PLANNING & ZONING COMMISSION MEETING

Tuesday, July 22, 2025 at 6:00 PM

Agenda

1. Call to Order

2. Opening Prayer and Pledge of Allegiance

3. Presented Items

A) Consideration of Resolutions, Recognizing Commissioner Sam McGaugh and Commissioner Tim Slattery for Public Service to Gluckstadt

4. Consideration and Approval of Minutes

A) Review and Approve June 24, 2025 Board Minutes

5. New Conditional Use Considerations

A) Discussion and Consideration of B&B Cosmetic MS LLC Conditional Use

6. New Site Plan Considerations

A) Discussion and Consideration of Wellspring Church Parking Expansion Site Plan

7. New Business

8. Next Meeting

A) The Next Planning and Zoning Meeting Will Be Held on August 26, 2025

9. Adjourn

MINUTES OF THE REGULAR MEETING
OF THE PLANNING AND ZONING COMMISSION
OF THE CITY OF GLUCKSTADT, MISSISSIPPI

A regular meeting of the Planning and Zoning Commission of the City of Gluckstadt, Mississippi ("the Board"), was duly called, held, and conducted on Tuesday, June 24, 2025, at 6:00 p.m. at Gluckstadt City Hall, 343 Distribution Drive, Gluckstadt, Madison County, Mississippi.

The following members were present, to-wit:

Sam McGaugh (Chairman)
Melanie Greer (Vice-Chairwoman)
Tim Slattery
Andrew Duggar
Katrina B. Myricks
Phillips King
Kayce Saik

Absent:

Also present:

Zachary L. Giddy, Attorney
William Hall, City of Gluckstadt

Chairman Sam McGaugh called the meeting to order. Roll was called and it was announced that a majority of the voting members of the Board were present, and that said number constituted a quorum.

Chairman Sam McGaugh opened the meeting with prayer and led the Pledge of Allegiance.

All members of the Board present acknowledged receipt of the agenda and the agenda was as follows:

1. Call to Order

2. Opening Prayer and Pledge of Allegiance

3. Consideration and Approval of Minutes

A) Review and Approve May 27, 2025 Board Minutes

4. Request for Variance

A) Discussion and Consideration of 1743 Hwy 51 Texaco Sign Variance

5. New Business

6. Next Meeting

A) The Next Planning and Zoning Meeting Will Be Held on July 22, 2025

7. Adjourn

The Board considered the Minutes of the May 27, 2025, regular meeting. Commissioner Kayce Saik moved to approve the minutes presented as written. The motion was seconded by Commissioner Melanie Greer and approved unanimously by all present Commissioners. The Chairman declared the motion carried.

Application by Sum Oil, LLC for Texaco Sign Variance

First came on for consideration an Application for Variance from the Sign Regulations by Sun Oil, LLC for Texaco for property located at 1743 Highway 51 and identified as Tax Parcel No. 082H-27-004/04.00, in the City of Gluckstadt. The property is currently zoned C-2 Highway Commercial District. There was no one present on behalf of the Applicant. William Hall advised that the applicant is requesting a height variance of the current ground sign regulations to 14'6" for the Texaco sign. William Hall further advised that no public hearing is required because the variance falls under the city's Sign Ordinance. Mr. Hall stated that under the Sign Ordinance, sign are limited to 6' in height. The application states the sign set back is 50' from the road; however Mr. Hall advised the set back is actually 6'.

There was discussion regarding the need for variance because of visibility issues and further discussion regarding heights of other signs throughout the city.

After discussion, Chairman Sam McGaugh called for a vote on the Application. On motion by Commissioner Melanie Greer and seconded by Commissioner Katrina Myricks, the Board present voted unanimously to recommend to the Mayor and Board of Aldermen that they deny the requested variance for Applicant to allow the 14'6" Texaco ground sign on the subject property located in the C-2 zoning district. The Chairman declared the motion carried.

NEW BUSINESS

Phillips King moved to have a Resolution drafted thanking Sam McGaugh and Tim Slattery for their service on the Planning and Zoning Board. The motion was seconded by Melanie Greer, and the Board present voted unanimously to have a Resolution drafted thanking Sam McGaugh and Tim Slattery for their service on the Planning and Zoning Board. The Chairman declared the motion carried.

OLD BUSINESS

None.

There was no further business to be presented.

ADJOURN

Commissioner Tim Slattery moved that the meeting be adjourned. The motion was seconded by Commissioner Phillips King and approved unanimously by all present Commissioners. The Chairman declared the Motion carried.

WITNESS OUR HANDS, this the _____ day of _____, 2025.

_____
SAM McGAUGH, Chairman

_____
MELANIE GREER, Vice Chairman/Secretary

City of Gluckstadt

Application for Conditional Use

Subject Property Address: 547 Church Rd, Madison, MS 39110
Parcel #: 082E-15-001

Owner: S & D Realty, LLC
Address: 115 Honours Lane
Madison, MS 39110

Phone #:
E-Mail:

Applicant: B&B Cosmetic MS LLC
Address: 312 Bristlecone Court
Flowood, MS 39232

Phone #: 626-551-1523
E-Mail: bryan.tho1992@gmail.com

Current Zoning District:
Acreage of Property (If applicable):
Use sought of Property: Luxury Nail Salon

Requirements of Applicant:

1. Letter demonstrating how the proposed use will comply with or otherwise satisfy the requirements for granting a Conditional Use pursuant to Section 804.01 of the Zoning Ordinance.
2. Copy of written legal description.
3. Additional items may be requested depending on the nature and status of the proposed development or property.
4. $ 250.00 fee required for processing
5. Sie Plan as required in Section 807-810

Requirements for Granting Conditional Use: (Section 805.01, Zoning Ordinance)

A Conditional Use shall not be granted unless satisfactory provisions and arrangements have been made concerning all the following:

(a). Ingress and egress to property and proposed structures
(b). Off-Street parking and loading areas
(c). Refuse and service areas
(d). Utilities, with reference locations, availability, and compatibility.
(e). Screening and buffering with reference to type, dimensions, and character.
(f). Required yards and other open spaces.
(g). General compatibility with adjacent properties and other properties in the district.
(h). Any other provisions deemed applicable by the Mayor and Board of Aldermen.

Applicant shall be present at the Planning and Zoning Commission meeting and Mayor and Board of Alderman meeting. Documents shall be submitted thirty (30) days prior to the Planning and Zoning Commission meeting.

Applicant is responsible for complying with all applicable requirements of the Zoning Ordinance.

By signing this application, it is understood and agreed that permission is given to the Zoning Administrator to have a sign erected on subject property, giving notice to the public that said property is being considered for a dimensional variance.

Signed by:
Quynhchau Nguyen Do
D9B2F3EA0F8A429...
Applicant Signature

7/1/2025
Date

Property Owner Signature

7/1/25
Date

Dear the City of Gluckstadt,

I am writing to express my interest in opening a luxury nail salon in Gluckstadt, Mississippi. With over 20 years in the beauty and wellness industry, this luxury salon will fill a significant gap in the market.

Currently, all nail salons are located on the west side of I-55, while the east side is underserved. My proposed location will provide high-end, relaxing services with premium products in a spa-like atmosphere, attracting clients who seek more than just a basic service. This project will create local job opportunities and contribute to the area's retail growth.

Establishing a luxury salon on the east side will also help balance traffic and reduce congestion in the west side's retail areas. This aligns with the city's goals for equitable development.

I kindly request your support in approving my application. I am eager to discuss this further and provide any additional information that may be needed.

Thank you for your consideration.
Warm regards,

Signed by:
Quynhnhu Nguyen Do
D9B2F3EA0F8A429...

7/1/2025

Quynhnhu Do
B&B Cosmetic MS LLC

MADISON COUNTY JOURNAL

Invoice

Column Software PBC
PO Box 208098
Dallas, TX 75320-8098
help.column.us

Bill to
City of Gluckstadt Planning and Zoning

Invoice number	20571CB1-0055
Notice ID	C8iwKGvEsfbfVIIUvK16
Publisher	Madison County Journal
Date of issue	Jul 1, 2025
Date due	Aug 1, 2025
Amount due	$27.00

Description	Qty	Unit price	Amount
07/03/2025: Governmental Entity Notice	1	15.00	15.00
Proof of Publication Fee	1	5.00	5.00

=== Notes ===
Notice Name: Conditional Use 547 Church Rd

=== How to pay this invoice ===
Column Software PBC accepts online payment via credit or debit card, or ACH bank transfers. Please click here to pay online:
https://www.column.us/invoices/f4TYSu8MypH1q8vjprNk/pay

Please note that, once paid, the merchant name on your billing statements will be Column Software PBC.

Select organizations may also pay via check. Checks will result in processing delays and should not be used if your notice requires upfront payment. Please pay the exact amount due, write your invoice number 20571CB1-0055 on the memo, include a printed copy of your Invoice PDF, make the check payable to Column Software PBC, and mail to the address above.

Net Subtotal	$20.00
Tax	0.00
Processing Fee	7.00
Amount due	**$27.00**

Pay here: https://www.column.us/invoices/f4TYSu8MypH1q8vjprNk/pay

Questions? Visit help.column.us

Column

INTERIM AD DRAFT

This is the proof of your ad scheduled to run in **Madison County Journal** on the dates indicated below. If changes are needed, please contact us prior to deadline at **(601) 853-4222**.

Notice ID: C8iwKGvEsfbfVIIUvK16 | **Proof Updated: Jul. 01, 2025 at 01:59pm CDT**
Notice Name: Conditional Use

This is not an invoice. Below is an estimated price, and it is subject to change. You will receive an invoice with the final price upon invoice creation by the publisher.

FILER

Bridgette Smith
bridgette.smith@gluckstadt.net
(769) 567-2306

FILING FOR

Madison County Journal

Columns Wide: 1
Ad Class: Legals
Total Column Inches: 2.17
Number of Lines: 19

07/03/2025: Governmental Entity	15.00
Proof of Publication Fee	5.00
Subtotal	$20.00
Tax	$0.00
Processing Fee	$7.00
Total	**$27.00**

IS HEREBY GIVEN TO THOSE PARTIES IN INTEREST that there will be a public hearing on Tuesday, July 22, 2025 at 6:00 PM before the Gluckstadt Planning and Zoning Commission at the Gluckstadt City Hall, 343 Distribution Drive, Gluckstadt, MS 39110 for the purpose of determining whether or not a conditional use shall be granted to B & B Cosmetic MS LLC for the following address:

547 Church Road

The public hearing in relation thereto shall provide parties i interest and citizens an opportunity to be heard . A copy is available at City Hall for inspection by the public

City of Gluckstadt

Application for Site Plan Review

Subject Property Address: Lot 6, Gluckstadt Business Park

Parcel #: 082E-21-025/00.00

Owner: Wellspring Methodist Church

Address: 418 Business Park Dr
Gluckstadt, MS

Phone #: 601-853-9131

E-Mail:

Applicant: Wellspring Methodist Church

Address: P.O. Box 3344
Ridgeland, MS 39158
Attn: John Moore, Secretary

Phone #: 601-260-6834

E-Mail: john@johndmoore pa.com

Current Zoning District: C-2

Acreage of Property (If applicable):

Use sought of Property: Parking lot & Greenspace

Requirements of Applicant:

1. Copy of written legal description.
2. Site Plan as required in Sections 807-810 of City of Gluckstadt Zoning Ordinance
3. Color Rendering & Elevations at time of submittal

Requirements for Site Plan Submittal (Refer to Section 807, Gluckstadt Zoning Ordinance)

Nine (9) copies of the site plan shall be prepared and submitted to the Zoning Administrator. Digital copies are acceptable. Three (3) hard copies are required.

Site Plan Specifications (Section 809, Zoning Ordinance)

A. Lot Lines (property lines)
B. Zoning of the adjacent lots
C. The names of owners of adjacent lots
D. Rights of way existing and proposed streets, including streets shown on the adopted Throughfares plan
E. Access ways, curb cuts, driveways, and parking, including number of parking spaces to be provided
F. All existing and proposed easements
G. All existing and proposed water and sewer lines. Also, the location of all existing and proposed fire hydrants.
H. Drainage plan showing existing and proposed storm drainage facilities. The drainage plan shall indicate adjacent off site drainage courses and projected storm water flow rates from off-site and on-site sources.

I. Contours at vertical intervals of five (5) feet or less.
J. Floodplain designation, according to FEMA Maps.
K. Landscaped areas and planting screens.
L. Building lines and the locations of all structures, existing and proposed
M. Proposed uses of the land and buildings, if known
N. Open space and recreation areas, where required.
O. Area in square feet, and/or square acres of parcel
P. Proposed gross lot coverage in square feet
Q. Number and type of dwelling units where proposed
R. Location of sign structures and drawings. (Section 701)
S. Location of garbage dumpster and enclosure. (Section 406.06)
T. Any other data necessary to allow for a through evaluation of the proposed use, including a traffic study.

Applicant shall be present at the monthly meeting of the Planning and Zoning Commission when site plan is on the agenda for consideration; additionally, applicant shall be present at the Mayor and Board of Alderman meeting when the site plan is on the agenda for final approval.

Applicant is responsible for complying with all applicable requirements of the Gluckstadt Zoning Ordinance.

Site Plans shall be submitted by the 5:00 pm on the 5th day of the month, immediately preceding the next regular meeting of the Planning and Zoning Commission. No Exceptions.

Once submitted to the Planning & Zoning Administrator for approval to add to the Planning and Zoning Commission's agenda, no amendments or changes shall be made to the site plan. If you wish to submit changes, you will be required to resubmit by the 5th of the following month for the next monthly meeting of the Planning and Zoning Commission.

Attestation: ***By signing this application, the applicant agrees to all the terms and conditions laid out in this document. Approval of site plan is subject to Board approval.***

John D. Moore 7/3/2025

Applicant Signature John D. Moore, Secretary Date
Wellspring Methodist Church

CITY OF GLUCKSTADT BUILDING DEPARTMENT

OFFICE USE ONLY

Date Received: 7.7.2025

Application Complete & Approved to Submit to P&Z Board (please check):

Yes ✓ No _____

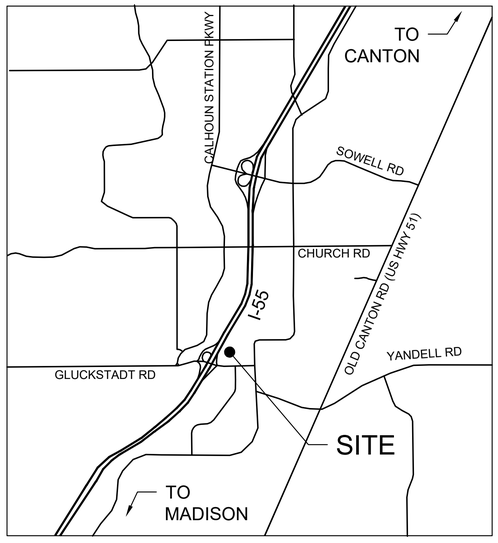
Signature: Bridgette Smith

Planning & Zoning Administrator (or Authorized Representative)

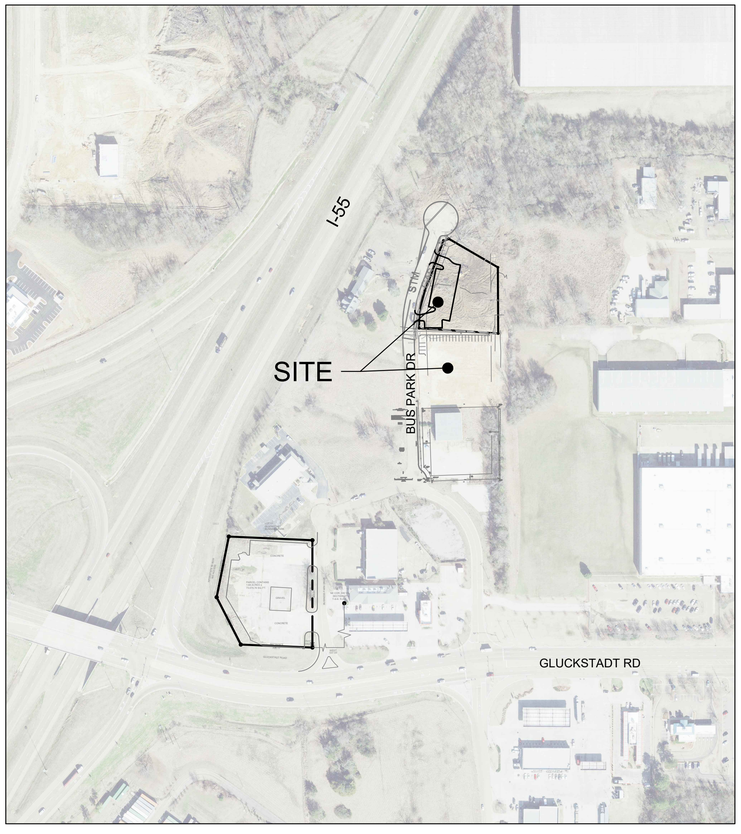
WELLSPRING CHURCH

PROPOSED PARKING LOT EXPANSION

418 BUS PARK DR
MADISON, MS 39110



CITY LOCATION



STREET LOCATION

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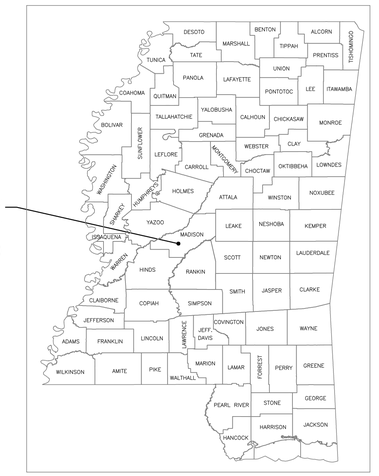


STATE LOCATION

Know what's below
Call before you dig

DEAN ENGINEERING SOLUTIONS INC.
4780 I-55 NORTH, SUITE 100-4,
JACKSON, MS 39211
601-522-2000 WWW.DEANENGSOLUTIONS.COM

W. SETH DEAN
LICENSED PROFESSIONAL ENGINEER
20957
STATE OF MISSISSIPPI
06-28-2026

DRAWING ISSUED

#	Description	Date
1	PLANS SUBMITTED FOR REVIEW	06.28.26

OWNER:
WELLSPRING CHURCH
418 BUS PARK DR
MADISON, MS 39110

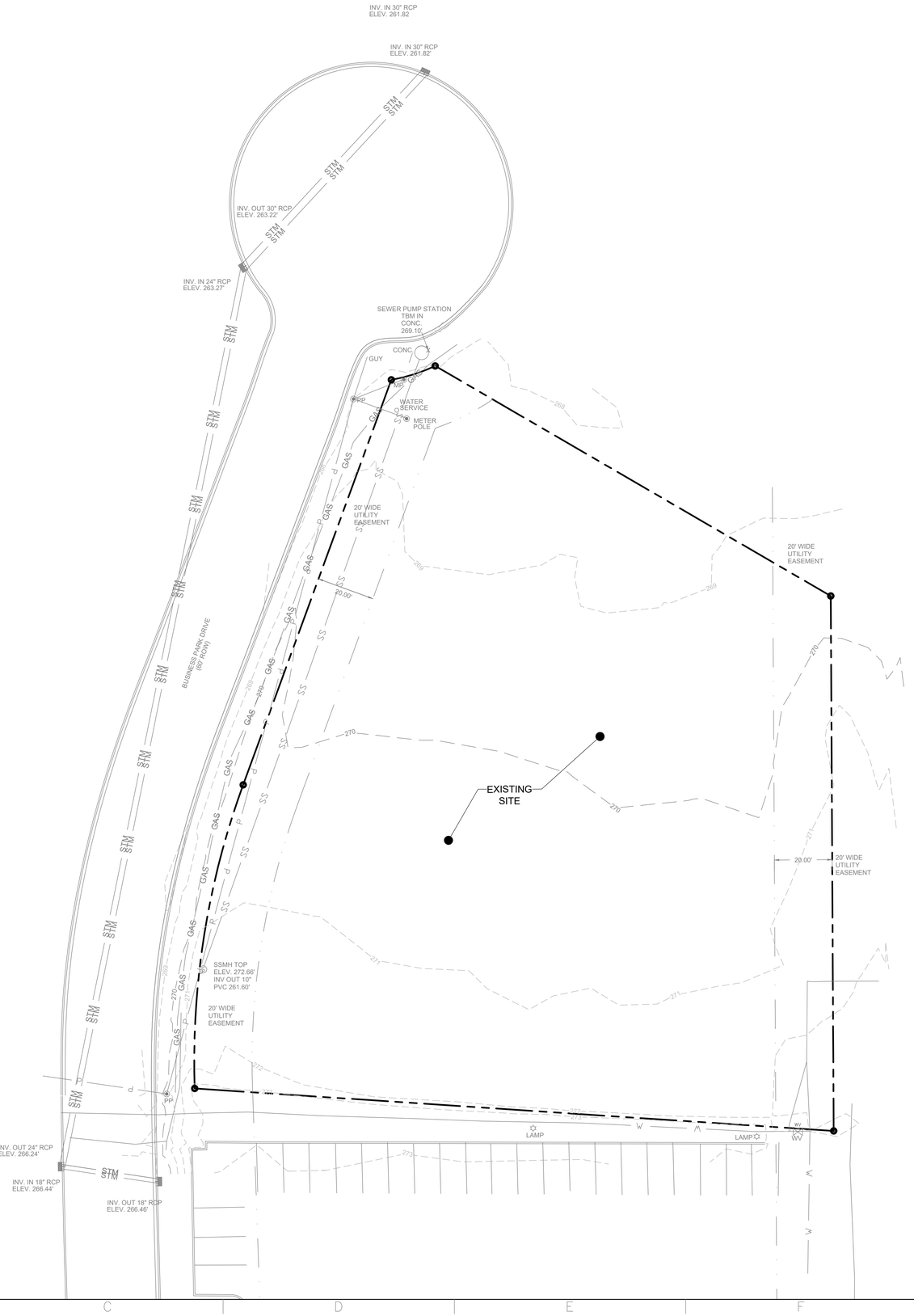
PROJECT TITLE: WELLSPRING CHURCH PARKING EXPANSION

SHEET TITLE: COVER

SITE DEVELOPMENT

DATE: 09 JUN 2029
SCALE: AS SHOWN
DRAWN BY: WSD
REVIEWED BY: WSD

SHEET NUMBER:
C1.0



GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

DRAWING SYMBOL LEGEND

EXISTING	DESCRIPTION
P	POWER LINE
GAS	GAS LINE
SS	GRAVITY SANITARY SEWER LINE
W	WATER LINE
STM	STORM LINE
	PROPERTY LINE
100	MAJOR CONTOUR LINE
101	MINOR CONTOUR LINE
S	SANITARY SEWER MANHOLE

SURVEY NOTES:

1. EXISTING SURVEY INFORMATION SHOWN ON THIS SHEET PROVIDED BY: AFFORDABLE SURVEYING OLUTIONS INC. 452 HOLLY HEDGE DR, MADISON MS 39110. MAP DATE 6/562025.
2. LOCATION OF UNDERGROUND UTILITIES & STRUCTURES OF ANY TYPE MAY NOT BE COMPLETE OR EXACT. FOR MORE POSITIVE LOCATIONS CONTACT MISSISSIPPI ONE CALL SYSTEM INC. (TELEPHONE NO. 811) OR OTHER LOCAL AUTHORITIES TO LOCATE ALL EXISTING UTILITIES PRIOR TO BEGINNING CONSTRUCTION. CONTRACTOR SHALL VERIFY THE DEPTH AND LOCATION OF ALL EXISTING UTILITIES AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES OR CONFLICTS PRIOR TO BEGINNING CONSTRUCTION. ALL NECESSARY FIELD REVISIONS ARE SUBJECT TO REVIEW AND APPROVAL BY ENGINEER PRIOR TO CONSTRUCTION. THIS PLAN IS DIAGRAMMATIC AND REPRESENTS THE APPROXIMATE LOCATION OF UTILITIES UNLESS SPECIFICALLY DIMENSIONED.

DEAN
ENGINEERING SOLUTIONS INC.
4780 I-55 NORTH, SUITE 100-4,
JACKSON, MS 39211
601-572-2001 WWW.DEANSI.COM

W. SETH DEAN
LICENSED PROFFESIONAL ENGINEER
20957
STATE OF MISSISSIPPI
06-28-2026

DRAWING ISSUED

#	Description	Date
1	PLANS SUBMITTED FOR REVIEW	06.28.26

OWNER:
WELLSPRING CHURCH
418 BUS PARK DR
MADISON, MS 39110

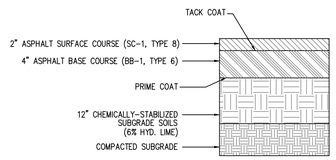
PROJECT TITLE: WELLSPRING CHURCH PARKING EXPANSION

SHEET TITLE:
EXISTING CONDITIONS & DEMO PLAN

SITE DEVELOPMENT

DATE: 09 JUN 2029
SCALE: AS SHOWN
DRAWN BY: WSD
REVIEWED BY: WSD

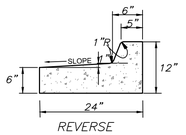
SHEET NUMBER:
C2.0



ASPHALT PAVEMENT

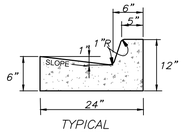
N.T.S.

NOTE: LIME TREATED SUBGRADE SHALL EXTEND 24" BEYOND EDGE OF PAVEMENT OR CONCRETE CURB AND GUTTER. ASPHALT MATERIAL SHALL CONFORM WITH ALL APPLICABLE SPECIFICATIONS AS PRESENTED IN THE 1990 EDITIONS OF THE MISSISSIPPI STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.



*REVERSE GUTTER**

* TO BE INSTALLED WHERE PAVEMENT SLOPES AWAY FROM CURB

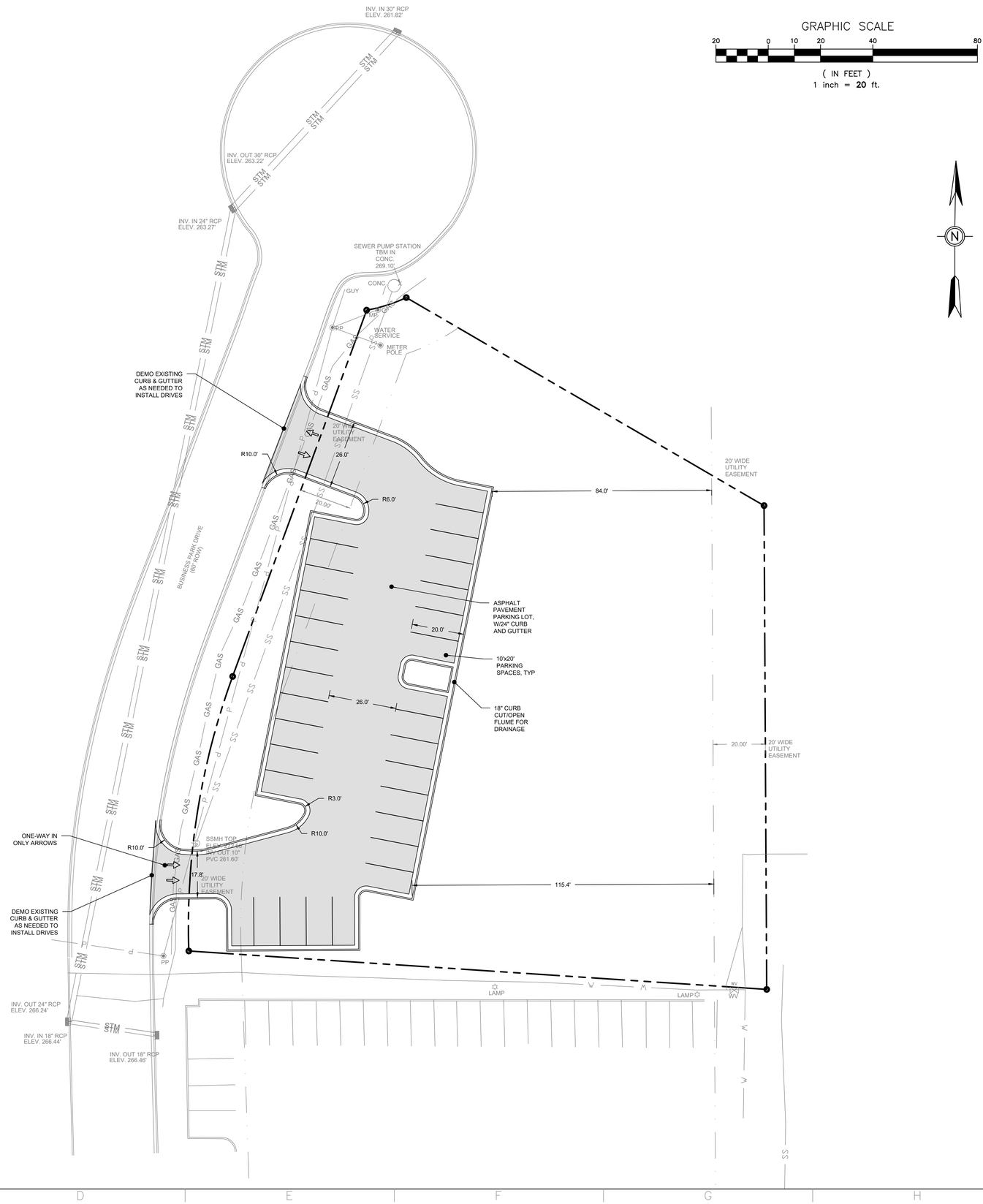


TYPICAL GUTTER

ALL CURBS SHALL HAVE CONTROL JOINTS AT 10' ISOLATION JOINTS AT 40'

CONCRETE CURB & GUTTER DETAILS

NTS



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601-572-2001 WWW.DEANMSI.COM

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LICENSED PROFESSIONAL ENGINEER
20957
STATE OF MISSISSIPPI
06-28-2026

DRAWING ISSUED

#	Description	Date
1	PLANS SUBMITTED FOR REVIEW	06.28.26

OWNER:
WELLSPRING CHURCH
418 BUS PARK DR
MADISON, MS 39110

PROJECT TITLE: WELLSPRING CHURCH PARKING EXPANSION

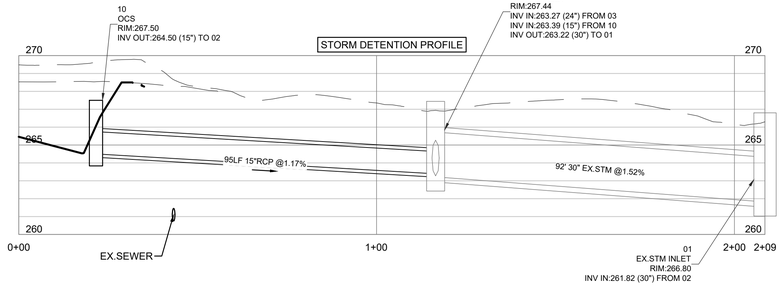
SHEET TITLE:
SITE PLAN

SITE DEVELOPMENT

DATE: 09 JUN 2029
SCALE: AS SHOWN
DRAWN BY: WSD
REVIEWED BY: WSD

SHEET NUMBER:
C3.0

PROFILE NOTES:
SOLID LINE=PROPOSED GRADE,
DASHED LINE=EXISTING GROUND.
SCALE: 1"=20' HORIZONTAL
VERTICAL EXAGGERATION=5X

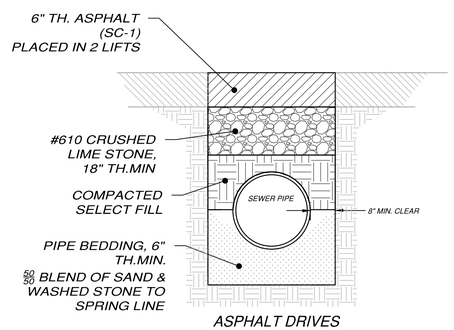


GRADING & STORM DRAINAGE NOTES

1. THE SYMBOLS AND NOTES SHOWN ON THIS SHEET APPLY TO ALL GRADING PLANS
2. UTILITIES: CONTRACTOR SHALL HAVE MISSISSIPPI ONE CALL (811 OR 800-227-6477) LOCATE ALL EXISTING UTILITIES PRIOR TO BEGINNING CONSTRUCTION. THIS PLAN IS DIAGRAMMATIC AND REPRESENT THE APPROXIMATE LOCATION OF UTILITIES UNLESS SPECIFICALLY DIMENSIONED. CONTRACTOR SHALL VERIFY THE DEPTH AND LOCATION OF ALL EXISTING UTILITIES AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES OR CONFLICTS PRIOR TO BEGINNING CONSTRUCTION. ALL NECESSARY FIELD REVISIONS ARE SUBJECT TO REVIEW AND APPROVAL BY ENGINEER AND PUBLIC WORKS DEPARTMENT PRIOR TO CONSTRUCTION.
3. GEOTECHNICAL ENGINEER: CONTRACTOR SHALL COORDINATE GRADING OPERATIONS WITH THE OWNER'S GEOTECHNICAL ENGINEER FOR CONSTRUCTION REQUIREMENTS RELATED TO EARTH WORK & GRADING, PAVEMENT CONSTRUCTION AND EXISTING SOIL INFORMATION.
4. RIP-RAP & LINER: ALL RIP-RAP SHALL HAVE BOTTOM LINED WITH FILTER FABRIC PRIOR TO PLACING STONE. USE MIRAFI 180N OR APPROVED EQUAL, SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS. RIP RAP SHALL BE #200 STONE, TYP.
5. STORM PIPE (HP): HP REFERS TO DUAL-WALL, PLASTIC PIPE. HIGH PERFORMANCE (HP). GRAY IN COLOR, AS MANUFACTURED BY ADS. SEE SPECIFICATION FOR ADDITIONAL REQUIREMENTS. ALL PIPE JOINTS SHALL BE WRAPPED IN 4' OF FILTER CLOTH REGARDLESS OF JOINT GASKETS OR MATERIAL TYPE. ALL HP SHALL BE BACKFILLED WITH SELECT FILL, SEE SPECS FOR ADDITIONAL REQUIREMENTS.

DRAWING SYMBOL LEGEND

EXISTING	PROPOSED	DESCRIPTION
STM		STORM SEWER LINE
	1.0%	SLOPE DIRECTION & PERCENT
400	400	MAJOR CONTOUR LINE
399	399	MINOR CONTOUR LINE
EX.400.00	400.00	SPOT ELEVATION, BC=BOTTOM OF CURB
	400.00	SPOT ELEVATION, IF AT CURB, ELEV=BC
		RIP-RAP APRON PROTECTION



TRENCH REPAIR DETAIL

GRAPHIC SCALE
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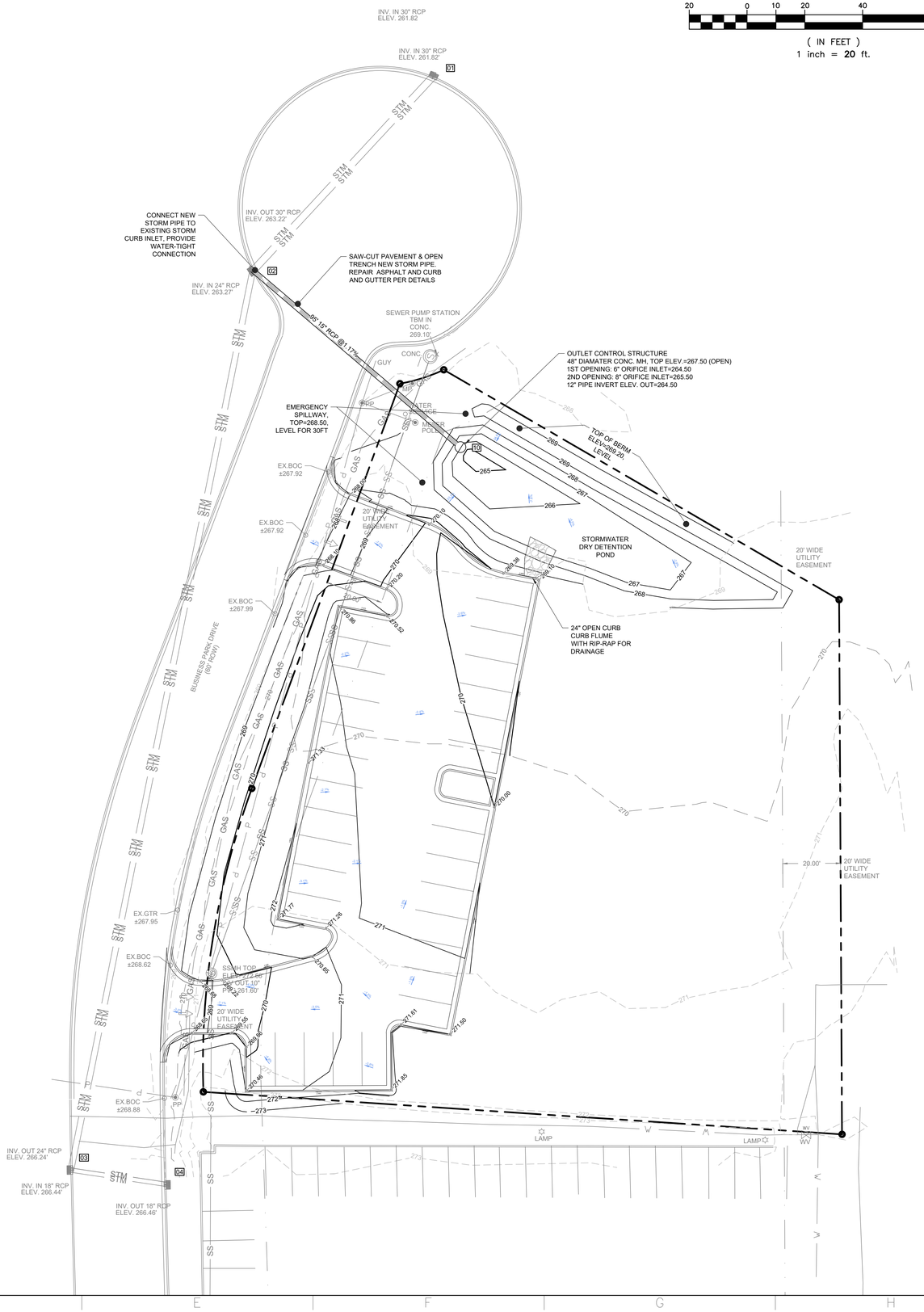
(IN FEET)
1 inch = 20 ft.



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4780 I-55 NORTH, SUITE 100-4,
JACKSON, MS 39211
601-522-2000 WWW.DEANES.COM

W. SETH DEAN
LICENSED PROFESSIONAL ENGINEER
20957
STATE OF MISSISSIPPI
06-28-2026

DRAWING ISSUED

#	Description	Date
1	PLANS SUBMITTED FOR REVIEW	06.28.26

OWNER:
WELLSPRING CHURCH
418 BUS PARK DR
MADISON, MS 39110

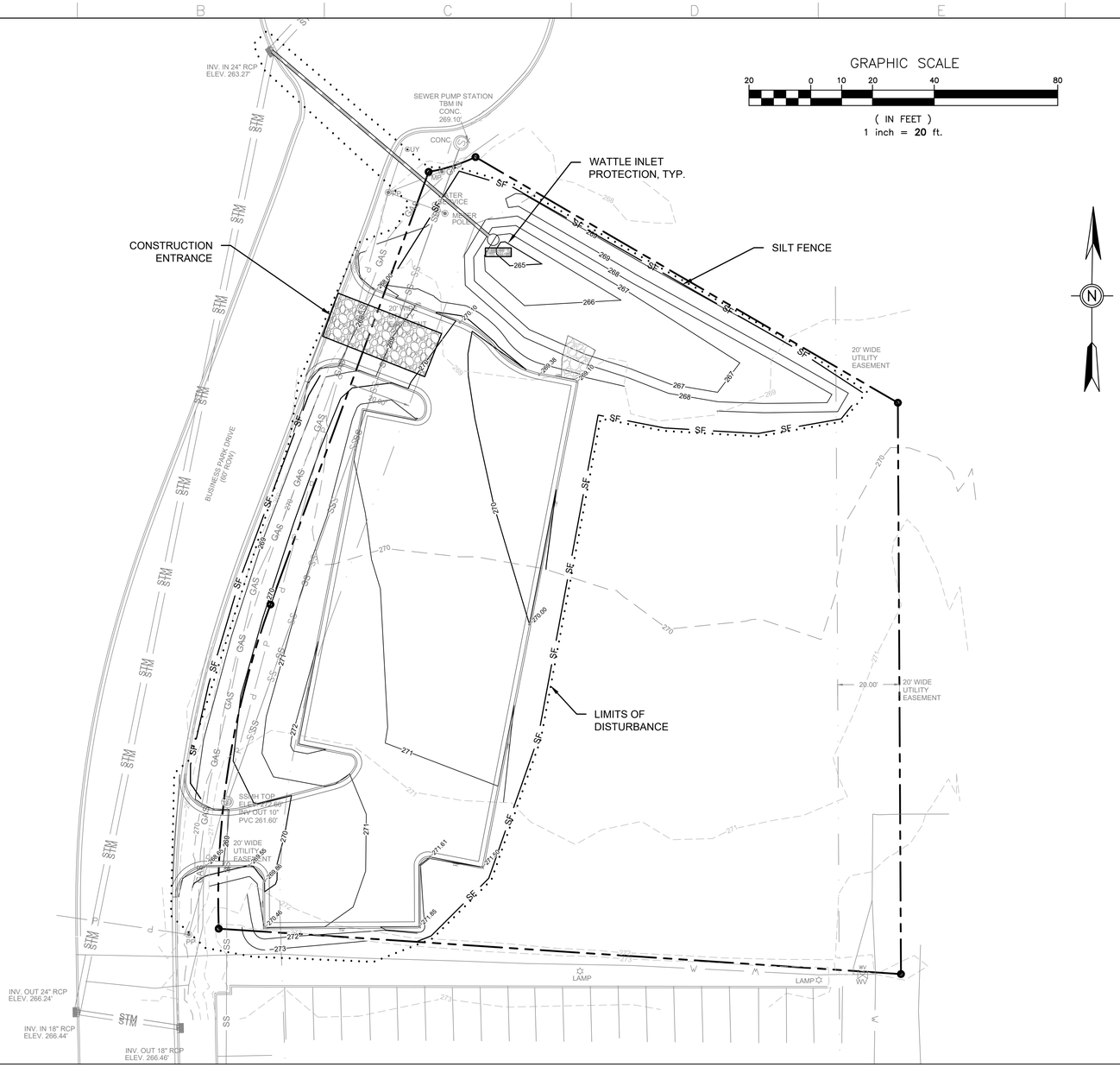
PROJECT TITLE: WELLSPRING CHURCH PARKING EXPANSION

SHEET TITLE:
GRADING PLAN

SITE DEVELOPMENT

DATE: 09 JUN 2029
SCALE: AS SHOWN
DRAWN BY: WSD
REVIEWED BY: WSD

SHEET NUMBER:
C4.0

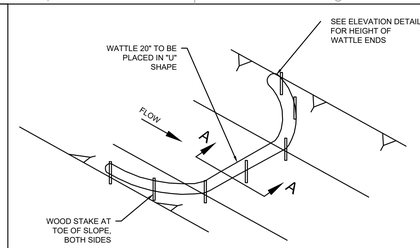


EROSION CONTROL PLAN NOTES

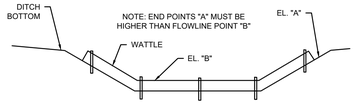
1. TOTAL DISTURBED SITE AREA ± 0.7 AC.
2. VEGETATIVE CONTROLS: A COMBINATION OF TEMPORARY AND PERMANENT GRASSING WILL BE USED TO PROTECT SLOPES AS CONSTRUCTION PROGRESSES. REFER TO VEGETATION SPECIFICATIONS FOR DETAILS. SHOULD A DISTURBED AREA BE LEFT UNDISTURBED FOR 14 DAYS OR MORE, TEMPORARY OR PERMANENT VEGETATION SHALL BE PLACED IMMEDIATELY.
3. STRUCTURAL CONTROLS: INSTALL CONSTRUCTION ENTRANCES, DIVERSION DITCHES, WATTLE CHECK DAMS, SILT FENCE AND ALL OTHER STRUCTURAL BMPs AS SHOWN BELOW. PERMANENT EROSION CONTROL BMPs AND STRUCTURAL BMPs SHOULD BE PLACED AS SOON AS POSSIBLE TO ENSURE FINAL STABILIZATION OF THE SITE.
4. WATTLE CHECK DAMS: SILT FENCE AND HAY BALES ARE NOT ACCEPTABLE FORMS OF CHECK DAMS WITHIN TEMPORARY DIVERSION DITCHES, SWALES OR OTHER AREAS OF CONCENTRATED FLOW. CONTRACTOR SHALL USE SAND BAGS OR STONE DAMES TO CHECK FLOW. WATTLES MAY ALSO BE USED WHERE LOWER FLOWS/SMALLER DRAINAGE AREAS OCCUR.
5. HOUSEKEEPING & MAINTENANCE PRACTICES: ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE CHECKED FOR STABILITY AND OPERATION FOLLOWING EVERY RAINFALL BUT IN NO CASE LESS THAN ONCE EVERY WEEK. NON-FUNCTIONING EROSION CONTROLS SHALL BE REPAIRED, REPLACED, OR SUPPLEMENTED WITH FUNCTIONAL CONTROLS WITHIN 24 HOURS OF DISCOVERY, OR AS SOON AS FIELD CONDITIONS ALLOW. WALK THROUGH INSPECTIONS ARE RECOMMENDED BEFORE ANTICIPATED STORM EVENTS TO VERIFY THE INTEGRITY OF EROSION CONTROL MEASURES AND TO DETERMINE IF ADDITIONAL MEASURES ARE NEEDED. SEDIMENT BASINS WILL BE CLEANED OUT WHEN THE LEVEL OF SEDIMENT REACHES 2.0 FEET BELOW THE TOP OF THE RISER, AND/OR WHEN THE CAPACITY HAS BEEN REDUCED BY 50%. SILT FENCE SHALL BE CLEANED OUT WHEN SEDIMENT REACHES ¼ TO ½ OF THE HEIGHT OF THE FENCE. MAINTENANCE AND REPAIR OF EQUIPMENT SHALL BE PERFORMED OFF-SITE, MATERIAL WASH OUT SHALL OCCUR EITHER OFF-SITE OR WITHIN DESIGNATED WASH OUT AREAS.
6. POST-CONSTRUCTION CONTROL MEASURES: AS CONSTRUCTION IS COMPLETED, PERMANENT VEGETATIVE GROWTH SHALL BE ESTABLISHED ON DISTURBED SOILS TO IMPROVE SOIL STABILITY AND PROVIDE A BUFFER ZONE FOR LOOSE MATERIAL. LINED DITCHES SHALL BE INSTALLED AS SPECIFIED IN THE EROSION CONTROL SEQUENCE TO REDUCE EROSION IN CONCENTRATED FLOW AREAS AND RIP-RAP WILL BE PLACED AS SPECIFIED TO DISSIPATE FLOW ENERGY AND REDUCE FLOW VELOCITY. TEMPORARY BMPs MUST BE REMOVED FROM THE SITE WHEN THEY ARE NO LONGER NEEDED.

DRAWING SYMBOL LEGEND

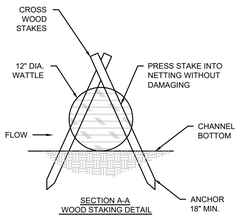
PROPOSED	DESCRIPTION
SF	SILT FENCE PROTECTION
	LIMITS OF DISTURBANCE
	WATTLE CHECK DAM/INLET PROTECTION



DETAIL (DITCH CHECK)



ELEVATION DETAIL

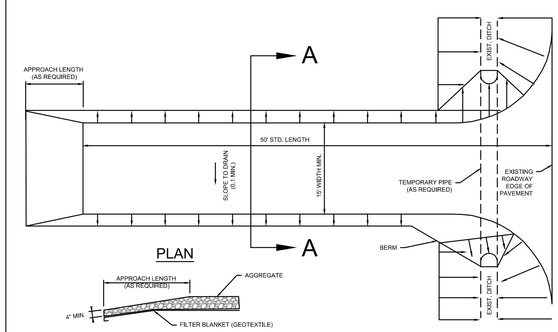


SECTION A-A
WOOD STAKING DETAIL

NOTES:
1. MIN. RECOMMENDED PLACEMENT INTERVAL BETWEEN WATTLE DITCH CHECK IS 100' UNLESS SHOWN OTHERWISE ON THE PLANS OR EROSION CONTROL PLAN APPROVED BY THE ENGINEER. SEE SPACING GUIDANCE ON ECD-4.
2. ANCHORING WOOD STAKES SHALL BE SIZED, SPACED, DRIVEN, AND BE OF A MATERIAL THAT EFFECTIVELY SECURES THE CHECK. STAKE SPACING SHALL BE A MAXIMUM OF THREE FEET. ALL NON-DEGRADABLE MATERIALS SHALL BE REMOVED WHEN NO LONGER NEEDED.
3. TRENCHING OF WATTLES MAY BE NECESSARY IF PIPING BECOMES EVIDENT.
4. WATTLES SHOULD NOT BE USED IN HARD BOTTOM CHANNELS

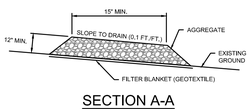
WATTLE DITCH CHECK SELECTION GUIDELINES:
WATTLE DITCH CHECKS ARE APPROPRIATE FOR VELOCITY REDUCTION AND CONTROL OF SEDIMENT TRANSPORT UNDER LOW TO MEDIUM FLOW CONDITIONS.

DETAILS OF EROSION CONTROL WATTLE DITCH CHECK (MDOT WORKING NO. ECD-6)

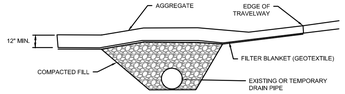


PLAN

TRANSITION DETAIL



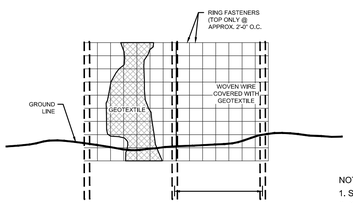
SECTION A-A



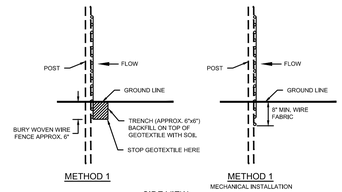
RURAL CONSTRUCTION DETAIL

NOTES:
1. A STABILIZED CONSTRUCTION ENTRANCE SHALL BE CONSTRUCTED AT POINTS OF EGRESS FROM UNSTABILIZED AREAS OF THE PROJECT TO PUBLIC ROADS WHERE OFFSITE TRACKING OF MUD COULD OCCUR. TRAFFIC FROM UNSTABILIZED AREAS OF THE PROJECT SHALL BE DIRECTED THRU THE STABILIZED ENTRANCE. BARRIERS, FLAGGING OR OTHER POSITIVE MEANS SHALL BE USED AS REQUIRED TO LIMIT AND DIRECT VEHICULAR EGRESS ACROSS THE STABILIZED ENTRANCE.
2. THE CONTRACTOR MAY PROPOSE AN ALTERNATIVE TECHNIQUE TO MINIMIZE OFFSITE TRACKING OF SEDIMENT. THE ALTERNATIVE MUST BE REVIEWED AND APPROVED BY THE ENGINEER PRIOR TO ITS USE.
3. ALL MATERIALS SPILLED, DROPPED, OR TRACKED ONTO PUBLIC ROADS (INCLUDING THE STABILIZED CONSTRUCTION ENTRANCE AGGREGATE AND CONSTRUCTION MUD) SHALL BE REMOVED DAILY, OR MORE FREQUENTLY IF SO DIRECTED BY THE ENGINEER.
4. SIZE 1 STABILIZER AGGREGATE SHALL BE USED.
5. THE STABILIZED CONSTRUCTION ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL ALLOW IT TO PERFORM ITS FUNCTION TO PREVENT OFFSITE TRACKING. THE STABILIZED CONSTRUCTION ENTRANCE SHALL BE RINSED WHEN NECESSARY TO MOVE ACCUMULATED MUD DOWNWARD THRU THE STONE. ADDITIONAL STABILIZATION OF THE VEHICULAR ROUT LEADING TO THE STABILIZED ENTRANCE MAY BE REQUIRED TO LIMIT THE MUD TRACKED.
6. THE NOMINAL SIZE OF A STANDARD STABILIZED CONSTRUCTION ENTRANCE IS 15' X 50' UNLESS OTHERWISE SHOWN IN THE EROSION CONTROL PLAN.

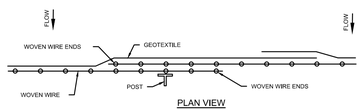
DETAILS OF STABILIZED CONSTRUCTION ENTRANCE (MDOT WORKING NO. ECD-15)



ELEVATION VIEW



SIDE VIEW



PLAN VIEW
REQUIRED LAPPING

NOTES:
1. SILT FENCES SHALL BE USED IN AREAS WHERE FLOW IS NOT SEVERE.
2. SILT FENCES ARE TEMPORARY SEDIMENT CONTROL ITEMS THAT SHALL BE ERECTED OPPOSITE ERODIBLE AREAS SUCH AS NEWLY GRADED FILL SLOPES AND ADJACENT TO STREAMS AND CHANNELS.
3. SILT FENCE SHOULD BE PLACED WELL INSIDE RIGHT-OF-WAY AND ALONG EDGE OF CLEARING LIMITS. THIS WILL ALLOW ROOM FOR A BACK-UP FENCE IF FIRST FENCE BECOMES FULL.
4. WHEREVER POSSIBLE SILT FENCE SHALL BE CONSTRUCTED ACROSS A LEVEL AREA IN THE SHAPE OF A SMILE. THIS AIDS IN PONDING OF RUNOFF AND FACILITATES SEDIMENTATION.
5. THE CONTRACTOR MAY ELECT TO USE EITHER METHOD I OR METHOD II. COST TO BE LINEAR FEET OF SILT FENCE.
6. METHOD II INSTALLATION SHALL BE ACCOMPLISHED USING AN IMPLEMENT THAT IS MANUFACTUREED FOR THE APPLICATION AND PROVIDES A CONFIGURATION MEETING THE REQUIREMENTS OF THE DETAIL.
7. WIRE SHALL BE MINIMUM OF 32' IN WIDTH AND SHALL HAVE A MINIMUM OF 6 LINE WIRES WITH 12" STAY SPACING.
8. GEOTEXTILE FABRIC MEETING THE TYPE II MATERIAL REQUIREMENTS AND INSTALLED ACCORDING TO SPECIFICATION MAY BE USED WITHOUT WIRE FENCE.

DETAILS OF SILT FENCE INSTALLATION (MDOT WORKING NO.ECD-3)

DEAN ENGINEERING SOLUTIONS INC.
4780 I-55 NORTH, SUITE 100-4,
JACKSON, MS 39211
601-573-5000 WWW.DEANSI.COM

W. SETH DEAN
LICENSED PROFESSIONAL ENGINEER
20957
STATE OF MISSISSIPPI
06-28-2026

DRAWING ISSUED

#	Description	Date
1	PLANS SUBMITTED FOR REVIEW	06.28.26

OWNER:
WELLSPRING CHURCH
418 BUS PARK DR
MADISON, MS 39110

PROJECT TITLE: WELLSPRING CHURCH PARKING EXPANSION

SHEET TITLE:
EROSION CONTROL PLAN (SWPPP)

SITE DEVELOPMENT

DATE: 09 JUN 2029
SCALE: AS SHOWN
DRAWN BY: WSD
REVIEWED BY: WSD

SHEET NUMBER:
C5.0

4780 I-55 North
Suite 100-4
Jackson, MS 39211

DEAN
ENGINEERING SOLUTIONS INC.

www.de
ph: 601-557-2002
info@deanesi.com

Stormwater Impact Analysis

For

Wellspring Church
A Proposed Site Development
418 Bus Park Dr
Madison, MS 39110

Report Prepared by:

Dean Engineering Solutions Inc.

06-28-2025

Issue Dates	Description
28 Jun 2025	Submittal for Review

Project Overview

The existing site lies on a roughly 1-acre tract of land in the City of Gluckstadt along Bus Park Dr. The project will feature a new asphalt parking lot expansion. Stormwater management for the site will be handled with a new dry detention pond that is sized to accommodate all the new development, plus future building expansion areas within the 1-acre tract.

Existing Site Description:

According to the USDA Natural Resource Conservation Service, Web Soil Survey Service mapping, the existing site soils are Grenada silt loam, which have been modeled as USDA hydrologic soils group C.

According to FEMA FIRM Map #28089c0415G effective January 17, 2025, the site lies within zone X of the 100-year flood plain, areas of minimal flood hazard.

Stormwater Management Requirements:

The City of Gluckstadt requires peak stormwater discharge flows for all new development to be equal to or less than the pre-development condition for the 2-100 year storm events.

Conclusion:

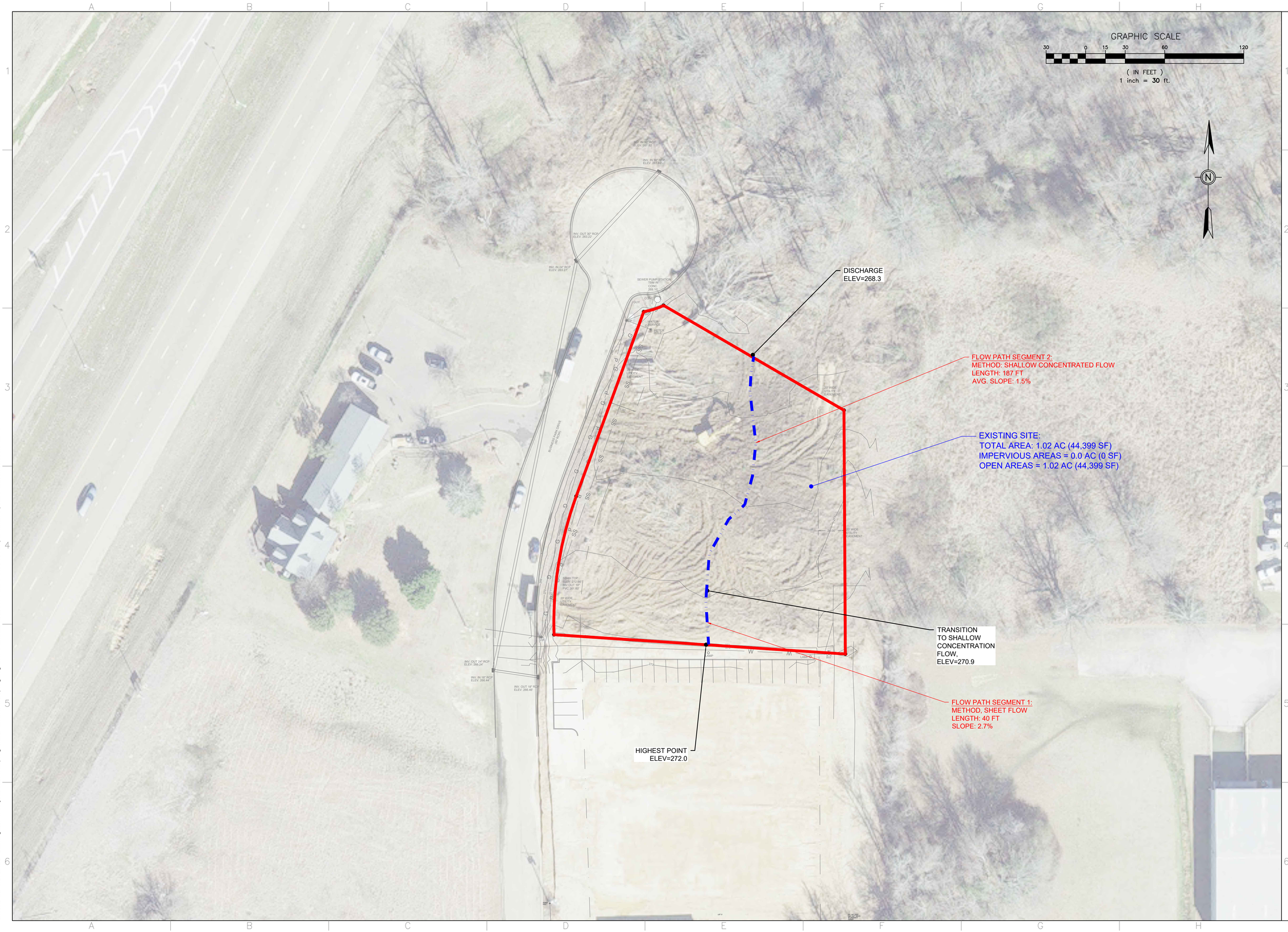
The proposed stormwater detention design meets the City's requirements, reducing stormwater flows below the existing development conditions for the 2-year, 5, 10, 25, 50 and 100-yr storm events as indicated in Table 1 below. See also the list attachments for detailed stormwater pre-vs-post flow results and other pertinent design parameters, inputs and results.

Pond routing runoff summary

Storm Event (year)	Pre-Developed peak flow (cfs)	Post-Dvlp. Peak flow (detained) (cfs)	Pond Elev
2	2.4	2.21	266.89
5	3.6	3.04	267.18
10	4.64	3.55	267.41
25	5.71	4.68	267.58
50	6.68	6.44	267.64
100	7.54	7.50	267.70

List of Attachments:

- Maps
  - DA1 – Pre-Development Drainage Map
  - DA2 – Post Development Drainage Map
  - Natural Resources Conservation Service Web Soil Survey
  - FEMA FIRMette Map
- Calculations
  - HydroCAD Pond Routing Report (2-100 year events)



C:\Users\clems\OneDrive - deanengr.com\1-Projects DES\Wellspring Church\ds\DA1-Wellspring.dwg, DA1, 6/29/2025 6:38:30 AM, clems, DWG To PDF.pc3, ARCH expand D (24.00 x 36.00 Inches), 1:1

DEAN
ENGINEERING SOLUTIONS INC.
4780 I-55 NORTH, SUITE 100-4,
JACKSON, MS 39211
601-572-5001 DEANENGRSOLUTIONS.COM

W. SETH DEAN
LICENSED PROFESSIONAL ENGINEER
20957
STATE OF MISSISSIPPI
06-28-2026

DRAWING ISSUED

#	Description	Date
1	PLANS SUBMITTED FOR REVIEW	06.28.26

OWNER:
WELLSPRING
CHURCH
418 BUS PARK DR
MADISON, MS 39110

PROJECT TITLE: WELLSPRING CHURCH PARKING EXPANSION

SHEET TITLE:
EXISTING CONDITIONS DRAINAGE MAP

SITE DEVELOPMENT

DATE: 09 JUN 2029
SCALE: AS SHOWN
DRAWN BY: WSD
REVIEWED BY: WSD

SHEET NUMBER:
DA1

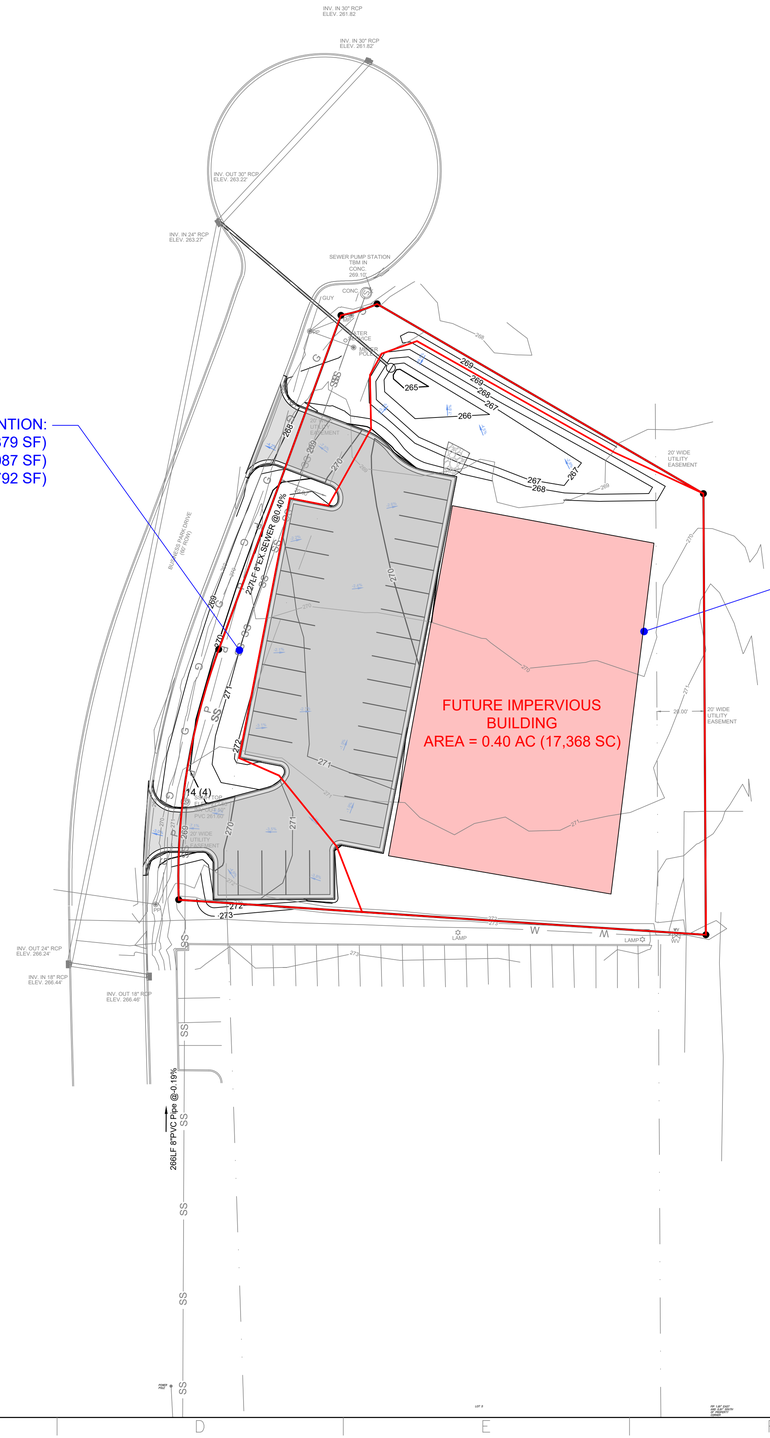
GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

PROPOSED SITE BY-PASSING DETENTION:
TOTAL AREA: 0.18 AC (7,879 SF)
IMPERVIOUS AREAS = 0.07 AC (3,087 SF)
OPEN AREAS = 0.11 AC (4,792 SF)

PROPOSED BASIN TO DETENTION:
TOTAL AREA: 0.84 AC (36,520 SF)
IMPERVIOUS PARKING AREAS = 0.22 AC (9,639 SF)
FUTURE IMPERVIOUS BUILDING AREAS = 0.40 AC (17,368 SC)
OPEN AREAS = 0.22 AC (9,503 SF)



DEAN
ENGINEERING SOLUTIONS INC.
4780 I-55 NORTH, SUITE 100-4,
JACKSON, MS 39211
601-573-2001 WWW.DEANESI.COM

W. SETH DEAN
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1	PLANS SUBMITTED FOR REVIEW	06.28.26

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418 BUS PARK DR
MADISON, MS 39110

PROJECT TITLE: WELLSPRING CHURCH PARKING EXPANSION

SHEET TITLE:
EXISTING CONDITIONS DRAINAGE MAP

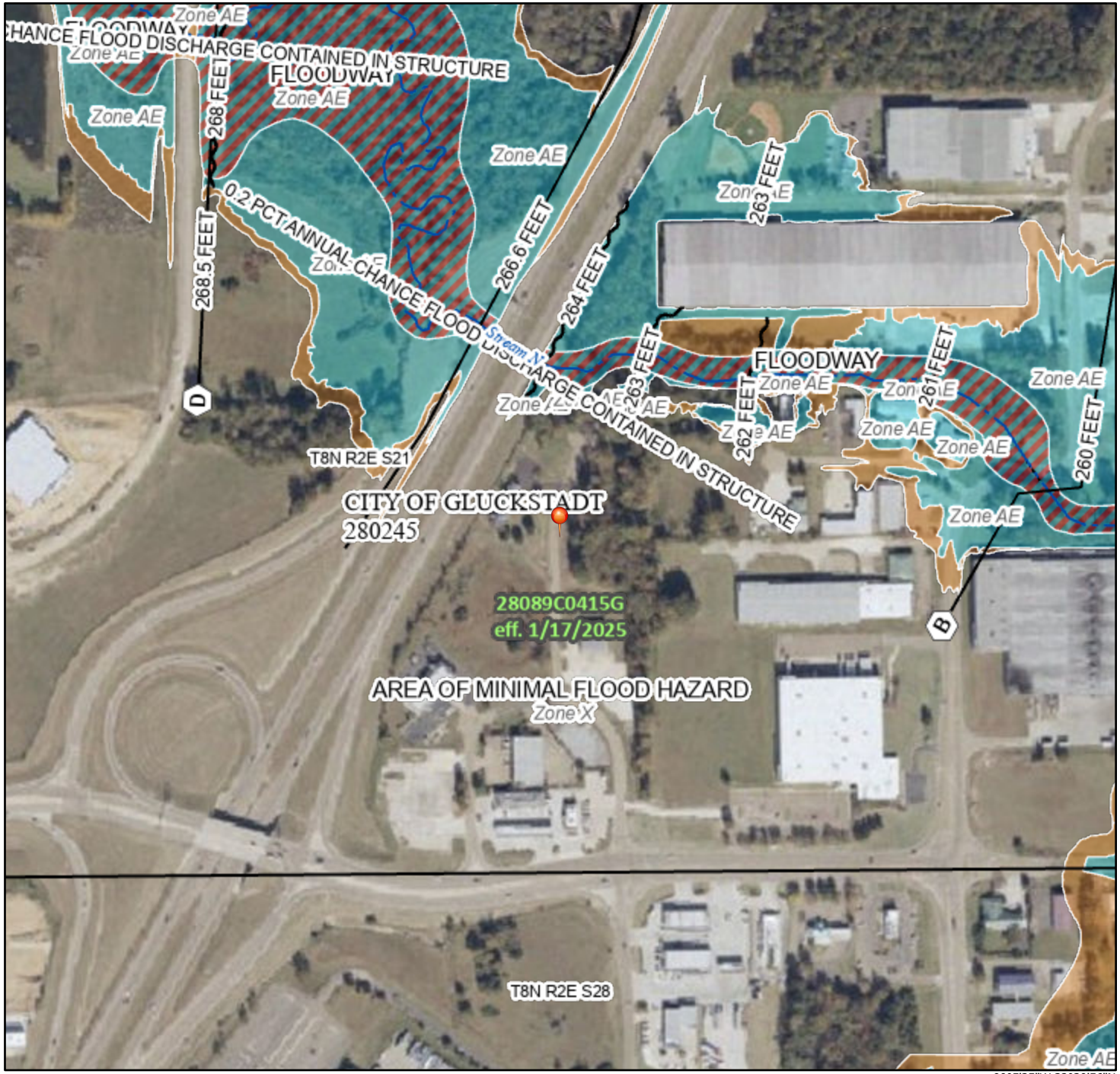
SITE DEVELOPMENT

DATE: 09 JUN 2029
SCALE: AS SHOWN
DRAWN BY: WSD
REVIEWED BY: WSD

SHEET NUMBER:
DA1

National Flood Hazard Layer FIRMette

90°6'13"W 32°31'26"N



0 250 500 1,000 1,500 2,000 Feet

1:6,000

90°5'35"W 32°30'56"N

Basemap Imagery Source: USGS National Map 2023

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND IN UT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

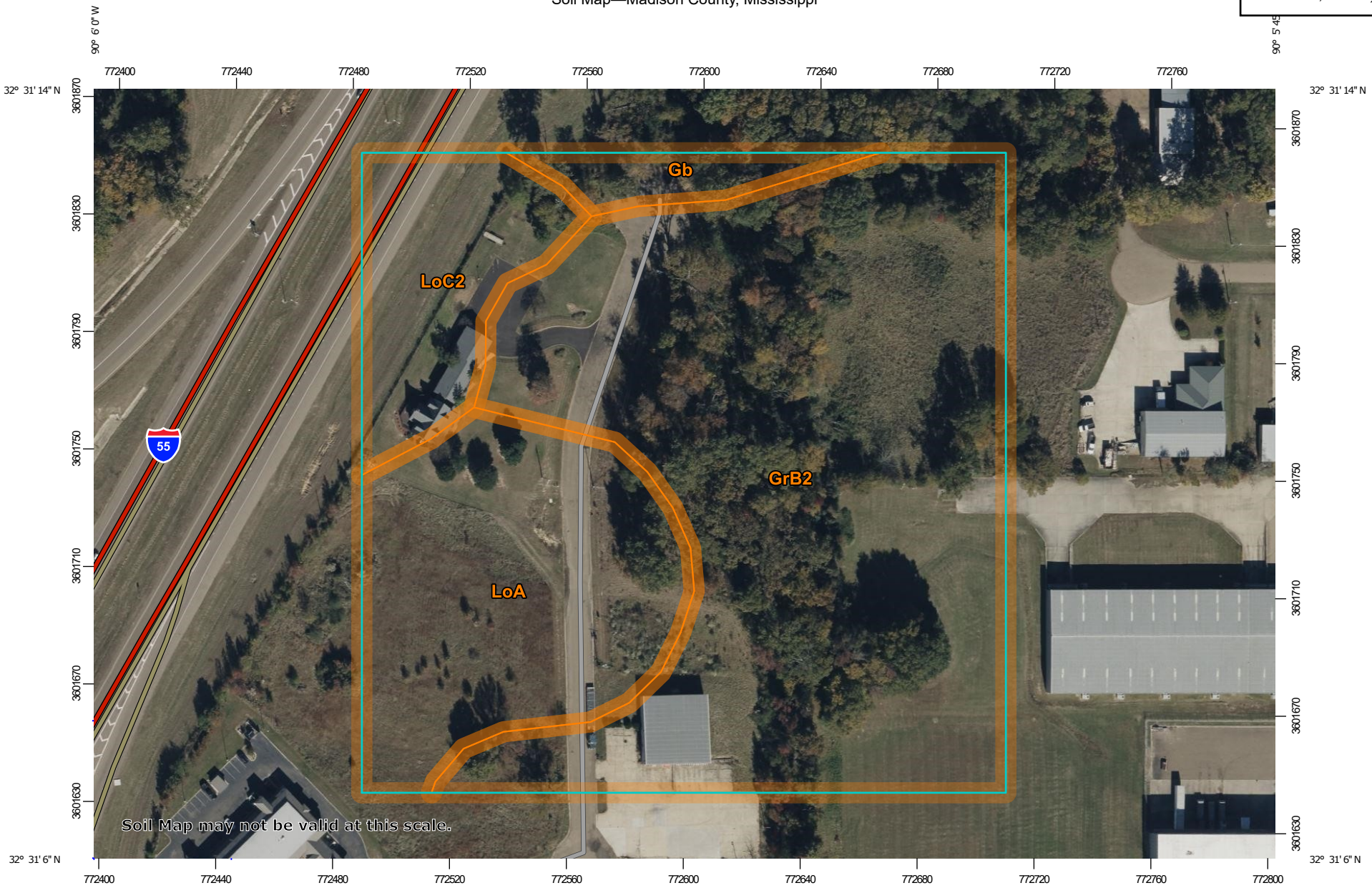
The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 6/27/2025 at 4:13 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community ide FIRM panel number, and FIRM effective date. Map im unmapped and unmodernized areas cannot be used regulatory purposes.

Soil Map—Madison County, Mississippi



Map Scale: 1:1,850 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 25 50 100 150

Feet: 0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 15N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

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

Special Point Features

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

Water Features

- Streams and Canals

Transportation

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

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

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

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

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

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

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

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

Soil Survey Area: Madison County, Mississippi
Survey Area Data: Version 19, Sep 6, 2024

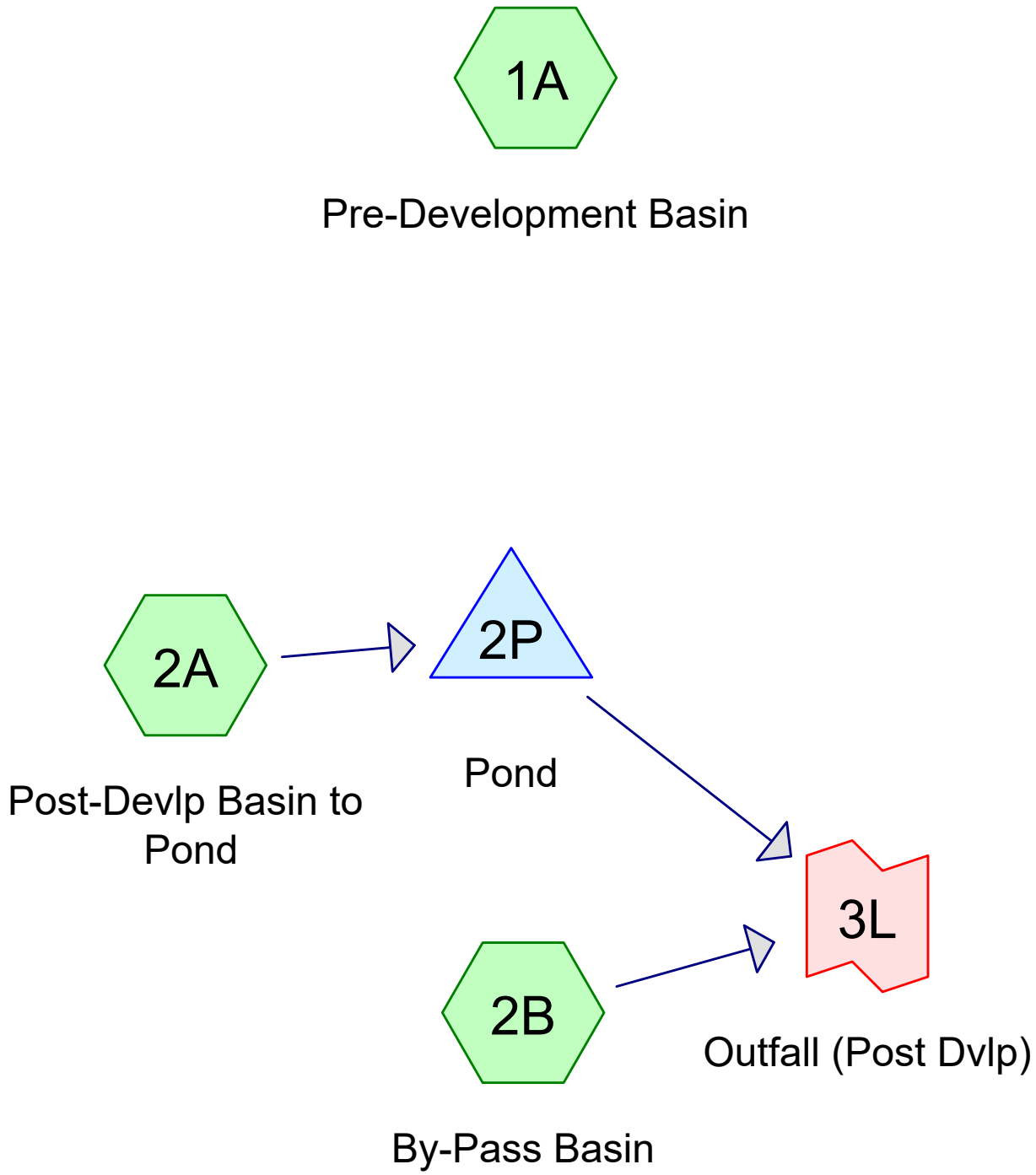
Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Nov 8, 2021—Nov 29, 2021

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Gb	Gillsburg silt loam	0.4	3.2%
GrB2	Grenada silt loam, 2 to 5 percent slopes, eroded	7.5	62.9%
LoA	Loring silt loam, 0 to 2 percent slopes, south	2.7	23.0%
LoC2	Loring silt loam, 5 to 8 percent slopes, moderately eroded, central	1.3	10.9%
Totals for Area of Interest		**11.9**	**100.0%**



Routing Diagram for Wellspring Church STM Study
Prepared by {enter your company name here}, Printed 6/29/2025
HydroCAD® 10.00-26 s/n 09984 © 2020 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
1.350	74	>75% Grass cover, Good, HSG C (1A, 2A, 2B)
0.400	98	FUTURE BLDG, HSG C (2A)
0.290	98	Paved parking, HSG C (2A, 2B)
2.040	**82**	**TOTAL AREA**

Soil Listing (all nodes)

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

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	1.350	0.000	0.000	1.350	>75% Grass cover, Good	1A, 2A, 2B
0.000	0.000	0.400	0.000	0.000	0.400	FUTURE BLDG	2A
0.000	0.000	0.290	0.000	0.000	0.290	Paved parking	2A, 2B
0.000	**0.000**	**2.040**	**0.000**	**0.000**	**2.040**	**TOTAL AREA**	

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Diam/Width (inches)	Height (inches)	Inside-Fill (inches)
1	2P	264.50	263.39	95.0	0.0117	0.009	12.0	0.0	0.0

Time span=0.00-48.00 hrs, dt=0.02 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1A: Pre-Development Basin Runoff Area=1.020 ac 0.00% Impervious Runoff Depth=1.97"
Flow Length=227' Tc=5.2 min CN=74 Runoff=2.40 cfs 0.168 af

Subcatchment 2A: Post-Devlp Basin to Runoff Area=0.840 ac 73.81% Impervious Runoff Depth=3.60"
Tc=5.0 min CN=92 Runoff=3.50 cfs 0.252 af

Subcatchment 2B: By-Pass Basin Runoff Area=0.180 ac 38.89% Impervious Runoff Depth=2.73"
Tc=5.0 min CN=83 Runoff=0.59 cfs 0.041 af

Pond 2P: Pond Peak Elev=266.89' Storage=0.031 af Inflow=3.50 cfs 0.252 af
Primary=1.84 cfs 0.252 af Secondary=0.00 cfs 0.000 af Outflow=1.84 cfs 0.252 af

Link 3L: Outfall (Post Dvlp) Inflow=2.21 cfs 0.293 af
Primary=2.21 cfs 0.293 af

Total Runoff Area = 2.040 ac Runoff Volume = 0.461 af Average Runoff Depth = 2.71"
66.18% Pervious = 1.350 ac 33.82% Impervious = 0.690 ac

Summary for Subcatchment 1A: Pre-Development Basin

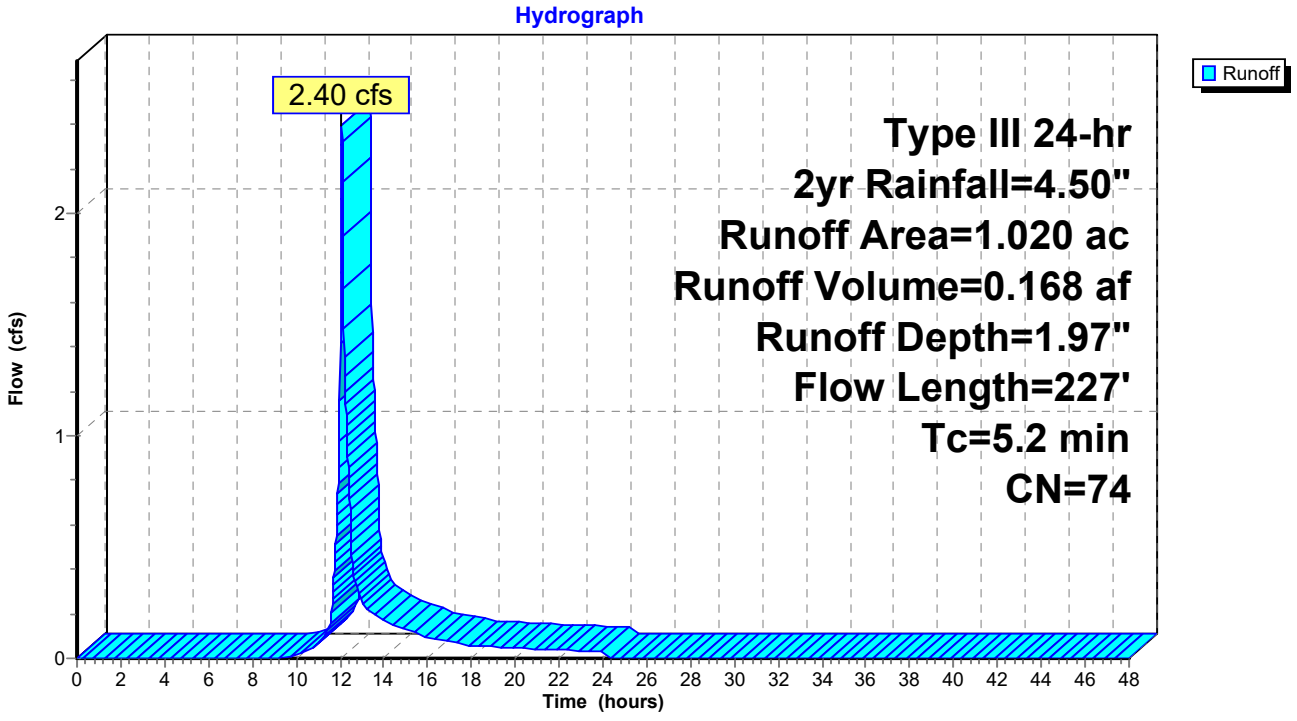
Runoff = 2.40 cfs @ 12.08 hrs, Volume= 0.168 af, Depth= 1.97"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 2yr Rainfall=4.50"

Area (ac)	CN	Description
1.020	74	>75% Grass cover, Good, HSG C
1.020		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.5	40	0.0270	0.19		**Sheet Flow, sheet** Grass: Short n= 0.150 P2= 4.50"
1.7	187	0.0150	1.84		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
5.2	227	Total			

Subcatchment 1A: Pre-Development Basin



Summary for Subcatchment 2A: Post-Devlp Basin to Pond

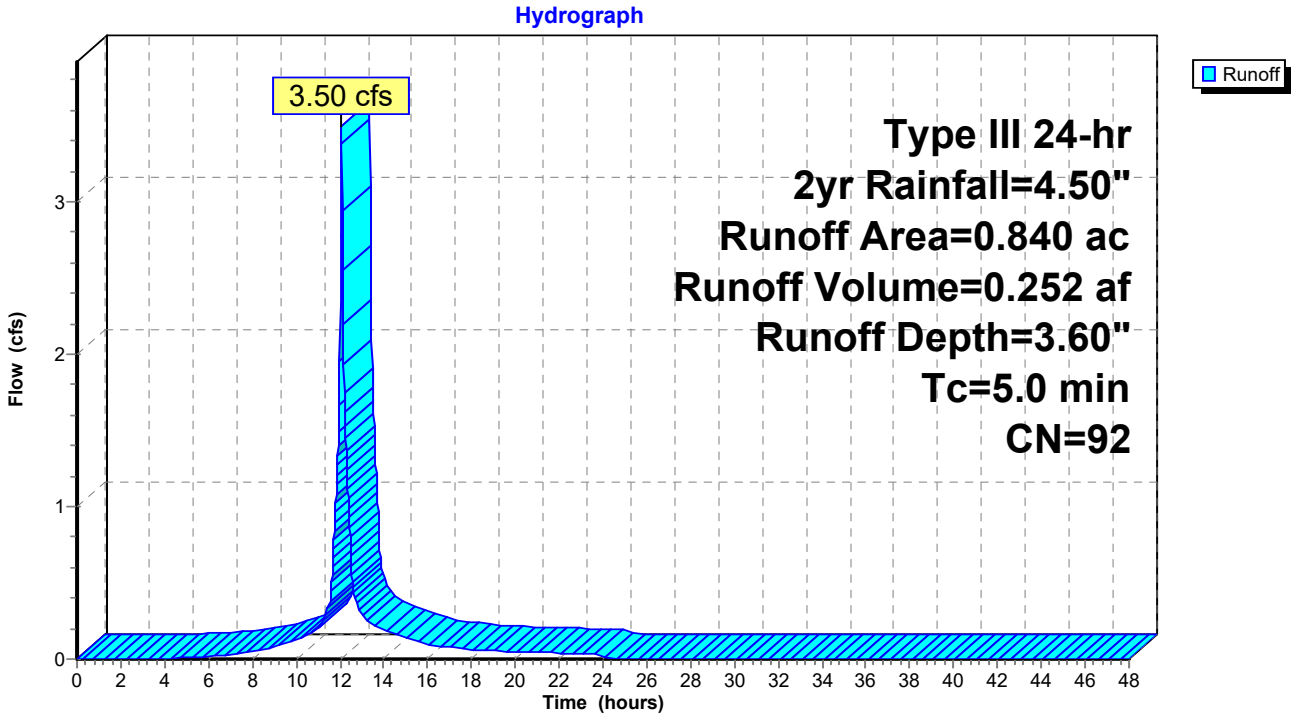
Runoff = 3.50 cfs @ 12.07 hrs, Volume= 0.252 af, Depth= 3.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 2yr Rainfall=4.50"

	Area (ac)	CN	Description
	0.220	74	>75% Grass cover, Good, HSG C
*	0.400	98	FUTURE BLDG, HSG C
	0.220	98	Paved parking, HSG C
	0.840	92	Weighted Average
	0.220		26.19% Pervious Area
	0.620		73.81% Impervious Area

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

Subcatchment 2A: Post-Devlp Basin to Pond



Summary for Subcatchment 2B: By-Pass Basin

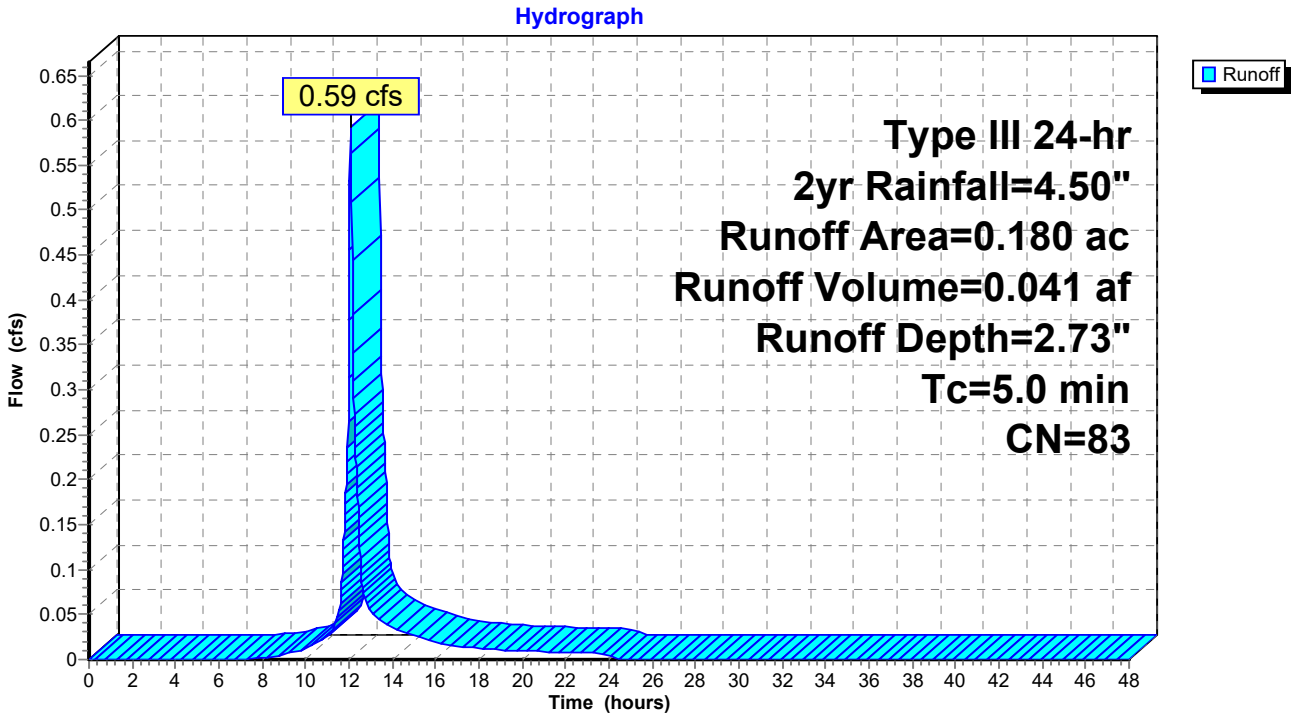
Runoff = 0.59 cfs @ 12.07 hrs, Volume= 0.041 af, Depth= 2.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 2yr Rainfall=4.50"

Area (ac)	CN	Description
0.110	74	>75% Grass cover, Good, HSG C
0.070	98	Paved parking, HSG C
0.180	83	Weighted Average
0.110		61.11% Pervious Area
0.070		38.89% Impervious Area

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

Subcatchment 2B: By-Pass Basin



Summary for Pond 2P: Pond

Inflow Area = 0.840 ac, 73.81% Impervious, Inflow Depth = 3.60" for 2yr event
Inflow = 3.50 cfs @ 12.07 hrs, Volume= 0.252 af
Outflow = 1.84 cfs @ 12.19 hrs, Volume= 0.252 af, Atten= 47%, Lag= 7.1 min
Primary = 1.84 cfs @ 12.19 hrs, Volume= 0.252 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 266.89' @ 12.19 hrs Surf.Area= 0.041 ac Storage= 0.031 af

Plug-Flow detention time= 4.1 min calculated for 0.252 af (100% of inflow)
Center-of-Mass det. time= 4.1 min (789.3 - 785.2)

Volume	Invert	Avail.Storage	Storage Description
#1	264.50'	0.267 af	**Custom Stage Data (Prismatic)**Listed below (Recalc)

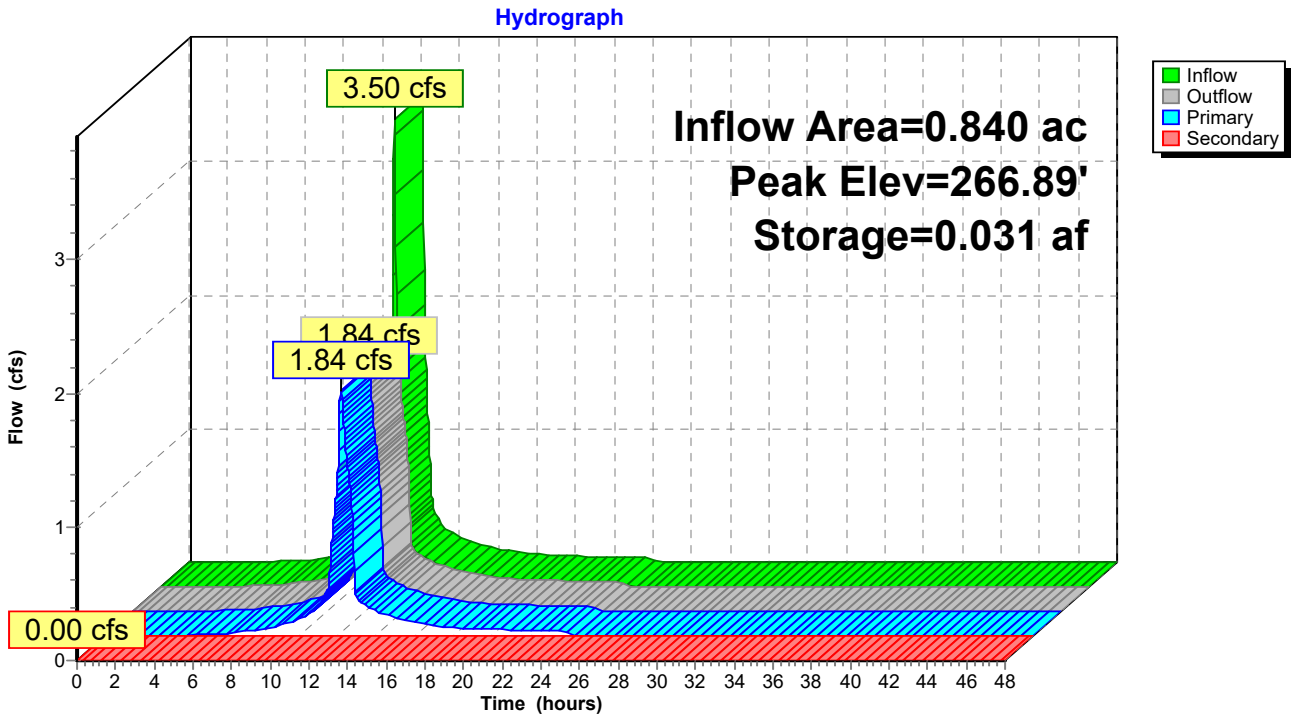
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
264.50	0.000	0.000	0.000
265.00	0.001	0.000	0.000
266.00	0.012	0.006	0.007
267.00	0.045	0.028	0.035
268.00	0.069	0.057	0.092
269.00	0.089	0.079	0.171
270.00	0.103	0.096	0.267

Device	Routing	Invert	Outlet Devices
#1	Primary	264.50'	**12.0" Round Culvert** L= 95.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 264.50' / 263.39' S= 0.0117 '/' Cc= 0.900 n= 0.009, Flow Area= 0.79 sf
#2	Device 1	264.50'	**6.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	266.50'	**8.0" Vert. Orifice/Grate** C= 0.600
#4	Device 1	267.50'	**48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#5	Secondary	268.50'	**30.0' long x 4.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

Primary OutFlow Max=1.84 cfs @ 12.19 hrs HW=266.89' (Free Discharge)
└**1=Culvert** (Passes 1.84 cfs of 5.20 cfs potential flow)
  ├**2=Orifice/Grate** (Orifice Controls 1.38 cfs @ 7.05 fps)
  ├**3=Orifice/Grate** (Orifice Controls 0.45 cfs @ 2.13 fps)
  └**4=Orifice/Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=264.50' (Free Discharge)
└**5=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 2P: Pond

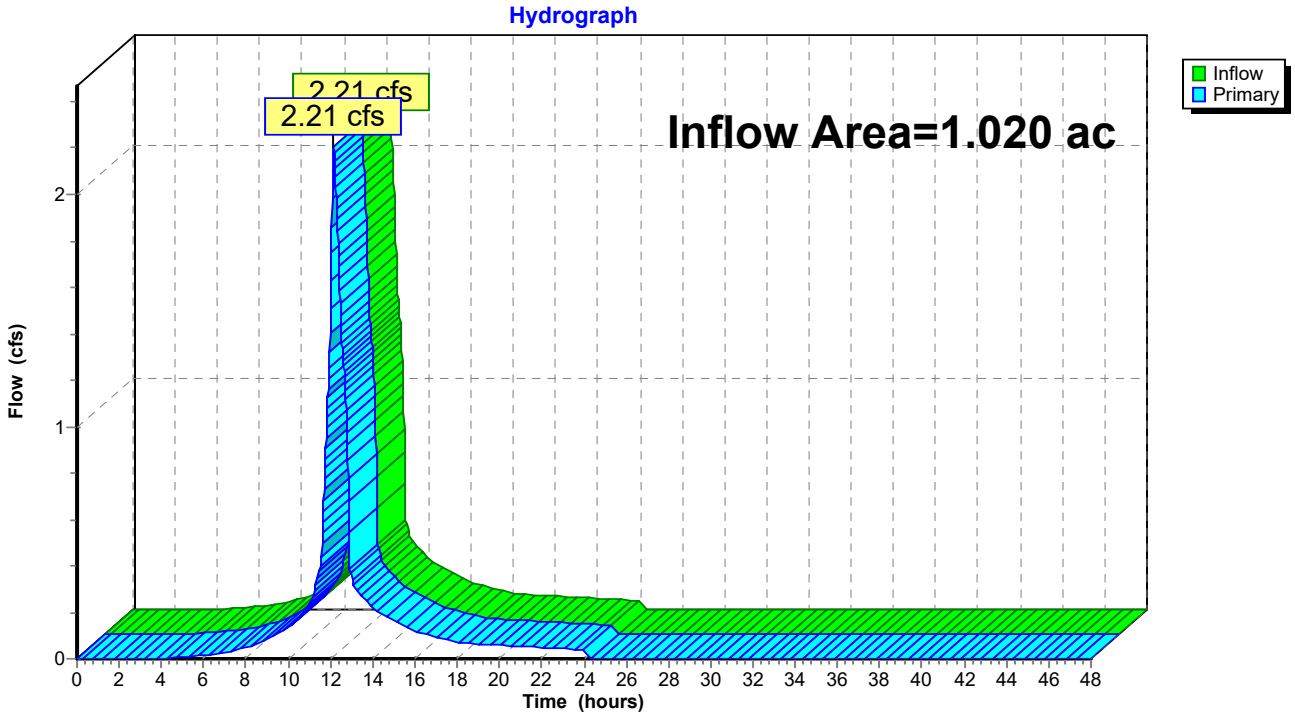

Hydrograph
3.50 cfs
1.84 cfs
1.84 cfs
0.00 cfs
Inflow Area=0.840 ac
Peak Elev=266.89'
Storage=0.031 af
Inflow
Outflow
Primary
Secondary
Flow (cfs)
0
1
2
3
Time (hours)
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48

Summary for Link 3L: Outfall (Post Dvlp)

Inflow Area = 1.020 ac, 67.65% Impervious, Inflow Depth = 3.45" for 2yr event
Inflow = 2.21 cfs @ 12.15 hrs, Volume= 0.293 af
Primary = 2.21 cfs @ 12.15 hrs, Volume= 0.293 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs

Link 3L: Outfall (Post Dvlp)



Time span=0.00-48.00 hrs, dt=0.02 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1A: Pre-Development Basin Runoff Area=1.020 ac 0.00% Impervious Runoff Depth=2.93"
Flow Length=227' Tc=5.2 min CN=74 Runoff=3.60 cfs 0.249 af

Subcatchment 2A: Post-Devlp Basin to Runoff Area=0.840 ac 73.81% Impervious Runoff Depth=4.77"
Tc=5.0 min CN=92 Runoff=4.57 cfs 0.334 af

Subcatchment 2B: By-Pass Basin Runoff Area=0.180 ac 38.89% Impervious Runoff Depth=3.81"
Tc=5.0 min CN=83 Runoff=0.82 cfs 0.057 af

Pond 2P: Pond Peak Elev=267.18' Storage=0.044 af Inflow=4.57 cfs 0.334 af
Primary=2.46 cfs 0.334 af Secondary=0.00 cfs 0.000 af Outflow=2.46 cfs 0.334 af

Link 3L: Outfall (Post Dvlp) Inflow=3.04 cfs 0.391 af
Primary=3.04 cfs 0.391 af

Total Runoff Area = 2.040 ac Runoff Volume = 0.641 af Average Runoff Depth = 3.77"
66.18% Pervious = 1.350 ac 33.82% Impervious = 0.690 ac

Summary for Subcatchment 1A: Pre-Development Basin

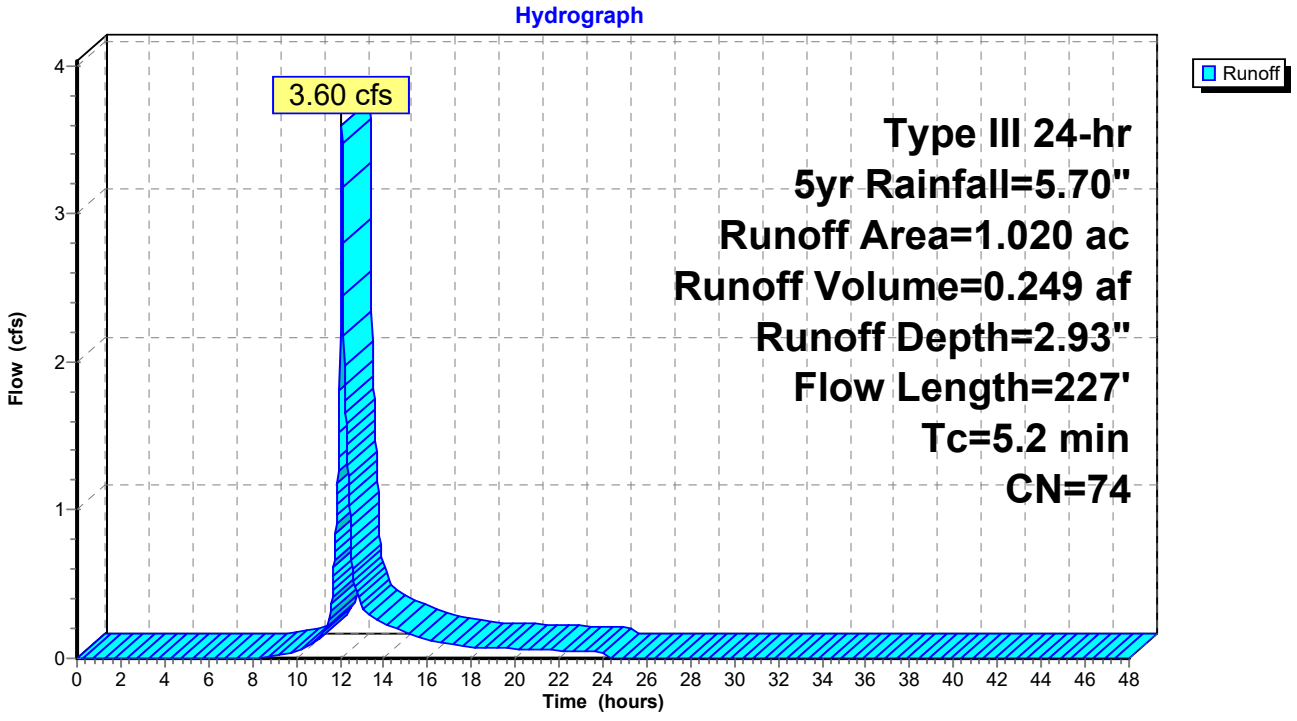
Runoff = 3.60 cfs @ 12.08 hrs, Volume= 0.249 af, Depth= 2.93"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 5yr Rainfall=5.70"

Area (ac)	CN	Description
1.020	74	>75% Grass cover, Good, HSG C
1.020		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.5	40	0.0270	0.19		**Sheet Flow, sheet** Grass: Short n= 0.150 P2= 4.50"
1.7	187	0.0150	1.84		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
5.2	227	Total			

Subcatchment 1A: Pre-Development Basin



Summary for Subcatchment 2A: Post-Devlp Basin to Pond

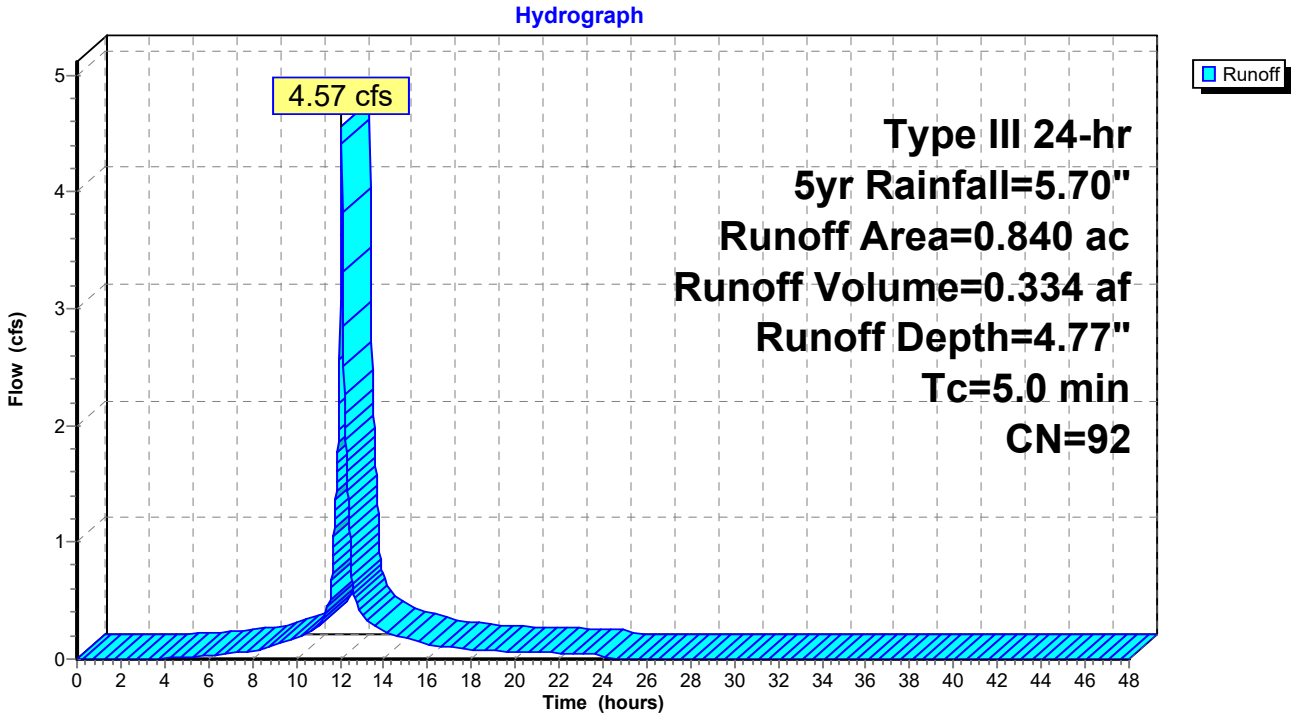
Runoff = 4.57 cfs @ 12.07 hrs, Volume= 0.334 af, Depth= 4.77"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 5yr Rainfall=5.70"

	Area (ac)	CN	Description
	0.220	74	>75% Grass cover, Good, HSG C
*	0.400	98	FUTURE BLDG, HSG C
	0.220	98	Paved parking, HSG C
	0.840	92	Weighted Average
	0.220		26.19% Pervious Area
	0.620		73.81% Impervious Area

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

Subcatchment 2A: Post-Devlp Basin to Pond



Summary for Subcatchment 2B: By-Pass Basin

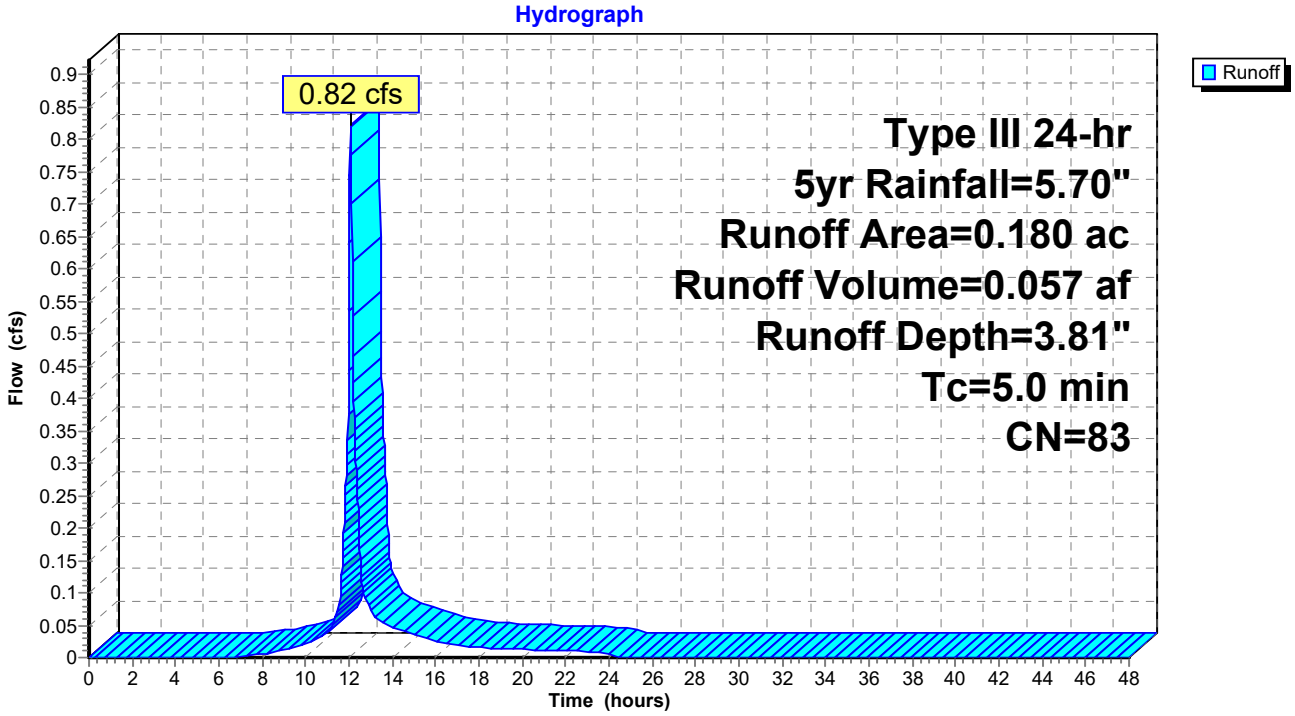
Runoff = 0.82 cfs @ 12.07 hrs, Volume= 0.057 af, Depth= 3.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 5yr Rainfall=5.70"

Area (ac)	CN	Description
0.110	74	>75% Grass cover, Good, HSG C
0.070	98	Paved parking, HSG C
0.180	83	Weighted Average
0.110		61.11% Pervious Area
0.070		38.89% Impervious Area

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

Subcatchment 2B: By-Pass Basin



Summary for Pond 2P: Pond

Inflow Area = 0.840 ac, 73.81% Impervious, Inflow Depth = 4.77" for 5yr event
Inflow = 4.57 cfs @ 12.07 hrs, Volume= 0.334 af
Outflow = 2.46 cfs @ 12.19 hrs, Volume= 0.334 af, Atten= 46%, Lag= 6.9 min
Primary = 2.46 cfs @ 12.19 hrs, Volume= 0.334 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 267.18' @ 12.19 hrs Surf.Area= 0.049 ac Storage= 0.044 af

Plug-Flow detention time= 4.8 min calculated for 0.334 af (100% of inflow)
Center-of-Mass det. time= 4.8 min (782.6 - 777.8)

Volume	Invert	Avail.Storage	Storage Description
#1	264.50'	0.267 af	**Custom Stage Data (Prismatic)**Listed below (Recalc)

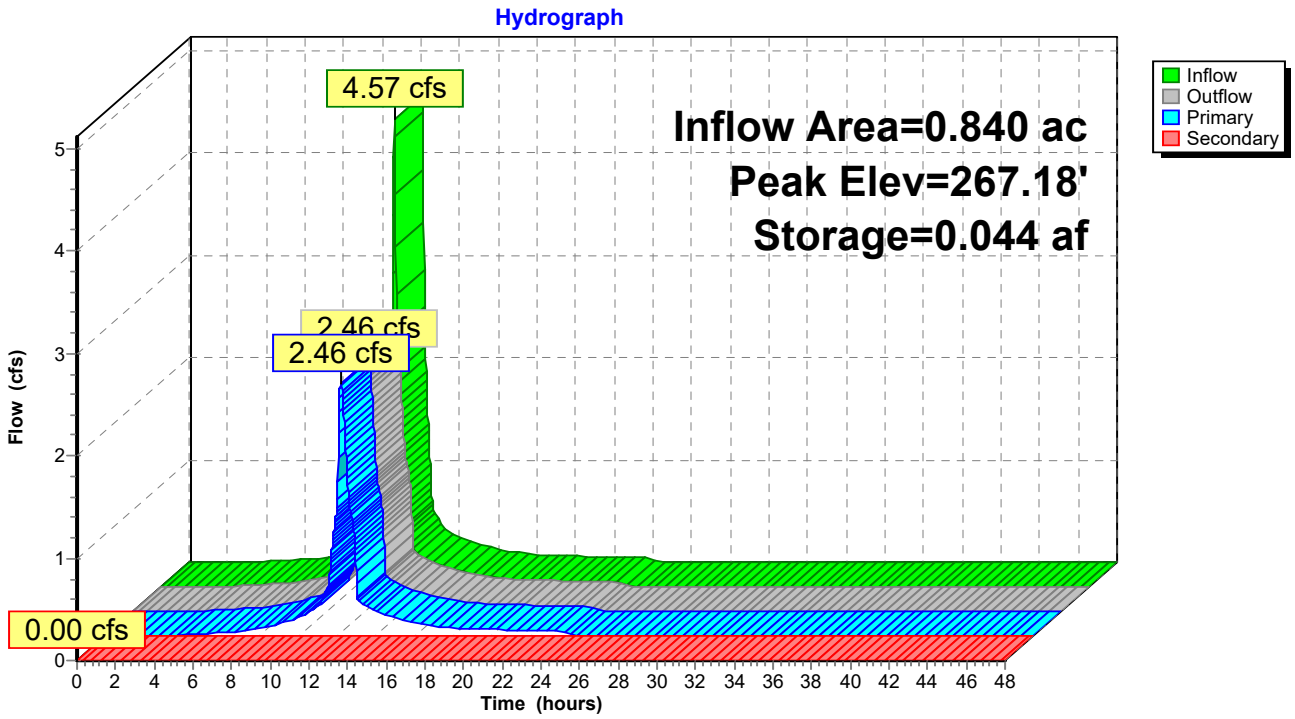
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
264.50	0.000	0.000	0.000
265.00	0.001	0.000	0.000
266.00	0.012	0.006	0.007
267.00	0.045	0.028	0.035
268.00	0.069	0.057	0.092
269.00	0.089	0.079	0.171
270.00	0.103	0.096	0.267

Device	Routing	Invert	Outlet Devices
#1	Primary	264.50'	**12.0" Round Culvert** L= 95.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 264.50' / 263.39' S= 0.0117 '/' Cc= 0.900 n= 0.009, Flow Area= 0.79 sf
#2	Device 1	264.50'	**6.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	266.50'	**8.0" Vert. Orifice/Grate** C= 0.600
#4	Device 1	267.50'	**48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#5	Secondary	268.50'	**30.0' long x 4.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

Primary OutFlow Max=2.46 cfs @ 12.19 hrs HW=267.18' (Free Discharge)
└**1=Culvert** (Passes 2.46 cfs of 5.58 cfs potential flow)
  ├**2=Orifice/Grate** (Orifice Controls 1.47 cfs @ 7.50 fps)
  ├**3=Orifice/Grate** (Orifice Controls 0.98 cfs @ 2.82 fps)
  └**4=Orifice/Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=264.50' (Free Discharge)
└**5=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 2P: Pond

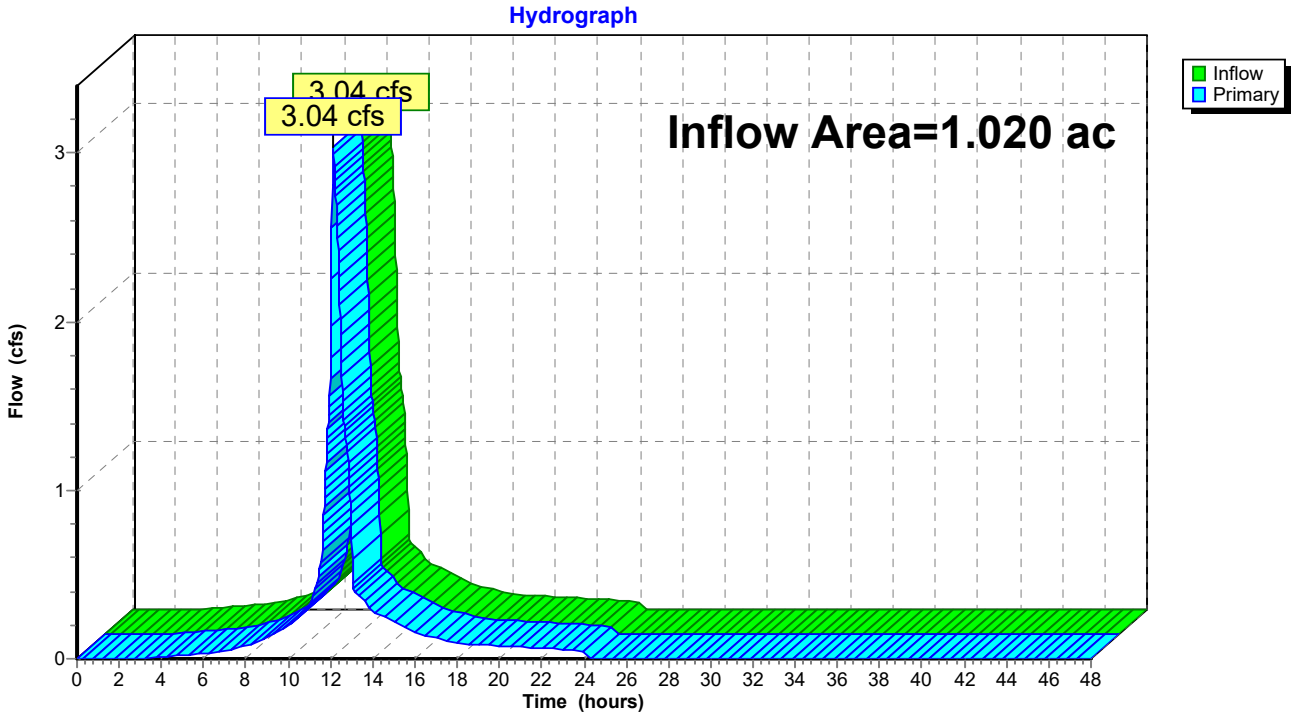

Hydrograph
4.57 cfs
2.46 cfs
2.46 cfs
0.00 cfs
Inflow Area=0.840 ac
Peak Elev=267.18'
Storage=0.044 af
Inflow
Outflow
Primary
Secondary
Flow (cfs)
Time (hours)
0
1
2
3
4
5
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48

Summary for Link 3L: Outfall (Post Dvlp)

Inflow Area = 1.020 ac, 67.65% Impervious, Inflow Depth = 4.61" for 5yr event
Inflow = 3.04 cfs @ 12.13 hrs, Volume= 0.391 af
Primary = 3.04 cfs @ 12.13 hrs, Volume= 0.391 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs

Link 3L: Outfall (Post Dvlp)



Time span=0.00-48.00 hrs, dt=0.02 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1A: Pre-Development Basin Runoff Area=1.020 ac 0.00% Impervious Runoff Depth=3.78"
Flow Length=227' Tc=5.2 min CN=74 Runoff=4.64 cfs 0.321 af

Subcatchment 2A: Post-Devlp Basin to Runoff Area=0.840 ac 73.81% Impervious Runoff Depth=5.76"
Tc=5.0 min CN=92 Runoff=5.45 cfs 0.403 af

Subcatchment 2B: By-Pass Basin Runoff Area=0.180 ac 38.89% Impervious Runoff Depth=4.75"
Tc=5.0 min CN=83 Runoff=1.02 cfs 0.071 af

Pond 2P: Pond Peak Elev=267.41' Storage=0.056 af Inflow=5.45 cfs 0.403 af
Primary=2.82 cfs 0.403 af Secondary=0.00 cfs 0.000 af Outflow=2.82 cfs 0.403 af

Link 3L: Outfall (Post Dvlp) Inflow=3.55 cfs 0.474 af
Primary=3.55 cfs 0.474 af

Total Runoff Area = 2.040 ac Runoff Volume = 0.796 af Average Runoff Depth = 4.68"
66.18% Pervious = 1.350 ac 33.82% Impervious = 0.690 ac

Summary for Subcatchment 1A: Pre-Development Basin

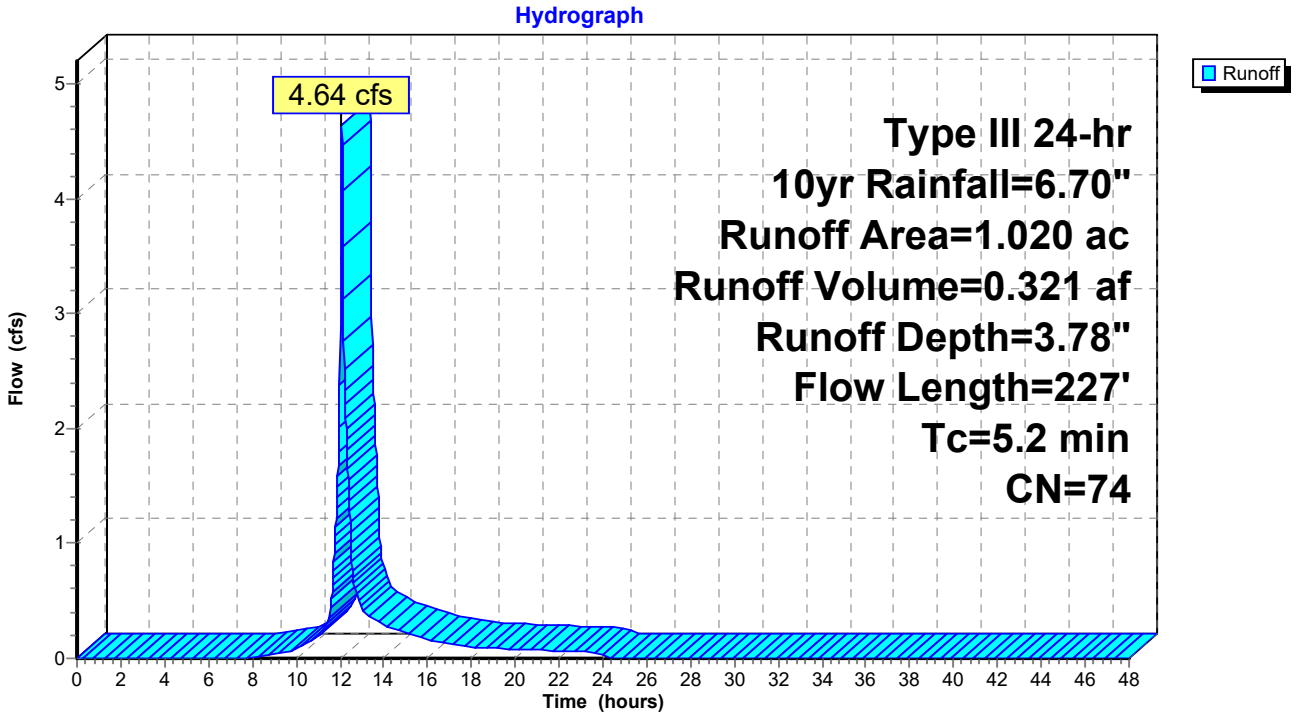
Runoff = 4.64 cfs @ 12.08 hrs, Volume= 0.321 af, Depth= 3.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 10yr Rainfall=6.70"

Area (ac)	CN	Description
1.020	74	>75% Grass cover, Good, HSG C
1.020		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.5	40	0.0270	0.19		**Sheet Flow, sheet** Grass: Short n= 0.150 P2= 4.50"
1.7	187	0.0150	1.84		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
5.2	227	Total			

Subcatchment 1A: Pre-Development Basin



Summary for Subcatchment 2A: Post-Devlp Basin to Pond

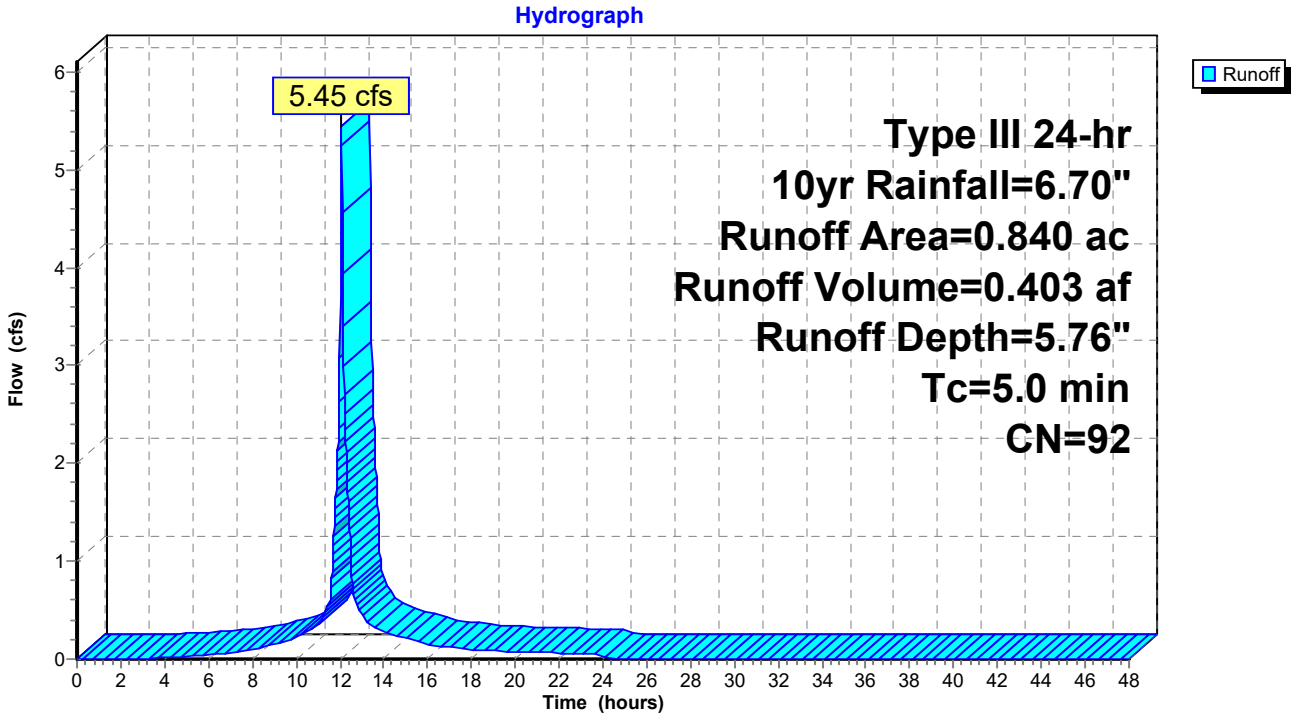
Runoff = 5.45 cfs @ 12.07 hrs, Volume= 0.403 af, Depth= 5.76"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 10yr Rainfall=6.70"

	Area (ac)	CN	Description
	0.220	74	>75% Grass cover, Good, HSG C
*	0.400	98	FUTURE BLDG, HSG C
	0.220	98	Paved parking, HSG C
	0.840	92	Weighted Average
	0.220		26.19% Pervious Area
	0.620		73.81% Impervious Area

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

Subcatchment 2A: Post-Devlp Basin to Pond



Summary for Subcatchment 2B: By-Pass Basin

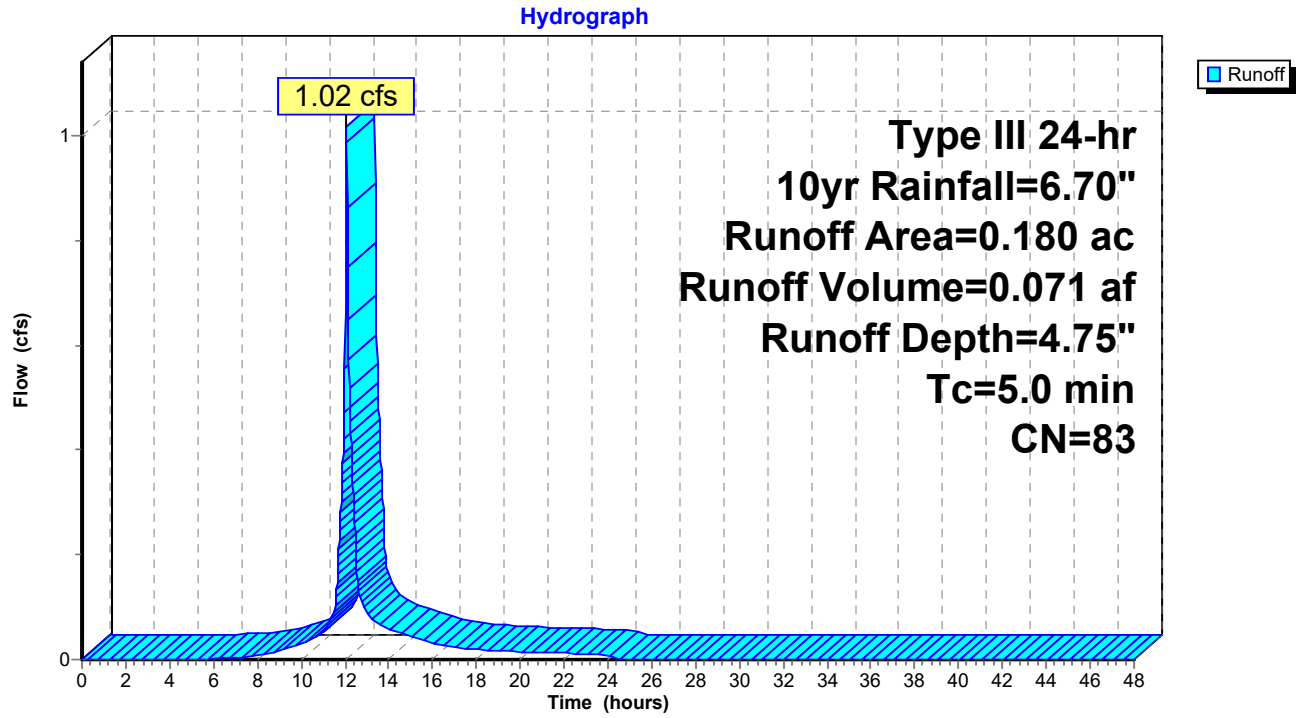
Runoff = 1.02 cfs @ 12.07 hrs, Volume= 0.071 af, Depth= 4.75"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 10yr Rainfall=6.70"

Area (ac)	CN	Description
0.110	74	>75% Grass cover, Good, HSG C
0.070	98	Paved parking, HSG C
0.180	83	Weighted Average
0.110		61.11% Pervious Area
0.070		38.89% Impervious Area

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

Subcatchment 2B: By-Pass Basin



Summary for Pond 2P: Pond

Inflow Area = 0.840 ac, 73.81% Impervious, Inflow Depth = 5.76" for 10yr event
Inflow = 5.45 cfs @ 12.07 hrs, Volume= 0.403 af
Outflow = 2.82 cfs @ 12.19 hrs, Volume= 0.403 af, Atten= 48%, Lag= 7.3 min
Primary = 2.82 cfs @ 12.19 hrs, Volume= 0.403 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 267.41' @ 12.19 hrs Surf.Area= 0.055 ac Storage= 0.056 af

Plug-Flow detention time= 5.5 min calculated for 0.403 af (100% of inflow)
Center-of-Mass det. time= 5.5 min (778.5 - 773.0)

Volume	Invert	Avail.Storage	Storage Description
#1	264.50'	0.267 af	**Custom Stage Data (Prismatic)**Listed below (Recalc)

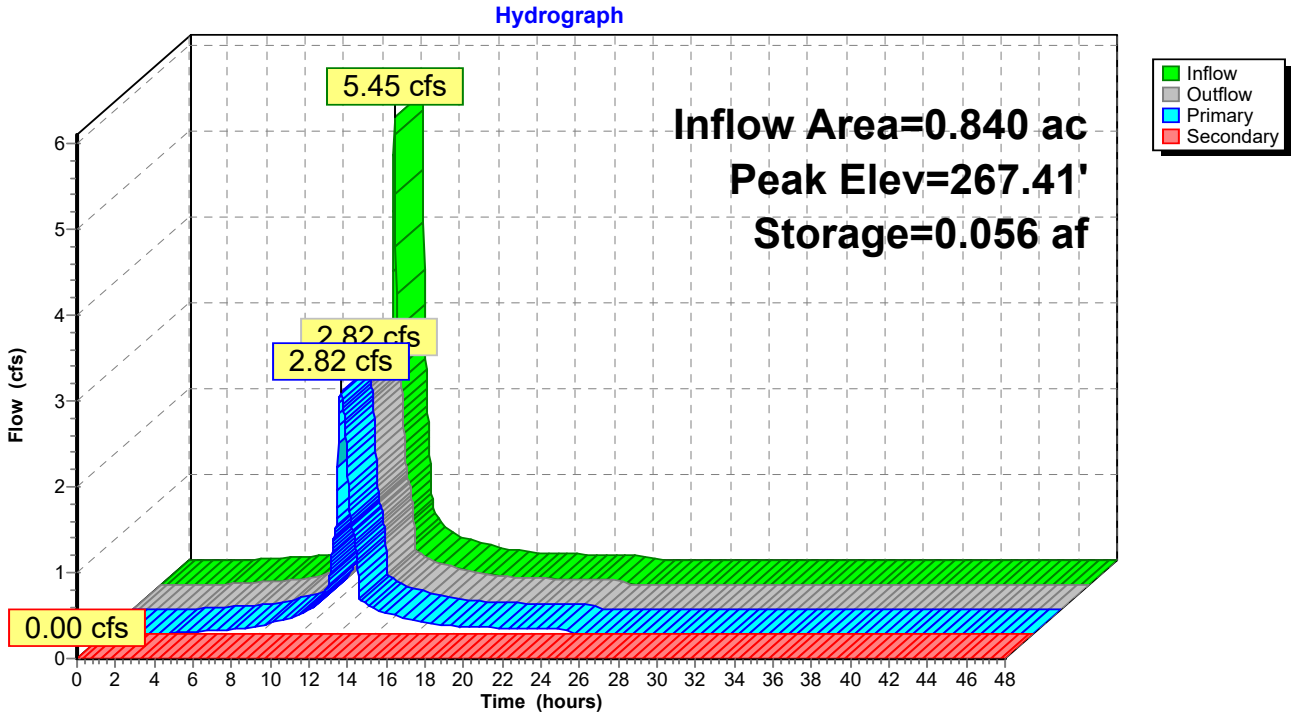
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
264.50	0.000	0.000	0.000
265.00	0.001	0.000	0.000
266.00	0.012	0.006	0.007
267.00	0.045	0.028	0.035
268.00	0.069	0.057	0.092
269.00	0.089	0.079	0.171
270.00	0.103	0.096	0.267

Device	Routing	Invert	Outlet Devices
#1	Primary	264.50'	**12.0" Round Culvert** L= 95.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 264.50' / 263.39' S= 0.0117 '/' Cc= 0.900 n= 0.009, Flow Area= 0.79 sf
#2	Device 1	264.50'	**6.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	266.50'	**8.0" Vert. Orifice/Grate** C= 0.600
#4	Device 1	267.50'	**48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#5	Secondary	268.50'	**30.0' long x 4.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

Primary OutFlow Max=2.81 cfs @ 12.19 hrs HW=267.41' (Free Discharge)
└─**1=Culvert** (Passes 2.81 cfs of 5.87 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 1.54 cfs @ 7.85 fps)
  ├─**3=Orifice/Grate** (Orifice Controls 1.27 cfs @ 3.65 fps)
  └─**4=Orifice/Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=264.50' (Free Discharge)
└─**5=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 2P: Pond

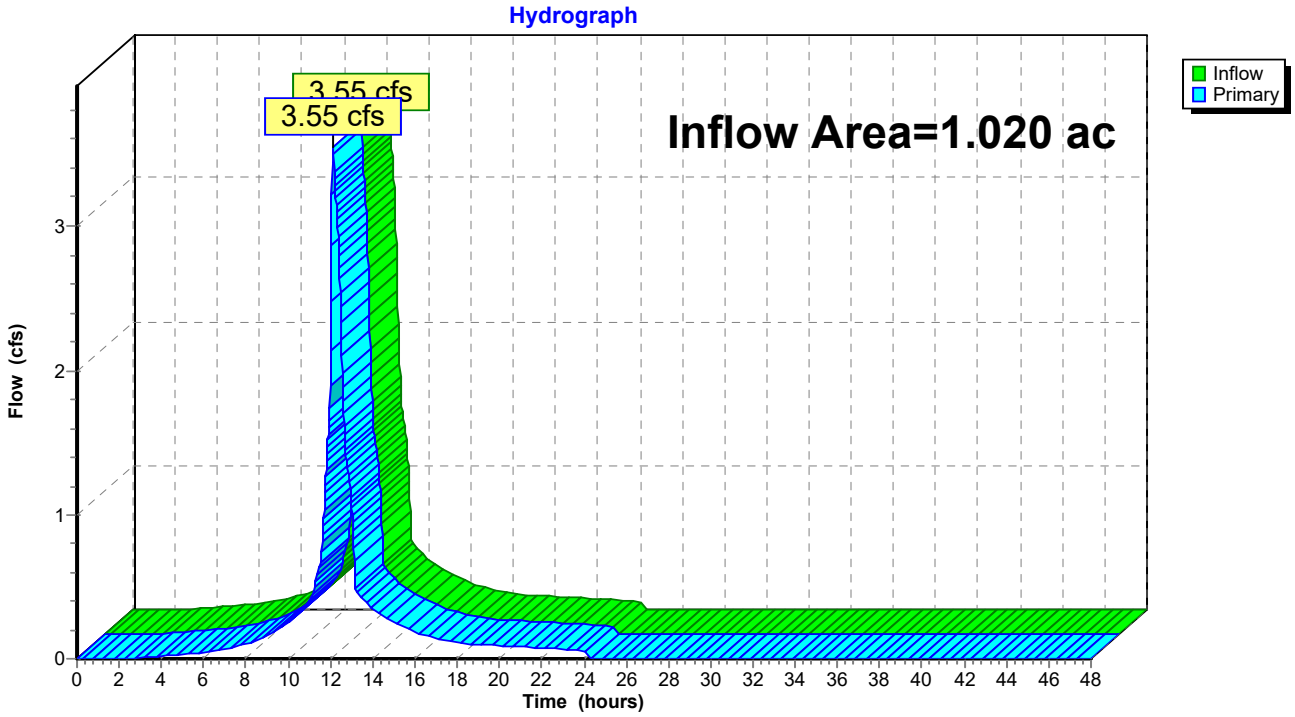

Hydrograph
5.45 cfs
2.82 cfs
2.82 cfs
0.00 cfs
Inflow Area=0.840 ac
Peak Elev=267.41'
Storage=0.056 af
Inflow
Outflow
Primary
Secondary
Flow (cfs)
Time (hours)
0
1
2
3
4
5
6
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48

Summary for Link 3L: Outfall (Post Dvlp)

Inflow Area = 1.020 ac, 67.65% Impervious, Inflow Depth = 5.58" for 10yr event
Inflow = 3.55 cfs @ 12.11 hrs, Volume= 0.474 af
Primary = 3.55 cfs @ 12.11 hrs, Volume= 0.474 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs

Link 3L: Outfall (Post Dvlp)



Time span=0.00-48.00 hrs, dt=0.02 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1A: Pre-Development Basin Runoff Area=1.020 ac 0.00% Impervious Runoff Depth=4.66"
Flow Length=227' Tc=5.2 min CN=74 Runoff=5.71 cfs 0.396 af

Subcatchment 2A: Post-Devlp Basin to Runoff Area=0.840 ac 73.81% Impervious Runoff Depth=6.75"
Tc=5.0 min CN=92 Runoff=6.33 cfs 0.472 af

Subcatchment 2B: By-Pass Basin Runoff Area=0.180 ac 38.89% Impervious Runoff Depth=5.69"
Tc=5.0 min CN=83 Runoff=1.21 cfs 0.085 af

Pond 2P: Pond Peak Elev=267.58' Storage=0.065 af Inflow=6.33 cfs 0.472 af
Primary=3.92 cfs 0.472 af Secondary=0.00 cfs 0.000 af Outflow=3.92 cfs 0.472 af

Link 3L: Outfall (Post Dvlp) Inflow=4.68 cfs 0.558 af
Primary=4.68 cfs 0.558 af

Total Runoff Area = 2.040 ac Runoff Volume = 0.954 af Average Runoff Depth = 5.61"
66.18% Pervious = 1.350 ac 33.82% Impervious = 0.690 ac

Summary for Subcatchment 1A: Pre-Development Basin

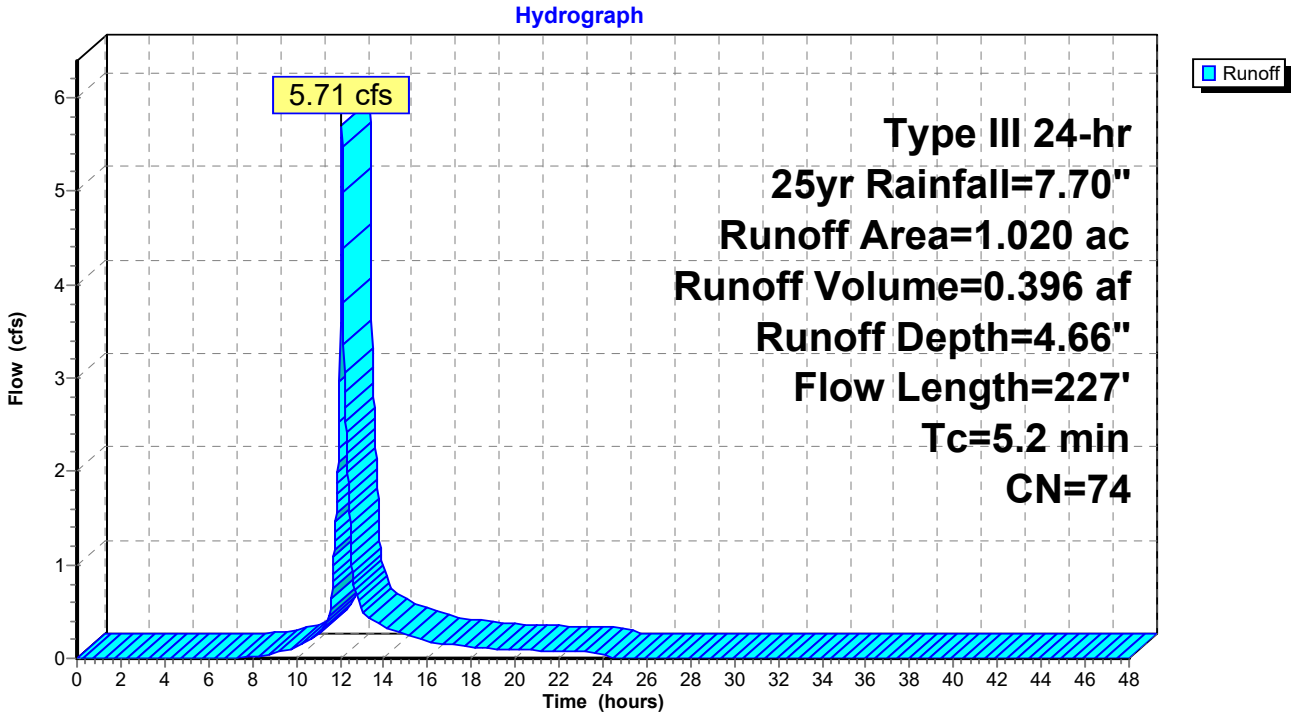
Runoff = 5.71 cfs @ 12.08 hrs, Volume= 0.396 af, Depth= 4.66"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 25yr Rainfall=7.70"

Area (ac)	CN	Description
1.020	74	>75% Grass cover, Good, HSG C
1.020		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.5	40	0.0270	0.19		**Sheet Flow, sheet** Grass: Short n= 0.150 P2= 4.50"
1.7	187	0.0150	1.84		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
5.2	227	Total			

Subcatchment 1A: Pre-Development Basin



Summary for Subcatchment 2A: Post-Devlp Basin to Pond

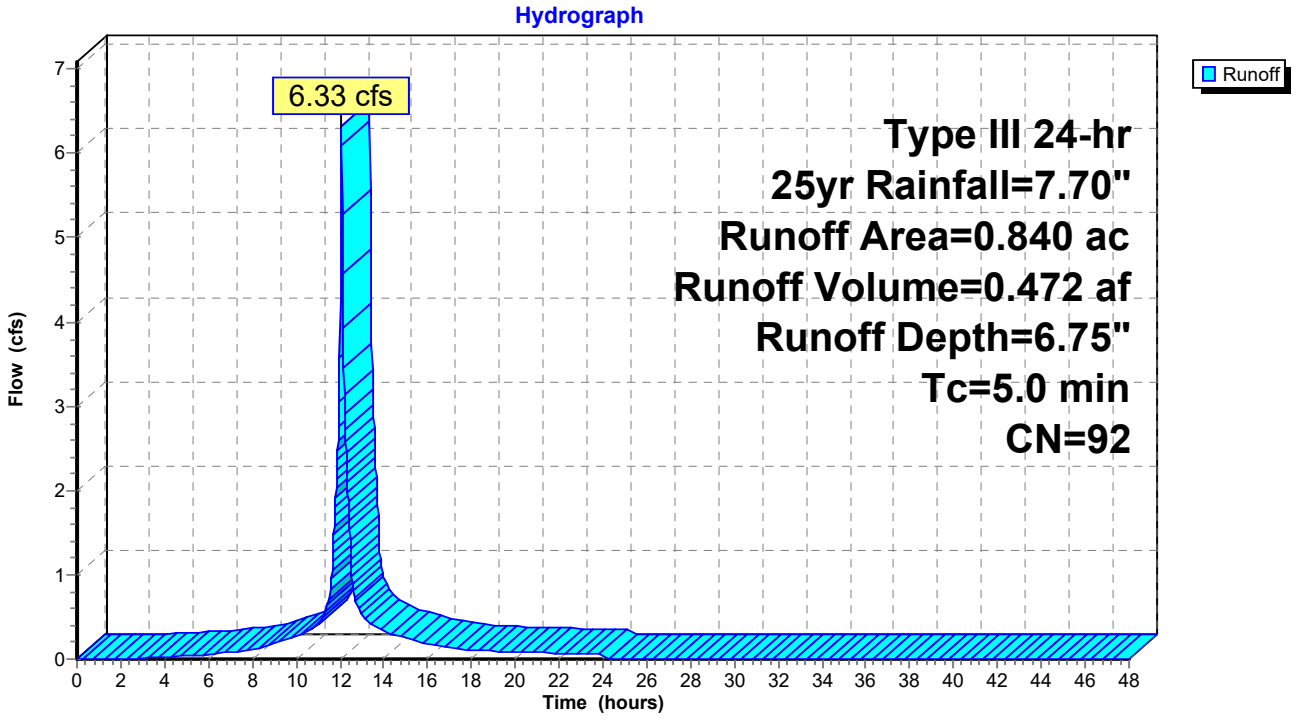
Runoff = 6.33 cfs @ 12.07 hrs, Volume= 0.472 af, Depth= 6.75"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 25yr Rainfall=7.70"

	Area (ac)	CN	Description
	0.220	74	>75% Grass cover, Good, HSG C
*	0.400	98	FUTURE BLDG, HSG C
	0.220	98	Paved parking, HSG C
	0.840	92	Weighted Average
	0.220		26.19% Pervious Area
	0.620		73.81% Impervious Area

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

Subcatchment 2A: Post-Devlp Basin to Pond



Summary for Subcatchment 2B: By-Pass Basin

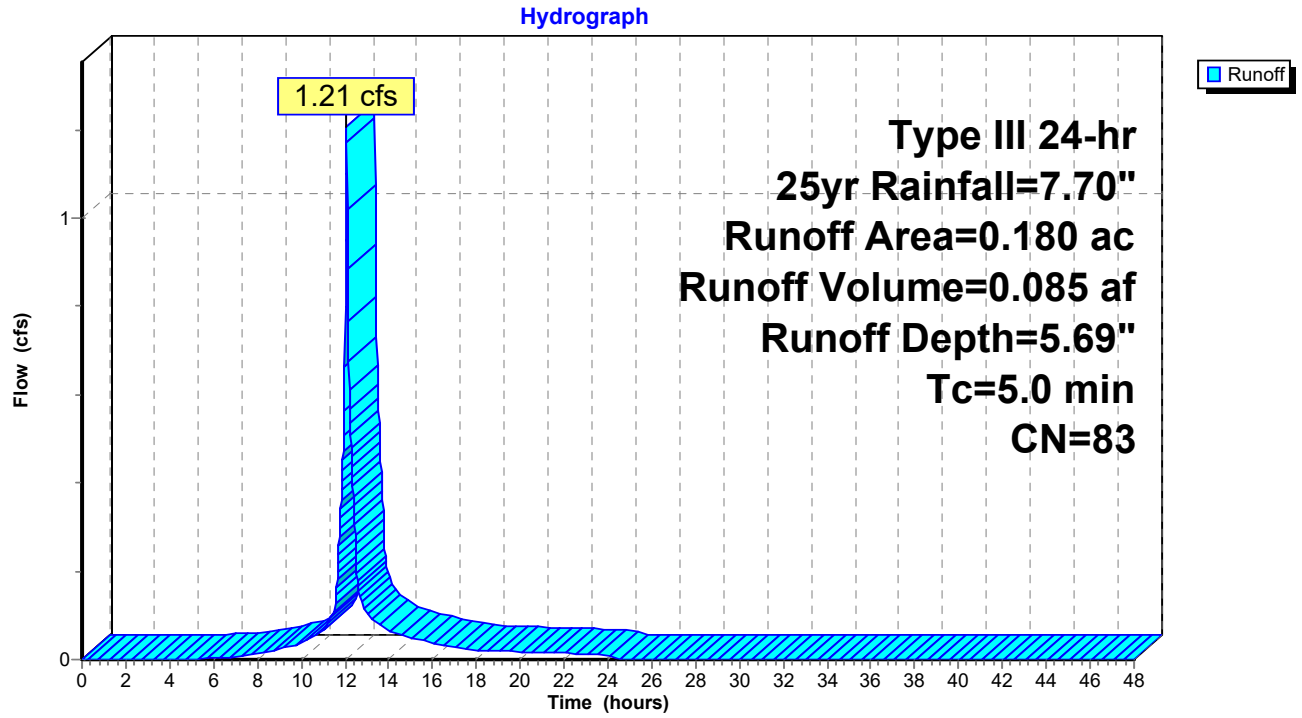
Runoff = 1.21 cfs @ 12.07 hrs, Volume= 0.085 af, Depth= 5.69"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 25yr Rainfall=7.70"

Area (ac)	CN	Description
0.110	74	>75% Grass cover, Good, HSG C
0.070	98	Paved parking, HSG C
0.180	83	Weighted Average
0.110		61.11% Pervious Area
0.070		38.89% Impervious Area

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

Subcatchment 2B: By-Pass Basin



Summary for Pond 2P: Pond

Inflow Area = 0.840 ac, 73.81% Impervious, Inflow Depth = 6.75" for 25yr event
Inflow = 6.33 cfs @ 12.07 hrs, Volume= 0.472 af
Outflow = 3.92 cfs @ 12.16 hrs, Volume= 0.472 af, Atten= 38%, Lag= 5.6 min
Primary = 3.92 cfs @ 12.16 hrs, Volume= 0.472 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 267.58' @ 12.16 hrs Surf.Area= 0.059 ac Storage= 0.065 af

Plug-Flow detention time= 5.8 min calculated for 0.472 af (100% of inflow)
Center-of-Mass det. time= 5.8 min (775.0 - 769.2)

Volume	Invert	Avail.Storage	Storage Description
#1	264.50'	0.267 af	**Custom Stage Data (Prismatic)**Listed below (Recalc)

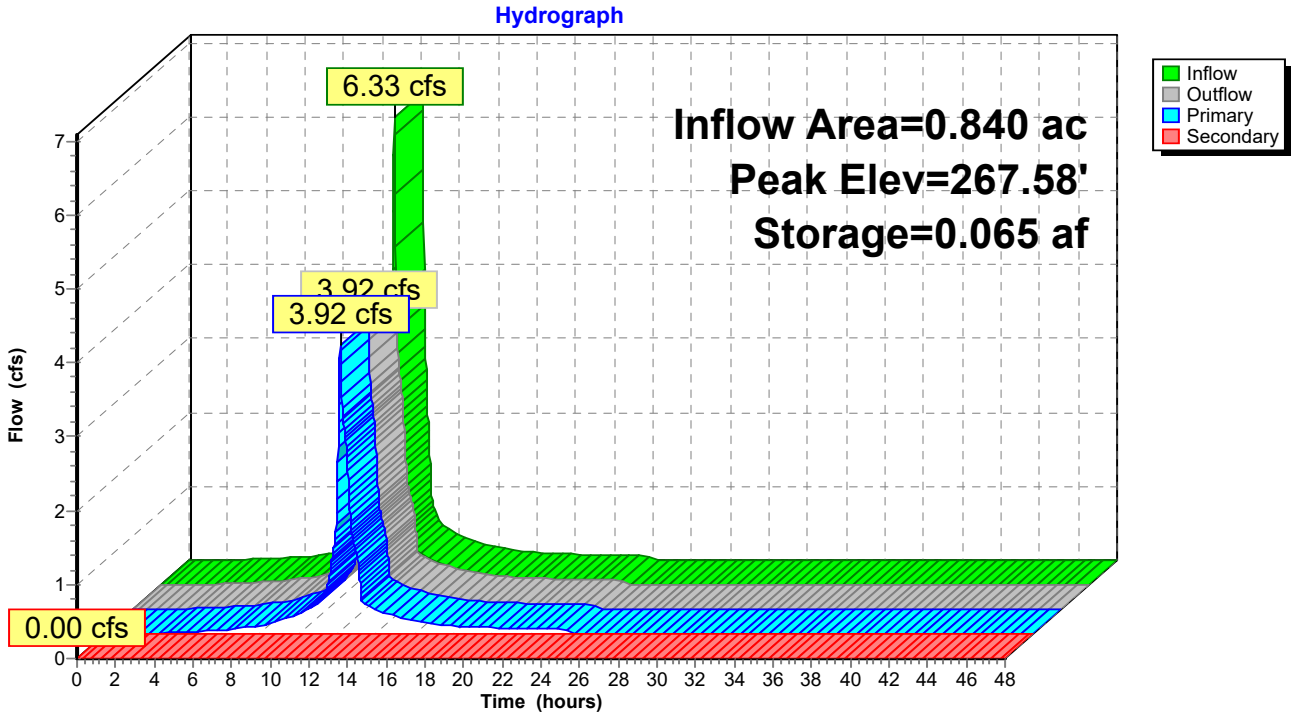
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
264.50	0.000	0.000	0.000
265.00	0.001	0.000	0.000
266.00	0.012	0.006	0.007
267.00	0.045	0.028	0.035
268.00	0.069	0.057	0.092
269.00	0.089	0.079	0.171
270.00	0.103	0.096	0.267

Device	Routing	Invert	Outlet Devices
#1	Primary	264.50'	**12.0" Round Culvert** L= 95.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 264.50' / 263.39' S= 0.0117 '/' Cc= 0.900 n= 0.009, Flow Area= 0.79 sf
#2	Device 1	264.50'	**6.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	266.50'	**8.0" Vert. Orifice/Grate** C= 0.600
#4	Device 1	267.50'	**48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#5	Secondary	268.50'	**30.0' long x 4.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

Primary OutFlow Max=3.88 cfs @ 12.16 hrs HW=267.58' (Free Discharge)
└**1=Culvert** (Passes 3.88 cfs of 6.07 cfs potential flow)
  ├**2=Orifice/Grate** (Orifice Controls 1.59 cfs @ 8.09 fps)
  ├**3=Orifice/Grate** (Orifice Controls 1.45 cfs @ 4.15 fps)
  └**4=Orifice/Grate** (Weir Controls 0.84 cfs @ 0.90 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=264.50' (Free Discharge)
└**5=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 2P: Pond

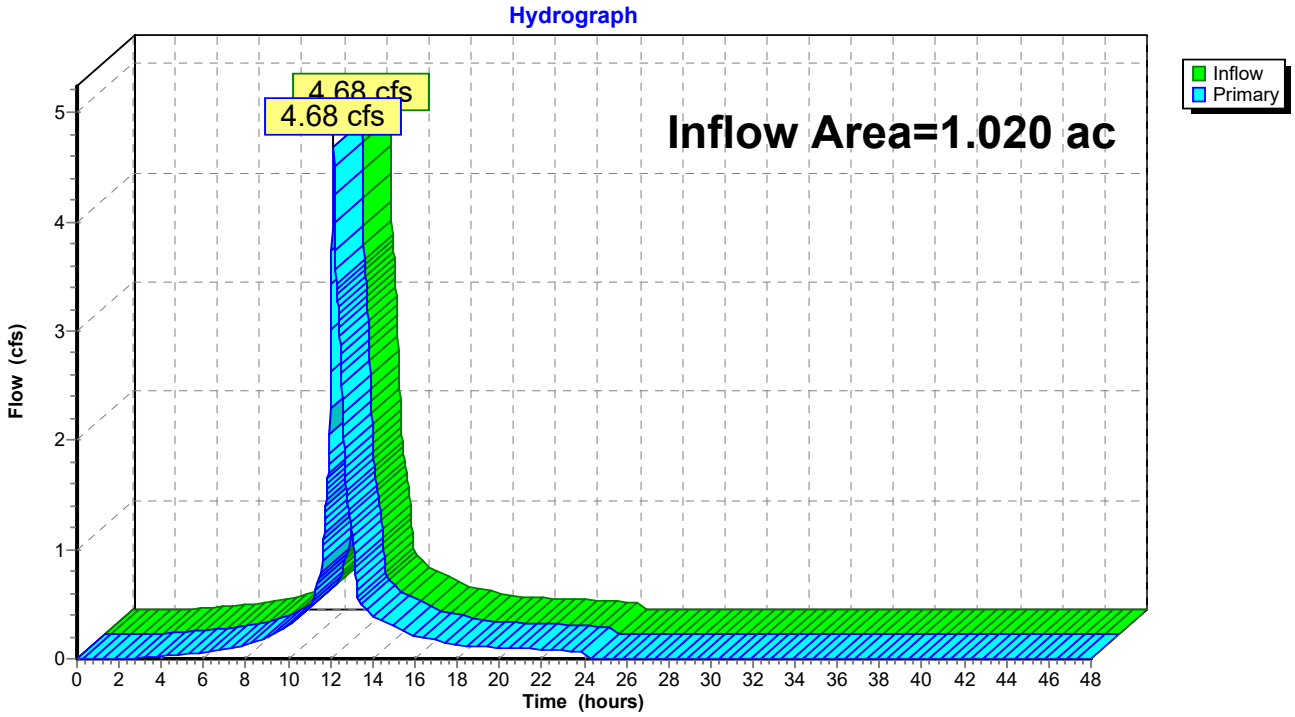

Hydrograph
6.33 cfs
3.92 cfs
3.92 cfs
0.00 cfs
Inflow Area=0.840 ac
Peak Elev=267.58'
Storage=0.065 af
Inflow
Outflow
Primary
Secondary
Flow (cfs)
Time (hours)
0 1 2 3 4 5 6 7
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48

Summary for Link 3L: Outfall (Post Dvlp)

Inflow Area = 1.020 ac, 67.65% Impervious, Inflow Depth = 6.56" for 25yr event
Inflow = 4.68 cfs @ 12.16 hrs, Volume= 0.558 af
Primary = 4.68 cfs @ 12.16 hrs, Volume= 0.558 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs

Link 3L: Outfall (Post Dvlp)



Time span=0.00-48.00 hrs, dt=0.02 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1A: Pre-Development Basin Runoff Area=1.020 ac 0.00% Impervious Runoff Depth=5.47"
Flow Length=227' Tc=5.2 min CN=74 Runoff=6.68 cfs 0.465 af

Subcatchment 2A: Post-Devlp Basin to Runoff Area=0.840 ac 73.81% Impervious Runoff Depth=7.64"
Tc=5.0 min CN=92 Runoff=7.11 cfs 0.535 af

Subcatchment 2B: By-Pass Basin Runoff Area=0.180 ac 38.89% Impervious Runoff Depth=6.55"
Tc=5.0 min CN=83 Runoff=1.38 cfs 0.098 af

Pond 2P: Pond Peak Elev=267.64' Storage=0.069 af Inflow=7.11 cfs 0.535 af
Primary=5.33 cfs 0.535 af Secondary=0.00 cfs 0.000 af Outflow=5.33 cfs 0.535 af

Link 3L: Outfall (Post Dvlp) Inflow=6.44 cfs 0.633 af
Primary=6.44 cfs 0.633 af

Total Runoff Area = 2.040 ac Runoff Volume = 1.098 af Average Runoff Depth = 6.46"
66.18% Pervious = 1.350 ac 33.82% Impervious = 0.690 ac

Summary for Subcatchment 1A: Pre-Development Basin

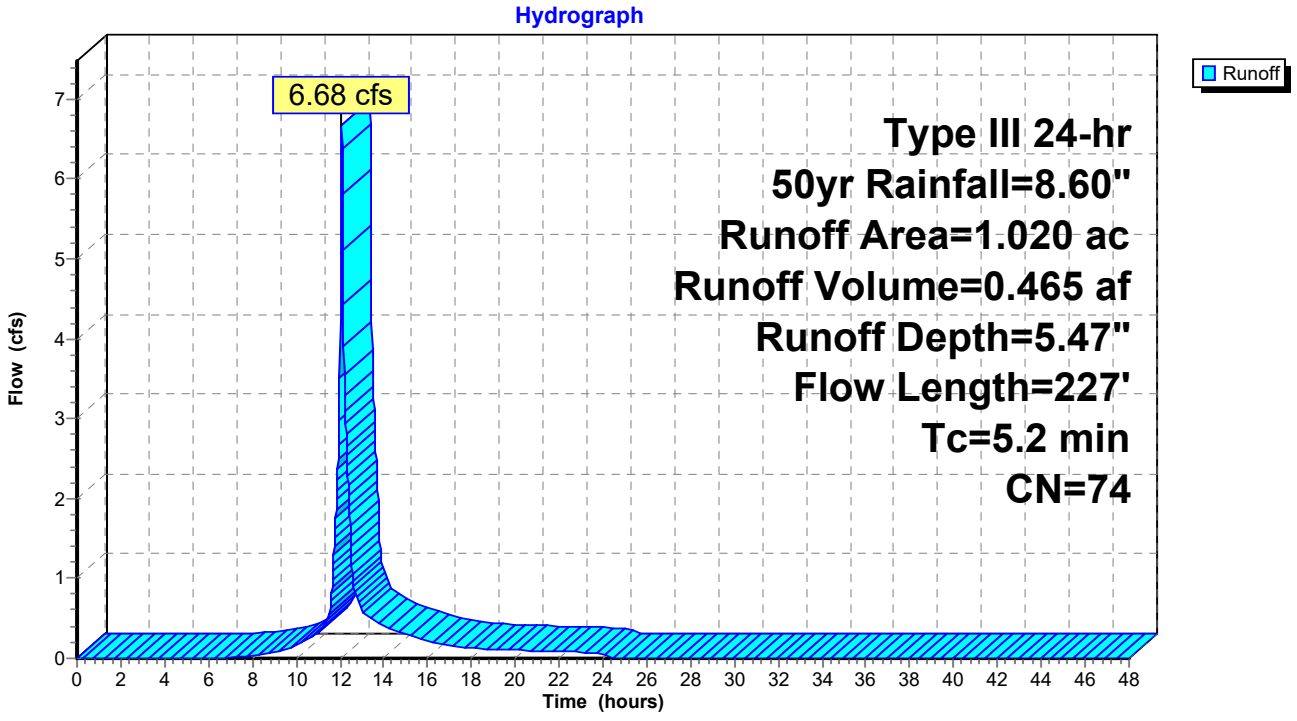
Runoff = 6.68 cfs @ 12.08 hrs, Volume= 0.465 af, Depth= 5.47"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 50yr Rainfall=8.60"

Area (ac)	CN	Description
1.020	74	>75% Grass cover, Good, HSG C
1.020		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.5	40	0.0270	0.19		**Sheet Flow, sheet** Grass: Short n= 0.150 P2= 4.50"
1.7	187	0.0150	1.84		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
5.2	227	Total			

Subcatchment 1A: Pre-Development Basin



Summary for Subcatchment 2A: Post-Devlp Basin to Pond

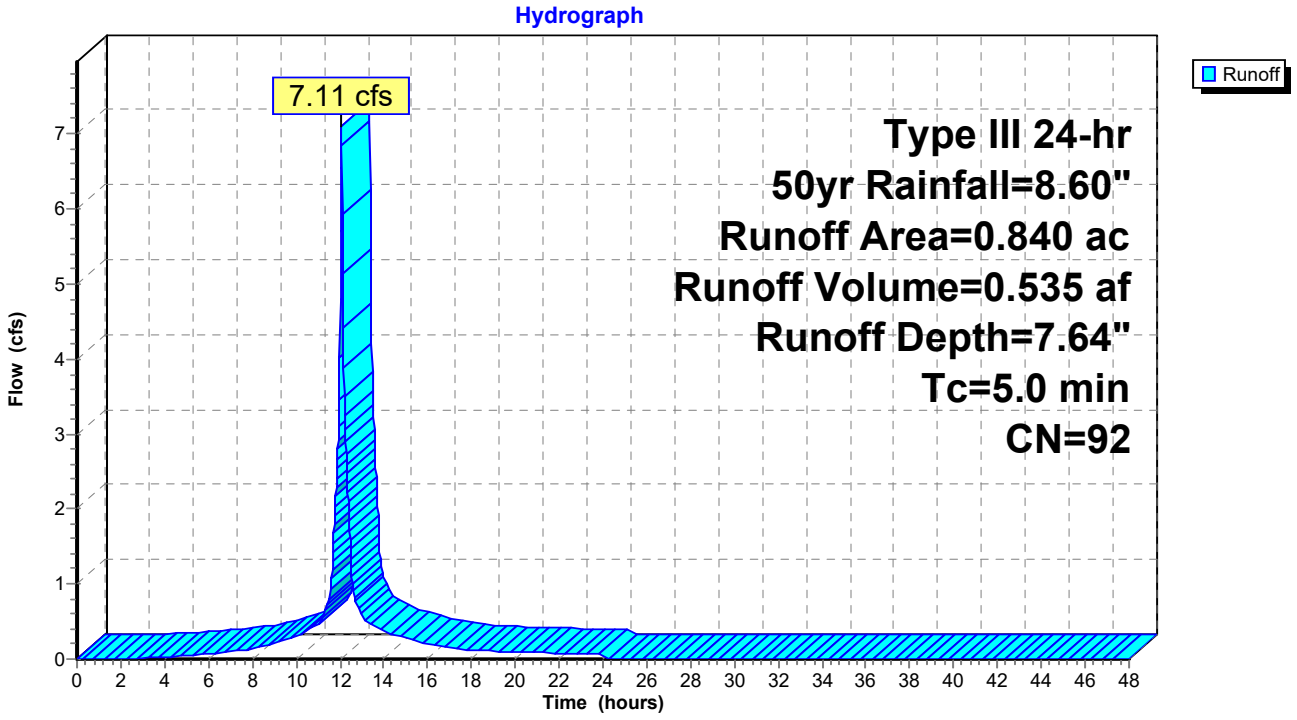
Runoff = 7.11 cfs @ 12.07 hrs, Volume= 0.535 af, Depth= 7.64"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 50yr Rainfall=8.60"

	Area (ac)	CN	Description
	0.220	74	>75% Grass cover, Good, HSG C
*	0.400	98	FUTURE BLDG, HSG C
	0.220	98	Paved parking, HSG C
	0.840	92	Weighted Average
	0.220		26.19% Pervious Area
	0.620		73.81% Impervious Area

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

Subcatchment 2A: Post-Devlp Basin to Pond



Summary for Subcatchment 2B: By-Pass Basin

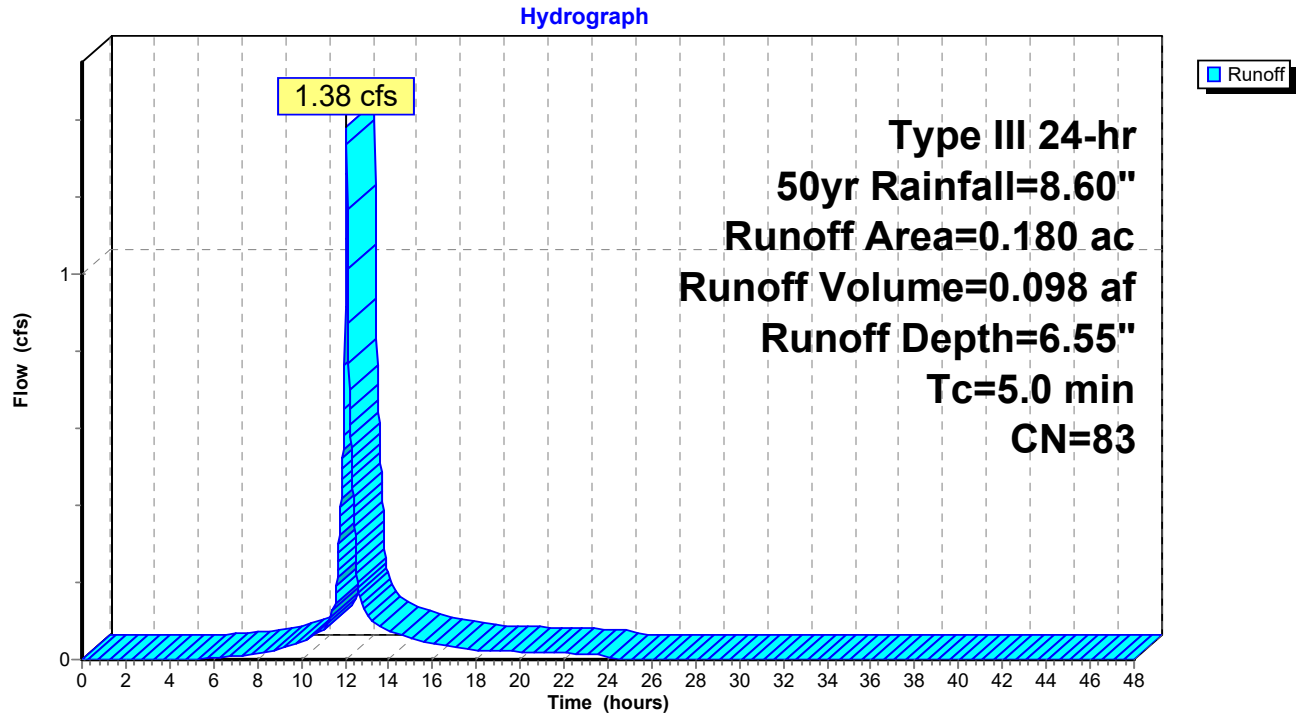
Runoff = 1.38 cfs @ 12.07 hrs, Volume= 0.098 af, Depth= 6.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 50yr Rainfall=8.60"

Area (ac)	CN	Description
0.110	74	>75% Grass cover, Good, HSG C
0.070	98	Paved parking, HSG C
0.180	83	Weighted Average
0.110		61.11% Pervious Area
0.070		38.89% Impervious Area

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

Subcatchment 2B: By-Pass Basin



Summary for Pond 2P: Pond

Inflow Area = 0.840 ac, 73.81% Impervious, Inflow Depth = 7.64" for 50yr event
Inflow = 7.11 cfs @ 12.07 hrs, Volume= 0.535 af
Outflow = 5.33 cfs @ 12.14 hrs, Volume= 0.535 af, Atten= 25%, Lag= 4.0 min
Primary = 5.33 cfs @ 12.14 hrs, Volume= 0.535 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 267.64' @ 12.14 hrs Surf.Area= 0.060 ac Storage= 0.069 af

Plug-Flow detention time= 5.7 min calculated for 0.534 af (100% of inflow)
Center-of-Mass det. time= 5.7 min (772.0 - 766.3)

Volume	Invert	Avail.Storage	Storage Description
#1	264.50'	0.267 af	**Custom Stage Data (Prismatic)**Listed below (Recalc)

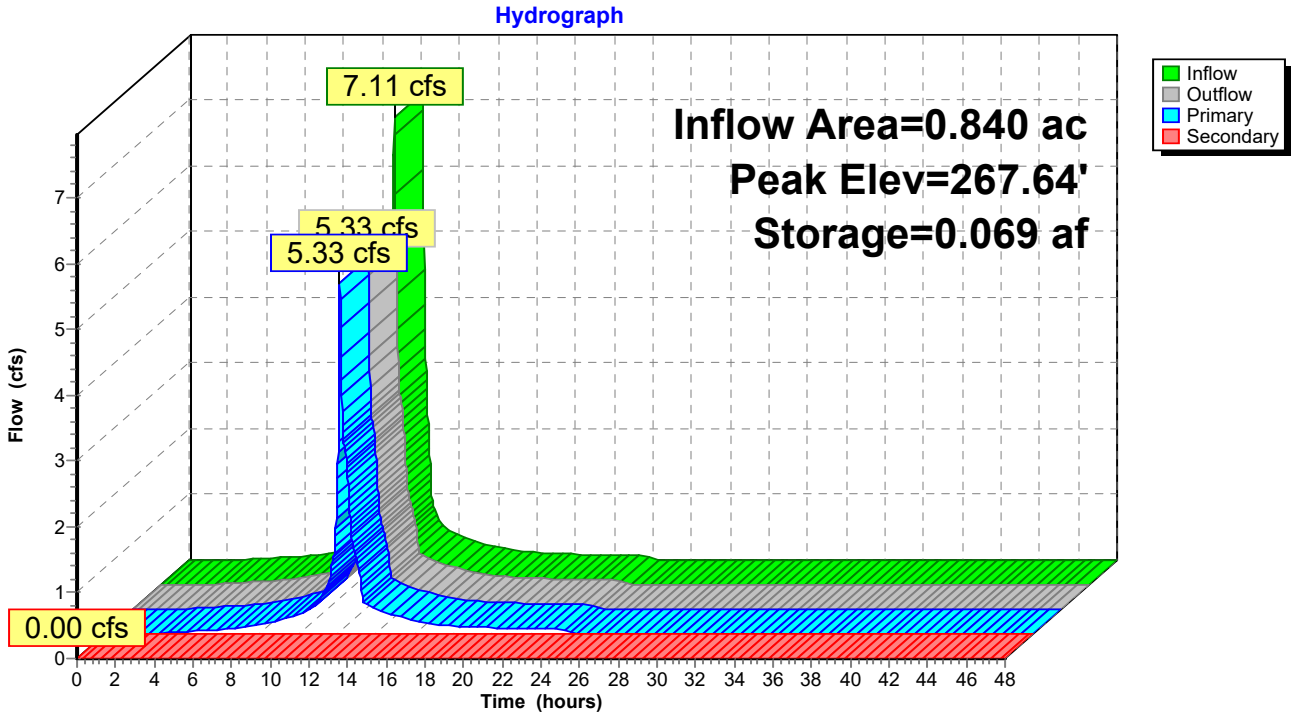
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
264.50	0.000	0.000	0.000
265.00	0.001	0.000	0.000
266.00	0.012	0.006	0.007
267.00	0.045	0.028	0.035
268.00	0.069	0.057	0.092
269.00	0.089	0.079	0.171
270.00	0.103	0.096	0.267

Device	Routing	Invert	Outlet Devices
#1	Primary	264.50'	**12.0" Round Culvert** L= 95.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 264.50' / 263.39' S= 0.0117 '/' Cc= 0.900 n= 0.009, Flow Area= 0.79 sf
#2	Device 1	264.50'	**6.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	266.50'	**8.0" Vert. Orifice/Grate** C= 0.600
#4	Device 1	267.50'	**48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#5	Secondary	268.50'	**30.0' long x 4.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

Primary OutFlow Max=5.35 cfs @ 12.14 hrs HW=267.64' (Free Discharge)
└**1=Culvert** (Passes 5.35 cfs of 6.15 cfs potential flow)
  ├**2=Orifice/Grate** (Orifice Controls 1.61 cfs @ 8.19 fps)
  ├**3=Orifice/Grate** (Orifice Controls 1.51 cfs @ 4.33 fps)
  └**4=Orifice/Grate** (Weir Controls 2.23 cfs @ 1.24 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=264.50' (Free Discharge)
└**5=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 2P: Pond

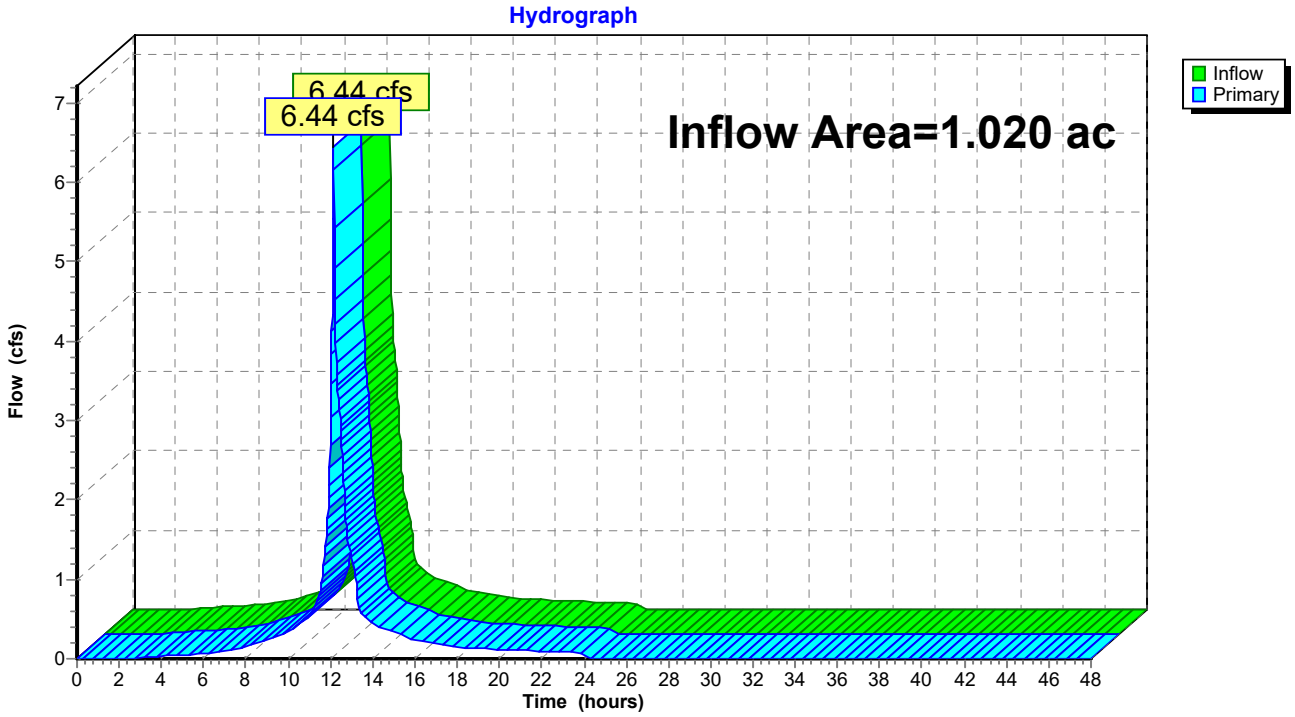

Hydrograph
7.11 cfs
5.33 cfs
5.33 cfs
0.00 cfs
Inflow Area=0.840 ac
Peak Elev=267.64'
Storage=0.069 af
Inflow
Outflow
Primary
Secondary
Flow (cfs)
0
1
2
3
4
5
6
7
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48
Time (hours)

Summary for Link 3L: Outfall (Post Dvlp)

Inflow Area = 1.020 ac, 67.65% Impervious, Inflow Depth = 7.45" for 50yr event
Inflow = 6.44 cfs @ 12.13 hrs, Volume= 0.633 af
Primary = 6.44 cfs @ 12.13 hrs, Volume= 0.633 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs

Link 3L: Outfall (Post Dvlp)



Time span=0.00-48.00 hrs, dt=0.02 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1A: Pre-Development Basin Runoff Area=1.020 ac 0.00% Impervious Runoff Depth=6.19"
Flow Length=227' Tc=5.2 min CN=74 Runoff=7.54 cfs 0.527 af

Subcatchment 2A: Post-Devlp Basin to Runoff Area=0.840 ac 73.81% Impervious Runoff Depth=8.43"
Tc=5.0 min CN=92 Runoff=7.81 cfs 0.590 af

Subcatchment 2B: By-Pass Basin Runoff Area=0.180 ac 38.89% Impervious Runoff Depth=7.32"
Tc=5.0 min CN=83 Runoff=1.54 cfs 0.110 af

Pond 2P: Pond Peak Elev=267.70' Storage=0.073 af Inflow=7.81 cfs 0.590 af
Primary=6.25 cfs 0.590 af Secondary=0.00 cfs 0.000 af Outflow=6.25 cfs 0.590 af

Link 3L: Outfall (Post Dvlp) Inflow=7.50 cfs 0.700 af
Primary=7.50 cfs 0.700 af

Total Runoff Area = 2.040 ac Runoff Volume = 1.227 af Average Runoff Depth = 7.22"
66.18% Pervious = 1.350 ac 33.82% Impervious = 0.690 ac

Summary for Subcatchment 1A: Pre-Development Basin

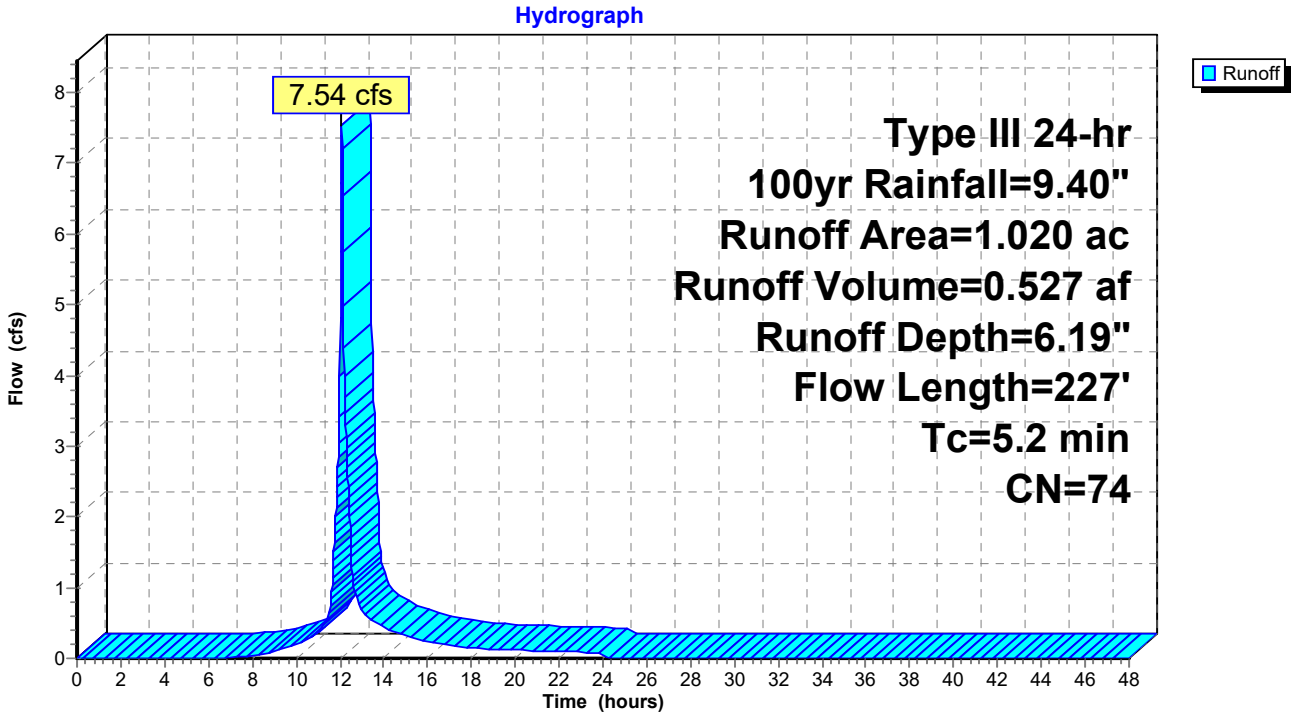
Runoff = 7.54 cfs @ 12.08 hrs, Volume= 0.527 af, Depth= 6.19"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 100yr Rainfall=9.40"

Area (ac)	CN	Description
1.020	74	>75% Grass cover, Good, HSG C
1.020		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.5	40	0.0270	0.19		**Sheet Flow, sheet** Grass: Short n= 0.150 P2= 4.50"
1.7	187	0.0150	1.84		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
5.2	227	Total			

Subcatchment 1A: Pre-Development Basin



Summary for Subcatchment 2A: Post-Devlp Basin to Pond

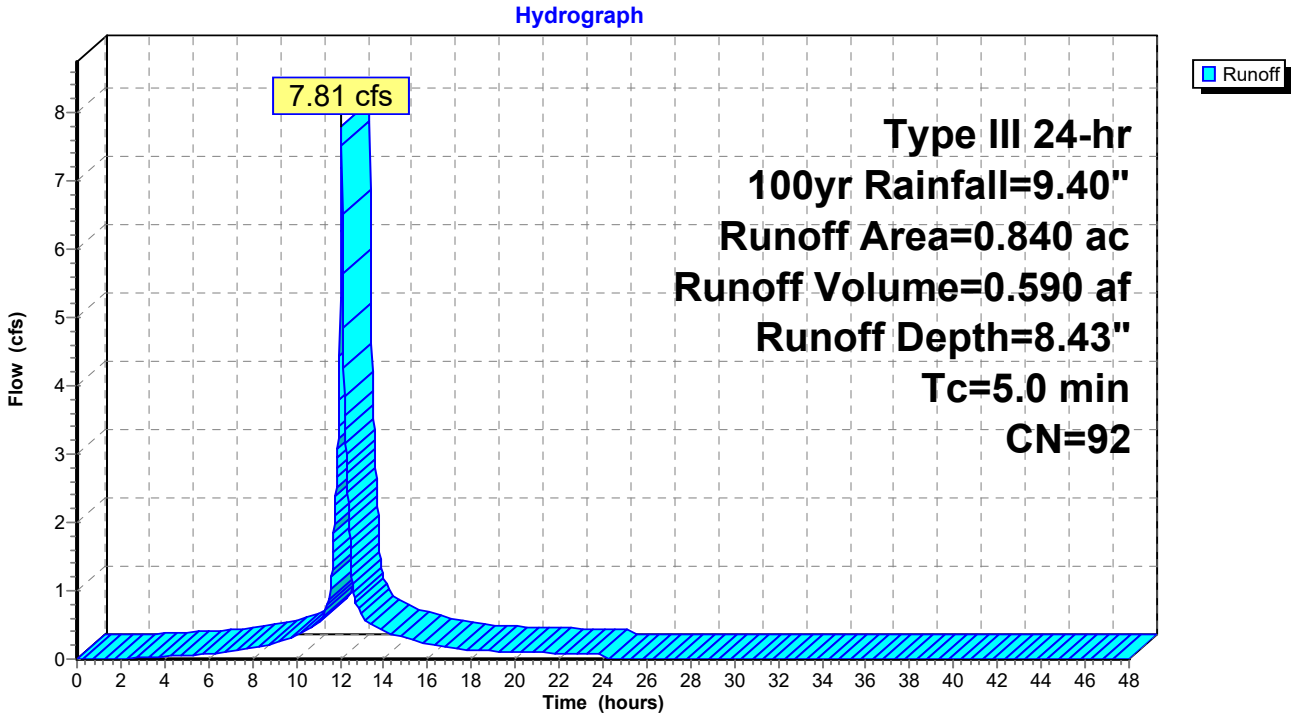
Runoff = 7.81 cfs @ 12.07 hrs, Volume= 0.590 af, Depth= 8.43"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 100yr Rainfall=9.40"

	Area (ac)	CN	Description
	0.220	74	>75% Grass cover, Good, HSG C
*	0.400	98	FUTURE BLDG, HSG C
	0.220	98	Paved parking, HSG C
	0.840	92	Weighted Average
	0.220		26.19% Pervious Area
	0.620		73.81% Impervious Area

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

Subcatchment 2A: Post-Devlp Basin to Pond



Summary for Subcatchment 2B: By-Pass Basin

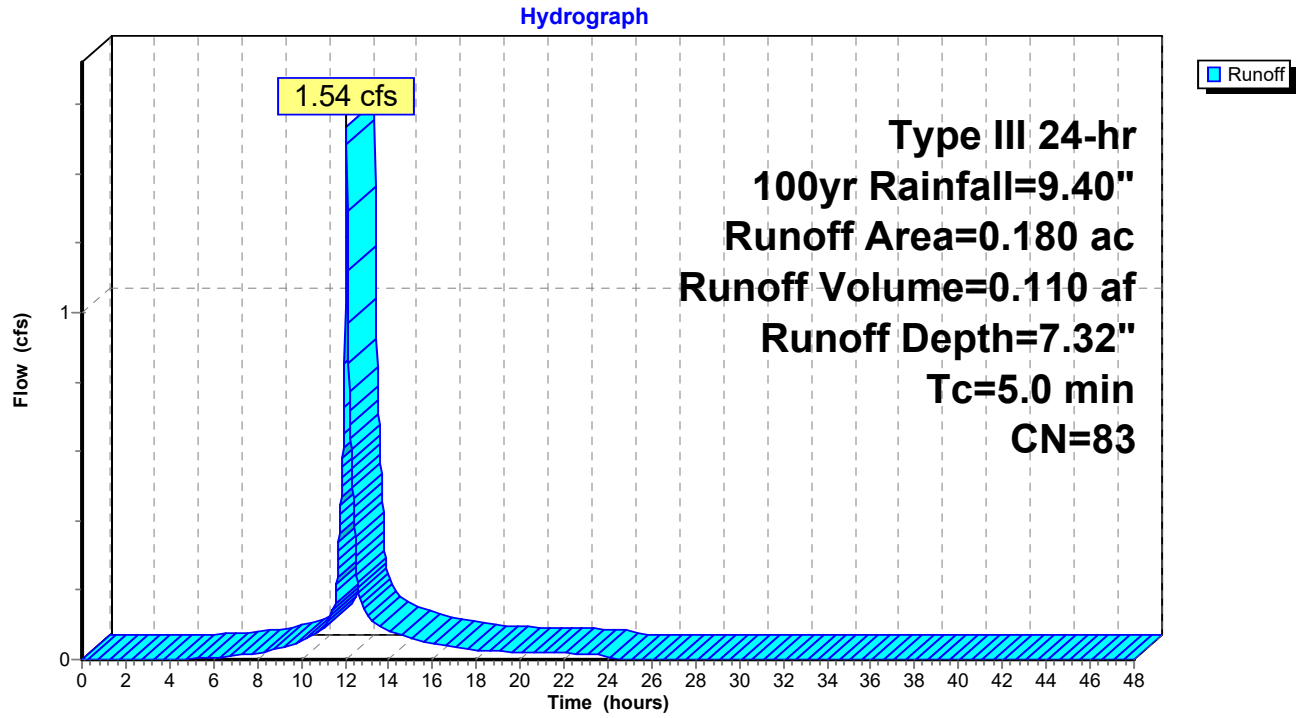
Runoff = 1.54 cfs @ 12.07 hrs, Volume= 0.110 af, Depth= 7.32"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 100yr Rainfall=9.40"

Area (ac)	CN	Description
0.110	74	>75% Grass cover, Good, HSG C
0.070	98	Paved parking, HSG C
0.180	83	Weighted Average
0.110		61.11% Pervious Area
0.070		38.89% Impervious Area

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

Subcatchment 2B: By-Pass Basin



Summary for Pond 2P: Pond

Inflow Area = 0.840 ac, 73.81% Impervious, Inflow Depth = 8.43" for 100yr event
Inflow = 7.81 cfs @ 12.07 hrs, Volume= 0.590 af
Outflow = 6.25 cfs @ 12.13 hrs, Volume= 0.590 af, Atten= 20%, Lag= 3.6 min
Primary = 6.25 cfs @ 12.13 hrs, Volume= 0.590 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 267.70' @ 12.13 hrs Surf.Area= 0.062 ac Storage= 0.073 af

Plug-Flow detention time= 5.7 min calculated for 0.590 af (100% of inflow)
Center-of-Mass det. time= 5.7 min (769.7 - 764.0)

Volume	Invert	Avail.Storage	Storage Description
#1	264.50'	0.267 af	**Custom Stage Data (Prismatic)**Listed below (Recalc)

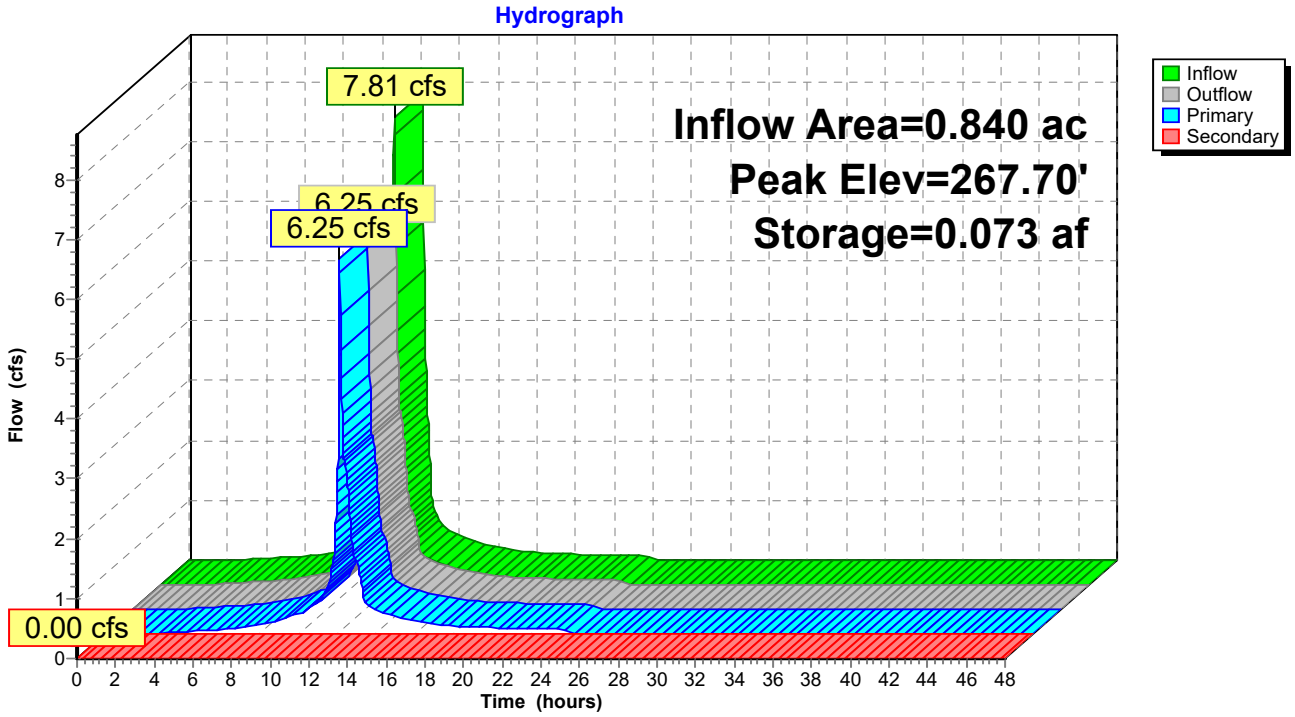
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
264.50	0.000	0.000	0.000
265.00	0.001	0.000	0.000
266.00	0.012	0.006	0.007
267.00	0.045	0.028	0.035
268.00	0.069	0.057	0.092
269.00	0.089	0.079	0.171
270.00	0.103	0.096	0.267

Device	Routing	Invert	Outlet Devices
#1	Primary	264.50'	**12.0" Round Culvert** L= 95.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 264.50' / 263.39' S= 0.0117 '/' Cc= 0.900 n= 0.009, Flow Area= 0.79 sf
#2	Device 1	264.50'	**6.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	266.50'	**8.0" Vert. Orifice/Grate** C= 0.600
#4	Device 1	267.50'	**48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#5	Secondary	268.50'	**30.0' long x 4.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

Primary OutFlow Max=6.21 cfs @ 12.13 hrs HW=267.69' (Free Discharge)
└**1=Culvert** (Inlet Controls 6.21 cfs @ 7.90 fps)
  ├**2=Orifice/Grate** (Passes < 1.62 cfs potential flow)
  ├**3=Orifice/Grate** (Passes < 1.56 cfs potential flow)
  └**4=Orifice/Grate** (Passes < 3.53 cfs potential flow)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=264.50' (Free Discharge)
└**5=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 2P: Pond


Hydrograph
7.81 cfs
6.25 cfs
6.25 cfs
0.00 cfs
Inflow Area=0.840 ac
Peak Elev=267.70'
Storage=0.073 af
Inflow
Outflow
Primary
Secondary
Flow (cfs)
0
1
2
3
4
5
6
7
8
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48
Time (hours)

Summary for Link 3L: Outfall (Post Dvlp)

Inflow Area = 1.020 ac, 67.65% Impervious, Inflow Depth = 8.24" for 100yr event
Inflow = 7.50 cfs @ 12.12 hrs, Volume= 0.700 af
Primary = 7.50 cfs @ 12.12 hrs, Volume= 0.700 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs

Link 3L: Outfall (Post Dvlp)