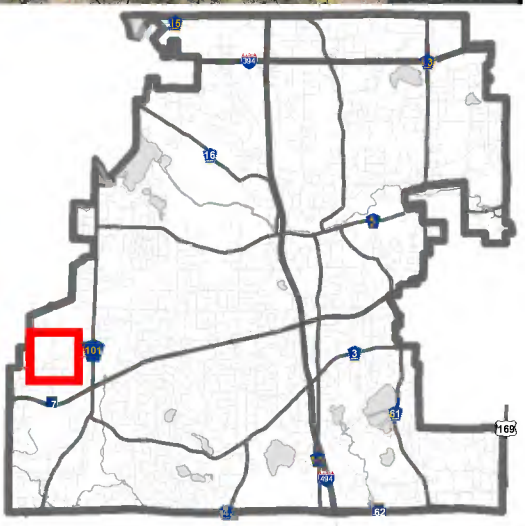
Location Map

Project: Priory Woods
Address: 4633 Sparrow Road



CITY OF MINNETONKA

"Priory Woods" – Development Narrative

Developer Introduction:

ZEHNDER HOMES, INC. –
Eric Zehnder
10300 10th Ave N
Plymouth, Minnesota 55441
Telephone: 651-303-5747
Email: ericzehnder@zehnderhomes.com

Zehnder Homes is proposing to develop a single parcel in the city of Minnetonka, Minnesota that will create a community of 3 detached single-family homes on +/- 1.87 acres of land. The site is located in the NE corner of the intersection of Sparrow Road and Priory Lane. There will not be any new public infrastructure needed for this development. The land will be subdivided into three lots, with two homes having driveways off of Priory Lane, and one home with a driveway on Sparrow Road. The development will be named "Priory Woods" and is a conforming, single-family, R1 development. Care has been taken to minimize grading and the impact to existing trees. The percentage of removed trees is within the allowed percentages. This proposed residential development will consist of single-family style homes.

DESCRIPTION OF PROPERTY SURVEYED

That part of the Northwest Quarter of Northeast Quarter of Section 30, Township 117 North, Range 22 West of the Fifth Principal Meridian, described as follows:

Commencing 280.5 feet South of the Northwest corner of the Northwest Quarter of the Northeast Quarter of Section 30, Township 117, Range 22; thence East 292.9 feet; thence South 330 feet; thence North 77 degrees West for a distance of 300 feet; thence North along the center of the road for a distance of 264 feet to the point of beginning, Hennepin County, Minnesota, except road.

Abstract Property

STANDARD NOTES

1) **Site Address**: 4633 Sparrow Road, Minnetonka MN 55345

2) **Flood Zone Information**: X (area determined to be outside of the 0.2% annual chance floodplain) per Flood Insurance Rate Map, Community Panel No. 27053C0317F effective date of 11/4/2016.

3) **Parcel Area Information**:

Gross Area:	82,393 s.f.	~	1.89 acres
R/W Area:	2,808 s.f.	~	0.06 acres
Net Area:	79,585 s.f.	~	1.83 acres.

*We do not affirmatively insure the quantity of acreage set forth in the description

4) **Benchmark**: Elevations are based on Hennepin County Control Point Name: Jeff which has an elevation of: 922.21 feet (NAVD88).

5) **Zoning Information**: The current Zoning for the subject property is R1 (Low Density Residential District) per the City of Minnetonka's zoning map found on the city GIS website 8/1/2023. The setback, height, and floor space area restrictions for said zoning designation are as follows:

Principal Structure Setbacks - Street(s): 35 feet from right of way, corner lot reduce one side by 10 feet
Side: Sum shall not be less than 30 feet, minimum 10 feet
Rear: 40 feet or 20% of lot depth whichever is less
Height: 35 feet

*Please note that the zoning information shown hereon may have been amended through a city process. We recommend that a zoning letter be obtained from the Zoning Administrator for the current restrictions for this site. All setback information and hardcover data for planning and design must be verified by all parties involved in the design and planning process prior to any planning or construction.

We have not received the current zoning classification and building setback requirements from the insurer.

6) **Utilities**: We have shown the location of utilities to the best of our ability based on observed evidence together with evidence from the following sources: plans obtained from utility companies, plans provided by client, markings by utility companies and other appropriate sources. We have used this information to develop a view of the underground utilities for this site. However, lacking excavation, the exact location of underground features cannot be accurately, completely and reliably depicted. Where additional or more detailed information is required, the client is advised that excavation may be necessary. Also, please note that Seasonal conditions may inhibit our ability to visibly observe all the utilities located on the subject property. A Gopher State One Call was submitted for this survey. Please reference Ticket No. 231944203 for a list of utility operators in this area.

SURVEY REPORT

This map and report was prepared with the benefit of a Commitment for Title Insurance issued by CHB Title, LLC issuing agent for Old Republic National Title Insurance Company, File No. 59187, dated June 19, 2023.

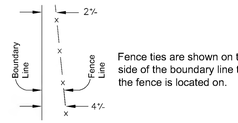
1) We note the following with regards to Schedule B of the herein referenced Title Commitment:
   a) Item no.'s 1-8, 11 & 12 are not survey related
   b) Item no. 9 - Terms and conditions of right of way for a driveway over the South 8 feet of the subject property as contained in that Warranty Deed, filed October 7, 1965, as Document No. 3567247. (B)
   c) Item no. 10 - Terms and conditions of easement to the City of Minnetonka for right of way purposes, filed March 13, 2013, as Document No. 9920336. (C)

2) Observations/Comments noted hereon per field survey such as (but not limited to): access, occupation, and easements and/or servitudes:
   a) There appears to be a gap between the east line of the described subject property and the west line of Block 1, HIGHGATE, Hennepin County, Minnesota. As well as a gap between the south line of the described subject property and the northerly right of way of Priory Lane per the recorded plat of HIGHGATE.
   There also appears to be a gap between the north line of the described subject property and the south line the the described property to the north.

NORTH

Bearings are based on the Hennepin County Coordinate System (NAD 83 - 1986 adj.)

30 15 0 15 30 60
SCALE IN FEET



Fence ties are shown on the side of the boundary line that the fence is located on.

SURVEY LEGEND

- CAST IRON MONUMENT
- IRON PIPE MONUMENT SET
- IRON PIPE MONUMENT FOUND
- DRILL HOLE FOUND
- CHISELED "X" MONUMENT SET
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- WETLAND BUFFER SIGN

FIELD CREW	NO.	BY	DATE	REVISION
DM / AK				
DRAWN				
CMT				
CHECKED				
DLS				
DATE				
7/24/2023				

I hereby certify that this survey, plan or report was prepared by me or under my direct supervision and that I am a duly Licensed Land Surveyor under the laws of the State of Minnesota.

Dated this 15th day of August, 2023.

Daniel L. Schmidt, PLS Minnesota License No. 26147
schmidt@sathre.com

SATHRE-BERGQUIST, INC.
14000 25TH AVENUE NORTH, SUITE 120
PLYMOUTH MN 55447 (952) 476-6000
WWW.SATHRE.COM

TWP:30-RGE.117-SEC:22
Hennepin County

MINNETONKA, MINNESOTA

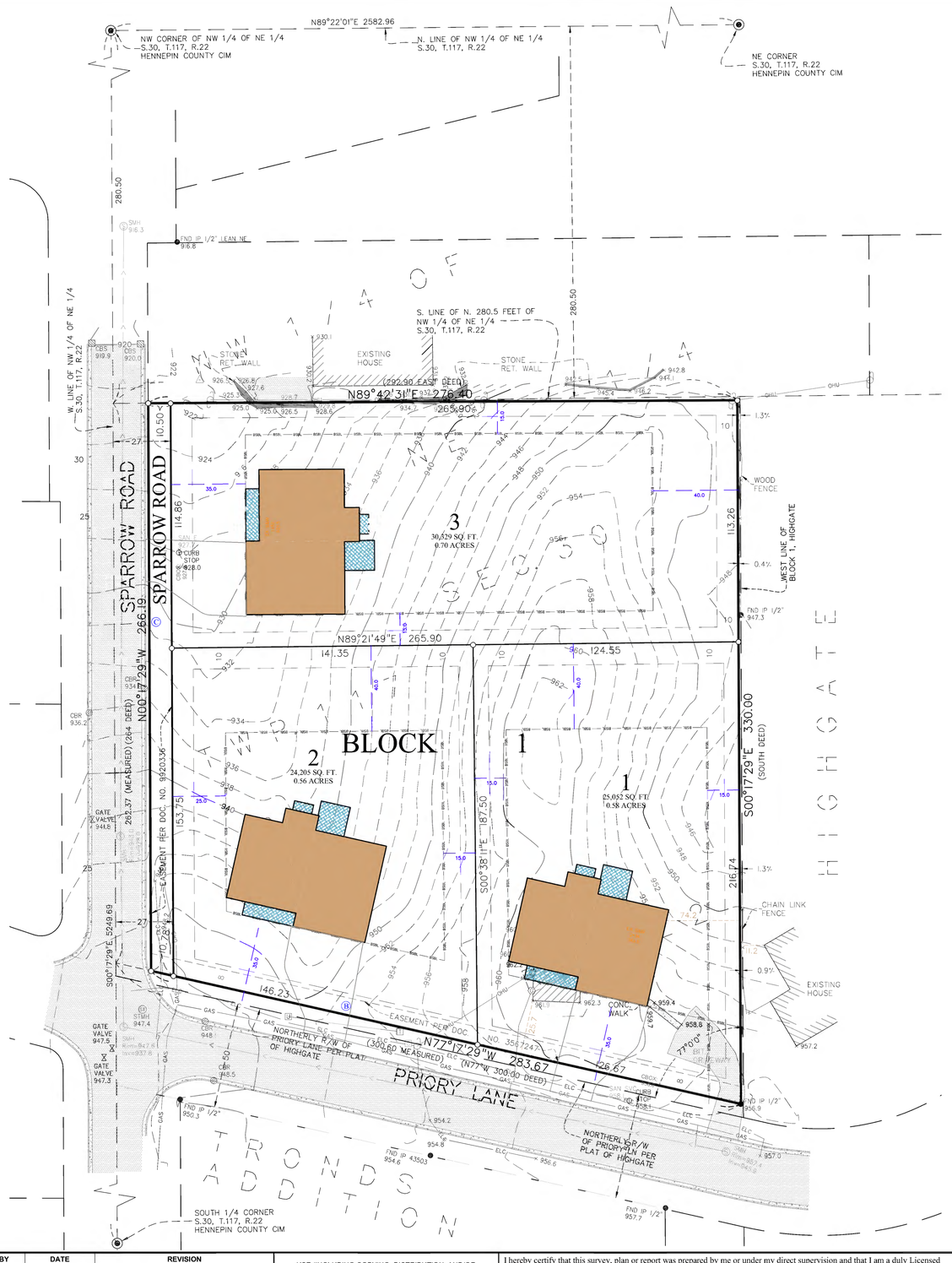
CERTIFICATE OF SURVEY

PREPARED FOR:

ZEHNDER HOMES INC.

FILE NO. 99595-151

1 / 1



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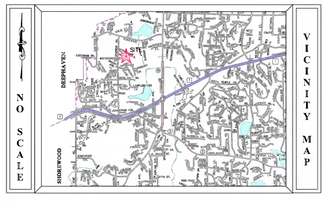
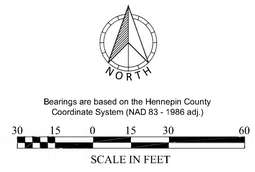
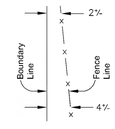
PREPARED BY	PREPARED FOR
ENGINEER SATHRE-BERGQUIST, INC. 14000 25th Ave N, Suite 120 Plymouth, MN 55447 PHONE: (952) 476-6000 FAX: (952) 476-0104 CONTACT : CHARLES WIEMERSLAGE, P.E. EMAIL: CWIEMERSLAGE@SATHRE.COM	DEVELOPER ZEHNDER HOMES INC. 14240 23RD AVE N PLYMOUTH, MN 55447 CONTACT: TOM DEHN PHONE: (651) 303-5747 EMAIL: ERICZEHNDER@ZEHNDERHOMES.COM







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- RAILROAD SWITCH
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- WETLAND BUFFER SIGN

FIELD CREW	NO.	BY	DATE	REVISION
DRAWN				
CMT				
CHECKED				
DLS				
DATE				
8/21/2023				

I hereby certify that this survey, plan or report was prepared by me or under my direct supervision and that I am a duly Licensed Land Surveyor under the laws of the State of Minnesota.

Dated this 24th day of August, 2023.

Daniel L. Schmidt, PLS Minnesota License No. 26147
schmidt@sathre.com

SATHRE-BERGQUIST, INC.
14000 25TH AVENUE NORTH, SUITE 120
PLYMOUTH MN 55447 (952) 476-6000
WWW.SATHRE.COM

TWP:30-RGE.117-SEC.22
Hennepin County

MINNETONKA, MINNESOTA

PRELIMINARY PLAT
PRIORY WOODS
PREPARED FOR:
ZEHNDER HOMES INC.

FILE NO. 99595-151

1 / 1

PRIORY WOODS

C.R. DOC. NO. _____

KNOW ALL PERSONS BY THESE PRESENTS: That Zehnder Homes Incorporated, a Minnesota Corporation, owner of the following described property:

That part of the Northwest Quarter of Northeast Quarter of Section 30, Township 117 North, Range 22 West of the Fifth Principal Meridian, described as follows:

Commencing 280.5 feet South of the Northwest corner of the Northwest Quarter of the Northeast Quarter of Section 30, Township 117, Range 22; thence East 292.9 feet; thence South 330 feet; thence North 77 degrees West for a distance of 300 feet; thence North along the center of the road for a distance of 264 feet to the point of beginning, Hennepin County, Minnesota, except road.

Has caused the same to be surveyed and platted as PRIORY WOODS and does hereby dedicate to the public for public use the public ways and easements for drainage and utility purposes as created by this plat.

In witness whereof said Zehnder Homes Incorporated, a Minnesota Corporation, has caused these presents to be signed by its proper officer this _____ day of _____, 20____.

_____
Eric Zehnder, Chief Manager

STATE OF MINNESOTA, COUNTY OF _____

This instrument was acknowledged before me this _____ day of _____, 20____, by Eric Zehnder, Chief Manager of Zehnder Homes Incorporated, a Minnesota Corporation, on behalf of the company.

_____ _____ My Commission Expires:_____
Notary Public, _____ County, Minnesota (Signature) (Notary Printed Name)

SURVEYORS CERTIFICATE

I Daniel L. Schmidt do hereby certify that this plat was prepared by me or under my direct supervision; that I am a duly Licensed Land Surveyor in the State of Minnesota; that this plat is a correct representation of the boundary survey; that all mathematical data and labels are correctly designated on this plat; that all monuments depicted on this plat have been or will be correctly set within one year; that all water boundaries and wet lands, as defined by Minnesota Statutes, Section 505.01, Subd. 3, as of the date of this certificate are shown and labeled on this plat; and all public ways are shown and labeled on this plat.

Dated this _____ day of _____, 20____.

_____
Daniel L. Schmidt, Licensed Land Surveyor
Minnesota License No. 26147

STATE OF MINNESOTA, COUNTY OF HENNEPIN

This instrument was acknowledged before me this _____ day of _____, 20____, by Daniel L. Schmidt.

_____ _____ My Commission Expires:_____
Notary Public, Hennepin County, Minnesota (Signature) (Notary Printed Name)

CITY COUNCIL, CITY OF MINNETONKA, MINNESOTA

This plat of PRIORY WOODS was approved and accepted by the City Council of the City of Minnetonka, Minnesota at a regular meeting thereof held this _____ day of _____, 20____, and said plat is in compliance with the provisions of Minnesota Statutes, Section 505.03, Subd. 2.

City Council, City of Minnetonka, Minnesota

By:_____, Mayor By:_____, Clerk

COUNTY AUDITOR
Hennepin County, Minnesota

I hereby certify that taxes payable in _____and prior years have been paid for land described on this plat, dated this _____ day of_____, 20____.

Daniel Rogan, County Auditor By:_____, Deputy

SURVEY DIVISION
Hennepin County, Minnesota

Pursuant to Minnesota Statutes Section 383B.565 (1969), this plat has been approved this _____ day of _____, 20____.

Chris F. Mavis, County Surveyor By: _____

COUNTY RECORDER
Hennepin County, Minnesota

I hereby certify that the within plat of PRIORY WOODS was recorded in this office this _____ day of _____, 20____, at _____o'clock ____M.

Amber Bougie, County Recorder By:_____, Deputy

SATHRE-BERGQUIST, INC.

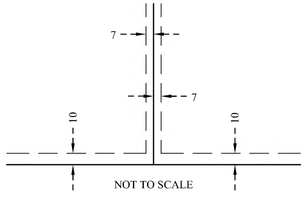
NORTH

60 30 0 30 60 120
SCALE IN FEET

The basis for the bearing system is the North-South Quarter line of Section 30, Township 117, Range 22 and is assumed to bear South 00 degrees 17 minutes 29 seconds

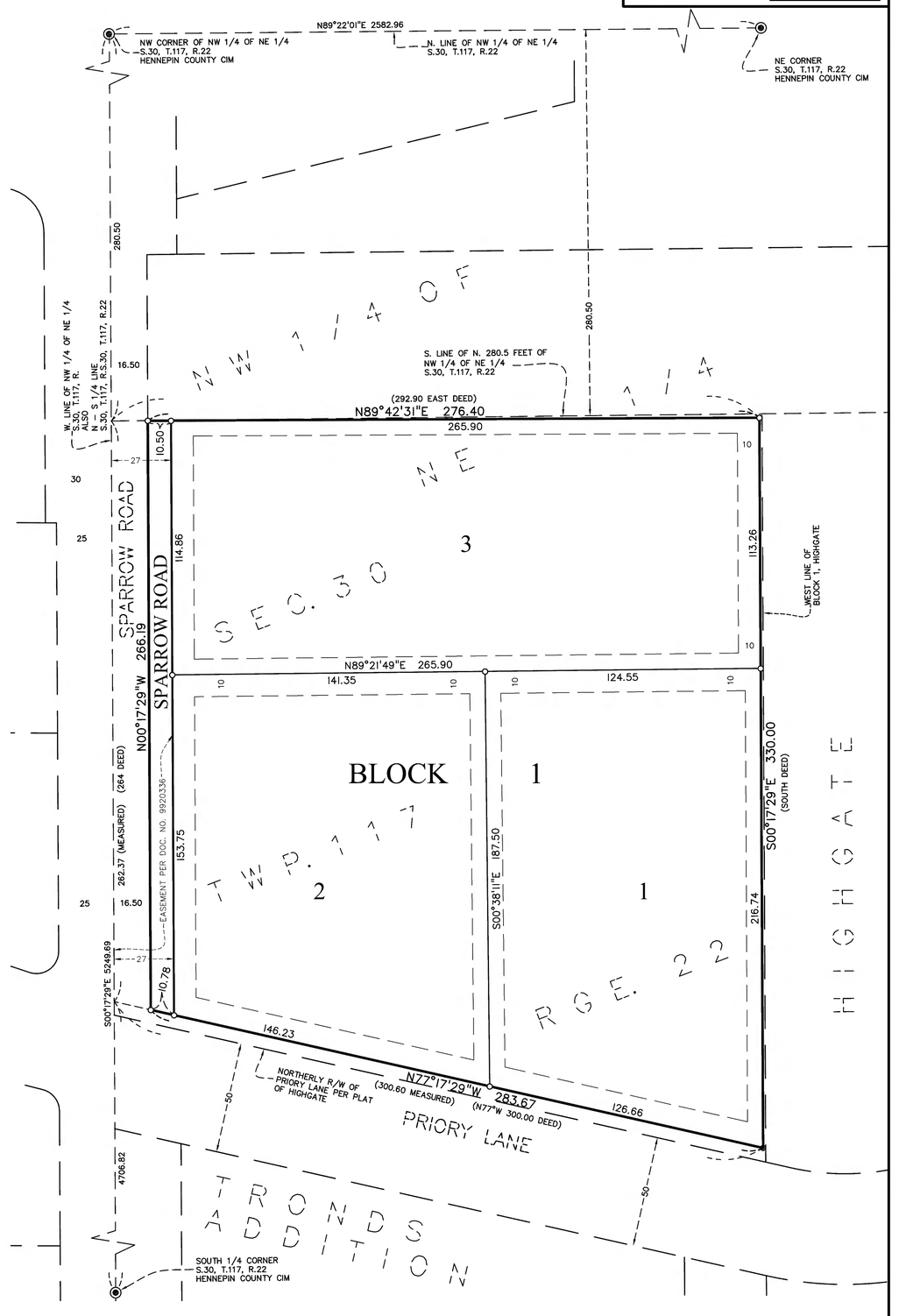
- Denotes a 1/2 inch by 14 inch iron pipe monument set and marked by License No. 26147.
- Denotes a found open 1/2 inch iron pipe monument.
- Denotes a Found Cast-Iron-Monument

DRAINAGE AND UTILITY EASEMENTS ARE SHOWN THUS:

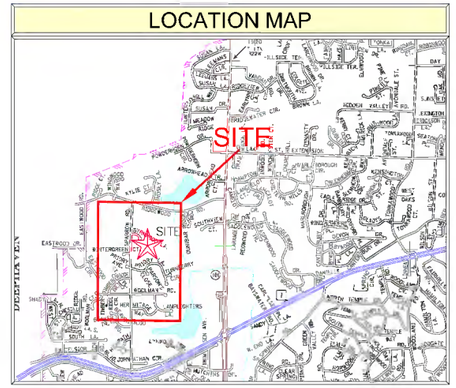


NOT TO SCALE

Being 7 feet in width and adjoining lot lines, unless otherwise indicated, and being 10 feet in width and adjoining right of way lines, unless otherwise indicated, as shown on this plat.



LOCATION MAP



SHEET INDEX TABLE

Notes:
Lots: 3 Single Family Lots
Front Yard Setback: 35'
Side Yard Setback: 30' total - 10 min'
Side Yard Setback Corner Lot: 25'
Rear Yard Setback: 40'

R1 - Zoning
110 Ft min at Setback line
125 Ft Deep
22,000 sf

PREPARED BY	PREPARED FOR
ENGINEER SATHRE-BERGQUIST, INC. 14000 25th Ave N, Suite 120 Plymouth, MN 55447 PHONE: (952) 476-6000 FAX: (952) 476-0104 CONTACT : CHARLES WIEMERSLAGE, P.E. EMAIL: CWIEMERSLAGE@SATHRE.COM	DEVELOPER ZEHNDER HOMES, INC. 10300 10th Ave N. Plymouth, MN 55441 CONTACT: ERIC ZEHNDER PHONE: (651) 303-5745 EMAIL: ERICZEHNDER@ZEHNERHHOMES.COM

NORTH

50 25 0 25 50 100
SCALE IN FEET

EXISTING UTILITIES SHOWN ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ANY AND ALL EXISTING UTILITIES BEFORE COMMENCING WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES ARISING OUT OF HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL EXISTING UTILITIES.

DRAWING NAME	NO.	BY	DATE	REVISION
SPARROW	1			
DRAWN				
CAW				
CHECKED				
CAW				
DATE				
XX/XX/XX				

I HEREBY CERTIFY THAT THIS PLAN OR SPECIFICATION WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

CHARLES A. WIEMERSLAGE, P.E.
Date: 07/07/23 Lic. No. 49180

ENGINEERS SURVEYORS DESIGNERS PLANNERS

SATHRE-BERGQUIST, INC.
14000 25TH AVE N #120 PLYMOUTH, MN. 55447 (952) 476-6000

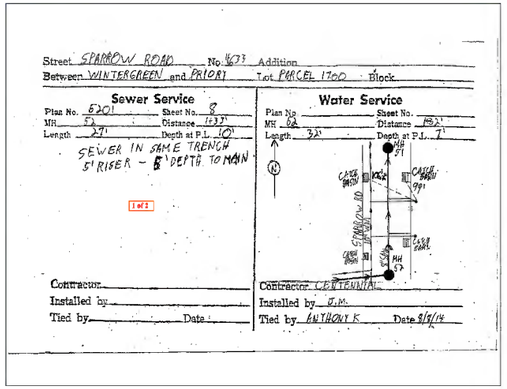
CITY PROJECT NO.

MINNETONKA, MINNESOTA

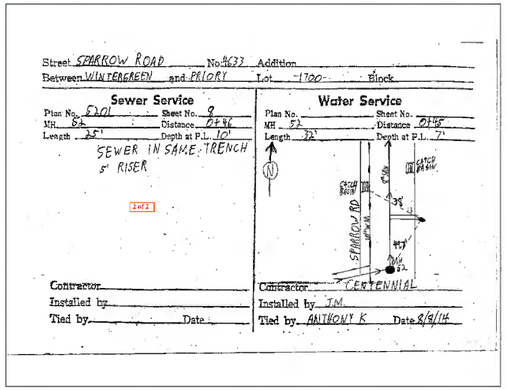
TITLE SHEET
PRIORY WOODS
ZEHNDER HOMES, INC.

FILE NO.
99595-151
01
09

LOT 3 EXISTING SERVICE TIE CARD



LOT 2 EXISTING SERVICE TIE CARD



VERIFY EXISTING SERVICE LOCATION

VERIFY EXISTING SERVICE LOCATION

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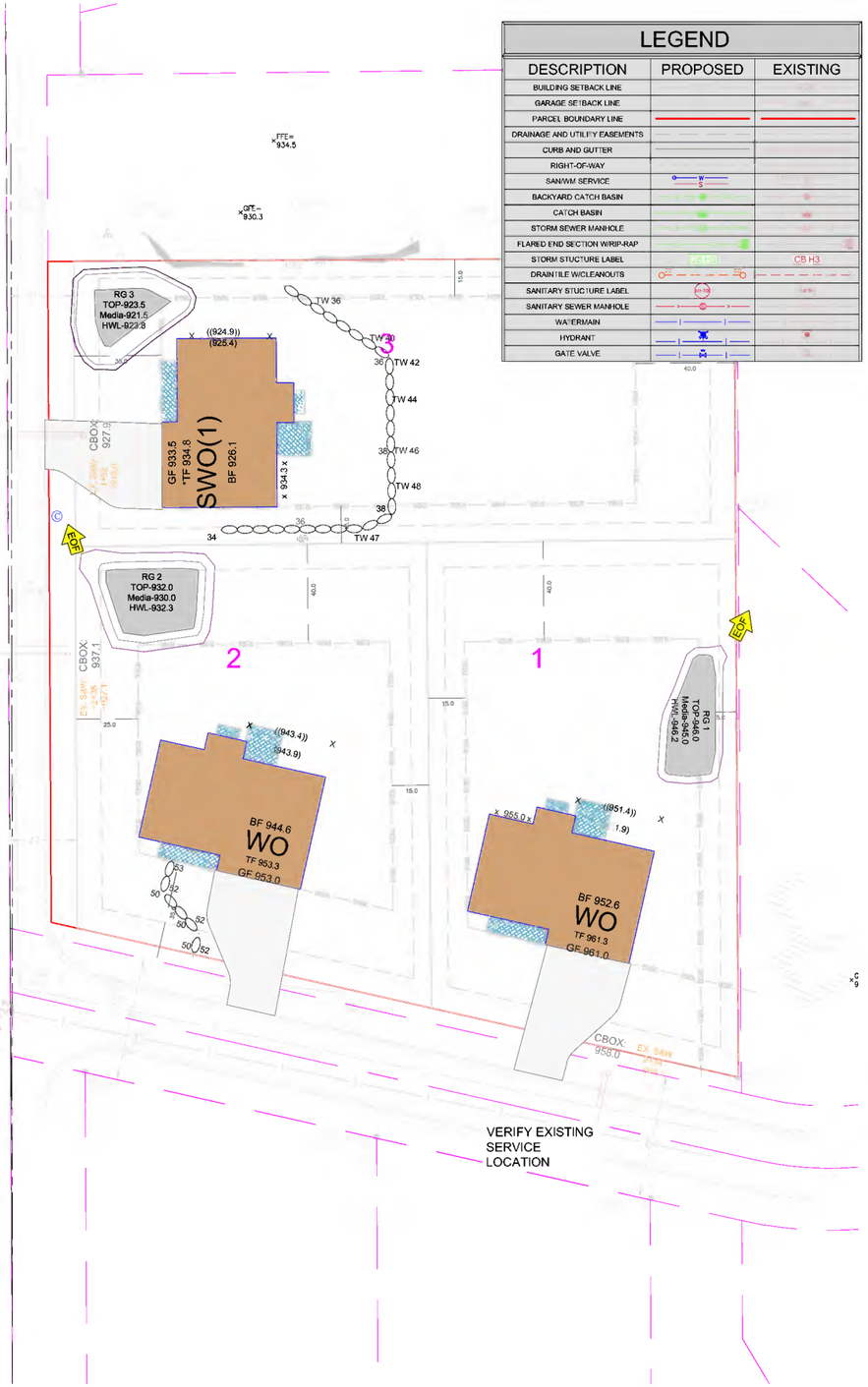


LEGEND		
DESCRIPTION	PROPOSED	EXISTING
BUILDING SETBACK LINE		
GARAGE SETBACK LINE		
PARCEL BOUNDARY LINE		
DRAINAGE AND UTILITY EASEMENTS		
CURB AND GUTTER		
RIGHT-OF-WAY		
SAN/WM SERVICE		
BACKYARD CATCH BASIN		
CATCH BASIN		
STORM SEWER MANHOLE		
FLARED END SECTION W/RIP-RAP		
STORM STUCTURE LABEL	CB H1	CB H3
DRAIN TILE W/CLEANOUTS		
SANITARY STUCTURE LABEL		
SANITARY SEWER MANHOLE		
WATERMAIN		
HYDRANT		
GATE VALVE		

NOTES:

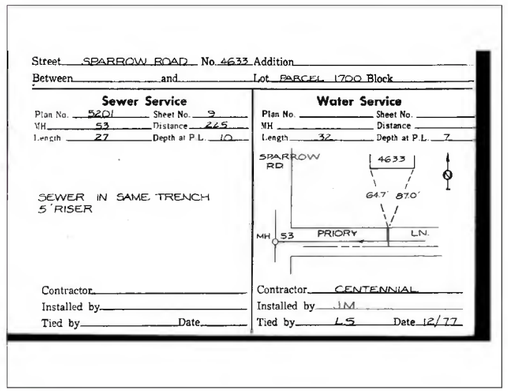
1. EXISTING SERVICES TO BE REUSED AS APPROPRIATE
2. VERIFY LOCATIONS & CONDITION OF ALL EXISTING SERVICES. - REMOVE AND REPLACE AS NECESSARY
3. REPLACEMENT SERVICES SHALL BE

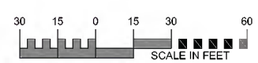
   SANITARY: 6" PVC SDR26 AND RISER TO BE SDR 26.

   WATER TO BE 1.5" COPPER - ONE CONTIGUOUS PIECE, NO JOINTS OR SPLICING ALLOWED IN ROW

   **REMOVE & REPLACE STREET IN KIND AS NECESSARY FOR NEW SERVICES CONNECTIONS NEEDED. EXISTING SERVICE TO BE REMOVED BACK TO MAIN - CORP STOP SHALL BE SHUT OFF AT MAIN PRIOR TO TAPPING NEW SERVICE.
4. CURB BOXES TO HAVE EXTENSION RODS TO CURB STOP.
5. ALL SEWER SERVICES ARE LOCATED 3' DOWNSTREAM OF WATER SERVICES.
6. THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS, VERIFY EXISTING INVERT LOC. & ELEV. AND NOTIFY THE OWNER OF ANY DIFFERENCES. PRIOR TO BEGINNING CONSTRUCTION
7. UNLESS OTHERWISE NOTED, OR AS SPECIFIED IN THE ABOVE NOTE, ALL MATERIALS, CONSTRUCTION TECHNIQUES AND TESTING SHALL CONFORM TO THE 1999 ED. OF THE "STANDARD UTILITIES SPECIFICATIONS FOR WATER MAIN AND SERVICE LINE INSTALLATION AND SANITARY SEWER AND STORM SEWER INSTALLATION BY THE CITY ENGINEERING ASSOCIATION OF MINN." AND TO THE "STANDARD SPECIFICATION FOR HIGHWAY CONSTRUCTION" MINN. DEPT. OF TRANS., 2000 EDITION, INCLUDING THE CURRENT ADDENDUM.
9. WATER SERVICE TO HAVE CURB STOP & BOX INSTALLED PER DETAIL 518.
10. CONNECT TO WATERMAIN WITH CORPORATION STOP AND TAPPING SADDLE PER CITY OF MINNETONKA SPECIAL PROVISIONS - SEE 2504 WATER MAIN - 2611.2D .
11. CORPORATIONS MUELLER H15000 OR FORD F 600
    SADDLES SMITH-BLAIR 315 OR 317

LOT 1 EXISTING SERVICE TIE CARD





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DRAWING NAME	NO.	BY	DATE	REVISION
SPARROW	1			
DRAWN				
CAW				
CHECKED				
CAW				
DATE				
XXXXXX				

I HEREBY CERTIFY THAT THIS PLAN OR SPECIFICATION WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

CHARLES A. WIEMERSLAGE, P.E.
Date: 09/01/23 Lic. No. 49180

SATHRE-BERGQUIST, INC.
14000 25TH AVE N #120 PLYMOUTH, MN. 55447 (952) 476-6000

CITY PROJECT NO.

MINNETONKA, MINNESOTA

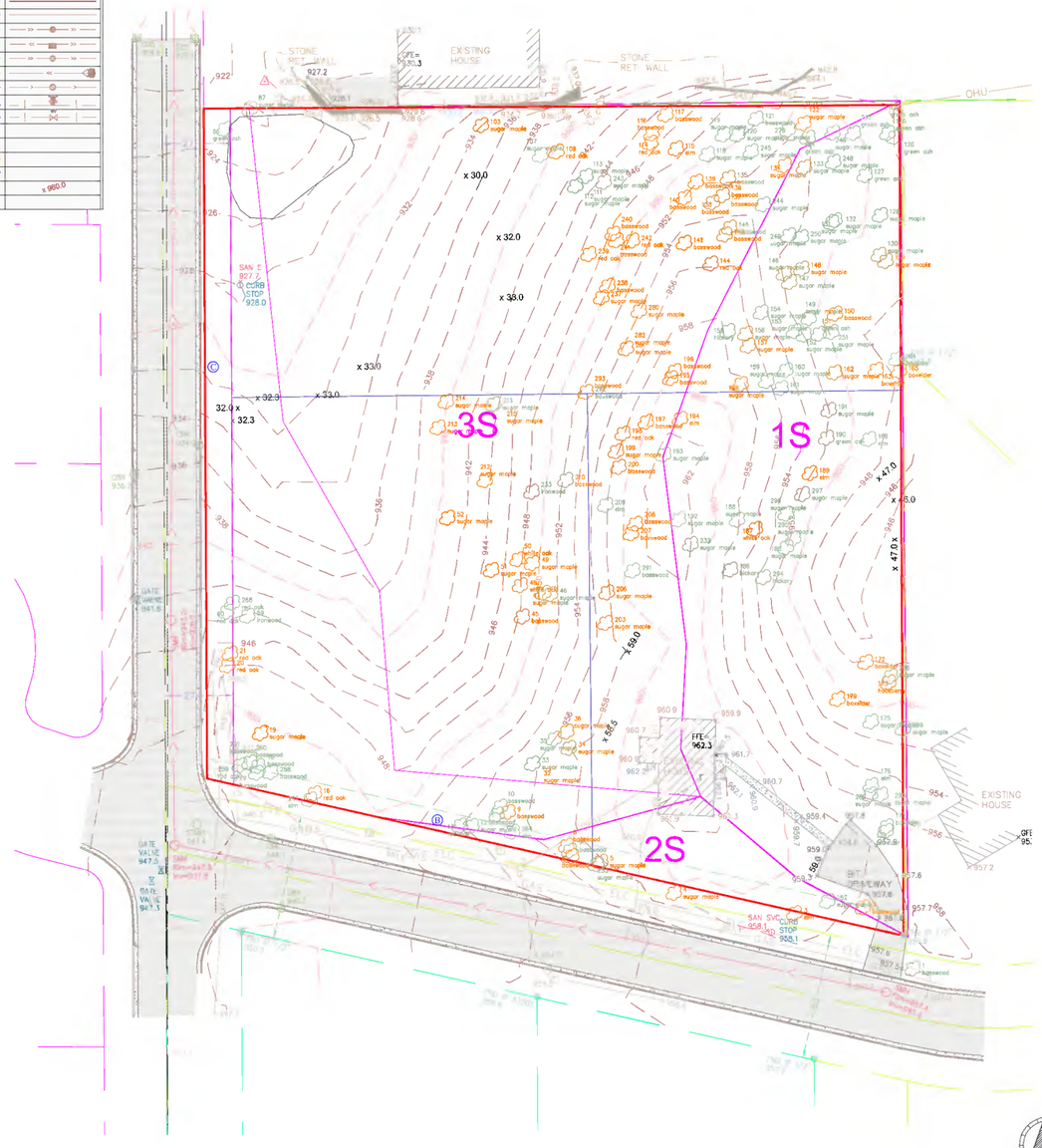
UTILITY PLAN
PRIORY WOODS
ZEHNDER HOMES, INC.

FILE NO.
99595-151

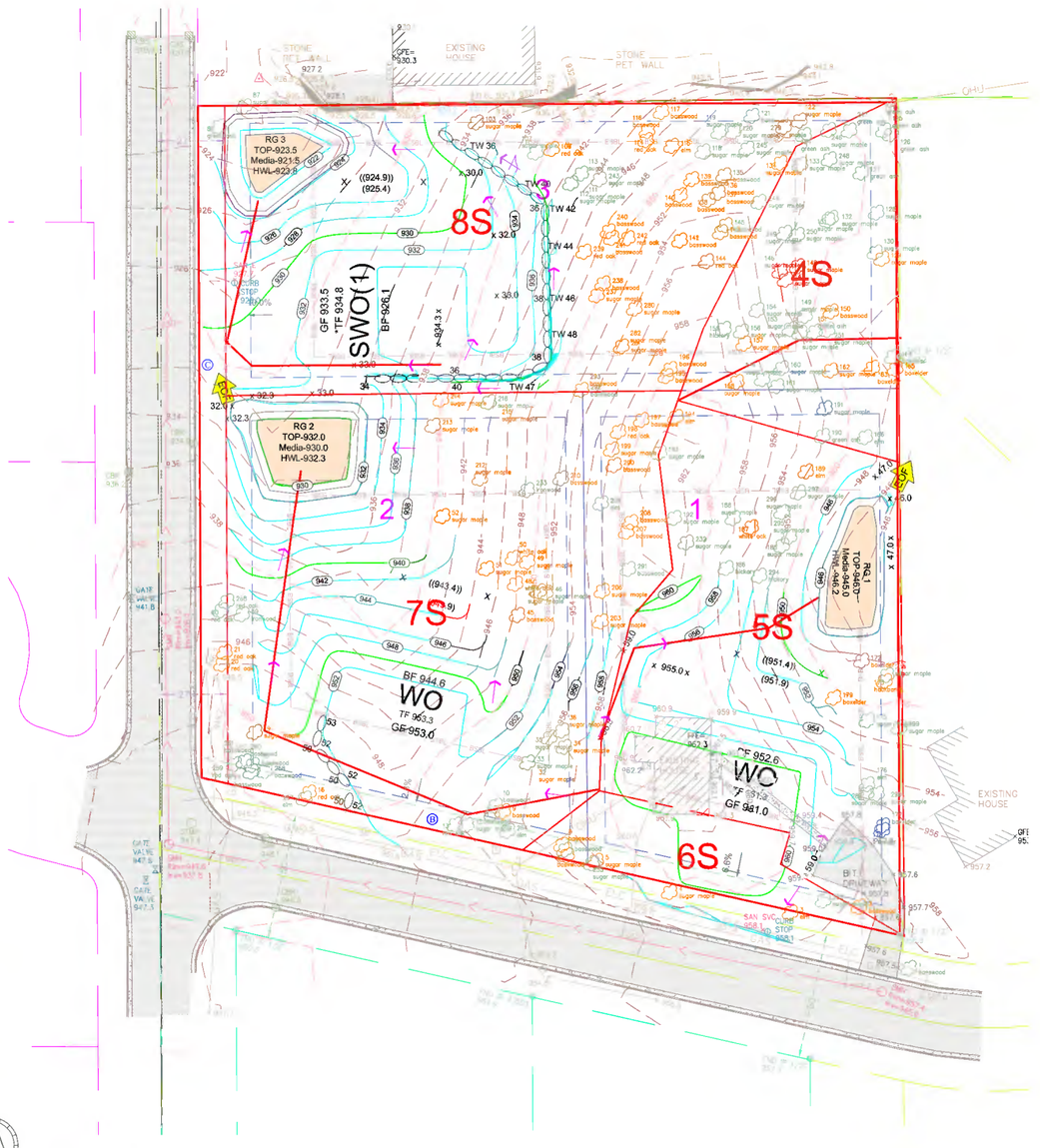
02
09

SYMBOL LEGEND

DESCRIPTION	PROPOSED	EXISTING
MINOR CONTOUR	972	958
MAJOR CONTOUR	970	
LOT LINE		
BUILDING SETBACK LINE	BSBL	BSBL
GARAGE SETBACK LINE	GSBL	GSBL
PARCEL BOUNDARY LINE		
DRAINAGE AND UTILITY EASEMENTS		
CURB AND GUTTER		
RIGHT-OF-WAY		
BACKYARD CATCH BASIN		
CATCH BASIN		
STORM SEWER MANHOLE		
FLARED END SECTION W/RIP-RAP		
SANITARY SEWER MANHOLE		
HYDRANT		
GATE VALVE		
DRAIN FLOW/RUNOFF ARROW		
EMERGENCY OVERFLOW SWALE	EOF	
SILT FENCE -PRE CONSTRUCTION)		
SILT FENCE -POST CONSTRUCTION)		
SPOT ELEVATION	x 960.0	x 960.0
TBC SPOT ELEVATION	x 960.00	



EXISTING DRAINAGE



PROPOSED DRAINAGE

NORTH

30 15 0 15 30 60
SCALE IN FEET

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CAW				
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SATHRE-BERGQUIST, INC.
14000 25TH AVE N #120 PLYMOUTH, MN. 55447 (952) 476-6000

CITY PROJECT NO.

MINNETONKA, MINNESOTA

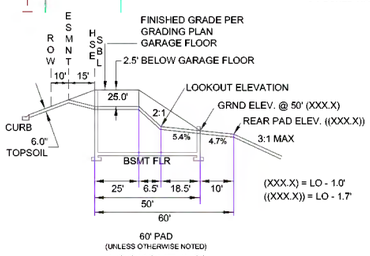
DRAINAGE MAP
PRIORY WOODS
ZEHNDER HOMES, INC.

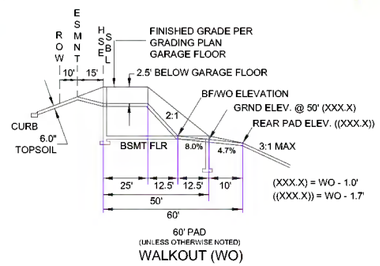
FILE NO.
99595-151

DA
DA

SYMBOL LEGEND

DESCRIPTION	PROPOSED	EXISTING
MINOR CONTOUR	972	958
MAJOR CONTOUR	970	960
LOT LINE		
BUILDING SETBACK LINE	BSBL	BSBL
GARAGE SETBACK LINE	GSBL	GSBL
PARCEL BOUNDARY LINE		
DRAINAGE AND UTILITY EASEMENTS		
CURB AND GUTTER		
RIGHT-OF-WAY		
BACKYARD CATCH BASIN		
CATCH BASIN		
STORM SEWER MANHOLE		
FLARED END SECTION W/RIPRAP		
SANITARY SEWER MANHOLE		
HYDRANT		
GATE VALVE		
DRAIN FLOW/RUNOFF ARROW		
EMERGENCY OVERFLOW SWALE	EOF	
SILT FENCE -PRE CONSTRUCTION)		
SILT FENCE -POST CONSTRUCTION)		
SPOT ELEVATION	x 980.0	x 980.0
TBC SPOT ELEVATION	x 980.65	





NOTES:
1. GRADE (XXX.X) BEHIND EACH HOMESITE IS THE PROPOSED TOP OF TOPSOIL, SUBGRADE SHALL BE DOWN 0.50 FEET.
2. ESTABLISH FINISH GRADE TO ALL 10' FRONT YARD UTILITY EASEMENT LOCATIONS.
3. THESE DETAILS REFERENCE A 9' POURED FOUNDATION WALL (8.7' TF to BF)

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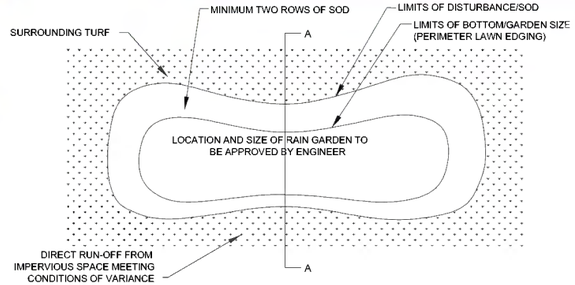
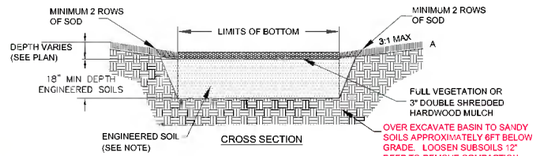


PLAN VIEW



CROSS SECTION

NOTES
1. FINAL GRADE AND MULCHING SHALL BE DONE BY HAND.
2. NO EQUIPMENT WILL BE ALLOWED ON THE RAIN GARDEN AFTER EXCAVATION BEGINS.
3. PERIMETER EROSION CONTROL SHALL BE INSTALLED AND REMAIN IN PLACE UNTIL TURF IS ESTABLISHED AROUND RAIN GARDEN.
4. OWNER IS RESPONSIBLE FOR NOTIFYING ENGINEER FOR INSPECTION OF RAIN GARDEN FOR
   (1) FINALIZING RAIN GARDEN SIZE AND LOCATION.
   (2) OBSERVATION OF EXCAVATION AND SCARIFYING OF SUBSOIL.
   (3) APPROVAL TO BACKFILL WITH ENGINEERED SOILS.
   (4) FINAL INSPECTION WITH MULCH AND PLANTS INSTALLED.

ENGINEERED SOIL
TOP 6" OF RAING GARDEN SHALL BE ENGINEERED SOILS.
USE ON SITE SOILS FOR THE REMAINING 12" PROVIDED THAT SAND SEEM IS INTERSECTED WHEN BASIN IS CONSTRUCTED. SHOULD SAND SEEM NOT BE FOUND THEN THE ENGINEERED SOILS LISTED BELOW SHALL BE USED.
(DCSWCD MIX B)
80% COARSE-WASHED SAND (MNDOT 3126)
20% LEAF-LITTER COMPOST (ORGANIC, GRADE 2, MNDOT 3890) NO TOPSOIL OR ON-SITE SOILS MAY BE USED IN ENGINEERED SOIL MIX UNLESS APPROVED BY THE ENGINEER. 3 RING INFILTROMETOR TESTING AND INFILTRATION TEST ON ENGINEERED SOILS MAY BE REQUIRED AS DIRECTED BY THE ENGINEER.

SUBSOIL TYPE	SUBSOIL TYPE	RECOM. DEPTH
A	SAND/GRAVEL	12"–18"
B	SAND WITH CLAY OR SILT	9"–12"
C	CLAY OR SILT WITH SAND	6"–9"
D	CLAYS OR SILTS	6"

NOTE:
RAIN GARDEN VEGETATION SHALL BE GARDEN VARIETY PERENNIALS, SHRUBS, OR NATIVE PLANTS FROM A CONTAINER (PLUG TO HALF GALLON SIZE) PLACED ACCORDING TO RECOMMENDED PLANT SPACING REQUIREMENTS OR AS APPROVED BY THE ENGINEER.

Construction Sequencing

1. Delineate the location of areas not to be disturbed before work begins.
2. Establish sediment control practices on all down gradient perimeters before any up gradient land disturbing activities begin. These practices shall remain in place until final stabilization has been established.
3. Install all perimeter sediment control devices and construction entrances. The timing of installation of sediment control practices may be adjusted in order to accommodate short-term activities, but sediment control practices must be installed before the next precipitation event even if the short-term activity is not complete.
4. Contact the City for approval of the sediment control devices.
5. Rough grade the site.
6. Install utilities.
7. Install pavements.
8. Install lawn and landscape & soil amendments.
9. Restore all disturbed areas.
10. Clean all storm sewer and conveyance systems.
11. After all disturbed areas are stabilized, obtain approval from the City and/or Watershed District.
12. Remove all temporary sediment control devices.

GENERAL NOTES:
1. THE GRADING CONTRACTOR IS RESPONSIBLE FOR ALL STORM WATER INSPECTIONS ACCORDING TO THE MPCA STORM WATER PERMIT. THIS INCLUDES BOTH WEEKLY INSPECTIONS AND INSPECTIONS DONE AFTER A 0.5" RAIN EVENT. A COPY OF THE INSPECTION REPORT MUST BE EMAILED TO THE ENGINEER AND DEVELOPER ON A WEEKLY BASIS.

2. THE CONTRACTOR SHALL PLACE INLET PROTECTION DEVICES IN ACCORDANCE WITH THE CITY OF MINNETONKA DETAIL FOR ALL STORM SEWER INLETS AND MAINTAIN THEM AS AN EFFECTIVE SILT CONTROL DEVICE. INLET PROTECTION SHALL BE REMOVED WHEN RESTORATION HAS BEEN ESTABLISHED.

3. ALL RETAINING WALLS WILL REQUIRE A STRUCTURAL DESIGN, A BUILDING PERMIT & A FINAL INSPECTION REPORT.

4. A 1"-2" CRUSHED ROCK ENTRANCE BERM SHALL BE PLACED AT THE SITE ENTRANCE, TO REPLACE SILT FENCE, AND MINIMIZE EROSION ON TO THE STREETS. THE ROCK BERMS SHALL BE THE WIDTH OF THE ENTRANCE AND 2 FEET HIGH WITH 4:1 SLOPES. (SEE DETAIL).

5. THE CONTRACTOR SHALL MAINTAIN POSITIVE DRAINAGE AWAY FROM THE BUILDING PAD AND STREET AREAS THROUGHOUT CONSTRUCTION.

6. THE CONTRACTOR SHALL ATTEMPT TO PREVENT SOIL MATERIALS FROM LEAVING THE SITE BY EROSION AND VEHICLE WHEEL TRACKING. HE SHALL BE RESPONSIBLE FOR CLEANING OF STREET, BOULEVARD AND UTILITY FACILITIES THAT RECEIVE ANY ERODED OR TRACKED SOIL MATERIAL OR OTHER CONSTRUCTION DEBRIS OR MATERIAL.

7. EXISTING UTILITIES SHOWN ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ANY AND ALL EXISTING UTILITIES BEFORE COMMENCING WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES ARISING OUT OF HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL EXISTING UTILITIES.

8. BUILDING PADS ARE 60' DEEP, UNLESS OTHERWISE NOTED. THE FRONT AND REAR BUILDING PAD LINES ARE SHOWN ON THE PLAN. THE ENGINEER SHOULD BE CONTACTED IF THE CONTRACTOR HAS ANY QUESTIONS REGARDING BUILDING PADS. REAR PAD ELEVATIONS SHOULD BE ESTABLISHED BASED OFF THE 2:1 SLOPE FROM THE 26' FLAT BENCH, OR AT MOST 50' BEHIND FRONT OF PAD.

9. STAKING OFF AND MARKING OF PROPOSED INFILTRATION FACILITIES TO PREVENT SOIL COMPACTION BY HEAVY EQUIPMENT, STOCKPILING OF MATERIALS, AND TRAFFIC. IF INFILTRATION FACILITIES ARE IN PLACE DURING CONSTRUCTION ACTIVITIES, BEST PRACTICES MUST BE DEPLOYED TO PREVENT SEDIMENT AND OTHER MATERIAL FROM ENTERING THE PRACTICE(S). INFILTRATION FACILITIES MUST NOT BE EXCAVATED TO WITHIN 3FT OF FINAL GRADE UNTIL THE CONTRIBUTING DRAINAGE AREA HAS BEEN CONSTRUCTED AND FULLY STABILIZED. ANY ACCUMULATED SEDIMENT IN AN INFILTRATION FACILITY MUST BE REMOVED IN A MANNER THAT PREVENTS COMPACTION OF THE FACILITY BOTTOM. TO PROVIDE A WELL-AERATED, HIGHLY POROUS SURFACE, THE SOILS BELOW AN INFILTRATION PRACTICE MUST BE LOOSENED TO A MINIMUM OF 18 INCHES PRIOR TO INSTALLATION OR PLANTING.

10. ALL DISTURBED AREAS MUST BE STABILIZED WITHIN 7 CALENDAR DAYS AFTER LAND-DISTURBING WORK HAS TEMPORARILY OR PERMANENTLY CEASED ON A PROPERTY THAT DRAINS TO AN IMPAIRED WATER, WITHIN 14 DAYS OTHERWISE.

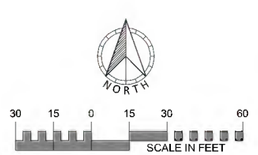
11. CONSTRUCTION SHOULD INCLUDE MINIMIZATION OF THE DISTURBANCE INTENSITY AND DURATION, INCLUDING PHASING OF DISTURBANCE TO MINIMIZE QUANTITY OF DISTURBED AREA AT ANY ONE TIME.

12. SOILS SURFACES COMPACTED DURING CONSTRUCTION & REMAINING PERVIOUS UPON COMPLETION OF CONSTRUCTION MUST BE DECOMPACTED TO ACHIEVE:
   A. A SOIL COMPACTION TESTING PRESSURE OF LESS THANT 1,400KPA OR 200PSI IN THE UPPER 12" OF SOIL OR;
   B. A BULK DENSITY OF LESS THAN 1.4G PER CC OR 87 LB/FT^3 IN THE UPPER 12" OF SOIL
   IN ADDITION, UTILITIES, TREE ROOTS, AND OTHER EXISTING VEGITATION MUST BE PROTECTED UNTIL FINAL REVEGITATION OR OTHER STABILIZATION OF THE SITE.

13. PROTECTION OF NATURAL TOPOGRAPHY AND SOILS CONDITIONS, INCLUDED RETENTION ON SITE OF NATIVE TOPSOIL TO THE GREATEST EXTENT POSSIBLE§PER RULE C SUBSECTION 3.1A)

14. THE PERMITTEE WILL INSPECT ALL EROSION PREVENTION AND SEDIMENT CONTROL FACILITIES AND SOIL STABILIZATION MEASURES TO ENSURE INTEGRITY & EFFECTIVENESS. THE PERMITTEE WILL REPAIR, REPLACE OR SUPPLEMENT ALL NON FUNCTIONAL BMPS WITH FUNCTIONAL BMPS WITHIN 48HRS OF DISCOVERY & PRIOR TO THE NEXT PRECIPITATION EVENT UNLESS ADVERSE CONDITIONS PRECLUDE ACCESS TO THE RELEVANT AREA OF THE SITE. IN WHICH CASE THE REPAIR MUST BE COMPLETED AS SOON AS CONDITIONS ALLOW. WHEN ACTIVE LAND-DISTURBING ACTIVITIES ARE NOT UNDERWAY THE PERMITTEE WILL PERFORM THESE RESPONSIBILITIES AT LEAST WEEKLY UNTIL VEGETATIVE COVER IS ESTABLISHED. THE PERMITTEE WILL MAINTAIN A LOG OF ACTIVITIES UNDER THIS SECTION FOR INSPECTION BY THE DISTRICT ON REQUEST.

CONSTRUCTION NOTES
1. INSTALL SILT FENCE AS SHOWN ON PLAN, AS REQUIRED BY THE CITY OF MINNETONKA OR DIRECTED BY THE ENGINEER.
2. INSPECT SILT FENCE, AND ROCK ENTRANCE BERM AFTER ALL RAINFALL EVENTS AS REQUIRED BY THE NPDES PERMIT.
3. WO PADS 3:1 MAX. ALL OTHER SLOPES 4:1 MAX (UNLESS NOTED)
4. RESTORATION - 1.3 ACRES
   A. RESTORE ALL DISTURBED AREAS WITH AMENDED SOILS. AMENDED SOILS SHALL CONSIST OF 2" OF COMPOST TILLED INTO 6" OF TOP SOIL. COMPOST SHALL MEET MNDOT SPEC 3890.1B GRADE 1. SOIL AMENDMENTS SHALL BE COMPLETED AFTER CONSTRUCTION IS COMPLETE TO AVOID COMPACTION. (APPROXIMATELY 35,791 SF).
   B. SEED POND SLOPES AND DETENTION AREAS WITH MN/DOT 310 OR BWSR P8 SEED MIX AT A RATE OF 100 LBS./ACRE AND FERTILIZE WITH 20-0-10 AT 100 LBS./ACRE. SEED WETLAND BUFFER AREAS WITH MN/DOT 350-MESIC PRAIRIE (36.5 PLS LBS/AC) OR BWSR 35-241 SEED MIX AND FERTILIZE WITH 20-0-10 AT 100 LBS./ACRE. (REFER TO WETLAND CREATION/BANKING PLAN FOR WETLAND SEED MIX REQUIREMENTS).
   C. SEED ALL OTHER DISTURBED AREAS WITH RESIDENTIAL TURN 270 AT A RATE OF 100 LBS./ACRE AND FERTILIZE WITH 20-0-10 AT 100 LBS./ACRE. (UNLESS OTHERWISE NOTED)
   D. ONLY PHOSPHOROUS FREE FERTILIZER IS TO BE USED ON SITE.
   E. MULCH WITH TYPE 1 AT A RATE OF 2 TONS/ACRE AND DISC ANCHOR IMMEDIATELY AFTER PLACEMENT. USE WOODFIBER BLANKET ON ALL SLOPES 3:1 (FT) OR GREATER.
   F. MAINTAIN ALL SILT FENCE UNTIL TURF HAS BEEN ESTABLISHED.
   G. RESTORATION WORK WILL BE COMPLETED WITHIN 72 HOURS OF GRADING COMPLETION.
   H. ALL WETLAND BUFFERS AND FULL CONSERVATION EASEMENT SHALL BE FULLY ESTABLISHED IN NATIVE VEGETATION BY A QUALIFIED RESTORATION COMPANY. NO TURF OR LAWN MAINTENANCE ACTIVITIES ARE ALLOWED WITHIN THE BUFFER AREAS. ANY EROSION BLANKET INSIDE THE CONSERVATION EASEMENT MUST BE FULLY BIODEGRADEABLE SUCH AS S31BD OR S32BD.
5. GRADE BACK 1:1 - 3' FROM FACE OF ALL RETAINING WALLS
6. SILT FENCE - BEFORE GRADING - 1,500 LF
   AFTER GRADING - 305 LF
7. TOPSOIL SHALL BE STOCKPILED AND SAVED FOR RESPREAD AFTER CONSTRUCTION IS COMPLETE. ALL DISTURBED AREAS SHALL BE RESTORED WITH TOPSOIL MEETING RPBCWD'S DEFINITION (INCLUDING AT LEAST 5% ORGANIC MATERIAL).
8. DRAIN ALL ROOF WATER TO RAIN GARDENS VIA GUTTERS & DOWNSPOUTS OR SIMILAR METHOD TO MAXIMIZE HARD COVER RUNOFF TO RAIN GARDENS.



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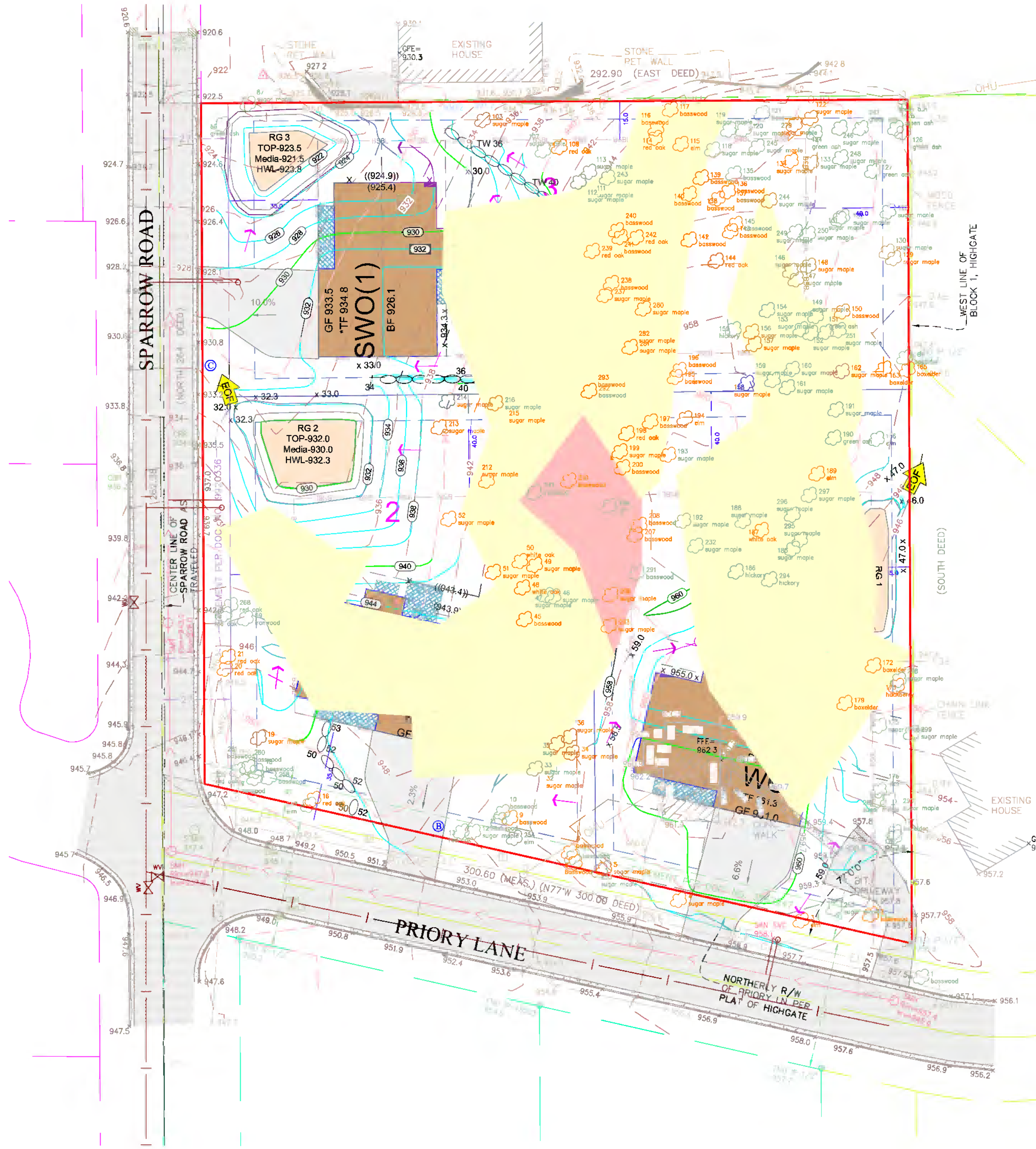
14000 25TH AVE N #120 PLYMOUTH, MN. 55447 (952) 476-6000

CITY PROJECT NO.

MINNETONKA, MINNESOTA

GRADING PLAN
PRIORY WOODS
ZEHNDER HOMES, INC.

FILE NO.
99595-151
03
09



(yellow)	20% SLOPE AREA
(pink)	30% SLOPE AREA

SYMBOL LEGEND

DESCRIPTION	PROPOSED	EXISTING
MINOR CONTOUR	972	958
MAJOR CONTOUR	970	
LOT LINE		
BUILDING SETBACK LINE	BSBL	BSBL
GARAGE SETBACK LINE	GSBL	GSBL
PARCEL BOUNDARY LINE		
DRAINAGE AND UTILITY EASEMENTS		
CURB AND GUTTER		
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STORM SEWER MANHOLE		
FLARED END SECTION W/RIP-RAP		
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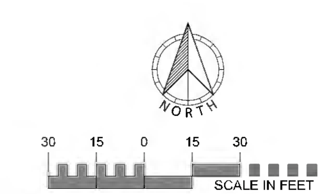

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Charles A. Wiemerslage

CHARLES A. WIEMERSLAGE, P.E.

Date: 09/01/23 Lic. No. 49180

ENGINEERS SURVEYORS DESIGNERS PLANNERS

SATHRE-BERGQUIST, INC.

14000 25TH AVE N #120 PLYMOUTH, MN. 55447 (952) 476-6000

CITY PROJECT NO.

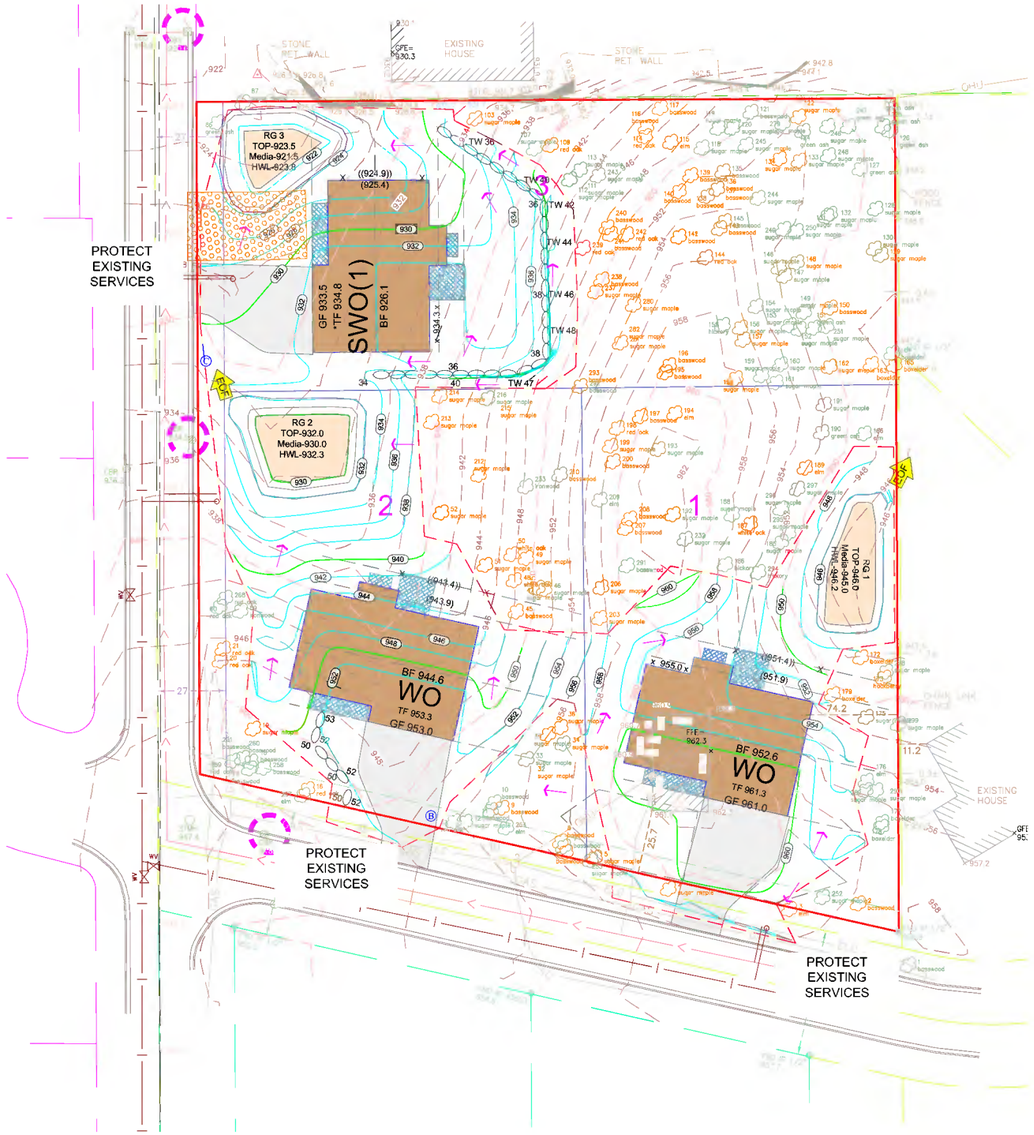
MINNETONKA, MINNESOTA

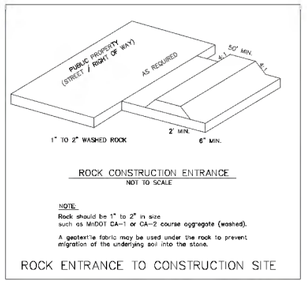
STEEP SLOPE PLAN

PRIORY WOODS

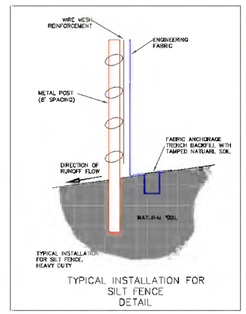
ZEHNDER HOMES, INC.

FILE NO. 99595-151

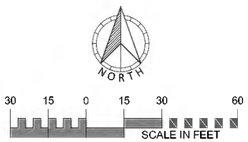




ROCK ENTRANCE TO CONSTRUCTION SITE



TYPICAL INSTALLATION FOR SILT FENCE DETAIL



- ROCK ENTRANCE BERM
- SILT FENCE
- POST GRADING SILT FENCE
- BIO-ROLL
- ROCK DITCH CHECK
- CONCRETE WASHOUT
- INLET PROTECTION
- EROSION BLANKET

SYMBOL LEGEND

DESCRIPTION	PROPOSED	EXISTING
MINOR CONTOUR	972	958
MAJOR CONTOUR	970	
LOT LINE		
BUILDING SETBACK LINE	BSBL	BSBL
GARAGE SETBACK LINE	GSBL	GSBL
PARCEL BOUNDARY LINE		
DRAINAGE AND UTILITY EASEMENTS		
CURB AND GUTTER		
RIGHT-OF-WAY		
BACKYARD CATCH BASIN		
CATCH BASIN		
STORM SEWER MANHOLE		
FLARED END SECTION W/RIP-RAP		
SANITARY SEWER MANHOLE		
HYDRANT		
GATE VALVE		
DRAIN FLOW/RUNOFF ARROW		
EMERGENCY OVERFLOW SWALE		
SILT FENCE -PRE CONSTRUCTION)		
SILT FENCE -POST CONSTRUCTION)		
SPOT ELEVATION	x 960.0	x 960.0
TBC SPOT ELEVATION	x 960.00	

EXISTING UTILITIES SHOWN ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ANY AND ALL EXISTING UTILITIES BEFORE COMMENCING WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES ARISING OUT OF HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL EXISTING UTILITIES.

DRAWING NAME	NO.	BY	DATE	REVISION
SPARROW	1			
DRAWN				
CAW				
CHECKED				
CAW				
DATE				
XX/XX/XX				

I HEREBY CERTIFY THAT THIS PLAN OR SPECIFICATION WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

CHARLES A. WIEMERSLAGE, P.E.
Date: 09/01/23 Lic. No. 49180

SATHRE-BERGQUIST, INC.
14000 25TH AVE N #120 PLYMOUTH, MN. 55447 (952) 476-6000

CITY PROJECT NO.

MINNETONKA, MINNESOTA

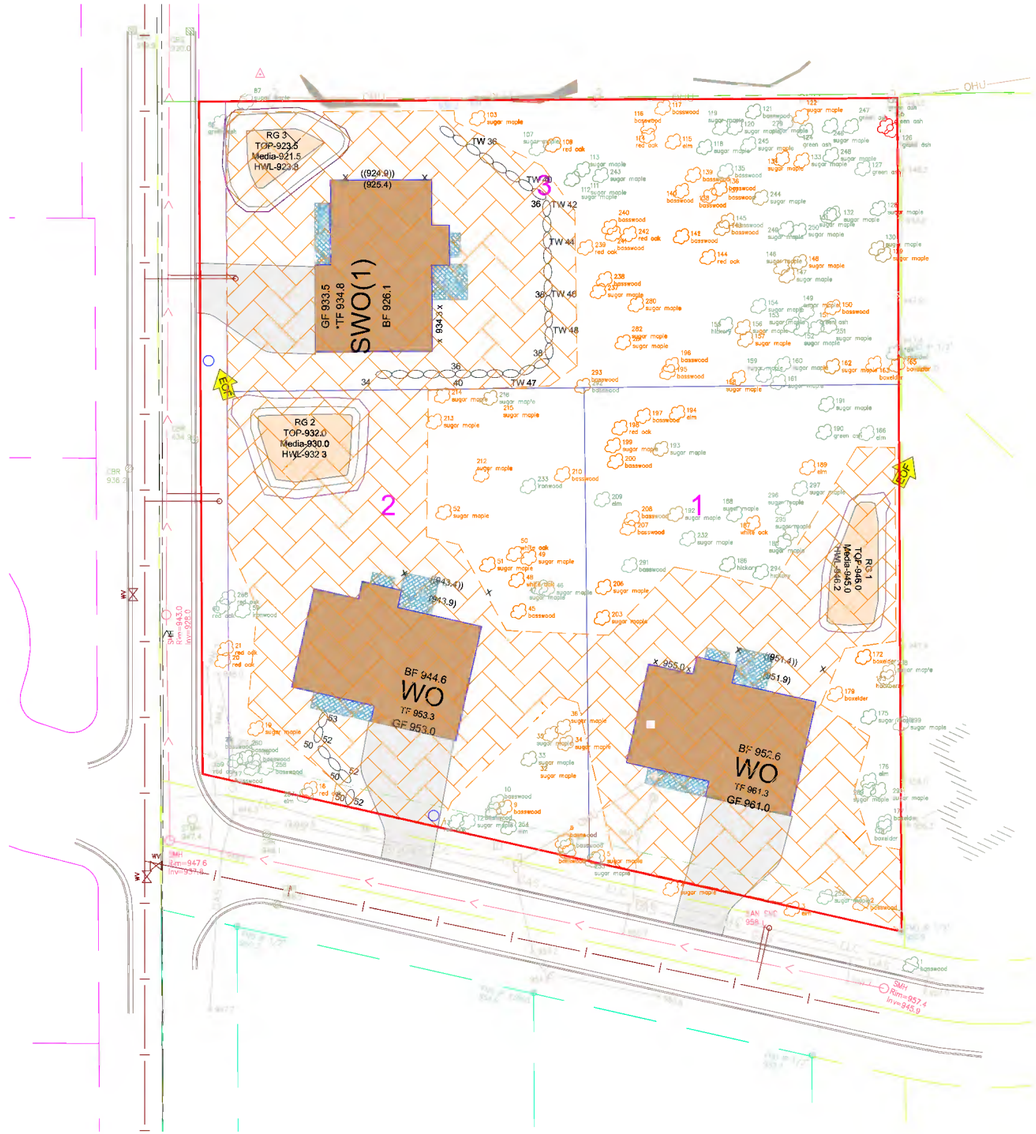
EROSION CONTROL PLAN
PRIORY WOODS
ZEHNDER HOMES, INC.

FILE NO.
99595-151

05
09

SYMBOL LEGEND

DESCRIPTION	PROPOSED	EXISTING
MINOR CONTOUR	972	958
MAJOR CONTOUR	970	
LOT LINE		
BUILDING SETBACK LINE	BSBL	BSBL
GARAGE SETBACK LINE	GSBL	GSBL
PARCEL BOUNDARY LINE		
DRAINAGE AND UTILITY EASEMENTS		
CURB AND GUTTER		
RIGHT-OF-WAY		
BACKYARD CATCH BASIN		
CATCH BASIN		
STORM SEWER MANHOLE		
FLARED END SECTION W/RIP-RAP		
SANITARY SEWER MANHOLE		
HYDRANT		
GATE VALVE		
DRAIN FLOW/RUNOFF ARROW		
EMERGENCY OVERFLOW SWALE	EOF	
SILT FENCE -PRE CONSTRUCTION)		
SILT FENCE -POST CONSTRUCTION)		
SPOT ELEVATION	x 960.0	x 960.0
TBC SPOT ELEVATION	x 960.00	



SOIL AMENDMENT NOTES

1. RESTORE ALL DISTURBED AREAS SHALL BE RESTORED WITH AMENDED SOILS. AMENDED SOILS SHALL CONSIST OF 2' OF COMPOST TILLED INTO 6" OF TOP SOIL. COMPOST SHALL MEET MNDOT SPEC 3890.1B GRADE 1. SOIL AMENDMENTS SHALL BE COMPLETED AFTER CONSTRUCTION IS COMPLETE TO AVOID COMPACTION.
2. SEED ALL AMENDED AREAS WITH RESIDENTIAL TURN 270 AT A RATE OF 100 LBS./ACRE AND FERTILIZE WITH 20-0-10 AT 100 LBS./ACRE. (UNLESS OTHERWISE NOTED)
3. ONLY PHOSPHOROUS FREE FERTILIZER TO BE USE DON SITE.

NORTH

30 15 0 15 30 60
SCALE IN FEET

EXISTING UTILITIES SHOWN ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ANY AND ALL EXISTING UTILITIES BEFORE COMMENCING WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES ARISING OUT OF HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL EXISTING UTILITIES.

DRAWING NAME	NO.	BY	DATE	REVISION
SPARROW	1			
DRAWN				
CAW				
CHECKED				
CAW				
DATE				
XX/XX/XX				

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CHARLES A. WIEMERSLAGE, P.E.
Date: 09/01/23 Lic. No. 49180

SATHRE-BERGQUIST, INC.
14000 25TH AVE N #120 PLYMOUTH, MN. 55447 (952) 476-6000

CITY PROJECT NO.

MINNETONKA, MINNESOTA

AMENDED SOILS PLAN
PRIORY WOODS
ZEHNDER HOMES, INC.

FILE NO.
99595-151

06
09

EXISTING UTILITIES SHOWN ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ANY AND ALL EXISTING UTILITIES BEFORE COMMENCING WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES ARISING OUT OF HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL EXISTING UTILITIES.

DRAWING NAME	NO.	BY	DATE	REVISION
SPARROW	1			
DRAWN				
CAW				
CHECKED				
CAW				
DATE				
XX/XX/XX				

I HEREBY CERTIFY THAT THIS PLAN OR SPECIFICATION WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

CHARLES A. WIEMERSLAGE, P.E.
Date: 09/01/23 Lic. No. 49180

SATHRE-BERGQUIST, INC.
14000 25TH AVE N #120 PLYMOUTH, MN. 55447 (952) 476-6000

CITY PROJECT NO.

MINNETONKA, MINNESOTA

TREE SURVEY
PRIORY WOODS
ZEHNDER HOMES, INC.

FILE NO.
99595-151

07
09

Tree #	Species	Notes	DSH	HP Save	HP Remove	Sig Save	Sig Remove
1	basswood		29				
2	basswood	Cavity	27	1			
3	elm		24	1			
4	sugar maple		31	1			
5	sugar maple		12	1			
6	basswood		20	1			
7	basswood		6			1	
8	basswood		13	1			
9	basswood		19	1			
10	basswood		7.5			1	
11	basswood		7.5			1	
12	sugar maple	Cavity	18				
13	red oak	No top	18				
14	sugar maple		14		1		
15	red oak		24		1		
16	red oak		24	1			
17	basswood		7			1	
18	basswood		8			1	
19	sugar maple		22	1			
20	red oak		16	1			
21	red oak		25	1			
22	sugar maple		15		1		
23	sugar maple		16		1		
24	sugar maple		14		1		
25	sugar maple		13		1		
26	sugar maple		14		1		
27	sugar maple		19		1		
28	sugar maple		15		1		
29	sugar maple		7				1
30	sugar maple		13		1		
31	sugar maple		12		1		
32	sugar maple		14	1			
33	sugar maple		7			1	
34	sugar maple		13	1			
35	sugar maple		7			1	
36	sugar maple		14	1			
37	sugar maple		9				1
38	red oak		20		1		
39	sugar maple		15.5		1		
40	sugar maple		9				1
41	sugar maple		16		1		
42	basswood		20		1		
43	sugar maple		9				1
44	sugar maple		9				1
45	basswood		17	1			
46	sugar maple		9			1	
47	sugar maple		8			1	
48	white oak		11	1			
49	sugar maple		16	1			
50	white oak		21	1			
51	sugar maple		11	1			
52	sugar maple		20	1			
53	ironwood		6				1
54	red oak		11		1		
55	sugar maple		12.5		1		
56	sugar maple		15		1		
57	red oak		8				1
58	sugar maple		12		1		
59	ironwood		6			1	
60	red oak		7			1	
61	red oak		9				1
62	sugar maple		29		1		
63	red oak		20		1		
64	green ash	Not Sig	6				
65	sugar maple		6				1
66	hickory		7				1
67	green ash	Not Sig	9				
68	hickory		7				1
69	sugar maple		7				1
70	green ash	Not Sig	11				
71	green ash	Not Sig	10				
72	sugar maple		24		1		
73	ironwood		6				1
74	hickory		10		1		
75	elm		17		1		
76	black ash	Not Sig	8				
77	green ash	Not Sig	10				
78	green ash	Not Sig	7				
79	cherry		7				1
80	elm		8				1
81	sugar maple		8				1
82	green ash	Dead	17				
83	green ash	Not Sig	7				
84	green ash	Not Sig	8				
85	hickory		9				1
86	green ash	Not Sig	11				
87	sugar maple		8			1	
88	basswood		11		1		
89	green ash	Not Sig	6				
90	green ash	Not Sig	8				
91	basswood		9				1
92	basswood		8				1
93	basswood		8				1
94	basswood		7				1
95	basswood		8				1
96	green ash	Not Sig	8				
97	hickory		6				1
98	hickory		8				1
99	ironwood		6				1
100	basswood		9				1
101	basswood		9				1
102	green ash	Not Sig	7				
103	sugar maple		15	1			
104	sugar maple	Canker	10				
105	basswood		10		1		
106	sugar maple		7				1
107	sugar maple		7			1	
108	red oak		20	1			
109	red oak		17	1			
110	sugar maple		6				1
111	sugar maple		7			1	
112	sugar maple		9			1	
113	sugar maple		9			1	
114	red oak		19	1			
115	elm		14	1			
116	basswood		13	1			
117	basswood		17	1			
118	sugar maple		7			1	
119	sugar maple		7			1	
120	sugar maple		7			1	
121	basswood	Dead	18				
122	sugar maple		10	1			
123	green ash	Not Sig	11				
124	green ash	Not Sig	14				
125	green ash	Not Sig	14				
126	green ash	Not Sig	15				
127	green ash	Dead	10				
128	sugar maple		9			1	
129	sugar maple		11	1			
130	sugar maple		9			1	
131	sugar maple	split	11				
132	sugar maple		9			1	
133	sugar maple		8			1	
134	sugar maple		12	1			
135	basswood	Rotten	25				
136	basswood		13	1			
137	basswood		17	1			
138	basswood		16	1			
139	basswood		24	1			
140	basswood		11	1			
141	basswood		11	1			
142	basswood		21	1			
143	basswood		18	1			
144	red oak		26	1			
145	basswood		9			1	
146	sugar maple		8			1	
147	sugar maple		9			1	
148	sugar maple		12	1			
149	sugar maple		9			1	
150	basswood		17	1			
151	green ash	Not Sig	18				
152	sugar maple		6			1	
153	sugar maple		6			1	
154	sugar maple		7			1	
155	hickory		8			1	
156	sugar maple		8			1	
157	sugar maple		11	1			
158	sugar maple		10	1			
159	sugar maple		7			1	
160	sugar maple		9			1	
161	sugar maple		6			1	
162	sugar maple		10	1			
163	boxelder		12	1			
164	boxelder		7			1	
165	boxelder		17	1			
166	elm		7			1	
167	hickory		9				1
168	sugar maple		13		1		
169	sugar maple		9				1
170	green ash	EAB	15				
171	sugar maple		7				1
172	boxelder		21	1			
173	hackberry		25	1			
174	boxelder		12		1		
175	sugar maple		6			1	
176	elm		9			1	
177	boxelder		6			1	
178	boxelder		8			1	
179	boxelder		10	1			
180	boxelder		8				1
181	boxelder		8				1
182	sugar maple		10		1		
183	elm		28		1		
184	boxelder		8				1
185	sugar maple		8			1	
186	hickory		9			1	
187	white oak		33	1			
188	sugar maple		9			1	
189	elm		14	1			
190	green ash	Not Sig	17.5				
191	sugar maple		7			1	
192	sugar maple		8			1	
193	sugar maple		6			1	
194	elm		17	1			
195	basswood		12	1			
196	basswood		25	1			
197	basswood		18	1			
198	red oak		22	1			
199	sugar maple		15	1			
200	basswood		13	1			
201	sugar maple		8				1
202	sugar maple		9				1
203	sugar maple		11	1			
204	sugar maple	Damage	18				
205	basswood	Damage	14				
206	sugar maple		20	1			
207	basswood		13	1			
208	basswood		20	1			
209	elm		8			1	
210	basswood		20	1			
211	red oak	Dead	22				
212	sugar maple		14	1			
213	sugar maple		20	1			
214	sugar maple		17	1			
215	sugar maple		17	1			
216	sugar maple		9			1	
217	white oak		13		1		
218	sugar maple		17		1		
219	sugar maple		19		1		
220	sugar maple		16		1		
221	sugar maple		9				1
222	sugar maple		17		1		
223	sugar maple	dead	29				
224	sugar maple		24		1		
225	sugar maple		9				1
226	sugar maple		16		1		
227	sugar maple		12		1		
228	sugar maple		12		1		
229	sugar maple		9				1
230	red oak		21		1		
231	sugar maple		7				1
232	sugar maple		6			1	
233	ironwood		6			1	
234	sugar maple		8				1
235	sugar maple		7				1
236	sugar maple		9				1
237	sugar maple		16	1			
238	basswood		10	1			
239	red oak		19	1			
240	basswood		14	1			
241	basswood		16	1			
242	red oak		20	1			
243	sugar maple		5			1	
244	sugar maple		6			1	
245	sugar maple		6			1	
246	sugar maple		6			1	
247	green ash	Not Sig	6				
248	sugar maple		5			1	
249	sugar maple		6			1	
250	sugar maple		5			1	
251	sugar maple		5			1	
252	sugar maple		7			1	
253	sugar maple		5			1	
254	elm		6				1
255	sugar maple		4				1
256	basswood		5				1
257	elm		6			1	
258	basswood		5			1	
259	red oak		6			1	
260	basswood		6			1	
261	basswood		6			1	
262	basswood		6				1
263	ironwood		6				1
264	sugar maple		4				1
265	sugar maple		12		1		
266	red oak		5				1
267	ironwood		5				1
268	red oak		4			1	
269	hickory		5.5				1
270	sugar maple		6				1
271	ironwood		6				1
272	black ash	Not Sig	6				
273	cherry		6				1
274	ironwood		4				1
275	hickory		5				1
276	basswood		4				1
277	basswood		7				1
278	basswood		4				1
279	sugar maple		5			1	
280	sugar maple		22	1			
281	sugar maple		11	1			
282	sugar maple		13	1			
283	sugar maple		9				1
284	sugar maple		7				1
285	ironwood		6				1
286	ironwood		6				1
287	sugar maple		6				1
288	sugar maple		5			1	
289	sugar maple		5			1	
290	sugar maple		6			1	
291	basswood	Cavity	10				
292	basswood		9			1	
293	basswood		21	1			
294	hickory		7			1	
295	sugar maple	Dead	6				
296	sugar maple		6			1	
297	sugar maple		6			1	
298	sugar maple		6				1
299	sugar maple		6			1	
				77	41	76	67

Total Trees	299		
Trees ***NOT*** Regulated by Ordinange	38		
Trees Regulated by Ordinance	261		
High Priority Trees	118		
Allowable Removals (35%)	41	Removed	41
Signifigant Trees	143		
Allowable Removals (50%)	72	Removed	67

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DRAWING NAME	NO.	BY	DATE	REVISION
SPARROW	1			
DRAWN				
CAW				
CHECKED				
CAW				
DATE				
XXXXXX				

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CHARLES A. WIEMERSLAGE, P.E.
Date: 07/01/23 Lic. No. 49180

SATHRE-BERGQUIST, INC.
14000 25TH AVE N #120 PLYMOUTH, MN. 55447 (952) 476-6000

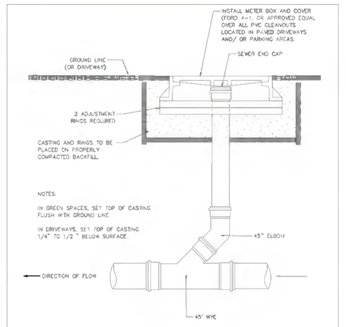
CITY PROJECT NO.

MINNETONKA, MINNESOTA

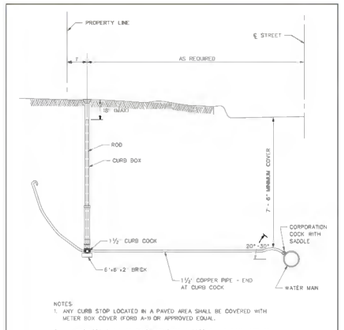
TREE SURVEY
PRIORY WOODS
ZEHNDER HOMES, INC.

FILE NO.
99595-151

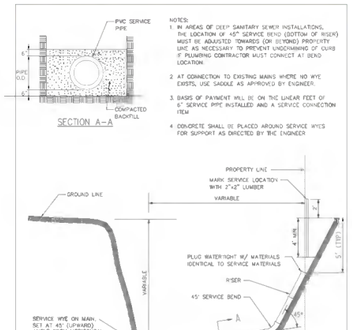
08
09



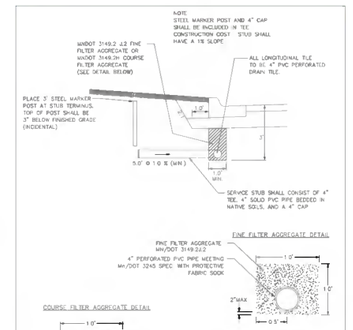
City of minnetonka | SANITARY SEWER SERVICE CLEANOUT | SCALE: NOT TO SCALE | STD PLATE NO. 420 | APPROVED: 5/2000 REVISED: 1/2017



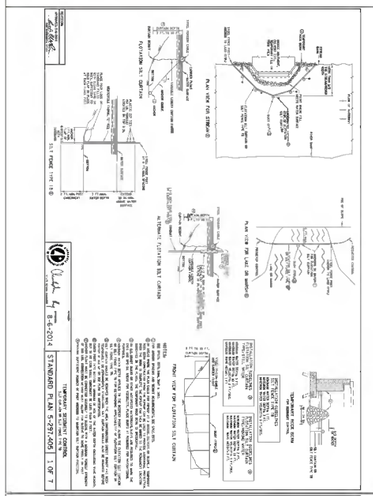
City of minnetonka | WATER SERVICE CONNECTION | SCALE: NOT TO SCALE | STD PLATE NO. 510 | APPROVED: 5/2000 REVISED: 3/2015

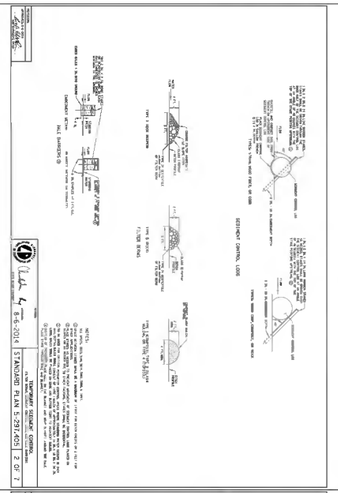


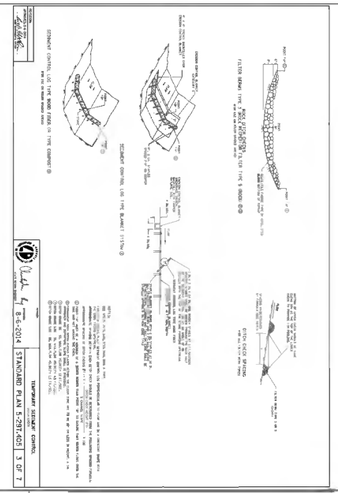
City of minnetonka | SANITARY SEWER SERVICE CONNECTION | SCALE: NOT TO SCALE | STD PLATE NO. 440 | APPROVED: 4/2000 REVISED: 1/2017

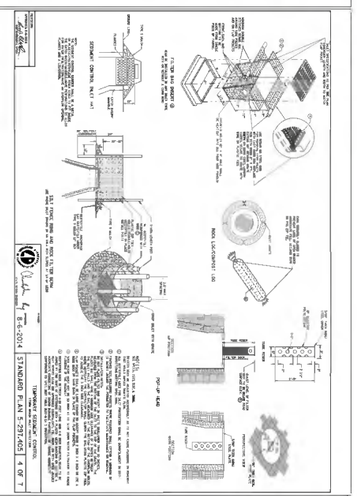


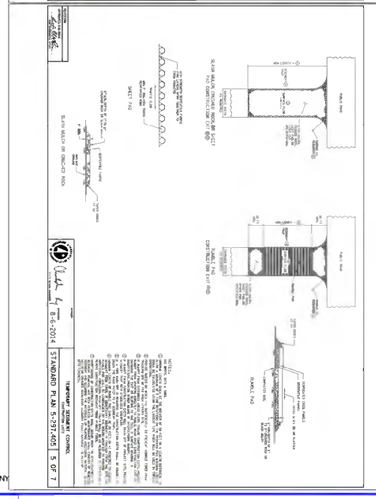
City of minnetonka | DRAIN TILE INSTALLATION (CONCRETE CURB) | SCALE: NOT TO SCALE | STD PLATE NO. 180 | APPROVED: 2/2001 REVISED: 1/2017

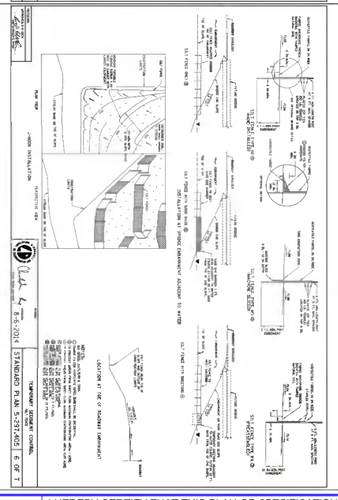


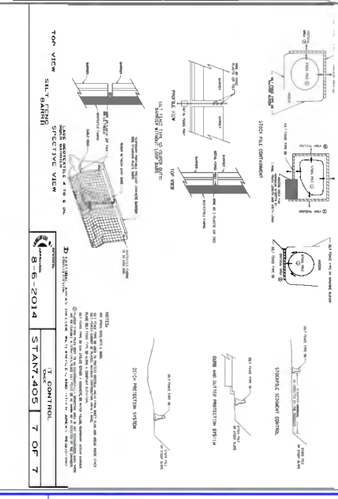


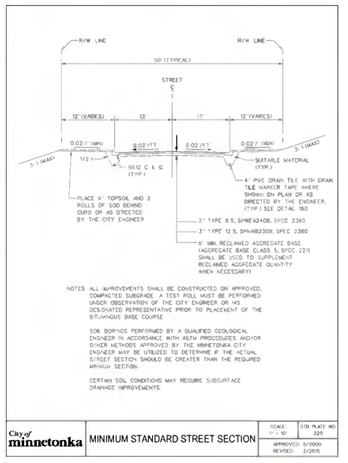












City of minnetonka | MINIMUM STANDARD STREET SECTION | SCALE: - - - 12 | STD PLATE NO. 325 | APPROVED: 5/2000 REVISED: 2/2015

EXISTING UTILITIES SHOWN ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ANY AND ALL EXISTING UTILITIES BEFORE COMMENCING WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES ARISING OUT OF HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL EXISTING UTILITIES.

DRAWING NAME	NO.	BY	DATE	REVISION
SPARROW	1			
DRAWN				
CAW				
CHECKED				
CAW				
DATE				
XX/XX/XX				

I HEREBY CERTIFY THAT THIS PLAN OR SPECIFICATION WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

Charles A. Wiemerslage

CHARLES A. WIEMERSLAGE, P.E.
Date: 09/01/23 Lic. No. 49180

ENGINEERS SURVEYORS DESIGNERS PLANNERS
SATHRE-BERGQUIST, INC.
14000 25TH AVE N #120 PLYMOUTH, MN. 55447 (952) 476-6000

CITY PROJECT NO.

MINNETONKA, MINNESOTA

CITY DETAILS
PRIORY WOODS
ZEHNDER HOMES, INC.

FILE NO.
99595-151

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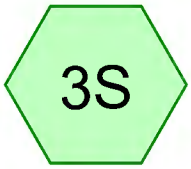
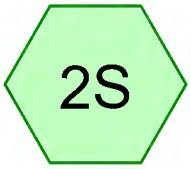
Existing

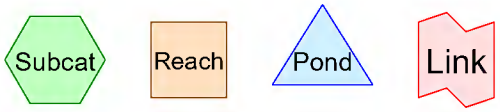
To East



To North



To Street



Routing Diagram for Priory - Haugo Soils
Prepared by Sathre-Bergquist, Inc, Printed 8/31/2023

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1-Year	MSE 24-hr	3	Default	24.00	1	2.50	2
2	2-Year	MSE 24-hr	3	Default	24.00	1	2.87	2
3	10-Year	MSE 24-hr	3	Default	24.00	1	4.27	2
4	10day-snow	Spillway 1-day 10-day		Default	240.00	1	7.20	4
5	100-Year	MSE 24-hr	3	Default	24.00	1	7.41	2

Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.043	98	Unconnected roofs, HSG C (1S, 3S)
1.797	76	Woods/grass comb., Fair, HSG C (1S, 2S, 3S)
1.840	**77**	**TOTAL AREA**

Soil Listing (selected nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
1.840	HSG C	1S, 2S, 3S
0.000	HSG D	
0.000	Other	
1.840		**TOTAL AREA**

Ground Covers (selected nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.043	0.000	0.000	0.043	Unconnected roofs	1S, 3S
0.000	0.000	1.797	0.000	0.000	1.797	Woods/grass comb., Fair	1S, 2S, 3S
0.000	**0.000**	**1.840**	**0.000**	**0.000**	**1.840**	**TOTAL AREA**	

Time span=0.00-200.00 hrs, dt=0.04 hrs, 5001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

Subcatchment1S: To East Runoff Area=23,590 sf 5.45% Impervious Runoff Depth=0.78"
Flow Length=80' Slope=0.2000 '/' Tc=7.5 min CN=WQ Runoff=0.69 cfs 0.035 af

Subcatchment2S: To Street Runoff Area=2,805 sf 0.00% Impervious Runoff Depth=0.69"
Flow Length=32' Slope=0.1250 '/' Tc=2.9 min CN=76 Runoff=0.09 cfs 0.004 af

Subcatchment3S: To North Runoff Area=53,773 sf 1.09% Impervious Runoff Depth=0.71"
Flow Length=380' Tc=13.5 min CN=WQ Runoff=1.11 cfs 0.073 af

Total Runoff Area = 1.840 ac Runoff Volume = 0.112 af Average Runoff Depth = 0.73"
97.67% Pervious = 1.797 ac 2.33% Impervious = 0.043 ac

Summary for Subcatchment 1S: To East

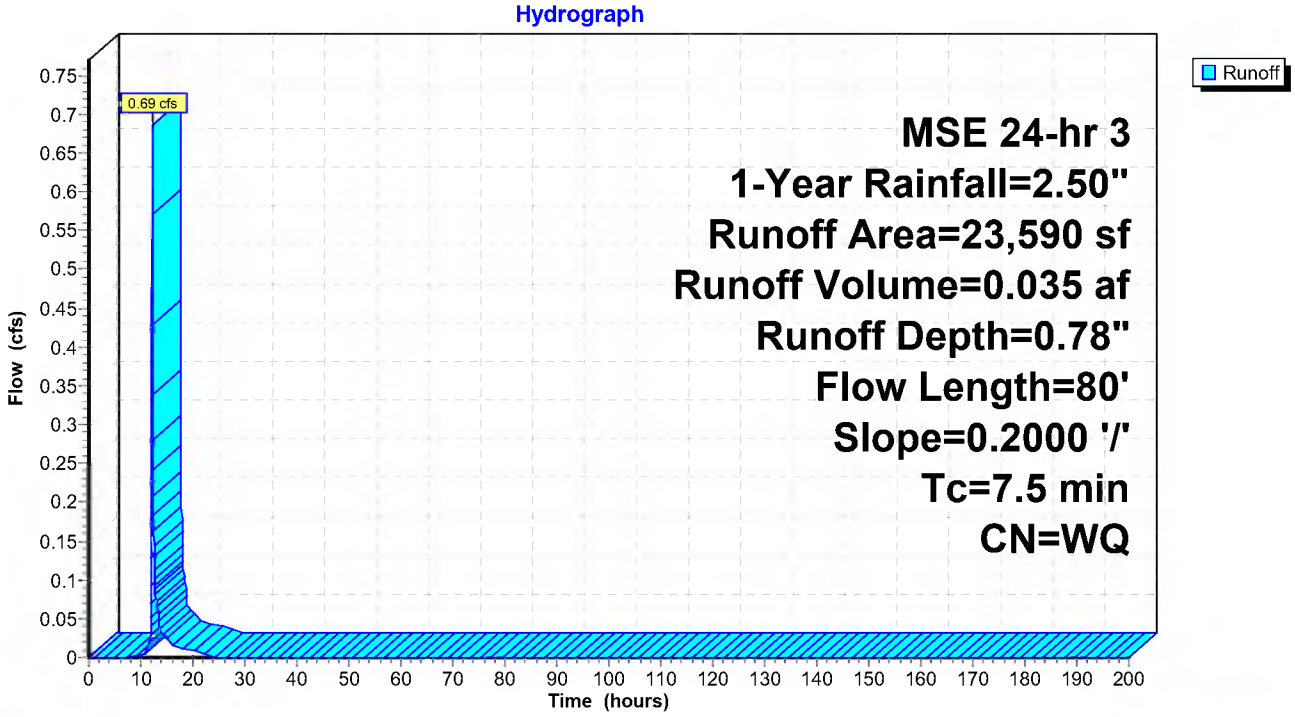
Runoff = 0.69 cfs @ 12.16 hrs, Volume= 0.035 af, Depth= 0.78"
Routed to nonexistent node 10P

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-200.00 hrs, dt= 0.04 hrs
MSE 24-hr 3 1-Year Rainfall=2.50"

Area (sf)	CN	Description
22,305	76	Woods/grass comb., Fair, HSG C
1,285	98	Unconnected roofs, HSG C
23,590		Weighted Average
22,305	76	94.55% Pervious Area
1,285	98	5.45% Impervious Area
1,285		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	80	0.2000	0.18		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.88"

Subcatchment 1S: To East



Summary for Subcatchment 2S: To Street

[49] Hint: Tc<2dt may require smaller dt

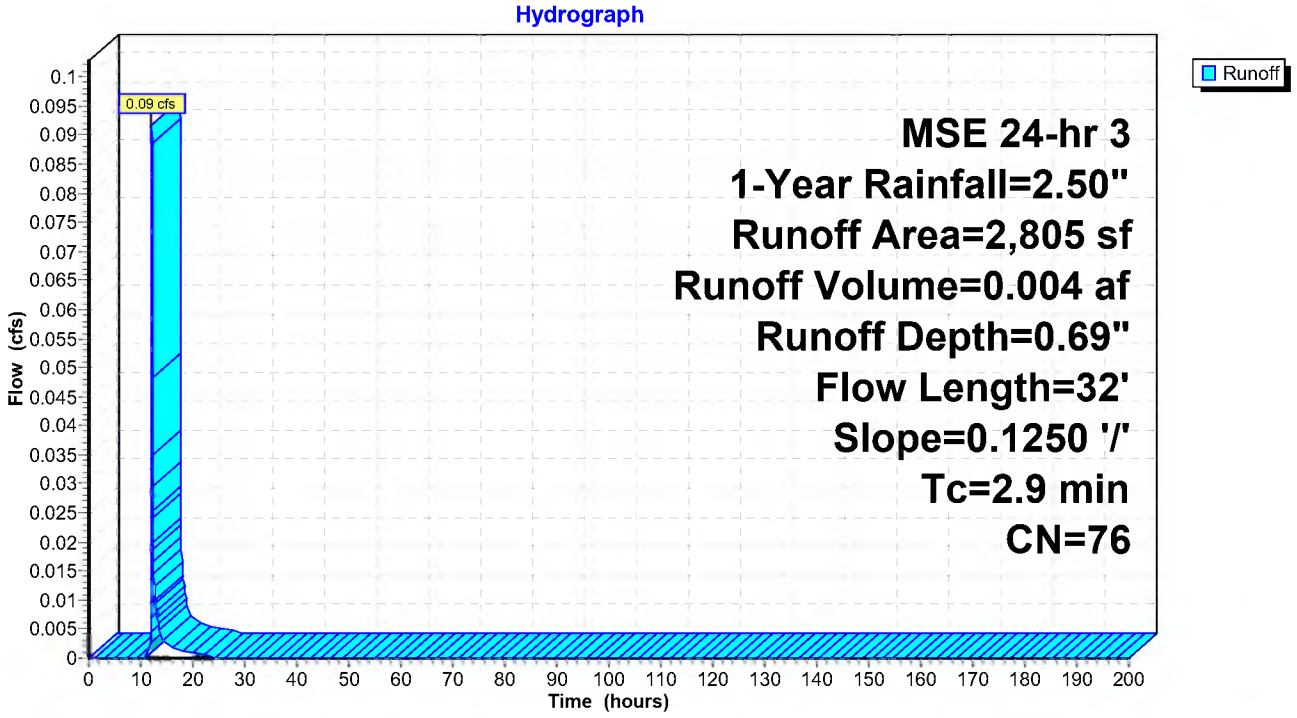
Runoff = 0.09 cfs @ 12.10 hrs, Volume= 0.004 af, Depth= 0.69"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-200.00 hrs, dt= 0.04 hrs
MSE 24-hr 3 1-Year Rainfall=2.50"

Area (sf)	CN	Description
2,805	76	Woods/grass comb., Fair, HSG C
2,805	76	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.9	32	0.1250	0.18		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.88"

Subcatchment 2S: To Street



Summary for Subcatchment 3S: To North

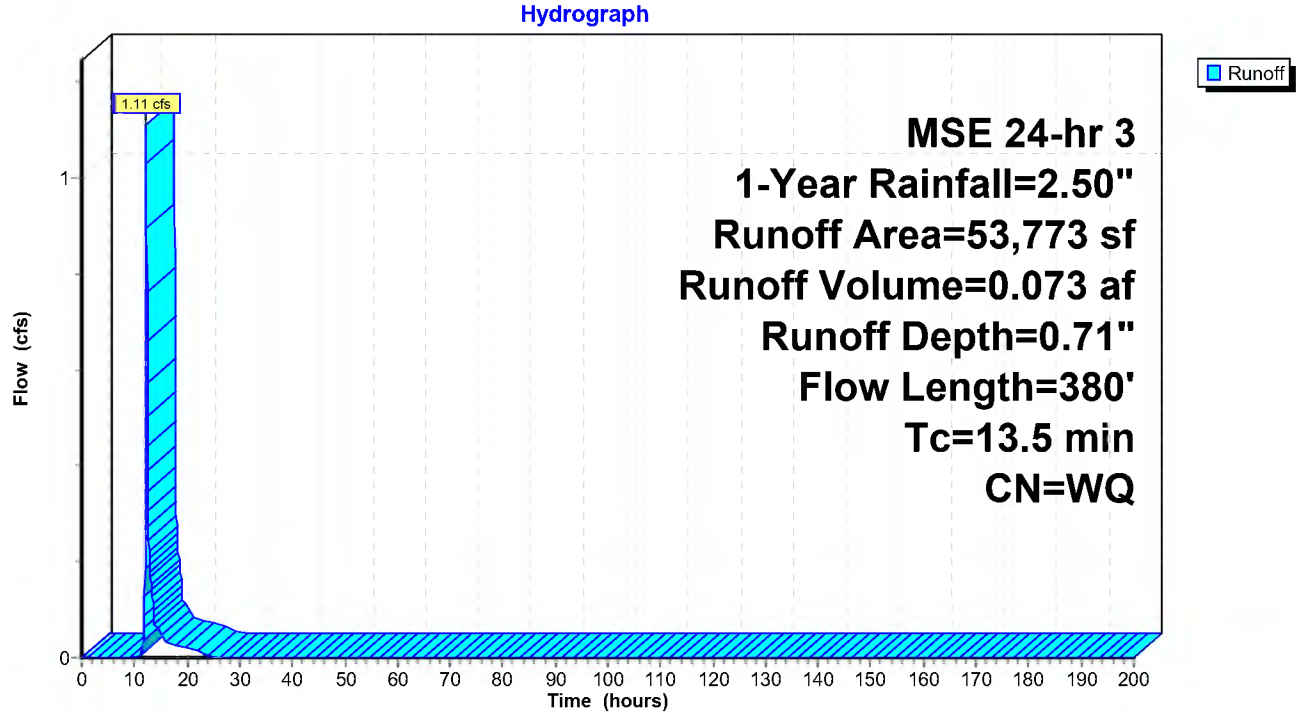
Runoff = 1.11 cfs @ 12.23 hrs, Volume= 0.073 af, Depth= 0.71"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-200.00 hrs, dt= 0.04 hrs
MSE 24-hr 3 1-Year Rainfall=2.50"

Area (sf)	CN	Description
53,189	76	Woods/grass comb., Fair, HSG C
584	98	Unconnected roofs, HSG C
53,773		Weighted Average
53,189	76	98.91% Pervious Area
584	98	1.09% Impervious Area
584		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.1	100	0.1200	0.15		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.88"
2.4	280	0.1500	1.94		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
13.5	380	Total			

Subcatchment 3S: To North



Time span=0.00-200.00 hrs, dt=0.04 hrs, 5001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

Subcatchment1S: To East Runoff Area=23,590 sf 5.45% Impervious Runoff Depth=1.02"
Flow Length=80' Slope=0.2000 '/' Tc=7.5 min CN=WQ Runoff=0.92 cfs 0.046 af

Subcatchment2S: To Street Runoff Area=2,805 sf 0.00% Impervious Runoff Depth=0.93"
Flow Length=32' Slope=0.1250 '/' Tc=2.9 min CN=76 Runoff=0.12 cfs 0.005 af

Subcatchment3S: To North Runoff Area=53,773 sf 1.09% Impervious Runoff Depth=0.95"
Flow Length=380' Tc=13.5 min CN=WQ Runoff=1.52 cfs 0.097 af

Total Runoff Area = 1.840 ac Runoff Volume = 0.149 af Average Runoff Depth = 0.97"
97.67% Pervious = 1.797 ac 2.33% Impervious = 0.043 ac

Summary for Subcatchment 1S: To East

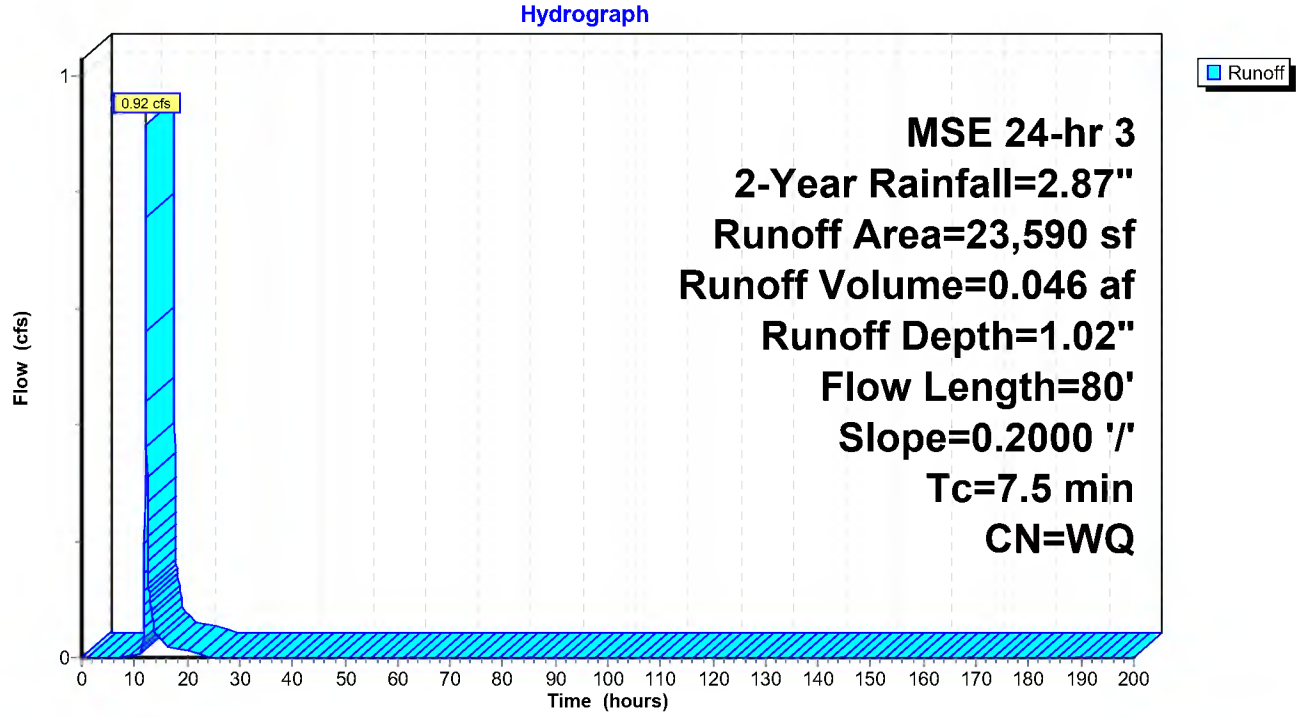
Runoff = 0.92 cfs @ 12.15 hrs, Volume= 0.046 af, Depth= 1.02"
Routed to nonexistent node 10P

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-200.00 hrs, dt= 0.04 hrs
MSE 24-hr 3 2-Year Rainfall=2.87"

Area (sf)	CN	Description
22,305	76	Woods/grass comb., Fair, HSG C
1,285	98	Unconnected roofs, HSG C
23,590		Weighted Average
22,305	76	94.55% Pervious Area
1,285	98	5.45% Impervious Area
1,285		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	80	0.2000	0.18		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.88"

Subcatchment 1S: To East



Summary for Subcatchment 2S: To Street

[49] Hint: Tc<2dt may require smaller dt

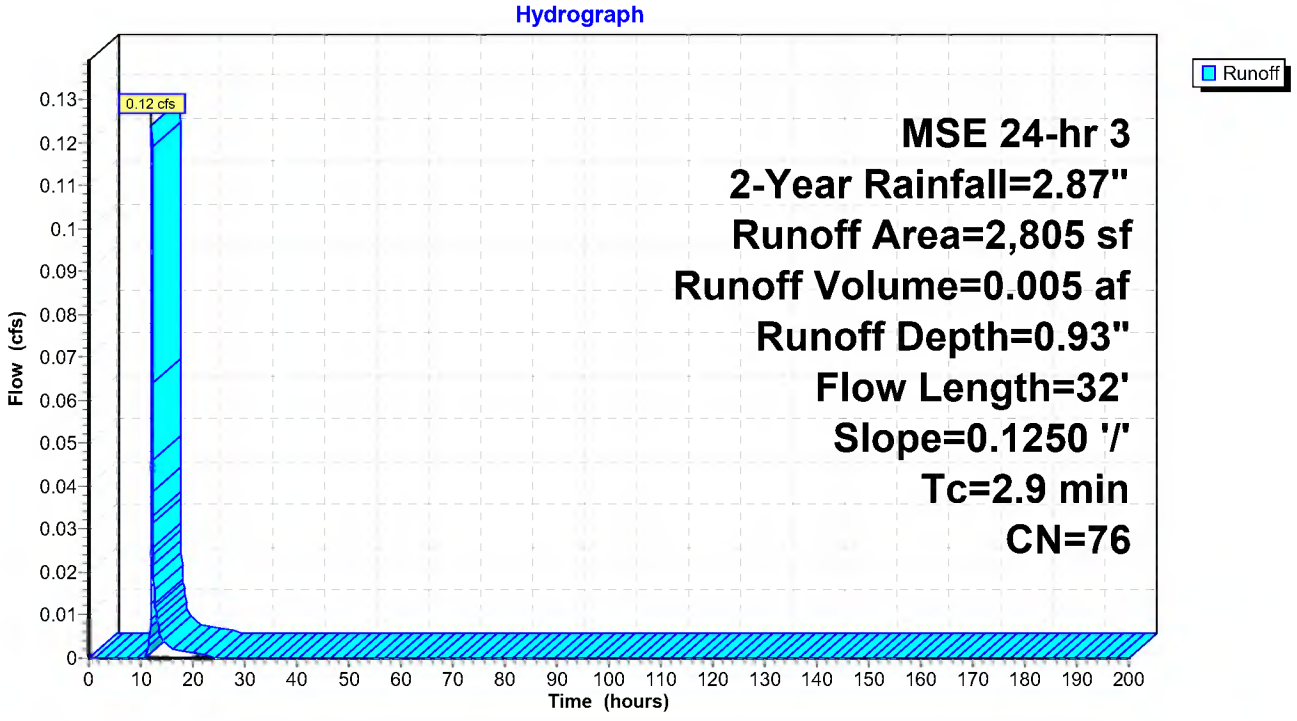
Runoff = 0.12 cfs @ 12.10 hrs, Volume= 0.005 af, Depth= 0.93"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-200.00 hrs, dt= 0.04 hrs
MSE 24-hr 3 2-Year Rainfall=2.87"

Area (sf)	CN	Description
2,805	76	Woods/grass comb., Fair, HSG C
2,805	76	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.9	32	0.1250	0.18		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.88"

Subcatchment 2S: To Street



Summary for Subcatchment 3S: To North

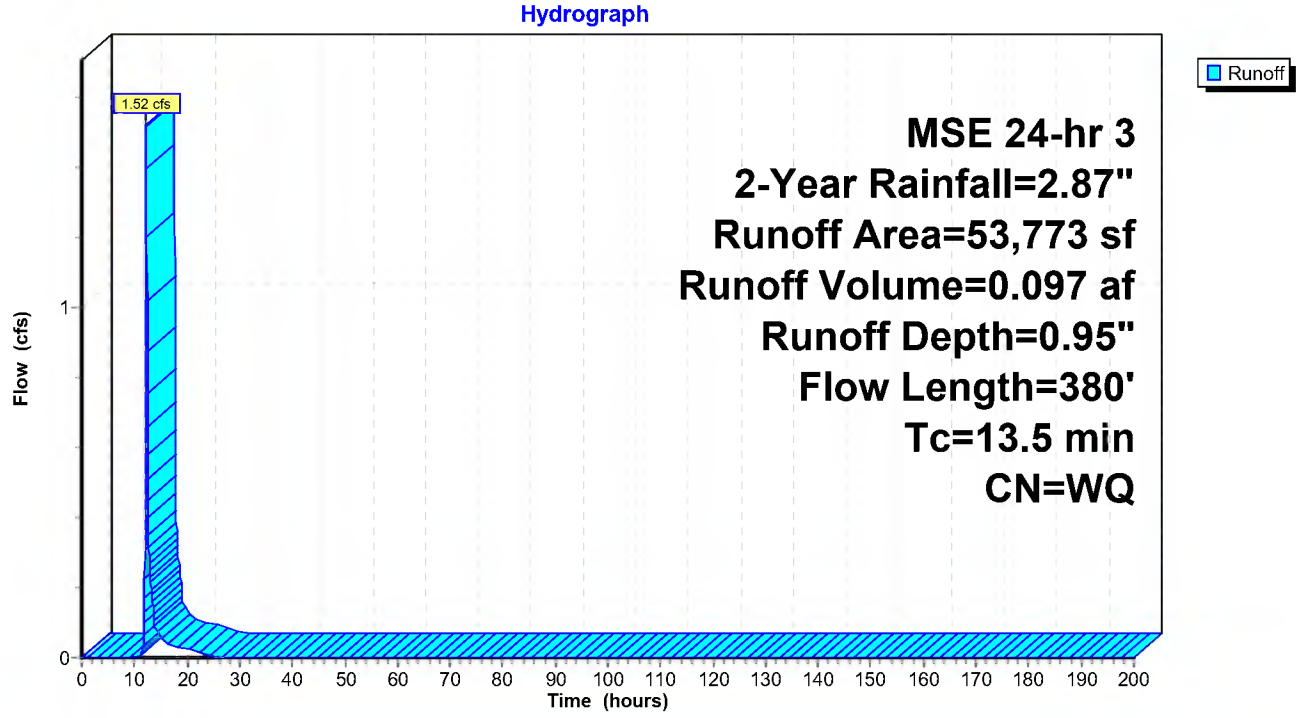
Runoff = 1.52 cfs @ 12.23 hrs, Volume= 0.097 af, Depth= 0.95"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-200.00 hrs, dt= 0.04 hrs
MSE 24-hr 3 2-Year Rainfall=2.87"

Area (sf)	CN	Description
53,189	76	Woods/grass comb., Fair, HSG C
584	98	Unconnected roofs, HSG C
53,773		Weighted Average
53,189	76	98.91% Pervious Area
584	98	1.09% Impervious Area
584		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.1	100	0.1200	0.15		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.88"
2.4	280	0.1500	1.94		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
13.5	380	Total			

Subcatchment 3S: To North



Time span=0.00-200.00 hrs, dt=0.04 hrs, 5001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

Subcatchment1S: To East Runoff Area=23,590 sf 5.45% Impervious Runoff Depth=2.06"
Flow Length=80' Slope=0.2000 '/' Tc=7.5 min CN=WQ Runoff=1.89 cfs 0.093 af

Subcatchment2S: To Street Runoff Area=2,805 sf 0.00% Impervious Runoff Depth=1.95"
Flow Length=32' Slope=0.1250 '/' Tc=2.9 min CN=76 Runoff=0.25 cfs 0.010 af

Subcatchment3S: To North Runoff Area=53,773 sf 1.09% Impervious Runoff Depth=1.97"
Flow Length=380' Tc=13.5 min CN=WQ Runoff=3.27 cfs 0.203 af

Total Runoff Area = 1.840 ac Runoff Volume = 0.306 af Average Runoff Depth = 2.00"
97.67% Pervious = 1.797 ac 2.33% Impervious = 0.043 ac

Summary for Subcatchment 1S: To East

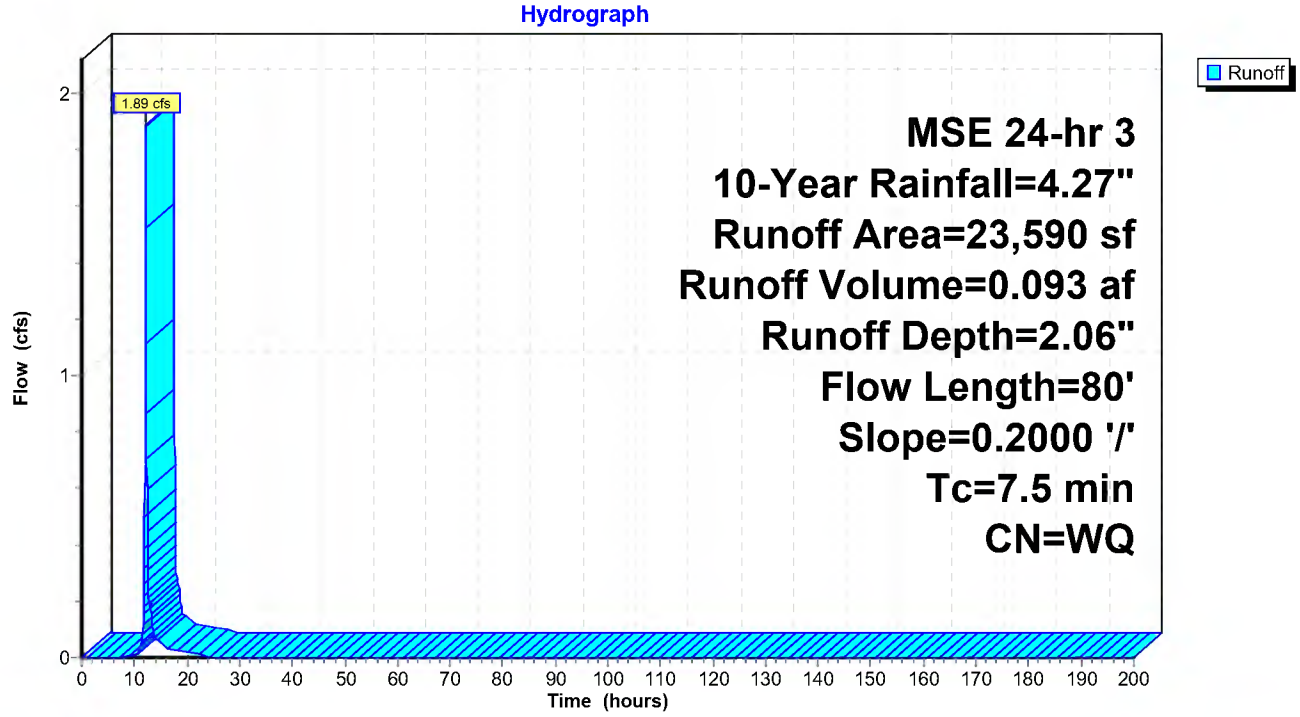
Runoff = 1.89 cfs @ 12.15 hrs, Volume= 0.093 af, Depth= 2.06"
Routed to nonexistent node 10P

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-200.00 hrs, dt= 0.04 hrs
MSE 24-hr 3 10-Year Rainfall=4.27"

Area (sf)	CN	Description
22,305	76	Woods/grass comb., Fair, HSG C
1,285	98	Unconnected roofs, HSG C
23,590		Weighted Average
22,305	76	94.55% Pervious Area
1,285	98	5.45% Impervious Area
1,285		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	80	0.2000	0.18		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.88"

Subcatchment 1S: To East



Summary for Subcatchment 2S: To Street

[49] Hint: Tc<2dt may require smaller dt

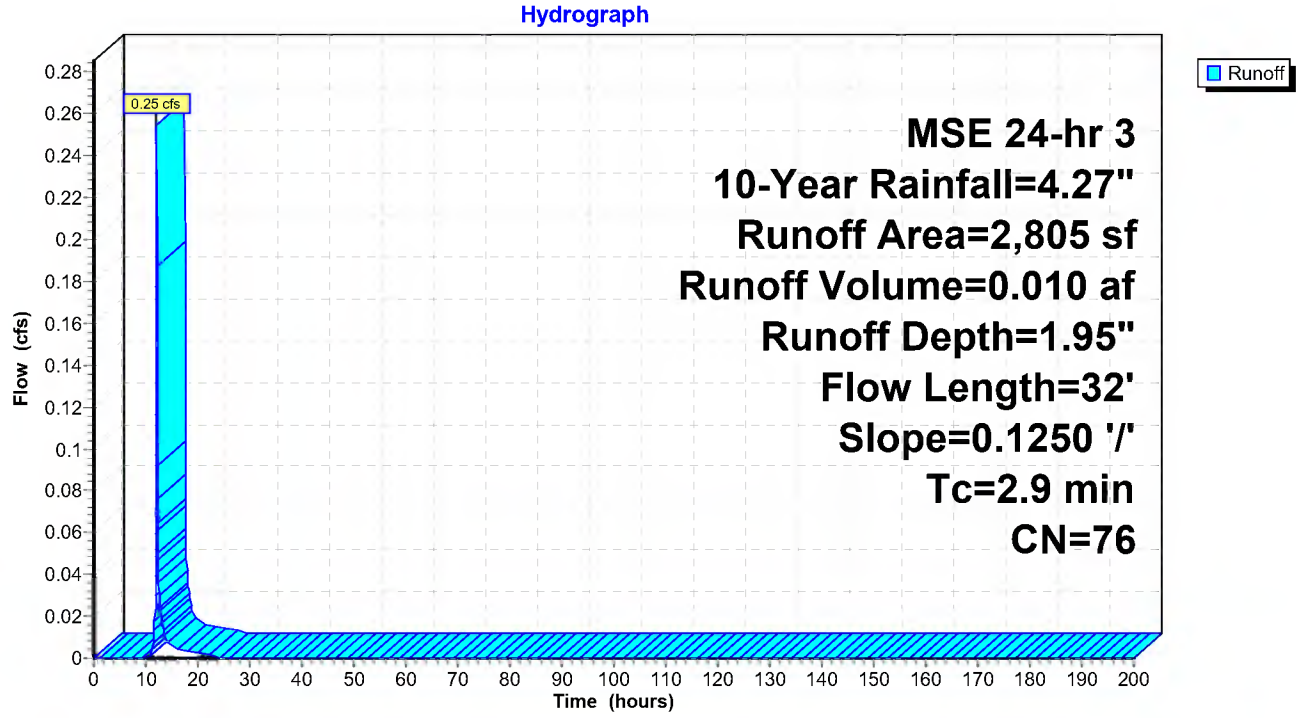
Runoff = 0.25 cfs @ 12.10 hrs, Volume= 0.010 af, Depth= 1.95"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-200.00 hrs, dt= 0.04 hrs
MSE 24-hr 3 10-Year Rainfall=4.27"

Area (sf)	CN	Description
2,805	76	Woods/grass comb., Fair, HSG C
2,805	76	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.9	32	0.1250	0.18		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.88"

Subcatchment 2S: To Street



Summary for Subcatchment 3S: To North

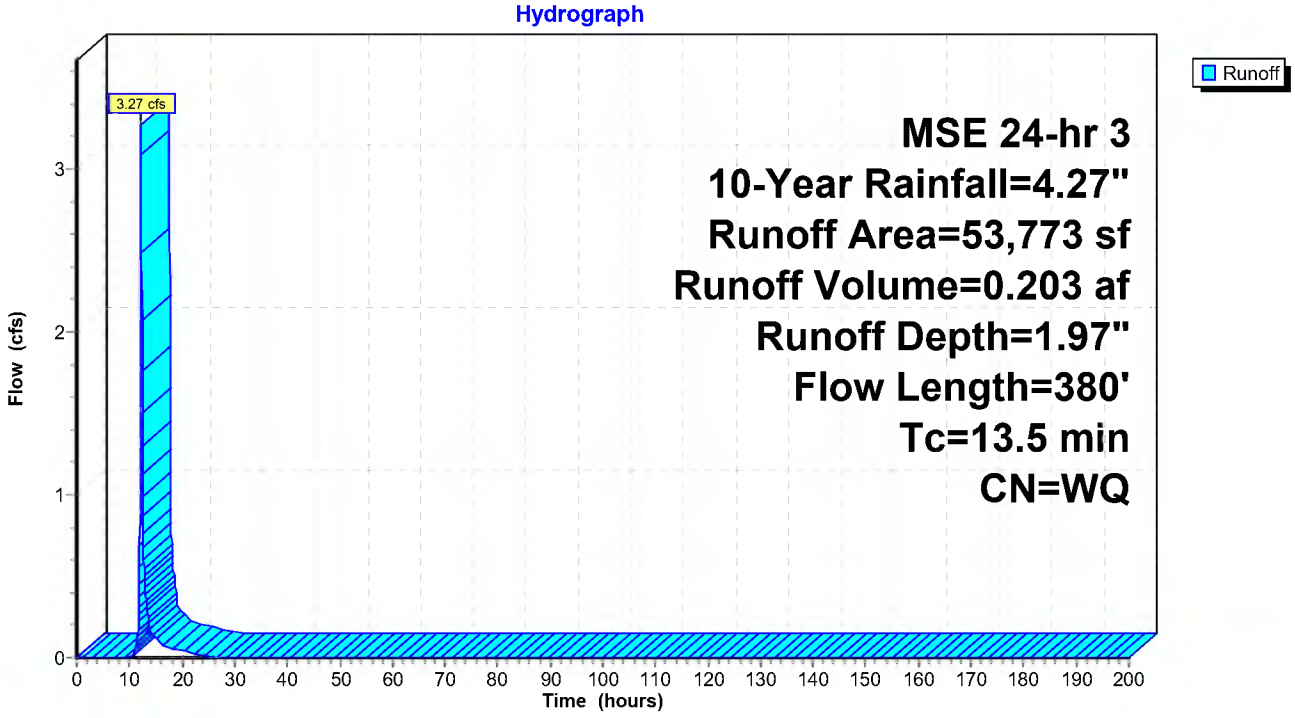
Runoff = 3.27 cfs @ 12.22 hrs, Volume= 0.203 af, Depth= 1.97"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-200.00 hrs, dt= 0.04 hrs
MSE 24-hr 3 10-Year Rainfall=4.27"

Area (sf)	CN	Description
53,189	76	Woods/grass comb., Fair, HSG C
584	98	Unconnected roofs, HSG C
53,773		Weighted Average
53,189	76	98.91% Pervious Area
584	98	1.09% Impervious Area
584		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.1	100	0.1200	0.15		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.88"
2.4	280	0.1500	1.94		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
13.5	380	Total			

Subcatchment 3S: To North



Time span=0.00-200.00 hrs, dt=0.04 hrs, 5001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

Subcatchment1S: To East Runoff Area=23,590 sf 5.45% Impervious Runoff Depth>6.48"
Flow Length=80' Slope=0.2000 '/' Tc=7.5 min AMC UI Adjusted CN=WQ Runoff=0.26 cfs 0.292 af

Subcatchment2S: To Street Runoff Area=2,805 sf 0.00% Impervious Runoff Depth>6.48"
Flow Length=32' Slope=0.1250 '/' Tc=2.9 min AMC Adjusted CN=98 Runoff=0.03 cfs 0.035 af

Subcatchment3S: To North Runoff Area=53,773 sf 1.09% Impervious Runoff Depth>6.47"
Flow Length=380' Tc=13.5 min AMC UI Adjusted CN=WQ Runoff=0.59 cfs 0.666 af

Total Runoff Area = 1.840 ac Runoff Volume = 0.993 af Average Runoff Depth = 6.48"
97.67% Pervious = 1.797 ac 2.33% Impervious = 0.043 ac

Summary for Subcatchment 1S: To East

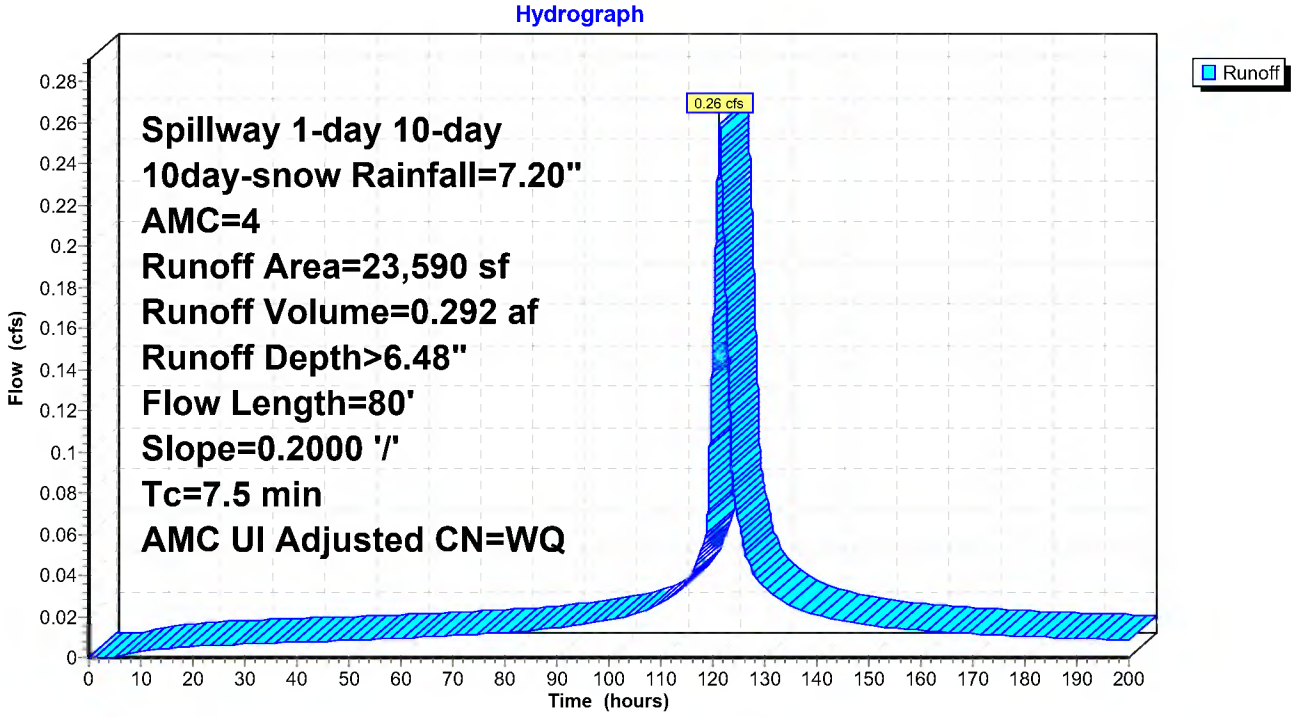
Runoff = 0.26 cfs @ 121.32 hrs, Volume= 0.292 af, Depth> 6.48"
Routed to nonexistent node 10P

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-200.00 hrs, dt= 0.04 hrs
Spillway 1-day 10-day 10day-snow Rainfall=7.20", AMC=4

Area (sf)	CN	Adj	Description
22,305	76	98	Woods/grass comb., Fair, HSG C
1,285	98	98	Unconnected roofs, HSG C
23,590			Weighted Average
22,305	76	98	94.55% Pervious Area, AMC Adjusted
1,285	98	98	5.45% Impervious Area, AMC Adjusted
1,285			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	80	0.2000	0.18		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.88"

Subcatchment 1S: To East



Summary for Subcatchment 2S: To Street

[49] Hint: Tc<2dt may require smaller dt

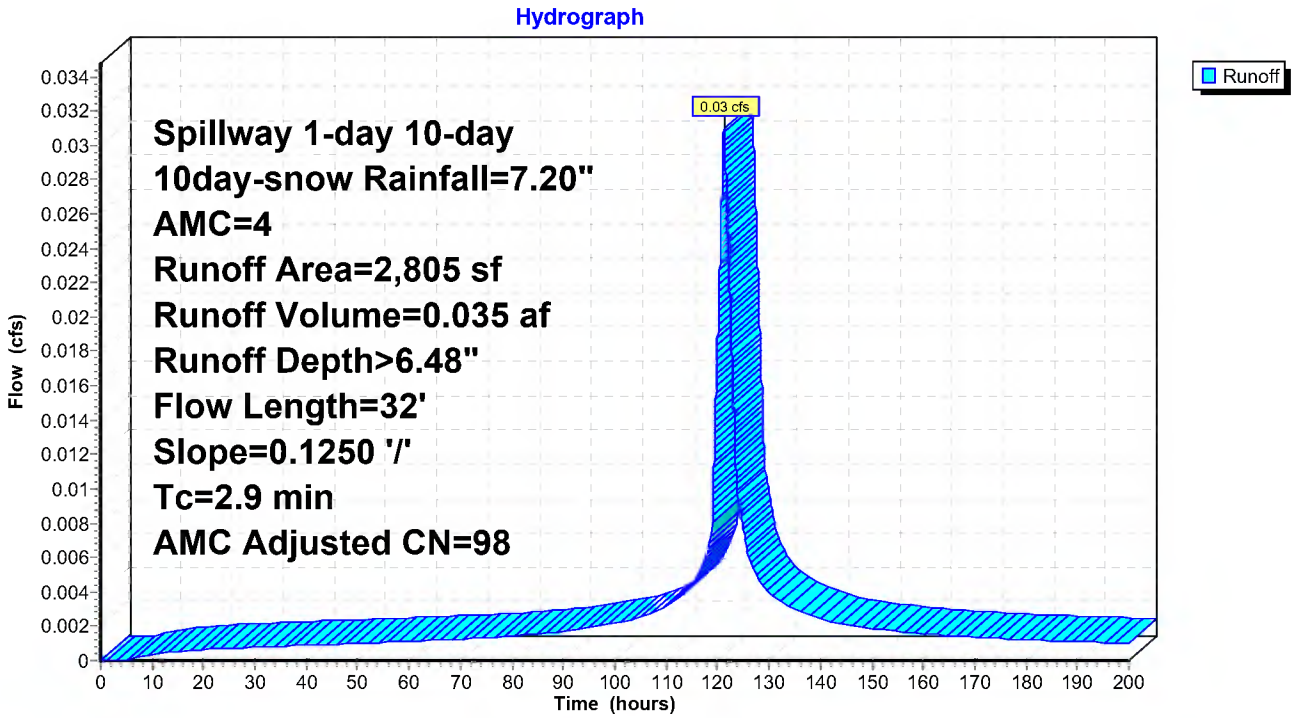
Runoff = 0.03 cfs @ 121.26 hrs, Volume= 0.035 af, Depth> 6.48"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-200.00 hrs, dt= 0.04 hrs
Spillway 1-day 10-day 10day-snow Rainfall=7.20", AMC=4

Area (sf)	CN	Adj	Description
2,805	76	98	Woods/grass comb., Fair, HSG C
2,805			Weighted Average
2,805	76	98	100.00% Pervious Area, AMC Adjusted

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.9	32	0.1250	0.18		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.88"

Subcatchment 2S: To Street



Summary for Subcatchment 3S: To North

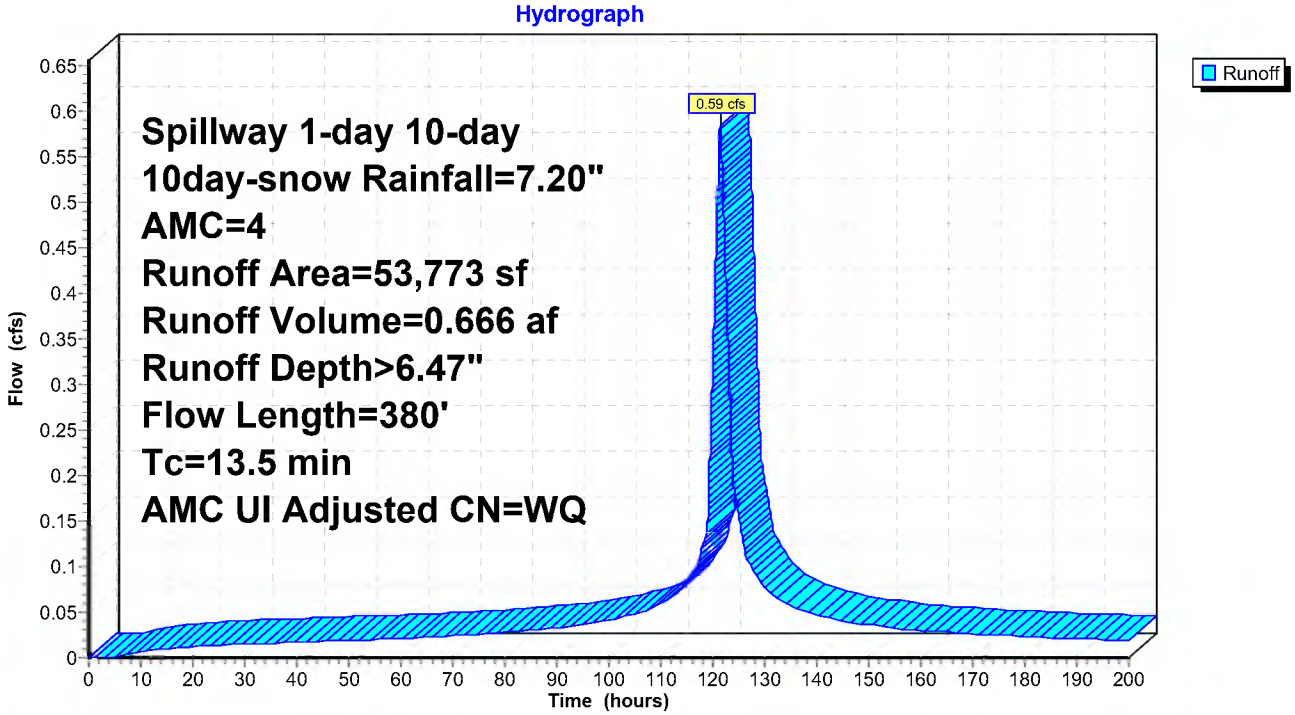
Runoff = 0.59 cfs @ 121.41 hrs, Volume= 0.666 af, Depth> 6.47"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-200.00 hrs, dt= 0.04 hrs
Spillway 1-day 10-day 10day-snow Rainfall=7.20", AMC=4

Area (sf)	CN	Adj	Description
53,189	76	98	Woods/grass comb., Fair, HSG C
584	98	98	Unconnected roofs, HSG C
53,773			Weighted Average
53,189	76	98	98.91% Pervious Area, AMC Adjusted
584	98	98	1.09% Impervious Area, AMC Adjusted
584			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.1	100	0.1200	0.15		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.88"
2.4	280	0.1500	1.94		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
13.5	380	Total			

Subcatchment 3S: To North



Time span=0.00-200.00 hrs, dt=0.04 hrs, 5001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

Subcatchment1S: To East Runoff Area=23,590 sf 5.45% Impervious Runoff Depth=4.76"
Flow Length=80' Slope=0.2000 '/' Tc=7.5 min CN=WQ Runoff=4.31 cfs 0.215 af

Subcatchment2S: To Street Runoff Area=2,805 sf 0.00% Impervious Runoff Depth=4.62"
Flow Length=32' Slope=0.1250 '/' Tc=2.9 min CN=76 Runoff=0.59 cfs 0.025 af

Subcatchment3S: To North Runoff Area=53,773 sf 1.09% Impervious Runoff Depth=4.65"
Flow Length=380' Tc=13.5 min CN=WQ Runoff=7.71 cfs 0.479 af

Total Runoff Area = 1.840 ac Runoff Volume = 0.718 af Average Runoff Depth = 4.68"
97.67% Pervious = 1.797 ac 2.33% Impervious = 0.043 ac

Summary for Subcatchment 1S: To East

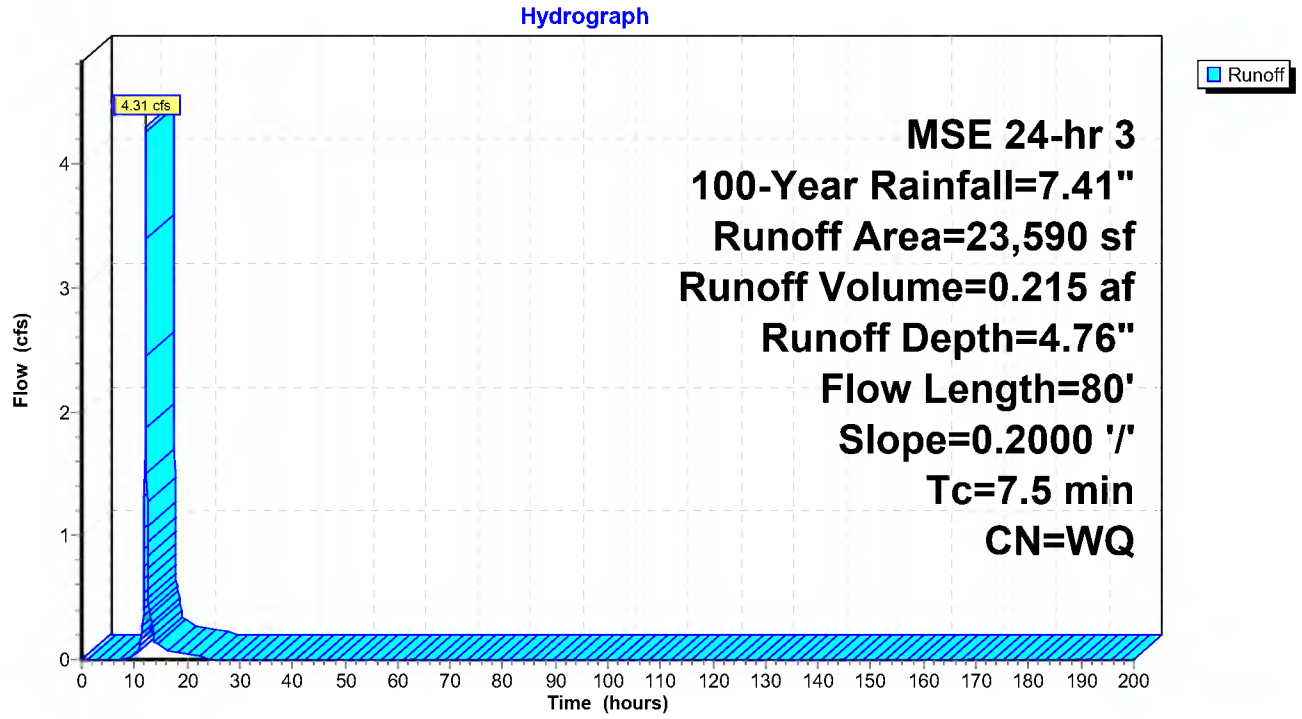
Runoff = 4.31 cfs @ 12.15 hrs, Volume= 0.215 af, Depth= 4.76"
Routed to nonexistent node 10P

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-200.00 hrs, dt= 0.04 hrs
MSE 24-hr 3 100-Year Rainfall=7.41"

Area (sf)	CN	Description
22,305	76	Woods/grass comb., Fair, HSG C
1,285	98	Unconnected roofs, HSG C
23,590		Weighted Average
22,305	76	94.55% Pervious Area
1,285	98	5.45% Impervious Area
1,285		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	80	0.2000	0.18		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.88"

Subcatchment 1S: To East



Summary for Subcatchment 2S: To Street

[49] Hint: Tc<2dt may require smaller dt

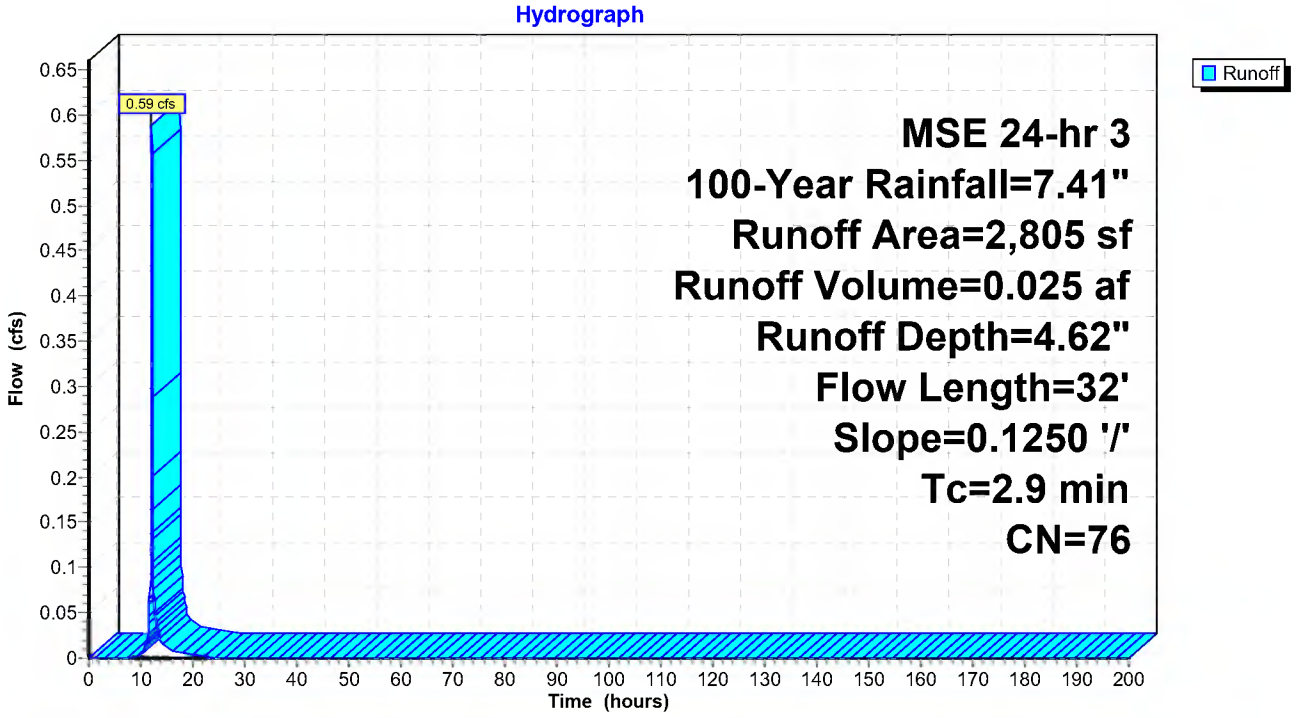
Runoff = 0.59 cfs @ 12.10 hrs, Volume= 0.025 af, Depth= 4.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-200.00 hrs, dt= 0.04 hrs
MSE 24-hr 3 100-Year Rainfall=7.41"

Area (sf)	CN	Description
2,805	76	Woods/grass comb., Fair, HSG C
2,805	76	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.9	32	0.1250	0.18		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.88"

Subcatchment 2S: To Street



Summary for Subcatchment 3S: To North

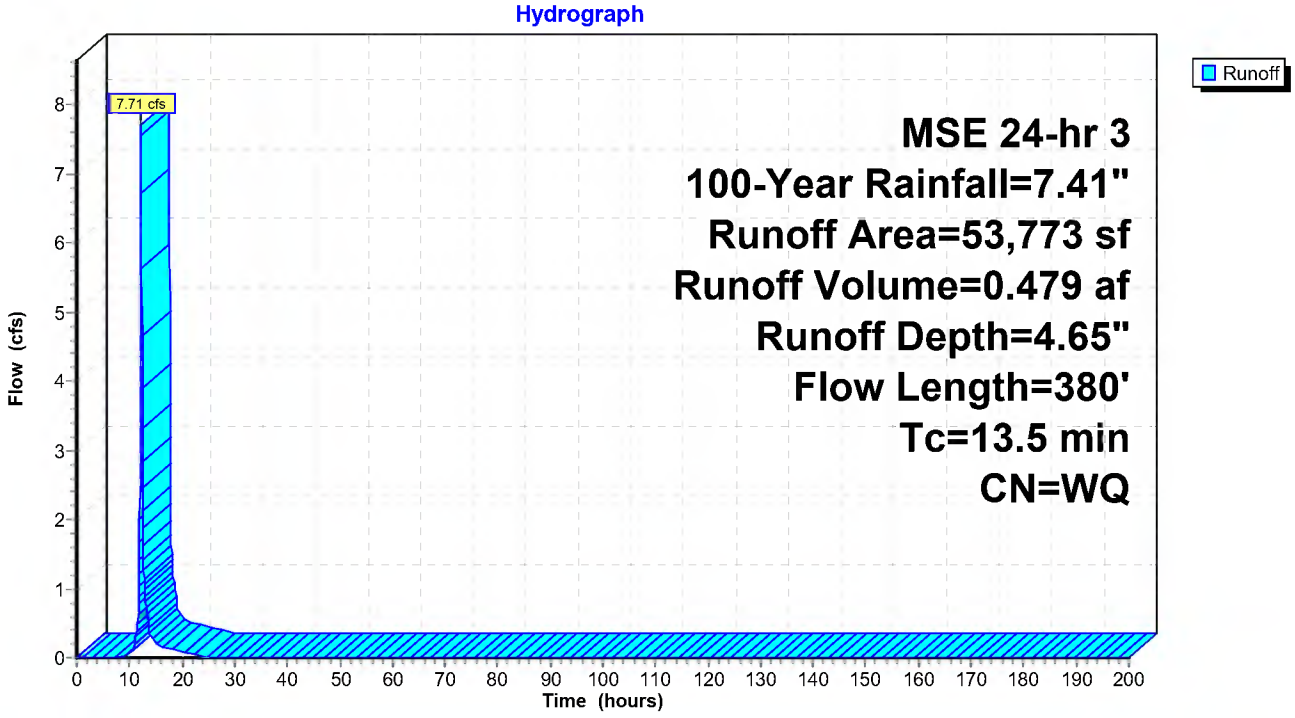
Runoff = 7.71 cfs @ 12.22 hrs, Volume= 0.479 af, Depth= 4.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-200.00 hrs, dt= 0.04 hrs
MSE 24-hr 3 100-Year Rainfall=7.41"

Area (sf)	CN	Description
53,189	76	Woods/grass comb., Fair, HSG C
584	98	Unconnected roofs, HSG C
53,773		Weighted Average
53,189	76	98.91% Pervious Area
584	98	1.09% Impervious Area
584		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.1	100	0.1200	0.15		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.88"
2.4	280	0.1500	1.94		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
13.5	380	Total			

Subcatchment 3S: To North



P8 Urban Catchment Model, Version 3.5				Run Date	08/31/23
Case	Priory Woods Existing.p8c	FirstDate	01/01/12	Precip(in)	333.8
Title	Priory Woods	LastDate	01/01/22	Rain(in)	296.33
PrecFile	MSP49-20220228.pcp	Events	778	Snow(in)	37.42
PartFile	nurp50.p8p	TotalHrs	86976	TotalYrs	9.92

Case Title	Priory Woods
Case Data File	Priory Woods Existing.p8c
Path	H:\P8\
Case Notes:	Onsite model represents pollutant loading from onsite only
Storm Data File	MSP49-20220228.pcp
Particle File	nurp50.p8p
Air Temp File File	MSP49-20220228.tem

Time Steps Per Hour	12
Minimum Inter-Event Time (hrs)	10
Maximum Continuity Error %	2
Rainfall Breakpoint (inches)	0.8
Precipitation Scale Factor	1
Air Temp Offset (deg-F)	0
Loops Thru Storm File	1
Simulation Dates	
Start	40544
Keep	40909
Stop	44562
Max Snowfall Temperature (deg-f)	32
SnowMelt Temperature (deg-f)	32
Snowmelt Coef (in/degF-Day)	0.06
Soil Freeze Temp (deg-F)	32
Snowmelt Abstraction Factor	1
Evapo-Trans. Calibration Factor	1
Growing Season Start Month	5
Growing Season End Month	10

5-Day Antecedent Rainfall + Runoff (inches)

CN Antecedent Moisture Condition	AMC-II	AMC-III
Growing Season	1.4	2.1
NonGrowing Season	0.5	1.1

Watershed Data

Watershed Name	1S EX - Ea	2S EX - To	3S EX - To North
Runoff to Device	Ex Loading	Ex Loading	Ex Loading
Infiltration to Device			
Watershed Area	3.352	0.064	0.542
SCS Curve Number (Pervious)	86	76	76
Scale Factor for Pervious Runoff I	1	1	1
Indirectly Connected Imperv Fract	0	0	0
UnSwept Impervious Fraction	0	0	0
UnSwept Depression Storage (inc	0.02	0.02	0.02
UnSwept Imperv. Runoff Coefficie	1	1	1
UnSwept Scale Factor for Particle	1	1	1
Swept Impervious Fraction	0	0	0
Swept Depression Storage (inches	0.02	0.02	0.02

Swept Imperv. Runoff Coefficient	1	1	1
Swept Scale Factor for Particle Lo	1	1	1
Sweeping Frequency	0.5	0.5	0.5
Sweeping Efficiency	1	1	1
Sweeping Start Date (MMDD)	101	101	101
Sweeping Stop Date (MMDD)	1231	1231	1231

Device Data	
Device Name	Ex Loading
Device Type	PIPE
Infiltration Outlet	
Normal Outlet	
Spillway Outlet	
Particle Removal Scale Factor	
Bottom Elevation (ft)	
Bottom Area (acres)	
Permanent Pool Area (acres)	
Permanent Pool Volume (ac-ft)	
Perm Pool Infilt Rate (in/hr)	
Flood Pool Area (acres)	
Flood Pool Volume (ac-ft)	
Flood Pool Infilt Rate (in/hr)	
Infilt Basin Void Fraction (%)	
Detention Pond Outlet Parameters	
Outlet Type	
Outlet Orifice Diameter (in)	
Orifice Discharge Coef	
Outlet Weir Length (ft)	
Weir Discharge Coef	
Perforated Riser Height (ft)	
Number of Holes in Riser	
Holes Diameter	
Flood Pool Drain Time (hrs)	
Swale Parameters	
Length of Flow Path (ft)	
Slope of Flow Path %	
Bottom Width (ft)	
Side Slope (ft-v/ft-h)	
Maximum Depth of Flow (ft)	
Mannings n Constant	
Hydraulic Model	
Pipe, Splitter, Aquifer Parameter	
Hydraulic Res. Time (hrs)	0.16

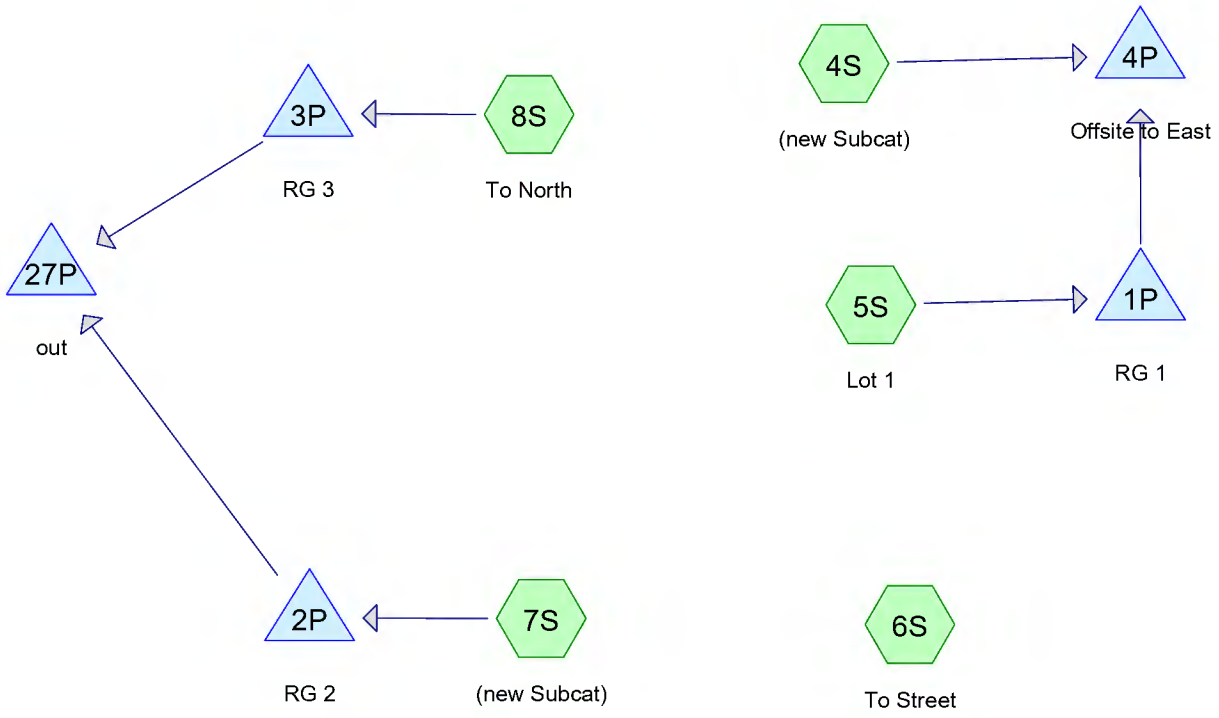
Particle Data					
Particle File	nurp50.p8p				
Particle Class	P0%	P10%	P30%	P50%	P80%
Filtration Efficiency (%	0	25	100	100	100
Settling Velocity (ft/hr)	0	0.03	0.3	1.5	15
First Order Decay Rate	0	0	0	0	0
2nd Order Decay (1/da	0	0	0	0	0
Impervious Runoff Cor	1	0	0	0	0
Pervious Runoff Conc	1	100	100	100	200
Pervious Conc Expone	0	1	1	1	1
Accum. Rate (lbs-ac-d	0	1.75	1.75	1.75	3.5

Particle Removal Rate	0	0.25	0.25	0.25	0.25
Washoff Coefficient	0	20	20	20	20
Washoff Exponent	0	2	2	2	2
Sweeper Efficiency	0	0	0	5	15

Water Quality Component Data

Component Name	TSS	TP	TKN	CU	PB	ZN	HC
Water Quality Criteria (ppm)							
Level 1	5	0.025	2	2	0.02	5	0.1
Level 2	10	0.05	1	0.0048	0.014	0.0362	0.5
Level 3	20	0.1	0.5	0.02	0.15	0.38	1
Content Scale Factor	1	1	1	1	1	1	1
Particle Composition (mg/kg)							
P0%	0	99000	600000	13600	2000	64000	250000
P10%	1000000	3850	15000	340	180	1600	22500
P30%	1000000	3850	15000	340	180	1600	22500
P50%	1000000	3850	15000	340	180	1600	22500
P80%	1000000	0	0	340	180	0	22500

Proposed - less 900 sf each lot



Subcat Reach Pond Link

Routing Diagram for Priory - Haugo Soils
Prepared by Sathre-Bergquist, Inc, Printed 8/31/2023

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1-Year	MSE 24-hr	3	Default	24.00	1	2.50	2
2	2-Year	MSE 24-hr	3	Default	24.00	1	2.87	2
3	10-Year	MSE 24-hr	3	Default	24.00	1	4.27	2
4	10day-snow	Spillway 1-day 10-day		Default	240.00	1	7.20	4
5	100-Year	MSE 24-hr	3	Default	24.00	1	7.41	2

Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.149	74	>75% Grass cover, Good, HSG C (5S, 6S)
0.202	65	Amended Soils (8S)
0.216	65	Amended soils (7S)
0.031	61	Soil Amendment Area (6S)
0.393	98	Unconnected roofs, HSG C (5S, 6S, 7S, 8S)
0.849	76	Woods/grass comb., Fair, HSG C (4S, 5S, 7S, 8S)
1.840	**78**	**TOTAL AREA**

Soil Listing (selected nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
1.392	HSG C	4S, 5S, 6S, 7S, 8S
0.000	HSG D	
0.449	Other	6S, 7S, 8S
1.840		**TOTAL AREA**

Ground Covers (selected nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.149	0.000	0.000	0.149	>75% Grass cover, Good	5S, 6S
0.000	0.000	0.000	0.000	0.202	0.202	Amended Soils	8S
0.000	0.000	0.000	0.000	0.216	0.216	Amended soils	7S
0.000	0.000	0.000	0.000	0.031	0.031	Soil Amendment Area	6S
0.000	0.000	0.393	0.000	0.000	0.393	Unconnected roofs	5S, 6S, 7S, 8S
0.000	0.000	0.849	0.000	0.000	0.849	Woods/grass comb., Fair	4S, 5S, 7S, 8S
0.000	**0.000**	**1.392**	**0.000**	**0.449**	**1.840**	**TOTAL AREA**	

Time span=0.00-200.00 hrs, dt=0.04 hrs, 5001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

Subcatchment4S: (new Subcat) Runoff Area=8,038 sf 0.00% Impervious Runoff Depth=0.69"
Flow Length=100' Slope=0.1200 '/' Tc=11.1 min CN=76 Runoff=0.18 cfs 0.011 af

Subcatchment5S: Lot 1 Runoff Area=17,559 sf 23.92% Impervious Runoff Depth=1.04"
Flow Length=100' Slope=0.0850 '/' Tc=8.4 min UI Adjusted CN=WQ Runoff=0.63 cfs 0.035 af

Subcatchment6S: To Street Runoff Area=3,110 sf 48.33% Impervious Runoff Depth=1.23"
Flow Length=35' Slope=0.0400 '/' Tc=4.9 min CN=WQ Runoff=0.14 cfs 0.007 af

Subcatchment7S: (new Subcat) Runoff Area=27,422 sf 20.80% Impervious Runoff Depth=0.89"
Flow Length=245' Tc=10.1 min UI Adjusted CN=WQ Runoff=0.74 cfs 0.046 af

Subcatchment8S: To North Runoff Area=24,039 sf 23.72% Impervious Runoff Depth=0.92"
Flow Length=145' Tc=11.4 min UI Adjusted CN=WQ Runoff=0.64 cfs 0.042 af

Pond 1P: RG 1 Peak Elev=946.01' Storage=987 cf Inflow=0.63 cfs 0.035 af
Discarded=0.01 cfs 0.031 af Primary=0.03 cfs 0.004 af Outflow=0.04 cfs 0.035 af

Pond 2P: RG 2 Peak Elev=931.23' Storage=1,340 cf Inflow=0.74 cfs 0.046 af
Discarded=0.02 cfs 0.046 af Primary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.046 af

Pond 3P: RG 3 Peak Elev=923.25' Storage=1,288 cf Inflow=0.64 cfs 0.042 af
Discarded=0.01 cfs 0.042 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.042 af

Pond 4P: Offsite to East Inflow=0.18 cfs 0.015 af
Primary=0.18 cfs 0.015 af

Pond 27P: out Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Total Runoff Area = 1.840 ac Runoff Volume = 0.142 af Average Runoff Depth = 0.93"
78.66% Pervious = 1.448 ac 21.34% Impervious = 0.393 ac

Summary for Subcatchment 4S: (new Subcat)

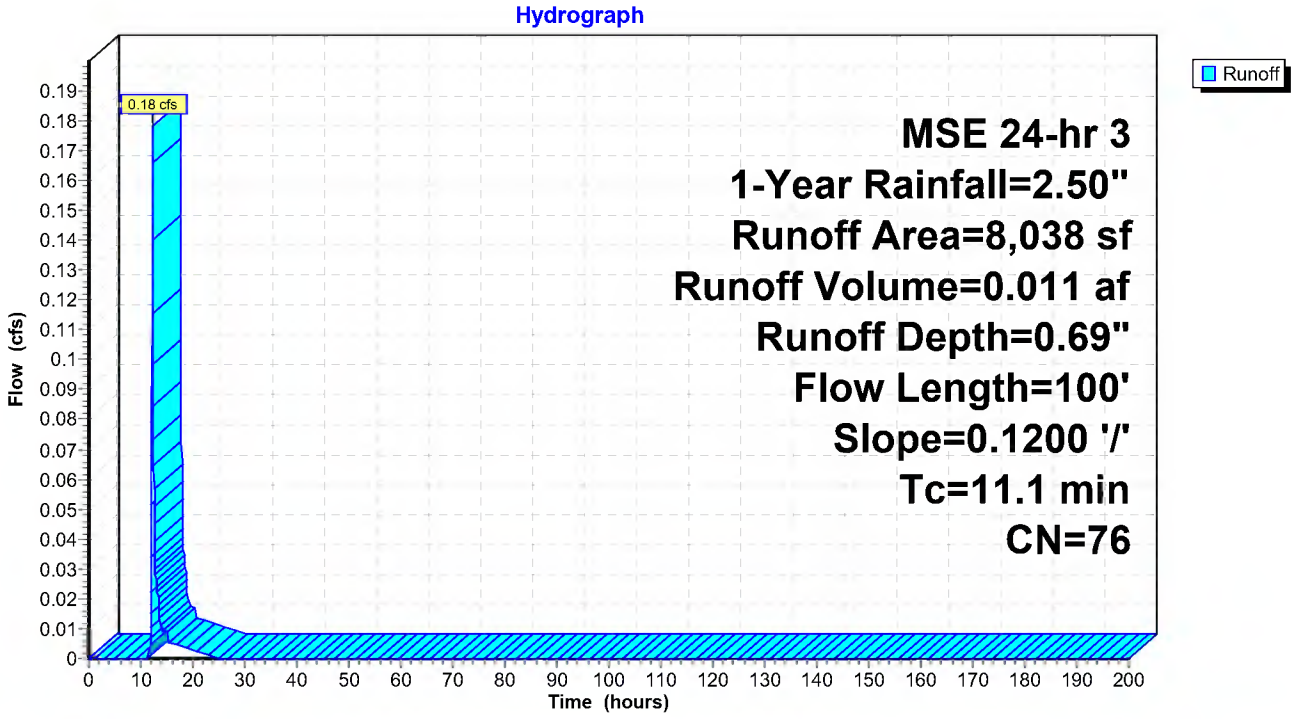
Runoff = 0.18 cfs @ 12.20 hrs, Volume= 0.011 af, Depth= 0.69"
Routed to Pond 4P : Offsite to East

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-200.00 hrs, dt= 0.04 hrs
MSE 24-hr 3 1-Year Rainfall=2.50"

Area (sf)	CN	Description
8,038	76	Woods/grass comb., Fair, HSG C
8,038	76	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.1	100	0.1200	0.15		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.88"

Subcatchment 4S: (new Subcat)



Summary for Subcatchment 5S: Lot 1

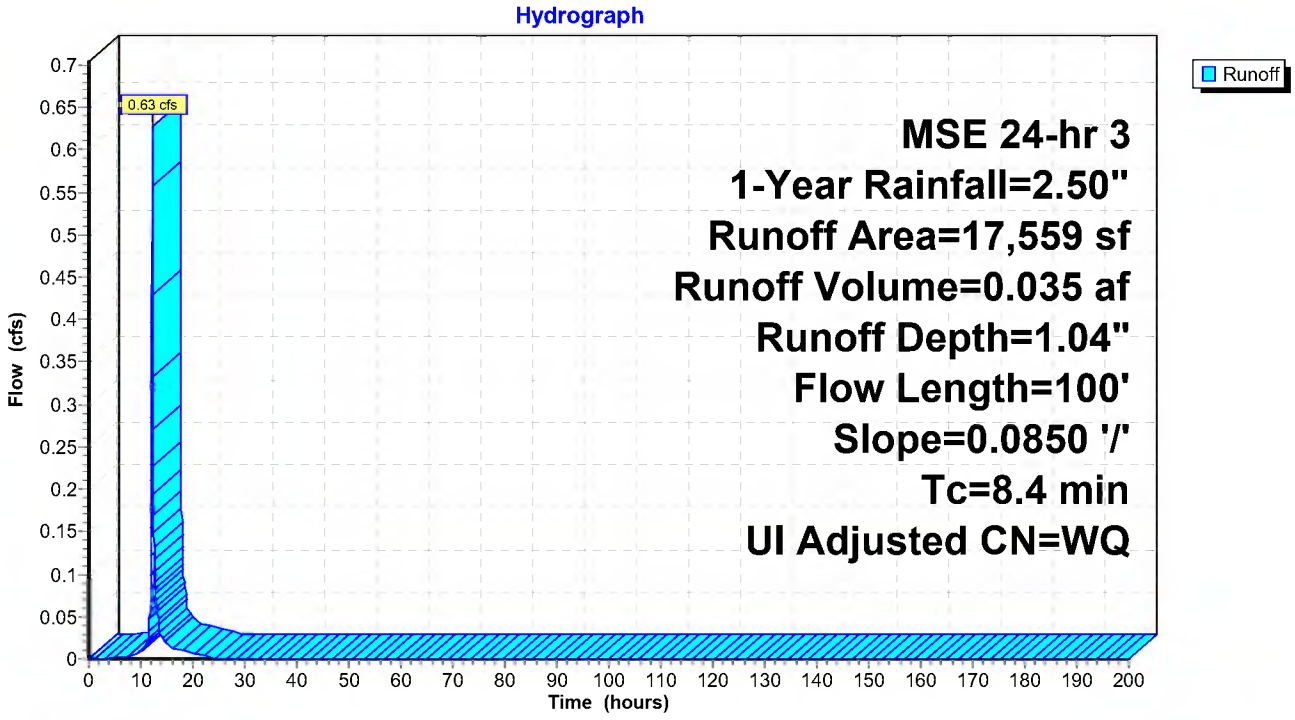
Runoff = 0.63 cfs @ 12.16 hrs, Volume= 0.035 af, Depth= 1.04"
Routed to Pond 1P : RG 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-200.00 hrs, dt= 0.04 hrs
MSE 24-hr 3 1-Year Rainfall=2.50"

Area (sf)	CN	Adj	Description
7,115	76	76	Woods/grass comb., Fair, HSG C
6,244	74	74	>75% Grass cover, Good, HSG C
4,200	98	98	Unconnected roofs, HSG C
17,559			Weighted Average
13,359	75	75	76.08% Pervious Area
4,200	98	98	23.92% Impervious Area
4,200			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.4	100	0.0850	0.20		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.88"

Subcatchment 5S: Lot 1



Summary for Subcatchment 6S: To Street

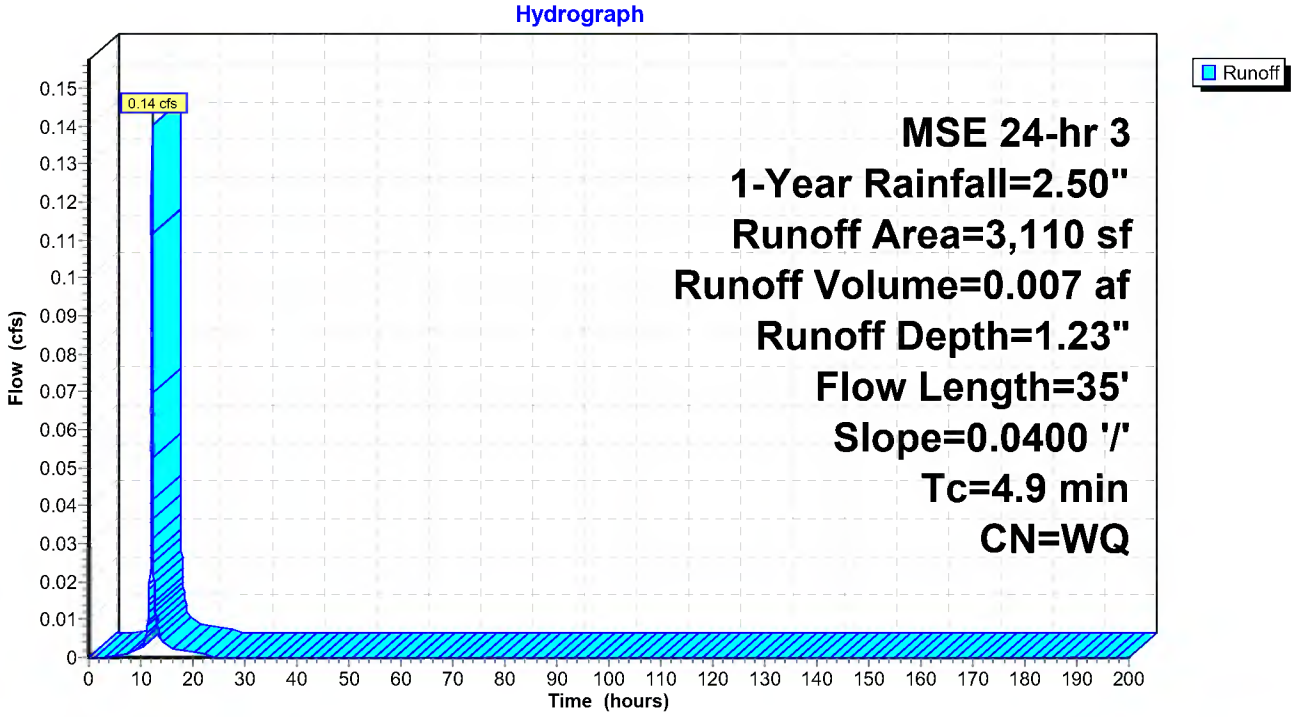
Runoff = 0.14 cfs @ 12.12 hrs, Volume= 0.007 af, Depth= 1.23"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-200.00 hrs, dt= 0.04 hrs
MSE 24-hr 3 1-Year Rainfall=2.50"

	Area (sf)	CN	Description
	268	74	>75% Grass cover, Good, HSG C
*	1,339	61	Soil Amendment Area
	1,503	98	Unconnected roofs, HSG C
	3,110		Weighted Average
	1,607	63	51.67% Pervious Area
	1,503	98	48.33% Impervious Area
	1,503		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.9	35	0.0400	0.12		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.88"

Subcatchment 6S: To Street



Summary for Subcatchment 7S: (new Subcat)

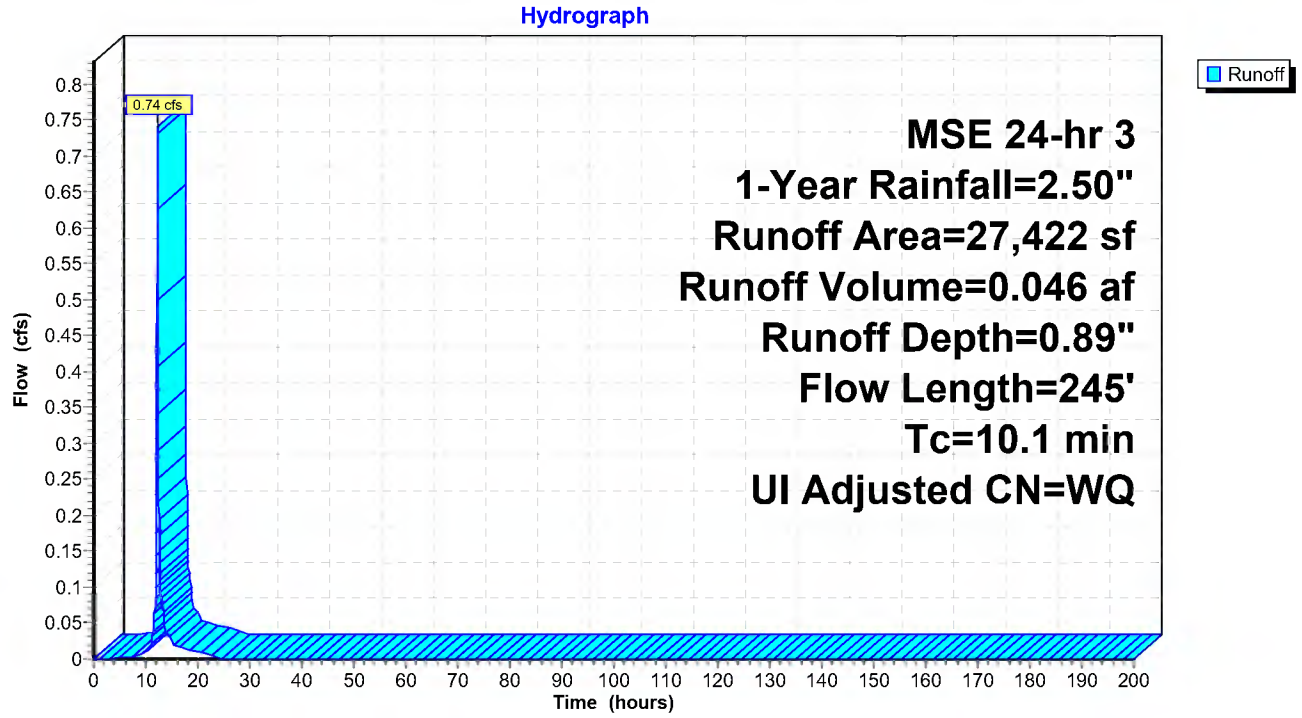
Runoff = 0.74 cfs @ 12.18 hrs, Volume= 0.046 af, Depth= 0.89"
Routed to Pond 2P : RG 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-200.00 hrs, dt= 0.04 hrs
MSE 24-hr 3 1-Year Rainfall=2.50"

	Area (sf)	CN	Adj	Description
	12,301	76	76	Woods/grass comb., Fair, HSG C
*	9,418	65	65	Amended soils
	0	74		>75% Grass cover, Good, HSG C
	5,703	98	98	Unconnected roofs, HSG C
	27,422			Weighted Average
	21,719	71	71	79.20% Pervious Area
	5,703	98	98	20.80% Impervious Area
	5,703			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.1	100	0.0700	0.18		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.88"
1.0	145	0.1300	2.52		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
10.1	245	Total			

Subcatchment 7S: (new Subcat)



Summary for Subcatchment 8S: To North

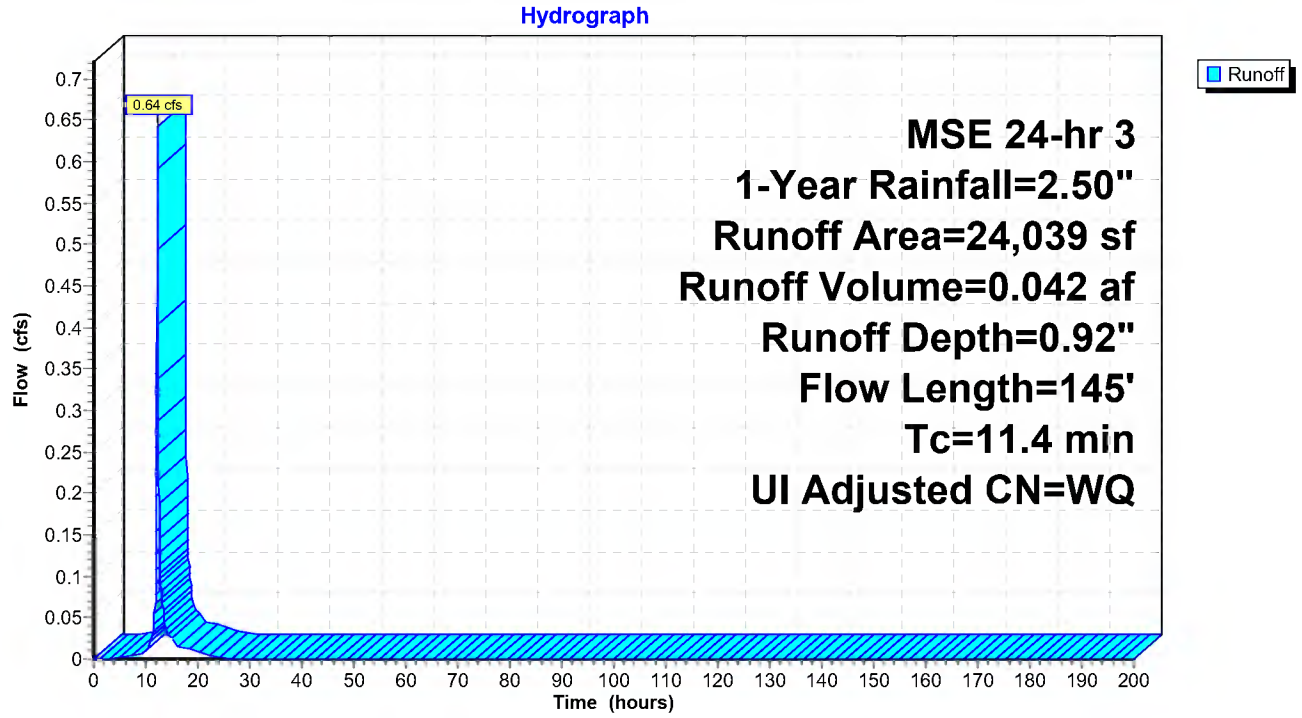
Runoff = 0.64 cfs @ 12.20 hrs, Volume= 0.042 af, Depth= 0.92"
Routed to Pond 3P : RG 3

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-200.00 hrs, dt= 0.04 hrs
MSE 24-hr 3 1-Year Rainfall=2.50"

	Area (sf)	CN	Adj	Description
	9,546	76	76	Woods/grass comb., Fair, HSG C
*	8,790	65	65	Amended Soils
	0	74		>75% Grass cover, Good, HSG C
	5,703	98	98	Unconnected roofs, HSG C
	24,039			Weighted Average
	18,336	71	71	76.28% Pervious Area
	5,703	98	98	23.72% Impervious Area
	5,703			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.1	100	0.0430	0.15		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.88"
0.3	45	0.1400	2.62		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
11.4	145	Total			

Subcatchment 8S: To North



Summary for Pond 1P: RG 1

Inflow Area = 0.403 ac, 23.92% Impervious, Inflow Depth = 1.04" for 1-Year event
Inflow = 0.63 cfs @ 12.16 hrs, Volume= 0.035 af
Outflow = 0.04 cfs @ 13.54 hrs, Volume= 0.035 af, Atten= 94%, Lag= 82.7 min
Discarded = 0.01 cfs @ 13.54 hrs, Volume= 0.031 af
Primary = 0.03 cfs @ 13.54 hrs, Volume= 0.004 af
Routed to Pond 4P : Offsite to East

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.04 hrs / 3
Peak Elev= 946.01' @ 13.54 hrs Surf.Area= 1,176 sf Storage= 987 cf

Plug-Flow detention time= 1,103.1 min calculated for 0.035 af (100% of inflow)
Center-of-Mass det. time= 1,103.4 min (1,900.9 - 797.5)

Volume	Invert	Avail.Storage	Storage Description
#1	945.00'	2,370 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

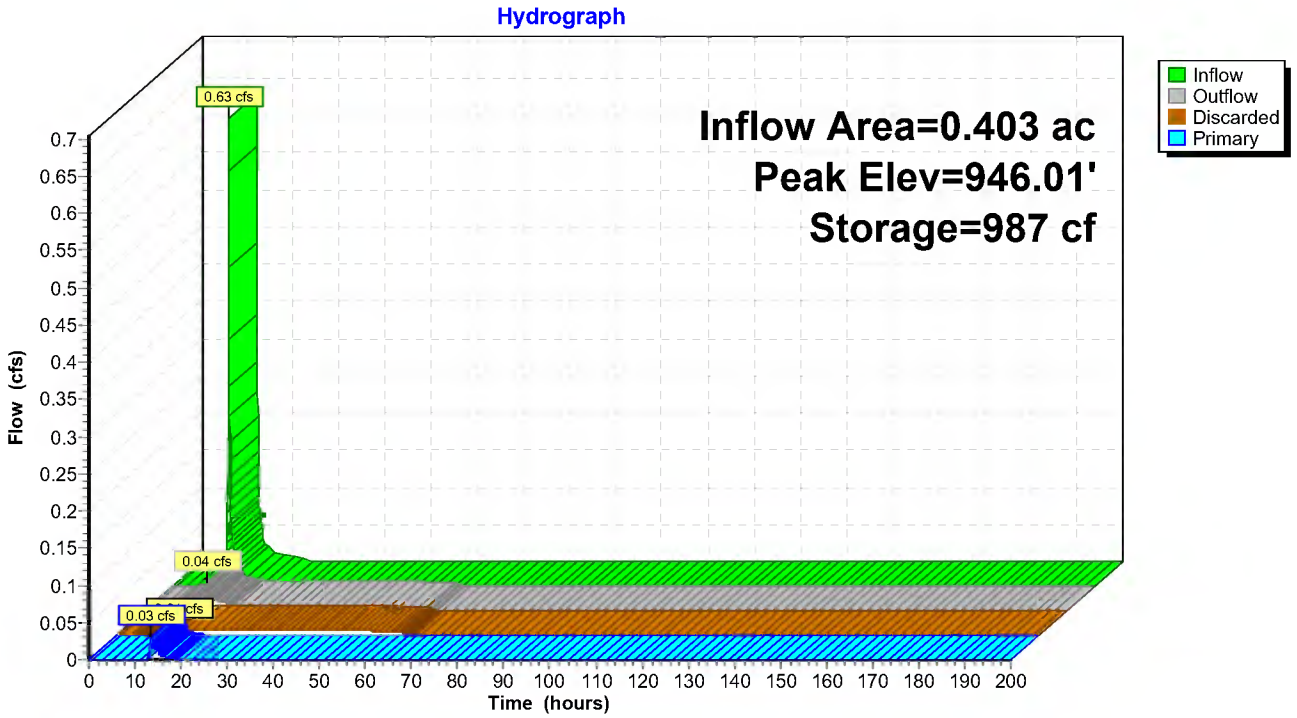
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
945.00	775	0	0
946.00	1,170	973	973
946.20	1,265	244	1,216
947.00	1,620	1,154	2,370

Device	Routing	Invert	Outlet Devices
#1	Discarded	945.00'	**0.300 in/hr Exfiltration over Surface area**
#2	Primary	946.00'	**EOF, Cv= 2.62 (C= 3.28)**
			Head (feet) 1.00 1.20 2.00
			Width (feet) 5.00 10.00 65.00

Discarded OutFlow Max=0.01 cfs @ 13.54 hrs HW=946.01' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.02 cfs @ 13.54 hrs HW=946.01' (Free Discharge)
↑—**2=EOF** (Weir Controls 0.02 cfs @ 0.36 fps)

Pond 1P: RG 1


Hydrograph
Inflow Area=0.403 ac
Peak Elev=946.01'
Storage=987 cf
Inflow
Outflow
Discarded
Primary
0.63 cfs
0.04 cfs
0.03 cfs
Flow (cfs)
Time (hours)
0 0.05 0.1 0.15 0.2 0.25 0.3 0.35 0.4 0.45 0.5 0.55 0.6 0.65 0.7
0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200

Stage-Discharge for Pond 1P: RG 1

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
945.00	0.00	0.00	0.00	946.02	0.06	0.01	0.05
945.02	0.01	0.01	0.00	946.04	0.15	0.01	0.14
945.04	0.01	0.01	0.00	946.06	0.28	0.01	0.27
945.06	0.01	0.01	0.00	946.08	0.44	0.01	0.43
945.08	0.01	0.01	0.00	946.10	0.63	0.01	0.62
945.10	0.01	0.01	0.00	946.12	0.85	0.01	0.84
945.12	0.01	0.01	0.00	946.14	1.11	0.01	1.10
945.14	0.01	0.01	0.00	946.16	1.39	0.01	1.38
945.16	0.01	0.01	0.00	946.18	1.71	0.01	1.70
945.18	0.01	0.01	0.00	946.20	2.06	0.01	2.05
945.20	0.01	0.01	0.00	946.22	2.45	0.01	2.44
945.22	0.01	0.01	0.00	946.24	2.88	0.01	2.87
945.24	0.01	0.01	0.00	946.26	3.36	0.01	3.35
945.26	0.01	0.01	0.00	946.28	3.90	0.01	3.89
945.28	0.01	0.01	0.00	946.30	4.50	0.01	4.49
945.30	0.01	0.01	0.00	946.32	5.16	0.01	5.15
945.32	0.01	0.01	0.00	946.34	5.88	0.01	5.87
945.34	0.01	0.01	0.00	946.36	6.68	0.01	6.67
945.36	0.01	0.01	0.00	946.38	7.55	0.01	7.54
945.38	0.01	0.01	0.00	946.40	8.49	0.01	8.48
945.40	0.01	0.01	0.00	946.42	9.51	0.01	9.50
945.42	0.01	0.01	0.00	946.44	10.61	0.01	10.60
945.44	0.01	0.01	0.00	946.46	11.79	0.01	11.78
945.46	0.01	0.01	0.00	946.48	13.06	0.01	13.05
945.48	0.01	0.01	0.00	946.50	14.41	0.01	14.40
945.50	0.01	0.01	0.00	946.52	15.86	0.01	15.85
945.52	0.01	0.01	0.00	946.54	17.39	0.01	17.38
945.54	0.01	0.01	0.00	946.56	19.01	0.01	19.00
945.56	0.01	0.01	0.00	946.58	20.74	0.01	20.73
945.58	0.01	0.01	0.00	946.60	22.55	0.01	22.54
945.60	0.01	0.01	0.00	946.62	24.47	0.01	24.46
945.62	0.01	0.01	0.00	946.64	26.49	0.01	26.48
945.64	0.01	0.01	0.00	946.66	28.61	0.01	28.59
945.66	0.01	0.01	0.00	946.68	30.83	0.01	30.82
945.68	0.01	0.01	0.00	946.70	33.16	0.01	33.15
945.70	0.01	0.01	0.00	946.72	35.60	0.01	35.59
945.72	0.01	0.01	0.00	946.74	38.14	0.01	38.13
945.74	0.01	0.01	0.00	946.76	40.80	0.01	40.79
945.76	0.01	0.01	0.00	946.78	43.57	0.01	43.56
945.78	0.01	0.01	0.00	946.80	46.46	0.01	46.45
945.80	0.01	0.01	0.00	946.82	49.46	0.01	49.45
945.82	0.01	0.01	0.00	946.84	52.58	0.01	52.57
945.84	0.01	0.01	0.00	946.86	55.81	0.01	55.80
945.86	0.01	0.01	0.00	946.88	59.17	0.01	59.16
945.88	0.01	0.01	0.00	946.90	62.65	0.01	62.64
945.90	0.01	0.01	0.00	946.92	66.26	0.01	66.25
945.92	0.01	0.01	0.00	946.94	69.99	0.01	69.98
945.94	0.01	0.01	0.00	946.96	73.85	0.01	73.83
945.96	0.01	0.01	0.00	946.98	77.83	0.01	77.82
945.98	0.01	0.01	0.00	947.00	**81.94**	**0.01**	**81.93**
946.00	0.01	0.01	0.00				

Stage-Area-Storage for Pond 1P: RG 1

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
945.00	775	0	946.02	1,179	996
945.02	783	16	946.04	1,189	1,020
945.04	791	31	946.06	1,198	1,044
945.06	799	47	946.08	1,208	1,068
945.08	807	63	946.10	1,218	1,092
945.10	815	79	946.12	1,227	1,116
945.12	822	96	946.14	1,236	1,141
945.14	830	112	946.16	1,246	1,166
945.16	838	129	946.18	1,255	1,191
945.18	846	146	946.20	1,265	1,216
945.20	854	163	946.22	1,274	1,241
945.22	862	180	946.24	1,283	1,267
945.24	870	197	946.26	1,292	1,293
945.26	878	215	946.28	1,300	1,319
945.28	886	232	946.30	1,309	1,345
945.30	893	250	946.32	1,318	1,371
945.32	901	268	946.34	1,327	1,397
945.34	909	286	946.36	1,336	1,424
945.36	917	305	946.38	1,345	1,451
945.38	925	323	946.40	1,354	1,478
945.40	933	342	946.42	1,363	1,505
945.42	941	360	946.44	1,372	1,532
945.44	949	379	946.46	1,380	1,560
945.46	957	398	946.48	1,389	1,588
945.48	965	418	946.50	1,398	1,615
945.50	973	437	946.52	1,407	1,644
945.52	980	456	946.54	1,416	1,672
945.54	988	476	946.56	1,425	1,700
945.56	996	496	946.58	1,434	1,729
945.58	1,004	516	946.60	1,443	1,758
945.60	1,012	536	946.62	1,451	1,786
945.62	1,020	556	946.64	1,460	1,816
945.64	1,028	577	946.66	1,469	1,845
945.66	1,036	598	946.68	1,478	1,874
945.68	1,044	618	946.70	1,487	1,904
945.70	1,052	639	946.72	1,496	1,934
945.72	1,059	660	946.74	1,505	1,964
945.74	1,067	682	946.76	1,513	1,994
945.76	1,075	703	946.78	1,522	2,024
945.78	1,083	725	946.80	1,531	2,055
945.80	1,091	746	946.82	1,540	2,086
945.82	1,099	768	946.84	1,549	2,116
945.84	1,107	790	946.86	1,558	2,148
945.86	1,115	813	946.88	1,567	2,179
945.88	1,123	835	946.90	1,576	2,210
945.90	1,130	857	946.92	1,584	2,242
945.92	1,138	880	946.94	1,593	2,274
945.94	1,146	903	946.96	1,602	2,306
945.96	1,154	926	946.98	1,611	2,338
945.98	1,162	949	947.00	**1,620**	**2,370**
946.00	1,170	973			

Summary for Pond 2P: RG 2

Inflow Area = 0.630 ac, 20.80% Impervious, Inflow Depth = 0.89" for 1-Year event
Inflow = 0.74 cfs @ 12.18 hrs, Volume= 0.046 af
Outflow = 0.02 cfs @ 15.51 hrs, Volume= 0.046 af, Atten= 98%, Lag= 199.6 min
Discarded = 0.02 cfs @ 15.51 hrs, Volume= 0.046 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond 27P : out

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.04 hrs
Peak Elev= 931.23' @ 15.51 hrs Surf.Area= 1,284 sf Storage= 1,340 cf

Plug-Flow detention time= 773.7 min calculated for 0.046 af (100% of inflow)
Center-of-Mass det. time= 773.8 min (1,575.5 - 801.7)

Volume	Invert	Avail.Storage	Storage Description
#1	930.00'	4,308 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

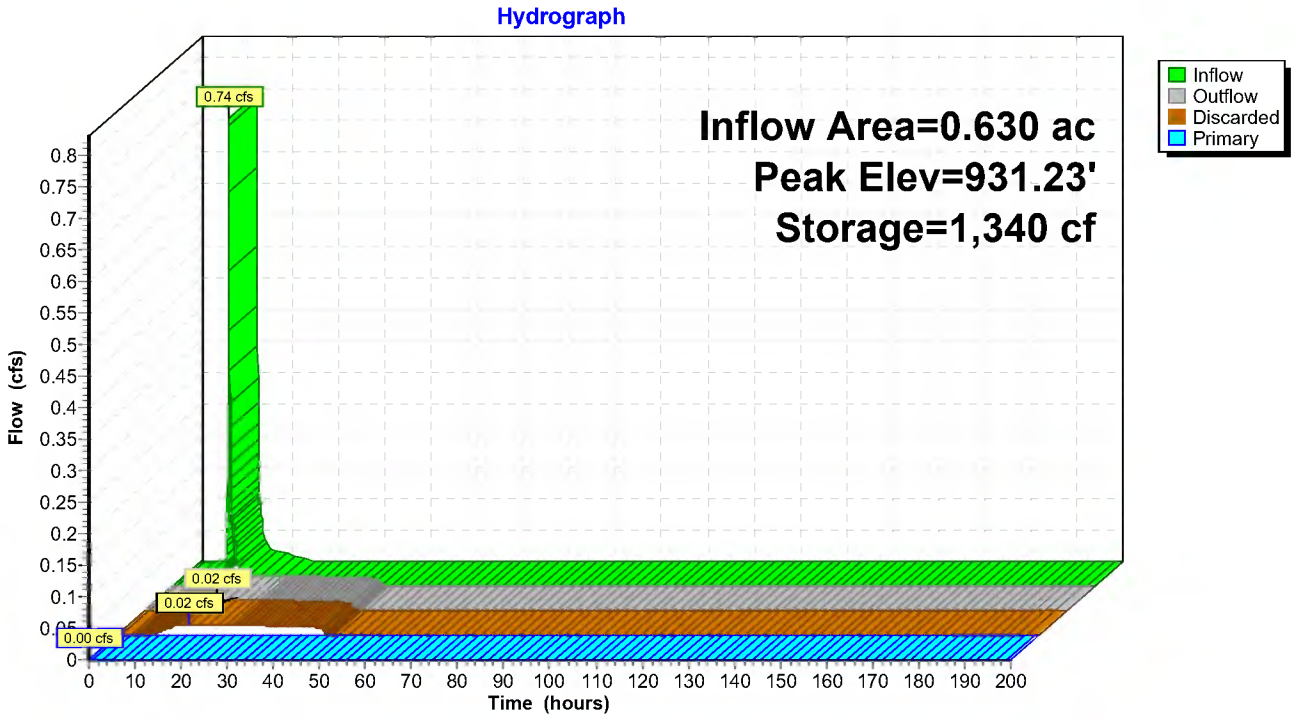
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
930.00	860	0	0
931.00	1,240	1,050	1,050
932.00	1,430	1,335	2,385
932.20	1,760	319	2,704
933.00	2,250	1,604	4,308

Device	Routing	Invert	Outlet Devices
#1	Discarded	930.00'	**0.600 in/hr Exfiltration over Surface area**
#2	Primary	932.00'	**Custom Weir/Orifice, Cv= 2.62 (C= 3.28)**
			Head (feet) 1.00 1.20 2.00
			Width (feet) 5.00 10.00 30.00

Discarded OutFlow Max=0.02 cfs @ 15.51 hrs HW=931.23' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=930.00' (Free Discharge)
↑**2=Custom Weir/Orifice** (Controls 0.00 cfs)

Pond 2P: RG 2


Hydrograph
Inflow Area=0.630 ac
Peak Elev=931.23'
Storage=1,340 cf
0.74 cfs
0.02 cfs
0.02 cfs
0.00 cfs
Inflow
Outflow
Discarded
Primary
Flow (cfs)
Time (hours)
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
0.45
0.5
0.55
0.6
0.65
0.7
0.75
0.8
0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200

Stage-Discharge for Pond 2P: RG 2

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
930.00	0.00	0.00	0.00
930.05	0.01	0.01	0.00
930.10	0.01	0.01	0.00
930.15	0.01	0.01	0.00
930.20	0.01	0.01	0.00
930.25	0.01	0.01	0.00
930.30	0.01	0.01	0.00
930.35	0.01	0.01	0.00
930.40	0.01	0.01	0.00
930.45	0.01	0.01	0.00
930.50	0.01	0.01	0.00
930.55	0.01	0.01	0.00
930.60	0.02	0.02	0.00
930.65	0.02	0.02	0.00
930.70	0.02	0.02	0.00
930.75	0.02	0.02	0.00
930.80	0.02	0.02	0.00
930.85	0.02	0.02	0.00
930.90	0.02	0.02	0.00
930.95	0.02	0.02	0.00
931.00	0.02	0.02	0.00
931.05	0.02	0.02	0.00
931.10	0.02	0.02	0.00
931.15	0.02	0.02	0.00
931.20	0.02	0.02	0.00
931.25	0.02	0.02	0.00
931.30	0.02	0.02	0.00
931.35	0.02	0.02	0.00
931.40	0.02	0.02	0.00
931.45	0.02	0.02	0.00
931.50	0.02	0.02	0.00
931.55	0.02	0.02	0.00
931.60	0.02	0.02	0.00
931.65	0.02	0.02	0.00
931.70	0.02	0.02	0.00
931.75	0.02	0.02	0.00
931.80	0.02	0.02	0.00
931.85	0.02	0.02	0.00
931.90	0.02	0.02	0.00
931.95	0.02	0.02	0.00
932.00	0.02	0.02	0.00
932.05	0.22	0.02	0.20
932.10	0.64	0.02	0.62
932.15	1.26	0.02	1.24
932.20	2.07	0.02	2.05
932.25	3.10	0.02	3.07
932.30	4.33	0.03	4.31
932.35	5.79	0.03	5.76
932.40	7.48	0.03	7.46
932.45	9.42	0.03	9.39
932.50	11.61	0.03	11.58
932.55	14.05	0.03	14.03
932.60	16.77	0.03	16.74
932.65	19.77	0.03	19.74
932.70	23.05	0.03	23.02
932.75	26.62	0.03	26.59
932.80	30.49	0.03	30.46
932.85	34.68	0.03	34.65
932.90	39.18	0.03	39.15
932.95	44.00	0.03	43.97
933.00	**49.16**	**0.03**	**49.13**

Stage-Area-Storage for Pond 2P: RG 2

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
930.00	860	0
930.05	879	43
930.10	898	88
930.15	917	133
930.20	936	180
930.25	955	227
930.30	974	275
930.35	993	324
930.40	1,012	374
930.45	1,031	425
930.50	1,050	478
930.55	1,069	530
930.60	1,088	584
930.65	1,107	639
930.70	1,126	695
930.75	1,145	752
930.80	1,164	810
930.85	1,183	868
930.90	1,202	928
930.95	1,221	988
931.00	1,240	1,050
931.05	1,249	1,112
931.10	1,259	1,175
931.15	1,268	1,238
931.20	1,278	1,302
931.25	1,288	1,366
931.30	1,297	1,431
931.35	1,307	1,496
931.40	1,316	1,561
931.45	1,326	1,627
931.50	1,335	1,694
931.55	1,344	1,761
931.60	1,354	1,828
931.65	1,363	1,896
931.70	1,373	1,965
931.75	1,383	2,033
931.80	1,392	2,103
931.85	1,402	2,173
931.90	1,411	2,243
931.95	1,421	2,314
932.00	1,430	2,385
932.05	1,512	2,459
932.10	1,595	2,536
932.15	1,677	2,618
932.20	1,760	2,704
932.25	1,791	2,793
932.30	1,821	2,883
932.35	1,852	2,975
932.40	1,882	3,068
932.45	1,913	3,163
932.50	1,944	3,260
932.55	1,974	3,358
932.60	2,005	3,457
932.65	2,036	3,558
932.70	2,066	3,661
932.75	2,097	3,765
932.80	2,127	3,870
932.85	2,158	3,977
932.90	2,189	4,086
932.95	2,219	4,196
933.00	**2,250**	**4,308**

Summary for Pond 3P: RG 3

Inflow Area = 0.552 ac, 23.72% Impervious, Inflow Depth = 0.92" for 1-Year event
Inflow = 0.64 cfs @ 12.20 hrs, Volume= 0.042 af
Outflow = 0.01 cfs @ 16.45 hrs, Volume= 0.042 af, Atten= 98%, Lag= 255.0 min
Discarded = 0.01 cfs @ 16.45 hrs, Volume= 0.042 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond 27P : out

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.04 hrs / 2
Peak Elev= 923.25' @ 16.45 hrs Surf.Area= 1,045 sf Storage= 1,288 cf

Plug-Flow detention time= 1,000.3 min calculated for 0.042 af (100% of inflow)
Center-of-Mass det. time= 1,000.5 min (1,799.6 - 799.0)

Volume	Invert	Avail.Storage	Storage Description
#1	921.50'	3,837 cf	**Custom Stage Data (Conic)** Listed below (Recalc)

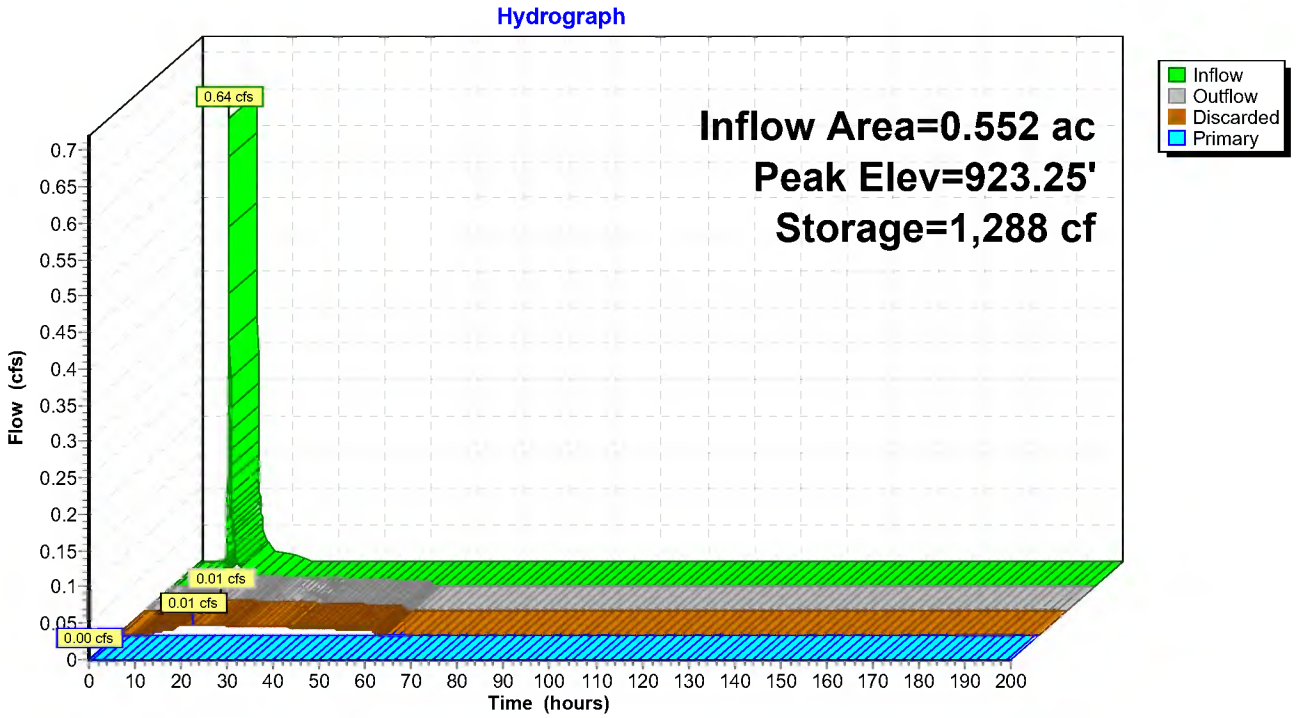
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
921.50	440	0	0	440
922.00	630	266	266	634
922.30	725	203	469	733
922.50	800	152	622	811
923.00	890	422	1,044	914
923.50	1,210	523	1,567	1,240
923.90	1,500	541	2,108	1,534
924.00	1,575	154	2,262	1,610
925.00	1,575	1,575	3,837	1,751

Device	Routing	Invert	Outlet Devices
#1	Discarded	921.50'	**0.600 in/hr Exfiltration over Surface area**
#2	Primary	923.50'	**Custom Weir/Orifice, Cv= 2.62 (C= 3.28)**
			Head (feet) 2.00 2.25 2.50 2.75
			Width (feet) 5.00 10.00 40.00 50.00

Discarded OutFlow Max=0.01 cfs @ 16.45 hrs HW=923.25' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=921.50' (Free Discharge)
↑—**2=Custom Weir/Orifice** (Controls 0.00 cfs)

Pond 3P: RG 3


Hydrograph
Inflow Area=0.552 ac
Peak Elev=923.25'
Storage=1,288 cf
Inflow
Outflow
Discarded
Primary
0.64 cfs
0.01 cfs
0.01 cfs
0.00 cfs
Flow (cfs)
Time (hours)
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
0.45
0.5
0.55
0.6
0.65
0.7
0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200

Stage-Discharge for Pond 3P: RG 3

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
921.50	0.00	0.00	0.00
921.55	0.01	0.01	0.00
921.60	0.01	0.01	0.00
921.65	0.01	0.01	0.00
921.70	0.01	0.01	0.00
921.75	0.01	0.01	0.00
921.80	0.01	0.01	0.00
921.85	0.01	0.01	0.00
921.90	0.01	0.01	0.00
921.95	0.01	0.01	0.00
922.00	0.01	0.01	0.00
922.05	0.01	0.01	0.00
922.10	0.01	0.01	0.00
922.15	0.01	0.01	0.00
922.20	0.01	0.01	0.00
922.25	0.01	0.01	0.00
922.30	0.01	0.01	0.00
922.35	0.01	0.01	0.00
922.40	0.01	0.01	0.00
922.45	0.01	0.01	0.00
922.50	0.01	0.01	0.00
922.55	0.01	0.01	0.00
922.60	0.01	0.01	0.00
922.65	0.01	0.01	0.00
922.70	0.01	0.01	0.00
922.75	0.01	0.01	0.00
922.80	0.01	0.01	0.00
922.85	0.01	0.01	0.00
922.90	0.01	0.01	0.00
922.95	0.01	0.01	0.00
923.00	0.01	0.01	0.00
923.05	0.01	0.01	0.00
923.10	0.01	0.01	0.00
923.15	0.01	0.01	0.00
923.20	0.01	0.01	0.00
923.25	0.01	0.01	0.00
923.30	0.01	0.01	0.00
923.35	0.02	0.02	0.00
923.40	0.02	0.02	0.00
923.45	0.02	0.02	0.00
923.50	0.02	0.02	0.00
923.55	0.22	0.02	0.20
923.60	0.62	0.02	0.60
923.65	1.20	0.02	1.18
923.70	1.95	0.02	1.93
923.75	2.88	0.02	2.87
923.80	4.08	0.02	4.06
923.85	5.72	0.02	5.70
923.90	7.96	0.02	7.94
923.95	10.87	0.02	10.85
924.00	14.54	**0.02**	14.51
924.05	18.98	0.02	18.96
924.10	24.10	0.02	24.08
924.15	29.87	0.02	29.85
924.20	36.27	0.02	36.25
924.25	43.30	0.02	43.28
924.30	49.10	0.02	49.08
924.35	53.90	0.02	53.88
924.40	58.18	0.02	58.16
924.45	62.12	0.02	62.09
924.50	65.78	0.02	65.76
924.55	69.23	0.02	69.21
924.60	72.50	0.02	72.47
924.65	75.61	0.02	75.59
924.70	78.60	0.02	78.58
924.75	81.47	0.02	81.44
924.80	84.23	0.02	84.21
924.85	86.91	0.02	86.89
924.90	89.50	0.02	89.48
924.95	92.02	0.02	92.00
925.00	**94.47**	0.02	**94.44**

Stage-Area-Storage for Pond 3P: RG 3

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
921.50	440	0
921.55	457	22
921.60	475	46
921.65	493	70
921.70	512	95
921.75	531	121
921.80	550	148
921.85	569	176
921.90	589	205
921.95	609	235
922.00	630	266
922.05	645	298
922.10	661	331
922.15	677	364
922.20	693	398
922.25	709	433
922.30	725	469
922.35	743	506
922.40	762	544
922.45	781	582
922.50	800	622
922.55	809	662
922.60	818	702
922.65	826	744
922.70	835	785
922.75	844	827
922.80	853	870
922.85	862	912
922.90	872	956
922.95	881	1,000
923.00	890	1,044
923.05	920	1,089
923.10	950	1,136
923.15	981	1,184
923.20	1,012	1,234
923.25	1,044	1,285
923.30	1,076	1,338
923.35	1,109	1,393
923.40	1,142	1,449
923.45	1,176	1,507
923.50	1,210	1,567
923.55	1,245	1,628
923.60	1,280	1,691
923.65	1,315	1,756
923.70	1,351	1,823
923.75	1,388	1,891
923.80	1,425	1,962
923.85	1,462	2,034
923.90	1,500	2,108
923.95	1,537	2,184
924.00	**1,575**	2,262
924.05	1,575	2,340
924.10	1,575	2,419
924.15	1,575	2,498
924.20	1,575	2,577
924.25	1,575	2,655
924.30	1,575	2,734
924.35	1,575	2,813
924.40	1,575	2,892
924.45	1,575	2,970
924.50	1,575	3,049
924.55	1,575	3,128
924.60	1,575	3,207
924.65	1,575	3,285
924.70	1,575	3,364
924.75	1,575	3,443
924.80	1,575	3,522
924.85	1,575	3,600
924.90	1,575	3,679
924.95	1,575	3,758
925.00	1,575	**3,837**

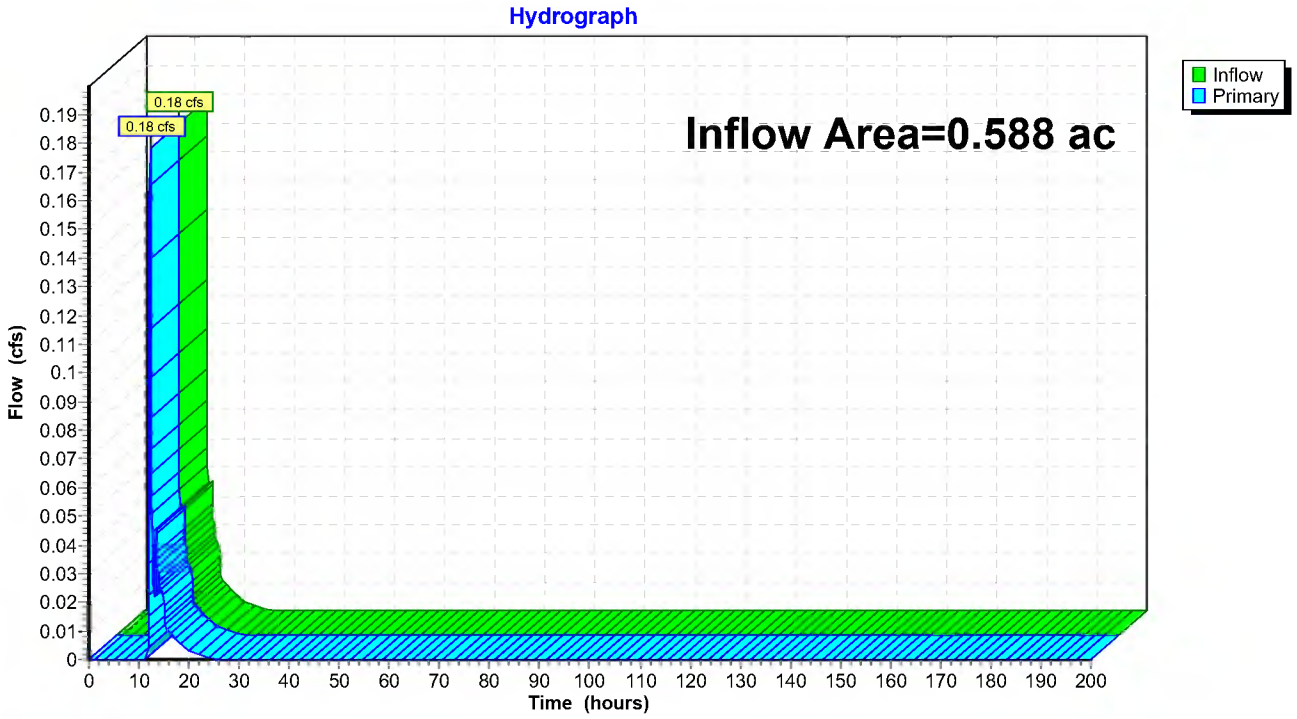
Summary for Pond 4P: Offsite to East

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.588 ac, 16.41% Impervious, Inflow Depth = 0.30" for 1-Year event
Inflow = 0.18 cfs @ 12.20 hrs, Volume= 0.015 af
Primary = 0.18 cfs @ 12.20 hrs, Volume= 0.015 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.04 hrs

Pond 4P: Offsite to East



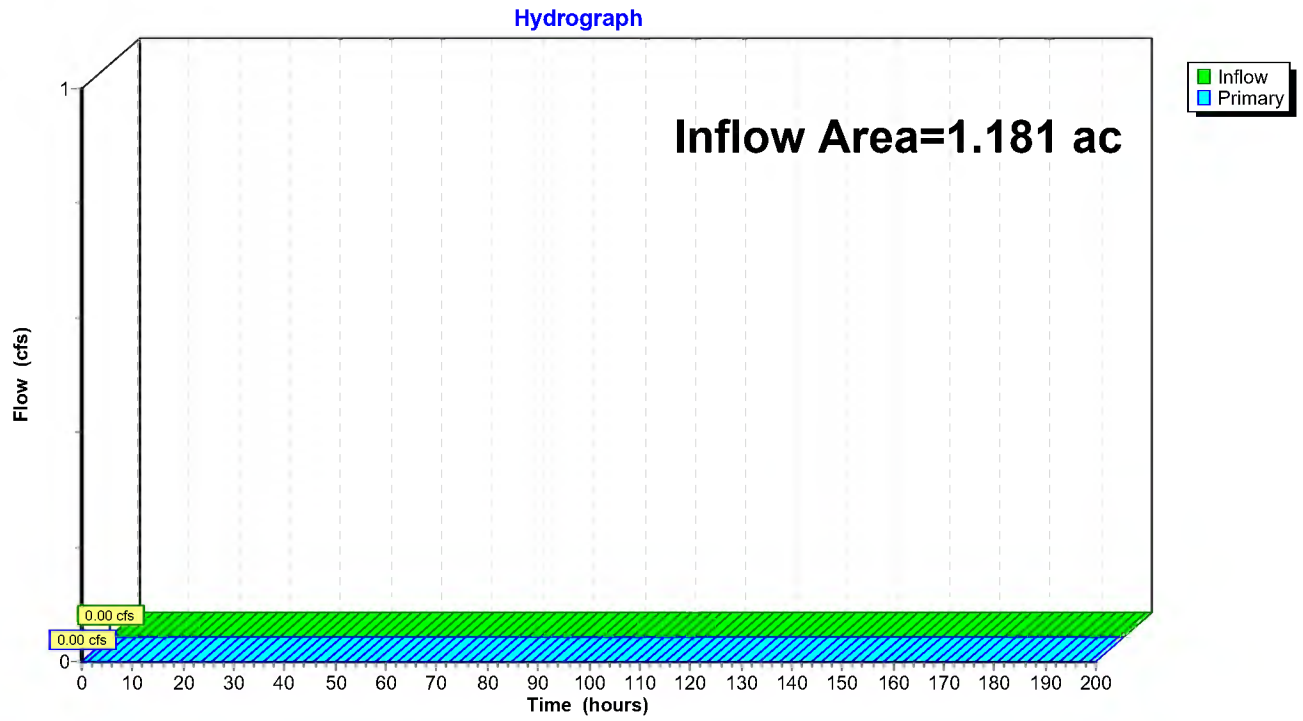
Summary for Pond 27P: out

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.181 ac, 22.16% Impervious, Inflow Depth = 0.00" for 1-Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.04 hrs

Pond 27P: out



Time span=0.00-200.00 hrs, dt=0.04 hrs, 5001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

Subcatchment4S: (new Subcat) Runoff Area=8,038 sf 0.00% Impervious Runoff Depth=0.93"
Flow Length=100' Slope=0.1200 '/' Tc=11.1 min CN=76 Runoff=0.24 cfs 0.014 af

Subcatchment5S: Lot 1 Runoff Area=17,559 sf 23.92% Impervious Runoff Depth=1.30"
Flow Length=100' Slope=0.0850 '/' Tc=8.4 min UI Adjusted CN=WQ Runoff=0.80 cfs 0.044 af

Subcatchment6S: To Street Runoff Area=3,110 sf 48.33% Impervious Runoff Depth=1.48"
Flow Length=35' Slope=0.0400 '/' Tc=4.9 min CN=WQ Runoff=0.17 cfs 0.009 af

Subcatchment7S: (new Subcat) Runoff Area=27,422 sf 20.80% Impervious Runoff Depth=1.12"
Flow Length=245' Tc=10.1 min UI Adjusted CN=WQ Runoff=0.96 cfs 0.059 af

Subcatchment8S: To North Runoff Area=24,039 sf 23.72% Impervious Runoff Depth=1.16"
Flow Length=145' Tc=11.4 min UI Adjusted CN=WQ Runoff=0.83 cfs 0.053 af

Pond 1P: RG 1 Peak Elev=946.04' Storage=1,015 cf Inflow=0.80 cfs 0.044 af
Discarded=0.01 cfs 0.032 af Primary=0.12 cfs 0.012 af Outflow=0.13 cfs 0.044 af

Pond 2P: RG 2 Peak Elev=931.56' Storage=1,775 cf Inflow=0.96 cfs 0.059 af
Discarded=0.02 cfs 0.059 af Primary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.059 af

Pond 3P: RG 3 Peak Elev=923.51' Storage=1,574 cf Inflow=0.83 cfs 0.053 af
Discarded=0.02 cfs 0.051 af Primary=0.02 cfs 0.002 af Outflow=0.03 cfs 0.053 af

Pond 4P: Offsite to East Inflow=0.24 cfs 0.026 af
Primary=0.24 cfs 0.026 af

Pond 27P: out Inflow=0.02 cfs 0.002 af
Primary=0.02 cfs 0.002 af

Total Runoff Area = 1.840 ac Runoff Volume = 0.179 af Average Runoff Depth = 1.17"
78.66% Pervious = 1.448 ac 21.34% Impervious = 0.393 ac

Summary for Subcatchment 4S: (new Subcat)

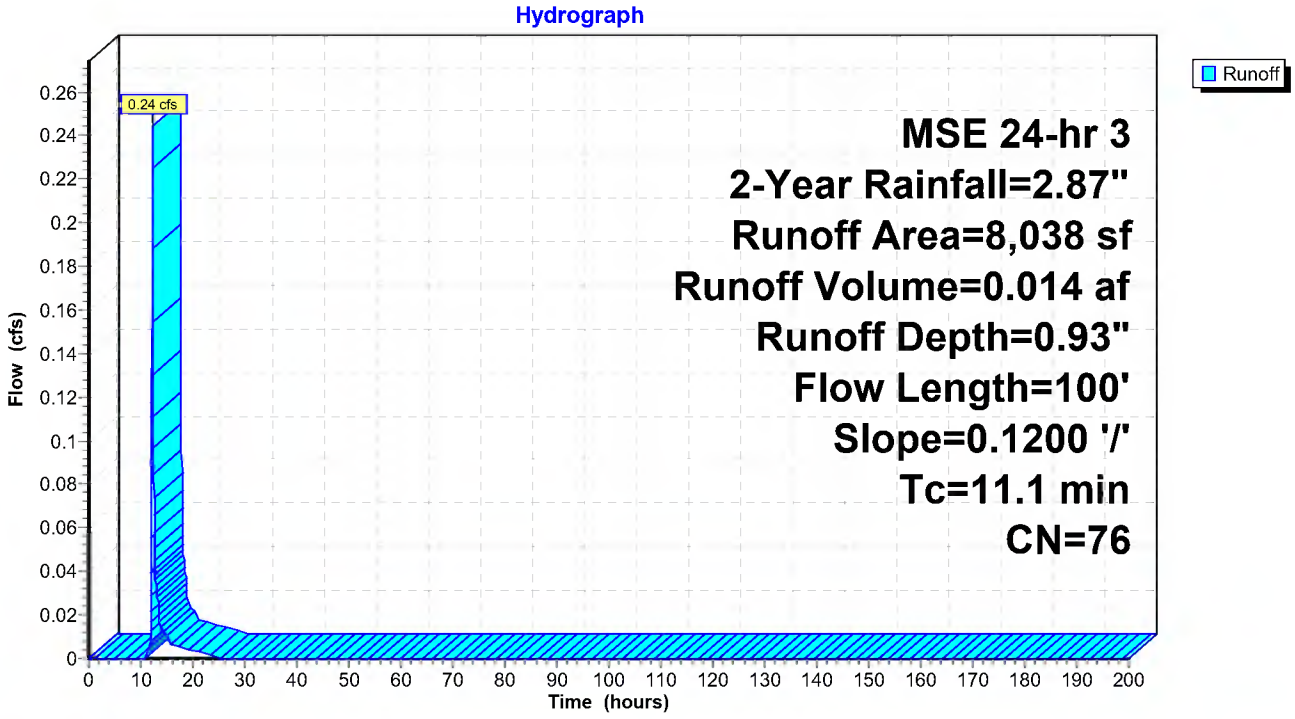
Runoff = 0.24 cfs @ 12.20 hrs, Volume= 0.014 af, Depth= 0.93"
Routed to Pond 4P : Offsite to East

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-200.00 hrs, dt= 0.04 hrs
MSE 24-hr 3 2-Year Rainfall=2.87"

Area (sf)	CN	Description
8,038	76	Woods/grass comb., Fair, HSG C
8,038	76	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.1	100	0.1200	0.15		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.88"

Subcatchment 4S: (new Subcat)



Summary for Subcatchment 5S: Lot 1

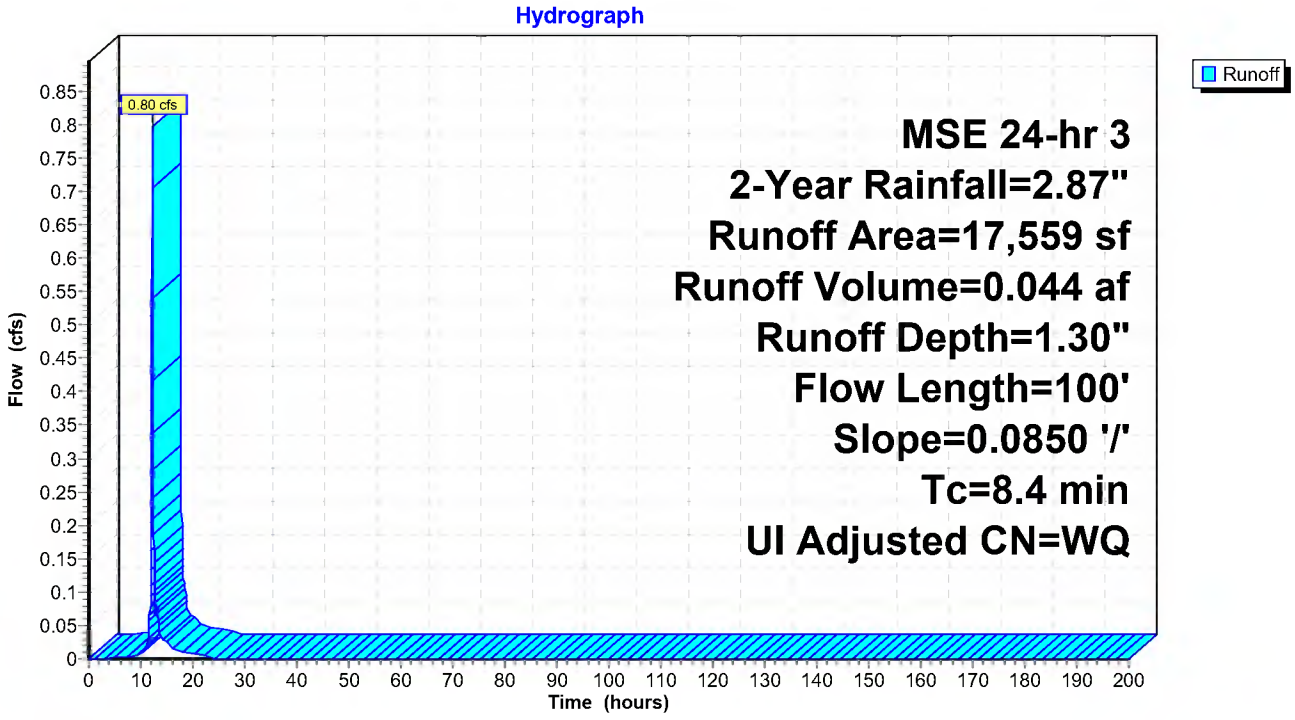
Runoff = 0.80 cfs @ 12.16 hrs, Volume= 0.044 af, Depth= 1.30"
Routed to Pond 1P : RG 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-200.00 hrs, dt= 0.04 hrs
MSE 24-hr 3 2-Year Rainfall=2.87"

Area (sf)	CN	Adj	Description
7,115	76	76	Woods/grass comb., Fair, HSG C
6,244	74	74	>75% Grass cover, Good, HSG C
4,200	98	98	Unconnected roofs, HSG C
17,559			Weighted Average
13,359	75	75	76.08% Pervious Area
4,200	98	98	23.92% Impervious Area
4,200			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.4	100	0.0850	0.20		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.88"

Subcatchment 5S: Lot 1



Summary for Subcatchment 6S: To Street

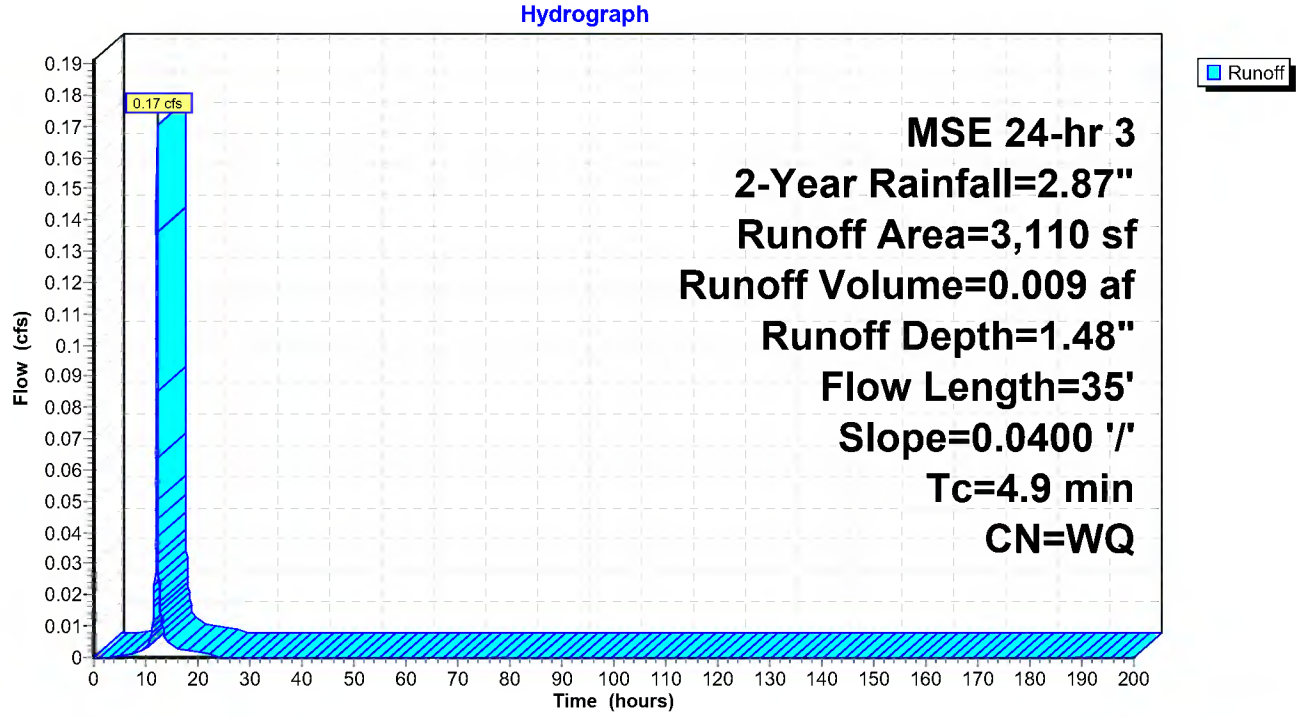
Runoff = 0.17 cfs @ 12.12 hrs, Volume= 0.009 af, Depth= 1.48"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-200.00 hrs, dt= 0.04 hrs
MSE 24-hr 3 2-Year Rainfall=2.87"

	Area (sf)	CN	Description
	268	74	>75% Grass cover, Good, HSG C
*	1,339	61	Soil Amendment Area
	1,503	98	Unconnected roofs, HSG C
	3,110		Weighted Average
	1,607	63	51.67% Pervious Area
	1,503	98	48.33% Impervious Area
	1,503		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.9	35	0.0400	0.12		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.88"

Subcatchment 6S: To Street



Summary for Subcatchment 7S: (new Subcat)

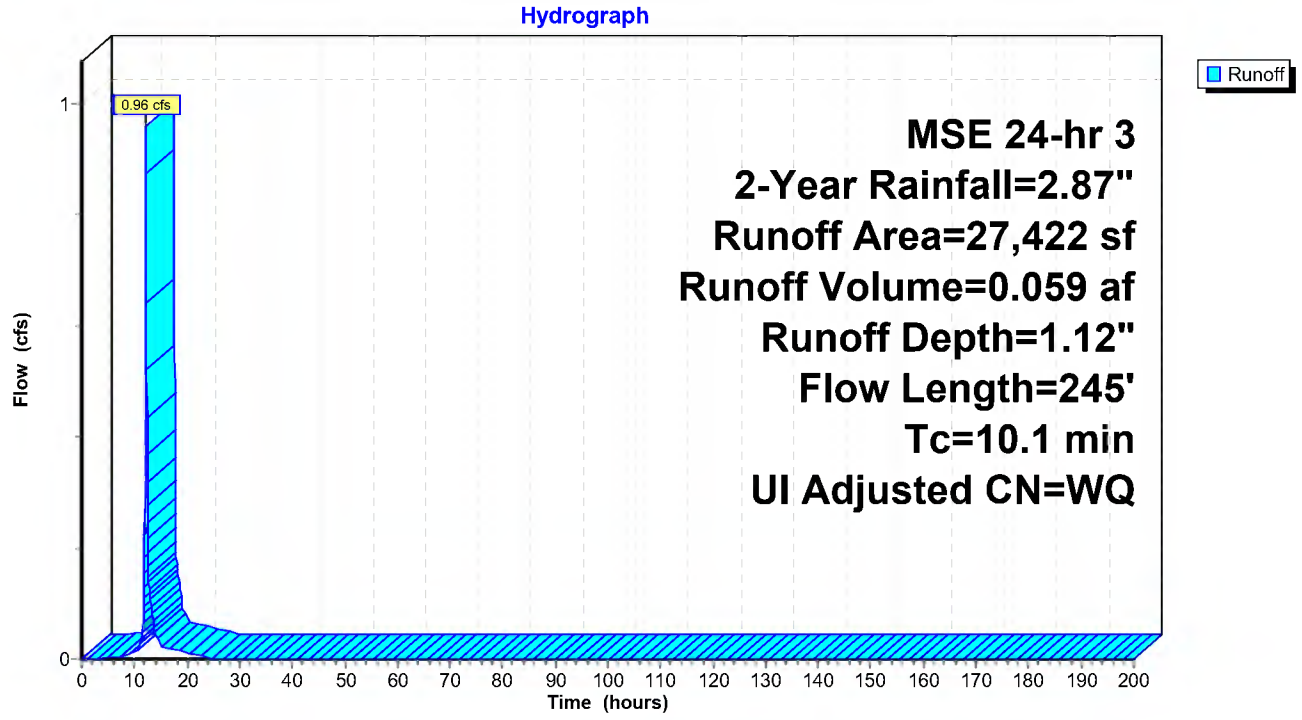
Runoff = 0.96 cfs @ 12.18 hrs, Volume= 0.059 af, Depth= 1.12"
Routed to Pond 2P : RG 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-200.00 hrs, dt= 0.04 hrs
MSE 24-hr 3 2-Year Rainfall=2.87"

	Area (sf)	CN	Adj	Description
	12,301	76	76	Woods/grass comb., Fair, HSG C
*	9,418	65	65	Amended soils
	0	74		>75% Grass cover, Good, HSG C
	5,703	98	98	Unconnected roofs, HSG C
	27,422			Weighted Average
	21,719	71	71	79.20% Pervious Area
	5,703	98	98	20.80% Impervious Area
	5,703			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.1	100	0.0700	0.18		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.88"
1.0	145	0.1300	2.52		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
10.1	245	Total			

Subcatchment 7S: (new Subcat)



Summary for Subcatchment 8S: To North

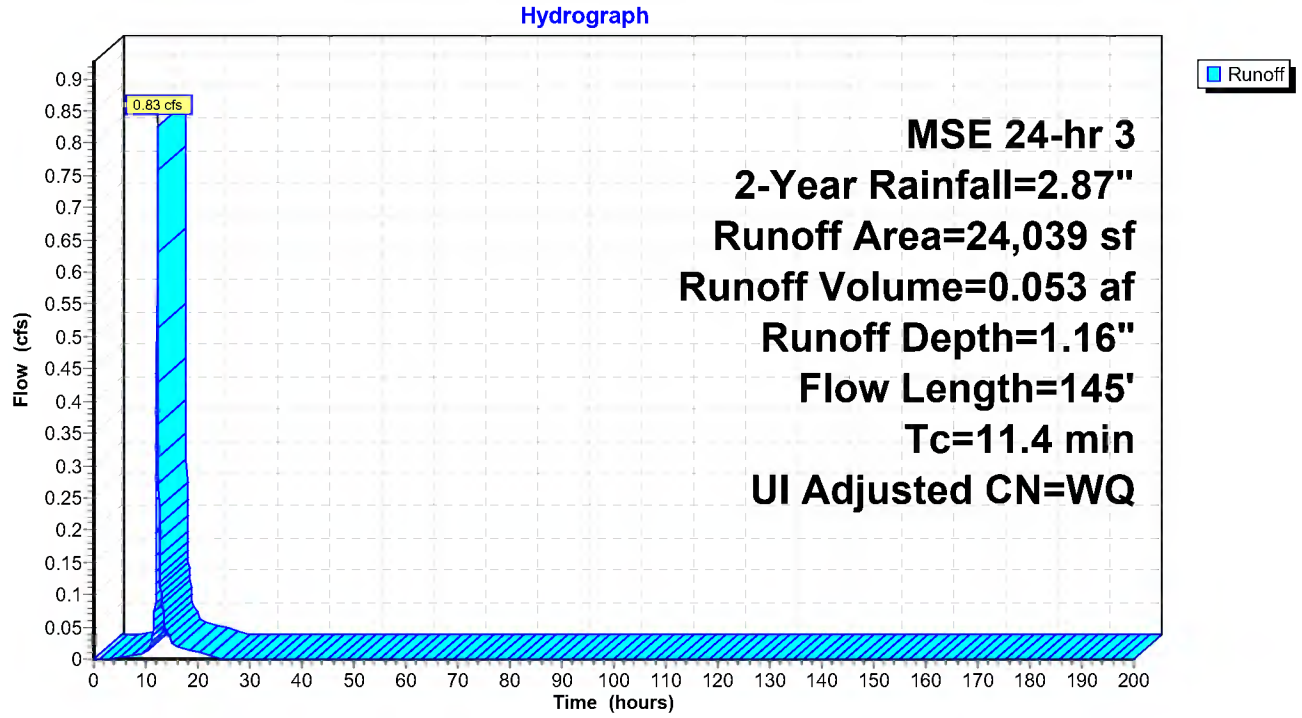
Runoff = 0.83 cfs @ 12.20 hrs, Volume= 0.053 af, Depth= 1.16"
Routed to Pond 3P : RG 3

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-200.00 hrs, dt= 0.04 hrs
MSE 24-hr 3 2-Year Rainfall=2.87"

	Area (sf)	CN	Adj	Description
	9,546	76	76	Woods/grass comb., Fair, HSG C
*	8,790	65	65	Amended Soils
	0	74		>75% Grass cover, Good, HSG C
	5,703	98	98	Unconnected roofs, HSG C
	24,039			Weighted Average
	18,336	71	71	76.28% Pervious Area
	5,703	98	98	23.72% Impervious Area
	5,703			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.1	100	0.0430	0.15		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.88"
0.3	45	0.1400	2.62		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
11.4	145	Total			

Subcatchment 8S: To North



Summary for Pond 1P: RG 1

Inflow Area = 0.403 ac, 23.92% Impervious, Inflow Depth = 1.30" for 2-Year event
Inflow = 0.80 cfs @ 12.16 hrs, Volume= 0.044 af
Outflow = 0.13 cfs @ 12.59 hrs, Volume= 0.044 af, Atten= 84%, Lag= 26.0 min
Discarded = 0.01 cfs @ 12.59 hrs, Volume= 0.032 af
Primary = 0.12 cfs @ 12.59 hrs, Volume= 0.012 af
Routed to Pond 4P : Offsite to East

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.04 hrs / 3
Peak Elev= 946.04' @ 12.59 hrs Surf.Area= 1,187 sf Storage= 1,015 cf

Plug-Flow detention time= 905.6 min calculated for 0.044 af (100% of inflow)
Center-of-Mass det. time= 905.7 min (1,701.3 - 795.6)

Volume	Invert	Avail.Storage	Storage Description
#1	945.00'	2,370 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

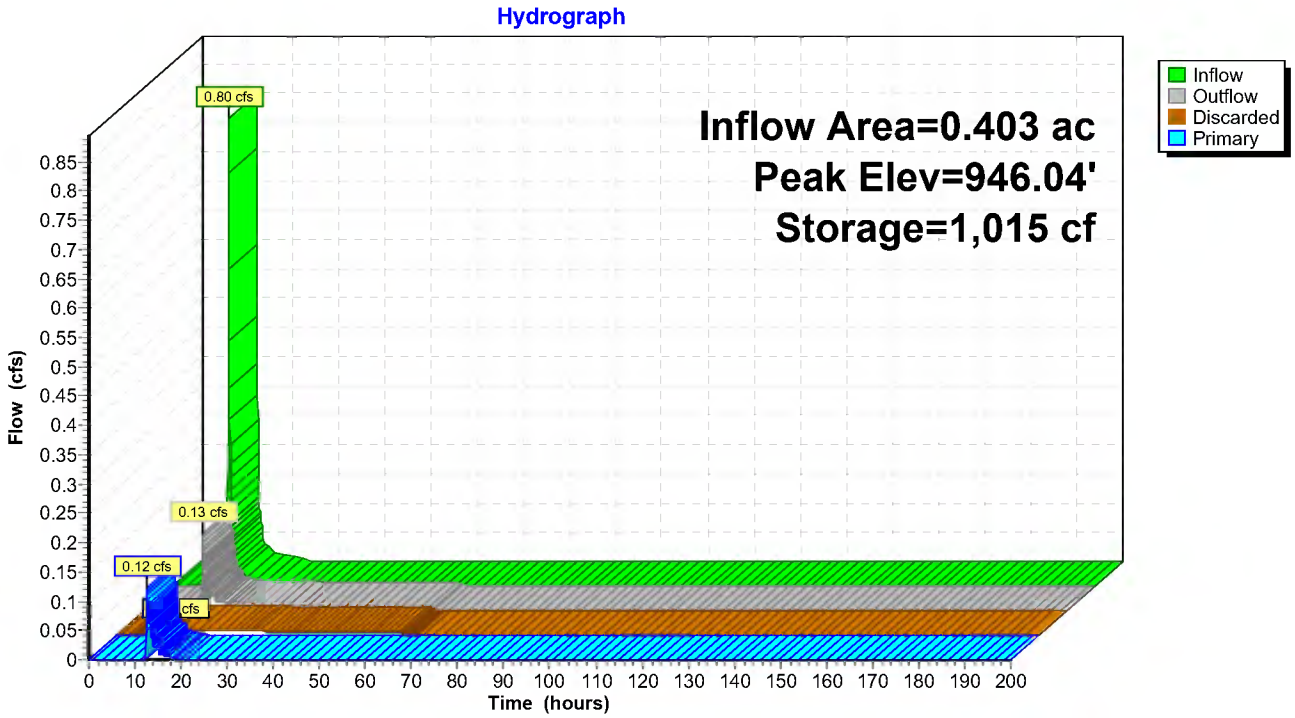
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
945.00	775	0	0
946.00	1,170	973	973
946.20	1,265	244	1,216
947.00	1,620	1,154	2,370

Device	Routing	Invert	Outlet Devices
#1	Discarded	945.00'	**0.300 in/hr Exfiltration over Surface area**
#2	Primary	946.00'	**EOF, Cv= 2.62 (C= 3.28)**
			Head (feet) 1.00 1.20 2.00
			Width (feet) 5.00 10.00 65.00

Discarded OutFlow Max=0.01 cfs @ 12.59 hrs HW=946.04' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.12 cfs @ 12.59 hrs HW=946.04' (Free Discharge)
↑—**2=EOF** (Weir Controls 0.12 cfs @ 0.61 fps)

Pond 1P: RG 1


Hydrograph
Inflow Area=0.403 ac
Peak Elev=946.04'
Storage=1,015 cf
0.80 cfs
0.13 cfs
0.12 cfs
cfs
Inflow
Outflow
Discarded
Primary
Flow (cfs)
Time (hours)
0 0.05 0.1 0.15 0.2 0.25 0.3 0.35 0.4 0.45 0.5 0.55 0.6 0.65 0.7 0.75 0.8 0.85
0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200

Stage-Discharge for Pond 1P: RG 1

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
945.00	0.00	0.00	0.00
945.02	0.01	0.01	0.00
945.04	0.01	0.01	0.00
945.06	0.01	0.01	0.00
945.08	0.01	0.01	0.00
945.10	0.01	0.01	0.00
945.12	0.01	0.01	0.00
945.14	0.01	0.01	0.00
945.16	0.01	0.01	0.00
945.18	0.01	0.01	0.00
945.20	0.01	0.01	0.00
945.22	0.01	0.01	0.00
945.24	0.01	0.01	0.00
945.26	0.01	0.01	0.00
945.28	0.01	0.01	0.00
945.30	0.01	0.01	0.00
945.32	0.01	0.01	0.00
945.34	0.01	0.01	0.00
945.36	0.01	0.01	0.00
945.38	0.01	0.01	0.00
945.40	0.01	0.01	0.00
945.42	0.01	0.01	0.00
945.44	0.01	0.01	0.00
945.46	0.01	0.01	0.00
945.48	0.01	0.01	0.00
945.50	0.01	0.01	0.00
945.52	0.01	0.01	0.00
945.54	0.01	0.01	0.00
945.56	0.01	0.01	0.00
945.58	0.01	0.01	0.00
945.60	0.01	0.01	0.00
945.62	0.01	0.01	0.00
945.64	0.01	0.01	0.00
945.66	0.01	0.01	0.00
945.68	0.01	0.01	0.00
945.70	0.01	0.01	0.00
945.72	0.01	0.01	0.00
945.74	0.01	0.01	0.00
945.76	0.01	0.01	0.00
945.78	0.01	0.01	0.00
945.80	0.01	0.01	0.00
945.82	0.01	0.01	0.00
945.84	0.01	0.01	0.00
945.86	0.01	0.01	0.00
945.88	0.01	0.01	0.00
945.90	0.01	0.01	0.00
945.92	0.01	0.01	0.00
945.94	0.01	0.01	0.00
945.96	0.01	0.01	0.00
945.98	0.01	0.01	0.00
946.00	0.01	0.01	0.00
946.02	0.06	0.01	0.05
946.04	0.15	0.01	0.14
946.06	0.28	0.01	0.27
946.08	0.44	0.01	0.43
946.10	0.63	0.01	0.62
946.12	0.85	0.01	0.84
946.14	1.11	0.01	1.10
946.16	1.39	0.01	1.38
946.18	1.71	0.01	1.70
946.20	2.06	0.01	2.05
946.22	2.45	0.01	2.44
946.24	2.88	0.01	2.87
946.26	3.36	0.01	3.35
946.28	3.90	0.01	3.89
946.30	4.50	0.01	4.49
946.32	5.16	0.01	5.15
946.34	5.88	0.01	5.87
946.36	6.68	0.01	6.67
946.38	7.55	0.01	7.54
946.40	8.49	0.01	8.48
946.42	9.51	0.01	9.50
946.44	10.61	0.01	10.60
946.46	11.79	0.01	11.78
946.48	13.06	0.01	13.05
946.50	14.41	0.01	14.40
946.52	15.86	0.01	15.85
946.54	17.39	0.01	17.38
946.56	19.01	0.01	19.00
946.58	20.74	0.01	20.73
946.60	22.55	0.01	22.54
946.62	24.47	0.01	24.46
946.64	26.49	0.01	26.48
946.66	28.61	0.01	28.59
946.68	30.83	0.01	30.82
946.70	33.16	0.01	33.15
946.72	35.60	0.01	35.59
946.74	38.14	0.01	38.13
946.76	40.80	0.01	40.79
946.78	43.57	0.01	43.56
946.80	46.46	0.01	46.45
946.82	49.46	0.01	49.45
946.84	52.58	0.01	52.57
946.86	55.81	0.01	55.80
946.88	59.17	0.01	59.16
946.90	62.65	0.01	62.64
946.92	66.26	0.01	66.25
946.94	69.99	0.01	69.98
946.96	73.85	0.01	73.83
946.98	77.83	0.01	77.82
947.00	**81.94**	**0.01**	**81.93**

Stage-Area-Storage for Pond 1P: RG 1

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
945.00	775	0	946.02	1,179	996
945.02	783	16	946.04	1,189	1,020
945.04	791	31	946.06	1,198	1,044
945.06	799	47	946.08	1,208	1,068
945.08	807	63	946.10	1,218	1,092
945.10	815	79	946.12	1,227	1,116
945.12	822	96	946.14	1,236	1,141
945.14	830	112	946.16	1,246	1,166
945.16	838	129	946.18	1,255	1,191
945.18	846	146	946.20	1,265	1,216
945.20	854	163	946.22	1,274	1,241
945.22	862	180	946.24	1,283	1,267
945.24	870	197	946.26	1,292	1,293
945.26	878	215	946.28	1,300	1,319
945.28	886	232	946.30	1,309	1,345
945.30	893	250	946.32	1,318	1,371
945.32	901	268	946.34	1,327	1,397
945.34	909	286	946.36	1,336	1,424
945.36	917	305	946.38	1,345	1,451
945.38	925	323	946.40	1,354	1,478
945.40	933	342	946.42	1,363	1,505
945.42	941	360	946.44	1,372	1,532
945.44	949	379	946.46	1,380	1,560
945.46	957	398	946.48	1,389	1,588
945.48	965	418	946.50	1,398	1,615
945.50	973	437	946.52	1,407	1,644
945.52	980	456	946.54	1,416	1,672
945.54	988	476	946.56	1,425	1,700
945.56	996	496	946.58	1,434	1,729
945.58	1,004	516	946.60	1,443	1,758
945.60	1,012	536	946.62	1,451	1,786
945.62	1,020	556	946.64	1,460	1,816
945.64	1,028	577	946.66	1,469	1,845
945.66	1,036	598	946.68	1,478	1,874
945.68	1,044	618	946.70	1,487	1,904
945.70	1,052	639	946.72	1,496	1,934
945.72	1,059	660	946.74	1,505	1,964
945.74	1,067	682	946.76	1,513	1,994
945.76	1,075	703	946.78	1,522	2,024
945.78	1,083	725	946.80	1,531	2,055
945.80	1,091	746	946.82	1,540	2,086
945.82	1,099	768	946.84	1,549	2,116
945.84	1,107	790	946.86	1,558	2,148
945.86	1,115	813	946.88	1,567	2,179
945.88	1,123	835	946.90	1,576	2,210
945.90	1,130	857	946.92	1,584	2,242
945.92	1,138	880	946.94	1,593	2,274
945.94	1,146	903	946.96	1,602	2,306
945.96	1,154	926	946.98	1,611	2,338
945.98	1,162	949	947.00	**1,620**	**2,370**
946.00	1,170	973			

Summary for Pond 2P: RG 2

Inflow Area = 0.630 ac, 20.80% Impervious, Inflow Depth = 1.12" for 2-Year event
Inflow = 0.96 cfs @ 12.18 hrs, Volume= 0.059 af
Outflow = 0.02 cfs @ 17.20 hrs, Volume= 0.059 af, Atten= 98%, Lag= 301.2 min
Discarded = 0.02 cfs @ 17.20 hrs, Volume= 0.059 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond 27P : out

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.04 hrs
Peak Elev= 931.56' @ 17.20 hrs Surf.Area= 1,346 sf Storage= 1,775 cf

Plug-Flow detention time= 968.1 min calculated for 0.059 af (100% of inflow)
Center-of-Mass det. time= 968.3 min (1,768.6 - 800.3)

Volume	Invert	Avail.Storage	Storage Description
#1	930.00'	4,308 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

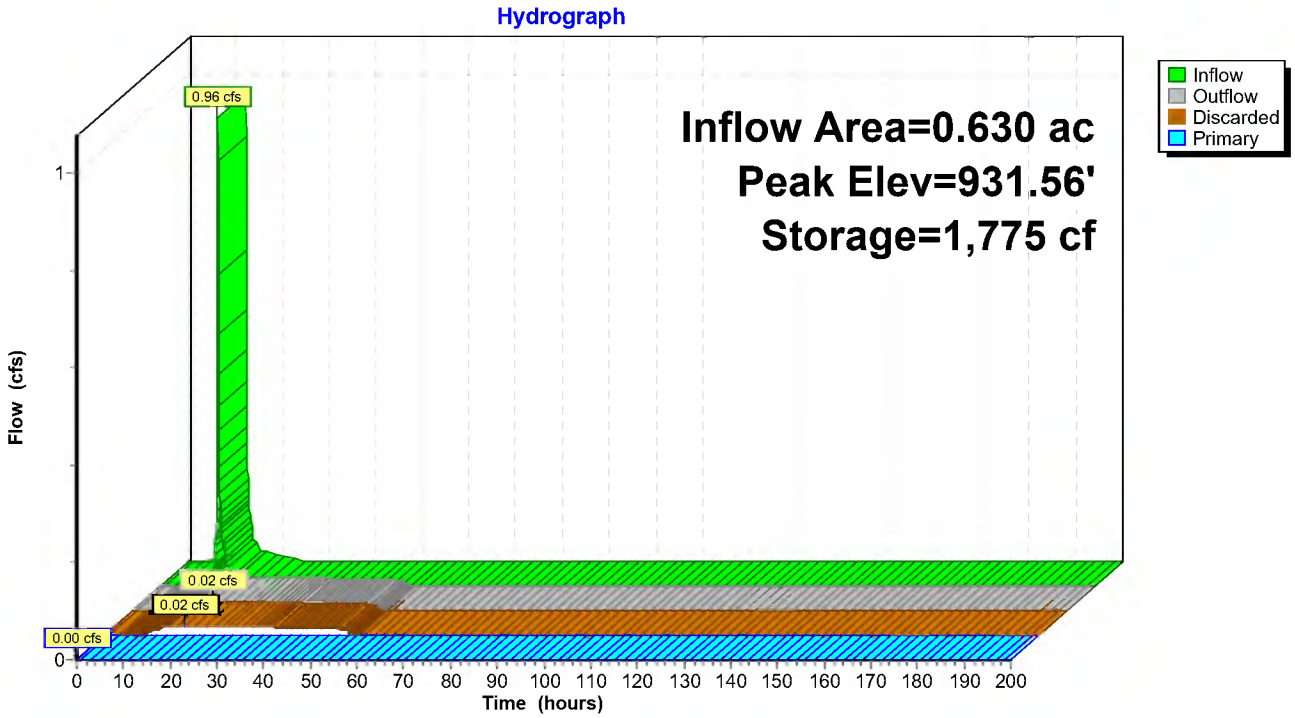
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
930.00	860	0	0
931.00	1,240	1,050	1,050
932.00	1,430	1,335	2,385
932.20	1,760	319	2,704
933.00	2,250	1,604	4,308

Device	Routing	Invert	Outlet Devices
#1	Discarded	930.00'	**0.600 in/hr Exfiltration over Surface area**
#2	Primary	932.00'	**Custom Weir/Orifice, Cv= 2.62 (C= 3.28)**
			Head (feet) 1.00 1.20 2.00
			Width (feet) 5.00 10.00 30.00

Discarded OutFlow Max=0.02 cfs @ 17.20 hrs HW=931.56' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=930.00' (Free Discharge)
↑**2=Custom Weir/Orifice** (Controls 0.00 cfs)

Pond 2P: RG 2


Hydrograph
Inflow Area=0.630 ac
Peak Elev=931.56'
Storage=1,775 cf
Inflow
Outflow
Discarded
Primary
0.96 cfs
0.02 cfs
0.02 cfs
0.00 cfs
Flow (cfs)
Time (hours)
0
1
0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200

Stage-Discharge for Pond 2P: RG 2

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
930.00	0.00	0.00	0.00
930.05	0.01	0.01	0.00
930.10	0.01	0.01	0.00
930.15	0.01	0.01	0.00
930.20	0.01	0.01	0.00
930.25	0.01	0.01	0.00
930.30	0.01	0.01	0.00
930.35	0.01	0.01	0.00
930.40	0.01	0.01	0.00
930.45	0.01	0.01	0.00
930.50	0.01	0.01	0.00
930.55	0.01	0.01	0.00
930.60	0.02	0.02	0.00
930.65	0.02	0.02	0.00
930.70	0.02	0.02	0.00
930.75	0.02	0.02	0.00
930.80	0.02	0.02	0.00
930.85	0.02	0.02	0.00
930.90	0.02	0.02	0.00
930.95	0.02	0.02	0.00
931.00	0.02	0.02	0.00
931.05	0.02	0.02	0.00
931.10	0.02	0.02	0.00
931.15	0.02	0.02	0.00
931.20	0.02	0.02	0.00
931.25	0.02	0.02	0.00
931.30	0.02	0.02	0.00
931.35	0.02	0.02	0.00
931.40	0.02	0.02	0.00
931.45	0.02	0.02	0.00
931.50	0.02	0.02	0.00
931.55	0.02	0.02	0.00
931.60	0.02	0.02	0.00
931.65	0.02	0.02	0.00
931.70	0.02	0.02	0.00
931.75	0.02	0.02	0.00
931.80	0.02	0.02	0.00
931.85	0.02	0.02	0.00
931.90	0.02	0.02	0.00
931.95	0.02	0.02	0.00
932.00	0.02	0.02	0.00
932.05	0.22	0.02	0.20
932.10	0.64	0.02	0.62
932.15	1.26	0.02	1.24
932.20	2.07	0.02	2.05
932.25	3.10	0.02	3.07
932.30	4.33	0.03	4.31
932.35	5.79	0.03	5.76
932.40	7.48	0.03	7.46
932.45	9.42	0.03	9.39
932.50	11.61	0.03	11.58
932.55	14.05	0.03	14.03
932.60	16.77	0.03	16.74
932.65	19.77	0.03	19.74
932.70	23.05	0.03	23.02
932.75	26.62	0.03	26.59
932.80	30.49	0.03	30.46
932.85	34.68	0.03	34.65
932.90	39.18	0.03	39.15
932.95	44.00	0.03	43.97
933.00	**49.16**	**0.03**	**49.13**

Stage-Area-Storage for Pond 2P: RG 2

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
930.00	860	0
930.05	879	43
930.10	898	88
930.15	917	133
930.20	936	180
930.25	955	227
930.30	974	275
930.35	993	324
930.40	1,012	374
930.45	1,031	425
930.50	1,050	478
930.55	1,069	530
930.60	1,088	584
930.65	1,107	639
930.70	1,126	695
930.75	1,145	752
930.80	1,164	810
930.85	1,183	868
930.90	1,202	928
930.95	1,221	988
931.00	1,240	1,050
931.05	1,249	1,112
931.10	1,259	1,175
931.15	1,268	1,238
931.20	1,278	1,302
931.25	1,288	1,366
931.30	1,297	1,431
931.35	1,307	1,496
931.40	1,316	1,561
931.45	1,326	1,627
931.50	1,335	1,694
931.55	1,344	1,761
931.60	1,354	1,828
931.65	1,363	1,896
931.70	1,373	1,965
931.75	1,383	2,033
931.80	1,392	2,103
931.85	1,402	2,173
931.90	1,411	2,243
931.95	1,421	2,314
932.00	1,430	2,385
932.05	1,512	2,459
932.10	1,595	2,536
932.15	1,677	2,618
932.20	1,760	2,704
932.25	1,791	2,793
932.30	1,821	2,883
932.35	1,852	2,975
932.40	1,882	3,068
932.45	1,913	3,163
932.50	1,944	3,260
932.55	1,974	3,358
932.60	2,005	3,457
932.65	2,036	3,558
932.70	2,066	3,661
932.75	2,097	3,765
932.80	2,127	3,870
932.85	2,158	3,977
932.90	2,189	4,086
932.95	2,219	4,196
933.00	**2,250**	**4,308**

Summary for Pond 3P: RG 3

Inflow Area = 0.552 ac, 23.72% Impervious, Inflow Depth = 1.16" for 2-Year event
Inflow = 0.83 cfs @ 12.20 hrs, Volume= 0.053 af
Outflow = 0.03 cfs @ 14.41 hrs, Volume= 0.053 af, Atten= 96%, Lag= 133.0 min
Discarded = 0.02 cfs @ 14.41 hrs, Volume= 0.051 af
Primary = 0.02 cfs @ 14.41 hrs, Volume= 0.002 af
Routed to Pond 27P : out

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.04 hrs / 2
Peak Elev= 923.51' @ 14.41 hrs Surf.Area= 1,214 sf Storage= 1,574 cf

Plug-Flow detention time= 1,057.7 min calculated for 0.053 af (100% of inflow)
Center-of-Mass det. time= 1,057.9 min (1,855.9 - 797.9)

Volume	Invert	Avail.Storage	Storage Description
#1	921.50'	3,837 cf	**Custom Stage Data (Conic)** Listed below (Recalc)

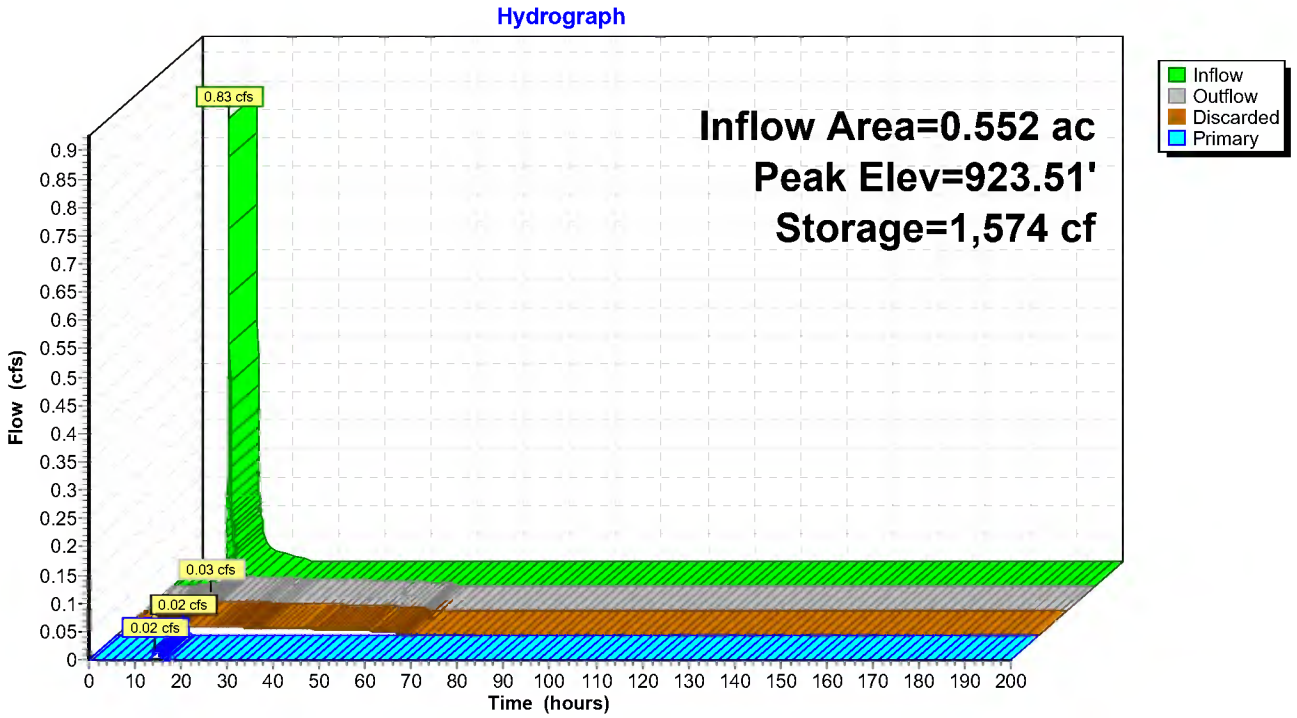
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
921.50	440	0	0	440
922.00	630	266	266	634
922.30	725	203	469	733
922.50	800	152	622	811
923.00	890	422	1,044	914
923.50	1,210	523	1,567	1,240
923.90	1,500	541	2,108	1,534
924.00	1,575	154	2,262	1,610
925.00	1,575	1,575	3,837	1,751

Device	Routing	Invert	Outlet Devices
#1	Discarded	921.50'	**0.600 in/hr Exfiltration over Surface area**
#2	Primary	923.50'	**Custom Weir/Orifice, Cv= 2.62 (C= 3.28)**
			Head (feet) 2.00 2.25 2.50 2.75
			Width (feet) 5.00 10.00 40.00 50.00

Discarded OutFlow Max=0.02 cfs @ 14.41 hrs HW=923.51' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=0.01 cfs @ 14.41 hrs HW=923.51' (Free Discharge)
↑—**2=Custom Weir/Orifice** (Weir Controls 0.01 cfs @ 0.25 fps)

Pond 3P: RG 3


Hydrograph
Inflow Area=0.552 ac
Peak Elev=923.51'
Storage=1,574 cf
Inflow
Outflow
Discarded
Primary
0.83 cfs
0.03 cfs
0.02 cfs
0.02 cfs
Flow (cfs)
Time (hours)
0 0.05 0.1 0.15 0.2 0.25 0.3 0.35 0.4 0.45 0.5 0.55 0.6 0.65 0.7 0.75 0.8 0.85 0.9
0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200

Stage-Discharge for Pond 3P: RG 3

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
921.50	0.00	0.00	0.00
921.55	0.01	0.01	0.00
921.60	0.01	0.01	0.00
921.65	0.01	0.01	0.00
921.70	0.01	0.01	0.00
921.75	0.01	0.01	0.00
921.80	0.01	0.01	0.00
921.85	0.01	0.01	0.00
921.90	0.01	0.01	0.00
921.95	0.01	0.01	0.00
922.00	0.01	0.01	0.00
922.05	0.01	0.01	0.00
922.10	0.01	0.01	0.00
922.15	0.01	0.01	0.00
922.20	0.01	0.01	0.00
922.25	0.01	0.01	0.00
922.30	0.01	0.01	0.00
922.35	0.01	0.01	0.00
922.40	0.01	0.01	0.00
922.45	0.01	0.01	0.00
922.50	0.01	0.01	0.00
922.55	0.01	0.01	0.00
922.60	0.01	0.01	0.00
922.65	0.01	0.01	0.00
922.70	0.01	0.01	0.00
922.75	0.01	0.01	0.00
922.80	0.01	0.01	0.00
922.85	0.01	0.01	0.00
922.90	0.01	0.01	0.00
922.95	0.01	0.01	0.00
923.00	0.01	0.01	0.00
923.05	0.01	0.01	0.00
923.10	0.01	0.01	0.00
923.15	0.01	0.01	0.00
923.20	0.01	0.01	0.00
923.25	0.01	0.01	0.00
923.30	0.01	0.01	0.00
923.35	0.02	0.02	0.00
923.40	0.02	0.02	0.00
923.45	0.02	0.02	0.00
923.50	0.02	0.02	0.00
923.55	0.22	0.02	0.20
923.60	0.62	0.02	0.60
923.65	1.20	0.02	1.18
923.70	1.95	0.02	1.93
923.75	2.88	0.02	2.87
923.80	4.08	0.02	4.06
923.85	5.72	0.02	5.70
923.90	7.96	0.02	7.94
923.95	10.87	0.02	10.85
924.00	14.54	**0.02**	14.51
924.05	18.98	0.02	18.96
924.10	24.10	0.02	24.08
924.15	29.87	0.02	29.85
924.20	36.27	0.02	36.25
924.25	43.30	0.02	43.28
924.30	49.10	0.02	49.08
924.35	53.90	0.02	53.88
924.40	58.18	0.02	58.16
924.45	62.12	0.02	62.09
924.50	65.78	0.02	65.76
924.55	69.23	0.02	69.21
924.60	72.50	0.02	72.47
924.65	75.61	0.02	75.59
924.70	78.60	0.02	78.58
924.75	81.47	0.02	81.44
924.80	84.23	0.02	84.21
924.85	86.91	0.02	86.89
924.90	89.50	0.02	89.48
924.95	92.02	0.02	92.00
925.00	**94.47**	0.02	**94.44**

Stage-Area-Storage for Pond 3P: RG 3

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
921.50	440	0
921.55	457	22
921.60	475	46
921.65	493	70
921.70	512	95
921.75	531	121
921.80	550	148
921.85	569	176
921.90	589	205
921.95	609	235
922.00	630	266
922.05	645	298
922.10	661	331
922.15	677	364
922.20	693	398
922.25	709	433
922.30	725	469
922.35	743	506
922.40	762	544
922.45	781	582
922.50	800	622
922.55	809	662
922.60	818	702
922.65	826	744
922.70	835	785
922.75	844	827
922.80	853	870
922.85	862	912
922.90	872	956
922.95	881	1,000
923.00	890	1,044
923.05	920	1,089
923.10	950	1,136
923.15	981	1,184
923.20	1,012	1,234
923.25	1,044	1,285
923.30	1,076	1,338
923.35	1,109	1,393
923.40	1,142	1,449
923.45	1,176	1,507
923.50	1,210	1,567
923.55	1,245	1,628
923.60	1,280	1,691
923.65	1,315	1,756
923.70	1,351	1,823
923.75	1,388	1,891
923.80	1,425	1,962
923.85	1,462	2,034
923.90	1,500	2,108
923.95	1,537	2,184
924.00	**1,575**	2,262
924.05	1,575	2,340
924.10	1,575	2,419
924.15	1,575	2,498
924.20	1,575	2,577
924.25	1,575	2,655
924.30	1,575	2,734
924.35	1,575	2,813
924.40	1,575	2,892
924.45	1,575	2,970
924.50	1,575	3,049
924.55	1,575	3,128
924.60	1,575	3,207
924.65	1,575	3,285
924.70	1,575	3,364
924.75	1,575	3,443
924.80	1,575	3,522
924.85	1,575	3,600
924.90	1,575	3,679
924.95	1,575	3,758
925.00	1,575	**3,837**

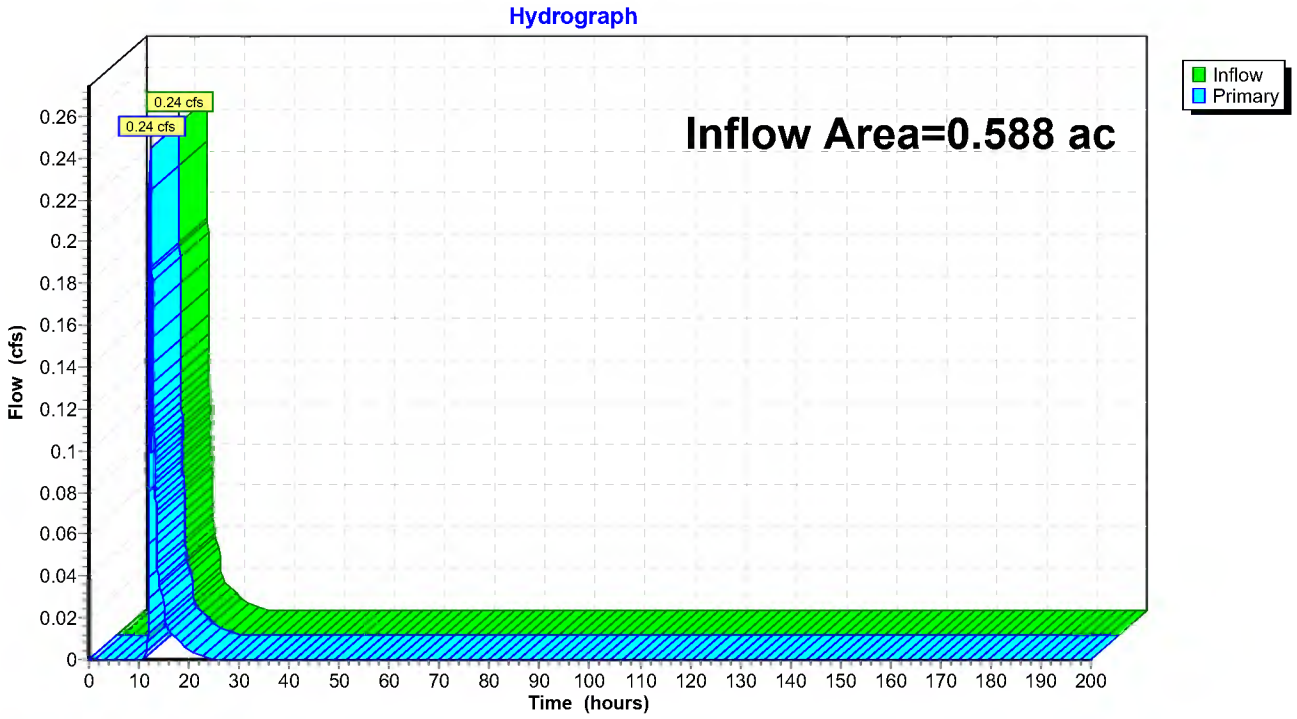
Summary for Pond 4P: Offsite to East

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.588 ac, 16.41% Impervious, Inflow Depth = 0.54" for 2-Year event
Inflow = 0.24 cfs @ 12.20 hrs, Volume= 0.026 af
Primary = 0.24 cfs @ 12.20 hrs, Volume= 0.026 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.04 hrs

Pond 4P: Offsite to East



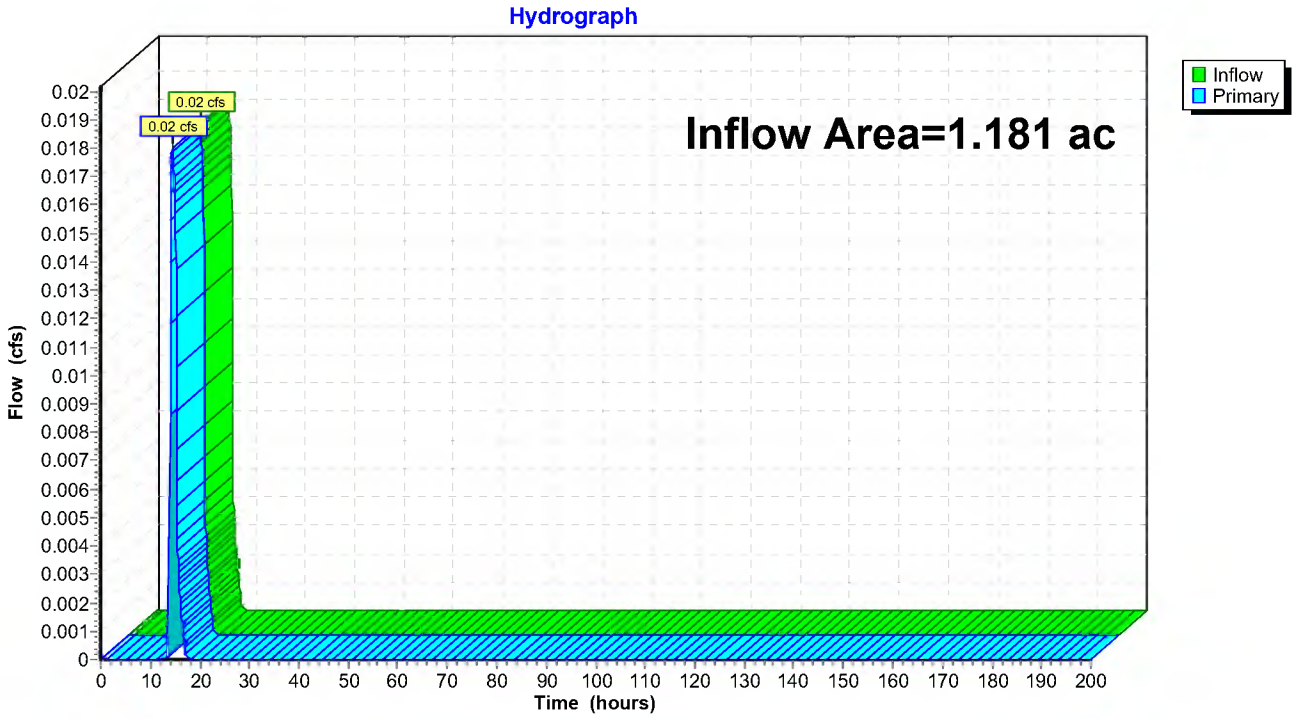
Summary for Pond 27P: out

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.181 ac, 22.16% Impervious, Inflow Depth = 0.02" for 2-Year event
Inflow = 0.02 cfs @ 14.41 hrs, Volume= 0.002 af
Primary = 0.02 cfs @ 14.41 hrs, Volume= 0.002 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.04 hrs

Pond 27P: out



Time span=0.00-200.00 hrs, dt=0.04 hrs, 5001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

Subcatchment4S: (new Subcat) Runoff Area=8,038 sf 0.00% Impervious Runoff Depth=1.95"
Flow Length=100' Slope=0.1200 '/' Tc=11.1 min CN=76 Runoff=0.53 cfs 0.030 af

Subcatchment5S: Lot 1 Runoff Area=17,559 sf 23.92% Impervious Runoff Depth=2.39"
Flow Length=100' Slope=0.0850 '/' Tc=8.4 min UI Adjusted CN=WQ Runoff=1.50 cfs 0.080 af

Subcatchment6S: To Street Runoff Area=3,110 sf 48.33% Impervious Runoff Depth=2.52"
Flow Length=35' Slope=0.0400 '/' Tc=4.9 min CN=WQ Runoff=0.30 cfs 0.015 af

Subcatchment7S: (new Subcat) Runoff Area=27,422 sf 20.80% Impervious Runoff Depth=2.12"
Flow Length=245' Tc=10.1 min UI Adjusted CN=WQ Runoff=1.91 cfs 0.111 af

Subcatchment8S: To North Runoff Area=24,039 sf 23.72% Impervious Runoff Depth=2.17"
Flow Length=145' Tc=11.4 min UI Adjusted CN=WQ Runoff=1.62 cfs 0.100 af

Pond 1P: RG 1 Peak Elev=946.15' Storage=1,156 cf Inflow=1.50 cfs 0.080 af
Discarded=0.01 cfs 0.033 af Primary=1.27 cfs 0.047 af Outflow=1.28 cfs 0.080 af

Pond 2P: RG 2 Peak Elev=932.08' Storage=2,503 cf Inflow=1.91 cfs 0.111 af
Discarded=0.02 cfs 0.078 af Primary=0.43 cfs 0.033 af Outflow=0.45 cfs 0.111 af

Pond 3P: RG 3 Peak Elev=923.63' Storage=1,735 cf Inflow=1.62 cfs 0.100 af
Discarded=0.02 cfs 0.055 af Primary=0.98 cfs 0.044 af Outflow=1.00 cfs 0.099 af

Pond 4P: Offsite to East Inflow=1.79 cfs 0.077 af
Primary=1.79 cfs 0.077 af

Pond 27P: out Inflow=0.98 cfs 0.078 af
Primary=0.98 cfs 0.078 af

Total Runoff Area = 1.840 ac Runoff Volume = 0.336 af Average Runoff Depth = 2.19"
78.66% Pervious = 1.448 ac 21.34% Impervious = 0.393 ac

Summary for Subcatchment 4S: (new Subcat)

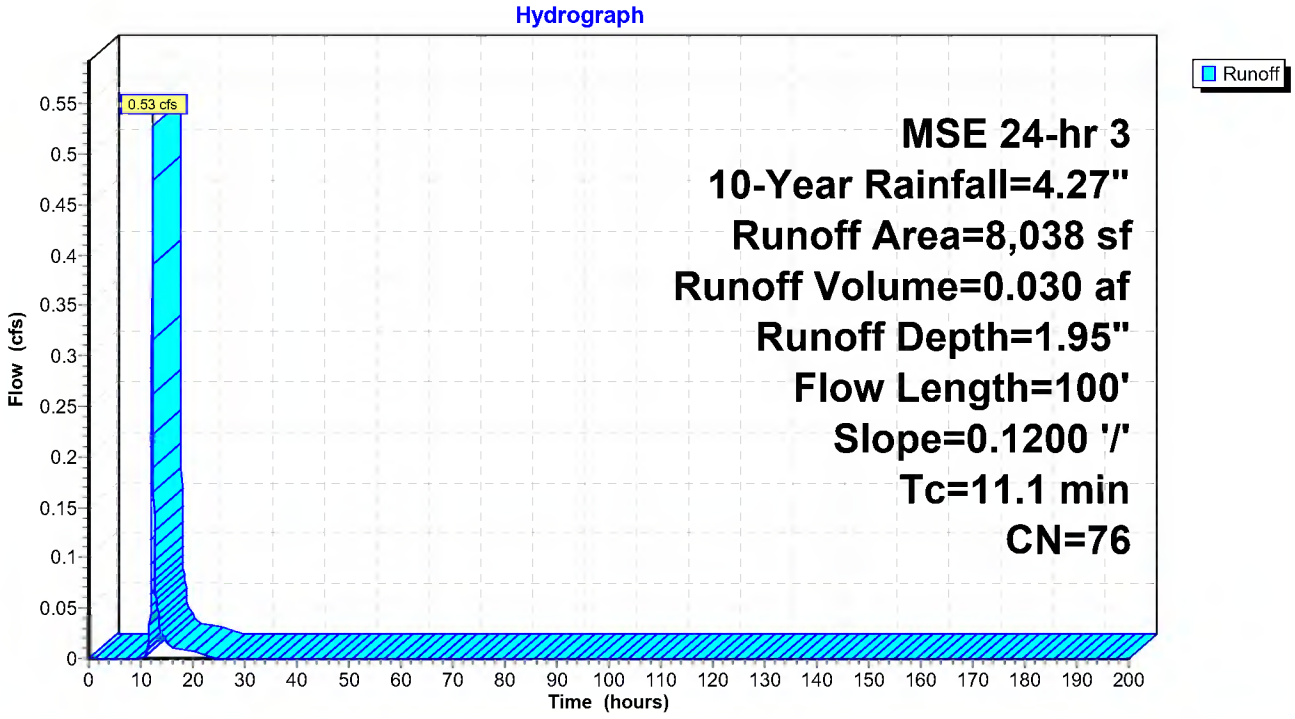
Runoff = 0.53 cfs @ 12.19 hrs, Volume= 0.030 af, Depth= 1.95"
Routed to Pond 4P : Offsite to East

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-200.00 hrs, dt= 0.04 hrs
MSE 24-hr 3 10-Year Rainfall=4.27"

Area (sf)	CN	Description
8,038	76	Woods/grass comb., Fair, HSG C
8,038	76	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.1	100	0.1200	0.15		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.88"

Subcatchment 4S: (new Subcat)



Summary for Subcatchment 5S: Lot 1

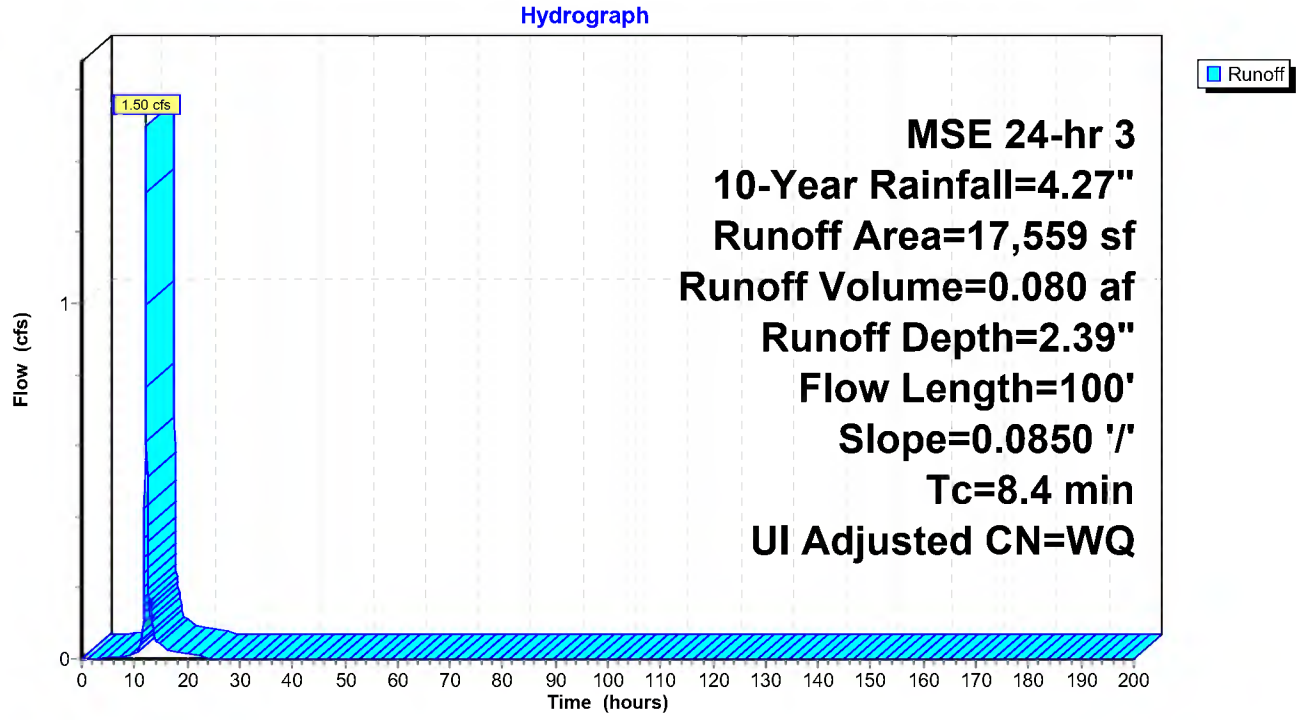
Runoff = 1.50 cfs @ 12.16 hrs, Volume= 0.080 af, Depth= 2.39"
Routed to Pond 1P : RG 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-200.00 hrs, dt= 0.04 hrs
MSE 24-hr 3 10-Year Rainfall=4.27"

Area (sf)	CN	Adj	Description
7,115	76	76	Woods/grass comb., Fair, HSG C
6,244	74	74	>75% Grass cover, Good, HSG C
4,200	98	98	Unconnected roofs, HSG C
17,559			Weighted Average
13,359	75	75	76.08% Pervious Area
4,200	98	98	23.92% Impervious Area
4,200			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.4	100	0.0850	0.20		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.88"

Subcatchment 5S: Lot 1



Summary for Subcatchment 6S: To Street

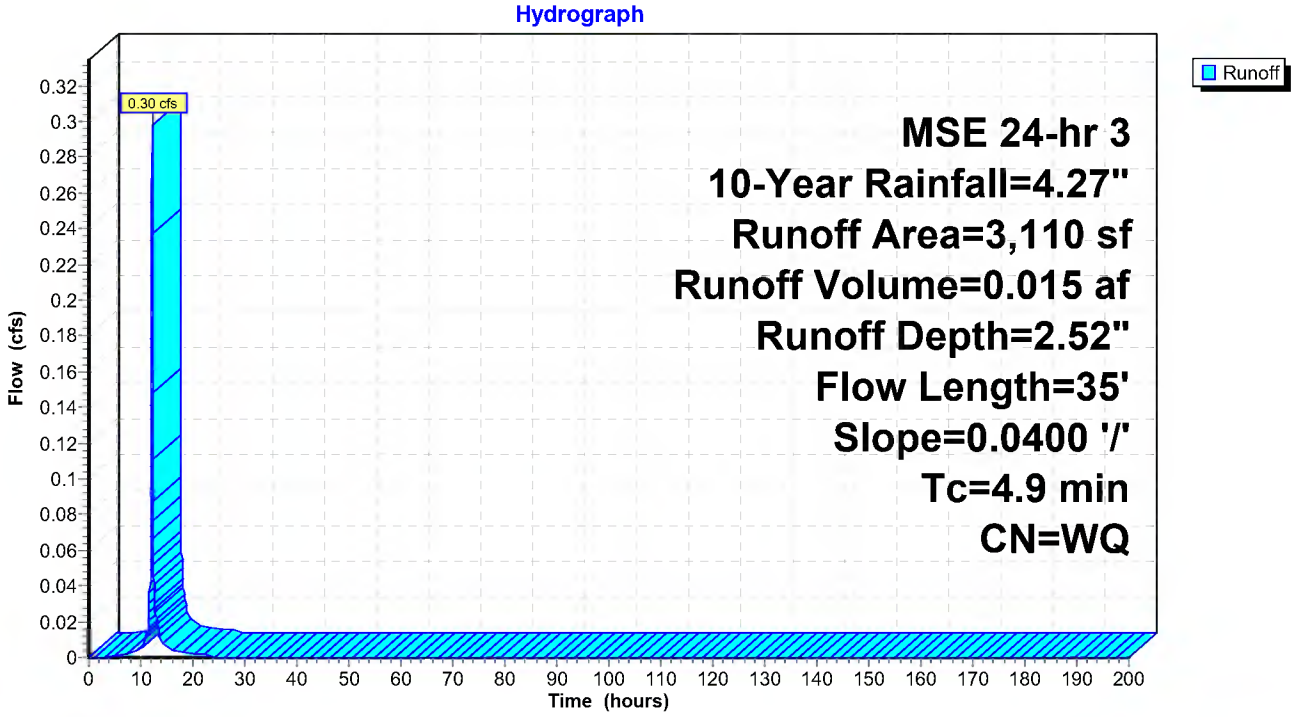
Runoff = 0.30 cfs @ 12.12 hrs, Volume= 0.015 af, Depth= 2.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-200.00 hrs, dt= 0.04 hrs
MSE 24-hr 3 10-Year Rainfall=4.27"

	Area (sf)	CN	Description
	268	74	>75% Grass cover, Good, HSG C
*	1,339	61	Soil Amendment Area
	1,503	98	Unconnected roofs, HSG C
	3,110		Weighted Average
	1,607	63	51.67% Pervious Area
	1,503	98	48.33% Impervious Area
	1,503		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.9	35	0.0400	0.12		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.88"

Subcatchment 6S: To Street



Summary for Subcatchment 7S: (new Subcat)

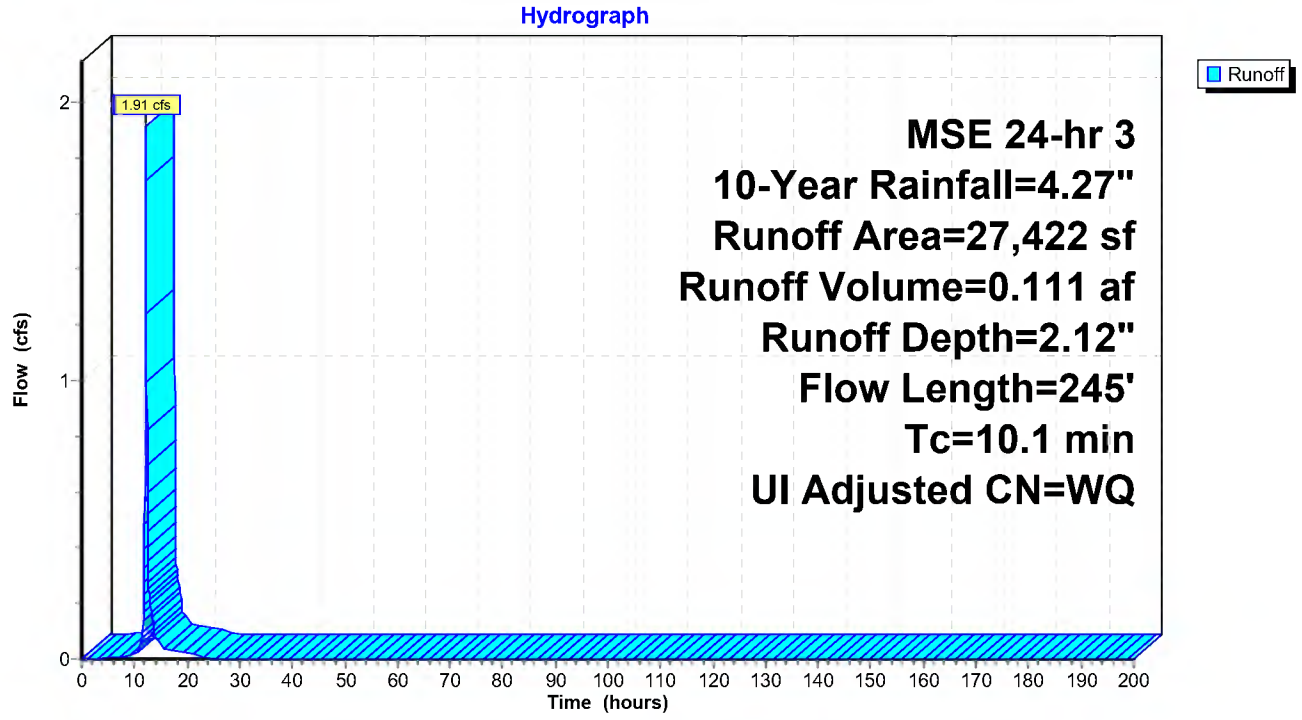
Runoff = 1.91 cfs @ 12.18 hrs, Volume= 0.111 af, Depth= 2.12"
Routed to Pond 2P : RG 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-200.00 hrs, dt= 0.04 hrs
MSE 24-hr 3 10-Year Rainfall=4.27"

	Area (sf)	CN	Adj	Description
	12,301	76	76	Woods/grass comb., Fair, HSG C
*	9,418	65	65	Amended soils
	0	74		>75% Grass cover, Good, HSG C
	5,703	98	98	Unconnected roofs, HSG C
	27,422			Weighted Average
	21,719	71	71	79.20% Pervious Area
	5,703	98	98	20.80% Impervious Area
	5,703			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.1	100	0.0700	0.18		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.88"
1.0	145	0.1300	2.52		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
10.1	245	Total			

Subcatchment 7S: (new Subcat)



Summary for Subcatchment 8S: To North

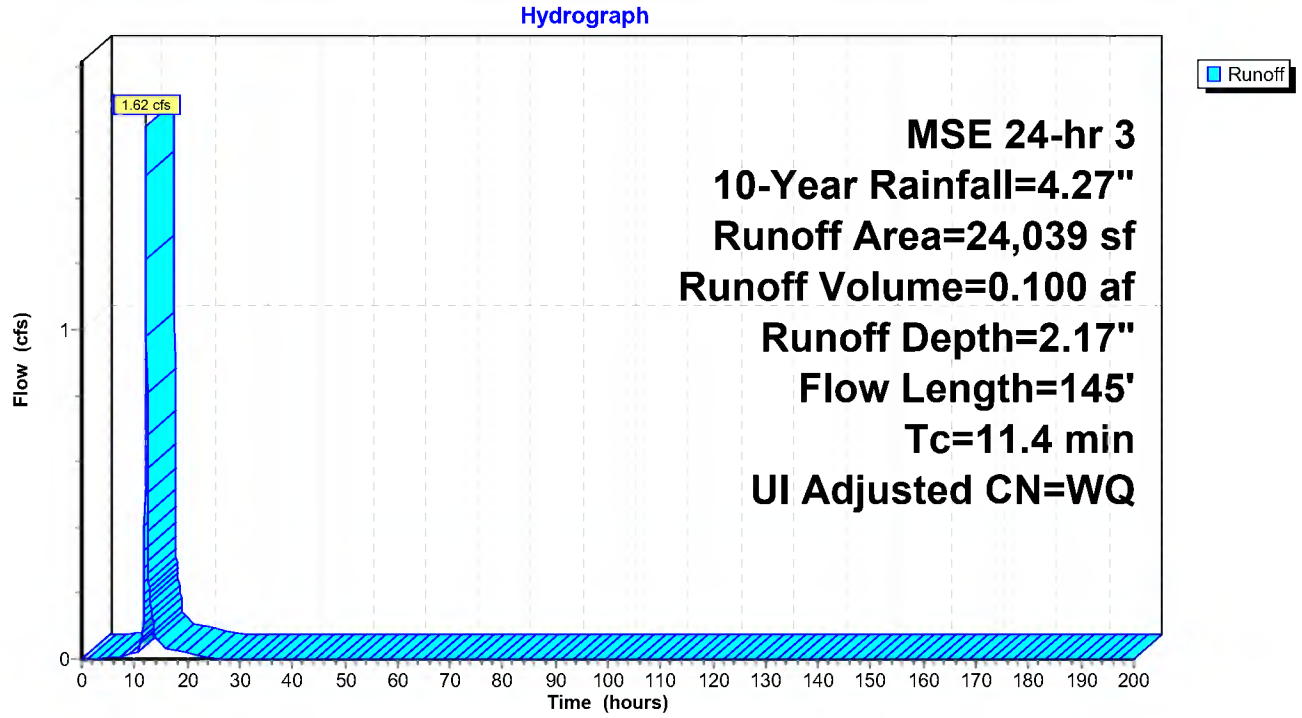
Runoff = 1.62 cfs @ 12.20 hrs, Volume= 0.100 af, Depth= 2.17"
Routed to Pond 3P : RG 3

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-200.00 hrs, dt= 0.04 hrs
MSE 24-hr 3 10-Year Rainfall=4.27"

	Area (sf)	CN	Adj	Description
	9,546	76	76	Woods/grass comb., Fair, HSG C
*	8,790	65	65	Amended Soils
	0	74		>75% Grass cover, Good, HSG C
	5,703	98	98	Unconnected roofs, HSG C
	24,039			Weighted Average
	18,336	71	71	76.28% Pervious Area
	5,703	98	98	23.72% Impervious Area
	5,703			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.1	100	0.0430	0.15		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.88"
0.3	45	0.1400	2.62		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
11.4	145	Total			

Subcatchment 8S: To North



Summary for Pond 1P: RG 1

Inflow Area = 0.403 ac, 23.92% Impervious, Inflow Depth = 2.39" for 10-Year event
Inflow = 1.50 cfs @ 12.16 hrs, Volume= 0.080 af
Outflow = 1.28 cfs @ 12.21 hrs, Volume= 0.080 af, Atten= 15%, Lag= 3.3 min
Discarded = 0.01 cfs @ 12.21 hrs, Volume= 0.033 af
Primary = 1.27 cfs @ 12.21 hrs, Volume= 0.047 af
Routed to Pond 4P : Offsite to East

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.04 hrs / 3
Peak Elev= 946.15' @ 12.21 hrs Surf.Area= 1,242 sf Storage= 1,156 cf

Plug-Flow detention time= 511.5 min calculated for 0.080 af (100% of inflow)
Center-of-Mass det. time= 514.0 min (1,303.4 - 789.4)

Volume	Invert	Avail.Storage	Storage Description
#1	945.00'	2,370 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

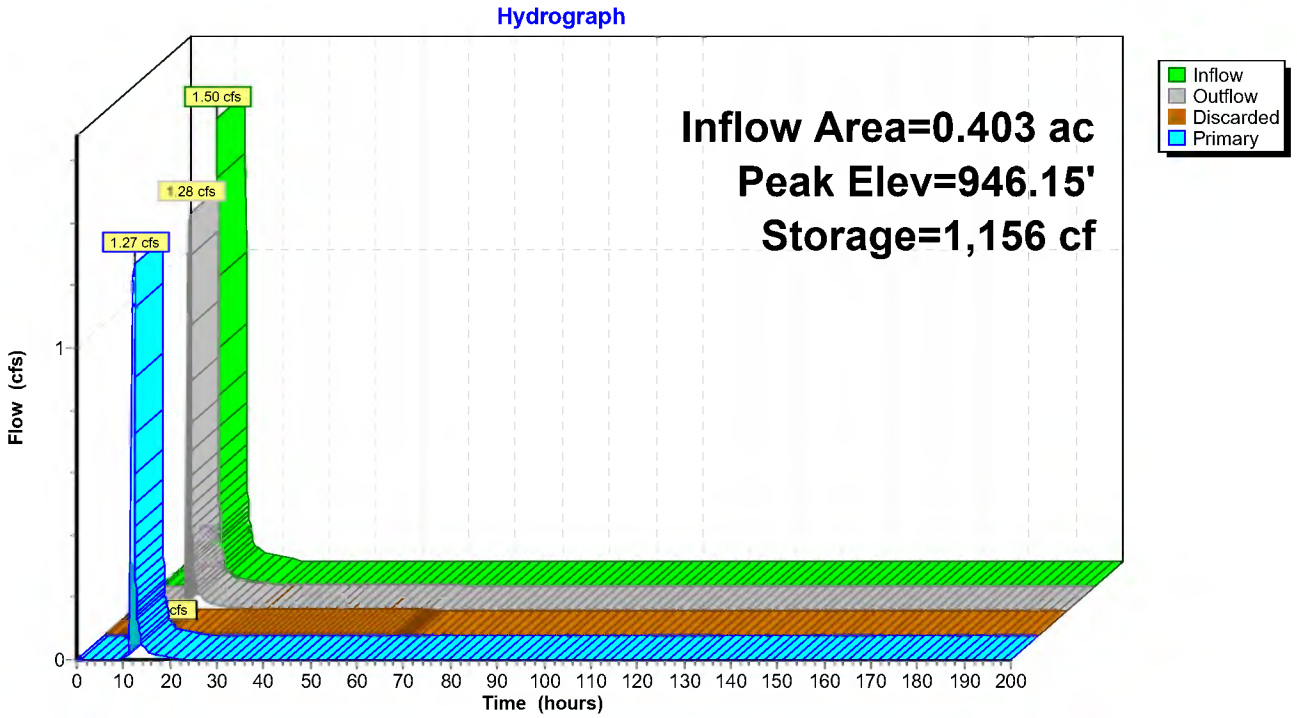
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
945.00	775	0	0
946.00	1,170	973	973
946.20	1,265	244	1,216
947.00	1,620	1,154	2,370

Device	Routing	Invert	Outlet Devices
#1	Discarded	945.00'	**0.300 in/hr Exfiltration over Surface area**
#2	Primary	946.00'	**EOF, Cv= 2.62 (C= 3.28)**
			Head (feet) 1.00 1.20 2.00
			Width (feet) 5.00 10.00 65.00

Discarded OutFlow Max=0.01 cfs @ 12.21 hrs HW=946.15' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=1.19 cfs @ 12.21 hrs HW=946.15' (Free Discharge)
↑—**2=EOF** (Weir Controls 1.19 cfs @ 1.19 fps)

Pond 1P: RG 1


Hydrograph
Inflow Area=0.403 ac
Peak Elev=946.15'
Storage=1,156 cf
1.50 cfs
1.28 cfs
1.27 cfs
cfs
Inflow
Outflow
Discarded
Primary
Flow (cfs)
0
1
0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200
Time (hours)

Stage-Discharge for Pond 1P: RG 1

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
945.00	0.00	0.00	0.00	946.02	0.06	0.01	0.05
945.02	0.01	0.01	0.00	946.04	0.15	0.01	0.14
945.04	0.01	0.01	0.00	946.06	0.28	0.01	0.27
945.06	0.01	0.01	0.00	946.08	0.44	0.01	0.43
945.08	0.01	0.01	0.00	946.10	0.63	0.01	0.62
945.10	0.01	0.01	0.00	946.12	0.85	0.01	0.84
945.12	0.01	0.01	0.00	946.14	1.11	0.01	1.10
945.14	0.01	0.01	0.00	946.16	1.39	0.01	1.38
945.16	0.01	0.01	0.00	946.18	1.71	0.01	1.70
945.18	0.01	0.01	0.00	946.20	2.06	0.01	2.05
945.20	0.01	0.01	0.00	946.22	2.45	0.01	2.44
945.22	0.01	0.01	0.00	946.24	2.88	0.01	2.87
945.24	0.01	0.01	0.00	946.26	3.36	0.01	3.35
945.26	0.01	0.01	0.00	946.28	3.90	0.01	3.89
945.28	0.01	0.01	0.00	946.30	4.50	0.01	4.49
945.30	0.01	0.01	0.00	946.32	5.16	0.01	5.15
945.32	0.01	0.01	0.00	946.34	5.88	0.01	5.87
945.34	0.01	0.01	0.00	946.36	6.68	0.01	6.67
945.36	0.01	0.01	0.00	946.38	7.55	0.01	7.54
945.38	0.01	0.01	0.00	946.40	8.49	0.01	8.48
945.40	0.01	0.01	0.00	946.42	9.51	0.01	9.50
945.42	0.01	0.01	0.00	946.44	10.61	0.01	10.60
945.44	0.01	0.01	0.00	946.46	11.79	0.01	11.78
945.46	0.01	0.01	0.00	946.48	13.06	0.01	13.05
945.48	0.01	0.01	0.00	946.50	14.41	0.01	14.40
945.50	0.01	0.01	0.00	946.52	15.86	0.01	15.85
945.52	0.01	0.01	0.00	946.54	17.39	0.01	17.38
945.54	0.01	0.01	0.00	946.56	19.01	0.01	19.00
945.56	0.01	0.01	0.00	946.58	20.74	0.01	20.73
945.58	0.01	0.01	0.00	946.60	22.55	0.01	22.54
945.60	0.01	0.01	0.00	946.62	24.47	0.01	24.46
945.62	0.01	0.01	0.00	946.64	26.49	0.01	26.48
945.64	0.01	0.01	0.00	946.66	28.61	0.01	28.59
945.66	0.01	0.01	0.00	946.68	30.83	0.01	30.82
945.68	0.01	0.01	0.00	946.70	33.16	0.01	33.15
945.70	0.01	0.01	0.00	946.72	35.60	0.01	35.59
945.72	0.01	0.01	0.00	946.74	38.14	0.01	38.13
945.74	0.01	0.01	0.00	946.76	40.80	0.01	40.79
945.76	0.01	0.01	0.00	946.78	43.57	0.01	43.56
945.78	0.01	0.01	0.00	946.80	46.46	0.01	46.45
945.80	0.01	0.01	0.00	946.82	49.46	0.01	49.45
945.82	0.01	0.01	0.00	946.84	52.58	0.01	52.57
945.84	0.01	0.01	0.00	946.86	55.81	0.01	55.80
945.86	0.01	0.01	0.00	946.88	59.17	0.01	59.16
945.88	0.01	0.01	0.00	946.90	62.65	0.01	62.64
945.90	0.01	0.01	0.00	946.92	66.26	0.01	66.25
945.92	0.01	0.01	0.00	946.94	69.99	0.01	69.98
945.94	0.01	0.01	0.00	946.96	73.85	0.01	73.83
945.96	0.01	0.01	0.00	946.98	77.83	0.01	77.82
945.98	0.01	0.01	0.00	947.00	**81.94**	**0.01**	**81.93**
946.00	0.01	0.01	0.00				

Stage-Area-Storage for Pond 1P: RG 1

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
945.00	775	0	946.02	1,179	996
945.02	783	16	946.04	1,189	1,020
945.04	791	31	946.06	1,198	1,044
945.06	799	47	946.08	1,208	1,068
945.08	807	63	946.10	1,218	1,092
945.10	815	79	946.12	1,227	1,116
945.12	822	96	946.14	1,236	1,141
945.14	830	112	946.16	1,246	1,166
945.16	838	129	946.18	1,255	1,191
945.18	846	146	946.20	1,265	1,216
945.20	854	163	946.22	1,274	1,241
945.22	862	180	946.24	1,283	1,267
945.24	870	197	946.26	1,292	1,293
945.26	878	215	946.28	1,300	1,319
945.28	886	232	946.30	1,309	1,345
945.30	893	250	946.32	1,318	1,371
945.32	901	268	946.34	1,327	1,397
945.34	909	286	946.36	1,336	1,424
945.36	917	305	946.38	1,345	1,451
945.38	925	323	946.40	1,354	1,478
945.40	933	342	946.42	1,363	1,505
945.42	941	360	946.44	1,372	1,532
945.44	949	379	946.46	1,380	1,560
945.46	957	398	946.48	1,389	1,588
945.48	965	418	946.50	1,398	1,615
945.50	973	437	946.52	1,407	1,644
945.52	980	456	946.54	1,416	1,672
945.54	988	476	946.56	1,425	1,700
945.56	996	496	946.58	1,434	1,729
945.58	1,004	516	946.60	1,443	1,758
945.60	1,012	536	946.62	1,451	1,786
945.62	1,020	556	946.64	1,460	1,816
945.64	1,028	577	946.66	1,469	1,845
945.66	1,036	598	946.68	1,478	1,874
945.68	1,044	618	946.70	1,487	1,904
945.70	1,052	639	946.72	1,496	1,934
945.72	1,059	660	946.74	1,505	1,964
945.74	1,067	682	946.76	1,513	1,994
945.76	1,075	703	946.78	1,522	2,024
945.78	1,083	725	946.80	1,531	2,055
945.80	1,091	746	946.82	1,540	2,086
945.82	1,099	768	946.84	1,549	2,116
945.84	1,107	790	946.86	1,558	2,148
945.86	1,115	813	946.88	1,567	2,179
945.88	1,123	835	946.90	1,576	2,210
945.90	1,130	857	946.92	1,584	2,242
945.92	1,138	880	946.94	1,593	2,274
945.94	1,146	903	946.96	1,602	2,306
945.96	1,154	926	946.98	1,611	2,338
945.98	1,162	949	947.00	**1,620**	**2,370**
946.00	1,170	973			

Summary for Pond 2P: RG 2

Inflow Area = 0.630 ac, 20.80% Impervious, Inflow Depth = 2.12" for 10-Year event
Inflow = 1.91 cfs @ 12.18 hrs, Volume= 0.111 af
Outflow = 0.45 cfs @ 12.53 hrs, Volume= 0.111 af, Atten= 76%, Lag= 21.3 min
Discarded = 0.02 cfs @ 12.53 hrs, Volume= 0.078 af
Primary = 0.43 cfs @ 12.53 hrs, Volume= 0.033 af
Routed to Pond 27P : out

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.04 hrs
Peak Elev= 932.08' @ 12.53 hrs Surf.Area= 1,561 sf Storage= 2,503 cf

Plug-Flow detention time= 866.0 min calculated for 0.111 af (100% of inflow)
Center-of-Mass det. time= 866.3 min (1,661.2 - 794.9)

Volume	Invert	Avail.Storage	Storage Description
#1	930.00'	4,308 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

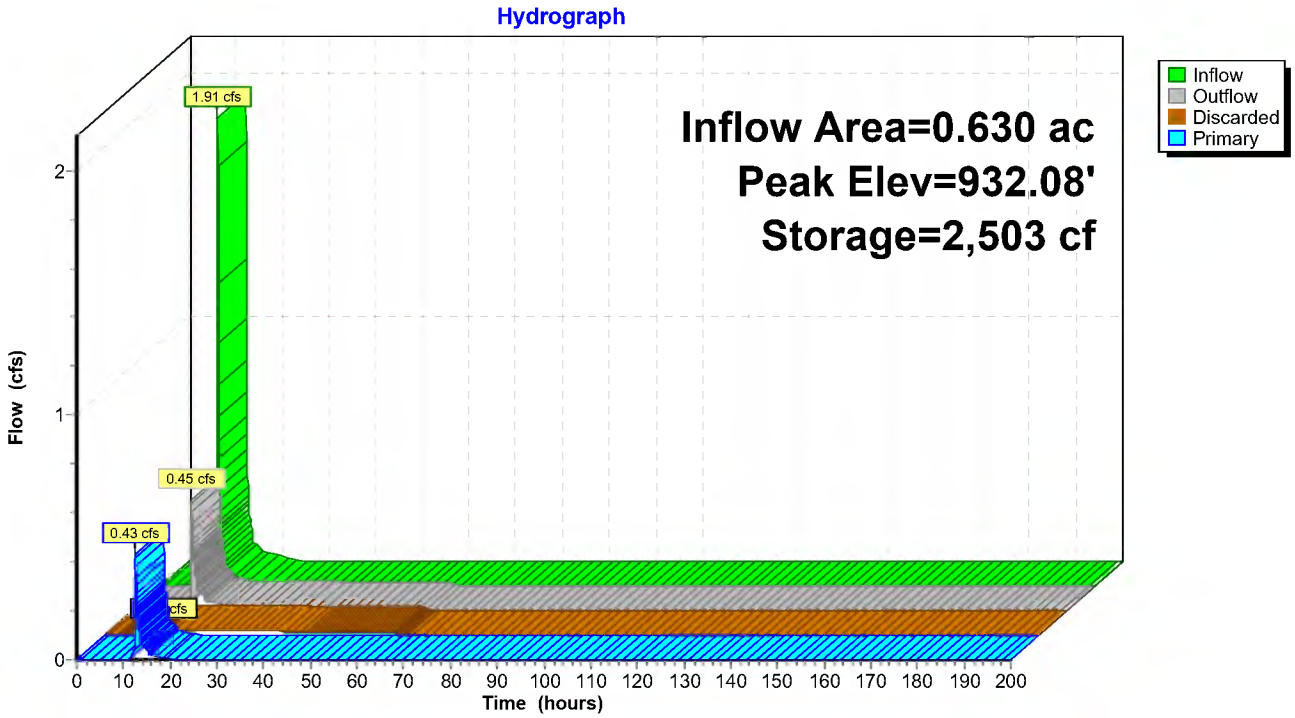
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
930.00	860	0	0
931.00	1,240	1,050	1,050
932.00	1,430	1,335	2,385
932.20	1,760	319	2,704
933.00	2,250	1,604	4,308

Device	Routing	Invert	Outlet Devices
#1	Discarded	930.00'	**0.600 in/hr Exfiltration over Surface area**
#2	Primary	932.00'	**Custom Weir/Orifice, Cv= 2.62 (C= 3.28)**
			Head (feet) 1.00 1.20 2.00
			Width (feet) 5.00 10.00 30.00

Discarded OutFlow Max=0.02 cfs @ 12.53 hrs HW=932.08' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=0.42 cfs @ 12.53 hrs HW=932.08' (Free Discharge)
↑**2=Custom Weir/Orifice** (Weir Controls 0.42 cfs @ 0.89 fps)

Pond 2P: RG 2


Hydrograph
Inflow Area=0.630 ac
Peak Elev=932.08'
Storage=2,503 cf
1.91 cfs
0.45 cfs
0.43 cfs
Inflow
Outflow
Discarded
Primary
Flow (cfs)
Time (hours)
0
1
2
0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200

Stage-Discharge for Pond 2P: RG 2

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
930.00	0.00	0.00	0.00
930.05	0.01	0.01	0.00
930.10	0.01	0.01	0.00
930.15	0.01	0.01	0.00
930.20	0.01	0.01	0.00
930.25	0.01	0.01	0.00
930.30	0.01	0.01	0.00
930.35	0.01	0.01	0.00
930.40	0.01	0.01	0.00
930.45	0.01	0.01	0.00
930.50	0.01	0.01	0.00
930.55	0.01	0.01	0.00
930.60	0.02	0.02	0.00
930.65	0.02	0.02	0.00
930.70	0.02	0.02	0.00
930.75	0.02	0.02	0.00
930.80	0.02	0.02	0.00
930.85	0.02	0.02	0.00
930.90	0.02	0.02	0.00
930.95	0.02	0.02	0.00
931.00	0.02	0.02	0.00
931.05	0.02	0.02	0.00
931.10	0.02	0.02	0.00
931.15	0.02	0.02	0.00
931.20	0.02	0.02	0.00
931.25	0.02	0.02	0.00
931.30	0.02	0.02	0.00
931.35	0.02	0.02	0.00
931.40	0.02	0.02	0.00
931.45	0.02	0.02	0.00
931.50	0.02	0.02	0.00
931.55	0.02	0.02	0.00
931.60	0.02	0.02	0.00
931.65	0.02	0.02	0.00
931.70	0.02	0.02	0.00
931.75	0.02	0.02	0.00
931.80	0.02	0.02	0.00
931.85	0.02	0.02	0.00
931.90	0.02	0.02	0.00
931.95	0.02	0.02	0.00
932.00	0.02	0.02	0.00
932.05	0.22	0.02	0.20
932.10	0.64	0.02	0.62
932.15	1.26	0.02	1.24
932.20	2.07	0.02	2.05
932.25	3.10	0.02	3.07
932.30	4.33	0.03	4.31
932.35	5.79	0.03	5.76
932.40	7.48	0.03	7.46
932.45	9.42	0.03	9.39
932.50	11.61	0.03	11.58
932.55	14.05	0.03	14.03
932.60	16.77	0.03	16.74
932.65	19.77	0.03	19.74
932.70	23.05	0.03	23.02
932.75	26.62	0.03	26.59
932.80	30.49	0.03	30.46
932.85	34.68	0.03	34.65
932.90	39.18	0.03	39.15
932.95	44.00	0.03	43.97
933.00	**49.16**	**0.03**	**49.13**

Stage-Area-Storage for Pond 2P: RG 2

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
930.00	860	0
930.05	879	43
930.10	898	88
930.15	917	133
930.20	936	180
930.25	955	227
930.30	974	275
930.35	993	324
930.40	1,012	374
930.45	1,031	425
930.50	1,050	478
930.55	1,069	530
930.60	1,088	584
930.65	1,107	639
930.70	1,126	695
930.75	1,145	752
930.80	1,164	810
930.85	1,183	868
930.90	1,202	928
930.95	1,221	988
931.00	1,240	1,050
931.05	1,249	1,112
931.10	1,259	1,175
931.15	1,268	1,238
931.20	1,278	1,302
931.25	1,288	1,366
931.30	1,297	1,431
931.35	1,307	1,496
931.40	1,316	1,561
931.45	1,326	1,627
931.50	1,335	1,694
931.55	1,344	1,761
931.60	1,354	1,828
931.65	1,363	1,896
931.70	1,373	1,965
931.75	1,383	2,033
931.80	1,392	2,103
931.85	1,402	2,173
931.90	1,411	2,243
931.95	1,421	2,314
932.00	1,430	2,385
932.05	1,512	2,459
932.10	1,595	2,536
932.15	1,677	2,618
932.20	1,760	2,704
932.25	1,791	2,793
932.30	1,821	2,883
932.35	1,852	2,975
932.40	1,882	3,068
932.45	1,913	3,163
932.50	1,944	3,260
932.55	1,974	3,358
932.60	2,005	3,457
932.65	2,036	3,558
932.70	2,066	3,661
932.75	2,097	3,765
932.80	2,127	3,870
932.85	2,158	3,977
932.90	2,189	4,086
932.95	2,219	4,196
933.00	**2,250**	**4,308**

Summary for Pond 3P: RG 3

Inflow Area = 0.552 ac, 23.72% Impervious, Inflow Depth = 2.17" for 10-Year event
Inflow = 1.62 cfs @ 12.20 hrs, Volume= 0.100 af
Outflow = 1.00 cfs @ 12.33 hrs, Volume= 0.099 af, Atten= 38%, Lag= 8.1 min
Discarded = 0.02 cfs @ 12.33 hrs, Volume= 0.055 af
Primary = 0.98 cfs @ 12.33 hrs, Volume= 0.044 af
Routed to Pond 27P : out

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.04 hrs / 2
Peak Elev= 923.63' @ 12.33 hrs Surf.Area= 1,304 sf Storage= 1,735 cf

Plug-Flow detention time= 616.3 min calculated for 0.099 af (100% of inflow)
Center-of-Mass det. time= 616.1 min (1,409.3 - 793.2)

Volume	Invert	Avail.Storage	Storage Description
#1	921.50'	3,837 cf	**Custom Stage Data (Conic)** Listed below (Recalc)

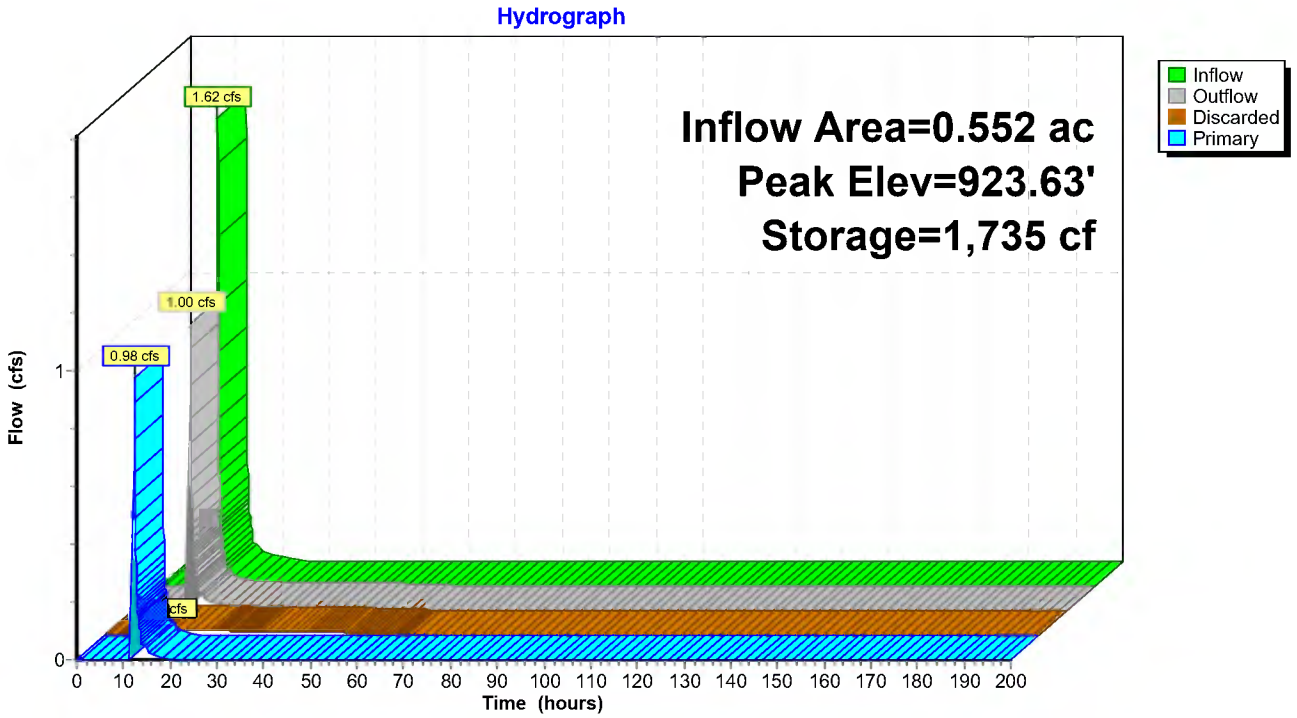
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
921.50	440	0	0	440
922.00	630	266	266	634
922.30	725	203	469	733
922.50	800	152	622	811
923.00	890	422	1,044	914
923.50	1,210	523	1,567	1,240
923.90	1,500	541	2,108	1,534
924.00	1,575	154	2,262	1,610
925.00	1,575	1,575	3,837	1,751

Device	Routing	Invert	Outlet Devices
#1	Discarded	921.50'	**0.600 in/hr Exfiltration over Surface area**
#2	Primary	923.50'	**Custom Weir/Orifice, Cv= 2.62 (C= 3.28)**
			Head (feet) 2.00 2.25 2.50 2.75
			Width (feet) 5.00 10.00 40.00 50.00

Discarded OutFlow Max=0.02 cfs @ 12.33 hrs HW=923.63' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=0.94 cfs @ 12.33 hrs HW=923.63' (Free Discharge)
↑—**2=Custom Weir/Orifice** (Weir Controls 0.94 cfs @ 1.14 fps)

Pond 3P: RG 3


Hydrograph
Inflow Area=0.552 ac
Peak Elev=923.63'
Storage=1,735 cf
1.62 cfs
1.00 cfs
0.98 cfs
Inflow
Outflow
Discarded
Primary
Flow (cfs)
Time (hours)
0
1
0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200

Stage-Discharge for Pond 3P: RG 3

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
921.50	0.00	0.00	0.00
921.55	0.01	0.01	0.00
921.60	0.01	0.01	0.00
921.65	0.01	0.01	0.00
921.70	0.01	0.01	0.00
921.75	0.01	0.01	0.00
921.80	0.01	0.01	0.00
921.85	0.01	0.01	0.00
921.90	0.01	0.01	0.00
921.95	0.01	0.01	0.00
922.00	0.01	0.01	0.00
922.05	0.01	0.01	0.00
922.10	0.01	0.01	0.00
922.15	0.01	0.01	0.00
922.20	0.01	0.01	0.00
922.25	0.01	0.01	0.00
922.30	0.01	0.01	0.00
922.35	0.01	0.01	0.00
922.40	0.01	0.01	0.00
922.45	0.01	0.01	0.00
922.50	0.01	0.01	0.00
922.55	0.01	0.01	0.00
922.60	0.01	0.01	0.00
922.65	0.01	0.01	0.00
922.70	0.01	0.01	0.00
922.75	0.01	0.01	0.00
922.80	0.01	0.01	0.00
922.85	0.01	0.01	0.00
922.90	0.01	0.01	0.00
922.95	0.01	0.01	0.00
923.00	0.01	0.01	0.00
923.05	0.01	0.01	0.00
923.10	0.01	0.01	0.00
923.15	0.01	0.01	0.00
923.20	0.01	0.01	0.00
923.25	0.01	0.01	0.00
923.30	0.01	0.01	0.00
923.35	0.02	0.02	0.00
923.40	0.02	0.02	0.00
923.45	0.02	0.02	0.00
923.50	0.02	0.02	0.00
923.55	0.22	0.02	0.20
923.60	0.62	0.02	0.60
923.65	1.20	0.02	1.18
923.70	1.95	0.02	1.93
923.75	2.88	0.02	2.87
923.80	4.08	0.02	4.06
923.85	5.72	0.02	5.70
923.90	7.96	0.02	7.94
923.95	10.87	0.02	10.85
924.00	14.54	**0.02**	14.51
924.05	18.98	0.02	18.96
924.10	24.10	0.02	24.08
924.15	29.87	0.02	29.85
924.20	36.27	0.02	36.25
924.25	43.30	0.02	43.28
924.30	49.10	0.02	49.08
924.35	53.90	0.02	53.88
924.40	58.18	0.02	58.16
924.45	62.12	0.02	62.09
924.50	65.78	0.02	65.76
924.55	69.23	0.02	69.21
924.60	72.50	0.02	72.47
924.65	75.61	0.02	75.59
924.70	78.60	0.02	78.58
924.75	81.47	0.02	81.44
924.80	84.23	0.02	84.21
924.85	86.91	0.02	86.89
924.90	89.50	0.02	89.48
924.95	92.02	0.02	92.00
925.00	**94.47**	0.02	**94.44**

Stage-Area-Storage for Pond 3P: RG 3

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
921.50	440	0
921.55	457	22
921.60	475	46
921.65	493	70
921.70	512	95
921.75	531	121
921.80	550	148
921.85	569	176
921.90	589	205
921.95	609	235
922.00	630	266
922.05	645	298
922.10	661	331
922.15	677	364
922.20	693	398
922.25	709	433
922.30	725	469
922.35	743	506
922.40	762	544
922.45	781	582
922.50	800	622
922.55	809	662
922.60	818	702
922.65	826	744
922.70	835	785
922.75	844	827
922.80	853	870
922.85	862	912
922.90	872	956
922.95	881	1,000
923.00	890	1,044
923.05	920	1,089
923.10	950	1,136
923.15	981	1,184
923.20	1,012	1,234
923.25	1,044	1,285
923.30	1,076	1,338
923.35	1,109	1,393
923.40	1,142	1,449
923.45	1,176	1,507
923.50	1,210	1,567
923.55	1,245	1,628
923.60	1,280	1,691
923.65	1,315	1,756
923.70	1,351	1,823
923.75	1,388	1,891
923.80	1,425	1,962
923.85	1,462	2,034
923.90	1,500	2,108
923.95	1,537	2,184
924.00	**1,575**	2,262
924.05	1,575	2,340
924.10	1,575	2,419
924.15	1,575	2,498
924.20	1,575	2,577
924.25	1,575	2,655
924.30	1,575	2,734
924.35	1,575	2,813
924.40	1,575	2,892
924.45	1,575	2,970
924.50	1,575	3,049
924.55	1,575	3,128
924.60	1,575	3,207
924.65	1,575	3,285
924.70	1,575	3,364
924.75	1,575	3,443
924.80	1,575	3,522
924.85	1,575	3,600
924.90	1,575	3,679
924.95	1,575	3,758
925.00	1,575	**3,837**

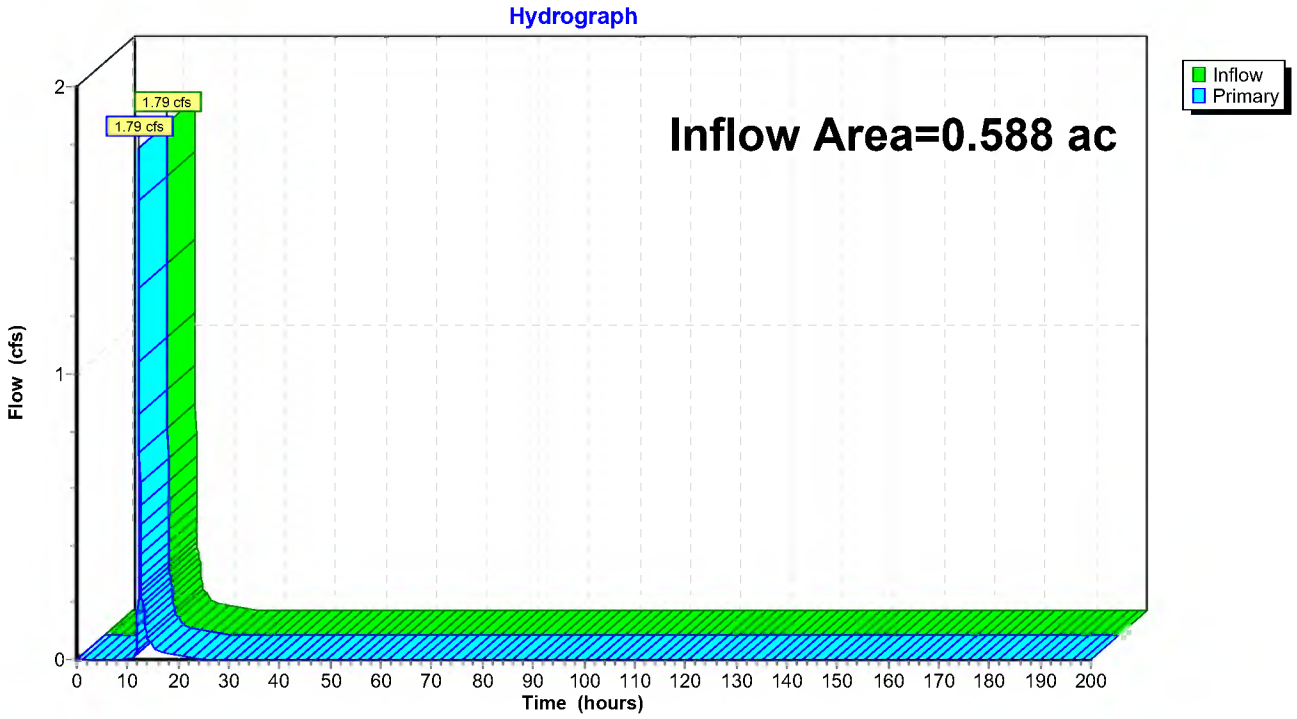
Summary for Pond 4P: Offsite to East

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.588 ac, 16.41% Impervious, Inflow Depth = 1.58" for 10-Year event
Inflow = 1.79 cfs @ 12.21 hrs, Volume= 0.077 af
Primary = 1.79 cfs @ 12.21 hrs, Volume= 0.077 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.04 hrs

Pond 4P: Offsite to East



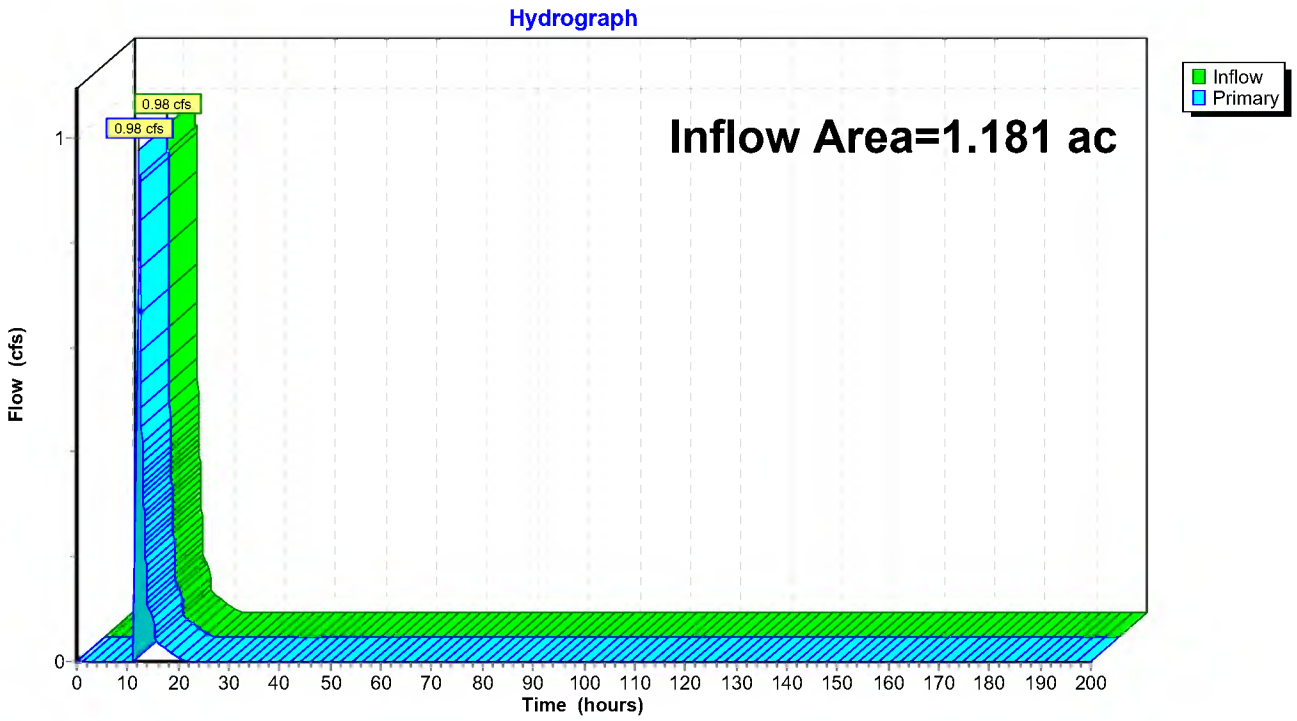
Summary for Pond 27P: out

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.181 ac, 22.16% Impervious, Inflow Depth = 0.79" for 10-Year event
Inflow = 0.98 cfs @ 12.33 hrs, Volume= 0.078 af
Primary = 0.98 cfs @ 12.33 hrs, Volume= 0.078 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.04 hrs

Pond 27P: out



Time span=0.00-200.00 hrs, dt=0.04 hrs, 5001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

Subcatchment4S: (new Subcat) Runoff Area=8,038 sf 0.00% Impervious Runoff Depth>6.48"
Flow Length=100' Slope=0.1200 '/' Tc=11.1 min AMC Adjusted CN=98 Runoff=0.09 cfs 0.100 af

Subcatchment5S: Lot 1 Runoff Area=17,559 sf 23.92% Impervious Runoff Depth>6.48"
Flow Length=100' Slope=0.0850 '/' Tc=8.4 min AMC UI Adjusted CN=WQ Runoff=0.19 cfs 0.218 af

Subcatchment6S: To Street Runoff Area=3,110 sf 48.33% Impervious Runoff Depth>6.48"
Flow Length=35' Slope=0.0400 '/' Tc=4.9 min AMC Adjusted CN=WQ Runoff=0.03 cfs 0.039 af

Subcatchment7S: (new Subcat) Runoff Area=27,422 sf 20.80% Impervious Runoff Depth>6.48"
Flow Length=245' Tc=10.1 min AMC UI Adjusted CN=WQ Runoff=0.30 cfs 0.340 af

Subcatchment8S: To North Runoff Area=24,039 sf 23.72% Impervious Runoff Depth>6.48"
Flow Length=145' Tc=11.4 min AMC UI Adjusted CN=WQ Runoff=0.26 cfs 0.298 af

Pond 1P: RG 1 Peak Elev=946.05' Storage=1,027 cf Inflow=0.19 cfs 0.218 af
Discarded=0.01 cfs 0.107 af Primary=0.18 cfs 0.090 af Outflow=0.19 cfs 0.197 af

Pond 2P: RG 2 Peak Elev=932.06' Storage=2,474 cf Inflow=0.30 cfs 0.340 af
Discarded=0.02 cfs 0.229 af Primary=0.28 cfs 0.081 af Outflow=0.30 cfs 0.310 af

Pond 3P: RG 3 Peak Elev=923.56' Storage=1,635 cf Inflow=0.26 cfs 0.298 af
Discarded=0.02 cfs 0.181 af Primary=0.24 cfs 0.094 af Outflow=0.26 cfs 0.275 af

Pond 4P: Offsite to East Inflow=0.27 cfs 0.190 af
Primary=0.27 cfs 0.190 af

Pond 27P: out Inflow=0.52 cfs 0.175 af
Primary=0.52 cfs 0.175 af

Total Runoff Area = 1.840 ac Runoff Volume = 0.993 af Average Runoff Depth = 6.48"
78.66% Pervious = 1.448 ac 21.34% Impervious = 0.393 ac

Summary for Subcatchment 4S: (new Subcat)

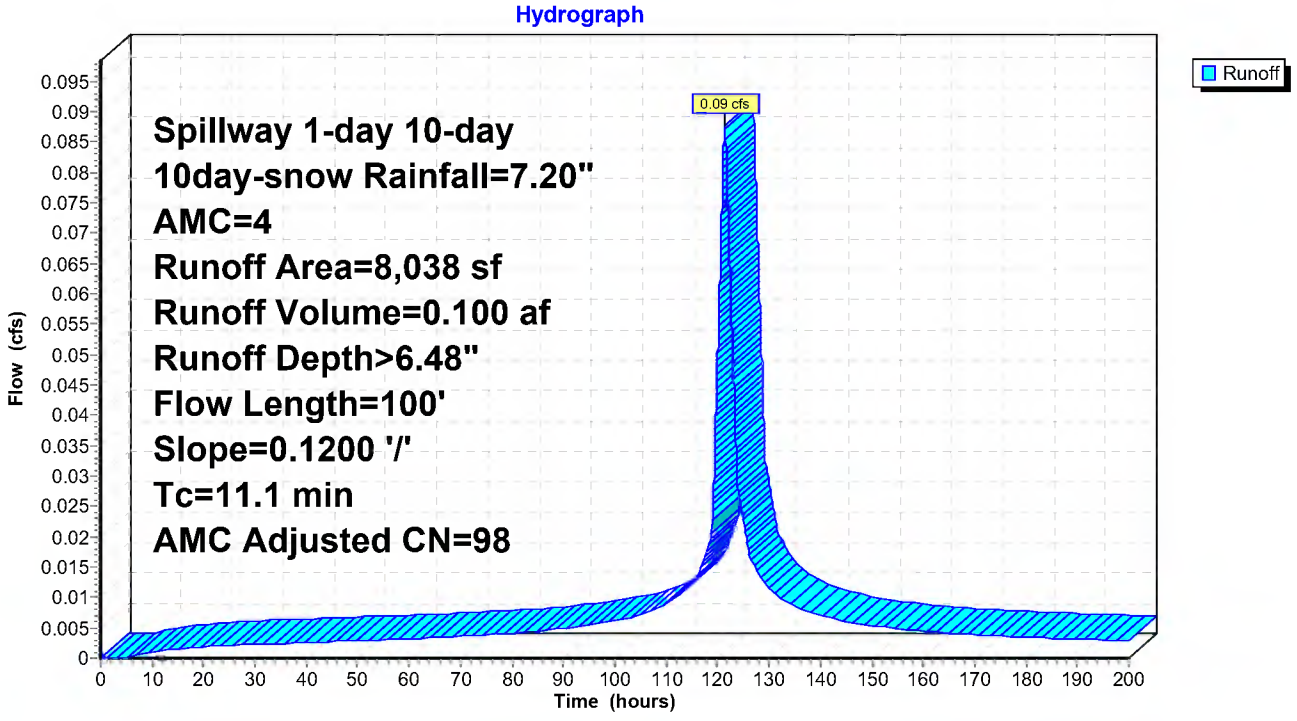
Runoff = 0.09 cfs @ 121.37 hrs, Volume= 0.100 af, Depth> 6.48"
Routed to Pond 4P : Offsite to East

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-200.00 hrs, dt= 0.04 hrs
Spillway 1-day 10-day 10day-snow Rainfall=7.20", AMC=4

Area (sf)	CN	Adj	Description
8,038	76	98	Woods/grass comb., Fair, HSG C
8,038			Weighted Average
8,038	76	98	100.00% Pervious Area, AMC Adjusted

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.1	100	0.1200	0.15		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.88"

Subcatchment 4S: (new Subcat)



Summary for Subcatchment 5S: Lot 1

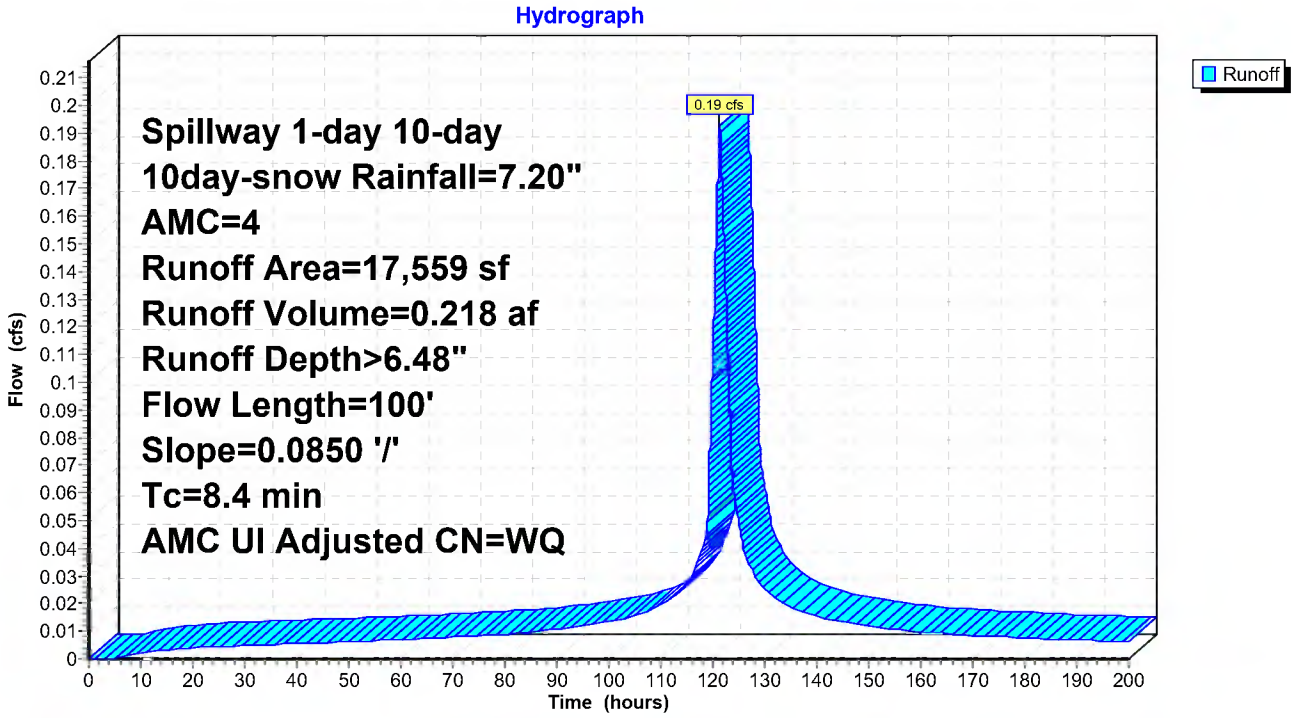
Runoff = 0.19 cfs @ 121.34 hrs, Volume= 0.218 af, Depth> 6.48"
Routed to Pond 1P : RG 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-200.00 hrs, dt= 0.04 hrs
Spillway 1-day 10-day 10day-snow Rainfall=7.20", AMC=4

Area (sf)	CN	Adj	Description
7,115	76	98	Woods/grass comb., Fair, HSG C
6,244	74	98	>75% Grass cover, Good, HSG C
4,200	98	98	Unconnected roofs, HSG C
17,559			Weighted Average
13,359	75	98	76.08% Pervious Area, AMC Adjusted
4,200	98	98	23.92% Impervious Area, AMC Adjusted
4,200			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.4	100	0.0850	0.20		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.88"

Subcatchment 5S: Lot 1



Summary for Subcatchment 6S: To Street

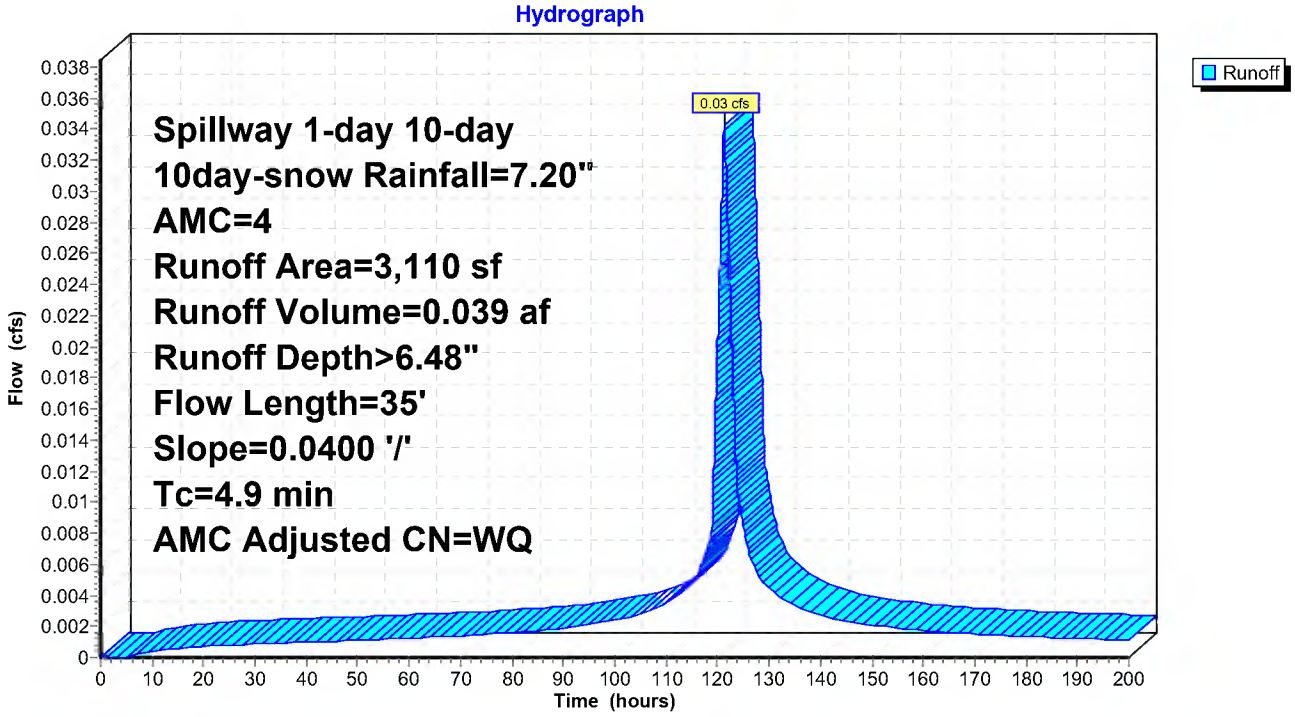
Runoff = 0.03 cfs @ 121.29 hrs, Volume= 0.039 af, Depth> 6.48"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-200.00 hrs, dt= 0.04 hrs
Spillway 1-day 10-day 10day-snow Rainfall=7.20", AMC=4

	Area (sf)	CN	Adj	Description
	268	74	98	>75% Grass cover, Good, HSG C
*	1,339	61	98	Soil Amendment Area
	1,503	98	98	Unconnected roofs, HSG C
	3,110			Weighted Average
	1,607	63	98	51.67% Pervious Area, AMC Adjusted
	1,503	98	98	48.33% Impervious Area, AMC Adjusted
	1,503			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.9	35	0.0400	0.12		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.88"

Subcatchment 6S: To Street



Summary for Subcatchment 7S: (new Subcat)

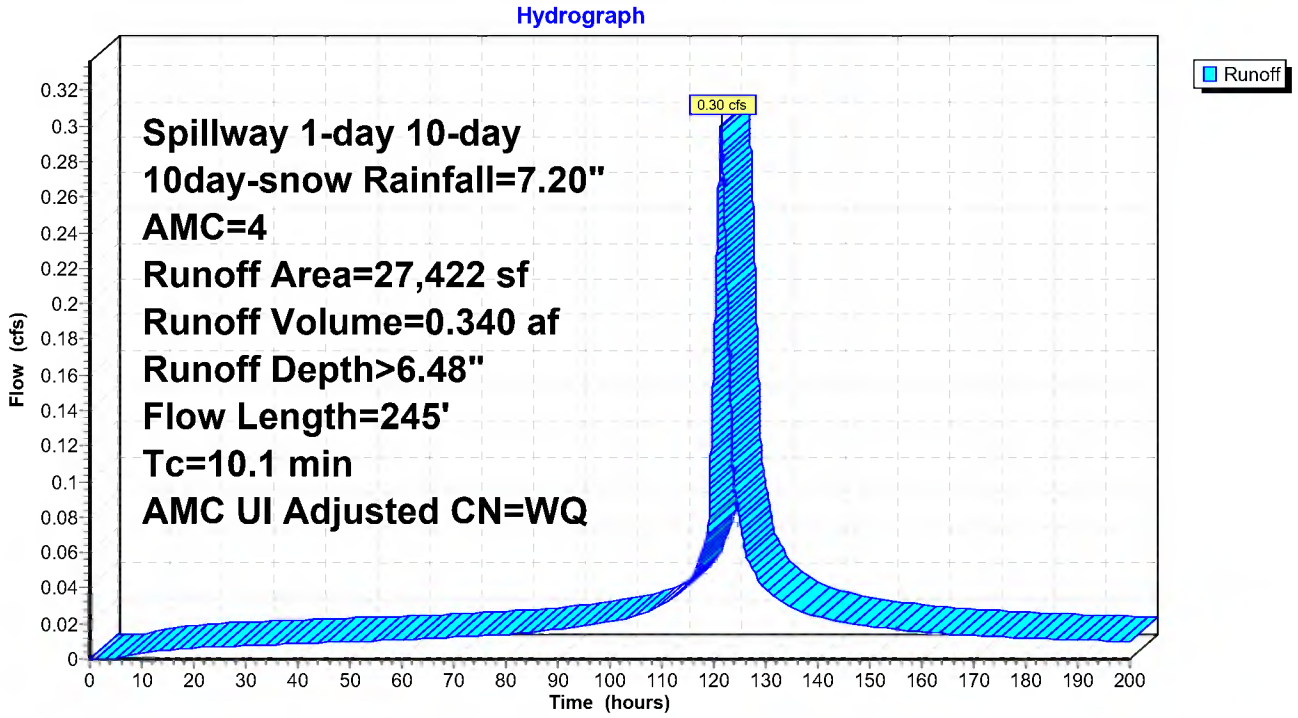
Runoff = 0.30 cfs @ 121.36 hrs, Volume= 0.340 af, Depth> 6.48"
Routed to Pond 2P : RG 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-200.00 hrs, dt= 0.04 hrs
Spillway 1-day 10-day 10day-snow Rainfall=7.20", AMC=4

	Area (sf)	CN	Adj	Description
	12,301	76	98	Woods/grass comb., Fair, HSG C
*	9,418	65	98	Amended soils
	0	74	98	>75% Grass cover, Good, HSG C
	5,703	98	98	Unconnected roofs, HSG C
	27,422			Weighted Average
	21,719	71	98	79.20% Pervious Area, AMC Adjusted
	5,703	98	98	20.80% Impervious Area, AMC Adjusted
	5,703			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.1	100	0.0700	0.18		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.88"
1.0	145	0.1300	2.52		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
10.1	245	Total			

Subcatchment 7S: (new Subcat)



Summary for Subcatchment 8S: To North

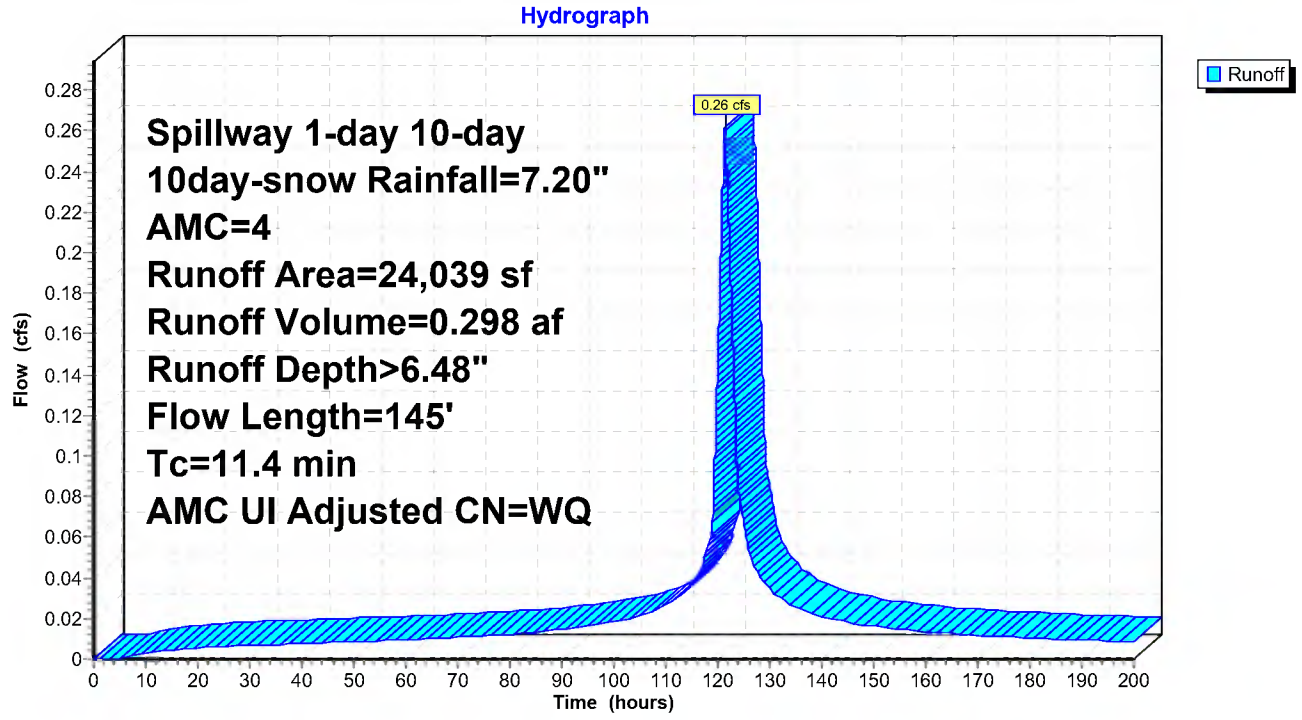
Runoff = 0.26 cfs @ 121.38 hrs, Volume= 0.298 af, Depth> 6.48"
Routed to Pond 3P : RG 3

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-200.00 hrs, dt= 0.04 hrs
Spillway 1-day 10-day 10day-snow Rainfall=7.20", AMC=4

	Area (sf)	CN	Adj	Description
	9,546	76	98	Woods/grass comb., Fair, HSG C
*	8,790	65	98	Amended Soils
	0	74	98	>75% Grass cover, Good, HSG C
	5,703	98	98	Unconnected roofs, HSG C
	24,039			Weighted Average
	18,336	71	98	76.28% Pervious Area, AMC Adjusted
	5,703	98	98	23.72% Impervious Area, AMC Adjusted
	5,703			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.1	100	0.0430	0.15		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.88"
0.3	45	0.1400	2.62		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
11.4	145	Total			

Subcatchment 8S: To North



Summary for Pond 1P: RG 1

Inflow Area = 0.403 ac, 23.92% Impervious, Inflow Depth > 6.48" for 10day-snow event
Inflow = 0.19 cfs @ 121.34 hrs, Volume= 0.218 af
Outflow = 0.19 cfs @ 121.39 hrs, Volume= 0.197 af, Atten= 1%, Lag= 3.1 min
Discarded = 0.01 cfs @ 121.39 hrs, Volume= 0.107 af
Primary = 0.18 cfs @ 121.39 hrs, Volume= 0.090 af
Routed to Pond 4P : Offsite to East

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.04 hrs / 3
Peak Elev= 946.05' @ 121.39 hrs Surf.Area= 1,192 sf Storage= 1,027 cf

Plug-Flow detention time= 624.1 min calculated for 0.197 af (91% of inflow)
Center-of-Mass det. time= 215.9 min (7,207.3 - 6,991.4)

Volume	Invert	Avail.Storage	Storage Description
#1	945.00'	2,370 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

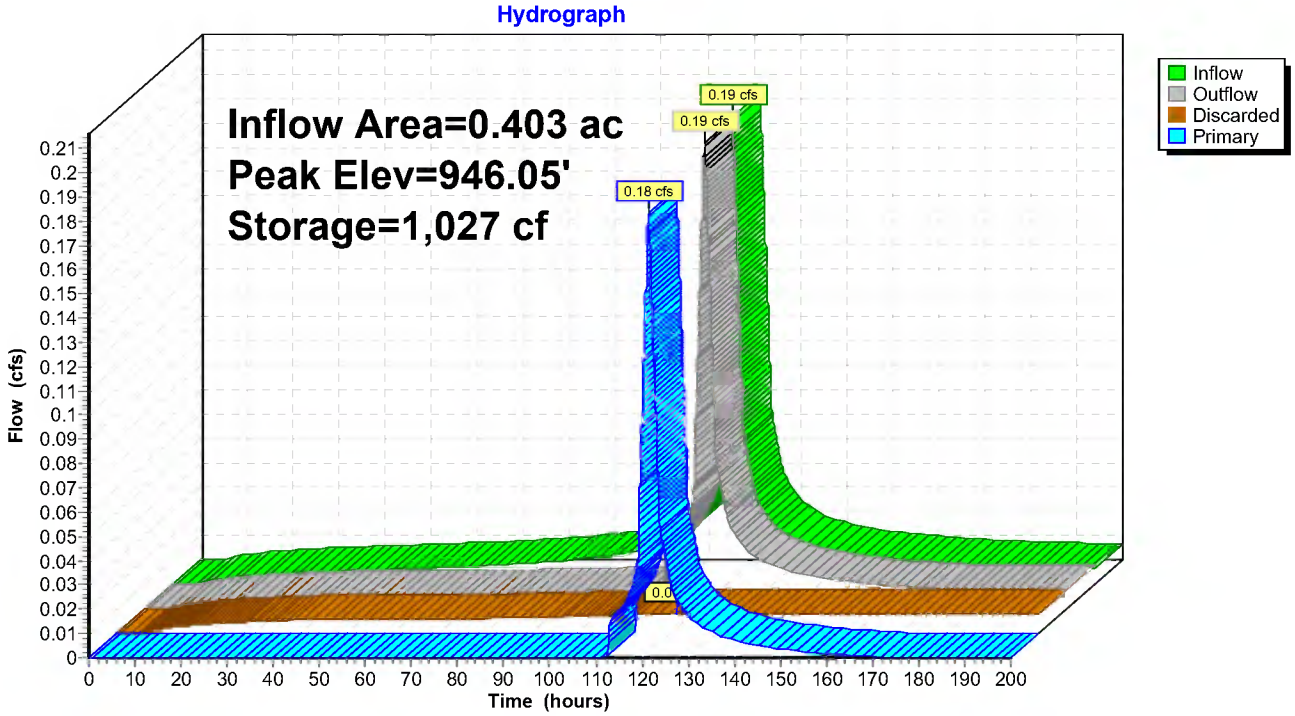
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
945.00	775	0	0
946.00	1,170	973	973
946.20	1,265	244	1,216
947.00	1,620	1,154	2,370

Device	Routing	Invert	Outlet Devices
#1	Discarded	945.00'	**0.300 in/hr Exfiltration over Surface area**
#2	Primary	946.00'	**EOF, Cv= 2.62 (C= 3.28)**
			Head (feet) 1.00 1.20 2.00
			Width (feet) 5.00 10.00 65.00

Discarded OutFlow Max=0.01 cfs @ 121.39 hrs HW=946.05' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.18 cfs @ 121.39 hrs HW=946.05' (Free Discharge)
↑—**2=EOF** (Weir Controls 0.18 cfs @ 0.69 fps)

Pond 1P: RG 1


Hydrograph
Inflow Area=0.403 ac
Peak Elev=946.05'
Storage=1,027 cf
0.19 cfs
0.19 cfs
0.18 cfs
Inflow
Outflow
Discarded
Primary
Flow (cfs)
Time (hours)

Stage-Discharge for Pond 1P: RG 1

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
945.00	0.00	0.00	0.00
945.02	0.01	0.01	0.00
945.04	0.01	0.01	0.00
945.06	0.01	0.01	0.00
945.08	0.01	0.01	0.00
945.10	0.01	0.01	0.00
945.12	0.01	0.01	0.00
945.14	0.01	0.01	0.00
945.16	0.01	0.01	0.00
945.18	0.01	0.01	0.00
945.20	0.01	0.01	0.00
945.22	0.01	0.01	0.00
945.24	0.01	0.01	0.00
945.26	0.01	0.01	0.00
945.28	0.01	0.01	0.00
945.30	0.01	0.01	0.00
945.32	0.01	0.01	0.00
945.34	0.01	0.01	0.00
945.36	0.01	0.01	0.00
945.38	0.01	0.01	0.00
945.40	0.01	0.01	0.00
945.42	0.01	0.01	0.00
945.44	0.01	0.01	0.00
945.46	0.01	0.01	0.00
945.48	0.01	0.01	0.00
945.50	0.01	0.01	0.00
945.52	0.01	0.01	0.00
945.54	0.01	0.01	0.00
945.56	0.01	0.01	0.00
945.58	0.01	0.01	0.00
945.60	0.01	0.01	0.00
945.62	0.01	0.01	0.00
945.64	0.01	0.01	0.00
945.66	0.01	0.01	0.00
945.68	0.01	0.01	0.00
945.70	0.01	0.01	0.00
945.72	0.01	0.01	0.00
945.74	0.01	0.01	0.00
945.76	0.01	0.01	0.00
945.78	0.01	0.01	0.00
945.80	0.01	0.01	0.00
945.82	0.01	0.01	0.00
945.84	0.01	0.01	0.00
945.86	0.01	0.01	0.00
945.88	0.01	0.01	0.00
945.90	0.01	0.01	0.00
945.92	0.01	0.01	0.00
945.94	0.01	0.01	0.00
945.96	0.01	0.01	0.00
945.98	0.01	0.01	0.00
946.00	0.01	0.01	0.00
946.02	0.06	0.01	0.05
946.04	0.15	0.01	0.14
946.06	0.28	0.01	0.27
946.08	0.44	0.01	0.43
946.10	0.63	0.01	0.62
946.12	0.85	0.01	0.84
946.14	1.11	0.01	1.10
946.16	1.39	0.01	1.38
946.18	1.71	0.01	1.70
946.20	2.06	0.01	2.05
946.22	2.45	0.01	2.44
946.24	2.88	0.01	2.87
946.26	3.36	0.01	3.35
946.28	3.90	0.01	3.89
946.30	4.50	0.01	4.49
946.32	5.16	0.01	5.15
946.34	5.88	0.01	5.87
946.36	6.68	0.01	6.67
946.38	7.55	0.01	7.54
946.40	8.49	0.01	8.48
946.42	9.51	0.01	9.50
946.44	10.61	0.01	10.60
946.46	11.79	0.01	11.78
946.48	13.06	0.01	13.05
946.50	14.41	0.01	14.40
946.52	15.86	0.01	15.85
946.54	17.39	0.01	17.38
946.56	19.01	0.01	19.00
946.58	20.74	0.01	20.73
946.60	22.55	0.01	22.54
946.62	24.47	0.01	24.46
946.64	26.49	0.01	26.48
946.66	28.61	0.01	28.59
946.68	30.83	0.01	30.82
946.70	33.16	0.01	33.15
946.72	35.60	0.01	35.59
946.74	38.14	0.01	38.13
946.76	40.80	0.01	40.79
946.78	43.57	0.01	43.56
946.80	46.46	0.01	46.45
946.82	49.46	0.01	49.45
946.84	52.58	0.01	52.57
946.86	55.81	0.01	55.80
946.88	59.17	0.01	59.16
946.90	62.65	0.01	62.64
946.92	66.26	0.01	66.25
946.94	69.99	0.01	69.98
946.96	73.85	0.01	73.83
946.98	77.83	0.01	77.82
947.00	**81.94**	**0.01**	**81.93**

Stage-Area-Storage for Pond 1P: RG 1

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
945.00	775	0	946.02	1,179	996
945.02	783	16	946.04	1,189	1,020
945.04	791	31	946.06	1,198	1,044
945.06	799	47	946.08	1,208	1,068
945.08	807	63	946.10	1,218	1,092
945.10	815	79	946.12	1,227	1,116
945.12	822	96	946.14	1,236	1,141
945.14	830	112	946.16	1,246	1,166
945.16	838	129	946.18	1,255	1,191
945.18	846	146	946.20	1,265	1,216
945.20	854	163	946.22	1,274	1,241
945.22	862	180	946.24	1,283	1,267
945.24	870	197	946.26	1,292	1,293
945.26	878	215	946.28	1,300	1,319
945.28	886	232	946.30	1,309	1,345
945.30	893	250	946.32	1,318	1,371
945.32	901	268	946.34	1,327	1,397
945.34	909	286	946.36	1,336	1,424
945.36	917	305	946.38	1,345	1,451
945.38	925	323	946.40	1,354	1,478
945.40	933	342	946.42	1,363	1,505
945.42	941	360	946.44	1,372	1,532
945.44	949	379	946.46	1,380	1,560
945.46	957	398	946.48	1,389	1,588
945.48	965	418	946.50	1,398	1,615
945.50	973	437	946.52	1,407	1,644
945.52	980	456	946.54	1,416	1,672
945.54	988	476	946.56	1,425	1,700
945.56	996	496	946.58	1,434	1,729
945.58	1,004	516	946.60	1,443	1,758
945.60	1,012	536	946.62	1,451	1,786
945.62	1,020	556	946.64	1,460	1,816
945.64	1,028	577	946.66	1,469	1,845
945.66	1,036	598	946.68	1,478	1,874
945.68	1,044	618	946.70	1,487	1,904
945.70	1,052	639	946.72	1,496	1,934
945.72	1,059	660	946.74	1,505	1,964
945.74	1,067	682	946.76	1,513	1,994
945.76	1,075	703	946.78	1,522	2,024
945.78	1,083	725	946.80	1,531	2,055
945.80	1,091	746	946.82	1,540	2,086
945.82	1,099	768	946.84	1,549	2,116
945.84	1,107	790	946.86	1,558	2,148
945.86	1,115	813	946.88	1,567	2,179
945.88	1,123	835	946.90	1,576	2,210
945.90	1,130	857	946.92	1,584	2,242
945.92	1,138	880	946.94	1,593	2,274
945.94	1,146	903	946.96	1,602	2,306
945.96	1,154	926	946.98	1,611	2,338
945.98	1,162	949	947.00	**1,620**	**2,370**
946.00	1,170	973			

Summary for Pond 2P: RG 2

Inflow Area = 0.630 ac, 20.80% Impervious, Inflow Depth > 6.48" for 10day-snow event
Inflow = 0.30 cfs @ 121.36 hrs, Volume= 0.340 af
Outflow = 0.30 cfs @ 121.42 hrs, Volume= 0.310 af, Atten= 1%, Lag= 3.6 min
Discarded = 0.02 cfs @ 121.42 hrs, Volume= 0.229 af
Primary = 0.28 cfs @ 121.42 hrs, Volume= 0.081 af
Routed to Pond 27P : out

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.04 hrs
Peak Elev= 932.06' @ 121.42 hrs Surf.Area= 1,529 sf Storage= 2,474 cf

Plug-Flow detention time= 747.6 min calculated for 0.310 af (91% of inflow)
Center-of-Mass det. time= 360.3 min (7,353.0 - 6,992.7)

Volume	Invert	Avail.Storage	Storage Description
#1	930.00'	4,308 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

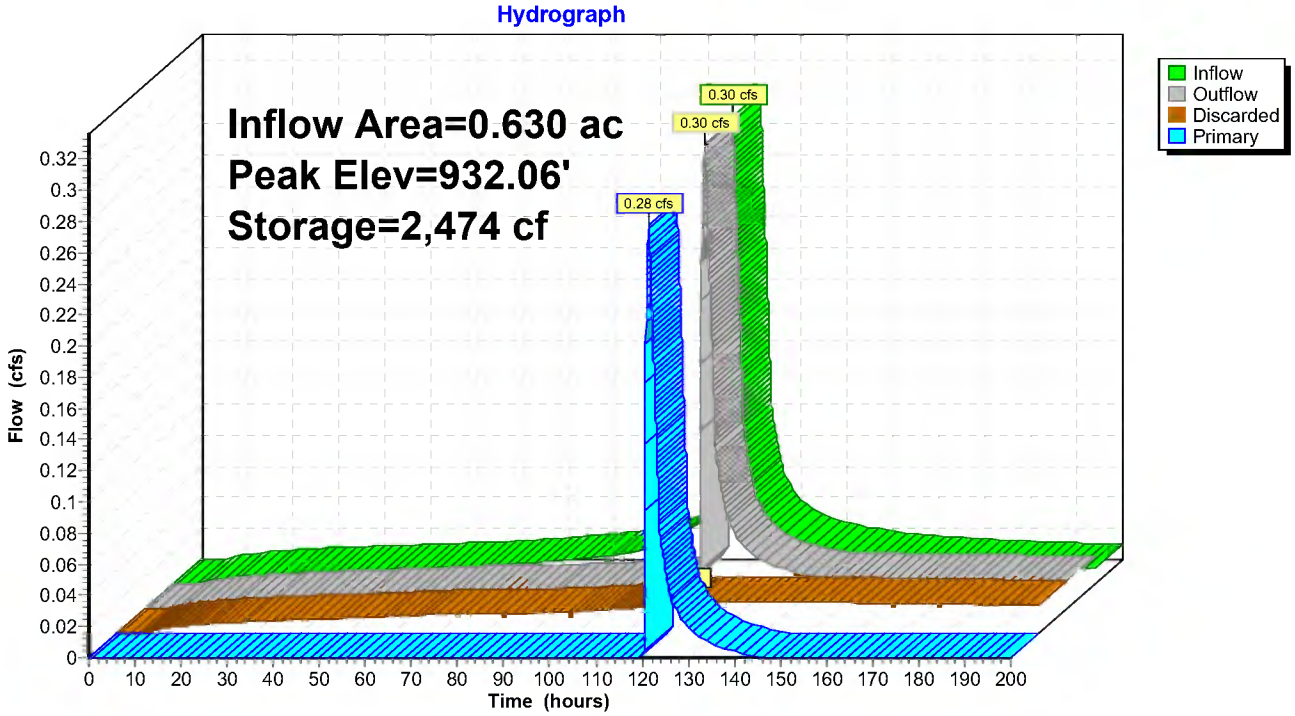
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
930.00	860	0	0
931.00	1,240	1,050	1,050
932.00	1,430	1,335	2,385
932.20	1,760	319	2,704
933.00	2,250	1,604	4,308

Device	Routing	Invert	Outlet Devices
#1	Discarded	930.00'	**0.600 in/hr Exfiltration over Surface area**
#2	Primary	932.00'	**Custom Weir/Orifice, Cv= 2.62 (C= 3.28)**
			Head (feet) 1.00 1.20 2.00
			Width (feet) 5.00 10.00 30.00

Discarded OutFlow Max=0.02 cfs @ 121.42 hrs HW=932.06' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=0.27 cfs @ 121.42 hrs HW=932.06' (Free Discharge)
↑—**2=Custom Weir/Orifice** (Weir Controls 0.27 cfs @ 0.78 fps)

Pond 2P: RG 2


Hydrograph
Inflow Area=0.630 ac
Peak Elev=932.06'
Storage=2,474 cf
0.30 cfs
0.30 cfs
0.28 cfs
Inflow
Outflow
Discarded
Primary
Flow (cfs)
0 0.02 0.04 0.06 0.08 0.1 0.12 0.14 0.16 0.18 0.2 0.22 0.24 0.26 0.28 0.3 0.32
0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200
Time (hours)

Stage-Discharge for Pond 2P: RG 2

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
930.00	0.00	0.00	0.00
930.05	0.01	0.01	0.00
930.10	0.01	0.01	0.00
930.15	0.01	0.01	0.00
930.20	0.01	0.01	0.00
930.25	0.01	0.01	0.00
930.30	0.01	0.01	0.00
930.35	0.01	0.01	0.00
930.40	0.01	0.01	0.00
930.45	0.01	0.01	0.00
930.50	0.01	0.01	0.00
930.55	0.01	0.01	0.00
930.60	0.02	0.02	0.00
930.65	0.02	0.02	0.00
930.70	0.02	0.02	0.00
930.75	0.02	0.02	0.00
930.80	0.02	0.02	0.00
930.85	0.02	0.02	0.00
930.90	0.02	0.02	0.00
930.95	0.02	0.02	0.00
931.00	0.02	0.02	0.00
931.05	0.02	0.02	0.00
931.10	0.02	0.02	0.00
931.15	0.02	0.02	0.00
931.20	0.02	0.02	0.00
931.25	0.02	0.02	0.00
931.30	0.02	0.02	0.00
931.35	0.02	0.02	0.00
931.40	0.02	0.02	0.00
931.45	0.02	0.02	0.00
931.50	0.02	0.02	0.00
931.55	0.02	0.02	0.00
931.60	0.02	0.02	0.00
931.65	0.02	0.02	0.00
931.70	0.02	0.02	0.00
931.75	0.02	0.02	0.00
931.80	0.02	0.02	0.00
931.85	0.02	0.02	0.00
931.90	0.02	0.02	0.00
931.95	0.02	0.02	0.00
932.00	0.02	0.02	0.00
932.05	0.22	0.02	0.20
932.10	0.64	0.02	0.62
932.15	1.26	0.02	1.24
932.20	2.07	0.02	2.05
932.25	3.10	0.02	3.07
932.30	4.33	0.03	4.31
932.35	5.79	0.03	5.76
932.40	7.48	0.03	7.46
932.45	9.42	0.03	9.39
932.50	11.61	0.03	11.58
932.55	14.05	0.03	14.03
932.60	16.77	0.03	16.74
932.65	19.77	0.03	19.74
932.70	23.05	0.03	23.02
932.75	26.62	0.03	26.59
932.80	30.49	0.03	30.46
932.85	34.68	0.03	34.65
932.90	39.18	0.03	39.15
932.95	44.00	0.03	43.97
933.00	**49.16**	**0.03**	**49.13**

Stage-Area-Storage for Pond 2P: RG 2

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
930.00	860	0
930.05	879	43
930.10	898	88
930.15	917	133
930.20	936	180
930.25	955	227
930.30	974	275
930.35	993	324
930.40	1,012	374
930.45	1,031	425
930.50	1,050	478
930.55	1,069	530
930.60	1,088	584
930.65	1,107	639
930.70	1,126	695
930.75	1,145	752
930.80	1,164	810
930.85	1,183	868
930.90	1,202	928
930.95	1,221	988
931.00	1,240	1,050
931.05	1,249	1,112
931.10	1,259	1,175
931.15	1,268	1,238
931.20	1,278	1,302
931.25	1,288	1,366
931.30	1,297	1,431
931.35	1,307	1,496
931.40	1,316	1,561
931.45	1,326	1,627
931.50	1,335	1,694
931.55	1,344	1,761
931.60	1,354	1,828
931.65	1,363	1,896
931.70	1,373	1,965
931.75	1,383	2,033
931.80	1,392	2,103
931.85	1,402	2,173
931.90	1,411	2,243
931.95	1,421	2,314
932.00	1,430	2,385
932.05	1,512	2,459
932.10	1,595	2,536
932.15	1,677	2,618
932.20	1,760	2,704
932.25	1,791	2,793
932.30	1,821	2,883
932.35	1,852	2,975
932.40	1,882	3,068
932.45	1,913	3,163
932.50	1,944	3,260
932.55	1,974	3,358
932.60	2,005	3,457
932.65	2,036	3,558
932.70	2,066	3,661
932.75	2,097	3,765
932.80	2,127	3,870
932.85	2,158	3,977
932.90	2,189	4,086
932.95	2,219	4,196
933.00	**2,250**	**4,308**

Summary for Pond 3P: RG 3

Inflow Area = 0.552 ac, 23.72% Impervious, Inflow Depth > 6.48" for 10day-snow event
Inflow = 0.26 cfs @ 121.38 hrs, Volume= 0.298 af
Outflow = 0.26 cfs @ 121.44 hrs, Volume= 0.275 af, Atten= 0%, Lag= 3.4 min
Discarded = 0.02 cfs @ 121.44 hrs, Volume= 0.181 af
Primary = 0.24 cfs @ 121.44 hrs, Volume= 0.094 af
Routed to Pond 27P : out

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.04 hrs / 2
Peak Elev= 923.56' @ 121.44 hrs Surf.Area= 1,249 sf Storage= 1,635 cf

Plug-Flow detention time= 685.2 min calculated for 0.275 af (92% of inflow)
Center-of-Mass det. time= 344.4 min (7,338.0 - 6,993.6)

Volume	Invert	Avail.Storage	Storage Description
#1	921.50'	3,837 cf	**Custom Stage Data (Conic)** Listed below (Recalc)

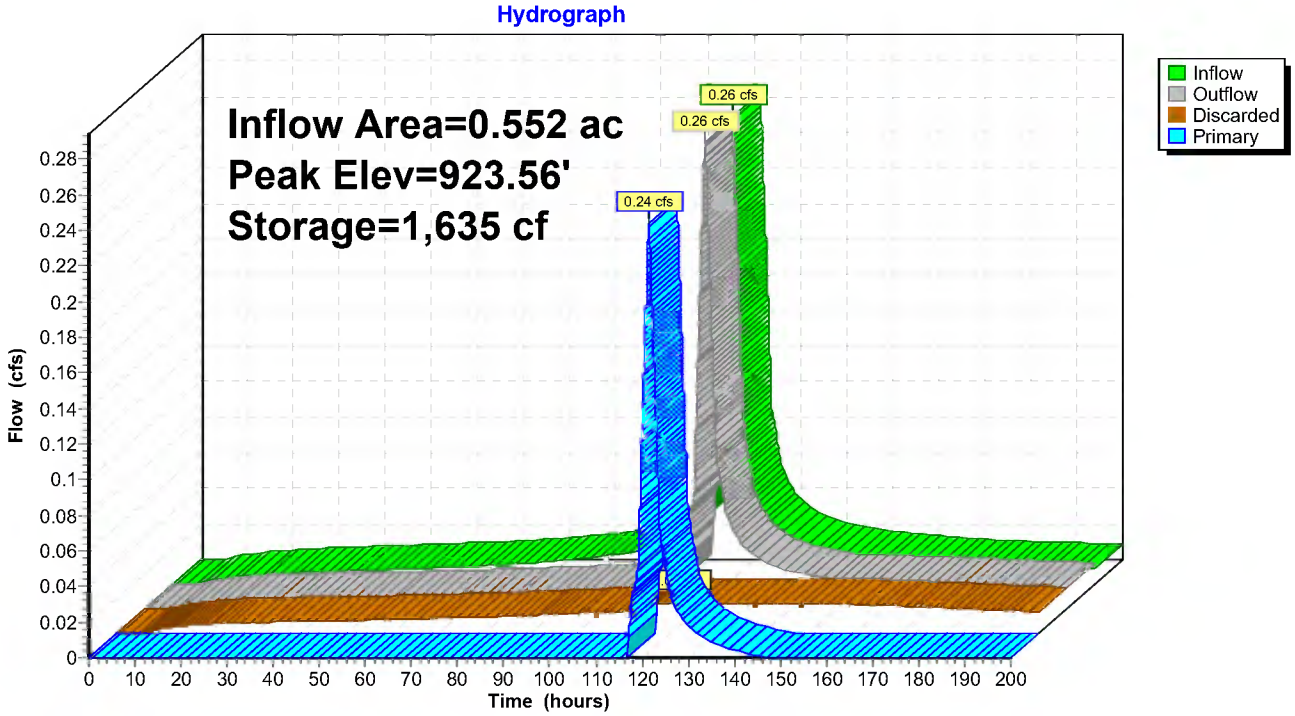
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
921.50	440	0	0	440
922.00	630	266	266	634
922.30	725	203	469	733
922.50	800	152	622	811
923.00	890	422	1,044	914
923.50	1,210	523	1,567	1,240
923.90	1,500	541	2,108	1,534
924.00	1,575	154	2,262	1,610
925.00	1,575	1,575	3,837	1,751

Device	Routing	Invert	Outlet Devices
#1	Discarded	921.50'	**0.600 in/hr Exfiltration over Surface area**
#2	Primary	923.50'	**Custom Weir/Orifice, Cv= 2.62 (C= 3.28)**
			Head (feet) 2.00 2.25 2.50 2.75
			Width (feet) 5.00 10.00 40.00 50.00

Discarded OutFlow Max=0.02 cfs @ 121.44 hrs HW=923.56' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=0.23 cfs @ 121.44 hrs HW=923.56' (Free Discharge)
↑—**2=Custom Weir/Orifice** (Weir Controls 0.23 cfs @ 0.76 fps)

Pond 3P: RG 3


Hydrograph
Inflow Area=0.552 ac
Peak Elev=923.56'
Storage=1,635 cf
0.26 cfs
0.26 cfs
0.24 cfs
Inflow
Outflow
Discarded
Primary
Flow (cfs)
0.28
0.26
0.24
0.22
0.2
0.18
0.16
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200
Time (hours)

Stage-Discharge for Pond 3P: RG 3

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
921.50	0.00	0.00	0.00
921.55	0.01	0.01	0.00
921.60	0.01	0.01	0.00
921.65	0.01	0.01	0.00
921.70	0.01	0.01	0.00
921.75	0.01	0.01	0.00
921.80	0.01	0.01	0.00
921.85	0.01	0.01	0.00
921.90	0.01	0.01	0.00
921.95	0.01	0.01	0.00
922.00	0.01	0.01	0.00
922.05	0.01	0.01	0.00
922.10	0.01	0.01	0.00
922.15	0.01	0.01	0.00
922.20	0.01	0.01	0.00
922.25	0.01	0.01	0.00
922.30	0.01	0.01	0.00
922.35	0.01	0.01	0.00
922.40	0.01	0.01	0.00
922.45	0.01	0.01	0.00
922.50	0.01	0.01	0.00
922.55	0.01	0.01	0.00
922.60	0.01	0.01	0.00
922.65	0.01	0.01	0.00
922.70	0.01	0.01	0.00
922.75	0.01	0.01	0.00
922.80	0.01	0.01	0.00
922.85	0.01	0.01	0.00
922.90	0.01	0.01	0.00
922.95	0.01	0.01	0.00
923.00	0.01	0.01	0.00
923.05	0.01	0.01	0.00
923.10	0.01	0.01	0.00
923.15	0.01	0.01	0.00
923.20	0.01	0.01	0.00
923.25	0.01	0.01	0.00
923.30	0.01	0.01	0.00
923.35	0.02	0.02	0.00
923.40	0.02	0.02	0.00
923.45	0.02	0.02	0.00
923.50	0.02	0.02	0.00
923.55	0.22	0.02	0.20
923.60	0.62	0.02	0.60
923.65	1.20	0.02	1.18
923.70	1.95	0.02	1.93
923.75	2.88	0.02	2.87
923.80	4.08	0.02	4.06
923.85	5.72	0.02	5.70
923.90	7.96	0.02	7.94
923.95	10.87	0.02	10.85
924.00	14.54	**0.02**	14.51
924.05	18.98	0.02	18.96
924.10	24.10	0.02	24.08
924.15	29.87	0.02	29.85
924.20	36.27	0.02	36.25
924.25	43.30	0.02	43.28
924.30	49.10	0.02	49.08
924.35	53.90	0.02	53.88
924.40	58.18	0.02	58.16
924.45	62.12	0.02	62.09
924.50	65.78	0.02	65.76
924.55	69.23	0.02	69.21
924.60	72.50	0.02	72.47
924.65	75.61	0.02	75.59
924.70	78.60	0.02	78.58
924.75	81.47	0.02	81.44
924.80	84.23	0.02	84.21
924.85	86.91	0.02	86.89
924.90	89.50	0.02	89.48
924.95	92.02	0.02	92.00
925.00	**94.47**	0.02	**94.44**

Stage-Area-Storage for Pond 3P: RG 3

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
921.50	440	0
921.55	457	22
921.60	475	46
921.65	493	70
921.70	512	95
921.75	531	121
921.80	550	148
921.85	569	176
921.90	589	205
921.95	609	235
922.00	630	266
922.05	645	298
922.10	661	331
922.15	677	364
922.20	693	398
922.25	709	433
922.30	725	469
922.35	743	506
922.40	762	544
922.45	781	582
922.50	800	622
922.55	809	662
922.60	818	702
922.65	826	744
922.70	835	785
922.75	844	827
922.80	853	870
922.85	862	912
922.90	872	956
922.95	881	1,000
923.00	890	1,044
923.05	920	1,089
923.10	950	1,136
923.15	981	1,184
923.20	1,012	1,234
923.25	1,044	1,285
923.30	1,076	1,338
923.35	1,109	1,393
923.40	1,142	1,449
923.45	1,176	1,507
923.50	1,210	1,567
923.55	1,245	1,628
923.60	1,280	1,691
923.65	1,315	1,756
923.70	1,351	1,823
923.75	1,388	1,891
923.80	1,425	1,962
923.85	1,462	2,034
923.90	1,500	2,108
923.95	1,537	2,184
924.00	**1,575**	2,262
924.05	1,575	2,340
924.10	1,575	2,419
924.15	1,575	2,498
924.20	1,575	2,577
924.25	1,575	2,655
924.30	1,575	2,734
924.35	1,575	2,813
924.40	1,575	2,892
924.45	1,575	2,970
924.50	1,575	3,049
924.55	1,575	3,128
924.60	1,575	3,207
924.65	1,575	3,285
924.70	1,575	3,364
924.75	1,575	3,443
924.80	1,575	3,522
924.85	1,575	3,600
924.90	1,575	3,679
924.95	1,575	3,758
925.00	1,575	**3,837**

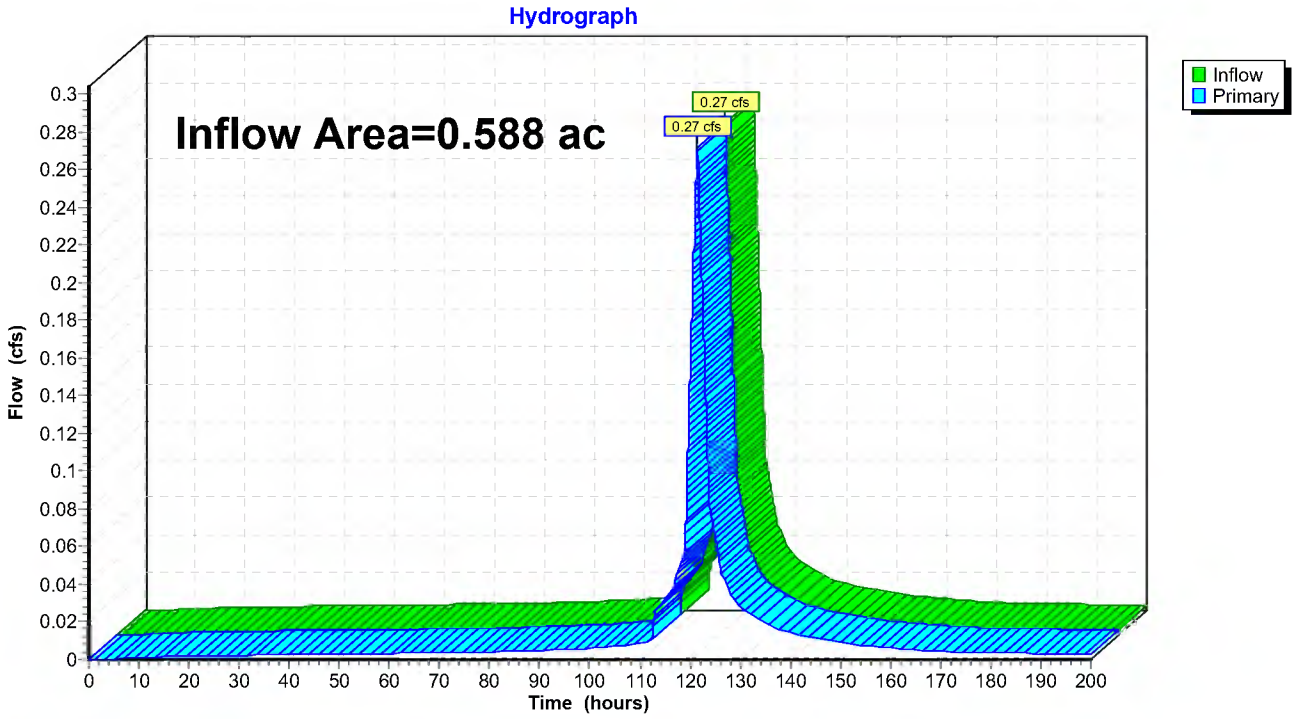
Summary for Pond 4P: Offsite to East

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.588 ac, 16.41% Impervious, Inflow Depth > 3.88" for 10day-snow event
Inflow = 0.27 cfs @ 121.38 hrs, Volume= 0.190 af
Primary = 0.27 cfs @ 121.38 hrs, Volume= 0.190 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.04 hrs

Pond 4P: Offsite to East



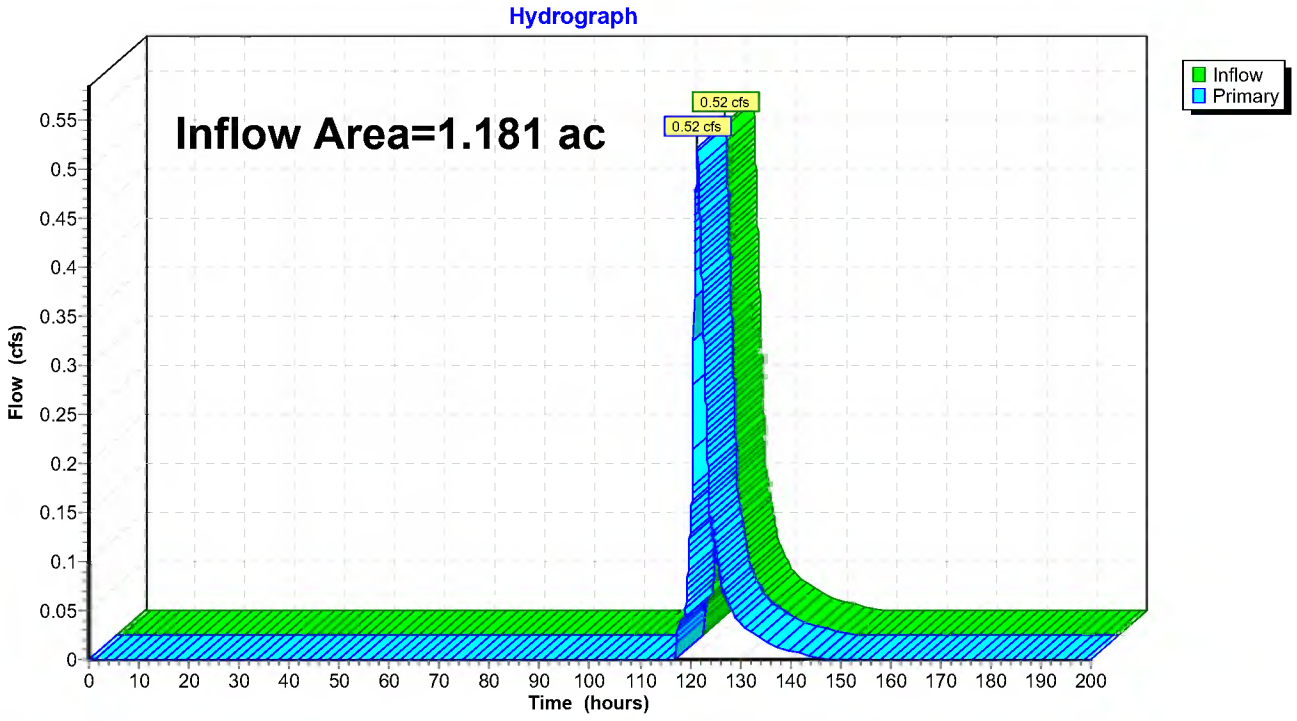
Summary for Pond 27P: out

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.181 ac, 22.16% Impervious, Inflow Depth = 1.77" for 10day-snow event
Inflow = 0.52 cfs @ 121.43 hrs, Volume= 0.175 af
Primary = 0.52 cfs @ 121.43 hrs, Volume= 0.175 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.04 hrs

Pond 27P: out



Time span=0.00-200.00 hrs, dt=0.04 hrs, 5001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

Subcatchment4S: (new Subcat) Runoff Area=8,038 sf 0.00% Impervious Runoff Depth=4.62"
Flow Length=100' Slope=0.1200 '/' Tc=11.1 min CN=76 Runoff=1.24 cfs 0.071 af

Subcatchment5S: Lot 1 Runoff Area=17,559 sf 23.92% Impervious Runoff Depth=5.15"
Flow Length=100' Slope=0.0850 '/' Tc=8.4 min UI Adjusted CN=WQ Runoff=3.23 cfs 0.173 af

Subcatchment6S: To Street Runoff Area=3,110 sf 48.33% Impervious Runoff Depth=5.14"
Flow Length=35' Slope=0.0400 '/' Tc=4.9 min CN=WQ Runoff=0.62 cfs 0.031 af

Subcatchment7S: (new Subcat) Runoff Area=27,422 sf 20.80% Impervious Runoff Depth=4.74"
Flow Length=245' Tc=10.1 min UI Adjusted CN=WQ Runoff=4.34 cfs 0.249 af

Subcatchment8S: To North Runoff Area=24,039 sf 23.72% Impervious Runoff Depth=4.79"
Flow Length=145' Tc=11.4 min UI Adjusted CN=WQ Runoff=3.63 cfs 0.220 af

Pond 1P: RG 1 Peak Elev=946.25' Storage=1,280 cf Inflow=3.23 cfs 0.173 af
Discarded=0.01 cfs 0.035 af Primary=3.10 cfs 0.139 af Outflow=3.11 cfs 0.173 af

Pond 2P: RG 2 Peak Elev=932.30' Storage=2,877 cf Inflow=4.34 cfs 0.249 af
Discarded=0.03 cfs 0.083 af Primary=4.22 cfs 0.166 af Outflow=4.25 cfs 0.249 af

Pond 3P: RG 3 Peak Elev=923.78' Storage=1,933 cf Inflow=3.63 cfs 0.220 af
Discarded=0.02 cfs 0.058 af Primary=3.54 cfs 0.162 af Outflow=3.56 cfs 0.220 af

Pond 4P: Offsite to East Inflow=4.33 cfs 0.210 af
Primary=4.33 cfs 0.210 af

Pond 27P: out Inflow=7.75 cfs 0.328 af
Primary=7.75 cfs 0.328 af

Total Runoff Area = 1.840 ac Runoff Volume = 0.744 af Average Runoff Depth = 4.85"
78.66% Pervious = 1.448 ac 21.34% Impervious = 0.393 ac

Summary for Subcatchment 4S: (new Subcat)

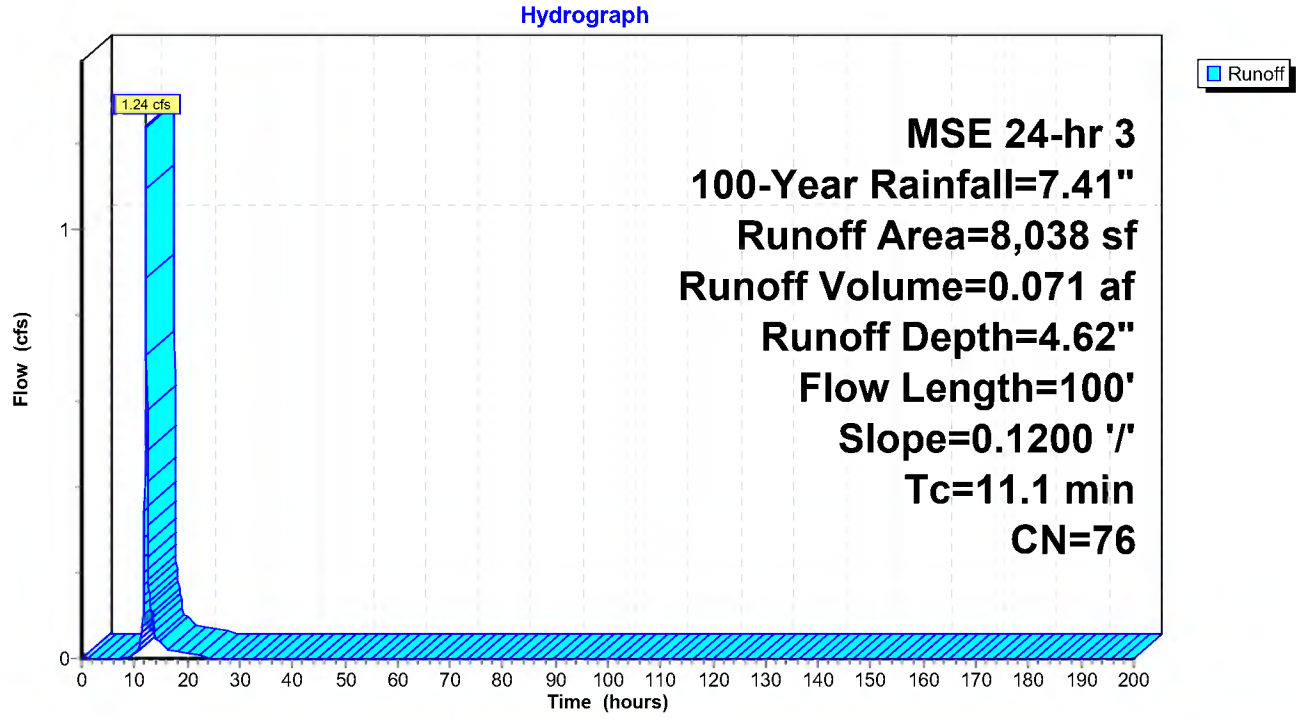
Runoff = 1.24 cfs @ 12.19 hrs, Volume= 0.071 af, Depth= 4.62"
Routed to Pond 4P : Offsite to East

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-200.00 hrs, dt= 0.04 hrs
MSE 24-hr 3 100-Year Rainfall=7.41"

Area (sf)	CN	Description
8,038	76	Woods/grass comb., Fair, HSG C
8,038	76	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.1	100	0.1200	0.15		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.88"

Subcatchment 4S: (new Subcat)



Summary for Subcatchment 5S: Lot 1

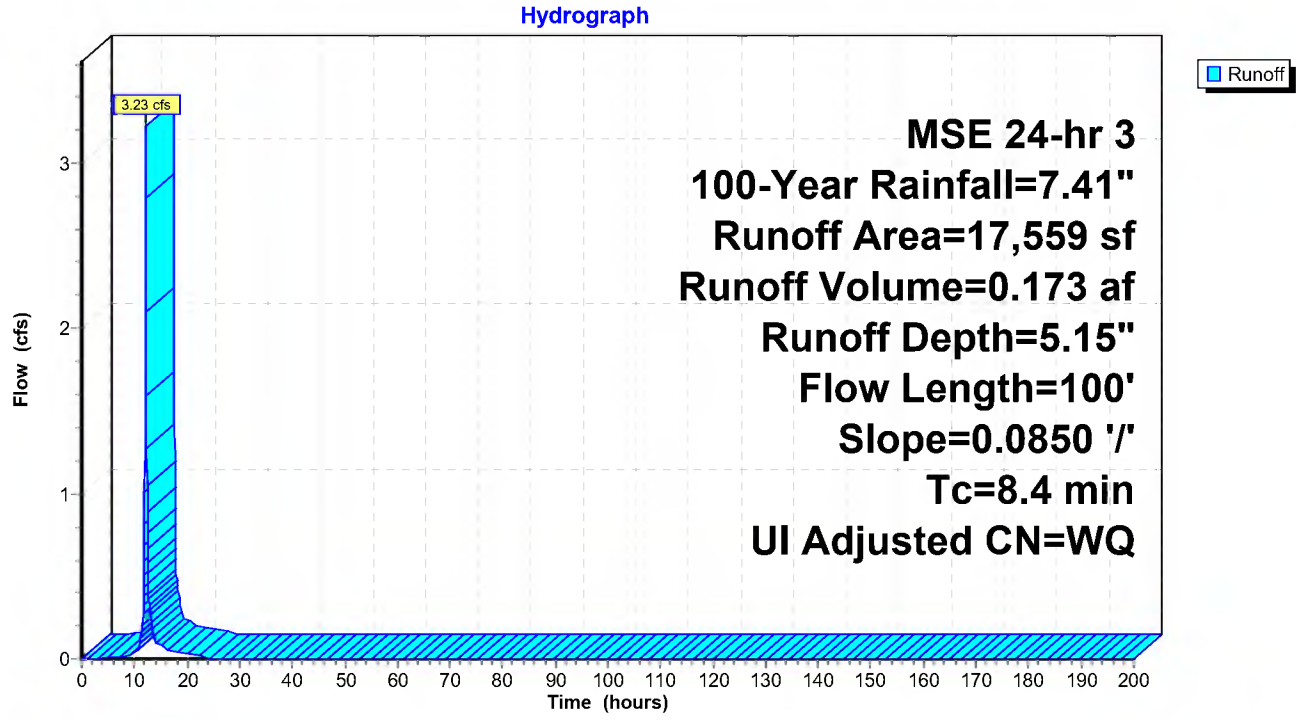
Runoff = 3.23 cfs @ 12.16 hrs, Volume= 0.173 af, Depth= 5.15"
Routed to Pond 1P : RG 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-200.00 hrs, dt= 0.04 hrs
MSE 24-hr 3 100-Year Rainfall=7.41"

Area (sf)	CN	Adj	Description
7,115	76	76	Woods/grass comb., Fair, HSG C
6,244	74	74	>75% Grass cover, Good, HSG C
4,200	98	98	Unconnected roofs, HSG C
17,559			Weighted Average
13,359	75	75	76.08% Pervious Area
4,200	98	98	23.92% Impervious Area
4,200			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.4	100	0.0850	0.20		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.88"

Subcatchment 5S: Lot 1



Summary for Subcatchment 6S: To Street

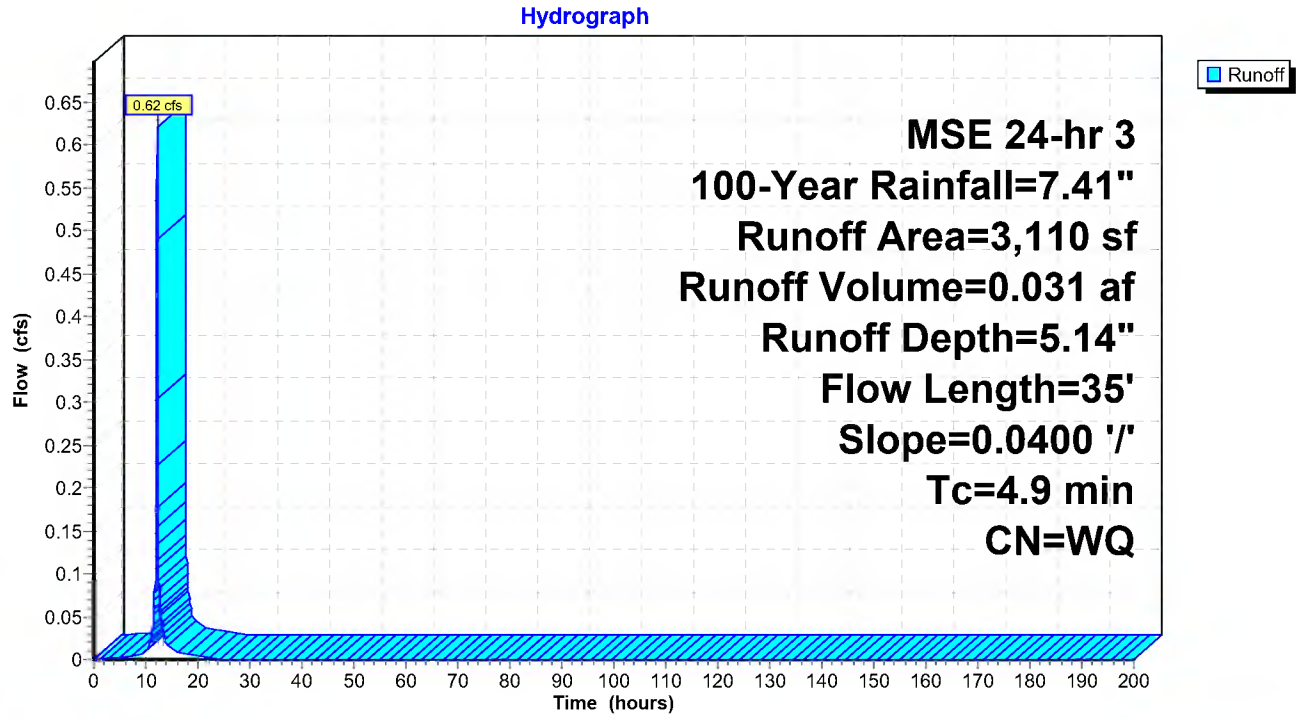
Runoff = 0.62 cfs @ 12.12 hrs, Volume= 0.031 af, Depth= 5.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-200.00 hrs, dt= 0.04 hrs
MSE 24-hr 3 100-Year Rainfall=7.41"

	Area (sf)	CN	Description
	268	74	>75% Grass cover, Good, HSG C
*	1,339	61	Soil Amendment Area
	1,503	98	Unconnected roofs, HSG C
	3,110		Weighted Average
	1,607	63	51.67% Pervious Area
	1,503	98	48.33% Impervious Area
	1,503		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.9	35	0.0400	0.12		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.88"

Subcatchment 6S: To Street



Summary for Subcatchment 7S: (new Subcat)

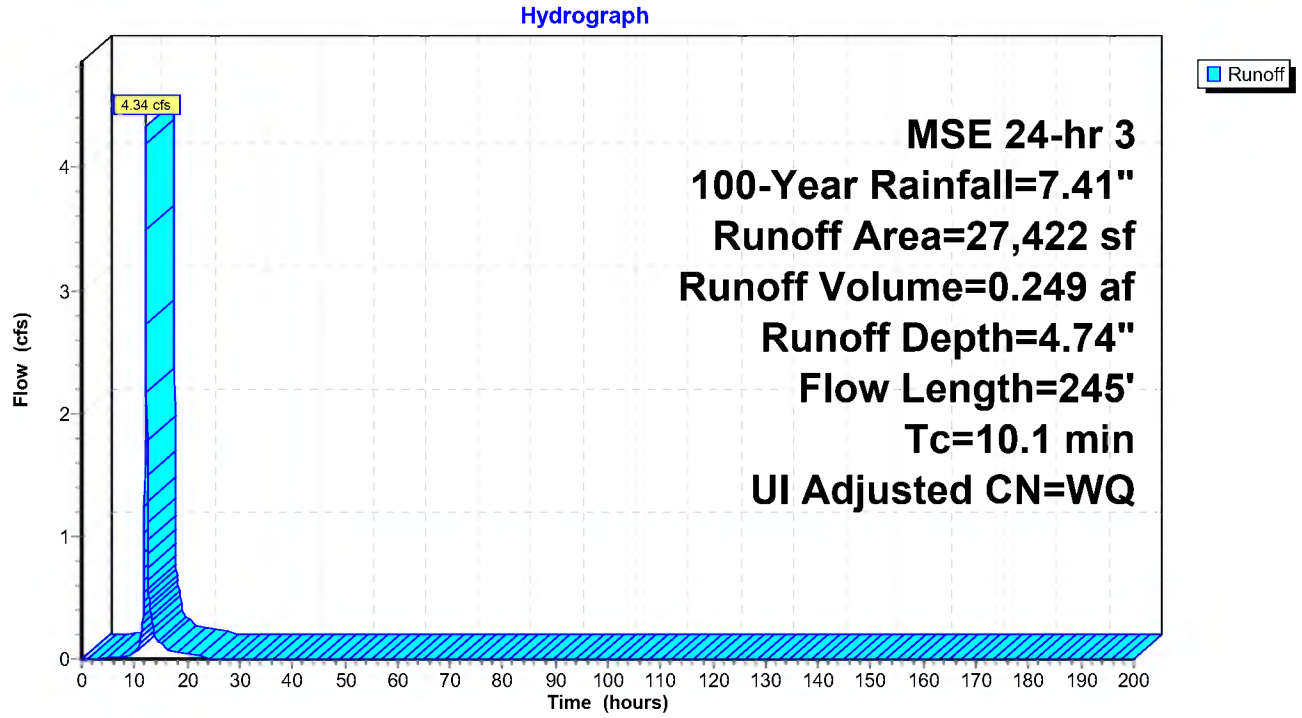
Runoff = 4.34 cfs @ 12.18 hrs, Volume= 0.249 af, Depth= 4.74"
Routed to Pond 2P : RG 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-200.00 hrs, dt= 0.04 hrs
MSE 24-hr 3 100-Year Rainfall=7.41"

	Area (sf)	CN	Adj	Description
	12,301	76	76	Woods/grass comb., Fair, HSG C
*	9,418	65	65	Amended soils
	0	74		>75% Grass cover, Good, HSG C
	5,703	98	98	Unconnected roofs, HSG C
	27,422			Weighted Average
	21,719	71	71	79.20% Pervious Area
	5,703	98	98	20.80% Impervious Area
	5,703			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.1	100	0.0700	0.18		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.88"
1.0	145	0.1300	2.52		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
10.1	245	Total			

Subcatchment 7S: (new Subcat)



Summary for Subcatchment 8S: To North

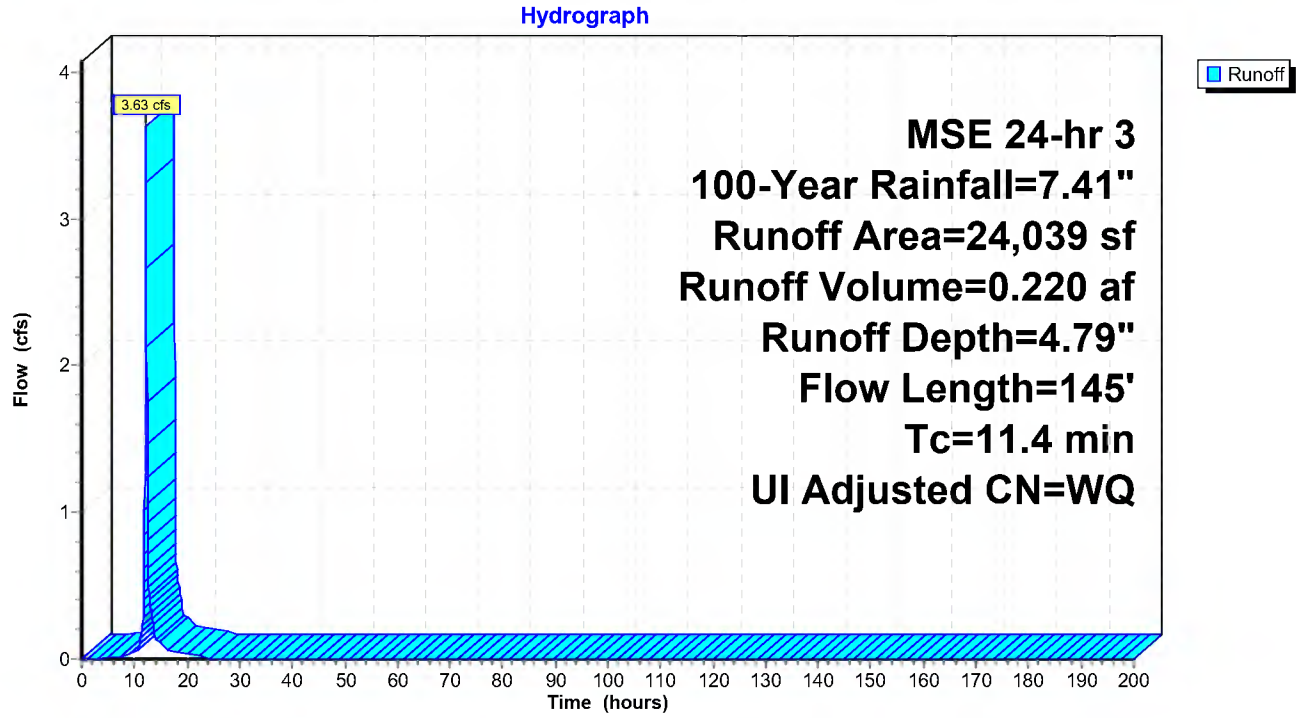
Runoff = 3.63 cfs @ 12.19 hrs, Volume= 0.220 af, Depth= 4.79"
Routed to Pond 3P : RG 3

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-200.00 hrs, dt= 0.04 hrs
MSE 24-hr 3 100-Year Rainfall=7.41"

	Area (sf)	CN	Adj	Description
	9,546	76	76	Woods/grass comb., Fair, HSG C
*	8,790	65	65	Amended Soils
	0	74		>75% Grass cover, Good, HSG C
	5,703	98	98	Unconnected roofs, HSG C
	24,039			Weighted Average
	18,336	71	71	76.28% Pervious Area
	5,703	98	98	23.72% Impervious Area
	5,703			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.1	100	0.0430	0.15		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.88"
0.3	45	0.1400	2.62		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
11.4	145	Total			

Subcatchment 8S: To North



Summary for Pond 1P: RG 1

Inflow Area = 0.403 ac, 23.92% Impervious, Inflow Depth = 5.15" for 100-Year event
Inflow = 3.23 cfs @ 12.16 hrs, Volume= 0.173 af
Outflow = 3.11 cfs @ 12.17 hrs, Volume= 0.173 af, Atten= 3%, Lag= 0.8 min
Discarded = 0.01 cfs @ 12.17 hrs, Volume= 0.035 af
Primary = 3.10 cfs @ 12.17 hrs, Volume= 0.139 af
Routed to Pond 4P : Offsite to East

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.04 hrs / 3
Peak Elev= 946.25' @ 12.17 hrs Surf.Area= 1,287 sf Storage= 1,280 cf

Plug-Flow detention time= 251.1 min calculated for 0.173 af (100% of inflow)
Center-of-Mass det. time= 251.0 min (1,030.9 - 779.9)

Volume	Invert	Avail.Storage	Storage Description
#1	945.00'	2,370 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

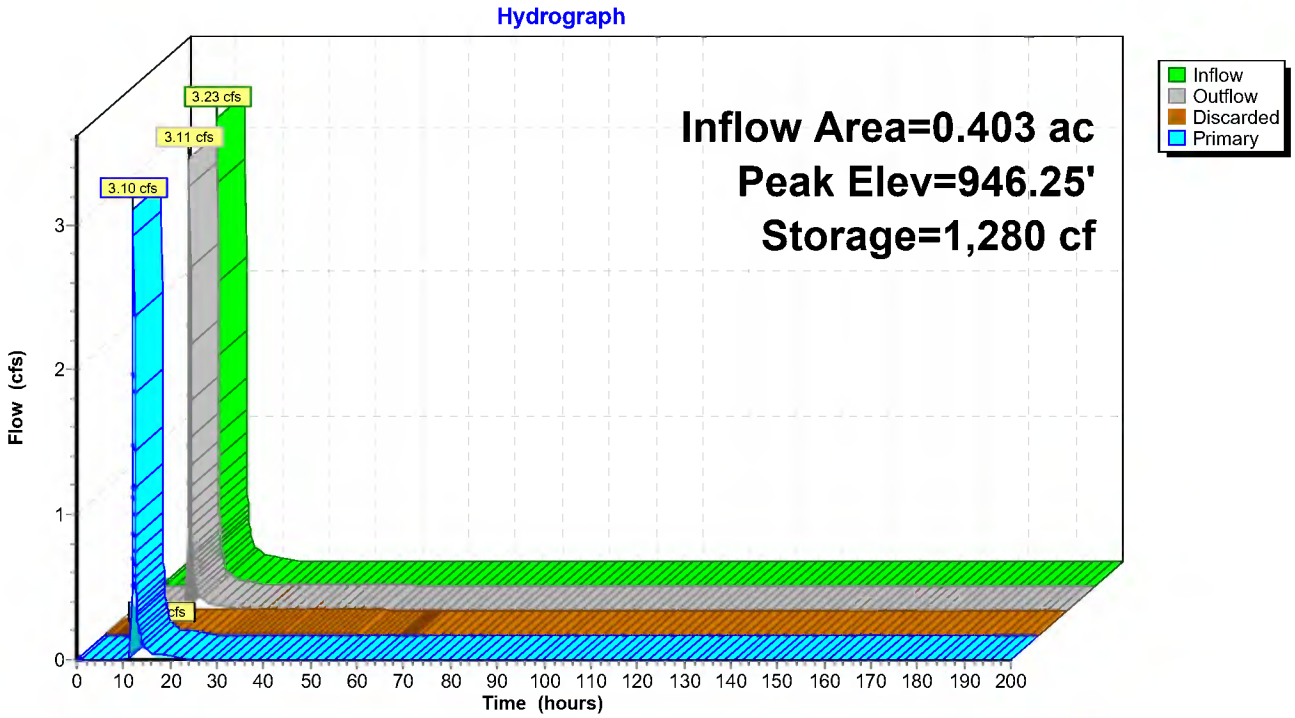
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
945.00	775	0	0
946.00	1,170	973	973
946.20	1,265	244	1,216
947.00	1,620	1,154	2,370

Device	Routing	Invert	Outlet Devices
#1	Discarded	945.00'	**0.300 in/hr Exfiltration over Surface area**
#2	Primary	946.00'	**EOF, Cv= 2.62 (C= 3.28)**
			Head (feet) 1.00 1.20 2.00
			Width (feet) 5.00 10.00 65.00

Discarded OutFlow Max=0.01 cfs @ 12.17 hrs HW=946.25' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=3.04 cfs @ 12.17 hrs HW=946.25' (Free Discharge)
↑**2=EOF** (Weir Controls 3.04 cfs @ 1.48 fps)

Pond 1P: RG 1


Hydrograph
Inflow Area=0.403 ac
Peak Elev=946.25'
Storage=1,280 cf
3.23 cfs
3.11 cfs
3.10 cfs
cfs
Inflow
Outflow
Discarded
Primary
Flow (cfs)
Time (hours)
0
1
2
3
0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200

Stage-Discharge for Pond 1P: RG 1

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
945.00	0.00	0.00	0.00	946.02	0.06	0.01	0.05
945.02	0.01	0.01	0.00	946.04	0.15	0.01	0.14
945.04	0.01	0.01	0.00	946.06	0.28	0.01	0.27
945.06	0.01	0.01	0.00	946.08	0.44	0.01	0.43
945.08	0.01	0.01	0.00	946.10	0.63	0.01	0.62
945.10	0.01	0.01	0.00	946.12	0.85	0.01	0.84
945.12	0.01	0.01	0.00	946.14	1.11	0.01	1.10
945.14	0.01	0.01	0.00	946.16	1.39	0.01	1.38
945.16	0.01	0.01	0.00	946.18	1.71	0.01	1.70
945.18	0.01	0.01	0.00	946.20	2.06	0.01	2.05
945.20	0.01	0.01	0.00	946.22	2.45	0.01	2.44
945.22	0.01	0.01	0.00	946.24	2.88	0.01	2.87
945.24	0.01	0.01	0.00	946.26	3.36	0.01	3.35
945.26	0.01	0.01	0.00	946.28	3.90	0.01	3.89
945.28	0.01	0.01	0.00	946.30	4.50	0.01	4.49
945.30	0.01	0.01	0.00	946.32	5.16	0.01	5.15
945.32	0.01	0.01	0.00	946.34	5.88	0.01	5.87
945.34	0.01	0.01	0.00	946.36	6.68	0.01	6.67
945.36	0.01	0.01	0.00	946.38	7.55	0.01	7.54
945.38	0.01	0.01	0.00	946.40	8.49	0.01	8.48
945.40	0.01	0.01	0.00	946.42	9.51	0.01	9.50
945.42	0.01	0.01	0.00	946.44	10.61	0.01	10.60
945.44	0.01	0.01	0.00	946.46	11.79	0.01	11.78
945.46	0.01	0.01	0.00	946.48	13.06	0.01	13.05
945.48	0.01	0.01	0.00	946.50	14.41	0.01	14.40
945.50	0.01	0.01	0.00	946.52	15.86	0.01	15.85
945.52	0.01	0.01	0.00	946.54	17.39	0.01	17.38
945.54	0.01	0.01	0.00	946.56	19.01	0.01	19.00
945.56	0.01	0.01	0.00	946.58	20.74	0.01	20.73
945.58	0.01	0.01	0.00	946.60	22.55	0.01	22.54
945.60	0.01	0.01	0.00	946.62	24.47	0.01	24.46
945.62	0.01	0.01	0.00	946.64	26.49	0.01	26.48
945.64	0.01	0.01	0.00	946.66	28.61	0.01	28.59
945.66	0.01	0.01	0.00	946.68	30.83	0.01	30.82
945.68	0.01	0.01	0.00	946.70	33.16	0.01	33.15
945.70	0.01	0.01	0.00	946.72	35.60	0.01	35.59
945.72	0.01	0.01	0.00	946.74	38.14	0.01	38.13
945.74	0.01	0.01	0.00	946.76	40.80	0.01	40.79
945.76	0.01	0.01	0.00	946.78	43.57	0.01	43.56
945.78	0.01	0.01	0.00	946.80	46.46	0.01	46.45
945.80	0.01	0.01	0.00	946.82	49.46	0.01	49.45
945.82	0.01	0.01	0.00	946.84	52.58	0.01	52.57
945.84	0.01	0.01	0.00	946.86	55.81	0.01	55.80
945.86	0.01	0.01	0.00	946.88	59.17	0.01	59.16
945.88	0.01	0.01	0.00	946.90	62.65	0.01	62.64
945.90	0.01	0.01	0.00	946.92	66.26	0.01	66.25
945.92	0.01	0.01	0.00	946.94	69.99	0.01	69.98
945.94	0.01	0.01	0.00	946.96	73.85	0.01	73.83
945.96	0.01	0.01	0.00	946.98	77.83	0.01	77.82
945.98	0.01	0.01	0.00	947.00	**81.94**	**0.01**	**81.93**
946.00	0.01	0.01	0.00				

Stage-Area-Storage for Pond 1P: RG 1

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
945.00	775	0	946.02	1,179	996
945.02	783	16	946.04	1,189	1,020
945.04	791	31	946.06	1,198	1,044
945.06	799	47	946.08	1,208	1,068
945.08	807	63	946.10	1,218	1,092
945.10	815	79	946.12	1,227	1,116
945.12	822	96	946.14	1,236	1,141
945.14	830	112	946.16	1,246	1,166
945.16	838	129	946.18	1,255	1,191
945.18	846	146	946.20	1,265	1,216
945.20	854	163	946.22	1,274	1,241
945.22	862	180	946.24	1,283	1,267
945.24	870	197	946.26	1,292	1,293
945.26	878	215	946.28	1,300	1,319
945.28	886	232	946.30	1,309	1,345
945.30	893	250	946.32	1,318	1,371
945.32	901	268	946.34	1,327	1,397
945.34	909	286	946.36	1,336	1,424
945.36	917	305	946.38	1,345	1,451
945.38	925	323	946.40	1,354	1,478
945.40	933	342	946.42	1,363	1,505
945.42	941	360	946.44	1,372	1,532
945.44	949	379	946.46	1,380	1,560
945.46	957	398	946.48	1,389	1,588
945.48	965	418	946.50	1,398	1,615
945.50	973	437	946.52	1,407	1,644
945.52	980	456	946.54	1,416	1,672
945.54	988	476	946.56	1,425	1,700
945.56	996	496	946.58	1,434	1,729
945.58	1,004	516	946.60	1,443	1,758
945.60	1,012	536	946.62	1,451	1,786
945.62	1,020	556	946.64	1,460	1,816
945.64	1,028	577	946.66	1,469	1,845
945.66	1,036	598	946.68	1,478	1,874
945.68	1,044	618	946.70	1,487	1,904
945.70	1,052	639	946.72	1,496	1,934
945.72	1,059	660	946.74	1,505	1,964
945.74	1,067	682	946.76	1,513	1,994
945.76	1,075	703	946.78	1,522	2,024
945.78	1,083	725	946.80	1,531	2,055
945.80	1,091	746	946.82	1,540	2,086
945.82	1,099	768	946.84	1,549	2,116
945.84	1,107	790	946.86	1,558	2,148
945.86	1,115	813	946.88	1,567	2,179
945.88	1,123	835	946.90	1,576	2,210
945.90	1,130	857	946.92	1,584	2,242
945.92	1,138	880	946.94	1,593	2,274
945.94	1,146	903	946.96	1,602	2,306
945.96	1,154	926	946.98	1,611	2,338
945.98	1,162	949	947.00	**1,620**	**2,370**
946.00	1,170	973			

Summary for Pond 2P: RG 2

Inflow Area = 0.630 ac, 20.80% Impervious, Inflow Depth = 4.74" for 100-Year event
Inflow = 4.34 cfs @ 12.18 hrs, Volume= 0.249 af
Outflow = 4.25 cfs @ 12.20 hrs, Volume= 0.249 af, Atten= 2%, Lag= 1.5 min
Discarded = 0.03 cfs @ 12.20 hrs, Volume= 0.083 af
Primary = 4.22 cfs @ 12.20 hrs, Volume= 0.166 af
Routed to Pond 27P : out

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.04 hrs
Peak Elev= 932.30' @ 12.20 hrs Surf.Area= 1,819 sf Storage= 2,877 cf

Plug-Flow detention time= 409.9 min calculated for 0.249 af (100% of inflow)
Center-of-Mass det. time= 410.4 min (1,196.0 - 785.7)

Volume	Invert	Avail.Storage	Storage Description
#1	930.00'	4,308 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

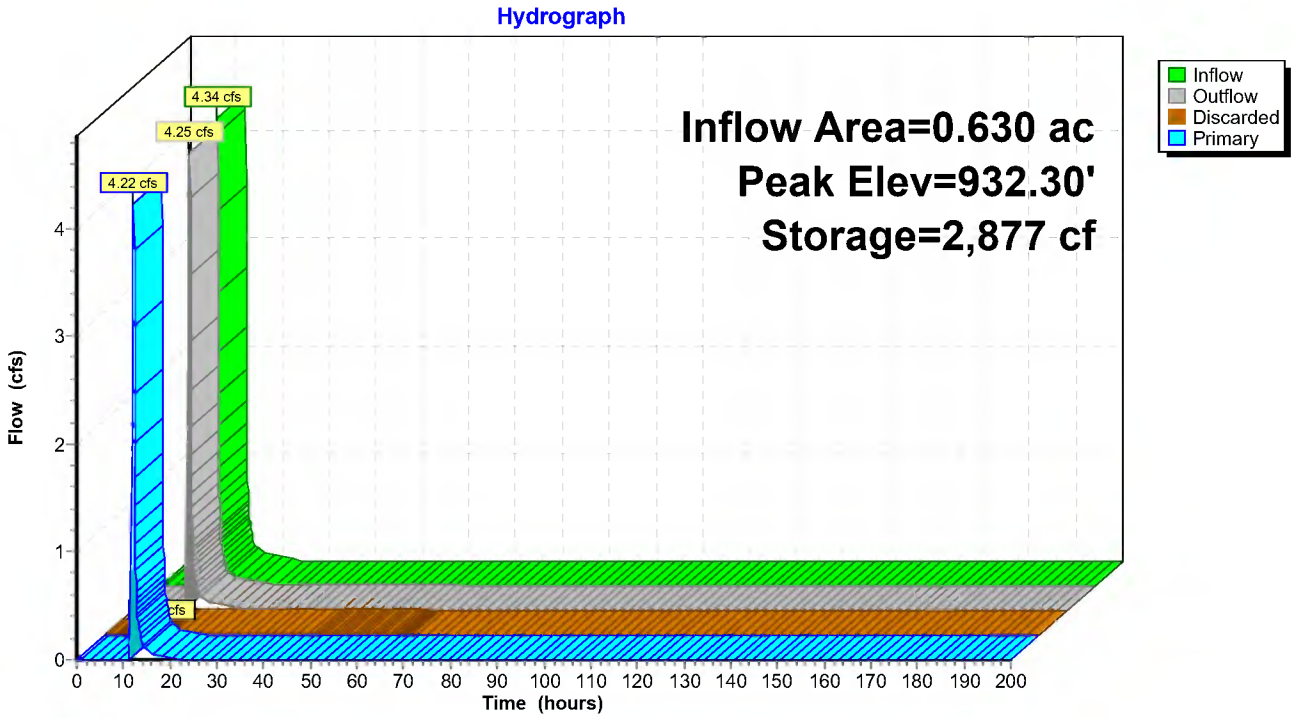
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
930.00	860	0	0
931.00	1,240	1,050	1,050
932.00	1,430	1,335	2,385
932.20	1,760	319	2,704
933.00	2,250	1,604	4,308

Device	Routing	Invert	Outlet Devices
#1	Discarded	930.00'	**0.600 in/hr Exfiltration over Surface area**
#2	Primary	932.00'	**Custom Weir/Orifice, Cv= 2.62 (C= 3.28)**
			Head (feet) 1.00 1.20 2.00
			Width (feet) 5.00 10.00 30.00

Discarded OutFlow Max=0.03 cfs @ 12.20 hrs HW=932.30' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.03 cfs)

Primary OutFlow Max=4.21 cfs @ 12.20 hrs HW=932.30' (Free Discharge)
↑—**2=Custom Weir/Orifice** (Weir Controls 4.21 cfs @ 1.63 fps)

Pond 2P: RG 2


Hydrograph
Inflow Area=0.630 ac
Peak Elev=932.30'
Storage=2,877 cf
4.34 cfs
4.25 cfs
4.22 cfs
cfs
Inflow
Outflow
Discarded
Primary
Flow (cfs)
Time (hours)
0
1
2
3
4
0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200

Stage-Discharge for Pond 2P: RG 2

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
930.00	0.00	0.00	0.00
930.05	0.01	0.01	0.00
930.10	0.01	0.01	0.00
930.15	0.01	0.01	0.00
930.20	0.01	0.01	0.00
930.25	0.01	0.01	0.00
930.30	0.01	0.01	0.00
930.35	0.01	0.01	0.00
930.40	0.01	0.01	0.00
930.45	0.01	0.01	0.00
930.50	0.01	0.01	0.00
930.55	0.01	0.01	0.00
930.60	0.02	0.02	0.00
930.65	0.02	0.02	0.00
930.70	0.02	0.02	0.00
930.75	0.02	0.02	0.00
930.80	0.02	0.02	0.00
930.85	0.02	0.02	0.00
930.90	0.02	0.02	0.00
930.95	0.02	0.02	0.00
931.00	0.02	0.02	0.00
931.05	0.02	0.02	0.00
931.10	0.02	0.02	0.00
931.15	0.02	0.02	0.00
931.20	0.02	0.02	0.00
931.25	0.02	0.02	0.00
931.30	0.02	0.02	0.00
931.35	0.02	0.02	0.00
931.40	0.02	0.02	0.00
931.45	0.02	0.02	0.00
931.50	0.02	0.02	0.00
931.55	0.02	0.02	0.00
931.60	0.02	0.02	0.00
931.65	0.02	0.02	0.00
931.70	0.02	0.02	0.00
931.75	0.02	0.02	0.00
931.80	0.02	0.02	0.00
931.85	0.02	0.02	0.00
931.90	0.02	0.02	0.00
931.95	0.02	0.02	0.00
932.00	0.02	0.02	0.00
932.05	0.22	0.02	0.20
932.10	0.64	0.02	0.62
932.15	1.26	0.02	1.24
932.20	2.07	0.02	2.05
932.25	3.10	0.02	3.07
932.30	4.33	0.03	4.31
932.35	5.79	0.03	5.76
932.40	7.48	0.03	7.46
932.45	9.42	0.03	9.39
932.50	11.61	0.03	11.58
932.55	14.05	0.03	14.03
932.60	16.77	0.03	16.74
932.65	19.77	0.03	19.74
932.70	23.05	0.03	23.02
932.75	26.62	0.03	26.59
932.80	30.49	0.03	30.46
932.85	34.68	0.03	34.65
932.90	39.18	0.03	39.15
932.95	44.00	0.03	43.97
933.00	**49.16**	**0.03**	**49.13**

Stage-Area-Storage for Pond 2P: RG 2

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
930.00	860	0
930.05	879	43
930.10	898	88
930.15	917	133
930.20	936	180
930.25	955	227
930.30	974	275
930.35	993	324
930.40	1,012	374
930.45	1,031	425
930.50	1,050	478
930.55	1,069	530
930.60	1,088	584
930.65	1,107	639
930.70	1,126	695
930.75	1,145	752
930.80	1,164	810
930.85	1,183	868
930.90	1,202	928
930.95	1,221	988
931.00	1,240	1,050
931.05	1,249	1,112
931.10	1,259	1,175
931.15	1,268	1,238
931.20	1,278	1,302
931.25	1,288	1,366
931.30	1,297	1,431
931.35	1,307	1,496
931.40	1,316	1,561
931.45	1,326	1,627
931.50	1,335	1,694
931.55	1,344	1,761
931.60	1,354	1,828
931.65	1,363	1,896
931.70	1,373	1,965
931.75	1,383	2,033
931.80	1,392	2,103
931.85	1,402	2,173
931.90	1,411	2,243
931.95	1,421	2,314
932.00	1,430	2,385
932.05	1,512	2,459
932.10	1,595	2,536
932.15	1,677	2,618
932.20	1,760	2,704
932.25	1,791	2,793
932.30	1,821	2,883
932.35	1,852	2,975
932.40	1,882	3,068
932.45	1,913	3,163
932.50	1,944	3,260
932.55	1,974	3,358
932.60	2,005	3,457
932.65	2,036	3,558
932.70	2,066	3,661
932.75	2,097	3,765
932.80	2,127	3,870
932.85	2,158	3,977
932.90	2,189	4,086
932.95	2,219	4,196
933.00	**2,250**	**4,308**

Summary for Pond 3P: RG 3

Inflow Area = 0.552 ac, 23.72% Impervious, Inflow Depth = 4.79" for 100-Year event
Inflow = 3.63 cfs @ 12.19 hrs, Volume= 0.220 af
Outflow = 3.56 cfs @ 12.21 hrs, Volume= 0.220 af, Atten= 2%, Lag= 1.0 min
Discarded = 0.02 cfs @ 12.21 hrs, Volume= 0.058 af
Primary = 3.54 cfs @ 12.21 hrs, Volume= 0.162 af
Routed to Pond 27P : out

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.04 hrs / 2
Peak Elev= 923.78' @ 12.21 hrs Surf.Area= 1,410 sf Storage= 1,933 cf

Plug-Flow detention time= 296.0 min calculated for 0.220 af (100% of inflow)
Center-of-Mass det. time= 297.1 min (1,082.0 - 784.9)

Volume	Invert	Avail.Storage	Storage Description
#1	921.50'	3,837 cf	**Custom Stage Data (Conic)** Listed below (Recalc)

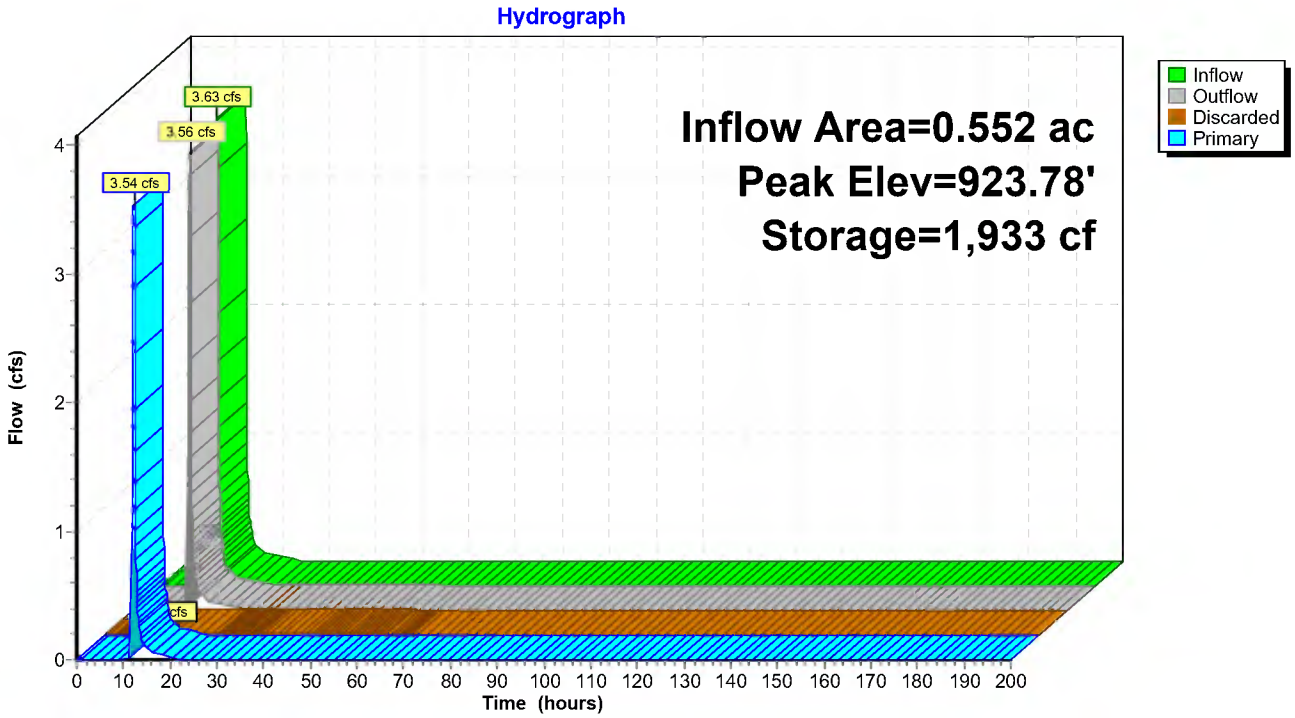
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
921.50	440	0	0	440
922.00	630	266	266	634
922.30	725	203	469	733
922.50	800	152	622	811
923.00	890	422	1,044	914
923.50	1,210	523	1,567	1,240
923.90	1,500	541	2,108	1,534
924.00	1,575	154	2,262	1,610
925.00	1,575	1,575	3,837	1,751

Device	Routing	Invert	Outlet Devices
#1	Discarded	921.50'	**0.600 in/hr Exfiltration over Surface area**
#2	Primary	923.50'	**Custom Weir/Orifice, Cv= 2.62 (C= 3.28)**
			Head (feet) 2.00 2.25 2.50 2.75
			Width (feet) 5.00 10.00 40.00 50.00

Discarded OutFlow Max=0.02 cfs @ 12.21 hrs HW=923.78' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=3.48 cfs @ 12.21 hrs HW=923.78' (Free Discharge)
↑—**2=Custom Weir/Orifice** (Weir Controls 3.48 cfs @ 1.58 fps)

Pond 3P: RG 3


Hydrograph
Inflow Area=0.552 ac
Peak Elev=923.78'
Storage=1,933 cf
3.63 cfs
3.56 cfs
3.54 cfs
cfs
Inflow
Outflow
Discarded
Primary
Flow (cfs)
Time (hours)
0
1
2
3
4
0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200

Stage-Discharge for Pond 3P: RG 3

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
921.50	0.00	0.00	0.00
921.55	0.01	0.01	0.00
921.60	0.01	0.01	0.00
921.65	0.01	0.01	0.00
921.70	0.01	0.01	0.00
921.75	0.01	0.01	0.00
921.80	0.01	0.01	0.00
921.85	0.01	0.01	0.00
921.90	0.01	0.01	0.00
921.95	0.01	0.01	0.00
922.00	0.01	0.01	0.00
922.05	0.01	0.01	0.00
922.10	0.01	0.01	0.00
922.15	0.01	0.01	0.00
922.20	0.01	0.01	0.00
922.25	0.01	0.01	0.00
922.30	0.01	0.01	0.00
922.35	0.01	0.01	0.00
922.40	0.01	0.01	0.00
922.45	0.01	0.01	0.00
922.50	0.01	0.01	0.00
922.55	0.01	0.01	0.00
922.60	0.01	0.01	0.00
922.65	0.01	0.01	0.00
922.70	0.01	0.01	0.00
922.75	0.01	0.01	0.00
922.80	0.01	0.01	0.00
922.85	0.01	0.01	0.00
922.90	0.01	0.01	0.00
922.95	0.01	0.01	0.00
923.00	0.01	0.01	0.00
923.05	0.01	0.01	0.00
923.10	0.01	0.01	0.00
923.15	0.01	0.01	0.00
923.20	0.01	0.01	0.00
923.25	0.01	0.01	0.00
923.30	0.01	0.01	0.00
923.35	0.02	0.02	0.00
923.40	0.02	0.02	0.00
923.45	0.02	0.02	0.00
923.50	0.02	0.02	0.00
923.55	0.22	0.02	0.20
923.60	0.62	0.02	0.60
923.65	1.20	0.02	1.18
923.70	1.95	0.02	1.93
923.75	2.88	0.02	2.87
923.80	4.08	0.02	4.06
923.85	5.72	0.02	5.70
923.90	7.96	0.02	7.94
923.95	10.87	0.02	10.85
924.00	14.54	**0.02**	14.51
924.05	18.98	0.02	18.96
924.10	24.10	0.02	24.08
924.15	29.87	0.02	29.85
924.20	36.27	0.02	36.25
924.25	43.30	0.02	43.28
924.30	49.10	0.02	49.08
924.35	53.90	0.02	53.88
924.40	58.18	0.02	58.16
924.45	62.12	0.02	62.09
924.50	65.78	0.02	65.76
924.55	69.23	0.02	69.21
924.60	72.50	0.02	72.47
924.65	75.61	0.02	75.59
924.70	78.60	0.02	78.58
924.75	81.47	0.02	81.44
924.80	84.23	0.02	84.21
924.85	86.91	0.02	86.89
924.90	89.50	0.02	89.48
924.95	92.02	0.02	92.00
925.00	**94.47**	0.02	**94.44**

Stage-Area-Storage for Pond 3P: RG 3

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
921.50	440	0
921.55	457	22
921.60	475	46
921.65	493	70
921.70	512	95
921.75	531	121
921.80	550	148
921.85	569	176
921.90	589	205
921.95	609	235
922.00	630	266
922.05	645	298
922.10	661	331
922.15	677	364
922.20	693	398
922.25	709	433
922.30	725	469
922.35	743	506
922.40	762	544
922.45	781	582
922.50	800	622
922.55	809	662
922.60	818	702
922.65	826	744
922.70	835	785
922.75	844	827
922.80	853	870
922.85	862	912
922.90	872	956
922.95	881	1,000
923.00	890	1,044
923.05	920	1,089
923.10	950	1,136
923.15	981	1,184
923.20	1,012	1,234
923.25	1,044	1,285
923.30	1,076	1,338
923.35	1,109	1,393
923.40	1,142	1,449
923.45	1,176	1,507
923.50	1,210	1,567
923.55	1,245	1,628
923.60	1,280	1,691
923.65	1,315	1,756
923.70	1,351	1,823
923.75	1,388	1,891
923.80	1,425	1,962
923.85	1,462	2,034
923.90	1,500	2,108
923.95	1,537	2,184
924.00	**1,575**	2,262
924.05	1,575	2,340
924.10	1,575	2,419
924.15	1,575	2,498
924.20	1,575	2,577
924.25	1,575	2,655
924.30	1,575	2,734
924.35	1,575	2,813
924.40	1,575	2,892
924.45	1,575	2,970
924.50	1,575	3,049
924.55	1,575	3,128
924.60	1,575	3,207
924.65	1,575	3,285
924.70	1,575	3,364
924.75	1,575	3,443
924.80	1,575	3,522
924.85	1,575	3,600
924.90	1,575	3,679
924.95	1,575	3,758
925.00	1,575	**3,837**

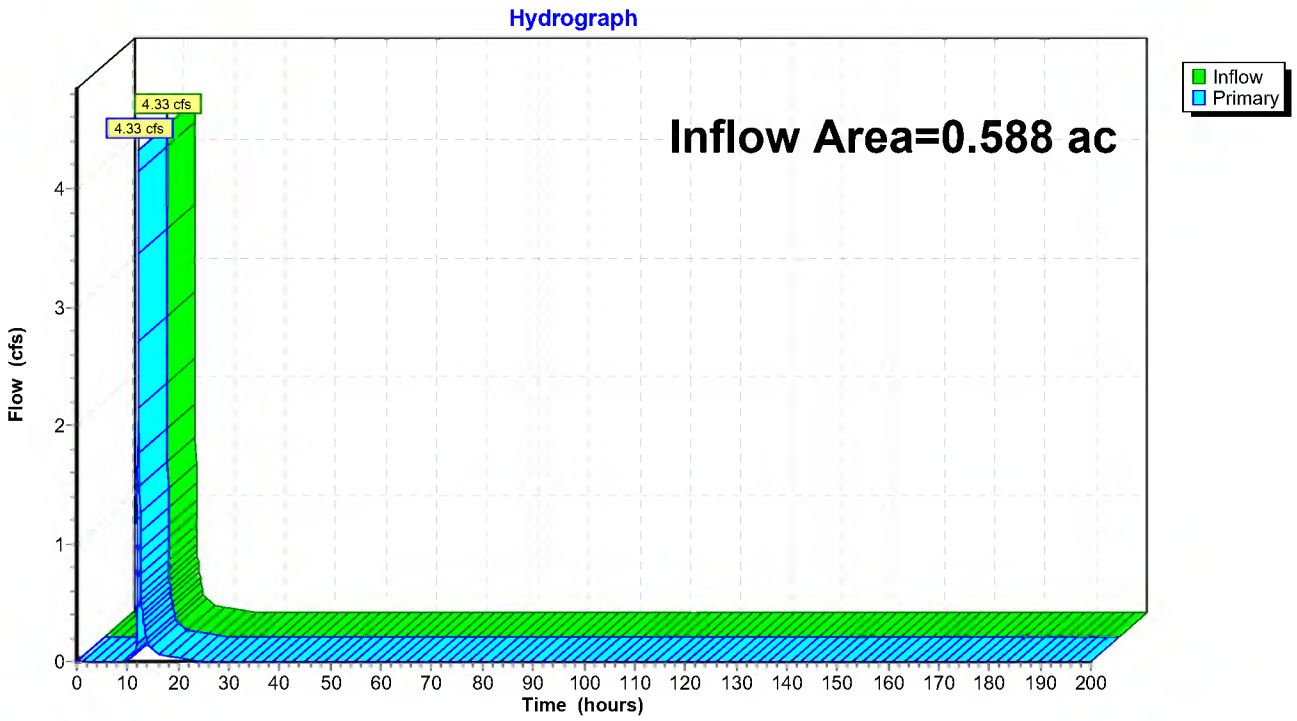
Summary for Pond 4P: Offsite to East

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.588 ac, 16.41% Impervious, Inflow Depth = 4.28" for 100-Year event
Inflow = 4.33 cfs @ 12.17 hrs, Volume= 0.210 af
Primary = 4.33 cfs @ 12.17 hrs, Volume= 0.210 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.04 hrs

Pond 4P: Offsite to East



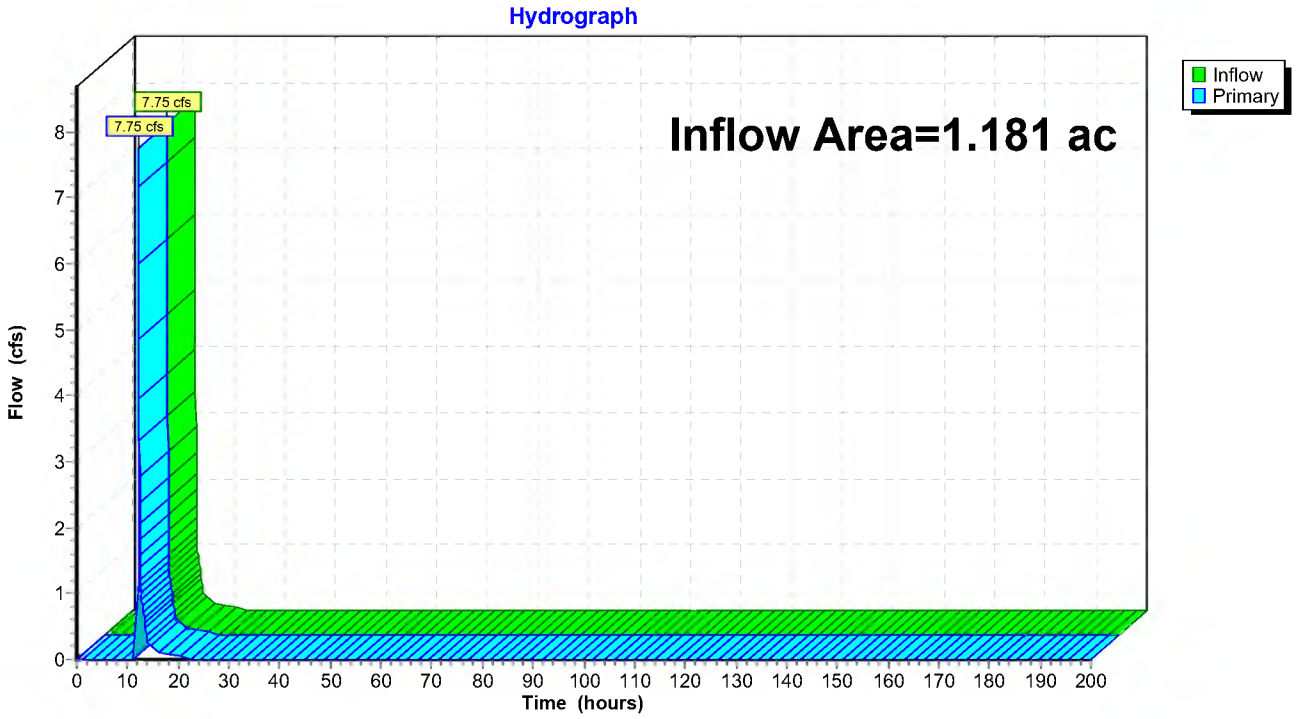
Summary for Pond 27P: out

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.181 ac, 22.16% Impervious, Inflow Depth = 3.33" for 100-Year event
Inflow = 7.75 cfs @ 12.20 hrs, Volume= 0.328 af
Primary = 7.75 cfs @ 12.20 hrs, Volume= 0.328 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.04 hrs

Pond 27P: out



P8 Urban Catchment Model, Version 3.5				Run Date	08/31/23
Case	Priory Woods Proposed.p8c	FirstDate	10/01/12	Precip(in)	312.9
Title	Priory Woods	LastDate	01/01/22	Rain(in)	276.26
PrecFile	MSP49-20220228.pcp	Events	718	Snow(in)	36.67
PartFile	nurp50.p8p	TotalHrs	80920	TotalYrs	9.23

Case Title	Priory Woods
Case Data File	Priory Woods Proposed.p8c
Path	H:\P8\
Case Notes:	simple startup case
Storm Data File	MSP49-20220228.pcp
Particle File	nurp50.p8p
Air Temp File File	MSP49-20220228.tem

Time Steps Per Hour	10
Minimum Inter-Event Time (hrs)	10
Maximum Continuity Error %	2
Rainfall Breakpoint (inches)	0.8
Precipitation Scale Factor	1
Air Temp Offset (deg-F)	0
Loops Thru Storm File	1
Simulation Dates	
Start	1/1/2011
Keep	10/1/2012
Stop	1/1/2022

Max Snowfall Temperature (deg-f)	32.0
SnowMelt Temperature (deg-f)	32.0
Snowmelt Coef (in/degF-Day)	0.06
Soil Freeze Temp (deg-F)	32.0
Snowmelt Abstraction Factor	1.00
Evapo-Trans. Calibration Factor	1.00
Growing Season Start Month	5
Growing Season End Month	10

5-Day Antecedent Rainfall + Runoff (inches)		
CN Antecedent Moisture Condition	AMC-II	AMC-III
Growing Season	1.40	2.10
NonGrowing Season	0.50	1.10

Watershed Data

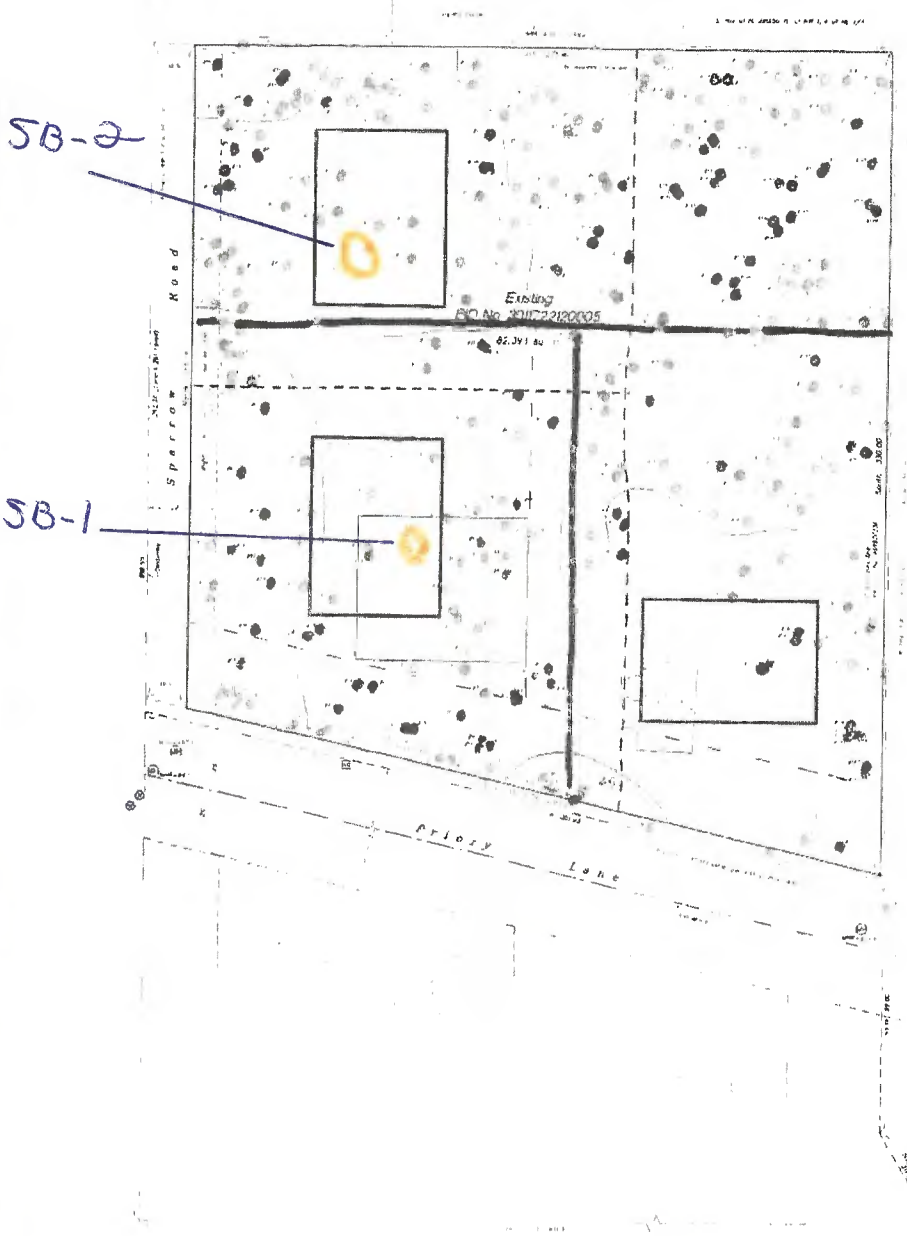
Watershed Name		5S		7S	8S	
Runoff to Device		RG1		RG2	RG3	
Infiltration to Device						
Watershed Area		0.404		0.629	0.552	
SCS Curve Number (Pervious)		74		65	80	
Scale Factor for Pervious Runoff Load		1		1	1	
Indirectly Connected Imperv Fraction		0		0	0	
UnSwept Impervious Fraction		0.9		0.9	0.9	
UnSwept Depression Storage (inches)		0.02		0.021	0.021	
UnSwept Imperv. Runoff Coefficient		1		1	1	
UnSwept Scale Factor for Particle Loads		1		1	1	
Swept Impervious Fraction		0		0	0	
Swept Depression Storage (inches)		0.02		0.021	0.021	
Swept Imperv. Runoff Coefficient		1		1	1	
Swept Scale Factor for Particle Loads		1		1	1	
Sweeping Frequency		0		0	0	
Sweeping Efficiency		1		1	1	
Sweeping Start Date (MMDD)		101		101	101	
Sweeping Stop Date (MMDD)		1231		1231	1231	

Device Data							
Device Name	Out	RG1	RG2	RG3		
Device Type	PIPE	INF_BASIN	INF_BASIN	INF_BASIN		
Infiltration Outlet						
Normal Outlet						
Spillway Outlet				Out		
Particle Removal Scale Factor		1	1	1		
Bottom Elevation (ft)		945	930	921.5		
Bottom Area (acres)		0.0178	0.0197	0.0101		
Permanent Pool Area (acres)						
Permanent Pool Volume (ac-ft)						
Perm Pool Infilt Rate (in/hr)						
Flood Pool Area (acres)		0.029	0.033	0.0277		
Flood Pool Volume (ac-ft)		0.0223	0.054	0.0359		
Flood Pool Infilt Rate (in/hr)		0.3	0.6	0.06		
Infilt Basin Void Fraction (%)		100	100	100		
Detention Pond Outlet Parameters						
Outlet Type						
Outlet Orifice Diameter (in)						
Orifice Discharge Coef						
Outlet Weir Length (ft)						
Weir Discharge Coef						
Perforated Riser Height (ft)						
Number of Holes in Riser						
Holes Diameter						
Flood Pool Drain Time (hrs)						
Swale Parameters						
Length of Flow Path (ft)						
Slope of Flow Path %						
Bottom Width (ft)						
Side Slope (ft-v/ft-h)						
Maximum Depth of Flow (ft)						
Mannings n Constant						
Hydraulic Model						
Pipe, Splitter, Aquifer Parameter						
Hydraulic Res. Time (hrs)	0					

Particle Data					
Particle File	nurp50.p8p				
Particle Class	P0%	P10%	P30%	P50%	P80%
Filtration Efficiency (%)	0	50	100	100	100
Settling Velocity (ft/hr)	0	0.03	0.3	1.5	15
First Order Decay Rate (1/da	0	0	0	0	0
2nd Order Decay (1/day-ppr	0	0	0	0	0
Impervious Runoff Conc (pp	1	0	0	0	0
Pervious Runoff Conc (ppm	1	100	100	100	200
Pervious Conc Exponent	0	1	1	1	1
Accum. Rate (lbs-ac-day)	0	1.75	1.75	1.75	3.5
Particle Removal Rate (1/da	0	0.25	0.25	0.25	0.25
Washoff Coefficient	0	20	20	20	20
Washoff Exponent	0	2	2	2	2
Sweeper Efficiency	0	0	0	5	15

Water Quality Component Data							
Component Name	TSS	TP	TKN	CU	PB	ZN	HC
Water Quality Criteria (ppm)							
Level 1	5	0.025	2	2	0.02	5	0.1
Level 2	10	0.05	1	0.0048	0.014	0.0362	0.5
Level 3	20	0.1	0.5	0.02	0.15	0.38	1
Content Scale Factor	1	1	1	1	1	1	1
Particle Composition (mg/kg)							
P0%	0	99000	600000	13600	2000	64000	250000
P10%	1000000	3850	15000	340	180	1600	22500
P30%	1000000	3850	15000	340	180	1600	22500
P50%	1000000	3850	15000	340	180	1600	22500
P80%	1000000	0	0	340	180	0	22500

Certificate of Survey



SCHOBORG LAND SERVICES INC.

Haugo GeoTechnical Services
2825 Cedar Ave South
Minneapolis, MN, 55407
Telephone: 612-729-2959
Fax: 763-445-2238

BORING NUMBER SB-1

CLIENT Zehnder Homes
PROJECT NAME 4633 Sparrow Road
PROJECT NUMBER 23-0498
PROJECT LOCATION Minnetonka, MN
DATE STARTED 7/12/23 **COMPLETED** 7/12/23
GROUND ELEVATION _____ **HOLE SIZE** 3 1/4 inches
DRILLING CONTRACTOR HGTS- 45
GROUND WATER LEVELS:
DRILLING METHOD Hollow Stem Auger/Split Spoon
AT TIME OF DRILLING --- Not Encountered
LOGGED BY MS **CHECKED BY** PG
AT END OF DRILLING --- Not Encountered
NOTES
AFTER DRILLING --- Not Encountered

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	Moisture Content (%)
0		Silty Sand with Grass and Roots, black, moist (Topsoil/Fill)	AU 1			
		Silty Sand, dark brown, damp (Fill)	SS 2		6-9-8 (17)	
		Sandy Lean Clay, trace Roots, dark brown, damp (Possible Fill)	SS 3		6-7-10 (17)	
5		(CL) Lean Clay, brown, damp, stiff to very stiff (Glacial Till)	SS 4		6-9-5 (14)	
			SS 5		6-8-9 (17)	
10		(SM) Silty Sand, fine to coarse grained, trace Gravel, brown, moist, medium dense (Glacial Till)	SS 6		3-6-7 (13)	
		(SP) Poorly Graded Sand, fine grained, trace Gravel, brown, moist, medium dense (Glacial Till)	SS 7		1-4-8 (12)	
15						
20			SS 8		4-9-12 (21)	

▲ SPT N VALUE ▲
20 40 60 80
PL MC LL
20 40 60 80
☐ FINES CONTENT (%) ☐
20 40 60 80

Bottom of borehole at 21.0 feet.

Haugo GeoTechnical Services
2825 Cedar Ave South
Minneapolis, MN, 55407
Telephone: 612-729-2959
Fax: 763-445-2238

BORING NUMBER SB-2

CLIENT Zehnder Homes
PROJECT NAME 4633 Sparrow Road
PROJECT NUMBER 23-0498
PROJECT LOCATION Minnetonka, MN
DATE STARTED 7/12/23 **COMPLETED** 7/12/23
GROUND ELEVATION _____ **HOLE SIZE** 3 1/4 inches
DRILLING CONTRACTOR HGTS- 45
GROUND WATER LEVELS:
DRILLING METHOD Hollow Stem Auger/Split Spoon
AT TIME OF DRILLING --- Not Encountered
LOGGED BY MS **CHECKED BY** PG
AT END OF DRILLING --- Not Encountered
NOTES
AFTER DRILLING --- Not Encountered

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	Moisture Content (%)
0		Silty Sand with Roots, black, damp (Topsoil)	AU 9			
		(SM) Silty Sand, fine to medium grained, trace Gravel, brown, moist, loose (Glacial Till)	SS 10		4-3-3 (6)	
5		(SP) Poorly Graded Sand, fine to coarse grained, trace Gravel, brown, moist, medium dense (Glacial Till)	SS 11		3-5-6 (11)	
			SS 12		3-8-11 (19)	
10			SS 13		4-9-11 (20)	
			SS 14		3-9-12 (21)	
15			SS 15		5-9-13 (22)	
20			SS 16		5-12-15 (27)	

▲ SPT N VALUE ▲
20 40 60 80
PL MC LL
20 40 60 80
☐ FINES CONTENT (%) ☐
20 40 60 80

Bottom of borehole at 21.0 feet.

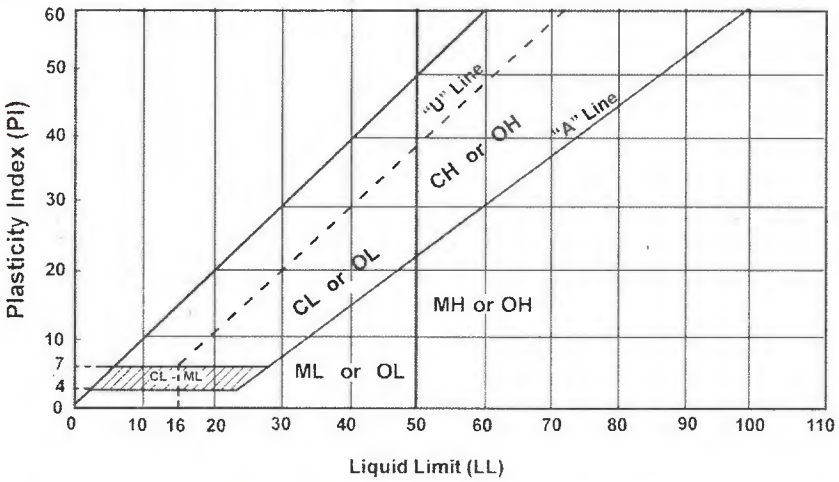
HAUGO GEOTECHNICAL SERVICES

Descriptive Terminology of Soil

Standard D 2487 - 00
Classification of Soils for Engineering Purposes
(Unified Soil Classification System)

Criteria for Assigning Group Symbols and Group Names Using Laboratory Tests [a]				Soils Classification	
				Group Symbol	Group Name [b]
Coarse-grained Soils more than 50% retained on No. 200 sieve	Gravels More than 50% of coarse fraction retained on No. 4 sieve	Clean Gravels 5% or less fines [e]	$C_u \geq 4$ and $1 \leq C_c \leq 3$ [c]	GW	Well-graded gravel [d]
			$C_u < 4$ and/or $1 > C_c > 3$ [c]	GP	Poorly graded gravel [d]
		Gravels with Fines More than 12% fines [e]	Fines classify as ML or MH	GM	Silty gravel [d f g]
			Fines classify as CL or CH	GC	Clayey gravel [d f g]
	Sands 50% or more of coarse fraction passes No. 4 sieve	Clean Sands 5% or less fines [f]	$C_u \geq 6$ and $1 \leq C_c \leq 3$ [c]	SW	Well-graded sand [h]
			$C_u < 6$ and/or $1 > C_c > 3$ [c]	SP	Poorly graded sand [h]
		Sands with Fines More than 12% [i]	Fines classify as ML or MH	SM	Silty sand [f g h]
			Fines classify as CL or CH	SC	Clayey sand [f g h]
Fine-grained Soils 50% or more passed the No. 200 sieve	Silts and Clays Liquid limit less than 50	Inorganic	PI > 7 and plots on or above "A" line [j]	CL	Lean clay [k l m]
			PI < 4 or plots below "A" line [j]	ML	Silt [k l m]
		Organic	Liquid limit - oven dried / Liquid limit - not dried < 0.75	OL	Organic clay [k l m n]
				OL	Organic silt [k l m o]
	Silts and clays Liquid limit 50 or more	Inorganic	PI plots on or above "A" line	CH	Fat clay [k l m]
			PI plots below "A" line	MH	Elastic silt [k l m]
		Organic	Liquid limit - oven dried / Liquid limit - not dried < 0.75	OH	Organic clay [k l m p]
				OH	Organic silt [k l m q]
Highly Organic Soils		Primarily organic matter, dark in color and organic odor		PT	Peat

a. Based on the material passing the 3-in (75mm) sieve.
b. If field sample contained cobbles or boulders, or both, add "with cobbles or boulders or both" to group name.
c. $C_u = D_{60} / D_{10}$ $C_c = \frac{(D_{30})^2}{D_{10} \times D_{60}}$
d. If soil contains ≥15% sand, add "with sand" to group name.
e. Gravels with 5 to 12% fines require dual symbols:
GW-GM well-graded gravel with silt
GW-GC well-graded gravel with clay
GP-GM poorly graded gravel with silt
GP-GC poorly graded gravel with clay
f. If fines classify as CL-ML, use dual symbol GC-GM or SC-SM.
g. If fines are organic, add "with organic fines" to group name.
h. If soil contains ≥ 15% gravel, add "with gravel" to group name.
i. Sands with 5 to 12% fines require dual symbols:
SW-SM well-graded sand with silt
SW-SC well-graded sand with clay
SP-SM poorly graded sand with silt
SP-SC poorly graded sand with clay
j. If Atterberg limits plot in hatched area, soil is a CL-ML, silty clay.
k. If soil contains 10 to 29% plus No. 200, add "with sand" or "with gravel" whichever is predominant.
l. If soil contains ≥ 30% plus No. 200 predominantly sand, add "sandy" to group name.
m. If soil contains ≥ 30% plus No. 200 predominantly gravel, add "gravelly" to group name.
n. PI ≥ 4 and plots on or above "A" line.
o. PI < 4 or plots below "A" line.
p. PI plots on or above "A" line.
q. PI plots below "A" line.



Laboratory Tests

DD	Dry density, pcf	OC	Organic content, %
WD	Wet density, pcf	S	Percent of saturation, %
MC	Natural moisture content, %	SG	Specific gravity
LL	Liquid limit, %	C	Cohesion, psf
PL	Plastic limit, %	∅	Angle of internal friction
PI	Plasticity index, %	qu	Unconfined compressive strength, psf
P200	% passing 200 sieve	qp	Pocket penetrometer strength, tsf

Particle Size Identification

Boulders	over 12"
Cobbles	3" to 12"
Gravel	
Coarse	3/4" to 3"
Fine	No. 4 to 3/4"
Sand	
Coarse	No. 4 to No. 10
Medium	No. 10 to No. 40
Fine	No. 40 to No. 200
Silt	< No. 200, PI < 4 or below "A" line
Clay	< No. 200, PI ≥ 4 and on or above "A" line

Relative Density of Cohesionless Soils

Very loose	0 to 4 BPF
Loose	5 to 10 BPF
Medium dense	11 to 30 BPF
Dense	31 to 50 BPF
Very dense	over 50 BPF

Consistency of Cohesive Soils

Very soft	0 to 1 BPF
Soft	2 to 3 BPF
Rather soft	4 to 5 BPF
Medium	6 to 8 BPF
Rather stiff	9 to 12 BPF
Stiff	13 to 16 BPF
Very stiff	17 to 30 BPF
Hard	over 30 BPF

Drilling Notes

Standard penetration test borings were advanced by 3 1/4" or 6 1/4" ID hollow-stem augers unless noted otherwise, Jetting water was used to clean out auger prior to sampling only where indicated on logs. Standard penetration test borings are designated by the prefix "ST" (Split Tube). All samples were taken with the standard 2" OD split-tube sampler, except where noted.

Power auger borings were advanced by 4" or 6" diameter continuous-flight, solid-stem augers. Soil classifications and strata depths were inferred from disturbed samples augered to the surface and are, therefore, somewhat approximate. Power auger borings are designated by the prefix "B."

Hand auger borings were advanced manually with a 1 1/2" or 3 1/4" diameter auger and were limited to the depth from which the auger could be manually withdrawn. Hand auger borings are indicated by the prefix "H."

BPF: Numbers indicate blows per foot recorded in standard penetration test, also known as "N" value. The sampler was set 6" into undisturbed soil below the hollow-stem auger. Driving resistances were then counted for second and third 6" increments and added to get BPF. Where they differed significantly, they are reported in the following form: 2/12 for the second and third 6" increments, respectively.

WH: WH indicates the sampler penetrated soil under weight of hammer and rods alone; driving not required.

WR: WR indicates the sampler penetrated soil under weight of rods alone; hammer weight and driving not required.

TW indicates thin-walled (undisturbed) tube sample.

Note: All tests were run in general accordance with applicable ASTM standards.

Project: Priory Woods
Location: 4633 Sparrow Road
Minnetonka, MN
Prepared for: Zehnder Homes
Prepared by: Sathre-Bergquist, Inc.
Date: 09/01/23
Revised:

SUMMARY

4633 Sparrow Rd is a single family residence to be split into 3 new single family lots. Each lot shall have its own stormwater management feature. Based on available on site soils information provided by Haugo Geotechnical Servics soils are a mix of CL (C) & SM, SP (A-B) Hydrologic soils group. C soils will be assumed for a conservative preliminary design. BMP goals will be achieve by 3 individual infiltration

3 individual rain gardens are proposed to meet stormwater requirements. Based on soils informaition SM & SP soils are located on site at 10ft below grade. Rain gardens shall be over excavated to this soils seem. All disturbed areas shall be amended via incorporation of 2" of compost tilled into 6" of topsoil - AFTER construction is complete. Compost shall meet MNDOT spec 3890.1B Grade 1

Design

Hydrology — Stormwater design was completed using HydroCAD for Pre & post development conditions. Runoff was estimated using TR-20. NOAA Atlas 14 was used to assign rainfall depths for analysis and runoff from pervious & impervious was calculated separately.

Curve Number — Curve numbers selected based on land use, soil conditions & impervious area

NOAA Atlas 14 Rainfall Depth (in)

24-hour Duration	1-Yr	2-Yr	10-Yr	100-Yr	Snow Melt
	2.50	2.87	4.27	7.41	7.20

Sizing & water quality — Filtration Basin for this projected have been sized to filtrate 1.0" of runoff from new impervious surfaces. This is consistent with standard required by the city & watershed. Water quality requirement is met by providing infiltration for a water quality volume equal to 1.1" of runoff from new impervious.

Soils — NRCS Websoils survey data base indicates on site soils are a combination of A & B Hydrologic Group soils. - Soil logs done by Haugo Geo Technical Services show SP, SM & CL soils. These range from C to A soils. For conservative design C soils are used.

City of Minnetonka

Runoff Rate Control — Limit peak runoff flow rates to existing conditions for 1, 2, 10, 100 year events from all discharge points from the project as well as 100yr 10day snow melt

Runoff Volume Control — Provide onsite retention of 1.1-in of runoff from all impervious surfaces. Infiltration is the prefered control practice. Alternative methods can be used if site conditions do not allow of infiltration

Water Quality Treatment — Provide treatment for all runoff of at least 60% removal efficiency for total phosphorus (TP) & 90% TSS

City requires that BMPs include pretreatment of runoff to removed soilds prior to discharge to infiltration/filtration features.

Low Floor Elevation — 2ft above the 100 yr flood elevation for wetlands, floodplains & Shorelands. Landlocked basins shall be 2ft above the back to back 100 yr storm events (first assuming AMC-II event and the second assuming AMC-III)

Infiltration Basins — Drawdown time for infiltratin basins shall be 48hrs from peak water level. Depth and area of the infiltration basin shall be adjusted accordingly.

Maintenance Plan — City requires that a maintenance plan submitted and recoreded on the deed in a form acceptable to the city. Maintenance agreement shall identify & protect design capacity & functionality of stormwater features as well as specify methods, schdeule & responsible parties for maintenance and provide for maintenance of the facility in perpetuity.

Riley-Purgatory-Bluff Creek Watershed District

Stormwater Management Rule

3.c.1 Phosphorus Control: — 60% reduction in TP 90% reduction in TSS

3.a Rate Control: — 1) Activity subject to this rule shall result in no net increase in peak runoff rate for the 1-,10-, & 100-yr design storms compared to the rate in the existing condition

2) Peak runoff rates for the 2-,10- & 100-yr design storms may in increase within a specific drainage area of the site so as to create or exacerbate drainage or erosion problems 100 yr 10 day snow melt

3.b Volume Control — 1) Stormwater management plan must provide for abstration of the first 1.1 inch of rainfall from the site's impervious surface.
2.3. Redevelopment: If proposed activities will increase total impervious surface by more than 50% or disturb more than 50% of existing impervious criteria shall apply to entire site

High Water Elevation — Provide at least 2 vertical feet of seperation between low openings of structures & the 100-yr high water elevations

No evidence of ground water within 3ft of the bottom of the facility, practice or system.

Based on soil borings provided, no ground water was encountered in 21ft depth of borings (~ 915 bore termination)

Minnesota Pollution Control Agency

For projects disturbing an area of more than 1.0 ac Natinal Pollution Discharge Elimination System Permit is triggered (NPDES). NPDES requires proposed BMPs provide capacity of retaining onste 1 in of runoff from all new impervious surfaces

Volume Control

VOLUME CONTROL REQUIRED:

3 new homes to be constructed - each to have individual systems

Required Infiltration -	1.1	inch =	0.092	ft
Average Home Size (s.f.)	3500		3,500.000	
Average Driveway size (s.f.)	1503		1,503.000	
Average Assumed additional hardcover	700	=	700.000	

Hardcover - Each Lot 5,703 sf 0.092 523 0.012 ac-ft

Total = 1,568.325 cf

	Time (hrs)	Infiltration rate (in/hr)	Max Depth (in)	Max Depth (ft)	
Drawdown	48	0.3	14.40	1.2	ft

VOLUME CONTROL ACHIEVED:

Rain Gardens

AV=Vol below Overflow

	Elev	Area	Storage (cf)			
Rain Garden 1	945.00	775.00	0.00	NWL		
	946.00	1,170.00	972.50	Outlet	AV =	972.50
Rain Garden 2	930.00	860.00	0.00	NWL		
	932.00	1,070.00	1,930.00	Outlet	AV =	1,930.00
Rain Garden 3	923.20	725.00	0.00	NWL		
	924.00	1,080.00	722.00	Outlet	AV =	722.00

Total AV from Filtration 3,624.50

Pre Treatment filter strips Per MN Stormwater Manual

https://stormwater.pca.state.mn.us/index.php?title=Pretreatment_sizing_for_basins_and_filters_strips

LW=-((CIA)/(Vs)xln(1-FR))

C=0.7	I=0.5in/hr =.04167ft/hr	Vs=.017 ft/s=61.2ft/hr
A= Directly connected impervipous Area		

LW=-((.7 x 17559 x .04167) / (61.2) ln(1-.8) = 13.5 sf

13. sf / 20ft long = .57ft wide = use 2ft filter strip

LW=-((.7 x 2380 x .04167) / (61.2) ln(1-.8) = 21.0sf

21.0sf / 20ft long = 1.05ft wide = use 2ft filter strip

LW=-((.7 x 1885 x .04167) / (61.2) ln(1-.8) = 18.4sf

18.4sf / 20ft long = 0.92ft wide = use 2ft filter strip

TOTAL VOLUME CONTROL

Infiltration volume	=	3,624.50
Required Volume	=	1,568.33
Excess Volume Provided	=	2,056.17

Excess volume is required to meet rate control

Quality Control

P8 Model Results

Pollutant	Existing Load	Proposed Load	Removed	Proposed discharge	Δ Loading (Ex v Pro)	Removal Eff.
TP (lbs/yr)	1.6	3.58	2.2	1.4	-0.2	61%
TSS (lbs/yr)	478.4	1097.4	1004.3	93.1	-385.3	92%

Rate Control

Rate control design standards are to maintain pre-development peak runoff rates for the 1-yr, 2-yr, 10-yr, 100-yr 24-hour storm events.
HydroCAD was used to model rate control for this project. The tables below compare pre-development and post-development rates.

Discharge East	1-yr (cfs)	2-yr (cfs)	10-yr (cfs)	100-yr (cfs)	100yr 10 Day Snow melt	Discharge North	1-yr (cfs)	2-Yr (cfs)	10-yr (cfs)	100-yr (cfs)	100yr 10 Day Snow melt
Existing (1S)	0.7	0.9	1.9	4.3	0.3	Existing (3S)	1.1	1.5	3.3	7.7	0.6
Proposed (4P)	0.2	0.2	1.8	4.3	0.3	Proposed (3P)	0.0	0.0	1.0	7.7	0.5
Change in Discharge Rate	-0.5	-0.7	-0.1	0.0	0.0	Change in Discharge Rate	-1.1	-1.5	-2.3	0.0	-0.1

Discharge Street	1-yr (cfs)	2-yr (cfs)	10-yr (cfs)	100-yr (cfs)	100yr 10 Day Snow melt
Existing (2S)	0.1	0.1	0.3	0.6	0.0
Proposed (6S)	0.1	0.2	0.3	0.6	0.0
Change in Discharge Rate	0.0	0.1	0.0	0.0	0.0

Low Floor Separation	Low Floor	Adjacent HWL	Difference
Lot 1	952.6	946.2	6.4
18208 Priory East of lot 1 to RG 1	945.9	946.2	-0.3
Lot 2	944.6	932.3	12.3
Lot 3 to RG 2	926.1	932.3	-6.2
Lot 3 RG 3	926.1	923.8	2.3
4617 Sparrow Rd to RG 3	925.5	923.8	1.7

Plot 1 Notes
Meets 3ft Separation
Based on Plot 1 with water 21ft below, min distance to basin is less than 5ft, existing is 48ft
Meets 3ft Separation
Based on Plot 1 with water 21ft below, min distance to basin is less than 5ft, existing is 20ft
Based on Plot 1 with water 21ft below, min distance to basin is less than 5ft (off chart), Proposed is 5ft
Based on Plot 1 with water 21ft below, min distance to basin is less than 5ft, existing is 11.5ft

Borings extended 21ft below grade - No ground water was observed
SB-1 Bottom Approx 923.0 (Lot 2)
SB-2 Bottom Approx 911.0 (Lot 3)

Stormwater Management Report
for

Priory Woods

Minnetonka, Minnesota

Prepared on September 1, 2023
Revised
Prepared for **Zehnder Homes, Inc.**
10300 10 Ave N
Plymouth, MN 55441
Contact : Eric Zehnder
Phone: (763) 204-8114

Prepared by **Sathre-Bergquist, Inc.**
14000 25th Ave N.
Plymouth, MN 55447

Contact(s):
Charles Wiemerslage, P.E.
cwiemerslage@sathre.com
(phone) (952) 476-6000
(fax) (952) 476-0104

http://www.sathre.com/

SATHRE-BERGQUIST, INC.
150 SOUTH BROADWAY, WAYZATA, MN 55391 ♦ (952) 476-6000

I hereby certify that this report was prepared by me or under my direct supervision and that I am a duly registered Professional Engineer under the laws of the State of Minnesota.

Date 9/1/23 Reg. No. 49180

PRIORY WOODS

Minnetonka, Minnesota

Project # 99595-151 **Date** August 24, 2023

Prepared for: Zehnder Homes Inc
14240 23rd Ave N Plymouth, MN 55447
Contact: Eric Zehnder
tel: 651-303-5747

Prepared by: Sathre-Bergquist, Inc.
14000 25th Avenue N, Suite 120
Plymouth, MN 55447
Contact: Charlie Wiemersalge
tel: 952-476-6000

BLOCK 1	GROSS AREA				WETLAND AREA				NET AREA				WIDTH @ SETBACK		
Lot 1	25,052	s.f.	0.58	acres	0	s.f.	25,052	s.f.	0.58	acres	126.9	+/-	l.f.
Lot 2	24,205	s.f.	0.56	acres	0	s.f.	24,205	s.f.	0.56	acres	146	+/-	l.f.
Lot 3	30,329	s.f.	0.70	acres	0	s.f.	30,329	s.f.	0.70	acres	114.6	+/-	l.f.
Total	79,586	s.f.	1.83	acres	0	s.f.	79,586	s.f.	1.83	acres			

R/W	GROSS AREA				WETLAND AREA				NET AREA			
	2,807	s.f.	0.06	acres	0	s.f.	2,807	s.f.	0.06	acres		

TOTAL	GROSS AREA				WETLAND AREA				NET AREA			
	82,393	s.f.	1.89	acres	0	s.f.	82,393	s.f.	1.89	acres		