| 37.00 | 2.84 | 0.55 | 0.00 |
| 37.50 | 2.84 | 0.55 | 0.00 |
| 38.00 | 2.84 | 0.55 | 0.00 |
| 38.50 | 2.84 | 0.55 | 0.00 |
| 39.00 | 2.84 | 0.55 | 0.00 |
| 39.50 | 2.84 | 0.55 | 0.00 |
| 40.00 | 2.84 | 0.55 | 0.00 |
| 40.50 | 2.84 | 0.55 | 0.00 |
| 41.00 | 2.84 | 0.55 | 0.00 |
| 41.50 | 2.84 | 0.55 | 0.00 |
| 42.00 | 2.84 | 0.55 | 0.00 |
| 42.50 | 2.84 | 0.55 | 0.00 |
| 43.00 | 2.84 | 0.55 | 0.00 |
| 43.50 | 2.84 | 0.55 | 0.00 |
| 44.00 | 2.84 | 0.55 | 0.00 |
| 44.50 | 2.84 | 0.55 | 0.00 |
| 45.00 | 2.84 | 0.55 | 0.00 |
| 45.50 | 2.84 | 0.55 | 0.00 |
| 46.00 | 2.84 | 0.55 | 0.00 |
| 46.50 | 2.84 | 0.55 | 0.00 |
| 47.00 | 2.84 | 0.55 | 0.00 |
| 47.50 | 2.84 | 0.55 | 0.00 |
| 48.00 | 2.84 | 0.55 | 0.00 |

## Summary for Subcatchment 3P: West Basin-untreated

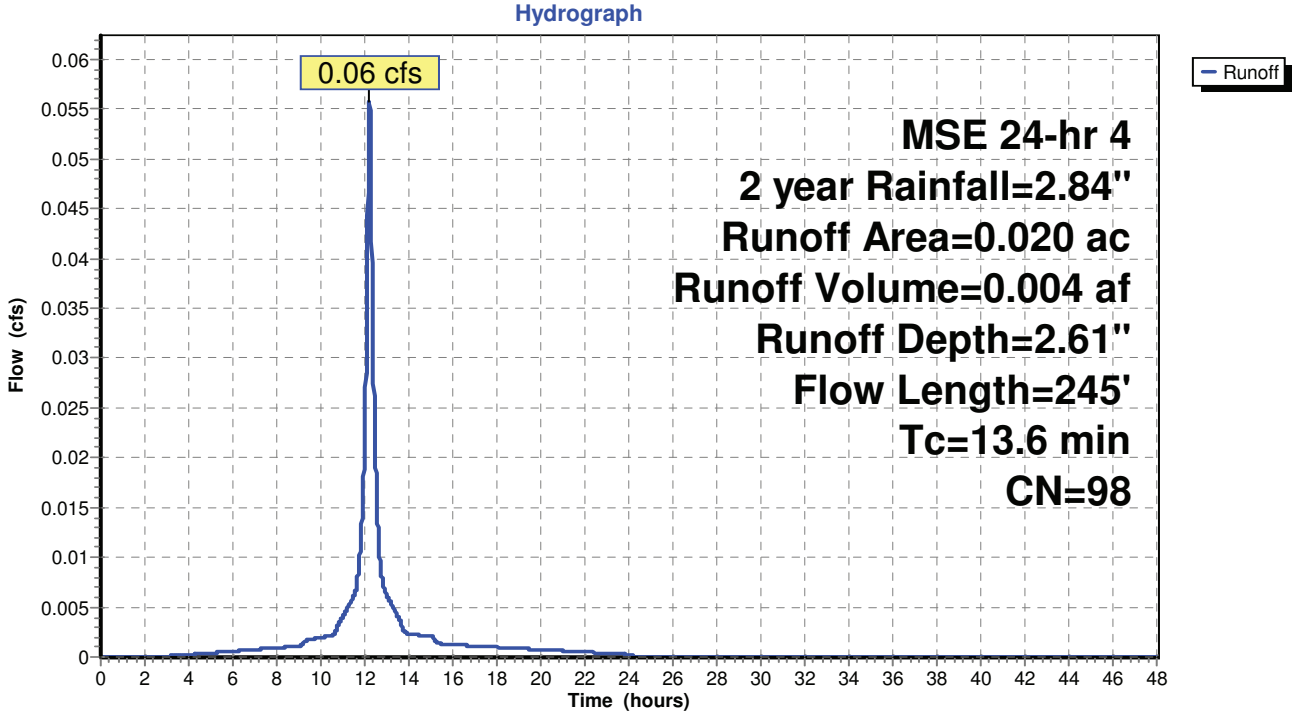
Runoff = 0.06 cfs @ 12.21 hrs, Volume= 0.004 af, Depth= 2.61"
Routed to Link 3PS : Developed Basin discharge

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 |
|---|---|---|---|
| * | 0.020 | 98 | New pvmt |
| | 0.020 | | 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



## Hydrograph for Subcatchment 3P: West Basin-untreated

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|---|---|---|---|
| 0.00 | 0.00 | 0.00 | 0.00 |
| 0.50 | 0.01 | 0.00 | 0.00 |
| 1.00 | 0.01 | 0.00 | 0.00 |
| 1.50 | 0.02 | 0.00 | 0.00 |
| 2.00 | 0.03 | 0.00 | 0.00 |
| 2.50 | 0.05 | 0.00 | 0.00 |
| 3.00 | 0.06 | 0.00 | 0.00 |
| 3.50 | 0.08 | 0.00 | 0.00 |
| 4.00 | 0.09 | 0.01 | 0.00 |
| 4.50 | 0.11 | 0.02 | 0.00 |
| 5.00 | 0.13 | 0.03 | 0.00 |
| 5.50 | 0.15 | 0.04 | 0.00 |
| 6.00 | 0.17 | 0.05 | 0.00 |
| 6.50 | 0.20 | 0.07 | 0.00 |
| 7.00 | 0.22 | 0.09 | 0.00 |
| 7.50 | 0.25 | 0.11 | 0.00 |
| 8.00 | 0.28 | 0.13 | 0.00 |
| 8.50 | 0.31 | 0.15 | 0.00 |
| 9.00 | 0.34 | 0.18 | 0.00 |
| 9.50 | 0.40 | 0.22 | 0.00 |
| 10.00 | 0.45 | 0.27 | 0.00 |
| 10.50 | 0.51 | 0.33 | 0.00 |
| 11.00 | 0.61 | 0.42 | 0.00 |
| 11.50 | 0.77 | 0.57 | 0.01 |
| 12.00 | 1.33 | 1.11 | **0.02** |
| 12.50 | 2.07 | 1.84 | **0.02** |
| 13.00 | 2.23 | 2.00 | 0.01 |
| 13.50 | 2.33 | 2.10 | 0.00 |
| 14.00 | 2.39 | 2.16 | 0.00 |
| 14.50 | 2.44 | 2.22 | 0.00 |
| 15.00 | 2.50 | 2.27 | 0.00 |
| 15.50 | 2.53 | 2.30 | 0.00 |
| 16.00 | 2.56 | 2.33 | 0.00 |
| 16.50 | 2.59 | 2.36 | 0.00 |
| 17.00 | 2.62 | 2.39 | 0.00 |
| 17.50 | 2.64 | 2.41 | 0.00 |
| 18.00 | 2.67 | 2.44 | 0.00 |
| 18.50 | 2.69 | 2.46 | 0.00 |
| 19.00 | 2.71 | 2.48 | 0.00 |
| 19.50 | 2.73 | 2.50 | 0.00 |
| 20.00 | 2.75 | 2.52 | 0.00 |
| 20.50 | 2.76 | 2.53 | 0.00 |
| 21.00 | 2.78 | 2.55 | 0.00 |
| 21.50 | 2.79 | 2.56 | 0.00 |
| 22.00 | 2.81 | 2.58 | 0.00 |
| 22.50 | 2.82 | 2.59 | 0.00 |
| 23.00 | 2.83 | 2.60 | 0.00 |
| 23.50 | 2.83 | 2.60 | 0.00 |
| 24.00 | **2.84** | **2.61** | 0.00 |
| 24.50 | 2.84 | 2.61 | 0.00 |
| 25.00 | 2.84 | 2.61 | 0.00 |
| 25.50 | 2.84 | 2.61 | 0.00 |
| 26.00 | 2.84 | 2.61 | 0.00 |
| 26.50 | 2.84 | 2.61 | 0.00 |
| 27.00 | 2.84 | 2.61 | 0.00 |
| 27.50 | 2.84 | 2.61 | 0.00 |
| 28.00 | 2.84 | 2.61 | 0.00 |
| 28.50 | 2.84 | 2.61 | 0.00 |
| 29.00 | 2.84 | 2.61 | 0.00 |
| 29.50 | 2.84 | 2.61 | 0.00 |
| 30.00 | 2.84 | 2.61 | 0.00 |
| 30.50 | 2.84 | 2.61 | 0.00 |
| 31.00 | 2.84 | 2.61 | 0.00 |
| 31.50 | 2.84 | 2.61 | 0.00 |
| 32.00 | 2.84 | 2.61 | 0.00 |
| 32.50 | 2.84 | 2.61 | 0.00 |
| 33.00 | 2.84 | 2.61 | 0.00 |
| 33.50 | 2.84 | 2.61 | 0.00 |
| 34.00 | 2.84 | 2.61 | 0.00 |
| 34.50 | 2.84 | 2.61 | 0.00 |
| 35.00 | 2.84 | 2.61 | 0.00 |
| 35.50 | 2.84 | 2.61 | 0.00 |
| 36.00 | 2.84 | 2.61 | 0.00 |
| 36.50 | 2.84 | 2.61 | 0.00 |
| 37.00 | 2.84 | 2.61 | 0.00 |
| 37.50 | 2.84 | 2.61 | 0.00 |
| 38.00 | 2.84 | 2.61 | 0.00 |
| 38.50 | 2.84 | 2.61 | 0.00 |
| 39.00 | 2.84 | 2.61 | 0.00 |
| 39.50 | 2.84 | 2.61 | 0.00 |
| 40.00 | 2.84 | 2.61 | 0.00 |
| 40.50 | 2.84 | 2.61 | 0.00 |
| 41.00 | 2.84 | 2.61 | 0.00 |
| 41.50 | 2.84 | 2.61 | 0.00 |
| 42.00 | 2.84 | 2.61 | 0.00 |
| 42.50 | 2.84 | 2.61 | 0.00 |
| 43.00 | 2.84 | 2.61 | 0.00 |
| 43.50 | 2.84 | 2.61 | 0.00 |
| 44.00 | 2.84 | 2.61 | 0.00 |
| 44.50 | 2.84 | 2.61 | 0.00 |
| 45.00 | 2.84 | 2.61 | 0.00 |
| 45.50 | 2.84 | 2.61 | 0.00 |
| 46.00 | 2.84 | 2.61 | 0.00 |
| 46.50 | 2.84 | 2.61 | 0.00 |
| 47.00 | 2.84 | 2.61 | 0.00 |
| 47.50 | 2.84 | 2.61 | 0.00 |
| 48.00 | 2.84 | 2.61 | 0.00 |

## Summary for Pond 1Po: combined ponds

Inflow Area = 0.984 ac, 51.63% Impervious, Inflow Depth = 1.25" for 2 year event
Inflow = 1.47 cfs @ 12.22 hrs, Volume= 0.103 af
Outflow = 0.49 cfs @ 12.55 hrs, Volume= 0.103 af, Atten= 67%, Lag= 19.5 min
Primary = 0.45 cfs @ 12.55 hrs, Volume= 0.062 af
Routed to Link 3PS : Developed Basin discharge
Secondary = 0.04 cfs @ 12.55 hrs, Volume= 0.041 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' @ 12.55 hrs Surf.Area= 3,419 sf Storage= 1,500 cf

Plug-Flow detention time= 78.5 min calculated for 0.103 af (100% of inflow)
Center-of-Mass det. time= 78.6 min ( 912.0 - 833.4 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 880.00' | 11,781 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**<br>2,400 cf Overall x 0.0% Voids |
| | | 11,781 cf | Total Available Storage |

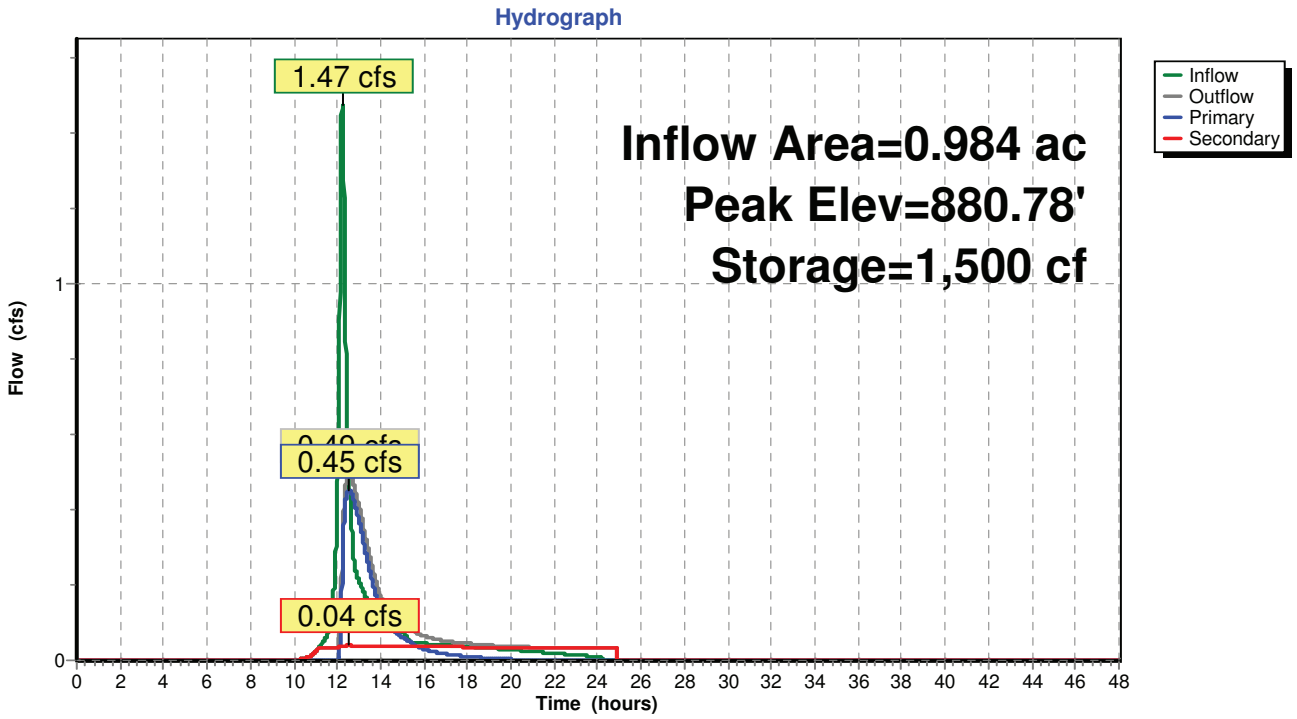
| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|---|---|---|---|
| 880.00 | 1,642 | 0 | 0 |
| 881.00 | 2,385 | 2,014 | 2,014 |
| 882.00 | 3,357 | 2,871 | 4,885 |
| 883.00 | 5,028 | 4,193 | 9,077 |
| 883.50 | 5,789 | 2,704 | 11,781 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Secondary | 878.00' | **0.500 in/hr Bio-filter Infiltration to native ground over Surface area**<br>Phase-In= 0.01' |
| #2 | Primary | 880.16' | **6.0" Round Pond discharge pipe**<br>L= 82.0' CPP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 880.16' / 877.00' S= 0.0385 '/' Cc= 0.900<br>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**<br>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<br>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 @ 12.55 hrs HW=880.78' TW=0.00' (Dynamic Tailwater)
└─**2=Pond discharge pipe** (Inlet Controls 0.45 cfs @ 2.30 fps)
└─**3=Overflow Weir to street** ( Controls 0.00 cfs)

**Secondary OutFlow** Max=0.04 cfs @ 12.55 hrs HW=880.78' TW=0.00' (Dynamic Tailwater)
└─**1=Bio-filter Infiltration to native ground** (Exfiltration Controls 0.04 cfs)

## Pond 1Po: combined ponds



## Hydrograph for Pond 1Po: combined ponds

| Time (hours) | Inflow (cfs) | Storage (cubic-feet) | Elevation (feet) | Outflow (cfs) | Primary (cfs) | Secondary (cfs) |
|---|---|---|---|---|---|---|
| 0.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 1.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 2.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 3.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 4.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 5.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 6.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 7.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 8.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 9.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 10.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 11.00 | 0.02 | 0 | 880.00 | 0.02 | 0.00 | 0.02 |
| 12.00 | **0.42** | **254** | **880.15** | **0.03** | **0.00** | **0.03** |
| 13.00 | **0.21** | **1,233** | **880.65** | **0.41** | **0.37** | **0.04** |
| 14.00 | 0.08 | 735 | 880.41 | 0.17 | 0.13 | 0.04 |
| 15.00 | 0.07 | 572 | 880.32 | 0.10 | 0.06 | 0.04 |
| 16.00 | 0.04 | 473 | 880.27 | 0.06 | 0.03 | 0.04 |
| 17.00 | 0.04 | 421 | 880.24 | 0.05 | 0.02 | 0.03 |
| 18.00 | 0.04 | 386 | 880.22 | 0.04 | 0.01 | 0.03 |
| 19.00 | 0.03 | 357 | 880.21 | 0.04 | 0.01 | 0.03 |
| 20.00 | 0.03 | 325 | 880.19 | 0.04 | 0.00 | 0.03 |
| 21.00 | 0.02 | 289 | 880.17 | 0.03 | 0.00 | 0.03 |
| 22.00 | 0.02 | 240 | 880.14 | 0.03 | 0.00 | 0.03 |
| 23.00 | 0.01 | 176 | 880.10 | 0.03 | 0.00 | 0.03 |
| 24.00 | 0.01 | 97 | 880.06 | 0.03 | 0.00 | 0.03 |
| 25.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 26.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 27.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 28.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 29.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 30.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 31.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 32.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 33.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 34.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 35.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 36.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 37.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 38.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 39.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 40.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 41.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 42.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 43.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 44.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 45.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 46.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 47.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 48.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |

## Stage-Discharge for Pond 1Po: combined ponds

| Elevation (feet) | Discharge (cfs) | Primary (cfs) | Secondary (cfs) |
|---|---|---|---|
| 878.00 | 0.00 | 0.00 | 0.00 |
| 878.10 | 0.01 | 0.00 | 0.01 |
| 878.20 | 0.01 | 0.00 | 0.01 |
| 878.30 | 0.01 | 0.00 | 0.01 |
| 878.40 | 0.01 | 0.00 | 0.01 |
| 878.50 | 0.01 | 0.00 | 0.01 |
| 878.60 | 0.01 | 0.00 | 0.01 |
| 878.70 | 0.01 | 0.00 | 0.01 |
| 878.80 | 0.01 | 0.00 | 0.01 |
| 878.90 | 0.01 | 0.00 | 0.01 |
| 879.00 | 0.01 | 0.00 | 0.01 |
| 879.10 | 0.01 | 0.00 | 0.01 |
| 879.20 | 0.01 | 0.00 | 0.01 |
| 879.30 | 0.01 | 0.00 | 0.01 |
| 879.40 | 0.01 | 0.00 | 0.01 |
| 879.50 | 0.01 | 0.00 | 0.01 |
| 879.60 | 0.01 | 0.00 | 0.01 |
| 879.70 | 0.01 | 0.00 | 0.01 |
| 879.80 | 0.01 | 0.00 | 0.01 |
| 879.90 | 0.01 | 0.00 | 0.01 |
| 880.00 | 0.03 | 0.00 | 0.03 |
| 880.10 | 0.03 | 0.00 | 0.03 |
| 880.20 | 0.04 | 0.00 | 0.03 |
| 880.30 | 0.08 | 0.05 | 0.04 |
| 880.40 | 0.16 | 0.12 | 0.04 |
| 880.50 | 0.26 | 0.22 | 0.04 |
| 880.60 | 0.36 | 0.33 | 0.04 |
| 880.70 | 0.44 | 0.40 | 0.04 |
| 880.80 | 0.51 | 0.47 | 0.04 |
| 880.90 | 0.56 | 0.52 | 0.04 |
| 881.00 | 0.61 | 0.57 | 0.04 |
| 881.10 | 0.66 | 0.62 | 0.04 |
| 881.20 | 0.71 | 0.66 | 0.04 |
| 881.30 | 0.75 | 0.70 | 0.04 |
| 881.40 | 0.79 | 0.74 | 0.05 |
| 881.50 | 0.83 | 0.78 | 0.05 |
| 881.60 | 0.86 | 0.81 | 0.05 |
| 881.70 | 0.90 | 0.85 | 0.05 |
| 881.80 | 0.93 | 0.88 | 0.05 |
| 881.90 | 0.96 | 0.91 | 0.05 |
| 882.00 | 0.99 | 0.94 | 0.05 |
| 882.10 | 1.02 | 0.97 | 0.05 |
| 882.20 | 1.06 | 1.00 | 0.06 |
| 882.30 | 1.08 | 1.03 | 0.06 |
| 882.40 | 1.11 | 1.05 | 0.06 |
| 882.50 | 1.14 | 1.08 | 0.06 |
| 882.60 | 1.17 | 1.10 | 0.06 |
| 882.70 | 4.43 | 4.36 | 0.07 |
| 882.80 | 10.42 | 10.35 | 0.07 |
| 882.90 | 18.48 | 18.41 | 0.07 |
| 883.00 | 28.32 | 28.25 | 0.07 |
| 883.10 | 39.32 | 39.24 | 0.07 |
| 883.20 | 51.59 | 51.51 | 0.08 |
| 883.30 | 64.94 | 64.86 | 0.08 |
| 883.40 | 79.36 | 79.28 | 0.08 |
| 883.50 | **96.06** | **95.98** | **0.08** |

## Stage-Area-Storage for Pond 1Po: combined ponds

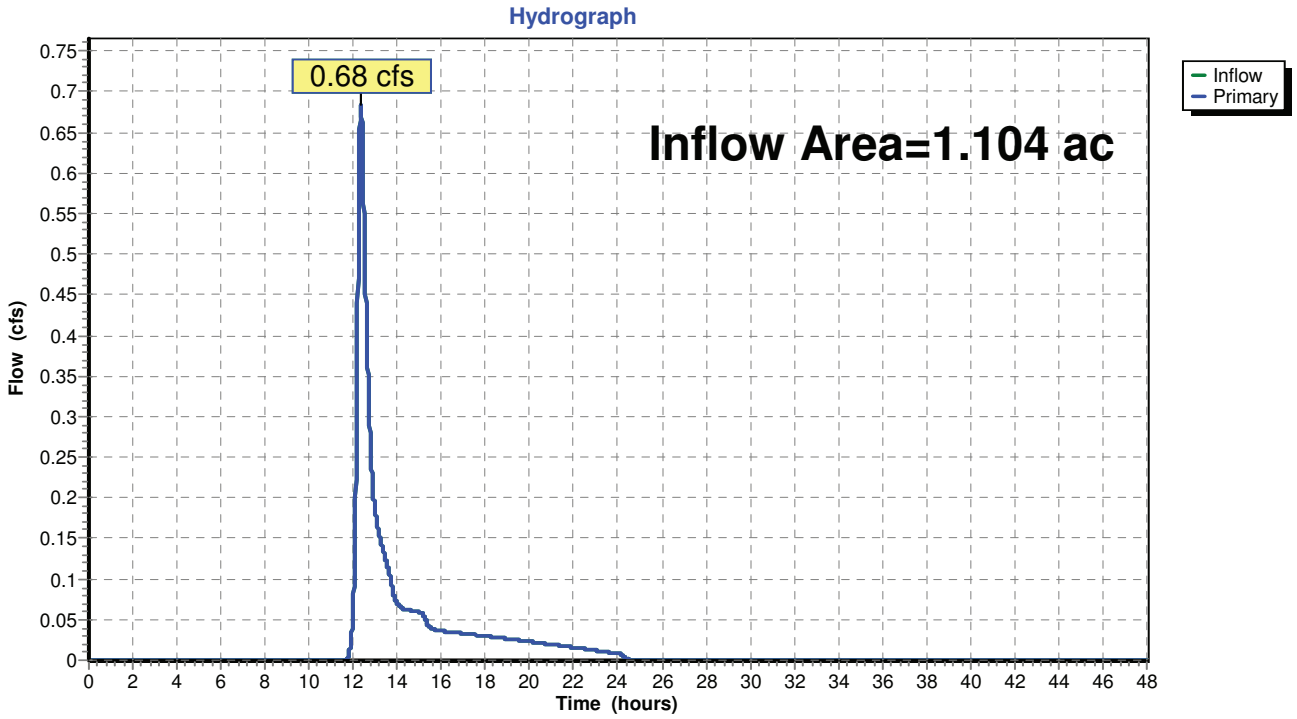
| Elevation (feet) | Surface (sq-ft) | Storage (cubic-feet) |
|---|---|---|
| 878.00 | 1,200 | 0 |
| 878.10 | 1,200 | 0 |
| 878.20 | 1,200 | 0 |
| 878.30 | 1,200 | 0 |
| 878.40 | 1,200 | 0 |
| 878.50 | 1,200 | 0 |
| 878.60 | 1,200 | 0 |
| 878.70 | 1,200 | 0 |
| 878.80 | 1,200 | 0 |
| 878.90 | 1,200 | 0 |
| 879.00 | 1,200 | 0 |
| 879.10 | 1,200 | 0 |
| 879.20 | 1,200 | 0 |
| 879.30 | 1,200 | 0 |
| 879.40 | 1,200 | 0 |
| 879.50 | 1,200 | 0 |
| 879.60 | 1,200 | 0 |
| 879.70 | 1,200 | 0 |
| 879.80 | 1,200 | 0 |
| 879.90 | 1,200 | 0 |
| 880.00 | 2,842 | 0 |
| 880.10 | 2,916 | 168 |
| 880.20 | 2,991 | 343 |
| 880.30 | 3,065 | 526 |
| 880.40 | 3,139 | 716 |
| 880.50 | 3,214 | 914 |
| 880.60 | 3,288 | 1,119 |
| 880.70 | 3,362 | 1,331 |
| 880.80 | 3,436 | 1,551 |
| 880.90 | 3,511 | 1,779 |
| 881.00 | 3,585 | 2,014 |
| 881.10 | 3,682 | 2,257 |
| 881.20 | 3,779 | 2,510 |
| 881.30 | 3,877 | 2,773 |
| 881.40 | 3,974 | 3,045 |
| 881.50 | 4,071 | 3,328 |
| 881.60 | 4,168 | 3,619 |
| 881.70 | 4,265 | 3,921 |
| 881.80 | 4,363 | 4,233 |
| 881.90 | 4,460 | 4,554 |
| 882.00 | 4,557 | 4,885 |
| 882.10 | 4,724 | 5,229 |
| 882.20 | 4,891 | 5,589 |
| 882.30 | 5,058 | 5,967 |
| 882.40 | 5,225 | 6,361 |
| 882.50 | 5,393 | 6,772 |
| 882.60 | 5,560 | 7,199 |
| 882.70 | 5,727 | 7,644 |
| 882.80 | 5,894 | 8,105 |
| 882.90 | 6,061 | 8,583 |
| 883.00 | 6,228 | 9,077 |
| 883.10 | 6,380 | 9,587 |
| 883.20 | 6,532 | 10,113 |
| 883.30 | 6,685 | 10,654 |
| 883.40 | 6,837 | 11,210 |
| 883.50 | **6,989** | **11,781** |

## Summary for Link 3ES: Existing Basin discharge

Inflow Area = 1.104 ac, 1.63% Impervious, Inflow Depth = 0.71" for 2 year event
Inflow = 0.68 cfs @ 12.34 hrs, Volume= 0.066 af
Primary = 0.68 cfs @ 12.34 hrs, Volume= 0.066 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



## Hydrograph for Link 3ES: Existing Basin discharge

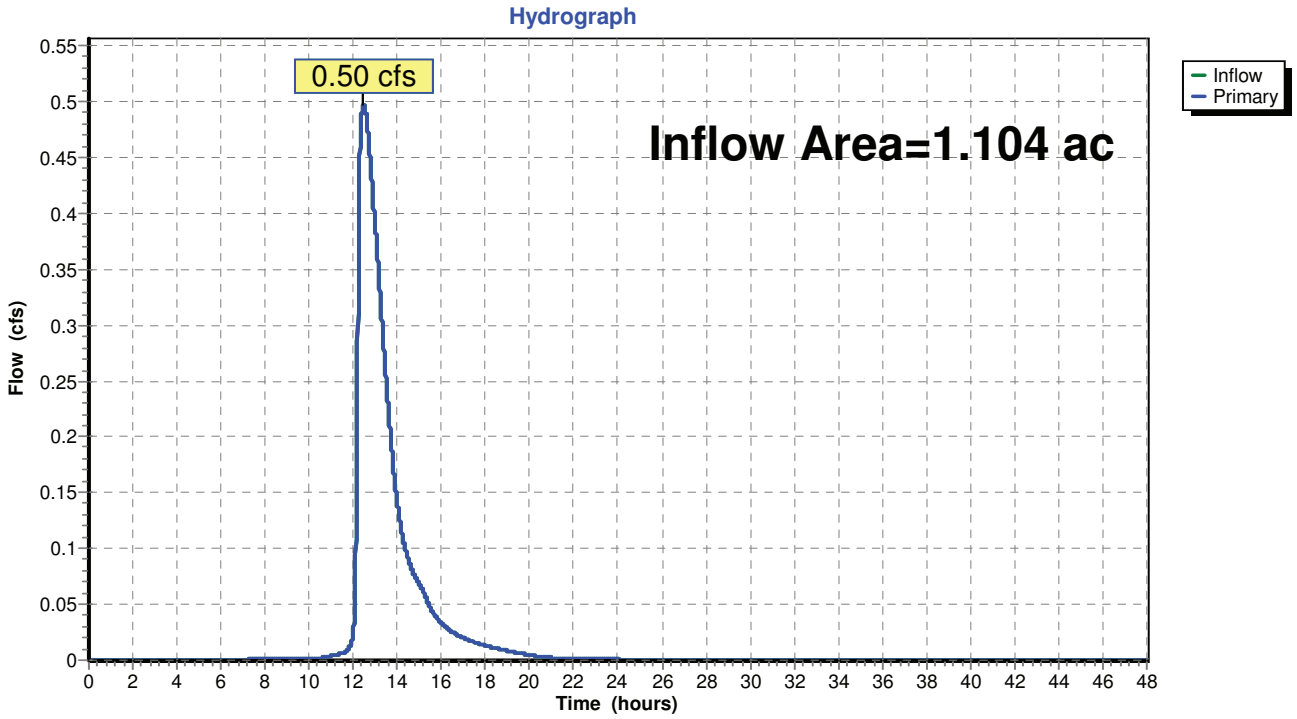
| Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) | Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) |
|---|---|---|---|---|---|---|---|
| 0.00 | 0.00 | **0.00** | 0.00 | 26.00 | 0.00 | 0.00 | 0.00 |
| 0.50 | 0.00 | 0.00 | 0.00 | 26.50 | 0.00 | 0.00 | 0.00 |
| 1.00 | 0.00 | 0.00 | 0.00 | 27.00 | 0.00 | 0.00 | 0.00 |
| 1.50 | 0.00 | 0.00 | 0.00 | 27.50 | 0.00 | 0.00 | 0.00 |
| 2.00 | 0.00 | 0.00 | 0.00 | 28.00 | 0.00 | 0.00 | 0.00 |
| 2.50 | 0.00 | 0.00 | 0.00 | 28.50 | 0.00 | 0.00 | 0.00 |
| 3.00 | 0.00 | 0.00 | 0.00 | 29.00 | 0.00 | 0.00 | 0.00 |
| 3.50 | 0.00 | 0.00 | 0.00 | 29.50 | 0.00 | 0.00 | 0.00 |
| 4.00 | 0.00 | 0.00 | 0.00 | 30.00 | 0.00 | 0.00 | 0.00 |
| 4.50 | 0.00 | 0.00 | 0.00 | 30.50 | 0.00 | 0.00 | 0.00 |
| 5.00 | 0.00 | 0.00 | 0.00 | 31.00 | 0.00 | 0.00 | 0.00 |
| 5.50 | 0.00 | 0.00 | 0.00 | 31.50 | 0.00 | 0.00 | 0.00 |
| 6.00 | 0.00 | 0.00 | 0.00 | 32.00 | 0.00 | 0.00 | 0.00 |
| 6.50 | 0.00 | 0.00 | 0.00 | 32.50 | 0.00 | 0.00 | 0.00 |
| 7.00 | 0.00 | 0.00 | 0.00 | 33.00 | 0.00 | 0.00 | 0.00 |
| 7.50 | 0.00 | 0.00 | 0.00 | 33.50 | 0.00 | 0.00 | 0.00 |
| 8.00 | 0.00 | 0.00 | 0.00 | 34.00 | 0.00 | 0.00 | 0.00 |
| 8.50 | 0.00 | 0.00 | 0.00 | 34.50 | 0.00 | 0.00 | 0.00 |
| 9.00 | 0.00 | 0.00 | 0.00 | 35.00 | 0.00 | 0.00 | 0.00 |
| 9.50 | 0.00 | 0.00 | 0.00 | 35.50 | 0.00 | 0.00 | 0.00 |
| 10.00 | 0.00 | 0.00 | 0.00 | 36.00 | 0.00 | 0.00 | 0.00 |
| 10.50 | 0.00 | 0.00 | 0.00 | 36.50 | 0.00 | 0.00 | 0.00 |
| 11.00 | 0.00 | 0.00 | 0.00 | 37.00 | 0.00 | 0.00 | 0.00 |
| 11.50 | 0.00 | 0.00 | 0.00 | 37.50 | 0.00 | 0.00 | 0.00 |
| 12.00 | **0.07** | 0.00 | **0.07** | 38.00 | 0.00 | 0.00 | 0.00 |
| 12.50 | **0.52** | 0.00 | **0.52** | 38.50 | 0.00 | 0.00 | 0.00 |
| 13.00 | 0.18 | 0.00 | 0.18 | 39.00 | 0.00 | 0.00 | 0.00 |
| 13.50 | 0.12 | 0.00 | 0.12 | 39.50 | 0.00 | 0.00 | 0.00 |
| 14.00 | 0.07 | 0.00 | 0.07 | 40.00 | 0.00 | 0.00 | 0.00 |
| 14.50 | 0.06 | 0.00 | 0.06 | 40.50 | 0.00 | 0.00 | 0.00 |
| 15.00 | 0.06 | 0.00 | 0.06 | 41.00 | 0.00 | 0.00 | 0.00 |
| 15.50 | 0.04 | 0.00 | 0.04 | 41.50 | 0.00 | 0.00 | 0.00 |
| 16.00 | 0.04 | 0.00 | 0.04 | 42.00 | 0.00 | 0.00 | 0.00 |
| 16.50 | 0.03 | 0.00 | 0.03 | 42.50 | 0.00 | 0.00 | 0.00 |
| 17.00 | 0.03 | 0.00 | 0.03 | 43.00 | 0.00 | 0.00 | 0.00 |
| 17.50 | 0.03 | 0.00 | 0.03 | 43.50 | 0.00 | 0.00 | 0.00 |
| 18.00 | 0.03 | 0.00 | 0.03 | 44.00 | 0.00 | 0.00 | 0.00 |
| 18.50 | 0.03 | 0.00 | 0.03 | 44.50 | 0.00 | 0.00 | 0.00 |
| 19.00 | 0.03 | 0.00 | 0.03 | 45.00 | 0.00 | 0.00 | 0.00 |
| 19.50 | 0.02 | 0.00 | 0.02 | 45.50 | 0.00 | 0.00 | 0.00 |
| 20.00 | 0.02 | 0.00 | 0.02 | 46.00 | 0.00 | 0.00 | 0.00 |
| 20.50 | 0.02 | 0.00 | 0.02 | 46.50 | 0.00 | 0.00 | 0.00 |
| 21.00 | 0.02 | 0.00 | 0.02 | 47.00 | 0.00 | 0.00 | 0.00 |
| 21.50 | 0.02 | 0.00 | 0.02 | 47.50 | 0.00 | 0.00 | 0.00 |
| 22.00 | 0.02 | 0.00 | 0.02 | 48.00 | 0.00 | 0.00 | 0.00 |
| 22.50 | 0.01 | 0.00 | 0.01 | | | | |
| 23.00 | 0.01 | 0.00 | 0.01 | | | | |
| 23.50 | 0.01 | 0.00 | 0.01 | | | | |
| 24.00 | 0.01 | 0.00 | 0.01 | | | | |
| 24.50 | 0.00 | 0.00 | 0.00 | | | | |
| 25.00 | 0.00 | 0.00 | 0.00 | | | | |
| 25.50 | 0.00 | 0.00 | 0.00 | | | | |

## Summary for Link 3PS: Developed Basin discharge

Inflow Area = 1.104 ac, 47.83% Impervious, Inflow Depth = 0.77" for 2 year event
Inflow = 0.50 cfs @ 12.46 hrs, Volume= 0.071 af
Primary = 0.50 cfs @ 12.46 hrs, Volume= 0.071 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



## Hydrograph for Link 3PS: Developed Basin discharge

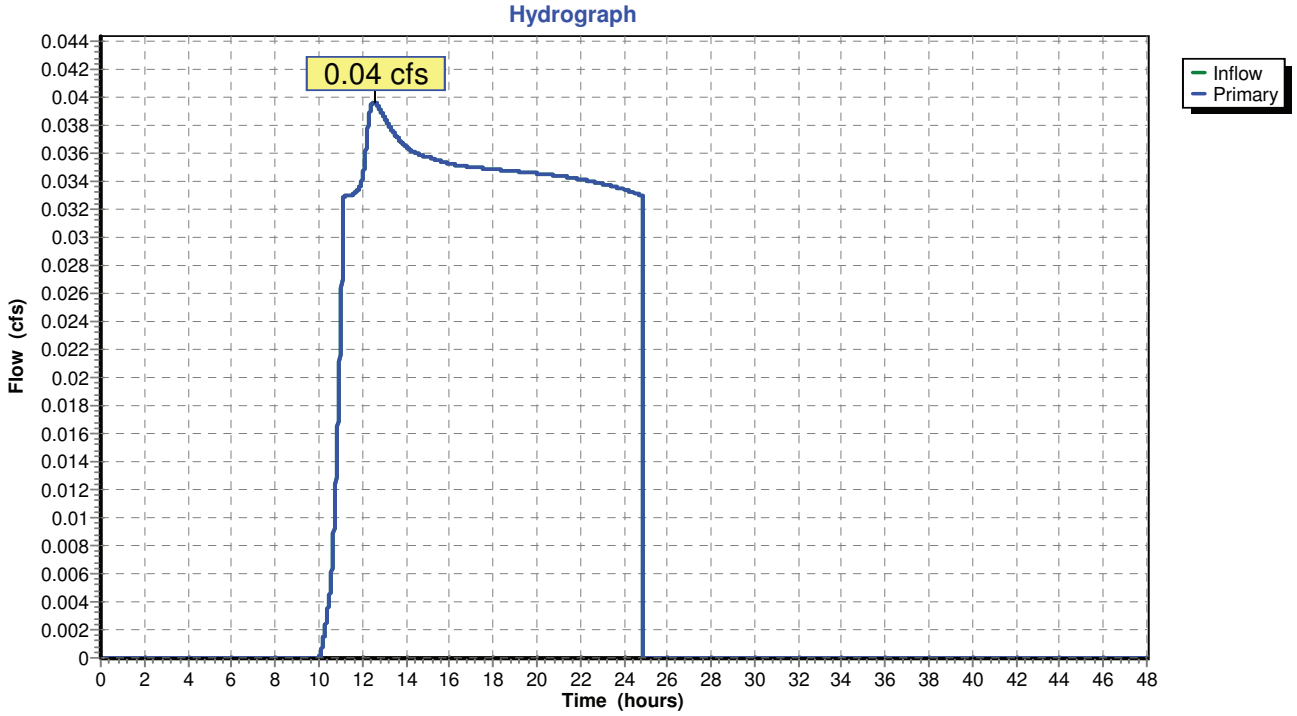
| Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) | Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) |
|---|---|---|---|---|---|---|---|
| 0.00 | 0.00 | **0.00** | 0.00 | 26.00 | 0.00 | 0.00 | 0.00 |
| 0.50 | 0.00 | 0.00 | 0.00 | 26.50 | 0.00 | 0.00 | 0.00 |
| 1.00 | 0.00 | 0.00 | 0.00 | 27.00 | 0.00 | 0.00 | 0.00 |
| 1.50 | 0.00 | 0.00 | 0.00 | 27.50 | 0.00 | 0.00 | 0.00 |
| 2.00 | 0.00 | 0.00 | 0.00 | 28.00 | 0.00 | 0.00 | 0.00 |
| 2.50 | 0.00 | 0.00 | 0.00 | 28.50 | 0.00 | 0.00 | 0.00 |
| 3.00 | 0.00 | 0.00 | 0.00 | 29.00 | 0.00 | 0.00 | 0.00 |
| 3.50 | 0.00 | 0.00 | 0.00 | 29.50 | 0.00 | 0.00 | 0.00 |
| 4.00 | 0.00 | 0.00 | 0.00 | 30.00 | 0.00 | 0.00 | 0.00 |
| 4.50 | 0.00 | 0.00 | 0.00 | 30.50 | 0.00 | 0.00 | 0.00 |
| 5.00 | 0.00 | 0.00 | 0.00 | 31.00 | 0.00 | 0.00 | 0.00 |
| 5.50 | 0.00 | 0.00 | 0.00 | 31.50 | 0.00 | 0.00 | 0.00 |
| 6.00 | 0.00 | 0.00 | 0.00 | 32.00 | 0.00 | 0.00 | 0.00 |
| 6.50 | 0.00 | 0.00 | 0.00 | 32.50 | 0.00 | 0.00 | 0.00 |
| 7.00 | 0.00 | 0.00 | 0.00 | 33.00 | 0.00 | 0.00 | 0.00 |
| 7.50 | 0.00 | 0.00 | 0.00 | 33.50 | 0.00 | 0.00 | 0.00 |
| 8.00 | 0.00 | 0.00 | 0.00 | 34.00 | 0.00 | 0.00 | 0.00 |
| 8.50 | 0.00 | 0.00 | 0.00 | 34.50 | 0.00 | 0.00 | 0.00 |
| 9.00 | 0.00 | 0.00 | 0.00 | 35.00 | 0.00 | 0.00 | 0.00 |
| 9.50 | 0.00 | 0.00 | 0.00 | 35.50 | 0.00 | 0.00 | 0.00 |
| 10.00 | 0.00 | 0.00 | 0.00 | 36.00 | 0.00 | 0.00 | 0.00 |
| 10.50 | 0.00 | 0.00 | 0.00 | 36.50 | 0.00 | 0.00 | 0.00 |
| 11.00 | 0.00 | 0.00 | 0.00 | 37.00 | 0.00 | 0.00 | 0.00 |
| 11.50 | 0.01 | 0.00 | 0.01 | 37.50 | 0.00 | 0.00 | 0.00 |
| 12.00 | **0.03** | 0.00 | **0.03** | 38.00 | 0.00 | 0.00 | 0.00 |
| 12.50 | **0.50** | 0.00 | **0.50** | 38.50 | 0.00 | 0.00 | 0.00 |
| 13.00 | 0.39 | 0.00 | 0.39 | 39.00 | 0.00 | 0.00 | 0.00 |
| 13.50 | 0.25 | 0.00 | 0.25 | 39.50 | 0.00 | 0.00 | 0.00 |
| 14.00 | 0.14 | 0.00 | 0.14 | 40.00 | 0.00 | 0.00 | 0.00 |
| 14.50 | 0.09 | 0.00 | 0.09 | 40.50 | 0.00 | 0.00 | 0.00 |
| 15.00 | 0.07 | 0.00 | 0.07 | 41.00 | 0.00 | 0.00 | 0.00 |
| 15.50 | 0.05 | 0.00 | 0.05 | 41.50 | 0.00 | 0.00 | 0.00 |
| 16.00 | 0.03 | 0.00 | 0.03 | 42.00 | 0.00 | 0.00 | 0.00 |
| 16.50 | 0.03 | 0.00 | 0.03 | 42.50 | 0.00 | 0.00 | 0.00 |
| 17.00 | 0.02 | 0.00 | 0.02 | 43.00 | 0.00 | 0.00 | 0.00 |
| 17.50 | 0.02 | 0.00 | 0.02 | 43.50 | 0.00 | 0.00 | 0.00 |
| 18.00 | 0.01 | 0.00 | 0.01 | 44.00 | 0.00 | 0.00 | 0.00 |
| 18.50 | 0.01 | 0.00 | 0.01 | 44.50 | 0.00 | 0.00 | 0.00 |
| 19.00 | 0.01 | 0.00 | 0.01 | 45.00 | 0.00 | 0.00 | 0.00 |
| 19.50 | 0.01 | 0.00 | 0.01 | 45.50 | 0.00 | 0.00 | 0.00 |
| 20.00 | 0.00 | 0.00 | 0.00 | 46.00 | 0.00 | 0.00 | 0.00 |
| 20.50 | 0.00 | 0.00 | 0.00 | 46.50 | 0.00 | 0.00 | 0.00 |
| 21.00 | 0.00 | 0.00 | 0.00 | 47.00 | 0.00 | 0.00 | 0.00 |
| 21.50 | 0.00 | 0.00 | 0.00 | 47.50 | 0.00 | 0.00 | 0.00 |
| 22.00 | 0.00 | 0.00 | 0.00 | 48.00 | 0.00 | 0.00 | 0.00 |
| 22.50 | 0.00 | 0.00 | 0.00 | | | | |
| 23.00 | 0.00 | 0.00 | 0.00 | | | | |
| 23.50 | 0.00 | 0.00 | 0.00 | | | | |
| 24.00 | 0.00 | 0.00 | 0.00 | | | | |
| 24.50 | 0.00 | 0.00 | 0.00 | | | | |
| 25.00 | 0.00 | 0.00 | 0.00 | | | | |
| 25.50 | 0.00 | 0.00 | 0.00 | | | | |

## Summary for Link 4Z: infiltrated to ground

| | | | | |
|---|---|---|---|---|
| Inflow | = | 0.04 cfs @ 12.55 hrs, | Volume= | 0.041 af |
| Primary | = | 0.04 cfs @ 12.55 hrs, | Volume= | 0.041 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



## Hydrograph for Link 4Z: infiltrated to ground

| Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) | Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) |
|---|---|---|---|---|---|---|---|
| 0.00 | 0.00 | **0.00** | 0.00 | 26.00 | 0.00 | 0.00 | 0.00 |
| 0.50 | 0.00 | 0.00 | 0.00 | 26.50 | 0.00 | 0.00 | 0.00 |
| 1.00 | 0.00 | 0.00 | 0.00 | 27.00 | 0.00 | 0.00 | 0.00 |
| 1.50 | 0.00 | 0.00 | 0.00 | 27.50 | 0.00 | 0.00 | 0.00 |
| 2.00 | 0.00 | 0.00 | 0.00 | 28.00 | 0.00 | 0.00 | 0.00 |
| 2.50 | 0.00 | 0.00 | 0.00 | 28.50 | 0.00 | 0.00 | 0.00 |
| 3.00 | 0.00 | 0.00 | 0.00 | 29.00 | 0.00 | 0.00 | 0.00 |
| 3.50 | 0.00 | 0.00 | 0.00 | 29.50 | 0.00 | 0.00 | 0.00 |
| 4.00 | 0.00 | 0.00 | 0.00 | 30.00 | 0.00 | 0.00 | 0.00 |
| 4.50 | 0.00 | 0.00 | 0.00 | 30.50 | 0.00 | 0.00 | 0.00 |
| 5.00 | 0.00 | 0.00 | 0.00 | 31.00 | 0.00 | 0.00 | 0.00 |
| 5.50 | 0.00 | 0.00 | 0.00 | 31.50 | 0.00 | 0.00 | 0.00 |
| 6.00 | 0.00 | 0.00 | 0.00 | 32.00 | 0.00 | 0.00 | 0.00 |
| 6.50 | 0.00 | 0.00 | 0.00 | 32.50 | 0.00 | 0.00 | 0.00 |
| 7.00 | 0.00 | 0.00 | 0.00 | 33.00 | 0.00 | 0.00 | 0.00 |
| 7.50 | 0.00 | 0.00 | 0.00 | 33.50 | 0.00 | 0.00 | 0.00 |
| 8.00 | 0.00 | 0.00 | 0.00 | 34.00 | 0.00 | 0.00 | 0.00 |
| 8.50 | 0.00 | 0.00 | 0.00 | 34.50 | 0.00 | 0.00 | 0.00 |
| 9.00 | 0.00 | 0.00 | 0.00 | 35.00 | 0.00 | 0.00 | 0.00 |
| 9.50 | 0.00 | 0.00 | 0.00 | 35.50 | 0.00 | 0.00 | 0.00 |
| 10.00 | 0.00 | 0.00 | 0.00 | 36.00 | 0.00 | 0.00 | 0.00 |
| 10.50 | 0.00 | 0.00 | 0.00 | 36.50 | 0.00 | 0.00 | 0.00 |
| 11.00 | 0.02 | 0.00 | 0.02 | 37.00 | 0.00 | 0.00 | 0.00 |
| 11.50 | 0.03 | 0.00 | 0.03 | 37.50 | 0.00 | 0.00 | 0.00 |
| 12.00 | 0.03 | 0.00 | 0.03 | 38.00 | 0.00 | 0.00 | 0.00 |
| 12.50 | **0.04** | 0.00 | **0.04** | 38.50 | 0.00 | 0.00 | 0.00 |
| 13.00 | **0.04** | 0.00 | **0.04** | 39.00 | 0.00 | 0.00 | 0.00 |
| 13.50 | 0.04 | 0.00 | 0.04 | 39.50 | 0.00 | 0.00 | 0.00 |
| 14.00 | 0.04 | 0.00 | 0.04 | 40.00 | 0.00 | 0.00 | 0.00 |
| 14.50 | 0.04 | 0.00 | 0.04 | 40.50 | 0.00 | 0.00 | 0.00 |
| 15.00 | 0.04 | 0.00 | 0.04 | 41.00 | 0.00 | 0.00 | 0.00 |
| 15.50 | 0.04 | 0.00 | 0.04 | 41.50 | 0.00 | 0.00 | 0.00 |
| 16.00 | 0.04 | 0.00 | 0.04 | 42.00 | 0.00 | 0.00 | 0.00 |
| 16.50 | 0.04 | 0.00 | 0.04 | 42.50 | 0.00 | 0.00 | 0.00 |
| 17.00 | 0.03 | 0.00 | 0.03 | 43.00 | 0.00 | 0.00 | 0.00 |
| 17.50 | 0.03 | 0.00 | 0.03 | 43.50 | 0.00 | 0.00 | 0.00 |
| 18.00 | 0.03 | 0.00 | 0.03 | 44.00 | 0.00 | 0.00 | 0.00 |
| 18.50 | 0.03 | 0.00 | 0.03 | 44.50 | 0.00 | 0.00 | 0.00 |
| 19.00 | 0.03 | 0.00 | 0.03 | 45.00 | 0.00 | 0.00 | 0.00 |
| 19.50 | 0.03 | 0.00 | 0.03 | 45.50 | 0.00 | 0.00 | 0.00 |
| 20.00 | 0.03 | 0.00 | 0.03 | 46.00 | 0.00 | 0.00 | 0.00 |
| 20.50 | 0.03 | 0.00 | 0.03 | 46.50 | 0.00 | 0.00 | 0.00 |
| 21.00 | 0.03 | 0.00 | 0.03 | 47.00 | 0.00 | 0.00 | 0.00 |
| 21.50 | 0.03 | 0.00 | 0.03 | 47.50 | 0.00 | 0.00 | 0.00 |
| 22.00 | 0.03 | 0.00 | 0.03 | 48.00 | 0.00 | 0.00 | 0.00 |
| 22.50 | 0.03 | 0.00 | 0.03 | | | | |
| 23.00 | 0.03 | 0.00 | 0.03 | | | | |
| 23.50 | 0.03 | 0.00 | 0.03 | | | | |
| 24.00 | 0.03 | 0.00 | 0.03 | | | | |
| 24.50 | 0.03 | 0.00 | 0.03 | | | | |
| 25.00 | 0.00 | 0.00 | 0.00 | | | | |
| 25.50 | 0.00 | 0.00 | 0.00 | | | | |

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=1.104 ac 1.63% Impervious Runoff Depth=1.52"
Flow Length=270' Tc=21.2 min CN=72 Runoff=1.59 cfs 0.140 af

**Subcatchment 1P: Developed Basin** Runoff Area=0.984 ac 51.63% Impervious Runoff Depth=2.28"
Flow Length=245' Tc=13.6 min CN=82 Runoff=2.69 cfs 0.187 af

**Subcatchment 2P: East Basin-untreated** Runoff Area=0.100 ac 0.00% Impervious Runoff Depth=1.26"
Flow Length=245' Tc=13.6 min CN=68 Runoff=0.14 cfs 0.011 af

**Subcatchment 3P: West Basin-untreated** Runoff Area=0.020 ac 100.00% Impervious Runoff Depth=3.85"
Flow Length=245' Tc=13.6 min CN=98 Runoff=0.08 cfs 0.006 af

**Pond 1Po: combined ponds** Peak Elev=881.37' Storage=2,968 cf Inflow=2.69 cfs 0.187 af
Primary=0.73 cfs 0.138 af Secondary=0.05 cfs 0.049 af Outflow=0.78 cfs 0.187 af

**Link 3ES: Existing Basin discharge** Inflow=1.59 cfs 0.140 af
Primary=1.59 cfs 0.140 af

**Link 3PS: Developed Basin discharge** Inflow=0.84 cfs 0.155 af
Primary=0.84 cfs 0.155 af

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

**Total Runoff Area = 2.208 ac Runoff Volume = 0.344 af Average Runoff Depth = 1.87"**
**75.27% Pervious = 1.662 ac 24.73% Impervious = 0.546 ac**

## Summary for Subcatchment 1E: Existing Basin

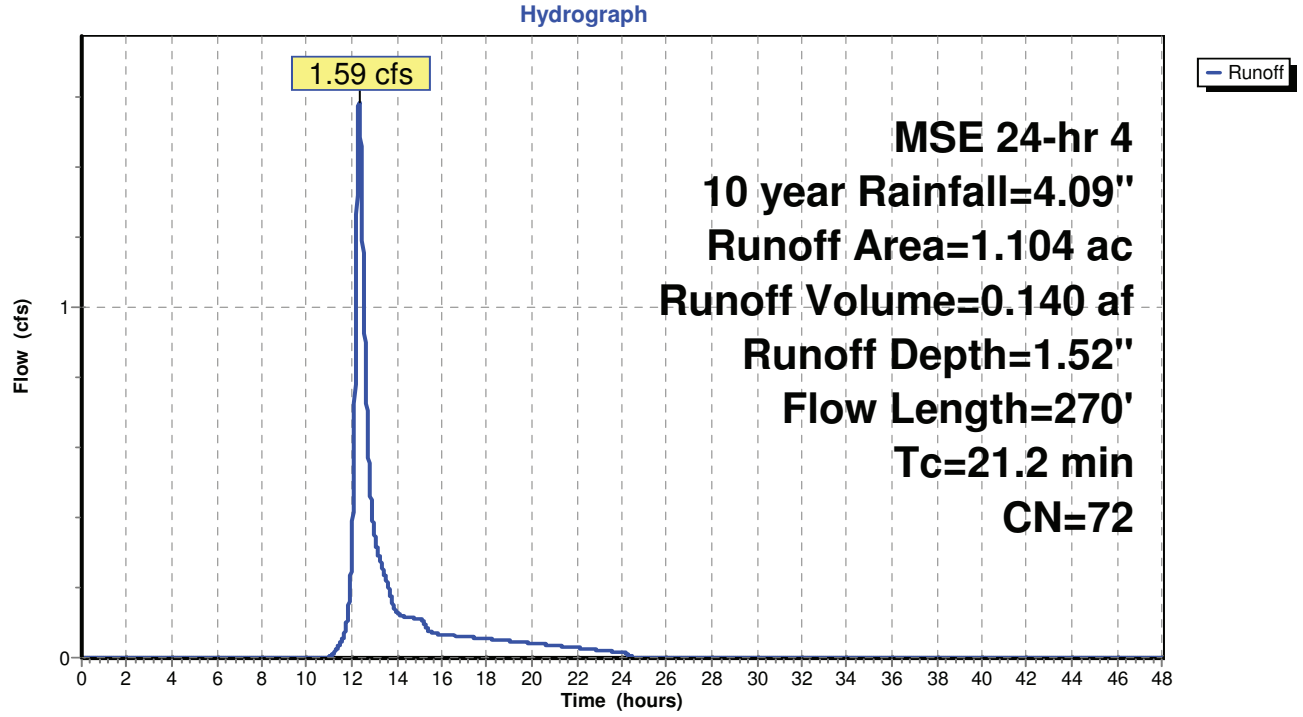
Runoff = 1.59 cfs @ 12.32 hrs, Volume= 0.140 af, Depth= 1.52"
Routed to Link 3ES : Existing Basin discharge

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 |
| * | 0.414 | 78 | Exi ag field, HSG C |
| | 1.104 | 72 | Weighted Average |
| | 1.086 | | 98.37% Pervious Area |
| | 0.018 | | 1.63% 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



## Hydrograph for Subcatchment 1E: Existing Basin

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|---|---|---|---|
| 0.00 | 0.00 | 0.00 | 0.00 |
| 0.50 | 0.01 | 0.00 | 0.00 |
| 1.00 | 0.02 | 0.00 | 0.00 |
| 1.50 | 0.03 | 0.00 | 0.00 |
| 2.00 | 0.05 | 0.00 | 0.00 |
| 2.50 | 0.07 | 0.00 | 0.00 |
| 3.00 | 0.09 | 0.00 | 0.00 |
| 3.50 | 0.11 | 0.00 | 0.00 |
| 4.00 | 0.13 | 0.00 | 0.00 |
| 4.50 | 0.16 | 0.00 | 0.00 |
| 5.00 | 0.19 | 0.00 | 0.00 |
| 5.50 | 0.22 | 0.00 | 0.00 |
| 6.00 | 0.25 | 0.00 | 0.00 |
| 6.50 | 0.29 | 0.00 | 0.00 |
| 7.00 | 0.32 | 0.00 | 0.00 |
| 7.50 | 0.36 | 0.00 | 0.00 |
| 8.00 | 0.41 | 0.00 | 0.00 |
| 8.50 | 0.45 | 0.00 | 0.00 |
| 9.00 | 0.50 | 0.00 | 0.00 |
| 9.50 | 0.57 | 0.00 | 0.00 |
| 10.00 | 0.65 | 0.00 | 0.00 |
| 10.50 | 0.73 | 0.00 | 0.00 |
| 11.00 | 0.88 | 0.00 | 0.00 |
| 11.50 | 1.11 | 0.03 | 0.04 |
| 12.00 | 1.92 | 0.26 | **0.31** |
| 12.50 | 2.98 | 0.80 | **1.13** |
| 13.00 | 3.21 | 0.93 | 0.36 |
| 13.50 | 3.36 | 1.03 | 0.23 |
| 14.00 | 3.44 | 1.08 | 0.13 |
| 14.50 | 3.52 | 1.13 | 0.12 |
| 15.00 | 3.59 | 1.18 | 0.11 |
| 15.50 | 3.64 | 1.21 | 0.07 |
| 16.00 | 3.68 | 1.24 | 0.07 |
| 16.50 | 3.73 | 1.27 | 0.06 |
| 17.00 | 3.77 | 1.30 | 0.06 |
| 17.50 | 3.80 | 1.32 | 0.06 |
| 18.00 | 3.84 | 1.35 | 0.05 |
| 18.50 | 3.87 | 1.37 | 0.05 |
| 19.00 | 3.90 | 1.39 | 0.05 |
| 19.50 | 3.93 | 1.41 | 0.04 |
| 20.00 | 3.96 | 1.43 | 0.04 |
| 20.50 | 3.98 | 1.45 | 0.04 |
| 21.00 | 4.00 | 1.46 | 0.03 |
| 21.50 | 4.02 | 1.48 | 0.03 |
| 22.00 | 4.04 | 1.49 | 0.03 |
| 22.50 | 4.06 | 1.50 | 0.02 |
| 23.00 | 4.07 | 1.51 | 0.02 |
| 23.50 | 4.08 | 1.52 | 0.02 |
| 24.00 | **4.09** | **1.52** | 0.01 |
| 24.50 | 4.09 | 1.52 | 0.00 |
| 25.00 | 4.09 | 1.52 | 0.00 |
| 25.50 | 4.09 | 1.52 | 0.00 |
| 26.00 | 4.09 | 1.52 | 0.00 |
| 26.50 | 4.09 | 1.52 | 0.00 |
| 27.00 | 4.09 | 1.52 | 0.00 |
| 27.50 | 4.09 | 1.52 | 0.00 |
| 28.00 | 4.09 | 1.52 | 0.00 |
| 28.50 | 4.09 | 1.52 | 0.00 |
| 29.00 | 4.09 | 1.52 | 0.00 |
| 29.50 | 4.09 | 1.52 | 0.00 |
| 30.00 | 4.09 | 1.52 | 0.00 |
| 30.50 | 4.09 | 1.52 | 0.00 |
| 31.00 | 4.09 | 1.52 | 0.00 |
| 31.50 | 4.09 | 1.52 | 0.00 |
| 32.00 | 4.09 | 1.52 | 0.00 |
| 32.50 | 4.09 | 1.52 | 0.00 |
| 33.00 | 4.09 | 1.52 | 0.00 |
| 33.50 | 4.09 | 1.52 | 0.00 |
| 34.00 | 4.09 | 1.52 | 0.00 |
| 34.50 | 4.09 | 1.52 | 0.00 |
| 35.00 | 4.09 | 1.52 | 0.00 |
| 35.50 | 4.09 | 1.52 | 0.00 |
| 36.00 | 4.09 | 1.52 | 0.00 |
| 36.50 | 4.09 | 1.52 | 0.00 |
| 37.00 | 4.09 | 1.52 | 0.00 |
| 37.50 | 4.09 | 1.52 | 0.00 |
| 38.00 | 4.09 | 1.52 | 0.00 |
| 38.50 | 4.09 | 1.52 | 0.00 |
| 39.00 | 4.09 | 1.52 | 0.00 |
| 39.50 | 4.09 | 1.52 | 0.00 |
| 40.00 | 4.09 | 1.52 | 0.00 |
| 40.50 | 4.09 | 1.52 | 0.00 |
| 41.00 | 4.09 | 1.52 | 0.00 |
| 41.50 | 4.09 | 1.52 | 0.00 |
| 42.00 | 4.09 | 1.52 | 0.00 |
| 42.50 | 4.09 | 1.52 | 0.00 |
| 43.00 | 4.09 | 1.52 | 0.00 |
| 43.50 | 4.09 | 1.52 | 0.00 |
| 44.00 | 4.09 | 1.52 | 0.00 |
| 44.50 | 4.09 | 1.52 | 0.00 |
| 45.00 | 4.09 | 1.52 | 0.00 |
| 45.50 | 4.09 | 1.52 | 0.00 |
| 46.00 | 4.09 | 1.52 | 0.00 |
| 46.50 | 4.09 | 1.52 | 0.00 |
| 47.00 | 4.09 | 1.52 | 0.00 |
| 47.50 | 4.09 | 1.52 | 0.00 |
| 48.00 | 4.09 | 1.52 | 0.00 |

## Summary for Subcatchment 1P: Developed Basin

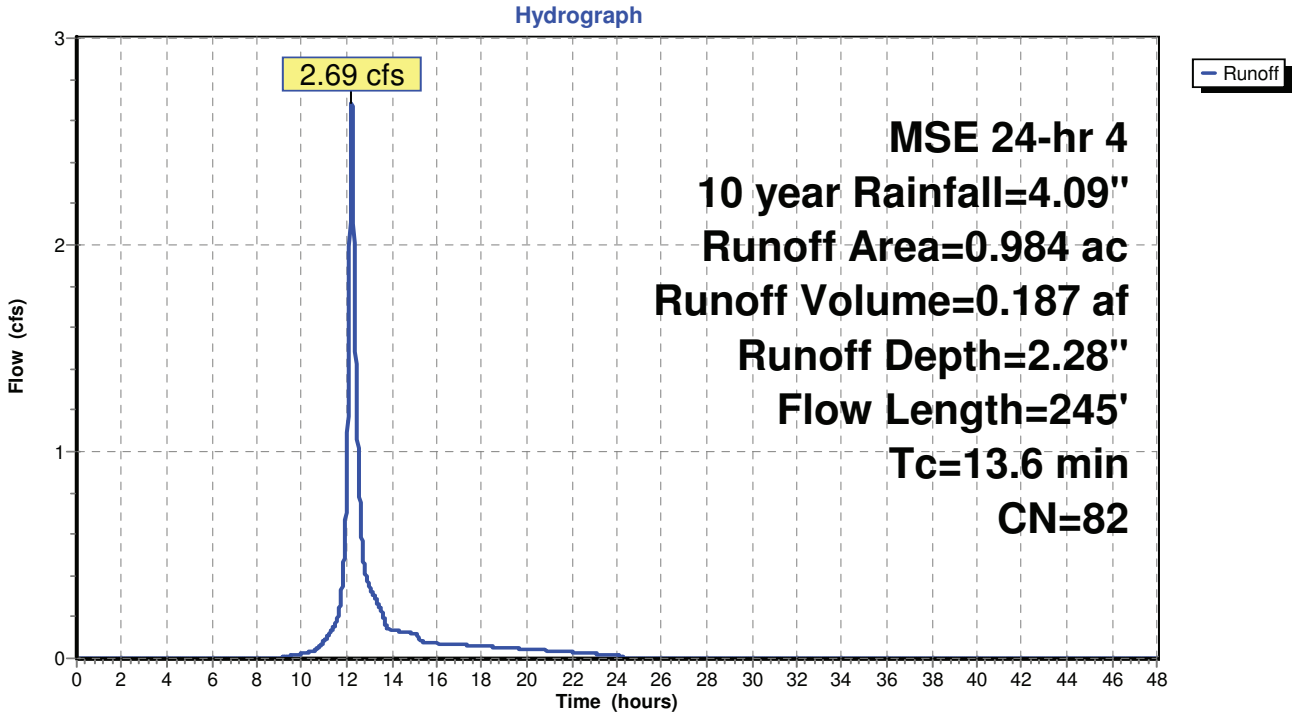
Runoff = 2.69 cfs @ 12.22 hrs, Volume= 0.187 af, Depth= 2.28"
Routed to Pond 1Po : combined ponds

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 |
| * | 0.238 | 98 | New roof |
| * | 0.252 | 98 | New pvmt |
| * | 0.212 | 61 | New yard, HSG B |
| * | 0.062 | 68 | New yard, HSG C |
| | 0.984 | 82 | Weighted Average |
| | 0.476 | | 48.37% Pervious Area |
| | 0.508 | | 51.63% 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



## Hydrograph for Subcatchment 1P: Developed Basin

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|---|---|---|---|
| 0.00 | 0.00 | 0.00 | 0.00 |
| 0.50 | 0.01 | 0.00 | 0.00 |
| 1.00 | 0.02 | 0.00 | 0.00 |
| 1.50 | 0.03 | 0.00 | 0.00 |
| 2.00 | 0.05 | 0.00 | 0.00 |
| 2.50 | 0.07 | 0.00 | 0.00 |
| 3.00 | 0.09 | 0.00 | 0.00 |
| 3.50 | 0.11 | 0.00 | 0.00 |
| 4.00 | 0.13 | 0.00 | 0.00 |
| 4.50 | 0.16 | 0.00 | 0.00 |
| 5.00 | 0.19 | 0.00 | 0.00 |
| 5.50 | 0.22 | 0.00 | 0.00 |
| 6.00 | 0.25 | 0.00 | 0.00 |
| 6.50 | 0.29 | 0.00 | 0.00 |
| 7.00 | 0.32 | 0.00 | 0.00 |
| 7.50 | 0.36 | 0.00 | 0.00 |
| 8.00 | 0.41 | 0.00 | 0.00 |
| 8.50 | 0.45 | 0.00 | 0.00 |
| 9.00 | 0.50 | 0.00 | 0.00 |
| 9.50 | 0.57 | 0.01 | 0.01 |
| 10.00 | 0.65 | 0.02 | 0.02 |
| 10.50 | 0.73 | 0.03 | 0.03 |
| 11.00 | 0.88 | 0.08 | 0.09 |
| 11.50 | 1.11 | 0.16 | 0.17 |
| 12.00 | 1.92 | 0.59 | **0.86** |
| 12.50 | 2.98 | 1.36 | **0.99** |
| 13.00 | 3.21 | 1.54 | 0.35 |
| 13.50 | 3.36 | 1.67 | 0.24 |
| 14.00 | 3.44 | 1.73 | 0.14 |
| 14.50 | 3.52 | 1.80 | 0.13 |
| 15.00 | 3.59 | 1.86 | 0.12 |
| 15.50 | 3.64 | 1.90 | 0.08 |
| 16.00 | 3.68 | 1.94 | 0.07 |
| 16.50 | 3.73 | 1.97 | 0.07 |
| 17.00 | 3.77 | 2.00 | 0.07 |
| 17.50 | 3.80 | 2.04 | 0.06 |
| 18.00 | 3.84 | 2.07 | 0.06 |
| 18.50 | 3.87 | 2.09 | 0.06 |
| 19.00 | 3.90 | 2.12 | 0.05 |
| 19.50 | 3.93 | 2.14 | 0.05 |
| 20.00 | 3.96 | 2.17 | 0.04 |
| 20.50 | 3.98 | 2.19 | 0.04 |
| 21.00 | 4.00 | 2.21 | 0.04 |
| 21.50 | 4.02 | 2.22 | 0.03 |
| 22.00 | 4.04 | 2.24 | 0.03 |
| 22.50 | 4.06 | 2.25 | 0.03 |
| 23.00 | 4.07 | 2.26 | 0.02 |
| 23.50 | 4.08 | 2.27 | 0.02 |
| 24.00 | **4.09** | **2.28** | 0.01 |
| 24.50 | 4.09 | 2.28 | 0.00 |
| 25.00 | 4.09 | 2.28 | 0.00 |
| 25.50 | 4.09 | 2.28 | 0.00 |
| 26.00 | 4.09 | 2.28 | 0.00 |
| 26.50 | 4.09 | 2.28 | 0.00 |
| 27.00 | 4.09 | 2.28 | 0.00 |
| 27.50 | 4.09 | 2.28 | 0.00 |
| 28.00 | 4.09 | 2.28 | 0.00 |
| 28.50 | 4.09 | 2.28 | 0.00 |
| 29.00 | 4.09 | 2.28 | 0.00 |
| 29.50 | 4.09 | 2.28 | 0.00 |
| 30.00 | 4.09 | 2.28 | 0.00 |
| 30.50 | 4.09 | 2.28 | 0.00 |
| 31.00 | 4.09 | 2.28 | 0.00 |
| 31.50 | 4.09 | 2.28 | 0.00 |
| 32.00 | 4.09 | 2.28 | 0.00 |
| 32.50 | 4.09 | 2.28 | 0.00 |
| 33.00 | 4.09 | 2.28 | 0.00 |
| 33.50 | 4.09 | 2.28 | 0.00 |
| 34.00 | 4.09 | 2.28 | 0.00 |
| 34.50 | 4.09 | 2.28 | 0.00 |
| 35.00 | 4.09 | 2.28 | 0.00 |
| 35.50 | 4.09 | 2.28 | 0.00 |
| 36.00 | 4.09 | 2.28 | 0.00 |
| 36.50 | 4.09 | 2.28 | 0.00 |
| 37.00 | 4.09 | 2.28 | 0.00 |
| 37.50 | 4.09 | 2.28 | 0.00 |
| 38.00 | 4.09 | 2.28 | 0.00 |
| 38.50 | 4.09 | 2.28 | 0.00 |
| 39.00 | 4.09 | 2.28 | 0.00 |
| 39.50 | 4.09 | 2.28 | 0.00 |
| 40.00 | 4.09 | 2.28 | 0.00 |
| 40.50 | 4.09 | 2.28 | 0.00 |
| 41.00 | 4.09 | 2.28 | 0.00 |
| 41.50 | 4.09 | 2.28 | 0.00 |
| 42.00 | 4.09 | 2.28 | 0.00 |
| 42.50 | 4.09 | 2.28 | 0.00 |
| 43.00 | 4.09 | 2.28 | 0.00 |
| 43.50 | 4.09 | 2.28 | 0.00 |
| 44.00 | 4.09 | 2.28 | 0.00 |
| 44.50 | 4.09 | 2.28 | 0.00 |
| 45.00 | 4.09 | 2.28 | 0.00 |
| 45.50 | 4.09 | 2.28 | 0.00 |
| 46.00 | 4.09 | 2.28 | 0.00 |
| 46.50 | 4.09 | 2.28 | 0.00 |
| 47.00 | 4.09 | 2.28 | 0.00 |
| 47.50 | 4.09 | 2.28 | 0.00 |
| 48.00 | 4.09 | 2.28 | 0.00 |

## Summary for Subcatchment 2P: East Basin-untreated

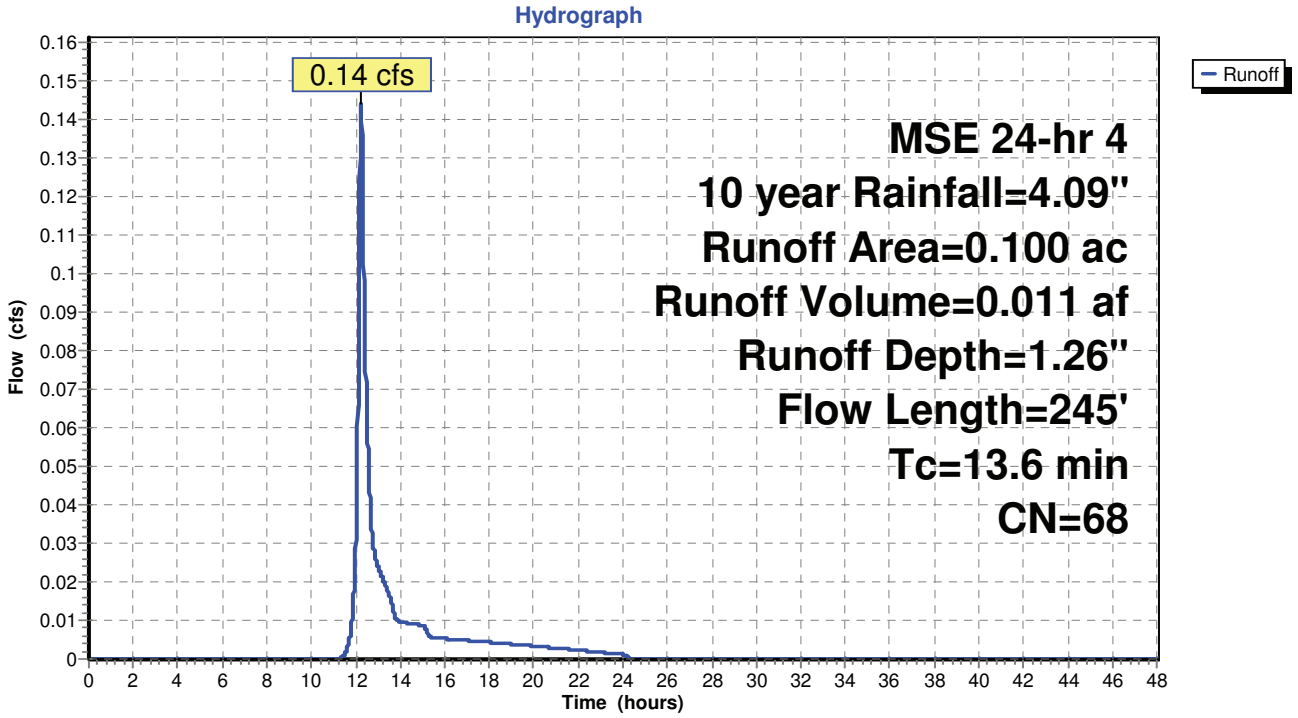
Runoff = 0.14 cfs @ 12.23 hrs, Volume= 0.011 af, Depth= 1.26"
Routed to Link 3PS : Developed Basin discharge

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 |
|---|---|---|---|
| * | 0.100 | 68 | New yard, HSG C |
| | 0.100 | | 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



## Hydrograph for Subcatchment 2P: East Basin-untreated

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|---|---|---|---|
| 0.00 | 0.00 | 0.00 | 0.00 |
| 0.50 | 0.01 | 0.00 | 0.00 |
| 1.00 | 0.02 | 0.00 | 0.00 |
| 1.50 | 0.03 | 0.00 | 0.00 |
| 2.00 | 0.05 | 0.00 | 0.00 |
| 2.50 | 0.07 | 0.00 | 0.00 |
| 3.00 | 0.09 | 0.00 | 0.00 |
| 3.50 | 0.11 | 0.00 | 0.00 |
| 4.00 | 0.13 | 0.00 | 0.00 |
| 4.50 | 0.16 | 0.00 | 0.00 |
| 5.00 | 0.19 | 0.00 | 0.00 |
| 5.50 | 0.22 | 0.00 | 0.00 |
| 6.00 | 0.25 | 0.00 | 0.00 |
| 6.50 | 0.29 | 0.00 | 0.00 |
| 7.00 | 0.32 | 0.00 | 0.00 |
| 7.50 | 0.36 | 0.00 | 0.00 |
| 8.00 | 0.41 | 0.00 | 0.00 |
| 8.50 | 0.45 | 0.00 | 0.00 |
| 9.00 | 0.50 | 0.00 | 0.00 |
| 9.50 | 0.57 | 0.00 | 0.00 |
| 10.00 | 0.65 | 0.00 | 0.00 |
| 10.50 | 0.73 | 0.00 | 0.00 |
| 11.00 | 0.88 | 0.00 | 0.00 |
| 11.50 | 1.11 | 0.01 | 0.00 |
| 12.00 | 1.92 | 0.17 | **0.03** |
| 12.50 | 2.98 | 0.62 | **0.06** |
| 13.00 | 3.21 | 0.74 | 0.02 |
| 13.50 | 3.36 | 0.82 | 0.02 |
| 14.00 | 3.44 | 0.87 | 0.01 |
| 14.50 | 3.52 | 0.91 | 0.01 |
| 15.00 | 3.59 | 0.96 | 0.01 |
| 15.50 | 3.64 | 0.98 | 0.01 |
| 16.00 | 3.68 | 1.01 | 0.01 |
| 16.50 | 3.73 | 1.04 | 0.01 |
| 17.00 | 3.77 | 1.06 | 0.00 |
| 17.50 | 3.80 | 1.08 | 0.00 |
| 18.00 | 3.84 | 1.10 | 0.00 |
| 18.50 | 3.87 | 1.12 | 0.00 |
| 19.00 | 3.90 | 1.14 | 0.00 |
| 19.50 | 3.93 | 1.16 | 0.00 |
| 20.00 | 3.96 | 1.18 | 0.00 |
| 20.50 | 3.98 | 1.19 | 0.00 |
| 21.00 | 4.00 | 1.21 | 0.00 |
| 21.50 | 4.02 | 1.22 | 0.00 |
| 22.00 | 4.04 | 1.23 | 0.00 |
| 22.50 | 4.06 | 1.24 | 0.00 |
| 23.00 | 4.07 | 1.25 | 0.00 |
| 23.50 | 4.08 | 1.26 | 0.00 |
| 24.00 | **4.09** | **1.26** | 0.00 |
| 24.50 | 4.09 | 1.26 | 0.00 |
| 25.00 | 4.09 | 1.26 | 0.00 |
| 25.50 | 4.09 | 1.26 | 0.00 |
| 26.00 | 4.09 | 1.26 | 0.00 |
| 26.50 | 4.09 | 1.26 | 0.00 |
| 27.00 | 4.09 | 1.26 | 0.00 |
| 27.50 | 4.09 | 1.26 | 0.00 |
| 28.00 | 4.09 | 1.26 | 0.00 |
| 28.50 | 4.09 | 1.26 | 0.00 |
| 29.00 | 4.09 | 1.26 | 0.00 |
| 29.50 | 4.09 | 1.26 | 0.00 |
| 30.00 | 4.09 | 1.26 | 0.00 |
| 30.50 | 4.09 | 1.26 | 0.00 |
| 31.00 | 4.09 | 1.26 | 0.00 |
| 31.50 | 4.09 | 1.26 | 0.00 |
| 32.00 | 4.09 | 1.26 | 0.00 |
| 32.50 | 4.09 | 1.26 | 0.00 |
| 33.00 | 4.09 | 1.26 | 0.00 |
| 33.50 | 4.09 | 1.26 | 0.00 |
| 34.00 | 4.09 | 1.26 | 0.00 |
| 34.50 | 4.09 | 1.26 | 0.00 |
| 35.00 | 4.09 | 1.26 | 0.00 |
| 35.50 | 4.09 | 1.26 | 0.00 |
| 36.00 | 4.09 | 1.26 | 0.00 |
| 36.50 | 4.09 | 1.26 | 0.00 |
| 37.00 | 4.09 | 1.26 | 0.00 |
| 37.50 | 4.09 | 1.26 | 0.00 |
| 38.00 | 4.09 | 1.26 | 0.00 |
| 38.50 | 4.09 | 1.26 | 0.00 |
| 39.00 | 4.09 | 1.26 | 0.00 |
| 39.50 | 4.09 | 1.26 | 0.00 |
| 40.00 | 4.09 | 1.26 | 0.00 |
| 40.50 | 4.09 | 1.26 | 0.00 |
| 41.00 | 4.09 | 1.26 | 0.00 |
| 41.50 | 4.09 | 1.26 | 0.00 |
| 42.00 | 4.09 | 1.26 | 0.00 |
| 42.50 | 4.09 | 1.26 | 0.00 |
| 43.00 | 4.09 | 1.26 | 0.00 |
| 43.50 | 4.09 | 1.26 | 0.00 |
| 44.00 | 4.09 | 1.26 | 0.00 |
| 44.50 | 4.09 | 1.26 | 0.00 |
| 45.00 | 4.09 | 1.26 | 0.00 |
| 45.50 | 4.09 | 1.26 | 0.00 |
| 46.00 | 4.09 | 1.26 | 0.00 |
| 46.50 | 4.09 | 1.26 | 0.00 |
| 47.00 | 4.09 | 1.26 | 0.00 |
| 47.50 | 4.09 | 1.26 | 0.00 |
| 48.00 | 4.09 | 1.26 | 0.00 |

## Summary for Subcatchment 3P: West Basin-untreated

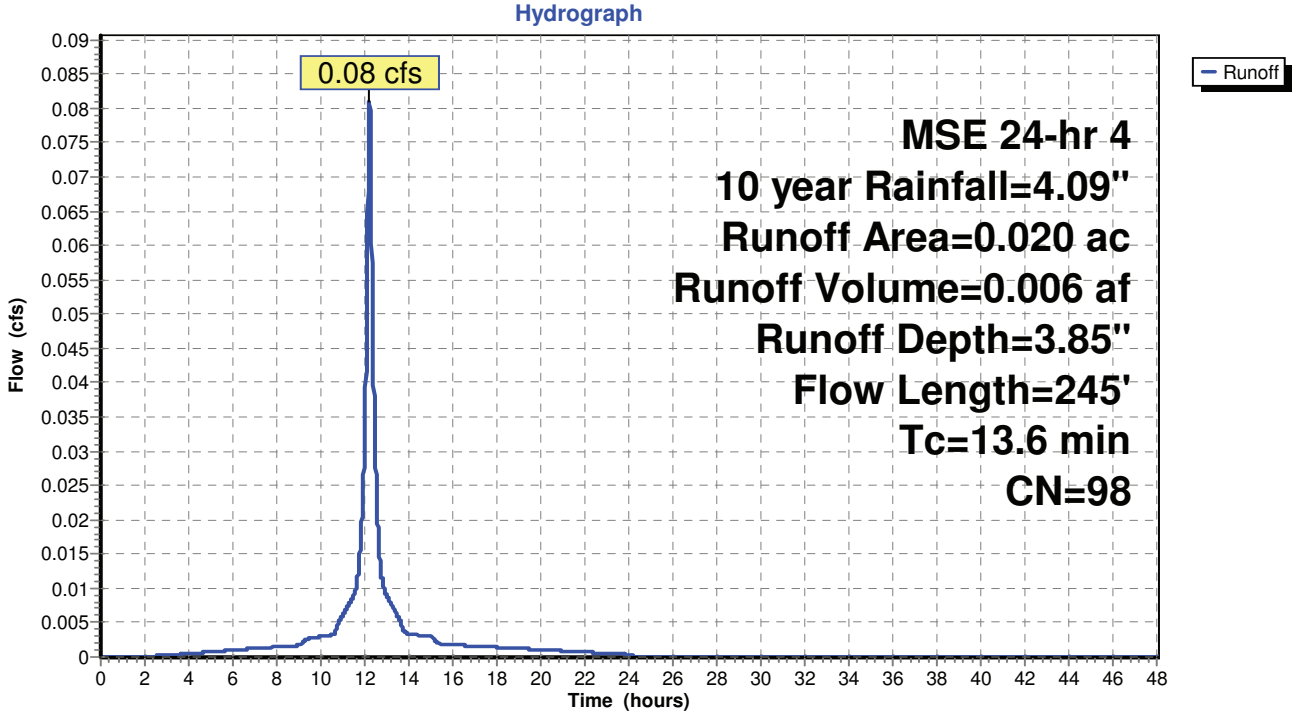
Runoff = 0.08 cfs @ 12.21 hrs, Volume= 0.006 af, Depth= 3.85"
Routed to Link 3PS : Developed Basin discharge

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 |
|---|---|---|---|
| * | 0.020 | 98 | New pvmt |
| | 0.020 | | 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



## Hydrograph for Subcatchment 3P: West Basin-untreated

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|---|---|---|---|
| 0.00 | 0.00 | 0.00 | 0.00 |
| 0.50 | 0.01 | 0.00 | 0.00 |
| 1.00 | 0.02 | 0.00 | 0.00 |
| 1.50 | 0.03 | 0.00 | 0.00 |
| 2.00 | 0.05 | 0.00 | 0.00 |
| 2.50 | 0.07 | 0.00 | 0.00 |
| 3.00 | 0.09 | 0.01 | 0.00 |
| 3.50 | 0.11 | 0.02 | 0.00 |
| 4.00 | 0.13 | 0.03 | 0.00 |
| 4.50 | 0.16 | 0.04 | 0.00 |
| 5.00 | 0.19 | 0.06 | 0.00 |
| 5.50 | 0.22 | 0.08 | 0.00 |
| 6.00 | 0.25 | 0.11 | 0.00 |
| 6.50 | 0.29 | 0.13 | 0.00 |
| 7.00 | 0.32 | 0.16 | 0.00 |
| 7.50 | 0.36 | 0.20 | 0.00 |
| 8.00 | 0.41 | 0.23 | 0.00 |
| 8.50 | 0.45 | 0.27 | 0.00 |
| 9.00 | 0.50 | 0.31 | 0.00 |
| 9.50 | 0.57 | 0.38 | 0.00 |
| 10.00 | 0.65 | 0.45 | 0.00 |
| 10.50 | 0.73 | 0.53 | 0.00 |
| 11.00 | 0.88 | 0.68 | 0.01 |
| 11.50 | 1.11 | 0.90 | 0.01 |
| 12.00 | 1.92 | 1.69 | **0.03** |
| 12.50 | 2.98 | 2.75 | **0.03** |
| 13.00 | 3.21 | 2.97 | 0.01 |
| 13.50 | 3.36 | 3.13 | 0.01 |
| 14.00 | 3.44 | 3.21 | 0.00 |
| 14.50 | 3.52 | 3.29 | 0.00 |
| 15.00 | 3.59 | 3.36 | 0.00 |
| 15.50 | 3.64 | 3.41 | 0.00 |
| 16.00 | 3.68 | 3.45 | 0.00 |
| 16.50 | 3.73 | 3.49 | 0.00 |
| 17.00 | 3.77 | 3.53 | 0.00 |
| 17.50 | 3.80 | 3.57 | 0.00 |
| 18.00 | 3.84 | 3.60 | 0.00 |
| 18.50 | 3.87 | 3.64 | 0.00 |
| 19.00 | 3.90 | 3.67 | 0.00 |
| 19.50 | 3.93 | 3.70 | 0.00 |
| 20.00 | 3.96 | 3.72 | 0.00 |
| 20.50 | 3.98 | 3.75 | 0.00 |
| 21.00 | 4.00 | 3.77 | 0.00 |
| 21.50 | 4.02 | 3.79 | 0.00 |
| 22.00 | 4.04 | 3.81 | 0.00 |
| 22.50 | 4.06 | 3.82 | 0.00 |
| 23.00 | 4.07 | 3.83 | 0.00 |
| 23.50 | 4.08 | 3.85 | 0.00 |
| 24.00 | **4.09** | **3.85** | 0.00 |
| 24.50 | 4.09 | 3.85 | 0.00 |
| 25.00 | 4.09 | 3.85 | 0.00 |
| 25.50 | 4.09 | 3.85 | 0.00 |
| 26.00 | 4.09 | 3.85 | 0.00 |
| 26.50 | 4.09 | 3.85 | 0.00 |
| 27.00 | 4.09 | 3.85 | 0.00 |
| 27.50 | 4.09 | 3.85 | 0.00 |
| 28.00 | 4.09 | 3.85 | 0.00 |
| 28.50 | 4.09 | 3.85 | 0.00 |
| 29.00 | 4.09 | 3.85 | 0.00 |
| 29.50 | 4.09 | 3.85 | 0.00 |
| 30.00 | 4.09 | 3.85 | 0.00 |
| 30.50 | 4.09 | 3.85 | 0.00 |
| 31.00 | 4.09 | 3.85 | 0.00 |
| 31.50 | 4.09 | 3.85 | 0.00 |
| 32.00 | 4.09 | 3.85 | 0.00 |
| 32.50 | 4.09 | 3.85 | 0.00 |
| 33.00 | 4.09 | 3.85 | 0.00 |
| 33.50 | 4.09 | 3.85 | 0.00 |
| 34.00 | 4.09 | 3.85 | 0.00 |
| 34.50 | 4.09 | 3.85 | 0.00 |
| 35.00 | 4.09 | 3.85 | 0.00 |
| 35.50 | 4.09 | 3.85 | 0.00 |
| 36.00 | 4.09 | 3.85 | 0.00 |
| 36.50 | 4.09 | 3.85 | 0.00 |
| 37.00 | 4.09 | 3.85 | 0.00 |
| 37.50 | 4.09 | 3.85 | 0.00 |
| 38.00 | 4.09 | 3.85 | 0.00 |
| 38.50 | 4.09 | 3.85 | 0.00 |
| 39.00 | 4.09 | 3.85 | 0.00 |
| 39.50 | 4.09 | 3.85 | 0.00 |
| 40.00 | 4.09 | 3.85 | 0.00 |
| 40.50 | 4.09 | 3.85 | 0.00 |
| 41.00 | 4.09 | 3.85 | 0.00 |
| 41.50 | 4.09 | 3.85 | 0.00 |
| 42.00 | 4.09 | 3.85 | 0.00 |
| 42.50 | 4.09 | 3.85 | 0.00 |
| 43.00 | 4.09 | 3.85 | 0.00 |
| 43.50 | 4.09 | 3.85 | 0.00 |
| 44.00 | 4.09 | 3.85 | 0.00 |
| 44.50 | 4.09 | 3.85 | 0.00 |
| 45.00 | 4.09 | 3.85 | 0.00 |
| 45.50 | 4.09 | 3.85 | 0.00 |
| 46.00 | 4.09 | 3.85 | 0.00 |
| 46.50 | 4.09 | 3.85 | 0.00 |
| 47.00 | 4.09 | 3.85 | 0.00 |
| 47.50 | 4.09 | 3.85 | 0.00 |
| 48.00 | 4.09 | 3.85 | 0.00 |

## Summary for Pond 1Po: combined ponds

Inflow Area = 0.984 ac, 51.63% Impervious, Inflow Depth = 2.28" for 10 year event
Inflow = 2.69 cfs @ 12.22 hrs, Volume= 0.187 af
Outflow = 0.78 cfs @ 12.57 hrs, Volume= 0.187 af, Atten= 71%, Lag= 21.2 min
Primary = 0.73 cfs @ 12.57 hrs, Volume= 0.138 af
Routed to Link 3PS : Developed Basin discharge
Secondary = 0.05 cfs @ 12.57 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= 881.37' @ 12.57 hrs Surf.Area= 3,947 sf Storage= 2,968 cf

Plug-Flow detention time= 72.4 min calculated for 0.187 af (100% of inflow)
Center-of-Mass det. time= 72.5 min ( 891.5 - 819.1 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 880.00' | 11,781 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**<br>2,400 cf Overall x 0.0% Voids |
| | | 11,781 cf | Total Available Storage |

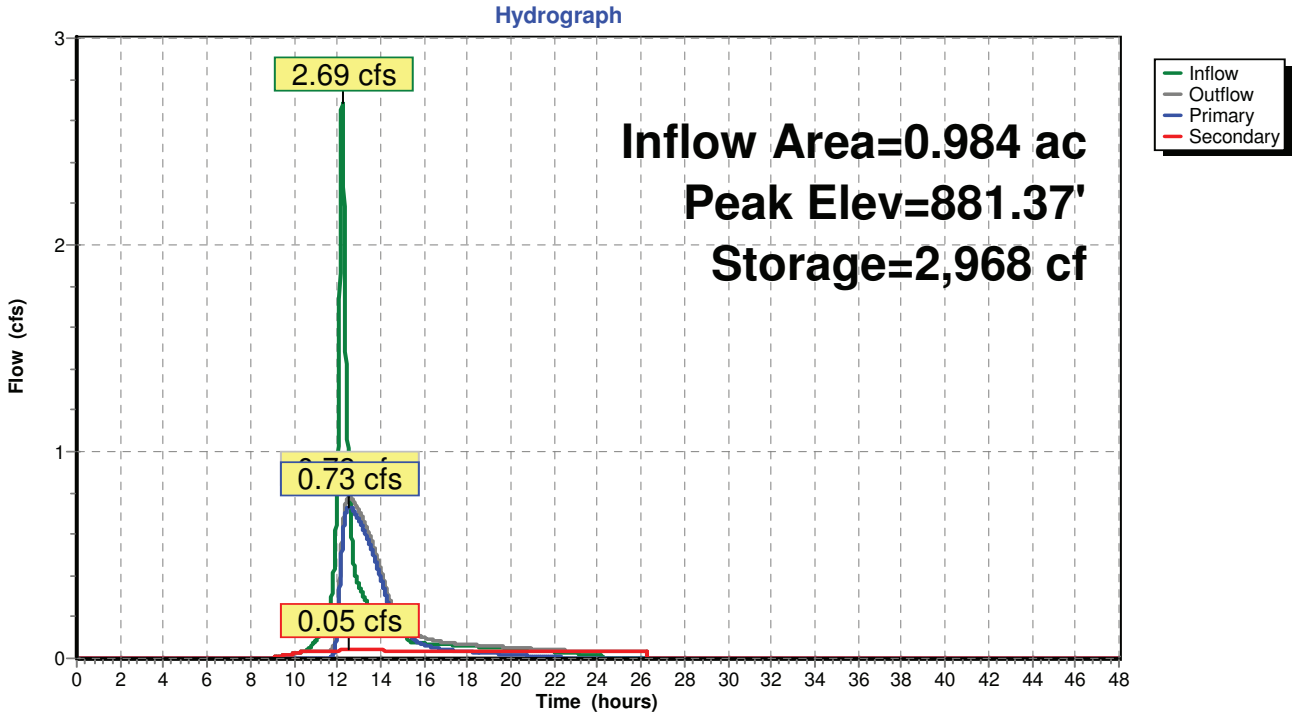
| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|---|---|---|---|
| 880.00 | 1,642 | 0 | 0 |
| 881.00 | 2,385 | 2,014 | 2,014 |
| 882.00 | 3,357 | 2,871 | 4,885 |
| 883.00 | 5,028 | 4,193 | 9,077 |
| 883.50 | 5,789 | 2,704 | 11,781 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Secondary | 878.00' | **0.500 in/hr Bio-filter Infiltration to native ground over Surface area**<br>Phase-In= 0.01' |
| #2 | Primary | 880.16' | **6.0" Round Pond discharge pipe**<br>L= 82.0' CPP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 880.16' / 877.00' S= 0.0385 '/' Cc= 0.900<br>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**<br>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<br>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=0.73 cfs @ 12.57 hrs HW=881.37' TW=0.00' (Dynamic Tailwater)
└─**2=Pond discharge pipe** (Inlet Controls 0.73 cfs @ 3.73 fps)
└─**3=Overflow Weir to street** ( Controls 0.00 cfs)

**Secondary OutFlow** Max=0.05 cfs @ 12.57 hrs HW=881.37' TW=0.00' (Dynamic Tailwater)
└─**1=Bio-filter Infiltration to native ground** (Exfiltration Controls 0.05 cfs)

## Pond 1Po: combined ponds



## Hydrograph for Pond 1Po: combined ponds

| Time (hours) | Inflow (cfs) | Storage (cubic-feet) | Elevation (feet) | Outflow (cfs) | Primary (cfs) | Secondary (cfs) |
|---|---|---|---|---|---|---|
| 0.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 1.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 2.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 3.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 4.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 5.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 6.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 7.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 8.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 9.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 10.00 | 0.02 | 0 | 880.00 | 0.02 | 0.00 | 0.02 |
| 11.00 | 0.09 | 40 | 880.02 | 0.03 | 0.00 | 0.03 |
| 12.00 | **0.86** | **760** | **880.42** | **0.18** | **0.14** | **0.04** |
| 13.00 | **0.35** | **2,549** | **881.21** | **0.71** | **0.67** | **0.04** |
| 14.00 | 0.14 | 1,287 | 880.68 | 0.43 | 0.39 | 0.04 |
| 15.00 | 0.12 | 755 | 880.42 | 0.18 | 0.14 | 0.04 |
| 16.00 | 0.07 | 581 | 880.33 | 0.10 | 0.06 | 0.04 |
| 17.00 | 0.07 | 516 | 880.29 | 0.08 | 0.04 | 0.04 |
| 18.00 | 0.06 | 482 | 880.28 | 0.07 | 0.03 | 0.04 |
| 19.00 | 0.05 | 453 | 880.26 | 0.06 | 0.02 | 0.04 |
| 20.00 | 0.04 | 425 | 880.25 | 0.05 | 0.02 | 0.04 |
| 21.00 | 0.04 | 394 | 880.23 | 0.05 | 0.01 | 0.03 |
| 22.00 | 0.03 | 359 | 880.21 | 0.04 | 0.01 | 0.03 |
| 23.00 | 0.02 | 315 | 880.18 | 0.04 | 0.00 | 0.03 |
| 24.00 | 0.01 | 258 | 880.15 | 0.03 | 0.00 | 0.03 |
| 25.00 | 0.00 | 146 | 880.09 | 0.03 | 0.00 | 0.03 |
| 26.00 | 0.00 | 26 | 880.02 | 0.03 | 0.00 | 0.03 |
| 27.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 28.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 29.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 30.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 31.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 32.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 33.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 34.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 35.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 36.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 37.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 38.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 39.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 40.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 41.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 42.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 43.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 44.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 45.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 46.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 47.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 48.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |

## Stage-Discharge for Pond 1Po: combined ponds

| Elevation (feet) | Discharge (cfs) | Primary (cfs) | Secondary (cfs) |
|---|---|---|---|
| 878.00 | 0.00 | 0.00 | 0.00 |
| 878.10 | 0.01 | 0.00 | 0.01 |
| 878.20 | 0.01 | 0.00 | 0.01 |
| 878.30 | 0.01 | 0.00 | 0.01 |
| 878.40 | 0.01 | 0.00 | 0.01 |
| 878.50 | 0.01 | 0.00 | 0.01 |
| 878.60 | 0.01 | 0.00 | 0.01 |
| 878.70 | 0.01 | 0.00 | 0.01 |
| 878.80 | 0.01 | 0.00 | 0.01 |
| 878.90 | 0.01 | 0.00 | 0.01 |
| 879.00 | 0.01 | 0.00 | 0.01 |
| 879.10 | 0.01 | 0.00 | 0.01 |
| 879.20 | 0.01 | 0.00 | 0.01 |
| 879.30 | 0.01 | 0.00 | 0.01 |
| 879.40 | 0.01 | 0.00 | 0.01 |
| 879.50 | 0.01 | 0.00 | 0.01 |
| 879.60 | 0.01 | 0.00 | 0.01 |
| 879.70 | 0.01 | 0.00 | 0.01 |
| 879.80 | 0.01 | 0.00 | 0.01 |
| 879.90 | 0.01 | 0.00 | 0.01 |
| 880.00 | 0.03 | 0.00 | 0.03 |
| 880.10 | 0.03 | 0.00 | 0.03 |
| 880.20 | 0.04 | 0.00 | 0.03 |
| 880.30 | 0.08 | 0.05 | 0.04 |
| 880.40 | 0.16 | 0.12 | 0.04 |
| 880.50 | 0.26 | 0.22 | 0.04 |
| 880.60 | 0.36 | 0.33 | 0.04 |
| 880.70 | 0.44 | 0.40 | 0.04 |
| 880.80 | 0.51 | 0.47 | 0.04 |
| 880.90 | 0.56 | 0.52 | 0.04 |
| 881.00 | 0.61 | 0.57 | 0.04 |
| 881.10 | 0.66 | 0.62 | 0.04 |
| 881.20 | 0.71 | 0.66 | 0.04 |
| 881.30 | 0.75 | 0.70 | 0.04 |
| 881.40 | 0.79 | 0.74 | 0.05 |
| 881.50 | 0.83 | 0.78 | 0.05 |
| 881.60 | 0.86 | 0.81 | 0.05 |
| 881.70 | 0.90 | 0.85 | 0.05 |
| 881.80 | 0.93 | 0.88 | 0.05 |
| 881.90 | 0.96 | 0.91 | 0.05 |
| 882.00 | 0.99 | 0.94 | 0.05 |
| 882.10 | 1.02 | 0.97 | 0.05 |
| 882.20 | 1.06 | 1.00 | 0.06 |
| 882.30 | 1.08 | 1.03 | 0.06 |
| 882.40 | 1.11 | 1.05 | 0.06 |
| 882.50 | 1.14 | 1.08 | 0.06 |
| 882.60 | 1.17 | 1.10 | 0.06 |
| 882.70 | 4.43 | 4.36 | 0.07 |
| 882.80 | 10.42 | 10.35 | 0.07 |
| 882.90 | 18.48 | 18.41 | 0.07 |
| 883.00 | 28.32 | 28.25 | 0.07 |
| 883.10 | 39.32 | 39.24 | 0.07 |
| 883.20 | 51.59 | 51.51 | 0.08 |
| 883.30 | 64.94 | 64.86 | 0.08 |
| 883.40 | 79.36 | 79.28 | 0.08 |
| 883.50 | **96.06** | **95.98** | **0.08** |

## Stage-Area-Storage for Pond 1Po: combined ponds

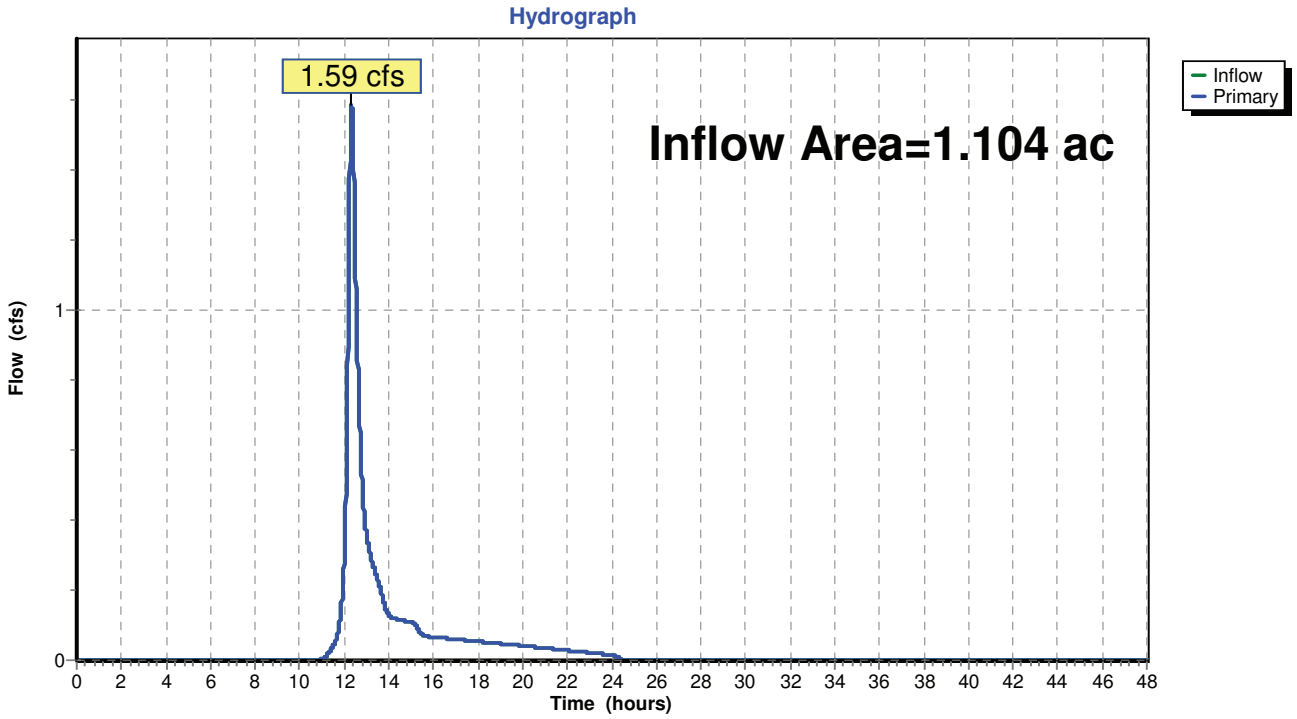
| Elevation (feet) | Surface (sq-ft) | Storage (cubic-feet) |
|---|---|---|
| 878.00 | 1,200 | 0 |
| 878.10 | 1,200 | 0 |
| 878.20 | 1,200 | 0 |
| 878.30 | 1,200 | 0 |
| 878.40 | 1,200 | 0 |
| 878.50 | 1,200 | 0 |
| 878.60 | 1,200 | 0 |
| 878.70 | 1,200 | 0 |
| 878.80 | 1,200 | 0 |
| 878.90 | 1,200 | 0 |
| 879.00 | 1,200 | 0 |
| 879.10 | 1,200 | 0 |
| 879.20 | 1,200 | 0 |
| 879.30 | 1,200 | 0 |
| 879.40 | 1,200 | 0 |
| 879.50 | 1,200 | 0 |
| 879.60 | 1,200 | 0 |
| 879.70 | 1,200 | 0 |
| 879.80 | 1,200 | 0 |
| 879.90 | 1,200 | 0 |
| 880.00 | 2,842 | 0 |
| 880.10 | 2,916 | 168 |
| 880.20 | 2,991 | 343 |
| 880.30 | 3,065 | 526 |
| 880.40 | 3,139 | 716 |
| 880.50 | 3,214 | 914 |
| 880.60 | 3,288 | 1,119 |
| 880.70 | 3,362 | 1,331 |
| 880.80 | 3,436 | 1,551 |
| 880.90 | 3,511 | 1,779 |
| 881.00 | 3,585 | 2,014 |
| 881.10 | 3,682 | 2,257 |
| 881.20 | 3,779 | 2,510 |
| 881.30 | 3,877 | 2,773 |
| 881.40 | 3,974 | 3,045 |
| 881.50 | 4,071 | 3,328 |
| 881.60 | 4,168 | 3,619 |
| 881.70 | 4,265 | 3,921 |
| 881.80 | 4,363 | 4,233 |
| 881.90 | 4,460 | 4,554 |
| 882.00 | 4,557 | 4,885 |
| 882.10 | 4,724 | 5,229 |
| 882.20 | 4,891 | 5,589 |
| 882.30 | 5,058 | 5,967 |
| 882.40 | 5,225 | 6,361 |
| 882.50 | 5,393 | 6,772 |
| 882.60 | 5,560 | 7,199 |
| 882.70 | 5,727 | 7,644 |
| 882.80 | 5,894 | 8,105 |
| 882.90 | 6,061 | 8,583 |
| 883.00 | 6,228 | 9,077 |
| 883.10 | 6,380 | 9,587 |
| 883.20 | 6,532 | 10,113 |
| 883.30 | 6,685 | 10,654 |
| 883.40 | 6,837 | 11,210 |
| 883.50 | **6,989** | **11,781** |

## Summary for Link 3ES: Existing Basin discharge

Inflow Area = 1.104 ac, 1.63% Impervious, Inflow Depth = 1.52" for 10 year event
Inflow = 1.59 cfs @ 12.32 hrs, Volume= 0.140 af
Primary = 1.59 cfs @ 12.32 hrs, Volume= 0.140 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



## Hydrograph for Link 3ES: Existing Basin discharge

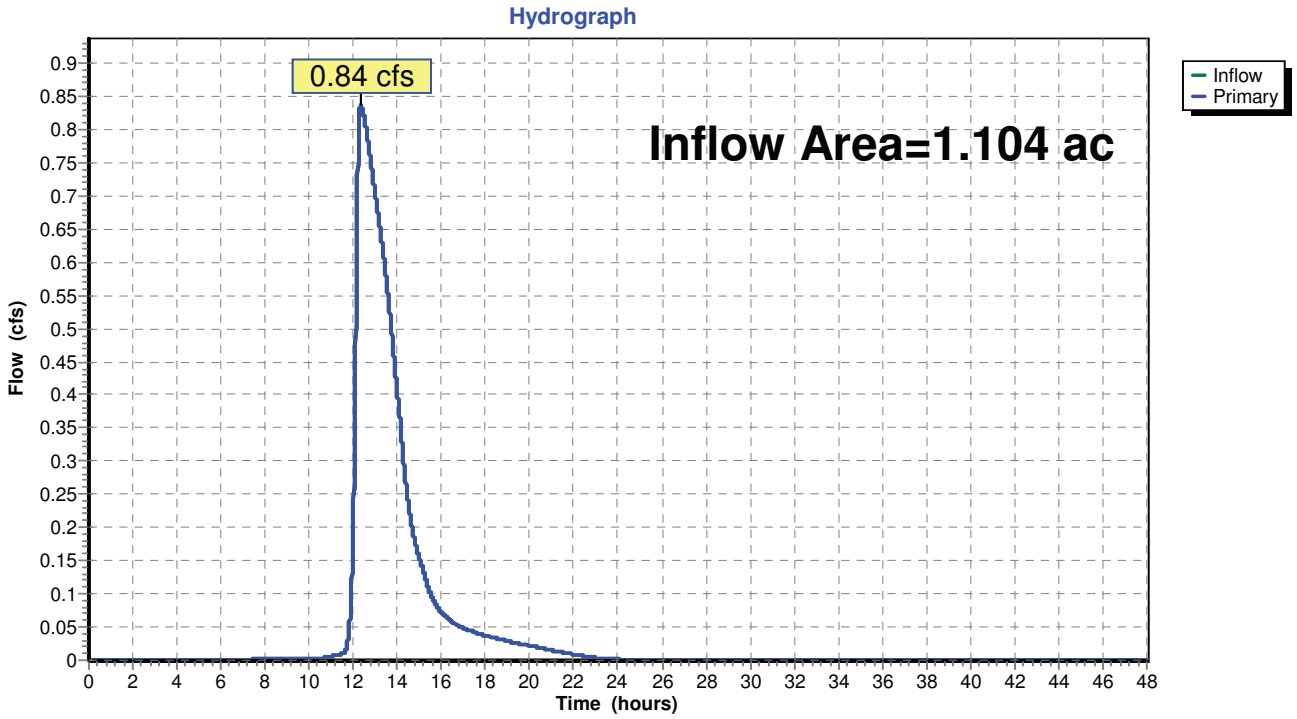
| Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) | Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) |
|---|---|---|---|---|---|---|---|
| 0.00 | 0.00 | **0.00** | 0.00 | 26.00 | 0.00 | 0.00 | 0.00 |
| 0.50 | 0.00 | 0.00 | 0.00 | 26.50 | 0.00 | 0.00 | 0.00 |
| 1.00 | 0.00 | 0.00 | 0.00 | 27.00 | 0.00 | 0.00 | 0.00 |
| 1.50 | 0.00 | 0.00 | 0.00 | 27.50 | 0.00 | 0.00 | 0.00 |
| 2.00 | 0.00 | 0.00 | 0.00 | 28.00 | 0.00 | 0.00 | 0.00 |
| 2.50 | 0.00 | 0.00 | 0.00 | 28.50 | 0.00 | 0.00 | 0.00 |
| 3.00 | 0.00 | 0.00 | 0.00 | 29.00 | 0.00 | 0.00 | 0.00 |
| 3.50 | 0.00 | 0.00 | 0.00 | 29.50 | 0.00 | 0.00 | 0.00 |
| 4.00 | 0.00 | 0.00 | 0.00 | 30.00 | 0.00 | 0.00 | 0.00 |
| 4.50 | 0.00 | 0.00 | 0.00 | 30.50 | 0.00 | 0.00 | 0.00 |
| 5.00 | 0.00 | 0.00 | 0.00 | 31.00 | 0.00 | 0.00 | 0.00 |
| 5.50 | 0.00 | 0.00 | 0.00 | 31.50 | 0.00 | 0.00 | 0.00 |
| 6.00 | 0.00 | 0.00 | 0.00 | 32.00 | 0.00 | 0.00 | 0.00 |
| 6.50 | 0.00 | 0.00 | 0.00 | 32.50 | 0.00 | 0.00 | 0.00 |
| 7.00 | 0.00 | 0.00 | 0.00 | 33.00 | 0.00 | 0.00 | 0.00 |
| 7.50 | 0.00 | 0.00 | 0.00 | 33.50 | 0.00 | 0.00 | 0.00 |
| 8.00 | 0.00 | 0.00 | 0.00 | 34.00 | 0.00 | 0.00 | 0.00 |
| 8.50 | 0.00 | 0.00 | 0.00 | 34.50 | 0.00 | 0.00 | 0.00 |
| 9.00 | 0.00 | 0.00 | 0.00 | 35.00 | 0.00 | 0.00 | 0.00 |
| 9.50 | 0.00 | 0.00 | 0.00 | 35.50 | 0.00 | 0.00 | 0.00 |
| 10.00 | 0.00 | 0.00 | 0.00 | 36.00 | 0.00 | 0.00 | 0.00 |
| 10.50 | 0.00 | 0.00 | 0.00 | 36.50 | 0.00 | 0.00 | 0.00 |
| 11.00 | 0.00 | 0.00 | 0.00 | 37.00 | 0.00 | 0.00 | 0.00 |
| 11.50 | 0.04 | 0.00 | 0.04 | 37.50 | 0.00 | 0.00 | 0.00 |
| 12.00 | **0.31** | 0.00 | **0.31** | 38.00 | 0.00 | 0.00 | 0.00 |
| 12.50 | **1.13** | 0.00 | **1.13** | 38.50 | 0.00 | 0.00 | 0.00 |
| 13.00 | 0.36 | 0.00 | 0.36 | 39.00 | 0.00 | 0.00 | 0.00 |
| 13.50 | 0.23 | 0.00 | 0.23 | 39.50 | 0.00 | 0.00 | 0.00 |
| 14.00 | 0.13 | 0.00 | 0.13 | 40.00 | 0.00 | 0.00 | 0.00 |
| 14.50 | 0.12 | 0.00 | 0.12 | 40.50 | 0.00 | 0.00 | 0.00 |
| 15.00 | 0.11 | 0.00 | 0.11 | 41.00 | 0.00 | 0.00 | 0.00 |
| 15.50 | 0.07 | 0.00 | 0.07 | 41.50 | 0.00 | 0.00 | 0.00 |
| 16.00 | 0.07 | 0.00 | 0.07 | 42.00 | 0.00 | 0.00 | 0.00 |
| 16.50 | 0.06 | 0.00 | 0.06 | 42.50 | 0.00 | 0.00 | 0.00 |
| 17.00 | 0.06 | 0.00 | 0.06 | 43.00 | 0.00 | 0.00 | 0.00 |
| 17.50 | 0.06 | 0.00 | 0.06 | 43.50 | 0.00 | 0.00 | 0.00 |
| 18.00 | 0.05 | 0.00 | 0.05 | 44.00 | 0.00 | 0.00 | 0.00 |
| 18.50 | 0.05 | 0.00 | 0.05 | 44.50 | 0.00 | 0.00 | 0.00 |
| 19.00 | 0.05 | 0.00 | 0.05 | 45.00 | 0.00 | 0.00 | 0.00 |
| 19.50 | 0.04 | 0.00 | 0.04 | 45.50 | 0.00 | 0.00 | 0.00 |
| 20.00 | 0.04 | 0.00 | 0.04 | 46.00 | 0.00 | 0.00 | 0.00 |
| 20.50 | 0.04 | 0.00 | 0.04 | 46.50 | 0.00 | 0.00 | 0.00 |
| 21.00 | 0.03 | 0.00 | 0.03 | 47.00 | 0.00 | 0.00 | 0.00 |
| 21.50 | 0.03 | 0.00 | 0.03 | 47.50 | 0.00 | 0.00 | 0.00 |
| 22.00 | 0.03 | 0.00 | 0.03 | 48.00 | 0.00 | 0.00 | 0.00 |
| 22.50 | 0.02 | 0.00 | 0.02 | | | | |
| 23.00 | 0.02 | 0.00 | 0.02 | | | | |
| 23.50 | 0.02 | 0.00 | 0.02 | | | | |
| 24.00 | 0.01 | 0.00 | 0.01 | | | | |
| 24.50 | 0.00 | 0.00 | 0.00 | | | | |
| 25.00 | 0.00 | 0.00 | 0.00 | | | | |
| 25.50 | 0.00 | 0.00 | 0.00 | | | | |

## Summary for Link 3PS: Developed Basin discharge

Inflow Area = 1.104 ac, 47.83% Impervious, Inflow Depth = 1.69" for 10 year event
Inflow = 0.84 cfs @ 12.32 hrs, Volume= 0.155 af
Primary = 0.84 cfs @ 12.32 hrs, Volume= 0.155 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



## Hydrograph for Link 3PS: Developed Basin discharge

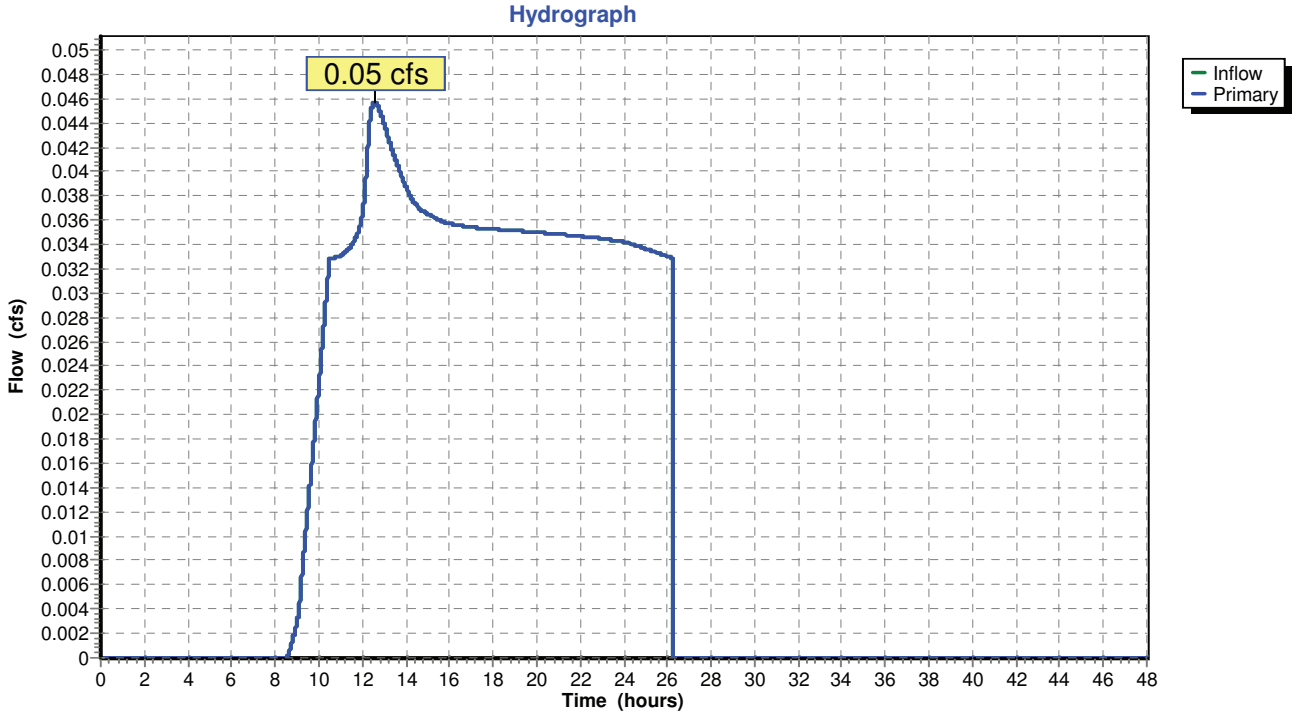
| Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) | Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) |
|---|---|---|---|---|---|---|---|
| 0.00 | 0.00 | **0.00** | 0.00 | 26.00 | 0.00 | 0.00 | 0.00 |
| 0.50 | 0.00 | 0.00 | 0.00 | 26.50 | 0.00 | 0.00 | 0.00 |
| 1.00 | 0.00 | 0.00 | 0.00 | 27.00 | 0.00 | 0.00 | 0.00 |
| 1.50 | 0.00 | 0.00 | 0.00 | 27.50 | 0.00 | 0.00 | 0.00 |
| 2.00 | 0.00 | 0.00 | 0.00 | 28.00 | 0.00 | 0.00 | 0.00 |
| 2.50 | 0.00 | 0.00 | 0.00 | 28.50 | 0.00 | 0.00 | 0.00 |
| 3.00 | 0.00 | 0.00 | 0.00 | 29.00 | 0.00 | 0.00 | 0.00 |
| 3.50 | 0.00 | 0.00 | 0.00 | 29.50 | 0.00 | 0.00 | 0.00 |
| 4.00 | 0.00 | 0.00 | 0.00 | 30.00 | 0.00 | 0.00 | 0.00 |
| 4.50 | 0.00 | 0.00 | 0.00 | 30.50 | 0.00 | 0.00 | 0.00 |
| 5.00 | 0.00 | 0.00 | 0.00 | 31.00 | 0.00 | 0.00 | 0.00 |
| 5.50 | 0.00 | 0.00 | 0.00 | 31.50 | 0.00 | 0.00 | 0.00 |
| 6.00 | 0.00 | 0.00 | 0.00 | 32.00 | 0.00 | 0.00 | 0.00 |
| 6.50 | 0.00 | 0.00 | 0.00 | 32.50 | 0.00 | 0.00 | 0.00 |
| 7.00 | 0.00 | 0.00 | 0.00 | 33.00 | 0.00 | 0.00 | 0.00 |
| 7.50 | 0.00 | 0.00 | 0.00 | 33.50 | 0.00 | 0.00 | 0.00 |
| 8.00 | 0.00 | 0.00 | 0.00 | 34.00 | 0.00 | 0.00 | 0.00 |
| 8.50 | 0.00 | 0.00 | 0.00 | 34.50 | 0.00 | 0.00 | 0.00 |
| 9.00 | 0.00 | 0.00 | 0.00 | 35.00 | 0.00 | 0.00 | 0.00 |
| 9.50 | 0.00 | 0.00 | 0.00 | 35.50 | 0.00 | 0.00 | 0.00 |
| 10.00 | 0.00 | 0.00 | 0.00 | 36.00 | 0.00 | 0.00 | 0.00 |
| 10.50 | 0.00 | 0.00 | 0.00 | 36.50 | 0.00 | 0.00 | 0.00 |
| 11.00 | 0.01 | 0.00 | 0.01 | 37.00 | 0.00 | 0.00 | 0.00 |
| 11.50 | 0.01 | 0.00 | 0.01 | 37.50 | 0.00 | 0.00 | 0.00 |
| 12.00 | **0.21** | 0.00 | **0.21** | 38.00 | 0.00 | 0.00 | 0.00 |
| 12.50 | **0.82** | 0.00 | **0.82** | 38.50 | 0.00 | 0.00 | 0.00 |
| 13.00 | 0.70 | 0.00 | 0.70 | 39.00 | 0.00 | 0.00 | 0.00 |
| 13.50 | 0.57 | 0.00 | 0.57 | 39.50 | 0.00 | 0.00 | 0.00 |
| 14.00 | 0.40 | 0.00 | 0.40 | 40.00 | 0.00 | 0.00 | 0.00 |
| 14.50 | 0.23 | 0.00 | 0.23 | 40.50 | 0.00 | 0.00 | 0.00 |
| 15.00 | 0.15 | 0.00 | 0.15 | 41.00 | 0.00 | 0.00 | 0.00 |
| 15.50 | 0.10 | 0.00 | 0.10 | 41.50 | 0.00 | 0.00 | 0.00 |
| 16.00 | 0.07 | 0.00 | 0.07 | 42.00 | 0.00 | 0.00 | 0.00 |
| 16.50 | 0.06 | 0.00 | 0.06 | 42.50 | 0.00 | 0.00 | 0.00 |
| 17.00 | 0.05 | 0.00 | 0.05 | 43.00 | 0.00 | 0.00 | 0.00 |
| 17.50 | 0.04 | 0.00 | 0.04 | 43.50 | 0.00 | 0.00 | 0.00 |
| 18.00 | 0.04 | 0.00 | 0.04 | 44.00 | 0.00 | 0.00 | 0.00 |
| 18.50 | 0.03 | 0.00 | 0.03 | 44.50 | 0.00 | 0.00 | 0.00 |
| 19.00 | 0.03 | 0.00 | 0.03 | 45.00 | 0.00 | 0.00 | 0.00 |
| 19.50 | 0.03 | 0.00 | 0.03 | 45.50 | 0.00 | 0.00 | 0.00 |
| 20.00 | 0.02 | 0.00 | 0.02 | 46.00 | 0.00 | 0.00 | 0.00 |
| 20.50 | 0.02 | 0.00 | 0.02 | 46.50 | 0.00 | 0.00 | 0.00 |
| 21.00 | 0.02 | 0.00 | 0.02 | 47.00 | 0.00 | 0.00 | 0.00 |
| 21.50 | 0.01 | 0.00 | 0.01 | 47.50 | 0.00 | 0.00 | 0.00 |
| 22.00 | 0.01 | 0.00 | 0.01 | 48.00 | 0.00 | 0.00 | 0.00 |
| 22.50 | 0.01 | 0.00 | 0.01 | | | | |
| 23.00 | 0.00 | 0.00 | 0.00 | | | | |
| 23.50 | 0.00 | 0.00 | 0.00 | | | | |
| 24.00 | 0.00 | 0.00 | 0.00 | | | | |
| 24.50 | 0.00 | 0.00 | 0.00 | | | | |
| 25.00 | 0.00 | 0.00 | 0.00 | | | | |
| 25.50 | 0.00 | 0.00 | 0.00 | | | | |

## Summary for Link 4Z: infiltrated to ground

| | | | | |
|---|---|---|---|---|
| Inflow | = | 0.05 cfs @ 12.57 hrs, | Volume= | 0.049 af |
| Primary | = | 0.05 cfs @ 12.57 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



## Hydrograph for Link 4Z: infiltrated to ground

| Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) | Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) |
|---|---|---|---|---|---|---|---|
| 0.00 | 0.00 | **0.00** | 0.00 | 26.00 | 0.03 | 0.00 | 0.03 |
| 0.50 | 0.00 | 0.00 | 0.00 | 26.50 | 0.00 | 0.00 | 0.00 |
| 1.00 | 0.00 | 0.00 | 0.00 | 27.00 | 0.00 | 0.00 | 0.00 |
| 1.50 | 0.00 | 0.00 | 0.00 | 27.50 | 0.00 | 0.00 | 0.00 |
| 2.00 | 0.00 | 0.00 | 0.00 | 28.00 | 0.00 | 0.00 | 0.00 |
| 2.50 | 0.00 | 0.00 | 0.00 | 28.50 | 0.00 | 0.00 | 0.00 |
| 3.00 | 0.00 | 0.00 | 0.00 | 29.00 | 0.00 | 0.00 | 0.00 |
| 3.50 | 0.00 | 0.00 | 0.00 | 29.50 | 0.00 | 0.00 | 0.00 |
| 4.00 | 0.00 | 0.00 | 0.00 | 30.00 | 0.00 | 0.00 | 0.00 |
| 4.50 | 0.00 | 0.00 | 0.00 | 30.50 | 0.00 | 0.00 | 0.00 |
| 5.00 | 0.00 | 0.00 | 0.00 | 31.00 | 0.00 | 0.00 | 0.00 |
| 5.50 | 0.00 | 0.00 | 0.00 | 31.50 | 0.00 | 0.00 | 0.00 |
| 6.00 | 0.00 | 0.00 | 0.00 | 32.00 | 0.00 | 0.00 | 0.00 |
| 6.50 | 0.00 | 0.00 | 0.00 | 32.50 | 0.00 | 0.00 | 0.00 |
| 7.00 | 0.00 | 0.00 | 0.00 | 33.00 | 0.00 | 0.00 | 0.00 |
| 7.50 | 0.00 | 0.00 | 0.00 | 33.50 | 0.00 | 0.00 | 0.00 |
| 8.00 | 0.00 | 0.00 | 0.00 | 34.00 | 0.00 | 0.00 | 0.00 |
| 8.50 | 0.00 | 0.00 | 0.00 | 34.50 | 0.00 | 0.00 | 0.00 |
| 9.00 | 0.00 | 0.00 | 0.00 | 35.00 | 0.00 | 0.00 | 0.00 |
| 9.50 | 0.01 | 0.00 | 0.01 | 35.50 | 0.00 | 0.00 | 0.00 |
| 10.00 | 0.02 | 0.00 | 0.02 | 36.00 | 0.00 | 0.00 | 0.00 |
| 10.50 | 0.03 | 0.00 | 0.03 | 36.50 | 0.00 | 0.00 | 0.00 |
| 11.00 | 0.03 | 0.00 | 0.03 | 37.00 | 0.00 | 0.00 | 0.00 |
| 11.50 | 0.03 | 0.00 | 0.03 | 37.50 | 0.00 | 0.00 | 0.00 |
| 12.00 | 0.04 | 0.00 | 0.04 | 38.00 | 0.00 | 0.00 | 0.00 |
| 12.50 | **0.05** | 0.00 | **0.05** | 38.50 | 0.00 | 0.00 | 0.00 |
| 13.00 | **0.04** | 0.00 | **0.04** | 39.00 | 0.00 | 0.00 | 0.00 |
| 13.50 | 0.04 | 0.00 | 0.04 | 39.50 | 0.00 | 0.00 | 0.00 |
| 14.00 | 0.04 | 0.00 | 0.04 | 40.00 | 0.00 | 0.00 | 0.00 |
| 14.50 | 0.04 | 0.00 | 0.04 | 40.50 | 0.00 | 0.00 | 0.00 |
| 15.00 | 0.04 | 0.00 | 0.04 | 41.00 | 0.00 | 0.00 | 0.00 |
| 15.50 | 0.04 | 0.00 | 0.04 | 41.50 | 0.00 | 0.00 | 0.00 |
| 16.00 | 0.04 | 0.00 | 0.04 | 42.00 | 0.00 | 0.00 | 0.00 |
| 16.50 | 0.04 | 0.00 | 0.04 | 42.50 | 0.00 | 0.00 | 0.00 |
| 17.00 | 0.04 | 0.00 | 0.04 | 43.00 | 0.00 | 0.00 | 0.00 |
| 17.50 | 0.04 | 0.00 | 0.04 | 43.50 | 0.00 | 0.00 | 0.00 |
| 18.00 | 0.04 | 0.00 | 0.04 | 44.00 | 0.00 | 0.00 | 0.00 |
| 18.50 | 0.04 | 0.00 | 0.04 | 44.50 | 0.00 | 0.00 | 0.00 |
| 19.00 | 0.04 | 0.00 | 0.04 | 45.00 | 0.00 | 0.00 | 0.00 |
| 19.50 | 0.04 | 0.00 | 0.04 | 45.50 | 0.00 | 0.00 | 0.00 |
| 20.00 | 0.04 | 0.00 | 0.04 | 46.00 | 0.00 | 0.00 | 0.00 |
| 20.50 | 0.03 | 0.00 | 0.03 | 46.50 | 0.00 | 0.00 | 0.00 |
| 21.00 | 0.03 | 0.00 | 0.03 | 47.00 | 0.00 | 0.00 | 0.00 |
| 21.50 | 0.03 | 0.00 | 0.03 | 47.50 | 0.00 | 0.00 | 0.00 |
| 22.00 | 0.03 | 0.00 | 0.03 | 48.00 | 0.00 | 0.00 | 0.00 |
| 22.50 | 0.03 | 0.00 | 0.03 | | | | |
| 23.00 | 0.03 | 0.00 | 0.03 | | | | |
| 23.50 | 0.03 | 0.00 | 0.03 | | | | |
| 24.00 | 0.03 | 0.00 | 0.03 | | | | |
| 24.50 | 0.03 | 0.00 | 0.03 | | | | |
| 25.00 | 0.03 | 0.00 | 0.03 | | | | |
| 25.50 | 0.03 | 0.00 | 0.03 | | | | |

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=1.104 ac 1.63% Impervious Runoff Depth=3.54"
Flow Length=270' Tc=21.2 min CN=72 Runoff=3.79 cfs 0.326 af

**Subcatchment 1P: Developed Basin** Runoff Area=0.984 ac 51.63% Impervious Runoff Depth=4.60"
Flow Length=245' Tc=13.6 min CN=82 Runoff=5.33 cfs 0.377 af

**Subcatchment 2P: East Basin-untreated** Runoff Area=0.100 ac 0.00% Impervious Runoff Depth=3.14"
Flow Length=245' Tc=13.6 min CN=68 Runoff=0.38 cfs 0.026 af

**Subcatchment 3P: West Basin-untreated** Runoff Area=0.020 ac 100.00% Impervious Runoff Depth=6.42"
Flow Length=245' Tc=13.6 min CN=98 Runoff=0.13 cfs 0.011 af

**Pond 1Po: combined ponds** Peak Elev=882.47' Storage=6,662 cf Inflow=5.33 cfs 0.377 af
Primary=1.07 cfs 0.316 af Secondary=0.06 cfs 0.061 af Outflow=1.13 cfs 0.377 af

**Link 3ES: Existing Basin discharge** Inflow=3.79 cfs 0.326 af
Primary=3.79 cfs 0.326 af

**Link 3PS: Developed Basin discharge** Inflow=1.40 cfs 0.353 af
Primary=1.40 cfs 0.353 af

**Link 4Z: infiltrated to ground** Inflow=0.06 cfs 0.061 af
Primary=0.06 cfs 0.061 af

**Total Runoff Area = 2.208 ac Runoff Volume = 0.740 af Average Runoff Depth = 4.02"**
**75.27% Pervious = 1.662 ac 24.73% Impervious = 0.546 ac**

## Summary for Subcatchment 1E: Existing Basin

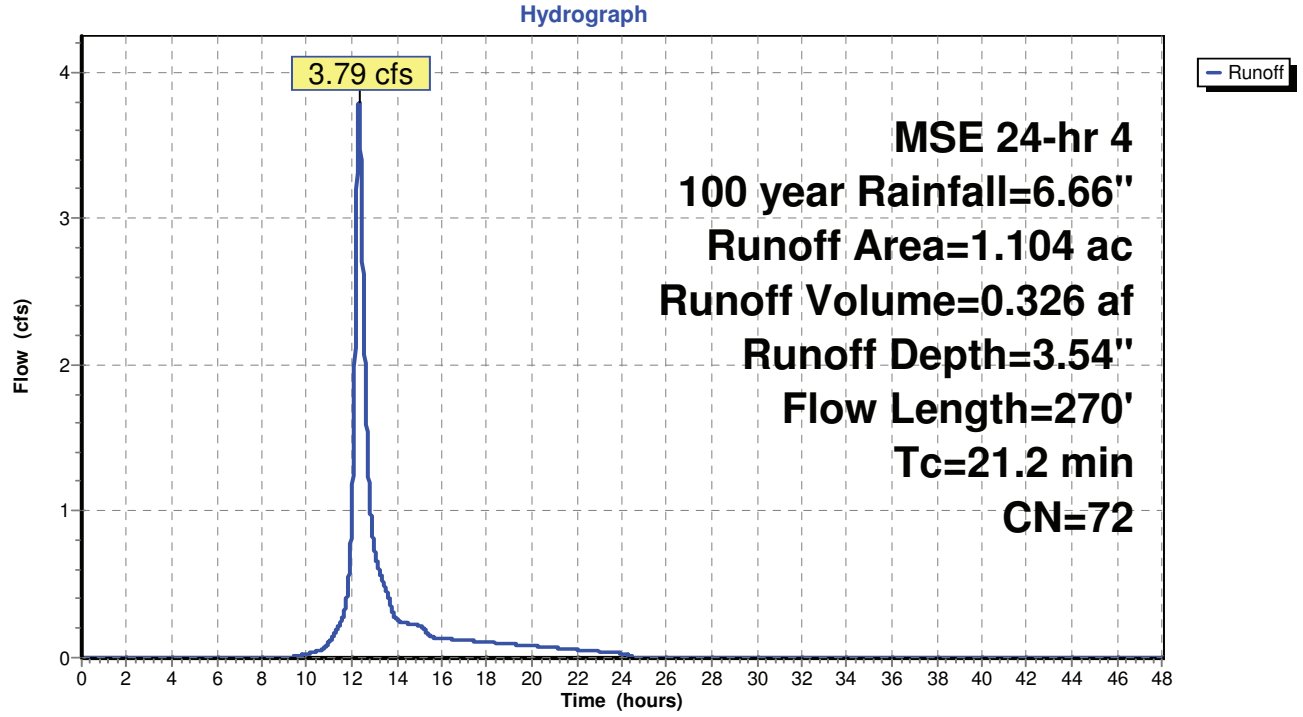
Runoff = 3.79 cfs @ 12.32 hrs, Volume= 0.326 af, Depth= 3.54"
Routed to Link 3ES : Existing Basin discharge

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 |
| * | 0.414 | 78 | Exi ag field, HSG C |
| | 1.104 | 72 | Weighted Average |
| | 1.086 | | 98.37% Pervious Area |
| | 0.018 | | 1.63% 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



## Hydrograph for Subcatchment 1E: Existing Basin

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|---|---|---|---|
| 0.00 | 0.00 | 0.00 | 0.00 |
| 0.50 | 0.01 | 0.00 | 0.00 |
| 1.00 | 0.03 | 0.00 | 0.00 |
| 1.50 | 0.05 | 0.00 | 0.00 |
| 2.00 | 0.08 | 0.00 | 0.00 |
| 2.50 | 0.11 | 0.00 | 0.00 |
| 3.00 | 0.14 | 0.00 | 0.00 |
| 3.50 | 0.18 | 0.00 | 0.00 |
| 4.00 | 0.22 | 0.00 | 0.00 |
| 4.50 | 0.26 | 0.00 | 0.00 |
| 5.00 | 0.31 | 0.00 | 0.00 |
| 5.50 | 0.36 | 0.00 | 0.00 |
| 6.00 | 0.41 | 0.00 | 0.00 |
| 6.50 | 0.47 | 0.00 | 0.00 |
| 7.00 | 0.53 | 0.00 | 0.00 |
| 7.50 | 0.59 | 0.00 | 0.00 |
| 8.00 | 0.66 | 0.00 | 0.00 |
| 8.50 | 0.73 | 0.00 | 0.00 |
| 9.00 | 0.81 | 0.00 | 0.00 |
| 9.50 | 0.93 | 0.01 | 0.01 |
| 10.00 | 1.05 | 0.02 | 0.03 |
| 10.50 | 1.19 | 0.04 | 0.04 |
| 11.00 | 1.44 | 0.10 | 0.11 |
| 11.50 | 1.81 | 0.22 | 0.24 |
| 12.00 | 3.12 | 0.88 | **0.97** |
| 12.50 | 4.85 | 2.08 | **2.55** |
| 13.00 | 5.22 | 2.37 | 0.75 |
| 13.50 | 5.47 | 2.56 | 0.47 |
| 14.00 | 5.61 | 2.67 | 0.26 |
| 14.50 | 5.73 | 2.78 | 0.23 |
| 15.00 | 5.85 | 2.87 | 0.22 |
| 15.50 | 5.93 | 2.94 | 0.15 |
| 16.00 | 6.00 | 2.99 | 0.13 |
| 16.50 | 6.07 | 3.05 | 0.12 |
| 17.00 | 6.13 | 3.10 | 0.12 |
| 17.50 | 6.19 | 3.15 | 0.11 |
| 18.00 | 6.25 | 3.20 | 0.11 |
| 18.50 | 6.30 | 3.24 | 0.10 |
| 19.00 | 6.35 | 3.29 | 0.09 |
| 19.50 | 6.40 | 3.32 | 0.09 |
| 20.00 | 6.44 | 3.36 | 0.08 |
| 20.50 | 6.48 | 3.39 | 0.07 |
| 21.00 | 6.52 | 3.42 | 0.07 |
| 21.50 | 6.55 | 3.45 | 0.06 |
| 22.00 | 6.58 | 3.47 | 0.05 |
| 22.50 | 6.61 | 3.50 | 0.05 |
| 23.00 | 6.63 | 3.51 | 0.04 |
| 23.50 | 6.65 | 3.53 | 0.04 |
| 24.00 | **6.66** | **3.54** | 0.03 |
| 24.50 | 6.66 | 3.54 | 0.00 |
| 25.00 | 6.66 | 3.54 | 0.00 |
| 25.50 | 6.66 | 3.54 | 0.00 |
| 26.00 | 6.66 | 3.54 | 0.00 |
| 26.50 | 6.66 | 3.54 | 0.00 |
| 27.00 | 6.66 | 3.54 | 0.00 |
| 27.50 | 6.66 | 3.54 | 0.00 |
| 28.00 | 6.66 | 3.54 | 0.00 |
| 28.50 | 6.66 | 3.54 | 0.00 |
| 29.00 | 6.66 | 3.54 | 0.00 |
| 29.50 | 6.66 | 3.54 | 0.00 |
| 30.00 | 6.66 | 3.54 | 0.00 |
| 30.50 | 6.66 | 3.54 | 0.00 |
| 31.00 | 6.66 | 3.54 | 0.00 |
| 31.50 | 6.66 | 3.54 | 0.00 |
| 32.00 | 6.66 | 3.54 | 0.00 |
| 32.50 | 6.66 | 3.54 | 0.00 |
| 33.00 | 6.66 | 3.54 | 0.00 |
| 33.50 | 6.66 | 3.54 | 0.00 |
| 34.00 | 6.66 | 3.54 | 0.00 |
| 34.50 | 6.66 | 3.54 | 0.00 |
| 35.00 | 6.66 | 3.54 | 0.00 |
| 35.50 | 6.66 | 3.54 | 0.00 |
| 36.00 | 6.66 | 3.54 | 0.00 |
| 36.50 | 6.66 | 3.54 | 0.00 |
| 37.00 | 6.66 | 3.54 | 0.00 |
| 37.50 | 6.66 | 3.54 | 0.00 |
| 38.00 | 6.66 | 3.54 | 0.00 |
| 38.50 | 6.66 | 3.54 | 0.00 |
| 39.00 | 6.66 | 3.54 | 0.00 |
| 39.50 | 6.66 | 3.54 | 0.00 |
| 40.00 | 6.66 | 3.54 | 0.00 |
| 40.50 | 6.66 | 3.54 | 0.00 |
| 41.00 | 6.66 | 3.54 | 0.00 |
| 41.50 | 6.66 | 3.54 | 0.00 |
| 42.00 | 6.66 | 3.54 | 0.00 |
| 42.50 | 6.66 | 3.54 | 0.00 |
| 43.00 | 6.66 | 3.54 | 0.00 |
| 43.50 | 6.66 | 3.54 | 0.00 |
| 44.00 | 6.66 | 3.54 | 0.00 |
| 44.50 | 6.66 | 3.54 | 0.00 |
| 45.00 | 6.66 | 3.54 | 0.00 |
| 45.50 | 6.66 | 3.54 | 0.00 |
| 46.00 | 6.66 | 3.54 | 0.00 |
| 46.50 | 6.66 | 3.54 | 0.00 |
| 47.00 | 6.66 | 3.54 | 0.00 |
| 47.50 | 6.66 | 3.54 | 0.00 |
| 48.00 | 6.66 | 3.54 | 0.00 |

## Summary for Subcatchment 1P: Developed Basin

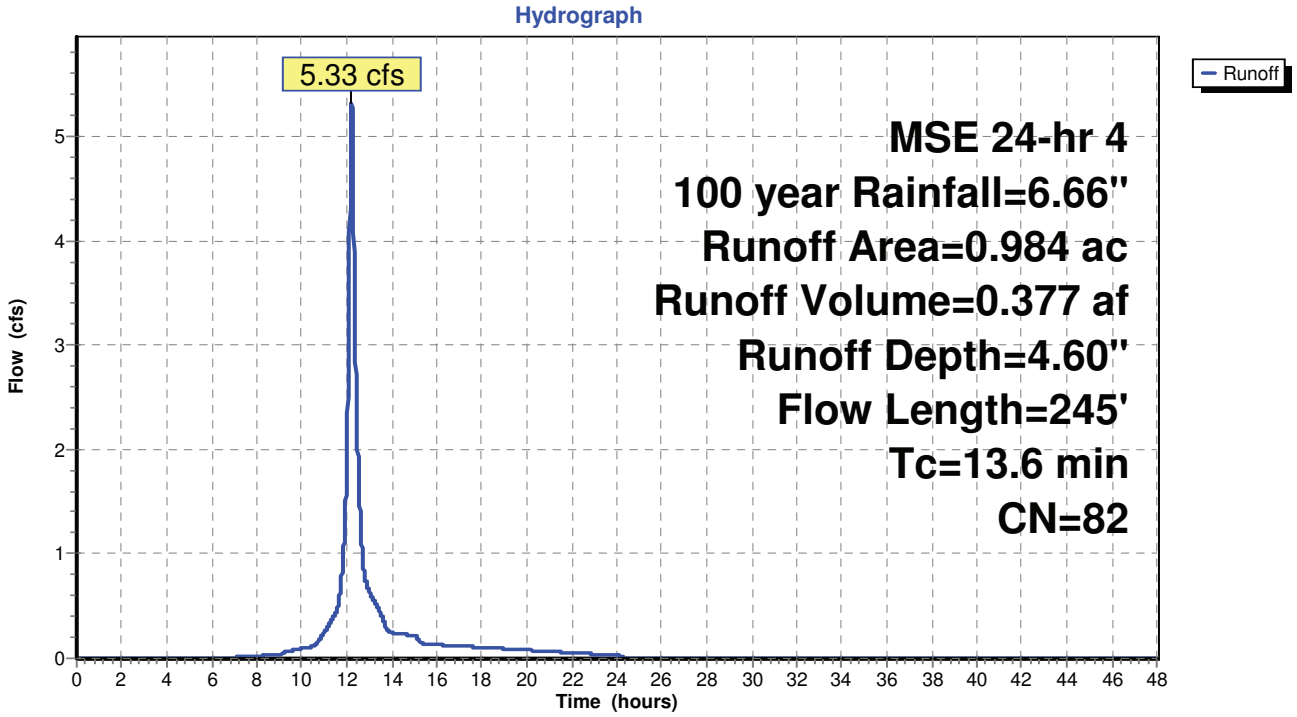
Runoff = 5.33 cfs @ 12.21 hrs, Volume= 0.377 af, Depth= 4.60"
Routed to Pond 1Po : combined ponds

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 |
| * | 0.238 | 98 | New roof |
| * | 0.252 | 98 | New pvmt |
| * | 0.212 | 61 | New yard, HSG B |
| * | 0.062 | 68 | New yard, HSG C |
| | 0.984 | 82 | Weighted Average |
| | 0.476 | | 48.37% Pervious Area |
| | 0.508 | | 51.63% 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**<br>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**<br>Kv= 6.0 fps |
| 13.6 | 245 | Total | | | |

## Subcatchment 1P: Developed Basin



## Hydrograph for Subcatchment 1P: Developed Basin

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|---|---|---|---|
| 0.00 | 0.00 | 0.00 | 0.00 |
| 0.50 | 0.01 | 0.00 | 0.00 |
| 1.00 | 0.03 | 0.00 | 0.00 |
| 1.50 | 0.05 | 0.00 | 0.00 |
| 2.00 | 0.08 | 0.00 | 0.00 |
| 2.50 | 0.11 | 0.00 | 0.00 |
| 3.00 | 0.14 | 0.00 | 0.00 |
| 3.50 | 0.18 | 0.00 | 0.00 |
| 4.00 | 0.22 | 0.00 | 0.00 |
| 4.50 | 0.26 | 0.00 | 0.00 |
| 5.00 | 0.31 | 0.00 | 0.00 |
| 5.50 | 0.36 | 0.00 | 0.00 |
| 6.00 | 0.41 | 0.00 | 0.00 |
| 6.50 | 0.47 | 0.00 | 0.00 |
| 7.00 | 0.53 | 0.00 | 0.01 |
| 7.50 | 0.59 | 0.01 | 0.01 |
| 8.00 | 0.66 | 0.02 | 0.02 |
| 8.50 | 0.73 | 0.03 | 0.03 |
| 9.00 | 0.81 | 0.05 | 0.04 |
| 9.50 | 0.93 | 0.09 | 0.07 |
| 10.00 | 1.05 | 0.13 | 0.09 |
| 10.50 | 1.19 | 0.19 | 0.11 |
| 11.00 | 1.44 | 0.31 | 0.25 |
| 11.50 | 1.81 | 0.53 | 0.44 |
| 12.00 | 3.12 | 1.47 | **1.89** |
| 12.50 | 4.85 | 2.95 | **1.86** |
| 13.00 | 5.22 | 3.28 | 0.64 |
| 13.50 | 5.47 | 3.50 | 0.43 |
| 14.00 | 5.61 | 3.63 | 0.25 |
| 14.50 | 5.73 | 3.74 | 0.23 |
| 15.00 | 5.85 | 3.85 | 0.22 |
| 15.50 | 5.93 | 3.92 | 0.14 |
| 16.00 | 6.00 | 3.99 | 0.13 |
| 16.50 | 6.07 | 4.05 | 0.12 |
| 17.00 | 6.13 | 4.11 | 0.12 |
| 17.50 | 6.19 | 4.17 | 0.11 |
| 18.00 | 6.25 | 4.22 | 0.10 |
| 18.50 | 6.30 | 4.27 | 0.10 |
| 19.00 | 6.35 | 4.31 | 0.09 |
| 19.50 | 6.40 | 4.36 | 0.09 |
| 20.00 | 6.44 | 4.40 | 0.08 |
| 20.50 | 6.48 | 4.43 | 0.07 |
| 21.00 | 6.52 | 4.47 | 0.07 |
| 21.50 | 6.55 | 4.50 | 0.06 |
| 22.00 | 6.58 | 4.52 | 0.05 |
| 22.50 | 6.61 | 4.55 | 0.05 |
| 23.00 | 6.63 | 4.57 | 0.04 |
| 23.50 | 6.65 | 4.58 | 0.03 |
| 24.00 | **6.66** | **4.60** | 0.03 |
| 24.50 | 6.66 | 4.60 | 0.00 |
| 25.00 | 6.66 | 4.60 | 0.00 |
| 25.50 | 6.66 | 4.60 | 0.00 |
| 26.00 | 6.66 | 4.60 | 0.00 |
| 26.50 | 6.66 | 4.60 | 0.00 |
| 27.00 | 6.66 | 4.60 | 0.00 |
| 27.50 | 6.66 | 4.60 | 0.00 |
| 28.00 | 6.66 | 4.60 | 0.00 |
| 28.50 | 6.66 | 4.60 | 0.00 |
| 29.00 | 6.66 | 4.60 | 0.00 |
| 29.50 | 6.66 | 4.60 | 0.00 |
| 30.00 | 6.66 | 4.60 | 0.00 |
| 30.50 | 6.66 | 4.60 | 0.00 |
| 31.00 | 6.66 | 4.60 | 0.00 |
| 31.50 | 6.66 | 4.60 | 0.00 |
| 32.00 | 6.66 | 4.60 | 0.00 |
| 32.50 | 6.66 | 4.60 | 0.00 |
| 33.00 | 6.66 | 4.60 | 0.00 |
| 33.50 | 6.66 | 4.60 | 0.00 |
| 34.00 | 6.66 | 4.60 | 0.00 |
| 34.50 | 6.66 | 4.60 | 0.00 |
| 35.00 | 6.66 | 4.60 | 0.00 |
| 35.50 | 6.66 | 4.60 | 0.00 |
| 36.00 | 6.66 | 4.60 | 0.00 |
| 36.50 | 6.66 | 4.60 | 0.00 |
| 37.00 | 6.66 | 4.60 | 0.00 |
| 37.50 | 6.66 | 4.60 | 0.00 |
| 38.00 | 6.66 | 4.60 | 0.00 |
| 38.50 | 6.66 | 4.60 | 0.00 |
| 39.00 | 6.66 | 4.60 | 0.00 |
| 39.50 | 6.66 | 4.60 | 0.00 |
| 40.00 | 6.66 | 4.60 | 0.00 |
| 40.50 | 6.66 | 4.60 | 0.00 |
| 41.00 | 6.66 | 4.60 | 0.00 |
| 41.50 | 6.66 | 4.60 | 0.00 |
| 42.00 | 6.66 | 4.60 | 0.00 |
| 42.50 | 6.66 | 4.60 | 0.00 |
| 43.00 | 6.66 | 4.60 | 0.00 |
| 43.50 | 6.66 | 4.60 | 0.00 |
| 44.00 | 6.66 | 4.60 | 0.00 |
| 44.50 | 6.66 | 4.60 | 0.00 |
| 45.00 | 6.66 | 4.60 | 0.00 |
| 45.50 | 6.66 | 4.60 | 0.00 |
| 46.00 | 6.66 | 4.60 | 0.00 |
| 46.50 | 6.66 | 4.60 | 0.00 |
| 47.00 | 6.66 | 4.60 | 0.00 |
| 47.50 | 6.66 | 4.60 | 0.00 |
| 48.00 | 6.66 | 4.60 | 0.00 |

## Summary for Subcatchment 2P: East Basin-untreated

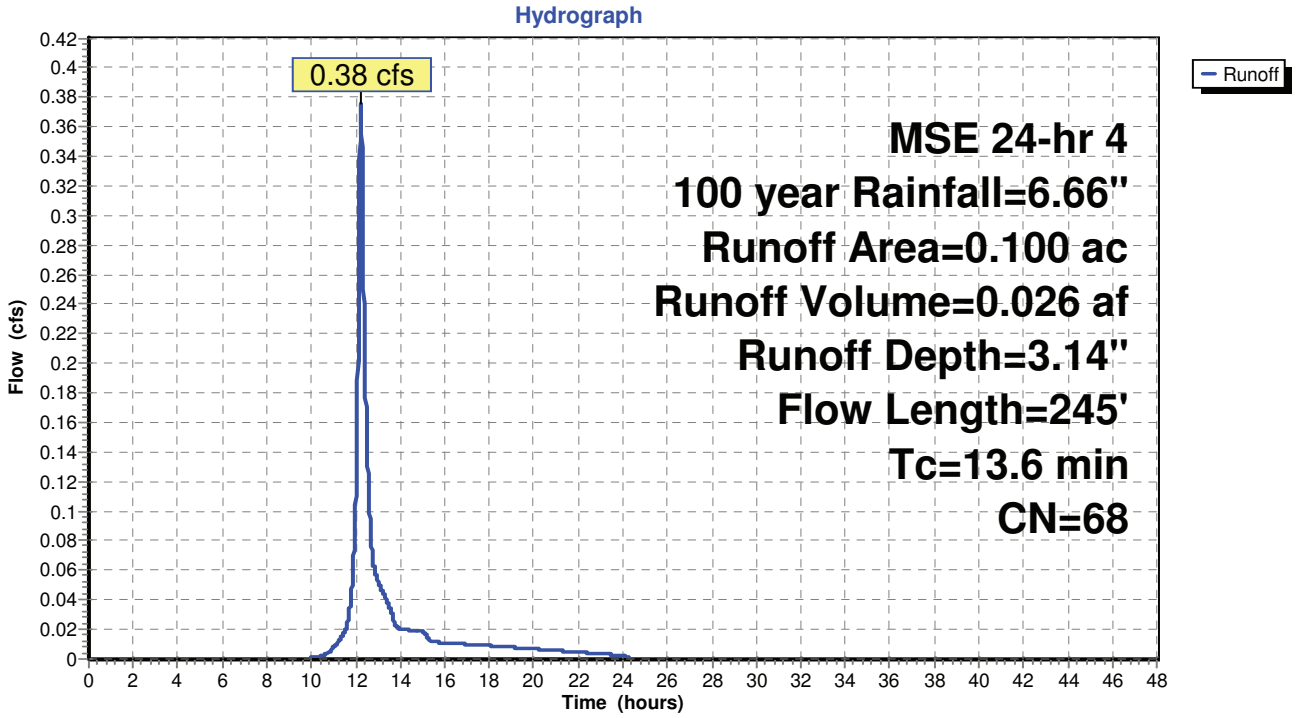
Runoff = 0.38 cfs @ 12.22 hrs, Volume= 0.026 af, Depth= 3.14"
Routed to Link 3PS : Developed Basin discharge

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 |
|---|---|---|---|
| * | 0.100 | 68 | New yard, HSG C |
| | 0.100 | | 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



## Hydrograph for Subcatchment 2P: East Basin-untreated

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|---|---|---|---|
| 0.00 | 0.00 | 0.00 | 0.00 |
| 0.50 | 0.01 | 0.00 | 0.00 |
| 1.00 | 0.03 | 0.00 | 0.00 |
| 1.50 | 0.05 | 0.00 | 0.00 |
| 2.00 | 0.08 | 0.00 | 0.00 |
| 2.50 | 0.11 | 0.00 | 0.00 |
| 3.00 | 0.14 | 0.00 | 0.00 |
| 3.50 | 0.18 | 0.00 | 0.00 |
| 4.00 | 0.22 | 0.00 | 0.00 |
| 4.50 | 0.26 | 0.00 | 0.00 |
| 5.00 | 0.31 | 0.00 | 0.00 |
| 5.50 | 0.36 | 0.00 | 0.00 |
| 6.00 | 0.41 | 0.00 | 0.00 |
| 6.50 | 0.47 | 0.00 | 0.00 |
| 7.00 | 0.53 | 0.00 | 0.00 |
| 7.50 | 0.59 | 0.00 | 0.00 |
| 8.00 | 0.66 | 0.00 | 0.00 |
| 8.50 | 0.73 | 0.00 | 0.00 |
| 9.00 | 0.81 | 0.00 | 0.00 |
| 9.50 | 0.93 | 0.00 | 0.00 |
| 10.00 | 1.05 | 0.00 | 0.00 |
| 10.50 | 1.19 | 0.01 | 0.00 |
| 11.00 | 1.44 | 0.05 | 0.01 |
| 11.50 | 1.81 | 0.13 | 0.02 |
| 12.00 | 3.12 | 0.69 | **0.11** |
| 12.50 | 4.85 | 1.77 | **0.14** |
| 13.00 | 5.22 | 2.04 | 0.05 |
| 13.50 | 5.47 | 2.22 | 0.04 |
| 14.00 | 5.61 | 2.32 | 0.02 |
| 14.50 | 5.73 | 2.42 | 0.02 |
| 15.00 | 5.85 | 2.51 | 0.02 |
| 15.50 | 5.93 | 2.57 | 0.01 |
| 16.00 | 6.00 | 2.62 | 0.01 |
| 16.50 | 6.07 | 2.67 | 0.01 |
| 17.00 | 6.13 | 2.72 | 0.01 |
| 17.50 | 6.19 | 2.77 | 0.01 |
| 18.00 | 6.25 | 2.81 | 0.01 |
| 18.50 | 6.30 | 2.86 | 0.01 |
| 19.00 | 6.35 | 2.90 | 0.01 |
| 19.50 | 6.40 | 2.93 | 0.01 |
| 20.00 | 6.44 | 2.97 | 0.01 |
| 20.50 | 6.48 | 3.00 | 0.01 |
| 21.00 | 6.52 | 3.03 | 0.01 |
| 21.50 | 6.55 | 3.05 | 0.01 |
| 22.00 | 6.58 | 3.07 | 0.00 |
| 22.50 | 6.61 | 3.09 | 0.00 |
| 23.00 | 6.63 | 3.11 | 0.00 |
| 23.50 | 6.65 | 3.13 | 0.00 |
| 24.00 | **6.66** | **3.14** | 0.00 |
| 24.50 | 6.66 | 3.14 | 0.00 |
| 25.00 | 6.66 | 3.14 | 0.00 |
| 25.50 | 6.66 | 3.14 | 0.00 |
| 26.00 | 6.66 | 3.14 | 0.00 |
| 26.50 | 6.66 | 3.14 | 0.00 |
| 27.00 | 6.66 | 3.14 | 0.00 |
| 27.50 | 6.66 | 3.14 | 0.00 |
| 28.00 | 6.66 | 3.14 | 0.00 |
| 28.50 | 6.66 | 3.14 | 0.00 |
| 29.00 | 6.66 | 3.14 | 0.00 |
| 29.50 | 6.66 | 3.14 | 0.00 |
| 30.00 | 6.66 | 3.14 | 0.00 |
| 30.50 | 6.66 | 3.14 | 0.00 |
| 31.00 | 6.66 | 3.14 | 0.00 |
| 31.50 | 6.66 | 3.14 | 0.00 |
| 32.00 | 6.66 | 3.14 | 0.00 |
| 32.50 | 6.66 | 3.14 | 0.00 |
| 33.00 | 6.66 | 3.14 | 0.00 |
| 33.50 | 6.66 | 3.14 | 0.00 |
| 34.00 | 6.66 | 3.14 | 0.00 |
| 34.50 | 6.66 | 3.14 | 0.00 |
| 35.00 | 6.66 | 3.14 | 0.00 |
| 35.50 | 6.66 | 3.14 | 0.00 |
| 36.00 | 6.66 | 3.14 | 0.00 |
| 36.50 | 6.66 | 3.14 | 0.00 |
| 37.00 | 6.66 | 3.14 | 0.00 |
| 37.50 | 6.66 | 3.14 | 0.00 |
| 38.00 | 6.66 | 3.14 | 0.00 |
| 38.50 | 6.66 | 3.14 | 0.00 |
| 39.00 | 6.66 | 3.14 | 0.00 |
| 39.50 | 6.66 | 3.14 | 0.00 |
| 40.00 | 6.66 | 3.14 | 0.00 |
| 40.50 | 6.66 | 3.14 | 0.00 |
| 41.00 | 6.66 | 3.14 | 0.00 |
| 41.50 | 6.66 | 3.14 | 0.00 |
| 42.00 | 6.66 | 3.14 | 0.00 |
| 42.50 | 6.66 | 3.14 | 0.00 |
| 43.00 | 6.66 | 3.14 | 0.00 |
| 43.50 | 6.66 | 3.14 | 0.00 |
| 44.00 | 6.66 | 3.14 | 0.00 |
| 44.50 | 6.66 | 3.14 | 0.00 |
| 45.00 | 6.66 | 3.14 | 0.00 |
| 45.50 | 6.66 | 3.14 | 0.00 |
| 46.00 | 6.66 | 3.14 | 0.00 |
| 46.50 | 6.66 | 3.14 | 0.00 |
| 47.00 | 6.66 | 3.14 | 0.00 |
| 47.50 | 6.66 | 3.14 | 0.00 |
| 48.00 | 6.66 | 3.14 | 0.00 |

## Summary for Subcatchment 3P: West Basin-untreated

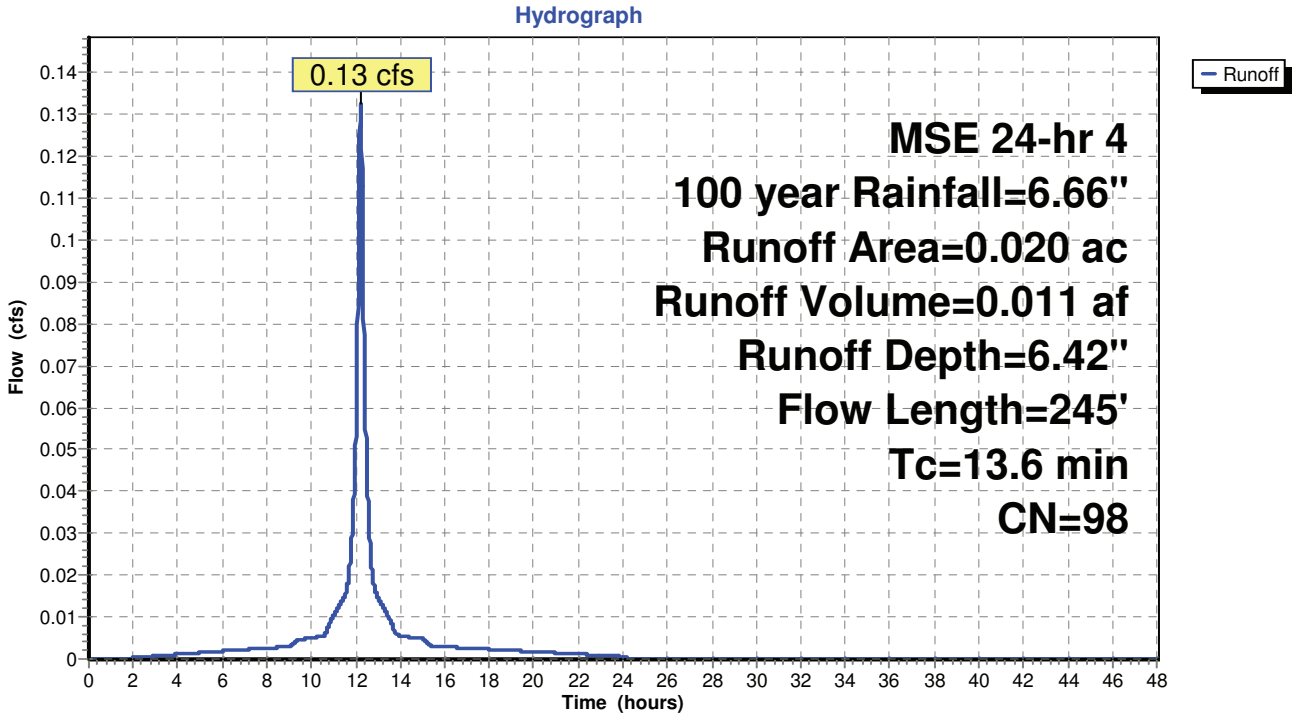
Runoff = 0.13 cfs @ 12.21 hrs, Volume= 0.011 af, Depth= 6.42"
Routed to Link 3PS : Developed Basin discharge

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 |
|---|---|---|---|
| * | 0.020 | 98 | New pvmt |
| | 0.020 | | 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



## Hydrograph for Subcatchment 3P: West Basin-untreated

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|---|---|---|---|
| 0.00 | 0.00 | 0.00 | 0.00 |
| 0.50 | 0.01 | 0.00 | 0.00 |
| 1.00 | 0.03 | 0.00 | 0.00 |
| 1.50 | 0.05 | 0.00 | 0.00 |
| 2.00 | 0.08 | 0.01 | 0.00 |
| 2.50 | 0.11 | 0.02 | 0.00 |
| 3.00 | 0.14 | 0.03 | 0.00 |
| 3.50 | 0.18 | 0.05 | 0.00 |
| 4.00 | 0.22 | 0.08 | 0.00 |
| 4.50 | 0.26 | 0.11 | 0.00 |
| 5.00 | 0.31 | 0.15 | 0.00 |
| 5.50 | 0.36 | 0.19 | 0.00 |
| 6.00 | 0.41 | 0.24 | 0.00 |
| 6.50 | 0.47 | 0.29 | 0.00 |
| 7.00 | 0.53 | 0.34 | 0.00 |
| 7.50 | 0.59 | 0.40 | 0.00 |
| 8.00 | 0.66 | 0.47 | 0.00 |
| 8.50 | 0.73 | 0.53 | 0.00 |
| 9.00 | 0.81 | 0.60 | 0.00 |
| 9.50 | 0.93 | 0.72 | 0.00 |
| 10.00 | 1.05 | 0.84 | 0.01 |
| 10.50 | 1.19 | 0.98 | 0.01 |
| 11.00 | 1.44 | 1.22 | 0.01 |
| 11.50 | 1.81 | 1.58 | 0.02 |
| 12.00 | 3.12 | 2.89 | **0.05** |
| 12.50 | 4.85 | 4.62 | **0.04** |
| 13.00 | 5.22 | 4.98 | 0.01 |
| 13.50 | 5.47 | 5.23 | 0.01 |
| 14.00 | 5.61 | 5.37 | 0.01 |
| 14.50 | 5.73 | 5.50 | 0.01 |
| 15.00 | 5.85 | 5.62 | 0.00 |
| 15.50 | 5.93 | 5.69 | 0.00 |
| 16.00 | 6.00 | 5.76 | 0.00 |
| 16.50 | 6.07 | 5.83 | 0.00 |
| 17.00 | 6.13 | 5.89 | 0.00 |
| 17.50 | 6.19 | 5.95 | 0.00 |
| 18.00 | 6.25 | 6.01 | 0.00 |
| 18.50 | 6.30 | 6.07 | 0.00 |
| 19.00 | 6.35 | 6.12 | 0.00 |
| 19.50 | 6.40 | 6.16 | 0.00 |
| 20.00 | 6.44 | 6.21 | 0.00 |
| 20.50 | 6.48 | 6.24 | 0.00 |
| 21.00 | 6.52 | 6.28 | 0.00 |
| 21.50 | 6.55 | 6.31 | 0.00 |
| 22.00 | 6.58 | 6.34 | 0.00 |
| 22.50 | 6.61 | 6.37 | 0.00 |
| 23.00 | 6.63 | 6.39 | 0.00 |
| 23.50 | 6.65 | 6.41 | 0.00 |
| 24.00 | **6.66** | **6.42** | 0.00 |
| 24.50 | 6.66 | 6.42 | 0.00 |
| 25.00 | 6.66 | 6.42 | 0.00 |
| 25.50 | 6.66 | 6.42 | 0.00 |
| 26.00 | 6.66 | 6.42 | 0.00 |
| 26.50 | 6.66 | 6.42 | 0.00 |
| 27.00 | 6.66 | 6.42 | 0.00 |
| 27.50 | 6.66 | 6.42 | 0.00 |
| 28.00 | 6.66 | 6.42 | 0.00 |
| 28.50 | 6.66 | 6.42 | 0.00 |
| 29.00 | 6.66 | 6.42 | 0.00 |
| 29.50 | 6.66 | 6.42 | 0.00 |
| 30.00 | 6.66 | 6.42 | 0.00 |
| 30.50 | 6.66 | 6.42 | 0.00 |
| 31.00 | 6.66 | 6.42 | 0.00 |
| 31.50 | 6.66 | 6.42 | 0.00 |
| 32.00 | 6.66 | 6.42 | 0.00 |
| 32.50 | 6.66 | 6.42 | 0.00 |
| 33.00 | 6.66 | 6.42 | 0.00 |
| 33.50 | 6.66 | 6.42 | 0.00 |
| 34.00 | 6.66 | 6.42 | 0.00 |
| 34.50 | 6.66 | 6.42 | 0.00 |
| 35.00 | 6.66 | 6.42 | 0.00 |
| 35.50 | 6.66 | 6.42 | 0.00 |
| 36.00 | 6.66 | 6.42 | 0.00 |
| 36.50 | 6.66 | 6.42 | 0.00 |
| 37.00 | 6.66 | 6.42 | 0.00 |
| 37.50 | 6.66 | 6.42 | 0.00 |
| 38.00 | 6.66 | 6.42 | 0.00 |
| 38.50 | 6.66 | 6.42 | 0.00 |
| 39.00 | 6.66 | 6.42 | 0.00 |
| 39.50 | 6.66 | 6.42 | 0.00 |
| 40.00 | 6.66 | 6.42 | 0.00 |
| 40.50 | 6.66 | 6.42 | 0.00 |
| 41.00 | 6.66 | 6.42 | 0.00 |
| 41.50 | 6.66 | 6.42 | 0.00 |
| 42.00 | 6.66 | 6.42 | 0.00 |
| 42.50 | 6.66 | 6.42 | 0.00 |
| 43.00 | 6.66 | 6.42 | 0.00 |
| 43.50 | 6.66 | 6.42 | 0.00 |
| 44.00 | 6.66 | 6.42 | 0.00 |
| 44.50 | 6.66 | 6.42 | 0.00 |
| 45.00 | 6.66 | 6.42 | 0.00 |
| 45.50 | 6.66 | 6.42 | 0.00 |
| 46.00 | 6.66 | 6.42 | 0.00 |
| 46.50 | 6.66 | 6.42 | 0.00 |
| 47.00 | 6.66 | 6.42 | 0.00 |
| 47.50 | 6.66 | 6.42 | 0.00 |
| 48.00 | 6.66 | 6.42 | 0.00 |

## Summary for Pond 1Po: combined ponds

Inflow Area = 0.984 ac, 51.63% Impervious, Inflow Depth = 4.60" for 100 year event
Inflow = 5.33 cfs @ 12.21 hrs, Volume= 0.377 af
Outflow = 1.13 cfs @ 12.65 hrs, Volume= 0.377 af, Atten= 79%, Lag= 26.1 min
Primary = 1.07 cfs @ 12.65 hrs, Volume= 0.316 af
Routed to Link 3PS : Developed Basin discharge
Secondary = 0.06 cfs @ 12.65 hrs, Volume= 0.061 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= 882.47' @ 12.65 hrs Surf.Area= 5,348 sf Storage= 6,662 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 78.6 min ( 881.1 - 802.5 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 880.00' | 11,781 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**<br>2,400 cf Overall x 0.0% Voids |
| | | 11,781 cf | Total Available Storage |

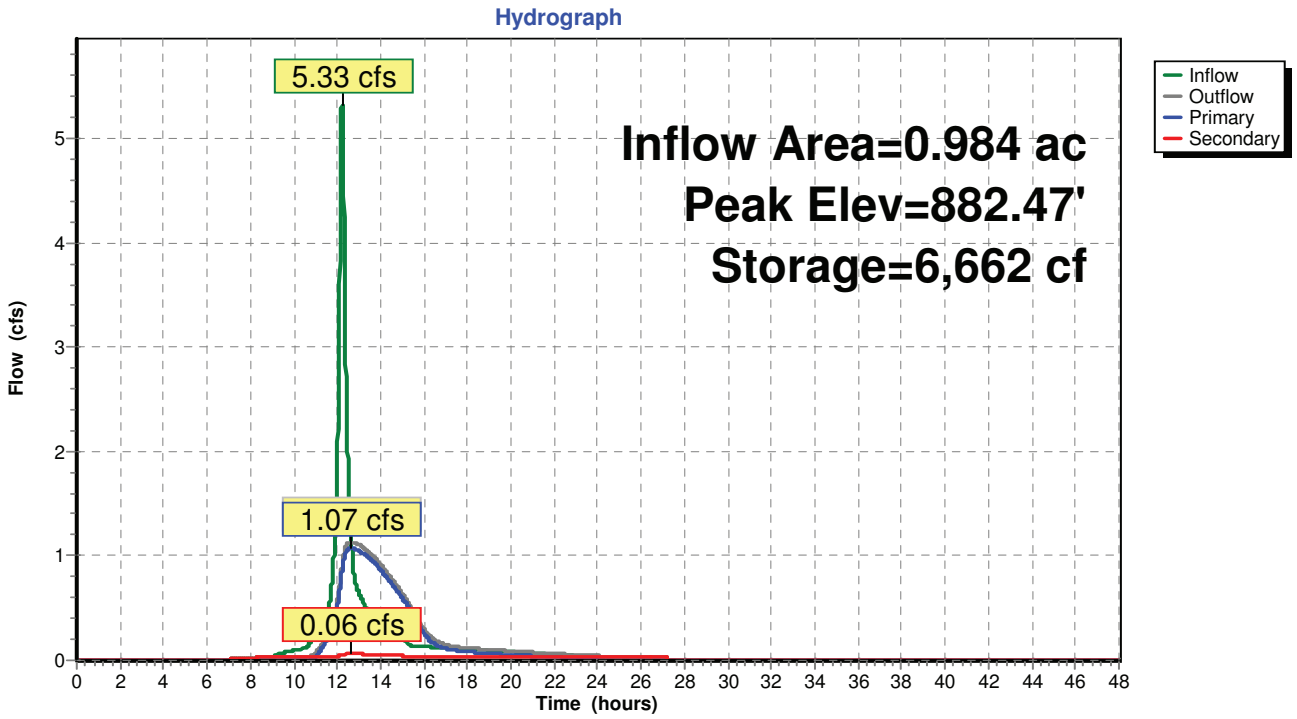
| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|---|---|---|---|
| 880.00 | 1,642 | 0 | 0 |
| 881.00 | 2,385 | 2,014 | 2,014 |
| 882.00 | 3,357 | 2,871 | 4,885 |
| 883.00 | 5,028 | 4,193 | 9,077 |
| 883.50 | 5,789 | 2,704 | 11,781 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Secondary | 878.00' | **0.500 in/hr Bio-filter Infiltration to native ground over Surface area**<br>Phase-In= 0.01' |
| #2 | Primary | 880.16' | **6.0" Round Pond discharge pipe**<br>L= 82.0' CPP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 880.16' / 877.00' S= 0.0385 '/' Cc= 0.900<br>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**<br>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<br>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=1.07 cfs @ 12.65 hrs HW=882.47' TW=0.00' (Dynamic Tailwater)
└─**2=Pond discharge pipe** (Inlet Controls 1.07 cfs @ 5.46 fps)
└─**3=Overflow Weir to street** ( Controls 0.00 cfs)

**Secondary OutFlow** Max=0.06 cfs @ 12.65 hrs HW=882.47' TW=0.00' (Dynamic Tailwater)
└─**1=Bio-filter Infiltration to native ground** (Exfiltration Controls 0.06 cfs)

## Pond 1Po: combined ponds



## Hydrograph for Pond 1Po: combined ponds

| Time (hours) | Inflow (cfs) | Storage (cubic-feet) | Elevation (feet) | Outflow (cfs) | Primary (cfs) | Secondary (cfs) |
|---|---|---|---|---|---|---|
| 0.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 1.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 2.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 3.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 4.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 5.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 6.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 7.00 | 0.01 | 0 | 878.00 | 0.01 | 0.00 | 0.01 |
| 8.00 | 0.02 | 0 | 880.00 | 0.02 | 0.00 | 0.02 |
| 9.00 | 0.04 | 2 | 880.00 | 0.03 | 0.00 | 0.03 |
| 10.00 | 0.09 | 132 | 880.08 | 0.03 | 0.00 | 0.03 |
| 11.00 | 0.25 | 494 | 880.28 | 0.07 | 0.04 | 0.04 |
| 12.00 | **1.89** | **1,760** | **880.89** | **0.56** | **0.52** | **0.04** |
| 13.00 | **0.64** | **6,255** | **882.37** | **1.11** | **1.05** | **0.06** |
| 14.00 | 0.25 | 4,094 | 881.76 | 0.92 | 0.87 | 0.05 |
| 15.00 | 0.22 | 2,121 | 881.04 | 0.64 | 0.59 | 0.04 |
| 16.00 | 0.13 | 978 | 880.53 | 0.29 | 0.26 | 0.04 |
| 17.00 | 0.12 | 697 | 880.39 | 0.15 | 0.11 | 0.04 |
| 18.00 | 0.10 | 624 | 880.35 | 0.12 | 0.08 | 0.04 |
| 19.00 | 0.09 | 584 | 880.33 | 0.10 | 0.07 | 0.04 |
| 20.00 | 0.08 | 549 | 880.31 | 0.09 | 0.05 | 0.04 |
| 21.00 | 0.07 | 512 | 880.29 | 0.08 | 0.04 | 0.04 |
| 22.00 | 0.05 | 472 | 880.27 | 0.06 | 0.03 | 0.04 |
| 23.00 | 0.04 | 427 | 880.25 | 0.05 | 0.02 | 0.04 |
| 24.00 | 0.03 | 374 | 880.22 | 0.04 | 0.01 | 0.03 |
| 25.00 | 0.00 | 259 | 880.15 | 0.03 | 0.00 | 0.03 |
| 26.00 | 0.00 | 137 | 880.08 | 0.03 | 0.00 | 0.03 |
| 27.00 | 0.00 | 17 | 880.01 | 0.03 | 0.00 | 0.03 |
| 28.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 29.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 30.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 31.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 32.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 33.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 34.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 35.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 36.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 37.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 38.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 39.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 40.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 41.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 42.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 43.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 44.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 45.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 46.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 47.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 48.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |

## Stage-Discharge for Pond 1Po: combined ponds

| Elevation (feet) | Discharge (cfs) | Primary (cfs) | Secondary (cfs) |
|---|---|---|---|
| 878.00 | 0.00 | 0.00 | 0.00 |
| 878.10 | 0.01 | 0.00 | 0.01 |
| 878.20 | 0.01 | 0.00 | 0.01 |
| 878.30 | 0.01 | 0.00 | 0.01 |
| 878.40 | 0.01 | 0.00 | 0.01 |
| 878.50 | 0.01 | 0.00 | 0.01 |
| 878.60 | 0.01 | 0.00 | 0.01 |
| 878.70 | 0.01 | 0.00 | 0.01 |
| 878.80 | 0.01 | 0.00 | 0.01 |
| 878.90 | 0.01 | 0.00 | 0.01 |
| 879.00 | 0.01 | 0.00 | 0.01 |
| 879.10 | 0.01 | 0.00 | 0.01 |
| 879.20 | 0.01 | 0.00 | 0.01 |
| 879.30 | 0.01 | 0.00 | 0.01 |
| 879.40 | 0.01 | 0.00 | 0.01 |
| 879.50 | 0.01 | 0.00 | 0.01 |
| 879.60 | 0.01 | 0.00 | 0.01 |
| 879.70 | 0.01 | 0.00 | 0.01 |
| 879.80 | 0.01 | 0.00 | 0.01 |
| 879.90 | 0.01 | 0.00 | 0.01 |
| 880.00 | 0.03 | 0.00 | 0.03 |
| 880.10 | 0.03 | 0.00 | 0.03 |
| 880.20 | 0.04 | 0.00 | 0.03 |
| 880.30 | 0.08 | 0.05 | 0.04 |
| 880.40 | 0.16 | 0.12 | 0.04 |
| 880.50 | 0.26 | 0.22 | 0.04 |
| 880.60 | 0.36 | 0.33 | 0.04 |
| 880.70 | 0.44 | 0.40 | 0.04 |
| 880.80 | 0.51 | 0.47 | 0.04 |
| 880.90 | 0.56 | 0.52 | 0.04 |
| 881.00 | 0.61 | 0.57 | 0.04 |
| 881.10 | 0.66 | 0.62 | 0.04 |
| 881.20 | 0.71 | 0.66 | 0.04 |
| 881.30 | 0.75 | 0.70 | 0.04 |
| 881.40 | 0.79 | 0.74 | 0.05 |
| 881.50 | 0.83 | 0.78 | 0.05 |
| 881.60 | 0.86 | 0.81 | 0.05 |
| 881.70 | 0.90 | 0.85 | 0.05 |
| 881.80 | 0.93 | 0.88 | 0.05 |
| 881.90 | 0.96 | 0.91 | 0.05 |
| 882.00 | 0.99 | 0.94 | 0.05 |
| 882.10 | 1.02 | 0.97 | 0.05 |
| 882.20 | 1.06 | 1.00 | 0.06 |
| 882.30 | 1.08 | 1.03 | 0.06 |
| 882.40 | 1.11 | 1.05 | 0.06 |
| 882.50 | 1.14 | 1.08 | 0.06 |
| 882.60 | 1.17 | 1.10 | 0.06 |
| 882.70 | 4.43 | 4.36 | 0.07 |
| 882.80 | 10.42 | 10.35 | 0.07 |
| 882.90 | 18.48 | 18.41 | 0.07 |
| 883.00 | 28.32 | 28.25 | 0.07 |
| 883.10 | 39.32 | 39.24 | 0.07 |
| 883.20 | 51.59 | 51.51 | 0.08 |
| 883.30 | 64.94 | 64.86 | 0.08 |
| 883.40 | 79.36 | 79.28 | 0.08 |
| 883.50 | **96.06** | **95.98** | **0.08** |

## Stage-Area-Storage for Pond 1Po: combined ponds

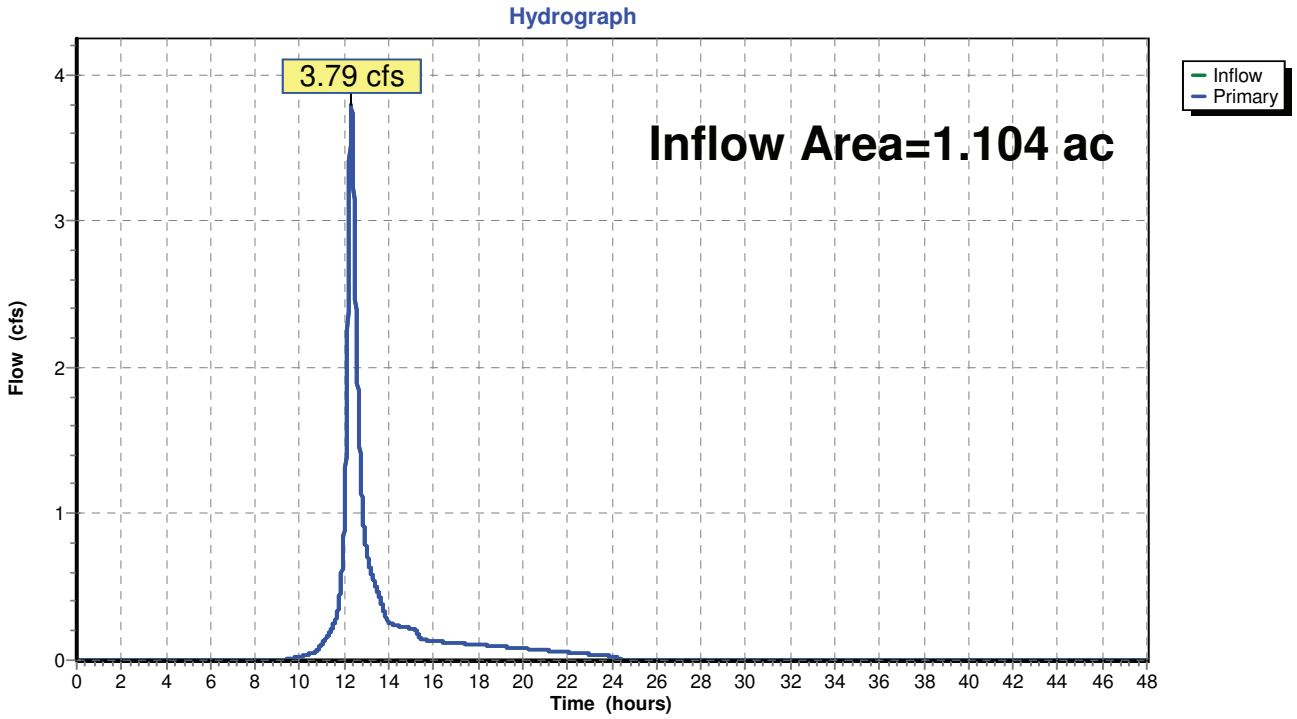
| Elevation (feet) | Surface (sq-ft) | Storage (cubic-feet) |
|---|---|---|
| 878.00 | 1,200 | 0 |
| 878.10 | 1,200 | 0 |
| 878.20 | 1,200 | 0 |
| 878.30 | 1,200 | 0 |
| 878.40 | 1,200 | 0 |
| 878.50 | 1,200 | 0 |
| 878.60 | 1,200 | 0 |
| 878.70 | 1,200 | 0 |
| 878.80 | 1,200 | 0 |
| 878.90 | 1,200 | 0 |
| 879.00 | 1,200 | 0 |
| 879.10 | 1,200 | 0 |
| 879.20 | 1,200 | 0 |
| 879.30 | 1,200 | 0 |
| 879.40 | 1,200 | 0 |
| 879.50 | 1,200 | 0 |
| 879.60 | 1,200 | 0 |
| 879.70 | 1,200 | 0 |
| 879.80 | 1,200 | 0 |
| 879.90 | 1,200 | 0 |
| 880.00 | 2,842 | 0 |
| 880.10 | 2,916 | 168 |
| 880.20 | 2,991 | 343 |
| 880.30 | 3,065 | 526 |
| 880.40 | 3,139 | 716 |
| 880.50 | 3,214 | 914 |
| 880.60 | 3,288 | 1,119 |
| 880.70 | 3,362 | 1,331 |
| 880.80 | 3,436 | 1,551 |
| 880.90 | 3,511 | 1,779 |
| 881.00 | 3,585 | 2,014 |
| 881.10 | 3,682 | 2,257 |
| 881.20 | 3,779 | 2,510 |
| 881.30 | 3,877 | 2,773 |
| 881.40 | 3,974 | 3,045 |
| 881.50 | 4,071 | 3,328 |
| 881.60 | 4,168 | 3,619 |
| 881.70 | 4,265 | 3,921 |
| 881.80 | 4,363 | 4,233 |
| 881.90 | 4,460 | 4,554 |
| 882.00 | 4,557 | 4,885 |
| 882.10 | 4,724 | 5,229 |
| 882.20 | 4,891 | 5,589 |
| 882.30 | 5,058 | 5,967 |
| 882.40 | 5,225 | 6,361 |
| 882.50 | 5,393 | 6,772 |
| 882.60 | 5,560 | 7,199 |
| 882.70 | 5,727 | 7,644 |
| 882.80 | 5,894 | 8,105 |
| 882.90 | 6,061 | 8,583 |
| 883.00 | 6,228 | 9,077 |
| 883.10 | 6,380 | 9,587 |
| 883.20 | 6,532 | 10,113 |
| 883.30 | 6,685 | 10,654 |
| 883.40 | 6,837 | 11,210 |
| 883.50 | **6,989** | **11,781** |

## Summary for Link 3ES: Existing Basin discharge

Inflow Area = 1.104 ac, 1.63% Impervious, Inflow Depth = 3.54" for 100 year event
Inflow = 3.79 cfs @ 12.32 hrs, Volume= 0.326 af
Primary = 3.79 cfs @ 12.32 hrs, Volume= 0.326 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



## Hydrograph for Link 3ES: Existing Basin discharge

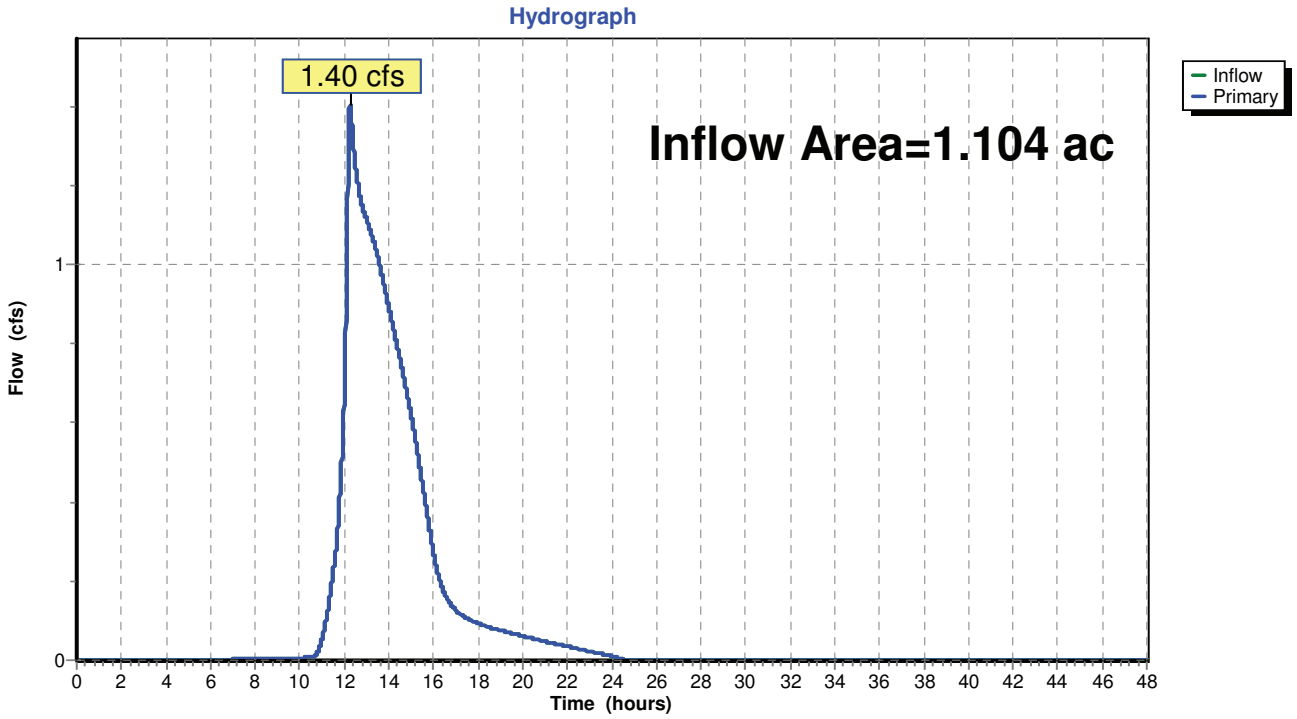
| Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) | Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) |
|---|---|---|---|---|---|---|---|
| 0.00 | 0.00 | **0.00** | 0.00 | 26.00 | 0.00 | 0.00 | 0.00 |
| 0.50 | 0.00 | 0.00 | 0.00 | 26.50 | 0.00 | 0.00 | 0.00 |
| 1.00 | 0.00 | 0.00 | 0.00 | 27.00 | 0.00 | 0.00 | 0.00 |
| 1.50 | 0.00 | 0.00 | 0.00 | 27.50 | 0.00 | 0.00 | 0.00 |
| 2.00 | 0.00 | 0.00 | 0.00 | 28.00 | 0.00 | 0.00 | 0.00 |
| 2.50 | 0.00 | 0.00 | 0.00 | 28.50 | 0.00 | 0.00 | 0.00 |
| 3.00 | 0.00 | 0.00 | 0.00 | 29.00 | 0.00 | 0.00 | 0.00 |
| 3.50 | 0.00 | 0.00 | 0.00 | 29.50 | 0.00 | 0.00 | 0.00 |
| 4.00 | 0.00 | 0.00 | 0.00 | 30.00 | 0.00 | 0.00 | 0.00 |
| 4.50 | 0.00 | 0.00 | 0.00 | 30.50 | 0.00 | 0.00 | 0.00 |
| 5.00 | 0.00 | 0.00 | 0.00 | 31.00 | 0.00 | 0.00 | 0.00 |
| 5.50 | 0.00 | 0.00 | 0.00 | 31.50 | 0.00 | 0.00 | 0.00 |
| 6.00 | 0.00 | 0.00 | 0.00 | 32.00 | 0.00 | 0.00 | 0.00 |
| 6.50 | 0.00 | 0.00 | 0.00 | 32.50 | 0.00 | 0.00 | 0.00 |
| 7.00 | 0.00 | 0.00 | 0.00 | 33.00 | 0.00 | 0.00 | 0.00 |
| 7.50 | 0.00 | 0.00 | 0.00 | 33.50 | 0.00 | 0.00 | 0.00 |
| 8.00 | 0.00 | 0.00 | 0.00 | 34.00 | 0.00 | 0.00 | 0.00 |
| 8.50 | 0.00 | 0.00 | 0.00 | 34.50 | 0.00 | 0.00 | 0.00 |
| 9.00 | 0.00 | 0.00 | 0.00 | 35.00 | 0.00 | 0.00 | 0.00 |
| 9.50 | 0.01 | 0.00 | 0.01 | 35.50 | 0.00 | 0.00 | 0.00 |
| 10.00 | 0.03 | 0.00 | 0.03 | 36.00 | 0.00 | 0.00 | 0.00 |
| 10.50 | 0.04 | 0.00 | 0.04 | 36.50 | 0.00 | 0.00 | 0.00 |
| 11.00 | 0.11 | 0.00 | 0.11 | 37.00 | 0.00 | 0.00 | 0.00 |
| 11.50 | 0.24 | 0.00 | 0.24 | 37.50 | 0.00 | 0.00 | 0.00 |
| 12.00 | **0.97** | 0.00 | **0.97** | 38.00 | 0.00 | 0.00 | 0.00 |
| 12.50 | **2.55** | 0.00 | **2.55** | 38.50 | 0.00 | 0.00 | 0.00 |
| 13.00 | 0.75 | 0.00 | 0.75 | 39.00 | 0.00 | 0.00 | 0.00 |
| 13.50 | 0.47 | 0.00 | 0.47 | 39.50 | 0.00 | 0.00 | 0.00 |
| 14.00 | 0.26 | 0.00 | 0.26 | 40.00 | 0.00 | 0.00 | 0.00 |
| 14.50 | 0.23 | 0.00 | 0.23 | 40.50 | 0.00 | 0.00 | 0.00 |
| 15.00 | 0.22 | 0.00 | 0.22 | 41.00 | 0.00 | 0.00 | 0.00 |
| 15.50 | 0.15 | 0.00 | 0.15 | 41.50 | 0.00 | 0.00 | 0.00 |
| 16.00 | 0.13 | 0.00 | 0.13 | 42.00 | 0.00 | 0.00 | 0.00 |
| 16.50 | 0.12 | 0.00 | 0.12 | 42.50 | 0.00 | 0.00 | 0.00 |
| 17.00 | 0.12 | 0.00 | 0.12 | 43.00 | 0.00 | 0.00 | 0.00 |
| 17.50 | 0.11 | 0.00 | 0.11 | 43.50 | 0.00 | 0.00 | 0.00 |
| 18.00 | 0.11 | 0.00 | 0.11 | 44.00 | 0.00 | 0.00 | 0.00 |
| 18.50 | 0.10 | 0.00 | 0.10 | 44.50 | 0.00 | 0.00 | 0.00 |
| 19.00 | 0.09 | 0.00 | 0.09 | 45.00 | 0.00 | 0.00 | 0.00 |
| 19.50 | 0.09 | 0.00 | 0.09 | 45.50 | 0.00 | 0.00 | 0.00 |
| 20.00 | 0.08 | 0.00 | 0.08 | 46.00 | 0.00 | 0.00 | 0.00 |
| 20.50 | 0.07 | 0.00 | 0.07 | 46.50 | 0.00 | 0.00 | 0.00 |
| 21.00 | 0.07 | 0.00 | 0.07 | 47.00 | 0.00 | 0.00 | 0.00 |
| 21.50 | 0.06 | 0.00 | 0.06 | 47.50 | 0.00 | 0.00 | 0.00 |
| 22.00 | 0.05 | 0.00 | 0.05 | 48.00 | 0.00 | 0.00 | 0.00 |
| 22.50 | 0.05 | 0.00 | 0.05 | | | | |
| 23.00 | 0.04 | 0.00 | 0.04 | | | | |
| 23.50 | 0.04 | 0.00 | 0.04 | | | | |
| 24.00 | 0.03 | 0.00 | 0.03 | | | | |
| 24.50 | 0.00 | 0.00 | 0.00 | | | | |
| 25.00 | 0.00 | 0.00 | 0.00 | | | | |
| 25.50 | 0.00 | 0.00 | 0.00 | | | | |

## Summary for Link 3PS: Developed Basin discharge

Inflow Area = 1.104 ac, 47.83% Impervious, Inflow Depth = 3.84" for 100 year event
Inflow = 1.40 cfs @ 12.26 hrs, Volume= 0.353 af
Primary = 1.40 cfs @ 12.26 hrs, Volume= 0.353 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



## Hydrograph for Link 3PS: Developed Basin discharge

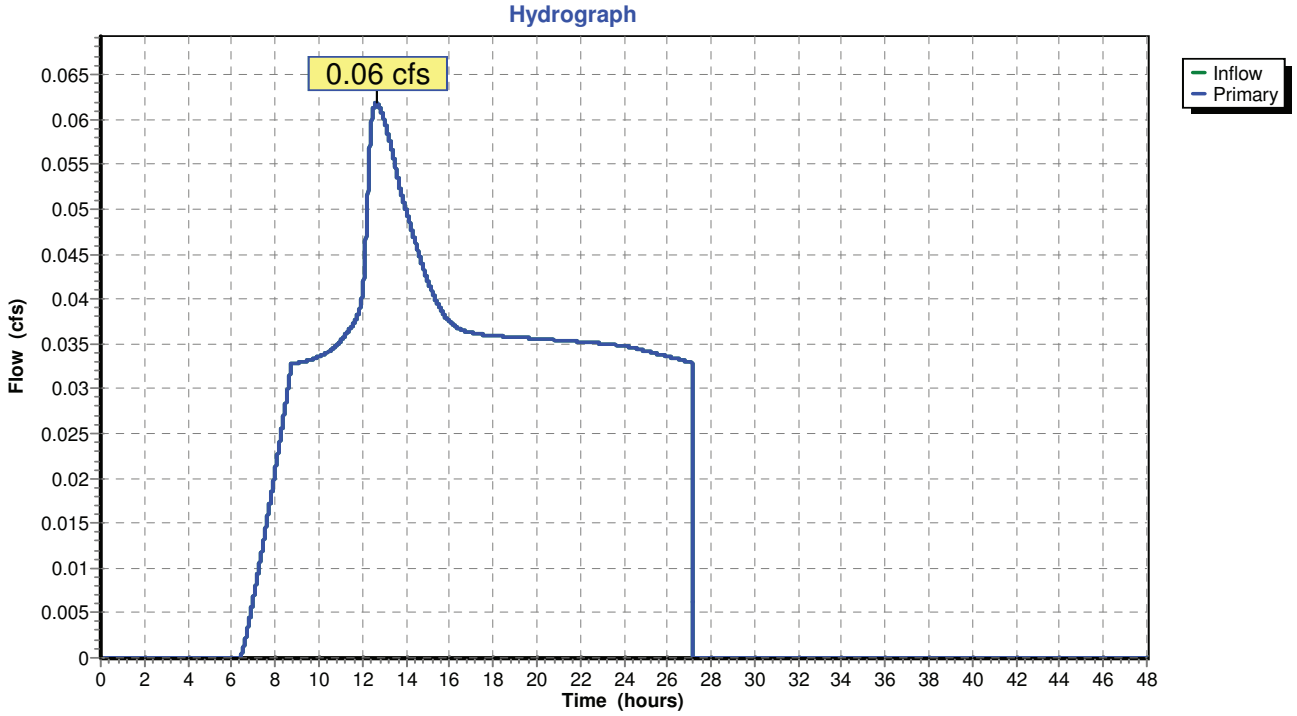
| Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) | Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) |
|---|---|---|---|---|---|---|---|
| 0.00 | 0.00 | **0.00** | 0.00 | 26.00 | 0.00 | 0.00 | 0.00 |
| 0.50 | 0.00 | 0.00 | 0.00 | 26.50 | 0.00 | 0.00 | 0.00 |
| 1.00 | 0.00 | 0.00 | 0.00 | 27.00 | 0.00 | 0.00 | 0.00 |
| 1.50 | 0.00 | 0.00 | 0.00 | 27.50 | 0.00 | 0.00 | 0.00 |
| 2.00 | 0.00 | 0.00 | 0.00 | 28.00 | 0.00 | 0.00 | 0.00 |
| 2.50 | 0.00 | 0.00 | 0.00 | 28.50 | 0.00 | 0.00 | 0.00 |
| 3.00 | 0.00 | 0.00 | 0.00 | 29.00 | 0.00 | 0.00 | 0.00 |
| 3.50 | 0.00 | 0.00 | 0.00 | 29.50 | 0.00 | 0.00 | 0.00 |
| 4.00 | 0.00 | 0.00 | 0.00 | 30.00 | 0.00 | 0.00 | 0.00 |
| 4.50 | 0.00 | 0.00 | 0.00 | 30.50 | 0.00 | 0.00 | 0.00 |
| 5.00 | 0.00 | 0.00 | 0.00 | 31.00 | 0.00 | 0.00 | 0.00 |
| 5.50 | 0.00 | 0.00 | 0.00 | 31.50 | 0.00 | 0.00 | 0.00 |
| 6.00 | 0.00 | 0.00 | 0.00 | 32.00 | 0.00 | 0.00 | 0.00 |
| 6.50 | 0.00 | 0.00 | 0.00 | 32.50 | 0.00 | 0.00 | 0.00 |
| 7.00 | 0.00 | 0.00 | 0.00 | 33.00 | 0.00 | 0.00 | 0.00 |
| 7.50 | 0.00 | 0.00 | 0.00 | 33.50 | 0.00 | 0.00 | 0.00 |
| 8.00 | 0.00 | 0.00 | 0.00 | 34.00 | 0.00 | 0.00 | 0.00 |
| 8.50 | 0.00 | 0.00 | 0.00 | 34.50 | 0.00 | 0.00 | 0.00 |
| 9.00 | 0.00 | 0.00 | 0.00 | 35.00 | 0.00 | 0.00 | 0.00 |
| 9.50 | 0.00 | 0.00 | 0.00 | 35.50 | 0.00 | 0.00 | 0.00 |
| 10.00 | 0.01 | 0.00 | 0.01 | 36.00 | 0.00 | 0.00 | 0.00 |
| 10.50 | 0.01 | 0.00 | 0.01 | 36.50 | 0.00 | 0.00 | 0.00 |
| 11.00 | 0.05 | 0.00 | 0.05 | 37.00 | 0.00 | 0.00 | 0.00 |
| 11.50 | 0.22 | 0.00 | 0.22 | 37.50 | 0.00 | 0.00 | 0.00 |
| 12.00 | **0.68** | 0.00 | **0.68** | 38.00 | 0.00 | 0.00 | 0.00 |
| 12.50 | **1.25** | 0.00 | **1.25** | 38.50 | 0.00 | 0.00 | 0.00 |
| 13.00 | 1.11 | 0.00 | 1.11 | 39.00 | 0.00 | 0.00 | 0.00 |
| 13.50 | 1.02 | 0.00 | 1.02 | 39.50 | 0.00 | 0.00 | 0.00 |
| 14.00 | 0.89 | 0.00 | 0.89 | 40.00 | 0.00 | 0.00 | 0.00 |
| 14.50 | 0.76 | 0.00 | 0.76 | 40.50 | 0.00 | 0.00 | 0.00 |
| 15.00 | 0.62 | 0.00 | 0.62 | 41.00 | 0.00 | 0.00 | 0.00 |
| 15.50 | 0.45 | 0.00 | 0.45 | 41.50 | 0.00 | 0.00 | 0.00 |
| 16.00 | 0.27 | 0.00 | 0.27 | 42.00 | 0.00 | 0.00 | 0.00 |
| 16.50 | 0.17 | 0.00 | 0.17 | 42.50 | 0.00 | 0.00 | 0.00 |
| 17.00 | 0.13 | 0.00 | 0.13 | 43.00 | 0.00 | 0.00 | 0.00 |
| 17.50 | 0.11 | 0.00 | 0.11 | 43.50 | 0.00 | 0.00 | 0.00 |
| 18.00 | 0.09 | 0.00 | 0.09 | 44.00 | 0.00 | 0.00 | 0.00 |
| 18.50 | 0.08 | 0.00 | 0.08 | 44.50 | 0.00 | 0.00 | 0.00 |
| 19.00 | 0.08 | 0.00 | 0.08 | 45.00 | 0.00 | 0.00 | 0.00 |
| 19.50 | 0.07 | 0.00 | 0.07 | 45.50 | 0.00 | 0.00 | 0.00 |
| 20.00 | 0.06 | 0.00 | 0.06 | 46.00 | 0.00 | 0.00 | 0.00 |
| 20.50 | 0.05 | 0.00 | 0.05 | 46.50 | 0.00 | 0.00 | 0.00 |
| 21.00 | 0.05 | 0.00 | 0.05 | 47.00 | 0.00 | 0.00 | 0.00 |
| 21.50 | 0.04 | 0.00 | 0.04 | 47.50 | 0.00 | 0.00 | 0.00 |
| 22.00 | 0.03 | 0.00 | 0.03 | 48.00 | 0.00 | 0.00 | 0.00 |
| 22.50 | 0.03 | 0.00 | 0.03 | | | | |
| 23.00 | 0.02 | 0.00 | 0.02 | | | | |
| 23.50 | 0.02 | 0.00 | 0.02 | | | | |
| 24.00 | 0.01 | 0.00 | 0.01 | | | | |
| 24.50 | 0.00 | 0.00 | 0.00 | | | | |
| 25.00 | 0.00 | 0.00 | 0.00 | | | | |
| 25.50 | 0.00 | 0.00 | 0.00 | | | | |

## Summary for Link 4Z: infiltrated to ground

Inflow = 0.06 cfs @ 12.65 hrs, Volume= 0.061 af
Primary = 0.06 cfs @ 12.65 hrs, Volume= 0.061 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



## Hydrograph for Link 4Z: infiltrated to ground

| Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) | Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) |
|---|---|---|---|---|---|---|---|
| 0.00 | 0.00 | **0.00** | 0.00 | 26.00 | 0.03 | 0.00 | 0.03 |
| 0.50 | 0.00 | 0.00 | 0.00 | 26.50 | 0.03 | 0.00 | 0.03 |
| 1.00 | 0.00 | 0.00 | 0.00 | 27.00 | 0.03 | 0.00 | 0.03 |
| 1.50 | 0.00 | 0.00 | 0.00 | 27.50 | 0.00 | 0.00 | 0.00 |
| 2.00 | 0.00 | 0.00 | 0.00 | 28.00 | 0.00 | 0.00 | 0.00 |
| 2.50 | 0.00 | 0.00 | 0.00 | 28.50 | 0.00 | 0.00 | 0.00 |
| 3.00 | 0.00 | 0.00 | 0.00 | 29.00 | 0.00 | 0.00 | 0.00 |
| 3.50 | 0.00 | 0.00 | 0.00 | 29.50 | 0.00 | 0.00 | 0.00 |
| 4.00 | 0.00 | 0.00 | 0.00 | 30.00 | 0.00 | 0.00 | 0.00 |
| 4.50 | 0.00 | 0.00 | 0.00 | 30.50 | 0.00 | 0.00 | 0.00 |
| 5.00 | 0.00 | 0.00 | 0.00 | 31.00 | 0.00 | 0.00 | 0.00 |
| 5.50 | 0.00 | 0.00 | 0.00 | 31.50 | 0.00 | 0.00 | 0.00 |
| 6.00 | 0.00 | 0.00 | 0.00 | 32.00 | 0.00 | 0.00 | 0.00 |
| 6.50 | 0.00 | 0.00 | 0.00 | 32.50 | 0.00 | 0.00 | 0.00 |
| 7.00 | 0.01 | 0.00 | 0.01 | 33.00 | 0.00 | 0.00 | 0.00 |
| 7.50 | 0.01 | 0.00 | 0.01 | 33.50 | 0.00 | 0.00 | 0.00 |
| 8.00 | 0.02 | 0.00 | 0.02 | 34.00 | 0.00 | 0.00 | 0.00 |
| 8.50 | 0.03 | 0.00 | 0.03 | 34.50 | 0.00 | 0.00 | 0.00 |
| 9.00 | 0.03 | 0.00 | 0.03 | 35.00 | 0.00 | 0.00 | 0.00 |
| 9.50 | 0.03 | 0.00 | 0.03 | 35.50 | 0.00 | 0.00 | 0.00 |
| 10.00 | 0.03 | 0.00 | 0.03 | 36.00 | 0.00 | 0.00 | 0.00 |
| 10.50 | 0.03 | 0.00 | 0.03 | 36.50 | 0.00 | 0.00 | 0.00 |
| 11.00 | 0.04 | 0.00 | 0.04 | 37.00 | 0.00 | 0.00 | 0.00 |
| 11.50 | 0.04 | 0.00 | 0.04 | 37.50 | 0.00 | 0.00 | 0.00 |
| 12.00 | 0.04 | 0.00 | 0.04 | 38.00 | 0.00 | 0.00 | 0.00 |
| 12.50 | **0.06** | 0.00 | **0.06** | 38.50 | 0.00 | 0.00 | 0.00 |
| 13.00 | **0.06** | 0.00 | **0.06** | 39.00 | 0.00 | 0.00 | 0.00 |
| 13.50 | 0.06 | 0.00 | 0.06 | 39.50 | 0.00 | 0.00 | 0.00 |
| 14.00 | 0.05 | 0.00 | 0.05 | 40.00 | 0.00 | 0.00 | 0.00 |
| 14.50 | 0.05 | 0.00 | 0.05 | 40.50 | 0.00 | 0.00 | 0.00 |
| 15.00 | 0.04 | 0.00 | 0.04 | 41.00 | 0.00 | 0.00 | 0.00 |
| 15.50 | 0.04 | 0.00 | 0.04 | 41.50 | 0.00 | 0.00 | 0.00 |
| 16.00 | 0.04 | 0.00 | 0.04 | 42.00 | 0.00 | 0.00 | 0.00 |
| 16.50 | 0.04 | 0.00 | 0.04 | 42.50 | 0.00 | 0.00 | 0.00 |
| 17.00 | 0.04 | 0.00 | 0.04 | 43.00 | 0.00 | 0.00 | 0.00 |
| 17.50 | 0.04 | 0.00 | 0.04 | 43.50 | 0.00 | 0.00 | 0.00 |
| 18.00 | 0.04 | 0.00 | 0.04 | 44.00 | 0.00 | 0.00 | 0.00 |
| 18.50 | 0.04 | 0.00 | 0.04 | 44.50 | 0.00 | 0.00 | 0.00 |
| 19.00 | 0.04 | 0.00 | 0.04 | 45.00 | 0.00 | 0.00 | 0.00 |
| 19.50 | 0.04 | 0.00 | 0.04 | 45.50 | 0.00 | 0.00 | 0.00 |
| 20.00 | 0.04 | 0.00 | 0.04 | 46.00 | 0.00 | 0.00 | 0.00 |
| 20.50 | 0.04 | 0.00 | 0.04 | 46.50 | 0.00 | 0.00 | 0.00 |
| 21.00 | 0.04 | 0.00 | 0.04 | 47.00 | 0.00 | 0.00 | 0.00 |
| 21.50 | 0.04 | 0.00 | 0.04 | 47.50 | 0.00 | 0.00 | 0.00 |
| 22.00 | 0.04 | 0.00 | 0.04 | 48.00 | 0.00 | 0.00 | 0.00 |
| 22.50 | 0.04 | 0.00 | 0.04 | | | | |
| 23.00 | 0.04 | 0.00 | 0.04 | | | | |
| 23.50 | 0.03 | 0.00 | 0.03 | | | | |
| 24.00 | 0.03 | 0.00 | 0.03 | | | | |
| 24.50 | 0.03 | 0.00 | 0.03 | | | | |
| 25.00 | 0.03 | 0.00 | 0.03 | | | | |
| 25.50 | 0.03 | 0.00 | 0.03 | | | | |

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=1.104 ac 1.63% Impervious Runoff Depth=4.28"
Flow Length=270' Tc=21.2 min CN=72 Runoff=4.59 cfs 0.394 af

**Subcatchment 1P: Developed Basin** Runoff Area=0.984 ac 51.63% Impervious Runoff Depth=5.41"
Flow Length=245' Tc=13.6 min CN=82 Runoff=6.23 cfs 0.444 af

**Subcatchment 2P: East Basin-untreated** Runoff Area=0.100 ac 0.00% Impervious Runoff Depth=3.84"
Flow Length=245' Tc=13.6 min CN=68 Runoff=0.46 cfs 0.032 af

**Subcatchment 3P: West Basin-untreated** Runoff Area=0.020 ac 100.00% Impervious Runoff Depth=7.29"
Flow Length=245' Tc=13.6 min CN=98 Runoff=0.15 cfs 0.012 af

**Pond 1Po: combined ponds** Peak Elev=882.65' Storage=7,431 cf Inflow=6.23 cfs 0.444 af
Primary=2.34 cfs 0.380 af Secondary=0.07 cfs 0.064 af Outflow=2.41 cfs 0.444 af

**Link 3ES: Existing Basin discharge** Inflow=4.59 cfs 0.394 af
Primary=4.59 cfs 0.394 af

**Link 3PS: Developed Basin discharge** Inflow=2.59 cfs 0.424 af
Primary=2.59 cfs 0.424 af

**Link 4Z: infiltrated to ground** Inflow=0.07 cfs 0.064 af
Primary=0.07 cfs 0.064 af

**Total Runoff Area = 2.208 ac Runoff Volume = 0.882 af Average Runoff Depth = 4.80"**
**75.27% Pervious = 1.662 ac 24.73% Impervious = 0.546 ac**

## Summary for Subcatchment 1E: Existing Basin

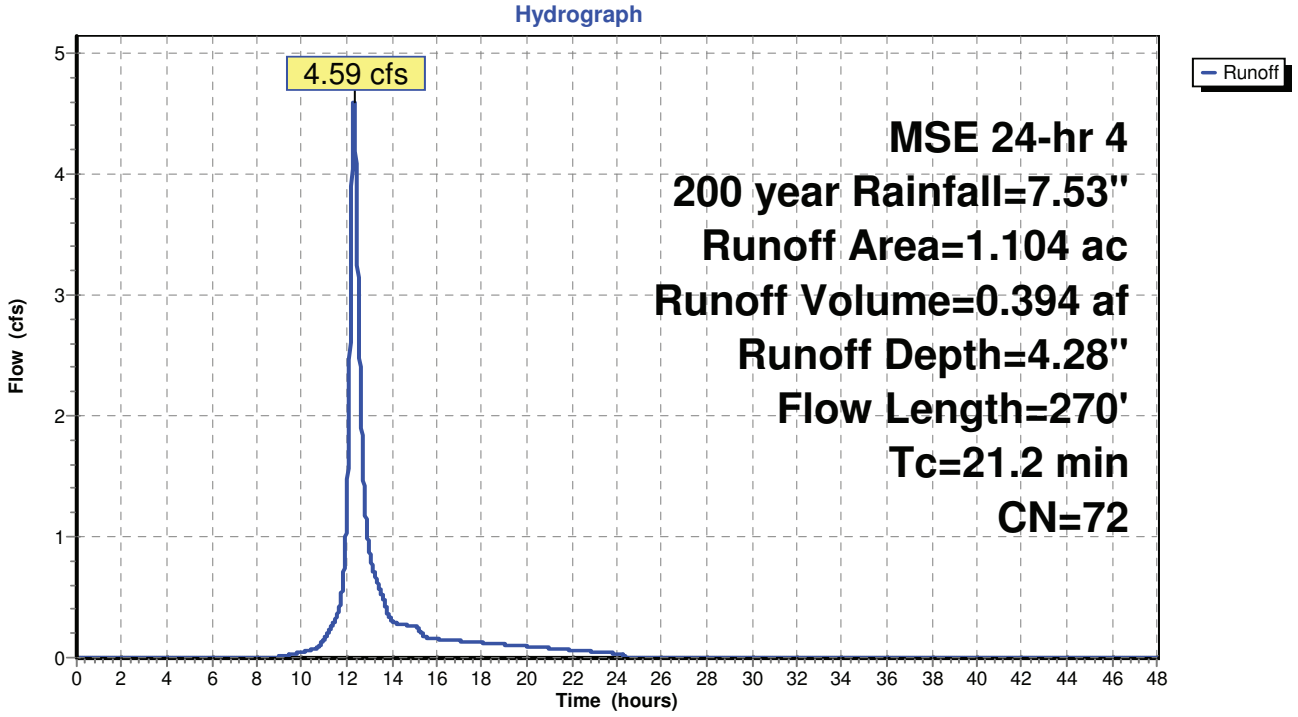
Runoff = 4.59 cfs @ 12.32 hrs, Volume= 0.394 af, Depth= 4.28"
Routed to Link 3ES : Existing Basin discharge

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 |
| * | 0.414 | 78 | Exi ag field, HSG C |
| | 1.104 | 72 | Weighted Average |
| | 1.086 | | 98.37% Pervious Area |
| | 0.018 | | 1.63% 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



## Hydrograph for Subcatchment 1E: Existing Basin

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|---|---|---|---|
| 0.00 | 0.00 | 0.00 | 0.00 |
| 0.50 | 0.02 | 0.00 | 0.00 |
| 1.00 | 0.04 | 0.00 | 0.00 |
| 1.50 | 0.06 | 0.00 | 0.00 |
| 2.00 | 0.09 | 0.00 | 0.00 |
| 2.50 | 0.12 | 0.00 | 0.00 |
| 3.00 | 0.16 | 0.00 | 0.00 |
| 3.50 | 0.20 | 0.00 | 0.00 |
| 4.00 | 0.24 | 0.00 | 0.00 |
| 4.50 | 0.29 | 0.00 | 0.00 |
| 5.00 | 0.35 | 0.00 | 0.00 |
| 5.50 | 0.40 | 0.00 | 0.00 |
| 6.00 | 0.46 | 0.00 | 0.00 |
| 6.50 | 0.53 | 0.00 | 0.00 |
| 7.00 | 0.60 | 0.00 | 0.00 |
| 7.50 | 0.67 | 0.00 | 0.00 |
| 8.00 | 0.75 | 0.00 | 0.00 |
| 8.50 | 0.83 | 0.00 | 0.00 |
| 9.00 | 0.91 | 0.00 | 0.01 |
| 9.50 | 1.05 | 0.02 | 0.03 |
| 10.00 | 1.19 | 0.04 | 0.05 |
| 10.50 | 1.35 | 0.07 | 0.07 |
| 11.00 | 1.63 | 0.15 | 0.16 |
| 11.50 | 2.04 | 0.31 | 0.32 |
| 12.00 | 3.53 | 1.14 | **1.23** |
| 12.50 | 5.49 | 2.58 | **3.05** |
| 13.00 | 5.90 | 2.91 | 0.88 |
| 13.50 | 6.18 | 3.14 | 0.55 |
| 14.00 | 6.34 | 3.27 | 0.31 |
| 14.50 | 6.48 | 3.39 | 0.27 |
| 15.00 | 6.62 | 3.51 | 0.26 |
| 15.50 | 6.70 | 3.58 | 0.17 |
| 16.00 | 6.78 | 3.65 | 0.15 |
| 16.50 | 6.86 | 3.71 | 0.15 |
| 17.00 | 6.93 | 3.77 | 0.14 |
| 17.50 | 7.00 | 3.83 | 0.13 |
| 18.00 | 7.07 | 3.89 | 0.12 |
| 18.50 | 7.13 | 3.94 | 0.12 |
| 19.00 | 7.18 | 3.99 | 0.11 |
| 19.50 | 7.24 | 4.03 | 0.10 |
| 20.00 | 7.29 | 4.07 | 0.09 |
| 20.50 | 7.33 | 4.11 | 0.09 |
| 21.00 | 7.37 | 4.15 | 0.08 |
| 21.50 | 7.41 | 4.18 | 0.07 |
| 22.00 | 7.44 | 4.21 | 0.06 |
| 22.50 | 7.47 | 4.23 | 0.06 |
| 23.00 | 7.49 | 4.25 | 0.05 |
| 23.50 | 7.51 | 4.27 | 0.04 |
| 24.00 | **7.53** | **4.28** | 0.03 |
| 24.50 | 7.53 | 4.28 | 0.00 |
| 25.00 | 7.53 | 4.28 | 0.00 |
| 25.50 | 7.53 | 4.28 | 0.00 |
| 26.00 | 7.53 | 4.28 | 0.00 |
| 26.50 | 7.53 | 4.28 | 0.00 |
| 27.00 | 7.53 | 4.28 | 0.00 |
| 27.50 | 7.53 | 4.28 | 0.00 |
| 28.00 | 7.53 | 4.28 | 0.00 |
| 28.50 | 7.53 | 4.28 | 0.00 |
| 29.00 | 7.53 | 4.28 | 0.00 |
| 29.50 | 7.53 | 4.28 | 0.00 |
| 30.00 | 7.53 | 4.28 | 0.00 |
| 30.50 | 7.53 | 4.28 | 0.00 |
| 31.00 | 7.53 | 4.28 | 0.00 |
| 31.50 | 7.53 | 4.28 | 0.00 |
| 32.00 | 7.53 | 4.28 | 0.00 |
| 32.50 | 7.53 | 4.28 | 0.00 |
| 33.00 | 7.53 | 4.28 | 0.00 |
| 33.50 | 7.53 | 4.28 | 0.00 |
| 34.00 | 7.53 | 4.28 | 0.00 |
| 34.50 | 7.53 | 4.28 | 0.00 |
| 35.00 | 7.53 | 4.28 | 0.00 |
| 35.50 | 7.53 | 4.28 | 0.00 |
| 36.00 | 7.53 | 4.28 | 0.00 |
| 36.50 | 7.53 | 4.28 | 0.00 |
| 37.00 | 7.53 | 4.28 | 0.00 |
| 37.50 | 7.53 | 4.28 | 0.00 |
| 38.00 | 7.53 | 4.28 | 0.00 |
| 38.50 | 7.53 | 4.28 | 0.00 |
| 39.00 | 7.53 | 4.28 | 0.00 |
| 39.50 | 7.53 | 4.28 | 0.00 |
| 40.00 | 7.53 | 4.28 | 0.00 |
| 40.50 | 7.53 | 4.28 | 0.00 |
| 41.00 | 7.53 | 4.28 | 0.00 |
| 41.50 | 7.53 | 4.28 | 0.00 |
| 42.00 | 7.53 | 4.28 | 0.00 |
| 42.50 | 7.53 | 4.28 | 0.00 |
| 43.00 | 7.53 | 4.28 | 0.00 |
| 43.50 | 7.53 | 4.28 | 0.00 |
| 44.00 | 7.53 | 4.28 | 0.00 |
| 44.50 | 7.53 | 4.28 | 0.00 |
| 45.00 | 7.53 | 4.28 | 0.00 |
| 45.50 | 7.53 | 4.28 | 0.00 |
| 46.00 | 7.53 | 4.28 | 0.00 |
| 46.50 | 7.53 | 4.28 | 0.00 |
| 47.00 | 7.53 | 4.28 | 0.00 |
| 47.50 | 7.53 | 4.28 | 0.00 |
| 48.00 | 7.53 | 4.28 | 0.00 |

## Summary for Subcatchment 1P: Developed Basin

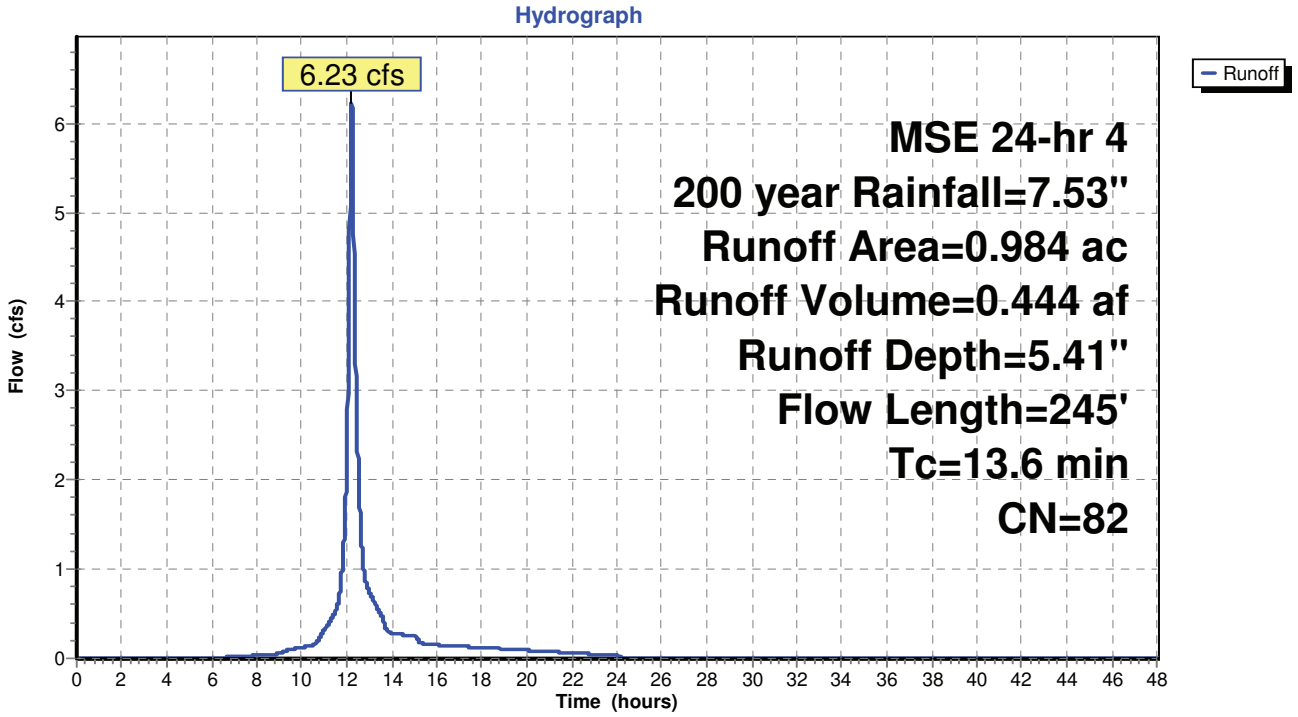
Runoff = 6.23 cfs @ 12.21 hrs, Volume= 0.444 af, Depth= 5.41"
Routed to Pond 1Po : combined ponds

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 |
| * | 0.238 | 98 | New roof |
| * | 0.252 | 98 | New pvmt |
| * | 0.212 | 61 | New yard, HSG B |
| * | 0.062 | 68 | New yard, HSG C |
| | 0.984 | 82 | Weighted Average |
| | 0.476 | | 48.37% Pervious Area |
| | 0.508 | | 51.63% 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**<br>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**<br>Kv= 6.0 fps |
| 13.6 | 245 | Total | | | |

## Subcatchment 1P: Developed Basin



## Hydrograph for Subcatchment 1P: Developed Basin

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|---|---|---|---|
| 0.00 | 0.00 | 0.00 | 0.00 |
| 0.50 | 0.02 | 0.00 | 0.00 |
| 1.00 | 0.04 | 0.00 | 0.00 |
| 1.50 | 0.06 | 0.00 | 0.00 |
| 2.00 | 0.09 | 0.00 | 0.00 |
| 2.50 | 0.12 | 0.00 | 0.00 |
| 3.00 | 0.16 | 0.00 | 0.00 |
| 3.50 | 0.20 | 0.00 | 0.00 |
| 4.00 | 0.24 | 0.00 | 0.00 |
| 4.50 | 0.29 | 0.00 | 0.00 |
| 5.00 | 0.35 | 0.00 | 0.00 |
| 5.50 | 0.40 | 0.00 | 0.00 |
| 6.00 | 0.46 | 0.00 | 0.00 |
| 6.50 | 0.53 | 0.00 | 0.01 |
| 7.00 | 0.60 | 0.01 | 0.01 |
| 7.50 | 0.67 | 0.02 | 0.02 |
| 8.00 | 0.75 | 0.04 | 0.03 |
| 8.50 | 0.83 | 0.06 | 0.04 |
| 9.00 | 0.91 | 0.08 | 0.05 |
| 9.50 | 1.05 | 0.13 | 0.10 |
| 10.00 | 1.19 | 0.19 | 0.12 |
| 10.50 | 1.35 | 0.27 | 0.15 |
| 11.00 | 1.63 | 0.42 | 0.32 |
| 11.50 | 2.04 | 0.68 | 0.53 |
| 12.00 | 3.53 | 1.81 | **2.25** |
| 12.50 | 5.49 | 3.52 | **2.15** |
| 13.00 | 5.90 | 3.90 | 0.74 |
| 13.50 | 6.18 | 4.16 | 0.50 |
| 14.00 | 6.34 | 4.30 | 0.28 |
| 14.50 | 6.48 | 4.43 | 0.27 |
| 15.00 | 6.62 | 4.56 | 0.25 |
| 15.50 | 6.70 | 4.64 | 0.16 |
| 16.00 | 6.78 | 4.71 | 0.15 |
| 16.50 | 6.86 | 4.79 | 0.14 |
| 17.00 | 6.93 | 4.85 | 0.13 |
| 17.50 | 7.00 | 4.92 | 0.13 |
| 18.00 | 7.07 | 4.98 | 0.12 |
| 18.50 | 7.13 | 5.04 | 0.11 |
| 19.00 | 7.18 | 5.09 | 0.11 |
| 19.50 | 7.24 | 5.14 | 0.10 |
| 20.00 | 7.29 | 5.18 | 0.09 |
| 20.50 | 7.33 | 5.23 | 0.08 |
| 21.00 | 7.37 | 5.26 | 0.08 |
| 21.50 | 7.41 | 5.30 | 0.07 |
| 22.00 | 7.44 | 5.33 | 0.06 |
| 22.50 | 7.47 | 5.36 | 0.05 |
| 23.00 | 7.49 | 5.38 | 0.05 |
| 23.50 | 7.51 | 5.40 | 0.04 |
| 24.00 | **7.53** | **5.41** | 0.03 |
| 24.50 | 7.53 | 5.41 | 0.00 |
| 25.00 | 7.53 | 5.41 | 0.00 |
| 25.50 | 7.53 | 5.41 | 0.00 |
| 26.00 | 7.53 | 5.41 | 0.00 |
| 26.50 | 7.53 | 5.41 | 0.00 |
| 27.00 | 7.53 | 5.41 | 0.00 |
| 27.50 | 7.53 | 5.41 | 0.00 |
| 28.00 | 7.53 | 5.41 | 0.00 |
| 28.50 | 7.53 | 5.41 | 0.00 |
| 29.00 | 7.53 | 5.41 | 0.00 |
| 29.50 | 7.53 | 5.41 | 0.00 |
| 30.00 | 7.53 | 5.41 | 0.00 |
| 30.50 | 7.53 | 5.41 | 0.00 |
| 31.00 | 7.53 | 5.41 | 0.00 |
| 31.50 | 7.53 | 5.41 | 0.00 |
| 32.00 | 7.53 | 5.41 | 0.00 |
| 32.50 | 7.53 | 5.41 | 0.00 |
| 33.00 | 7.53 | 5.41 | 0.00 |
| 33.50 | 7.53 | 5.41 | 0.00 |
| 34.00 | 7.53 | 5.41 | 0.00 |
| 34.50 | 7.53 | 5.41 | 0.00 |
| 35.00 | 7.53 | 5.41 | 0.00 |
| 35.50 | 7.53 | 5.41 | 0.00 |
| 36.00 | 7.53 | 5.41 | 0.00 |
| 36.50 | 7.53 | 5.41 | 0.00 |
| 37.00 | 7.53 | 5.41 | 0.00 |
| 37.50 | 7.53 | 5.41 | 0.00 |
| 38.00 | 7.53 | 5.41 | 0.00 |
| 38.50 | 7.53 | 5.41 | 0.00 |
| 39.00 | 7.53 | 5.41 | 0.00 |
| 39.50 | 7.53 | 5.41 | 0.00 |
| 40.00 | 7.53 | 5.41 | 0.00 |
| 40.50 | 7.53 | 5.41 | 0.00 |
| 41.00 | 7.53 | 5.41 | 0.00 |
| 41.50 | 7.53 | 5.41 | 0.00 |
| 42.00 | 7.53 | 5.41 | 0.00 |
| 42.50 | 7.53 | 5.41 | 0.00 |
| 43.00 | 7.53 | 5.41 | 0.00 |
| 43.50 | 7.53 | 5.41 | 0.00 |
| 44.00 | 7.53 | 5.41 | 0.00 |
| 44.50 | 7.53 | 5.41 | 0.00 |
| 45.00 | 7.53 | 5.41 | 0.00 |
| 45.50 | 7.53 | 5.41 | 0.00 |
| 46.00 | 7.53 | 5.41 | 0.00 |
| 46.50 | 7.53 | 5.41 | 0.00 |
| 47.00 | 7.53 | 5.41 | 0.00 |
| 47.50 | 7.53 | 5.41 | 0.00 |
| 48.00 | 7.53 | 5.41 | 0.00 |

## Summary for Subcatchment 2P: East Basin-untreated

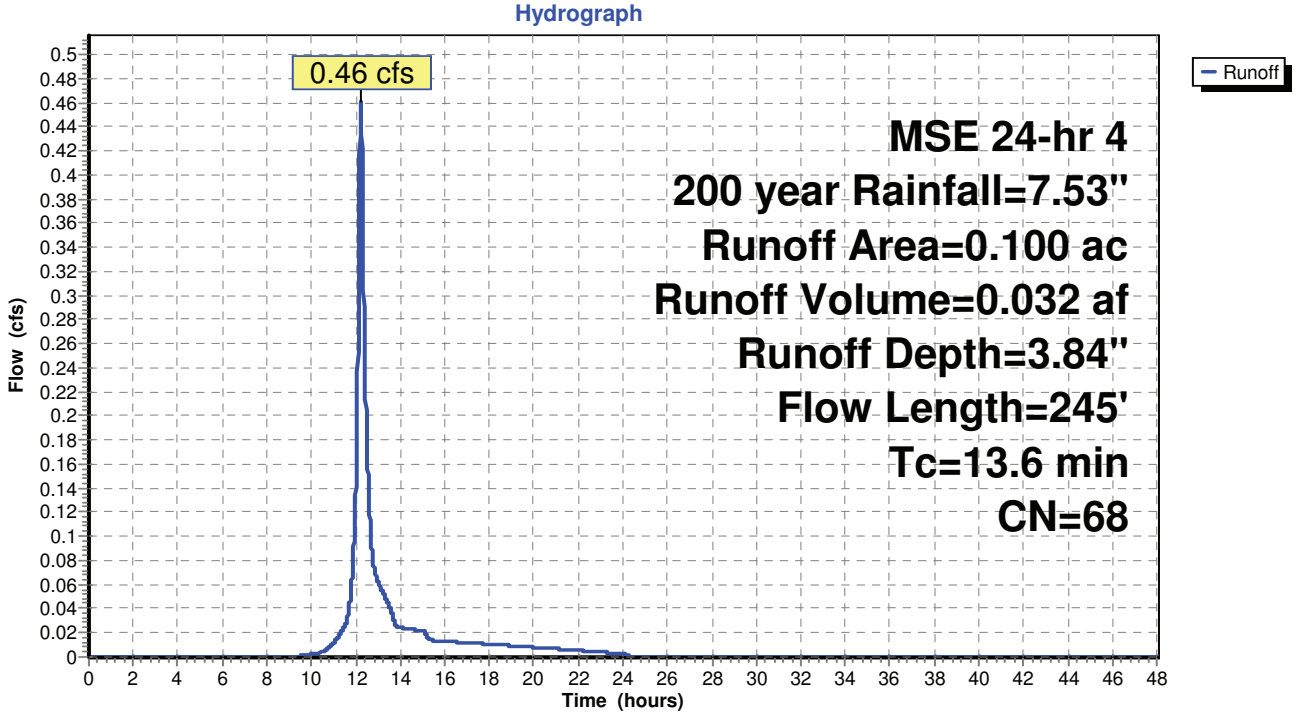
Runoff = 0.46 cfs @ 12.22 hrs, Volume= 0.032 af, Depth= 3.84"
Routed to Link 3PS : Developed Basin discharge

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 |
|---|---|---|---|
| * | 0.100 | 68 | New yard, HSG C |
| | 0.100 | | 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



## Hydrograph for Subcatchment 2P: East Basin-untreated

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|---|---|---|---|
| 0.00 | 0.00 | 0.00 | 0.00 |
| 0.50 | 0.02 | 0.00 | 0.00 |
| 1.00 | 0.04 | 0.00 | 0.00 |
| 1.50 | 0.06 | 0.00 | 0.00 |
| 2.00 | 0.09 | 0.00 | 0.00 |
| 2.50 | 0.12 | 0.00 | 0.00 |
| 3.00 | 0.16 | 0.00 | 0.00 |
| 3.50 | 0.20 | 0.00 | 0.00 |
| 4.00 | 0.24 | 0.00 | 0.00 |
| 4.50 | 0.29 | 0.00 | 0.00 |
| 5.00 | 0.35 | 0.00 | 0.00 |
| 5.50 | 0.40 | 0.00 | 0.00 |
| 6.00 | 0.46 | 0.00 | 0.00 |
| 6.50 | 0.53 | 0.00 | 0.00 |
| 7.00 | 0.60 | 0.00 | 0.00 |
| 7.50 | 0.67 | 0.00 | 0.00 |
| 8.00 | 0.75 | 0.00 | 0.00 |
| 8.50 | 0.83 | 0.00 | 0.00 |
| 9.00 | 0.91 | 0.00 | 0.00 |
| 9.50 | 1.05 | 0.00 | 0.00 |
| 10.00 | 1.19 | 0.01 | 0.00 |
| 10.50 | 1.35 | 0.03 | 0.00 |
| 11.00 | 1.63 | 0.09 | 0.01 |
| 11.50 | 2.04 | 0.21 | 0.03 |
| 12.00 | 3.53 | 0.92 | **0.14** |
| 12.50 | 5.49 | 2.23 | **0.17** |
| 13.00 | 5.90 | 2.55 | 0.06 |
| 13.50 | 6.18 | 2.76 | 0.04 |
| 14.00 | 6.34 | 2.88 | 0.02 |
| 14.50 | 6.48 | 3.00 | 0.02 |
| 15.00 | 6.62 | 3.10 | 0.02 |
| 15.50 | 6.70 | 3.17 | 0.01 |
| 16.00 | 6.78 | 3.24 | 0.01 |
| 16.50 | 6.86 | 3.30 | 0.01 |
| 17.00 | 6.93 | 3.36 | 0.01 |
| 17.50 | 7.00 | 3.41 | 0.01 |
| 18.00 | 7.07 | 3.46 | 0.01 |
| 18.50 | 7.13 | 3.51 | 0.01 |
| 19.00 | 7.18 | 3.56 | 0.01 |
| 19.50 | 7.24 | 3.60 | 0.01 |
| 20.00 | 7.29 | 3.64 | 0.01 |
| 20.50 | 7.33 | 3.68 | 0.01 |
| 21.00 | 7.37 | 3.71 | 0.01 |
| 21.50 | 7.41 | 3.74 | 0.01 |
| 22.00 | 7.44 | 3.77 | 0.01 |
| 22.50 | 7.47 | 3.79 | 0.00 |
| 23.00 | 7.49 | 3.81 | 0.00 |
| 23.50 | 7.51 | 3.83 | 0.00 |
| 24.00 | **7.53** | **3.84** | 0.00 |
| 24.50 | 7.53 | 3.84 | 0.00 |
| 25.00 | 7.53 | 3.84 | 0.00 |
| 25.50 | 7.53 | 3.84 | 0.00 |
| 26.00 | 7.53 | 3.84 | 0.00 |
| 26.50 | 7.53 | 3.84 | 0.00 |
| 27.00 | 7.53 | 3.84 | 0.00 |
| 27.50 | 7.53 | 3.84 | 0.00 |
| 28.00 | 7.53 | 3.84 | 0.00 |
| 28.50 | 7.53 | 3.84 | 0.00 |
| 29.00 | 7.53 | 3.84 | 0.00 |
| 29.50 | 7.53 | 3.84 | 0.00 |
| 30.00 | 7.53 | 3.84 | 0.00 |
| 30.50 | 7.53 | 3.84 | 0.00 |
| 31.00 | 7.53 | 3.84 | 0.00 |
| 31.50 | 7.53 | 3.84 | 0.00 |
| 32.00 | 7.53 | 3.84 | 0.00 |
| 32.50 | 7.53 | 3.84 | 0.00 |
| 33.00 | 7.53 | 3.84 | 0.00 |
| 33.50 | 7.53 | 3.84 | 0.00 |
| 34.00 | 7.53 | 3.84 | 0.00 |
| 34.50 | 7.53 | 3.84 | 0.00 |
| 35.00 | 7.53 | 3.84 | 0.00 |
| 35.50 | 7.53 | 3.84 | 0.00 |
| 36.00 | 7.53 | 3.84 | 0.00 |
| 36.50 | 7.53 | 3.84 | 0.00 |
| 37.00 | 7.53 | 3.84 | 0.00 |
| 37.50 | 7.53 | 3.84 | 0.00 |
| 38.00 | 7.53 | 3.84 | 0.00 |
| 38.50 | 7.53 | 3.84 | 0.00 |
| 39.00 | 7.53 | 3.84 | 0.00 |
| 39.50 | 7.53 | 3.84 | 0.00 |
| 40.00 | 7.53 | 3.84 | 0.00 |
| 40.50 | 7.53 | 3.84 | 0.00 |
| 41.00 | 7.53 | 3.84 | 0.00 |
| 41.50 | 7.53 | 3.84 | 0.00 |
| 42.00 | 7.53 | 3.84 | 0.00 |
| 42.50 | 7.53 | 3.84 | 0.00 |
| 43.00 | 7.53 | 3.84 | 0.00 |
| 43.50 | 7.53 | 3.84 | 0.00 |
| 44.00 | 7.53 | 3.84 | 0.00 |
| 44.50 | 7.53 | 3.84 | 0.00 |
| 45.00 | 7.53 | 3.84 | 0.00 |
| 45.50 | 7.53 | 3.84 | 0.00 |
| 46.00 | 7.53 | 3.84 | 0.00 |
| 46.50 | 7.53 | 3.84 | 0.00 |
| 47.00 | 7.53 | 3.84 | 0.00 |
| 47.50 | 7.53 | 3.84 | 0.00 |
| 48.00 | 7.53 | 3.84 | 0.00 |

## Summary for Subcatchment 3P: West Basin-untreated

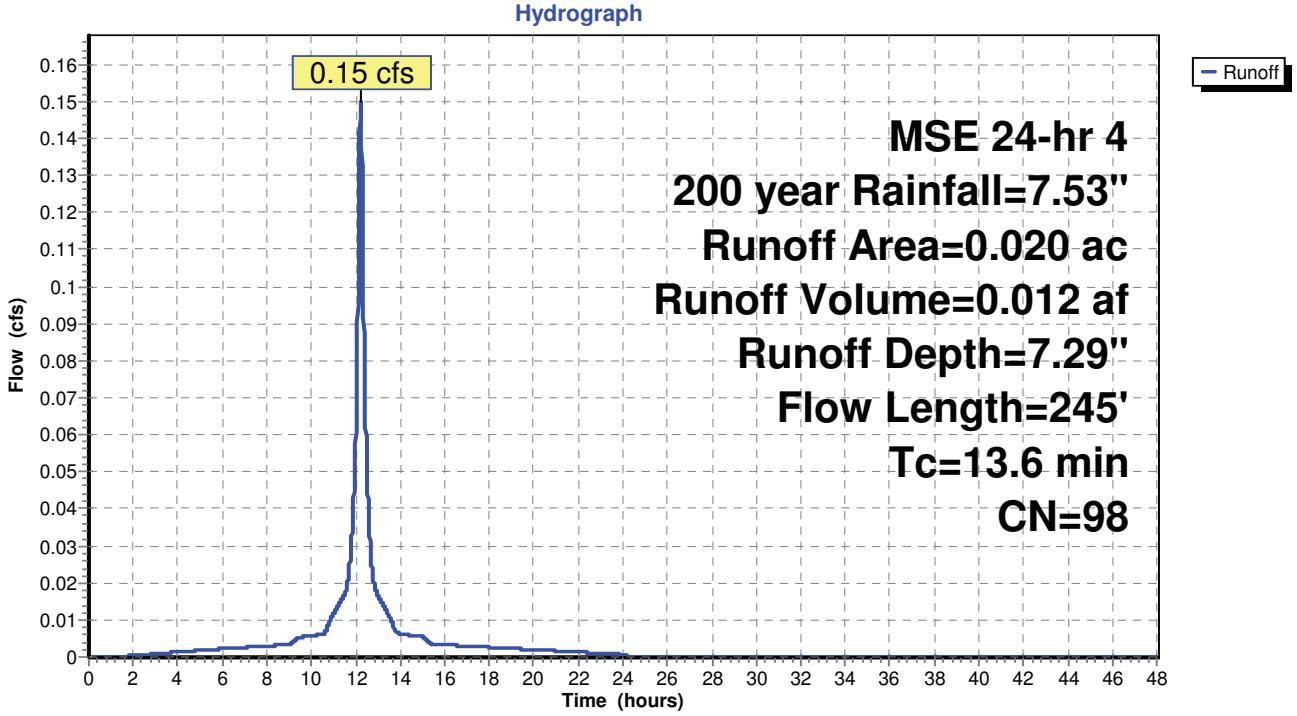
Runoff = 0.15 cfs @ 12.21 hrs, Volume= 0.012 af, Depth= 7.29"
Routed to Link 3PS : Developed Basin discharge

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 |
|---|---|---|---|
| * | 0.020 | 98 | New pvmt |
| | 0.020 | | 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



## Hydrograph for Subcatchment 3P: West Basin-untreated

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|---|---|---|---|
| 0.00 | 0.00 | 0.00 | 0.00 |
| 0.50 | 0.02 | 0.00 | 0.00 |
| 1.00 | 0.04 | 0.00 | 0.00 |
| 1.50 | 0.06 | 0.00 | 0.00 |
| 2.00 | 0.09 | 0.01 | 0.00 |
| 2.50 | 0.12 | 0.02 | 0.00 |
| 3.00 | 0.16 | 0.04 | 0.00 |
| 3.50 | 0.20 | 0.07 | 0.00 |
| 4.00 | 0.24 | 0.10 | 0.00 |
| 4.50 | 0.29 | 0.14 | 0.00 |
| 5.00 | 0.35 | 0.18 | 0.00 |
| 5.50 | 0.40 | 0.23 | 0.00 |
| 6.00 | 0.46 | 0.28 | 0.00 |
| 6.50 | 0.53 | 0.34 | 0.00 |
| 7.00 | 0.60 | 0.41 | 0.00 |
| 7.50 | 0.67 | 0.47 | 0.00 |
| 8.00 | 0.75 | 0.55 | 0.00 |
| 8.50 | 0.83 | 0.62 | 0.00 |
| 9.00 | 0.91 | 0.71 | 0.00 |
| 9.50 | 1.05 | 0.84 | 0.01 |
| 10.00 | 1.19 | 0.98 | 0.01 |
| 10.50 | 1.35 | 1.13 | 0.01 |
| 11.00 | 1.63 | 1.41 | 0.01 |
| 11.50 | 2.04 | 1.82 | 0.02 |
| 12.00 | 3.53 | 3.29 | **0.06** |
| 12.50 | 5.49 | 5.25 | **0.05** |
| 13.00 | 5.90 | 5.66 | 0.02 |
| 13.50 | 6.18 | 5.94 | 0.01 |
| 14.00 | 6.34 | 6.10 | 0.01 |
| 14.50 | 6.48 | 6.24 | 0.01 |
| 15.00 | 6.62 | 6.38 | 0.01 |
| 15.50 | 6.70 | 6.46 | 0.00 |
| 16.00 | 6.78 | 6.55 | 0.00 |
| 16.50 | 6.86 | 6.62 | 0.00 |
| 17.00 | 6.93 | 6.69 | 0.00 |
| 17.50 | 7.00 | 6.76 | 0.00 |
| 18.00 | 7.07 | 6.83 | 0.00 |
| 18.50 | 7.13 | 6.89 | 0.00 |
| 19.00 | 7.18 | 6.95 | 0.00 |
| 19.50 | 7.24 | 7.00 | 0.00 |
| 20.00 | 7.29 | 7.05 | 0.00 |
| 20.50 | 7.33 | 7.09 | 0.00 |
| 21.00 | 7.37 | 7.13 | 0.00 |
| 21.50 | 7.41 | 7.17 | 0.00 |
| 22.00 | 7.44 | 7.20 | 0.00 |
| 22.50 | 7.47 | 7.23 | 0.00 |
| 23.00 | 7.49 | 7.25 | 0.00 |
| 23.50 | 7.51 | 7.27 | 0.00 |
| 24.00 | **7.53** | **7.29** | 0.00 |
| 24.50 | 7.53 | 7.29 | 0.00 |
| 25.00 | 7.53 | 7.29 | 0.00 |
| 25.50 | 7.53 | 7.29 | 0.00 |
| 26.00 | 7.53 | 7.29 | 0.00 |
| 26.50 | 7.53 | 7.29 | 0.00 |
| 27.00 | 7.53 | 7.29 | 0.00 |
| 27.50 | 7.53 | 7.29 | 0.00 |
| 28.00 | 7.53 | 7.29 | 0.00 |
| 28.50 | 7.53 | 7.29 | 0.00 |
| 29.00 | 7.53 | 7.29 | 0.00 |
| 29.50 | 7.53 | 7.29 | 0.00 |
| 30.00 | 7.53 | 7.29 | 0.00 |
| 30.50 | 7.53 | 7.29 | 0.00 |
| 31.00 | 7.53 | 7.29 | 0.00 |
| 31.50 | 7.53 | 7.29 | 0.00 |
| 32.00 | 7.53 | 7.29 | 0.00 |
| 32.50 | 7.53 | 7.29 | 0.00 |
| 33.00 | 7.53 | 7.29 | 0.00 |
| 33.50 | 7.53 | 7.29 | 0.00 |
| 34.00 | 7.53 | 7.29 | 0.00 |
| 34.50 | 7.53 | 7.29 | 0.00 |
| 35.00 | 7.53 | 7.29 | 0.00 |
| 35.50 | 7.53 | 7.29 | 0.00 |
| 36.00 | 7.53 | 7.29 | 0.00 |
| 36.50 | 7.53 | 7.29 | 0.00 |
| 37.00 | 7.53 | 7.29 | 0.00 |
| 37.50 | 7.53 | 7.29 | 0.00 |
| 38.00 | 7.53 | 7.29 | 0.00 |
| 38.50 | 7.53 | 7.29 | 0.00 |
| 39.00 | 7.53 | 7.29 | 0.00 |
| 39.50 | 7.53 | 7.29 | 0.00 |
| 40.00 | 7.53 | 7.29 | 0.00 |
| 40.50 | 7.53 | 7.29 | 0.00 |
| 41.00 | 7.53 | 7.29 | 0.00 |
| 41.50 | 7.53 | 7.29 | 0.00 |
| 42.00 | 7.53 | 7.29 | 0.00 |
| 42.50 | 7.53 | 7.29 | 0.00 |
| 43.00 | 7.53 | 7.29 | 0.00 |
| 43.50 | 7.53 | 7.29 | 0.00 |
| 44.00 | 7.53 | 7.29 | 0.00 |
| 44.50 | 7.53 | 7.29 | 0.00 |
| 45.00 | 7.53 | 7.29 | 0.00 |
| 45.50 | 7.53 | 7.29 | 0.00 |
| 46.00 | 7.53 | 7.29 | 0.00 |
| 46.50 | 7.53 | 7.29 | 0.00 |
| 47.00 | 7.53 | 7.29 | 0.00 |
| 47.50 | 7.53 | 7.29 | 0.00 |
| 48.00 | 7.53 | 7.29 | 0.00 |

## Summary for Pond 1Po: combined ponds

Inflow Area = 0.984 ac, 51.63% Impervious, Inflow Depth = 5.41" for 200 year event
Inflow = 6.23 cfs @ 12.21 hrs, Volume= 0.444 af
Outflow = 2.41 cfs @ 12.47 hrs, Volume= 0.444 af, Atten= 61%, Lag= 15.4 min
Primary = 2.34 cfs @ 12.47 hrs, Volume= 0.380 af
Routed to Link 3PS : Developed Basin discharge
Secondary = 0.07 cfs @ 12.47 hrs, Volume= 0.064 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= 882.65' @ 12.47 hrs Surf.Area= 5,647 sf Storage= 7,431 cf

Plug-Flow detention time= 77.1 min calculated for 0.444 af (100% of inflow)
Center-of-Mass det. time= 77.1 min ( 875.7 - 798.6 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 880.00' | 11,781 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**<br>2,400 cf Overall x 0.0% Voids |
| | | 11,781 cf | Total Available Storage |

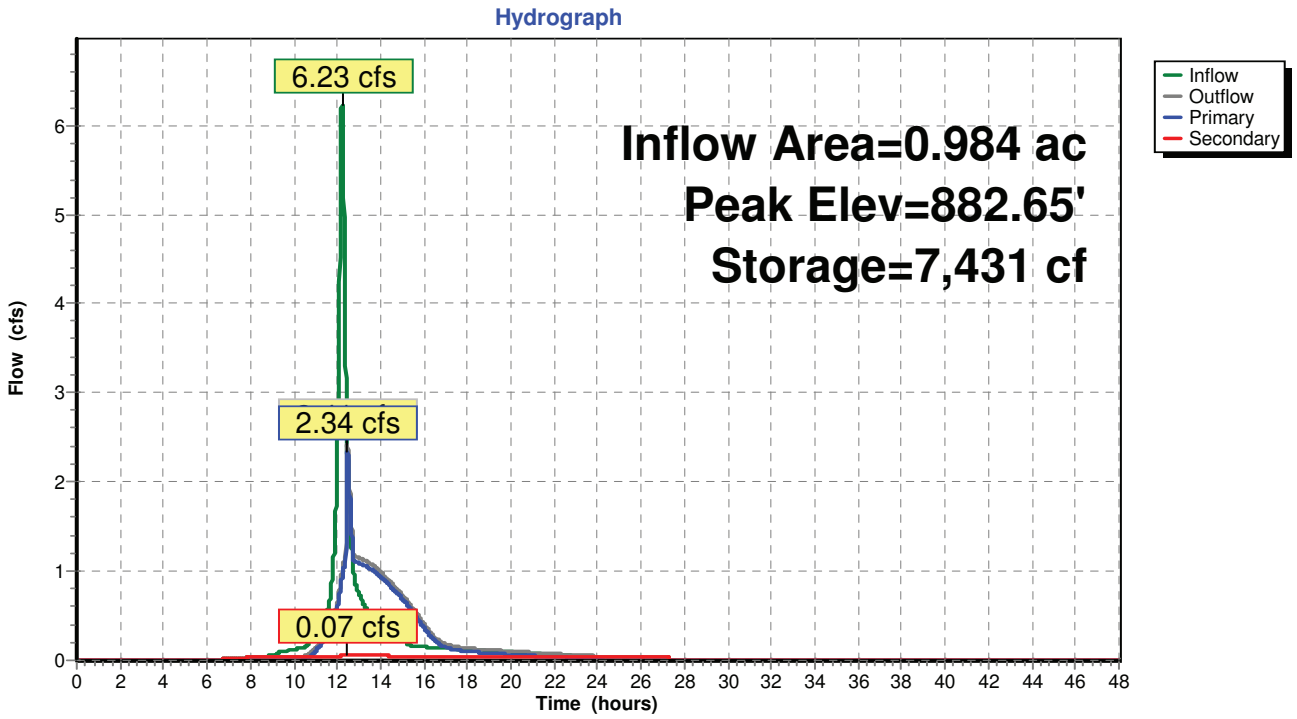
| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|---|---|---|---|
| 880.00 | 1,642 | 0 | 0 |
| 881.00 | 2,385 | 2,014 | 2,014 |
| 882.00 | 3,357 | 2,871 | 4,885 |
| 883.00 | 5,028 | 4,193 | 9,077 |
| 883.50 | 5,789 | 2,704 | 11,781 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Secondary | 878.00' | **0.500 in/hr Bio-filter Infiltration to native ground over Surface area**<br>Phase-In= 0.01' |
| #2 | Primary | 880.16' | **6.0" Round Pond discharge pipe**<br>L= 82.0' CPP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 880.16' / 877.00' S= 0.0385 '/' Cc= 0.900<br>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**<br>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<br>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=2.34 cfs @ 12.47 hrs HW=882.65' TW=0.00' (Dynamic Tailwater)
└─**2=Pond discharge pipe** (Inlet Controls 1.12 cfs @ 5.69 fps)
└─**3=Overflow Weir to street** (Weir Controls 1.23 cfs @ 0.58 fps)

**Secondary OutFlow** Max=0.07 cfs @ 12.47 hrs HW=882.65' TW=0.00' (Dynamic Tailwater)
└─**1=Bio-filter Infiltration to native ground** (Exfiltration Controls 0.07 cfs)

## Pond 1Po: combined ponds



## Hydrograph for Pond 1Po: combined ponds

| Time (hours) | Inflow (cfs) | Storage (cubic-feet) | Elevation (feet) | Outflow (cfs) | Primary (cfs) | Secondary (cfs) |
|---|---|---|---|---|---|---|
| 0.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 1.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 2.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 3.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 4.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 5.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 6.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 7.00 | 0.01 | 0 | 880.00 | 0.01 | 0.00 | 0.01 |
| 8.00 | 0.03 | 0 | 880.00 | 0.03 | 0.00 | 0.03 |
| 9.00 | 0.05 | 31 | 880.02 | 0.03 | 0.00 | 0.03 |
| 10.00 | 0.12 | 245 | 880.14 | 0.03 | 0.00 | 0.03 |
| 11.00 | 0.32 | 664 | 880.37 | 0.13 | 0.10 | 0.04 |
| 12.00 | **2.25** | **2,106** | **881.04** | **0.63** | **0.59** | **0.04** |
| 13.00 | **0.74** | **6,930** | **882.54** | **1.15** | **1.09** | **0.06** |
| 14.00 | 0.28 | 4,791 | 881.97 | 0.99 | 0.93 | 0.05 |
| 15.00 | 0.25 | 2,650 | 881.25 | 0.73 | 0.69 | 0.04 |
| 16.00 | 0.15 | 1,220 | 880.65 | 0.40 | 0.37 | 0.04 |
| 17.00 | 0.13 | 766 | 880.43 | 0.18 | 0.15 | 0.04 |
| 18.00 | 0.12 | 666 | 880.37 | 0.14 | 0.10 | 0.04 |
| 19.00 | 0.11 | 620 | 880.35 | 0.12 | 0.08 | 0.04 |
| 20.00 | 0.09 | 582 | 880.33 | 0.10 | 0.07 | 0.04 |
| 21.00 | 0.08 | 543 | 880.31 | 0.09 | 0.05 | 0.04 |
| 22.00 | 0.06 | 501 | 880.29 | 0.07 | 0.04 | 0.04 |
| 23.00 | 0.05 | 454 | 880.26 | 0.06 | 0.02 | 0.04 |
| 24.00 | 0.03 | 399 | 880.23 | 0.05 | 0.01 | 0.03 |
| 25.00 | 0.00 | 279 | 880.16 | 0.03 | 0.00 | 0.03 |
| 26.00 | 0.00 | 156 | 880.09 | 0.03 | 0.00 | 0.03 |
| 27.00 | 0.00 | 36 | 880.02 | 0.03 | 0.00 | 0.03 |
| 28.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 29.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 30.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 31.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 32.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 33.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 34.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 35.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 36.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 37.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 38.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 39.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 40.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 41.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 42.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 43.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 44.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 45.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 46.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 47.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |
| 48.00 | 0.00 | 0 | 878.00 | 0.00 | 0.00 | 0.00 |

## Stage-Discharge for Pond 1Po: combined ponds

| Elevation (feet) | Discharge (cfs) | Primary (cfs) | Secondary (cfs) |
|---|---|---|---|
| 878.00 | 0.00 | 0.00 | 0.00 |
| 878.10 | 0.01 | 0.00 | 0.01 |
| 878.20 | 0.01 | 0.00 | 0.01 |
| 878.30 | 0.01 | 0.00 | 0.01 |
| 878.40 | 0.01 | 0.00 | 0.01 |
| 878.50 | 0.01 | 0.00 | 0.01 |
| 878.60 | 0.01 | 0.00 | 0.01 |
| 878.70 | 0.01 | 0.00 | 0.01 |
| 878.80 | 0.01 | 0.00 | 0.01 |
| 878.90 | 0.01 | 0.00 | 0.01 |
| 879.00 | 0.01 | 0.00 | 0.01 |
| 879.10 | 0.01 | 0.00 | 0.01 |
| 879.20 | 0.01 | 0.00 | 0.01 |
| 879.30 | 0.01 | 0.00 | 0.01 |
| 879.40 | 0.01 | 0.00 | 0.01 |
| 879.50 | 0.01 | 0.00 | 0.01 |
| 879.60 | 0.01 | 0.00 | 0.01 |
| 879.70 | 0.01 | 0.00 | 0.01 |
| 879.80 | 0.01 | 0.00 | 0.01 |
| 879.90 | 0.01 | 0.00 | 0.01 |
| 880.00 | 0.03 | 0.00 | 0.03 |
| 880.10 | 0.03 | 0.00 | 0.03 |
| 880.20 | 0.04 | 0.00 | 0.03 |
| 880.30 | 0.08 | 0.05 | 0.04 |
| 880.40 | 0.16 | 0.12 | 0.04 |
| 880.50 | 0.26 | 0.22 | 0.04 |
| 880.60 | 0.36 | 0.33 | 0.04 |
| 880.70 | 0.44 | 0.40 | 0.04 |
| 880.80 | 0.51 | 0.47 | 0.04 |
| 880.90 | 0.56 | 0.52 | 0.04 |
| 881.00 | 0.61 | 0.57 | 0.04 |
| 881.10 | 0.66 | 0.62 | 0.04 |
| 881.20 | 0.71 | 0.66 | 0.04 |
| 881.30 | 0.75 | 0.70 | 0.04 |
| 881.40 | 0.79 | 0.74 | 0.05 |
| 881.50 | 0.83 | 0.78 | 0.05 |
| 881.60 | 0.86 | 0.81 | 0.05 |
| 881.70 | 0.90 | 0.85 | 0.05 |
| 881.80 | 0.93 | 0.88 | 0.05 |
| 881.90 | 0.96 | 0.91 | 0.05 |
| 882.00 | 0.99 | 0.94 | 0.05 |
| 882.10 | 1.02 | 0.97 | 0.05 |
| 882.20 | 1.06 | 1.00 | 0.06 |
| 882.30 | 1.08 | 1.03 | 0.06 |
| 882.40 | 1.11 | 1.05 | 0.06 |
| 882.50 | 1.14 | 1.08 | 0.06 |
| 882.60 | 1.17 | 1.10 | 0.06 |
| 882.70 | 4.43 | 4.36 | 0.07 |
| 882.80 | 10.42 | 10.35 | 0.07 |
| 882.90 | 18.48 | 18.41 | 0.07 |
| 883.00 | 28.32 | 28.25 | 0.07 |
| 883.10 | 39.32 | 39.24 | 0.07 |
| 883.20 | 51.59 | 51.51 | 0.08 |
| 883.30 | 64.94 | 64.86 | 0.08 |
| 883.40 | 79.36 | 79.28 | 0.08 |
| 883.50 | **96.06** | **95.98** | **0.08** |

## Stage-Area-Storage for Pond 1Po: combined ponds

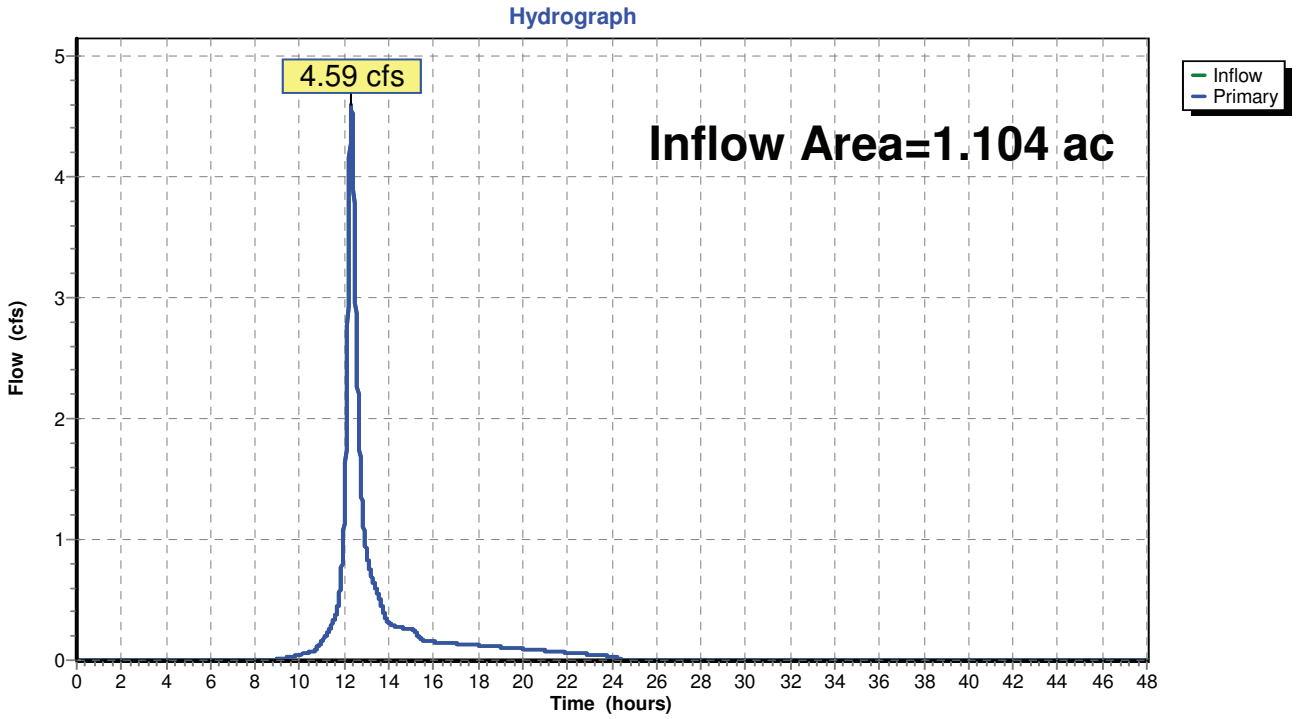
| Elevation (feet) | Surface (sq-ft) | Storage (cubic-feet) |
|---|---|---|
| 878.00 | 1,200 | 0 |
| 878.10 | 1,200 | 0 |
| 878.20 | 1,200 | 0 |
| 878.30 | 1,200 | 0 |
| 878.40 | 1,200 | 0 |
| 878.50 | 1,200 | 0 |
| 878.60 | 1,200 | 0 |
| 878.70 | 1,200 | 0 |
| 878.80 | 1,200 | 0 |
| 878.90 | 1,200 | 0 |
| 879.00 | 1,200 | 0 |
| 879.10 | 1,200 | 0 |
| 879.20 | 1,200 | 0 |
| 879.30 | 1,200 | 0 |
| 879.40 | 1,200 | 0 |
| 879.50 | 1,200 | 0 |
| 879.60 | 1,200 | 0 |
| 879.70 | 1,200 | 0 |
| 879.80 | 1,200 | 0 |
| 879.90 | 1,200 | 0 |
| 880.00 | 2,842 | 0 |
| 880.10 | 2,916 | 168 |
| 880.20 | 2,991 | 343 |
| 880.30 | 3,065 | 526 |
| 880.40 | 3,139 | 716 |
| 880.50 | 3,214 | 914 |
| 880.60 | 3,288 | 1,119 |
| 880.70 | 3,362 | 1,331 |
| 880.80 | 3,436 | 1,551 |
| 880.90 | 3,511 | 1,779 |
| 881.00 | 3,585 | 2,014 |
| 881.10 | 3,682 | 2,257 |
| 881.20 | 3,779 | 2,510 |
| 881.30 | 3,877 | 2,773 |
| 881.40 | 3,974 | 3,045 |
| 881.50 | 4,071 | 3,328 |
| 881.60 | 4,168 | 3,619 |
| 881.70 | 4,265 | 3,921 |
| 881.80 | 4,363 | 4,233 |
| 881.90 | 4,460 | 4,554 |
| 882.00 | 4,557 | 4,885 |
| 882.10 | 4,724 | 5,229 |
| 882.20 | 4,891 | 5,589 |
| 882.30 | 5,058 | 5,967 |
| 882.40 | 5,225 | 6,361 |
| 882.50 | 5,393 | 6,772 |
| 882.60 | 5,560 | 7,199 |
| 882.70 | 5,727 | 7,644 |
| 882.80 | 5,894 | 8,105 |
| 882.90 | 6,061 | 8,583 |
| 883.00 | 6,228 | 9,077 |
| 883.10 | 6,380 | 9,587 |
| 883.20 | 6,532 | 10,113 |
| 883.30 | 6,685 | 10,654 |
| 883.40 | 6,837 | 11,210 |
| 883.50 | **6,989** | **11,781** |

## Summary for Link 3ES: Existing Basin discharge

Inflow Area = 1.104 ac, 1.63% Impervious, Inflow Depth = 4.28" for 200 year event
Inflow = 4.59 cfs @ 12.32 hrs, Volume= 0.394 af
Primary = 4.59 cfs @ 12.32 hrs, Volume= 0.394 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



## Hydrograph for Link 3ES: Existing Basin discharge

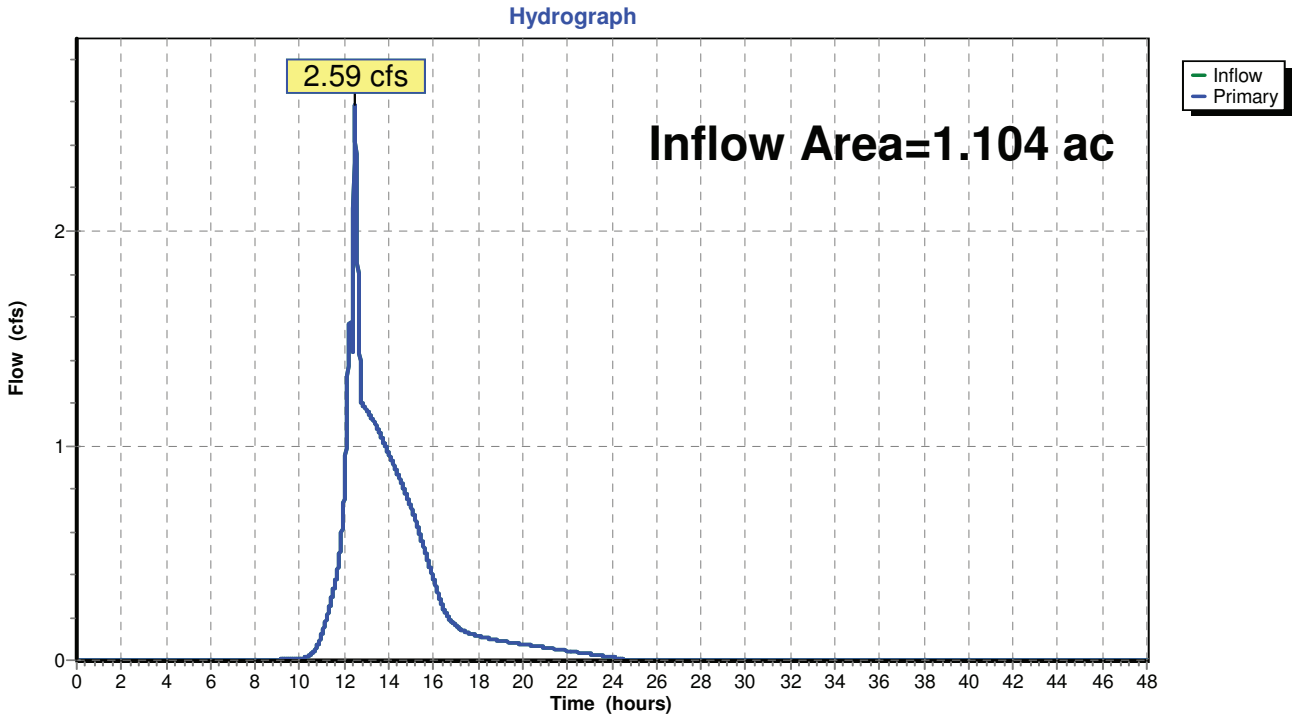
| Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) | Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) |
|---|---|---|---|---|---|---|---|
| 0.00 | 0.00 | **0.00** | 0.00 | 26.00 | 0.00 | 0.00 | 0.00 |
| 0.50 | 0.00 | 0.00 | 0.00 | 26.50 | 0.00 | 0.00 | 0.00 |
| 1.00 | 0.00 | 0.00 | 0.00 | 27.00 | 0.00 | 0.00 | 0.00 |
| 1.50 | 0.00 | 0.00 | 0.00 | 27.50 | 0.00 | 0.00 | 0.00 |
| 2.00 | 0.00 | 0.00 | 0.00 | 28.00 | 0.00 | 0.00 | 0.00 |
| 2.50 | 0.00 | 0.00 | 0.00 | 28.50 | 0.00 | 0.00 | 0.00 |
| 3.00 | 0.00 | 0.00 | 0.00 | 29.00 | 0.00 | 0.00 | 0.00 |
| 3.50 | 0.00 | 0.00 | 0.00 | 29.50 | 0.00 | 0.00 | 0.00 |
| 4.00 | 0.00 | 0.00 | 0.00 | 30.00 | 0.00 | 0.00 | 0.00 |
| 4.50 | 0.00 | 0.00 | 0.00 | 30.50 | 0.00 | 0.00 | 0.00 |
| 5.00 | 0.00 | 0.00 | 0.00 | 31.00 | 0.00 | 0.00 | 0.00 |
| 5.50 | 0.00 | 0.00 | 0.00 | 31.50 | 0.00 | 0.00 | 0.00 |
| 6.00 | 0.00 | 0.00 | 0.00 | 32.00 | 0.00 | 0.00 | 0.00 |
| 6.50 | 0.00 | 0.00 | 0.00 | 32.50 | 0.00 | 0.00 | 0.00 |
| 7.00 | 0.00 | 0.00 | 0.00 | 33.00 | 0.00 | 0.00 | 0.00 |
| 7.50 | 0.00 | 0.00 | 0.00 | 33.50 | 0.00 | 0.00 | 0.00 |
| 8.00 | 0.00 | 0.00 | 0.00 | 34.00 | 0.00 | 0.00 | 0.00 |
| 8.50 | 0.00 | 0.00 | 0.00 | 34.50 | 0.00 | 0.00 | 0.00 |
| 9.00 | 0.01 | 0.00 | 0.01 | 35.00 | 0.00 | 0.00 | 0.00 |
| 9.50 | 0.03 | 0.00 | 0.03 | 35.50 | 0.00 | 0.00 | 0.00 |
| 10.00 | 0.05 | 0.00 | 0.05 | 36.00 | 0.00 | 0.00 | 0.00 |
| 10.50 | 0.07 | 0.00 | 0.07 | 36.50 | 0.00 | 0.00 | 0.00 |
| 11.00 | 0.16 | 0.00 | 0.16 | 37.00 | 0.00 | 0.00 | 0.00 |
| 11.50 | 0.32 | 0.00 | 0.32 | 37.50 | 0.00 | 0.00 | 0.00 |
| 12.00 | **1.23** | 0.00 | **1.23** | 38.00 | 0.00 | 0.00 | 0.00 |
| 12.50 | **3.05** | 0.00 | **3.05** | 38.50 | 0.00 | 0.00 | 0.00 |
| 13.00 | 0.88 | 0.00 | 0.88 | 39.00 | 0.00 | 0.00 | 0.00 |
| 13.50 | 0.55 | 0.00 | 0.55 | 39.50 | 0.00 | 0.00 | 0.00 |
| 14.00 | 0.31 | 0.00 | 0.31 | 40.00 | 0.00 | 0.00 | 0.00 |
| 14.50 | 0.27 | 0.00 | 0.27 | 40.50 | 0.00 | 0.00 | 0.00 |
| 15.00 | 0.26 | 0.00 | 0.26 | 41.00 | 0.00 | 0.00 | 0.00 |
| 15.50 | 0.17 | 0.00 | 0.17 | 41.50 | 0.00 | 0.00 | 0.00 |
| 16.00 | 0.15 | 0.00 | 0.15 | 42.00 | 0.00 | 0.00 | 0.00 |
| 16.50 | 0.15 | 0.00 | 0.15 | 42.50 | 0.00 | 0.00 | 0.00 |
| 17.00 | 0.14 | 0.00 | 0.14 | 43.00 | 0.00 | 0.00 | 0.00 |
| 17.50 | 0.13 | 0.00 | 0.13 | 43.50 | 0.00 | 0.00 | 0.00 |
| 18.00 | 0.12 | 0.00 | 0.12 | 44.00 | 0.00 | 0.00 | 0.00 |
| 18.50 | 0.12 | 0.00 | 0.12 | 44.50 | 0.00 | 0.00 | 0.00 |
| 19.00 | 0.11 | 0.00 | 0.11 | 45.00 | 0.00 | 0.00 | 0.00 |
| 19.50 | 0.10 | 0.00 | 0.10 | 45.50 | 0.00 | 0.00 | 0.00 |
| 20.00 | 0.09 | 0.00 | 0.09 | 46.00 | 0.00 | 0.00 | 0.00 |
| 20.50 | 0.09 | 0.00 | 0.09 | 46.50 | 0.00 | 0.00 | 0.00 |
| 21.00 | 0.08 | 0.00 | 0.08 | 47.00 | 0.00 | 0.00 | 0.00 |
| 21.50 | 0.07 | 0.00 | 0.07 | 47.50 | 0.00 | 0.00 | 0.00 |
| 22.00 | 0.06 | 0.00 | 0.06 | 48.00 | 0.00 | 0.00 | 0.00 |
| 22.50 | 0.06 | 0.00 | 0.06 | | | | |
| 23.00 | 0.05 | 0.00 | 0.05 | | | | |
| 23.50 | 0.04 | 0.00 | 0.04 | | | | |
| 24.00 | 0.03 | 0.00 | 0.03 | | | | |
| 24.50 | 0.00 | 0.00 | 0.00 | | | | |
| 25.00 | 0.00 | 0.00 | 0.00 | | | | |
| 25.50 | 0.00 | 0.00 | 0.00 | | | | |

## Summary for Link 3PS: Developed Basin discharge

Inflow Area = 1.104 ac, 47.83% Impervious, Inflow Depth = 4.61" for 200 year event
Inflow = 2.59 cfs @ 12.47 hrs, Volume= 0.424 af
Primary = 2.59 cfs @ 12.47 hrs, Volume= 0.424 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



## Hydrograph for Link 3PS: Developed Basin discharge

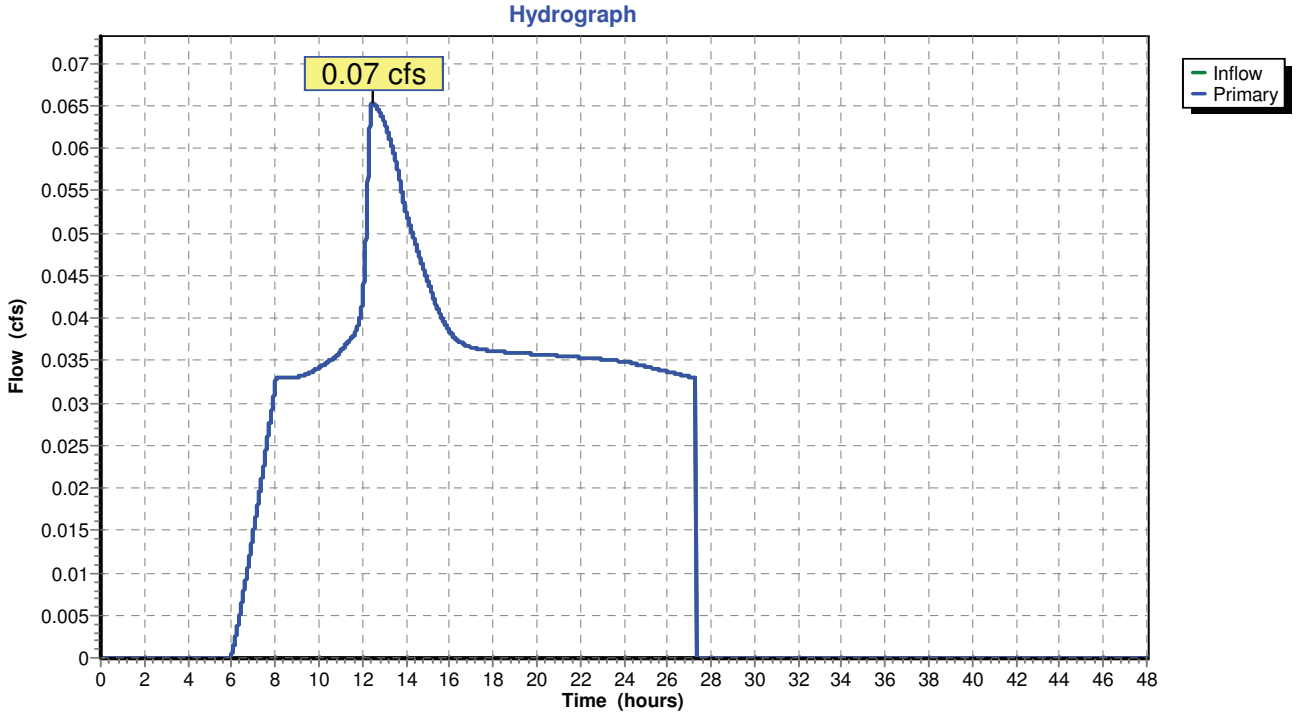
| Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) | Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) |
|---|---|---|---|---|---|---|---|
| 0.00 | 0.00 | **0.00** | 0.00 | 26.00 | 0.00 | 0.00 | 0.00 |
| 0.50 | 0.00 | 0.00 | 0.00 | 26.50 | 0.00 | 0.00 | 0.00 |
| 1.00 | 0.00 | 0.00 | 0.00 | 27.00 | 0.00 | 0.00 | 0.00 |
| 1.50 | 0.00 | 0.00 | 0.00 | 27.50 | 0.00 | 0.00 | 0.00 |
| 2.00 | 0.00 | 0.00 | 0.00 | 28.00 | 0.00 | 0.00 | 0.00 |
| 2.50 | 0.00 | 0.00 | 0.00 | 28.50 | 0.00 | 0.00 | 0.00 |
| 3.00 | 0.00 | 0.00 | 0.00 | 29.00 | 0.00 | 0.00 | 0.00 |
| 3.50 | 0.00 | 0.00 | 0.00 | 29.50 | 0.00 | 0.00 | 0.00 |
| 4.00 | 0.00 | 0.00 | 0.00 | 30.00 | 0.00 | 0.00 | 0.00 |
| 4.50 | 0.00 | 0.00 | 0.00 | 30.50 | 0.00 | 0.00 | 0.00 |
| 5.00 | 0.00 | 0.00 | 0.00 | 31.00 | 0.00 | 0.00 | 0.00 |
| 5.50 | 0.00 | 0.00 | 0.00 | 31.50 | 0.00 | 0.00 | 0.00 |
| 6.00 | 0.00 | 0.00 | 0.00 | 32.00 | 0.00 | 0.00 | 0.00 |
| 6.50 | 0.00 | 0.00 | 0.00 | 32.50 | 0.00 | 0.00 | 0.00 |
| 7.00 | 0.00 | 0.00 | 0.00 | 33.00 | 0.00 | 0.00 | 0.00 |
| 7.50 | 0.00 | 0.00 | 0.00 | 33.50 | 0.00 | 0.00 | 0.00 |
| 8.00 | 0.00 | 0.00 | 0.00 | 34.00 | 0.00 | 0.00 | 0.00 |
| 8.50 | 0.00 | 0.00 | 0.00 | 34.50 | 0.00 | 0.00 | 0.00 |
| 9.00 | 0.00 | 0.00 | 0.00 | 35.00 | 0.00 | 0.00 | 0.00 |
| 9.50 | 0.01 | 0.00 | 0.01 | 35.50 | 0.00 | 0.00 | 0.00 |
| 10.00 | 0.01 | 0.00 | 0.01 | 36.00 | 0.00 | 0.00 | 0.00 |
| 10.50 | 0.03 | 0.00 | 0.03 | 36.50 | 0.00 | 0.00 | 0.00 |
| 11.00 | 0.12 | 0.00 | 0.12 | 37.00 | 0.00 | 0.00 | 0.00 |
| 11.50 | 0.32 | 0.00 | 0.32 | 37.50 | 0.00 | 0.00 | 0.00 |
| 12.00 | **0.79** | 0.00 | **0.79** | 38.00 | 0.00 | 0.00 | 0.00 |
| 12.50 | **2.48** | 0.00 | **2.48** | 38.50 | 0.00 | 0.00 | 0.00 |
| 13.00 | 1.17 | 0.00 | 1.17 | 39.00 | 0.00 | 0.00 | 0.00 |
| 13.50 | 1.08 | 0.00 | 1.08 | 39.50 | 0.00 | 0.00 | 0.00 |
| 14.00 | 0.96 | 0.00 | 0.96 | 40.00 | 0.00 | 0.00 | 0.00 |
| 14.50 | 0.84 | 0.00 | 0.84 | 40.50 | 0.00 | 0.00 | 0.00 |
| 15.00 | 0.71 | 0.00 | 0.71 | 41.00 | 0.00 | 0.00 | 0.00 |
| 15.50 | 0.55 | 0.00 | 0.55 | 41.50 | 0.00 | 0.00 | 0.00 |
| 16.00 | 0.38 | 0.00 | 0.38 | 42.00 | 0.00 | 0.00 | 0.00 |
| 16.50 | 0.23 | 0.00 | 0.23 | 42.50 | 0.00 | 0.00 | 0.00 |
| 17.00 | 0.16 | 0.00 | 0.16 | 43.00 | 0.00 | 0.00 | 0.00 |
| 17.50 | 0.13 | 0.00 | 0.13 | 43.50 | 0.00 | 0.00 | 0.00 |
| 18.00 | 0.11 | 0.00 | 0.11 | 44.00 | 0.00 | 0.00 | 0.00 |
| 18.50 | 0.10 | 0.00 | 0.10 | 44.50 | 0.00 | 0.00 | 0.00 |
| 19.00 | 0.09 | 0.00 | 0.09 | 45.00 | 0.00 | 0.00 | 0.00 |
| 19.50 | 0.08 | 0.00 | 0.08 | 45.50 | 0.00 | 0.00 | 0.00 |
| 20.00 | 0.07 | 0.00 | 0.07 | 46.00 | 0.00 | 0.00 | 0.00 |
| 20.50 | 0.07 | 0.00 | 0.07 | 46.50 | 0.00 | 0.00 | 0.00 |
| 21.00 | 0.06 | 0.00 | 0.06 | 47.00 | 0.00 | 0.00 | 0.00 |
| 21.50 | 0.05 | 0.00 | 0.05 | 47.50 | 0.00 | 0.00 | 0.00 |
| 22.00 | 0.04 | 0.00 | 0.04 | 48.00 | 0.00 | 0.00 | 0.00 |
| 22.50 | 0.04 | 0.00 | 0.04 | | | | |
| 23.00 | 0.03 | 0.00 | 0.03 | | | | |
| 23.50 | 0.02 | 0.00 | 0.02 | | | | |
| 24.00 | 0.02 | 0.00 | 0.02 | | | | |
| 24.50 | 0.00 | 0.00 | 0.00 | | | | |
| 25.00 | 0.00 | 0.00 | 0.00 | | | | |
| 25.50 | 0.00 | 0.00 | 0.00 | | | | |

## Summary for Link 4Z: infiltrated to ground

| | | | | |
|---|---|---|---|---|
| Inflow | = | 0.07 cfs @ 12.47 hrs, | Volume= | 0.064 af |
| Primary | = | 0.07 cfs @ 12.47 hrs, | Volume= | 0.064 af, Atten= 0%, Lag= 0.0 min |

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

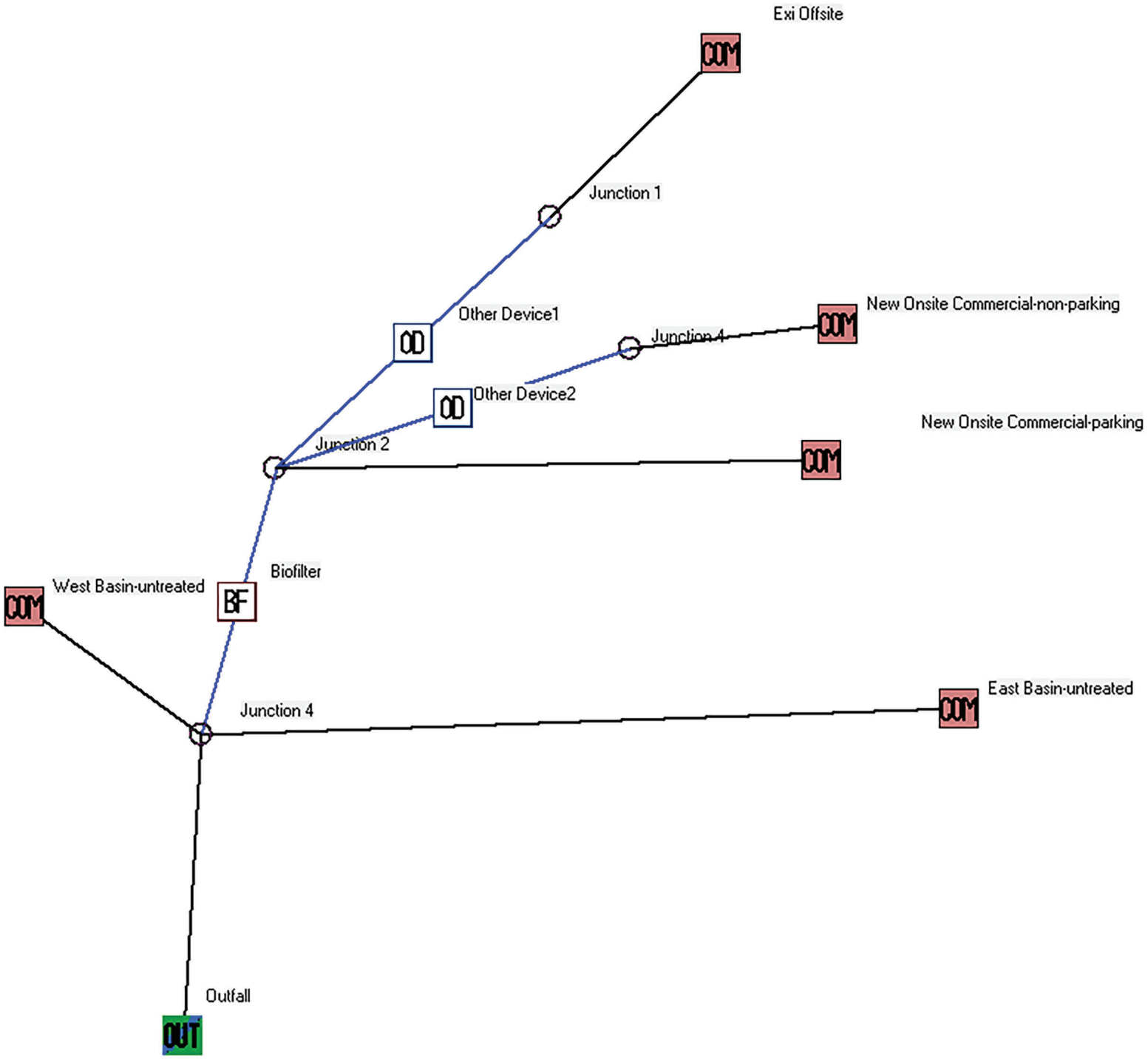
## Link 4Z: infiltrated to ground



## Hydrograph for Link 4Z: infiltrated to ground

| Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) |
|---|---|---|---|
| 0.00 | 0.00 | **0.00** | 0.00 |
| 0.50 | 0.00 | 0.00 | 0.00 |
| 1.00 | 0.00 | 0.00 | 0.00 |
| 1.50 | 0.00 | 0.00 | 0.00 |
| 2.00 | 0.00 | 0.00 | 0.00 |
| 2.50 | 0.00 | 0.00 | 0.00 |
| 3.00 | 0.00 | 0.00 | 0.00 |
| 3.50 | 0.00 | 0.00 | 0.00 |
| 4.00 | 0.00 | 0.00 | 0.00 |
| 4.50 | 0.00 | 0.00 | 0.00 |
| 5.00 | 0.00 | 0.00 | 0.00 |
| 5.50 | 0.00 | 0.00 | 0.00 |
| 6.00 | 0.00 | 0.00 | 0.00 |
| 6.50 | 0.01 | 0.00 | 0.01 |
| 7.00 | 0.01 | 0.00 | 0.01 |
| 7.50 | 0.02 | 0.00 | 0.02 |
| 8.00 | 0.03 | 0.00 | 0.03 |
| 8.50 | 0.03 | 0.00 | 0.03 |
| 9.00 | 0.03 | 0.00 | 0.03 |
| 9.50 | 0.03 | 0.00 | 0.03 |
| 10.00 | 0.03 | 0.00 | 0.03 |
| 10.50 | 0.03 | 0.00 | 0.03 |
| 11.00 | 0.04 | 0.00 | 0.04 |
| 11.50 | 0.04 | 0.00 | 0.04 |
| 12.00 | **0.04** | 0.00 | **0.04** |
| 12.50 | **0.07** | 0.00 | **0.07** |
| 13.00 | 0.06 | 0.00 | 0.06 |
| 13.50 | 0.06 | 0.00 | 0.06 |
| 14.00 | 0.05 | 0.00 | 0.05 |
| 14.50 | 0.05 | 0.00 | 0.05 |
| 15.00 | 0.04 | 0.00 | 0.04 |
| 15.50 | 0.04 | 0.00 | 0.04 |
| 16.00 | 0.04 | 0.00 | 0.04 |
| 16.50 | 0.04 | 0.00 | 0.04 |
| 17.00 | 0.04 | 0.00 | 0.04 |
| 17.50 | 0.04 | 0.00 | 0.04 |
| 18.00 | 0.04 | 0.00 | 0.04 |
| 18.50 | 0.04 | 0.00 | 0.04 |
| 19.00 | 0.04 | 0.00 | 0.04 |
| 19.50 | 0.04 | 0.00 | 0.04 |
| 20.00 | 0.04 | 0.00 | 0.04 |
| 20.50 | 0.04 | 0.00 | 0.04 |
| 21.00 | 0.04 | 0.00 | 0.04 |
| 21.50 | 0.04 | 0.00 | 0.04 |
| 22.00 | 0.04 | 0.00 | 0.04 |
| 22.50 | 0.04 | 0.00 | 0.04 |
| 23.00 | 0.04 | 0.00 | 0.04 |
| 23.50 | 0.04 | 0.00 | 0.04 |
| 24.00 | 0.03 | 0.00 | 0.03 |
| 24.50 | 0.03 | 0.00 | 0.03 |
| 25.00 | 0.03 | 0.00 | 0.03 |
| 25.50 | 0.03 | 0.00 | 0.03 |
| 26.00 | 0.03 | 0.00 | 0.03 |
| 26.50 | 0.03 | 0.00 | 0.03 |
| 27.00 | 0.03 | 0.00 | 0.03 |
| 27.50 | 0.00 | 0.00 | 0.00 |
| 28.00 | 0.00 | 0.00 | 0.00 |
| 28.50 | 0.00 | 0.00 | 0.00 |
| 29.00 | 0.00 | 0.00 | 0.00 |
| 29.50 | 0.00 | 0.00 | 0.00 |
| 30.00 | 0.00 | 0.00 | 0.00 |
| 30.50 | 0.00 | 0.00 | 0.00 |
| 31.00 | 0.00 | 0.00 | 0.00 |
| 31.50 | 0.00 | 0.00 | 0.00 |
| 32.00 | 0.00 | 0.00 | 0.00 |
| 32.50 | 0.00 | 0.00 | 0.00 |
| 33.00 | 0.00 | 0.00 | 0.00 |
| 33.50 | 0.00 | 0.00 | 0.00 |
| 34.00 | 0.00 | 0.00 | 0.00 |
| 34.50 | 0.00 | 0.00 | 0.00 |
| 35.00 | 0.00 | 0.00 | 0.00 |
| 35.50 | 0.00 | 0.00 | 0.00 |
| 36.00 | 0.00 | 0.00 | 0.00 |
| 36.50 | 0.00 | 0.00 | 0.00 |
| 37.00 | 0.00 | 0.00 | 0.00 |
| 37.50 | 0.00 | 0.00 | 0.00 |
| 38.00 | 0.00 | 0.00 | 0.00 |
| 38.50 | 0.00 | 0.00 | 0.00 |
| 39.00 | 0.00 | 0.00 | 0.00 |
| 39.50 | 0.00 | 0.00 | 0.00 |
| 40.00 | 0.00 | 0.00 | 0.00 |
| 40.50 | 0.00 | 0.00 | 0.00 |
| 41.00 | 0.00 | 0.00 | 0.00 |
| 41.50 | 0.00 | 0.00 | 0.00 |
| 42.00 | 0.00 | 0.00 | 0.00 |
| 42.50 | 0.00 | 0.00 | 0.00 |
| 43.00 | 0.00 | 0.00 | 0.00 |
| 43.50 | 0.00 | 0.00 | 0.00 |
| 44.00 | 0.00 | 0.00 | 0.00 |
| 44.50 | 0.00 | 0.00 | 0.00 |
| 45.00 | 0.00 | 0.00 | 0.00 |
| 45.50 | 0.00 | 0.00 | 0.00 |
| 46.00 | 0.00 | 0.00 | 0.00 |
| 46.50 | 0.00 | 0.00 | 0.00 |
| 47.00 | 0.00 | 0.00 | 0.00 |
| 47.50 | 0.00 | 0.00 | 0.00 |
| 48.00 | 0.00 | 0.00 | 0.00 |

# Winslamm Routing Diagram



## Winslamm-Input Data

Data file name:  T:\PROJECTS\2025 Projects\125-555 Kaashagen\Engineering\Drainage\Winslamm\2026-06-24 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:  06-25-2026  Time:  15:29:38
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 | .414 | 78 |
| Total Area (ac)/Composite CN | 1.104 | 72 |

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):  0.252
     13 - Paved Parking 1:  0.252 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz

LU# 3 - Commercial:  New Onsite Commercial-non-parking     Total area (ac):  0.512
     1 - Roofs 1:  0.238 ac.    Pitched    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     45 - Large Landscaped Areas 1:  0.212 ac.    Normal Silty    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     46 - Large Landscaped Areas 2:  0.062 ac.    Moderately Compacted Silty    Source Area PSD File: C:\WinSLAMM
Files\NURP.cpz

LU# 4 - Commercial:  West Basin-untreated     Total area (ac):  0.020
     25 - Driveways 1:  0.020 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz

LU# 5 - Commercial:  East Basin-untreated     Total area (ac):  0.100
     45 - Large Landscaped Areas 1:  0.100 ac.    Normal 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\2026-06-24 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:  06-25-2026  Time of run:  15:30:12
Total Area Modeled (acres):  1.104
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: | 62256 | - | 45.99 | 178.7 | - |
| Outfall Total with Controls: | 2146 | 96.55% | 175.4 | 23.49 | 86.86% |

Annualized Total After Outfall Controls: 2152 23.56

Biofilter # 1 is expected to clog in 10.57 years.. Percent Solids Reduction due to Treatment Media = 80

Data File: T:\PROJECTS\2025 Projects\125-555 Kaashagen\Engineering\
Drainage\Winslamm\2026-06-24 Commercial Building.mdb
Rain File: WisReg - Madison WI 1981.RAN
Date: 06-25-26 Time: 3:29:48 PM
Site Description: New Commercial Building

Runoff Volume Total (cf) at the Outfall

| Rain Number | 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 | 2.135 | 0.008 | 0.07 | 97.2 | 0 | 0 |
| 16 | 3/29/1981 | 0.05 | 1.359 | 0.007 | 0.05 | 98 | 0 | 0 |
| 17 | 3/29/1981 | 0.06 | 1.73 | 0.007 | 0.06 | 97.6 | 0.001 | 0 |
| 18 | 3/29/1981 | 0.07 | 2.135 | 0.008 | 0.07 | 97.2 | 0 | 0 |
| 19 | 4/3/1981 | 0.02 | 0.2582 | 0.003 | 0.02 | 99.1 | 0 | 0 |
| 20 | 4/3/1981 | 0.26 | 11.69 | 0.011 | 0.26 | 90.7 | 0.003 | 0 |
| 21 | 4/7/1981 | 0.71 | 46.43 | 0.016 | 0.7 | 79.1 | 0.003 | 0 |
| 22 | 4/8/1981 | 0.41 | 22.41 | 0.014 | 0.4 | 86.4 | 0.003 | 0 |
| 23 | 4/10/1981 | 1.06 | 78.56 | 0.018 | 1.04 | 72.1 | 0.023 | 77 |
| 24 | 4/12/1981 | 0.13 | 4.724 | 0.009 | 0.13 | 95 | 0.004 | 0 |
| 25 | 4/13/1981 | 0.32 | 15.7 | 0.012 | 0.32 | 89 | 0.002 | 0 |
| 26 | 4/16/1981 | 0.01 | 0.0645 | 0.002 | 0.01 | 99.5 | 0 | 0 |
| 27 | 4/19/1981 | 0.04 | 1.021 | 0.006 | 0.04 | 98.4 | 0 | 0 |
| 28 | 4/22/1981 | 0.01 | 0.0645 | 0.002 | 0.01 | 99.5 | 0 | 0 |
| 29 | 4/22/1981 | 0.02 | 0.2582 | 0.003 | 0.02 | 99.1 | 0 | 0 |
| 30 | 4/23/1981 | 0.05 | 1.359 | 0.007 | 0.05 | 98 | 0 | 0 |
| 31 | 4/28/1981 | 0.3 | 14.31 | 0.012 | 0.3 | 89.5 | 0.004 | 0 |
| 32 | 4/28/1981 | 0.06 | 1.73 | 0.007 | 0.06 | 97.6 | 0.001 | 0 |
| 33 | 4/30/1981 | 0.02 | 0.2582 | 0.003 | 0.02 | 99.1 | 0 | 0 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 34 | 5/4/1981 | 0.09 | 2.968 | 0.008 | 0.09 | 96.5 | 0 | 0 |
| 35 | 5/10/1981 | 0.08 | 2.565 | 0.008 | 0.08 | 96.8 | 0.001 | 0 |
| 36 | 5/13/1981 | 0.01 | 0.0645 | 0.002 | 0.01 | 99.5 | 0 | 0 |
| 37 | 5/23/1981 | 0.02 | 0.2582 | 0.003 | 0.02 | 99.1 | 0 | 0 |
| 38 | 5/24/1981 | 0.1 | 3.39 | 0.008 | 0.1 | 96.1 | 0.001 | 0 |
| 39 | 5/29/1981 | 0.34 | 17.14 | 0.013 | 0.34 | 88.4 | 0.008 | 0 |
| 40 | 6/2/1981 | 0.01 | 0.0645 | 0.002 | 0.01 | 99.5 | 0 | 0 |
| 41 | 6/3/1981 | 0.01 | 0.0645 | 0.002 | 0.01 | 99.5 | 0 | 0 |
| 42 | 6/8/1981 | 0.01 | 0.0645 | 0.002 | 0.01 | 99.5 | 0 | 0 |
| 43 | 6/8/1981 | 0.33 | 16.41 | 0.012 | 0.33 | 88.7 | 0.003 | 0 |
| 44 | 6/9/1981 | 0.07 | 2.135 | 0.008 | 0.07 | 97.2 | 0 | 0 |
| 45 | 6/12/1981 | 0.43 | 23.8 | 0.014 | 0.42 | 85.9 | 0.003 | 0 |
| 46 | 6/15/1981 | 2.59 | 360.2 | 0.035 | 2.5 | 54.4 | 0.035 | 2309 |
| 47 | 6/20/1981 | 0.34 | 17.14 | 0.013 | 0.34 | 88.4 | 0.005 | 0 |
| 48 | 6/21/1981 | 0.32 | 15.7 | 0.012 | 0.32 | 89 | 0.005 | 0 |
| 49 | 6/23/1981 | 0.51 | 29.66 | 0.015 | 0.5 | 83.8 | 0.004 | 0 |
| 50 | 6/25/1981 | 0.13 | 4.724 | 0.009 | 0.13 | 95 | 0.001 | 0 |
| 51 | 6/28/1981 | 0.24 | 10.46 | 0.011 | 0.24 | 91.4 | 0.009 | 0 |
| 52 | 7/4/1981 | 0.05 | 1.359 | 0.007 | 0.05 | 98 | 0.001 | 0 |
| 53 | 7/11/1981 | 0.5 | 28.91 | 0.014 | 0.49 | 84.1 | 0.013 | 0 |
| 54 | 7/12/1981 | 0.14 | 5.178 | 0.009 | 0.14 | 94.7 | 0.002 | 0 |
| 55 | 7/12/1981 | 0.86 | 59.84 | 0.017 | 0.85 | 75.9 | 0.053 | 7 |
| 56 | 7/13/1981 | 1.32 | 104.6 | 0.02 | 1.29 | 67.7 | 0.046 | 266 |
| 57 | 7/14/1981 | 0.12 | 4.284 | 0.009 | 0.12 | 95.4 | 0.002 | 0 |
| 58 | 7/15/1981 | 0.07 | 2.135 | 0.008 | 0.07 | 97.2 | 0 | 0 |
| 59 | 7/18/1981 | 0.12 | 4.284 | 0.009 | 0.12 | 95.4 | 0.002 | 0 |
| 60 | 7/20/1981 | 0.54 | 31.97 | 0.015 | 0.53 | 83 | 0.014 | 0 |
| 61 | 7/20/1981 | 0.1 | 3.39 | 0.008 | 0.1 | 96.1 | 0.001 | 0 |
| 62 | 7/23/1981 | 0.09 | 2.968 | 0.008 | 0.09 | 96.5 | 0 | 0 |
| 63 | 7/25/1981 | 0.24 | 10.46 | 0.011 | 0.24 | 91.4 | 0.003 | 0 |
| 64 | 7/27/1981 | 0.66 | 41.94 | 0.016 | 0.65 | 80.2 | 0.002 | 0 |
| 65 | 8/2/1981 | 0.58 | 35.16 | 0.015 | 0.57 | 82.1 | 0.002 | 0 |
| 66 | 8/3/1981 | 0.04 | 1.021 | 0.006 | 0.04 | 98.4 | 0 | 0 |
| 67 | 8/5/1981 | 0.01 | 0.0645 | 0.002 | 0.01 | 99.5 | 0 | 0 |
| 68 | 8/7/1981 | 0.02 | 0.2582 | 0.003 | 0.02 | 99.1 | 0 | 0 |
| 69 | 8/14/1981 | 2.09 | 287.7 | 0.034 | 2.02 | 59.6 | 0.016 | 1327 |
| 70 | 8/26/1981 | 0.49 | 28.16 | 0.014 | 0.48 | 84.3 | 0.008 | 0 |
| 71 | 8/26/1981 | 1.63 | 146.3 | 0.022 | 1.59 | 63.4 | 0.005 | 614 |
| 72 | 8/28/1981 | 0.62 | 38.48 | 0.015 | 0.61 | 81.1 | 0.005 | 0 |
| 73 | 8/28/1981 | 0.04 | 1.021 | 0.006 | 0.04 | 98.4 | 0 | 0 |
| 74 | 8/31/1981 | 0.03 | 0.5809 | 0.005 | 0.03 | 98.7 | 0.001 | 0 |
| 75 | 8/31/1981 | 1.52 | 123.8 | 0.02 | 1.49 | 64.7 | 0.008 | 477 |
| 76 | 9/7/1981 | 0.89 | 62.42 | 0.018 | 0.87 | 75.3 | 0.011 | 13 |
| 77 | 9/11/1981 | 0.08 | 2.565 | 0.008 | 0.08 | 96.8 | 0.002 | 0 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 78 | 9/16/1981 | 0.03 | 0.5809 | 0.005 | 0.03 | 98.7 | 0 | 0 |
| 79 | 9/21/1981 | 0.45 | 25.23 | 0.014 | 0.44 | 85.4 | 0.003 | 0 |
| 80 | 9/24/1981 | 0.9 | 63.29 | 0.018 | 0.88 | 75.1 | 0.002 | 15 |
| 81 | 9/26/1981 | 0.12 | 4.284 | 0.009 | 0.12 | 95.4 | 0.001 | 0 |
| 82 | 9/28/1981 | 0.1 | 3.39 | 0.008 | 0.1 | 96.1 | 0.001 | 0 |
| 83 | 9/29/1981 | 0.16 | 6.124 | 0.01 | 0.16 | 94 | 0.003 | 0 |
| 84 | 9/30/1981 | 0.36 | 18.64 | 0.013 | 0.36 | 87.8 | 0.016 | 0 |
| 85 | 10/1/1981 | 0.01 | 0.0645 | 0.002 | 0.01 | 99.5 | 0 | 0 |
| 86 | 10/4/1981 | 0.15 | 5.645 | 0.009 | 0.15 | 94.3 | 0.001 | 0 |
| 87 | 10/5/1981 | 0.04 | 1.021 | 0.006 | 0.04 | 98.4 | 0 | 0 |
| 88 | 10/5/1981 | 0.02 | 0.2582 | 0.003 | 0.02 | 99.1 | 0 | 0 |
| 89 | 10/9/1981 | 0.14 | 5.178 | 0.009 | 0.14 | 94.7 | 0.001 | 0 |
| 90 | 10/13/1981 | 1.2 | 93.47 | 0.019 | 1.18 | 69.7 | 0.006 | 166 |
| 91 | 10/15/1981 | 0.02 | 0.2582 | 0.003 | 0.02 | 99.1 | 0 | 0 |
| 92 | 10/17/1981 | 0.95 | 67.68 | 0.018 | 0.93 | 74.1 | 0.007 | 29 |
| 93 | 10/18/1981 | 0.06 | 1.73 | 0.007 | 0.06 | 97.6 | 0 | 0 |
| 94 | 10/21/1981 | 0.06 | 1.73 | 0.007 | 0.06 | 97.6 | 0 | 0 |
| 95 | 10/21/1981 | 0.01 | 0.0645 | 0.002 | 0.01 | 99.5 | 0 | 0 |
| 96 | 10/24/1981 | 0.01 | 0.0645 | 0.002 | 0.01 | 99.5 | 0 | 0 |
| 97 | 10/31/1981 | 0.01 | 0.0645 | 0.002 | 0.01 | 99.5 | 0 | 0 |
| 98 | 11/5/1981 | 0.04 | 1.021 | 0.006 | 0.04 | 98.4 | 0 | 0 |
| 99 | 11/15/1981 | 0.07 | 2.135 | 0.008 | 0.07 | 97.2 | 0 | 0 |
| 100 | 11/18/1981 | 0.05 | 1.359 | 0.007 | 0.05 | 98 | 0.001 | 0 |
| 101 | 11/19/1981 | 0.26 | 11.69 | 0.011 | 0.26 | 90.7 | 0 | 0 |
| 102 | 11/23/1981 | 0.18 | 7.122 | 0.01 | 0.18 | 93.3 | 0.001 | 0 |
| 103 | 11/25/1981 | 0.89 | 62.42 | 0.018 | 0.87 | 75.3 | 0.003 | 13 |
| 104 | 11/30/1981 | 0.37 | 19.41 | 0.013 | 0.37 | 87.5 | 0.001 | 0 |
| 105 | 12/3/1981 | - | - | - | - | - | - | - |
| 106 | 12/14/1981 | - | - | - | - | - | - | - |
| 107 | 12/20/1981 | - | - | - | - | - | - | - |
| 108 | 12/26/1981 | - | - | - | - | - | - | - |
| 109 | 12/31/1981 | - | - | - | - | - | - | - |
| Minimum: | | 0 | 0 | 0.002 | 0.01 | 54.4 | 0 | 0 |
| Maximum: | | 2.59 | 360.2 | 0.035 | 2.5 | 99.5 | 0.053 | 2309 |
| Average: | | 0.26 | 19.69 | 0.008 | 0.26 | 70.9 | 0.016 | 59 |
| Total: | | 28.81 | 2146 | | 28.31 | | | 5313 |

* 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 | 1.104 | |
| Calculated Volume of Annual **Rainfall** (site area x 28.81 in) | 115,457 | cf |
| ***Enter*** Pre-development **Runoff** (from Slamm Output) "Outfall" tab then "Runoff Volume (cf)" tab | 5,313 | cf |
| Calculated Pre-development "Stay-on" (infiltration) (**Rainfall - Runoff**) | 110,144 | cf |
| Calculated Post-development "Stay-on" ***required*** based on Level of Imperviousness | ***82,608*** | cf or more required to stay-on |
| ***Enter*** **Post-development runoff** (from Slamm "Outfall Total with Controls") | 2,146 | cf |
| Calculated Post-development "Stay-on" (infiltration) (**Rainfall - Post-development runoff**) | ***113,311*** | cf |
| Post-Construction Infiltration = | ***103%*** | 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:**

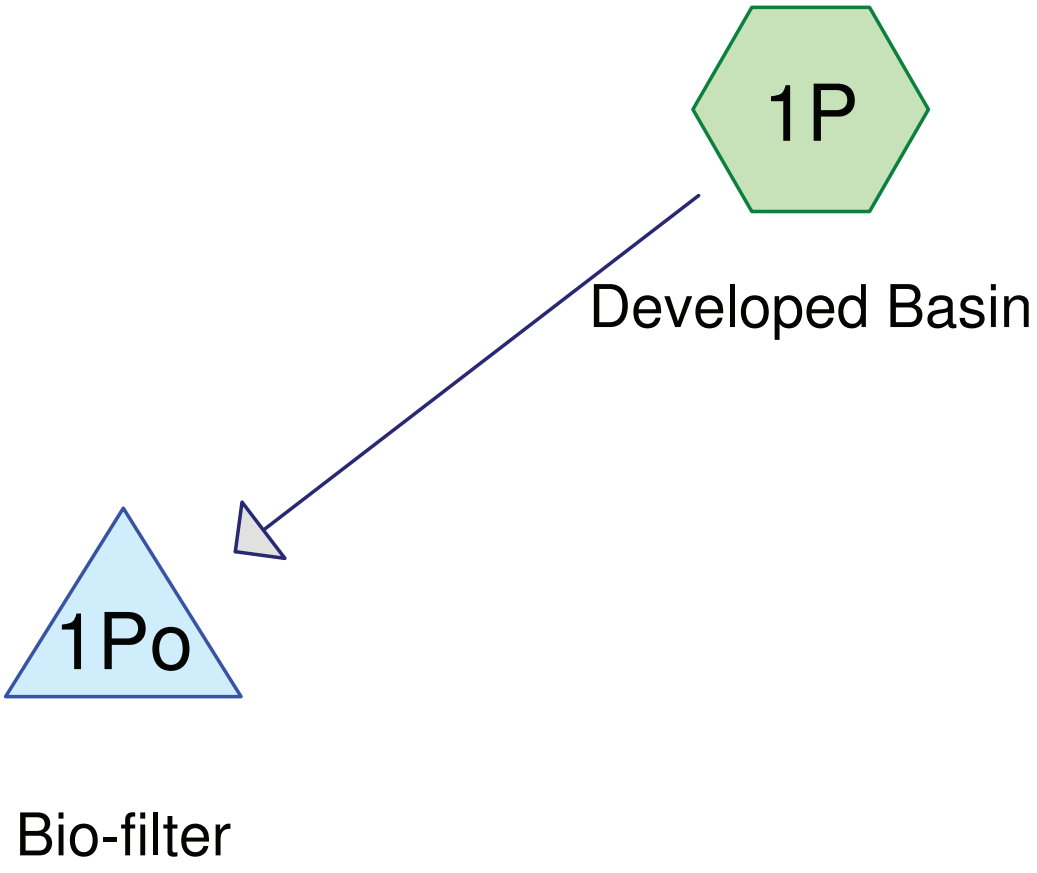
See Help Page for further descriptions of variables and items in drop-down boxes.
The last land disturbing activity on each sheet must be 'End'. This is either 12 months from the start of construction or final stabilization.
For periods of construction that exceed 12 months, please demonstrate that 5 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 2026-06-24 24-hour drawdown**
Prepared by Combs & Associates, Printed 6/25/2026
HydroCAD® 10.20-9a s/n 02820 © 2026 HydroCAD Software Solutions LLC

## 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**<br>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**<br>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**<br>Phase-In= 0.01' |
| #2 | Primary | 880.16' | **6.0" Round Pond discharge pipe**<br>L= 82.0' CPP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 880.16' / 877.00' S= 0.0385 '/' Cc= 0.900<br>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**<br>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<br>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

**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:

This space is reserved for recording data

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

Parcel Number(s):
061201320141

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.

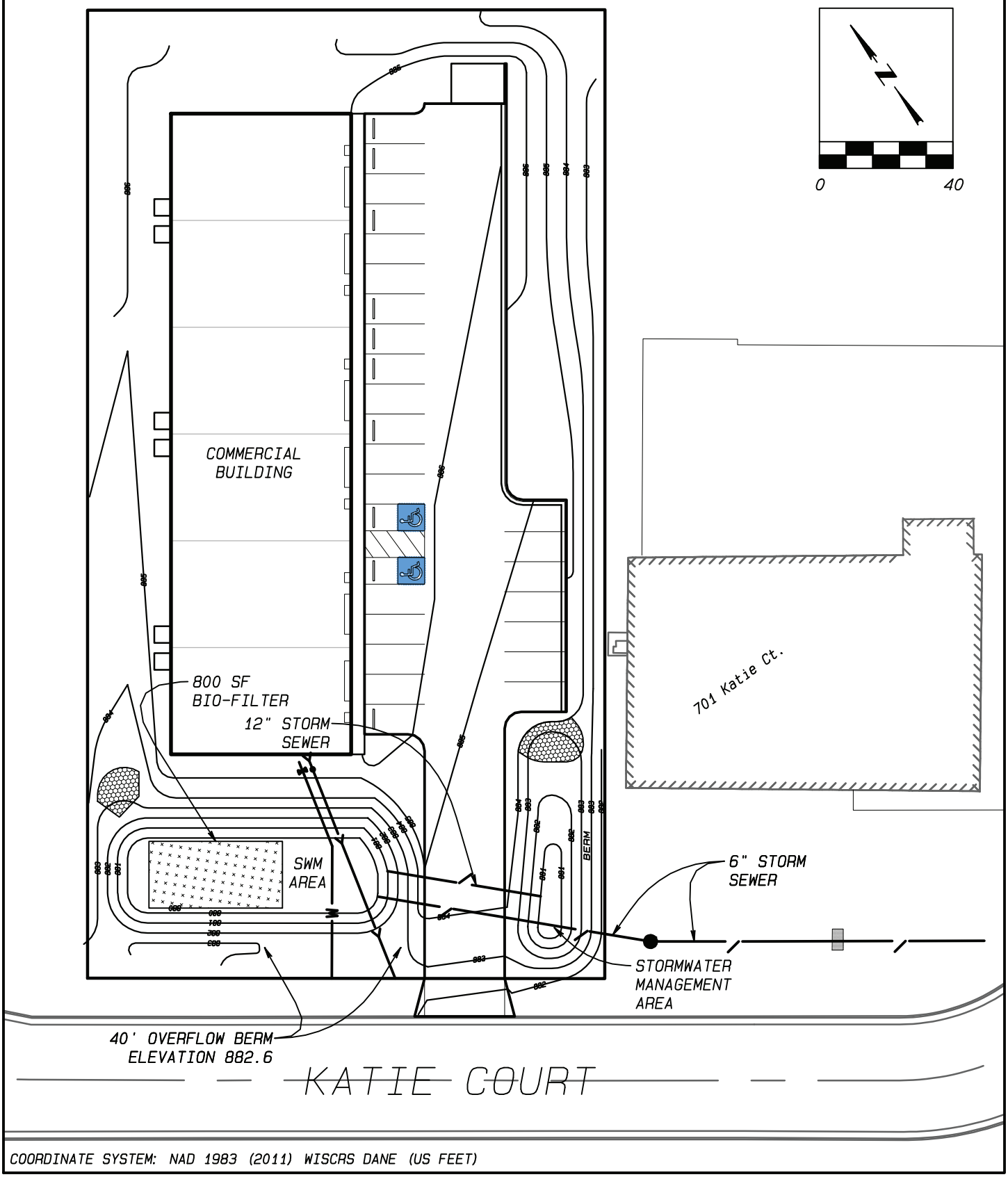
-Repair inlets and outfalls that are damaged or show signs of erosion.

-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:** | 708 Katie Court – Site Plan Review Application |
| **Date:** | June 10th, 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 the future land use of '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.

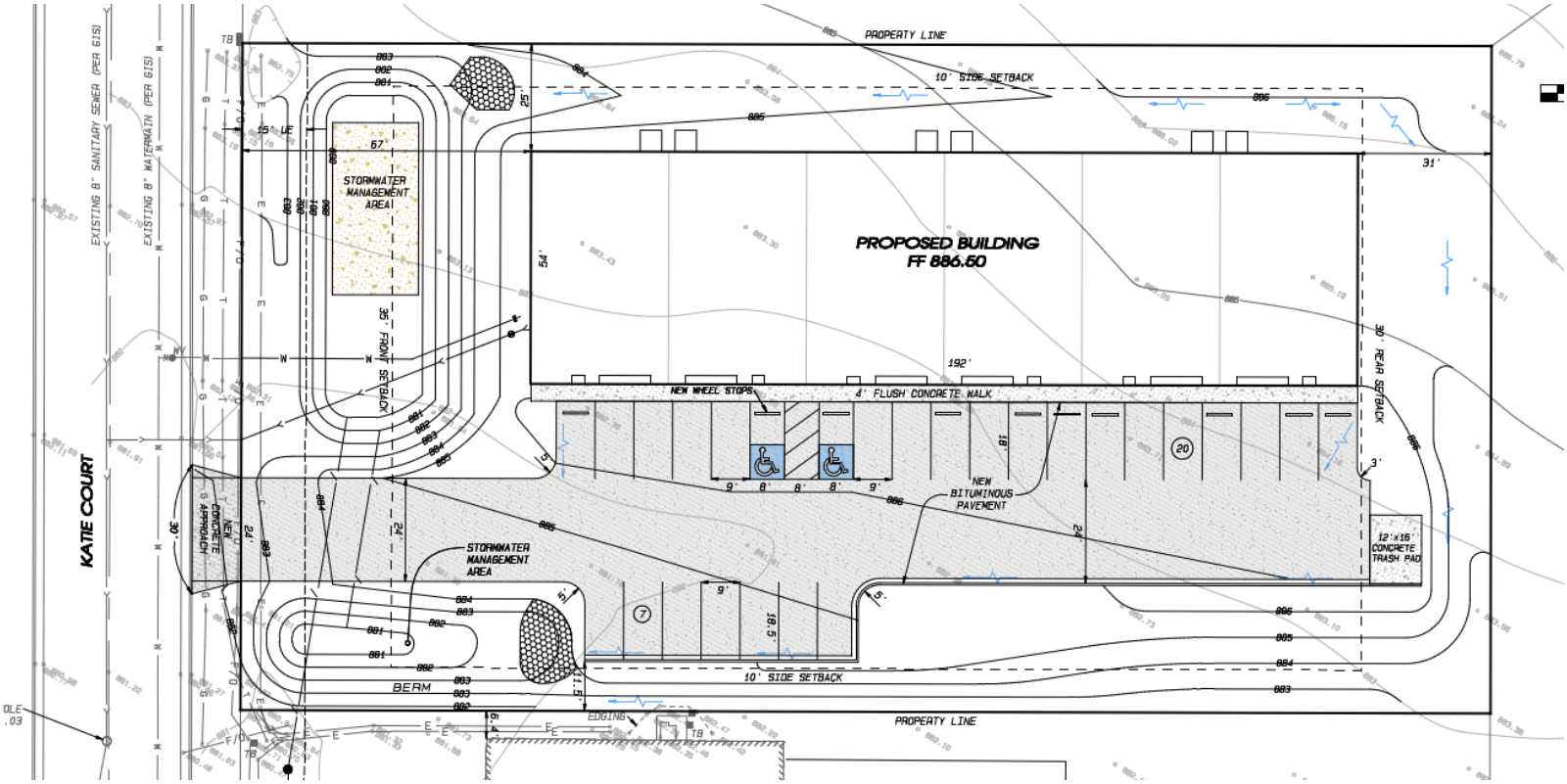
Site plan review exists to promote compatible development, protect property values, and prevent the impairment or depreciation of neighboring properties. No person may commence any non-agricultural use or erect any structure except conventional one- and two-family dwellings without first obtaining Plan 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

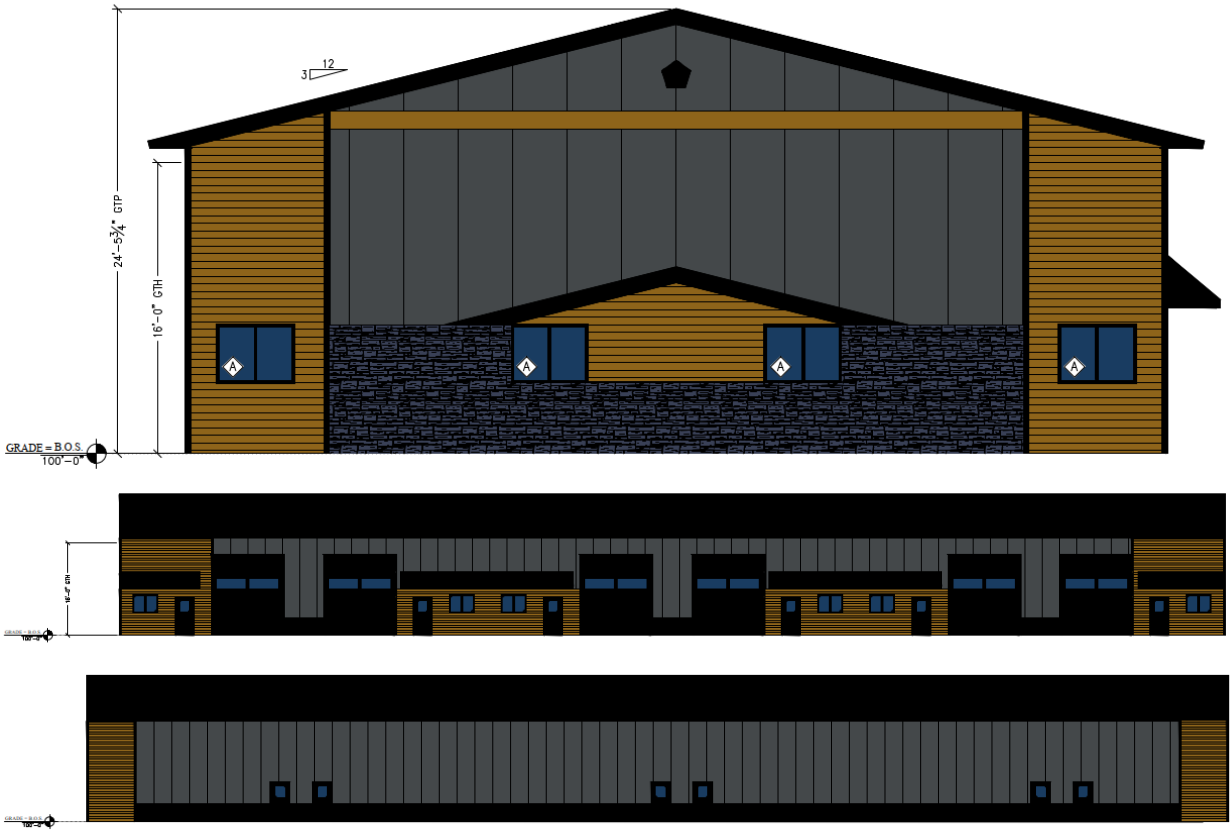
The applicant is proposing a 10,351 square foot 1-story commercial condo building with 6 units and a surface parking lot with 27 stalls (2 are ADA accessible). The intended uses are office/commercial storage units for small businesses and hobbyists. Stormwater management basins are located along the front of the building.

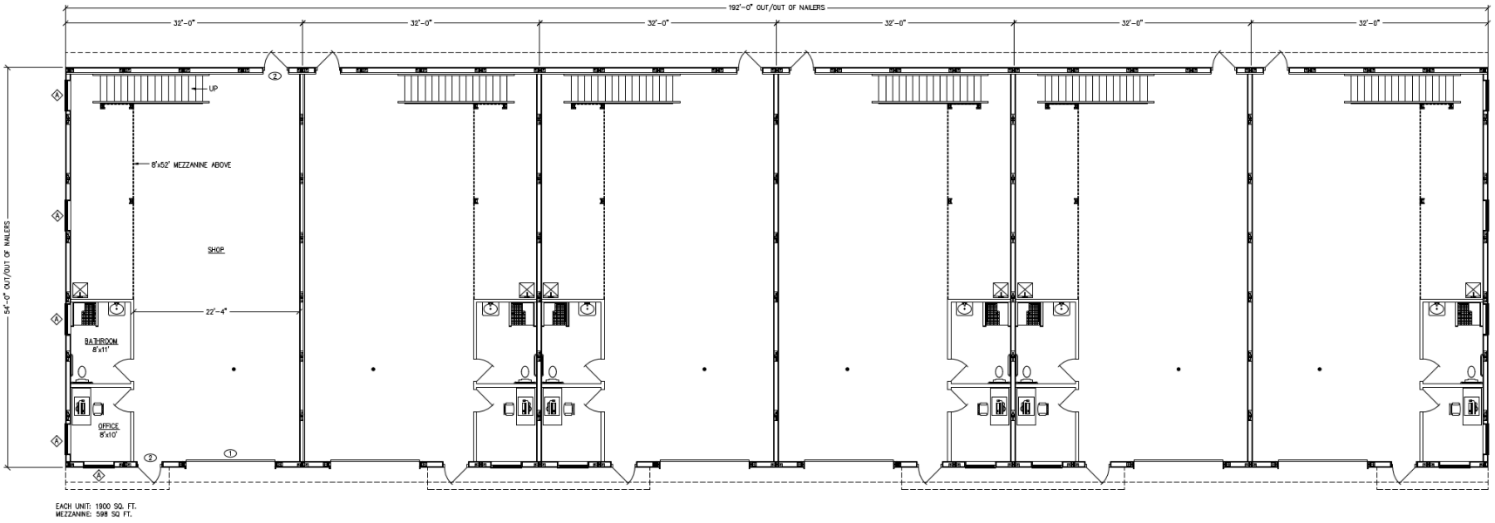
The following plans were submitted on May 5th, 2026:

- ✓ 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 (not requested at this time)

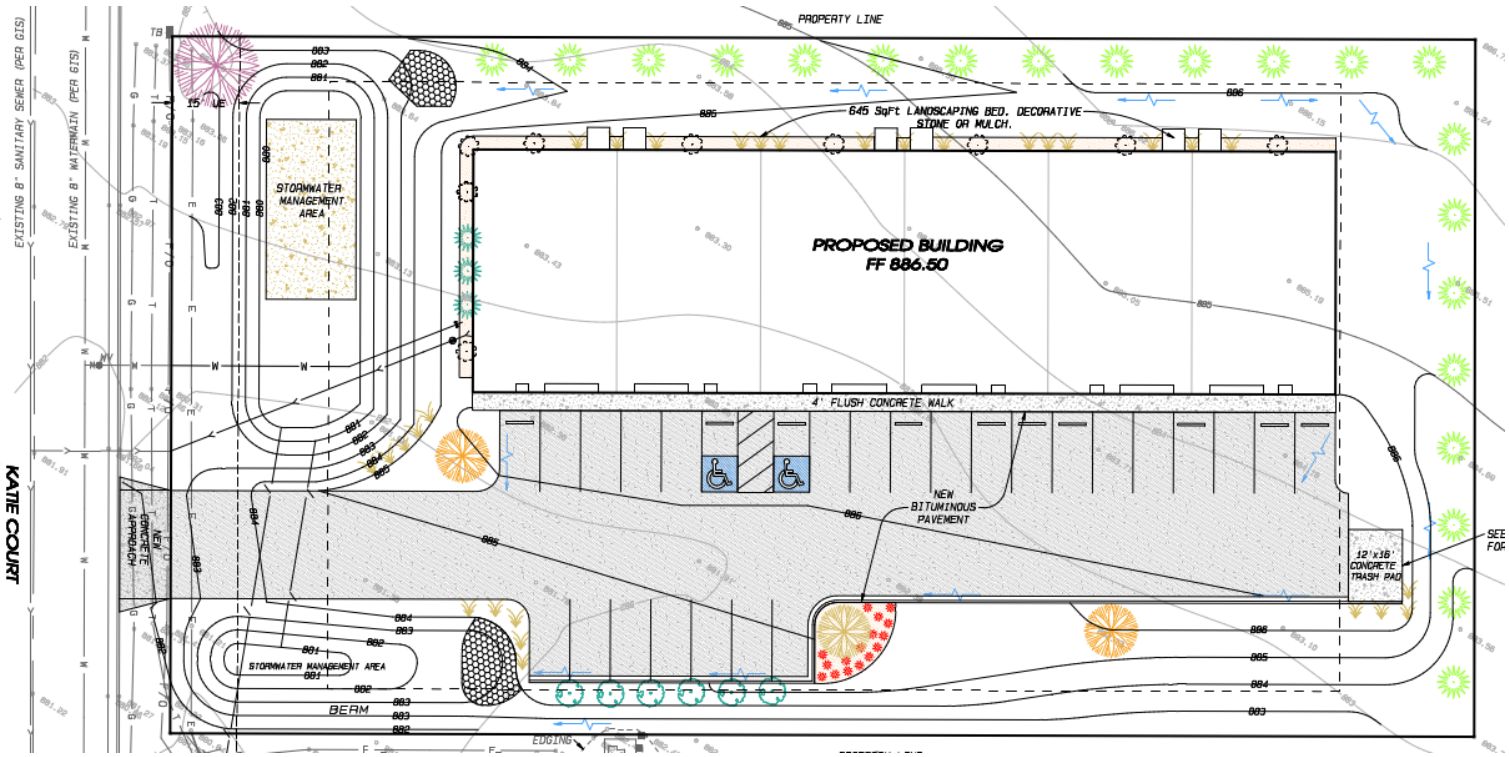



*Proposed layout*






*Proposed floorplan*




NEW ROBIN HILL SERVICEBERRY TREE- 1.5" DIA WHEN PLANTED

NEW SPRING GLORY SERVICEBERRY TREE- 1.5" DIA WHEN PLANTED

NEW SPRING FLURRY SERVICEBERRY TREE- 1.5" DIA WHEN PLANTED

NEW EMERALD GREEN ARBORVITAE TREE (OR APPROVED EQUAL) - MIN 5' TALL WHEN PLANTED

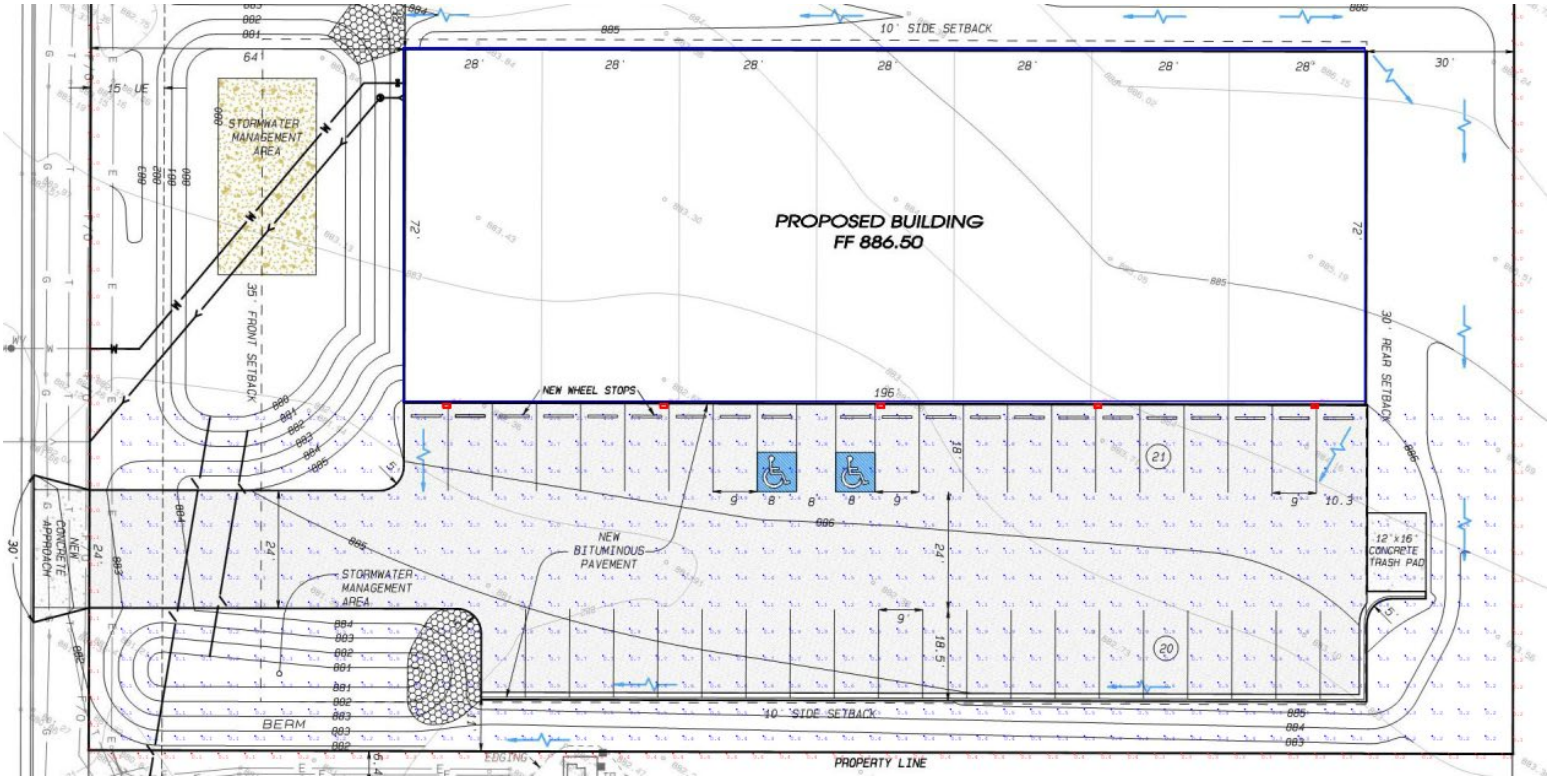
NEW PENCIL POINT JUNIPER (OR APPROVED EQUAL) - MINIMUM 18" TALL WHEN PLANTED

NEW BOXWOOD SHRUB (OR APPROVED EQUAL) - MINIMUM 18" TALL WHEN PLANTED

NEW IVORY DOGWOOD SHRUB

NEW FEATHER REED GRASS SHRUB

NEW HERBACEOUS PERENNIAL BED (MISCELLANEOUS VARIETY OF PLANTS)




*Lighting Plan With Photometrics*

## 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.* (67 ft)
- ✓ *Side Yards. Minimum ten (10) feet.* (25 ft)
- ✓ *Rear Yard. Minimum thirty (30) feet.* (31 ft)
- ✓ *Building Height. Maximum thirty-five (35) feet.* (~21 ft)
- ? *Percentage of Lot Coverage. Current Standard is Maximum 40%, unless tonight's agenda item has recommended text amendment to a Maximum fifty (50) percent.* (MSA Evaluation: 49.3%)

Lot Coverage standards across commercial districts were revisited by the Plan Commission tonight. The maximum lot coverage for the Mixed Business zoning district may change from 40% to 50%, consistent with general practice and other previously approved projects in this district. The updated site plan reflects an approximately 12% reduction from the initial lot coverage of 61.1%, bringing the proposal into compliance.

## 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 with its surroundings.**

   ? The rear of the building is visible from the public street (and the side of the neighboring lot), and lacks significant architectural articulation breaking up a very long monotonous facade. This façade has received minimal improvement to break up the horizontality of the façade. The landscaping and increased building setback will help soften the building's presence; however, updated CUP standard (if recommended) requires revisions to the rear facade.

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;*

   ? Generally the color the color palette will fit into the street corridor; however, material samples have not been provided and the renderings are not realistic from what I understand by the applicant.

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. **NOT APPLICABLE (no planned signage)** - The sizing and placement of signs should fit the buildings;

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

   ✓ The submitted landscaping plan provides vegetative screening for the parking area. 3 trees, 6 large shrubs, and 10 small shrubs are located along the front and side of the parking area. Along the front lot line, it does not appear that plantings will be possible in the right-of-way due to utilities and the stormwater basin. Plan Commission may wish to request additional plantings screening the parking lot and front face of the building from the right-of-way. Any additional conditions approved through the CUP should be verified for compliance with the submitted landscaping plan.

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

    ✓ The provided lighting plan depicts 5 wall-mounted lights along the side of the building containing the entrances and facing the parking lot. Verification that the lights will not negatively impact surrounding uses through photometrics analysis was submitted.

## 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. Commercial condo buildings requires meeting site-specific conditions as determined through the CUP approval to allow this use and building type based on the surrounding context.**

*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 6 units would split 25 parking spaces with two ADA stalls (4.16 spaces per unit). The 10,269 square foot building would require 26 parking spaces should the 1 space per 400 square feet of building be used (per CUP potential condition to be determined).**
- ✓ **Parking Space and Driveway Design: The parking lot has single street access, a 24' wide drive aisle, and 9' by 18' stalls.**
- ✓ **Sidewalk: A 4-foot flush concrete walkway has been added in front of the parking stalls.**

***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. Approval by the county has not been finalized yet. **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.

***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 revised site plan submitted includes a landscaping plan including small trees planted on the northwest (side) and northeast (rear) lot lines, a 645 sq. ft. landscaping bed along the northwest side, and boxwood/feather grass shrubs planted on the northwest and northeast foundations of the building. Plantings elsewhere around the site include 4 trees, 6 shrubs, and a perennial bed. **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. MSA calculated 10,970 feet of surfaced area which would require 1,097 feet of landscaped area. The proposed plan has roughly 1,168 square feet landscaped, meaning it is compliant.

**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:** 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. This is met by the proposed lighting plan, which has over 5 footcandles measures at each entrance and a minimum of 0.4 around the exterior of the lot.

| 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. |

The section also regulates lighting fixture design. Certain subsections may not be met by the proposed plan, which only includes wall-mounted fixtures pointed at an angle towards the parking lot. Potentially noncompliant subsections include:

> *"b. For lighting horizontal tasks such as private sidewalks, paths, entrances and parking areas,* ***fixtures shall be aimed straight down, shall have flat lenses and shall meet IESNA full-cutoff criteria.****"*
>
> *"d. The use of floodlighting, spotlighting,* ***wall-mounted fixtures,*** *internally illuminated decorative globes and spheres and other fixtures not meeting IESNA full-cutoff criteria,* ***shall be permitted only with the approval of the village, based upon acceptable justification and achievement of adequate glare control.****"*

## Potential Action

Plan Commission may postpone the agenda should there be any unresolved information and wait until 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) Change lighting plan to bring it into compliance with lighting fixture design requirements.
   b) Add additional vegetative screening from the right-of-way along the parking lot and face of the building.

c) Revise the rear building façade to come into compliance with the CUP conditions. This is if the updated conditions are included in the approval.
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*

June 25, 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 June 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

**Site Design**

3. Identify the ADA accessible route from the public street to a door to every possible tenant occupancy.
4. Show contours for the adjacent parcel to the south demonstrating that stormwater will not flow onto the adjacent parcel.
5. 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?
   Provide detail of how curb/gutter drainage will be directed into the detention area and not flow to the adjacent parcel

**Stormwater**

6. Provide copy of the stormwater management plan with approval by Dane County. Stormwater was not reviewed by MSA.
7. 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.
8. Provide a profile for the storm lateral and elevation of Village storm sewer.

9. Provide detail for method of connection to Village storm sewer.
10. Provide detail for what appears to be rip rap for drainage into the stormwater detention areas. Drainage is shown to flow parallel to contour lines which is not possible. Revise surface drainage arrows to correctly show flow direction

**Sanitary Sewer**

11. Provide invert elevations for connection to the Village sewer main.
12. 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?
13. Provide detail for connection to Village sanitary sewer with elevation of city sewer.
14. Provide a profile for the sanitary lateral where it crosses the stormwater detention basin
15. 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**

16. 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.
17. Provide a profile for the water service from the shutoff valve in the street to the building.
18. 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.

**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