



**TOWN OF CARTHAGE
PLANNING BOARD
May 7th, 2026
6:00 P.M.**

AGENDA

- 1. CALL TO ORDER**
- 2. INVOCATION**
- 3. PLEDGE OF ALLEGIANCE**
- 4. APPROVAL OF AGENDA** - Members of the board may remove or add items to the agenda prior to commencing the meeting. Motions/votes are not required to approve the agenda but there must be unanimous consent before proceeding.
- 5. CONSENT AGENDA** - All items listed below are considered routine and will be enacted by one motion. No separate discussion will be held except on request of a member of the Planning Board to remove an item from the consent agenda and place it on the regular agenda.
 - a. Approval of minutes from April 2nd, 2026, Regular Meeting Minutes.
- 6. PUBLIC COMMENT** - Members of the public may use this time to address the Planning Board with any presentations, questions or concerns. Those who wish to speak should fill out the sign-up sheet in the building's entryway to be recognized during the public comment session or raise their hand and wait to be recognized by the presiding member. All public comment made as part of a public hearing should be withheld until the public hearing has begun and the floor is given to public comments. The chairperson may place time limits on speakers prior to the start of the public comment session.
- 7. OLD BUSINESS**
 - a. No old business.
- 8. NEW BUSINESS**
 - a. S-04-26: Site Plan Review for 801 Monroe Street; Parcel #00005174, Zone: B-2;
Petitioner: Nick Gollifer.
- 9. OTHER BUSINESS OF THE BOARD**
 - a. Upcoming School of Government Training on May 14.
- 10. ADJOURNMENT**

Town of Carthage
April 2nd, 2026
Planning Board Meeting
Meeting minutes

Attendance

Those in attendance were Mark Lawler, Bill Smyth, David Norris, Antoniette Kelly, John Ferrari, Christopher Denfeld, and Corey Deibel. Those who were absent were Ian Lumgair and Victoria Riddle.

Call to Order

Chair David Norris called the meeting to order at 6:00 PM.

Invocation

An invocation was provided by David Norris.

Pledge of Allegiance

The Pledge of Allegiance was recited.

Approval of Agenda

Chair Norris asked for any additions or changes to the agenda. Hearing none, he called for a motion to approve the agenda.

Motion: To approve the agenda as presented. Result: Motion carried unanimously 7-0.

Consent Agenda

Chair Norris explained that all items listed under the consent agenda are considered routine and would be enacted by one motion, with the only item being the approval of minutes from the March 5th, 2026, regular meeting.

Motion: To approve the consent agenda. Result: Motion carried unanimously 7-0.

Public Comment

Chair Norris asked if anyone had signed up for public comment. No one had signed up to speak during this portion of the meeting.

Old Business

a. No Old Business

Chair Norris noted there was no old business to discuss.

New Business

a. S-03-26: Site Plan Review for James Gaston located at 832 Dowd Road, Parcel 20040368; Airport-Conditional Zoning; Petitioner: James Gaston

Central Pines Planner, Abby Manning, presented the site plan application, noting that the applicant was not present at the meeting. She explained that the property was conditionally rezoned in April of the previous year (2025), and the applicant was now seeking approval for a 12,000 square foot building as part of the 20,000 square feet of commercial space allowed under the conditional zoning. The building would house further defense tech and conveyor services.

Manning reported that the site is located at 832 Dowd Road with a maximum impervious surface allowance of 50 percent. Between the existing 11,000 square feet and the proposed 12,000 square feet, the development would be at 15 percent impervious coverage, well below the UDO standard. She referenced the site plan located on the top page of the packet and offered to answer any questions.

Planning Board member Mark Lawler asked about a statement on page 8, section 3.C, which indicated that town staff were still reviewing the site plan for comments. Manning clarified that she had discussed this with Town Planner, Jennifer Locklear, who conducted the actual review. Fire Department, Public Works, and Zoning had all approved the plan. The remaining review process pertained to construction drawings needed for building permits, but for zoning purposes, the site plan was approved.

Lawler also inquired about infrastructure details such as water, storm water, and traffic impact studies. Manning explained that traffic studies are typically only required for certain developments, and since this was an existing site with an additional building, a traffic study was not necessary. Regarding infrastructure, she noted that Public Works reviews plans to ensure adequate sewer and water capacity during their review process.

Motion: To approve S-03-26 as written and presented. Made by: John Ferrari. Seconded by: Bill Smyth.

Result: Motion carried unanimously 7-0.

b. TA-04-01: UDO Amendment Section 100.44: Call for Public Hearing or Decision to Summarily Dismiss

Management Analyst, Jamie Sandoval, presented the UDO Text Amendment to allow Planning staff to set public hearings without resolutions made by the Board of Commissioners. The amendment would eliminate Section 100.44 of the UDO, allowing more flexibility when projects are presented to both the Planning Board and the Board of Commissioners. Bill Smyth asked whether the proposed changes would provide more time to post signs for public hearings, noting that this was a concern from the previous month when people were unaware of hearings despite proper procedures being followed. Mrs. Sandoval stated that there are regulations that are set by the General Assembly that must be followed by staff for posting notices. Mrs. Sandoval explained that this would provide more flexibility for staff and the applicants due to presenting information to the Planning Board and the Board of Commissioners in the same month. This would allow the applicant to present to the Board of Commissioners after proper changes were made from the comments made by the Planning Board. Mrs. Sandoval stated that staff is looking into having applicants present their project to the Planning Board in one month and allowing the applicant, if ready, to present their request to the Board of Commissioners the next month.

Chair Norris asked if there were any other concerns before calling for a motion.

Motion: To approve the text amendment and describe its consistency with the adopted 2040 Land Use Plan. Made by: Mark Lawler. Seconded by: Bill Smyth. Result: Motion carried unanimously 7-0.

Motion: To approve TA-04-01 as written and presented. Made by: Christopher Denfeld. Seconded by: Corey Deibel. Result: Motion carried unanimously 7-0.

Other Business of the Board

a. No Other Business

Chair Norris asked if the board had any other discussion items, business to discuss, or comments. No board members had additional items to discuss.

Adjournment

As the meeting was concluding, a member of the public arrived and Chair Norris offered him an opportunity to speak, explaining that they were just finishing the meeting. The individual indicated he had just remembered the meeting and wasn't seeking to make a comment.

Motion: To adjourn the meeting. Made by: Bill Smyth. Seconded by: Mark Lawler. Result: Motion carried unanimously 7-0.

Meeting was adjourned at 6:12 p.m.



MEMORANDUM

Date: May 7, 2026
To: Planning Board
From: Jennifer Locklear, Town Planner
Subject: S-04-26: Site Plan Review for 801 Monroe Street; Parcel 00005174, Zone:B-2;
Petitioner: Nick Gollifer

I. SUMMARY OF APPLICATION REQUEST:

Applicant, Nick Gollifer is requesting site plan approval for their commercial development located at 801 Monroe Street. This is located along Monroe Street east of Clark Street and west of Anderson Street. This parcel is approximately 1.5 acres, measured from Moore County GIS, and features approximately 5,000 square feet of commercial space. The commercial development includes an anchor tenant of Dunkin Donuts in 2,000 square feet and has two 1,500 square feet of retail available.

Please view **Attachment 1 for the Site Plan.**
Please view **Attachment 2 for the Stormwater Management & Erosion Control Report.**

For the full set of construction plans, if desired, please email planning@townofcarthage.org.

The zoning uses, building setbacks, parking, landscaping, lighting, and building meet the Town of Carthage UDO standards. Hence, this is a site plan review. There are no special conditions being requested. The applicant has met with the TRC (Technical Review Committee) where they received Planning and Public Works comments. The Fire Department had no comments.

However, it appears that some of the front portion of the property is located within the WS-III (Little River Intake No. 2). Please view the site outline below. To be most conservative, I recommend that the BOC approve the Special Non-residential Intensity Allocation. In the UDO Section 100.68 “Special Density Allocation in the Little River WS III Balance of Watershed Special” it says below:

For non-residential intensity allocation up to ten percent (10%) of the balance of the watershed may be developed for non-residential uses to seventy percent (70%) built-upon area on a project-by-project basis, provided that the following conditions are met:

- a. For the purpose of calculating built-upon area, total project area shall include total acreage in the tract on which the project is to be developed.*
- b. The Board of Commissioners must approve the Special Non-Residential Intensity Allocation.*

c. Projects must minimize built-upon surface area and incorporate Best Management Practices to minimize water quality impacts.

The “Built Upon Area (BUA)” for total site, according to the applicant, is 54%. The applicant says, “Drainage Area to the protected Little River Watershed has decreased from existing area 0.39ac with a BUA of 19% to 0.06ac with a 0% BUA.”

The BOC must approve the Special Non-Residential Intensity Allocation.

Figure 1: Site Location outlined in blue.



II. PROJECT INFORMATION:

1. PARID: 00005174 (PIN: 856700975613)
2. Applicant/Owner: Nicholas Gollifer
3. Owner: MARTIN, MARY THELMA, MARTIN, MARY THEODORA & OTHER
4. Long-Range Plan Designation:
This future area of this land appears to be Downtown or Commercial per the adopted 2040 Land Use Plan.
5. Current Zoning:
The current zoning is B-2 (Central Business District Fringe).

III. APPLICATION REVIEW:

A. Review Process:

Applications for site plan review are pursuant to UDO Section 100.32, Section 100.44 and Section 100.64 "Site-Specific Vesting Plan."

Sec. 100.32 Planning Board – Powers and Duties

In addition to its specific duties set forth in this and other Town Ordinances and policies, the Planning Board shall have the following powers and duties:

1. *To make studies of the Town and surrounding areas;*
2. *To determine objectives to be sought in the development of the Town;*
3. *To propose and recommend plans for achieving these objectives;*
4. *To develop and recommend to the Board of Commissions policies, ordinances, administrative procedures and other means for carrying out plans in a coordinated and efficient manner;*
5. *To advise the Board of Commissioners concerning the use and amendment of means for carrying out plans;*
6. *To exercise such functions in the administration and enforcement of various means for carrying out plans as may be assigned by this article or other ordinances of the Town; and*
7. *To perform other related duties as may be assigned by this article or other ordinances.*

Section 100.44 (4) Planning Board

All proposed Development Ordinance amendments must be given review by the Planning Board for a recommendation to the Board of Commissioners. They are not required to conduct a public hearing, but they are encouraged to accept public input. The Planning Board shall evaluate all proposals for consistency with any adopted long-range plans and adopt a statement of consistency with said plans before voting to recommend approval or denial of the request.

C. Staff Comments:

The zoning use for Dunkin Donuts is a "fast-food restaurant," permitted in the B-2 zoning district. The other retail is subject to the "Table of Permitted and Conditional Uses" in the B-2 zoning district. The site plan review process is following UDO Section 100.64. The property is located partially in the WS-III (Little River Intake No. 2) and has a built upon area (BUA) proposed of 54%. To be on the conservative side, it is best for the Board of Commissioners to approve this BUA. In Section 100.68,

the BOC can approve up to 70% BUA in this zoning district. This would be an appropriate use of this “Nonresidential special intensity allocation” in the commercial area of town.

IV. PLANNING ATTACHMENTS PROVIDED BY THE APPLICANT:

1. Attachment 1: Site Plan (for full set of construction plans please email planning@townofcarthage.org)
2. Attachment 2: Stormwater Management and Erosion Control Report

V. PLANNING BOARD ACTION:

The Planning Board shall evaluate all proposals for consistency with any adopted long-range plans and adopt a statement of consistency with said plans before voting to recommend approval or denial of the request. All proposed Development Ordinance amendments must be given review by the Planning Board for a recommendation to the Board of Commissioners. They are not required to conduct a public hearing, but they are encouraged to accept public input, per UDO Section 100.42 and 100.44.

The Planning Board shall first adopt a Resolution of Consistency with the adopted Land Use Plan and other long-range plans then the Planning Board shall vote on the petition (**two motions required**). The Resolution of Consistency may take one of three forms consistent with N.C.G.S 160D-604(d); 605(a); 701.

LUP CONSISTENCY MOTION (1st Required Motion)

I move to:

OPTION 1

Approve the site plan and describe its consistency with the adopted Land Use Plan.

or

OPTION 2

Reject the site plan and describe its inconsistency with the adopted Land Use Plan.

or

OPTION 3

Approve the site plan and deem it a modification of the adopted Land Use Plan. The Planning Board believes this action taken is reasonable and in the public interest because.....

PETITION MOTION (2ND Required Motion)

And, therefore, I move to:

OPTION 1

Approve S-04-26 as written and presented.

or

OPTION 2

Approve S-04-26 with the following conditions.....

OPTION 3

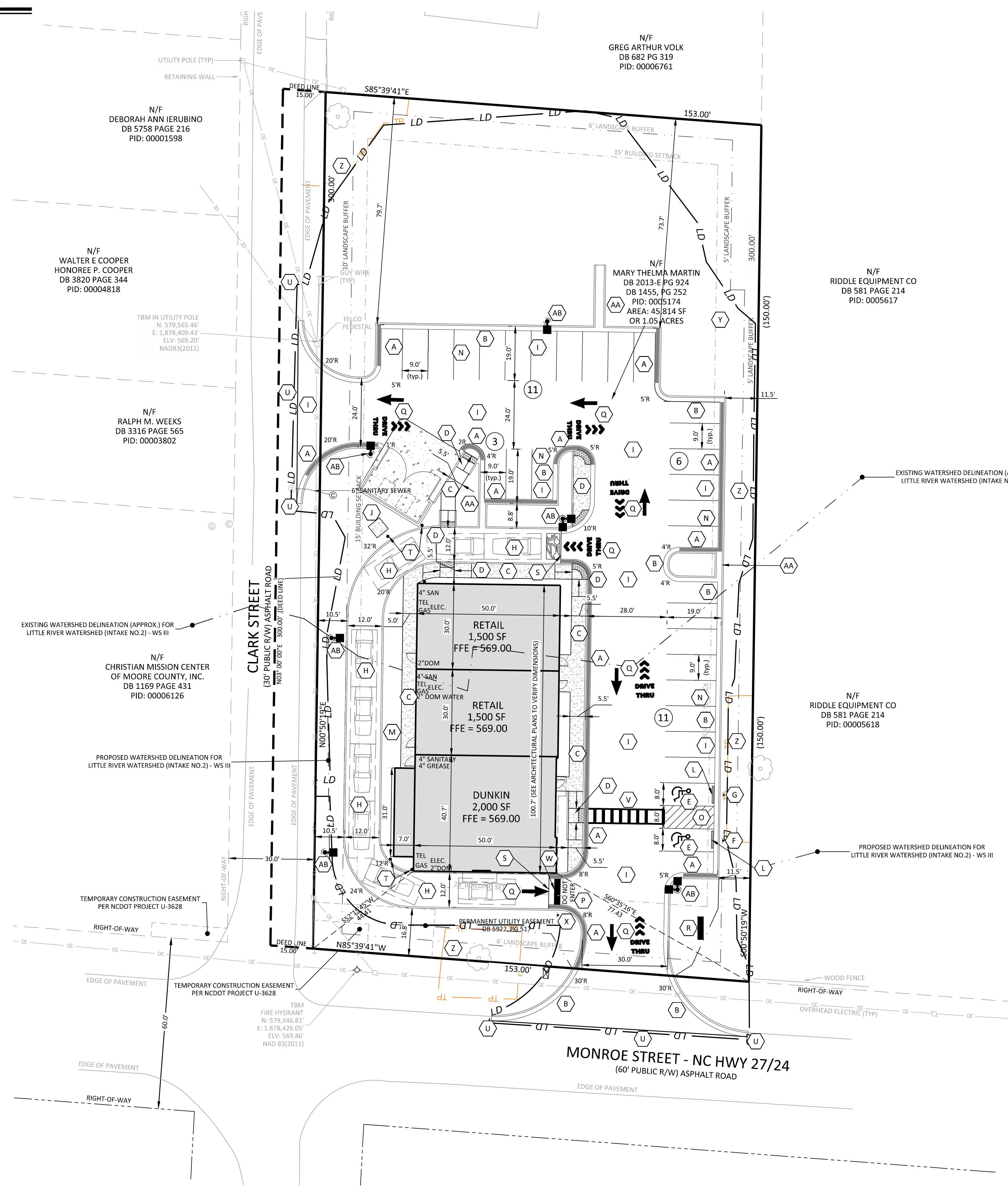
Deny S-04-26 for the following reasons.....

DEVELOPMENT NOTES

1. THE LOCATIONS OF ALL UTILITIES SHOWN ON THESE PLANS ARE BASED ON THE AVAILABLE INFORMATION. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF UTILITIES WITH THE UTILITY OWNERS PRIOR TO COMMENCEMENT OF CONSTRUCTION.
2. ALL HANDICAP SITE FEATURES SHALL BE CONSTRUCTED TO MEET ALL FEDERAL, STATE AND LOCAL CODES.
3. ANY DISCREPANCY IN THIS PLAN AND ACTUAL FIELD CONDITIONS SHALL BE REPORTED TO THE OWNER PRIOR TO START OF CONSTRUCTION. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF ALL SETBACKS, EASEMENTS, AND DIMENSIONS SHOWN HEREON BEFORE BEGINNING CONSTRUCTION.
4. PRIOR TO STARTING CONSTRUCTION, THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY THAT ALL REQUIRED PERMITS AND APPROVALS HAVE BEEN OBTAINED. NO CONSTRUCTION OR FABRICATION OF ANY ITEM SHALL BEGIN UNTIL THE CONTRACTOR HAS RECEIVED ALL PLANS AND ANY OTHER DOCUMENTATION FROM ALL OF THE PERMITTING AND ANY OTHER REGULATORY AUTHORITIES. FAILURE OF THE CONTRACTOR TO FOLLOW THIS PROCEDURE SHALL CAUSE THE CONTRACTOR TO ASSUME FULL RESPONSIBILITY FOR ANY SUBSEQUENT MODIFICATION OF THE WORK MANDATED BY ANY REGULATORY AUTHORITY. ALL CONSTRUCTION TO BE IN ACCORDANCE WITH PERMITS ISSUED AND APPLICABLE STATE, COUNTY AND LOCAL CODES.
5. THE GENERAL CONTRACTOR SHALL CONTACT ALL OWNERS OF EASEMENTS, UTILITIES AND RIGHT-OF-WAYS, PUBLIC OR PRIVATE, PRIOR TO WORKING IN THESE AREAS.
6. CONTRACTOR SHALL MAINTAIN THE SITE IN A MANNER SO THAT WORKMEN AND PUBLIC SHALL BE PROTECTED FROM INJURY AND ADJOINING PROPERTY PROTECTED FROM DAMAGE.
7. ACCESS TO UTILITIES, FIRE HYDRANTS, STREET LIGHTING, ETC., SHALL REMAIN UNDISTURBED, UNLESS COORDINATED WITH RESPECTIVE UTILITY.
8. CONTRACTOR IS RESPONSIBLE FOR DAMAGE TO ANY EXISTING ITEM AND/OR MATERIAL INSIDE OR OUTSIDE CONTRACT LIMITS DUE TO CONSTRUCTION OPERATIONS.
9. ALL DIMENSIONS ARE TO THE FACE OF CURB, UNLESS OTHERWISE NOTED.
10. DO NOT SCALE THIS DRAWING AS IT IS A REPRODUCTION AND SUBJECT TO DISTORTION.
11. THE GENERAL CONTRACTOR SHALL REMOVE ALL TRASH AND DEBRIS FROM THE SITE UPON COMPLETION OF THE PROJECT AND AT LEAST ONCE A WEEK DURING CONSTRUCTION.
12. THE GENERAL CONTRACTOR SHALL KEEP THE AREA OUTSIDE THE "CONSTRUCTION LIMITS" BROOM CLEAN AT ALL TIMES.
13. GENERAL CONTRACTOR WILL ERECT AND ILLUMINATE A SITE IDENTIFICATION SIGN, PER OWNER'S SPECIFICATION. COORDINATE LOCATION WITH OWNER'S REPRESENTATIVE.
14. FINISH CURB AND WALK ELEVATIONS SHALL BE 6" ABOVE FINISH PAVEMENT GRADE UNLESS NOTED DIFFERENT ON PLAN.
15. CONTRACTOR SHALL ENSURE THAT ADEQUATE SITE LIGHTING IS PROVIDED PER OWNER'S SPECIFICATIONS.
16. ALL ROAD DIMENSIONS ARE TO FACE OF CURB.
17. ALL UTILITIES TO SERVICE BUILDING SHALL BE UNDERGROUND ON SITE, UNLESS OTHERWISE INDICATED.
18. ALL STREET SURFACES, DRIVEWAYS, CULVERTS, CURB AND GUTTERS, ROADSIDE DRAINAGE DITCHES AND OTHER STRUCTURES THAT ARE DISTURBED OR DAMAGED IN ANY MANNER AS A RESULT OF CONSTRUCTION SHALL BE REPLACED OR REPAIRED IN ACCORDANCE WITH THE SPECIFICATIONS.
19. ALL DISTURBED AREAS SHALL HAVE TEMPORARY SEEDING AND MULCHING. ALL AREAS THAT ARE PLANNED TO BE BARE FOR MORE THAN 45 DAYS SHALL BE SEED AND MULCHED WITHIN SEVEN (7) DAYS.
20. THE CONTRACTOR SHALL VERIFY LOCATION AND ELEVATION OF ALL UNDERGROUND UTILITIES. THE LOCATION OF ALL EXISTING UTILITIES ARE NOT NECESSARILY SHOWN ON THE PLANS AND WHERE SHOWN ARE ONLY APPROXIMATE. THE CONTRACTOR SHALL ON HIS INITIATIVE AND AT NO EXTRA COSTS HAVE LOCATED ALL UNDERGROUND LINES AND STRUCTURES AS NECESSARY. NO CLAIMS FOR DAMAGES OR EXTRA COMPENSATION SHALL ACCRUE TO THE CONTRACTOR FROM THE PRESENCE OF SUCH PIPE, OTHER OBSTRUCTIONS OR FROM ANY DELAY DUE TO REMOVAL OR REARRANGEMENT OF THE SAME. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO UNDERGROUND STRUCTURES. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING ALL NON-SUBSCRIBING UTILITIES. THE CONTRACTOR(S) SHALL CONTACT THE LOCAL LOCATE SERVICE BY CALLING 811 AT LEAST 12 FULL WORKING DAYS PRIOR TO ANY DIGGING FOR ASSISTANCE IN LOCATING EXISTING UTILITIES.
21. ALL LOT STRIPING AND DIRECTIONAL ARROWS TO BE WHITE REFLECTIVE MARKINGS AND SHALL CONFORM TO LOCAL REGULATIONS.
22. COMPACTION AND MAINTENANCE OF PROPER MOISTURE CONTENT OF THE SOIL UNDER BUILDINGS AND PAVED AREAS SHALL BE ACCOMPLISHED TO ACHIEVE 95 STANDARD PROCTOR MAXIMUM DRY DENSITY OR AS RECOMMENDED IN THE SOIL REPORT.
23. THE CONTRACTOR SHALL MAINTAIN AN "AS-BUILT" SET OF DRAWINGS TO RECORD THE EXACT LOCATION OF ALL PIPING PRIOR TO CONCEALMENT. DRAWINGS SHALL BE GIVEN TO THE OWNER UPON COMPLETION OF THE PROJECT WITH A COPY OF THE TRANSMITTAL LETTER TO THE ENGINEER.
24. BEFORE COMMENCEMENT OF WORK, THE CONTRACTOR SHALL REVIEW ALL PLANS AND SPECIFICATIONS AND THE JOB SITE. THE CONTRACTOR SHALL NOTIFY THE OWNER AND THE ENGINEER WHO PREPARED THE PLANS OF ANY DISCREPANCIES THAT MAY REQUIRE MODIFICATIONS TO THESE PLANS OR OF ANY FIELD CONFLICTS.
25. ALL PERMITS RELATIVE TO THE PROJECT MUST BE OBTAINED, PRIOR TO CONSTRUCTION. ALL CONSTRUCTION TO BE IN ACCORDANCE WITH PERMITS ISSUED AND APPLICABLE STATE, COUNTY AND LOCAL CODES.
26. THE CONTRACTOR SHALL REFER TO THE ARCHITECTURAL DRAWINGS FOR ALL BUILDING DIMENSIONS.
27. CONTRACTOR SHALL COORDINATE EXACT SIZE OF HVAC CONCRETE PADS WITH MECHANICAL CONTRACTOR. REFER TO MECHANICAL PLANS FOR DETAILS.
28. ALL SEEDING, TEMPORARY AND PERMANENT, TO BE INSTALLED TO LOCAL REGULATIONS AND STANDARD PRACTICES.
29. ALL ROAD WORK SHALL BE PERFORMED IN ACCORDANCE WITH "THE CURRENT EDITION OF THE STATE DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIALS SPECIFICATIONS".
30. ANY AND ALL QUANTITIES SHOWN OR IMPLIED ON THESE PLANS ARE FOR ESTIMATION PURPOSES ONLY.
31. IT IS THE GENERAL CONTRACTOR'S RESPONSIBILITY TO COORDINATE WITH THE IRRIGATION CONTRACTOR, FOR IRRIGATION SLEEVE SIZE FOR IRRIGATION SYSTEM.
32. CONTRACTOR AGREES THAT IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, CONTRACTOR WILL BE REQUIRED TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY. THIS REQUIREMENT SHALL BE MADE TO APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS. CONTRACTOR FURTHER AGREES TO DEFEND, INDEMNIFY, AND HOLD THE OWNER AND DESIGN PROFESSIONAL HARMLESS OF ANY AND ALL LIABILITY, REAL OR ALLEGED IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE OWNER OR DESIGN PROFESSIONAL.

NOTE TO CONTRACTOR:
GENERAL CONTRACTOR SHALL FIELD VERIFY ALL UTILITIES FOR VERIFICATION OF EXACT LOCATION AND DEPTH PRIOR TO ANY CONSTRUCTION.

UTILITY INFORMATION SHOWN IS A COMBINATION OF SURVEY AND COUNTY AS-BUILTS.



LEGEND

PROPOSED	EXISTING	BOUNDARY LINE
		CONCRETE CURB
		EASEMENT LINE
		BUILDING LINE
		RETAINING WALL
		WETLAND
		TREE LINE
		SAW CUT LINE
		SIGN
		BOLLARD
		PARKING STALL COUNT
		KEY NOTE

- KEY NOTES**
- A. CONSTRUCT 2.0' STANDARD CONCRETE SPILLING CURB AND GUTTER PER DETAIL SHEET
 - B. CONSTRUCT 2.0' STANDARD CONCRETE CATCHING CURB AND GUTTER PER DETAIL SHEET
 - C. CONSTRUCT CONCRETE SIDEWALK PER DETAIL SHEET
 - D. CONSTRUCT CONCRETE ACCESSIBLE RAMP PER DETAIL SHEET
 - E. ACCESSIBLE PARKING STALL
 - F. INSTALL ACCESSIBLE PARKING SIGN PER DETAIL SHEET
 - G. INSTALL "VAN ACCESSIBLE" HANDICAP PARKING SIGN PER DETAIL SHEET
 - H. CONCRETE PAVEMENT PER DETAIL SHEET
 - I. ASPHALT PAVEMENT PER DETAIL SHEET
 - J. TRANSFORMER PAD BY GENERAL CONTRACTOR, PER ELECTRIC COMPANY SPECIFICATIONS, (COORDINATE SIZE AND LOCATION WITH UTILITY COMPANY)
 - K. CONSTRUCT DUMPSTER PAD, MINIMUM 6" CONCRETE WITH 6" ABC BASE, AND TRASH ENCLOSURE WITH GATES, SEE ARCHITECTURAL SHEETS FOR DETAIL, MATERIALS TO MATCH BUILDING
 - L. CONCRETE WHEEL STOP PER DETAIL SHEET
 - M. MENU BOARD, COORDINATE WITH OWNER
 - N. PAINT 4" WIDE STRIPE, WHITE PAINT, MINIMUM FLOW RATE OF 100 SF PER GALLON (PAINT FEDERAL STANDARD: TT-P1952D)
 - O. PAINT 4" WIDE STRIPE @ 45°, 2 FEET APART, MINIMUM FLOW RATE OF 100 SF PER GALLON (PAINT FEDERAL STANDARD: TT-P1952D)
 - P. PAINT "DO NOT ENTER" PER MUTCD
 - Q. PAINT TRAFFIC ARROWS PER DETAIL SHEET
 - R. SITE IDENTIFICATION SIGN, PERMITTED SEPARATELY, COORDINATE WITH OWNER AND CITY.
 - S. ASPHALT/CONCRETE TRANSITION PER DETAIL SHEET
 - T. INSTALL STEEL PIPE BOLLARD PER DETAIL SHEET
 - U. MATCH EXISTING PAVEMENT
 - V. PAINT CROSS WALK PER DETAIL SHEET
 - W. PAINT 24" WHITE STOP BAR PER MUTCD
 - X. INSTALL "STOP" SIGN AND "DO NOT ENTER" SIGN PER MUTCD
 - Y. RETAINING WALL, DESIGNED BY OTHERS
 - Z. TREE PROTECTION FENCE PER DETAIL
 - AA. CONCRETE FLUME, PER DETAIL
 - AB. POLE MOUNTED AREA LIGHT, SEE LIGHTING PLAN

THE SUBSURFACE UTILITY INFORMATION SHOWN ON THESE PLANS IS A UTILITY QUALITY LEVEL D. THIS QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF ASCE/318-02, TITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA". THE CONTRACTOR AND/OR SUBCONTRACTORS SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, BY CALLING 811 FOR THE LOCAL NOTIFICATION CENTER. THE CONTRACTOR AND/OR SUBCONTRACTOR AGREE TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES, WHICH MIGHT BE OCCASIONED BY HIS OR HER FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UTILITIES (UNDERGROUND AND OVERHEAD).

IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.

24.15 (LMS TECH) | ERIKA ATKINSON | 4/18/2026 3:57:17 PM X:\DUN - DUNKIN DONUTS \2506 - CARTHAGE, NC\CAD SHEETS\1500-2506-C3.01-SITE.DWG-C3.01-SITE PLAN

NO	DATE	BY	CKD	APPR	COMMENT



PRELIMINARY 3/18/2026
DESIGN REVIEW
PERMIT SUBMITTAL
CONSTRUCTION DOCUMENTS

DRAWN BY STH
DESIGNED BY NDG
CHECKED BY NDG
PROJECT NO. DUN-2506

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SITE PLAN

DUNKIN
801 MONROE STREET
CARTHAGE, NORTH CAROLINA 28327

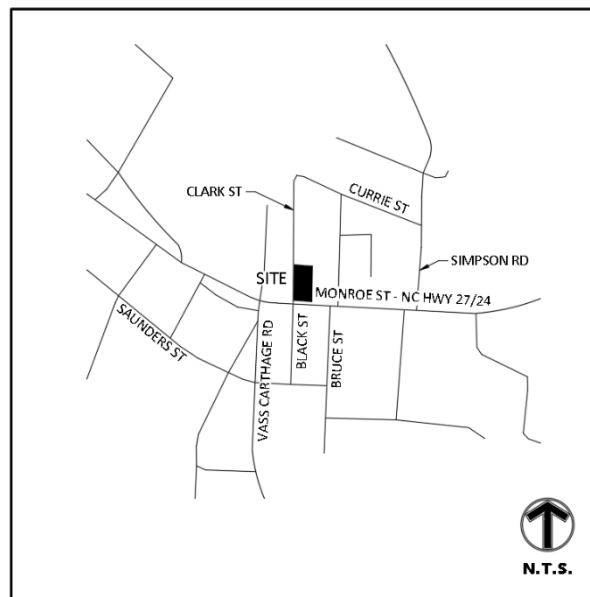
SHEET
C-3.01
REV.

Stormwater Management & Erosion Control Report

Submitted to:
City of Carthage

Prepared for:
Dunkin'
801 Monroe Street
Carthage NC

Sambatek Project Ref.: DUN - 2506



VICINITY MAP
NO SCALE

Prepared by:
SAMBATEK NC PC
8312 Creedmoor Road
Raleigh, North Carolina 27613

Date: 2/27/2026

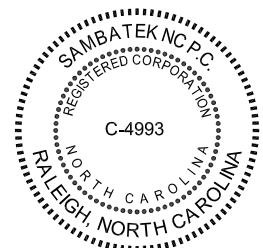


Table of Contents:

Project Summary 1
Existing Conditions..... 1
Proposed Conditions..... 1
Stormwater Management..... 2
Erosion and Sediment Control Measures 2
Project Sequence..... 2
Critical Erosion Areas..... 3
Silt Fence..... 3
Vegetative Stabilization..... 3
Temporary Stabilization 3
Temporary Erosion and Sediment Control Maintenance..... 3
Calculation Methodology..... 3

List of Appendices:

- Appendix A – Maps & Exhibits (USDA HSG, FEMA, USGS Topo, Drainage)
- Appendix B – Pre-Development Hydrographs
- Appendix C – Post-Development Hydrographs

Project Summary

This report is for the redevelopment of an existing site to construct a Dunkin' restaurant located at 801 Monroe Street in Carthage, NC. The property coordinates are approximately 35.341401°, -79.407559°. This report is intended to address the City of Carthage stormwater and construction phase erosion and sediment control permitting requirements and compliance measures for this project. The redevelopment of this lot includes the construction of a new fast food building with vehicle parking, asphalt and concrete pavements, and landscaped areas. Post-construction stormwater management requirements for this parcel's drainage area are proposed to be met by the use of one surface dry detention basin located at the back of curb on the north side of the site. The proposed on-site stormwater infrastructure has been designed to discharge the proposed 2-yr 24-hr and 10-yr 24-hr storm events at rates equal or less than in existing conditions. The proposed stormwater infrastructure is designed to draw down the required design volume in between 2-4 days. The remainder of this report contains a discussion of the pre- and post-development site conditions, stormwater requirements, and the construction phase erosion and sediment control measures proposed to be used on this project.

Existing Conditions

The existing parcel contains a single-family residence, gravel driveway, lone trees, and turf grass. Runoff from the majority of the existing site drains to the northeast, with the existing building and driveway draining southwest to Monroe Street. Monroe Street does discharge north to Clark Street and the ultimate outfall location for all runoff leaving the site is a tree line north of the property. Please see appendix A of this report which includes a drainage map demonstrating these existing subcatchments.

According to the United States Department of Agriculture's Web Soil Survey, existing soils onsite consist of Vacluse gravelly sandy loam and Vacluse-urban land complex. These soils are considered hydrologic soil group C.

Analyzed Area = 1.05 AC
Existing Impervious Area = 0.10 AC
Existing Pervious Area = 0.95 AC

Proposed Conditions

Prior to the start of construction, the site will be prepared for land disturbance through the installation of erosion and sedimentation control measures as detailed in the construction plan set. The proposed development of this parcel includes the construction of a fast food restaurant building, asphalt and concrete drive and parking areas, paved sidewalks, and landscaping areas. Stormwater runoff from the proposed building and parking areas will sheet flow outward from the new building pad, over the parking and drive areas, and flow into one proposed surface dry detention basin located behind the back of curb at the northern site of the development. The design volume will draw down over 2 to 4 days in accordance with design documents. Water above the design volume will discharge through an outlet control structure to the northeast corner of the site in maintenance of existing drainage patterns. Total runoff from the site will be controlled so as not to increase discharge rates for the 2-year and 10-year design storm events from existing conditions.

Please see appendix A of this report which includes a drainage map demonstrating the proposed subcatchments.

Analyzed Area = 1.05 AC
 Proposed Impervious Area = 0.57 AC
 Proposed Pervious Area = 0.48 AC

Stormwater Management

This proposed stormwater management design addresses discharge rate requirements as outlined by the UDO Design Standards. The property is within a Watershed Protection Overlay District with maximum impervious coverage development requirements, however the proposed Dunkin project is granted a variance from this item and stormwater runoff rate detention is the only stormwater requirement addressed onsite. Hydrocad is used to demonstrate compliance with discharge rate requirements in the 2,- and 10-yr 24-hr storm events. A summary of the discharge rate analysis is provided below, and detailed calculations can be found in Appendix B and C.

Table 1: Hydrograph Summary – Existing versus Proposed Conditions

	Existing (cfs)	Proposed (cfs)
2-year	2.95	2.80
10-year	5.48	3.65

Calculations for the dry basin design volume are performed in accordance with the Simple Method for Runoff Volume.

$$Rv = 0.05 + 0.9 * Ia, \quad Ia = \frac{0.57}{0.84} = 0.67, \quad Rv = 0.05 + 0.9 * 0.67 = 0.66$$

$$Dv = 3630 * Rd * Rv * A = 3630 * I * 0.66 * 0.84 = 2,013 \text{ cu - ft}$$

Provided Design Volume = 2,352 cu - ft

Erosion and Sediment Control Measures

All vegetative practices and erosion and sediment control features shall be designed, constructed, and maintained in accordance with City of Carthage requirements. The erosion and sediment control plan shall be kept on site in a mailbox type structure located immediately adjacent to the posted permits if needed. Sediment shall be removed from the sediment control structures as necessary, but at a minimum, when the design capacity of each structure is reduced by 50%.

Project Sequence

A site-specific project sequence has been prepared and included within the construction drawings. This project sequence details the full schedule of events to be completed during the construction of this project including pre-construction permitting and compliance activities as well as construction-phase

erosion and sediment control, inspections, and approvals. Please refer to the construction drawings for further information.

Critical Erosion Areas

The most critical erosion area will be the surface of the working areas during construction operations. If areas being disturbed are not provided the appropriate erosion protection, there is a significant potential for erosion and for sediment to be carried away onto the existing right of way, negatively impacting locations downstream. To minimize the potential for erosion, covered areas that are temporarily inactive will be seeded within 14 calendar days after placement of the soil cover and BMPs installed to prevent runoff from being carried away offsite.

Silt Fence

Sediment fences will be provided down gradient of the proposed site grading at the locations shown on the drawings. Silt fences are not to be used across channels or in areas of concentrated flows.

Vegetative Stabilization

Vegetative cover shall be re-established within 14 calendar days after completion of the activity. Refer to plans for temporary and permanent seeding schedule and specifications.

Temporary Stabilization

Disturbed areas will be vegetated in accordance with City of Carthage requirements. Temporary control features will remain in place and will be maintained until the up-gradient disturbed area has been stabilized with vegetative cover.

Temporary Erosion and Sediment Control Maintenance

All erosion and sediment control measures will be checked for stability and operation following every runoff-producing rainfall but in no case less than twice every week, at least 72 hours apart. Any required repairs will be made immediately to maintain all measures as designed. Sediment fences and inlet protection shall be inspected at least twice every week, at least 72 hours apart. Repairs shall be made immediately.

Sediment deposits shall be removed as needed to provide adequate storage volume for the next rainfall event, and to reduce pressure on the silt fence. Fencing materials and sediment deposits shall be removed, and the area brought to grade following stabilization of upgradient disturbed areas and approval of the site.

Calculation Methodology

- On- and off-site topography used in the analysis is from a field survey.

- Rainfall data was taken from Hydrocad's inventory of NOAA Atlas 14 for Moore County. Times of concentration were calculated using 100 feet of sheet flow followed by shallow concentrated flow. A minimum Tc of 5-minutes was assigned for existing and proposed subcatchments with shorter flow paths and high impervious areas in accordance with best engineering practices.
- Soils data for the site was taken from the USDA Web Soil Survey website
- HydroCAD was utilized to prepare hydrograph calculations using the Dynamic Storage Indicator routing method and Type II distribution with Atlas 14 rainfall events. Please refer to Appendix B&C within this report for additional information.

Appendix A:

Maps



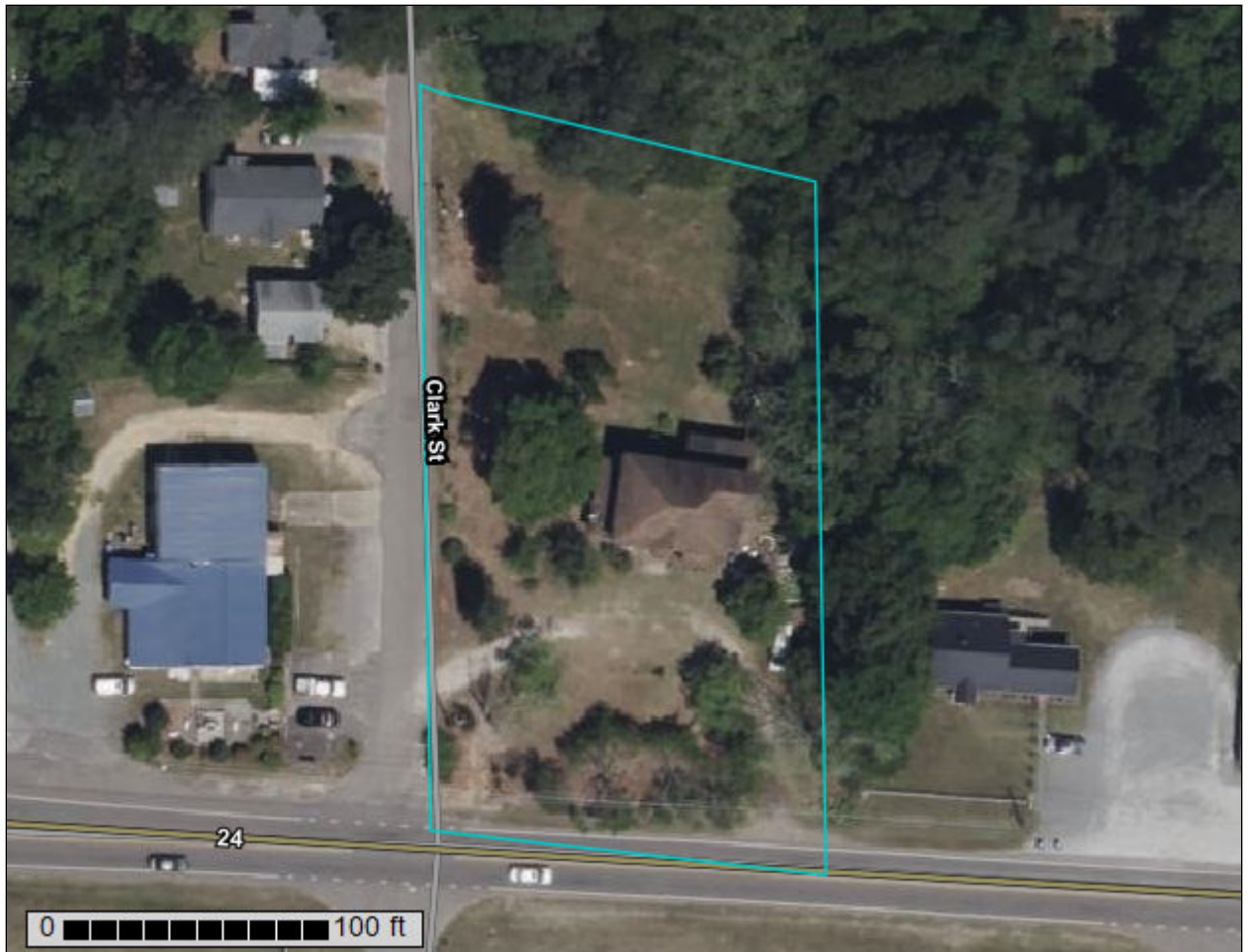
United States
Department of
Agriculture

NRCS

Natural
Resources
Conservation
Service

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

Custom Soil Resource Report for **Moore County, North Carolina**



Preface

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

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

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

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

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

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

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

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Contents

Preface	2
How Soil Surveys Are Made	5
Soil Map	8
Soil Map.....	9
Legend.....	10
Map Unit Legend.....	11
Map Unit Descriptions.....	11
Moore County, North Carolina.....	13
VcB—Vaucluse gravelly sandy loam, 2 to 8 percent slopes.....	13
VuD—Vaucluse-Urban land complex, 8 to 15 percent slopes.....	14
Soil Information for All Uses	17
Soil Properties and Qualities.....	17
Soil Qualities and Features.....	17
Hydrologic Soil Group.....	17
References	22

How Soil Surveys Are Made

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

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

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

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

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

Custom Soil Resource Report

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

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

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

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

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

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

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

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

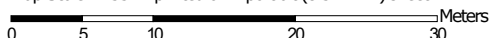
Soil Map

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

Custom Soil Resource Report Soil Map




Map Scale: 1:532 if printed on A portrait (8.5" x 11") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N 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 1:24,000.

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: Moore County, North Carolina
 Survey Area Data: Version 28, Aug 27, 2025

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

Date(s) aerial images were photographed: Apr 23, 2022—Apr 27, 2022

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
VcB	Vaucluse gravelly sandy loam, 2 to 8 percent slopes	0.9	100.0%
VuD	Vaucluse-Urban land complex, 8 to 15 percent slopes	0.0	0.0%
Totals for Area of Interest		0.9	100.0%

Map Unit Descriptions

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

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

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

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

Custom Soil Resource Report

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

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

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

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

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

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

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

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

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

Moore County, North Carolina

VcB—Vaucluse gravelly sandy loam, 2 to 8 percent slopes

Map Unit Setting

National map unit symbol: 3tkf
Landscape: Sandhills
Elevation: 160 to 660 feet
Mean annual precipitation: 38 to 52 inches
Mean annual air temperature: 61 to 70 degrees F
Frost-free period: 210 to 245 days
Farmland classification: Not prime farmland

Map Unit Composition

Vaucluse and similar soils: 90 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Vaucluse

Setting

Landscape: Sandhills
Landform: Low hills
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Crest
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy and sandy marine deposits

Typical profile

Ap - 0 to 6 inches: gravelly sandy loam
E - 6 to 14 inches: gravelly sandy loam
Bt - 14 to 29 inches: sandy clay loam
Btx - 29 to 58 inches: sandy clay loam
BC - 58 to 80 inches: sandy loam

Properties and qualities

Slope: 2 to 8 percent
Depth to restrictive feature: 15 to 35 inches to fragipan
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 3.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: C
Ecological site: F137XY040SC - Loamy Summit Woodland, F133AY440NC - Summits, Loamy, Depth Restriction
Hydric soil rating: No

Minor Components

Bibb, undrained

Percent of map unit: 3 percent
Landscape: Sandhills
Landform: Flood plains
Landform position (two-dimensional): Toeslope
Down-slope shape: Concave
Across-slope shape: Linear
Ecological site: F137XY010SC - Flood Plains And Seepage Swamps
Hydric soil rating: Yes

Johnston, undrained

Percent of map unit: 2 percent
Landscape: Sandhills
Landform: Flood plains
Down-slope shape: Concave
Across-slope shape: Linear
Ecological site: F137XY010SC - Flood Plains And Seepage Swamps
Hydric soil rating: Yes

VuD—Vaucluse-Urban land complex, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 3tkk
Landscape: Sandhills
Elevation: 160 to 660 feet
Mean annual precipitation: 38 to 52 inches
Mean annual air temperature: 61 to 70 degrees F
Frost-free period: 210 to 245 days
Farmland classification: Not prime farmland

Map Unit Composition

Vaucluse and similar soils: 60 percent
Urban land: 20 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Vaucluse

Setting

Landscape: Sandhills
Landform: Low hills
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Crest
Anthropogenic Feature: Urban land
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy and sandy marine deposits

Typical profile

Ap - 0 to 6 inches: loamy sand
E - 6 to 15 inches: loamy sand
Bt - 15 to 29 inches: sandy clay loam
Btx - 29 to 58 inches: sandy clay loam
BC - 58 to 80 inches: sandy loam

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: 15 to 35 inches to fragipan
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Very low (about 2.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Ecological site: F137XY050GA - Loamy Backslope Woodland
Hydric soil rating: No

Description of Urban Land

Setting

Anthropogenic Feature: Urban land

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydric soil rating: No

Minor Components

Bibb, undrained

Percent of map unit: 3 percent
Landscape: Sandhills
Landform: Flood plains
Landform position (two-dimensional): Toeslope
Down-slope shape: Concave
Across-slope shape: Linear
Ecological site: F137XY010SC - Flood Plains And Seepage Swamps
Hydric soil rating: Yes

Johnston, undrained

Percent of map unit: 2 percent
Landscape: Sandhills
Landform: Flood plains
Down-slope shape: Concave
Across-slope shape: Linear
Ecological site: F137XY010SC - Flood Plains And Seepage Swamps
Hydric soil rating: Yes

Custom Soil Resource Report

Soil Information for All Uses

Soil Properties and Qualities

The Soil Properties and Qualities section includes various soil properties and qualities displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each property or quality.

Soil Qualities and Features

Soil qualities are behavior and performance attributes that are not directly measured, but are inferred from observations of dynamic conditions and from soil properties. Example soil qualities include natural drainage, and frost action. Soil features are attributes that are not directly part of the soil. Example soil features include slope and depth to restrictive layer. These features can greatly impact the use and management of the soil.

Hydrologic Soil Group

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

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

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

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

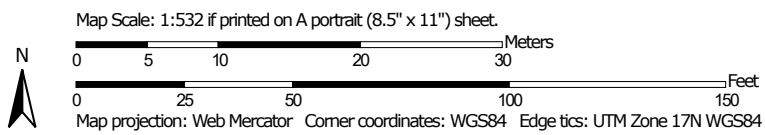
Custom Soil Resource Report

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


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

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

Custom Soil Resource Report Map—Hydrologic Soil Group











MAP LEGEND









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

Soils





Soil Rating Polygons


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


Soil Rating Lines


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


Soil Rating Points

-  A
-  A/D
-  B
-  B/D


 C

 C/D


 D


 Not rated or not available


Water Features


 Streams and Canals


Transportation

 Rails


 Interstate Highways

 US Routes

 Major Roads

 Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

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: Moore County, North Carolina
 Survey Area Data: Version 28, Aug 27, 2025

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

Date(s) aerial images were photographed: Apr 23, 2022—Apr 27, 2022

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

Table—Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
VcB	Vaucluse gravelly sandy loam, 2 to 8 percent slopes	C	0.9	100.0%
VuD	Vaucluse-Urban land complex, 8 to 15 percent slopes	C	0.0	0.0%
Totals for Area of Interest			0.9	100.0%

Rating Options—Hydrologic Soil Group

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

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Custom Soil Resource Report

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

National Flood Hazard Layer FIRMMette



79°24'45"W 35°20'44"N



Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

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 Water Surface Elevation
		8 Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
		Coastal Transect Baseline
OTHER FEATURES		Profile Baseline
		Hydrographic Feature

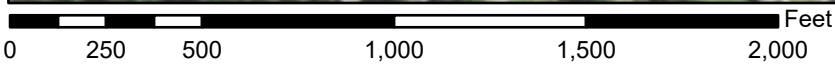
MAP PANELS		Digital Data Available
		No Digital Data Available
		Unmapped

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 **2/19/2026 at 6:43 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 identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.



1:6,000

79°24'7"W 35°20'15"N

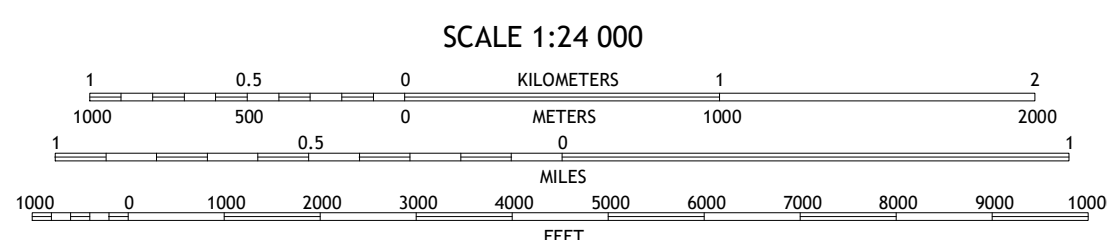
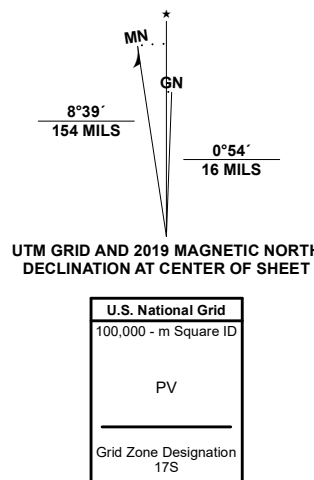
Basemap Imagery Source: USGS National Map 2023



Produced by the United States Geological Survey

North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and
1 000-meter grid: Universal Transverse Mercator, Zone 17S
This map is not a legal document. Boundaries may be
generalized for this map scale. Private lands within government
reservations may not be shown. Obtain permission before
entering private lands.

Imagery:.....NAIP, June 2020 - September 2020
Roads:.....U.S. Census Bureau, 2016
Names:.....GNIS, 1980 - 2022
Hydrography:.....National Hydrography Dataset, 2005 - 2018
Contours:.....National Elevation Dataset, 2008
Boundaries:.....Multiple sources; see metadata file 2019 - 2021
Wetlands:.....FWS National Wetlands Inventory Not Available



CONTOUR INTERVAL 10 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988
This map was produced to conform with the
National Geospatial Program US Topo Product Standard.



QUADRANGLE LOCATION

1	2	3
4	5	6
7	8	

ADJOINING QUADRANGLES

- 1 Robbins
- 2 Putnam
- 3 White Hill
- 4 Zion Grove
- 5 Vass
- 6 West End
- 7 Southern Pines
- 8 Niagara

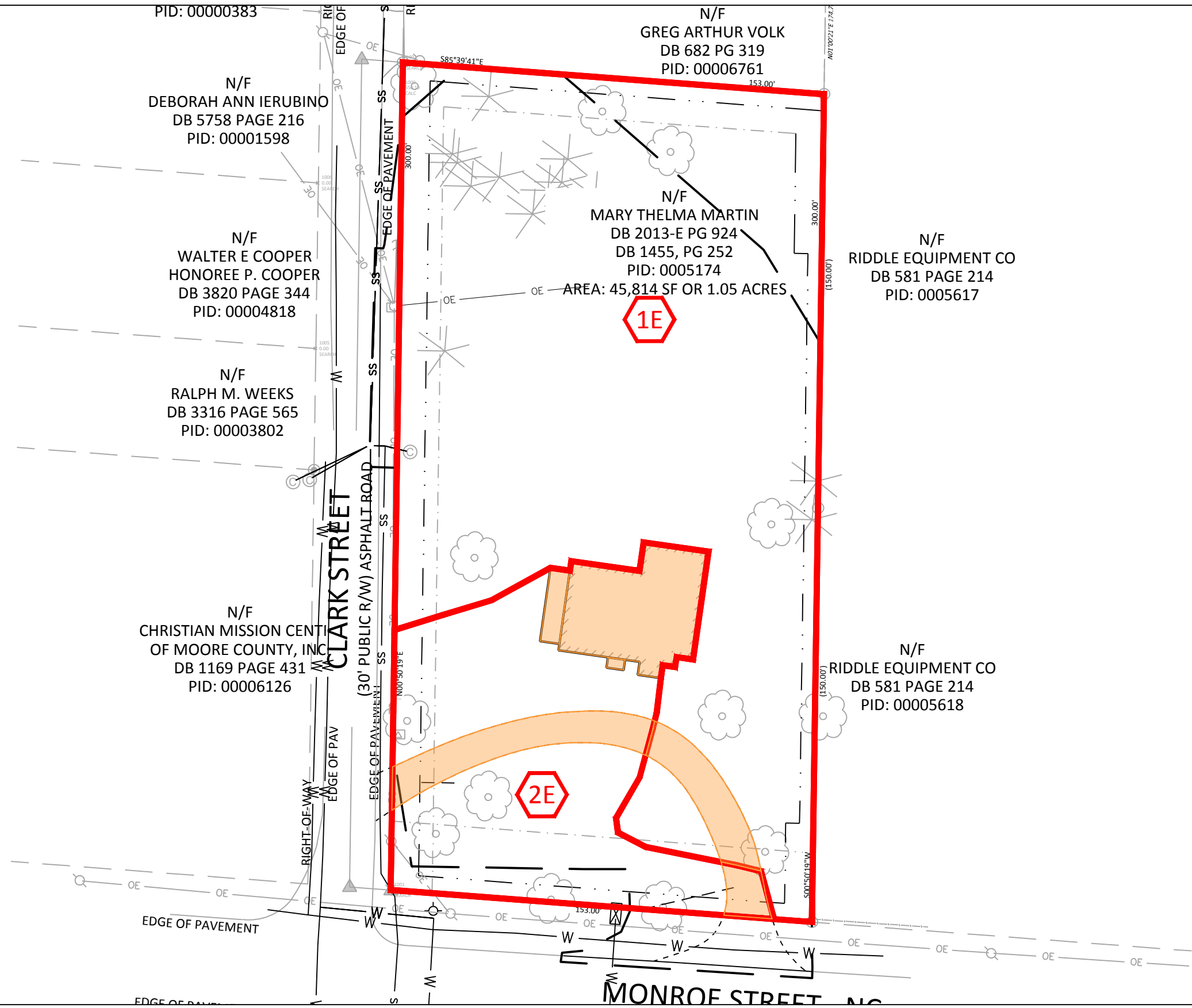
ROAD CLASSIFICATION

	Expressway		Local Connector
	Secondary Hwy		Local Road
	Ramp		4WD
	Interstate Route		US Route
			State Route





CARTHAGE, NC
2022

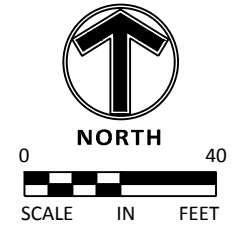


Feb 27, 2026 - 1:53pm - User: rastutz X:\DUN - Dunkin Donuts\2506 - Carthage, NC\Engineering\Stormwater\Maps\MCD 2506-DRINBASE.dwg



LEGEND

-  LINK
-  POND
-  REACH
-  SUB-CATCHMENT



DRAWN BY: DRWN
 DESIGNED BY: DSGN
 CHECKED BY: CHCK
 ISSUED: ISSUE
 REVISION: REV
 REV DATE: 00/00/00



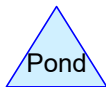
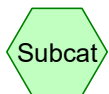
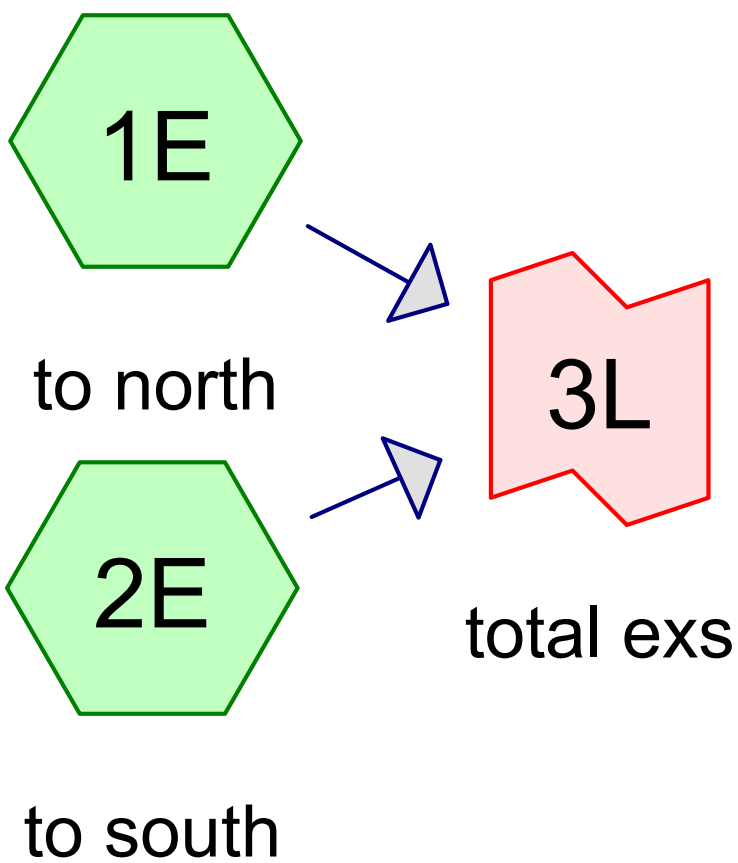
EXISTING DRAINAGE MAP
 DUNKIN
 SITE REDEVELOPMENT
 CARTHAGE, NC

SHEET
00
 PROJECT NO: 00000

Appendix B:

Pre-Development Hydrographs

Existing



Routing Diagram for 2506 - hydrocad 20260227
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Page 2

Rainfall Events Listing

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-Year	Type II 24-hr		Default	24.00	1	3.71	2
2	10-Year	Type II 24-hr		Default	24.00	1	5.40	2
3	100-Year	Type II 24-hr		Default	24.00	1	8.05	2

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Page 3

Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.954	74	>75% Grass cover, Good, HSG C (1E, 2E)
0.098	98	Paved parking, HSG C (1E, 2E)
1.051	76	TOTAL AREA

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Page 4

Soil Listing (selected nodes)

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

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Page 5

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	0.954	0.000	0.000	0.954	>75% Grass cover, Good	1E, 2E
0.000	0.000	0.098	0.000	0.000	0.098	Paved parking	1E, 2E
0.000	0.000	1.051	0.000	0.000	1.051	TOTAL AREA	

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Existing
Type II 24-hr 2-Year Rainfall=3.71"

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Page 6

Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1E: to north

Runoff Area=33,847 sf 2.29% Impervious Runoff Depth=1.45"
Flow Length=200' Slope=0.1250 '/' Tc=5.1 min CN=75 Runoff=2.02 cfs 0.094 af

Subcatchment2E: to south

Runoff Area=11,956 sf 29.22% Impervious Runoff Depth=1.88"
Tc=5.0 min CN=81 Runoff=0.93 cfs 0.043 af

Link 3L: total exs

Inflow=2.95 cfs 0.137 af
Primary=2.95 cfs 0.137 af

Total Runoff Area = 1.051 ac Runoff Volume = 0.137 af Average Runoff Depth = 1.56"
90.68% Pervious = 0.954 ac 9.32% Impervious = 0.098 ac

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Existing
Type II 24-hr 2-Year Rainfall=3.71"

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Page 7

Summary for Subcatchment 1E: to north

Runoff = 2.02 cfs @ 11.96 hrs, Volume= 0.094 af, Depth= 1.45"
Routed to Link 3L : total exs

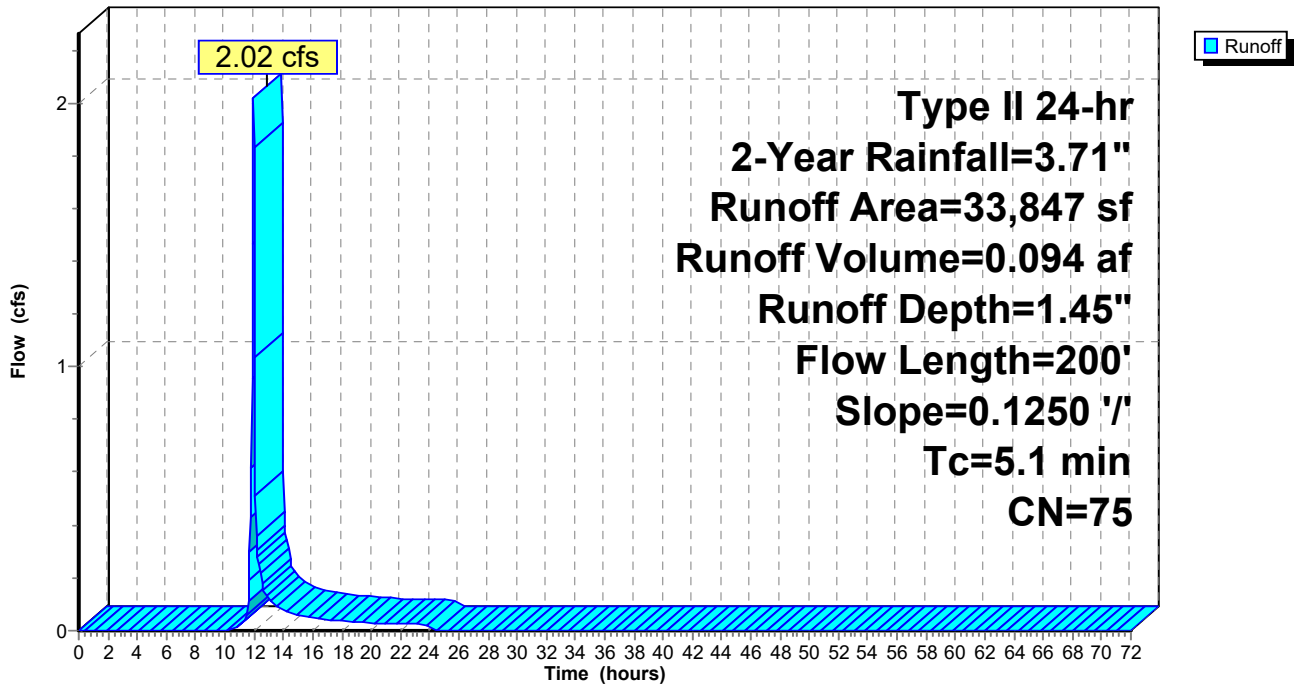
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-Year Rainfall=3.71"

Area (sf)	CN	Description
774	98	Paved parking, HSG C
33,073	74	>75% Grass cover, Good, HSG C
33,847	75	Weighted Average
33,073		97.71% Pervious Area
774		2.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.4	100	0.1250	0.38		Sheet Flow, Grass: Short n= 0.150 P2= 3.71"
0.7	100	0.1250	2.47		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
5.1	200	Total			

Subcatchment 1E: to north

Hydrograph



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Existing
Type II 24-hr 2-Year Rainfall=3.71"

Printed 2/27/2026

Page 8

Hydrograph for Subcatchment 1E: to north

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	51.00	3.71	1.45	0.00
1.00	0.04	0.00	0.00	52.00	3.71	1.45	0.00
2.00	0.08	0.00	0.00	53.00	3.71	1.45	0.00
3.00	0.13	0.00	0.00	54.00	3.71	1.45	0.00
4.00	0.18	0.00	0.00	55.00	3.71	1.45	0.00
5.00	0.23	0.00	0.00	56.00	3.71	1.45	0.00
6.00	0.30	0.00	0.00	57.00	3.71	1.45	0.00
7.00	0.37	0.00	0.00	58.00	3.71	1.45	0.00
8.00	0.45	0.00	0.00	59.00	3.71	1.45	0.00
9.00	0.55	0.00	0.00	60.00	3.71	1.45	0.00
10.00	0.67	0.00	0.00	61.00	3.71	1.45	0.00
11.00	0.87	0.01	0.02	62.00	3.71	1.45	0.00
12.00	2.46	0.63	1.83	63.00	3.71	1.45	0.00
13.00	2.86	0.87	0.12	64.00	3.71	1.45	0.00
14.00	3.04	0.99	0.07	65.00	3.71	1.45	0.00
15.00	3.17	1.07	0.06	66.00	3.71	1.45	0.00
16.00	3.26	1.14	0.05	67.00	3.71	1.45	0.00
17.00	3.35	1.19	0.04	68.00	3.71	1.45	0.00
18.00	3.42	1.24	0.04	69.00	3.71	1.45	0.00
19.00	3.48	1.29	0.03	70.00	3.71	1.45	0.00
20.00	3.53	1.32	0.03	71.00	3.71	1.45	0.00
21.00	3.58	1.36	0.03	72.00	3.71	1.45	0.00
22.00	3.62	1.39	0.03				
23.00	3.67	1.42	0.02				
24.00	3.71	1.45	0.02				
25.00	3.71	1.45	0.00				
26.00	3.71	1.45	0.00				
27.00	3.71	1.45	0.00				
28.00	3.71	1.45	0.00				
29.00	3.71	1.45	0.00				
30.00	3.71	1.45	0.00				
31.00	3.71	1.45	0.00				
32.00	3.71	1.45	0.00				
33.00	3.71	1.45	0.00				
34.00	3.71	1.45	0.00				
35.00	3.71	1.45	0.00				
36.00	3.71	1.45	0.00				
37.00	3.71	1.45	0.00				
38.00	3.71	1.45	0.00				
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40.00	3.71	1.45	0.00				
41.00	3.71	1.45	0.00				
42.00	3.71	1.45	0.00				
43.00	3.71	1.45	0.00				
44.00	3.71	1.45	0.00				
45.00	3.71	1.45	0.00				
46.00	3.71	1.45	0.00				
47.00	3.71	1.45	0.00				
48.00	3.71	1.45	0.00				
49.00	3.71	1.45	0.00				
50.00	3.71	1.45	0.00				

2506 - hydrocad 20260227

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Existing
Type II 24-hr 2-Year Rainfall=3.71"

Printed 2/27/2026

Page 9

Summary for Subcatchment 2E: to south

Runoff = 0.93 cfs @ 11.96 hrs, Volume= 0.043 af, Depth= 1.88"
Routed to Link 3L : total exs

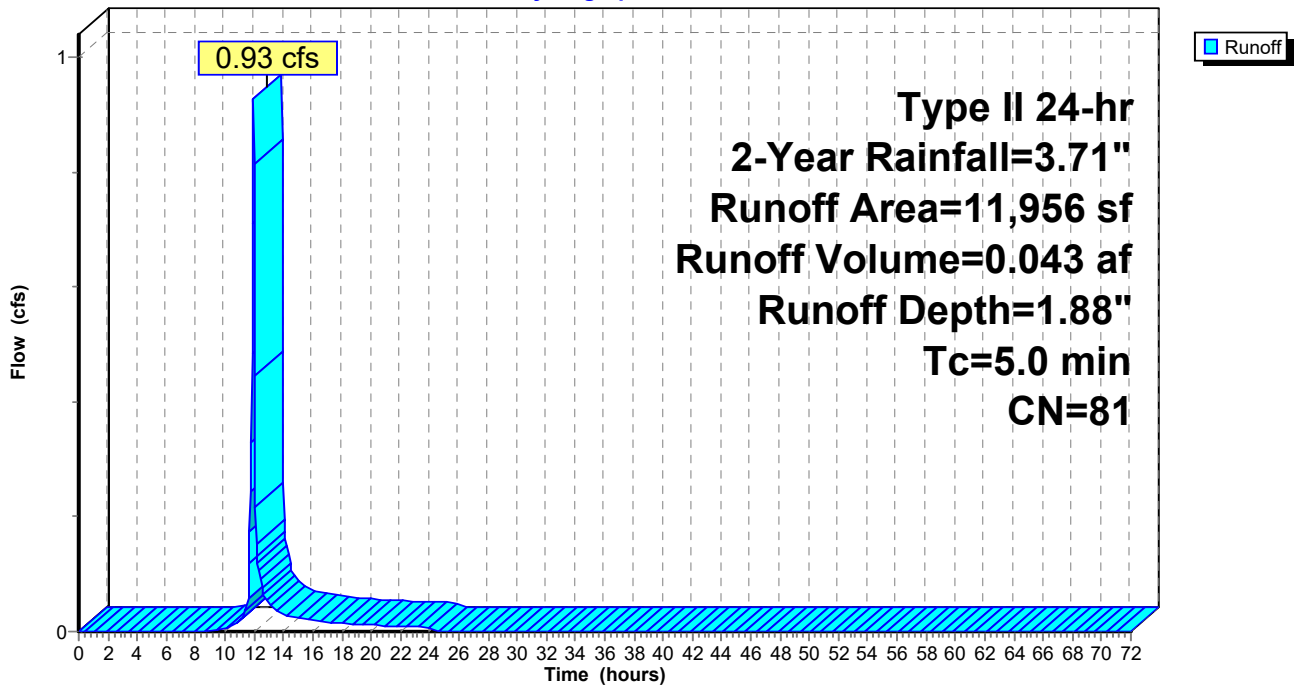
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-Year Rainfall=3.71"

Area (sf)	CN	Description
3,494	98	Paved parking, HSG C
8,462	74	>75% Grass cover, Good, HSG C
11,956	81	Weighted Average
8,462		70.78% Pervious Area
3,494		29.22% Impervious Area

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

Subcatchment 2E: to south

Hydrograph



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Existing
Type II 24-hr 2-Year Rainfall=3.71"

Printed 2/27/2026

Page 10

Hydrograph for Subcatchment 2E: to south

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	51.00	3.71	1.88	0.00
1.00	0.04	0.00	0.00	52.00	3.71	1.88	0.00
2.00	0.08	0.00	0.00	53.00	3.71	1.88	0.00
3.00	0.13	0.00	0.00	54.00	3.71	1.88	0.00
4.00	0.18	0.00	0.00	55.00	3.71	1.88	0.00
5.00	0.23	0.00	0.00	56.00	3.71	1.88	0.00
6.00	0.30	0.00	0.00	57.00	3.71	1.88	0.00
7.00	0.37	0.00	0.00	58.00	3.71	1.88	0.00
8.00	0.45	0.00	0.00	59.00	3.71	1.88	0.00
9.00	0.55	0.00	0.00	60.00	3.71	1.88	0.00
10.00	0.67	0.02	0.01	61.00	3.71	1.88	0.00
11.00	0.87	0.06	0.02	62.00	3.71	1.88	0.00
12.00	2.46	0.91	0.81	63.00	3.71	1.88	0.00
13.00	2.86	1.21	0.05	64.00	3.71	1.88	0.00
14.00	3.04	1.35	0.03	65.00	3.71	1.88	0.00
15.00	3.17	1.44	0.02	66.00	3.71	1.88	0.00
16.00	3.26	1.52	0.02	67.00	3.71	1.88	0.00
17.00	3.35	1.58	0.02	68.00	3.71	1.88	0.00
18.00	3.42	1.64	0.02	69.00	3.71	1.88	0.00
19.00	3.48	1.69	0.01	70.00	3.71	1.88	0.00
20.00	3.53	1.73	0.01	71.00	3.71	1.88	0.00
21.00	3.58	1.77	0.01	72.00	3.71	1.88	0.00
22.00	3.62	1.81	0.01				
23.00	3.67	1.85	0.01				
24.00	3.71	1.88	0.01				
25.00	3.71	1.88	0.00				
26.00	3.71	1.88	0.00				
27.00	3.71	1.88	0.00				
28.00	3.71	1.88	0.00				
29.00	3.71	1.88	0.00				
30.00	3.71	1.88	0.00				
31.00	3.71	1.88	0.00				
32.00	3.71	1.88	0.00				
33.00	3.71	1.88	0.00				
34.00	3.71	1.88	0.00				
35.00	3.71	1.88	0.00				
36.00	3.71	1.88	0.00				
37.00	3.71	1.88	0.00				
38.00	3.71	1.88	0.00				
39.00	3.71	1.88	0.00				
40.00	3.71	1.88	0.00				
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43.00	3.71	1.88	0.00				
44.00	3.71	1.88	0.00				
45.00	3.71	1.88	0.00				
46.00	3.71	1.88	0.00				
47.00	3.71	1.88	0.00				
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50.00	3.71	1.88	0.00				

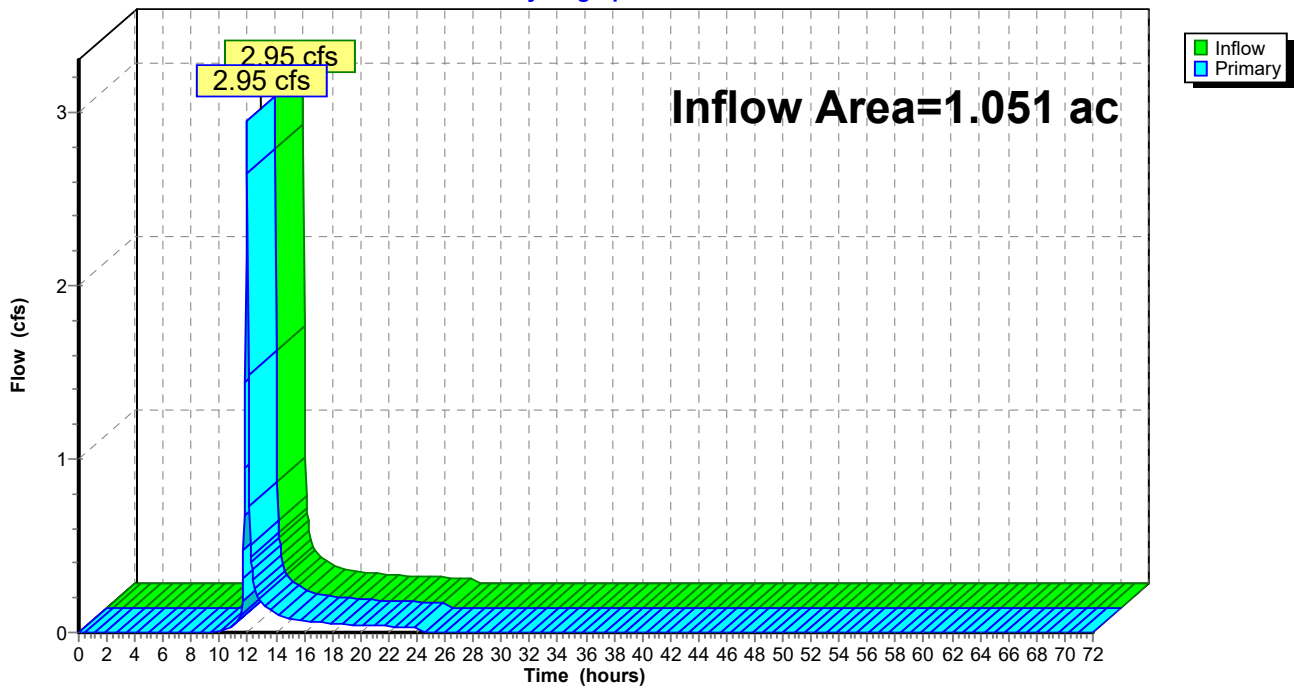
Summary for Link 3L: total exs

Inflow Area = 1.051 ac, 9.32% Impervious, Inflow Depth = 1.56" for 2-Year event
Inflow = 2.95 cfs @ 11.96 hrs, Volume= 0.137 af
Primary = 2.95 cfs @ 11.96 hrs, Volume= 0.137 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 3L: total exs

Hydrograph



2506 - hydrocad 20260227

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Existing
Type II 24-hr 2-Year Rainfall=3.71"

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Page 12

Hydrograph for Link 3L: total exs

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	51.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	52.00	0.00	0.00	0.00
2.00	0.00	0.00	0.00	53.00	0.00	0.00	0.00
3.00	0.00	0.00	0.00	54.00	0.00	0.00	0.00
4.00	0.00	0.00	0.00	55.00	0.00	0.00	0.00
5.00	0.00	0.00	0.00	56.00	0.00	0.00	0.00
6.00	0.00	0.00	0.00	57.00	0.00	0.00	0.00
7.00	0.00	0.00	0.00	58.00	0.00	0.00	0.00
8.00	0.00	0.00	0.00	59.00	0.00	0.00	0.00
9.00	0.00	0.00	0.00	60.00	0.00	0.00	0.00
10.00	0.01	0.00	0.01	61.00	0.00	0.00	0.00
11.00	0.04	0.00	0.04	62.00	0.00	0.00	0.00
12.00	2.64	0.00	2.64	63.00	0.00	0.00	0.00
13.00	0.17	0.00	0.17	64.00	0.00	0.00	0.00
14.00	0.10	0.00	0.10	65.00	0.00	0.00	0.00
15.00	0.08	0.00	0.08	66.00	0.00	0.00	0.00
16.00	0.07	0.00	0.07	67.00	0.00	0.00	0.00
17.00	0.06	0.00	0.06	68.00	0.00	0.00	0.00
18.00	0.05	0.00	0.05	69.00	0.00	0.00	0.00
19.00	0.05	0.00	0.05	70.00	0.00	0.00	0.00
20.00	0.04	0.00	0.04	71.00	0.00	0.00	0.00
21.00	0.04	0.00	0.04	72.00	0.00	0.00	0.00
22.00	0.04	0.00	0.04				
23.00	0.03	0.00	0.03				
24.00	0.03	0.00	0.03				
25.00	0.00	0.00	0.00				
26.00	0.00	0.00	0.00				
27.00	0.00	0.00	0.00				
28.00	0.00	0.00	0.00				
29.00	0.00	0.00	0.00				
30.00	0.00	0.00	0.00				
31.00	0.00	0.00	0.00				
32.00	0.00	0.00	0.00				
33.00	0.00	0.00	0.00				
34.00	0.00	0.00	0.00				
35.00	0.00	0.00	0.00				
36.00	0.00	0.00	0.00				
37.00	0.00	0.00	0.00				
38.00	0.00	0.00	0.00				
39.00	0.00	0.00	0.00				
40.00	0.00	0.00	0.00				
41.00	0.00	0.00	0.00				
42.00	0.00	0.00	0.00				
43.00	0.00	0.00	0.00				
44.00	0.00	0.00	0.00				
45.00	0.00	0.00	0.00				
46.00	0.00	0.00	0.00				
47.00	0.00	0.00	0.00				
48.00	0.00	0.00	0.00				
49.00	0.00	0.00	0.00				
50.00	0.00	0.00	0.00				

2506 - hydrocad 20260227

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Existing
Type II 24-hr 10-Year Rainfall=5.40"

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Page 13

Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1E: to north Runoff Area=33,847 sf 2.29% Impervious Runoff Depth=2.78"
Flow Length=200' Slope=0.1250 '/' Tc=5.1 min CN=75 Runoff=3.86 cfs 0.180 af

Subcatchment2E: to south Runoff Area=11,956 sf 29.22% Impervious Runoff Depth=3.34"
Tc=5.0 min CN=81 Runoff=1.62 cfs 0.076 af

Link 3L: total exs Inflow=5.48 cfs 0.256 af
Primary=5.48 cfs 0.256 af

Total Runoff Area = 1.051 ac Runoff Volume = 0.256 af Average Runoff Depth = 2.92"
90.68% Pervious = 0.954 ac 9.32% Impervious = 0.098 ac

2506 - hydrocad 20260227

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Existing
Type II 24-hr 10-Year Rainfall=5.40"

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Page 14

Summary for Subcatchment 1E: to north

Runoff = 3.86 cfs @ 11.96 hrs, Volume= 0.180 af, Depth= 2.78"
Routed to Link 3L : total exs

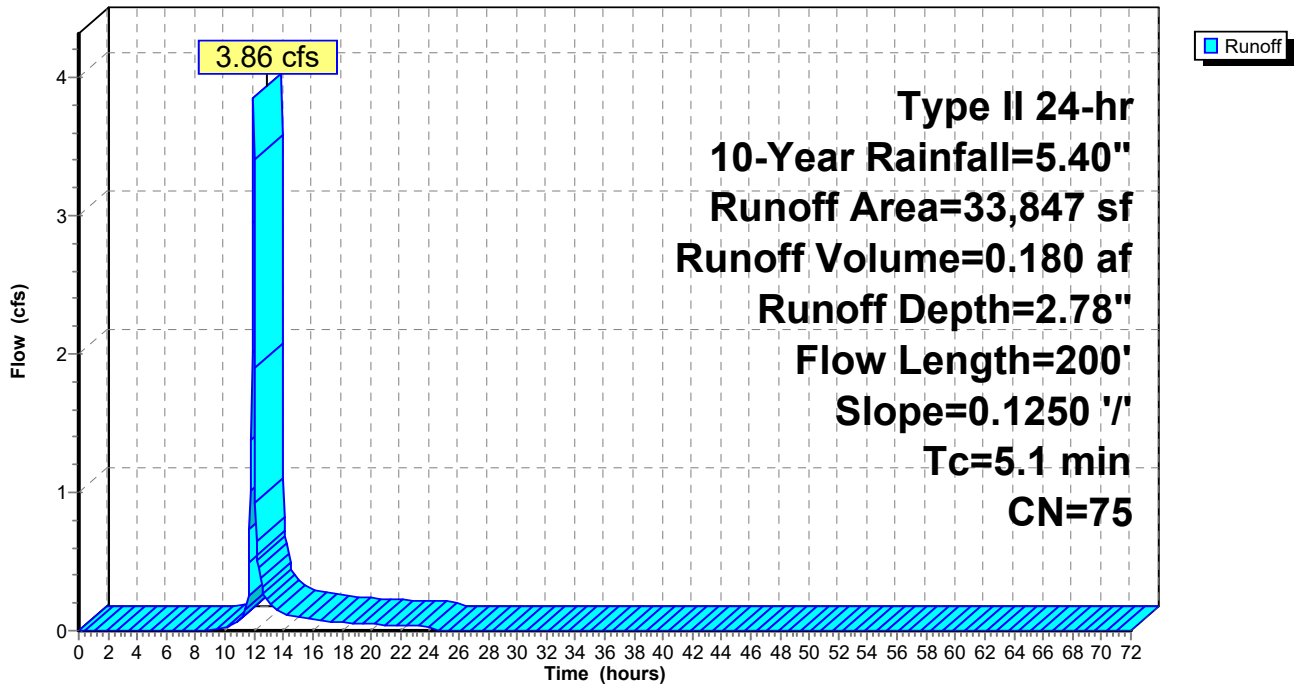
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-Year Rainfall=5.40"

Area (sf)	CN	Description
774	98	Paved parking, HSG C
33,073	74	>75% Grass cover, Good, HSG C
33,847	75	Weighted Average
33,073		97.71% Pervious Area
774		2.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.4	100	0.1250	0.38		Sheet Flow, Grass: Short n= 0.150 P2= 3.71"
0.7	100	0.1250	2.47		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
5.1	200	Total			

Subcatchment 1E: to north

Hydrograph



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Existing
Type II 24-hr 10-Year Rainfall=5.40"

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Page 15

Hydrograph for Subcatchment 1E: to north

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	51.00	5.40	2.78	0.00
1.00	0.06	0.00	0.00	52.00	5.40	2.78	0.00
2.00	0.12	0.00	0.00	53.00	5.40	2.78	0.00
3.00	0.19	0.00	0.00	54.00	5.40	2.78	0.00
4.00	0.26	0.00	0.00	55.00	5.40	2.78	0.00
5.00	0.34	0.00	0.00	56.00	5.40	2.78	0.00
6.00	0.43	0.00	0.00	57.00	5.40	2.78	0.00
7.00	0.53	0.00	0.00	58.00	5.40	2.78	0.00
8.00	0.65	0.00	0.00	59.00	5.40	2.78	0.00
9.00	0.79	0.00	0.01	60.00	5.40	2.78	0.00
10.00	0.98	0.03	0.03	61.00	5.40	2.78	0.00
11.00	1.27	0.09	0.08	62.00	5.40	2.78	0.00
12.00	3.58	1.36	3.42	63.00	5.40	2.78	0.00
13.00	4.17	1.79	0.21	64.00	5.40	2.78	0.00
14.00	4.43	1.99	0.13	65.00	5.40	2.78	0.00
15.00	4.61	2.14	0.10	66.00	5.40	2.78	0.00
16.00	4.75	2.25	0.08	67.00	5.40	2.78	0.00
17.00	4.87	2.34	0.07	68.00	5.40	2.78	0.00
18.00	4.97	2.43	0.06	69.00	5.40	2.78	0.00
19.00	5.06	2.50	0.05	70.00	5.40	2.78	0.00
20.00	5.14	2.56	0.05	71.00	5.40	2.78	0.00
21.00	5.21	2.62	0.04	72.00	5.40	2.78	0.00
22.00	5.28	2.67	0.04				
23.00	5.34	2.73	0.04				
24.00	5.40	2.78	0.04				
25.00	5.40	2.78	0.00				
26.00	5.40	2.78	0.00				
27.00	5.40	2.78	0.00				
28.00	5.40	2.78	0.00				
29.00	5.40	2.78	0.00				
30.00	5.40	2.78	0.00				
31.00	5.40	2.78	0.00				
32.00	5.40	2.78	0.00				
33.00	5.40	2.78	0.00				
34.00	5.40	2.78	0.00				
35.00	5.40	2.78	0.00				
36.00	5.40	2.78	0.00				
37.00	5.40	2.78	0.00				
38.00	5.40	2.78	0.00				
39.00	5.40	2.78	0.00				
40.00	5.40	2.78	0.00				
41.00	5.40	2.78	0.00				
42.00	5.40	2.78	0.00				
43.00	5.40	2.78	0.00				
44.00	5.40	2.78	0.00				
45.00	5.40	2.78	0.00				
46.00	5.40	2.78	0.00				
47.00	5.40	2.78	0.00				
48.00	5.40	2.78	0.00				
49.00	5.40	2.78	0.00				
50.00	5.40	2.78	0.00				

Summary for Subcatchment 2E: to south

Runoff = 1.62 cfs @ 11.96 hrs, Volume= 0.076 af, Depth= 3.34"
Routed to Link 3L : total exs

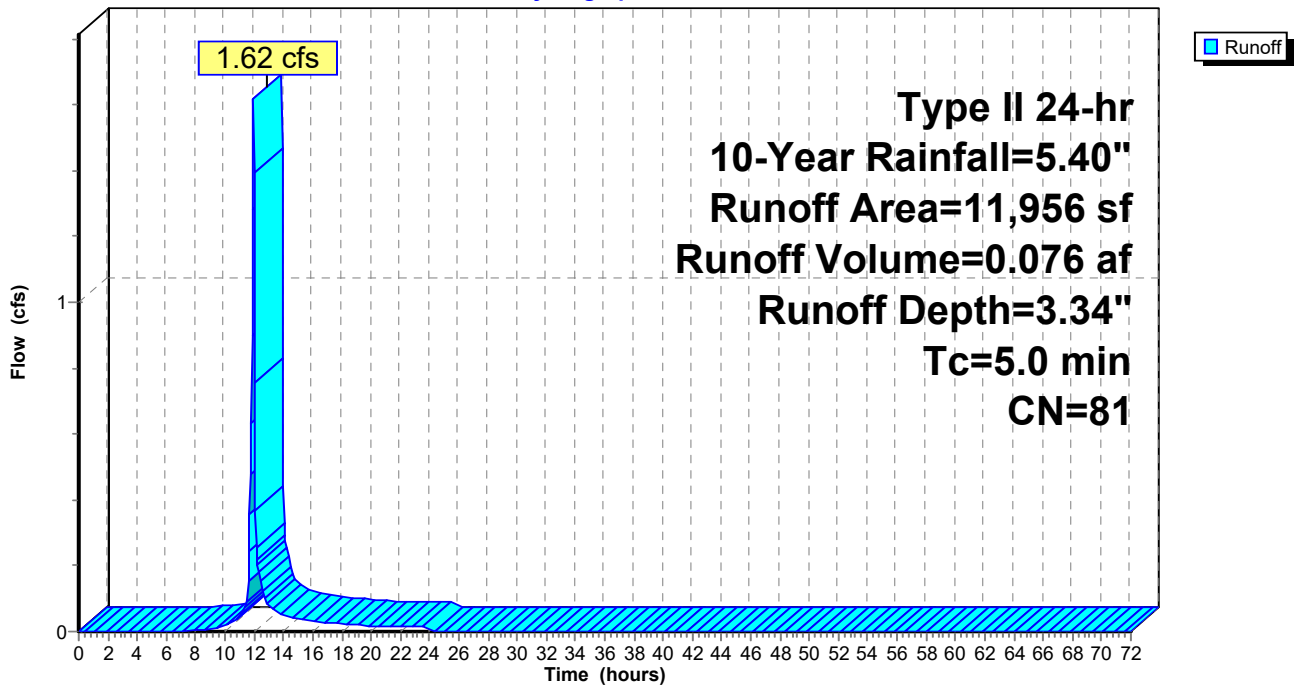
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-Year Rainfall=5.40"

Area (sf)	CN	Description
3,494	98	Paved parking, HSG C
8,462	74	>75% Grass cover, Good, HSG C
11,956	81	Weighted Average
8,462		70.78% Pervious Area
3,494		29.22% Impervious Area

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

Subcatchment 2E: to south

Hydrograph



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Existing
Type II 24-hr 10-Year Rainfall=5.40"

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Page 17

Hydrograph for Subcatchment 2E: to south

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	51.00	5.40	3.34	0.00
1.00	0.06	0.00	0.00	52.00	5.40	3.34	0.00
2.00	0.12	0.00	0.00	53.00	5.40	3.34	0.00
3.00	0.19	0.00	0.00	54.00	5.40	3.34	0.00
4.00	0.26	0.00	0.00	55.00	5.40	3.34	0.00
5.00	0.34	0.00	0.00	56.00	5.40	3.34	0.00
6.00	0.43	0.00	0.00	57.00	5.40	3.34	0.00
7.00	0.53	0.00	0.00	58.00	5.40	3.34	0.00
8.00	0.65	0.01	0.00	59.00	5.40	3.34	0.00
9.00	0.79	0.04	0.01	60.00	5.40	3.34	0.00
10.00	0.98	0.09	0.02	61.00	5.40	3.34	0.00
11.00	1.27	0.20	0.04	62.00	5.40	3.34	0.00
12.00	3.58	1.77	1.40	63.00	5.40	3.34	0.00
13.00	4.17	2.26	0.08	64.00	5.40	3.34	0.00
14.00	4.43	2.49	0.05	65.00	5.40	3.34	0.00
15.00	4.61	2.64	0.04	66.00	5.40	3.34	0.00
16.00	4.75	2.77	0.03	67.00	5.40	3.34	0.00
17.00	4.87	2.87	0.03	68.00	5.40	3.34	0.00
18.00	4.97	2.96	0.02	69.00	5.40	3.34	0.00
19.00	5.06	3.04	0.02	70.00	5.40	3.34	0.00
20.00	5.14	3.11	0.02	71.00	5.40	3.34	0.00
21.00	5.21	3.17	0.02	72.00	5.40	3.34	0.00
22.00	5.28	3.23	0.02				
23.00	5.34	3.29	0.02				
24.00	5.40	3.34	0.01				
25.00	5.40	3.34	0.00				
26.00	5.40	3.34	0.00				
27.00	5.40	3.34	0.00				
28.00	5.40	3.34	0.00				
29.00	5.40	3.34	0.00				
30.00	5.40	3.34	0.00				
31.00	5.40	3.34	0.00				
32.00	5.40	3.34	0.00				
33.00	5.40	3.34	0.00				
34.00	5.40	3.34	0.00				
35.00	5.40	3.34	0.00				
36.00	5.40	3.34	0.00				
37.00	5.40	3.34	0.00				
38.00	5.40	3.34	0.00				
39.00	5.40	3.34	0.00				
40.00	5.40	3.34	0.00				
41.00	5.40	3.34	0.00				
42.00	5.40	3.34	0.00				
43.00	5.40	3.34	0.00				
44.00	5.40	3.34	0.00				
45.00	5.40	3.34	0.00				
46.00	5.40	3.34	0.00				
47.00	5.40	3.34	0.00				
48.00	5.40	3.34	0.00				
49.00	5.40	3.34	0.00				
50.00	5.40	3.34	0.00				

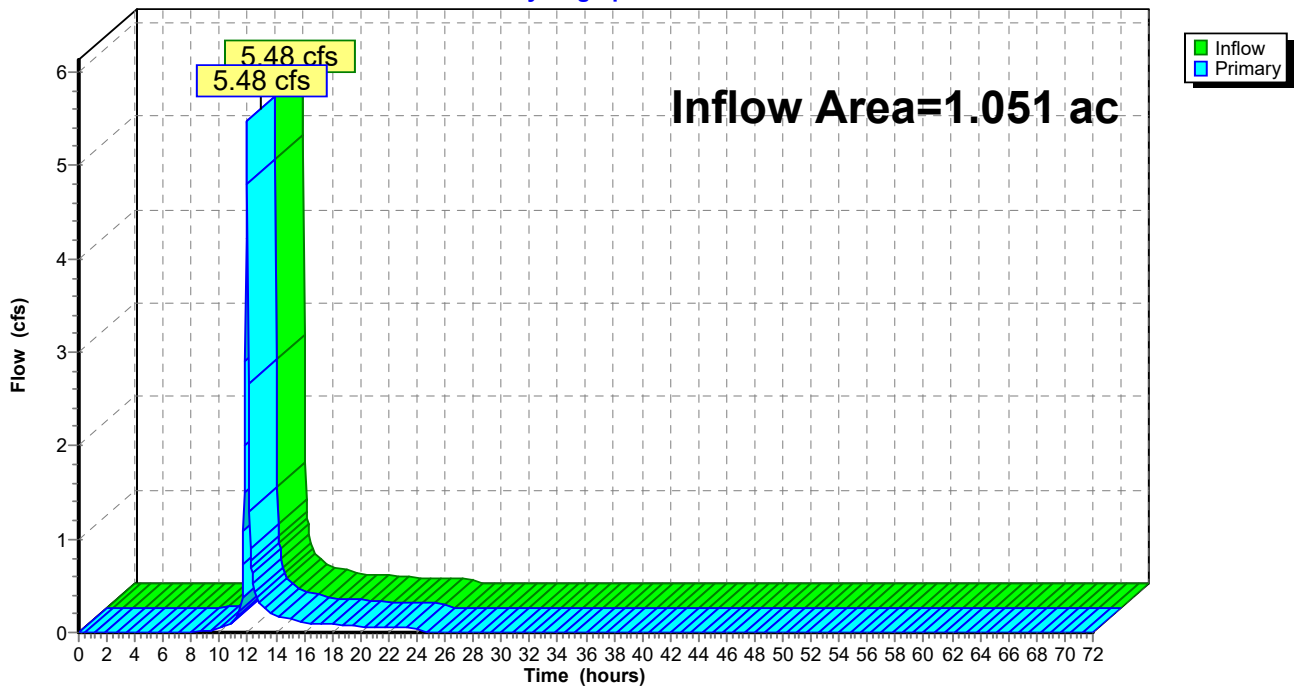
Summary for Link 3L: total exs

Inflow Area = 1.051 ac, 9.32% Impervious, Inflow Depth = 2.92" for 10-Year event
Inflow = 5.48 cfs @ 11.96 hrs, Volume= 0.256 af
Primary = 5.48 cfs @ 11.96 hrs, Volume= 0.256 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 3L: total exs

Hydrograph



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Existing
Type II 24-hr 10-Year Rainfall=5.40"

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Page 19

Hydrograph for Link 3L: total exs

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	51.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	52.00	0.00	0.00	0.00
2.00	0.00	0.00	0.00	53.00	0.00	0.00	0.00
3.00	0.00	0.00	0.00	54.00	0.00	0.00	0.00
4.00	0.00	0.00	0.00	55.00	0.00	0.00	0.00
5.00	0.00	0.00	0.00	56.00	0.00	0.00	0.00
6.00	0.00	0.00	0.00	57.00	0.00	0.00	0.00
7.00	0.00	0.00	0.00	58.00	0.00	0.00	0.00
8.00	0.00	0.00	0.00	59.00	0.00	0.00	0.00
9.00	0.02	0.00	0.02	60.00	0.00	0.00	0.00
10.00	0.04	0.00	0.04	61.00	0.00	0.00	0.00
11.00	0.12	0.00	0.12	62.00	0.00	0.00	0.00
12.00	4.81	0.00	4.81	63.00	0.00	0.00	0.00
13.00	0.29	0.00	0.29	64.00	0.00	0.00	0.00
14.00	0.18	0.00	0.18	65.00	0.00	0.00	0.00
15.00	0.14	0.00	0.14	66.00	0.00	0.00	0.00
16.00	0.11	0.00	0.11	67.00	0.00	0.00	0.00
17.00	0.10	0.00	0.10	68.00	0.00	0.00	0.00
18.00	0.09	0.00	0.09	69.00	0.00	0.00	0.00
19.00	0.07	0.00	0.07	70.00	0.00	0.00	0.00
20.00	0.06	0.00	0.06	71.00	0.00	0.00	0.00
21.00	0.06	0.00	0.06	72.00	0.00	0.00	0.00
22.00	0.06	0.00	0.06				
23.00	0.06	0.00	0.06				
24.00	0.05	0.00	0.05				
25.00	0.00	0.00	0.00				
26.00	0.00	0.00	0.00				
27.00	0.00	0.00	0.00				
28.00	0.00	0.00	0.00				
29.00	0.00	0.00	0.00				
30.00	0.00	0.00	0.00				
31.00	0.00	0.00	0.00				
32.00	0.00	0.00	0.00				
33.00	0.00	0.00	0.00				
34.00	0.00	0.00	0.00				
35.00	0.00	0.00	0.00				
36.00	0.00	0.00	0.00				
37.00	0.00	0.00	0.00				
38.00	0.00	0.00	0.00				
39.00	0.00	0.00	0.00				
40.00	0.00	0.00	0.00				
41.00	0.00	0.00	0.00				
42.00	0.00	0.00	0.00				
43.00	0.00	0.00	0.00				
44.00	0.00	0.00	0.00				
45.00	0.00	0.00	0.00				
46.00	0.00	0.00	0.00				
47.00	0.00	0.00	0.00				
48.00	0.00	0.00	0.00				
49.00	0.00	0.00	0.00				
50.00	0.00	0.00	0.00				

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Existing
Type II 24-hr 100-Year Rainfall=8.05"

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Page 20

Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1E: to north Runoff Area=33,847 sf 2.29% Impervious Runoff Depth=5.09"
Flow Length=200' Slope=0.1250 '/' Tc=5.1 min CN=75 Runoff=6.93 cfs 0.329 af

Subcatchment2E: to south Runoff Area=11,956 sf 29.22% Impervious Runoff Depth=5.79"
Tc=5.0 min CN=81 Runoff=2.73 cfs 0.132 af

Link 3L: total exs Inflow=9.66 cfs 0.462 af
Primary=9.66 cfs 0.462 af

Total Runoff Area = 1.051 ac Runoff Volume = 0.462 af Average Runoff Depth = 5.27"
90.68% Pervious = 0.954 ac 9.32% Impervious = 0.098 ac

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Existing
Type II 24-hr 100-Year Rainfall=8.05"

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Page 21

Summary for Subcatchment 1E: to north

Runoff = 6.93 cfs @ 11.96 hrs, Volume= 0.329 af, Depth= 5.09"
Routed to Link 3L : total exs

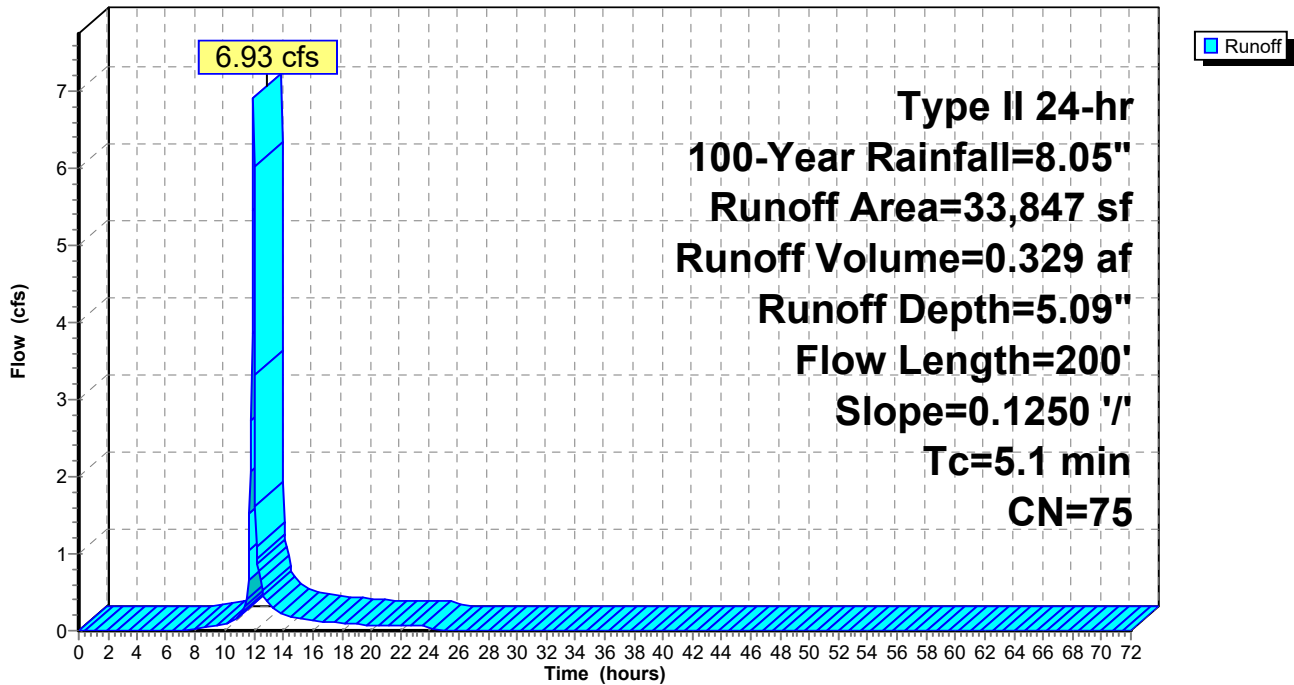
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-Year Rainfall=8.05"

Area (sf)	CN	Description
774	98	Paved parking, HSG C
33,073	74	>75% Grass cover, Good, HSG C
33,847	75	Weighted Average
33,073		97.71% Pervious Area
774		2.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.4	100	0.1250	0.38		Sheet Flow, Grass: Short n= 0.150 P2= 3.71"
0.7	100	0.1250	2.47		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
5.1	200	Total			

Subcatchment 1E: to north

Hydrograph



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Existing
Type II 24-hr 100-Year Rainfall=8.05"

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Page 22

Hydrograph for Subcatchment 1E: to north

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	51.00	8.05	5.09	0.00
1.00	0.08	0.00	0.00	52.00	8.05	5.09	0.00
2.00	0.18	0.00	0.00	53.00	8.05	5.09	0.00
3.00	0.28	0.00	0.00	54.00	8.05	5.09	0.00
4.00	0.39	0.00	0.00	55.00	8.05	5.09	0.00
5.00	0.51	0.00	0.00	56.00	8.05	5.09	0.00
6.00	0.64	0.00	0.00	57.00	8.05	5.09	0.00
7.00	0.80	0.00	0.01	58.00	8.05	5.09	0.00
8.00	0.97	0.02	0.02	59.00	8.05	5.09	0.00
9.00	1.18	0.07	0.05	60.00	8.05	5.09	0.00
10.00	1.46	0.15	0.08	61.00	8.05	5.09	0.00
11.00	1.89	0.33	0.20	62.00	8.05	5.09	0.00
12.00	5.34	2.73	6.03	63.00	8.05	5.09	0.00
13.00	6.21	3.47	0.35	64.00	8.05	5.09	0.00
14.00	6.60	3.80	0.21	65.00	8.05	5.09	0.00
15.00	6.87	4.04	0.17	66.00	8.05	5.09	0.00
16.00	7.08	4.22	0.13	67.00	8.05	5.09	0.00
17.00	7.26	4.38	0.12	68.00	8.05	5.09	0.00
18.00	7.41	4.52	0.10	69.00	8.05	5.09	0.00
19.00	7.55	4.64	0.09	70.00	8.05	5.09	0.00
20.00	7.66	4.74	0.07	71.00	8.05	5.09	0.00
21.00	7.77	4.83	0.07	72.00	8.05	5.09	0.00
22.00	7.86	4.92	0.07				
23.00	7.96	5.01	0.07				
24.00	8.05	5.09	0.06				
25.00	8.05	5.09	0.00				
26.00	8.05	5.09	0.00				
27.00	8.05	5.09	0.00				
28.00	8.05	5.09	0.00				
29.00	8.05	5.09	0.00				
30.00	8.05	5.09	0.00				
31.00	8.05	5.09	0.00				
32.00	8.05	5.09	0.00				
33.00	8.05	5.09	0.00				
34.00	8.05	5.09	0.00				
35.00	8.05	5.09	0.00				
36.00	8.05	5.09	0.00				
37.00	8.05	5.09	0.00				
38.00	8.05	5.09	0.00				
39.00	8.05	5.09	0.00				
40.00	8.05	5.09	0.00				
41.00	8.05	5.09	0.00				
42.00	8.05	5.09	0.00				
43.00	8.05	5.09	0.00				
44.00	8.05	5.09	0.00				
45.00	8.05	5.09	0.00				
46.00	8.05	5.09	0.00				
47.00	8.05	5.09	0.00				
48.00	8.05	5.09	0.00				
49.00	8.05	5.09	0.00				
50.00	8.05	5.09	0.00				

Summary for Subcatchment 2E: to south

Runoff = 2.73 cfs @ 11.95 hrs, Volume= 0.132 af, Depth= 5.79"
Routed to Link 3L : total exs

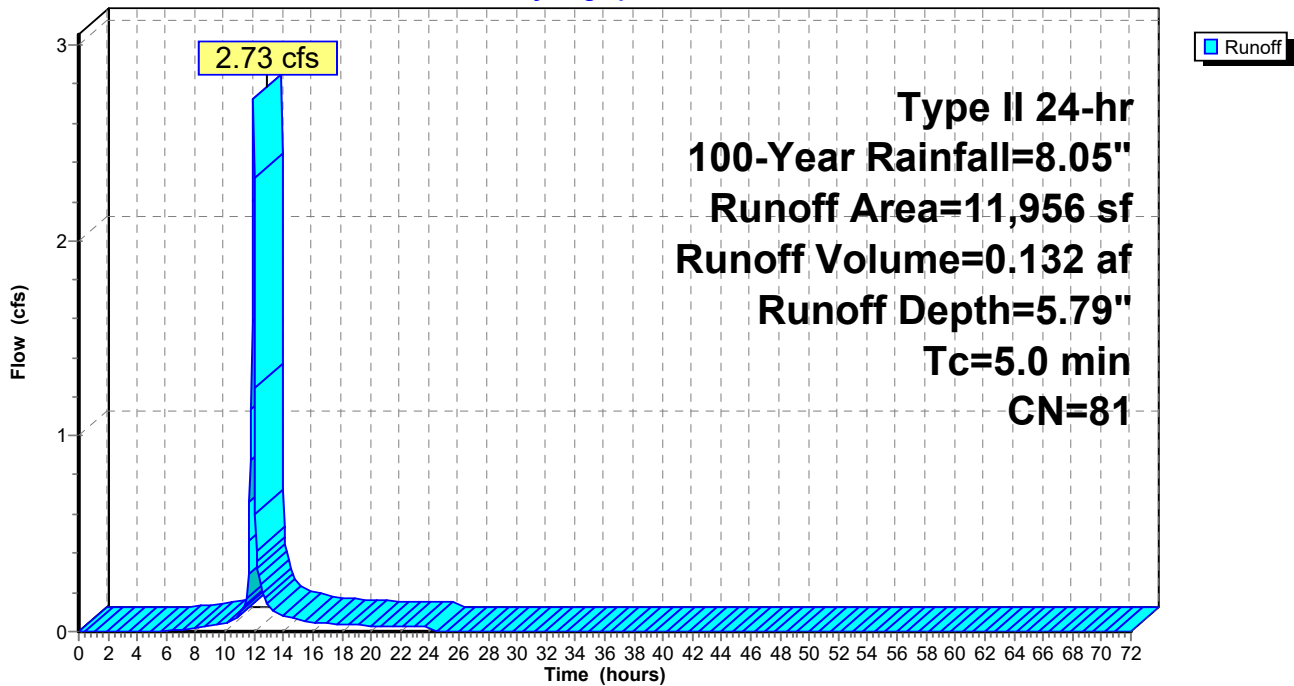
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-Year Rainfall=8.05"

Area (sf)	CN	Description
3,494	98	Paved parking, HSG C
8,462	74	>75% Grass cover, Good, HSG C
11,956	81	Weighted Average
8,462		70.78% Pervious Area
3,494		29.22% Impervious Area

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

Subcatchment 2E: to south

Hydrograph



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Existing
Type II 24-hr 100-Year Rainfall=8.05"

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Page 24

Hydrograph for Subcatchment 2E: to south

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	51.00	8.05	5.79	0.00
1.00	0.08	0.00	0.00	52.00	8.05	5.79	0.00
2.00	0.18	0.00	0.00	53.00	8.05	5.79	0.00
3.00	0.28	0.00	0.00	54.00	8.05	5.79	0.00
4.00	0.39	0.00	0.00	55.00	8.05	5.79	0.00
5.00	0.51	0.00	0.00	56.00	8.05	5.79	0.00
6.00	0.64	0.01	0.01	57.00	8.05	5.79	0.00
7.00	0.80	0.04	0.01	58.00	8.05	5.79	0.00
8.00	0.97	0.09	0.02	59.00	8.05	5.79	0.00
9.00	1.18	0.17	0.03	60.00	8.05	5.79	0.00
10.00	1.46	0.29	0.04	61.00	8.05	5.79	0.00
11.00	1.89	0.54	0.09	62.00	8.05	5.79	0.00
12.00	5.34	3.29	2.32	63.00	8.05	5.79	0.00
13.00	6.21	4.08	0.13	64.00	8.05	5.79	0.00
14.00	6.60	4.44	0.08	65.00	8.05	5.79	0.00
15.00	6.87	4.68	0.06	66.00	8.05	5.79	0.00
16.00	7.08	4.88	0.05	67.00	8.05	5.79	0.00
17.00	7.26	5.05	0.04	68.00	8.05	5.79	0.00
18.00	7.41	5.19	0.04	69.00	8.05	5.79	0.00
19.00	7.55	5.32	0.03	70.00	8.05	5.79	0.00
20.00	7.66	5.43	0.03	71.00	8.05	5.79	0.00
21.00	7.77	5.52	0.03	72.00	8.05	5.79	0.00
22.00	7.86	5.61	0.03				
23.00	7.96	5.70	0.02				
24.00	8.05	5.79	0.02				
25.00	8.05	5.79	0.00				
26.00	8.05	5.79	0.00				
27.00	8.05	5.79	0.00				
28.00	8.05	5.79	0.00				
29.00	8.05	5.79	0.00				
30.00	8.05	5.79	0.00				
31.00	8.05	5.79	0.00				
32.00	8.05	5.79	0.00				
33.00	8.05	5.79	0.00				
34.00	8.05	5.79	0.00				
35.00	8.05	5.79	0.00				
36.00	8.05	5.79	0.00				
37.00	8.05	5.79	0.00				
38.00	8.05	5.79	0.00				
39.00	8.05	5.79	0.00				
40.00	8.05	5.79	0.00				
41.00	8.05	5.79	0.00				
42.00	8.05	5.79	0.00				
43.00	8.05	5.79	0.00				
44.00	8.05	5.79	0.00				
45.00	8.05	5.79	0.00				
46.00	8.05	5.79	0.00				
47.00	8.05	5.79	0.00				
48.00	8.05	5.79	0.00				
49.00	8.05	5.79	0.00				
50.00	8.05	5.79	0.00				

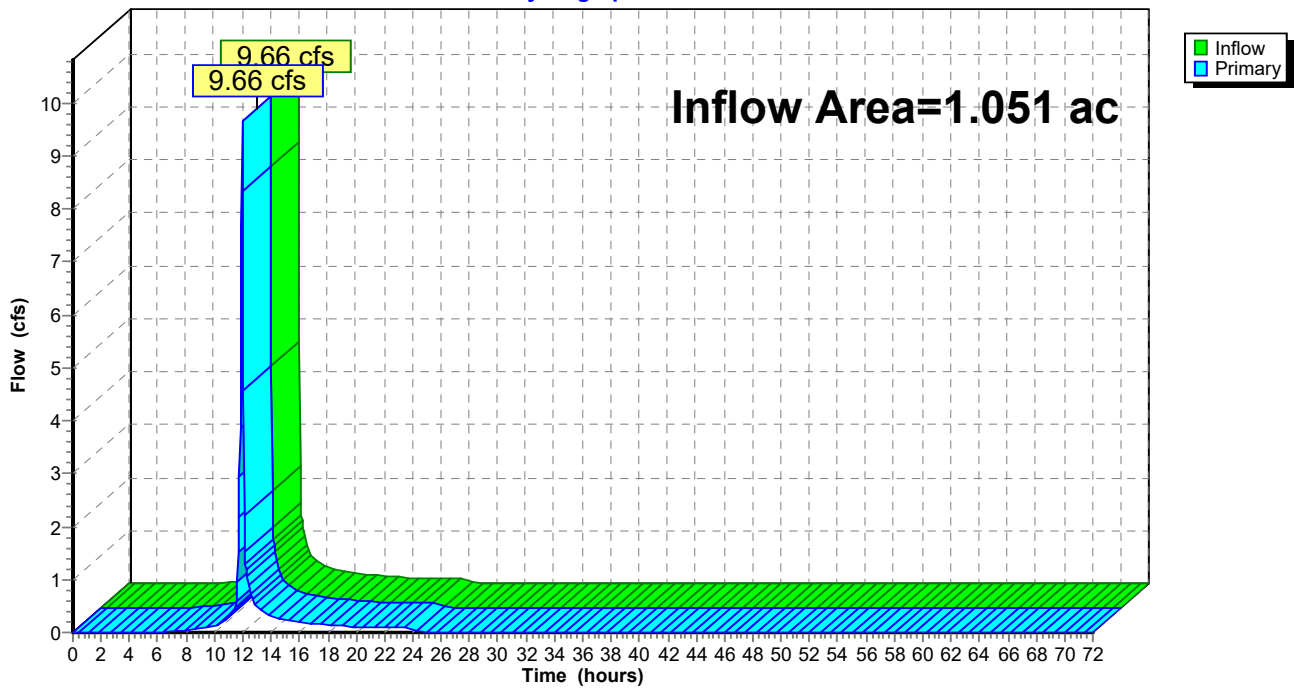
Summary for Link 3L: total exs

Inflow Area = 1.051 ac, 9.32% Impervious, Inflow Depth = 5.27" for 100-Year event
Inflow = 9.66 cfs @ 11.96 hrs, Volume= 0.462 af
Primary = 9.66 cfs @ 11.96 hrs, Volume= 0.462 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 3L: total exs

Hydrograph



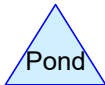
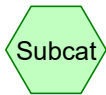
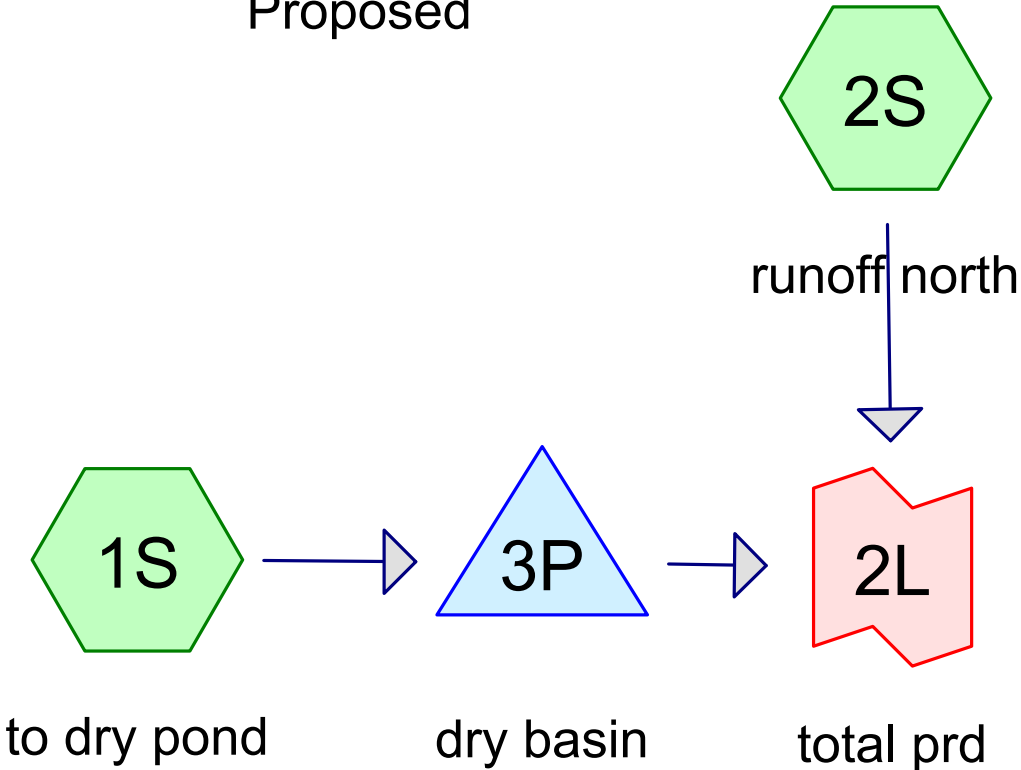
Hydrograph for Link 3L: total exs

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	51.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	52.00	0.00	0.00	0.00
2.00	0.00	0.00	0.00	53.00	0.00	0.00	0.00
3.00	0.00	0.00	0.00	54.00	0.00	0.00	0.00
4.00	0.00	0.00	0.00	55.00	0.00	0.00	0.00
5.00	0.00	0.00	0.00	56.00	0.00	0.00	0.00
6.00	0.01	0.00	0.01	57.00	0.00	0.00	0.00
7.00	0.02	0.00	0.02	58.00	0.00	0.00	0.00
8.00	0.04	0.00	0.04	59.00	0.00	0.00	0.00
9.00	0.08	0.00	0.08	60.00	0.00	0.00	0.00
10.00	0.13	0.00	0.13	61.00	0.00	0.00	0.00
11.00	0.29	0.00	0.29	62.00	0.00	0.00	0.00
12.00	0.835	0.00	0.835	63.00	0.00	0.00	0.00
13.00	0.48	0.00	0.48	64.00	0.00	0.00	0.00
14.00	0.29	0.00	0.29	65.00	0.00	0.00	0.00
15.00	0.23	0.00	0.23	66.00	0.00	0.00	0.00
16.00	0.18	0.00	0.18	67.00	0.00	0.00	0.00
17.00	0.16	0.00	0.16	68.00	0.00	0.00	0.00
18.00	0.14	0.00	0.14	69.00	0.00	0.00	0.00
19.00	0.12	0.00	0.12	70.00	0.00	0.00	0.00
20.00	0.10	0.00	0.10	71.00	0.00	0.00	0.00
21.00	0.10	0.00	0.10	72.00	0.00	0.00	0.00
22.00	0.09	0.00	0.09				
23.00	0.09	0.00	0.09				
24.00	0.09	0.00	0.09				
25.00	0.00	0.00	0.00				
26.00	0.00	0.00	0.00				
27.00	0.00	0.00	0.00				
28.00	0.00	0.00	0.00				
29.00	0.00	0.00	0.00				
30.00	0.00	0.00	0.00				
31.00	0.00	0.00	0.00				
32.00	0.00	0.00	0.00				
33.00	0.00	0.00	0.00				
34.00	0.00	0.00	0.00				
35.00	0.00	0.00	0.00				
36.00	0.00	0.00	0.00				
37.00	0.00	0.00	0.00				
38.00	0.00	0.00	0.00				
39.00	0.00	0.00	0.00				
40.00	0.00	0.00	0.00				
41.00	0.00	0.00	0.00				
42.00	0.00	0.00	0.00				
43.00	0.00	0.00	0.00				
44.00	0.00	0.00	0.00				
45.00	0.00	0.00	0.00				
46.00	0.00	0.00	0.00				
47.00	0.00	0.00	0.00				
48.00	0.00	0.00	0.00				
49.00	0.00	0.00	0.00				
50.00	0.00	0.00	0.00				

Appendix C:

Post-Development Hydrographs

Proposed



Routing Diagram for 2506 - hydrocad 20260227
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Page 2

Rainfall Events Listing

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-Year	Type II 24-hr		Default	24.00	1	3.71	2
2	10-Year	Type II 24-hr		Default	24.00	1	5.40	2
3	100-Year	Type II 24-hr		Default	24.00	1	8.05	2

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Page 3

Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.482	74	>75% Grass cover, Good, HSG C (1S, 2S)
0.569	98	Paved parking, HSG C (1S)
1.052	87	TOTAL AREA

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Page 4

Soil Listing (selected nodes)

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

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Page 5

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	0.482	0.000	0.000	0.482	>75% Grass cover, Good	1S, 2S
0.000	0.000	0.569	0.000	0.000	0.569	Paved parking	1S
0.000	0.000	1.052	0.000	0.000	1.052	TOTAL AREA	

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Page 6

Pipe Listing (selected nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Width (inches)	Diam/Height (inches)	Inside-Fill (inches)	Node Name
1	3P	557.00	556.00	30.0	0.0333	0.012	0.0	10.0	0.0	

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Proposed
Type II 24-hr 2-Year Rainfall=3.71"

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Page 7

Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: to dry pond Runoff Area=36,786 sf 67.42% Impervious Runoff Depth=2.65"
Tc=5.0 min CN=90 Runoff=3.84 cfs 0.186 af

Subcatchment2S: runoff north Runoff Area=9,018 sf 0.00% Impervious Runoff Depth=1.39"
Tc=5.0 min CN=74 Runoff=0.52 cfs 0.024 af

Pond 3P: dry basin Peak Elev=558.69' Storage=3,003 cf Inflow=3.84 cfs 0.186 af
Outflow=2.34 cfs 0.186 af

Link 2L: total prd Inflow=2.80 cfs 0.210 af
Primary=2.80 cfs 0.210 af

Total Runoff Area = 1.052 ac Runoff Volume = 0.210 af Average Runoff Depth = 2.40"
45.85% Pervious = 0.482 ac 54.15% Impervious = 0.569 ac

Summary for Subcatchment 1S: to dry pond

Runoff = 3.84 cfs @ 11.95 hrs, Volume= 0.186 af, Depth= 2.65"
Routed to Pond 3P : dry basin

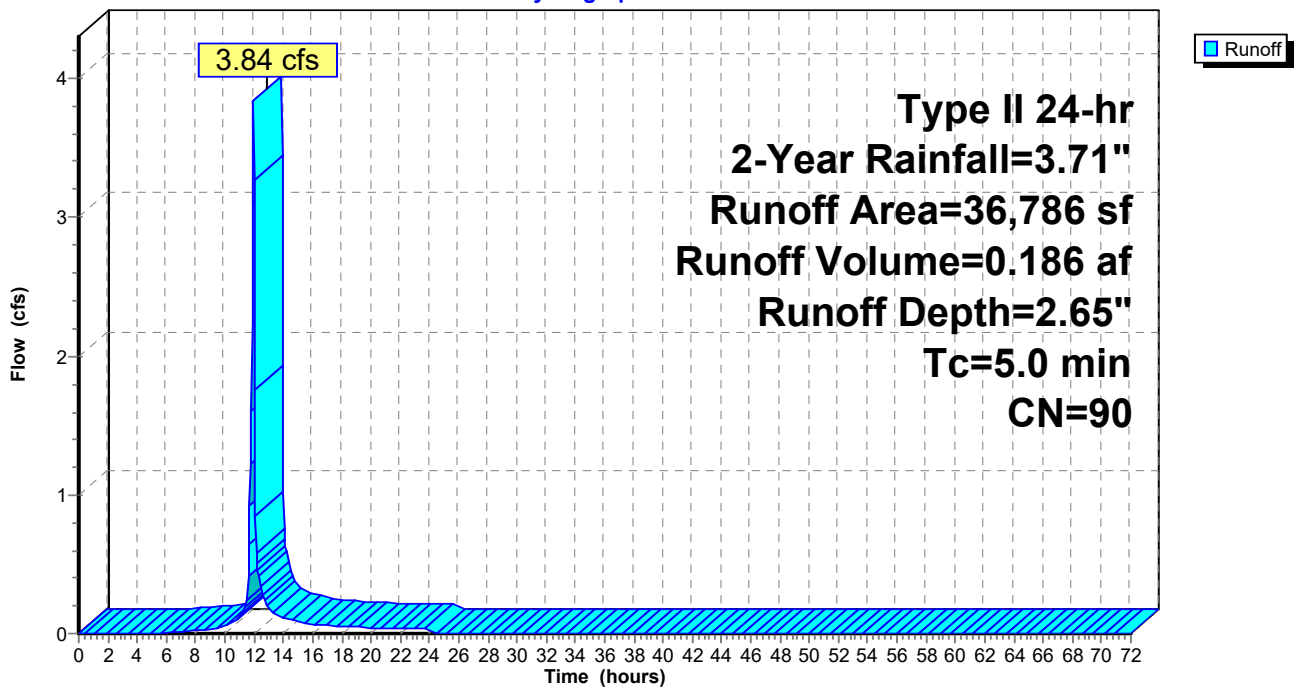
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-Year Rainfall=3.71"

Area (sf)	CN	Description
24,801	98	Paved parking, HSG C
11,985	74	>75% Grass cover, Good, HSG C
36,786	90	Weighted Average
11,985		32.58% Pervious Area
24,801		67.42% Impervious Area

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

Subcatchment 1S: to dry pond

Hydrograph



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Proposed
Type II 24-hr 2-Year Rainfall=3.71"

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Page 9

Hydrograph for Subcatchment 1S: to dry pond

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	51.00	3.71	2.65	0.00
1.00	0.04	0.00	0.00	52.00	3.71	2.65	0.00
2.00	0.08	0.00	0.00	53.00	3.71	2.65	0.00
3.00	0.13	0.00	0.00	54.00	3.71	2.65	0.00
4.00	0.18	0.00	0.00	55.00	3.71	2.65	0.00
5.00	0.23	0.00	0.00	56.00	3.71	2.65	0.00
6.00	0.30	0.00	0.01	57.00	3.71	2.65	0.00
7.00	0.37	0.02	0.01	58.00	3.71	2.65	0.00
8.00	0.45	0.04	0.02	59.00	3.71	2.65	0.00
9.00	0.55	0.07	0.04	60.00	3.71	2.65	0.00
10.00	0.67	0.13	0.06	61.00	3.71	2.65	0.00
11.00	0.87	0.24	0.13	62.00	3.71	2.65	0.00
12.00	2.46	1.50	3.27	63.00	3.71	2.65	0.00
13.00	2.86	1.86	0.19	64.00	3.71	2.65	0.00
14.00	3.04	2.02	0.11	65.00	3.71	2.65	0.00
15.00	3.17	2.14	0.09	66.00	3.71	2.65	0.00
16.00	3.26	2.23	0.07	67.00	3.71	2.65	0.00
17.00	3.35	2.30	0.06	68.00	3.71	2.65	0.00
18.00	3.42	2.37	0.05	69.00	3.71	2.65	0.00
19.00	3.48	2.43	0.05	70.00	3.71	2.65	0.00
20.00	3.53	2.48	0.04	71.00	3.71	2.65	0.00
21.00	3.58	2.52	0.04	72.00	3.71	2.65	0.00
22.00	3.62	2.56	0.04				
23.00	3.67	2.61	0.03				
24.00	3.71	2.65	0.03				
25.00	3.71	2.65	0.00				
26.00	3.71	2.65	0.00				
27.00	3.71	2.65	0.00				
28.00	3.71	2.65	0.00				
29.00	3.71	2.65	0.00				
30.00	3.71	2.65	0.00				
31.00	3.71	2.65	0.00				
32.00	3.71	2.65	0.00				
33.00	3.71	2.65	0.00				
34.00	3.71	2.65	0.00				
35.00	3.71	2.65	0.00				
36.00	3.71	2.65	0.00				
37.00	3.71	2.65	0.00				
38.00	3.71	2.65	0.00				
39.00	3.71	2.65	0.00				
40.00	3.71	2.65	0.00				
41.00	3.71	2.65	0.00				
42.00	3.71	2.65	0.00				
43.00	3.71	2.65	0.00				
44.00	3.71	2.65	0.00				
45.00	3.71	2.65	0.00				
46.00	3.71	2.65	0.00				
47.00	3.71	2.65	0.00				
48.00	3.71	2.65	0.00				
49.00	3.71	2.65	0.00				
50.00	3.71	2.65	0.00				

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Proposed
Type II 24-hr 2-Year Rainfall=3.71"

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Page 10

Summary for Subcatchment 2S: runoff north

Runoff = 0.52 cfs @ 11.96 hrs, Volume= 0.024 af, Depth= 1.39"
Routed to Link 2L : total prd

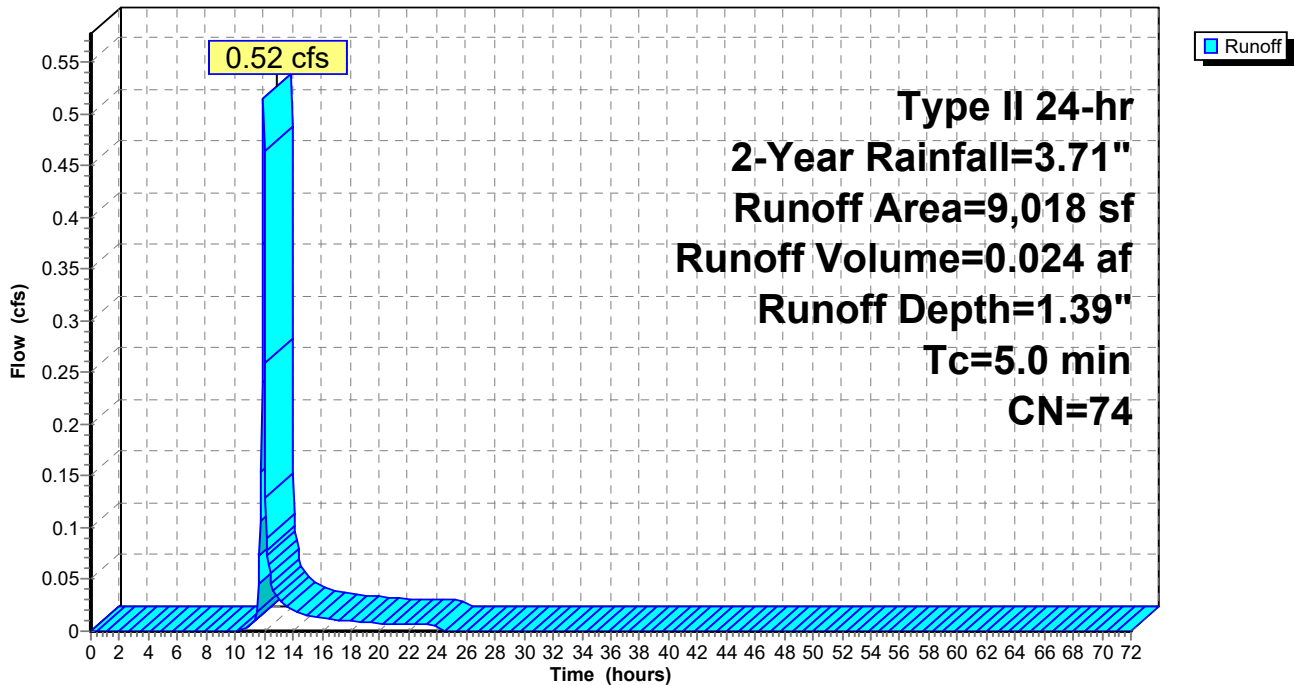
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-Year Rainfall=3.71"

Area (sf)	CN	Description
0	98	Paved parking, HSG C
9,018	74	>75% Grass cover, Good, HSG C
9,018	74	Weighted Average
9,018		100.00% Pervious Area

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

Subcatchment 2S: runoff north

Hydrograph



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Proposed
Type II 24-hr 2-Year Rainfall=3.71"

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Page 11

Hydrograph for Subcatchment 2S: runoff north

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	51.00	3.71	1.39	0.00
1.00	0.04	0.00	0.00	52.00	3.71	1.39	0.00
2.00	0.08	0.00	0.00	53.00	3.71	1.39	0.00
3.00	0.13	0.00	0.00	54.00	3.71	1.39	0.00
4.00	0.18	0.00	0.00	55.00	3.71	1.39	0.00
5.00	0.23	0.00	0.00	56.00	3.71	1.39	0.00
6.00	0.30	0.00	0.00	57.00	3.71	1.39	0.00
7.00	0.37	0.00	0.00	58.00	3.71	1.39	0.00
8.00	0.45	0.00	0.00	59.00	3.71	1.39	0.00
9.00	0.55	0.00	0.00	60.00	3.71	1.39	0.00
10.00	0.67	0.00	0.00	61.00	3.71	1.39	0.00
11.00	0.87	0.01	0.00	62.00	3.71	1.39	0.00
12.00	2.46	0.59	0.46	63.00	3.71	1.39	0.00
13.00	2.86	0.82	0.03	64.00	3.71	1.39	0.00
14.00	3.04	0.94	0.02	65.00	3.71	1.39	0.00
15.00	3.17	1.02	0.02	66.00	3.71	1.39	0.00
16.00	3.26	1.08	0.01	67.00	3.71	1.39	0.00
17.00	3.35	1.13	0.01	68.00	3.71	1.39	0.00
18.00	3.42	1.18	0.01	69.00	3.71	1.39	0.00
19.00	3.48	1.23	0.01	70.00	3.71	1.39	0.00
20.00	3.53	1.26	0.01	71.00	3.71	1.39	0.00
21.00	3.58	1.29	0.01	72.00	3.71	1.39	0.00
22.00	3.62	1.33	0.01				
23.00	3.67	1.36	0.01				
24.00	3.71	1.39	0.01				
25.00	3.71	1.39	0.00				
26.00	3.71	1.39	0.00				
27.00	3.71	1.39	0.00				
28.00	3.71	1.39	0.00				
29.00	3.71	1.39	0.00				
30.00	3.71	1.39	0.00				
31.00	3.71	1.39	0.00				
32.00	3.71	1.39	0.00				
33.00	3.71	1.39	0.00				
34.00	3.71	1.39	0.00				
35.00	3.71	1.39	0.00				
36.00	3.71	1.39	0.00				
37.00	3.71	1.39	0.00				
38.00	3.71	1.39	0.00				
39.00	3.71	1.39	0.00				
40.00	3.71	1.39	0.00				
41.00	3.71	1.39	0.00				
42.00	3.71	1.39	0.00				
43.00	3.71	1.39	0.00				
44.00	3.71	1.39	0.00				
45.00	3.71	1.39	0.00				
46.00	3.71	1.39	0.00				
47.00	3.71	1.39	0.00				
48.00	3.71	1.39	0.00				
49.00	3.71	1.39	0.00				
50.00	3.71	1.39	0.00				

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Proposed
Type II 24-hr 2-Year Rainfall=3.71"

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Page 12

Summary for Pond 3P: dry basin

Inflow Area = 0.844 ac, 67.42% Impervious, Inflow Depth = 2.65" for 2-Year event
 Inflow = 3.84 cfs @ 11.95 hrs, Volume= 0.186 af
 Outflow = 2.34 cfs @ 12.03 hrs, Volume= 0.186 af, Atten= 39%, Lag= 4.8 min
 Primary = 2.34 cfs @ 12.03 hrs, Volume= 0.186 af
 Routed to Link 2L : total prd

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 558.69' @ 12.03 hrs Surf.Area= 2,262 sf Storage= 3,003 cf
 Flood Elev= 558.29' Surf.Area= 2,021 sf Storage= 2,139 cf

Plug-Flow detention time= 417.3 min calculated for 0.186 af (100% of inflow)
 Center-of-Mass det. time= 415.7 min (1,212.9 - 797.3)

Volume	Invert	Avail.Storage	Storage Description
#1	557.00'	6,505 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
557.00	1,308	0	0
558.00	1,848	1,578	1,578
559.00	2,445	2,147	3,725
559.30	2,658	765	4,490
560.00	3,100	2,015	6,505

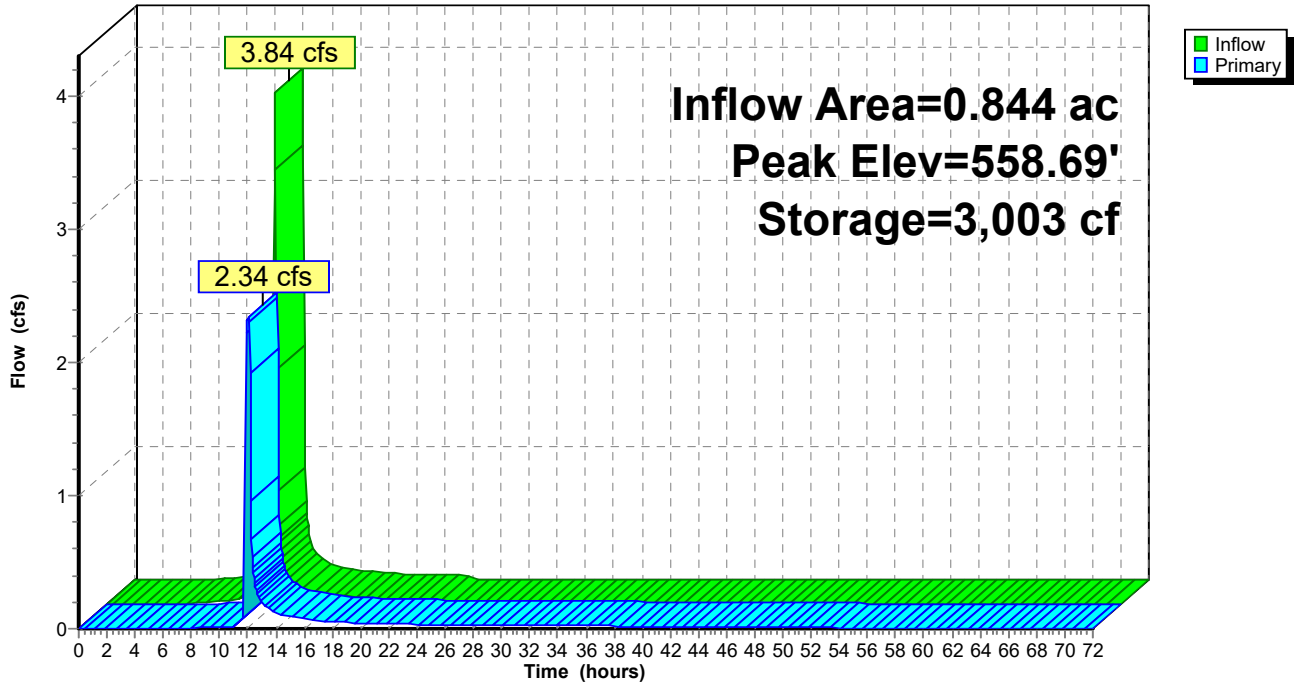
Device	Routing	Invert	Outlet Devices
#1	Primary	557.00'	10.0" Round OCS outlet L= 30.0' Ke= 0.900 Inlet / Outlet Invert= 557.00' / 556.00' S= 0.0333 '/' Cc= 0.900 n= 0.012, Flow Area= 0.55 sf
#2	Device 1	557.00'	1.0" Vert. Detention inlet C= 0.600 Limited to weir flow at low heads
#3	Device 1	558.29'	24.0" Horiz. OCS grate C= 0.600 Limited to weir flow at low heads
#4	Primary	559.30'	10.0' long x 3.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Primary OutFlow Max=2.33 cfs @ 12.03 hrs HW=558.68' TW=0.00' (Dynamic Tailwater)

- 1=OCS outlet (Inlet Controls 2.33 cfs @ 4.28 fps)
- 2=Detention inlet (Passes < 0.03 cfs potential flow)
- 3=OCS grate (Passes < 5.05 cfs potential flow)
- 4=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 3P: dry basin

Hydrograph



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Proposed
Type II 24-hr 2-Year Rainfall=3.71"

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Page 14

Hydrograph for Pond 3P: dry basin

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	557.00	0.00
2.50	0.00	0	557.00	0.00
5.00	0.00	0	557.00	0.00
7.50	0.02	69	557.05	0.00
10.00	0.06	310	557.23	0.01
12.50	0.30	2,266	558.35	0.35
15.00	0.09	2,181	558.31	0.09
17.50	0.06	2,164	558.30	0.06
20.00	0.04	2,153	558.30	0.04
22.50	0.04	2,148	558.29	0.04
25.00	0.00	2,049	558.25	0.03
27.50	0.00	1,797	558.12	0.03
30.00	0.00	1,559	557.99	0.03
32.50	0.00	1,337	557.87	0.02
35.00	0.00	1,130	557.75	0.02
37.50	0.00	939	557.63	0.02
40.00	0.00	766	557.53	0.02
42.50	0.00	610	557.43	0.02
45.00	0.00	472	557.34	0.01
47.50	0.00	353	557.26	0.01
50.00	0.00	253	557.19	0.01
52.50	0.00	173	557.13	0.01
55.00	0.00	114	557.09	0.01
57.50	0.00	75	557.06	0.00
60.00	0.00	53	557.04	0.00
62.50	0.00	41	557.03	0.00
65.00	0.00	32	557.02	0.00
67.50	0.00	27	557.02	0.00
70.00	0.00	23	557.02	0.00

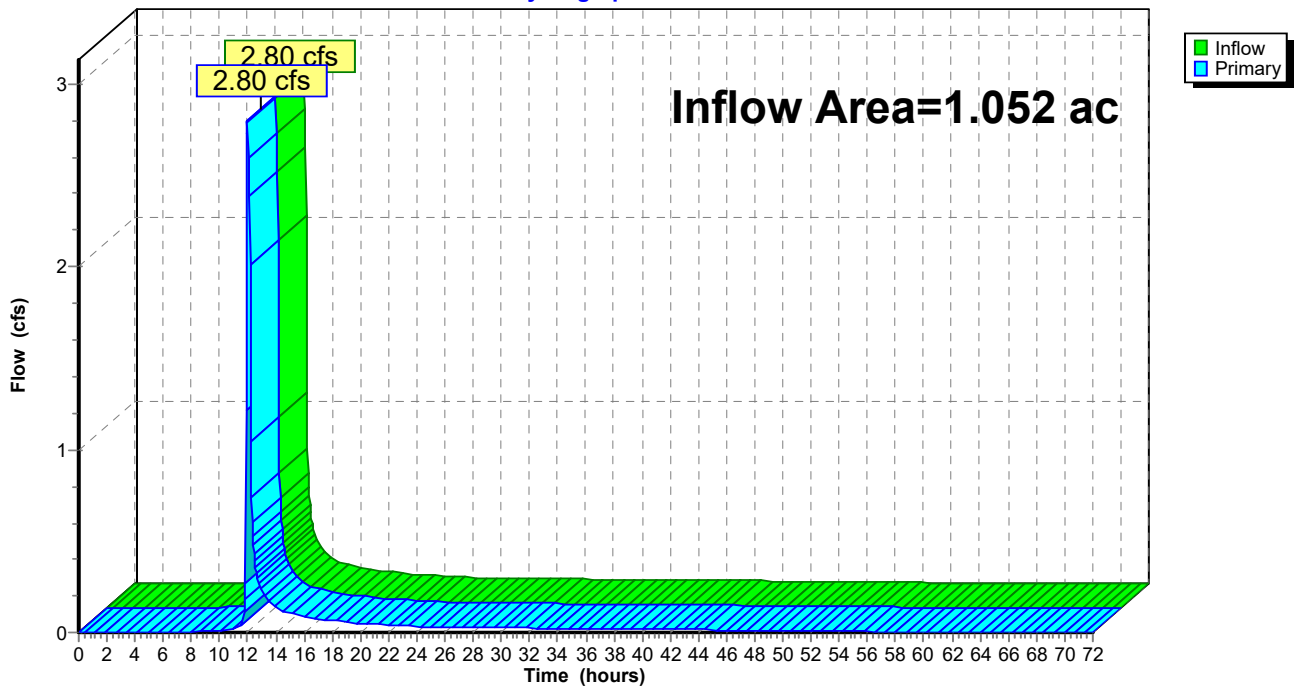
Summary for Link 2L: total prd

Inflow Area = 1.052 ac, 54.15% Impervious, Inflow Depth > 2.39" for 2-Year event
Inflow = 2.80 cfs @ 11.99 hrs, Volume= 0.210 af
Primary = 2.80 cfs @ 11.99 hrs, Volume= 0.210 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 2L: total prd

Hydrograph



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Proposed
Type II 24-hr 2-Year Rainfall=3.71"

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Page 16

Hydrograph for Link 2L: total prd

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	51.00	0.01	0.00	0.01
1.00	0.00	0.00	0.00	52.00	0.01	0.00	0.01
2.00	0.00	0.00	0.00	53.00	0.01	0.00	0.01
3.00	0.00	0.00	0.00	54.00	0.01	0.00	0.01
4.00	0.00	0.00	0.00	55.00	0.01	0.00	0.01
5.00	0.00	0.00	0.00	56.00	0.00	0.00	0.00
6.00	0.00	0.00	0.00	57.00	0.00	0.00	0.00
7.00	0.00	0.00	0.00	58.00	0.00	0.00	0.00
8.00	0.00	0.00	0.00	59.00	0.00	0.00	0.00
9.00	0.01	0.00	0.01	60.00	0.00	0.00	0.00
10.00	0.01	0.00	0.01	61.00	0.00	0.00	0.00
11.00	0.02	0.00	0.02	62.00	0.00	0.00	0.00
12.00	2.79	0.00	2.79	63.00	0.00	0.00	0.00
13.00	0.23	0.00	0.23	64.00	0.00	0.00	0.00
14.00	0.14	0.00	0.14	65.00	0.00	0.00	0.00
15.00	0.11	0.00	0.11	66.00	0.00	0.00	0.00
16.00	0.08	0.00	0.08	67.00	0.00	0.00	0.00
17.00	0.07	0.00	0.07	68.00	0.00	0.00	0.00
18.00	0.06	0.00	0.06	69.00	0.00	0.00	0.00
19.00	0.06	0.00	0.06	70.00	0.00	0.00	0.00
20.00	0.05	0.00	0.05	71.00	0.00	0.00	0.00
21.00	0.04	0.00	0.04	72.00	0.00	0.00	0.00
22.00	0.04	0.00	0.04				
23.00	0.04	0.00	0.04				
24.00	0.04	0.00	0.04				
25.00	0.03	0.00	0.03				
26.00	0.03	0.00	0.03				
27.00	0.03	0.00	0.03				
28.00	0.03	0.00	0.03				
29.00	0.03	0.00	0.03				
30.00	0.03	0.00	0.03				
31.00	0.02	0.00	0.02				
32.00	0.02	0.00	0.02				
33.00	0.02	0.00	0.02				
34.00	0.02	0.00	0.02				
35.00	0.02	0.00	0.02				
36.00	0.02	0.00	0.02				
37.00	0.02	0.00	0.02				
38.00	0.02	0.00	0.02				
39.00	0.02	0.00	0.02				
40.00	0.02	0.00	0.02				
41.00	0.02	0.00	0.02				
42.00	0.02	0.00	0.02				
43.00	0.02	0.00	0.02				
44.00	0.02	0.00	0.02				
45.00	0.01	0.00	0.01				
46.00	0.01	0.00	0.01				
47.00	0.01	0.00	0.01				
48.00	0.01	0.00	0.01				
49.00	0.01	0.00	0.01				
50.00	0.01	0.00	0.01				

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Proposed
Type II 24-hr 10-Year Rainfall=5.40"

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Page 17

Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: to dry pond

Runoff Area=36,786 sf 67.42% Impervious Runoff Depth=4.26"
Tc=5.0 min CN=90 Runoff=6.01 cfs 0.300 af

Subcatchment2S: runoff north

Runoff Area=9,018 sf 0.00% Impervious Runoff Depth=2.69"
Tc=5.0 min CN=74 Runoff=1.00 cfs 0.046 af

Pond 3P: dry basin

Peak Elev=559.25' Storage=4,361 cf Inflow=6.01 cfs 0.300 af
Outflow=2.81 cfs 0.300 af

Link 2L: total prd

Inflow=3.65 cfs 0.346 af
Primary=3.65 cfs 0.346 af

Total Runoff Area = 1.052 ac Runoff Volume = 0.346 af Average Runoff Depth = 3.95"
45.85% Pervious = 0.482 ac 54.15% Impervious = 0.569 ac

Summary for Subcatchment 1S: to dry pond

Runoff = 6.01 cfs @ 11.95 hrs, Volume= 0.300 af, Depth= 4.26"
Routed to Pond 3P : dry basin

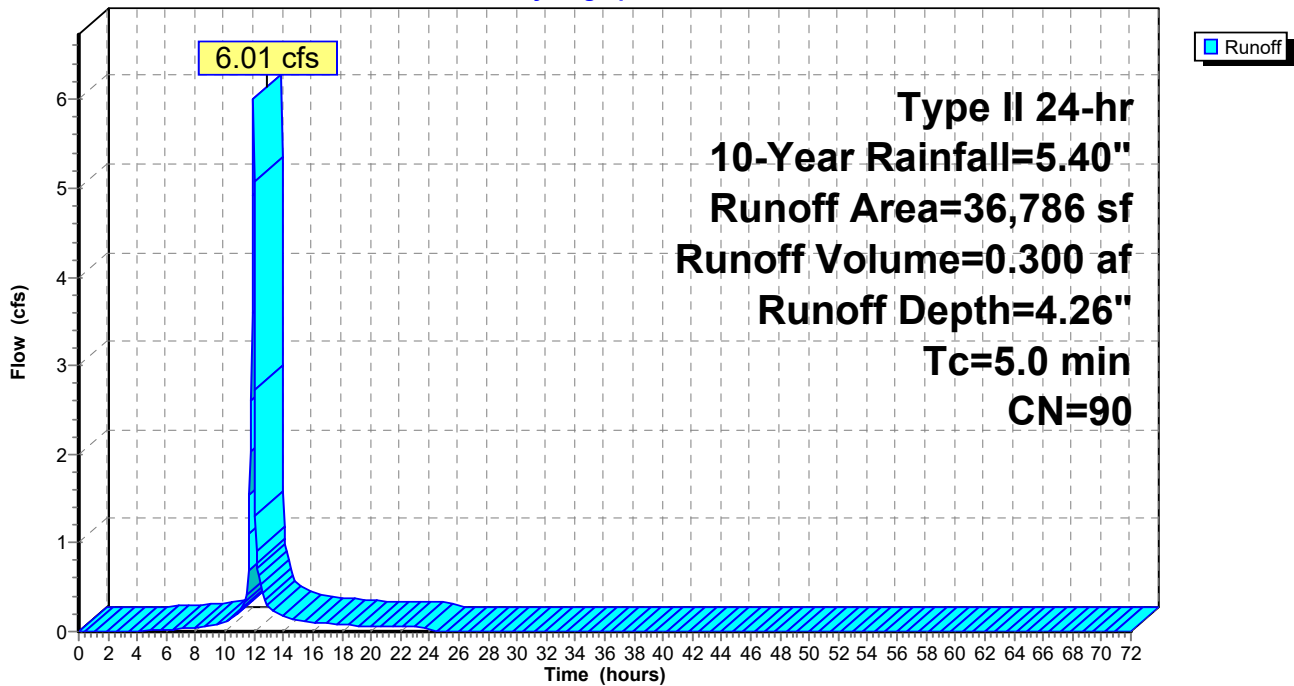
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-Year Rainfall=5.40"

Area (sf)	CN	Description
24,801	98	Paved parking, HSG C
11,985	74	>75% Grass cover, Good, HSG C
36,786	90	Weighted Average
11,985		32.58% Pervious Area
24,801		67.42% Impervious Area

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

Subcatchment 1S: to dry pond

Hydrograph



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Type II 24-hr 10-Year Rainfall=5.40"

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Page 19

Hydrograph for Subcatchment 1S: to dry pond

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	51.00	5.40	4.26	0.00
1.00	0.06	0.00	0.00	52.00	5.40	4.26	0.00
2.00	0.12	0.00	0.00	53.00	5.40	4.26	0.00
3.00	0.19	0.00	0.00	54.00	5.40	4.26	0.00
4.00	0.26	0.00	0.00	55.00	5.40	4.26	0.00
5.00	0.34	0.01	0.01	56.00	5.40	4.26	0.00
6.00	0.43	0.03	0.02	57.00	5.40	4.26	0.00
7.00	0.53	0.07	0.03	58.00	5.40	4.26	0.00
8.00	0.65	0.12	0.05	59.00	5.40	4.26	0.00
9.00	0.79	0.19	0.08	60.00	5.40	4.26	0.00
10.00	0.98	0.31	0.11	61.00	5.40	4.26	0.00
11.00	1.27	0.51	0.23	62.00	5.40	4.26	0.00
12.00	3.58	2.52	5.07	63.00	5.40	4.26	0.00
13.00	4.17	3.08	0.28	64.00	5.40	4.26	0.00
14.00	4.43	3.33	0.17	65.00	5.40	4.26	0.00
15.00	4.61	3.50	0.13	66.00	5.40	4.26	0.00
16.00	4.75	3.64	0.10	67.00	5.40	4.26	0.00
17.00	4.87	3.75	0.09	68.00	5.40	4.26	0.00
18.00	4.97	3.85	0.08	69.00	5.40	4.26	0.00
19.00	5.06	3.94	0.07	70.00	5.40	4.26	0.00
20.00	5.14	4.01	0.06	71.00	5.40	4.26	0.00
21.00	5.21	4.08	0.06	72.00	5.40	4.26	0.00
22.00	5.28	4.14	0.05				
23.00	5.34	4.20	0.05				
24.00	5.40	4.26	0.05				
25.00	5.40	4.26	0.00				
26.00	5.40	4.26	0.00				
27.00	5.40	4.26	0.00				
28.00	5.40	4.26	0.00				
29.00	5.40	4.26	0.00				
30.00	5.40	4.26	0.00				
31.00	5.40	4.26	0.00				
32.00	5.40	4.26	0.00				
33.00	5.40	4.26	0.00				
34.00	5.40	4.26	0.00				
35.00	5.40	4.26	0.00				
36.00	5.40	4.26	0.00				
37.00	5.40	4.26	0.00				
38.00	5.40	4.26	0.00				
39.00	5.40	4.26	0.00				
40.00	5.40	4.26	0.00				
41.00	5.40	4.26	0.00				
42.00	5.40	4.26	0.00				
43.00	5.40	4.26	0.00				
44.00	5.40	4.26	0.00				
45.00	5.40	4.26	0.00				
46.00	5.40	4.26	0.00				
47.00	5.40	4.26	0.00				
48.00	5.40	4.26	0.00				
49.00	5.40	4.26	0.00				
50.00	5.40	4.26	0.00				

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Proposed
Type II 24-hr 10-Year Rainfall=5.40"

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Page 20

Summary for Subcatchment 2S: runoff north

Runoff = 1.00 cfs @ 11.96 hrs, Volume= 0.046 af, Depth= 2.69"
Routed to Link 2L : total prd

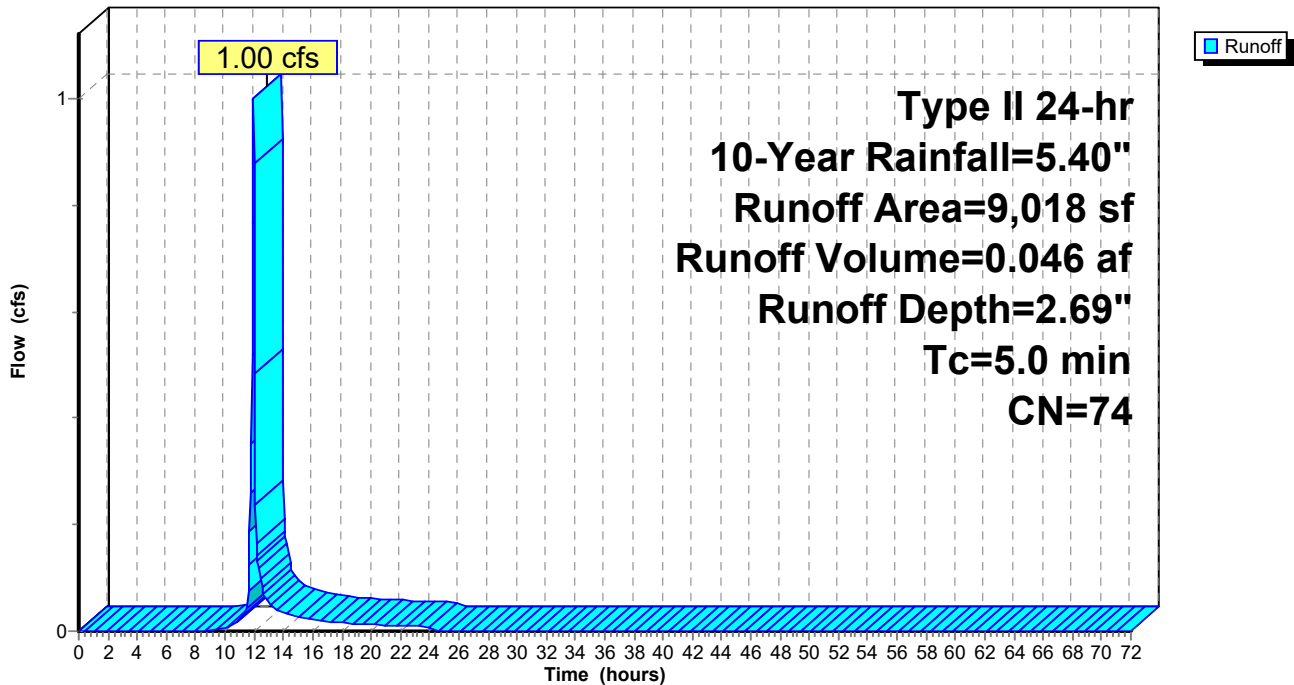
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-Year Rainfall=5.40"

Area (sf)	CN	Description
0	98	Paved parking, HSG C
9,018	74	>75% Grass cover, Good, HSG C
9,018	74	Weighted Average
9,018		100.00% Pervious Area

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

Subcatchment 2S: runoff north

Hydrograph



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Proposed
Type II 24-hr 10-Year Rainfall=5.40"

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Page 21

Hydrograph for Subcatchment 2S: runoff north

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	51.00	5.40	2.69	0.00
1.00	0.06	0.00	0.00	52.00	5.40	2.69	0.00
2.00	0.12	0.00	0.00	53.00	5.40	2.69	0.00
3.00	0.19	0.00	0.00	54.00	5.40	2.69	0.00
4.00	0.26	0.00	0.00	55.00	5.40	2.69	0.00
5.00	0.34	0.00	0.00	56.00	5.40	2.69	0.00
6.00	0.43	0.00	0.00	57.00	5.40	2.69	0.00
7.00	0.53	0.00	0.00	58.00	5.40	2.69	0.00
8.00	0.65	0.00	0.00	59.00	5.40	2.69	0.00
9.00	0.79	0.00	0.00	60.00	5.40	2.69	0.00
10.00	0.98	0.02	0.01	61.00	5.40	2.69	0.00
11.00	1.27	0.08	0.02	62.00	5.40	2.69	0.00
12.00	3.58	1.30	0.88	63.00	5.40	2.69	0.00
13.00	4.17	1.72	0.05	64.00	5.40	2.69	0.00
14.00	4.43	1.92	0.03	65.00	5.40	2.69	0.00
15.00	4.61	2.06	0.03	66.00	5.40	2.69	0.00
16.00	4.75	2.17	0.02	67.00	5.40	2.69	0.00
17.00	4.87	2.26	0.02	68.00	5.40	2.69	0.00
18.00	4.97	2.34	0.02	69.00	5.40	2.69	0.00
19.00	5.06	2.42	0.01	70.00	5.40	2.69	0.00
20.00	5.14	2.48	0.01	71.00	5.40	2.69	0.00
21.00	5.21	2.53	0.01	72.00	5.40	2.69	0.00
22.00	5.28	2.59	0.01				
23.00	5.34	2.64	0.01				
24.00	5.40	2.69	0.01				
25.00	5.40	2.69	0.00				
26.00	5.40	2.69	0.00				
27.00	5.40	2.69	0.00				
28.00	5.40	2.69	0.00				
29.00	5.40	2.69	0.00				
30.00	5.40	2.69	0.00				
31.00	5.40	2.69	0.00				
32.00	5.40	2.69	0.00				
33.00	5.40	2.69	0.00				
34.00	5.40	2.69	0.00				
35.00	5.40	2.69	0.00				
36.00	5.40	2.69	0.00				
37.00	5.40	2.69	0.00				
38.00	5.40	2.69	0.00				
39.00	5.40	2.69	0.00				
40.00	5.40	2.69	0.00				
41.00	5.40	2.69	0.00				
42.00	5.40	2.69	0.00				
43.00	5.40	2.69	0.00				
44.00	5.40	2.69	0.00				
45.00	5.40	2.69	0.00				
46.00	5.40	2.69	0.00				
47.00	5.40	2.69	0.00				
48.00	5.40	2.69	0.00				
49.00	5.40	2.69	0.00				
50.00	5.40	2.69	0.00				

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Proposed
Type II 24-hr 10-Year Rainfall=5.40"

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Page 22

Summary for Pond 3P: dry basin

Inflow Area = 0.844 ac, 67.42% Impervious, Inflow Depth = 4.26" for 10-Year event
 Inflow = 6.01 cfs @ 11.95 hrs, Volume= 0.300 af
 Outflow = 2.81 cfs @ 12.05 hrs, Volume= 0.300 af, Atten= 53%, Lag= 6.2 min
 Primary = 2.81 cfs @ 12.05 hrs, Volume= 0.300 af
 Routed to Link 2L : total prd

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 559.25' @ 12.05 hrs Surf.Area= 2,623 sf Storage= 4,361 cf
 Flood Elev= 558.29' Surf.Area= 2,021 sf Storage= 2,139 cf

Plug-Flow detention time= 271.3 min calculated for 0.299 af (100% of inflow)
 Center-of-Mass det. time= 272.0 min (1,055.9 - 784.0)

Volume	Invert	Avail.Storage	Storage Description
#1	557.00'	6,505 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
557.00	1,308	0	0
558.00	1,848	1,578	1,578
559.00	2,445	2,147	3,725
559.30	2,658	765	4,490
560.00	3,100	2,015	6,505

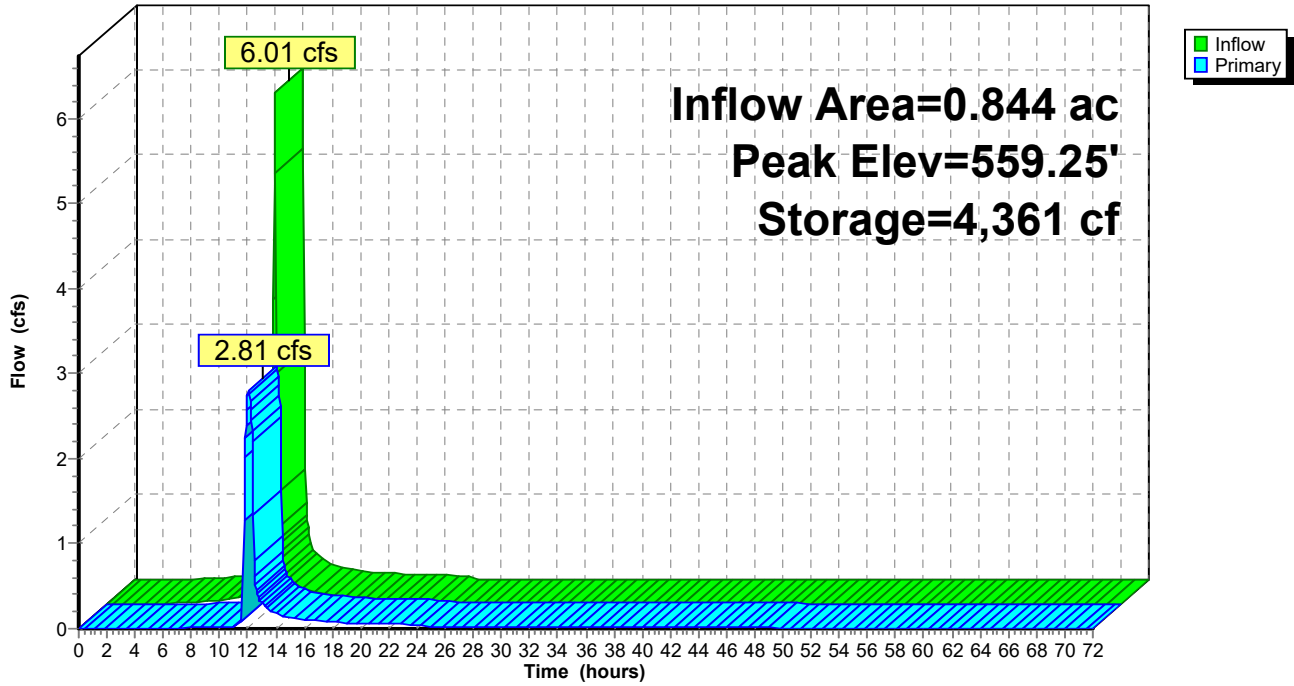
Device	Routing	Invert	Outlet Devices
#1	Primary	557.00'	10.0" Round OCS outlet L= 30.0' Ke= 0.900 Inlet / Outlet Invert= 557.00' / 556.00' S= 0.0333 '/' Cc= 0.900 n= 0.012, Flow Area= 0.55 sf
#2	Device 1	557.00'	1.0" Vert. Detention inlet C= 0.600 Limited to weir flow at low heads
#3	Device 1	558.29'	24.0" Horiz. OCS grate C= 0.600 Limited to weir flow at low heads
#4	Primary	559.30'	10.0' long x 3.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Primary OutFlow Max=2.80 cfs @ 12.05 hrs HW=559.25' TW=0.00' (Dynamic Tailwater)

- 1=OCS outlet (Inlet Controls 2.80 cfs @ 5.14 fps)
- 2=Detention inlet (Passes < 0.04 cfs potential flow)
- 3=OCS grate (Passes < 14.79 cfs potential flow)
- 4=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 3P: dry basin

Hydrograph



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Proposed
Type II 24-hr 10-Year Rainfall=5.40"

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Page 24

Hydrograph for Pond 3P: dry basin

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	557.00	0.00
2.50	0.00	0	557.00	0.00
5.00	0.01	30	557.02	0.00
7.50	0.04	224	557.17	0.01
10.00	0.11	739	557.51	0.02
12.50	0.46	2,329	558.38	0.61
15.00	0.13	2,200	558.32	0.14
17.50	0.09	2,179	558.31	0.09
20.00	0.06	2,166	558.30	0.06
22.50	0.05	2,161	558.30	0.05
25.00	0.00	2,059	558.25	0.03
27.50	0.00	1,806	558.12	0.03
30.00	0.00	1,568	557.99	0.03
32.50	0.00	1,345	557.87	0.02
35.00	0.00	1,137	557.75	0.02
37.50	0.00	946	557.64	0.02
40.00	0.00	772	557.53	0.02
42.50	0.00	616	557.43	0.02
45.00	0.00	477	557.34	0.01
47.50	0.00	357	557.26	0.01
50.00	0.00	257	557.19	0.01
52.50	0.00	176	557.13	0.01
55.00	0.00	116	557.09	0.01
57.50	0.00	76	557.06	0.00
60.00	0.00	54	557.04	0.00
62.50	0.00	41	557.03	0.00
65.00	0.00	33	557.02	0.00
67.50	0.00	27	557.02	0.00
70.00	0.00	23	557.02	0.00

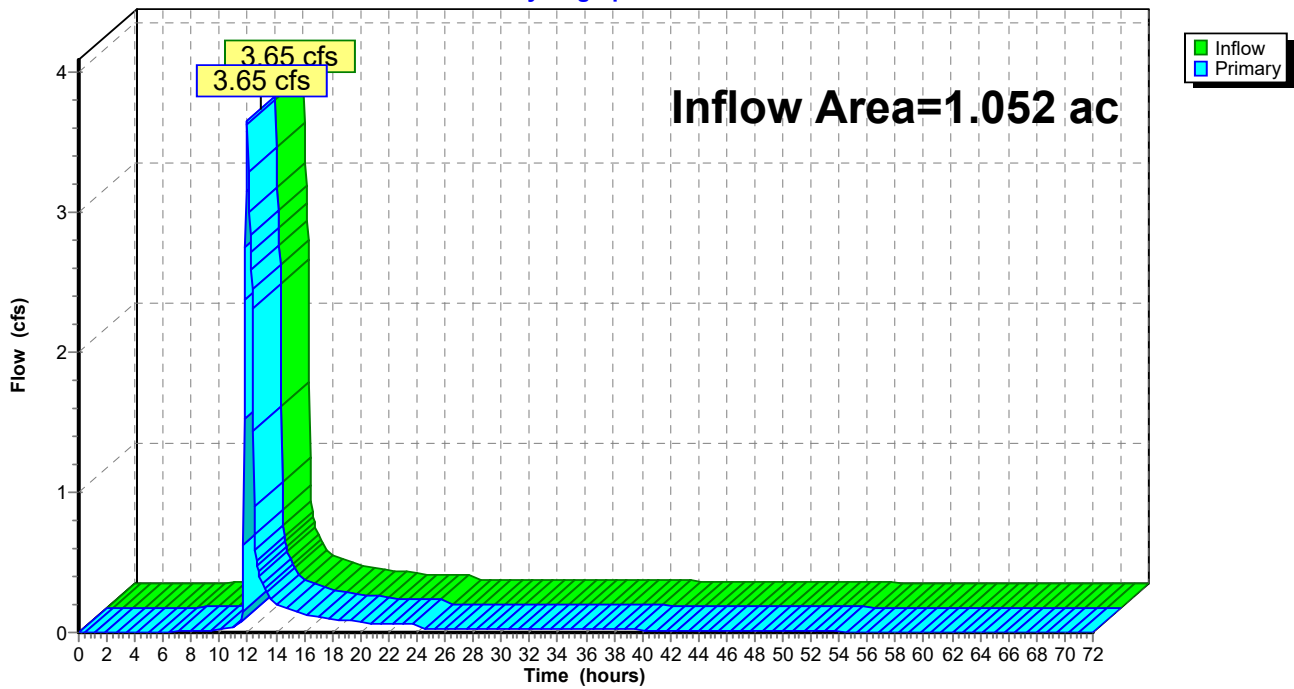
Summary for Link 2L: total prd

Inflow Area = 1.052 ac, 54.15% Impervious, Inflow Depth = 3.95" for 10-Year event
Inflow = 3.65 cfs @ 11.98 hrs, Volume= 0.346 af
Primary = 3.65 cfs @ 11.98 hrs, Volume= 0.346 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 2L: total prd

Hydrograph



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Proposed
Type II 24-hr 10-Year Rainfall=5.40"

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Page 26

Hydrograph for Link 2L: total prd

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	51.00	0.01	0.00	0.01
1.00	0.00	0.00	0.00	52.00	0.01	0.00	0.01
2.00	0.00	0.00	0.00	53.00	0.01	0.00	0.01
3.00	0.00	0.00	0.00	54.00	0.01	0.00	0.01
4.00	0.00	0.00	0.00	55.00	0.01	0.00	0.01
5.00	0.00	0.00	0.00	56.00	0.00	0.00	0.00
6.00	0.00	0.00	0.00	57.00	0.00	0.00	0.00
7.00	0.01	0.00	0.01	58.00	0.00	0.00	0.00
8.00	0.01	0.00	0.01	59.00	0.00	0.00	0.00
9.00	0.02	0.00	0.02	60.00	0.00	0.00	0.00
10.00	0.02	0.00	0.02	61.00	0.00	0.00	0.00
11.00	0.04	0.00	0.04	62.00	0.00	0.00	0.00
12.00	3.63	0.00	3.63	63.00	0.00	0.00	0.00
13.00	0.36	0.00	0.36	64.00	0.00	0.00	0.00
14.00	0.21	0.00	0.21	65.00	0.00	0.00	0.00
15.00	0.16	0.00	0.16	66.00	0.00	0.00	0.00
16.00	0.13	0.00	0.13	67.00	0.00	0.00	0.00
17.00	0.11	0.00	0.11	68.00	0.00	0.00	0.00
18.00	0.10	0.00	0.10	69.00	0.00	0.00	0.00
19.00	0.09	0.00	0.09	70.00	0.00	0.00	0.00
20.00	0.07	0.00	0.07	71.00	0.00	0.00	0.00
21.00	0.07	0.00	0.07	72.00	0.00	0.00	0.00
22.00	0.06	0.00	0.06				
23.00	0.06	0.00	0.06				
24.00	0.06	0.00	0.06				
25.00	0.03	0.00	0.03				
26.00	0.03	0.00	0.03				
27.00	0.03	0.00	0.03				
28.00	0.03	0.00	0.03				
29.00	0.03	0.00	0.03				
30.00	0.03	0.00	0.03				
31.00	0.02	0.00	0.02				
32.00	0.02	0.00	0.02				
33.00	0.02	0.00	0.02				
34.00	0.02	0.00	0.02				
35.00	0.02	0.00	0.02				
36.00	0.02	0.00	0.02				
37.00	0.02	0.00	0.02				
38.00	0.02	0.00	0.02				
39.00	0.02	0.00	0.02				
40.00	0.02	0.00	0.02				
41.00	0.02	0.00	0.02				
42.00	0.02	0.00	0.02				
43.00	0.02	0.00	0.02				
44.00	0.02	0.00	0.02				
45.00	0.01	0.00	0.01				
46.00	0.01	0.00	0.01				
47.00	0.01	0.00	0.01				
48.00	0.01	0.00	0.01				
49.00	0.01	0.00	0.01				
50.00	0.01	0.00	0.01				

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Proposed
Type II 24-hr 100-Year Rainfall=8.05"

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Page 28

Summary for Subcatchment 1S: to dry pond

Runoff = 9.37 cfs @ 11.95 hrs, Volume= 0.482 af, Depth= 6.85"
Routed to Pond 3P : dry basin

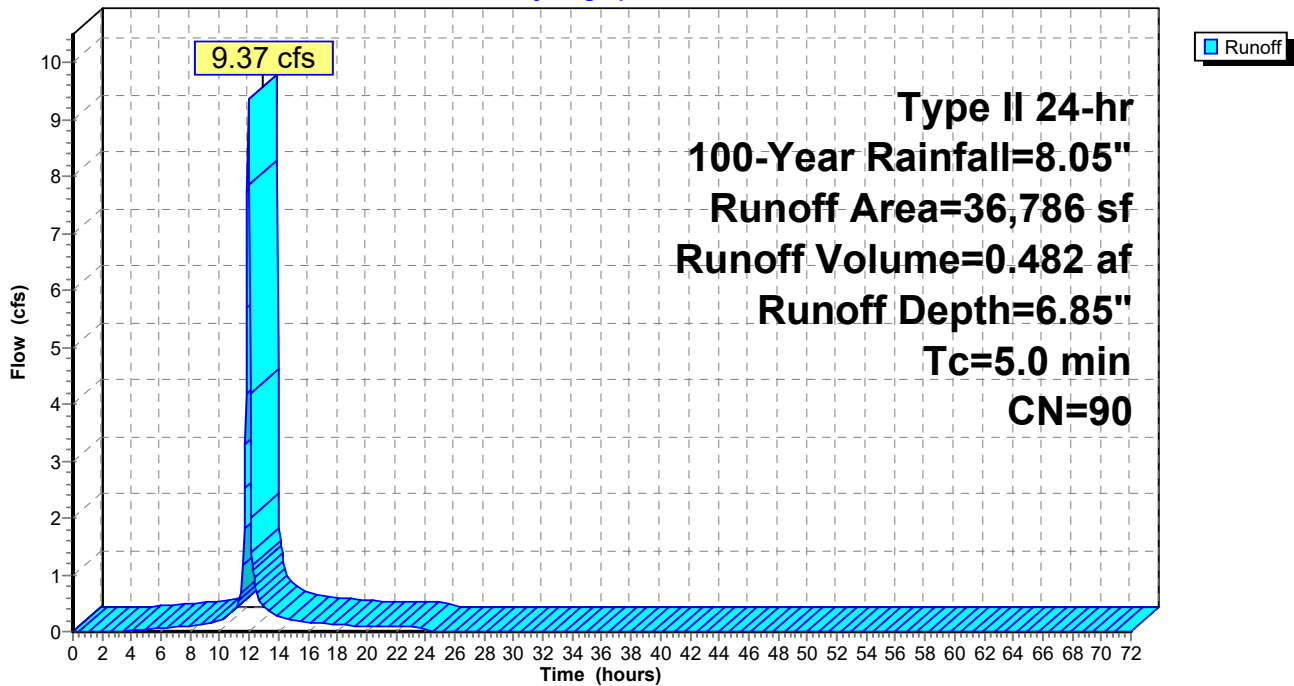
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-Year Rainfall=8.05"

Area (sf)	CN	Description
24,801	98	Paved parking, HSG C
11,985	74	>75% Grass cover, Good, HSG C
36,786	90	Weighted Average
11,985		32.58% Pervious Area
24,801		67.42% Impervious Area

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

Subcatchment 1S: to dry pond

Hydrograph



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Proposed
Type II 24-hr 100-Year Rainfall=8.05"

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Page 29

Hydrograph for Subcatchment 1S: to dry pond

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	51.00	8.05	6.85	0.00
1.00	0.08	0.00	0.00	52.00	8.05	6.85	0.00
2.00	0.18	0.00	0.00	53.00	8.05	6.85	0.00
3.00	0.28	0.00	0.01	54.00	8.05	6.85	0.00
4.00	0.39	0.02	0.02	55.00	8.05	6.85	0.00
5.00	0.51	0.06	0.04	56.00	8.05	6.85	0.00
6.00	0.64	0.12	0.06	57.00	8.05	6.85	0.00
7.00	0.80	0.20	0.08	58.00	8.05	6.85	0.00
8.00	0.97	0.30	0.10	59.00	8.05	6.85	0.00
9.00	1.18	0.45	0.15	60.00	8.05	6.85	0.00
10.00	1.46	0.65	0.20	61.00	8.05	6.85	0.00
11.00	1.89	1.00	0.39	62.00	8.05	6.85	0.00
12.00	5.34	4.20	7.86	63.00	8.05	6.85	0.00
13.00	6.21	5.06	0.43	64.00	8.05	6.85	0.00
14.00	6.60	5.43	0.26	65.00	8.05	6.85	0.00
15.00	6.87	5.70	0.21	66.00	8.05	6.85	0.00
16.00	7.08	5.91	0.16	67.00	8.05	6.85	0.00
17.00	7.26	6.08	0.14	68.00	8.05	6.85	0.00
18.00	7.41	6.23	0.12	69.00	8.05	6.85	0.00
19.00	7.55	6.36	0.11	70.00	8.05	6.85	0.00
20.00	7.66	6.47	0.09	71.00	8.05	6.85	0.00
21.00	7.77	6.58	0.08	72.00	8.05	6.85	0.00
22.00	7.86	6.67	0.08				
23.00	7.96	6.77	0.08				
24.00	8.05	6.85	0.07				
25.00	8.05	6.85	0.00				
26.00	8.05	6.85	0.00				
27.00	8.05	6.85	0.00				
28.00	8.05	6.85	0.00				
29.00	8.05	6.85	0.00				
30.00	8.05	6.85	0.00				
31.00	8.05	6.85	0.00				
32.00	8.05	6.85	0.00				
33.00	8.05	6.85	0.00				
34.00	8.05	6.85	0.00				
35.00	8.05	6.85	0.00				
36.00	8.05	6.85	0.00				
37.00	8.05	6.85	0.00				
38.00	8.05	6.85	0.00				
39.00	8.05	6.85	0.00				
40.00	8.05	6.85	0.00				
41.00	8.05	6.85	0.00				
42.00	8.05	6.85	0.00				
43.00	8.05	6.85	0.00				
44.00	8.05	6.85	0.00				
45.00	8.05	6.85	0.00				
46.00	8.05	6.85	0.00				
47.00	8.05	6.85	0.00				
48.00	8.05	6.85	0.00				
49.00	8.05	6.85	0.00				
50.00	8.05	6.85	0.00				

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Proposed
Type II 24-hr 100-Year Rainfall=8.05"

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Page 30

Summary for Subcatchment 2S: runoff north

Runoff = 1.82 cfs @ 11.96 hrs, Volume= 0.086 af, Depth= 4.97"
Routed to Link 2L : total prd

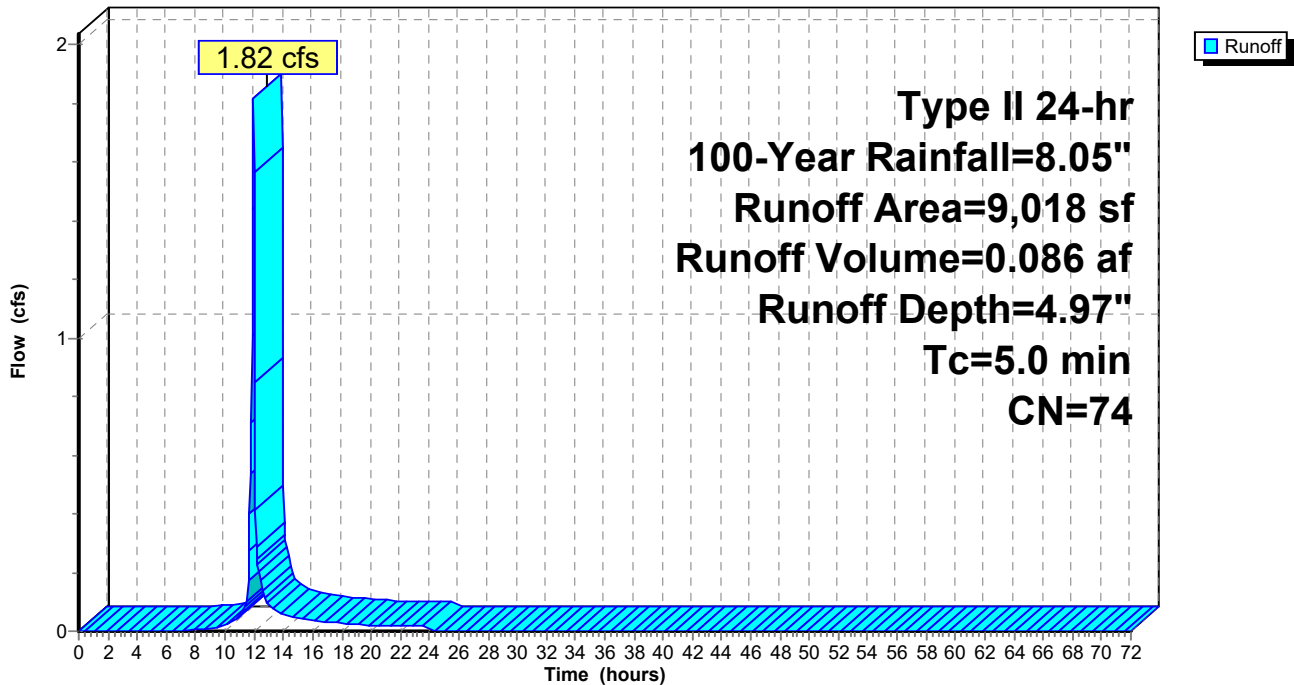
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-Year Rainfall=8.05"

Area (sf)	CN	Description
0	98	Paved parking, HSG C
9,018	74	>75% Grass cover, Good, HSG C
9,018	74	Weighted Average
9,018		100.00% Pervious Area

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

Subcatchment 2S: runoff north

Hydrograph



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Proposed
Type II 24-hr 100-Year Rainfall=8.05"

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Page 31

Hydrograph for Subcatchment 2S: runoff north

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	51.00	8.05	4.97	0.00
1.00	0.08	0.00	0.00	52.00	8.05	4.97	0.00
2.00	0.18	0.00	0.00	53.00	8.05	4.97	0.00
3.00	0.28	0.00	0.00	54.00	8.05	4.97	0.00
4.00	0.39	0.00	0.00	55.00	8.05	4.97	0.00
5.00	0.51	0.00	0.00	56.00	8.05	4.97	0.00
6.00	0.64	0.00	0.00	57.00	8.05	4.97	0.00
7.00	0.80	0.00	0.00	58.00	8.05	4.97	0.00
8.00	0.97	0.02	0.00	59.00	8.05	4.97	0.00
9.00	1.18	0.06	0.01	60.00	8.05	4.97	0.00
10.00	1.46	0.13	0.02	61.00	8.05	4.97	0.00
11.00	1.89	0.30	0.05	62.00	8.05	4.97	0.00
12.00	5.34	2.64	1.57	63.00	8.05	4.97	0.00
13.00	6.21	3.37	0.09	64.00	8.05	4.97	0.00
14.00	6.60	3.70	0.06	65.00	8.05	4.97	0.00
15.00	6.87	3.93	0.04	66.00	8.05	4.97	0.00
16.00	7.08	4.12	0.03	67.00	8.05	4.97	0.00
17.00	7.26	4.27	0.03	68.00	8.05	4.97	0.00
18.00	7.41	4.41	0.03	69.00	8.05	4.97	0.00
19.00	7.55	4.52	0.02	70.00	8.05	4.97	0.00
20.00	7.66	4.63	0.02	71.00	8.05	4.97	0.00
21.00	7.77	4.72	0.02	72.00	8.05	4.97	0.00
22.00	7.86	4.80	0.02				
23.00	7.96	4.89	0.02				
24.00	8.05	4.97	0.02				
25.00	8.05	4.97	0.00				
26.00	8.05	4.97	0.00				
27.00	8.05	4.97	0.00				
28.00	8.05	4.97	0.00				
29.00	8.05	4.97	0.00				
30.00	8.05	4.97	0.00				
31.00	8.05	4.97	0.00				
32.00	8.05	4.97	0.00				
33.00	8.05	4.97	0.00				
34.00	8.05	4.97	0.00				
35.00	8.05	4.97	0.00				
36.00	8.05	4.97	0.00				
37.00	8.05	4.97	0.00				
38.00	8.05	4.97	0.00				
39.00	8.05	4.97	0.00				
40.00	8.05	4.97	0.00				
41.00	8.05	4.97	0.00				
42.00	8.05	4.97	0.00				
43.00	8.05	4.97	0.00				
44.00	8.05	4.97	0.00				
45.00	8.05	4.97	0.00				
46.00	8.05	4.97	0.00				
47.00	8.05	4.97	0.00				
48.00	8.05	4.97	0.00				
49.00	8.05	4.97	0.00				
50.00	8.05	4.97	0.00				

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Proposed
Type II 24-hr 100-Year Rainfall=8.05"

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Page 32

Summary for Pond 3P: dry basin

Inflow Area = 0.844 ac, 67.42% Impervious, Inflow Depth = 6.85" for 100-Year event
 Inflow = 9.37 cfs @ 11.95 hrs, Volume= 0.482 af
 Outflow = 7.91 cfs @ 12.01 hrs, Volume= 0.482 af, Atten= 16%, Lag= 3.4 min
 Primary = 7.91 cfs @ 12.01 hrs, Volume= 0.482 af
 Routed to Link 2L : total prd

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 559.63' @ 12.01 hrs Surf.Area= 2,868 sf Storage= 5,408 cf
 Flood Elev= 558.29' Surf.Area= 2,021 sf Storage= 2,139 cf

Plug-Flow detention time= 183.0 min calculated for 0.482 af (100% of inflow)
 Center-of-Mass det. time= 182.3 min (953.7 - 771.3)

Volume	Invert	Avail.Storage	Storage Description
#1	557.00'	6,505 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
557.00	1,308	0	0
558.00	1,848	1,578	1,578
559.00	2,445	2,147	3,725
559.30	2,658	765	4,490
560.00	3,100	2,015	6,505

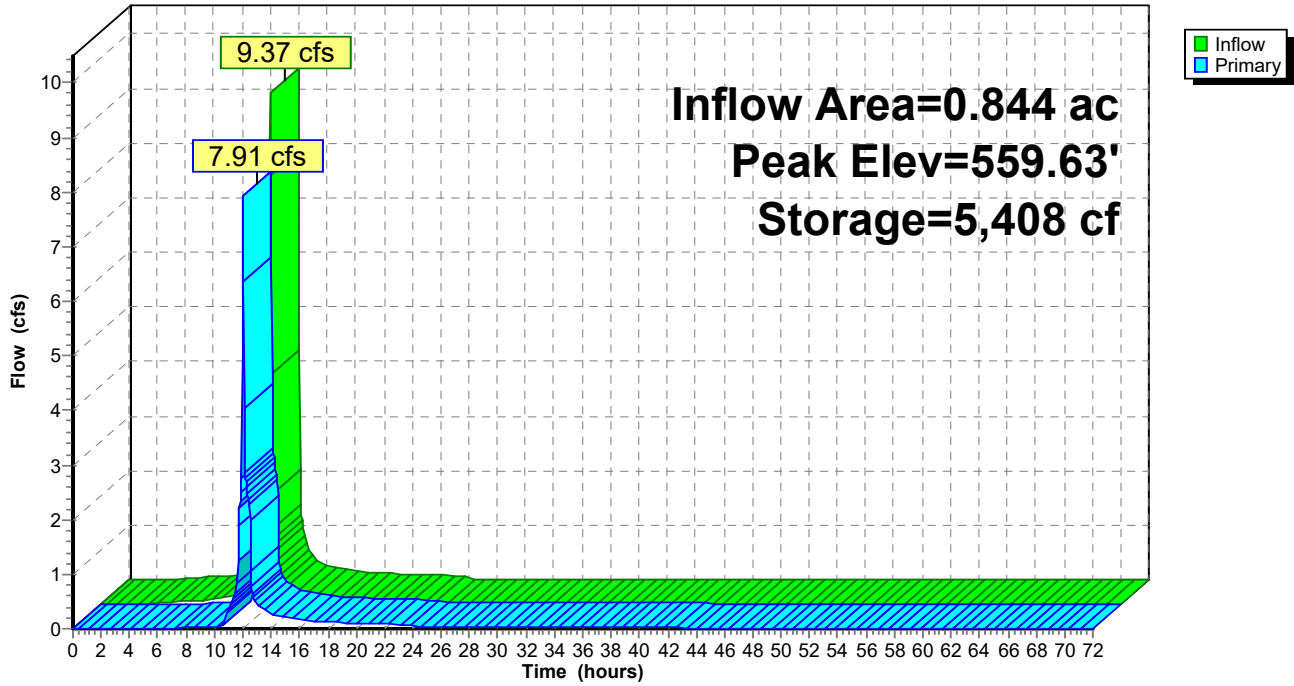
Device	Routing	Invert	Outlet Devices
#1	Primary	557.00'	10.0" Round OCS outlet L= 30.0' Ke= 0.900 Inlet / Outlet Invert= 557.00' / 556.00' S= 0.0333 '/' Cc= 0.900 n= 0.012, Flow Area= 0.55 sf
#2	Device 1	557.00'	1.0" Vert. Detention inlet C= 0.600 Limited to weir flow at low heads
#3	Device 1	558.29'	24.0" Horiz. OCS grate C= 0.600 Limited to weir flow at low heads
#4	Primary	559.30'	10.0' long x 3.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Primary OutFlow Max=7.62 cfs @ 12.01 hrs HW=559.62' TW=0.00' (Dynamic Tailwater)

- 1=OCS outlet (Inlet Controls 3.08 cfs @ 5.64 fps)
- 2=Detention inlet (Passes < 0.04 cfs potential flow)
- 3=OCS grate (Passes < 17.44 cfs potential flow)
- 4=Broad-Crested Rectangular Weir (Weir Controls 4.54 cfs @ 1.42 fps)

Pond 3P: dry basin

Hydrograph



Hydrograph for Pond 3P: dry basin

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	557.00	0.00
2.50	0.00	0	557.00	0.00
5.00	0.04	149	557.11	0.01
7.50	0.09	601	557.42	0.02
10.00	0.20	1,623	558.02	0.03
12.50	0.70	2,575	558.50	2.00
15.00	0.21	2,225	558.33	0.21
17.50	0.13	2,198	558.32	0.13
20.00	0.09	2,181	558.31	0.09
22.50	0.08	2,176	558.31	0.08
25.00	0.00	2,066	558.25	0.03
27.50	0.00	1,813	558.12	0.03
30.00	0.00	1,574	558.00	0.03
32.50	0.00	1,351	557.87	0.02
35.00	0.00	1,143	557.76	0.02
37.50	0.00	951	557.64	0.02
40.00	0.00	777	557.53	0.02
42.50	0.00	620	557.43	0.02
45.00	0.00	481	557.34	0.01
47.50	0.00	360	557.26	0.01
50.00	0.00	259	557.19	0.01
52.50	0.00	178	557.13	0.01
55.00	0.00	117	557.09	0.01
57.50	0.00	77	557.06	0.00
60.00	0.00	54	557.04	0.00
62.50	0.00	41	557.03	0.00
65.00	0.00	33	557.03	0.00
67.50	0.00	27	557.02	0.00
70.00	0.00	23	557.02	0.00

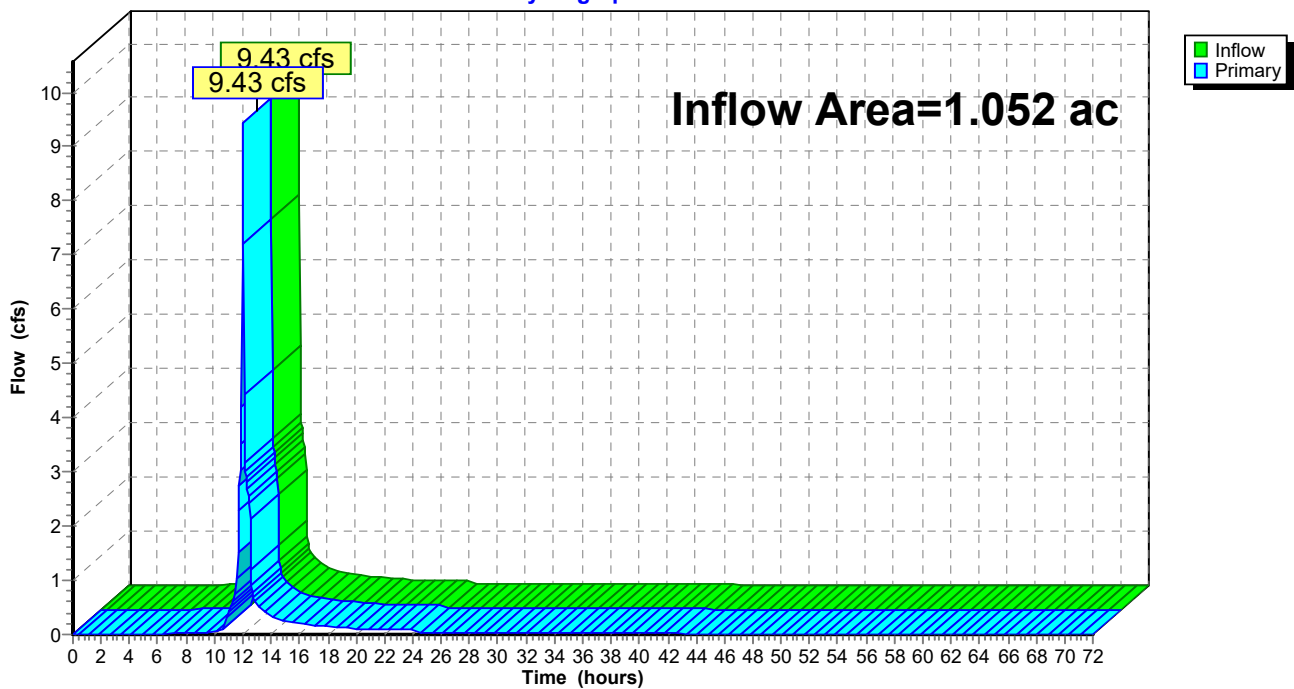
Summary for Link 2L: total prd

Inflow Area = 1.052 ac, 54.15% Impervious, Inflow Depth = 6.48" for 100-Year event
Inflow = 9.43 cfs @ 12.00 hrs, Volume= 0.568 af
Primary = 9.43 cfs @ 12.00 hrs, Volume= 0.568 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 2L: total prd

Hydrograph



2506 - hydrocad 20260227

Prepared by Sambatek LLC

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Proposed
Type II 24-hr 100-Year Rainfall=8.05"

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Page 36

Hydrograph for Link 2L: total prd

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	51.00	0.01	0.00	0.01
1.00	0.00	0.00	0.00	52.00	0.01	0.00	0.01
2.00	0.00	0.00	0.00	53.00	0.01	0.00	0.01
3.00	0.00	0.00	0.00	54.00	0.01	0.00	0.01
4.00	0.00	0.00	0.00	55.00	0.01	0.00	0.01
5.00	0.01	0.00	0.01	56.00	0.00	0.00	0.00
6.00	0.01	0.00	0.01	57.00	0.00	0.00	0.00
7.00	0.02	0.00	0.02	58.00	0.00	0.00	0.00
8.00	0.02	0.00	0.02	59.00	0.00	0.00	0.00
9.00	0.03	0.00	0.03	60.00	0.00	0.00	0.00
10.00	0.05	0.00	0.05	61.00	0.00	0.00	0.00
11.00	0.42	0.00	0.42	62.00	0.00	0.00	0.00
12.00	9.43	0.00	9.43	63.00	0.00	0.00	0.00
13.00	0.55	0.00	0.55	64.00	0.00	0.00	0.00
14.00	0.32	0.00	0.32	65.00	0.00	0.00	0.00
15.00	0.25	0.00	0.25	66.00	0.00	0.00	0.00
16.00	0.20	0.00	0.20	67.00	0.00	0.00	0.00
17.00	0.17	0.00	0.17	68.00	0.00	0.00	0.00
18.00	0.15	0.00	0.15	69.00	0.00	0.00	0.00
19.00	0.13	0.00	0.13	70.00	0.00	0.00	0.00
20.00	0.11	0.00	0.11	71.00	0.00	0.00	0.00
21.00	0.10	0.00	0.10	72.00	0.00	0.00	0.00
22.00	0.10	0.00	0.10				
23.00	0.10	0.00	0.10				
24.00	0.09	0.00	0.09				
25.00	0.03	0.00	0.03				
26.00	0.03	0.00	0.03				
27.00	0.03	0.00	0.03				
28.00	0.03	0.00	0.03				
29.00	0.03	0.00	0.03				
30.00	0.03	0.00	0.03				
31.00	0.03	0.00	0.03				
32.00	0.02	0.00	0.02				
33.00	0.02	0.00	0.02				
34.00	0.02	0.00	0.02				
35.00	0.02	0.00	0.02				
36.00	0.02	0.00	0.02				
37.00	0.02	0.00	0.02				
38.00	0.02	0.00	0.02				
39.00	0.02	0.00	0.02				
40.00	0.02	0.00	0.02				
41.00	0.02	0.00	0.02				
42.00	0.02	0.00	0.02				
43.00	0.02	0.00	0.02				
44.00	0.02	0.00	0.02				
45.00	0.01	0.00	0.01				
46.00	0.01	0.00	0.01				
47.00	0.01	0.00	0.01				
48.00	0.01	0.00	0.01				
49.00	0.01	0.00	0.01				
50.00	0.01	0.00	0.01				