



Special Bryant Planning Commission Meeting
Monday, November 27th, 2017
5:00 p.m.
Boswell Municipal Complex - City Hall Courtroom

Agenda

CALL TO ORDER

- Chairman to call the meeting to order.
- Secretary calls roll

NEW BUSINESS

Kensington Place Phase 1

GarNat Engineering - Requesting Final Plat Approval of Phase 1

Documents:

[Kensington Place Phase 1 Final Plat.pdf](#)

Kensington Place Phase 2

Gar Nat Engineering - Requesting Preliminary Plat Approval

Documents:

[Kensington Place Phase 2 Preliminary Plat.pdf](#)

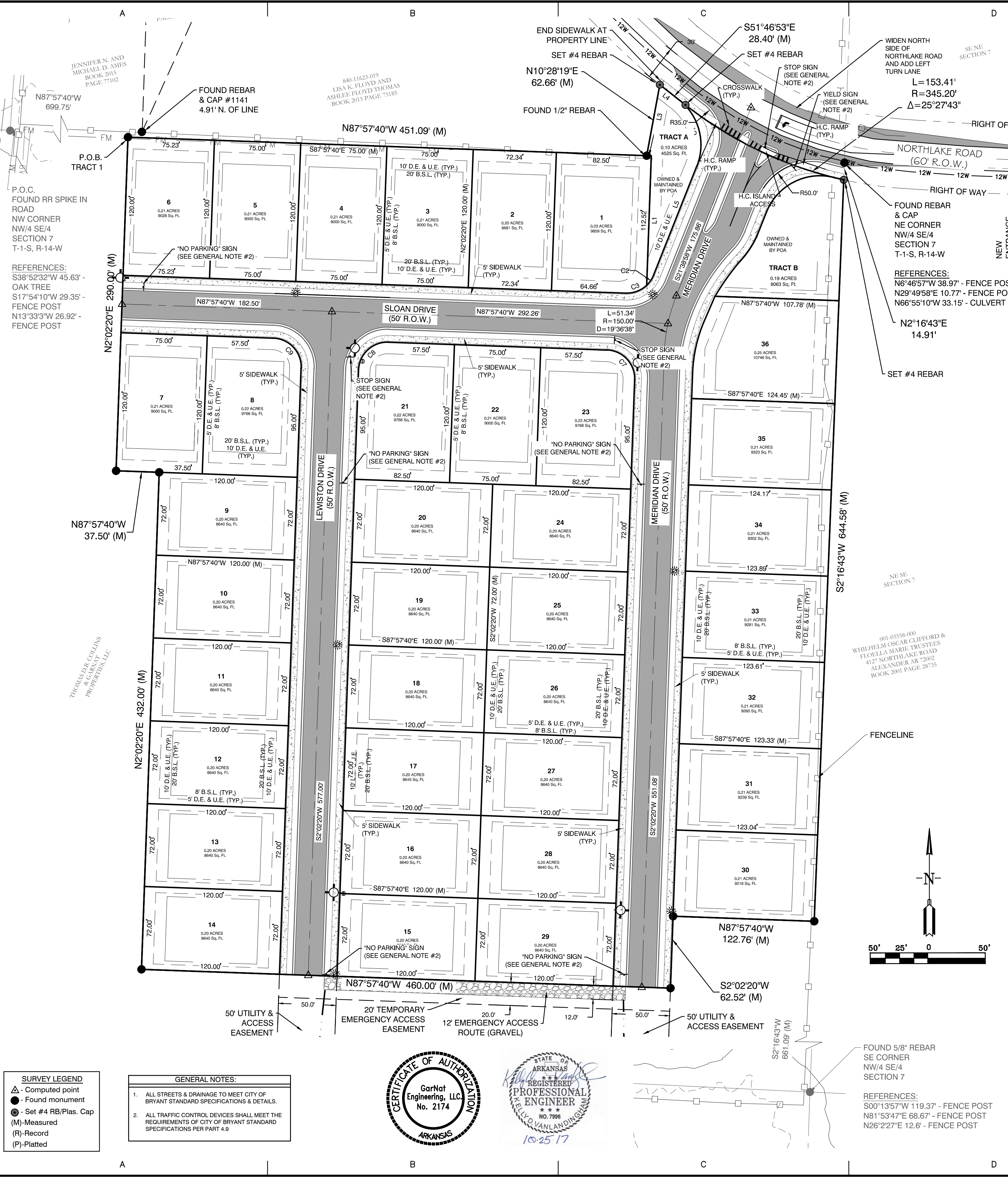
Andres Woods

Requesting Approval of Revised Final Plat

Documents:

[Revised Final Plat.pdf](#)

ADJOURNMENT



Curve Table

Curve #	Length	Radius	Delta	Chord Direction	Chord Length
C3	19.86'	25.00'	45.31'	S69°16'44"W	19.34'
C9	39.27'	25.00'	90.00'	S42°57'40"E	35.36'
C7	39.27'	25.00'	90.00'	S42°57'40"E	35.36'
C8	39.27'	25.00'	90.00'	N47°02'20"E	35.36'
C1	63.29'	50.00'	72.31'	N14°36'41"W	59.15'
C2	10.85'	25.00'	24.52'	N34°05'03"E	10.77'

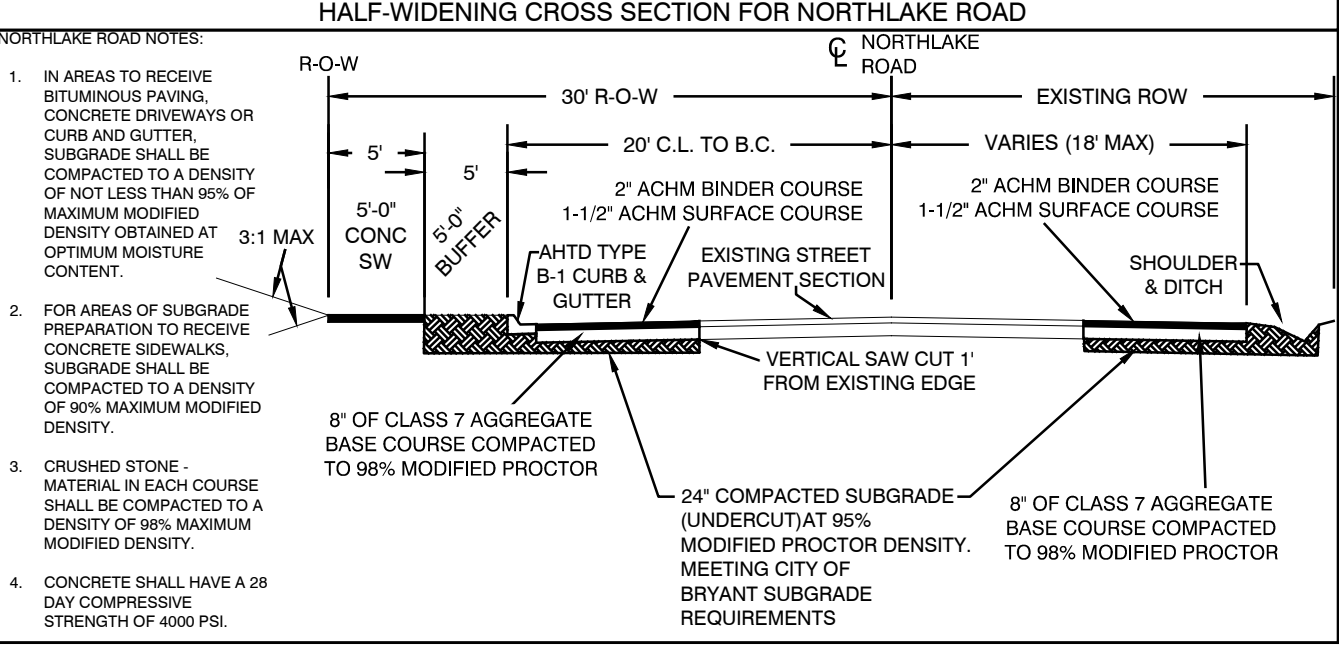
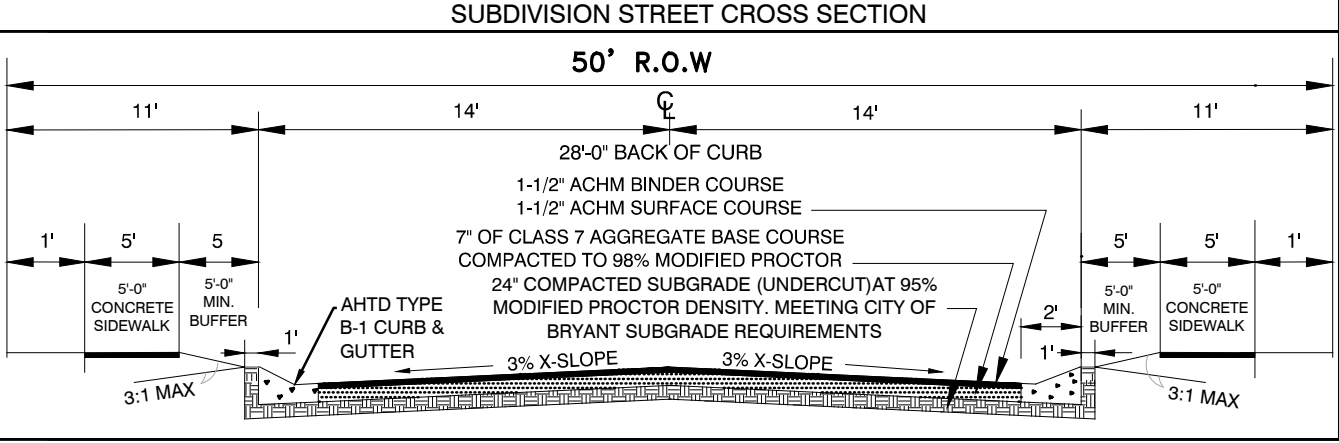
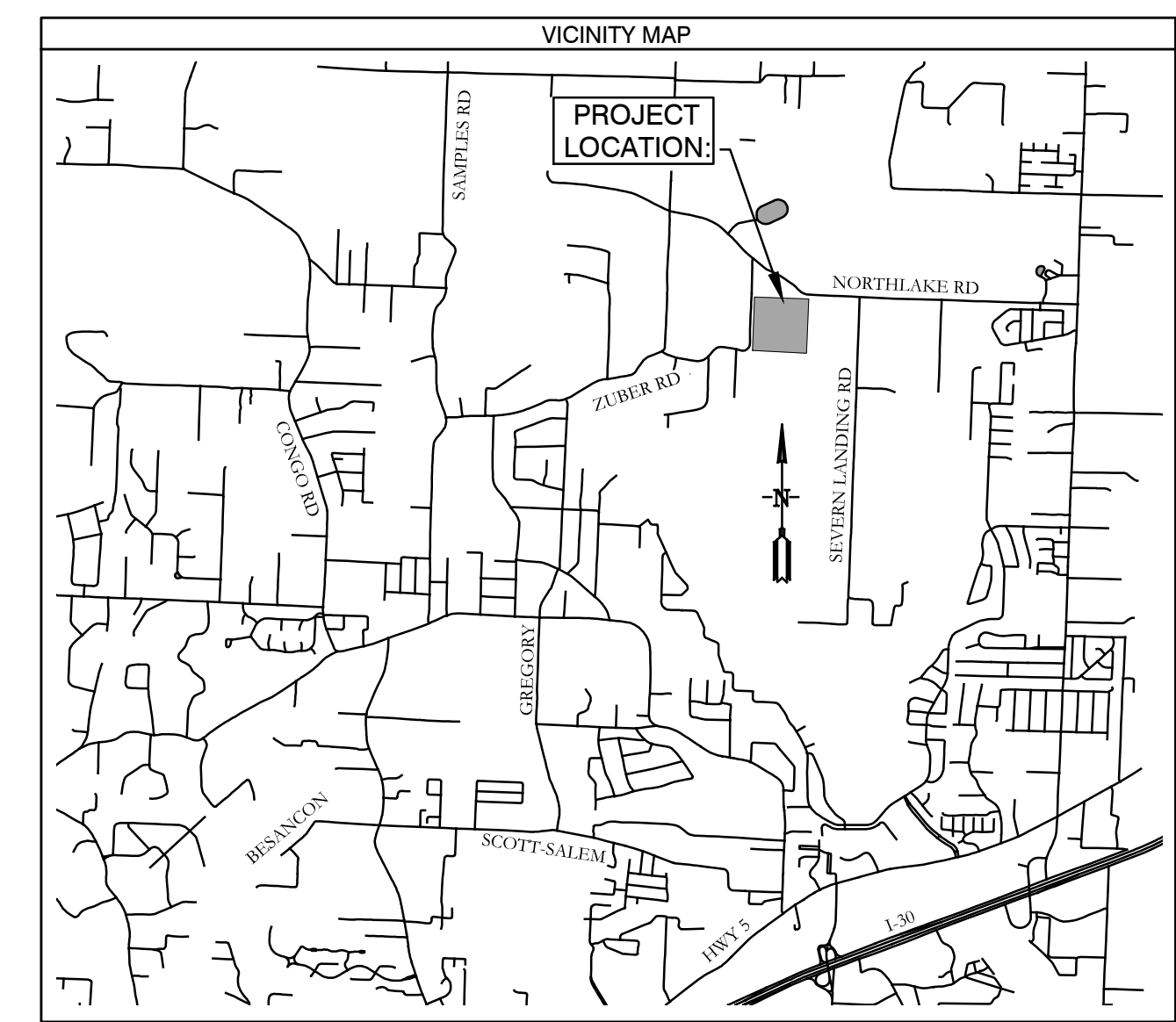
PROPERTY DESCRIPTION:

ALL OF THE NORTHWEST QUARTER OF SOUTHWEST QUARTER (NW/4 SE/4) OF SECTION 7, TOWNSHIP 1 SOUTH, RANGE 14 WEST, DESCRIBED AS FOLLOWS: COMMENCING AT THE NORTHWEST CORNER OF THE NW/4 SE/4, A FOUND RAILROAD SPIKE; THENCE, ALONG THE NORTH LINE OF SAID NW/4 SE/4, S87°57'40"E A DISTANCE OF 699.75 FEET TO A SET REBAR AND CAP, AND ALSO THE POINT OF BEGINNING; THENCE S87°57'40"E A DISTANCE OF 451.09 FEET TO A SET REBAR AND CAP; THENCE LEAVING THE SAID NORTH LINE OF THE NW/4 SE/4 AND ALONG THE EAST LINE OF THE NW/4 SE/4, N10°28'19"E A DISTANCE OF 62.66 FEET TO A SET REBAR AND CAP; THENCE S51°46'53"E A DISTANCE OF 28.40 FEET TO A SET REBAR AND CAP; THENCE ALONG A CURVE TO THE LEFT, HAVING A RADIUS OF 345.20 FEET, A DELTA ANGLE OF 25°27'43", AND WHOSE LONG CHORD BEARS S64°40'56"E A DISTANCE OF 152.15 FEET TO THE EAST LINE OF THE NW/4 SE/4; THENCE, ALONG SAID EAST LINE OF THE NW/4 SE/4, S2°16'43"W A DISTANCE OF 644.58 FEET; THENCE, LEAVING SAID EAST LINE OF THE NW/4 SE/4, N87°57'40"W A DISTANCE OF 122.78 FEET TO A SET REBAR AND CAP; THENCE S2°22'00"W A DISTANCE OF 62.52 FEET TO A SET REBAR AND CAP; THENCE N87°57'40"W A DISTANCE OF 460.00 FEET TO A SET REBAR AND CAP; THENCE N2°22'00"E A DISTANCE OF 432.00 FEET TO A SET REBAR AND CAP; THENCE N87°57'40"W A DISTANCE OF 37.50 FEET TO A SET REBAR AND CAP; THENCE N2°22'00"E A DISTANCE OF 290.00 FEET TO THE NORTH LINE OF THE NW/4 SE/4, AND THE POINT OF BEGINNING, CONTAINING 9.82 ACRES, OR 427,836 SQ. FEET, MORE OR LESS.

Parcel Line Table

Line #	Length	Direction
L1	112.52	S2°02'20"W
L2	3.98	S87°57'40"E
L3	62.66	S10°28'19"W
L4	21.90	N51°53'29"W
L5	101.72	N21°38'58"E

PROPERTY SPECIFICATIONS:
 ZONING CLASSIFICATION: R-1-S
 MIN. LOT SIZE: 6,840 S.F.
 NUMBER OF LOTS: 36
 SOURCE OF WATER: SALEM WATER
 SOURCE OF SEWER: CITY OF BRYANT
 BUILDING SETBACKS:
 FRONT - 20' OR AS SHOWN
 REAR - 20' OR AS SHOWN
 SIDE - 8' OR AS SHOWN
 EASEMENTS: UTILITY & DRAINAGE (D.E. & U.E.)
 FRONT - 10' OR AS SHOWN
 REAR - 10' OR AS SHOWN
 SIDE - 5' OR AS SHOWN
 STREET RIGHT OF WAY: 30' OR AS SHOWN
 STREET WIDTH: 28' BOC TO BOC
 LOT CORNERS: SET #4 REBAR WITH CAP
 TRACTS A & B WILL BE OWNED & MAINTAINED BY PROPERTY OWNERS ASSOCIATION



BASIS OF BEARINGS:
 NAD 83 ARKANSAS GRID SOUTH ZONE (GPS)

CERTIFICATIONS:
 By affixing my seal and signature, I Kelly D. Vanlandingham, PLS No. 1447, hereby certify that this drawing correctly depicts a survey completed under my supervision dated 7/20/2016.
 According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) for Saline County unincorporated areas, panel # 05125C0225D dated 6/19/2012, no portion, dated of the property described hereon does lie within the 100 year flood hazard boundary.

PLAT CERTIFICATES:

OWNER: Thomas D.B. Collins, Ltd.
DEVELOPER: Thomas D.B. Collins, Ltd.
CERTIFICATE OF RECORDING: This document, number _____, filed for record _____, 20____, in Plat Book _____, Page _____.

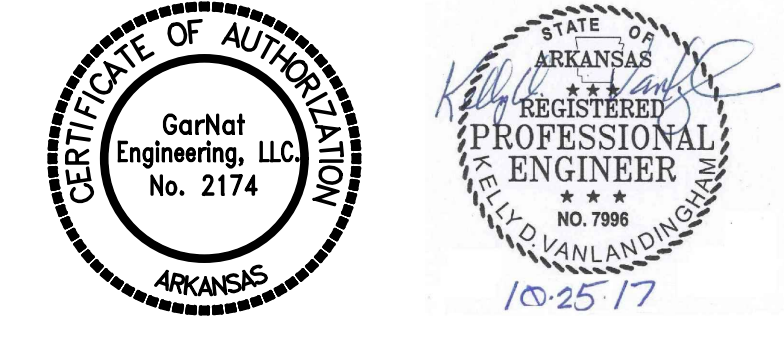
CERTIFICATE OF OWNER: We, the undersigned, owners of the real estate shown and described herein do hereby certify that we have laid off, platted and subdivided, and do hereby lay off, plat and subdivide said real estate in accordance with the within plat.
 Date: _____ Signed: _____
 Phillip Pengelli
 39 Walnut Valley, Little Rock, Arkansas 72211

CERTIFICATE OF ENGINEERING ACCURACY:
 I, Kelly D. Vanlandingham, hereby certify that this plat correctly represents a survey and a plan made by me or under my supervision; that all monuments shown hereon actually exist and their locations, size, type, and material are correctly shown; and that all requirements of the City of Bryant Subdivision Rules and Regulations have been fully complied with.
 Date: _____ Signed: _____
 Kelly D. Vanlandingham
 Registered Professional Engineer
 No. 7996, Arkansas

CERTIFICATE OF FINAL PLAT APPROVAL:
 Pursuant to the City of Bryant Subdivision Rules and Regulations, this document was given approval by the Bryant Planning Commission at a meeting held _____, 20____. All of the document is hereby accepted, and this certificate executed under the authority of said rules and regulations.
 Approval of the final plat shall become null and void unless said plat is filed for record within one hundred twenty (120) days from the date of execution of this certificate.
 Date of Execution: _____ Lance Penfield, Chairman
 Bryant Planning Commission

SURVEY LEGEND
 Δ - Computed point
 ● - Found monument
 ● - Set #4 RB/Plas. Cap
 (M) - Measured
 (R) - Record
 (P) - Platted

GENERAL NOTES:
 1. ALL STREETS & DRAINAGE TO MEET CITY OF BRYANT STANDARD SPECIFICATIONS & DETAILS.
 2. ALL TRAFFIC CONTROL DEVICES SHALL MEET THE REQUIREMENTS OF CITY OF BRYANT STANDARD SPECIFICATIONS PER PART 4.9



GNE Designing our client's success
GarNat Engineering, LLC
 P.O. Box 116 (72018)
 2909 Military Rd.
 Benton, AR 72015
 Ph (501) 408-4650
 Fax (888) 900-3068
 gnatengineering@gmail.com

REVISION
 REVISED PER CITY OF BRYANT COMMENTS
 AS BUILT

DATE
 9/22/2016
 10/25/17

BY
 JLV
 KDV

KENSINGTON PLACE SUBDIVISION,
 PHASE I,
 CITY OF BRYANT,
 SALINE COUNTY, ARKANSAS

CONTENTS:
FINAL PLAT

PROJECT NO:
 16044

DATE:
 OCT 25, 2017

SHEET NO:
 1

Designing our client's success

P.O. Box 116 (72018)
2909 Military Road
Benton, Arkansas 72015
PH: (501) 408-4650
FX: (888) 900-3068
garnatengineering@gmail.com

October 25, 2017

Truett Smith
Planning & Community Development
210 S.W. 3rd Street
Bryant, AR 72022

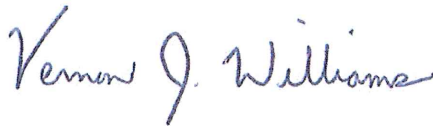
Re: Final Plat Certification
Kensington Place Subdivision Phase 1

Dear Mr. Smith:

Please allow this letter to serve as the certification for the referenced project required by Paragraph 15.12.05.a of the City of Bryant Subdivision Regulations. To that end, we certify that all improvements and installation to the subdivision required for its approval under the terms of the City of Bryant Subdivision Rules and Regulations have been made, added, or installed. Furthermore, these improvements were constructed in accordance with the approved plans and specifications.

If you have questions or need any additional information, please do not hesitate to contact us.

Sincerely,
GarNat Engineering, LLC



Vernon J. Williams, P.E., President

Thomas D.B. Collins



Phillip Pengelly

BILL OF ASSURANCE KENSINGTON PLACE SUBDIVISION

PART A. PREAMBLE

WHEREAS, THOMAS D.B. COLLINS, LTD. is the Owner, by virtue of Instrument INST_NUM, of the following land situated in Saline County, Arkansas, to wit:

ALL OF THE NORTHWEST QUARTER OF SOUTHEAST QUARTER (NW/4 SE/4) OF SECTION 7; TOWNSHIP 1 SOUTH; RANGE 14 WEST; DESCRIBED AS FOLLOWS: **COMMENCING** AT THE NORTHWEST CORNER OF THE NW/4 SE/4, A FOUND RAILROAD SPIKE; THENCE, ALONG THE NORTH LINE OF SAID NW/4 SE/4, S87°57'40"E A DISTANCE OF 699.75 FEET TO A SET REBAR AND CAP, AND ALSO THE **POINT OF BEGINNING**; THENCE S87°57'40"E A DISTANCE OF 451.09 FEET TO A SET REBAR AND CAP; THENCE, LEAVING THE SAID NORTH LINE OF THE NW/4 SE/4 AND ALONG THE EAST LINE OF THE NW/4 SE/4, N10°28'19"E A DISTANCE OF 62.66 FEET TO A SET REBAR AND CAP; THENCE S51°46'53"E A DISTANCE OF 28.40 FEET TO A SET REBAR AND CAP; THENCE ALONG A CURVE TO THE LEFT, HAVING A RADIUS OF 345.20 FEET, A DELTA ANGLE OF 25° 27' 43", AND WHOSE LONG CHORD BEARS S64°40'56" E A DISTANCE OF 152.15 FEET TO THE EAST LINE OF THE NW/4 SE/4; THENCE, ALONG SAID EAST LINE OF THE NW/4 SE/4, S2°16'43"W A DISTANCE OF 644.58 FEET; THENCE, LEAVING SAID EAST LINE OF THE NW/4 SE/4, N87°57'40"W A DISTANCE OF 122.76 FEET TO A SET REBAR AND CAP; THENCE S2°2'20"W A DISTANCE OF 62.52 FEET TO A SET REBAR AND CAP; THENCE N87°57'40"W A DISTANCE OF 460.00 FEET TO A SET REBAR AND CAP; THENCE N2°2'20"E A DISTANCE OF 432.00 FEET TO A SET REBAR AND CAP; THENCE N87°57'40"W A DISTANCE OF 37.50 FEET TO A SET REBAR AND CAP; THENCE N2°2'20"E A DISTANCE OF 290.00 FEET TO THE NORTH LINE OF THE NW/4 SE/4, AND THE **POINT OF BEGINNING**. CONTAINING 9.82 ACRES, OR 427,636 SQ. FEET, MORE OR LESS.

WHEREAS, Owner has caused said land to be surveyed and a plat thereof made, dividing said land into lots as shown on said plat and showing the dimensions of each lot and the width of the streets as known as KENSINGTON PLACE SUBDIVISION, Saline County, Arkansas.

WHEREAS, the Saline County Real Estate Assessor and Office of Emergency Services have approved said Subdivision and road names.

NOW THEREFORE, Thomas D.B. Collins, Ltd., in consideration of the purposes herein stated, does hereby designate said land and make part hereof to be known as KENSINGTON PLACE SUBDIVISION, to the City of Bryant, Saline County, Arkansas, and that hereafter any conveyance by the Owners of said land by lot number shall forever be held to be good and legal description and the streets shown on said plat in said Subdivision are hereby and will become a public road to be accepted by Saline County for maintenance. The property owners of KENSINGTON PLACE SUBDIVISION are subject to and are joined as members of the establish KENSINGTON PLACE Property Owner's Association for the purpose of maintaining

and ownership of common areas and appurtenants belonging thereto. The use of the land in said Subdivision being subject to the following Protective and Restrictive Covenants:

PART B. AREA OF APPLICATION

B-1 FULLY PROTECTED RESIDENTIAL AREA. The residential area covenants in Part C in their entirety shall apply to the entire Subdivision.

PART C: RESIDENTIAL AREA COVENANTS:

C-1 LAND USE AND BUILDING TYPE. No lot shall be used except for residential purposes. Not business of any nature or kind shall at any time be conducted in any building located on any of the lots. No building shall be erected, altered, placed or allowed to remain on any lot other than one detached, single-family dwelling not to exceed two stories in height, excluding basement area. No lot can be subdivided for any purpose without the prior approval from the Saline County Planning Board and the consent of 51% of the voting members of the Property owners associations.

C-2 ARCHITECTURAL CONTROL. No dwelling or structure shall be erected, placed or altered on any lot until the construction plans and specifications and a plan showing the location of the structure, including landscaping, have been approved by the architectural control committee as to quality of workmanship and materials, harmony of external design with existing structures, and as to location with respect to topography and finish grade elevation, and intended objectives of the Architectural Control Committee to achieve a subdivision that accomplishes the desired architectural design in the structure and subdivision ascetics. No fence or wall shall be erected, placed or altered on any lot nearer than the setbacks as shown on the Plat. The term structure is defined to include any and all types of fences, antennas, decks, basketball goals, swimming pools and television satellite dishes, which in no event shall be placed in front of dwellings. Each property owner requesting approval shall submit to the Architectural Control Committee at least two weeks prior to the time approval is needed, a complete set of house plans and completed material and specifications list. Approval shall be a provided in Part D.

C-3. DWELLING COST, QUALITY AND SIZE. No dwelling shall be permitted on any lot unless the dwelling has at least 1,500 square feet, it being the intention and purpose of the covenants to assure that all dwellings shall be of a quality of workmanship and materials substantially the same or better than that for the minimum permitted dwelling size. Each dwelling shall have a minimum of a two car garage. No open carports are allowed. No manufactured houses are allowed, site built homes only.

C-4. BUILDING LOCATION. No building shall be located on any lot, nearer to the side street line, than the minimum building set back lines as shown on the recorded plat. For the purposes of this covenant, eaves and steps shall not be considered as part of the building. No lot shall be subdivided and no more than one dwelling shall be permitted on any one lot.

C-5 BUILDING REQUIRMENTS. All buildings shall have roof pitch of no less than 6/12. A 2 car enclosed garage, No chain link fences shall be allowed, and all fences shall be of a wood type approved by the Architectural control committee.

C-6. EASEMENTS. Easements for installation and maintenance of utilities and drainage facilities, and construction, repair and maintenance of adequate walls, roofs and eaves are reserved as shown on recorded plat.

C-7. NUISANCES. No noxious or offensive trade or activities shall be carried on, nor shall anything be done thereon which may be or become a nuisance to the neighborhood.

C-8. TEMPORARY STRUCTURES. No structure of a temporary character, basement, tent, shack, garage, barn or other out building shall be used on any tract at any time as a residence either temporarily or permanently; except that the developer may have a temporary construction and/or sales office.

C-9. OUT BUILDINGS. One outbuilding for storage shall be permitted, if approved by the Architectural Control Committee and shall conform to the same architectural design and construction of the dwelling. Above ground swimming pools are prohibited.

C-10. SIGNS. No sign of any kind shall be displayed to the public view on any lot, except, one professional sign of not more than one square foot; one sign of not more than five square feet advertising the property for sale or rent or any signs used by a builder to advertise the property during the construction and sales period.

C-11. OWNER RESPONSIBILITY. Any property owner shall insure that any contractor performing services for the property owner shall comply with the provisions of this Bill of Assurance.

C-12. CONTRACTOR RESPONSIBILITY. No contractor shall damage in any way the utilities or streets in any manor.

C-13. OIL AND MINING OPERATIONS. No oil drilling, oil development operations, oil refining, quarrying or mining operations of any kind shall be permitted upon or in any lot, nor shall oil wells, tanks, tunnels, mineral excavations or shafts be permitted upon or in any lot. No derrick or structures designated for use in boring for oil or natural gas shall be erected, maintained or permitted upon any lot.

C-14. LIVESTOCK AND POULTRY. No animals, livestock or poultry of any kind may be raised, bred or kept on any tract, except that dogs or cats may be kept, on any lot provided that they are not kept, bred or maintained for any commercial purpose and provided that facilities for maintenance of same are approved by the Architectural Control Committee and that the keeping of same does not constitute a nuisance.

C-15. GARBAGE AND REFUSE DISPOSAL. No lot or easement shall be used or maintained as a dumping ground for rubbish. Trash, garbage and other waste shall not be kept except in sanitary containers. There shall be no burning of trash, rubbish, leaves or yard waste.

C-16 SIGHT DISTANCE AT INTERSECTIONS. No fence, wall, hedge or shrub planting which obstructs sight lines at elevations between 2 and 6 feet above the roadways shall be placed or permitted to remain on any lot corner which the triangular area formed by the street property lines and the line connecting them at points 15 feet from the intersection of street right of way lines, or in the case of a rounded property corner, from the intersection of the street property line extended. The same sight line limitations shall apply on any lot within 10 feet from the intersection of the street property line with the edge of a driveway pavement. No tree shall be permitted to remain within such distances or such intersections unless the foliage line is maintained at sufficient height to prevent obstruction of such sight lines.

C-17. LOT, YARD AND HOME MAINTENANCE. All property owners, after acquisition of any lot, shall keep all grounds and yards mowed, trimmed and clean. All houses shall be painted and stained. No deviation from the original plans shall be permitted without approval of the Architectural Control Committee.

C-18. COMMENCEMENT OF CONSTRUCTION. A property owner must start construction of an approved dwelling within a period of one (1) year from date of purchase. The developer reserves the option to repurchase any lot for the amount of the original purchase price if construction is not commenced within such period of time. This option shall be exercised in writing within a period of thirty (30) days after the one (1) year period.

C-19 COMPLETION OF CONSTRUCTION. Any dwelling must be completed in its entirety within a period of one year from date such construction is commenced.

C-20. MOTOR VEHICLE PARKING. Abandoned or unused motor vehicles shall not be parked or permitted to remain on any lot or within the dedicated street. Boats, recreational vehicles and trailers cannot be parked at the front or side of any dwelling or in the dedicated street and must be parked in back of the dwelling. Owners or permanent residents are prohibited from parking in the street. There shall be no non-functioning vehicles kept on the lot or in view of the public. There shall be no repair work done outside of the garage.

C-21. MINIMUM FLOOR LEVEL ELEVATIONS. The Architectural Control Committee reserves the right to prescribe the minimum floor elevations for lots. All homes shall have a minimum floor elevation of one foot above the back of the curb unless waived in writing by the Architectural Control Committee.

C-22 SEWER SERVICE. All homes shall connect to the Private Sewer System and pay such fee charged for the monthly service. No Septic systems shall be allowed on individual lots.

PART D. ARCHITECTURAL CONTROL COMMITTEE:

D-1 MEMBERSHIP. The Architectural Control Committee shall be composed of Darren Baker, Michelle Baker, and Travis Baker. A majority of the committee may designate a representative to act for it. In the event of death or resignation of any member of the committee,

the remaining members shall have full authority to designate a successor. Neither the members of the committee nor its designated representative shall be entitled to any compensation for these services performed pursuant to this covenant.

D-2 PROCEDURE. The committee's approval or disapproval as required in these covenants shall be in writing and in the form hereto attached marked Exhibit "A" which, when executed, should be retained by the owner/builder as proof of the Committee's approval. In the event the committee or its designated representative fails to approve or disapprove within 30 days after plans and specification have been submitted to it or in the event no suit to enjoin the construction or compliance with these covenants has been commenced within 180 days after the completion thereof will not be required and the related covenants shall be deemed to have been fully complied with. The Committee will with Buyer's will with Buyer's permission and at the expense of the Buyer refer Buyer's plan to an architect for revisions and changes to comply with the Bill of Assurance.

PART E. PROPERTY OWNERS ASSOCIATION

E-1 OWNERS EASEMENTS OF ENJOYMENT. Every owner shall have a right and easement of enjoyment in and to the common area which shall be appurtenant to and shall pass with the title to every tract. Subject to the following provision:

(a) The right of the Association to charge reasonable fees for maintenance of the common area;

E-2. MEMBERSHIP AND VOTING RIGHTS

SECTION 1: Every owner of a tract which is subject of assessment shall be a member of the Association. Membership shall be appurtenant to and may not be separated from ownership of any tract which is subject to assessment.

SECTION 2: The Association shall have two classes of voting membership:

Class A: Class A members shall be all owners, with the exception of the Declarant, and shall be entitled to one vote for each tract owned, which may be voted at such time as all tracts are sold by the Declarant. When more than one person holds an interest in any tract, all such persons shall be members. The vote for such tract shall be exercised as they determine, but in no event shall more than one vote be cast with respect to any Tract.

Class B: The Class B member(s) shall be the Declarant and shall be entitled to ten votes per tract owned. The Class B membership shall cease on the happening of the following events.

(a) when all tracts are sold by declarant.

E-3. COVENANT FOR MAINTENANCE ASSESSMENTS

SECTION 1: Creation of the Lien and Personal Obligation of Assessments: The Declarant, for each tract owned within the properties, hereby covenants, and each owner of any tract by acceptance of a deed therefore, whether or not it shall be so expressed in such deed, is deemed to covenant and agree to pay to the Association annual assessment or charges, such assessments to be established and collected as hereinafter provided. The annual assessments, together with interest, costs and reasonable attorneys' fees, shall be a charge on the land and shall be a continuing lien upon the property against which each such assessment is made. Each such assessment, together with interest, costs, and reasonable attorneys' fees, shall also be the personal obligation of the person who is the owner of such property at the time when the assessment fell due. The personal obligation for delinquent assessments shall not pass to his successors in title unless expressly assumed by them.

SECTION 2.: Purpose of Assessment: The assessments levied by the Association shall be used as follows:

- (a) For the maintenance and upkeep of all common areas
- (b) For any other purposes deemed in the best interest of the property owners by the Association

SECTION 3: Annual Assessment: Commencing on the date of filing of this Bill of Assurance, the property owners association will assume total responsibility for operation and maintenance of amenities and common areas and assess each property owner and annual assessment of \$60.00, which shall commence as to all Lots on the first day of January following the date of recordation of this instrument and then effective per annually thereafter. The fees may be adjusted after January 1 of the year immediately following the conveyance of the Lot to an Owner. The sole intent and purpose of these fees are for operation, maintenance, and improvements of the green space, street lights and other amenities in a manner determined by the association membership.

SECTION 4: Notice and Quorum for Any Action Authorized Under Section 3: Written Notice of any meeting called for the purpose of taking any action authorized under Section 3 shall be sent to all members not less than 10 days in advance of the meeting. At the first such meeting called, the presence of member or proxies entitled to cast 60% of all votes shall constitute a quorum.. If the required quorum is not present, another meeting may be called subject to the same notice requirement, and the required quorum at the preceding meeting shall be one-half (1/2) of the required quorum at the preceding meeting. No such subsequent meeting shall be held more than 60 days following the preceding meeting. Each tract as conveyed by Declarant shall have one vote.

SECTION 5: Uniform Rate of Assessment: Both annual and special assessments must be fixed at a uniform rate and may be collect on a semi-annual or annual basis.

SECTION 6: Date of Commencement of Annual Assessments: Due Dates: The annual assessments provided for herein shall commence as to all Lots on the first day of January following the date of recordation of this instrument. The Board of Directors shall fix the amount of the annual assessment against each Lot at least thirty (30) day in advance of each annual assessment period. Written notice of the annual assessment shall be sent to every Owner subject thereto. The due date shall be established by the Board of Directors. The Association shall, upon demand, and for a reasonable charge, furnish a certificate signed by an officer of the Association setting forth whether the assessments on a specified Lot have been paid. A properly executed certificate of the Association as to the status of assessments on a Lot is binding upon the Association as of the date of its issuance.

SECTION 7: Effect of Nonpayment of Assessments: Remedies of the Association: Any assessment not paid within thirty (30) days after the due date shall bear interest from the due date at the rate of ten percent per annum. The Association may bring an action at law against the owner personally obligated to pay the same, or foreclose the lien against the property. No owner may waive or otherwise escape liability for the assessments provided for herein by non-use of the common area or abandonment of the property.

SECTION 8: Subordination of the Lien to Mortgages: The lien of the assessments provided for herein shall be subordinate to the lien of any first mortgage. Sale or transfer of any tract shall not affect the assessment lien. However, the sale or transfer of any tract pursuant to mortgage foreclosure or any proceeding in lieu thereof, shall extinguish the lien of such assessments as to payments which became due prior to such sale or transfer. No sale or transfer shall relieve such tract from liability for any assessments thereafter becoming due or from the lien thereon.

SECTION 9: Special Assessments for Capital Improvements: In addition to the annual assessments authorized above, the members may levy, in any assessment year, a special assessment applicable to that year only for the purpose of defraying, in whole or in part, the cost of any construction, reconstruction, repair or replacement of a capital improvement upon the common areas, provided that such assessment shall have the assent of two-thirds (2/3) of the votes of the members who are voting in person or by proxy at a meeting duly called for this purpose.

PART F. GENERAL PROVISIONS:

F-1. TERM. These covenants are to run with the land and shall be binding on all parties and all persons claiming under them for a period of twenty-five years from the date these covenants are recorded after which time, said covenants shall be automatically extended for successive period of ten years, subject to the express provision that these covenants may be amended at any time after the date of execution hereby by an instrument signed by the members of the Architectural Control Committee and the owner or owners of a majority of the lots herein platted.

City of Bryant Subdivision Checklist

Subdivision/Project Name Kensington Place Phase 1
Contact Person Vernon Williams Phone 501-408-4650
Mailing Address 2909 Military Road

I. BASIC INFORMATION NEEDED ON THE PLAT

- ▲ 1. Name of Subdivision/Project
- ▲ 2. Current zoning R-1-S
- ▲ 3. Name and Address of owner of Record
- ▲ 4. Illustrate Source of Title giving deed record book and page number
- ▲ 5. Name & address of the sub-divider
- ▲ 6. Date of Survey
- ▲ 7. Vicinity map locating streets, highways, section lines, railroad, schools, & parks within ½ mile
- ▲ 8. Legal description of the property with exact boundary lines
- ▲ 9. Acreage of property
- ▲ 10. Number of Lots
- ▲ 11. Lot area in square feet
- ▲ 12. Lot lines with appropriate dimensions
- ▲ 13. Building setback lines
- ▲ 14. Preliminary Engineering certificate seal and signature on each page
- ▲ 15. Certificate of Engineering Accuracy
- ▲ 16. Certificate of Owner
- ▲ 17. Certificate of Final Plat Approval
- ▲ 18. Certificate of Recording
- ▲ 19. Show scale (not less than 1" = 100')
- ▲ 20. North Arrow
- ▲ 21. Show Title block
- ▲ 22. Show adjoining property owners
- ▲ 23. Layout of all proposed streets including traffic control devices (stop signs, speed limit, etc.)
- ▲ 24. Layout of all subdivision entrance street upgrades
- ▲ 25. Layout of all proposed alleys
- ▲ 26. Layout of all proposed sidewalk systems
- ▲ 27. Layout identifies any FEMA flood plain and flood way property within the 100-year flood elevation. (Provide Corp of Engineers 404 Permit if required)
- ▲ 28. Drainage easements for stormwater run-off and detention giving dimensions, locations, and purpose
- ▲ 29. Layout accommodates Master Street Plan segments within the boundaries
- ▲ 30. Street layout ties to existing adjoining subdivision stub-out streets and provides stub-out streets for future adjoining subdivisions.
- ▲ 31. Street width and right-of-way properly shown for each functional classification
- ▲ 32. Street centerlines showing angles of deflection, intersection, radii, length oftangents and arcs, and degree of curvature with basis of curve data
- ▲ 33. Typical cross section of streets
- ▲ 34. Location and name of existing streets
- ▲ 35. New street names that are not similar to existing street names
- ▲ 36. Show street lights
- ▲ 37. Show Fire Hydrant placement

- ▲ 38. Show and label all permanent & proposed easements
- ▲ 39. Any proposed open space must be shown
- ▲ 40. Show the direction and flow of all water courses entering the tract
- ▲ 41. Show the direction and flow of all water courses leaving the tract
- ▲ 42. The drainage area of all water courses above the points of entry.
- ▲ 43. The downstream drainage channel and drainage structures substantially impacted by the subdivision/project.
- ▲ 44. Show source of water supply
- ▲ 45. Show location of waste water connection to municipal main & sanitary sewer layout
- ▲ 46. A phasing plan outlining the boundaries for each phase

II. ADDITIONAL INFORMATION NEEDED, BUT NOT NECESSARILY ON THE PLAT

- ▲ 47. Natural features within the proposed subdivision including drainage channels, bodies of water, wooded areas, and other significant features
- ▲ 48. Existing streets, buildings, water courses, railroads. Culverts, utilities and easement on and adjacent to the tract.
- ▲ 49. Where method of disposal of wastewater is other than connection to a public waste water system, detailed information shall accompany the plat.
- ▲ 50. Calculations and field notes, including drainage calculations along with support drawing
 - 51. Stormwater detention plan approval from City Engineer (attach copy of approval)
- ▲ 52. The Certificate of Preliminary Engineering Accuracy on each set of street and drainage plans.
- ▲ 53. ADA Accessibility Standard Form completed (and attached)
- ▲ 54. A Bill of Assurance has been prepared for this subdivision (and attached)
- ▲ 55. All lots comply with minimum square footage area and minimum lot width at the front building line
- ▲ 56. Street pavement design will be as specified by City or AHTD design procedures, approved by the City Engineer.
- ▲ 57. Made the "One Call" prior to site clearance or other excavation activity

III. PRELIMINARY PLAT ATTACHMENTS

(APPLICATION WILL NOT BE ACCEPTED UNTIL ALL ATTACHMENT REQUIREMENTS ARE MET)

- ▲ 58. Letter to Planning Commission stating your request
- ▲ 59. Completed Checklist
- ▲ 60. Completed agreement to provide performance assurance
- ▲ 61. Subdivider Performance Bond or Cashier's Check for infrastructure installation
- ▲ 62. Landscaping plan of any proposed common open space
- ▲ 63. Draft of Bill of Assurance proposed for the subdivision (if applicable)
- ▲ 64. 20 copies of Preliminary Plat Plan (folded) that includes vicinity map (minimum size 17" X 34" paper)
- ▲ 65. Two (2) IBM compatible diskettes or CDR's with pertinent data and Plat in CAD compatible .DXF electronic file format
- ▲ 66. Copy of Stormwater Detention approval
- ▲ 67. 2 copies Plan and profile of all streets
- ▲ 68. Receipt for \$300.00 + \$3.00 per lot for preliminary Subdivision fee
- ▲ 69. Receipt for \$250.00 or \$25.00 per lot (whichever is greater) for Stormwater Detention and Drainage Plan review
- ▲ 70. Copy of ADEQ Stormwater Pollution Prevention Plan for property parcel containing one acre or larger.

III. FINAL PLAT ATTACHMENTS

(APPLICATION WILL NOT BE ACCEPTED UNTIL ALL ATTACHMENT REQUIREMENTS ARE MET)

- ▲ 71. Letter to Planning Commission stating your request
- ▲ 72. Completed Checklist
- ▲ 73. 20 copies of Final Plat Plan (folded) that includes vicinity map (minimum size 17" X 34" paper)
- ▲ 74. Two (2) IBM compatible diskettes or CDR's with pertinent data and Plat in CAD compatible .DXF electronic file format
- ▲ 75. Bill of Assurance including provisions set out in Title 15 Subdivision Regulations 15.16.01
- ▲ 76. Copy of Water & Sewer Commission approval or....
- ▲ 77. State Health Department approval of any new water supply and/or sewage system.
- ▲ 78. Letter submitted by a Registered Professional Engineer, certifying that all infrastructure improvements and installations have been installed in accordance with the submitted construction plans and drawings and the standards established by the City of Bryant and are functioning properly.
- ▲ 79. Infrastructure Maintenance Bond or Cashier's check.
- ▲ 80. Check for \$25.00 + \$1.00 per lot for final Subdivision fee
- ▲ 81. Check for Water Sewer impact fees (\$100.00 Flushing Fee and \$100.00 impact fee per lot)

Kensington Place Phase 2
Name of Subdivision

Kelly Vandenberg
Surveyor

I HAVE COMPLIED WITH THE REQUIREMENTS LISTED ABOVE AND HAVE CHECKED ALL OF THE BOXES ON THE CHECKLIST WHICH APPLY TO THIS PROJECT SUBMITTAL.

[Signature]
Owner Signature

Kelly Vandenberg
Engineer Signature

CITY USE

Preliminary Plat Approved _____

Planning Commission Date _____

Final Plat Approved _____

Planning Commission Date _____

Proof of Recording - County _____

County Clerk _____

Date _____

Sewer Improvements
 Kensington Place Subdivision - Phase 1
 Bryant, Arkansas
 16-Aug-17

Item#	Item Description	Total	Unit	Unit Price	Cost
1	Manhole	15	each	\$ 1,500.00	\$ 22,500.00
2	8" gravity sewer	3276	LF	\$ 25.00	\$ 81,900.00
3	lift Station	1	each	\$ 60,000.00	\$ 60,000.00
4	4" Force Main	3634	LF	\$ 10.00	\$ 36,340.00
5	Air Release Valve	3	each	\$ 2,000.00	\$ 6,000.00
6	4" MJ plug Valve	3	each	\$ 750.00	\$ 2,250.00
Total					\$ 208,990.00



Arkansas Department of Health

4815 West Markham Street • Little Rock, Arkansas 72205-3867 • Telephone (501) 661-2000

Governor Asa Hutchinson

Nathaniel Smith, MD, MPH, Director and State Health Officer

Engineering Section, Slot 37
www.healthy.arkansas.gov

Ph 501-661-2623

Fax 501-661-2032

After Hours Emergency 501-661-2136

September 23, 2016

Vernon J. Williams PE
GarNat Engineering, LLC
PO Box 116
Benton, Arkansas 72018

RE: Kensington Place Phase 1 (36 Lots) – Water and Sewer Extension
Salem, Saline County
ADH Project No. 97159

Dear Mr. Williams:

The plans for the above-captioned project dated 9-19-16, and submitted to the Engineering Section on 9-20-16, have been reviewed and are here by approved with the following conditions:

1. The Engineering Section relied upon the statements and representations made in the engineer's report, plans and specifications. In case any statement or representation in the aforementioned documents is found to be incorrect, this Approval may be revoked.
2. There shall be no deviation from the plans and specifications unless revised plans and specifications have been first submitted for review and written consent given.
3. The review and approval of the plans and specifications were for functional and sanitary features and in no way constitute an analysis of the structural design.
4. If construction on this project is not started within one year of the date affixed hereto, this Letter of Approval is void.
5. Construction shall be performed according to the Salem Water and Bryant Wastewater standard specifications and details.
6. Construction inspection for this project shall be the responsibility of Vernon J. Williams PE (GarNat Engineering).
7. All materials and components installed after January 3, 2014 in drinking water systems are required to comply with the federal definition of "lead free" contained in Public Law 111-380.

One set of the plans is being retained for our files and a set is being returned to you. When submitting correspondence pertaining to this project, please include our reference number 97159.

Sincerely,

Robert D. Arthur, P.E.
Engineer Supervisor
Engineering Section

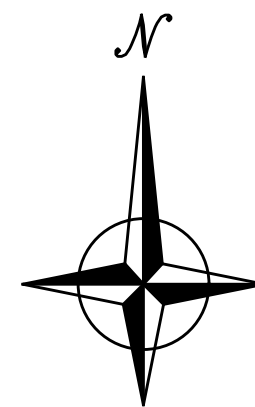
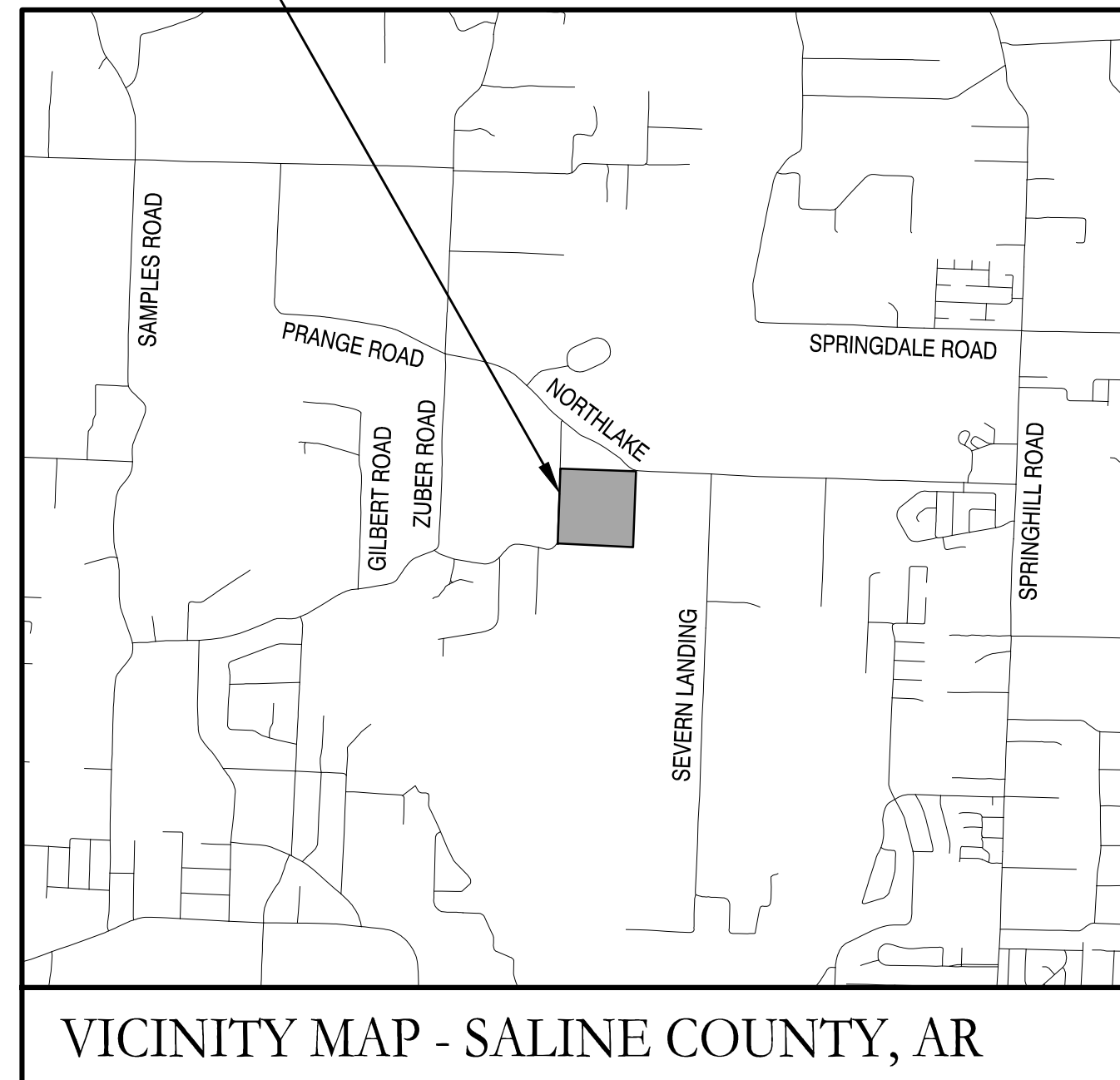
RDA: SGB: sgb

cc: Salem Water Association (PWS 492)
Bryant Wastewater (PSS S78)
Saline County Sanitarian
Protective Health Codes

KENSINGTON PLACE SUBDIVISION - PHASE 2

CITY OF BRYANT, SALINE COUNTY, ARKANSAS

KENSINGTON PLACE
SUBDIVISION



Prepared by:

GarNat Engineering, LLC

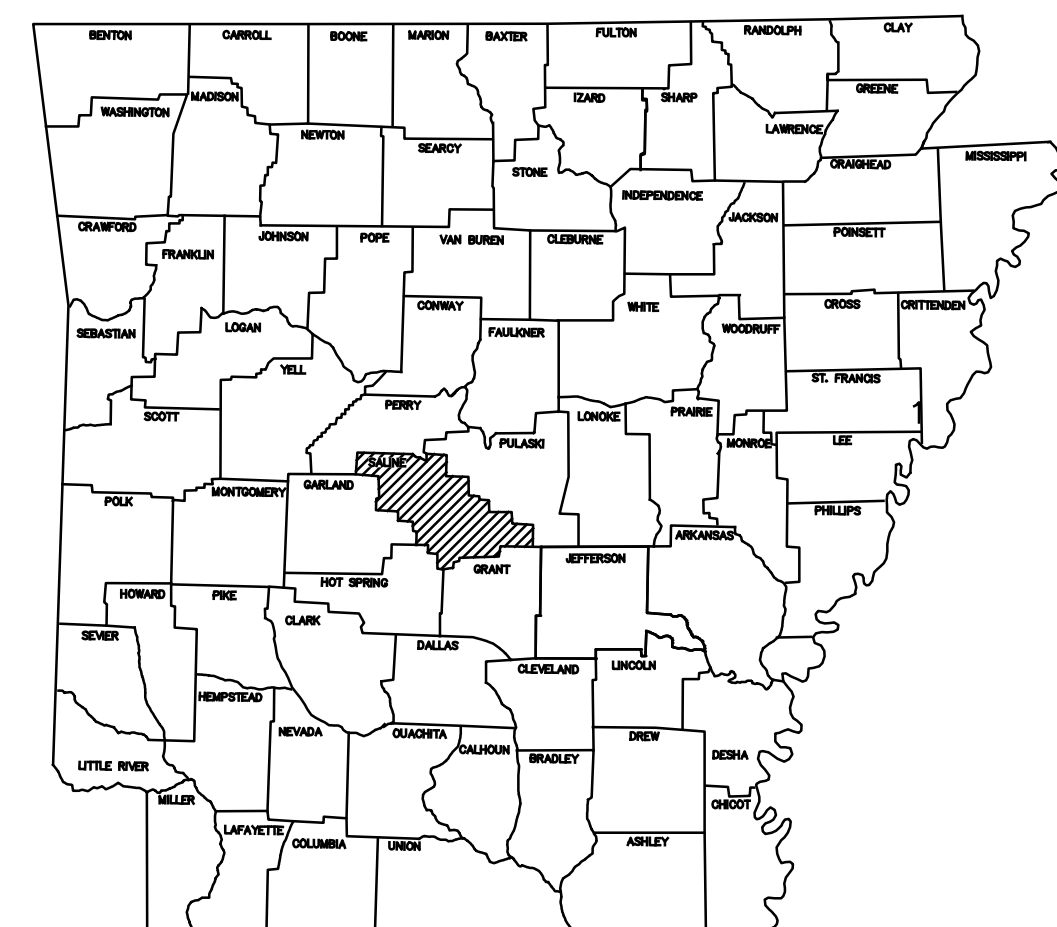
P.O. Box 116 (72018)
2990 Military Road
Benton, AR 72015

Ph (501) 408-4650
Fx (888) 900-3068
www.garnatengineering.com

Designing our client's success

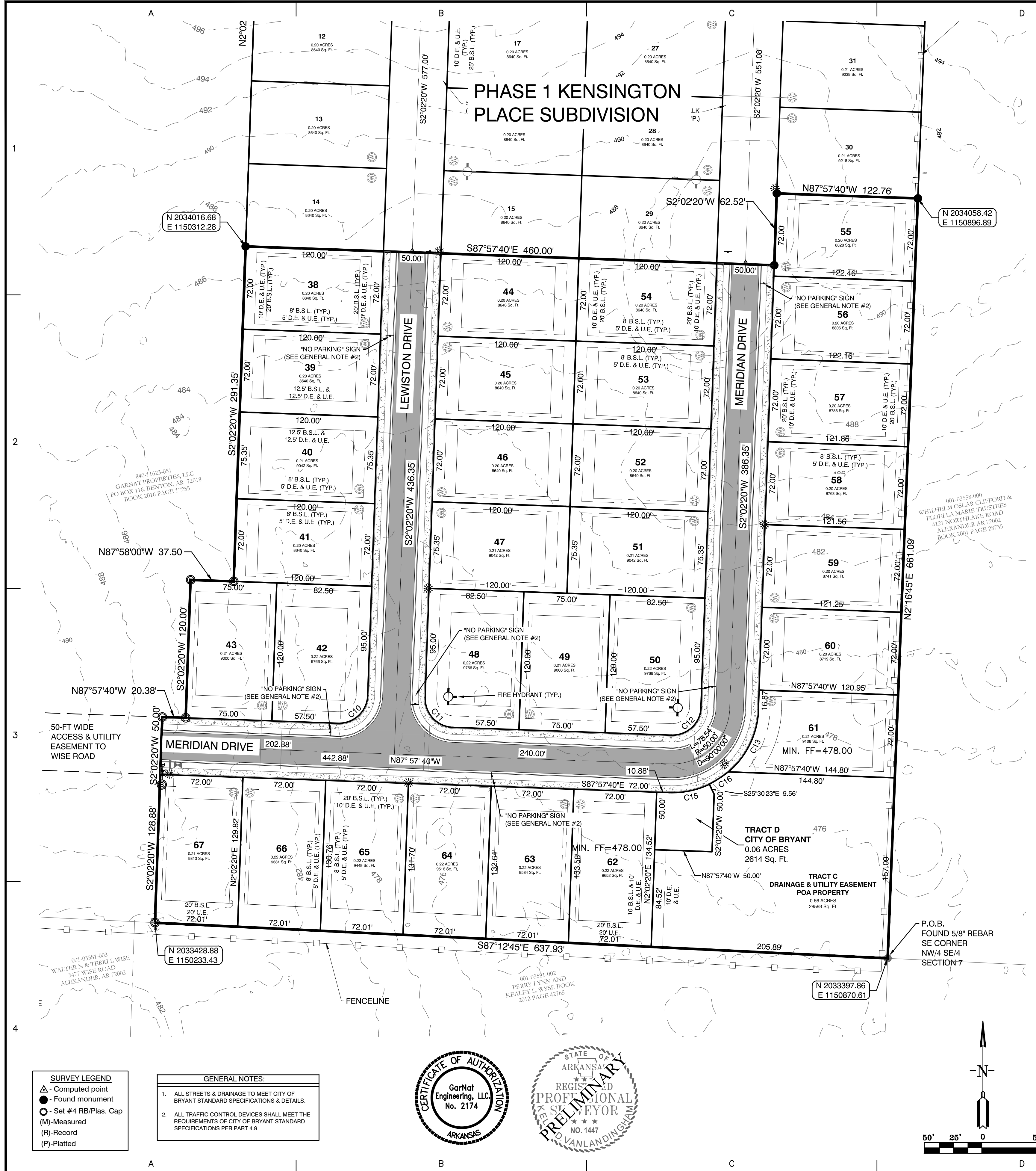
DRAWING INDEX:

- 1 PRELIMINARY PLAT
- 2 WATER AND SANITARY SEWER PLAN & PROFILE
- 3 STREET & DRAINAGE PLAN
- 4 STREET PROFILE - MERIDAN STREET
- 5 STREET PROFILE - LEWISTON STREET

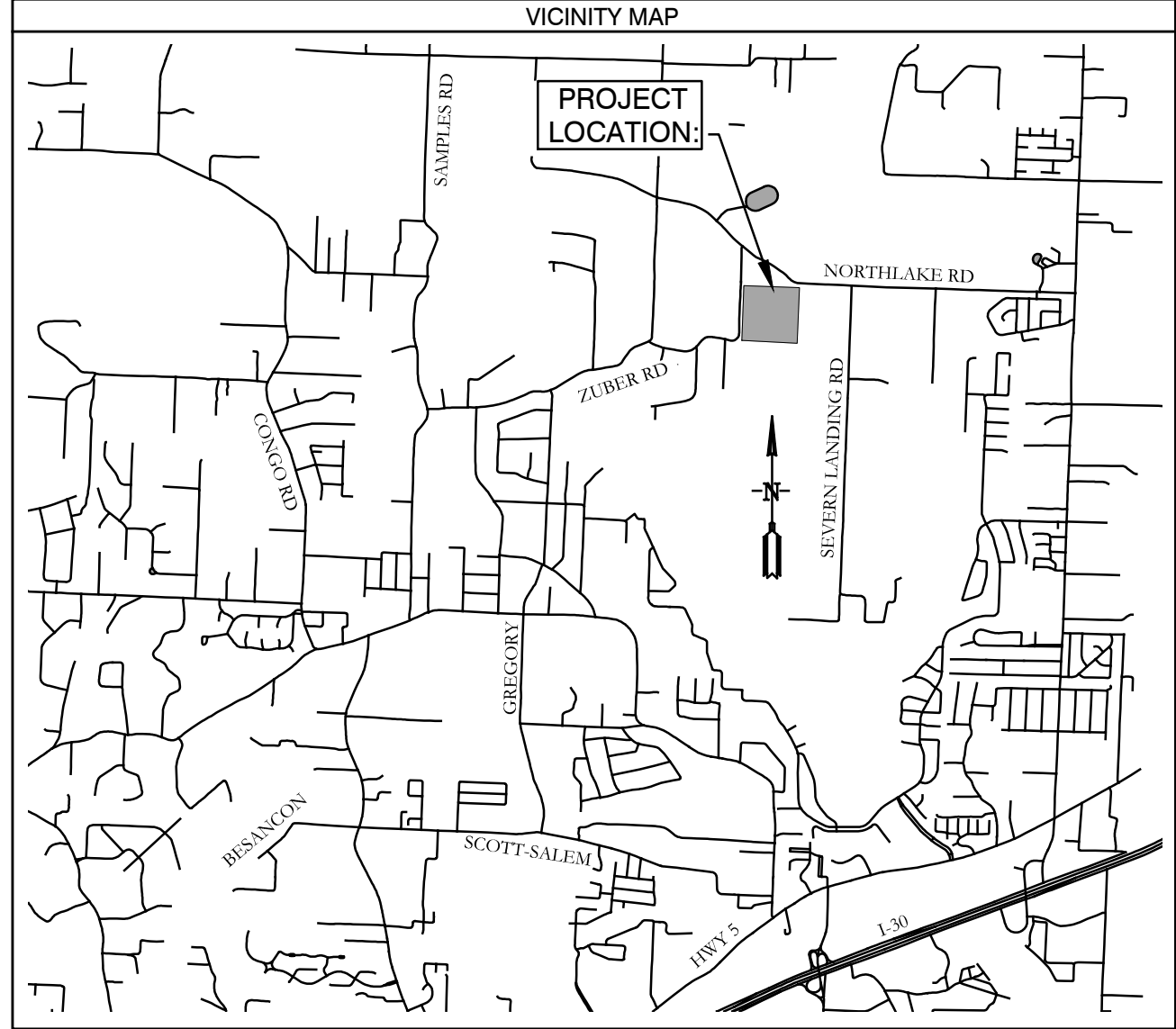


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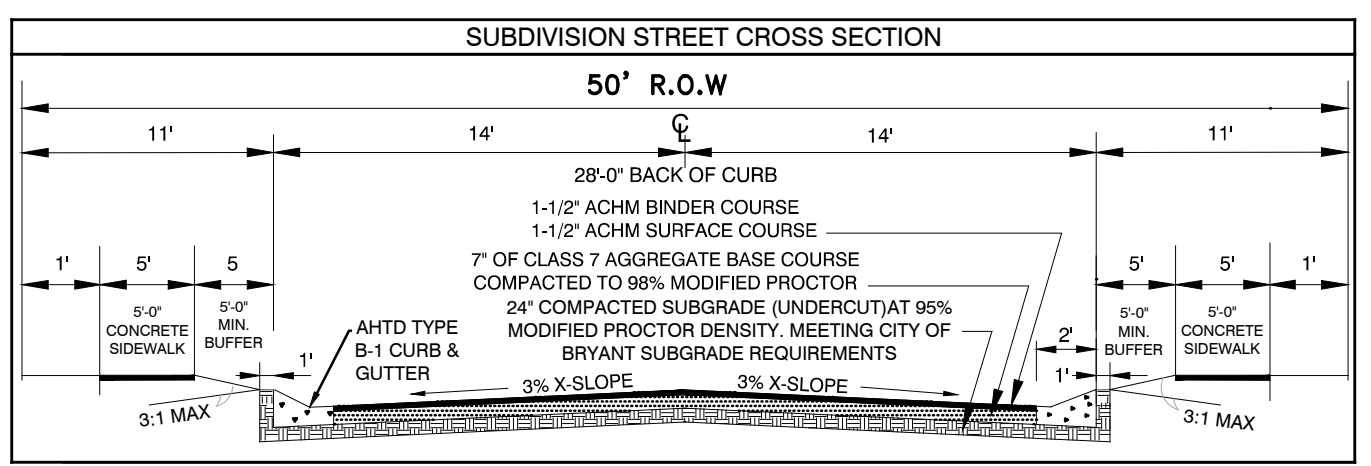




Curve #	Length	Radius	Delta	Chord Direction	Chord Length
C10	39.27'	25.00'	90°00'	S47°02'20"W	35.36'
C11	39.27'	25.00'	90°00'	N42°57'40"W	35.36'
C12	39.27'	25.00'	90°00'	S47°02'20"W	35.36'
C13	61.93'	75.00'	47°19'	N25°41'41"E	60.19'
C16	19.79'	122.48'	9°15'	N56°50'54"E	19.77'
C15	36.06'	75.00'	27°33'	N78°18'23"E	35.72'



PROPERTY DESCRIPTION:
PROPERTY DESCRIPTION: (PHASE 2 KENSINGTON PLACE)
 PART OF THE NORTHWEST QUARTER OF SOUTHEAST QUARTER (NW 1/4 SE 1/4) OF SECTION 7, TOWNSHIP 1 SOUTH, RANGE 14 WEST, DESCRIBED AS FOLLOWS:
BEGINNING AT THE SOUTHEAST CORNER OF SAID NW 1/4 SE 1/4 BEING A REBAR; THENCE N87°12'45"W A DISTANCE OF 637.93 FEET TO A REBAR AND CAP; THENCE N2°02'20"E A DISTANCE OF 178.88 FEET TO A REBAR AND CAP; THENCE S87°57'40"E A DISTANCE OF 20.38 FEET TO A REBAR AND CAP; THENCE S2°02'20"W A DISTANCE OF 120.00 FEET TO A REBAR AND CAP; THENCE S87°57'40"E A DISTANCE OF 37.50 FEET TO A REBAR AND CAP; THENCE N2°02'20"E A DISTANCE OF 291.35 FEET TO A REBAR AND CAP, BEING THE SOUTHWEST CORNER OF PHASE 1 OF KENSINGTON PLACE SUBDIVISION; THENCE ALONG THE SOUTH LINE OF SAID PHASE 1 OF KENSINGTON PLACE SUBDIVISION THE FOLLOWING CALLS: S87°57'40"E A DISTANCE OF 460.00 FEET TO A REBAR AND CAP; N2°02'20"E A DISTANCE OF 62.52 FEET TO A REBAR AND CAP; S87°57'40"E A DISTANCE OF 122.76 FEET TO A REBAR AND CAP, BEING THE SOUTHWEST CORNER OF SAID PHASE 1 OF KENSINGTON PLACE SUBDIVISION; THENCE S2°16'45"W A DISTANCE OF 681.09 FEET TO THE POINT OF BEGINNING, CONTAINING 8.45 ACRES, OR 368,259 SQUARE FEET, MORE OR LESS.



PROPERTY SPECIFICATIONS:
 ZONING CLASSIFICATION: R-1.5
 MIN. LOT SIZE: 8,640 S.F.
 NUMBER OF LOTS: 30
 SOURCE OF WATER: SALEM WATER
 SOURCE OF SEWER: CITY OF BRYANT
BUILDING MINIMUM SETBACKS:
 FRONT - 20' OR AS SHOWN
 REAR - 20' OR AS SHOWN
 SIDE - 8' OR AS SHOWN
EASEMENTS (MINIMUM): UTILITY & DRAINAGE (D.E. & U.E.)
 FRONT - 10' OR AS SHOWN
 REAR - 10' OR AS SHOWN
 SIDE - 5' OR AS SHOWN
 STREET RIGHT OF WAY: 50' OR AS SHOWN
 STREET WIDTH: 28' BOC TO BOC
 LOT CORNERS: SET #4 REBAR WITH CAP
 TRACT C WILL BE OWNED & MAINTAINED BY PROPERTY OWNERS ASSOCIATION. TRACT D WILL BE OWNED & MAINTAINED BY THE CITY OF BRYANT.

BASIS OF BEARINGS:
 NAD 83 ARKANSAS GRID SOUTH ZONE (GPS)
CERTIFICATIONS:
 By affixing my seal and signature, I Kelly D. Vanlandingham, PLS No. 1447, hereby certify that this drawing correctly depicts a survey completed under my supervision dated 7/20/2016.
 According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) for Saline County unincorporated areas, panel # 05125C0225D dated 6/19/2012, no portion, dated of the property described hereon does lie within the 100 year flood hazard boundary.

PLAT CERTIFICATES:

OWNER: Name: Thomas D.B. Collins, Ltd. Address: 39 Walnut Valley Little Rock, AR 72211

DEVELOPER: Name: Thomas D.B. Collins, Ltd. Address: 39 Walnut Valley Little Rock, AR 72211

CERTIFICATE OF RECORDING: This document, number _____ is filed for record this _____ day of _____, 20____ at _____ a.m./p.m. in Plat or Deed Book _____ Page _____ For Bill of Assurance see Deed Record Book _____ Page _____

CERTIFICATE OF OWNER: We, the undersigned, owners of the real estate shown and described herein do hereby certify that we have laid off, platted and subdivided, and do hereby lay off, plat and subdivide said real estate in accordance with the within plat.

CERTIFICATE OF PRELIMINARY SURVEYING ACCURACY: I, Kelly D. Vanlandingham, hereby certify that this proposed preliminary plat correctly represents a boundary survey made by me or under my supervision on 6/19/2016 that the boundary lines shown hereon correspond with the description in the deeds cited in the above Source of Title; and that all monuments which were found or placed on the property are correctly described and located.

CERTIFICATE OF PRELIMINARY ENGINEERING ACCURACY: I, Kelly D. Vanlandingham, hereby certify that this plat correctly represents a survey and a plan made by me or under my supervision; that all monuments shown herein actually exist and their locations, size, type, and material are correctly shown; and that all requirements of the City of Bryant Subdivision Rules and Regulations have been fully complied with.

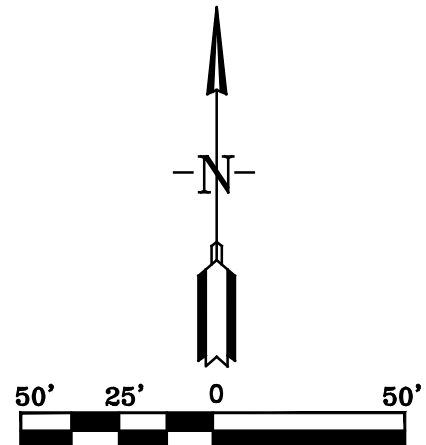
CERTIFICATE OF PRELIMINARY PLAT APPROVAL: All requirements of the City of Bryant Subdivision Rules and Regulations relative to the preparation and submittal of a Preliminary Plat having been fulfilled, approval of this plat is hereby granted, subject to further provisions of said Rules and Regulations.

This Certificate shall expire Date: _____

Date of Execution _____ **Name, Chairman** Kelly D. Vanlandingham, Registered Land Surveyor No. 1447, Arkansas **Bryant Planning Commission**

SURVEY LEGEND
 △ - Computed point
 ● - Found monument
 ○ - Set #4 RB/Plas. Cap
 (M) - Measured
 (R) - Record
 (P) - Platted

GENERAL NOTES:
 1. ALL STREETS & DRAINAGE TO MEET CITY OF BRYANT STANDARD SPECIFICATIONS & DETAILS.
 2. ALL TRAFFIC CONTROL DEVICES SHALL MEET THE REQUIREMENTS OF CITY OF BRYANT STANDARD SPECIFICATIONS PER PART 4.9



GarNat Engineering, LLC
 P.O. Box 116 (72018) Ph (501) 408-4650
 2909 Military Road Fx (888) 900-3068
 Benton, Arkansas 72015 gamatenengineering@gmail.com

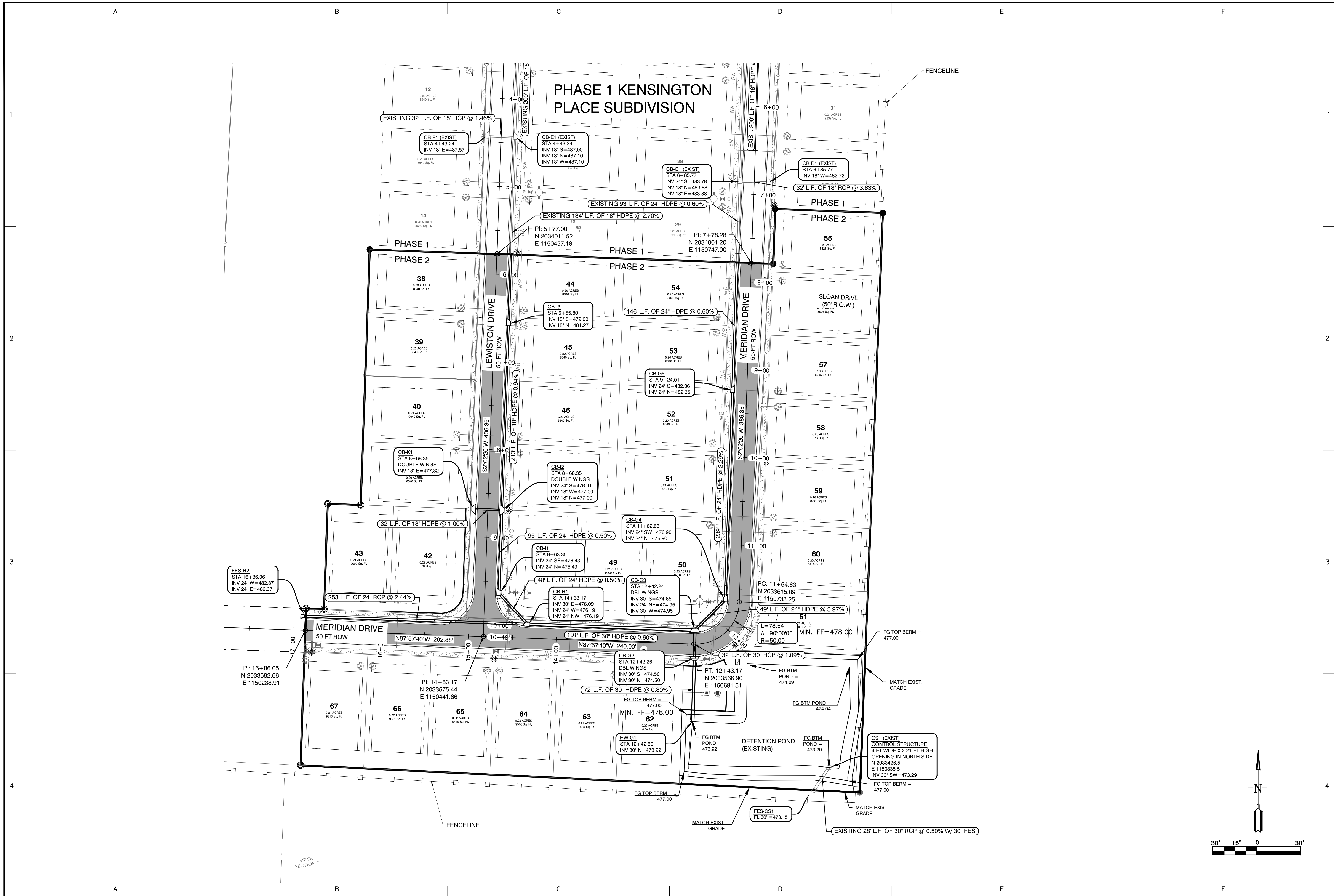
REVISIONS:

DATE	REVISIONS PER COMMENTS FROM BRYANT
9-14-2017	

CONTENTS:

PRELIMINARY PLAT

PROJECT NO: 16044
 DATE: AUG 22, 2017
 SHEET NO: 1



REVISION	DATE	BY
REVISIONS PER COMMENTS FROM BRYANT	8-14-2017	KDV

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 2909 Military Rd
 Benton, AR 72015
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 garnaengineering@gmail.com

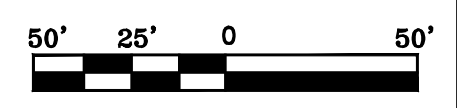
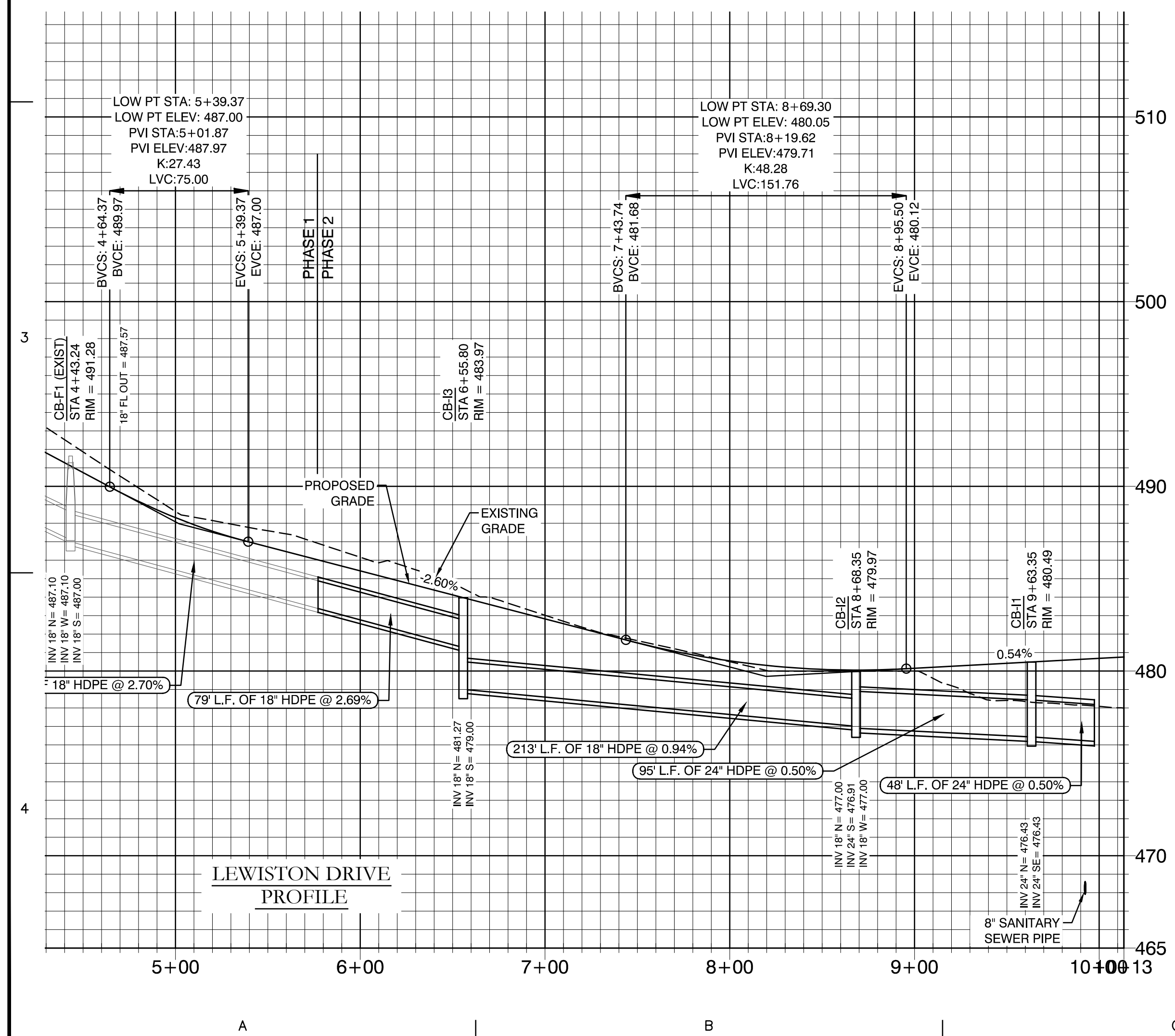
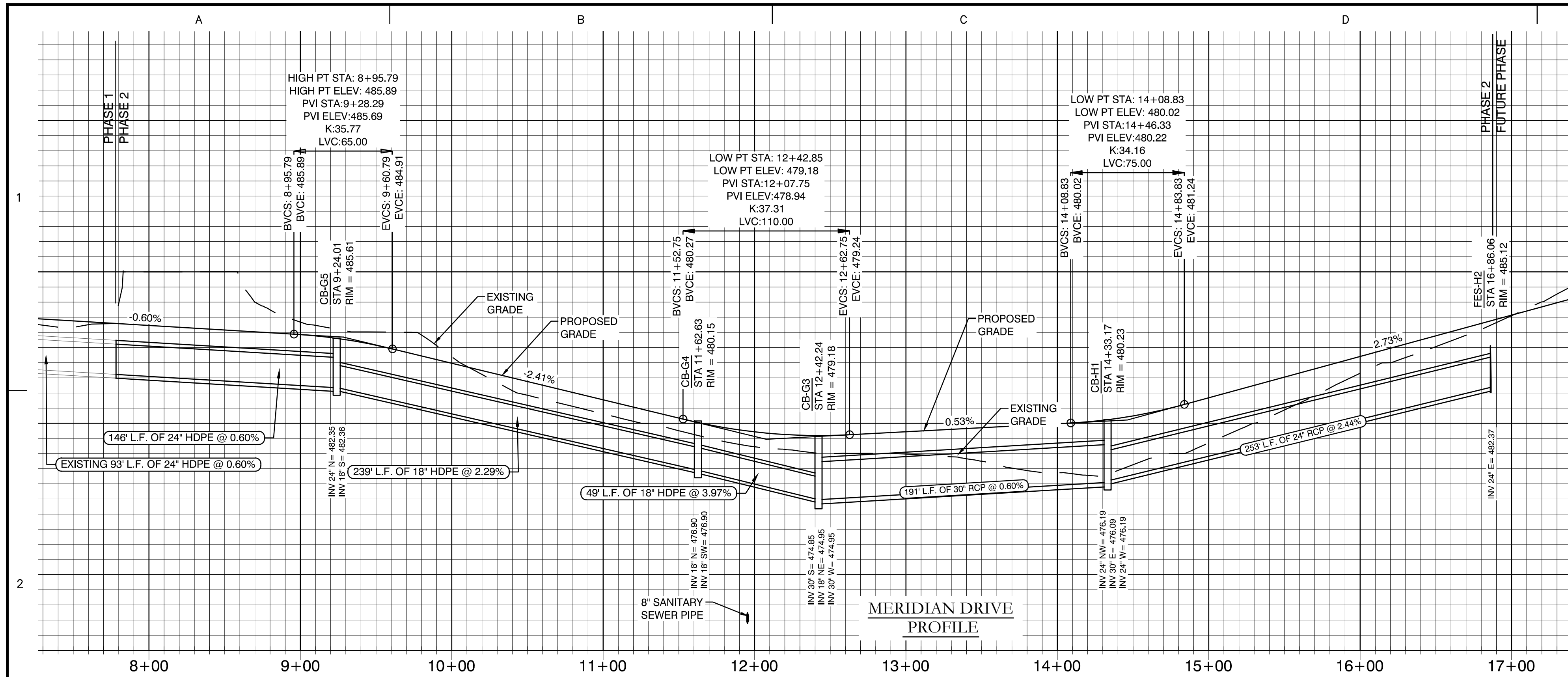
KENSINGTON PLACE SUBDIVISION,
 PHASE 2,
 CITY OF BRYANT,
 SALINE COUNTY, ARKANSAS



CONTENTS:
 STREET &
 DRAINAGE
 PLAN

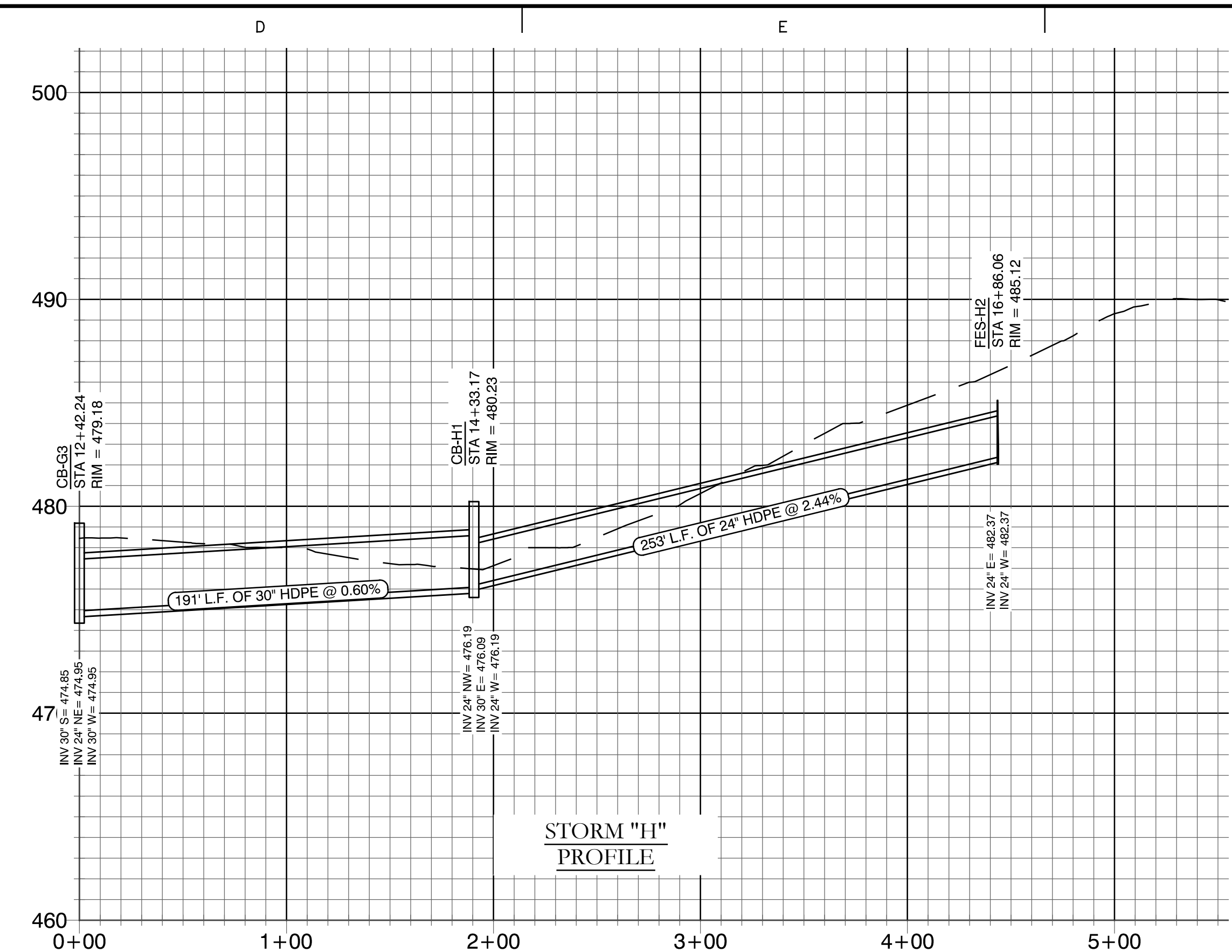
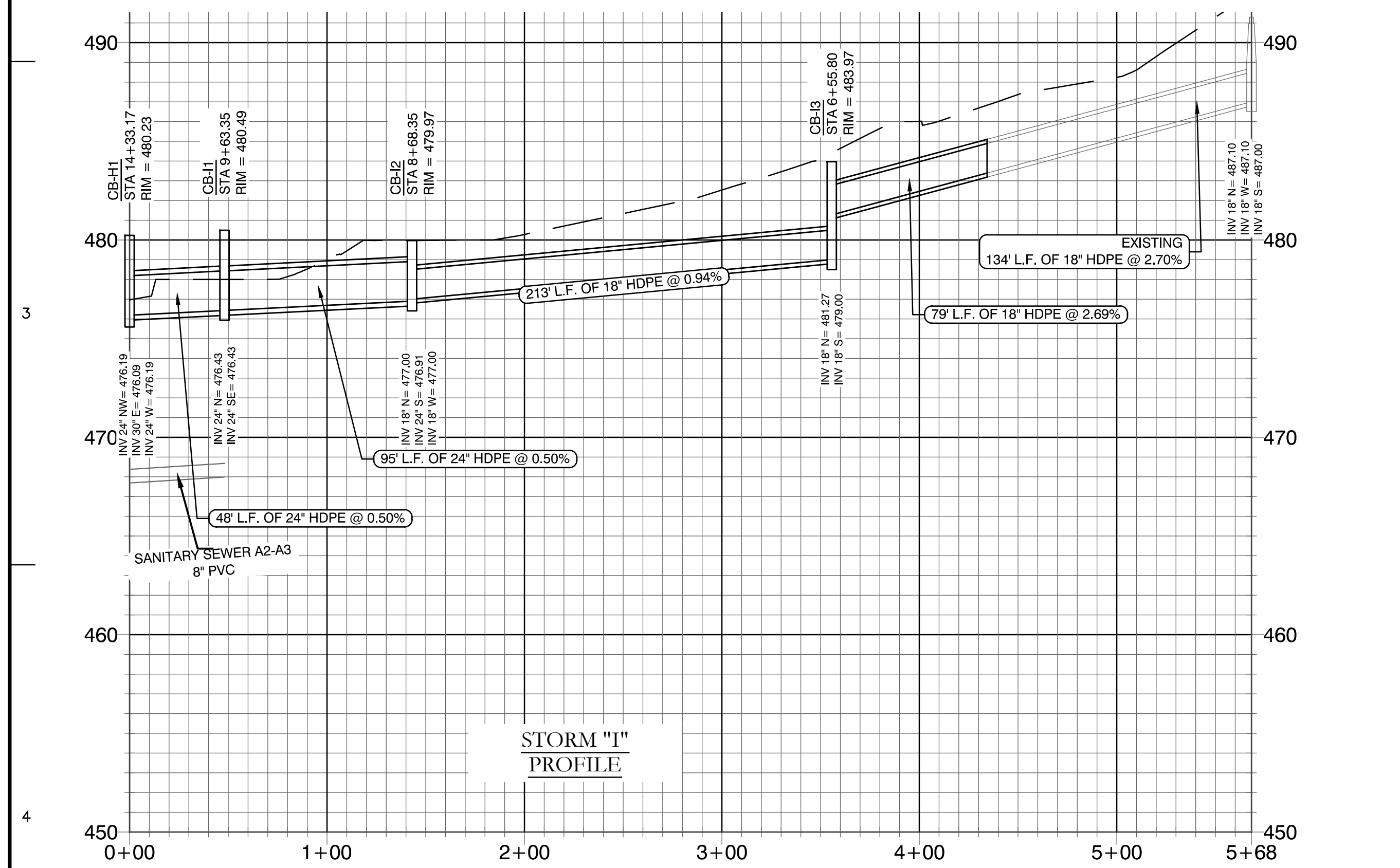
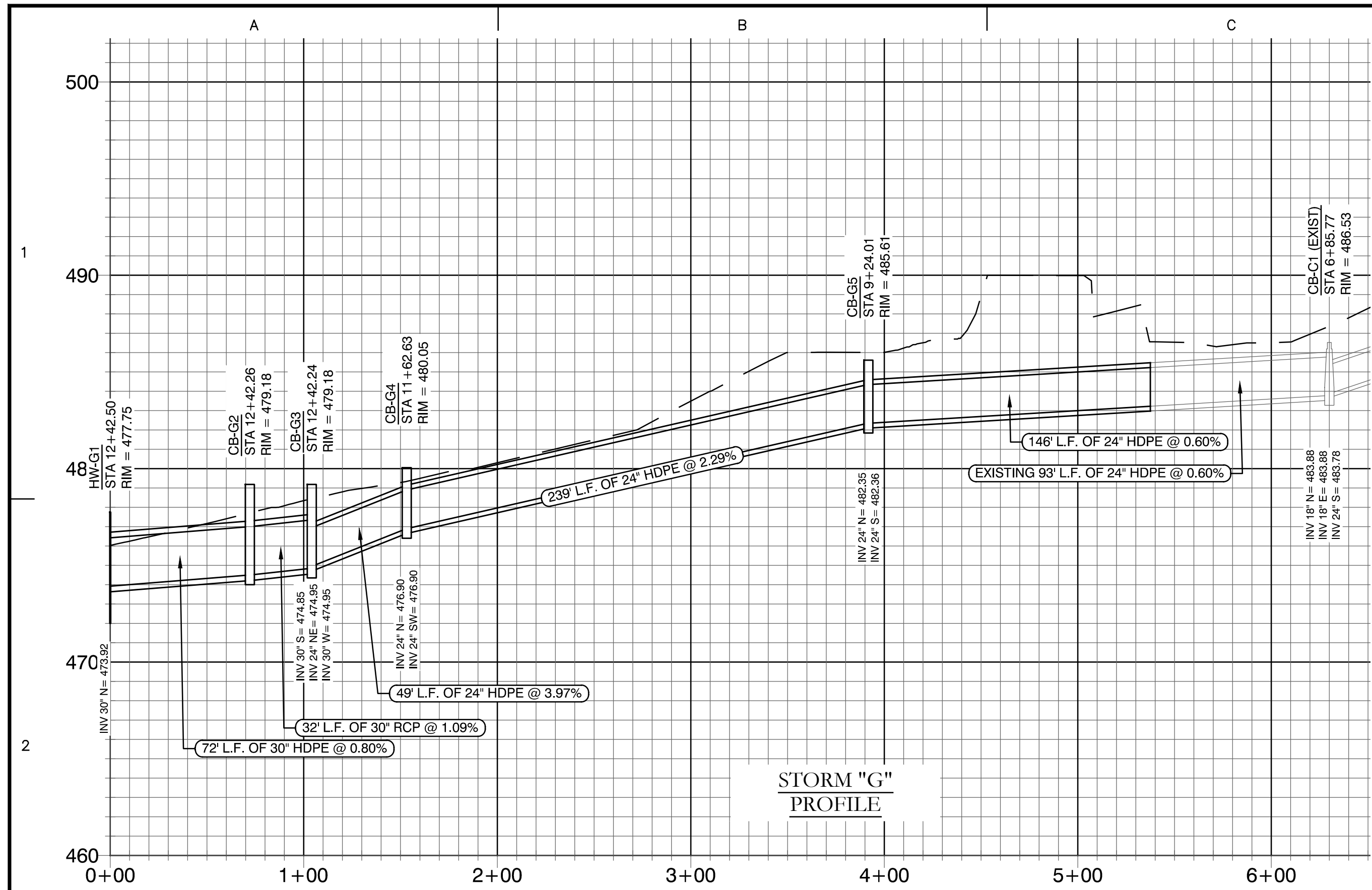
PROJECT NO:
 16044
 DATE:
 AUG 22, 2017
 SHEET NO:
 3

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BY	
REVISION	
DATE	
Designing our client's success GNE GarNat Engineering, LLC P.O. Box 116 (72018) Ph (501) 408-4650 2909 Military Rd Fx (888) 900-3068 Benton, AR 72015 gamatengineering@gmail.com	
KENSINGTON PLACE SUBDIVISION, PHASE 2, CITY OF BRYANT, SALINE COUNTY, ARKANSAS	
CONTENTS: STREET PROFILES	
PROJECT NO:	16044
DATE:	AUG 22, 2017
SHEET NO:	4

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DATE	REVISION	BY
	1	
	2	
	3	

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GarNat Engineering, LLC
 P.O. Box 116 (72018) Ph (501) 408-4650
 2909 Military Rd Fx (888) 900-3068
 BRYANT, AR 72015 garnaengineering@gmail.com

KENSINGTON PLACE SUBDIVISION,
 PHASE 2,
 CITY OF BRYANT,
 SALINE COUNTY, ARKANSAS

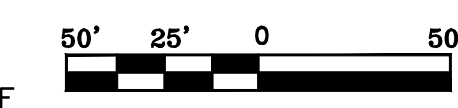


CONTENTS:
 DRAINAGE
 PROFILES

PROJECT NO:
 16044

DATE:
 AUG 22, 2017

SHEET NO:
 5



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KENSINGTON PLACE SUBDIVISION – PHASE 2
DRAINAGE CALCULATIONS – SUMMARY
9/18/2017

DESCRIPTION OF PROJECT

Kensington Place Subdivision is located in the City of Bryant, Saline County, Arkansas on Northlake Road. Phase 1 of this residential subdivision was approved by the City of Bryant in 2016 and is under construction. These calculations are for Phase 2 of this subdivision. There were some changes in the storm drainage design from the original designs submitted for Phase 1, which will be shown in the as-builts for Phase 1 once it is completed. The stormwater detention pond location was changed from the original design to be construction in the very southeast corner of Phase 2. These calculations include an analysis of the effects of this change.

These calculations are divided into the following sections:

Summary of Drainage Basins

Summary of Inlets

Summary of Pipes

Stormwater and Sanitary Analysis modeling for pre- and post-development conditions

Exhibit A – Pre-Development Drainage Basins

Exhibit B – Post-Development Drainage Basins

KENSINGTON PLACE SUBDIVISION – PHASE 2
DRAINAGE CALCULATIONS – SUMMARY
9/18/2017

SUMMARY OF DRAINAGE BASINS

PRE-DEVELOPMENT CONDITIONS

The existing site was a pasture / meadow prior to development into a residential subdivision. The entire area of Phase 2 of this subdivision is drained by one basin to a single checkpoint which is located in the vicinity of the proposed pond. This site was a mixture of forest, pasture, and meadow prior to development. Slopes range from 2% to 6% on most of the site. For the purposes of these calculations, the forested areas were assigned a runoff coefficient of 0.2, the pasture areas 0.5, and the meadow areas 0.4. See Exhibit A for the layout of the pre-development basins. The following is a summary of the basin data:

Area = 21.72 acres Weighted Runoff Coefficient = 0.36 Time of Concentration = 64 minutes

Peak Flow, 10 year = 19.40 cfs 25 year = 22.31 cfs

 50 year = 25.34 cfs 100 year = 28.37 cfs

POST-DEVELOPMENT CONDITIONS

As previously described, this site is being developed into a residential subdivision with about 3.5 homes every acre. For the purposes of these calculations, areas within the street right of ways were assigned a runoff coefficient of 0.90 and the areas developed into lots with homes a runoff coefficient of 0.60. Slopes will still range from 2% to 6%. Runoff drains from the developed areas of this phase into a pond located in the southeast corner of the subdivision. See Exhibit B for the layout of the post-development basins. The table on the following page shows the summary of data on the drainage basins.

KENSINGTON PLACE SUBDIVISION – PHASE 2
DRAINAGE CALCULATIONS – SUMMARY
 9/18/2017

TABLE 1 - POST-DEVELOPMENT DRAINAGE BASIN DATA

10-YEAR RETURN STORM

Subbasin	Area	Weighted	Time of	10- YEAR Peak	25- YEAR Peak	50- YEAR Peak	100- YEAR Peak
ID	Runoff	Concentration	Runoff	Runoff	Runoff	Runoff	Runoff
	Coefficient						
	(ac)	(days hh:mm:ss)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)
1	2.38	0.6100	0 01:11:46	3.38	3.87	4.41	4.94
2	0.96	0.6300	0 00:50:36	1.74	2.01	2.87	3.27
3	1.34	0.6300	0 00:30:46	3.24	3.73	0.96	1.04
4	0.17	0.7500	0 00:14:33	0.69	0.81	1.37	1.48
5	0.46	0.6900	0 00:17:04	1.58	1.84	1.93	2.07
6	1.73	0.6000	0 00:31:16	3.94	4.55	4.94	5.31
8	2.66	0.6000	0 00:49:03	4.68	1.11	8.60	9.25
9	0.06	0.9000	0 00:05:00	0.38	1.00	1.44	1.55
10	0.87	0.6300	0 00:27:10	2.24	5.39	2.31	2.48
11	0.12	0.9000	0 00:05:00	0.79	0.42	9.01	10.19
12	0.16	0.9000	0 00:05:00	1.12	2.59	0.44	0.48
13	0.23	0.9000	0 00:05:00	1.57	0.87	2.26	2.54
14	0.74	0.7200	0 00:05:00	4.03	1.24	1.62	1.75
15	1.28	0.7200	0 00:05:00	7.03	1.74	1.84	1.98
16	0.21	0.7500	0 00:05:00	1.18	4.46	1.67	1.79
17	0.28	0.9000	0 00:05:00	1.89	7.77	2.55	2.91
18	3.51	0.6000	0 00:39:45	6.97	1.30	1.75	1.88
19	0.05	0.9000	0 00:05:00	0.36	2.09	2.87	3.26
20	0.19	0.9000	0 00:05:00	1.33	8.04	2.77	3.14
21	0.22	0.9000	0 00:05:00	1.51	0.40	1.02	1.15
22	0.20	0.9000	0 00:05:00	1.36	1.47	1.29	1.39
26	1.06	0.6000	0 00:35:44	2.23	1.66	4.15	4.73
27	0.58	0.7200	0 00:15:56	2.16	1.50	1.01	1.09
28	0.22	0.7200	0 00:17:36	0.79	2.29	0.99	1.06
29	0.15	0.9000	0 00:05:00	1.05	1.58	0.89	1.00
30	0.12	0.9000	0 00:05:00	0.83	2.57	2.02	2.30
31	0.12	0.9000	0 00:05:00	0.81	2.52	5.06	5.77
23A	0.88	0.6000	0 00:31:54	1.99	0.92	1.24	1.41
23B	0.21	0.9000	0 00:05:00	1.43	1.16	1.11	1.26
7A	0.38	0.6600	0 00:30:58	0.96	0.92	6.08	6.83
7B	0.28	0.7200	0 00:23:23	0.86	0.89	0.46	0.50

KENSINGTON PLACE SUBDIVISION – PHASE 2
DRAINAGE CALCULATIONS – SUMMARY
9/18/2017

SUMMARY OF INLETS

On Exhibit B you will see labels for all of the inlets for these calculations. The following is a summary of the data on the inlets. The flows shown are for the 25-year return storm.

TABLE 2 – INLET SUMMARY

Element ID	Inlet Location	Invert Elevation (ft)	Max (Rim) Elevation (ft)	Curb Opening (in)	Peak Flow (cfs)	Peak Flow Intercepted by Inlet (cfs)	Peak Flow Bypassing Inlet (cfs)	Inlet Efficiency during Peak Flow (%)
CB-C1 (EXIST)	On Grade	483.78	487.16	96.00	4.77	3.76	1.01	78.78
CB-C2 (EXIST)	On Grade	490.63	495.14	48.00	1.84	0.69	1.16	37.23
CB-C3 (EXIST)	On Grade	490.95	495.16	48.00	0.81	0.41	0.40	50.26
CB-D1 (EXIST)	On Grade	484.10	487.17	96.00	3.76	3.25	0.51	86.32
CB-E1 (EXIST)	On Grade	487.00	491.64	96.00	0.88	0.88	0.00	100.00
CB-E2 (EXIST)	On Grade	496.73	501.05	48.00	1.24	1.06	0.18	85.16
CB-E3 (EXIST)	On Grade	497.60	501.00	48.00	1.74	1.30	0.43	75.04
CB-F1 (EXIST)	On Grade	487.57	491.28	96.00	1.41	1.41	0.00	100.00
CB-G2	On Sag	474.50	479.18	144.00	3.17	N/A	N/A	N/A
CB-G3	On Sag	474.85	478.79	144.00	5.39	N/A	N/A	N/A
CB-G4	On Grade	476.90	480.15	96.00	1.00	1.00	0.00	100.00
CB-G5	On Grade	482.36	485.61	96.00	2.00	2.00	0.00	99.95
CB-H1	On Grade	476.09	480.66	48.00	1.47	1.18	0.28	80.65
CB-H2	On Grade	483.38	485.12	48.00	1.76	1.51	0.25	86.01
CB-H3	On Grade	483.88	490.37	48.00	2.52	1.60	0.92	63.61
CB-H5	On Sag	485.87	488.55	144.00	12.22	N/A	N/A	N/A
CB-H6	On Sag	488.21	488.55	144.00	4.59	N/A	N/A	N/A
CB-I2	On Sag	476.91	479.97	144.00	0.42	N/A	N/A	N/A
CB-I3	On Grade	479.00	483.97	96.00	2.58	2.49	0.09	96.42
CB-K1	On Sag	478.07	482.00	144.00	8.04	N/A	N/A	N/A

Note that all catch basins are curb inlets and there is 100% interception of flow on all Sag Inlets.

KENSINGTON PLACE SUBDIVISION – PHASE 2
DRAINAGE CALCULATIONS – SUMMARY
9/18/2017

SUMMARY OF PIPES

All pipes used in this project are either RCP or HDPE pipes. Therefore, a manning's of 0.013 was used on all pipes in the analysis. A summary of the pipe data is in the following table. The flows shown are for the 25-year return storm.

TABLE 3 – SUMMARY OF PIPE INPUT

Element ID	From (Inlet) Node	To (Outlet) Node	Length (ft)	Inlet Invert Elevation (ft)	Outlet Invert Elevation (ft)	Average Slope (%)	Diameter or Height (in)	Manning's Roughness
ST-C1 (EXIST)	CB-C1 (EXIST)	CONNECT-G	92.51	483.78	483.22	0.6000	24.000	0.0130
ST-C2 (EXIST)	CB-C2 (EXIST)	CB-C1 (EXIST)	200.00	490.63	483.88	3.3800	18.000	0.0130
ST-C3 (EXIST)	CB-C3 (EXIST)	CB-C2 (EXIST)	32.02	490.95	490.63	1.0000	18.000	0.0130
ST-CS1 (EXIST)	Jun-01	Out-01	24.64	473.29	473.16	0.5300	30.000	0.0130
ST-D1 (EXIST)	CB-D1 (EXIST)	CB-C1 (EXIST)	32.02	484.10	483.88	0.6900	18.000	0.0130
ST-E1 (EXIST)	CB-E1 (EXIST)	CONNECT-I	133.90	487.00	483.38	2.7000	18.000	0.0130
ST-E2 (EXIST)	CB-E2 (EXIST)	CB-E1 (EXIST)	200.00	496.73	487.10	4.8100	18.000	0.0130
ST-E3 (EXIST)	CB-E3 (EXIST)	CB-E2 (EXIST)	32.02	497.60	496.83	2.4000	18.000	0.0130
ST-F1 (EXIST)	CB-F1 (EXIST)	CB-E1 (EXIST)	32.02	487.57	487.10	1.4600	18.000	0.0130
ST-G1	CB-G2	POND1	72.10	474.50	473.92	0.8000	30.000	0.0130
ST-G2	CB-G3	CB-G2	31.99	474.85	474.50	1.0900	30.000	0.0130
ST-G3	CB-G4	CB-G3	49.09	476.90	474.95	3.9700	24.000	0.0130
ST-G4	CB-G5	CB-G4	238.61	482.36	476.90	2.2900	24.000	0.0130
ST-G5	CONNECT-G	CB-G5	145.74	483.22	482.35	0.6000	24.000	0.0130
ST-H1	CB-H1	CB-G3	190.63	476.09	474.95	0.6000	30.000	0.0130
ST-H2	FES-H2	CB-H1	252.90	482.37	476.19	2.4400	24.000	0.0130
ST-H2A	CB-H2	FES-H2	37.10	483.38	482.37	2.7200	24.000	0.0130
ST-H3	CB-H3	CB-H2	48.08	483.88	483.38	1.0400	24.000	0.0130
ST-H5	CB-H5	CB-H3	378.49	485.87	483.98	0.5000	24.000	0.0130
ST-H6	CB-H6	CB-H5	32.00	488.21	487.89	1.0000	18.000	0.0130
ST-I1	CB-I1	CB-H1	48.08	476.43	476.19	0.5000	24.000	0.0130
ST-I2	CB-I2	CB-I1	95.00	476.91	476.43	0.5100	24.000	0.0130
ST-I3	CB-I3	CB-I2	212.56	479.00	477.00	0.9400	18.000	0.0130
ST-I4	CONNECT-I	CB-I3	78.66	483.38	481.27	2.6900	18.000	0.0130
ST-K1	CB-K1	CB-I2	32.05	477.32	477.00	1.0000	18.000	0.0130

KENSINGTON PLACE SUBDIVISION – PHASE 2
DRAINAGE CALCULATIONS – SUMMARY
9/18/2017

TABLE 4 - SUMMARY OF PIPE RESULTS

Element ID	Peak Flow (cfs)	Design Flow Capacity (cfs)	Peak Flow/ Design Flow Ratio	Peak Flow Velocity (ft/sec)	Peak Flow Depth (ft)	Peak Flow Depth/ Total Depth Ratio
ST-C1 (EXIST)	7.23	17.52	0.41	5.32	0.90	0.45
ST-C2 (EXIST)	1.05	19.30	0.05	7.08	0.24	0.16
ST-C3 (EXIST)	0.41	10.50	0.04	2.87	0.20	0.13
ST-CS1 (EXIST)	22.27	29.79	0.75	6.66	1.61	0.64
ST-D1 (EXIST)	3.25	8.71	0.37	4.57	0.63	0.42
ST-E1 (EXIST)	4.59	17.26	0.27	8.29	0.53	0.35
ST-E2 (EXIST)	2.33	23.05	0.10	8.44	0.32	0.21
ST-E3 (EXIST)	1.30	16.27	0.08	6.39	0.29	0.19
ST-F1 (EXIST)	1.41	12.70	0.11	4.74	0.34	0.22
ST-G1	32.61	36.79	0.89	8.48	1.83	0.73
ST-G2	30.37	42.90	0.71	9.48	1.55	0.62
ST-G3	9.82	45.08	0.22	11.48	0.63	0.32
ST-G4	9.18	34.22	0.27	9.24	0.71	0.35
ST-G5	7.23	17.44	0.41	5.30	0.90	0.45
ST-H1	26.98	31.72	0.85	7.36	1.77	0.71
ST-H2	17.56	35.36	0.50	11.33	1.00	0.50
ST-H2A	17.66	37.32	0.47	11.72	0.97	0.48
ST-H3	16.58	23.11	0.72	8.01	1.25	0.63
ST-H5	15.05	16.01	0.94	6.16	1.52	0.76
ST-H6	4.59	10.50	0.44	5.75	0.69	0.46
ST-I1	9.48	16.00	0.59	5.31	1.11	0.55
ST-I2	9.48	16.08	0.59	5.33	1.10	0.55
ST-I3	5.05	10.19	0.50	5.83	0.74	0.50
ST-I4	4.58	17.22	0.27	8.25	0.53	0.35
ST-K1	8.04	19.20	0.42	10.39	0.68	0.45

KENSINGTON PLACE SUBDIVISION – PHASE 2
DRAINAGE CALCULATIONS – SUMMARY
9/18/2017

POND SUMMARY

The pond in these calculations handles flows from both Phase 1 and 2 of Kensington Place Subdivision. The pond is located in the southeastern most corner of the subdivision property, just south of the sanitary sewer lift station. Water collected in the storm water system is discharged into the pond via a pipe culvert. A concrete control structure is constructed on the south edge of the pond. This control structure uses a slotted weir to limit the discharge through the structure to only that of the 25-year pre-development flow. Revised calculations for the pond will be submitted upon the completion of Phase 1. A summary of the pond inflow and outflow conditions are as follows:

The 25-year pre-development flow is 22.31 cfs

The 25-year post-development flow is 32.97 cfs

The 100-year pre-development flow is 28.37 cfs

The 100-year post-development flow is 40.21 cfs

A summary of the pond calculations for the 100-year event is on the following pages (including the overflow structure summary):

KENSINGTON PLACE SUBDIVISION – PHASE 2

DRAINAGE CALCULATIONS – SUMMARY

9/18/2017

POND CALCULATIONS (SOURCE: SSA)

Storage Node : POND1

Input Data

Invert Elevation (ft)	473.29
Max (Rim) Elevation (ft)	477.00
Max (Rim) Offset (ft)	3.71
Initial Water Elevation (ft)	473.29
Initial Water Depth (ft)	0.00
Ponded Area (ft ²)	0.00
Evaporation Loss	0.00

Storage Area Volume Curves

Storage Curve : POND1

Stage (ft)	Storage Area (ft ²)	Storage Volume (ft ³)
0	0	0.000
0.71	12615	4478.33
1.71	18216	19893.83
2.71	20116	39059.83
3.71	21896	60065.83

Outflow Weirs

Element ID	Weir Type	Crest Elevation (ft)	Crest Offset (ft)	Length (ft)	Weir Total Height (ft)	Discharge Coefficient
Weir-02	Rectangular	476.00	2.71	15.00	1.00	3.33

Outflow Orifices

Element ID	Orifice Type	Orifice Shape	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
Orifice-01	Side	Rectangular	26.50	21.00	0.00	0.63

KENSINGTON PLACE SUBDIVISION – PHASE 2

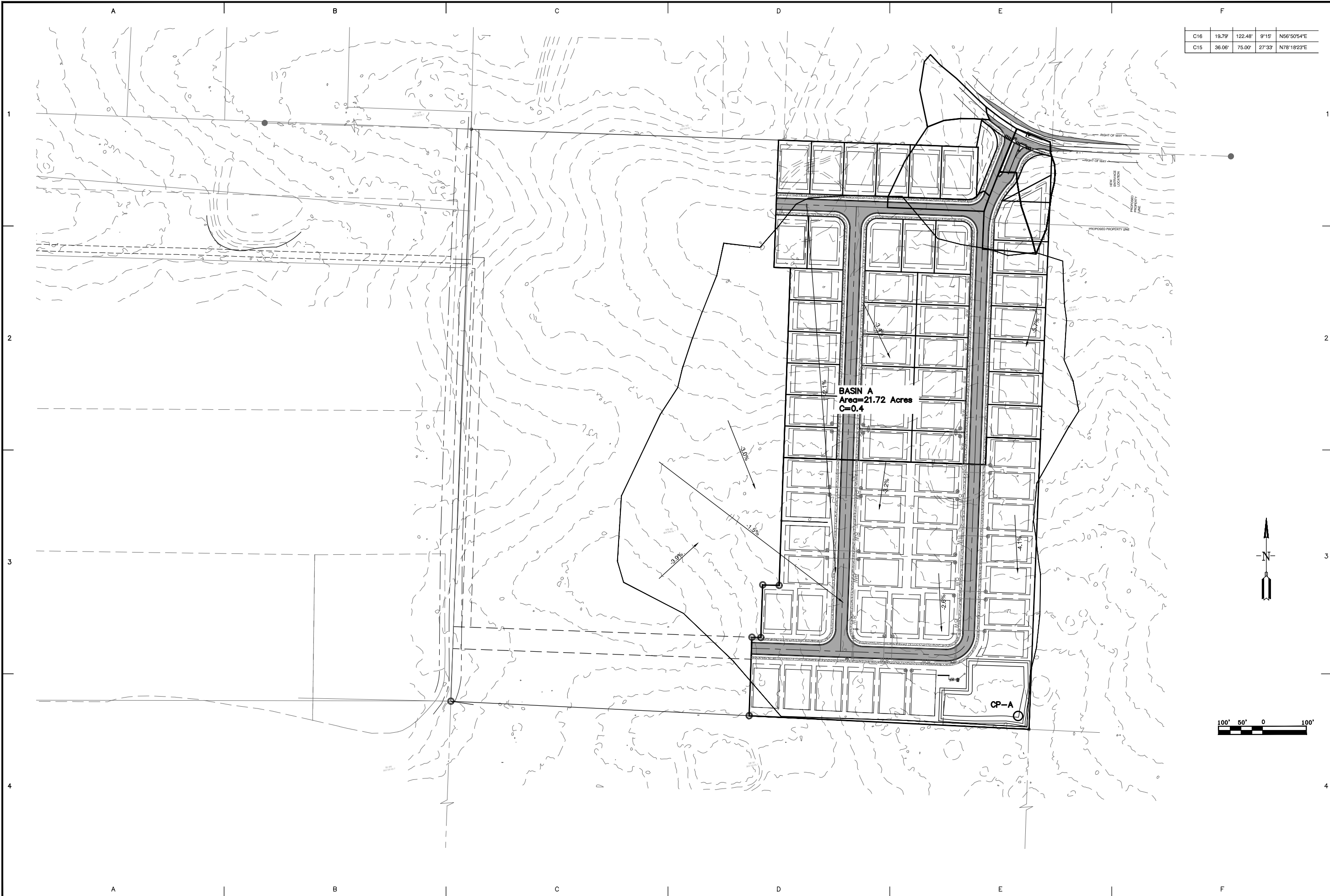
DRAINAGE CALCULATIONS – SUMMARY

9/18/2017

Output Summary

Results

Peak Inflow (cfs)	40.21
Peak Lateral Inflow (cfs)	4.94
Peak Outflow (cfs)	29.66
Peak Exfiltration Flow Rate (cfm)	0.00
Max HGL Elevation Attained (ft)	476.18
Max HGL Depth Attained (ft)	2.89
Average HGL Elevation Attained (ft)	473.48
Average HGL Depth Attained (ft)	0.19
Time of Max HGL Occurrence (days hh:mm)	0 00:50
Total Exfiltration Volume (1000-ft ³)	0.000
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00



BASIN A
 Area=21.72 Acres
 C=0.4

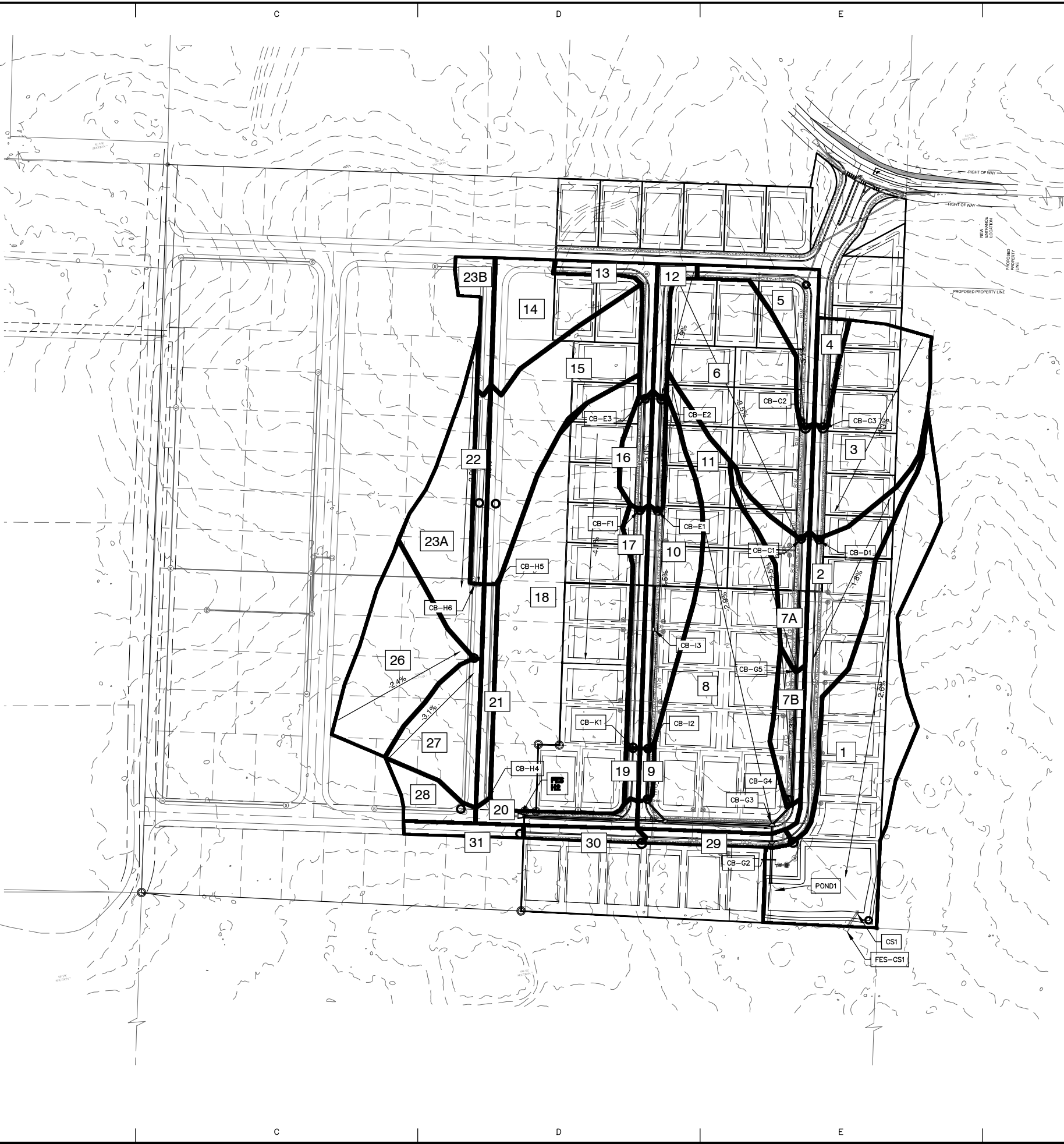
CP-A

BY	
REVISION	
DATE	
<p>GNE Designing our client's success GarNat Engineering, LLC Ph (501) 408-4650 Fx (888) 900-3068 2909 Military Rd Benton, Arkansas 72015 gnmateengineering@gmail.com</p>	
<p>KENSINGTON PLACE SUBDIVISION, PHASE 2, CITY OF BRYANT, SALINE COUNTY, ARKANSAS</p>	
<p>STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER KELLY D. VANLANDINGHAM NO. 7996 8/22/17</p>	
<p>CONTENTS: DRAINAGE MAP PRE-DEV</p>	
<p>PROJECT NO: 16044</p>	
<p>DATE: AUG 23, 2017</p>	
<p>SHEET NO: A</p>	

A:\Projects\2016 Projects\16044 Kensington Place\Map\Drawings\DWG\Phase 2\KENSINGTON PLACE PHASE 2 16044.dwg

DRAINAGE BASIN DATA

BASIN# (CFS)	AREA (ACRES)	RUNOFF, C	Q-25YR
1	2.38	0.61	3.87
2	0.96	0.63	2.01
3	1.34	0.63	3.73
4	0.17	0.75	0.81
5	0.46	0.69	1.84
6	1.73	0.60	4.55
7A	0.38	0.66	1.11
7B	0.28	0.72	1.00
8	2.66	0.60	5.39
9	0.06	0.90	0.42
10	0.87	0.63	2.59
11	0.12	0.90	0.87
12	0.16	0.90	1.24
13	0.23	0.90	1.74
14	0.74	0.74	4.46
15	1.28	0.72	7.77
16	0.21	0.75	1.30
17	0.28	0.90	2.09
18	3.51	0.60	8.04
19	0.05	0.90	0.40
20	0.19	0.90	1.47
21	0.22	0.72	1.33
22	0.20	0.90	1.50
23A	0.88	0.60	2.29
23B	0.21	0.90	1.58
26	1.06	0.60	2.57
27	0.58	0.72	3.51
28	0.22	0.72	1.35
29	0.15	0.90	1.16
30	0.12	0.90	0.92
31	0.12	0.90	0.89



C16	19.79'	122.48'	9'19"	N56°50'54"E
C15	36.06'	75.00'	27'33"	N78°18'23"E

BY		REVISION		DATE	
1					
2					
3					
4					

GNE Designing our client's success
GarNat Engineering, LLC
 Ph (501) 408-4650
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 2909 Military Rd
 Benton, Arkansas 72015
 Fx (888) 900-3068
 gnatengineering@gmail.com

KENSINGTON PLACE SUBDIVISION,
 PHASE 2,
 CITY OF BRYANT,
 SALINE COUNTY, ARKANSAS

CONTENTS:
**DRAINAGE
 MAP
 POST
 DEVELOPMENT**

PROJECT NO:
16044

DATE:
AUG 23, 2017

SHEET NO:
B

A:\Projects\2017 Projects\16044 Kensington Place PostDevelopment\Drawings\DWG\Phase 2\KENSINGTON PLACE PHASE 2 16044.dwg

Project Description

File Name 16044 Kensington Place Ph 2 Drainage Post-Dev 10 YEAR.SPF
Description J:\Projects\2016 Projects\16044 Kensington Place Subdivision Lee Pengelly\Drawings\DWG\Phase 2\KENSINGTON PLACE PHASE 2 R4.dwg

Project Options

Flow Units CFS
Elevation Type Elevation
Hydrology Method Rational
Time of Concentration (TOC) Method SCS TR-55
Link Routing Method Kinematic Wave
Enable Overflow Ponding at Nodes YES
Skip Steady State Analysis Time Periods NO

Analysis Options

Start Analysis On Aug 18, 2017 00:00:00
End Analysis On Aug 19, 2017 00:00:00
Start Reporting On Aug 18, 2017 00:00:00
Antecedent Dry Days 0 days
Runoff (Dry Weather) Time Step 0 01:00:00 days hh:mm:ss
Runoff (Wet Weather) Time Step 0 00:05:00 days hh:mm:ss
Reporting Time Step 0 00:05:00 days hh:mm:ss
Routing Time Step 30 seconds

Number of Elements

	Qty
Rain Gages	0
Subbasins.....	31
Nodes.....	28
<i>Junctions</i>	5
<i>Outfalls</i>	2
<i>Flow Diversions</i>	0
<i>Inlets</i>	20
<i>Storage Nodes</i>	1
Links.....	41
<i>Channels</i>	14
<i>Pipes</i>	25
<i>Pumps</i>	0
<i>Orifices</i>	1
<i>Weirs</i>	1
<i>Outlets</i>	0
Pollutants	0
Land Uses	0

Rainfall Details

Return Period..... 10 year(s)

Subbasin Summary

SN Subbasin ID	Area (ac)	Weighted Runoff Coefficient	Total Rainfall (in)	Total Runoff (in)	Total Runoff Volume (ac-in)	Peak Runoff (cfs)	Time of Concentration (days hh:mm:ss)
1 (STORM-BASINS).1	2.38	0.6100	2.79	1.70	4.04	3.38	0 01:11:46
2 (STORM-BASINS).10	0.87	0.6300	1.85	1.16	1.01	2.24	0 00:27:10
3 (STORM-BASINS).11	0.12	0.9000	0.63	0.57	0.07	0.79	0 00:05:00
4 (STORM-BASINS).12	0.16	0.9000	0.63	0.57	0.09	1.12	0 00:05:00
5 (STORM-BASINS).13	0.23	0.9000	0.63	0.57	0.13	1.57	0 00:05:00
6 (STORM-BASINS).14	0.74	0.7200	0.63	0.46	0.34	4.03	0 00:05:00
7 (STORM-BASINS).15	1.28	0.7200	0.63	0.46	0.59	7.03	0 00:05:00
8 (STORM-BASINS).16	0.21	0.7500	0.63	0.48	0.10	1.18	0 00:05:00
9 (STORM-BASINS).17	0.28	0.9000	0.63	0.57	0.16	1.89	0 00:05:00
10 (STORM-BASINS).18	3.51	0.6000	2.20	1.32	4.63	6.97	0 00:39:45
11 (STORM-BASINS).19	0.05	0.9000	0.63	0.57	0.03	0.36	0 00:05:00
12 (STORM-BASINS).2	0.96	0.6300	2.43	1.53	1.47	1.74	0 00:50:36
13 (STORM-BASINS).20	0.19	0.9000	0.63	0.57	0.11	1.33	0 00:05:00
14 (STORM-BASINS).21	0.22	0.9000	0.63	0.57	0.13	1.51	0 00:05:00
15 (STORM-BASINS).22	0.20	0.9000	0.63	0.57	0.11	1.36	0 00:05:00
16 (STORM-BASINS).23A	0.88	0.6000	2.00	1.20	1.05	1.99	0 00:31:54
17 (STORM-BASINS).23B	0.21	0.9000	0.63	0.57	0.12	1.43	0 00:05:00
18 (STORM-BASINS).26	1.06	0.6000	2.09	1.26	1.33	2.23	0 00:35:44
19 (STORM-BASINS).27	0.58	0.7200	1.38	0.99	0.58	2.16	0 00:15:56
20 (STORM-BASINS).28	0.22	0.7200	1.45	1.05	0.23	0.79	0 00:17:36
21 (STORM-BASINS).29	0.15	0.9000	0.63	0.57	0.09	1.05	0 00:05:00
22 (STORM-BASINS).3	1.34	0.6300	1.97	1.24	1.66	3.24	0 00:30:46
23 (STORM-BASINS).30	0.12	0.9000	0.63	0.57	0.07	0.83	0 00:05:00
24 (STORM-BASINS).31	0.12	0.9000	0.63	0.57	0.07	0.81	0 00:05:00
25 (STORM-BASINS).4	0.17	0.7500	1.30	0.97	0.17	0.69	0 00:14:33
26 (STORM-BASINS).5	0.46	0.6900	1.42	0.98	0.45	1.58	0 00:17:04
27 (STORM-BASINS).6	1.73	0.6000	1.99	1.19	2.06	3.94	0 00:31:16
28 (STORM-BASINS).7A	0.38	0.6600	1.98	1.31	0.50	0.96	0 00:30:58
29 (STORM-BASINS).7B	0.28	0.7200	1.69	1.22	0.34	0.86	0 00:23:23
30 (STORM-BASINS).8	2.66	0.6000	2.39	1.43	3.82	4.68	0 00:49:03
31 (STORM-BASINS).9	0.06	0.9000	0.63	0.57	0.03	0.38	0 00:05:00

Node Summary

SN Element ID	Element Type	Invert Elevation	Ground/Rim (Max) Elevation	Initial Water Elevation	Surcharge Elevation	Ponded Area	Peak Inflow	Max HGL Elevation Attained	Max Surcharge Depth Attained	Min Freeboard	Time of Peak Flooding Occurrence	Total Flooded Volume	Total Time Flooded	
		(ft)	(ft)	(ft)	(ft)	(ft²)	(cfs)	(ft)	(ft)	(ft)	(days hh:mm)	(ac-in)	(min)	
1	CB-I1	Junction	476.43	480.49	476.43	480.49	0.00	8.21	477.45	0.00	3.04	0 00:00	0.00	0.00
2	CONNECT-G	Junction	483.22	485.22	483.22	485.22	0.00	6.59	484.08	0.00	1.15	0 00:00	0.00	0.00
3	CONNECT-I	Junction	483.38	489.38	483.38	489.38	0.00	4.19	483.89	0.00	5.50	0 00:00	0.00	0.00
4	FES-H2	Junction	482.37	485.12	482.37	485.12	0.00	15.90	483.31	0.00	1.81	0 00:00	0.00	0.00
5	Jun-01	Junction	473.29	477.00	473.29	477.00	0.00	19.90	474.79	0.00	2.21	0 00:00	0.00	0.00
6	Out-01	Outfall	473.16					19.90	474.66					
7	Out-1ST-G3	Outfall	475.00					0.00	475.00					
8	POND1	Storage Node	473.29	477.00	473.29		0.00	29.48	475.46			0.00	0.00	

Link Summary

SN Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length	Inlet Invert Elevation	Outlet Invert Elevation	Average Slope (%)	Diameter or Height (in)	Manning's Roughness	Peak Flow (cfs)	Design Flow Capacity (cfs)	Peak Flow/Design Flow Ratio	Peak Flow Velocity (ft/sec)	Peak Flow Depth (ft)	Peak Flow Depth/Total Depth Ratio	Total Time Reported (min)	Surcharged Condition
1	ST-C1	Pipe	CB-C1 (EXIST) CONNECT-G	92.51	483.78	483.22	0.6000	24.000	0.0130	6.59	17.52	0.38	5.18	0.85	0.42	0.00	Calculated
2	ST-C2	Pipe	CB-C2 (EXIST) CB-C1 (EXIST)	200.00	490.63	483.88	3.3800	18.000	0.0130	0.95	19.30	0.05	6.85	0.23	0.15	0.00	Calculated
3	ST-C3	Pipe	CB-C3 (EXIST) CB-C2 (EXIST)	32.02	490.95	490.63	1.0000	18.000	0.0130	0.37	10.50	0.03	2.79	0.19	0.13	0.00	Calculated
4	ST-CS1	Pipe	Jun-01 Out-01	24.64	473.29	473.16	0.5300	30.000	0.0130	19.90	29.79	0.67	6.50	1.50	0.60	0.00	Calculated
5	ST-D1	Pipe	CB-D1 (EXIST) CB-C1 (EXIST)	32.02	484.10	483.88	0.6900	18.000	0.0130	2.95	8.71	0.34	4.45	0.60	0.40	0.00	Calculated
6	ST-E1 (2)	Pipe	CB-E1 (EXIST) CONNECT-I	133.90	487.00	483.38	2.7000	18.000	0.0130	4.19	17.26	0.24	8.08	0.50	0.34	0.00	Calculated
7	ST-E2 (EXIST)	Pipe	CB-E2 (EXIST) CB-E1 (EXIST)	200.00	496.73	487.10	4.8100	18.000	0.0130	2.20	23.05	0.10	8.30	0.31	0.21	0.00	Calculated
8	ST-E3 (EXIST)	Pipe	CB-E3 (EXIST) CB-E2 (EXIST)	32.02	497.60	496.83	2.4000	18.000	0.0130	1.23	16.27	0.08	6.26	0.28	0.19	0.00	Calculated
9	ST-F1 (EXIST)	Pipe	CB-F1 (EXIST) CB-E1 (EXIST)	32.02	487.57	487.10	1.4600	18.000	0.0130	1.24	12.70	0.10	4.57	0.32	0.21	0.00	Calculated
10	ST-G1	Pipe	CB-G2 POND1	72.10	474.50	473.92	0.8000	30.000	0.0130	29.16	36.79	0.79	8.33	1.68	0.67	0.00	Calculated
11	ST-G2	Pipe	CB-G3 CB-G2	31.99	474.85	474.50	1.0900	30.000	0.0130	27.15	42.90	0.63	9.24	1.44	0.58	0.00	Calculated
12	ST-G3	Pipe	CB-G4 CB-G3	49.09	476.90	474.95	3.9700	24.000	0.0130	8.63	45.08	0.19	11.06	0.59	0.30	0.00	Calculated
13	ST-G4	Pipe	CB-G5 CB-G4	238.61	482.36	476.90	2.2900	24.000	0.0130	8.08	34.22	0.24	8.92	0.66	0.33	0.00	Calculated
14	ST-G5	Pipe	CONNECT-G CB-G5	145.74	483.22	482.35	0.6000	24.000	0.0130	6.59	17.44	0.38	5.17	0.85	0.43	0.00	Calculated
15	ST-H1	Pipe	CB-H1 CB-G3	190.63	476.09	474.95	0.6000	30.000	0.0130	24.30	31.72	0.77	7.21	1.64	0.65	0.00	Calculated
16	ST-H2	Pipe	FES-H2 CB-H1	252.90	482.37	476.19	2.4400	24.000	0.0130	15.78	35.36	0.45	11.02	0.93	0.47	0.00	Calculated
17	ST-H2A	Pipe	CB-H2 FES-H2	37.10	483.38	482.37	2.7200	24.000	0.0130	15.90	37.32	0.43	11.41	0.91	0.46	0.00	Calculated
18	ST-H3	Pipe	CB-H3 CB-H2	48.08	483.88	483.38	1.0400	24.000	0.0130	15.00	23.11	0.65	7.83	1.17	0.59	0.00	Calculated
19	ST-H5	Pipe	CB-H5 CB-H3	378.49	485.87	483.98	0.5000	24.000	0.0130	13.57	16.01	0.85	6.03	1.40	0.70	0.00	Calculated
20	ST-H6	Pipe	CB-H6 CB-H5	32.00	488.21	487.89	1.0000	18.000	0.0130	3.98	10.50	0.38	5.53	0.64	0.43	0.00	Calculated
21	ST-I1	Pipe	CB-I1 CB-H1	48.08	476.43	476.19	0.5000	24.000	0.0130	8.21	16.00	0.51	5.13	1.02	0.51	0.00	Calculated
22	ST-I2	Pipe	CB-I2 CB-I1	95.00	476.91	476.43	0.5100	24.000	0.0130	8.21	16.08	0.51	5.15	1.01	0.51	0.00	Calculated
23	ST-I3	Pipe	CB-I3 CB-I2	212.56	479.00	477.00	0.9400	18.000	0.0130	4.58	10.19	0.45	5.69	0.70	0.47	0.00	Calculated
24	ST-I4	Pipe	CONNECT-I CB-I3	78.66	483.38	481.27	2.6900	18.000	0.0130	4.19	17.22	0.24	8.05	0.50	0.34	0.00	Calculated
25	ST-K1	Pipe	CB-K1 CB-I2	32.05	477.32	477.00	1.0000	18.000	0.0130	6.97	19.20	0.36	9.99	0.63	0.42	0.00	Calculated
26	Gutter-05	Channel	CB-C3 (EXIST) CB-D1 (EXIST)	200.35	495.00	487.00	3.9900	6.000	0.0130	0.30	9.52	0.03	3.28	0.14	0.27	0.00	
27	Gutter-06	Channel	CB-C2 (EXIST) CB-C1 (EXIST)	200.99	495.00	487.00	3.9800	6.000	0.0130	0.92	9.50	0.10	3.75	0.21	0.41	0.00	
28	Gutter-07	Channel	CB-C1 (EXIST) CB-G5	239.28	487.00	485.61	0.5800	6.000	0.0130	0.64	3.83	0.17	1.71	0.25	0.50	0.00	
29	Gutter-08	Channel	CB-G5 CB-G4	240.40	485.61	480.15	2.2700	6.000	0.0320	0.00	7.18	0.00	0.00	0.00	0.00	0.00	
30	Gutter-09	Channel	CB-G4 CB-G3	57.48	480.15	478.65	2.6100	6.000	0.0320	0.00	7.33	0.00	0.00	0.00	0.00	0.00	
31	Gutter-10	Channel	CB-H1 CB-G3	192.99	480.66	478.79	0.9700	6.000	0.0320	0.12	4.69	0.03	2.27	0.12	0.23	0.00	
32	Gutter-12	Channel	CB-I3 CB-I2	213.95	483.97	479.50	2.0900	6.000	0.0320	0.02	6.51	0.00	1.36	0.05	0.10	0.00	
33	Gutter-13	Channel	CB-E1 (EXIST) CB-I3	213.94	491.00	483.97	3.2900	6.000	0.0320	0.00	9.03	0.00	0.00	0.00	0.00	0.00	
34	Gutter-14	Channel	CB-E2 (EXIST) CB-E1 (EXIST)	201.82	500.50	491.00	4.7100	6.000	0.0320	0.08	10.29	0.01	3.62	0.07	0.15	0.00	
35	Gutter-15	Channel	CB-E3 (EXIST) CB-F1 (EXIST)	201.21	500.50	491.00	4.7200	6.000	0.0320	0.24	10.48	0.02	4.35	0.11	0.23	0.00	
36	Gutter-16	Channel	CB-F1 (EXIST) CB-K1	425.27	491.00	482.00	2.1200	6.000	0.0320	0.00	7.04	0.00	0.00	0.00	0.00	0.00	
37	Gutter-17	Channel	CB-H2 CB-H1	292.35	485.12	480.66	1.5200	6.000	0.0320	0.09	5.88	0.01	1.87	0.09	0.18	0.00	
38	Gutter-23	Channel	CB-D1 (EXIST) CB-G2	587.46	487.00	479.00	1.3600	6.000	0.0320	0.21	5.55	0.04	2.35	0.14	0.27	0.00	
39	Gutter-26	Channel	CB-H3 CB-H2	57.06	490.37	485.12	9.2000	6.000	0.0320	0.67	14.45	0.05	3.32	0.16	0.31	0.00	
40	Orifice-01	Orifice	POND1 Jun-01		473.29	473.29		26.500		19.90							
41	Weir-02	Weir	POND1 Jun-01		473.29	473.29				0.00							

Inlet Summary

SN Element ID	Inlet Manufacturer	Manufacturer Part Number	Inlet Location	Number of Inlets	Catchbasin Invert Elevation (ft)	Max (Rim) Elevation (ft)	Initial Water Elevation (ft)	Ponded Area (ft ²)	Peak Flow (cfs)	Peak Flow Intercepted (cfs)	Peak Flow Bypassing Inlet (cfs)	Inlet Efficiency during Peak Flow (%)	Allowable Spread (ft)	Max Gutter Spread during Peak Flow (ft)	Max Gutter Water Elev. during Peak Flow (ft)	
1	CB-C1 (EXIST)	FHWA HEC-22 GENERIC	N/A	On Grade	1	483.78	487.16	483.78	N/A	4.14	3.45	0.69	83.41	12.00	9.58	487.41
2	CB-C2 (EXIST)	FHWA HEC-22 GENERIC	N/A	On Grade	1	490.63	495.14	490.63	N/A	1.58	0.62	0.95	39.58	12.00	3.73	495.35
3	CB-C3 (EXIST)	FHWA HEC-22 GENERIC	N/A	On Grade	1	490.95	495.16	490.95	N/A	0.69	0.37	0.33	52.99	12.00	2.60	495.31
4	CB-D1 (EXIST)	FHWA HEC-22 GENERIC	N/A	On Grade	1	484.10	487.17	484.10	N/A	3.26	2.95	0.31	90.54	12.00	8.69	487.40
5	CB-E1 (EXIST)	FHWA HEC-22 GENERIC	N/A	On Grade	1	487.00	491.64	487.00	N/A	0.79	0.79	0.00	100.00	12.00	4.49	491.79
6	CB-E2 (EXIST)	FHWA HEC-22 GENERIC	N/A	On Grade	1	496.73	501.05	496.73	N/A	1.12	0.99	0.13	88.23	12.00	5.43	501.22
7	CB-E3 (EXIST)	FHWA HEC-22 GENERIC	N/A	On Grade	1	497.60	501.00	497.60	N/A	1.57	1.23	0.34	78.39	12.00	6.35	501.19
8	CB-F1 (EXIST)	FHWA HEC-22 GENERIC	N/A	On Grade	1	487.57	491.28	487.57	N/A	1.24	1.24	0.00	100.00	12.00	5.67	491.45
9	CB-G2	FHWA HEC-22 GENERIC	N/A	On Sag	1	474.50	479.18	474.50	0.00	2.86	N/A	N/A	N/A	12.00	9.21	479.93
10	CB-G3	FHWA HEC-22 GENERIC	N/A	On Sag	1	474.85	478.79	474.85	0.00	4.68	N/A	N/A	N/A	12.00	12.80	479.61
11	CB-G4	FHWA HEC-22 GENERIC	N/A	On Grade	1	476.90	480.15	476.90	N/A	0.86	0.86	0.00	100.00	12.00	4.72	480.31
12	CB-G5	FHWA HEC-22 GENERIC	N/A	On Grade	1	482.36	485.61	482.36	N/A	1.53	1.53	0.00	100.00	12.00	6.29	485.80
13	CB-H1	FHWA HEC-22 GENERIC	N/A	On Grade	1	476.09	480.66	476.09	N/A	1.33	1.10	0.22	83.25	12.00	5.86	480.84
14	CB-H2	FHWA HEC-22 GENERIC	N/A	On Grade	1	483.38	485.12	483.38	N/A	1.41	1.30	0.11	92.29	12.00	7.68	485.33
15	CB-H3	FHWA HEC-22 GENERIC	N/A	On Grade	1	483.88	490.37	483.88	N/A	2.18	1.48	0.70	68.01	12.00	7.32	490.58
16	CB-H5	FHWA HEC-22 GENERIC	N/A	On Sag	1	485.87	488.55	485.87	0.00	11.06	N/A	N/A	N/A	12.00	22.75	489.57
17	CB-H6	FHWA HEC-22 GENERIC	N/A	On Sag	1	488.21	488.55	488.21	0.00	3.98	N/A	N/A	N/A	12.00	11.51	489.34
18	CB-I2	FHWA HEC-22 GENERIC	N/A	On Sag	1	476.91	479.97	476.91	0.00	0.38	N/A	N/A	N/A	12.00	1.72	480.21
19	CB-I3	FHWA HEC-22 GENERIC	N/A	On Grade	1	479.00	483.97	479.00	N/A	2.24	2.20	0.03	98.55	12.00	7.40	484.18
20	CB-K1	FHWA HEC-22 GENERIC	N/A	On Sag	1	478.07	482.00	478.07	0.00	6.97	N/A	N/A	N/A	12.00	16.72	482.93

Subbasin Hydrology

Subbasin : {STORM-BASINS}.1

Input Data

Area (ac) 2.38
Weighted Runoff Coefficient 0.6100

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
Residential	1.66	-	0.70
Pasture	0.71	-	0.40
Composite Area & Weighted Runoff Coeff.	2.37		0.61

Time of Concentration

TOC Method : SCS TR-55

Sheet Flow Equation :

$$T_c = (0.007 * ((n * L_f)^{0.8}) / ((P^{0.5}) * (S_f^{0.4})))$$

Where :

T_c = Time of Concentration (hr)
n = Manning's roughness
L_f = Flow Length (ft)
P = 2 yr, 24 hr Rainfall (inches)
S_f = Slope (ft/ft)

Shallow Concentrated Flow Equation :

V = 16.1345 * (S_f^{0.5}) (unpaved surface)
V = 20.3282 * (S_f^{0.5}) (paved surface)
V = 15.0 * (S_f^{0.5}) (grassed waterway surface)
V = 10.0 * (S_f^{0.5}) (nearly bare & untilled surface)
V = 9.0 * (S_f^{0.5}) (cultivated straight rows surface)
V = 7.0 * (S_f^{0.5}) (short grass pasture surface)
V = 5.0 * (S_f^{0.5}) (woodland surface)
V = 2.5 * (S_f^{0.5}) (forest w/heavy litter surface)
T_c = (L_f / V) / (3600 sec/hr)

Where:

T_c = Time of Concentration (hr)
L_f = Flow Length (ft)
V = Velocity (ft/sec)
S_f = Slope (ft/ft)

Channel Flow Equation :

$$V = (1.49 * (R^{2/3}) * (S_f^{0.5})) / n$$

R = A_q / W_p
T_c = (L_f / V) / (3600 sec/hr)

Where :

T_c = Time of Concentration (hr)
L_f = Flow Length (ft)
R = Hydraulic Radius (ft)
A_q = Flow Area (ft²)
W_p = Wetted Perimeter (ft)
V = Velocity (ft/sec)
S_f = Slope (ft/ft)
n = Manning's roughness

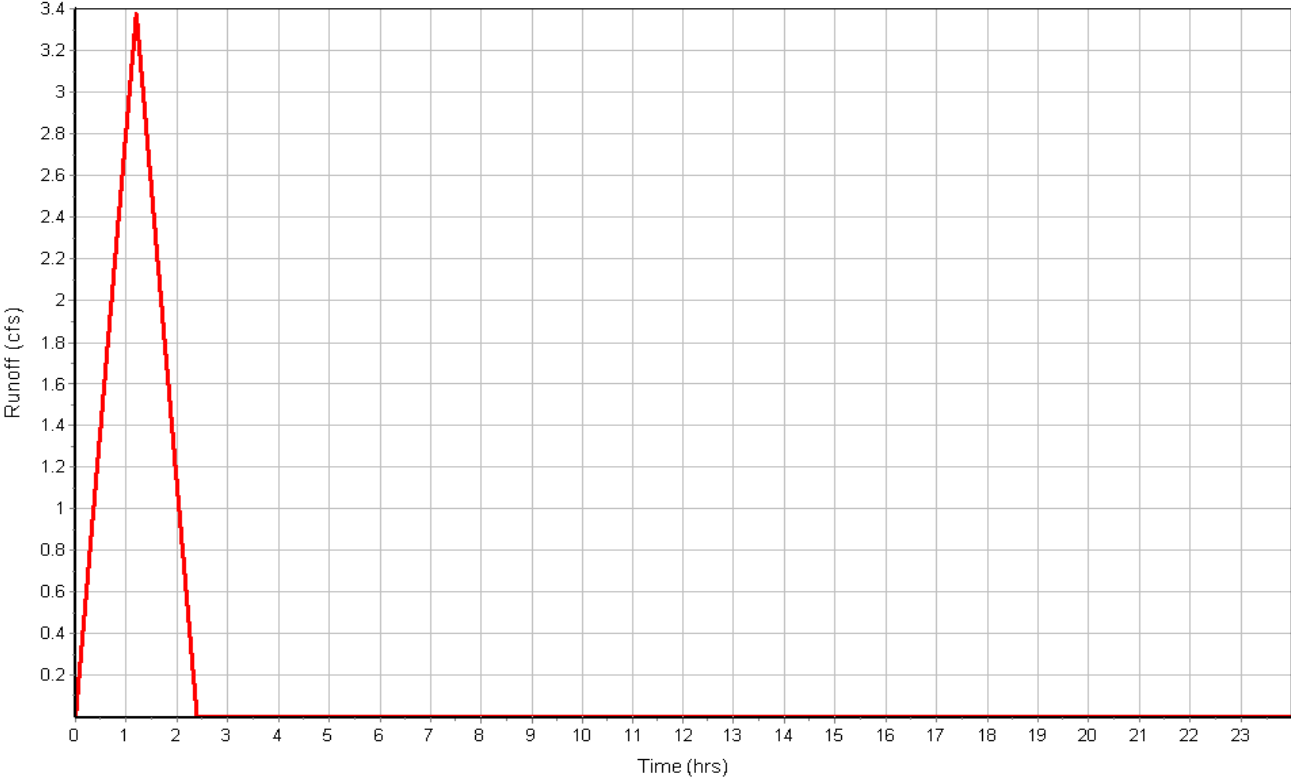
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	1221.57	0.00	0.00
Slope (%) :	2.6	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.28	0.00	0.00
Computed Flow Time (min) :	71.78	0.00	0.00
Total TOC (min)	71.78		

Subbasin Runoff Results

Total Rainfall (in)	2.79
Total Runoff (in)	1.70
Peak Runoff (cfs)	3.38
Rainfall Intensity	2.329
Weighted Runoff Coefficient	0.6100
Time of Concentration (days hh:mm:ss)	0 01:11:47

Subbasin : {STORM-BASINS}.1

Runoff Hydrograph



Subbasin : {STORM-BASINS}.10

Input Data

Area (ac) 0.87
 Weighted Runoff Coefficient 0.6300

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.78	-	0.60
-	0.09	-	0.90
Composite Area & Weighted Runoff Coeff.	0.87		0.63

Time of Concentration

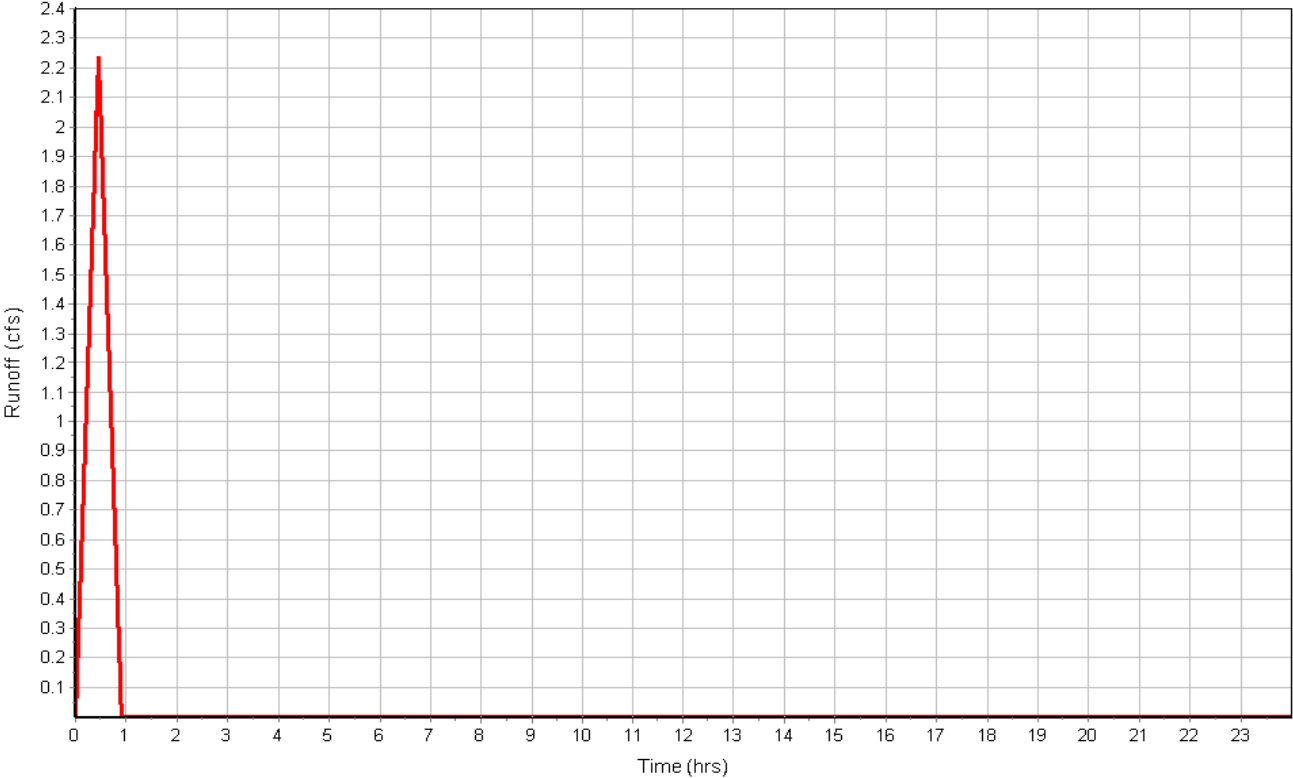
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	421.06	0.00	0.00
Slope (%) :	3.5	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.26	0.00	0.00
Computed Flow Time (min) :	27.18	0.00	0.00
Total TOC (min)	27.18		

Subbasin Runoff Results

Total Rainfall (in) 1.85
 Total Runoff (in) 1.16
 Peak Runoff (cfs) 2.24
 Rainfall Intensity 4.074
 Weighted Runoff Coefficient 0.6300
 Time of Concentration (days hh:mm:ss) 0 00:27:11

Subbasin : {STORM-BASINS}.10

Runoff Hydrograph



Subbasin : {STORM-BASINS}.11

Input Data

Area (ac) 0.12
 Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.12	-	0.90
Composite Area & Weighted Runoff Coeff.	0.12		0.90

Time of Concentration

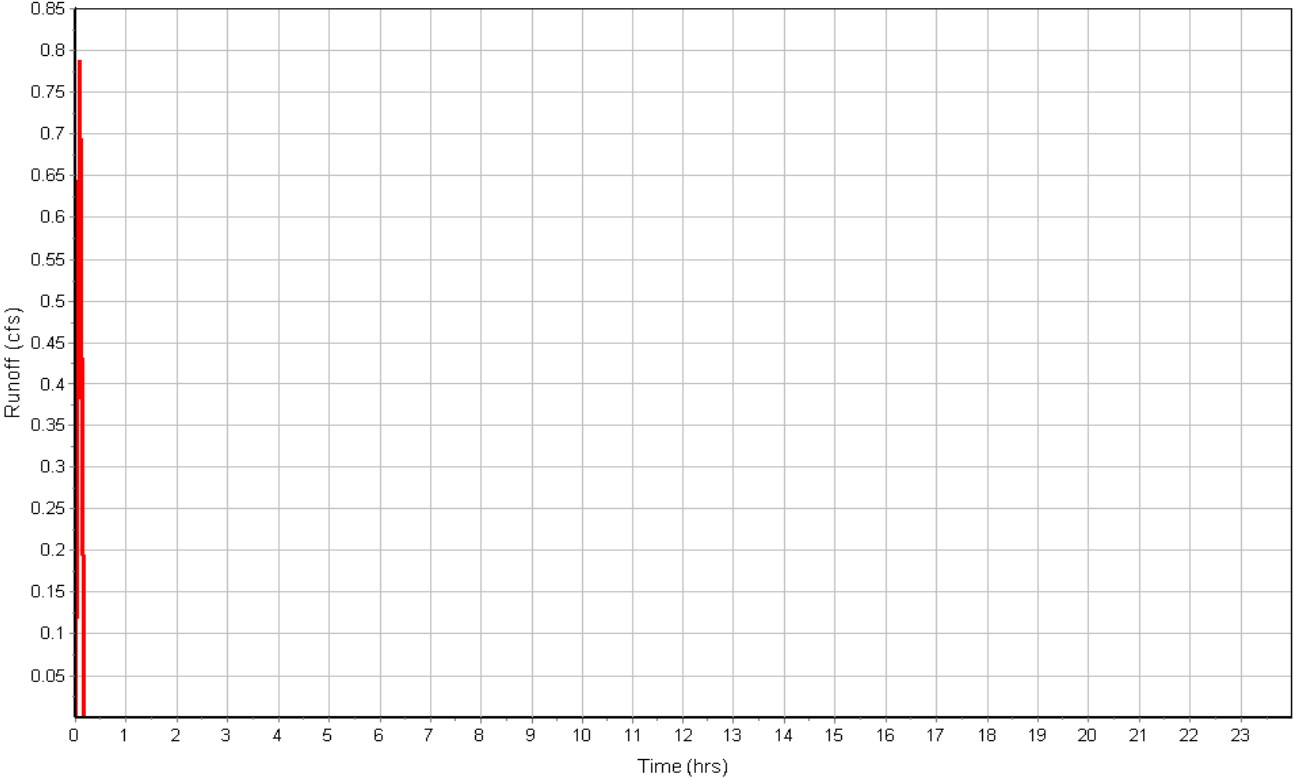
Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	251.93	0.00	0.00
Slope (%) :	4.7	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	4.41	0.00	0.00
Computed Flow Time (min) :	0.95	0.00	0.00
Total TOC (min)0.95			

Subbasin Runoff Results

Total Rainfall (in) 0.63
 Total Runoff (in) 0.57
 Peak Runoff (cfs) 0.79
 Rainfall Intensity 7.600
 Weighted Runoff Coefficient 0.9000
 Time of Concentration (days hh:mm:ss) 0 00:00:57

Subbasin : {STORM-BASINS}.11

Runoff Hydrograph



Subbasin : {STORM-BASINS}.12

Input Data

Area (ac) 0.16
 Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.16	-	0.90
Composite Area & Weighted Runoff Coeff.	0.16		0.90

Time of Concentration

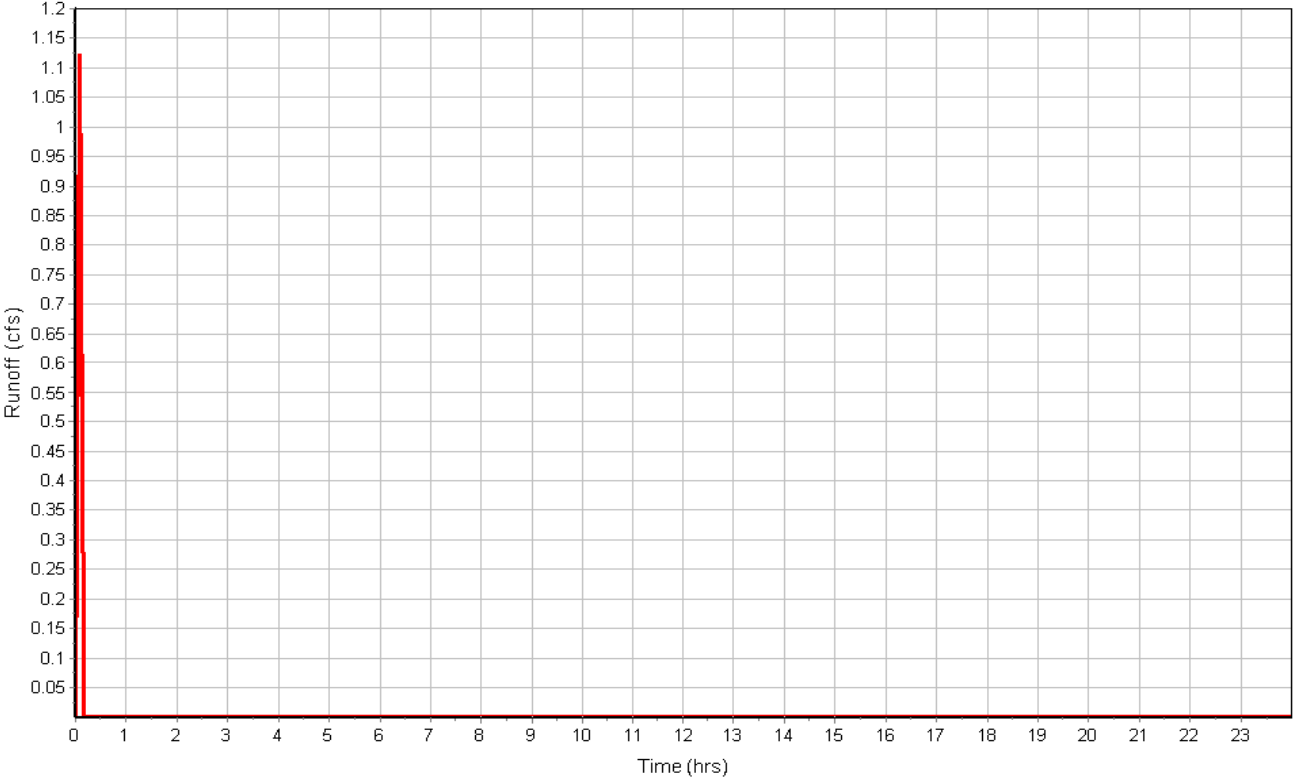
Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	261.41	0.00	0.00
Slope (%) :	1.9	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	2.80	0.00	0.00
Computed Flow Time (min) :	1.56	0.00	0.00
Total TOC (min)	1.56		

Subbasin Runoff Results

Total Rainfall (in) 0.63
 Total Runoff (in) 0.57
 Peak Runoff (cfs) 1.12
 Rainfall Intensity 7.600
 Weighted Runoff Coefficient 0.9000
 Time of Concentration (days hh:mm:ss) 0 00:01:34

Subbasin : {STORM-BASINS}.12

Runoff Hydrograph



Subbasin : {STORM-BASINS}.13

Input Data

Area (ac) 0.23
 Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.23	-	0.90
Composite Area & Weighted Runoff Coeff.	0.23		0.90

Time of Concentration

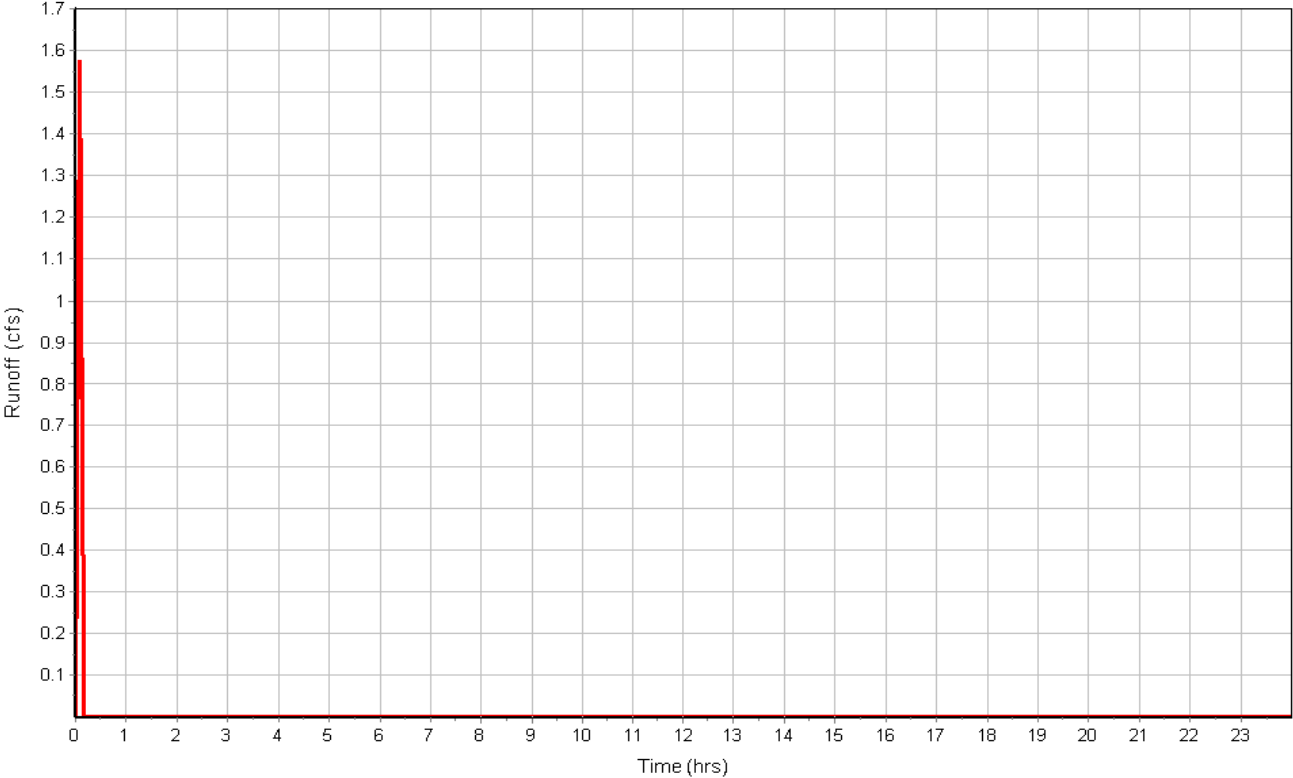
Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	407.22	0.00	0.00
Slope (%) :	2	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	2.87	0.00	0.00
Computed Flow Time (min) :	2.36	0.00	0.00
Total TOC (min)	2.36		

Subbasin Runoff Results

Total Rainfall (in) 0.63
 Total Runoff (in) 0.57
 Peak Runoff (cfs) 1.57
 Rainfall Intensity 7.600
 Weighted Runoff Coefficient 0.9000
 Time of Concentration (days hh:mm:ss) 0 00:02:22

Subbasin : {STORM-BASINS}.13

Runoff Hydrograph



Subbasin : {STORM-BASINS}.14

Input Data

Area (ac) 0.74
Weighted Runoff Coefficient 0.7200

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.74	-	0.72
Composite Area & Weighted Runoff Coeff.	0.74		0.72

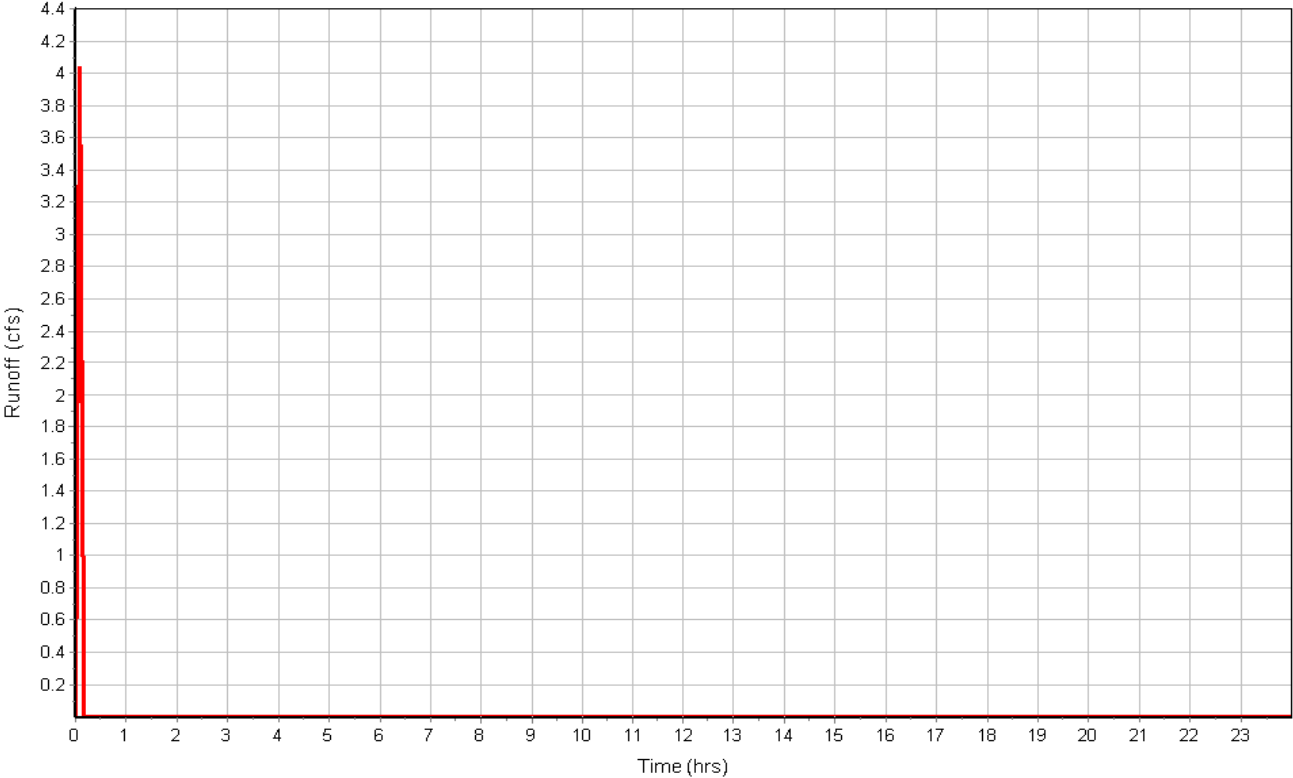
Time of Concentration

Subbasin Runoff Results

Total Rainfall (in) 0.63
Total Runoff (in) 0.46
Peak Runoff (cfs) 4.03
Rainfall Intensity 7.600
Weighted Runoff Coefficient 0.7200
Time of Concentration (days hh:mm:ss) 0 00:00:00

Subbasin : {STORM-BASINS}.14

Runoff Hydrograph



Subbasin : {STORM-BASINS}.15

Input Data

Area (ac) 1.28
Weighted Runoff Coefficient 0.7200

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	1.28	-	0.72
Composite Area & Weighted Runoff Coeff.	1.28		0.72

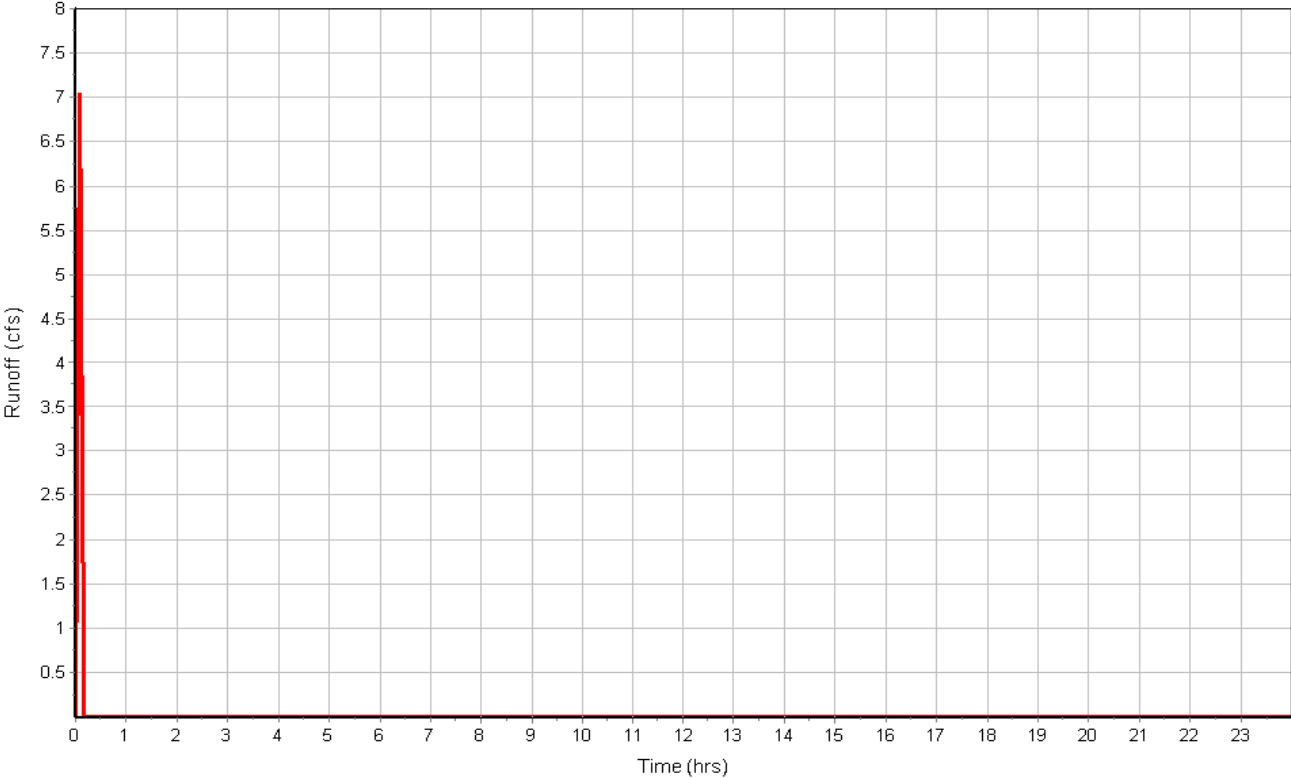
Time of Concentration

Subbasin Runoff Results

Total Rainfall (in) 0.63
Total Runoff (in) 0.46
Peak Runoff (cfs) 7.03
Rainfall Intensity 7.600
Weighted Runoff Coefficient 0.7200
Time of Concentration (days hh:mm:ss) 0 00:00:00

Subbasin : {STORM-BASINS}.15

Runoff Hydrograph



Subbasin : {STORM-BASINS}.16

Input Data

Area (ac) 0.21
 Weighted Runoff Coefficient 0.7500

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.10	-	0.90
-	0.10	-	0.60
Composite Area & Weighted Runoff Coeff.	0.20		0.75

Time of Concentration

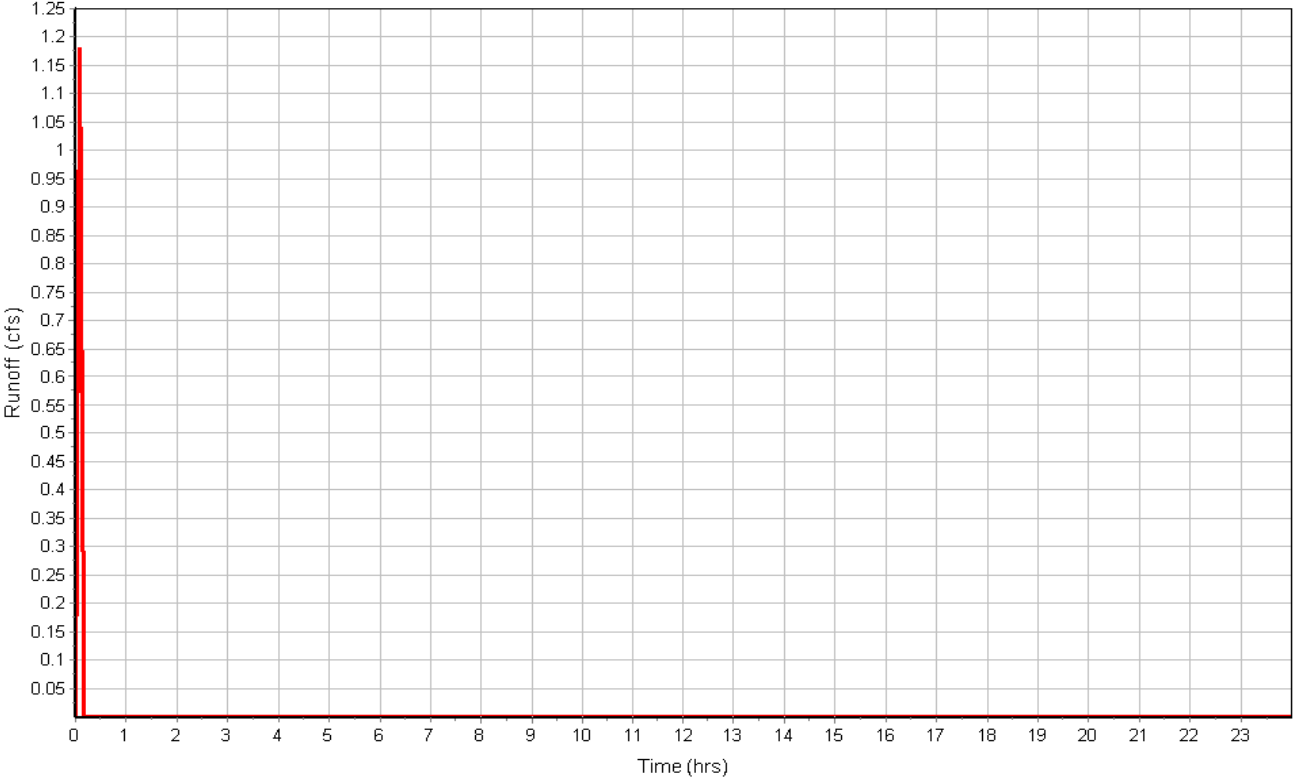
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	45.99	0.00	0.00
Slope (%) :	5	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.19	0.00	0.00
Computed Flow Time (min) :	4.01	0.00	0.00
Total TOC (min)	4.01		

Subbasin Runoff Results

Total Rainfall (in) 0.63
 Total Runoff (in) 0.48
 Peak Runoff (cfs) 1.18
 Rainfall Intensity 7.600
 Weighted Runoff Coefficient 0.7500
 Time of Concentration (days hh:mm:ss) 0 00:04:01

Subbasin : {STORM-BASINS}.16

Runoff Hydrograph



Subbasin : {STORM-BASINS}.17

Input Data

Area (ac) 0.28
 Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.28	-	0.90
Composite Area & Weighted Runoff Coeff.	0.28		0.90

Time of Concentration

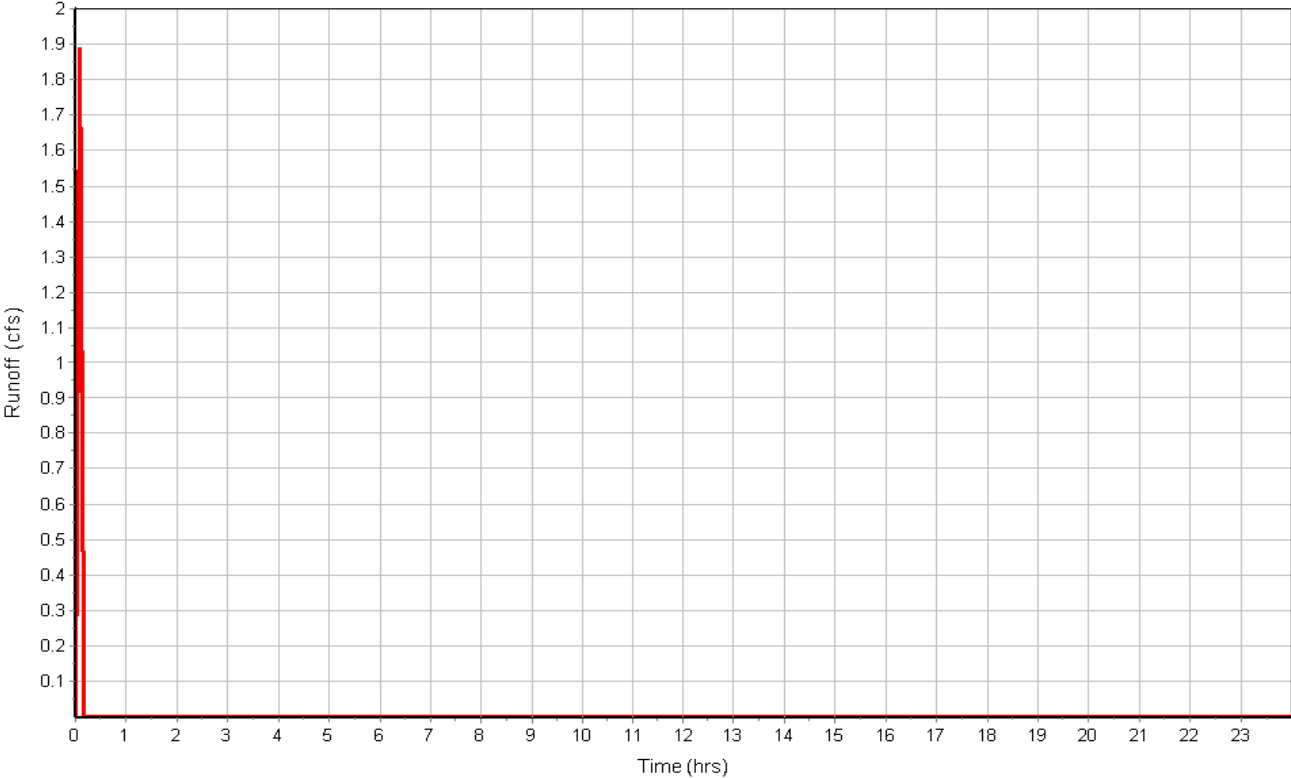
Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	400.01	0.00	0.00
Slope (%) :	3.5	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	3.80	0.00	0.00
Computed Flow Time (min) :	1.75	0.00	0.00
Total TOC (min)1.75			

Subbasin Runoff Results

Total Rainfall (in) 0.63
 Total Runoff (in) 0.57
 Peak Runoff (cfs) 1.89
 Rainfall Intensity 7.600
 Weighted Runoff Coefficient 0.9000
 Time of Concentration (days hh:mm:ss) 0 00:01:45

Subbasin : {STORM-BASINS}.17

Runoff Hydrograph



Subbasin : {STORM-BASINS}.18

Input Data

Area (ac) 3.51
 Weighted Runoff Coefficient 0.6000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	3.51	-	0.60
Composite Area & Weighted Runoff Coeff.	3.51		0.60

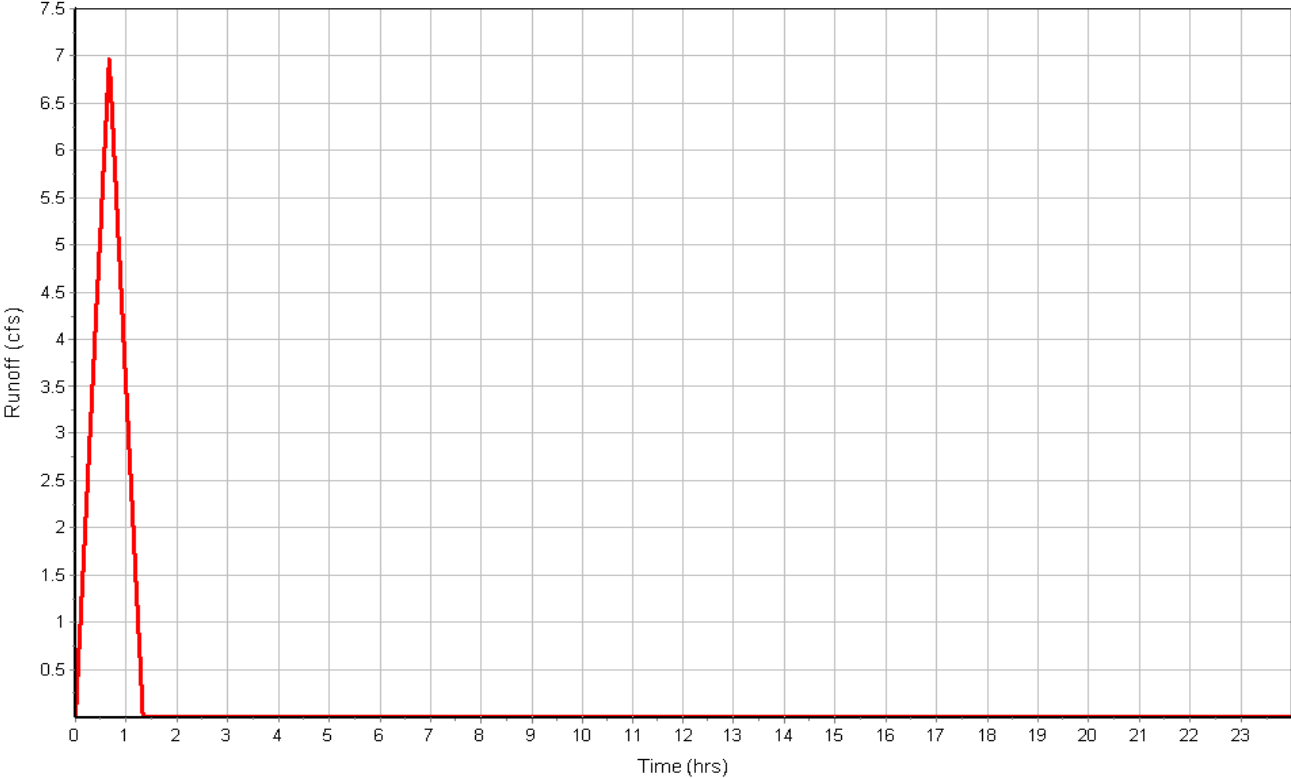
Time of Concentration

Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	723.77	0.00	0.00
Slope (%) :	4	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.30	0.00	0.00
Computed Flow Time (min) :	39.75	0.00	0.00
Total TOC (min)	39.75		

Subbasin Runoff Results

Total Rainfall (in) 2.20
 Total Runoff (in) 1.32
 Peak Runoff (cfs) 6.97
 Rainfall Intensity 3.308
 Weighted Runoff Coefficient 0.6000
 Time of Concentration (days hh:mm:ss) 0 00:39:45

Runoff Hydrograph



Subbasin : {STORM-BASINS}.19

Input Data

Area (ac) 0.05
Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.05	-	0.90
Composite Area & Weighted Runoff Coeff.	0.05		0.90

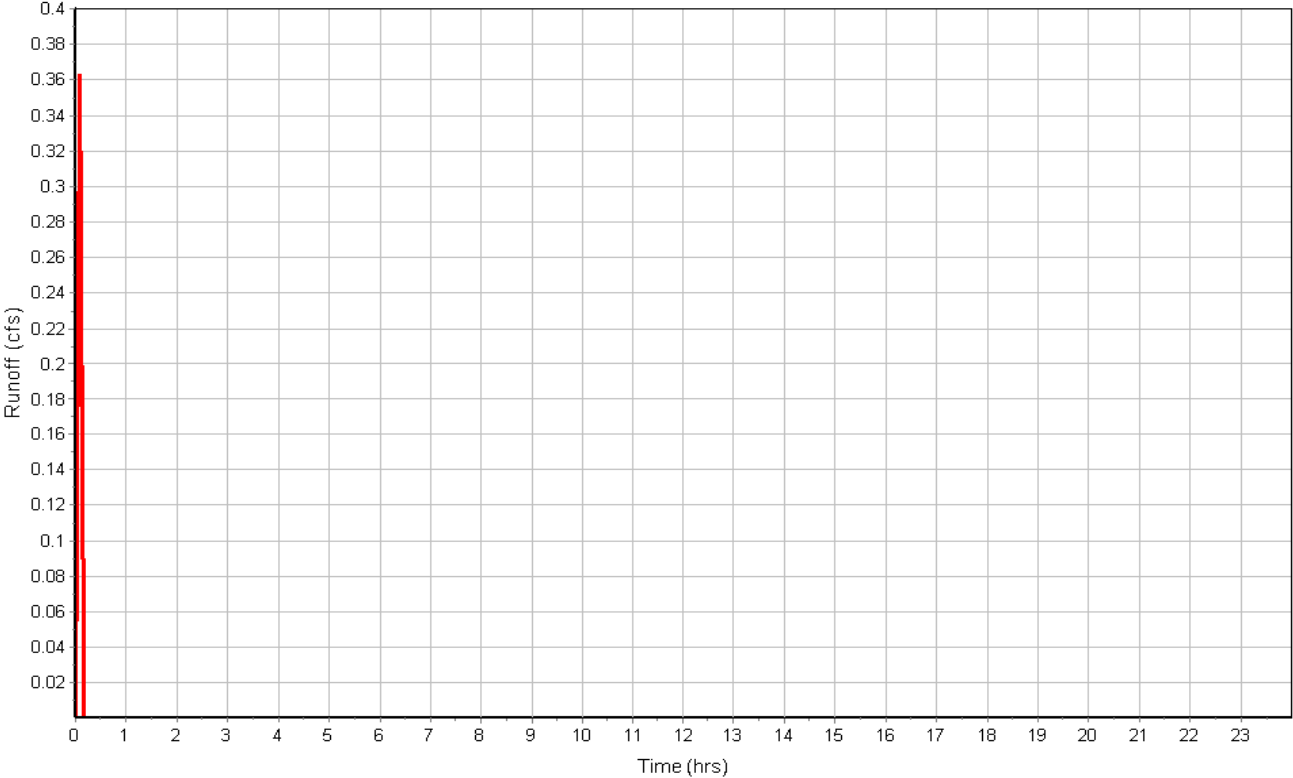
Time of Concentration

Subbasin Runoff Results

Total Rainfall (in) 0.63
Total Runoff (in) 0.57
Peak Runoff (cfs) 0.36
Rainfall Intensity 7.600
Weighted Runoff Coefficient 0.9000
Time of Concentration (days hh:mm:ss) 0 00:00:00

Subbasin : {STORM-BASINS}.19

Runoff Hydrograph



Subbasin : {STORM-BASINS}.2

Input Data

Area (ac) 0.96
 Weighted Runoff Coefficient 0.6300

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.86	-	0.60
-	0.10	-	0.90
Composite Area & Weighted Runoff Coeff.	0.96		0.63

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
	Manning's Roughness :	0.2	0.00
Flow Length (ft) :	606.64	0.00	0.00
Slope (%) :	1.8	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.21	0.00	0.00
Computed Flow Time (min) :	47.50	0.00	0.00

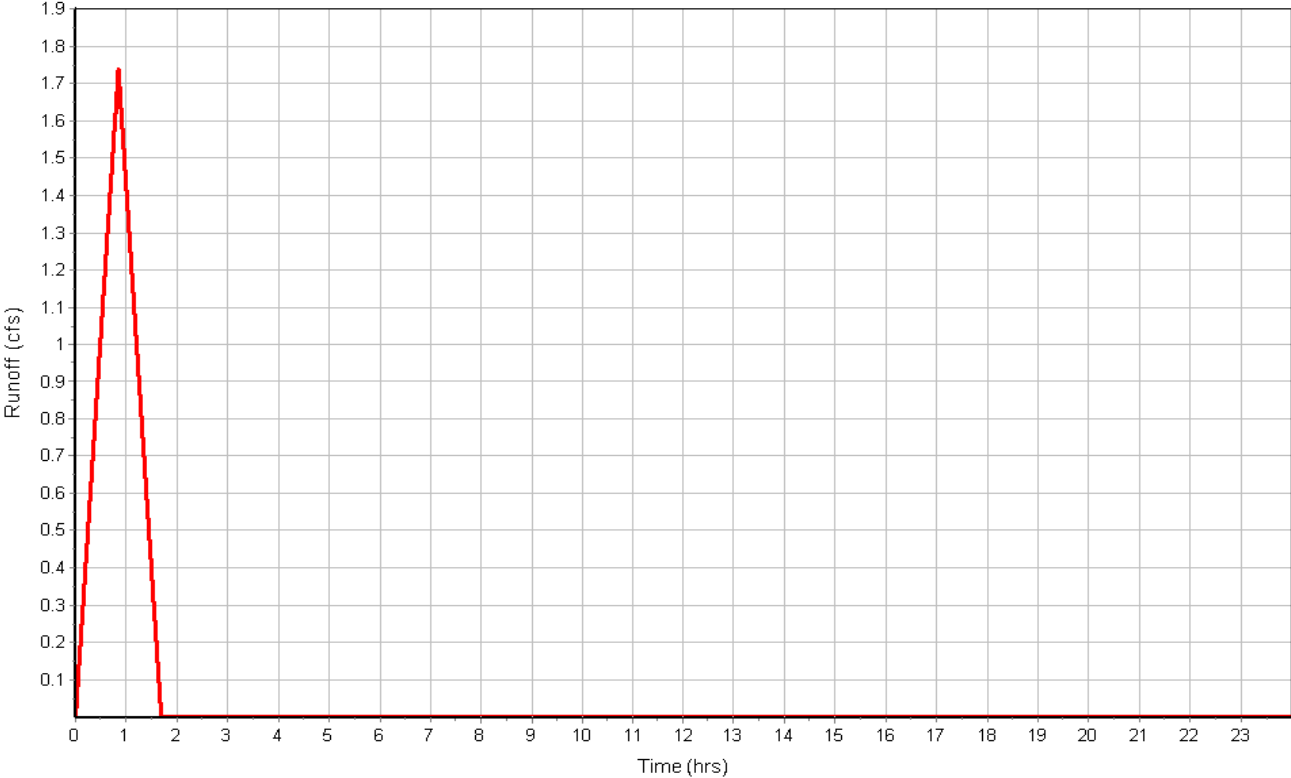
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
	Flow Length (ft) :	533.67	0.00
Slope (%) :	2	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	2.87	0.00	0.00
Computed Flow Time (min) :	3.10	0.00	0.00
Total TOC (min)	50.60		

Subbasin Runoff Results

Total Rainfall (in) 2.43
 Total Runoff (in) 1.53
 Peak Runoff (cfs) 1.74
 Rainfall Intensity 2.873
 Weighted Runoff Coefficient 0.6300
 Time of Concentration (days hh:mm:ss) 0 00:50:36

Subbasin : {STORM-BASINS}.2

Runoff Hydrograph



Subbasin : {STORM-BASINS}.20

Input Data

Area (ac) 0.19
 Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.19	-	0.90
Composite Area & Weighted Runoff Coeff.	0.19		0.90

Time of Concentration

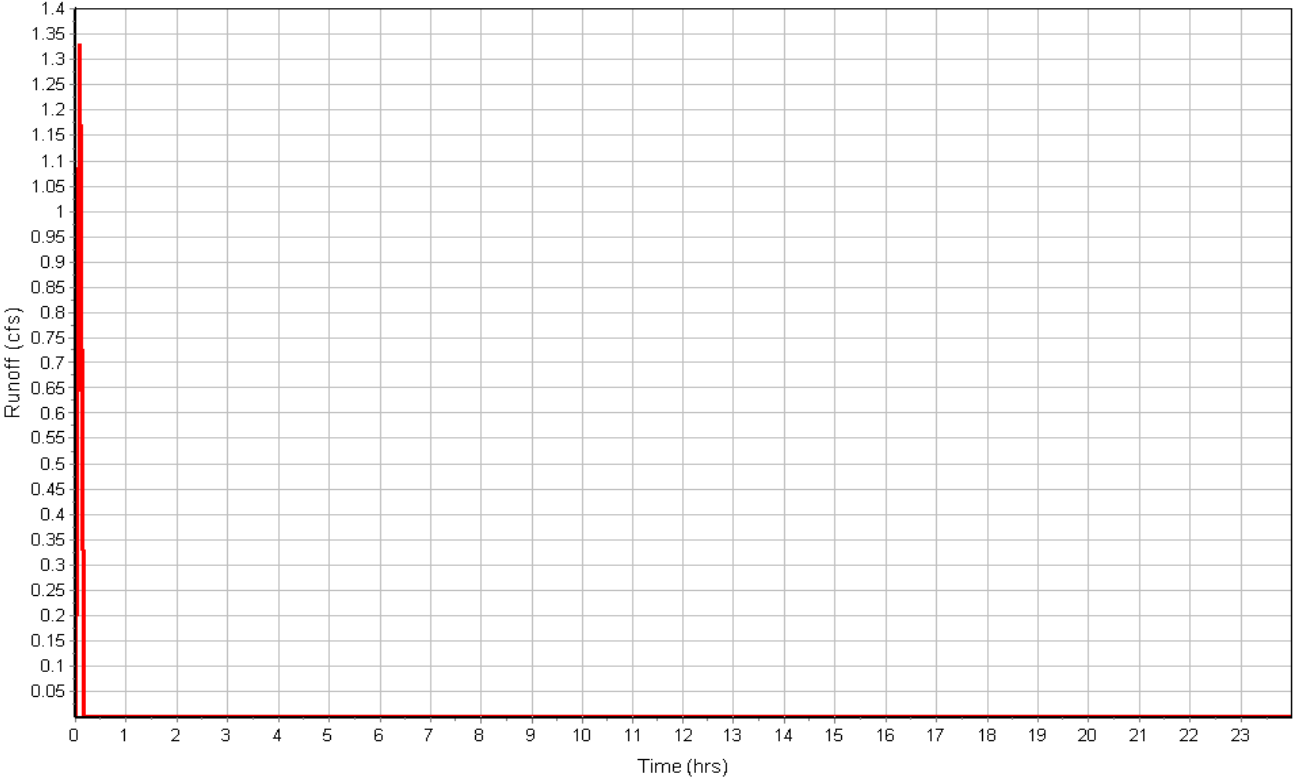
Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	319.14	0.00	0.00
Slope (%) :	2	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	2.87	0.00	0.00
Computed Flow Time (min) :	1.85	0.00	0.00
Total TOC (min)1.85			

Subbasin Runoff Results

Total Rainfall (in) 0.63
 Total Runoff (in) 0.57
 Peak Runoff (cfs) 1.33
 Rainfall Intensity 7.600
 Weighted Runoff Coefficient 0.9000
 Time of Concentration (days hh:mm:ss) 0 00:01:51

Subbasin : {STORM-BASINS}.20

Runoff Hydrograph



Subbasin : {STORM-BASINS}.21

Input Data

Area (ac) 0.22
Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.22	-	0.90
Composite Area & Weighted Runoff Coeff.	0.22		0.90

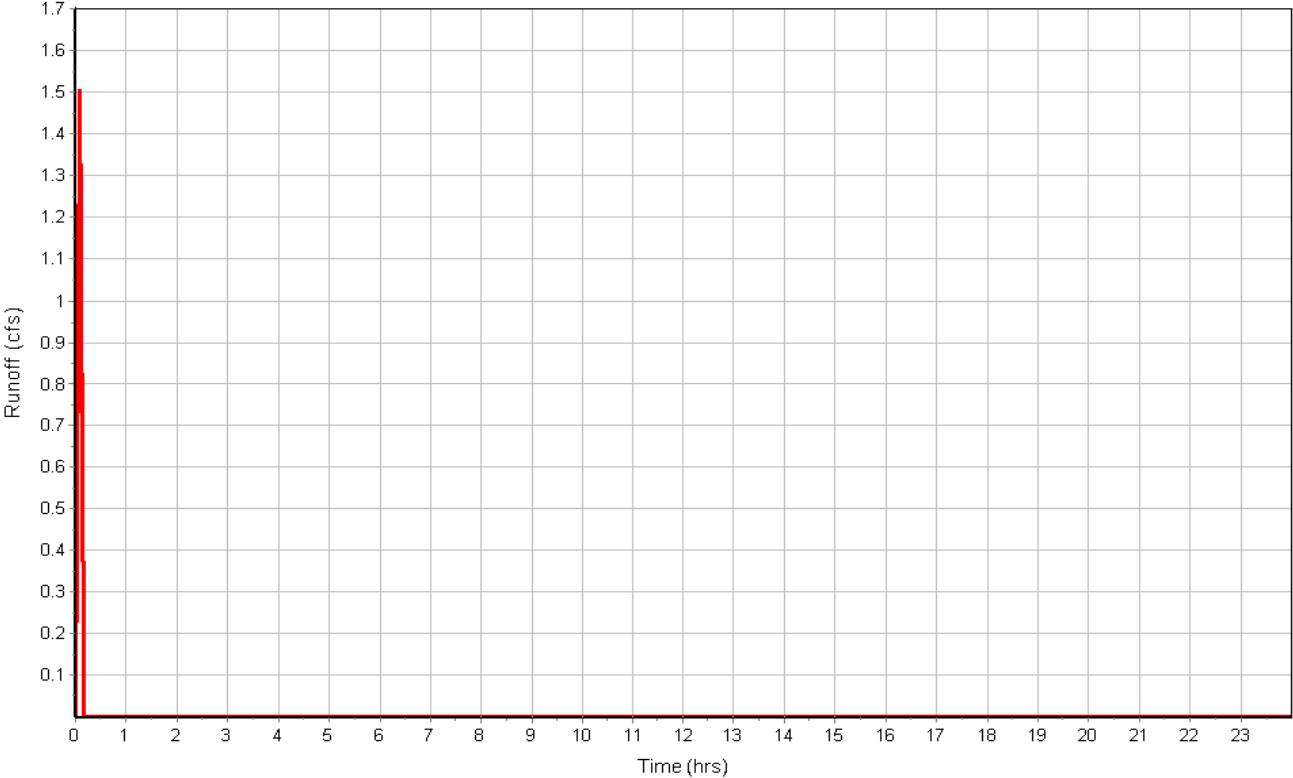
Time of Concentration

Subbasin Runoff Results

Total Rainfall (in) 0.63
Total Runoff (in) 0.57
Peak Runoff (cfs) 1.51
Rainfall Intensity 7.600
Weighted Runoff Coefficient 0.9000
Time of Concentration (days hh:mm:ss) 0 00:00:00

Subbasin : {STORM-BASINS}.21

Runoff Hydrograph



Subbasin : {STORM-BASINS}.22

Input Data

Area (ac) 0.20
 Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.20	-	0.90
Composite Area & Weighted Runoff Coeff.	0.20		0.90

Time of Concentration

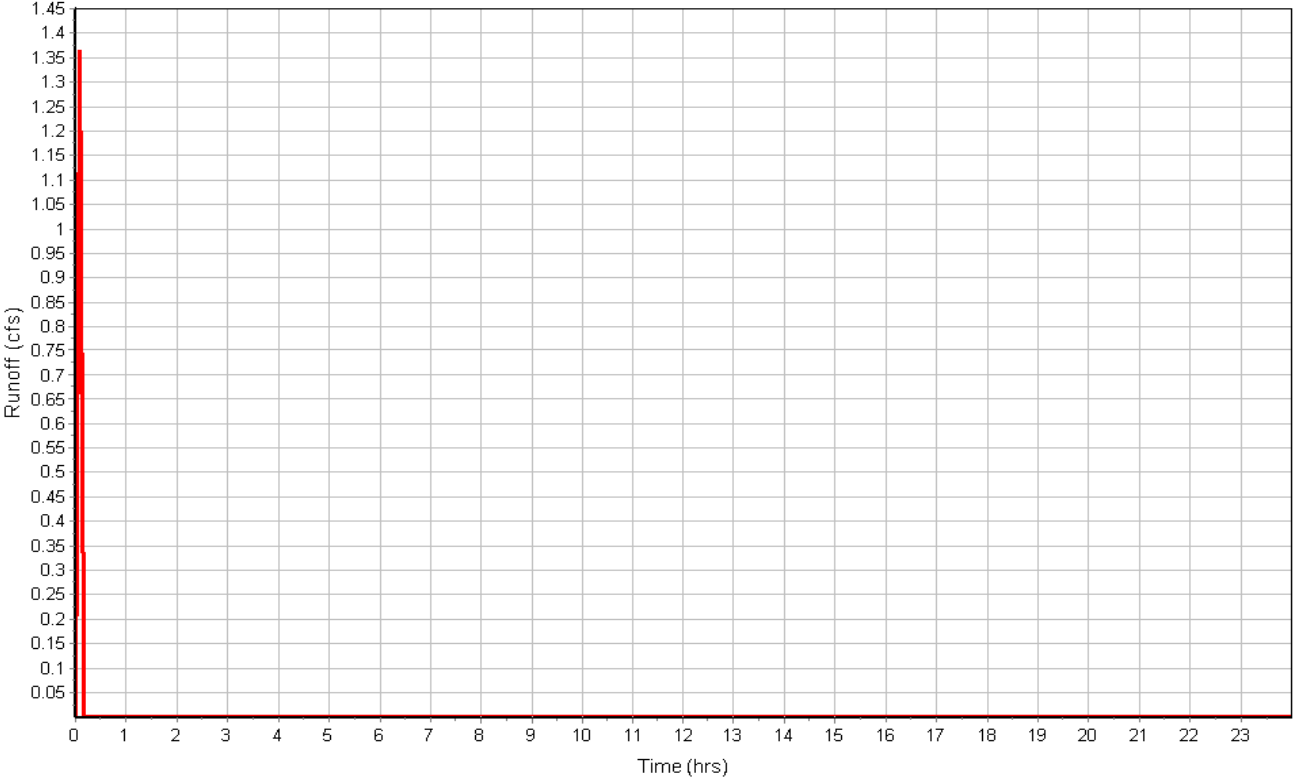
Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	364.92	0.00	0.00
Slope (%) :	3	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	3.52	0.00	0.00
Computed Flow Time (min) :	1.73	0.00	0.00
Total TOC (min)	1.73		

Subbasin Runoff Results

Total Rainfall (in) 0.63
 Total Runoff (in) 0.57
 Peak Runoff (cfs) 1.36
 Rainfall Intensity 7.600
 Weighted Runoff Coefficient 0.9000
 Time of Concentration (days hh:mm:ss) 0 00:01:44

Subbasin : {STORM-BASINS}.22

Runoff Hydrograph



Subbasin : {STORM-BASINS}.23A

Input Data

Area (ac) 0.88
Weighted Runoff Coefficient 0.6000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.88	-	0.60
Composite Area & Weighted Runoff Coeff.	0.88		0.60

Time of Concentration

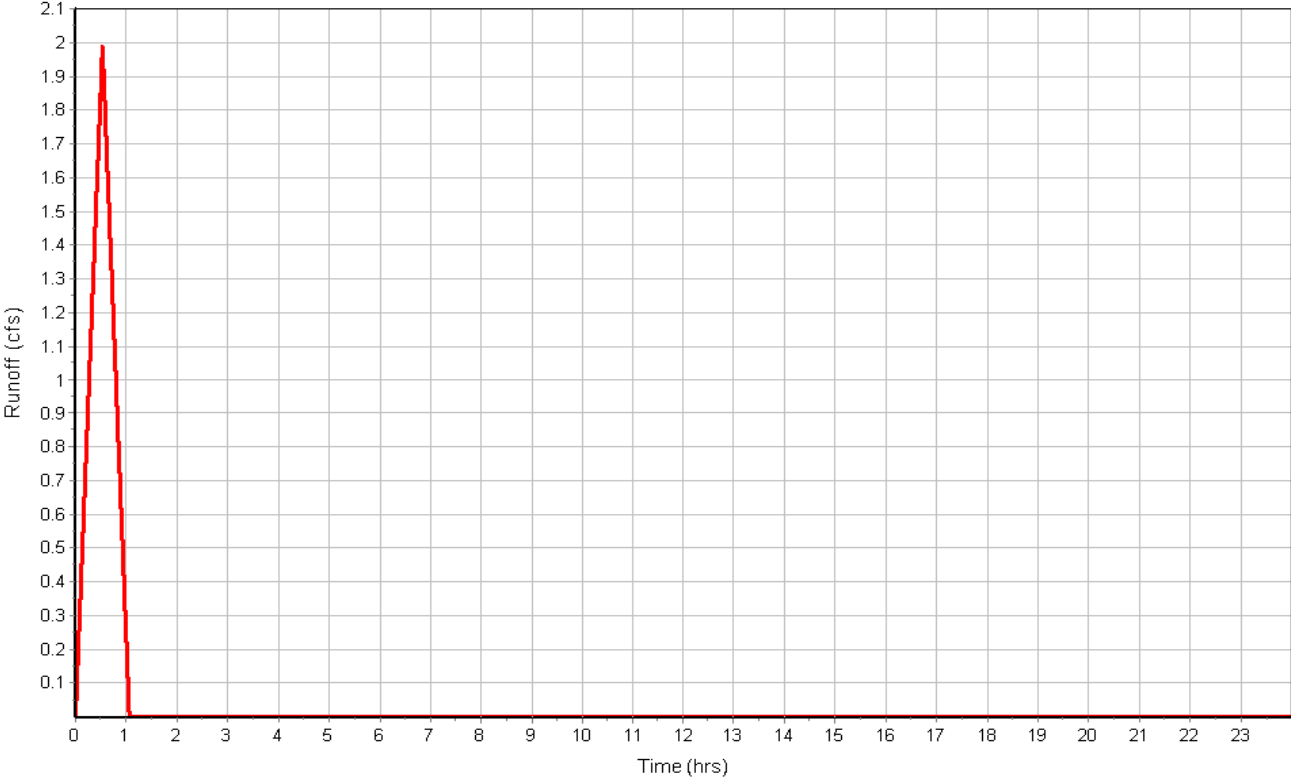
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	476.41	0.00	0.00
Slope (%) :	3	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.25	0.00	0.00
Computed Flow Time (min) :	31.91	0.00	0.00
Total TOC (min)	31.91		

Subbasin Runoff Results

Total Rainfall (in) 2.00
Total Runoff (in) 1.20
Peak Runoff (cfs) 1.99
Rainfall Intensity 3.762
Weighted Runoff Coefficient 0.6000
Time of Concentration (days hh:mm:ss) 0 00:31:55

Subbasin : {STORM-BASINS}.23A

Runoff Hydrograph



Subbasin : {STORM-BASINS}.23B

Input Data

Area (ac) 0.21
Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.21	-	0.90
Composite Area & Weighted Runoff Coeff.	0.21		0.90

Time of Concentration

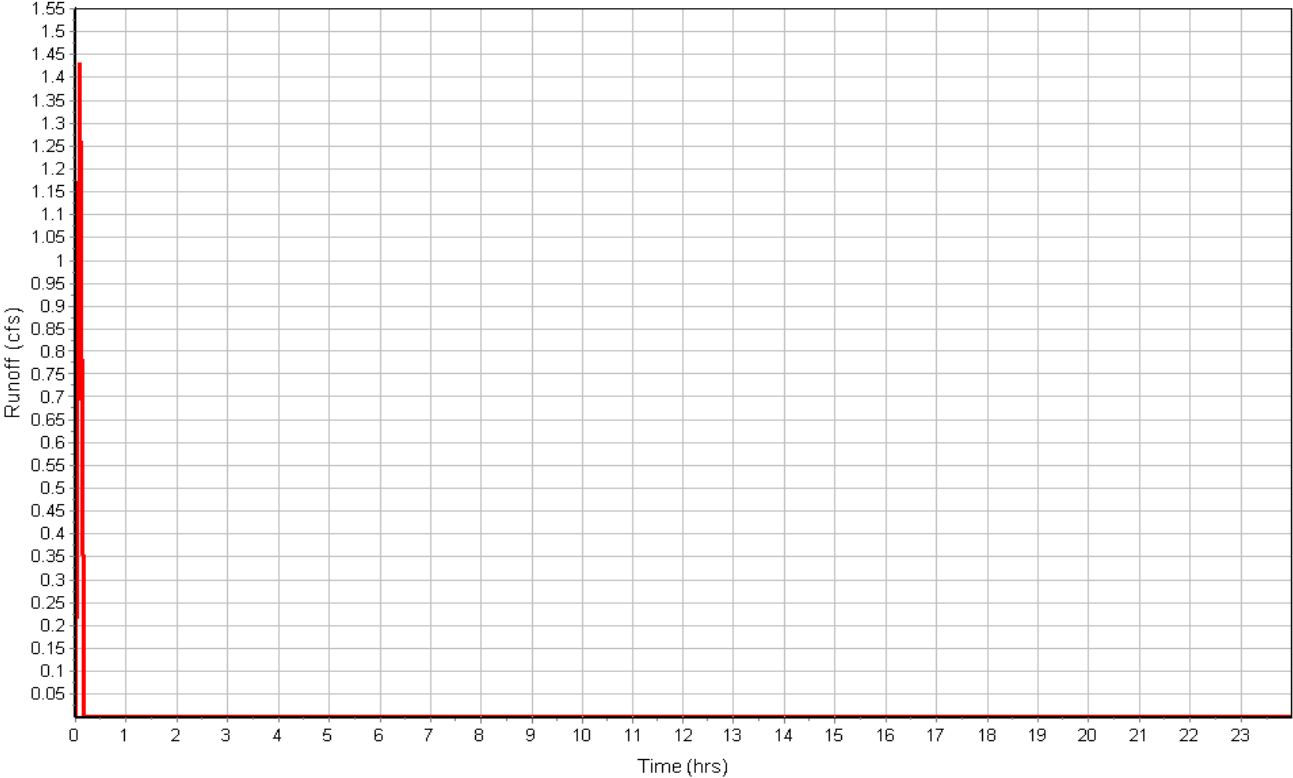
Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	294.20	0.00	0.00
Slope (%) :	2	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	2.87	0.00	0.00
Computed Flow Time (min) :	1.71	0.00	0.00
Total TOC (min)	1.71		

Subbasin Runoff Results

Total Rainfall (in) 0.63
Total Runoff (in) 0.57
Peak Runoff (cfs) 1.43
Rainfall Intensity 7.600
Weighted Runoff Coefficient 0.9000
Time of Concentration (days hh:mm:ss) 0 00:01:43

Subbasin : {STORM-BASINS}.23B

Runoff Hydrograph



Subbasin : {STORM-BASINS}.26

Input Data

Area (ac) 1.06
 Weighted Runoff Coefficient 0.6000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	1.06	-	0.60
Composite Area & Weighted Runoff Coeff.	1.06		0.60

Time of Concentration

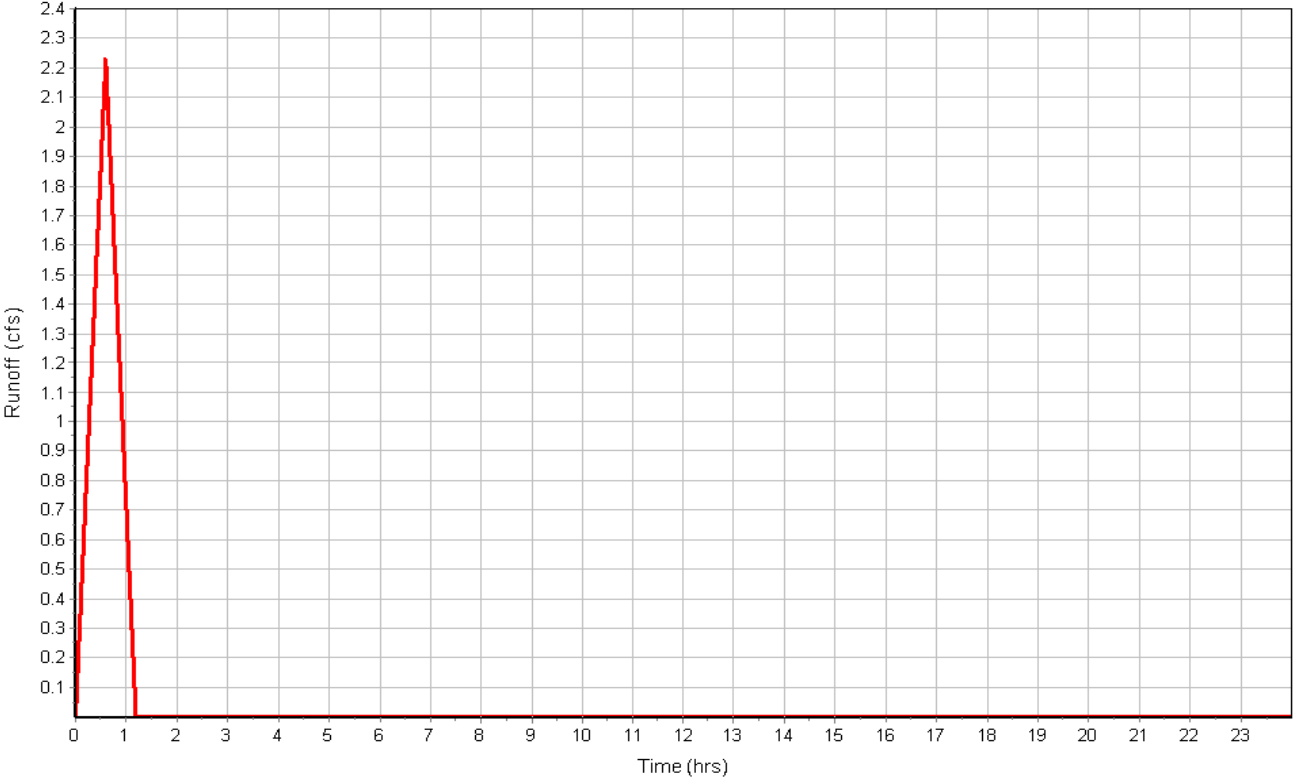
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	361.33	0.00	0.00
Slope (%) :	1.3	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.17	0.00	0.00
Computed Flow Time (min) :	35.74	0.00	0.00
Total TOC (min)	35.74		

Subbasin Runoff Results

Total Rainfall (in) 2.09
 Total Runoff (in) 1.26
 Peak Runoff (cfs) 2.23
 Rainfall Intensity 3.520
 Weighted Runoff Coefficient 0.6000
 Time of Concentration (days hh:mm:ss) 0 00:35:44

Subbasin : {STORM-BASINS}.26

Runoff Hydrograph



Subbasin : {STORM-BASINS}.27

Input Data

Area (ac) 0.58
Weighted Runoff Coefficient 0.7200

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.58	-	0.72
Composite Area & Weighted Runoff Coeff.	0.58		0.72

Time of Concentration

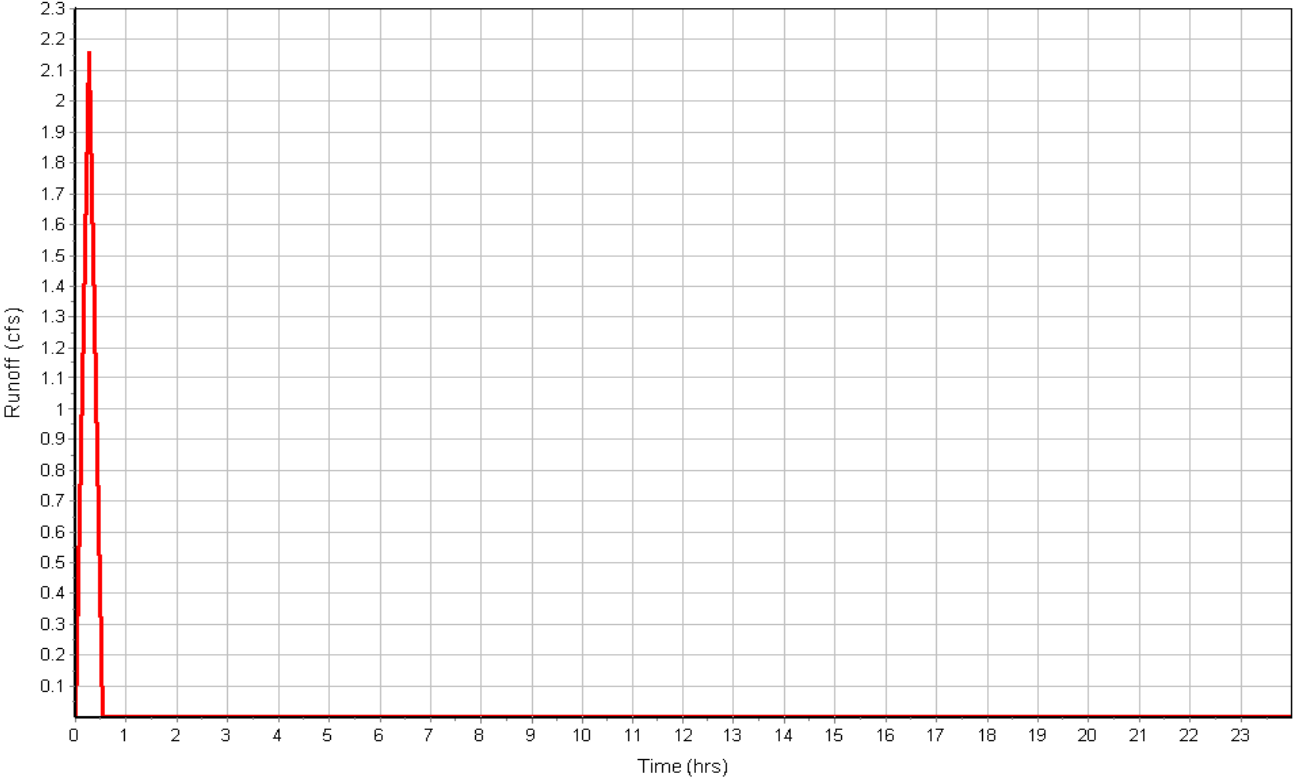
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	200	0.00	0.00
Slope (%) :	3	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.21	0.00	0.00
Computed Flow Time (min) :	15.94	0.00	0.00
Total TOC (min)	15.94		

Subbasin Runoff Results

Total Rainfall (in) 1.38
Total Runoff (in) 0.99
Peak Runoff (cfs) 2.16
Rainfall Intensity 5.159
Weighted Runoff Coefficient 0.7200
Time of Concentration (days hh:mm:ss) 0 00:15:56

Subbasin : {STORM-BASINS}.27

Runoff Hydrograph



Subbasin : {STORM-BASINS}.28

Input Data

Area (ac) 0.22
 Weighted Runoff Coefficient 0.7200

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.22	-	0.72
Composite Area & Weighted Runoff Coeff.	0.22		0.72

Time of Concentration

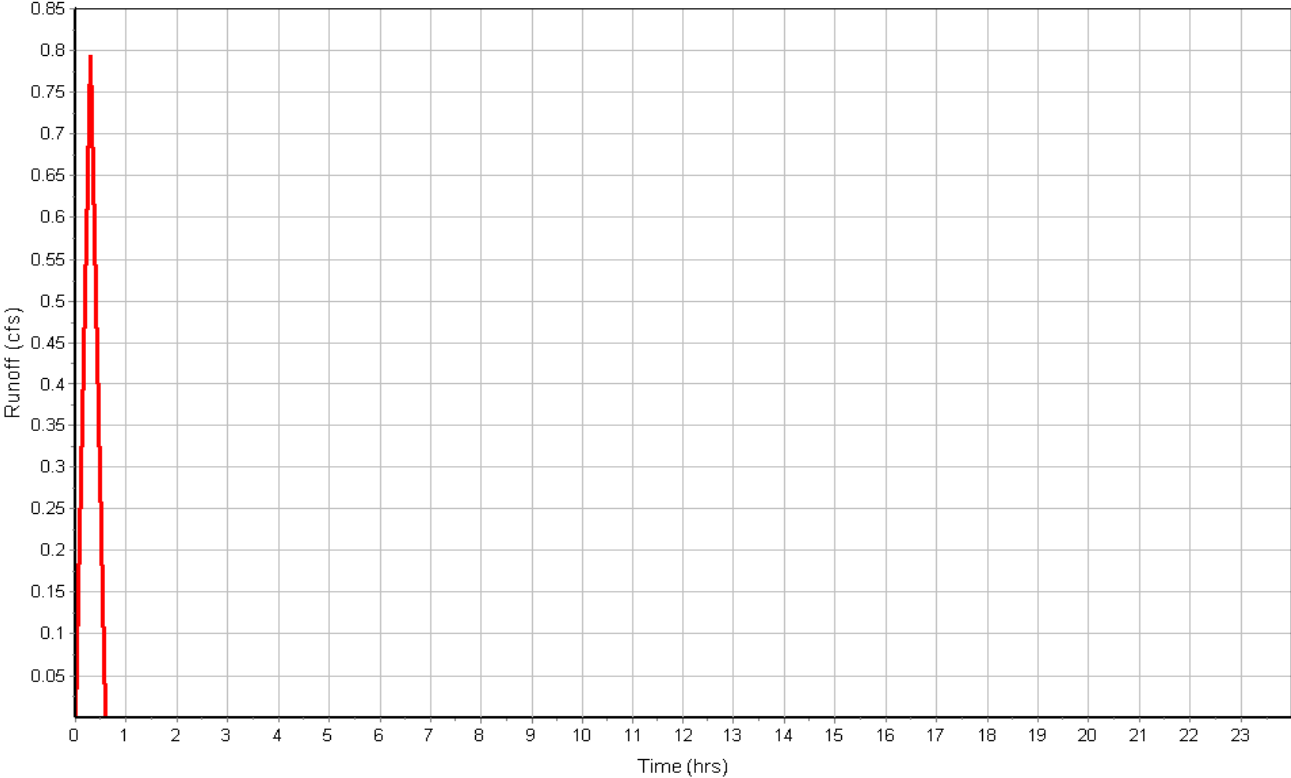
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	185	0.00	0.00
Slope (%) :	2	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.18	0.00	0.00
Computed Flow Time (min) :	17.61	0.00	0.00
Total TOC (min)	17.61		

Subbasin Runoff Results

Total Rainfall (in) 1.45
 Total Runoff (in) 1.05
 Peak Runoff (cfs) 0.79
 Rainfall Intensity 4.937
 Weighted Runoff Coefficient 0.7200
 Time of Concentration (days hh:mm:ss) 0 00:17:37

Subbasin : {STORM-BASINS}.28

Runoff Hydrograph



Subbasin : {STORM-BASINS}.29

Input Data

Area (ac) 0.15
 Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.15	-	0.90
Composite Area & Weighted Runoff Coeff.	0.15		0.90

Time of Concentration

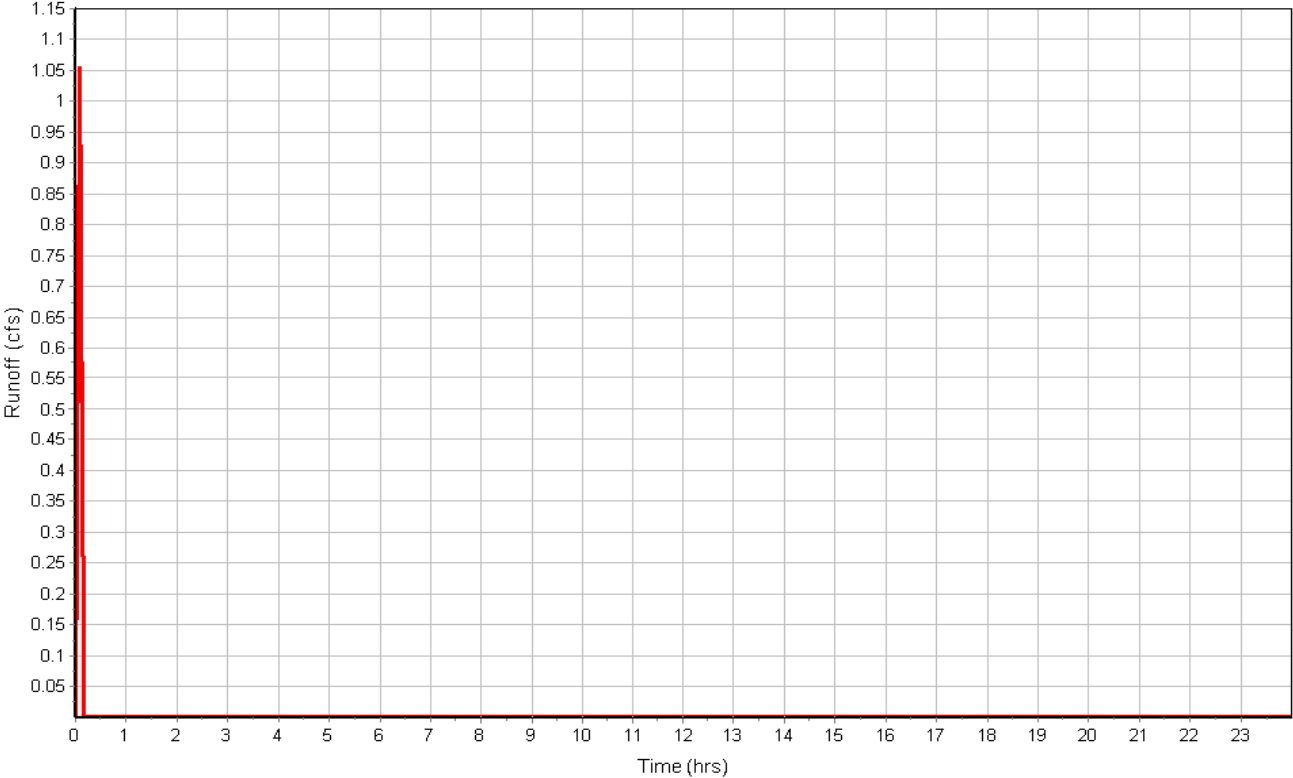
Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	223.61	0.00	0.00
Slope (%) :	2	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	2.87	0.00	0.00
Computed Flow Time (min) :	1.30	0.00	0.00
Total TOC (min)	1.30		

Subbasin Runoff Results

Total Rainfall (in) 0.63
 Total Runoff (in) 0.57
 Peak Runoff (cfs) 1.05
 Rainfall Intensity 7.600
 Weighted Runoff Coefficient 0.9000
 Time of Concentration (days hh:mm:ss) 0 00:01:18

Subbasin : {STORM-BASINS}.29

Runoff Hydrograph



Subbasin : {STORM-BASINS}.3

Input Data

Area (ac) 1.34
 Weighted Runoff Coefficient 0.6300

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	1.20	-	0.60
-	0.13	-	0.90
Composite Area & Weighted Runoff Coeff.	1.33		0.63

Time of Concentration

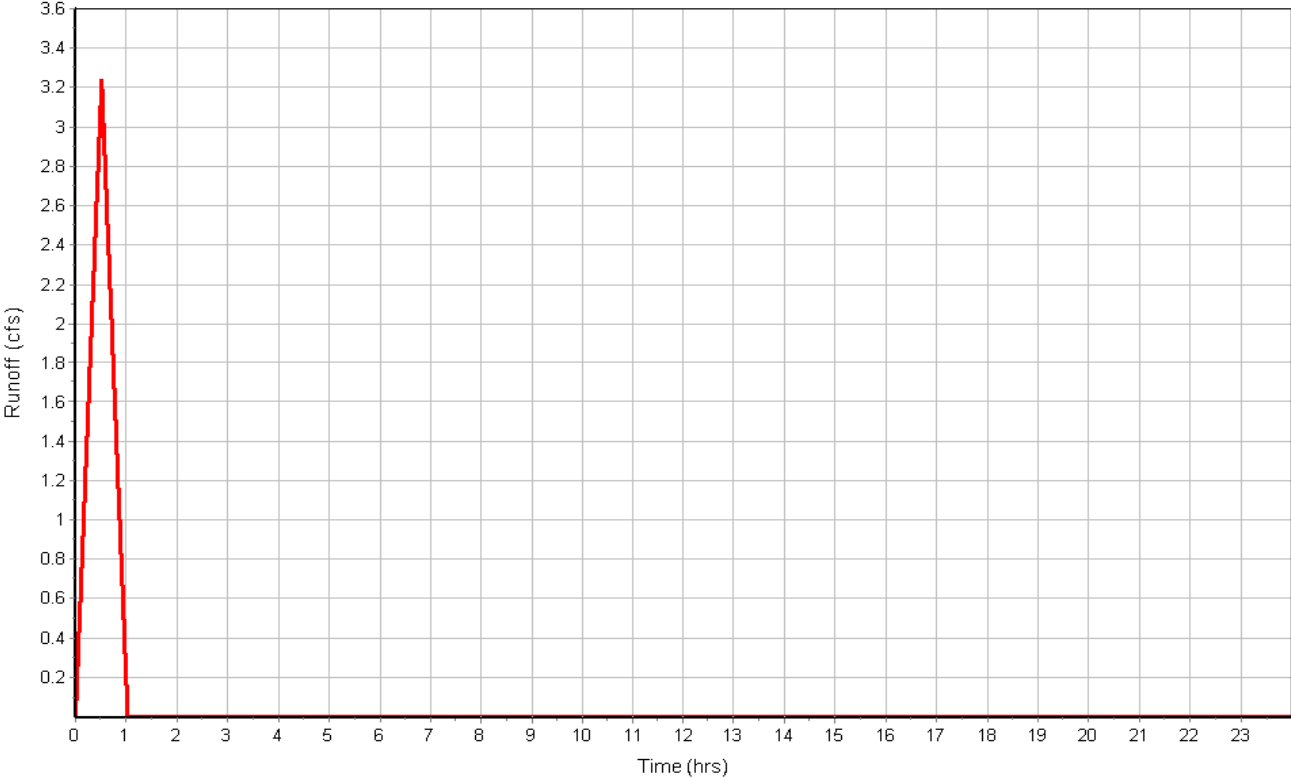
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	545.09	0.00	0.00
Slope (%) :	4.3	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.30	0.00	0.00
Computed Flow Time (min) :	30.78	0.00	0.00
Total TOC (min)	30.78		

Subbasin Runoff Results

Total Rainfall (in) 1.97
 Total Runoff (in) 1.24
 Peak Runoff (cfs) 3.24
 Rainfall Intensity 3.842
 Weighted Runoff Coefficient 0.6300
 Time of Concentration (days hh:mm:ss) 0 00:30:47

Subbasin : {STORM-BASINS}.3

Runoff Hydrograph



Subbasin : {STORM-BASINS}.30

Input Data

Area (ac) 0.12
 Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.12	-	0.90
Composite Area & Weighted Runoff Coeff.	0.12		0.90

Time of Concentration

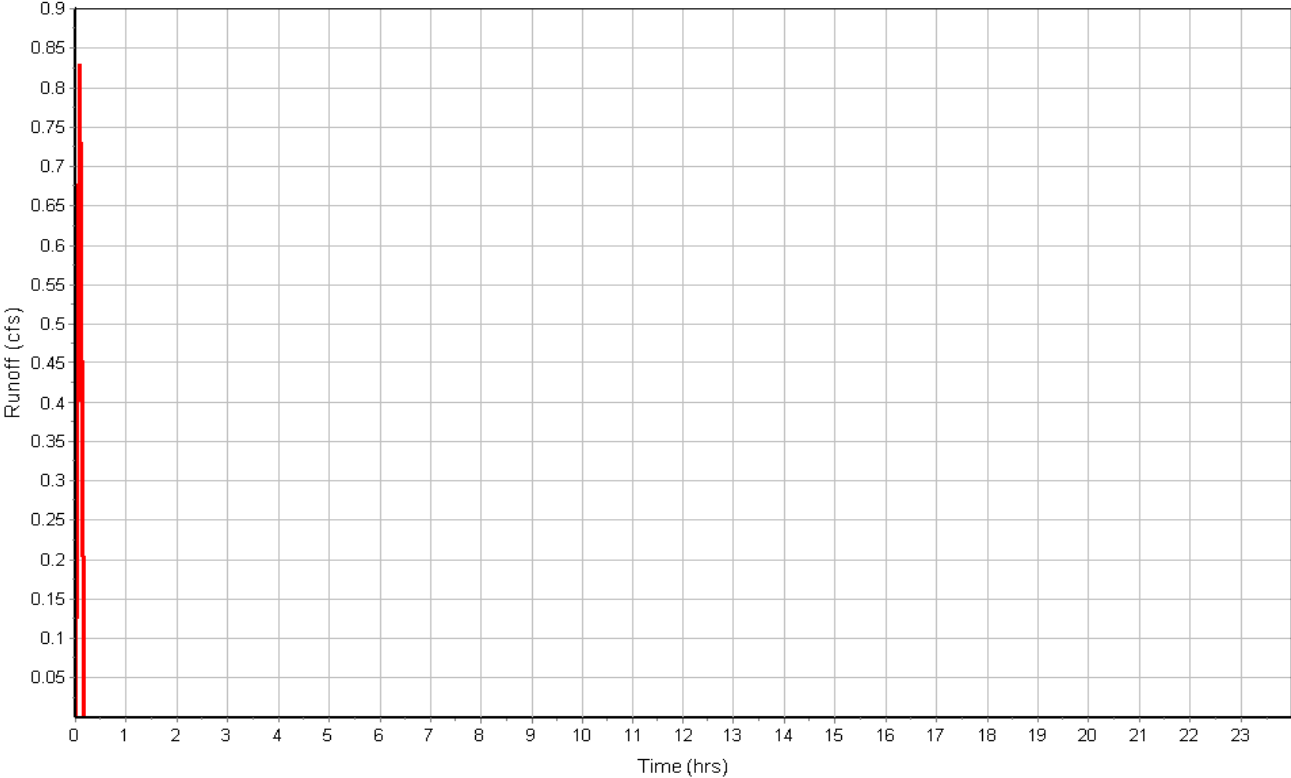
Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	222.61	0.00	0.00
Slope (%) :	2	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	2.87	0.00	0.00
Computed Flow Time (min) :	1.29	0.00	0.00
Total TOC (min)	1.29		

Subbasin Runoff Results

Total Rainfall (in) 0.63
 Total Runoff (in) 0.57
 Peak Runoff (cfs) 0.83
 Rainfall Intensity 7.600
 Weighted Runoff Coefficient 0.9000
 Time of Concentration (days hh:mm:ss) 0 00:01:17

Subbasin : {STORM-BASINS}.30

Runoff Hydrograph



Subbasin : {STORM-BASINS}.31

Input Data

Area (ac) 0.12
 Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.12	-	0.90
Composite Area & Weighted Runoff Coeff.	0.12		0.90

Time of Concentration

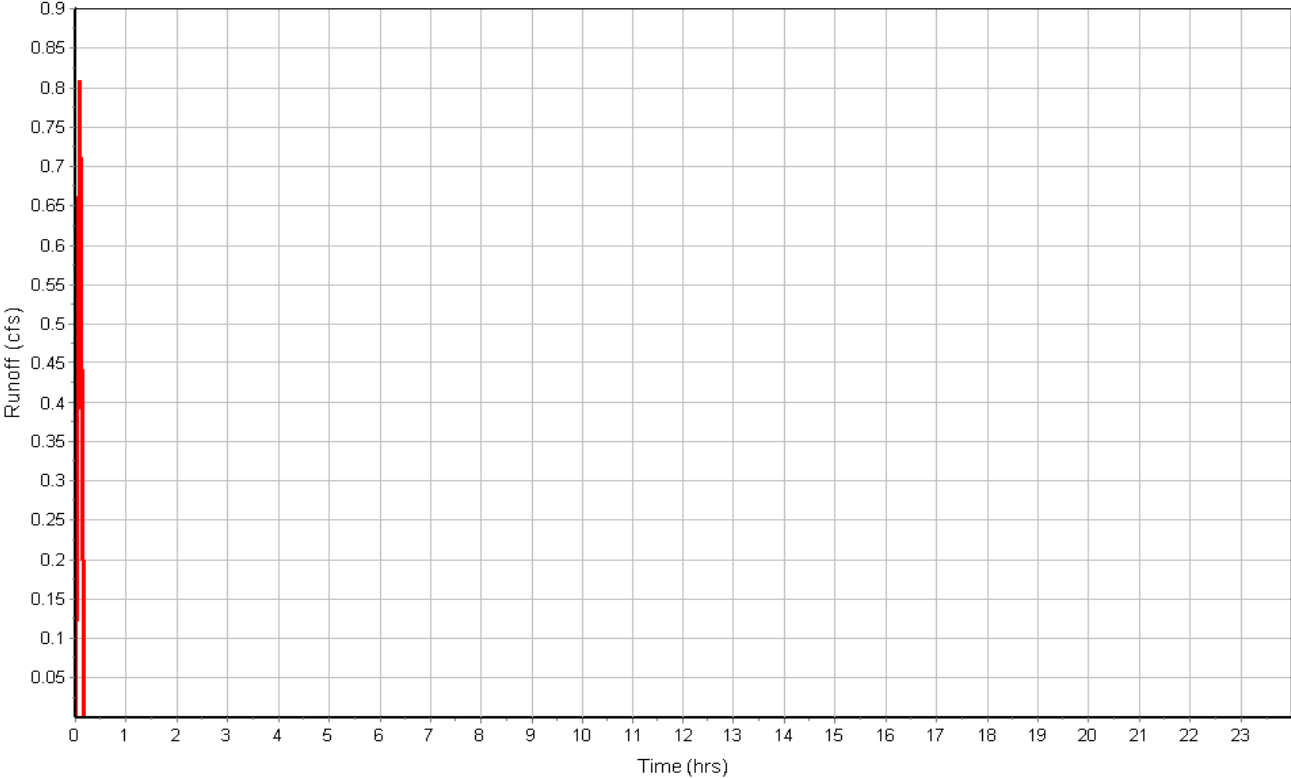
Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	258.85	0.00	0.00
Slope (%) :	2	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	2.87	0.00	0.00
Computed Flow Time (min) :	1.50	0.00	0.00
Total TOC (min)	1.50		

Subbasin Runoff Results

Total Rainfall (in) 0.63
 Total Runoff (in) 0.57
 Peak Runoff (cfs) 0.81
 Rainfall Intensity 7.600
 Weighted Runoff Coefficient 0.9000
 Time of Concentration (days hh:mm:ss) 0 00:01:30

Subbasin : {STORM-BASINS}.31

Runoff Hydrograph



Subbasin : {STORM-BASINS}.4

Input Data

Area (ac) 0.17
 Weighted Runoff Coefficient 0.7500

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.00	-	0.60
-	0.00	-	0.90
Composite Area & Weighted Runoff Coeff.	0.00		0.75

Time of Concentration

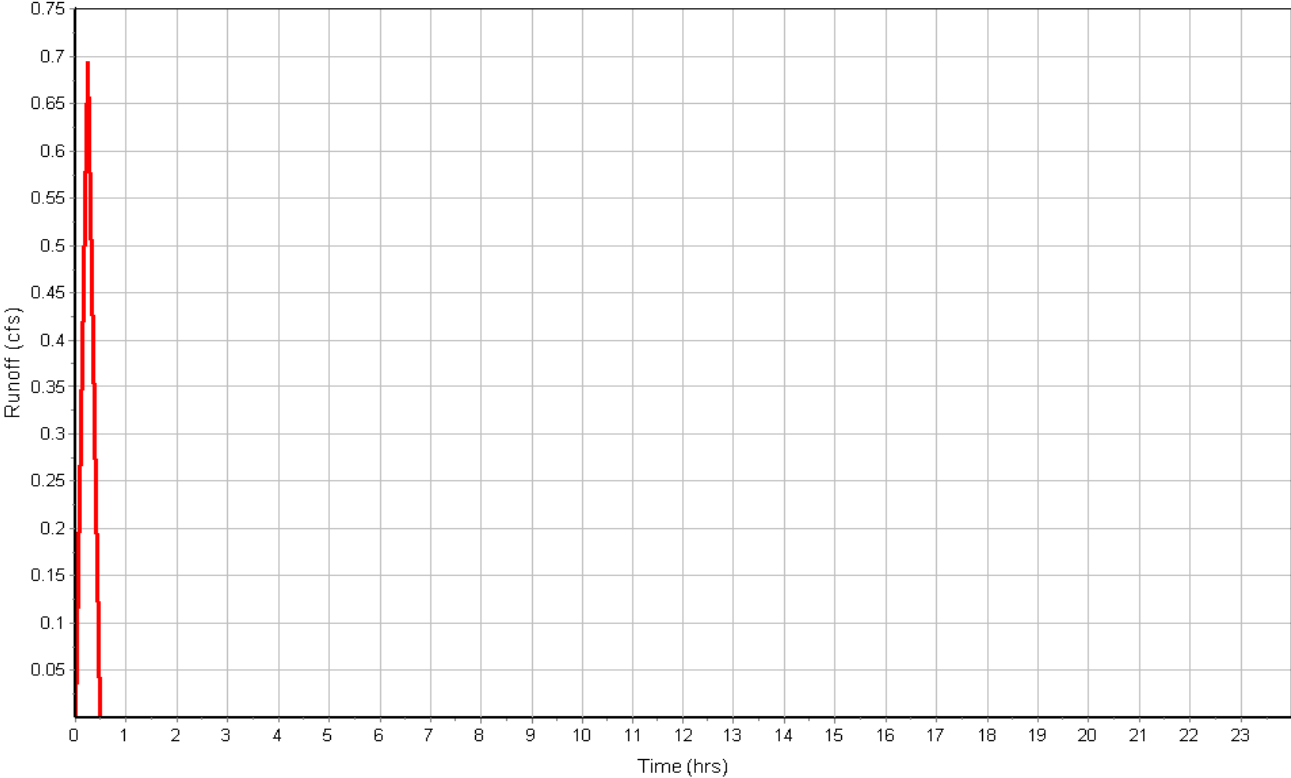
Sheet Flow Computations	Subarea A	Subarea B	Subarea C
	Manning's Roughness :	0.2	0.00
Flow Length (ft) :	211.10	0.00	0.00
Slope (%) :	4.2	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.24	0.00	0.00
Computed Flow Time (min) :	14.55	0.00	0.00
Total TOC (min)	14.55		

Subbasin Runoff Results

Total Rainfall (in) 1.30
 Total Runoff (in) 0.97
 Peak Runoff (cfs) 0.69
 Rainfall Intensity 5.369
 Weighted Runoff Coefficient 0.7500
 Time of Concentration (days hh:mm:ss) 0 00:14:33

Subbasin : {STORM-BASINS}.4

Runoff Hydrograph



Subbasin : {STORM-BASINS}.5

Input Data

Area (ac) 0.46
 Weighted Runoff Coefficient 0.6900

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.32	-	0.60
-	0.14	-	0.90
Composite Area & Weighted Runoff Coeff.	0.46		0.69

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
	Manning's Roughness :	0.2	0.00
Flow Length (ft) :	175.47	0.00	0.00
Slope (%) :	3	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.20	0.00	0.00
Computed Flow Time (min) :	14.35	0.00	0.00

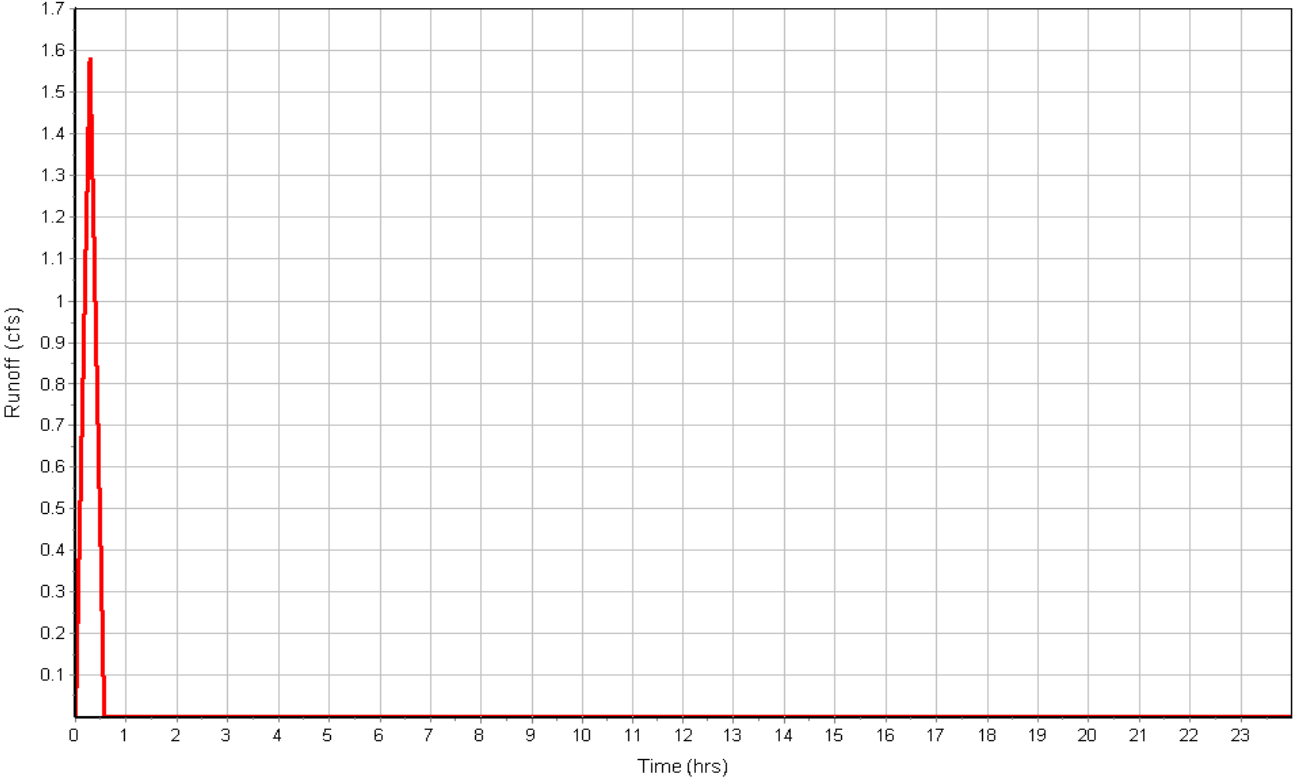
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
	Flow Length (ft) :	576.52	0.00
Slope (%) :	3	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	3.52	0.00	0.00
Computed Flow Time (min) :	2.73	0.00	0.00
Total TOC (min)	17.08		

Subbasin Runoff Results

Total Rainfall (in) 1.42
 Total Runoff (in) 0.98
 Peak Runoff (cfs) 1.58
 Rainfall Intensity 5.004
 Weighted Runoff Coefficient 0.6900
 Time of Concentration (days hh:mm:ss) 0 00:17:05

Subbasin : {STORM-BASINS}.5

Runoff Hydrograph



Subbasin : {STORM-BASINS}.6

Input Data

Area (ac) 1.73
 Weighted Runoff Coefficient 0.6000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	1.73	-	0.60
Composite Area & Weighted Runoff Coeff.	1.73		0.60

Time of Concentration

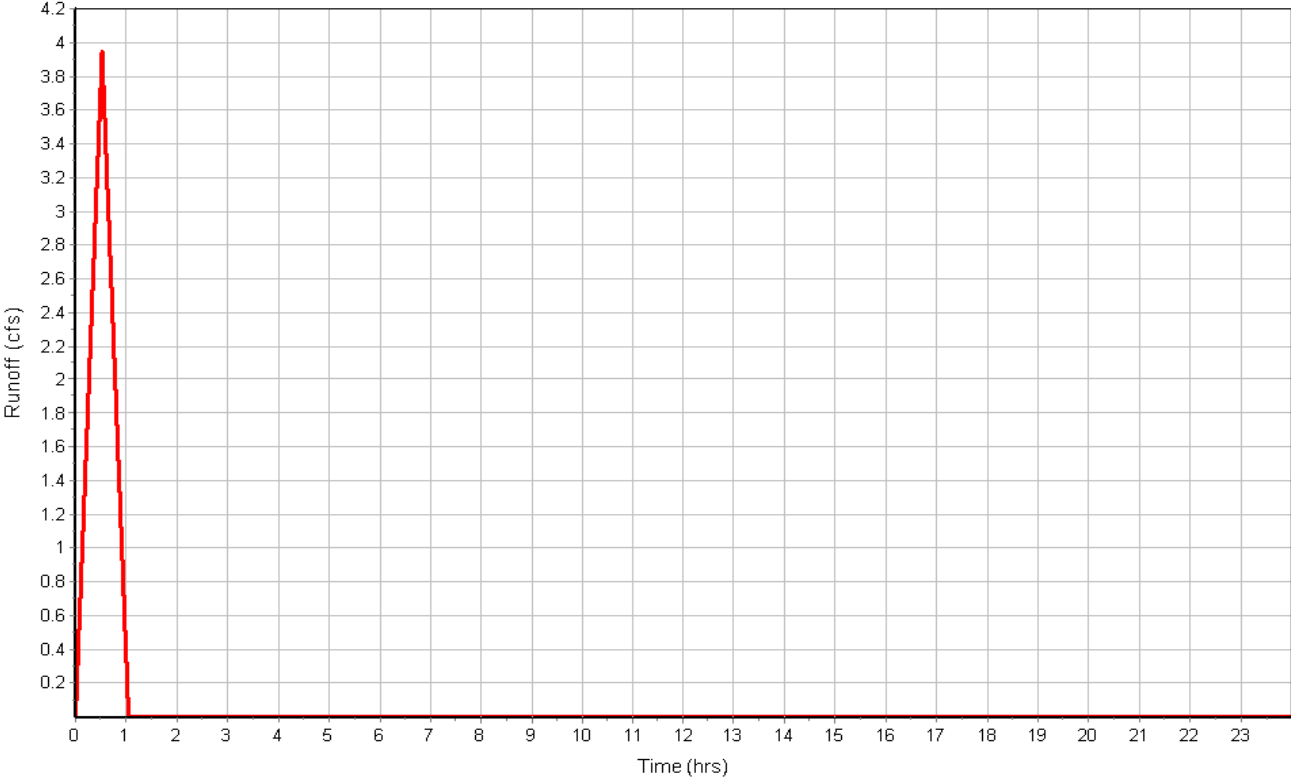
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	501.59	0.00	0.00
Slope (%) :	3.5	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.27	0.00	0.00
Computed Flow Time (min) :	31.27	0.00	0.00
Total TOC (min)	31.27		

Subbasin Runoff Results

Total Rainfall (in) 1.99
 Total Runoff (in) 1.19
 Peak Runoff (cfs) 3.94
 Rainfall Intensity 3.807
 Weighted Runoff Coefficient 0.6000
 Time of Concentration (days hh:mm:ss) 0 00:31:16

Subbasin : {STORM-BASINS}.6

Runoff Hydrograph



Subbasin : {STORM-BASINS}.7A

Input Data

Area (ac) 0.38
 Weighted Runoff Coefficient 0.6600

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.30	-	0.60
-	0.08	-	0.90
Composite Area & Weighted Runoff Coeff.	0.38		0.66

Time of Concentration

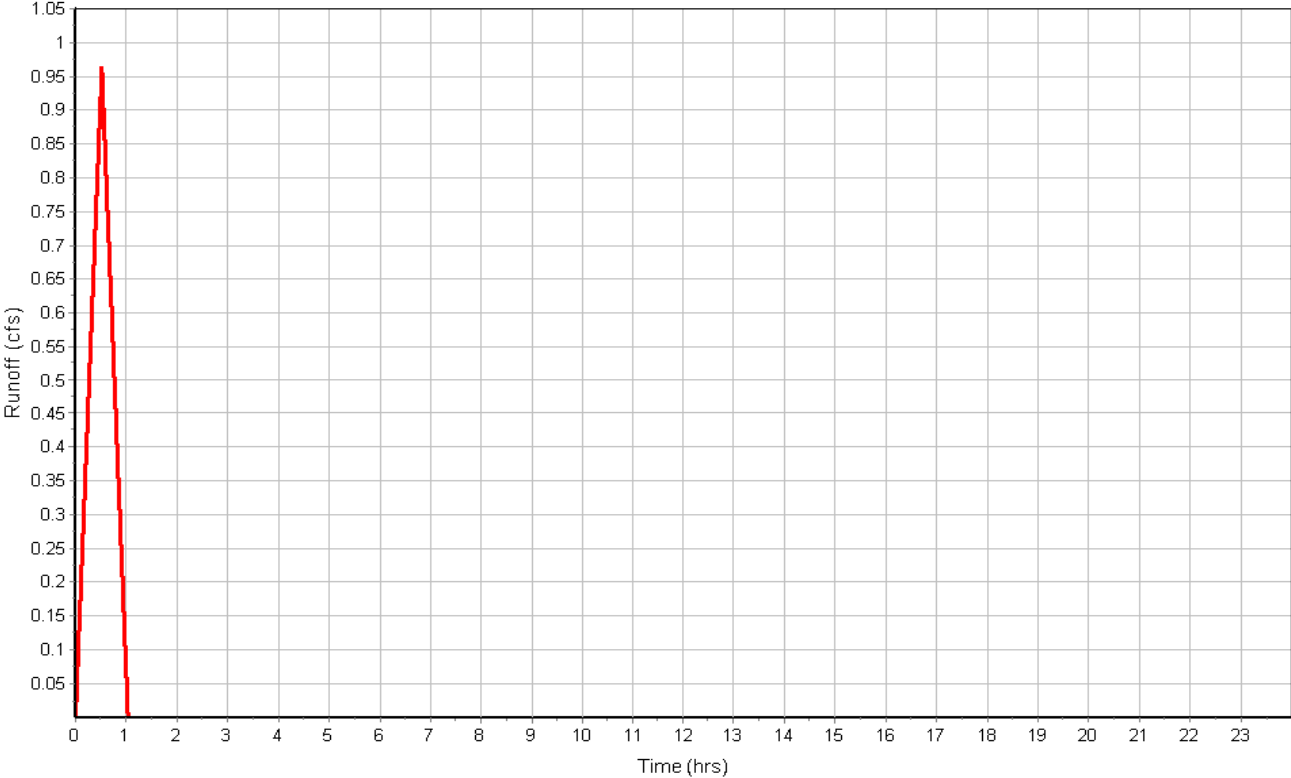
Sheet Flow Computations	Subarea A	Subarea B	Subarea C
	Manning's Roughness :	0.2	0.00
Flow Length (ft) :	419.02	0.00	0.00
Slope (%) :	2.5	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.23	0.00	0.00
Computed Flow Time (min) :	30.98	0.00	0.00
Total TOC (min)	30.98		

Subbasin Runoff Results

Total Rainfall (in) 1.98
 Total Runoff (in) 1.31
 Peak Runoff (cfs) 0.96
 Rainfall Intensity 3.827
 Weighted Runoff Coefficient 0.6600
 Time of Concentration (days hh:mm:ss) 0 00:30:59

Subbasin : {STORM-BASINS}.7A

Runoff Hydrograph



Subbasin : {STORM-BASINS}.7B

Input Data

Area (ac) 0.28
 Weighted Runoff Coefficient 0.7200

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.17	-	0.60
-	0.11	-	0.90
Composite Area & Weighted Runoff Coeff.	0.28		0.72

Time of Concentration

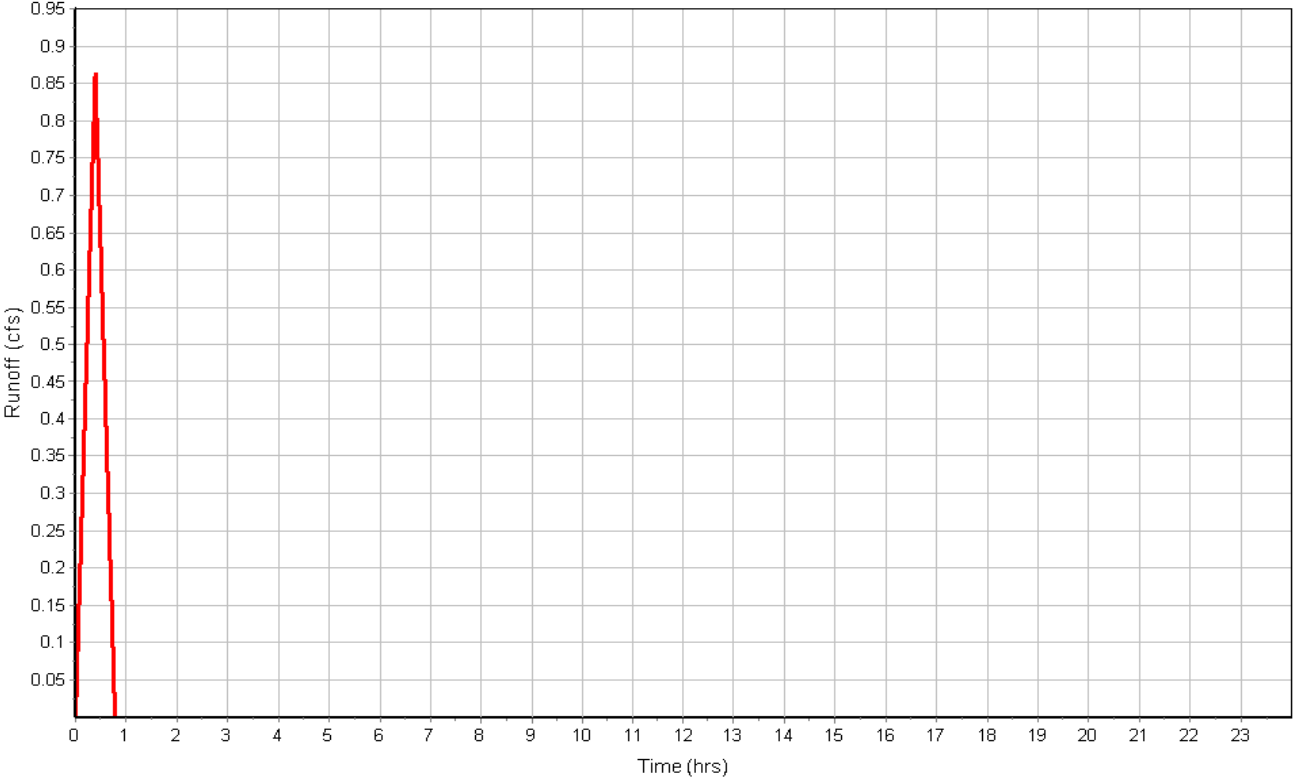
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	282.86	0.00	0.00
Slope (%) :	2.3	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.20	0.00	0.00
Computed Flow Time (min) :	23.39	0.00	0.00
Total TOC (min)	23.39		

Subbasin Runoff Results

Total Rainfall (in) 1.69
 Total Runoff (in) 1.22
 Peak Runoff (cfs) 0.86
 Rainfall Intensity 4.354
 Weighted Runoff Coefficient 0.7200
 Time of Concentration (days hh:mm:ss) 0 00:23:23

Subbasin : {STORM-BASINS}.7B

Runoff Hydrograph



Subbasin : {STORM-BASINS}.8

Input Data

Area (ac) 2.66
 Weighted Runoff Coefficient 0.6000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	2.66	-	0.60
Composite Area & Weighted Runoff Coeff.	2.66		0.60

Time of Concentration

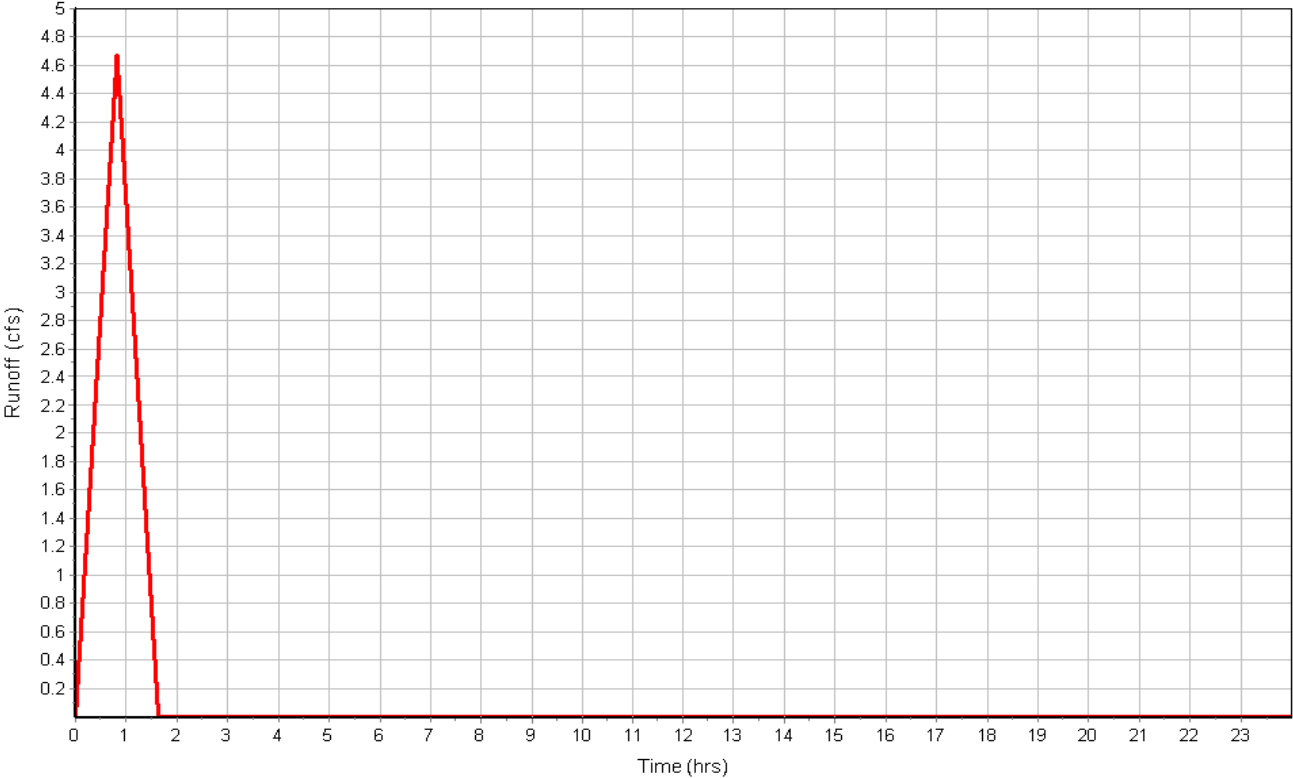
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	801.79	0.00	0.00
Slope (%) :	2.9	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.27	0.00	0.00
Computed Flow Time (min) :	49.06	0.00	0.00
Total TOC (min)	49.06		

Subbasin Runoff Results

Total Rainfall (in) 2.39
 Total Runoff (in) 1.43
 Peak Runoff (cfs) 4.68
 Rainfall Intensity 2.925
 Weighted Runoff Coefficient 0.6000
 Time of Concentration (days hh:mm:ss) 0 00:49:04

Subbasin : {STORM-BASINS}.8

Runoff Hydrograph



Subbasin : {STORM-BASINS}.9

Input Data

Area (ac) 0.06
Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.06	-	0.90
Composite Area & Weighted Runoff Coeff.	0.06		0.90

Time of Concentration

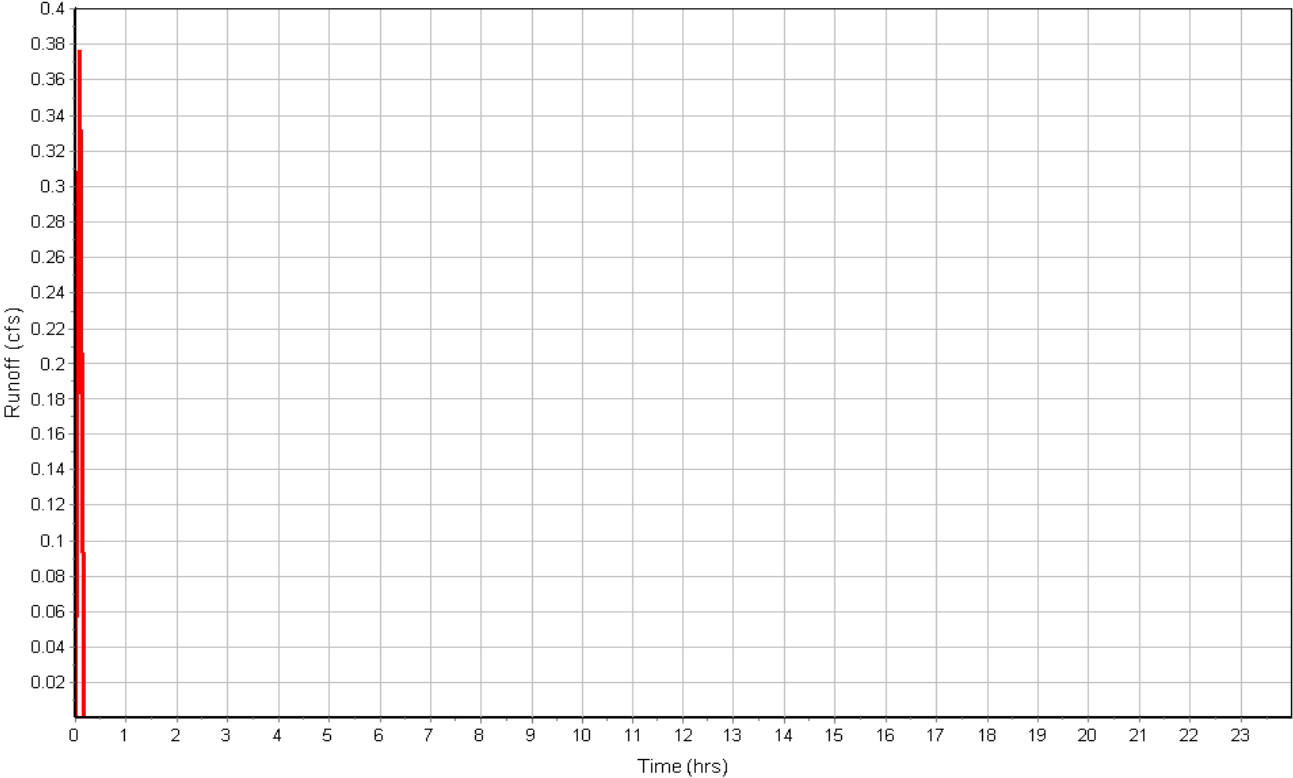
Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	93.99	0.00	0.00
Slope (%) :	2	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	2.87	0.00	0.00
Computed Flow Time (min) :	0.55	0.00	0.00
Total TOC (min)0.55			

Subbasin Runoff Results

Total Rainfall (in) 0.63
Total Runoff (in) 0.57
Peak Runoff (cfs) 0.38
Rainfall Intensity 7.600
Weighted Runoff Coefficient 0.9000
Time of Concentration (days hh:mm:ss) 0 00:00:33

Subbasin : {STORM-BASINS}.9

Runoff Hydrograph



Junction Input

SN Element ID	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Ground/Rim (Max) Offset (ft)	Initial Water Elevation (ft)	Initial Water Depth (ft)	Surcharge Elevation (ft)	Surcharge Depth (ft)	Ponded Area (ft ²)	Minimum Pipe Cover (in)
1 CB-I1	476.43	480.49	4.06	476.43	0.00	480.49	0.00	0.00	0.00
2 CONNECT-G	483.22	485.22	2.00	483.22	0.00	485.22	-0.01	0.00	0.00
3 CONNECT-I	483.38	489.38	6.00	483.38	0.00	489.38	0.00	0.00	0.00
4 FES-H2	482.37	485.12	2.75	482.37	0.00	485.12	0.00	0.00	0.00
5 Jun-01	473.29	477.00	3.71	473.29	0.00	477.00	0.00	0.00	0.00

Junction Results

SN Element ID	Peak Inflow	Peak Lateral Inflow	Max HGL Elevation Attained	Max HGL Depth Attained	Max Surge Depth Attained	Min Freeboard Attained	Average HGL Elevation Attained	Average HGL Depth Attained	Time of Max HGL Occurrence	Time of Peak Flooding Occurrence	Total Flooded Volume	Total Time Flooded
	(cfs)	(cfs)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(days hh:mm)	(days hh:mm)	(ac-in)	(min)
1 CB-I1	8.21	0.00	477.45	1.02	0.00	3.04	476.47	0.04	0 00:40	0 00:00	0.00	0.00
2 CONNECT-G	6.59	0.00	484.08	0.86	0.00	1.15	483.25	0.03	0 00:31	0 00:00	0.00	0.00
3 CONNECT-I	4.19	0.00	483.89	0.51	0.00	5.50	483.39	0.01	0 00:05	0 00:00	0.00	0.00
4 FES-H2	15.90	0.00	483.31	0.94	0.00	1.81	482.39	0.02	0 00:05	0 00:00	0.00	0.00
5 Jun-01	19.90	0.00	474.79	1.50	0.00	2.21	473.40	0.11	0 00:51	0 00:00	0.00	0.00

Channel Input

SN	Element ID	Length (ft)	Inlet Invert Elevation (ft)	Inlet Invert Offset (ft)	Outlet Invert Elevation (ft)	Outlet Invert Offset (ft)	Total Drop (ft)	Average Slope (%)	Shape	Height (ft)	Width (ft)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cfs)	Flap Gate
1	Gutter-05	200.35	495.00	4.05	487.00	2.90	8.00	3.9900	User-Defined	0.500	14.000	0.0130	0.5000	0.5000	0.0000	0.00	No
2	Gutter-06	200.99	495.00	4.37	487.00	3.22	8.00	3.9800	User-Defined	0.500	14.000	0.0130	0.5000	0.5000	0.0000	0.00	No
3	Gutter-07	239.28	487.00	3.22	485.61	3.25	1.39	0.5800	User-Defined	0.500	14.000	0.0130	0.5000	0.5000	0.0000	0.00	No
4	Gutter-08	240.40	485.61	3.25	480.15	3.25	5.46	2.2700	User-Defined	0.500	14.000	0.0320	0.5000	0.5000	0.0000	0.00	No
5	Gutter-09	57.48	480.15	3.25	478.65	3.80	1.50	2.6100	User-Defined	0.500	14.000	0.0320	0.5000	0.5000	0.0000	0.00	No
6	Gutter-10	192.99	480.66	4.57	478.79	3.94	1.87	0.9700	User-Defined	0.500	14.000	0.0320	0.5000	0.5000	0.0000	0.00	No
7	Gutter-12	213.95	483.97	4.97	479.50	2.59	4.47	2.0900	User-Defined	0.500	14.000	0.0320	0.5000	0.5000	0.0000	0.00	No
8	Gutter-13	213.94	491.00	4.00	483.97	4.97	7.03	3.2900	User-Defined	0.500	14.000	0.0320	0.5000	0.5000	0.0000	0.00	No
9	Gutter-14	201.82	500.50	3.77	491.00	4.00	9.50	4.7100	User-Defined	0.500	14.000	0.0320	0.5000	0.5000	0.0000	0.00	No
10	Gutter-15	201.21	500.50	2.90	491.00	3.43	9.50	4.7200	User-Defined	0.500	14.000	0.0320	0.5000	0.5000	0.0000	0.00	No
11	Gutter-16	425.27	491.00	3.43	482.00	3.93	9.00	2.1200	User-Defined	0.500	14.000	0.0320	0.5000	0.5000	0.0000	0.00	No
12	Gutter-17	292.35	485.12	1.74	480.66	4.57	4.46	1.5200	User-Defined	0.500	14.000	0.0320	0.5000	0.5000	0.0000	0.00	No
13	Gutter-23	587.46	487.00	2.90	479.00	4.50	8.00	1.3600	User-Defined	0.500	14.000	0.0320	0.5000	0.5000	0.0000	0.00	No
14	Gutter-26	57.06	490.37	6.49	485.12	1.74	5.25	9.2000	User-Defined	0.500	14.000	0.0320	0.5000	0.5000	0.0000	0.00	No

Channel Results

SN Element ID	Peak Flow	Time of Peak Flow Occurrence	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Travel Time	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Froude Number	Reported Condition
	(cfs)	(days hh:mm)	(cfs)		(ft/sec)	(min)	(ft)		(min)		
1 Gutter-05	0.30	0 00:16	9.52	0.03	3.28	1.02	0.14	0.27	0.00		
2 Gutter-06	0.92	0 00:18	9.50	0.10	3.75	0.89	0.21	0.41	0.00		
3 Gutter-07	0.64	0 00:33	3.83	0.17	1.71	2.33	0.25	0.50	0.00		
4 Gutter-08	0.00	0 00:33	7.18	0.00	0.00		0.00	0.00	0.00		
5 Gutter-09	0.00	0 00:00	7.33	0.00	0.00		0.00	0.00	0.00		
6 Gutter-10	0.12	0 00:08	4.69	0.03	2.27	1.42	0.12	0.23	0.00		
7 Gutter-12	0.02	0 00:30	6.51	0.00	1.36	2.62	0.05	0.10	0.00		
8 Gutter-13	0.00	0 00:00	9.03	0.00	0.00		0.00	0.00	0.00		
9 Gutter-14	0.08	0 00:07	10.29	0.01	3.62	0.93	0.07	0.15	0.00		
10 Gutter-15	0.24	0 00:06	10.48	0.02	4.35	0.77	0.11	0.23	0.00		
11 Gutter-16	0.00	0 00:00	7.04	0.00	0.00		0.00	0.00	0.00		
12 Gutter-17	0.09	0 00:20	5.88	0.01	1.87	2.61	0.09	0.18	0.00		
13 Gutter-23	0.21	0 00:38	5.55	0.04	2.35	4.17	0.14	0.27	0.00		
14 Gutter-26	0.67	0 00:16	14.45	0.05	3.32	0.29	0.16	0.31	0.00		

Pipe Input

SN	Element ID	Length (ft)	Inlet Invert Elevation (ft)	Inlet Invert Offset (ft)	Outlet Invert Elevation (ft)	Outlet Invert Offset (ft)	Total Drop (ft)	Average Slope (%)	Pipe Shape	Pipe Diameter or Height (in)	Pipe Width (in)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cfs)	Flap Gate	No. of Barrels
1	ST-C1	92.51	483.78	0.00	483.22	0.00	0.56	0.6000	CIRCULAR	24.000	24.000	0.0130	0.5000	0.0000	0.0000	0.00	No	1
2	ST-C2	200.00	490.63	0.00	483.88	0.10	6.75	3.3800	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
3	ST-C3	32.02	490.95	0.00	490.63	0.00	0.32	1.0000	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
4	ST-CS1	24.64	473.29	0.00	473.16	0.00	0.13	0.5300	CIRCULAR	30.000	30.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
5	ST-D1	32.02	484.10	0.00	483.88	0.10	0.22	0.6900	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
6	ST-E1 (2)	133.90	487.00	0.00	483.38	0.00	3.62	2.7000	CIRCULAR	18.000	18.000	0.0130	0.5000	0.0000	0.0000	0.00	No	1
7	ST-E2 (EXIST)	200.00	496.73	0.00	487.10	0.10	9.63	4.8100	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
8	ST-E3 (EXIST)	32.02	497.60	0.00	496.83	0.10	0.77	2.4000	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
9	ST-F1 (EXIST)	32.02	487.57	0.00	487.10	0.10	0.47	1.4600	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
10	ST-G1	72.10	474.50	0.00	473.92	0.63	0.58	0.8000	CIRCULAR	30.000	30.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
11	ST-G2	31.99	474.85	0.00	474.50	0.00	0.35	1.0900	CIRCULAR	30.000	30.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
12	ST-G3	49.09	476.90	0.00	474.95	0.10	1.95	3.9700	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
13	ST-G4	238.61	482.36	0.00	476.90	0.00	5.46	2.2900	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
14	ST-G5	145.74	483.22	0.00	482.35	-0.01	0.88	0.6000	CIRCULAR	24.000	24.000	0.0130	0.0000	0.5000	0.0000	0.00	No	1
15	ST-H1	190.63	476.09	0.00	474.95	0.10	1.14	0.6000	CIRCULAR	30.000	30.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
16	ST-H2	252.90	482.37	0.00	476.19	0.10	6.18	2.4400	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
17	ST-H2A	37.10	483.38	0.00	482.37	0.00	1.01	2.7200	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
18	ST-H3	48.08	483.88	0.00	483.38	0.00	0.50	1.0400	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
19	ST-H5	378.49	485.87	0.00	483.98	0.10	1.89	0.5000	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
20	ST-H6	32.00	488.21	0.00	487.89	2.02	0.32	1.0000	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
21	ST-I1	48.08	476.43	0.00	476.19	0.10	0.24	0.5000	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
22	ST-I2	95.00	476.91	0.00	476.43	0.00	0.48	0.5100	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
23	ST-I3	212.56	479.00	0.00	477.00	0.09	2.00	0.9400	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
24	ST-I4	78.66	483.38	0.00	481.27	2.27	2.11	2.6900	CIRCULAR	18.000	18.000	0.0130	0.0000	0.5000	0.0000	0.00	No	1
25	ST-K1	32.05	477.32	-0.75	477.00	0.09	0.32	1.0000	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1

Pipe Results

SN Element ID	Peak Flow	Time of Peak Flow Occurrence	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Travel Time	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Froude Number	Reported Condition
	(cfs)	(days hh:mm)	(cfs)		(ft/sec)	(min)	(ft)		(min)		
1 ST-C1	6.59	0 00:31	17.52	0.38	5.18	0.30	0.85	0.42	0.00		Calculated
2 ST-C2	0.95	0 00:17	19.30	0.05	6.85	0.49	0.23	0.15	0.00		Calculated
3 ST-C3	0.37	0 00:14	10.50	0.03	2.79	0.19	0.19	0.13	0.00		Calculated
4 ST-CS1	19.90	0 00:51	29.79	0.67	6.50	0.06	1.50	0.60	0.00		Calculated
5 ST-D1	2.95	0 00:31	8.71	0.34	4.45	0.12	0.60	0.40	0.00		Calculated
6 ST-E1 (2)	4.19	0 00:05	17.26	0.24	8.08	0.28	0.50	0.34	0.00		Calculated
7 ST-E2 (EXIST)	2.20	0 00:05	23.05	0.10	8.30	0.40	0.31	0.21	0.00		Calculated
8 ST-E3 (EXIST)	1.23	0 00:05	16.27	0.08	6.26	0.09	0.28	0.19	0.00		Calculated
9 ST-F1 (EXIST)	1.24	0 00:05	12.70	0.10	4.57	0.12	0.32	0.21	0.00		Calculated
10 ST-G1	29.16	0 00:06	36.79	0.79	8.33	0.14	1.68	0.67	0.00		Calculated
11 ST-G2	27.15	0 00:06	42.90	0.63	9.24	0.06	1.44	0.58	0.00		Calculated
12 ST-G3	8.63	0 00:32	45.08	0.19	11.06	0.07	0.59	0.30	0.00		Calculated
13 ST-G4	8.08	0 00:32	34.22	0.24	8.92	0.45	0.66	0.33	0.00		Calculated
14 ST-G5	6.59	0 00:31	17.44	0.38	5.17	0.47	0.85	0.43	0.00		Calculated
15 ST-H1	24.30	0 00:06	31.72	0.77	7.21	0.44	1.64	0.65	0.00		Calculated
16 ST-H2	15.78	0 00:06	35.36	0.45	11.02	0.38	0.93	0.47	0.00		Calculated
17 ST-H2A	15.90	0 00:05	37.32	0.43	11.41	0.05	0.91	0.46	0.00		Calculated
18 ST-H3	15.00	0 00:05	23.11	0.65	7.83	0.10	1.17	0.59	0.00		Calculated
19 ST-H5	13.57	0 00:05	16.01	0.85	6.03	1.05	1.40	0.70	0.00		Calculated
20 ST-H6	3.98	0 00:35	10.50	0.38	5.53	0.10	0.64	0.43	0.00		Calculated
21 ST-I1	8.21	0 00:40	16.00	0.51	5.13	0.16	1.02	0.51	0.00		Calculated
22 ST-I2	8.21	0 00:40	16.08	0.51	5.15	0.31	1.01	0.51	0.00		Calculated
23 ST-I3	4.58	0 00:06	10.19	0.45	5.69	0.62	0.70	0.47	0.00		Calculated
24 ST-I4	4.19	0 00:05	17.22	0.24	8.05	0.16	0.50	0.34	0.00		Calculated
25 ST-K1	6.97	0 00:40	19.20	0.36	9.99	0.05	0.63	0.42	0.00		Calculated

Inlet Input

SN Element ID	Inlet Manufacturer	Manufacturer Part Number	Inlet Location	Number of Inlets	Catchbasin Invert Elevation (ft)	Max (Rim) Elevation (ft)	Inlet Depth (ft)	Initial Water Elevation (ft)	Initial Water Depth (ft)	Ponded Area (ft ²)	Grate Clogging Factor (%)
1 CB-C1 (EXIST)	FHWA HEC-22	GENERIC	N/A	1	483.78	487.16	3.38	483.78	0.00	N/A	0.00
2 CB-C2 (EXIST)	FHWA HEC-22	GENERIC	N/A	1	490.63	495.14	4.51	490.63	0.00	N/A	0.00
3 CB-C3 (EXIST)	FHWA HEC-22	GENERIC	N/A	1	490.95	495.16	4.21	490.95	0.00	N/A	0.00
4 CB-D1 (EXIST)	FHWA HEC-22	GENERIC	N/A	1	484.10	487.17	3.07	484.10	0.00	N/A	0.00
5 CB-E1 (EXIST)	FHWA HEC-22	GENERIC	N/A	1	487.00	491.64	4.64	487.00	0.00	N/A	0.00
6 CB-E2 (EXIST)	FHWA HEC-22	GENERIC	N/A	1	496.73	501.05	4.32	496.73	0.00	N/A	0.00
7 CB-E3 (EXIST)	FHWA HEC-22	GENERIC	N/A	1	497.60	501.00	3.41	497.60	0.00	N/A	0.00
8 CB-F1 (EXIST)	FHWA HEC-22	GENERIC	N/A	1	487.57	491.28	3.71	487.57	0.00	N/A	0.00
9 CB-G2	FHWA HEC-22	GENERIC	N/A	1	474.50	479.18	4.68	474.50	0.00	0.00	0.00
10 CB-G3	FHWA HEC-22	GENERIC	N/A	1	474.85	478.79	3.94	474.85	0.00	0.00	0.00
11 CB-G4	FHWA HEC-22	GENERIC	N/A	1	476.90	480.15	3.25	476.90	0.00	N/A	0.00
12 CB-G5	FHWA HEC-22	GENERIC	N/A	1	482.36	485.61	3.25	482.36	0.00	N/A	0.00
13 CB-H1	FHWA HEC-22	GENERIC	N/A	1	476.09	480.66	4.57	476.09	0.00	N/A	0.00
14 CB-H2	FHWA HEC-22	GENERIC	N/A	1	483.38	485.12	1.74	483.38	0.00	N/A	0.00
15 CB-H3	FHWA HEC-22	GENERIC	N/A	1	483.88	490.37	6.49	483.88	0.00	N/A	0.00
16 CB-H5	FHWA HEC-22	GENERIC	N/A	1	485.87	488.55	2.68	485.87	0.00	0.00	0.00
17 CB-H6	FHWA HEC-22	GENERIC	N/A	1	488.21	488.55	0.35	488.21	0.00	0.00	0.00
18 CB-I2	FHWA HEC-22	GENERIC	N/A	1	476.91	479.97	3.06	476.91	0.00	0.00	0.00
19 CB-I3	FHWA HEC-22	GENERIC	N/A	1	479.00	483.97	4.97	479.00	0.00	N/A	0.00
20 CB-K1	FHWA HEC-22	GENERIC	N/A	1	478.07	482.00	3.93	478.07	0.00	0.00	0.00

Roadway & Gutter Input

SN Element ID	Roadway Longitudinal Slope (ft/ft)	Roadway Cross Slope (ft/ft)	Roadway Manning's Roughness	Gutter Cross Slope (ft/ft)	Gutter Width (ft)	Gutter Depression (in)	Allowable Spread (ft)
1 CB-C1 (EXIST)	0.0200	0.0200	0.0130	0.0620	1.50	0.1969	12.00
2 CB-C2 (EXIST)	0.0200	0.0500	0.0130	0.0620	2.00	0.0000	12.00
3 CB-C3 (EXIST)	0.0200	0.0500	0.0130	0.0620	2.00	0.0000	12.00
4 CB-D1 (EXIST)	0.0200	0.0200	0.0130	0.0620	1.50	0.1969	12.00
5 CB-E1 (EXIST)	0.0200	0.0200	0.0130	0.0620	1.50	0.1969	12.00
6 CB-E2 (EXIST)	0.0200	0.0200	0.0130	0.0620	1.50	0.1969	12.00
7 CB-E3 (EXIST)	0.0200	0.0200	0.0130	0.0620	1.50	0.1969	12.00
8 CB-F1 (EXIST)	0.0200	0.0200	0.0130	0.0620	1.50	0.1969	12.00
9 CB-G2	N/A	0.0200	0.0130	0.0620	1.50	0.1969	12.00
10 CB-G3	N/A	0.0200	0.0160	0.0620	1.50	0.1969	12.00
11 CB-G4	0.0200	0.0200	0.0130	0.0620	1.50	0.1969	12.00
12 CB-G5	0.0200	0.0200	0.0130	0.0620	1.50	0.1969	12.00
13 CB-H1	0.0200	0.0200	0.0130	0.0620	1.50	0.1969	12.00
14 CB-H2	0.0100	0.0200	0.0160	0.0620	1.50	0.1969	12.00
15 CB-H3	0.0200	0.0200	0.0130	0.0620	1.50	0.1969	12.00
16 CB-H5	N/A	0.0200	0.0130	0.0620	1.50	0.1969	12.00
17 CB-H6	N/A	0.0200	0.0160	0.0620	1.50	0.1969	12.00
18 CB-I2	N/A	0.0200	0.0130	0.0620	1.50	0.1969	12.00
19 CB-I3	0.0200	0.0200	0.0130	0.0620	1.50	0.1969	12.00
20 CB-K1	N/A	0.0200	0.0130	0.0833	1.50	0.1969	12.00

Inlet Results

SN Element ID	Peak Flow	Peak Lateral Inflow	Peak Flow Intercepted by Inlet	Peak Flow Bypassing Inlet	Inlet Efficiency during Peak	Max Gutter Spread during Peak	Max Gutter Water Elev. during Peak	Max Gutter Water Depth during Peak	Time of Max Depth Occurrence	Total Flooded Volume	Total Time Flooded
	(cfs)	(cfs)	(cfs)	(cfs)	(%)	(ft)	(ft)	(ft)	(days hh:mm)	(ac-in)	(min)
1 CB-C1 (EXIST)	4.14	3.94	3.45	0.69	83.41	9.58	487.41	0.25	0 00:31	0.00	0.00
2 CB-C2 (EXIST)	1.58	1.58	0.62	0.95	39.58	3.73	495.35	0.21	0 00:17	0.00	0.00
3 CB-C3 (EXIST)	0.69	0.69	0.37	0.33	52.99	2.60	495.31	0.15	0 00:14	0.00	0.00
4 CB-D1 (EXIST)	3.26	3.24	2.95	0.31	90.54	8.69	487.40	0.24	0 00:31	0.00	0.00
5 CB-E1 (EXIST)	0.79	0.79	0.79	0.00	100.00	4.49	491.79	0.15	0 00:05	0.00	0.00
6 CB-E2 (EXIST)	1.12	1.12	0.99	0.13	88.23	5.43	501.22	0.17	0 00:05	0.00	0.00
7 CB-E3 (EXIST)	1.57	1.57	1.23	0.34	78.39	6.35	501.19	0.19	0 00:05	0.00	0.00
8 CB-F1 (EXIST)	1.24	1.18	1.24	0.00	100.00	5.67	491.45	0.18	0 00:05	0.00	0.00
9 CB-G2	2.86	2.86	N/A	N/A	N/A	9.21	479.93	0.75	0 00:06	0.00	0.00
10 CB-G3	4.68	4.68	N/A	N/A	N/A	12.80	479.61	0.82	0 00:06	0.00	0.00
11 CB-G4	0.86	0.86	0.86	0.00	100.00	4.72	480.31	0.16	0 00:32	0.00	0.00
12 CB-G5	1.53	0.96	1.53	0.00	100.00	6.29	485.80	0.19	0 00:31	0.00	0.00
13 CB-H1	1.33	1.33	1.10	0.22	83.25	5.86	480.84	0.18	0 00:06	0.00	0.00
14 CB-H2	1.41	0.79	1.30	0.11	92.29	7.68	485.33	0.22	0 00:05	0.00	0.00
15 CB-H3	2.18	2.18	1.48	0.70	68.01	7.32	490.58	0.21	0 00:05	0.00	0.00
16 CB-H5	11.06	11.06	N/A	N/A	N/A	22.75	489.57	1.02	0 00:35	0.00	0.00
17 CB-H6	3.98	3.98	N/A	N/A	N/A	11.51	489.34	0.79	0 00:01	0.00	0.00
18 CB-I2	0.38	0.38	N/A	N/A	N/A	1.72	480.21	0.24	0 00:40	0.00	0.00
19 CB-I3	2.24	2.24	2.20	0.03	98.55	7.40	484.18	0.21	0 00:05	0.00	0.00
20 CB-K1	6.97	6.97	N/A	N/A	N/A	16.72	482.93	0.93	0 00:40	0.00	0.00

Storage Nodes

Storage Node : POND1

Input Data

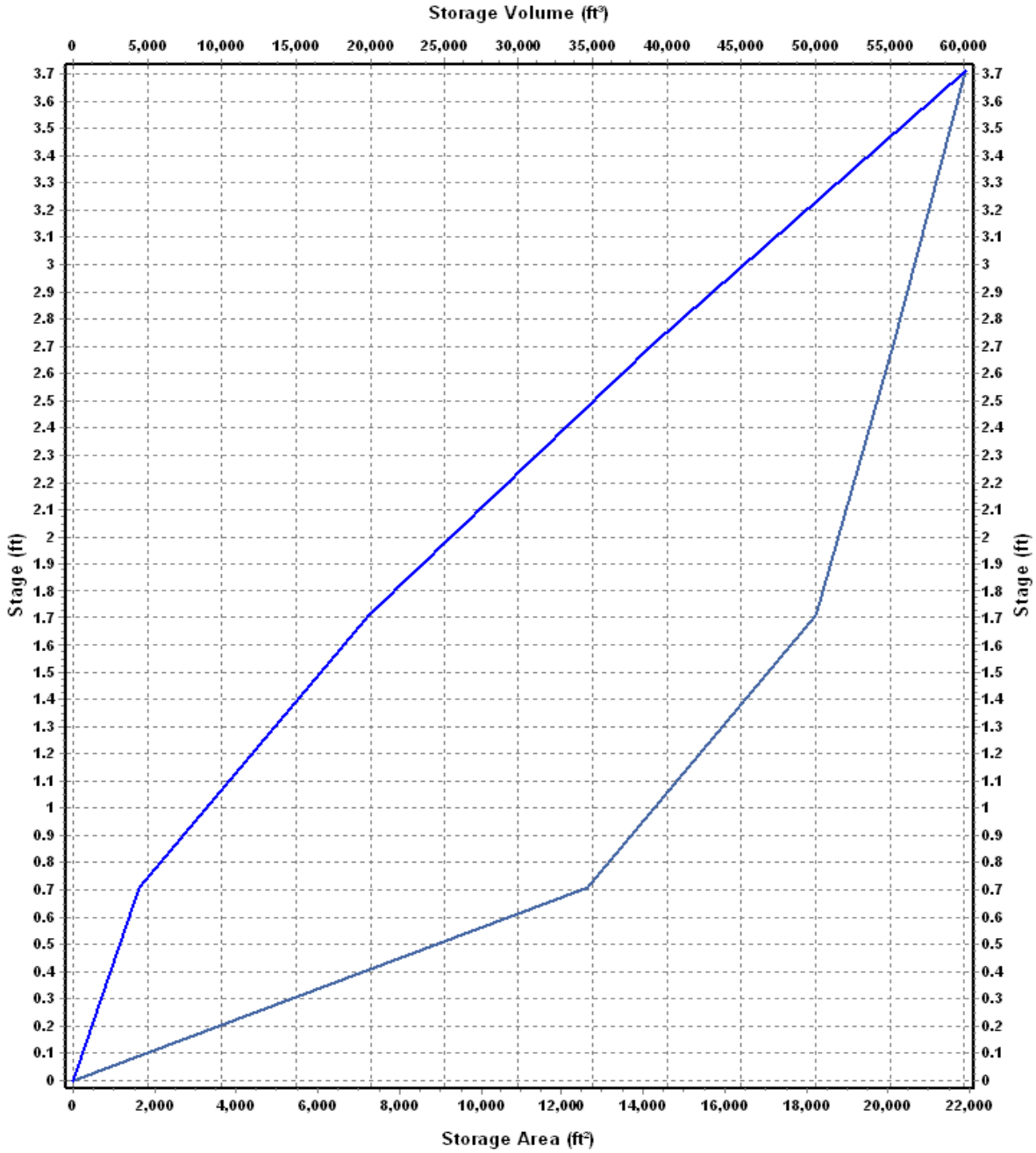
Invert Elevation (ft)	473.29
Max (Rim) Elevation (ft)	477.00
Max (Rim) Offset (ft)	3.71
Initial Water Elevation (ft)	473.29
Initial Water Depth (ft)	0.00
Ponded Area (ft ²)	0.00
Evaporation Loss	0.00

Storage Area Volume Curves

Storage Curve : POND1

Stage (ft)	Storage Area (ft ²)	Storage Volume (ft ³)
0	0	0.000
0.71	12615	4478.33
1.71	18216	19893.83
2.71	20116	39059.83
3.71	21896	60065.83

Storage Area Volume Curves



— Storage Area — Storage Volume

Storage Node : POND1 (continued)

Outflow Weirs

SN Element ID	Weir Type	Flap Gate	Crest Elevation (ft)	Crest Offset (ft)	Length (ft)	Weir Total Height (ft)	Discharge Coefficient
1 Weir-02	Rectangular	No	476.00	2.71	15.00	1.00	3.33

Outflow Orifices

SN Element ID	Orifice Type	Orifice Shape	Flap Gate	Circular Orifice Diameter (in)	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
1 Orifice-01	Side	Rectangular	No		26.50	21.00	0.00	0.63

Output Summary Results

Peak Inflow (cfs)	29.48
Peak Lateral Inflow (cfs)	3.38
Peak Outflow (cfs)	19.90
Peak Exfiltration Flow Rate (cfm)	0.00
Max HGL Elevation Attained (ft)	475.46
Max HGL Depth Attained (ft)	2.17
Average HGL Elevation Attained (ft)	473.43
Average HGL Depth Attained (ft)	0.14
Time of Max HGL Occurrence (days hh:mm)	0 00:51
Total Exfiltration Volume (1000-ft ³)	0.000
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00

Project Description

File Name 16044 Kensington Place Ph 2 Drainage Post-Dev 25 YEAR.SPF
Description J:\Projects\2016 Projects\16044 Kensington Place Subdivision Lee Pengelly\Drawings\DWG\Phase 2\KENSINGTON PLACE PHASE 2 R4.dwg

Project Options

Flow Units CFS
Elevation Type Elevation
Hydrology Method Rational
Time of Concentration (TOC) Method SCS TR-55
Link Routing Method Kinematic Wave
Enable Overflow Ponding at Nodes YES
Skip Steady State Analysis Time Periods NO

Analysis Options

Start Analysis On Aug 18, 2017 00:00:00
End Analysis On Aug 19, 2017 00:00:00
Start Reporting On Aug 18, 2017 00:00:00
Antecedent Dry Days 0 days
Runoff (Dry Weather) Time Step 0 01:00:00 days hh:mm:ss
Runoff (Wet Weather) Time Step 0 00:05:00 days hh:mm:ss
Reporting Time Step 0 00:05:00 days hh:mm:ss
Routing Time Step 30 seconds

Number of Elements

	Qty
Rain Gages	0
Subbasins.....	31
Nodes.....	28
<i>Junctions</i>	5
<i>Outfalls</i>	2
<i>Flow Diversions</i>	0
<i>Inlets</i>	20
<i>Storage Nodes</i>	1
Links.....	41
<i>Channels</i>	14
<i>Pipes</i>	25
<i>Pumps</i>	0
<i>Orifices</i>	1
<i>Weirs</i>	1
<i>Outlets</i>	0
Pollutants	0
Land Uses	0

Rainfall Details

Return Period..... 25 year(s)

Subbasin Summary

SN Subbasin ID	Area (ac)	Weighted Runoff Coefficient	Total Rainfall (in)	Total Runoff (in)	Total Runoff Volume (ac-in)	Peak Runoff (cfs)	Time of Concentration (days hh:mm:ss)
1 (STORM-BASINS).1	2.38	0.6100	3.19	1.95	4.63	3.87	0 01:11:46
2 (STORM-BASINS).10	0.87	0.6300	2.13	1.34	1.17	2.59	0 00:27:10
3 (STORM-BASINS).11	0.12	0.9000	0.70	0.63	0.07	0.87	0 00:05:00
4 (STORM-BASINS).12	0.16	0.9000	0.70	0.63	0.10	1.24	0 00:05:00
5 (STORM-BASINS).13	0.23	0.9000	0.70	0.63	0.14	1.74	0 00:05:00
6 (STORM-BASINS).14	0.74	0.7200	0.70	0.50	0.37	4.46	0 00:05:00
7 (STORM-BASINS).15	1.28	0.7200	0.70	0.50	0.65	7.77	0 00:05:00
8 (STORM-BASINS).16	0.21	0.7500	0.70	0.53	0.11	1.30	0 00:05:00
9 (STORM-BASINS).17	0.28	0.9000	0.70	0.63	0.17	2.09	0 00:05:00
10 (STORM-BASINS).18	3.51	0.6000	2.53	1.52	5.34	8.04	0 00:39:45
11 (STORM-BASINS).19	0.05	0.9000	0.70	0.63	0.03	0.40	0 00:05:00
12 (STORM-BASINS).2	0.96	0.6300	2.80	1.76	1.69	2.01	0 00:50:36
13 (STORM-BASINS).20	0.19	0.9000	0.70	0.63	0.12	1.47	0 00:05:00
14 (STORM-BASINS).21	0.22	0.9000	0.70	0.63	0.14	1.66	0 00:05:00
15 (STORM-BASINS).22	0.20	0.9000	0.70	0.63	0.13	1.50	0 00:05:00
16 (STORM-BASINS).23A	0.88	0.6000	2.30	1.38	1.22	2.29	0 00:31:54
17 (STORM-BASINS).23B	0.21	0.9000	0.70	0.63	0.13	1.58	0 00:05:00
18 (STORM-BASINS).26	1.06	0.6000	2.42	1.45	1.53	2.57	0 00:35:44
19 (STORM-BASINS).27	0.58	0.7200	1.61	1.16	0.67	2.52	0 00:15:56
20 (STORM-BASINS).28	0.22	0.7200	1.70	1.22	0.27	0.92	0 00:17:36
21 (STORM-BASINS).29	0.15	0.9000	0.70	0.63	0.10	1.16	0 00:05:00
22 (STORM-BASINS).3	1.34	0.6300	2.28	1.44	1.92	3.73	0 00:30:46
23 (STORM-BASINS).30	0.12	0.9000	0.70	0.63	0.08	0.92	0 00:05:00
24 (STORM-BASINS).31	0.12	0.9000	0.70	0.63	0.07	0.89	0 00:05:00
25 (STORM-BASINS).4	0.17	0.7500	1.52	1.14	0.20	0.81	0 00:14:33
26 (STORM-BASINS).5	0.46	0.6900	1.65	1.14	0.52	1.84	0 00:17:04
27 (STORM-BASINS).6	1.73	0.6000	2.29	1.38	2.38	4.55	0 00:31:16
28 (STORM-BASINS).7A	0.38	0.6600	2.28	1.51	0.57	1.11	0 00:30:58
29 (STORM-BASINS).7B	0.28	0.7200	1.96	1.41	0.39	1.00	0 00:23:23
30 (STORM-BASINS).8	2.66	0.6000	2.76	1.65	4.41	5.39	0 00:49:03
31 (STORM-BASINS).9	0.06	0.9000	0.70	0.63	0.03	0.42	0 00:05:00

Node Summary

SN Element ID	Element Type	Invert Elevation	Ground/Rim (Max) Elevation	Initial Water Elevation	Surcharge Elevation	Ponded Area	Peak Inflow	Max HGL Elevation Attained	Max Surcharge Depth Attained	Min Freeboard	Time of Peak Flooding Occurrence	Total Flooded Volume	Total Time Flooded	
		(ft)	(ft)	(ft)	(ft)	(ft ²)	(cfs)	(ft)	(ft)	(ft)	(days hh:mm)	(ac-in)	(min)	
1	CB-I1	Junction	476.43	480.49	476.43	480.49	0.00	9.48	477.54	0.00	2.95	0 00:00	0.00	0.00
2	CONNECT-G	Junction	483.22	485.22	483.22	485.22	0.00	7.23	484.12	0.00	1.10	0 00:00	0.00	0.00
3	CONNECT-I	Junction	483.38	489.38	483.38	489.38	0.00	4.59	483.91	0.00	5.47	0 00:00	0.00	0.00
4	FES-H2	Junction	482.37	485.12	482.37	485.12	0.00	17.66	483.37	0.00	1.75	0 00:00	0.00	0.00
5	Jun-01	Junction	473.29	477.00	473.29	477.00	0.00	22.27	474.90	0.00	2.10	0 00:00	0.00	0.00
6	Out-01	Outfall	473.16					22.27	474.77					
7	Out-1ST-G3	Outfall	475.00					0.00	475.00					
8	POND1	Storage Node	473.29	477.00	473.29		0.00	32.97	475.71			0.00	0.00	

Link Summary

SN Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length	Inlet Invert Elevation	Outlet Invert Elevation	Average Slope (%)	Diameter or Height (in)	Manning's Roughness	Peak Flow (cfs)	Design Flow Capacity (cfs)	Peak Flow/Design Flow Ratio	Peak Flow Velocity (ft/sec)	Peak Flow Depth (ft)	Peak Flow Depth/Total Depth Ratio	Total Time Reported (min)	Surcharged Condition
1	ST-C1	Pipe	CB-C1 (EXIST) CONNECT-G	92.51	483.78	483.22	0.6000	24.000	0.0130	7.23	17.52	0.41	5.32	0.90	0.45	0.00	Calculated
2	ST-C2	Pipe	CB-C2 (EXIST) CB-C1 (EXIST)	200.00	490.63	483.88	3.3800	18.000	0.0130	1.05	19.30	0.05	7.08	0.24	0.16	0.00	Calculated
3	ST-C3	Pipe	CB-C3 (EXIST) CB-C2 (EXIST)	32.02	490.95	490.63	1.0000	18.000	0.0130	0.41	10.50	0.04	2.87	0.20	0.13	0.00	Calculated
4	ST-CS1	Pipe	Jun-01 Out-01	24.64	473.29	473.16	0.5300	30.000	0.0130	22.27	29.79	0.75	6.66	1.61	0.64	0.00	Calculated
5	ST-D1	Pipe	CB-D1 (EXIST) CB-C1 (EXIST)	32.02	484.10	483.88	0.6900	18.000	0.0130	3.25	8.71	0.37	4.57	0.63	0.42	0.00	Calculated
6	ST-E1 (2)	Pipe	CB-E1 (EXIST) CONNECT-I	133.90	487.00	483.38	2.7000	18.000	0.0130	4.59	17.26	0.27	8.29	0.53	0.35	0.00	Calculated
7	ST-E2 (EXIST)	Pipe	CB-E2 (EXIST) CB-E1 (EXIST)	200.00	496.73	487.10	4.8100	18.000	0.0130	2.33	23.05	0.10	8.44	0.32	0.21	0.00	Calculated
8	ST-E3 (EXIST)	Pipe	CB-E3 (EXIST) CB-E2 (EXIST)	32.02	497.60	496.83	2.4000	18.000	0.0130	1.30	16.27	0.08	6.39	0.29	0.19	0.00	Calculated
9	ST-F1 (EXIST)	Pipe	CB-F1 (EXIST) CB-E1 (EXIST)	32.02	487.57	487.10	1.4600	18.000	0.0130	1.41	12.70	0.11	4.74	0.34	0.22	0.00	Calculated
10	ST-G1	Pipe	CB-G2 POND1	72.10	474.50	473.92	0.8000	30.000	0.0130	32.61	36.79	0.89	8.48	1.83	0.73	0.00	Calculated
11	ST-G2	Pipe	CB-G3 CB-G2	31.99	474.85	474.50	1.0900	30.000	0.0130	30.37	42.90	0.71	9.48	1.55	0.62	0.00	Calculated
12	ST-G3	Pipe	CB-G4 CB-G3	49.09	476.90	474.95	3.9700	24.000	0.0130	9.82	45.08	0.22	11.48	0.63	0.32	0.00	Calculated
13	ST-G4	Pipe	CB-G5 CB-G4	238.61	482.36	476.90	2.2900	24.000	0.0130	9.18	34.22	0.27	9.24	0.71	0.35	0.00	Calculated
14	ST-G5	Pipe	CONNECT-G CB-G5	145.74	483.22	482.35	0.6000	24.000	0.0130	7.23	17.44	0.41	5.30	0.90	0.45	0.00	Calculated
15	ST-H1	Pipe	CB-H1 CB-G3	190.63	476.09	474.95	0.6000	30.000	0.0130	26.98	31.72	0.85	7.36	1.77	0.71	0.00	Calculated
16	ST-H2	Pipe	FES-H2 CB-H1	252.90	482.37	476.19	2.4400	24.000	0.0130	17.56	35.36	0.50	11.33	1.00	0.50	0.00	Calculated
17	ST-H2A	Pipe	CB-H2 FES-H2	37.10	483.38	482.37	2.7200	24.000	0.0130	17.66	37.32	0.47	11.72	0.97	0.48	0.00	Calculated
18	ST-H3	Pipe	CB-H3 CB-H2	48.08	483.88	483.38	1.0400	24.000	0.0130	16.58	23.11	0.72	8.01	1.25	0.63	0.00	Calculated
19	ST-H5	Pipe	CB-H5 CB-H3	378.49	485.87	483.98	0.5000	24.000	0.0130	15.05	16.01	0.94	6.16	1.52	0.76	0.00	Calculated
20	ST-H6	Pipe	CB-H6 CB-H5	32.00	488.21	487.89	1.0000	18.000	0.0130	4.59	10.50	0.44	5.75	0.69	0.46	0.00	Calculated
21	ST-I1	Pipe	CB-I1 CB-H1	48.08	476.43	476.19	0.5000	24.000	0.0130	9.48	16.00	0.59	5.31	1.11	0.55	0.00	Calculated
22	ST-I2	Pipe	CB-I2 CB-I1	95.00	476.91	476.43	0.5100	24.000	0.0130	9.48	16.08	0.59	5.33	1.10	0.55	0.00	Calculated
23	ST-I3	Pipe	CB-I3 CB-I2	212.56	479.00	477.00	0.9400	18.000	0.0130	5.05	10.19	0.50	5.83	0.74	0.50	0.00	Calculated
24	ST-I4	Pipe	CONNECT-I CB-I3	78.66	483.38	481.27	2.6900	18.000	0.0130	4.58	17.22	0.27	8.25	0.53	0.35	0.00	Calculated
25	ST-K1	Pipe	CB-K1 CB-I2	32.05	477.32	477.00	1.0000	18.000	0.0130	8.04	19.20	0.42	10.39	0.68	0.45	0.00	Calculated
26	Gutter-05	Channel	CB-C3 (EXIST) CB-D1 (EXIST)	200.35	495.00	487.00	3.9900	6.000	0.0130	0.38	9.52	0.04	3.41	0.15	0.29	0.00	
27	Gutter-06	Channel	CB-C2 (EXIST) CB-C1 (EXIST)	200.99	495.00	487.00	3.9800	6.000	0.0130	1.11	9.50	0.12	3.90	0.22	0.44	0.00	
28	Gutter-07	Channel	CB-C1 (EXIST) CB-G5	239.28	487.00	485.61	0.5800	6.000	0.0130	0.96	3.83	0.25	1.79	0.29	0.58	0.00	
29	Gutter-08	Channel	CB-G5 CB-G4	240.40	485.61	480.15	2.2700	6.000	0.0320	0.00	7.18	0.00	0.28	0.01	0.02	0.00	
30	Gutter-09	Channel	CB-G4 CB-G3	57.48	480.15	478.65	2.6100	6.000	0.0320	0.00	7.33	0.00	0.00	0.00	0.00	0.00	
31	Gutter-10	Channel	CB-H1 CB-G3	192.99	480.66	478.79	0.9700	6.000	0.0320	0.16	4.69	0.03	2.42	0.13	0.26	0.00	
32	Gutter-12	Channel	CB-I3 CB-I2	213.95	483.97	479.50	2.0900	6.000	0.0320	0.06	6.51	0.01	1.81	0.08	0.17	0.00	
33	Gutter-13	Channel	CB-E1 (EXIST) CB-I3	213.94	491.00	483.97	3.2900	6.000	0.0320	0.00	9.03	0.00	0.00	0.00	0.00	0.00	
34	Gutter-14	Channel	CB-E2 (EXIST) CB-E1 (EXIST)	201.82	500.50	491.00	4.7100	6.000	0.0320	0.10	10.29	0.01	3.76	0.09	0.17	0.00	
35	Gutter-15	Channel	CB-E3 (EXIST) CB-F1 (EXIST)	201.21	500.50	491.00	4.7200	6.000	0.0320	0.31	10.48	0.03	4.50	0.13	0.26	0.00	
36	Gutter-16	Channel	CB-F1 (EXIST) CB-K1	425.27	491.00	482.00	2.1200	6.000	0.0320	0.00	7.04	0.00	0.00	0.00	0.00	0.00	
37	Gutter-17	Channel	CB-H2 CB-H1	292.35	485.12	480.66	1.5200	6.000	0.0320	0.17	5.88	0.03	2.14	0.13	0.25	0.00	
38	Gutter-23	Channel	CB-D1 (EXIST) CB-G2	587.46	487.00	479.00	1.3600	6.000	0.0320	0.39	5.55	0.07	2.61	0.18	0.35	0.00	
39	Gutter-26	Channel	CB-H3 CB-H2	57.06	490.37	485.12	9.2000	6.000	0.0320	0.91	14.45	0.06	3.39	0.18	0.35	0.00	
40	Orifice-01	Orifice	POND1 Jun-01		473.29	473.29		26.500		22.27							
41	Weir-02	Weir	POND1 Jun-01		473.29	473.29				0.00							

Inlet Summary

SN Element ID	Inlet Manufacturer	Manufacturer Part Number	Inlet Location	Number of Inlets	Catchbasin Invert Elevation (ft)	Max (Rim) Elevation (ft)	Initial Water Elevation (ft)	Ponded Area (ft ²)	Peak Flow (cfs)	Peak Flow Intercepted (cfs)	Peak Flow Bypassing Inlet (cfs)	Peak Flow Efficiency during Peak Flow (%)	Allowable Spread (ft)	Max Gutter Spread during Peak Flow (ft)	Max Gutter Water Elev. during Peak Flow (ft)	
1	CB-C1 (EXIST)	FHWA HEC-22 GENERIC	N/A	On Grade	1	483.78	487.16	483.78	N/A	4.77	3.76	1.01	78.78	12.00	10.15	487.43
2	CB-C2 (EXIST)	FHWA HEC-22 GENERIC	N/A	On Grade	1	490.63	495.14	490.63	N/A	1.84	0.69	1.16	37.23	12.00	3.97	495.37
3	CB-C3 (EXIST)	FHWA HEC-22 GENERIC	N/A	On Grade	1	490.95	495.16	490.95	N/A	0.81	0.41	0.40	50.26	12.00	2.79	495.32
4	CB-D1 (EXIST)	FHWA HEC-22 GENERIC	N/A	On Grade	1	484.10	487.17	484.10	N/A	3.76	3.25	0.51	86.32	12.00	9.22	487.41
5	CB-E1 (EXIST)	FHWA HEC-22 GENERIC	N/A	On Grade	1	487.00	491.64	487.00	N/A	0.88	0.88	0.00	100.00	12.00	4.77	491.80
6	CB-E2 (EXIST)	FHWA HEC-22 GENERIC	N/A	On Grade	1	496.73	501.05	496.73	N/A	1.24	1.06	0.18	85.16	12.00	5.68	501.23
7	CB-E3 (EXIST)	FHWA HEC-22 GENERIC	N/A	On Grade	1	497.60	501.00	497.60	N/A	1.74	1.30	0.43	75.04	12.00	6.63	501.20
8	CB-F1 (EXIST)	FHWA HEC-22 GENERIC	N/A	On Grade	1	487.57	491.28	487.57	N/A	1.41	1.41	0.00	100.00	12.00	6.03	491.46
9	CB-G2	FHWA HEC-22 GENERIC	N/A	On Sag	1	474.50	479.18	474.50	0.00	3.17	N/A	N/A	N/A	12.00	9.87	479.94
10	CB-G3	FHWA HEC-22 GENERIC	N/A	On Sag	1	474.85	478.79	474.85	0.00	5.39	N/A	N/A	N/A	12.00	14.08	479.63
11	CB-G4	FHWA HEC-22 GENERIC	N/A	On Grade	1	476.90	480.15	476.90	N/A	1.00	1.00	0.00	100.00	12.00	5.17	480.32
12	CB-G5	FHWA HEC-22 GENERIC	N/A	On Grade	1	482.36	485.61	482.36	N/A	2.00	2.00	0.00	99.95	12.00	7.08	485.82
13	CB-H1	FHWA HEC-22 GENERIC	N/A	On Grade	1	476.09	480.66	476.09	N/A	1.47	1.18	0.28	80.65	12.00	6.16	480.85
14	CB-H2	FHWA HEC-22 GENERIC	N/A	On Grade	1	483.38	485.12	483.38	N/A	1.76	1.51	0.25	86.01	12.00	8.44	485.35
15	CB-H3	FHWA HEC-22 GENERIC	N/A	On Grade	1	483.88	490.37	483.88	N/A	2.52	1.60	0.92	63.61	12.00	7.81	490.59
16	CB-H5	FHWA HEC-22 GENERIC	N/A	On Sag	1	485.87	488.55	485.87	0.00	12.22	N/A	N/A	N/A	12.00	24.31	489.60
17	CB-H6	FHWA HEC-22 GENERIC	N/A	On Sag	1	488.21	488.55	488.21	0.00	4.59	N/A	N/A	N/A	12.00	12.64	489.37
18	CB-I2	FHWA HEC-22 GENERIC	N/A	On Sag	1	476.91	479.97	476.91	0.00	0.42	N/A	N/A	N/A	12.00	1.90	480.24
19	CB-I3	FHWA HEC-22 GENERIC	N/A	On Grade	1	479.00	483.97	479.00	N/A	2.58	2.49	0.09	96.42	12.00	7.88	484.19
20	CB-K1	FHWA HEC-22 GENERIC	N/A	On Sag	1	478.07	482.00	478.07	0.00	8.04	N/A	N/A	N/A	12.00	18.40	482.96

Subbasin Hydrology

Subbasin : {STORM-BASINS}.1

Input Data

Area (ac) 2.38
Weighted Runoff Coefficient 0.6100

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
Residential	1.66	-	0.70
Pasture	0.71	-	0.40
Composite Area & Weighted Runoff Coeff.	2.37		0.61

Time of Concentration

TOC Method : SCS TR-55

Sheet Flow Equation :

$$T_c = (0.007 * ((n * L_f)^{0.8})) / ((P^{0.5}) * (S_f^{0.4}))$$

Where :

Tc = Time of Concentration (hr)
n = Manning's roughness
Lf = Flow Length (ft)
P = 2 yr, 24 hr Rainfall (inches)
Sf = Slope (ft/ft)

Shallow Concentrated Flow Equation :

V = 16.1345 * (Sf^{0.5}) (unpaved surface)
V = 20.3282 * (Sf^{0.5}) (paved surface)
V = 15.0 * (Sf^{0.5}) (grassed waterway surface)
V = 10.0 * (Sf^{0.5}) (nearly bare & untilled surface)
V = 9.0 * (Sf^{0.5}) (cultivated straight rows surface)
V = 7.0 * (Sf^{0.5}) (short grass pasture surface)
V = 5.0 * (Sf^{0.5}) (woodland surface)
V = 2.5 * (Sf^{0.5}) (forest w/heavy litter surface)
Tc = (Lf / V) / (3600 sec/hr)

Where:

Tc = Time of Concentration (hr)
Lf = Flow Length (ft)
V = Velocity (ft/sec)
Sf = Slope (ft/ft)

Channel Flow Equation :

$$V = (1.49 * (R^{2/3})) * (S_f^{0.5}) / n$$

R = Aq / Wp
Tc = (Lf / V) / (3600 sec/hr)

Where :

Tc = Time of Concentration (hr)
Lf = Flow Length (ft)
R = Hydraulic Radius (ft)
Aq = Flow Area (ft²)
Wp = Wetted Perimeter (ft)
V = Velocity (ft/sec)
Sf = Slope (ft/ft)
n = Manning's roughness

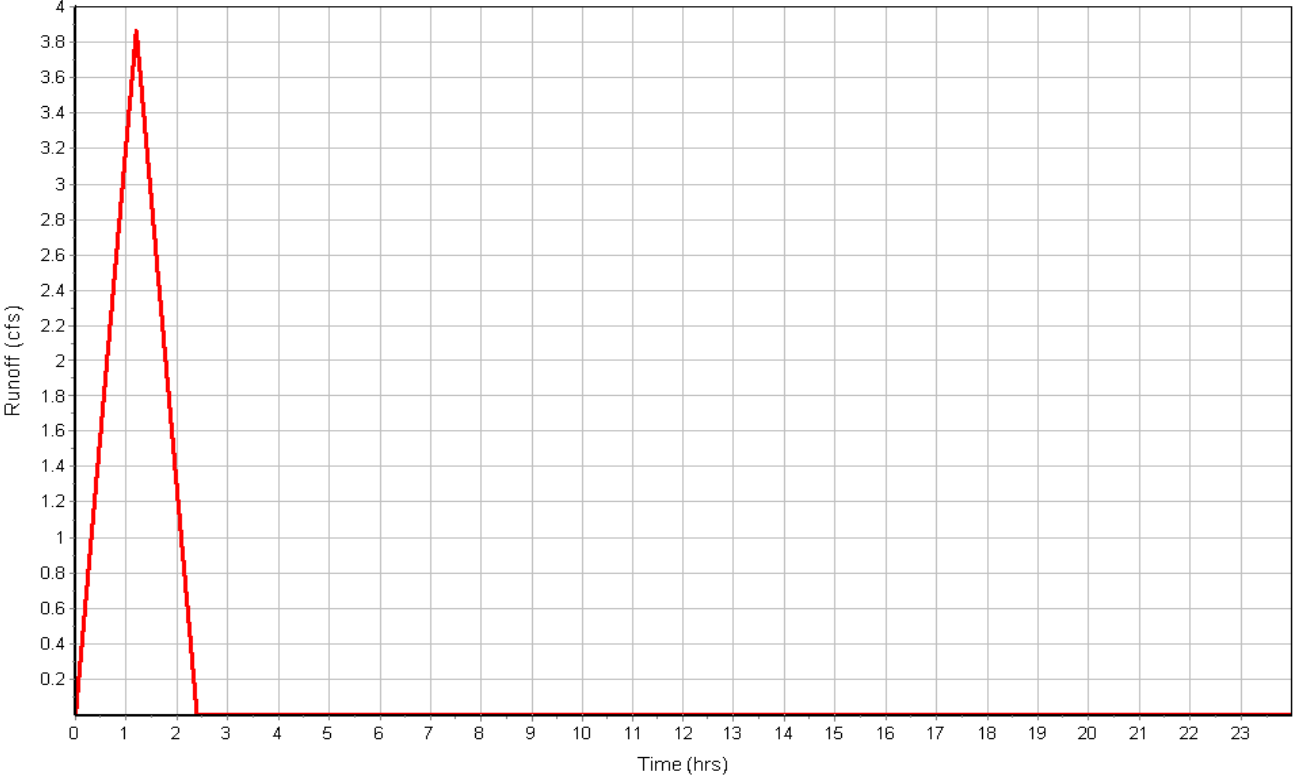
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	1221.57	0.00	0.00
Slope (%) :	2.6	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.28	0.00	0.00
Computed Flow Time (min) :	71.78	0.00	0.00
Total TOC (min)	71.78		

Subbasin Runoff Results

Total Rainfall (in)	3.19
Total Runoff (in)	1.95
Peak Runoff (cfs)	3.87
Rainfall Intensity	2.666
Weighted Runoff Coefficient	0.6100
Time of Concentration (days hh:mm:ss)	0 01:11:47

Subbasin : {STORM-BASINS}.1

Runoff Hydrograph



Subbasin : {STORM-BASINS}.10

Input Data

Area (ac) 0.87
 Weighted Runoff Coefficient 0.6300

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.78	-	0.60
-	0.09	-	0.90
Composite Area & Weighted Runoff Coeff.	0.87		0.63

Time of Concentration

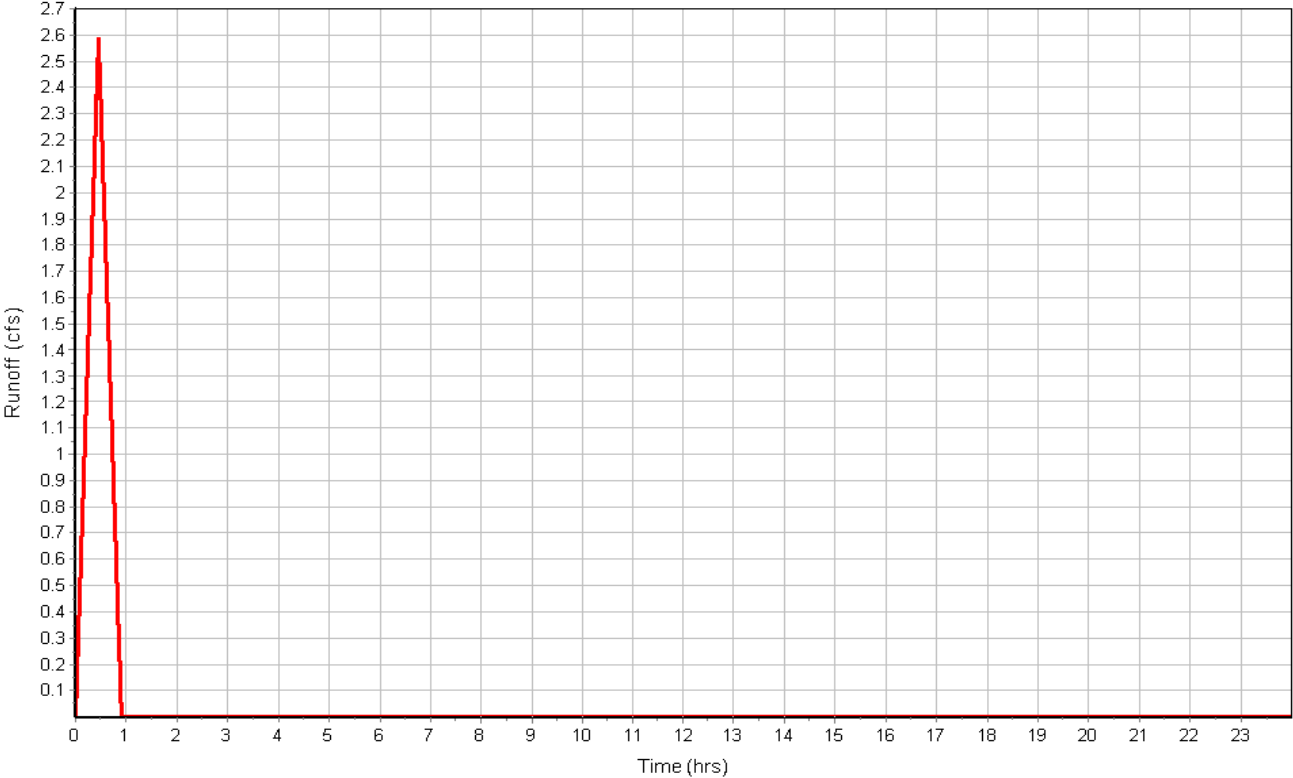
Sheet Flow Computations	Subarea A	Subarea B	Subarea C
	Manning's Roughness :	0.2	0.00
Flow Length (ft) :	421.06	0.00	0.00
Slope (%) :	3.5	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.26	0.00	0.00
Computed Flow Time (min) :	27.18	0.00	0.00
Total TOC (min)	27.18		

Subbasin Runoff Results

Total Rainfall (in) 2.13
 Total Runoff (in) 1.34
 Peak Runoff (cfs) 2.59
 Rainfall Intensity 4.710
 Weighted Runoff Coefficient 0.6300
 Time of Concentration (days hh:mm:ss) 0 00:27:11

Subbasin : {STORM-BASINS}.10

Runoff Hydrograph



Subbasin : {STORM-BASINS}.11

Input Data

Area (ac) 0.12
 Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.12	-	0.90
Composite Area & Weighted Runoff Coeff.	0.12		0.90

Time of Concentration

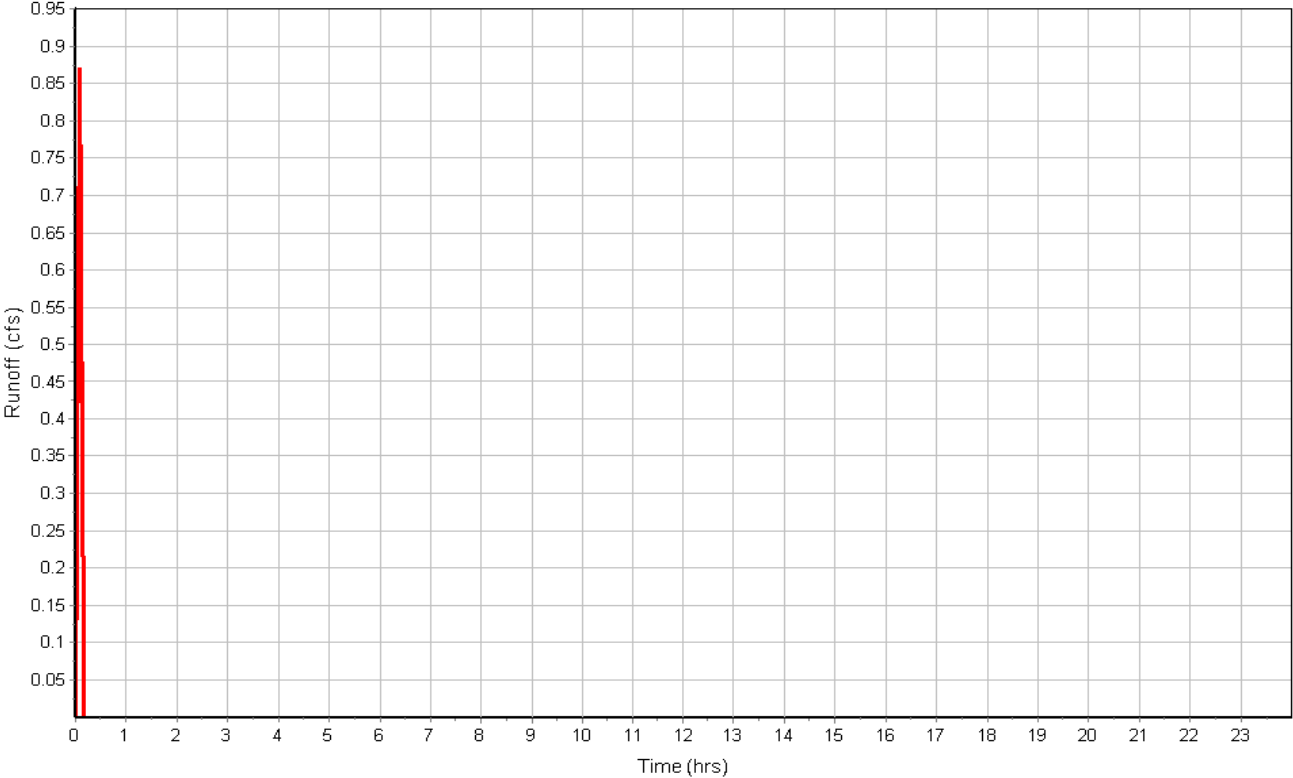
Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	251.93	0.00	0.00
Slope (%) :	4.7	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	4.41	0.00	0.00
Computed Flow Time (min) :	0.95	0.00	0.00
Total TOC (min)0.95			

Subbasin Runoff Results

Total Rainfall (in) 0.70
 Total Runoff (in) 0.63
 Peak Runoff (cfs) 0.87
 Rainfall Intensity 8.400
 Weighted Runoff Coefficient 0.9000
 Time of Concentration (days hh:mm:ss) 0 00:00:57

Subbasin : {STORM-BASINS}.11

Runoff Hydrograph



Subbasin : {STORM-BASINS}.12

Input Data

Area (ac) 0.16
Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.16	-	0.90
Composite Area & Weighted Runoff Coeff.	0.16		0.90

Time of Concentration

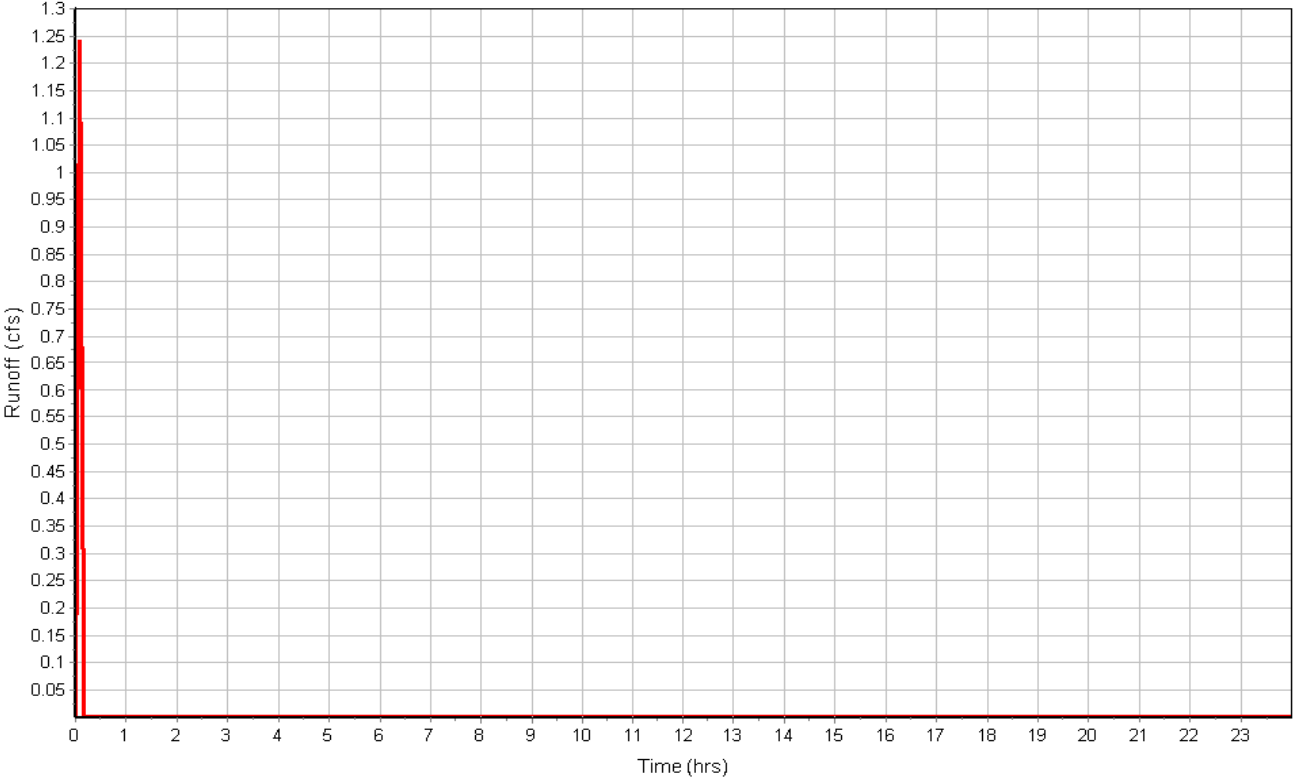
Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	261.41	0.00	0.00
Slope (%) :	1.9	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	2.80	0.00	0.00
Computed Flow Time (min) :	1.56	0.00	0.00
Total TOC (min)	1.56		

Subbasin Runoff Results

Total Rainfall (in) 0.70
Total Runoff (in) 0.63
Peak Runoff (cfs) 1.24
Rainfall Intensity 8.400
Weighted Runoff Coefficient 0.9000
Time of Concentration (days hh:mm:ss) 0 00:01:34

Subbasin : {STORM-BASINS}.12

Runoff Hydrograph



Subbasin : {STORM-BASINS}.13

Input Data

Area (ac) 0.23
 Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.23	-	0.90
Composite Area & Weighted Runoff Coeff.	0.23		0.90

Time of Concentration

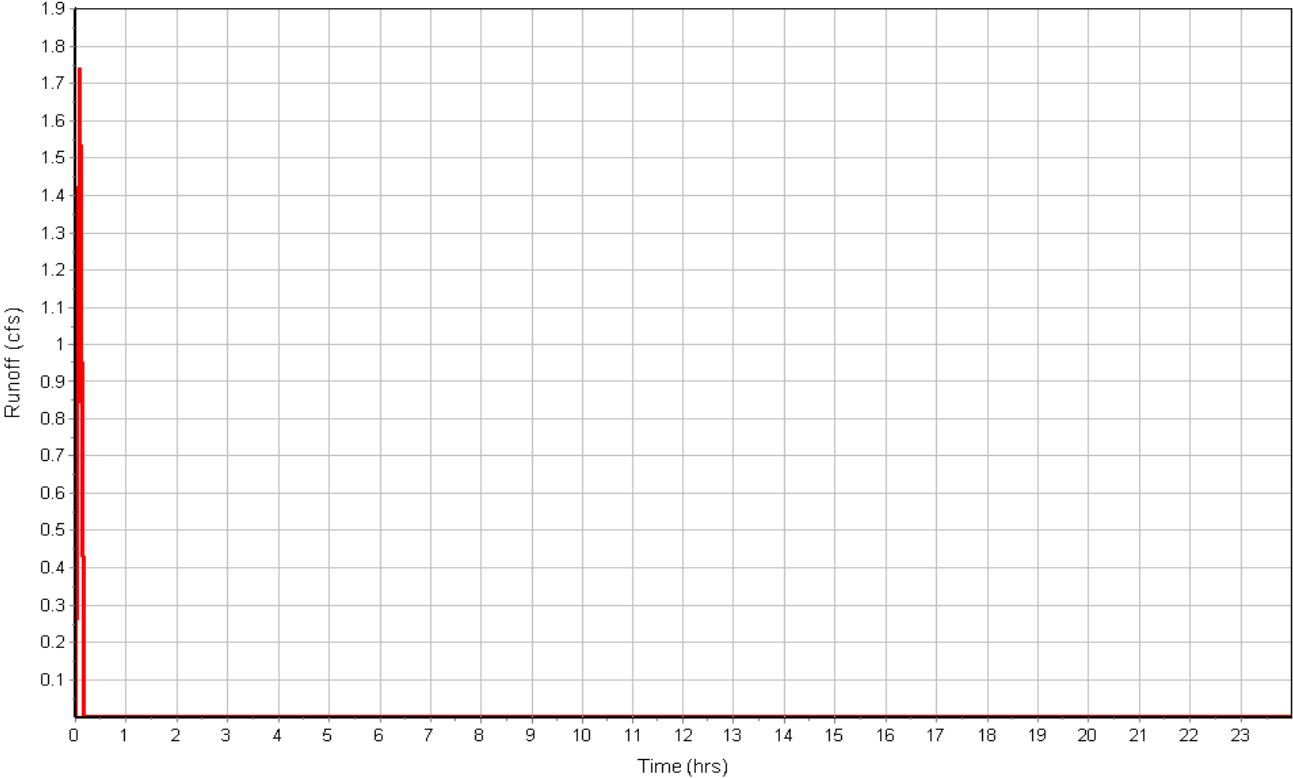
Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	407.22	0.00	0.00
Slope (%) :	2	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	2.87	0.00	0.00
Computed Flow Time (min) :	2.36	0.00	0.00
Total TOC (min)	2.36		

Subbasin Runoff Results

Total Rainfall (in) 0.70
 Total Runoff (in) 0.63
 Peak Runoff (cfs) 1.74
 Rainfall Intensity 8.400
 Weighted Runoff Coefficient 0.9000
 Time of Concentration (days hh:mm:ss) 0 00:02:22

Subbasin : {STORM-BASINS}.13

Runoff Hydrograph



Subbasin : {STORM-BASINS}.14

Input Data

Area (ac) 0.74
Weighted Runoff Coefficient 0.7200

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.74	-	0.72
Composite Area & Weighted Runoff Coeff.	0.74		0.72

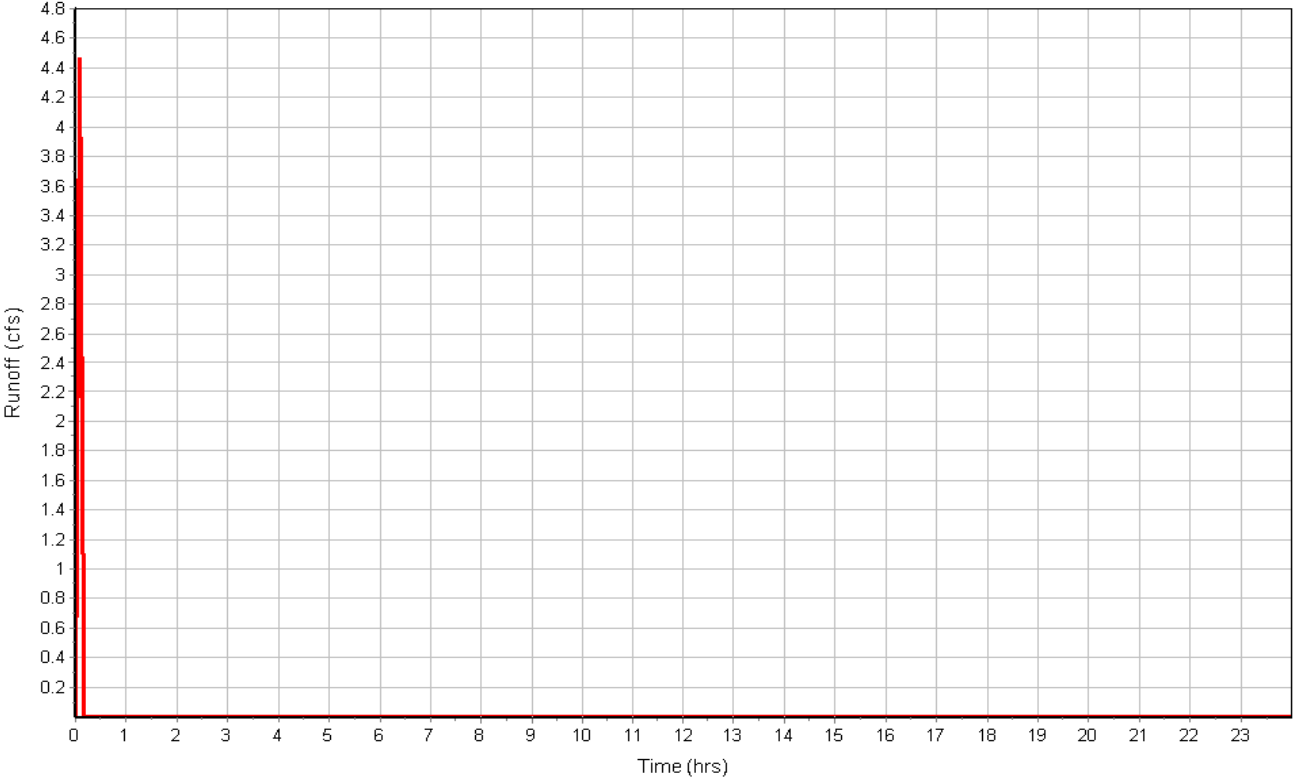
Time of Concentration

Subbasin Runoff Results

Total Rainfall (in) 0.70
Total Runoff (in) 0.50
Peak Runoff (cfs) 4.46
Rainfall Intensity 8.400
Weighted Runoff Coefficient 0.7200
Time of Concentration (days hh:mm:ss) 0 00:00:00

Subbasin : {STORM-BASINS}.14

Runoff Hydrograph



Subbasin : {STORM-BASINS}.15

Input Data

Area (ac) 1.28
Weighted Runoff Coefficient 0.7200

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	1.28	-	0.72
Composite Area & Weighted Runoff Coeff.	1.28		0.72

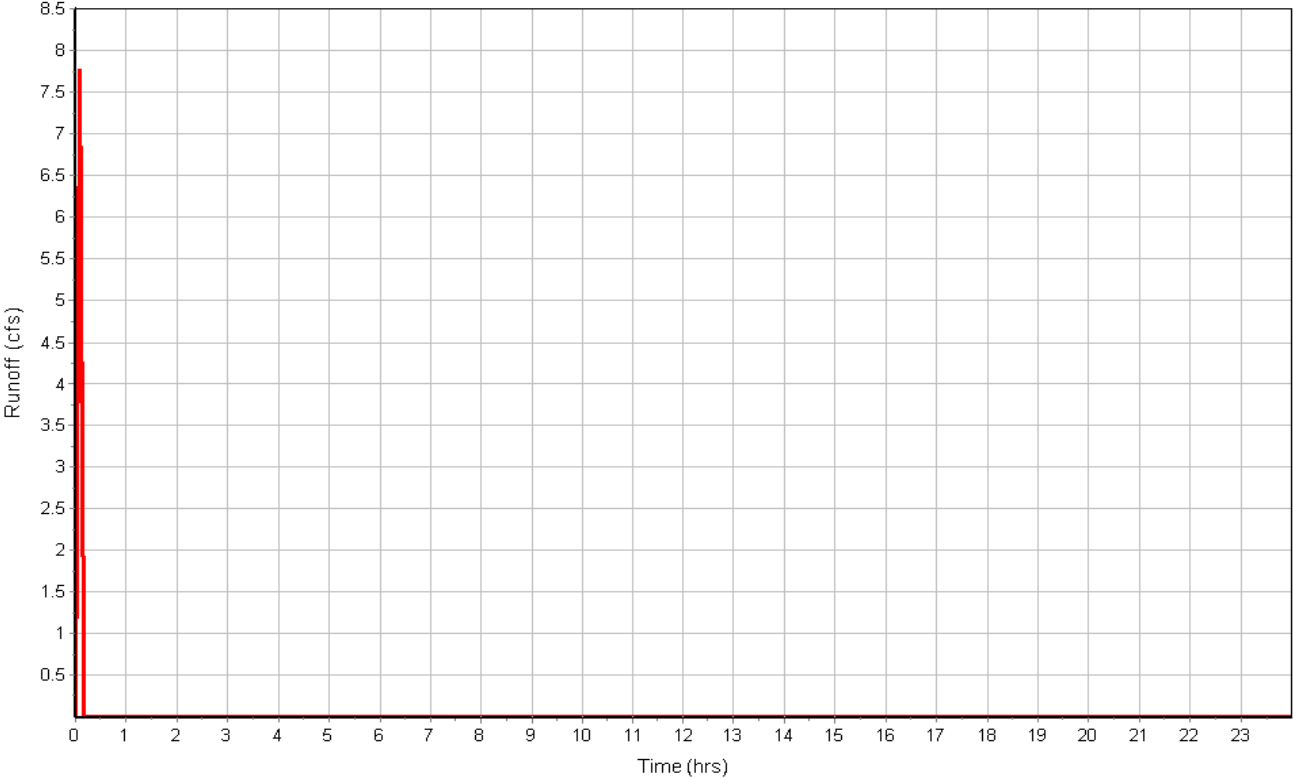
Time of Concentration

Subbasin Runoff Results

Total Rainfall (in) 0.70
Total Runoff (in) 0.50
Peak Runoff (cfs) 7.77
Rainfall Intensity 8.400
Weighted Runoff Coefficient 0.7200
Time of Concentration (days hh:mm:ss) 0 00:00:00

Subbasin : {STORM-BASINS}.15

Runoff Hydrograph



Subbasin : {STORM-BASINS}.16

Input Data

Area (ac) 0.21
 Weighted Runoff Coefficient 0.7500

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.10	-	0.90
-	0.10	-	0.60
Composite Area & Weighted Runoff Coeff.	0.20		0.75

Time of Concentration

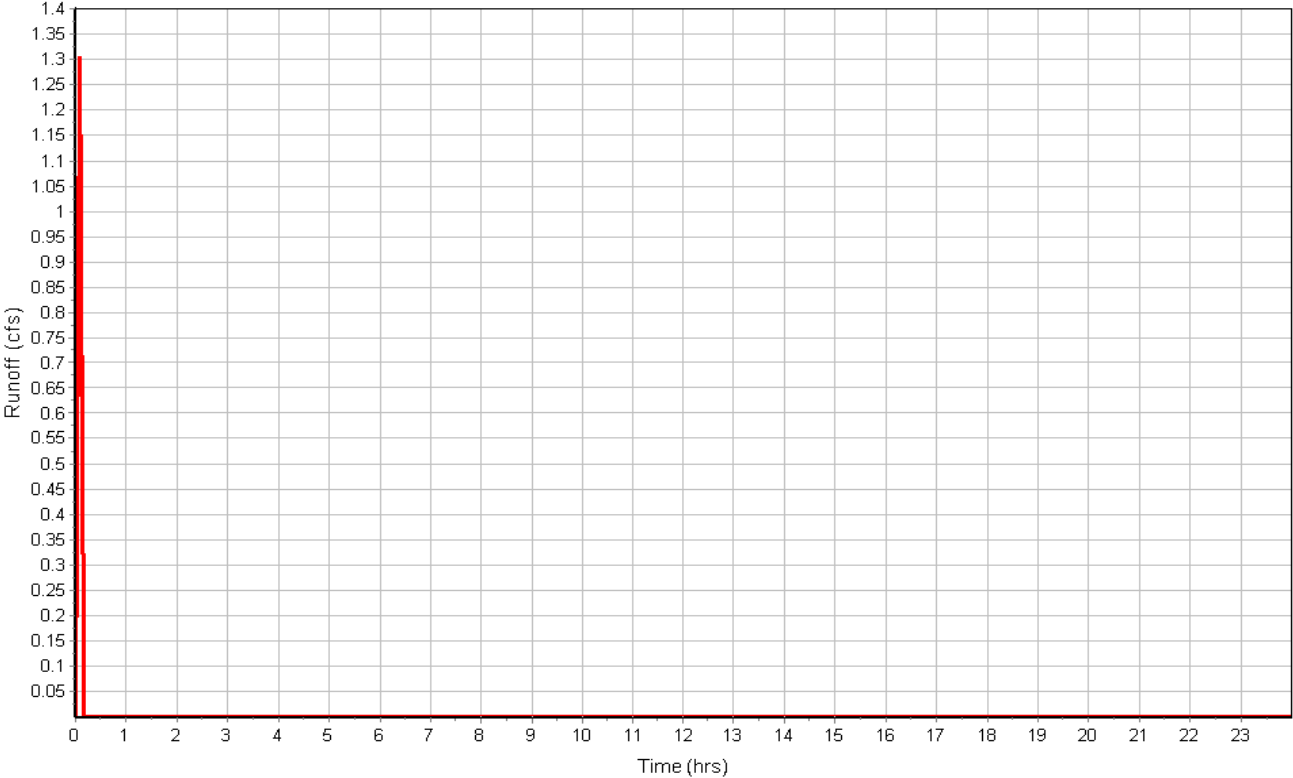
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	45.99	0.00	0.00
Slope (%) :	5	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.19	0.00	0.00
Computed Flow Time (min) :	4.01	0.00	0.00
Total TOC (min)	4.01		

Subbasin Runoff Results

Total Rainfall (in) 0.70
 Total Runoff (in) 0.53
 Peak Runoff (cfs) 1.30
 Rainfall Intensity 8.400
 Weighted Runoff Coefficient 0.7500
 Time of Concentration (days hh:mm:ss) 0 00:04:01

Subbasin : {STORM-BASINS}.16

Runoff Hydrograph



Subbasin : {STORM-BASINS}.17

Input Data

Area (ac) 0.28
Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.28	-	0.90
Composite Area & Weighted Runoff Coeff.	0.28		0.90

Time of Concentration

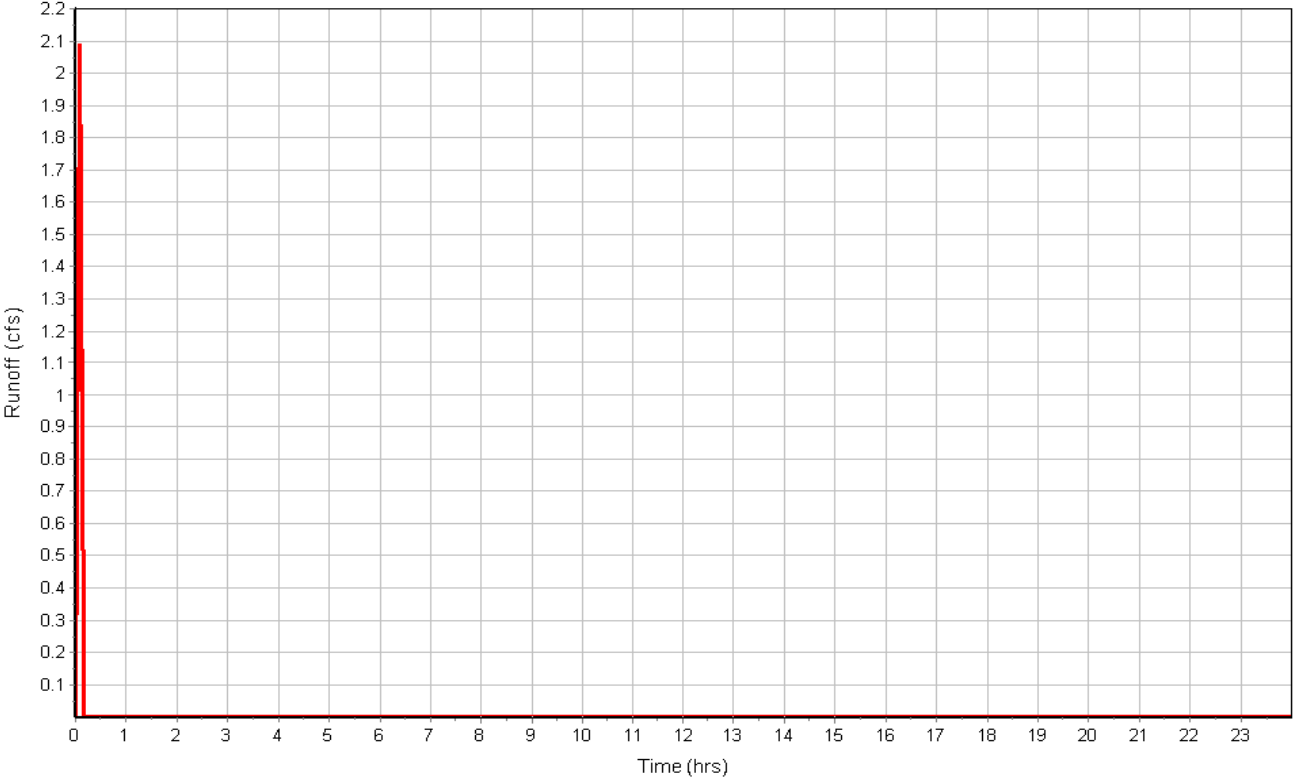
Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	400.01	0.00	0.00
Slope (%) :	3.5	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	3.80	0.00	0.00
Computed Flow Time (min) :	1.75	0.00	0.00
Total TOC (min)1.75			

Subbasin Runoff Results

Total Rainfall (in) 0.70
Total Runoff (in) 0.63
Peak Runoff (cfs) 2.09
Rainfall Intensity 8.400
Weighted Runoff Coefficient 0.9000
Time of Concentration (days hh:mm:ss) 0 00:01:45

Subbasin : {STORM-BASINS}.17

Runoff Hydrograph



Subbasin : {STORM-BASINS}.18

Input Data

Area (ac) 3.51
 Weighted Runoff Coefficient 0.6000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	3.51	-	0.60
Composite Area & Weighted Runoff Coeff.	3.51		0.60

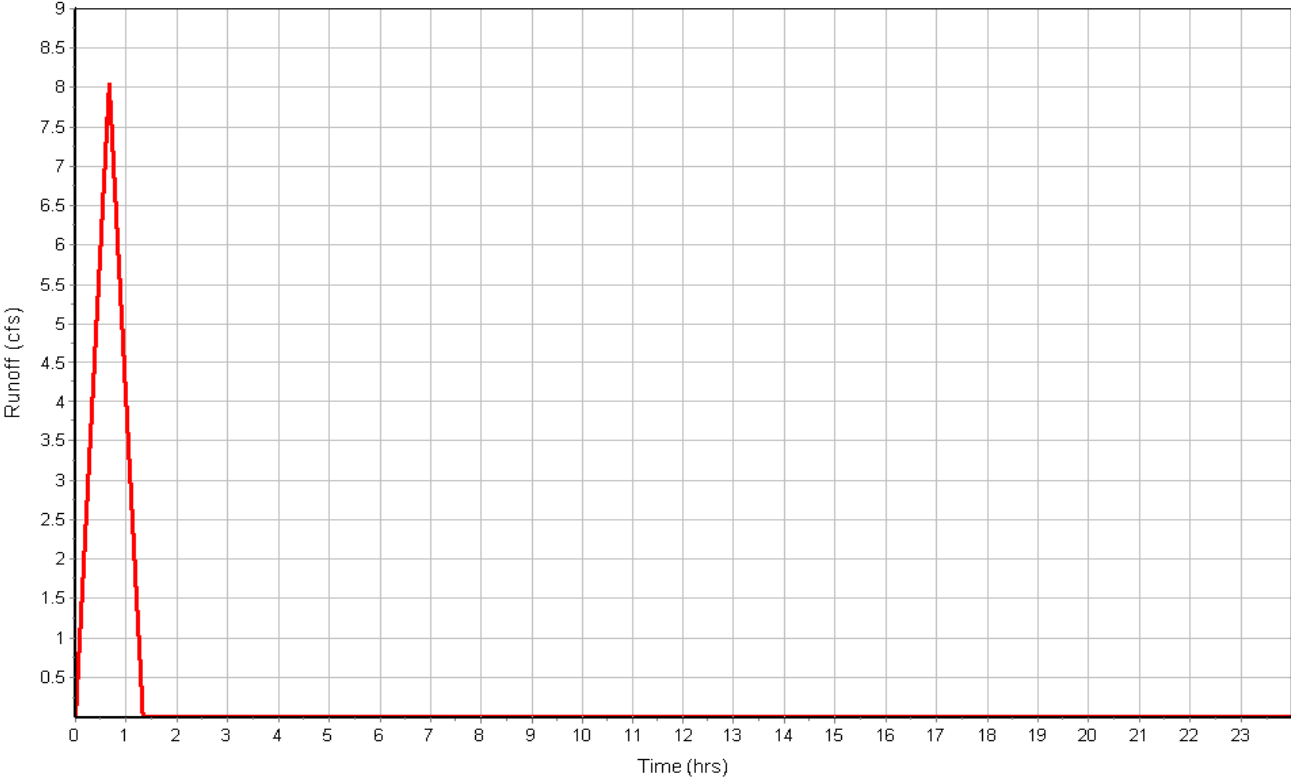
Time of Concentration

Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	723.77	0.00	0.00
Slope (%) :	4	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.30	0.00	0.00
Computed Flow Time (min) :	39.75	0.00	0.00
Total TOC (min)	39.75		

Subbasin Runoff Results

Total Rainfall (in) 2.53
 Total Runoff (in) 1.52
 Peak Runoff (cfs) 8.04
 Rainfall Intensity 3.817
 Weighted Runoff Coefficient 0.6000
 Time of Concentration (days hh:mm:ss) 0 00:39:45

Runoff Hydrograph



Subbasin : {STORM-BASINS}.19

Input Data

Area (ac) 0.05
Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.05	-	0.90
Composite Area & Weighted Runoff Coeff.	0.05		0.90

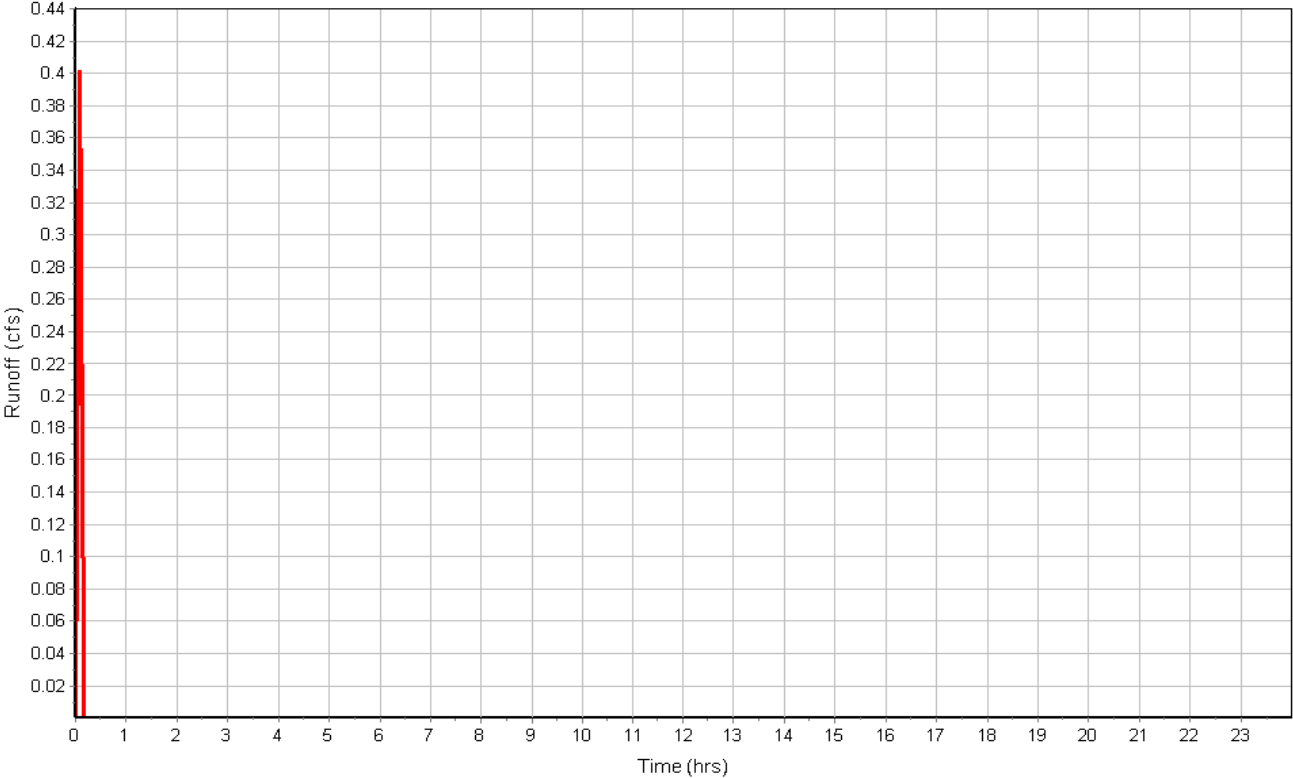
Time of Concentration

Subbasin Runoff Results

Total Rainfall (in) 0.70
Total Runoff (in) 0.63
Peak Runoff (cfs) 0.40
Rainfall Intensity 8.400
Weighted Runoff Coefficient 0.9000
Time of Concentration (days hh:mm:ss) 0 00:00:00

Subbasin : {STORM-BASINS}.19

Runoff Hydrograph



Subbasin : {STORM-BASINS}.2

Input Data

Area (ac) 0.96
 Weighted Runoff Coefficient 0.6300

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.86	-	0.60
-	0.10	-	0.90
Composite Area & Weighted Runoff Coeff.	0.96		0.63

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
	Manning's Roughness :	0.2	0.00
Flow Length (ft) :	606.64	0.00	0.00
Slope (%) :	1.8	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.21	0.00	0.00
Computed Flow Time (min) :	47.50	0.00	0.00

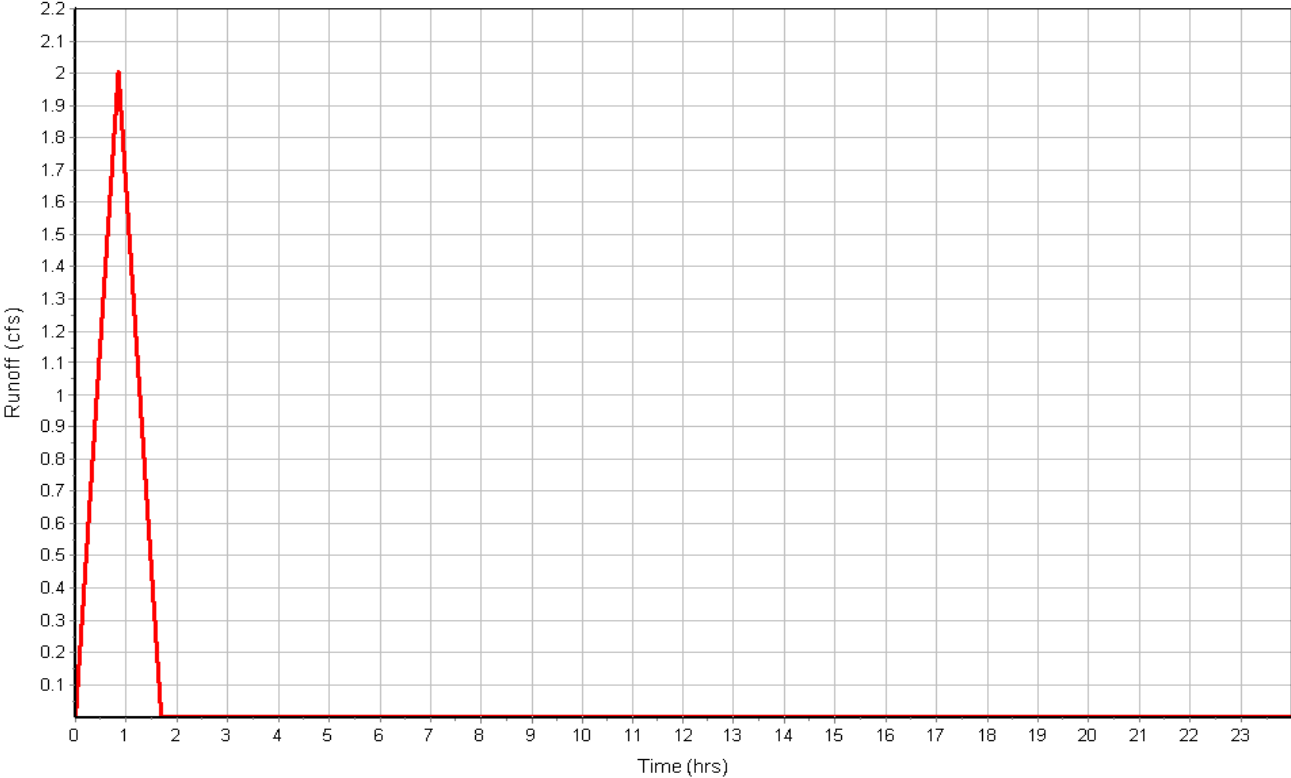
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
	Flow Length (ft) :	533.67	0.00
Slope (%) :	2	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	2.87	0.00	0.00
Computed Flow Time (min) :	3.10	0.00	0.00
Total TOC (min)	50.60		

Subbasin Runoff Results

Total Rainfall (in) 2.80
 Total Runoff (in) 1.76
 Peak Runoff (cfs) 2.01
 Rainfall Intensity 3.314
 Weighted Runoff Coefficient 0.6300
 Time of Concentration (days hh:mm:ss) 0 00:50:36

Subbasin : {STORM-BASINS}.2

Runoff Hydrograph



Subbasin : {STORM-BASINS}.20

Input Data

Area (ac) 0.19
 Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.19	-	0.90
Composite Area & Weighted Runoff Coeff.	0.19		0.90

Time of Concentration

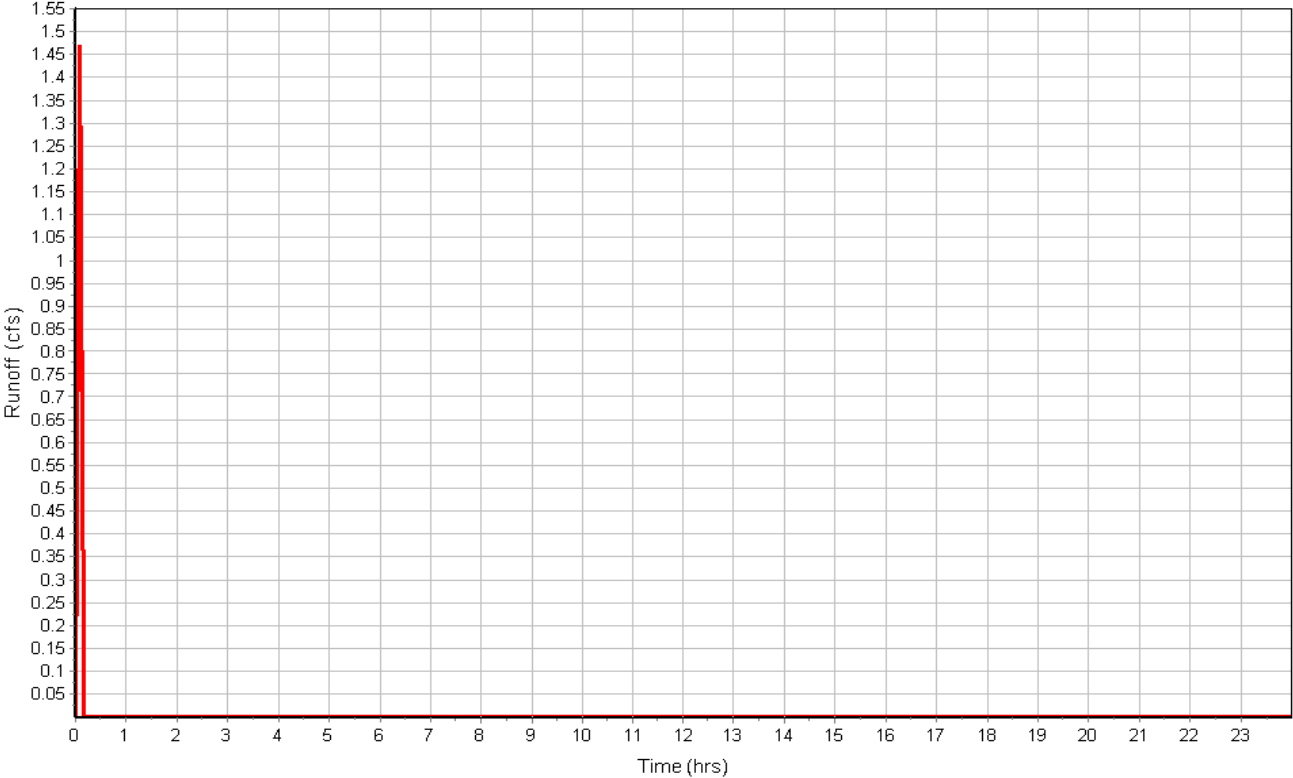
Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	319.14	0.00	0.00
Slope (%) :	2	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	2.87	0.00	0.00
Computed Flow Time (min) :	1.85	0.00	0.00
Total TOC (min)1.85			

Subbasin Runoff Results

Total Rainfall (in) 0.70
 Total Runoff (in) 0.63
 Peak Runoff (cfs) 1.47
 Rainfall Intensity 8.400
 Weighted Runoff Coefficient 0.9000
 Time of Concentration (days hh:mm:ss) 0 00:01:51

Subbasin : {STORM-BASINS}.20

Runoff Hydrograph



Subbasin : {STORM-BASINS}.21

Input Data

Area (ac) 0.22
Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.22	-	0.90
Composite Area & Weighted Runoff Coeff.	0.22		0.90

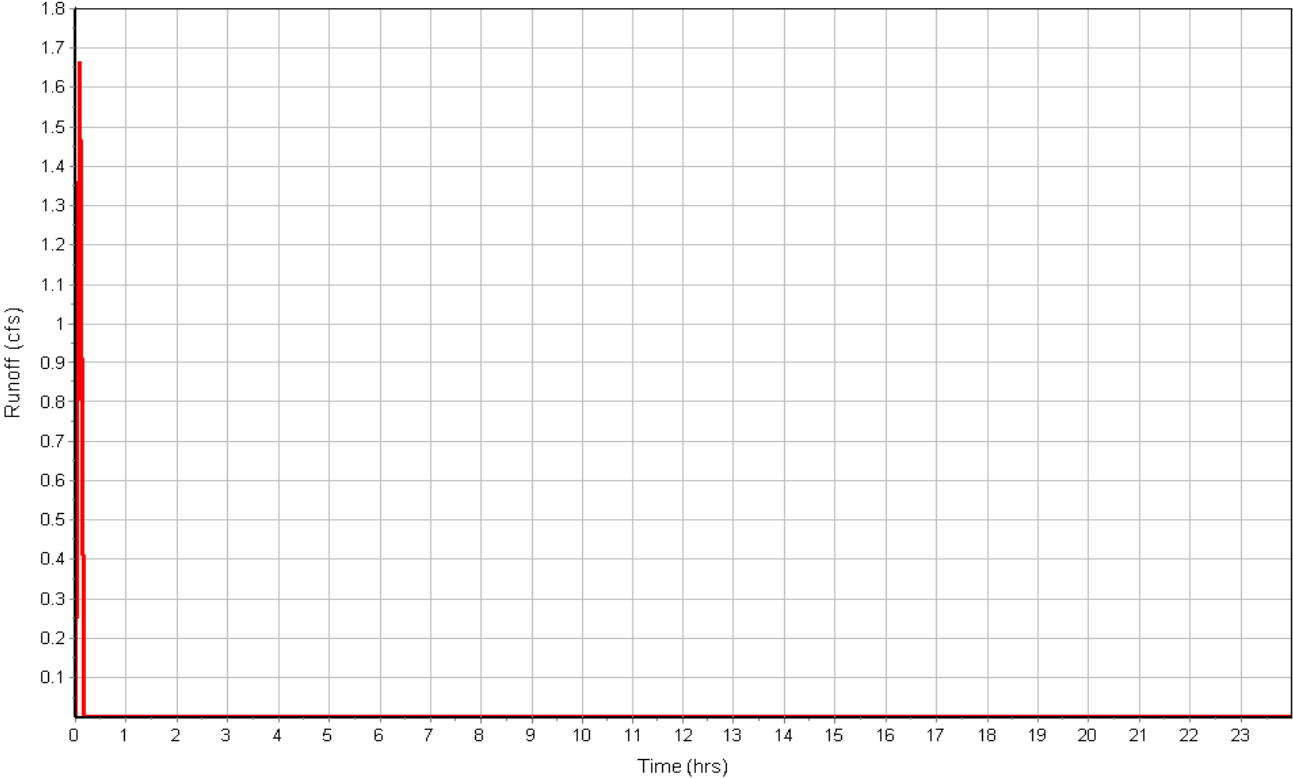
Time of Concentration

Subbasin Runoff Results

Total Rainfall (in) 0.70
Total Runoff (in) 0.63
Peak Runoff (cfs) 1.66
Rainfall Intensity 8.400
Weighted Runoff Coefficient 0.9000
Time of Concentration (days hh:mm:ss) 0 00:00:00

Subbasin : {STORM-BASINS}.21

Runoff Hydrograph



Subbasin : {STORM-BASINS}.22

Input Data

Area (ac) 0.20
 Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.20	-	0.90
Composite Area & Weighted Runoff Coeff.	0.20		0.90

Time of Concentration

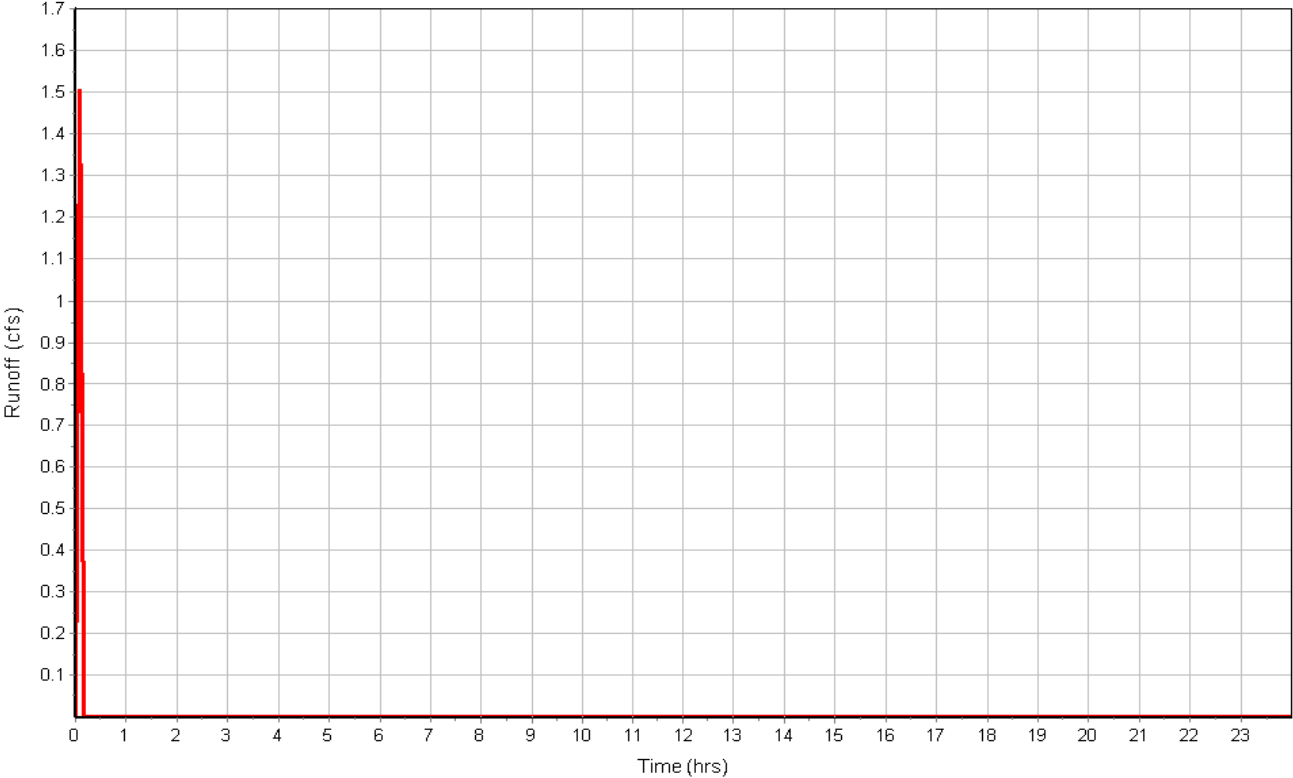
Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	364.92	0.00	0.00
Slope (%) :	3	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	3.52	0.00	0.00
Computed Flow Time (min) :	1.73	0.00	0.00
Total TOC (min)1.73			

Subbasin Runoff Results

Total Rainfall (in) 0.70
 Total Runoff (in) 0.63
 Peak Runoff (cfs) 1.50
 Rainfall Intensity 8.400
 Weighted Runoff Coefficient 0.9000
 Time of Concentration (days hh:mm:ss) 0 00:01:44

Subbasin : {STORM-BASINS}.22

Runoff Hydrograph



Subbasin : {STORM-BASINS}.23A

Input Data

Area (ac) 0.88
 Weighted Runoff Coefficient 0.6000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.88	-	0.60
Composite Area & Weighted Runoff Coeff.	0.88		0.60

Time of Concentration

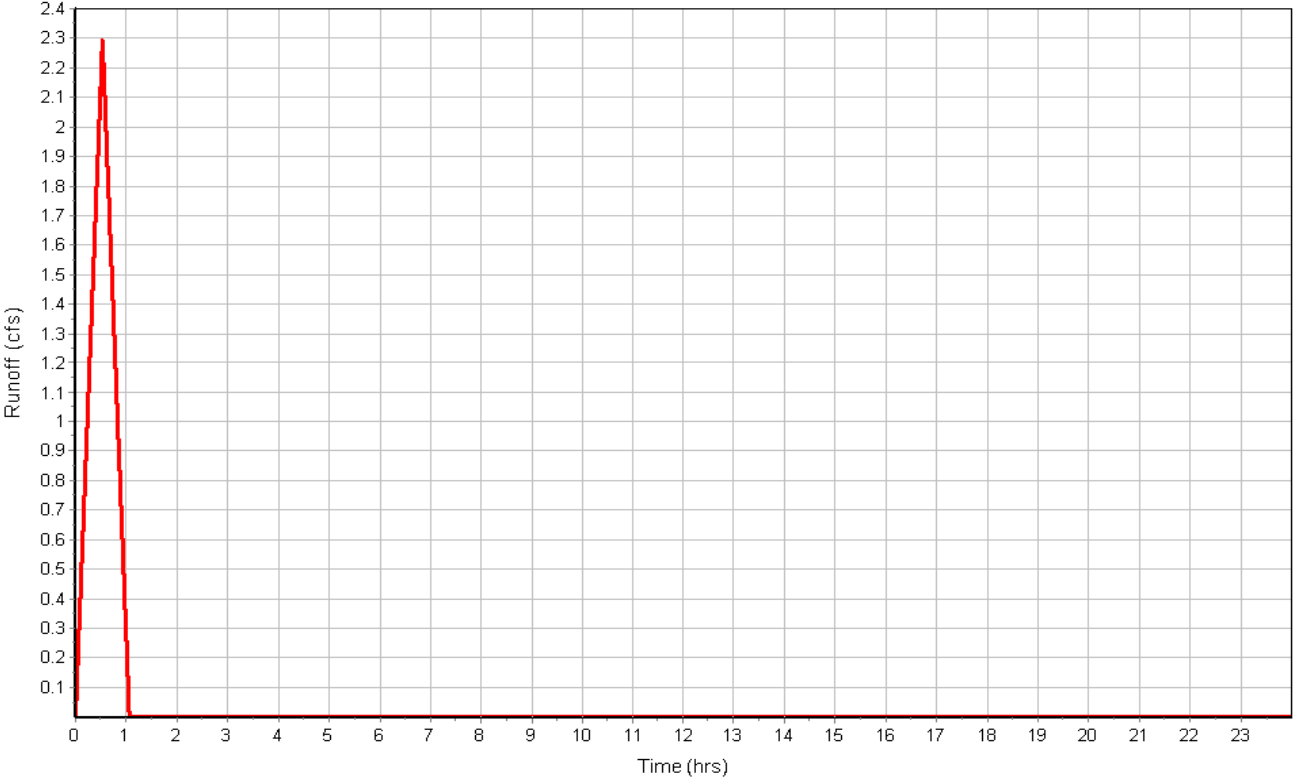
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	476.41	0.00	0.00
Slope (%) :	3	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.25	0.00	0.00
Computed Flow Time (min) :	31.91	0.00	0.00
Total TOC (min)	31.91		

Subbasin Runoff Results

Total Rainfall (in) 2.30
 Total Runoff (in) 1.38
 Peak Runoff (cfs) 2.29
 Rainfall Intensity 4.340
 Weighted Runoff Coefficient 0.6000
 Time of Concentration (days hh:mm:ss) 0 00:31:55

Subbasin : {STORM-BASINS}.23A

Runoff Hydrograph



Subbasin : {STORM-BASINS}.23B

Input Data

Area (ac) 0.21
 Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.21	-	0.90
Composite Area & Weighted Runoff Coeff.	0.21		0.90

Time of Concentration

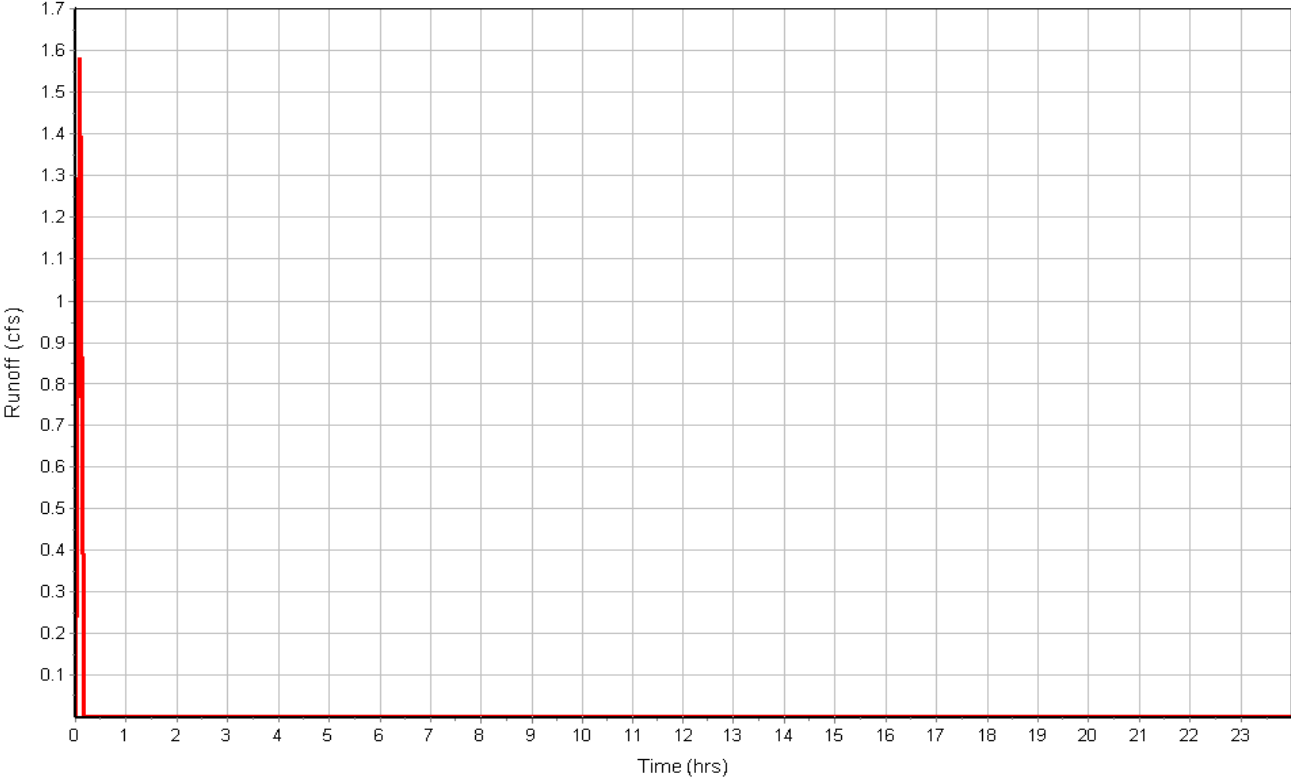
Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	294.20	0.00	0.00
Slope (%) :	2	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	2.87	0.00	0.00
Computed Flow Time (min) :	1.71	0.00	0.00
Total TOC (min)	1.71		

Subbasin Runoff Results

Total Rainfall (in) 0.70
 Total Runoff (in) 0.63
 Peak Runoff (cfs) 1.58
 Rainfall Intensity 8.400
 Weighted Runoff Coefficient 0.9000
 Time of Concentration (days hh:mm:ss) 0 00:01:43

Subbasin : {STORM-BASINS}.23B

Runoff Hydrograph



Subbasin : {STORM-BASINS}.26

Input Data

Area (ac) 1.06
 Weighted Runoff Coefficient 0.6000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	1.06	-	0.60
Composite Area & Weighted Runoff Coeff.	1.06		0.60

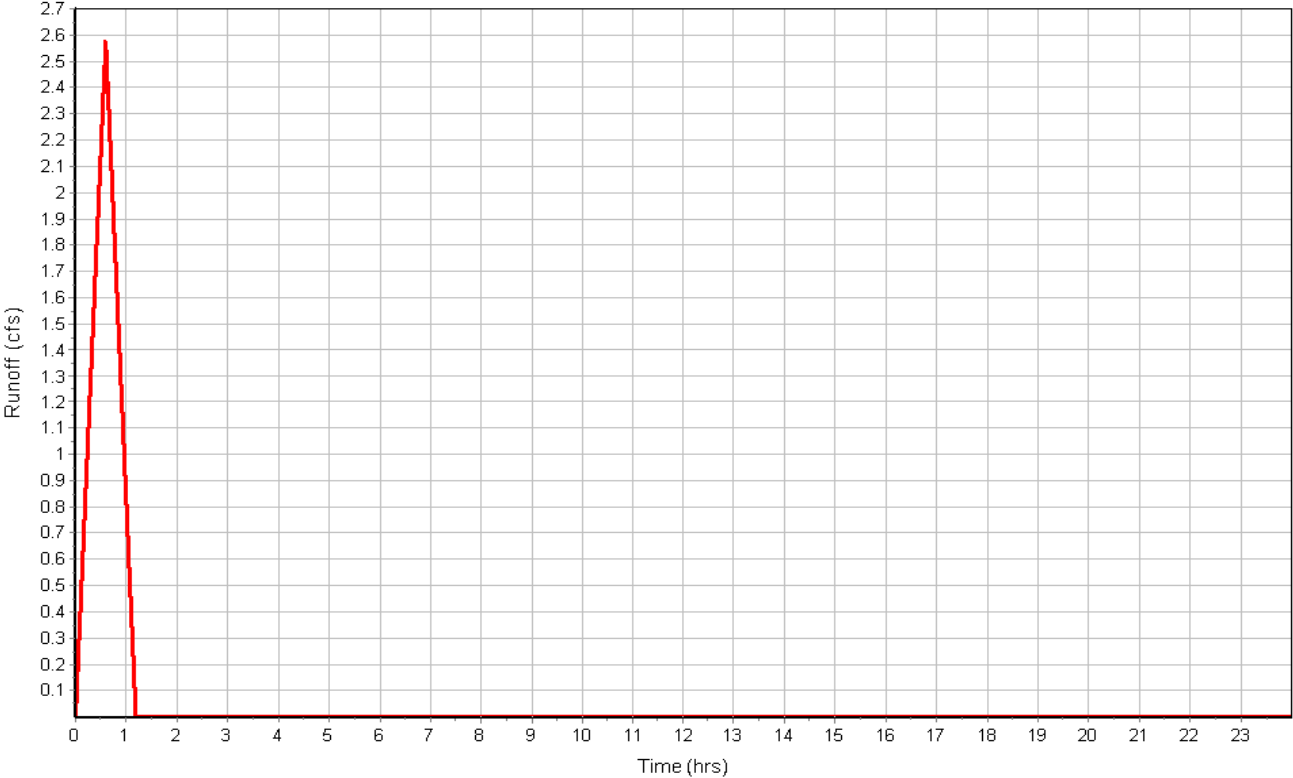
Time of Concentration

Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	361.33	0.00	0.00
Slope (%) :	1.3	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.17	0.00	0.00
Computed Flow Time (min) :	35.74	0.00	0.00
Total TOC (min)	35.74		

Subbasin Runoff Results

Total Rainfall (in) 2.42
 Total Runoff (in) 1.45
 Peak Runoff (cfs) 2.57
 Rainfall Intensity 4.062
 Weighted Runoff Coefficient 0.6000
 Time of Concentration (days hh:mm:ss) 0 00:35:44

Runoff Hydrograph



Subbasin : {STORM-BASINS}.27

Input Data

Area (ac) 0.58
 Weighted Runoff Coefficient 0.7200

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.58	-	0.72
Composite Area & Weighted Runoff Coeff.	0.58		0.72

Time of Concentration

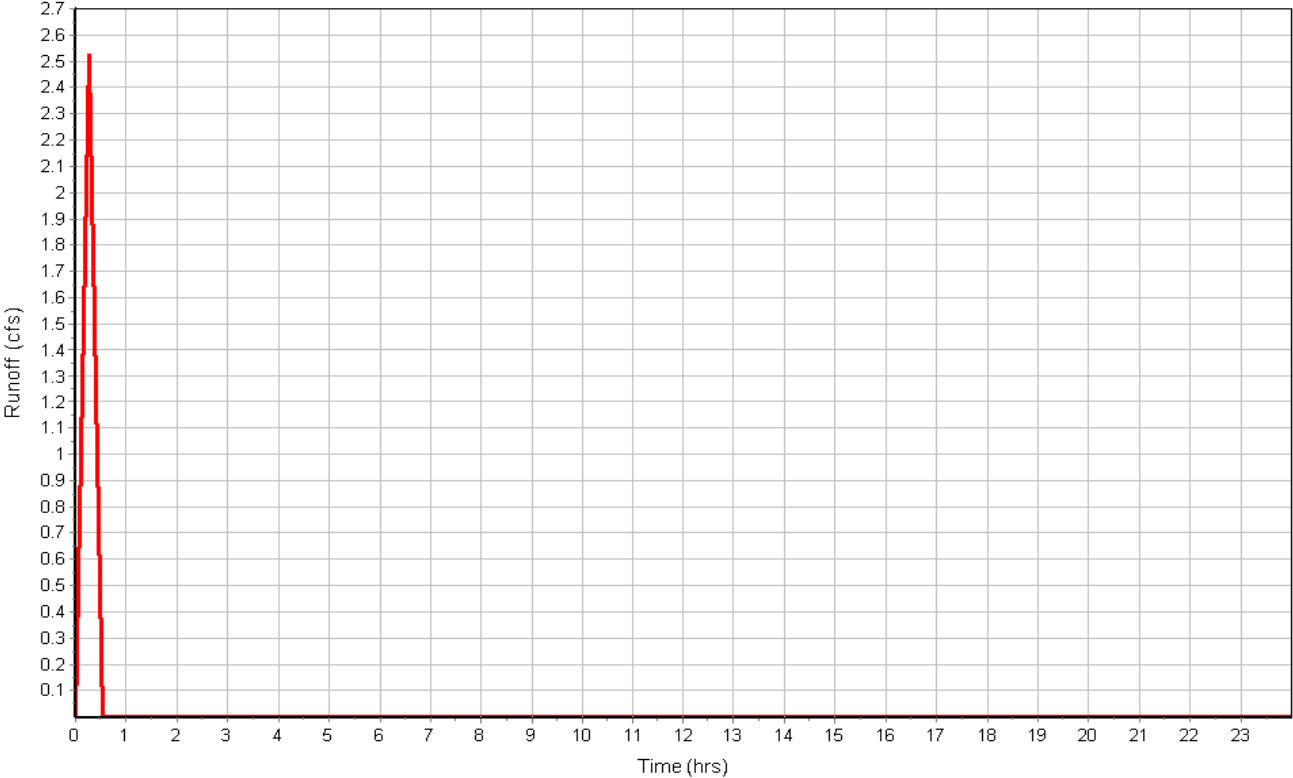
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	200	0.00	0.00
Slope (%) :	3	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.21	0.00	0.00
Computed Flow Time (min) :	15.94	0.00	0.00
Total TOC (min)	15.94		

Subbasin Runoff Results

Total Rainfall (in) 1.61
 Total Runoff (in) 1.16
 Peak Runoff (cfs) 2.52
 Rainfall Intensity 6.028
 Weighted Runoff Coefficient 0.7200
 Time of Concentration (days hh:mm:ss) 0 00:15:56

Subbasin : {STORM-BASINS}.27

Runoff Hydrograph



Subbasin : {STORM-BASINS}.28

Input Data

Area (ac) 0.22
 Weighted Runoff Coefficient 0.7200

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.22	-	0.72
Composite Area & Weighted Runoff Coeff.	0.22		0.72

Time of Concentration

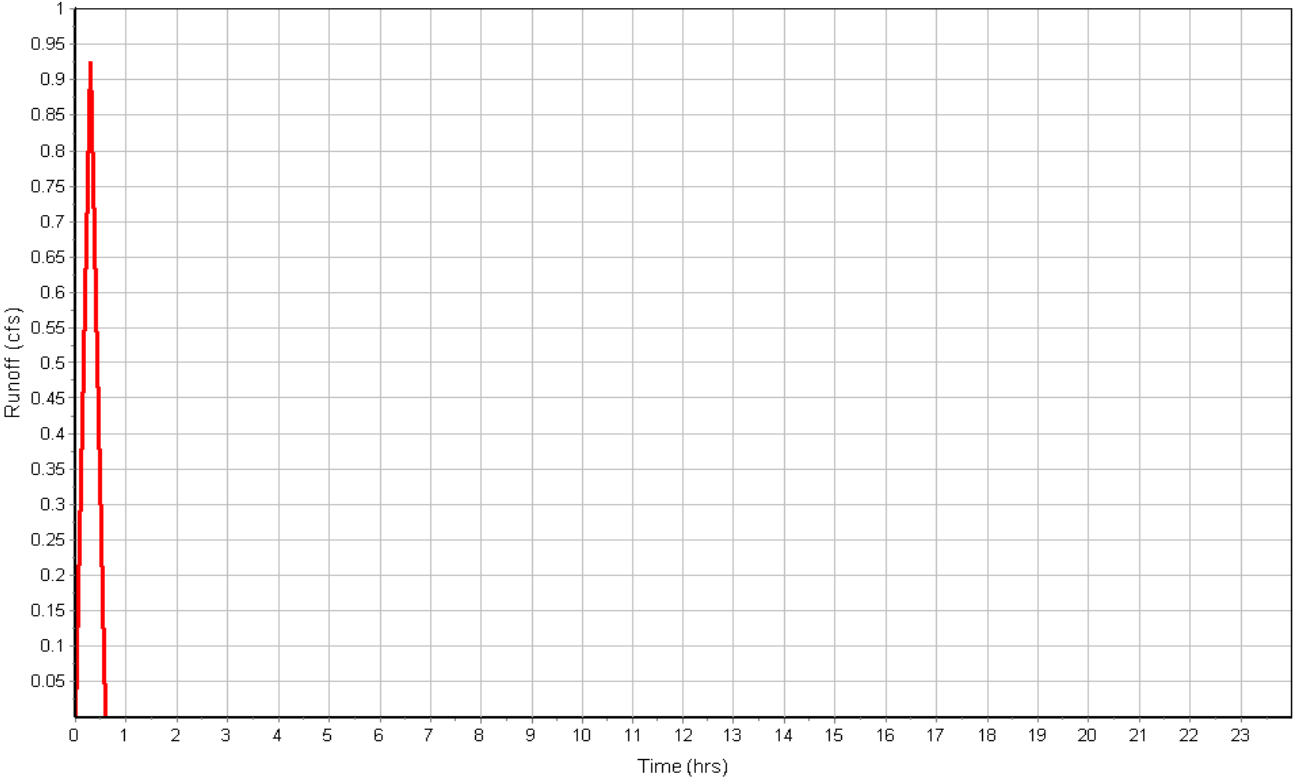
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	185	0.00	0.00
Slope (%) :	2	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.18	0.00	0.00
Computed Flow Time (min) :	17.61	0.00	0.00
Total TOC (min)	17.61		

Subbasin Runoff Results

Total Rainfall (in) 1.70
 Total Runoff (in) 1.22
 Peak Runoff (cfs) 0.92
 Rainfall Intensity 5.757
 Weighted Runoff Coefficient 0.7200
 Time of Concentration (days hh:mm:ss) 0 00:17:37

Subbasin : {STORM-BASINS}.28

Runoff Hydrograph



Subbasin : {STORM-BASINS}.29

Input Data

Area (ac) 0.15
 Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.15	-	0.90
Composite Area & Weighted Runoff Coeff.	0.15		0.90

Time of Concentration

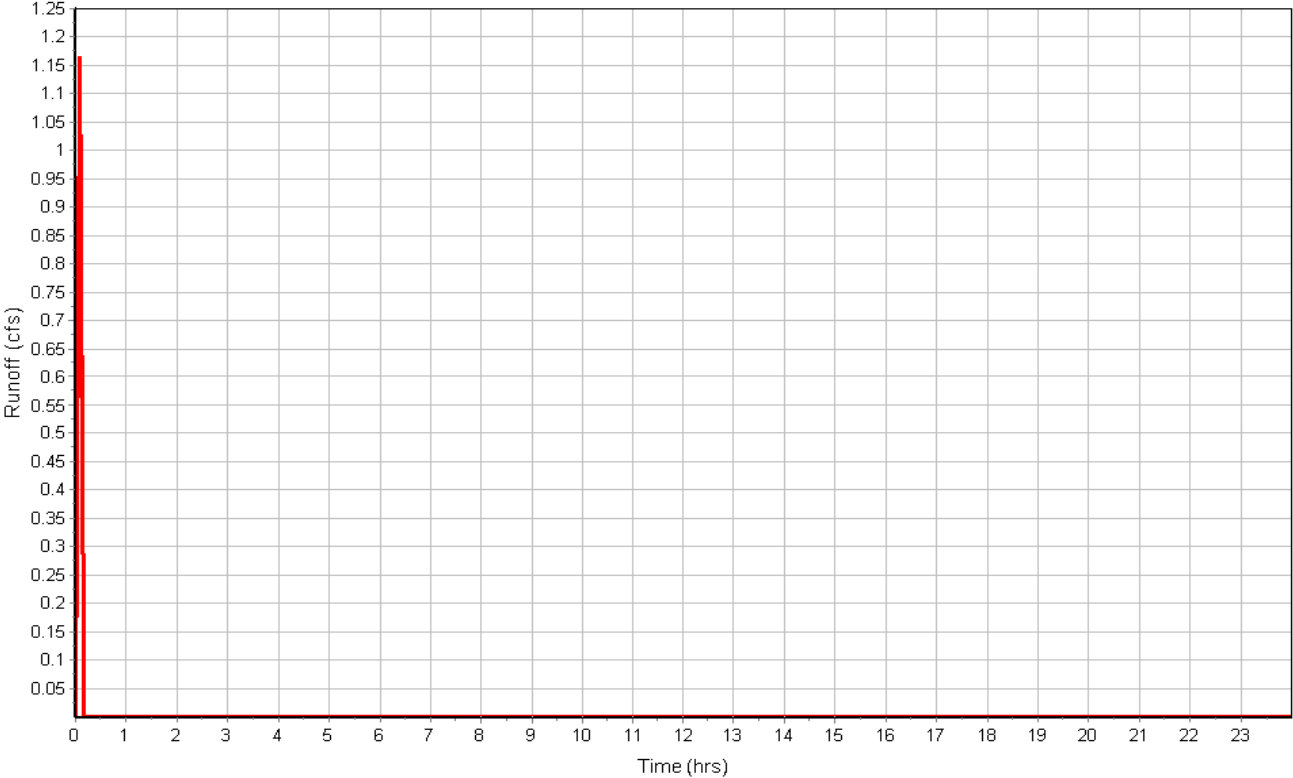
Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	223.61	0.00	0.00
Slope (%) :	2	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	2.87	0.00	0.00
Computed Flow Time (min) :	1.30	0.00	0.00
Total TOC (min)	1.30		

Subbasin Runoff Results

Total Rainfall (in) 0.70
 Total Runoff (in) 0.63
 Peak Runoff (cfs) 1.16
 Rainfall Intensity 8.400
 Weighted Runoff Coefficient 0.9000
 Time of Concentration (days hh:mm:ss) 0 00:01:18

Subbasin : {STORM-BASINS}.29

Runoff Hydrograph



Subbasin : {STORM-BASINS}.3

Input Data

Area (ac) 1.34
 Weighted Runoff Coefficient 0.6300

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	1.20	-	0.60
-	0.13	-	0.90
Composite Area & Weighted Runoff Coeff.	1.33		0.63

Time of Concentration

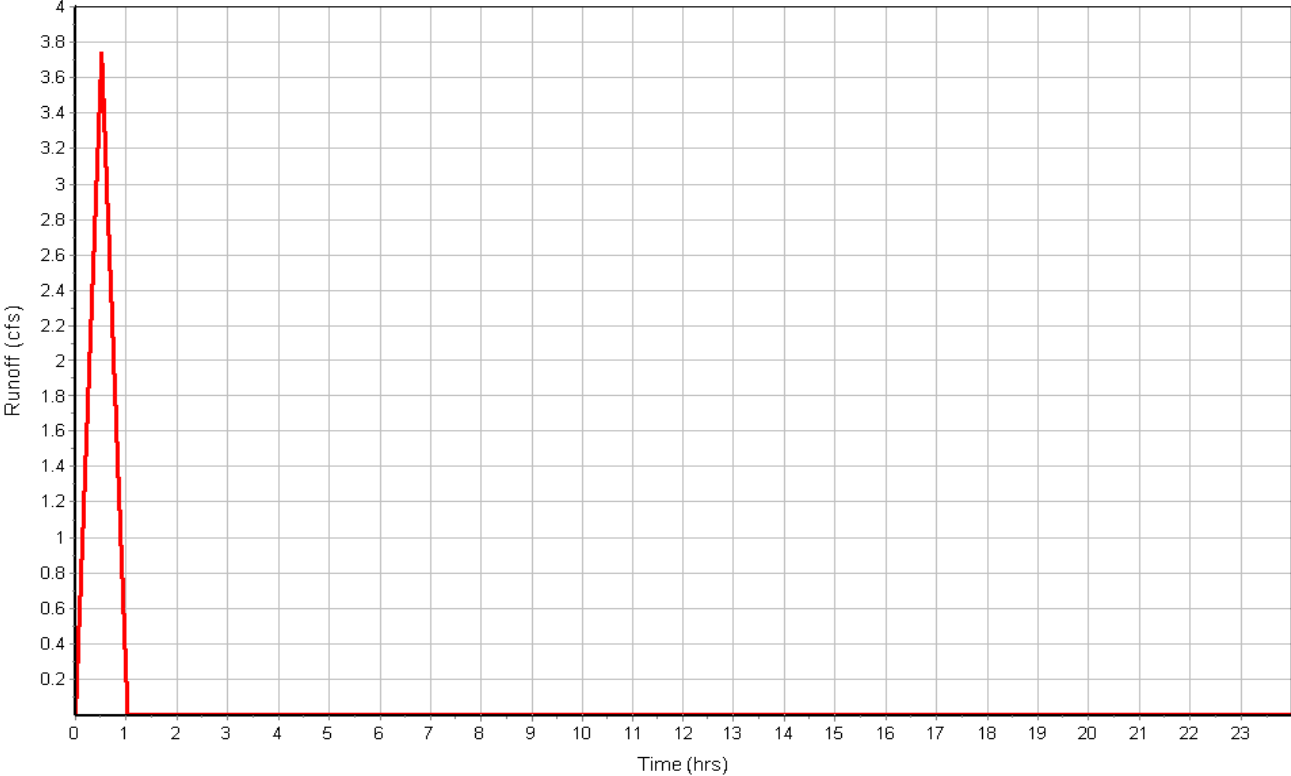
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	545.09	0.00	0.00
Slope (%) :	4.3	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.30	0.00	0.00
Computed Flow Time (min) :	30.78	0.00	0.00
Total TOC (min)	30.78		

Subbasin Runoff Results

Total Rainfall (in) 2.28
 Total Runoff (in) 1.44
 Peak Runoff (cfs) 3.73
 Rainfall Intensity 4.433
 Weighted Runoff Coefficient 0.6300
 Time of Concentration (days hh:mm:ss) 0 00:30:47

Subbasin : {STORM-BASINS}.3

Runoff Hydrograph



Subbasin : {STORM-BASINS}.30

Input Data

Area (ac) 0.12
 Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.12	-	0.90
Composite Area & Weighted Runoff Coeff.	0.12		0.90

Time of Concentration

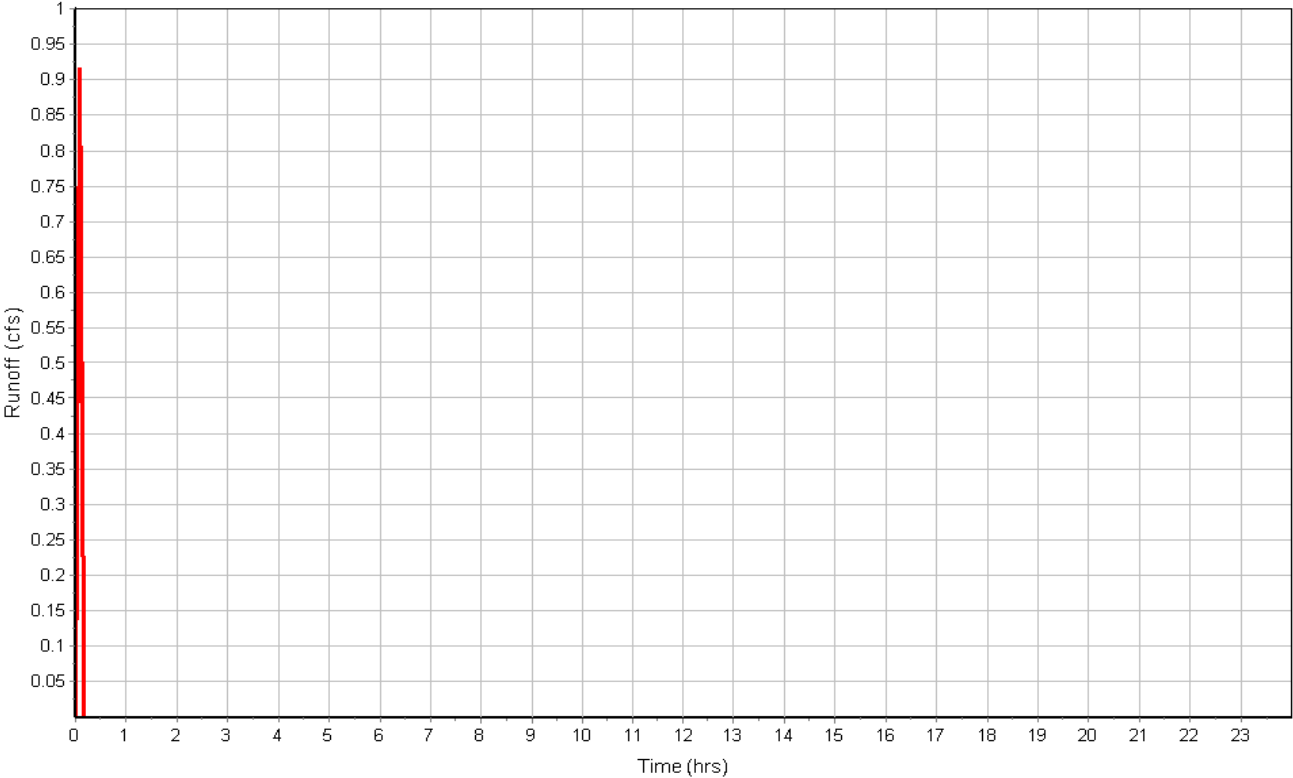
Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	222.61	0.00	0.00
Slope (%) :	2	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	2.87	0.00	0.00
Computed Flow Time (min) :	1.29	0.00	0.00
Total TOC (min)	1.29		

Subbasin Runoff Results

Total Rainfall (in) 0.70
 Total Runoff (in) 0.63
 Peak Runoff (cfs) 0.92
 Rainfall Intensity 8.400
 Weighted Runoff Coefficient 0.9000
 Time of Concentration (days hh:mm:ss) 0 00:01:17

Subbasin : {STORM-BASINS}.30

Runoff Hydrograph



Subbasin : {STORM-BASINS}.31

Input Data

Area (ac) 0.12
Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.12	-	0.90
Composite Area & Weighted Runoff Coeff.	0.12		0.90

Time of Concentration

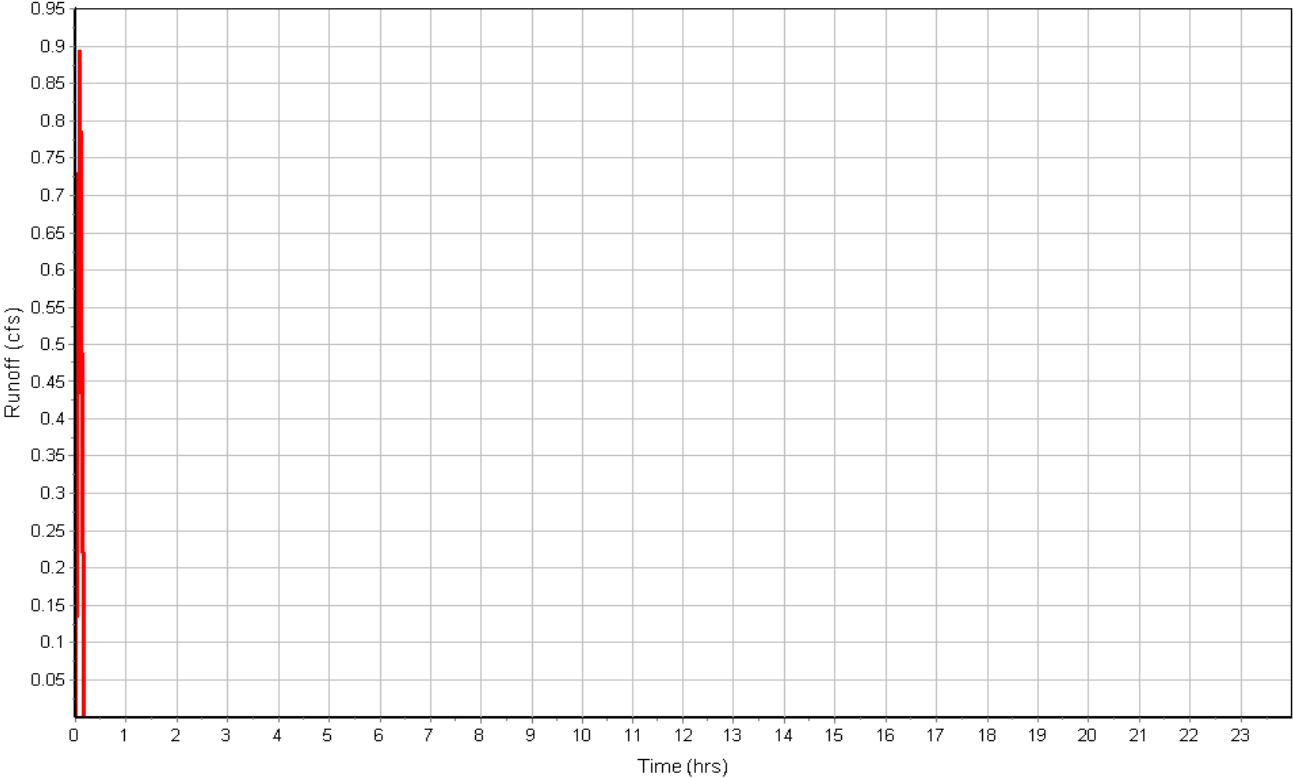
Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	258.85	0.00	0.00
Slope (%) :	2	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	2.87	0.00	0.00
Computed Flow Time (min) :	1.50	0.00	0.00
Total TOC (min)	1.50		

Subbasin Runoff Results

Total Rainfall (in) 0.70
Total Runoff (in) 0.63
Peak Runoff (cfs) 0.89
Rainfall Intensity 8.400
Weighted Runoff Coefficient 0.9000
Time of Concentration (days hh:mm:ss) 0 00:01:30

Subbasin : {STORM-BASINS}.31

Runoff Hydrograph



Subbasin : {STORM-BASINS}.4

Input Data

Area (ac) 0.17
 Weighted Runoff Coefficient 0.7500

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.00	-	0.60
-	0.00	-	0.90
Composite Area & Weighted Runoff Coeff.	0.00		0.75

Time of Concentration

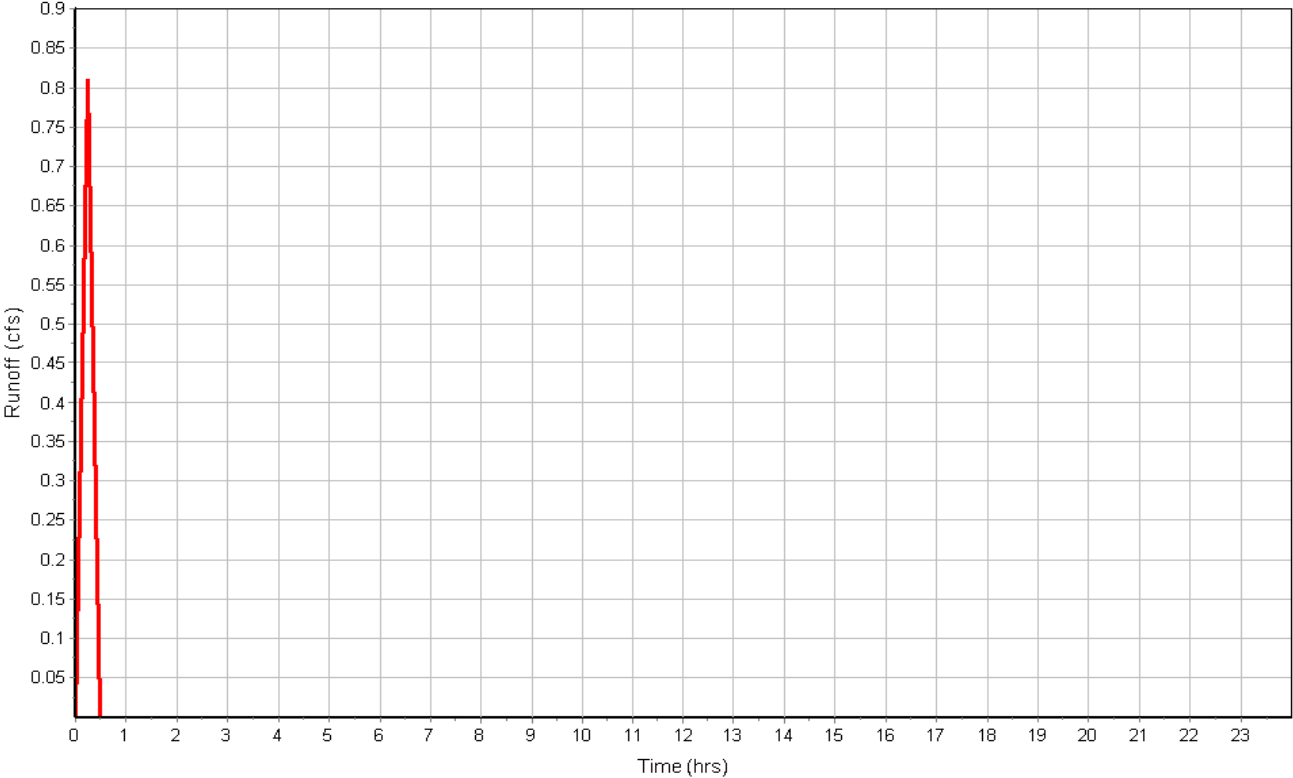
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	211.10	0.00	0.00
Slope (%) :	4.2	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.24	0.00	0.00
Computed Flow Time (min) :	14.55	0.00	0.00
Total TOC (min)	14.55		

Subbasin Runoff Results

Total Rainfall (in) 1.52
 Total Runoff (in) 1.14
 Peak Runoff (cfs) 0.81
 Rainfall Intensity 6.270
 Weighted Runoff Coefficient 0.7500
 Time of Concentration (days hh:mm:ss) 0 00:14:33

Subbasin : {STORM-BASINS}.4

Runoff Hydrograph



Subbasin : {STORM-BASINS}.5

Input Data

Area (ac) 0.46
 Weighted Runoff Coefficient 0.6900

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.32	-	0.60
-	0.14	-	0.90
Composite Area & Weighted Runoff Coeff.	0.46		0.69

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
	Manning's Roughness :	0.2	0.00
Flow Length (ft) :	175.47	0.00	0.00
Slope (%) :	3	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.20	0.00	0.00
Computed Flow Time (min) :	14.35	0.00	0.00

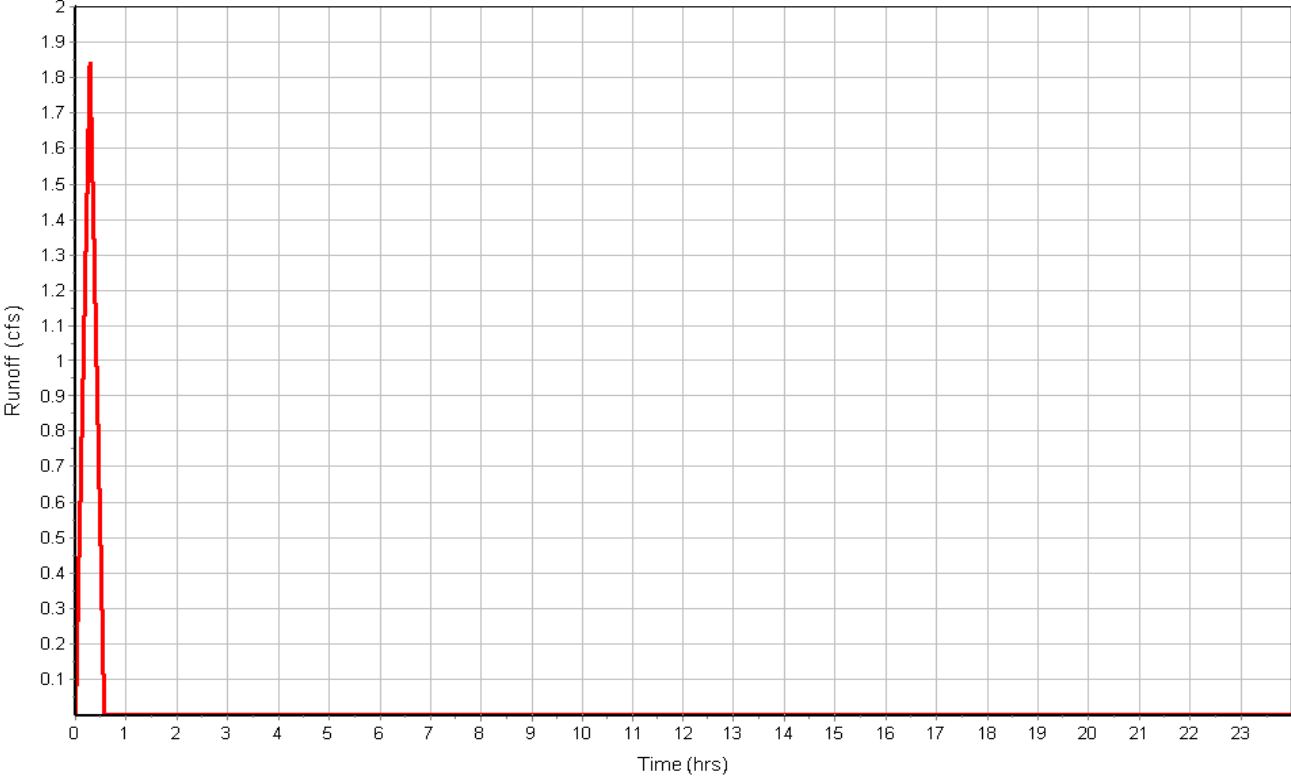
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
	Flow Length (ft) :	576.52	0.00
Slope (%) :	3	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	3.52	0.00	0.00
Computed Flow Time (min) :	2.73	0.00	0.00
Total TOC (min)	17.08		

Subbasin Runoff Results

Total Rainfall (in) 1.65
 Total Runoff (in) 1.14
 Peak Runoff (cfs) 1.84
 Rainfall Intensity 5.839
 Weighted Runoff Coefficient 0.6900
 Time of Concentration (days hh:mm:ss) 0 00:17:05

Subbasin : {STORM-BASINS}.5

Runoff Hydrograph



Subbasin : {STORM-BASINS}.6

Input Data

Area (ac) 1.73
 Weighted Runoff Coefficient 0.6000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	1.73	-	0.60
Composite Area & Weighted Runoff Coeff.	1.73		0.60

Time of Concentration

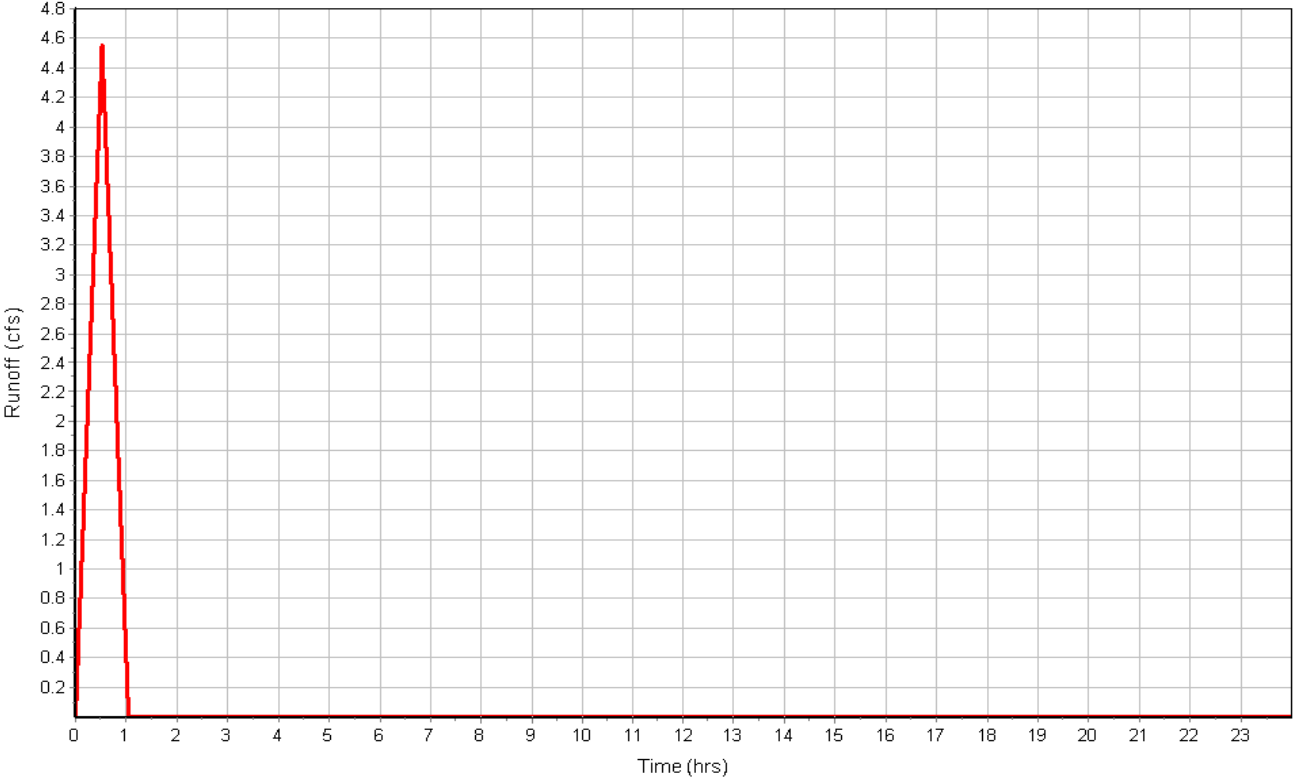
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	501.59	0.00	0.00
Slope (%) :	3.5	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.27	0.00	0.00
Computed Flow Time (min) :	31.27	0.00	0.00
Total TOC (min)	31.27		

Subbasin Runoff Results

Total Rainfall (in) 2.29
 Total Runoff (in) 1.38
 Peak Runoff (cfs) 4.55
 Rainfall Intensity 4.392
 Weighted Runoff Coefficient 0.6000
 Time of Concentration (days hh:mm:ss) 0 00:31:16

Subbasin : {STORM-BASINS}.6

Runoff Hydrograph



Subbasin : {STORM-BASINS}.7A

Input Data

Area (ac) 0.38
 Weighted Runoff Coefficient 0.6600

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.30	-	0.60
-	0.08	-	0.90
Composite Area & Weighted Runoff Coeff.	0.38		0.66

Time of Concentration

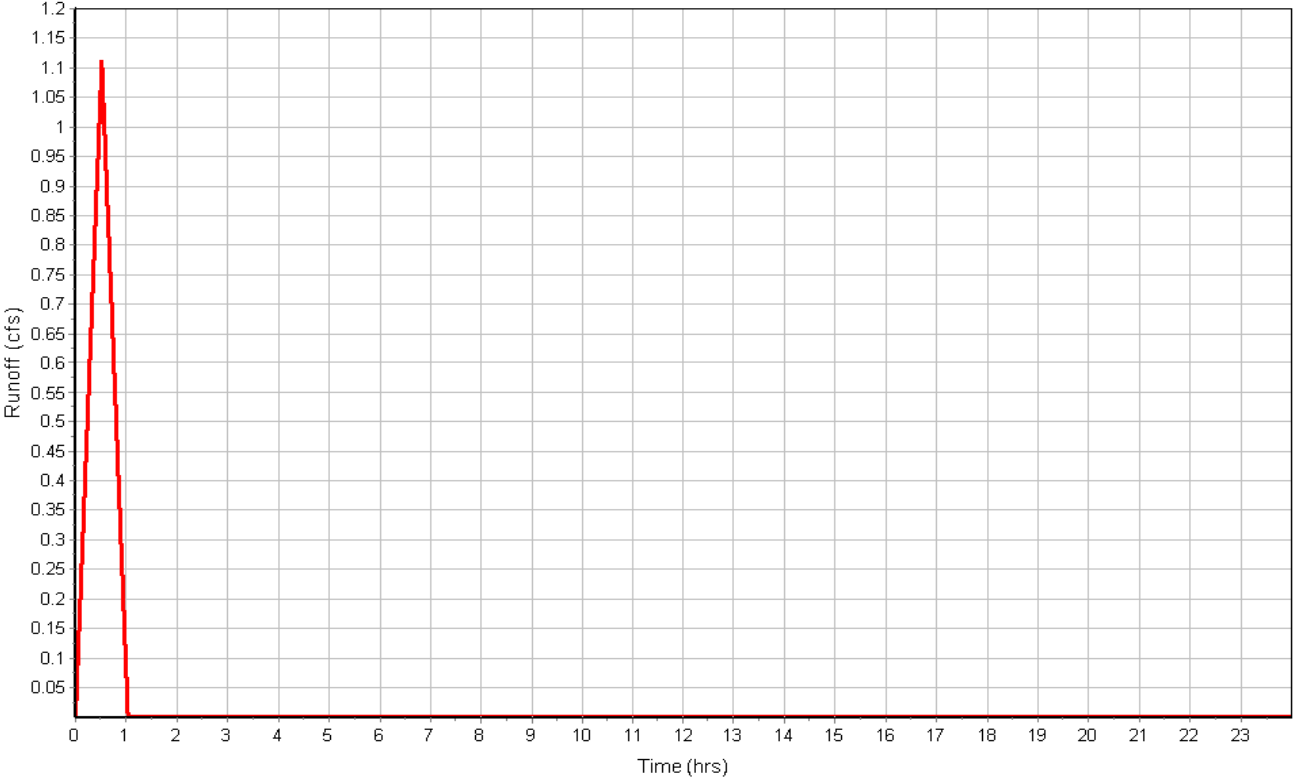
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	419.02	0.00	0.00
Slope (%) :	2.5	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.23	0.00	0.00
Computed Flow Time (min) :	30.98	0.00	0.00
Total TOC (min)	30.98		

Subbasin Runoff Results

Total Rainfall (in) 2.28
 Total Runoff (in) 1.51
 Peak Runoff (cfs) 1.11
 Rainfall Intensity 4.416
 Weighted Runoff Coefficient 0.6600
 Time of Concentration (days hh:mm:ss) 0 00:30:59

Subbasin : {STORM-BASINS}.7A

Runoff Hydrograph



Subbasin : {STORM-BASINS}.7B

Input Data

Area (ac) 0.28
 Weighted Runoff Coefficient 0.7200

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.17	-	0.60
-	0.11	-	0.90
Composite Area & Weighted Runoff Coeff.	0.28		0.72

Time of Concentration

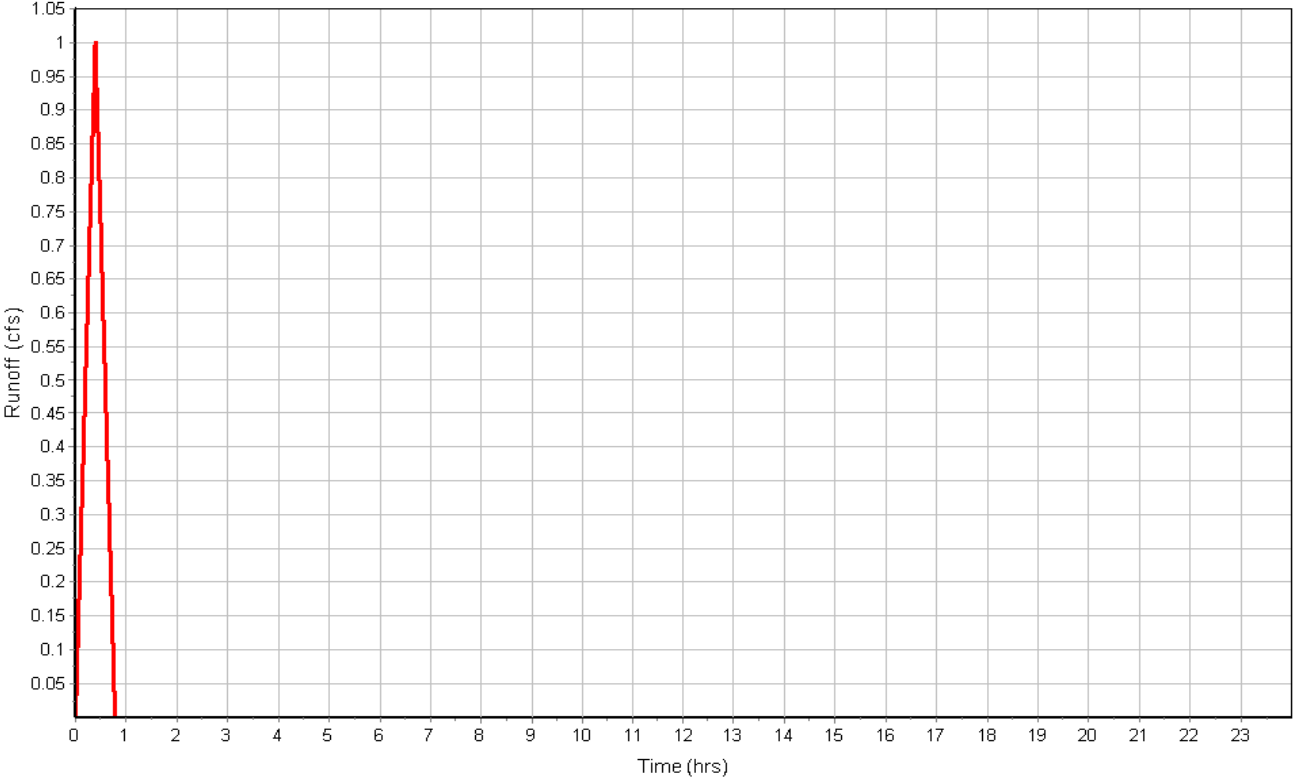
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	282.86	0.00	0.00
Slope (%) :	2.3	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.20	0.00	0.00
Computed Flow Time (min) :	23.39	0.00	0.00
Total TOC (min)	23.39		

Subbasin Runoff Results

Total Rainfall (in) 1.96
 Total Runoff (in) 1.41
 Peak Runoff (cfs) 1.00
 Rainfall Intensity 5.049
 Weighted Runoff Coefficient 0.7200
 Time of Concentration (days hh:mm:ss) 0 00:23:23

Subbasin : {STORM-BASINS}.7B

Runoff Hydrograph



Subbasin : {STORM-BASINS}.8

Input Data

Area (ac) 2.66
Weighted Runoff Coefficient 0.6000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	2.66	-	0.60
Composite Area & Weighted Runoff Coeff.	2.66		0.60

Time of Concentration

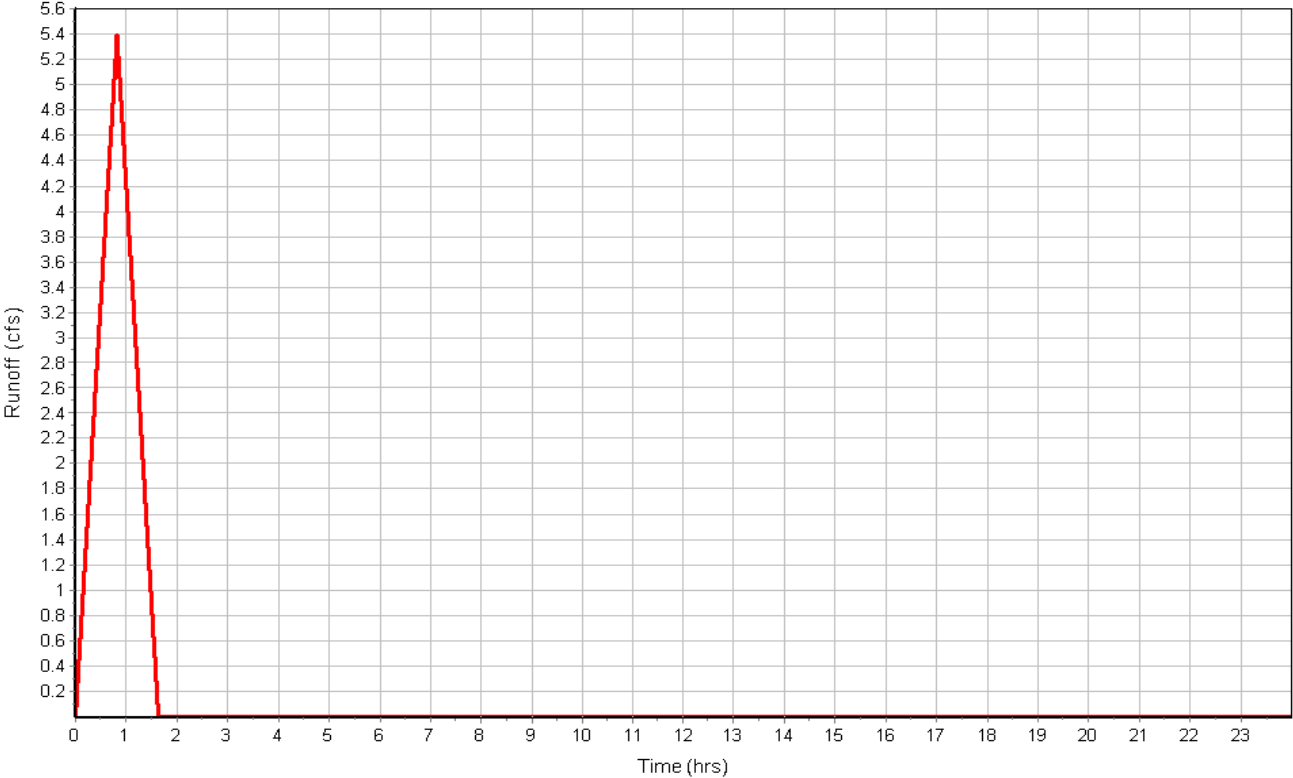
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	801.79	0.00	0.00
Slope (%) :	2.9	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.27	0.00	0.00
Computed Flow Time (min) :	49.06	0.00	0.00
Total TOC (min)	49.06		

Subbasin Runoff Results

Total Rainfall (in) 2.76
Total Runoff (in) 1.65
Peak Runoff (cfs) 5.39
Rainfall Intensity 3.375
Weighted Runoff Coefficient 0.6000
Time of Concentration (days hh:mm:ss) 0 00:49:04

Subbasin : {STORM-BASINS}.8

Runoff Hydrograph



Subbasin : {STORM-BASINS}.9

Input Data

Area (ac) 0.06
 Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.06	-	0.90
Composite Area & Weighted Runoff Coeff.	0.06		0.90

Time of Concentration

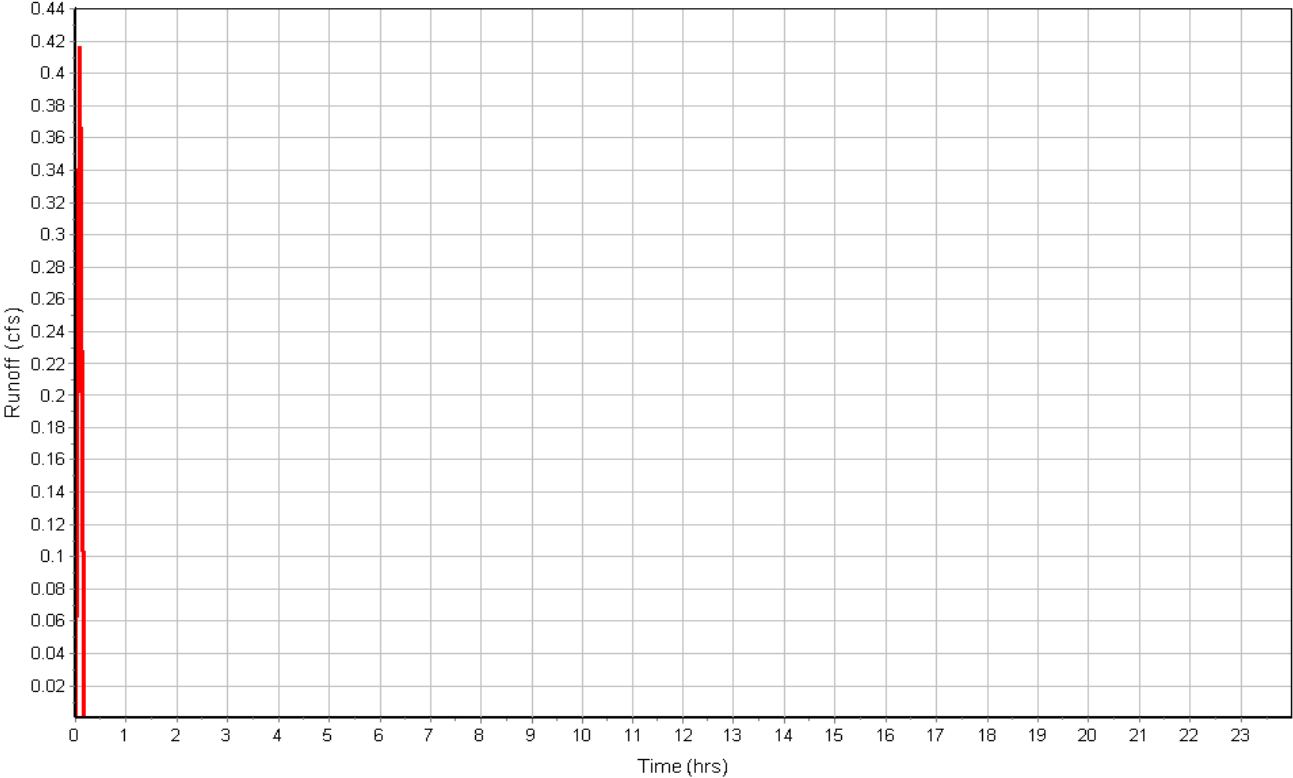
Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	93.99	0.00	0.00
Slope (%) :	2	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	2.87	0.00	0.00
Computed Flow Time (min) :	0.55	0.00	0.00
Total TOC (min)0.55			

Subbasin Runoff Results

Total Rainfall (in) 0.70
 Total Runoff (in) 0.63
 Peak Runoff (cfs) 0.42
 Rainfall Intensity 8.400
 Weighted Runoff Coefficient 0.9000
 Time of Concentration (days hh:mm:ss) 0 00:00:33

Subbasin : {STORM-BASINS}.9

Runoff Hydrograph



Junction Input

SN Element ID	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Ground/Rim (Max) Offset (ft)	Initial Water Elevation (ft)	Initial Water Depth (ft)	Surcharge Elevation (ft)	Surcharge Depth (ft)	Ponded Area (ft ²)	Minimum Pipe Cover (in)
1 CB-I1	476.43	480.49	4.06	476.43	0.00	480.49	0.00	0.00	0.00
2 CONNECT-G	483.22	485.22	2.00	483.22	0.00	485.22	-0.01	0.00	0.00
3 CONNECT-I	483.38	489.38	6.00	483.38	0.00	489.38	0.00	0.00	0.00
4 FES-H2	482.37	485.12	2.75	482.37	0.00	485.12	0.00	0.00	0.00
5 Jun-01	473.29	477.00	3.71	473.29	0.00	477.00	0.00	0.00	0.00

Junction Results

SN Element ID	Peak Inflow	Peak Lateral Inflow	Max HGL Elevation Attained	Max HGL Depth Attained	Max Surcharge Depth Attained	Min Freeboard Attained	Average HGL Elevation Attained	Average HGL Depth Attained	Time of Max HGL Occurrence	Time of Peak Flooding Occurrence	Total Flooded Volume	Total Time Flooded
	(cfs)	(cfs)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(days hh:mm)	(days hh:mm)	(ac-in)	(min)
1 CB-I1	9.48	0.00	477.54	1.11	0.00	2.95	476.47	0.04	0 00:40	0 00:00	0.00	0.00
2 CONNECT-G	7.23	0.00	484.12	0.90	0.00	1.10	483.25	0.03	0 00:31	0 00:00	0.00	0.00
3 CONNECT-I	4.59	0.00	483.91	0.53	0.00	5.47	483.39	0.01	0 00:05	0 00:00	0.00	0.00
4 FES-H2	17.66	0.00	483.37	1.00	0.00	1.75	482.39	0.02	0 00:06	0 00:00	0.00	0.00
5 Jun-01	22.27	0.00	474.90	1.61	0.00	2.10	473.41	0.12	0 00:52	0 00:00	0.00	0.00

Channel Input

SN	Element ID	Length (ft)	Inlet Invert Elevation (ft)	Inlet Invert Offset (ft)	Outlet Invert Elevation (ft)	Outlet Invert Offset (ft)	Total Drop (ft)	Average Slope (%)	Shape	Height (ft)	Width (ft)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cfs)	Flap Gate
1	Gutter-05	200.35	495.00	4.05	487.00	2.90	8.00	3.9900	User-Defined	0.500	14.000	0.0130	0.5000	0.5000	0.0000	0.00	No
2	Gutter-06	200.99	495.00	4.37	487.00	3.22	8.00	3.9800	User-Defined	0.500	14.000	0.0130	0.5000	0.5000	0.0000	0.00	No
3	Gutter-07	239.28	487.00	3.22	485.61	3.25	1.39	0.5800	User-Defined	0.500	14.000	0.0130	0.5000	0.5000	0.0000	0.00	No
4	Gutter-08	240.40	485.61	3.25	480.15	3.25	5.46	2.2700	User-Defined	0.500	14.000	0.0320	0.5000	0.5000	0.0000	0.00	No
5	Gutter-09	57.48	480.15	3.25	478.65	3.80	1.50	2.6100	User-Defined	0.500	14.000	0.0320	0.5000	0.5000	0.0000	0.00	No
6	Gutter-10	192.99	480.66	4.57	478.79	3.94	1.87	0.9700	User-Defined	0.500	14.000	0.0320	0.5000	0.5000	0.0000	0.00	No
7	Gutter-12	213.95	483.97	4.97	479.50	2.59	4.47	2.0900	User-Defined	0.500	14.000	0.0320	0.5000	0.5000	0.0000	0.00	No
8	Gutter-13	213.94	491.00	4.00	483.97	4.97	7.03	3.2900	User-Defined	0.500	14.000	0.0320	0.5000	0.5000	0.0000	0.00	No
9	Gutter-14	201.82	500.50	3.77	491.00	4.00	9.50	4.7100	User-Defined	0.500	14.000	0.0320	0.5000	0.5000	0.0000	0.00	No
10	Gutter-15	201.21	500.50	2.90	491.00	3.43	9.50	4.7200	User-Defined	0.500	14.000	0.0320	0.5000	0.5000	0.0000	0.00	No
11	Gutter-16	425.27	491.00	3.43	482.00	3.93	9.00	2.1200	User-Defined	0.500	14.000	0.0320	0.5000	0.5000	0.0000	0.00	No
12	Gutter-17	292.35	485.12	1.74	480.66	4.57	4.46	1.5200	User-Defined	0.500	14.000	0.0320	0.5000	0.5000	0.0000	0.00	No
13	Gutter-23	587.46	487.00	2.90	479.00	4.50	8.00	1.3600	User-Defined	0.500	14.000	0.0320	0.5000	0.5000	0.0000	0.00	No
14	Gutter-26	57.06	490.37	6.49	485.12	1.74	5.25	9.2000	User-Defined	0.500	14.000	0.0320	0.5000	0.5000	0.0000	0.00	No

Channel Results

SN Element ID	Peak Flow	Time of Peak Flow Occurrence	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Travel Time	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Froude Number	Reported Condition
	(cfs)	(days hh:mm)	(cfs)		(ft/sec)	(min)	(ft)		(min)		
1 Gutter-05	0.38	0 00:16	9.52	0.04	3.41	0.98	0.15	0.29	0.00		
2 Gutter-06	1.11	0 00:18	9.50	0.12	3.90	0.86	0.22	0.44	0.00		
3 Gutter-07	0.96	0 00:33	3.83	0.25	1.79	2.23	0.29	0.58	0.00		
4 Gutter-08	0.00	0 00:38	7.18	0.00	0.28	14.31	0.01	0.02	0.00		
5 Gutter-09	0.00	0 00:00	7.33	0.00	0.00		0.00	0.00	0.00		
6 Gutter-10	0.16	0 00:06	4.69	0.03	2.42	1.33	0.13	0.26	0.00		
7 Gutter-12	0.06	0 00:30	6.51	0.01	1.81	1.97	0.08	0.17	0.00		
8 Gutter-13	0.00	0 00:00	9.03	0.00	0.00		0.00	0.00	0.00		
9 Gutter-14	0.10	0 00:06	10.29	0.01	3.76	0.89	0.09	0.17	0.00		
10 Gutter-15	0.31	0 00:06	10.48	0.03	4.50	0.75	0.13	0.26	0.00		
11 Gutter-16	0.00	0 00:00	7.04	0.00	0.00		0.00	0.00	0.00		
12 Gutter-17	0.17	0 00:20	5.88	0.03	2.14	2.28	0.13	0.25	0.00		
13 Gutter-23	0.39	0 00:37	5.55	0.07	2.61	3.75	0.18	0.35	0.00		
14 Gutter-26	0.91	0 00:16	14.45	0.06	3.39	0.28	0.18	0.35	0.00		

Pipe Input

SN	Element ID	Length	Inlet Invert Elevation	Inlet Invert Offset	Outlet Invert Elevation	Outlet Invert Offset	Total Drop	Average Slope	Pipe Shape	Pipe Diameter or Height	Pipe Width	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow	Flap Gate	No. of Barrels
		(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(%)		(in)	(in)					(cfs)		
1	ST-C1	92.51	483.78	0.00	483.22	0.00	0.56	0.6000	CIRCULAR	24.000	24.000	0.0130	0.5000	0.0000	0.0000	0.00	No	1
2	ST-C2	200.00	490.63	0.00	483.88	0.10	6.75	3.3800	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
3	ST-C3	32.02	490.95	0.00	490.63	0.00	0.32	1.0000	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
4	ST-CS1	24.64	473.29	0.00	473.16	0.00	0.13	0.5300	CIRCULAR	30.000	30.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
5	ST-D1	32.02	484.10	0.00	483.88	0.10	0.22	0.6900	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
6	ST-E1 (2)	133.90	487.00	0.00	483.38	0.00	3.62	2.7000	CIRCULAR	18.000	18.000	0.0130	0.5000	0.0000	0.0000	0.00	No	1
7	ST-E2 (EXIST)	200.00	496.73	0.00	487.10	0.10	9.63	4.8100	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
8	ST-E3 (EXIST)	32.02	497.60	0.00	496.83	0.10	0.77	2.4000	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
9	ST-F1 (EXIST)	32.02	487.57	0.00	487.10	0.10	0.47	1.4600	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
10	ST-G1	72.10	474.50	0.00	473.92	0.63	0.58	0.8000	CIRCULAR	30.000	30.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
11	ST-G2	31.99	474.85	0.00	474.50	0.00	0.35	1.0900	CIRCULAR	30.000	30.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
12	ST-G3	49.09	476.90	0.00	474.95	0.10	1.95	3.9700	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
13	ST-G4	238.61	482.36	0.00	476.90	0.00	5.46	2.2900	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
14	ST-G5	145.74	483.22	0.00	482.35	-0.01	0.88	0.6000	CIRCULAR	24.000	24.000	0.0130	0.0000	0.5000	0.0000	0.00	No	1
15	ST-H1	190.63	476.09	0.00	474.95	0.10	1.14	0.6000	CIRCULAR	30.000	30.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
16	ST-H2	252.90	482.37	0.00	476.19	0.10	6.18	2.4400	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
17	ST-H2A	37.10	483.38	0.00	482.37	0.00	1.01	2.7200	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
18	ST-H3	48.08	483.88	0.00	483.38	0.00	0.50	1.0400	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
19	ST-H5	378.49	485.87	0.00	483.98	0.10	1.89	0.5000	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
20	ST-H6	32.00	488.21	0.00	487.89	2.02	0.32	1.0000	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
21	ST-I1	48.08	476.43	0.00	476.19	0.10	0.24	0.5000	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
22	ST-I2	95.00	476.91	0.00	476.43	0.00	0.48	0.5100	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
23	ST-I3	212.56	479.00	0.00	477.00	0.09	2.00	0.9400	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
24	ST-I4	78.66	483.38	0.00	481.27	2.27	2.11	2.6900	CIRCULAR	18.000	18.000	0.0130	0.0000	0.5000	0.0000	0.00	No	1
25	ST-K1	32.05	477.32	-0.75	477.00	0.09	0.32	1.0000	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1

Pipe Results

SN Element ID	Peak Flow	Time of Peak Flow Occurrence	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Travel Time	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Froude Number	Reported Condition
	(cfs)	(days hh:mm)	(cfs)		(ft/sec)	(min)	(ft)		(min)		
1 ST-C1	7.23	0 00:31	17.52	0.41	5.32	0.29	0.90	0.45	0.00		Calculated
2 ST-C2	1.05	0 00:17	19.30	0.05	7.08	0.47	0.24	0.16	0.00		Calculated
3 ST-C3	0.41	0 00:14	10.50	0.04	2.87	0.19	0.20	0.13	0.00		Calculated
4 ST-CS1	22.27	0 00:52	29.79	0.75	6.66	0.06	1.61	0.64	0.00		Calculated
5 ST-D1	3.25	0 00:31	8.71	0.37	4.57	0.12	0.63	0.42	0.00		Calculated
6 ST-E1 (2)	4.59	0 00:05	17.26	0.27	8.29	0.27	0.53	0.35	0.00		Calculated
7 ST-E2 (EXIST)	2.33	0 00:05	23.05	0.10	8.44	0.39	0.32	0.21	0.00		Calculated
8 ST-E3 (EXIST)	1.30	0 00:05	16.27	0.08	6.39	0.08	0.29	0.19	0.00		Calculated
9 ST-F1 (EXIST)	1.41	0 00:05	12.70	0.11	4.74	0.11	0.34	0.22	0.00		Calculated
10 ST-G1	32.61	0 00:06	36.79	0.89	8.48	0.14	1.83	0.73	0.00		Calculated
11 ST-G2	30.37	0 00:06	42.90	0.71	9.48	0.06	1.55	0.62	0.00		Calculated
12 ST-G3	9.82	0 00:31	45.08	0.22	11.48	0.07	0.63	0.32	0.00		Calculated
13 ST-G4	9.18	0 00:32	34.22	0.27	9.24	0.43	0.71	0.35	0.00		Calculated
14 ST-G5	7.23	0 00:31	17.44	0.41	5.30	0.46	0.90	0.45	0.00		Calculated
15 ST-H1	26.98	0 00:06	31.72	0.85	7.36	0.43	1.77	0.71	0.00		Calculated
16 ST-H2	17.56	0 00:06	35.36	0.50	11.33	0.37	1.00	0.50	0.00		Calculated
17 ST-H2A	17.66	0 00:06	37.32	0.47	11.72	0.05	0.97	0.48	0.00		Calculated
18 ST-H3	16.58	0 00:05	23.11	0.72	8.01	0.10	1.25	0.63	0.00		Calculated
19 ST-H5	15.05	0 00:05	16.01	0.94	6.16	1.02	1.52	0.76	0.00		Calculated
20 ST-H6	4.59	0 00:35	10.50	0.44	5.75	0.09	0.69	0.46	0.00		Calculated
21 ST-I1	9.48	0 00:40	16.00	0.59	5.31	0.15	1.11	0.55	0.00		Calculated
22 ST-I2	9.48	0 00:40	16.08	0.59	5.33	0.30	1.10	0.55	0.00		Calculated
23 ST-I3	5.05	0 00:06	10.19	0.50	5.83	0.61	0.74	0.50	0.00		Calculated
24 ST-I4	4.58	0 00:05	17.22	0.27	8.25	0.16	0.53	0.35	0.00		Calculated
25 ST-K1	8.04	0 00:40	19.20	0.42	10.39	0.05	0.68	0.45	0.00		Calculated

Inlet Input

SN Element ID	Inlet Manufacturer	Manufacturer Part Number	Inlet Location	Number of Inlets	Catchbasin Invert Elevation (ft)	Max (Rim) Elevation (ft)	Inlet Depth (ft)	Initial Water Elevation (ft)	Initial Water Depth (ft)	Ponded Area (ft ²)	Grate Clogging Factor (%)
1 CB-C1 (EXIST)	FHWA HEC-22	GENERIC	N/A	1	483.78	487.16	3.38	483.78	0.00	N/A	0.00
2 CB-C2 (EXIST)	FHWA HEC-22	GENERIC	N/A	1	490.63	495.14	4.51	490.63	0.00	N/A	0.00
3 CB-C3 (EXIST)	FHWA HEC-22	GENERIC	N/A	1	490.95	495.16	4.21	490.95	0.00	N/A	0.00
4 CB-D1 (EXIST)	FHWA HEC-22	GENERIC	N/A	1	484.10	487.17	3.07	484.10	0.00	N/A	0.00
5 CB-E1 (EXIST)	FHWA HEC-22	GENERIC	N/A	1	487.00	491.64	4.64	487.00	0.00	N/A	0.00
6 CB-E2 (EXIST)	FHWA HEC-22	GENERIC	N/A	1	496.73	501.05	4.32	496.73	0.00	N/A	0.00
7 CB-E3 (EXIST)	FHWA HEC-22	GENERIC	N/A	1	497.60	501.00	3.41	497.60	0.00	N/A	0.00
8 CB-F1 (EXIST)	FHWA HEC-22	GENERIC	N/A	1	487.57	491.28	3.71	487.57	0.00	N/A	0.00
9 CB-G2	FHWA HEC-22	GENERIC	N/A	1	474.50	479.18	4.68	474.50	0.00	0.00	0.00
10 CB-G3	FHWA HEC-22	GENERIC	N/A	1	474.85	478.79	3.94	474.85	0.00	0.00	0.00
11 CB-G4	FHWA HEC-22	GENERIC	N/A	1	476.90	480.15	3.25	476.90	0.00	N/A	0.00
12 CB-G5	FHWA HEC-22	GENERIC	N/A	1	482.36	485.61	3.25	482.36	0.00	N/A	0.00
13 CB-H1	FHWA HEC-22	GENERIC	N/A	1	476.09	480.66	4.57	476.09	0.00	N/A	0.00
14 CB-H2	FHWA HEC-22	GENERIC	N/A	1	483.38	485.12	1.74	483.38	0.00	N/A	0.00
15 CB-H3	FHWA HEC-22	GENERIC	N/A	1	483.88	490.37	6.49	483.88	0.00	N/A	0.00
16 CB-H5	FHWA HEC-22	GENERIC	N/A	1	485.87	488.55	2.68	485.87	0.00	0.00	0.00
17 CB-H6	FHWA HEC-22	GENERIC	N/A	1	488.21	488.55	0.35	488.21	0.00	0.00	0.00
18 CB-I2	FHWA HEC-22	GENERIC	N/A	1	476.91	479.97	3.06	476.91	0.00	0.00	0.00
19 CB-I3	FHWA HEC-22	GENERIC	N/A	1	479.00	483.97	4.97	479.00	0.00	N/A	0.00
20 CB-K1	FHWA HEC-22	GENERIC	N/A	1	478.07	482.00	3.93	478.07	0.00	0.00	0.00

Roadway & Gutter Input

SN Element ID	Roadway Longitudinal Slope (ft/ft)	Roadway Cross Slope (ft/ft)	Roadway Manning's Roughness	Gutter Cross Slope (ft/ft)	Gutter Width (ft)	Gutter Depression (in)	Allowable Spread (ft)
1 CB-C1 (EXIST)	0.0200	0.0200	0.0130	0.0620	1.50	0.1969	12.00
2 CB-C2 (EXIST)	0.0200	0.0500	0.0130	0.0620	2.00	0.0000	12.00
3 CB-C3 (EXIST)	0.0200	0.0500	0.0130	0.0620	2.00	0.0000	12.00
4 CB-D1 (EXIST)	0.0200	0.0200	0.0130	0.0620	1.50	0.1969	12.00
5 CB-E1 (EXIST)	0.0200	0.0200	0.0130	0.0620	1.50	0.1969	12.00
6 CB-E2 (EXIST)	0.0200	0.0200	0.0130	0.0620	1.50	0.1969	12.00
7 CB-E3 (EXIST)	0.0200	0.0200	0.0130	0.0620	1.50	0.1969	12.00
8 CB-F1 (EXIST)	0.0200	0.0200	0.0130	0.0620	1.50	0.1969	12.00
9 CB-G2	N/A	0.0200	0.0130	0.0620	1.50	0.1969	12.00
10 CB-G3	N/A	0.0200	0.0160	0.0620	1.50	0.1969	12.00
11 CB-G4	0.0200	0.0200	0.0130	0.0620	1.50	0.1969	12.00
12 CB-G5	0.0200	0.0200	0.0130	0.0620	1.50	0.1969	12.00
13 CB-H1	0.0200	0.0200	0.0130	0.0620	1.50	0.1969	12.00
14 CB-H2	0.0100	0.0200	0.0160	0.0620	1.50	0.1969	12.00
15 CB-H3	0.0200	0.0200	0.0130	0.0620	1.50	0.1969	12.00
16 CB-H5	N/A	0.0200	0.0130	0.0620	1.50	0.1969	12.00
17 CB-H6	N/A	0.0200	0.0160	0.0620	1.50	0.1969	12.00
18 CB-I2	N/A	0.0200	0.0130	0.0620	1.50	0.1969	12.00
19 CB-I3	0.0200	0.0200	0.0130	0.0620	1.50	0.1969	12.00
20 CB-K1	N/A	0.0200	0.0130	0.0833	1.50	0.1969	12.00

Inlet Results

SN Element ID	Peak Flow	Peak Lateral Inflow	Peak Flow Intercepted by Inlet	Peak Flow Bypassing Inlet	Inlet Efficiency during Peak	Max Gutter Spread during Peak	Max Gutter Water Elev. during Peak	Max Gutter Water Depth during Peak	Time of Max Depth Occurrence	Total Flooded Volume	Total Time Flooded
	(cfs)	(cfs)	(cfs)	(cfs)	(%)	(ft)	(ft)	(ft)	(days hh:mm)	(ac-in)	(min)
1 CB-C1 (EXIST)	4.77	4.55	3.76	1.01	78.78	10.15	487.43	0.27	0 00:31	0.00	0.00
2 CB-C2 (EXIST)	1.84	1.84	0.69	1.16	37.23	3.97	495.37	0.22	0 00:17	0.00	0.00
3 CB-C3 (EXIST)	0.81	0.81	0.41	0.40	50.26	2.79	495.32	0.16	0 00:14	0.00	0.00
4 CB-D1 (EXIST)	3.76	3.73	3.25	0.51	86.32	9.22	487.41	0.25	0 00:31	0.00	0.00
5 CB-E1 (EXIST)	0.88	0.87	0.88	0.00	100.00	4.77	491.80	0.16	0 00:05	0.00	0.00
6 CB-E2 (EXIST)	1.24	1.24	1.06	0.18	85.16	5.68	501.23	0.18	0 00:05	0.00	0.00
7 CB-E3 (EXIST)	1.74	1.74	1.30	0.43	75.04	6.63	501.20	0.20	0 00:05	0.00	0.00
8 CB-F1 (EXIST)	1.41	1.30	1.41	0.00	100.00	6.03	491.46	0.18	0 00:05	0.00	0.00
9 CB-G2	3.17	3.17	N/A	N/A	N/A	9.87	479.94	0.76	0 00:06	0.00	0.00
10 CB-G3	5.39	5.39	N/A	N/A	N/A	14.08	479.63	0.84	0 00:06	0.00	0.00
11 CB-G4	1.00	1.00	1.00	0.00	100.00	5.17	480.32	0.17	0 00:32	0.00	0.00
12 CB-G5	2.00	1.11	2.00	0.00	99.95	7.08	485.82	0.20	0 00:31	0.00	0.00
13 CB-H1	1.47	1.47	1.18	0.28	80.65	6.16	480.85	0.19	0 00:06	0.00	0.00
14 CB-H2	1.76	0.92	1.51	0.25	86.01	8.44	485.35	0.23	0 00:05	0.00	0.00
15 CB-H3	2.52	2.52	1.60	0.92	63.61	7.81	490.59	0.22	0 00:05	0.00	0.00
16 CB-H5	12.22	12.22	N/A	N/A	N/A	24.31	489.60	1.05	0 00:29	0.00	0.00
17 CB-H6	4.59	4.59	N/A	N/A	N/A	12.64	489.37	0.82	0 00:01	0.00	0.00
18 CB-I2	0.42	0.42	N/A	N/A	N/A	1.90	480.24	0.27	0 00:40	0.00	0.00
19 CB-I3	2.58	2.58	2.49	0.09	96.42	7.88	484.19	0.22	0 00:05	0.00	0.00
20 CB-K1	8.04	8.04	N/A	N/A	N/A	18.40	482.96	0.96	0 00:40	0.00	0.00

Storage Nodes

Storage Node : POND1

Input Data

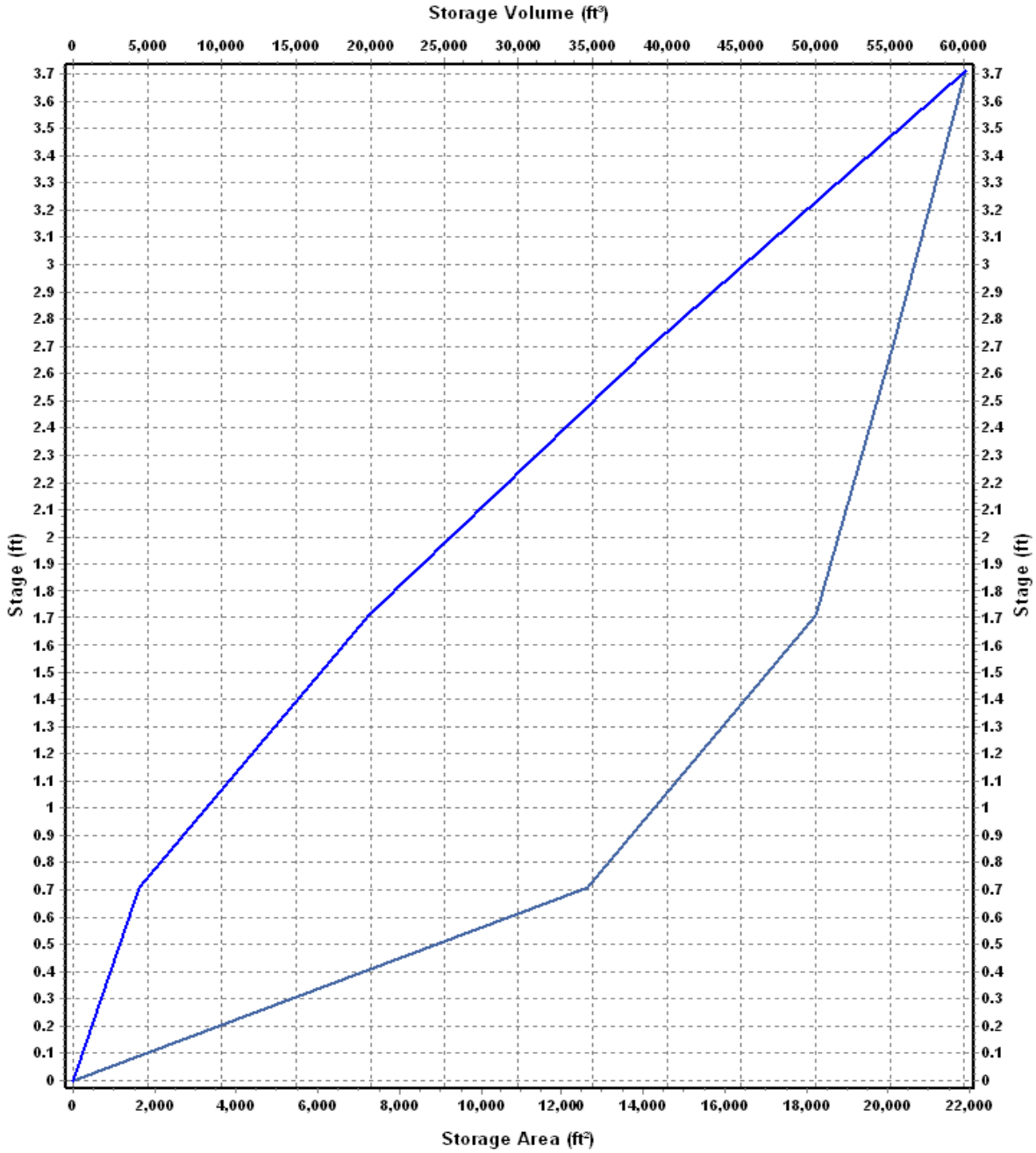
Invert Elevation (ft) 473.29
Max (Rim) Elevation (ft) 477.00
Max (Rim) Offset (ft) 3.71
Initial Water Elevation (ft) 473.29
Initial Water Depth (ft) 0.00
Ponded Area (ft²) 0.00
Evaporation Loss 0.00

Storage Area Volume Curves

Storage Curve : POND1

Stage (ft)	Storage Area (ft ²)	Storage Volume (ft ³)
0	0	0.000
0.71	12615	4478.33
1.71	18216	19893.83
2.71	20116	39059.83
3.71	21896	60065.83

Storage Area Volume Curves



— Storage Area — Storage Volume

Storage Node : POND1 (continued)

Outflow Weirs

SN Element ID	Weir Type	Flap Gate	Crest Elevation (ft)	Crest Offset (ft)	Length (ft)	Weir Total Height (ft)	Discharge Coefficient
1 Weir-02	Rectangular	No	476.00	2.71	15.00	1.00	3.33

Outflow Orifices

SN Element ID	Orifice Type	Orifice Shape	Flap Gate	Circular Orifice Diameter (in)	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
1 Orifice-01	Side	Rectangular	No		26.50	21.00	0.00	0.63

Output Summary Results

Peak Inflow (cfs)	32.97
Peak Lateral Inflow (cfs)	3.87
Peak Outflow (cfs)	22.27
Peak Exfiltration Flow Rate (cfm)	0.00
Max HGL Elevation Attained (ft)	475.71
Max HGL Depth Attained (ft)	2.42
Average HGL Elevation Attained (ft)	473.45
Average HGL Depth Attained (ft)	0.16
Time of Max HGL Occurrence (days hh:mm)	0 00:52
Total Exfiltration Volume (1000-ft ³)	0.000
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00

Project Description

File Name 16044 Kensington Place Ph 2 Drainage Post-Dev 50 YEAR.SPF
Description J:\Projects\2016 Projects\16044 Kensington Place Subdivision Lee Pengelly\Drawings\DWG\Phase 2\KENSINGTON PLACE PHASE 2 R4.dwg

Project Options

Flow Units CFS
Elevation Type Elevation
Hydrology Method Rational
Time of Concentration (TOC) Method SCS TR-55
Link Routing Method Kinematic Wave
Enable Overflow Ponding at Nodes YES
Skip Steady State Analysis Time Periods NO

Analysis Options

Start Analysis On Aug 18, 2017 00:00:00
End Analysis On Aug 19, 2017 00:00:00
Start Reporting On Aug 18, 2017 00:00:00
Antecedent Dry Days 0 days
Runoff (Dry Weather) Time Step 0 01:00:00 days hh:mm:ss
Runoff (Wet Weather) Time Step 0 00:05:00 days hh:mm:ss
Reporting Time Step 0 00:05:00 days hh:mm:ss
Routing Time Step 30 seconds

Number of Elements

	Qty
Rain Gages	0
Subbasins.....	31
Nodes.....	28
<i>Junctions</i>	5
<i>Outfalls</i>	2
<i>Flow Diversions</i>	0
<i>Inlets</i>	20
<i>Storage Nodes</i>	1
Links.....	41
<i>Channels</i>	14
<i>Pipes</i>	25
<i>Pumps</i>	0
<i>Orifices</i>	1
<i>Weirs</i>	1
<i>Outlets</i>	0
Pollutants	0
Land Uses	0

Rainfall Details

Return Period..... 50 year(s)

Subbasin Summary

SN Subbasin ID	Area (ac)	Weighted Runoff Coefficient	Total Rainfall (in)	Total Runoff (in)	Total Runoff Volume (ac-in)	Peak Runoff (cfs)	Time of Concentration (days hh:mm:ss)
1 {STORM-BASINS}.1	2.38	0.6100	3.64	2.22	5.27	4.41	0 01:11:46
2 {STORM-BASINS}.10	0.87	0.6300	2.37	1.49	1.30	2.87	0 00:27:10
3 {STORM-BASINS}.11	0.12	0.9000	0.78	0.70	0.08	0.96	0 00:05:00
4 {STORM-BASINS}.12	0.16	0.9000	0.78	0.70	0.11	1.37	0 00:05:00
5 {STORM-BASINS}.13	0.23	0.9000	0.78	0.70	0.16	1.93	0 00:05:00
6 {STORM-BASINS}.14	0.74	0.7200	0.78	0.56	0.41	4.94	0 00:05:00
7 {STORM-BASINS}.15	1.28	0.7200	0.78	0.56	0.72	8.60	0 00:05:00
8 {STORM-BASINS}.16	0.21	0.7500	0.78	0.58	0.12	1.44	0 00:05:00
9 {STORM-BASINS}.17	0.28	0.9000	0.78	0.70	0.19	2.31	0 00:05:00
10 {STORM-BASINS}.18	3.51	0.6000	2.84	1.70	5.98	9.01	0 00:39:45
11 {STORM-BASINS}.19	0.05	0.9000	0.78	0.70	0.04	0.44	0 00:05:00
12 {STORM-BASINS}.2	0.96	0.6300	3.16	1.99	1.91	2.26	0 00:50:36
13 {STORM-BASINS}.20	0.19	0.9000	0.78	0.70	0.14	1.62	0 00:05:00
14 {STORM-BASINS}.21	0.22	0.9000	0.78	0.70	0.15	1.84	0 00:05:00
15 {STORM-BASINS}.22	0.20	0.9000	0.78	0.70	0.14	1.67	0 00:05:00
16 {STORM-BASINS}.23A	0.88	0.6000	2.56	1.54	1.35	2.55	0 00:31:54
17 {STORM-BASINS}.23B	0.21	0.9000	0.78	0.70	0.15	1.75	0 00:05:00
18 {STORM-BASINS}.26	1.06	0.6000	2.70	1.62	1.71	2.87	0 00:35:44
19 {STORM-BASINS}.27	0.58	0.7200	1.77	1.27	0.74	2.77	0 00:15:56
20 {STORM-BASINS}.28	0.22	0.7200	1.87	1.34	0.30	1.02	0 00:17:36
21 {STORM-BASINS}.29	0.15	0.9000	0.78	0.70	0.11	1.29	0 00:05:00
22 {STORM-BASINS}.3	1.34	0.6300	2.53	1.60	2.13	4.15	0 00:30:46
23 {STORM-BASINS}.30	0.12	0.9000	0.78	0.70	0.08	1.01	0 00:05:00
24 {STORM-BASINS}.31	0.12	0.9000	0.78	0.70	0.08	0.99	0 00:05:00
25 {STORM-BASINS}.4	0.17	0.7500	1.66	1.25	0.21	0.89	0 00:14:33
26 {STORM-BASINS}.5	0.46	0.6900	1.82	1.26	0.57	2.02	0 00:17:04
27 {STORM-BASINS}.6	1.73	0.6000	2.55	1.53	2.64	5.06	0 00:31:16
28 {STORM-BASINS}.7A	0.38	0.6600	2.54	1.68	0.64	1.24	0 00:30:58
29 {STORM-BASINS}.7B	0.28	0.7200	2.17	1.56	0.43	1.11	0 00:23:23
30 {STORM-BASINS}.8	2.66	0.6000	3.11	1.86	4.96	6.08	0 00:49:03
31 {STORM-BASINS}.9	0.06	0.9000	0.78	0.70	0.04	0.46	0 00:05:00

Node Summary

SN Element ID	Element Type	Invert Elevation	Ground/Rim (Max) Elevation	Initial Water Elevation	Surcharge Elevation	Ponded Area	Peak Inflow	Max HGL Elevation Attained	Max Surcharge Depth Attained	Min Freeboard	Time of Peak Flooding Occurrence	Total Flooded Volume	Total Time Flooded	
		(ft)	(ft)	(ft)	(ft)	(ft²)	(cfs)	(ft)	(ft)	(ft)	(days hh:mm)	(ac-in)	(min)	
1	CB-I1	Junction	476.43	480.49	476.43	480.49	0.00	10.61	477.62	0.00	2.86	0 00:00	0.00	0.00
2	CONNECT-G	Junction	483.22	485.22	483.22	485.22	0.00	7.72	484.16	0.00	1.07	0 00:00	0.00	0.00
3	CONNECT-I	Junction	483.38	489.38	483.38	489.38	0.00	5.05	483.94	0.00	5.44	0 00:00	0.00	0.00
4	FES-H2	Junction	482.37	485.12	482.37	485.12	0.00	19.74	483.44	0.00	1.68	0 00:00	0.00	0.00
5	Jun-01	Junction	473.29	477.00	473.29	477.00	0.00	24.21	475.00	0.00	2.00	0 00:00	0.00	0.00
6	Out-01	Outfall	473.16					24.21	474.87					
7	Out-1ST-G3	Outfall	475.00					0.00	475.00					
8	POND1	Storage Node	473.29	477.00	473.29		0.00	36.61	475.95			0.00	0.00	

Link Summary

SN Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length	Inlet Invert Elevation	Outlet Invert Elevation	Average Slope (%)	Diameter or Height (in)	Manning's Roughness	Peak Flow (cfs)	Design Flow Capacity (cfs)	Peak Flow/Design Flow Ratio	Peak Flow Velocity (ft/sec)	Peak Flow Depth (ft)	Peak Flow Depth/Total Depth Ratio	Total Time Reported (min)	Condition
1	ST-C1	Pipe	CB-C1 (EXIST) CONNECT-G	92.51	483.78	483.22	0.6000	24.000	0.0130	7.72	17.52	0.44	5.40	0.93	0.46	0.00	Calculated
2	ST-C2	Pipe	CB-C2 (EXIST) CB-C1 (EXIST)	200.00	490.63	483.88	3.3800	18.000	0.0130	1.11	19.30	0.06	7.23	0.24	0.16	0.00	Calculated
3	ST-C3	Pipe	CB-C3 (EXIST) CB-C2 (EXIST)	32.02	490.95	490.63	1.0000	18.000	0.0130	0.43	10.50	0.04	2.93	0.21	0.14	0.00	Calculated
4	ST-CS1	Pipe	Jun-01 Out-01	24.64	473.29	473.16	0.5300	30.000	0.0130	24.21	29.79	0.81	6.76	1.71	0.68	0.00	Calculated
5	ST-D1	Pipe	CB-D1 (EXIST) CB-C1 (EXIST)	32.02	484.10	483.88	0.6900	18.000	0.0130	3.47	8.71	0.40	4.65	0.66	0.44	0.00	Calculated
6	ST-E1 (2)	Pipe	CB-E1 (EXIST) CONNECT-I	133.90	487.00	483.38	2.7000	18.000	0.0130	5.05	17.26	0.29	8.51	0.56	0.37	0.00	Calculated
7	ST-E2 (EXIST)	Pipe	CB-E2 (EXIST) CB-E1 (EXIST)	200.00	496.73	487.10	4.8100	18.000	0.0130	2.49	23.05	0.11	8.60	0.33	0.22	0.00	Calculated
8	ST-E3 (EXIST)	Pipe	CB-E3 (EXIST) CB-E2 (EXIST)	32.02	497.60	496.83	2.4000	18.000	0.0130	1.38	16.27	0.08	6.54	0.30	0.20	0.00	Calculated
9	ST-F1 (EXIST)	Pipe	CB-F1 (EXIST) CB-E1 (EXIST)	32.02	487.57	487.10	1.4600	18.000	0.0130	1.61	12.70	0.13	4.93	0.36	0.24	0.00	Calculated
10	ST-G1	Pipe	CB-G2 POND1	72.10	474.50	473.92	0.8000	30.000	0.0130	36.19	36.79	0.98	8.58	2.01	0.81	0.00	Calculated
11	ST-G2	Pipe	CB-G3 CB-G2	31.99	474.85	474.50	1.0900	30.000	0.0130	33.77	42.90	0.79	9.69	1.67	0.67	0.00	Calculated
12	ST-G3	Pipe	CB-G4 CB-G3	49.09	476.90	474.95	3.9700	24.000	0.0130	10.74	45.08	0.24	11.76	0.66	0.33	0.00	Calculated
13	ST-G4	Pipe	CB-G5 CB-G4	238.61	482.36	476.90	2.2900	24.000	0.0130	10.03	34.22	0.29	9.47	0.74	0.37	0.00	Calculated
14	ST-G5	Pipe	CONNECT-G CB-G5	145.74	483.22	482.35	0.6000	24.000	0.0130	7.71	17.44	0.44	5.39	0.93	0.47	0.00	Calculated
15	ST-H1	Pipe	CB-H1 CB-G3	190.63	476.09	474.95	0.6000	30.000	0.0130	29.91	31.72	0.94	7.49	1.93	0.77	0.00	Calculated
16	ST-H2	Pipe	FES-H2 CB-H1	252.90	482.37	476.19	2.4400	24.000	0.0130	19.56	35.36	0.55	11.62	1.06	0.53	0.00	Calculated
17	ST-H2A	Pipe	CB-H2 FES-H2	37.10	483.38	482.37	2.7200	24.000	0.0130	19.74	37.32	0.53	12.05	1.03	0.52	0.00	Calculated
18	ST-H3	Pipe	CB-H3 CB-H2	48.08	483.88	483.38	1.0400	24.000	0.0130	18.52	23.11	0.80	8.22	1.35	0.68	0.00	Calculated
19	ST-H5	Pipe	CB-H5 CB-H3	378.49	485.87	483.98	0.5000	24.000	0.0130	16.92	16.01	1.06	6.30	1.79	0.90	0.00	> CAPACITY
20	ST-H6	Pipe	CB-H6 CB-H5	32.00	488.21	487.89	1.0000	18.000	0.0130	5.12	10.50	0.49	5.91	0.74	0.49	0.00	Calculated
21	ST-I1	Pipe	CB-I1 CB-H1	48.08	476.43	476.19	0.5000	24.000	0.0130	10.61	16.00	0.66	5.44	1.19	0.60	0.00	Calculated
22	ST-I2	Pipe	CB-I2 CB-I1	95.00	476.91	476.43	0.5100	24.000	0.0130	10.61	16.08	0.66	5.47	1.19	0.59	0.00	Calculated
23	ST-I3	Pipe	CB-I3 CB-I2	212.56	479.00	477.00	0.9400	18.000	0.0130	5.58	10.19	0.55	5.97	0.79	0.53	0.00	Calculated
24	ST-I4	Pipe	CONNECT-I CB-I3	78.66	483.38	481.27	2.6900	18.000	0.0130	5.05	17.22	0.29	8.47	0.56	0.37	0.00	Calculated
25	ST-K1	Pipe	CB-K1 CB-I2	32.05	477.32	477.00	1.0000	18.000	0.0130	9.01	19.20	0.47	10.69	0.72	0.48	0.00	Calculated
26	Gutter-05	Channel	CB-C3 (EXIST) CB-D1 (EXIST)	200.35	495.00	487.00	3.9900	6.000	0.0130	0.43	9.52	0.05	3.44	0.15	0.31	0.00	
27	Gutter-06	Channel	CB-C2 (EXIST) CB-C1 (EXIST)	200.99	495.00	487.00	3.9800	6.000	0.0130	1.25	9.50	0.13	3.98	0.23	0.46	0.00	
28	Gutter-07	Channel	CB-C1 (EXIST) CB-G5	239.28	487.00	485.61	0.5800	6.000	0.0130	1.26	3.83	0.33	1.85	0.32	0.65	0.00	
29	Gutter-08	Channel	CB-G5 CB-G4	240.40	485.61	480.15	2.2700	6.000	0.0320	0.05	7.18	0.01	1.93	0.07	0.14	0.00	
30	Gutter-09	Channel	CB-G4 CB-G3	57.48	480.15	478.65	2.6100	6.000	0.0320	0.00	7.33	0.00	0.00	0.00	0.00	0.00	
31	Gutter-10	Channel	CB-H1 CB-G3	192.99	480.66	478.79	0.9700	6.000	0.0320	0.22	4.69	0.05	2.52	0.15	0.29	0.00	
32	Gutter-12	Channel	CB-I3 CB-I2	213.95	483.97	479.50	2.0900	6.000	0.0320	0.14	6.51	0.02	1.99	0.11	0.23	0.00	
33	Gutter-13	Channel	CB-E1 (EXIST) CB-I3	213.94	491.00	483.97	3.2900	6.000	0.0320	0.00	9.03	0.00	0.00	0.00	0.00	0.00	
34	Gutter-14	Channel	CB-E2 (EXIST) CB-E1 (EXIST)	201.82	500.50	491.00	4.7100	6.000	0.0320	0.16	10.29	0.02	4.01	0.10	0.20	0.00	
35	Gutter-15	Channel	CB-E3 (EXIST) CB-F1 (EXIST)	201.21	500.50	491.00	4.7200	6.000	0.0320	0.40	10.48	0.04	4.65	0.14	0.28	0.00	
36	Gutter-16	Channel	CB-F1 (EXIST) CB-K1	425.27	491.00	482.00	2.1200	6.000	0.0320	0.00	7.04	0.00	0.00	0.00	0.01	0.00	
37	Gutter-17	Channel	CB-H2 CB-H1	292.35	485.12	480.66	1.5200	6.000	0.0320	0.29	5.88	0.05	2.28	0.15	0.31	0.00	
38	Gutter-23	Channel	CB-D1 (EXIST) CB-G2	587.46	487.00	479.00	1.3600	6.000	0.0320	0.56	5.55	0.10	2.75	0.20	0.41	0.00	
39	Gutter-26	Channel	CB-H3 CB-H2	57.06	490.37	485.12	9.2000	6.000	0.0320	1.08	14.45	0.07	3.44	0.19	0.37	0.00	
40	Orifice-01	Orifice	POND1 Jun-01		473.29	473.29		26.500		24.21							
41	Weir-02	Weir	POND1 Jun-01		473.29	473.29				0.00							

Inlet Summary

SN Element ID	Inlet Manufacturer	Manufacturer Part Number	Inlet Location	Number of Inlets	Catchbasin Invert Elevation (ft)	Max (Rim) Elevation (ft)	Initial Pondered Water Elevation (ft)	Peak Area (ft ²)	Peak Flow Intercepted (cfs)	Peak Flow Bypassing Inlet (cfs)	Peak Flow during Peak Inlet (cfs)	Inlet Efficiency (%)	Allowable Spread (ft)	Max Gutter Spread during Peak (ft)	Max Gutter Water Elev. during Peak (ft)	
1	CB-C1 (EXIST)	FHWA HEC-22 GENERIC	N/A	On Grade	1	483.78	487.16	483.78	N/A	5.31	4.00	1.31	75.34	12.00	10.60	487.43
2	CB-C2 (EXIST)	FHWA HEC-22 GENERIC	N/A	On Grade	1	490.63	495.14	490.63	N/A	2.02	0.73	1.30	35.93	12.00	4.14	495.37
3	CB-C3 (EXIST)	FHWA HEC-22 GENERIC	N/A	On Grade	1	490.95	495.16	490.95	N/A	0.89	0.43	0.45	48.82	12.00	2.91	495.33
4	CB-D1 (EXIST)	FHWA HEC-22 GENERIC	N/A	On Grade	1	484.10	487.17	484.10	N/A	4.18	3.47	0.71	83.03	12.00	9.62	487.42
5	CB-E1 (EXIST)	FHWA HEC-22 GENERIC	N/A	On Grade	1	487.00	491.64	487.00	N/A	0.98	0.98	0.00	100.00	12.00	5.12	491.81
6	CB-E2 (EXIST)	FHWA HEC-22 GENERIC	N/A	On Grade	1	496.73	501.05	496.73	N/A	1.37	1.13	0.24	82.34	12.00	5.96	501.23
7	CB-E3 (EXIST)	FHWA HEC-22 GENERIC	N/A	On Grade	1	497.60	501.00	497.60	N/A	1.93	1.39	0.54	71.96	12.00	6.94	501.21
8	CB-F1 (EXIST)	FHWA HEC-22 GENERIC	N/A	On Grade	1	487.57	491.28	487.57	N/A	1.61	1.61	0.00	100.00	12.00	6.42	491.47
9	CB-G2	FHWA HEC-22 GENERIC	N/A	On Sag	1	474.50	479.18	474.50	0.00	3.51	N/A	N/A	N/A	12.00	10.56	479.96
10	CB-G3	FHWA HEC-22 GENERIC	N/A	On Sag	1	474.85	478.79	474.85	0.00	6.08	N/A	N/A	N/A	12.00	15.26	479.66
11	CB-G4	FHWA HEC-22 GENERIC	N/A	On Grade	1	476.90	480.15	476.90	N/A	1.11	1.11	0.00	100.00	12.00	5.39	480.32
12	CB-G5	FHWA HEC-22 GENERIC	N/A	On Grade	1	482.36	485.61	482.36	N/A	2.42	2.36	0.06	97.62	12.00	7.66	485.83
13	CB-H1	FHWA HEC-22 GENERIC	N/A	On Grade	1	476.09	480.66	476.09	N/A	1.62	1.26	0.37	77.29	12.00	6.44	480.85
14	CB-H2	FHWA HEC-22 GENERIC	N/A	On Grade	1	483.38	485.12	483.38	N/A	2.01	1.65	0.36	82.17	12.00	8.95	485.36
15	CB-H3	FHWA HEC-22 GENERIC	N/A	On Grade	1	483.88	490.37	483.88	N/A	2.77	1.68	1.09	60.71	12.00	8.11	490.59
16	CB-H5	FHWA HEC-22 GENERIC	N/A	On Sag	1	485.87	488.55	485.87	0.00	13.53	N/A	N/A	N/A	12.00	25.90	489.63
17	CB-H6	FHWA HEC-22 GENERIC	N/A	On Sag	1	488.21	488.55	488.21	0.00	5.12	N/A	N/A	N/A	12.00	13.61	489.39
18	CB-I2	FHWA HEC-22 GENERIC	N/A	On Sag	1	476.91	479.97	476.91	0.00	0.46	N/A	N/A	N/A	12.00	2.11	480.27
19	CB-I3	FHWA HEC-22 GENERIC	N/A	On Grade	1	479.00	483.97	479.00	N/A	2.87	2.69	0.17	93.99	12.00	8.23	484.19
20	CB-K1	FHWA HEC-22 GENERIC	N/A	On Sag	1	478.07	482.00	478.07	0.00	9.01	N/A	N/A	N/A	12.00	19.85	482.99

Subbasin Hydrology

Subbasin : {STORM-BASINS}.1

Input Data

Area (ac) 2.38
Weighted Runoff Coefficient 0.6100

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
Residential	1.66	-	0.70
Pasture	0.71	-	0.40
Composite Area & Weighted Runoff Coeff.	2.37		0.61

Time of Concentration

TOC Method : SCS TR-55

Sheet Flow Equation :

$$T_c = (0.007 * ((n * L_f)^{0.8})) / ((P^{0.5}) * (S_f^{0.4}))$$

Where :

Tc = Time of Concentration (hr)
n = Manning's roughness
Lf = Flow Length (ft)
P = 2 yr, 24 hr Rainfall (inches)
Sf = Slope (ft/ft)

Shallow Concentrated Flow Equation :

V = 16.1345 * (Sf^{0.5}) (unpaved surface)
V = 20.3282 * (Sf^{0.5}) (paved surface)
V = 15.0 * (Sf^{0.5}) (grassed waterway surface)
V = 10.0 * (Sf^{0.5}) (nearly bare & untilled surface)
V = 9.0 * (Sf^{0.5}) (cultivated straight rows surface)
V = 7.0 * (Sf^{0.5}) (short grass pasture surface)
V = 5.0 * (Sf^{0.5}) (woodland surface)
V = 2.5 * (Sf^{0.5}) (forest w/heavy litter surface)
Tc = (Lf / V) / (3600 sec/hr)

Where:

Tc = Time of Concentration (hr)
Lf = Flow Length (ft)
V = Velocity (ft/sec)
Sf = Slope (ft/ft)

Channel Flow Equation :

$$V = (1.49 * (R^{2/3})) * (S_f^{0.5}) / n$$

R = Aq / Wp
Tc = (Lf / V) / (3600 sec/hr)

Where :

Tc = Time of Concentration (hr)
Lf = Flow Length (ft)
R = Hydraulic Radius (ft)
Aq = Flow Area (ft²)
Wp = Wetted Perimeter (ft)
V = Velocity (ft/sec)
Sf = Slope (ft/ft)
n = Manning's roughness

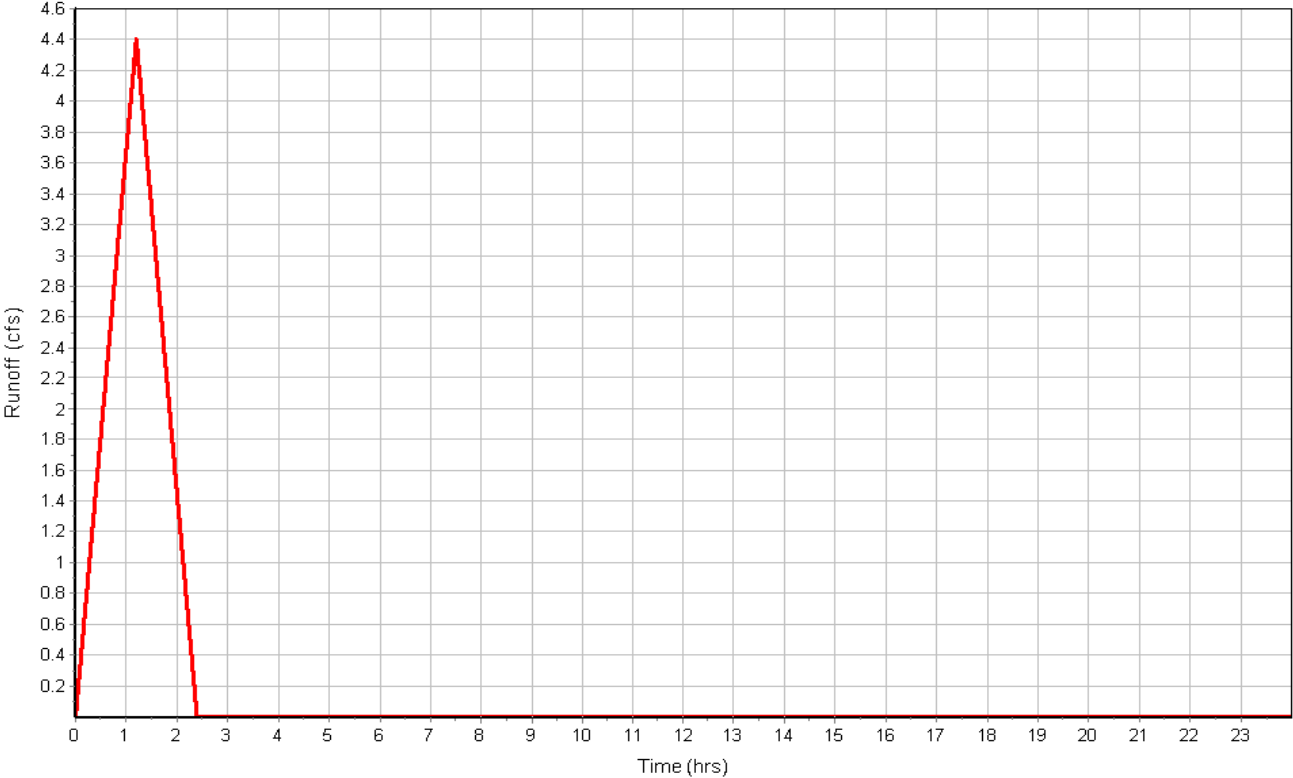
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	1221.57	0.00	0.00
Slope (%) :	2.6	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.28	0.00	0.00
Computed Flow Time (min) :	71.78	0.00	0.00
Total TOC (min)	71.78		

Subbasin Runoff Results

Total Rainfall (in)	3.64
Total Runoff (in)	2.22
Peak Runoff (cfs)	4.41
Rainfall Intensity	3.038
Weighted Runoff Coefficient	0.6100
Time of Concentration (days hh:mm:ss)	0 01:11:47

Subbasin : {STORM-BASINS}.1

Runoff Hydrograph



Subbasin : {STORM-BASINS}.10

Input Data

Area (ac) 0.87
 Weighted Runoff Coefficient 0.6300

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.78	-	0.60
-	0.09	-	0.90
Composite Area & Weighted Runoff Coeff.	0.87		0.63

Time of Concentration

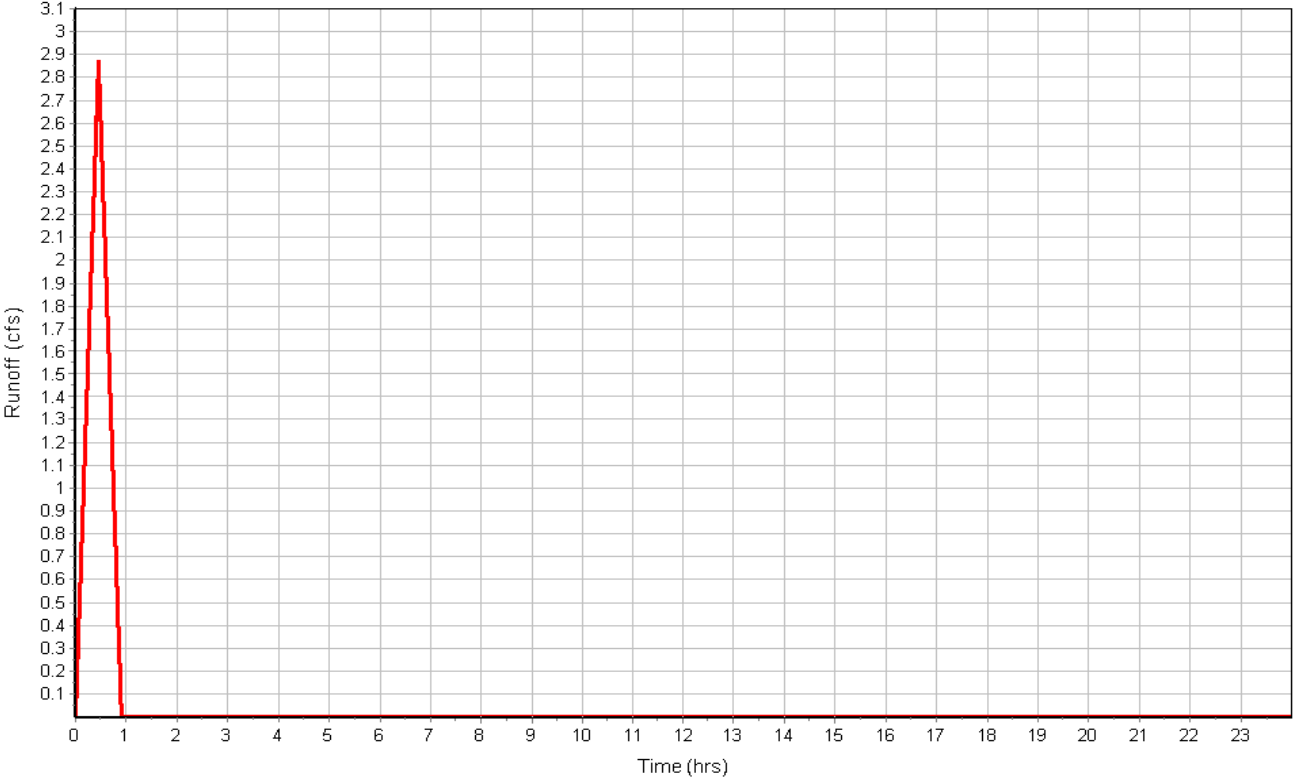
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	421.06	0.00	0.00
Slope (%) :	3.5	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.26	0.00	0.00
Computed Flow Time (min) :	27.18	0.00	0.00
Total TOC (min)	27.18		

Subbasin Runoff Results

Total Rainfall (in) 2.37
 Total Runoff (in) 1.49
 Peak Runoff (cfs) 2.87
 Rainfall Intensity 5.224
 Weighted Runoff Coefficient 0.6300
 Time of Concentration (days hh:mm:ss) 0 00:27:11

Subbasin : {STORM-BASINS}.10

Runoff Hydrograph



Subbasin : {STORM-BASINS}.11

Input Data

Area (ac) 0.12
 Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.12	-	0.90
Composite Area & Weighted Runoff Coeff.	0.12		0.90

Time of Concentration

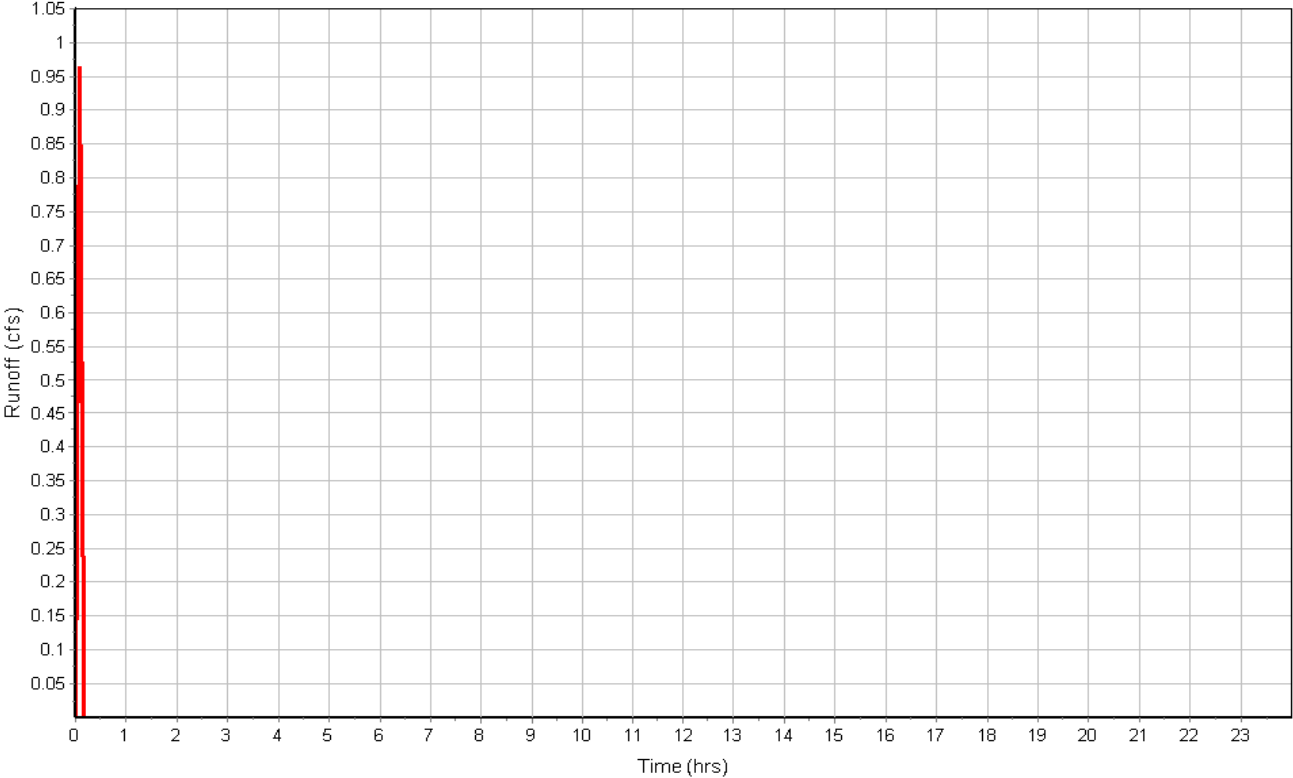
Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	251.93	0.00	0.00
Slope (%) :	4.7	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	4.41	0.00	0.00
Computed Flow Time (min) :	0.95	0.00	0.00
Total TOC (min)	0.95		

Subbasin Runoff Results

Total Rainfall (in) 0.78
 Total Runoff (in) 0.70
 Peak Runoff (cfs) 0.96
 Rainfall Intensity 9.300
 Weighted Runoff Coefficient 0.9000
 Time of Concentration (days hh:mm:ss) 0 00:00:57

Subbasin : {STORM-BASINS}.11

Runoff Hydrograph



Subbasin : {STORM-BASINS}.12

Input Data

Area (ac) 0.16
 Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.16	-	0.90
Composite Area & Weighted Runoff Coeff.	0.16		0.90

Time of Concentration

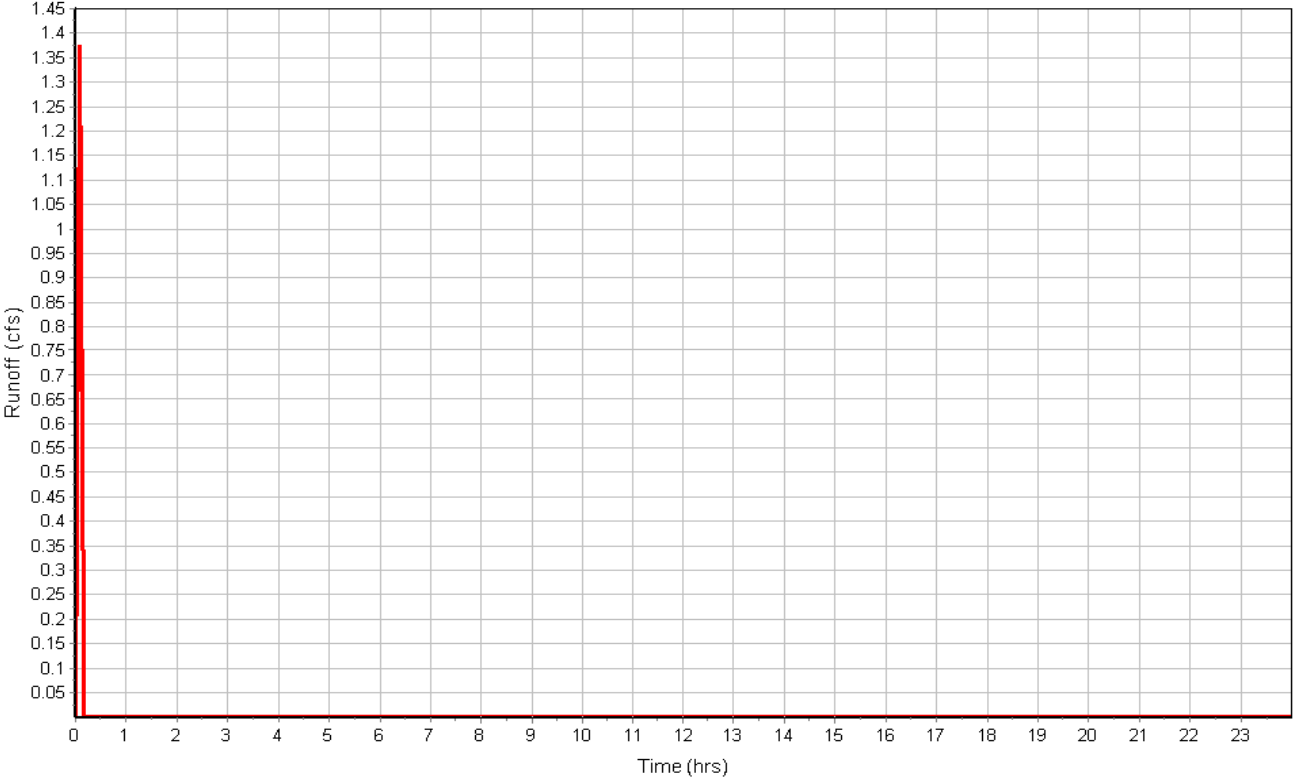
Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	261.41	0.00	0.00
Slope (%) :	1.9	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	2.80	0.00	0.00
Computed Flow Time (min) :	1.56	0.00	0.00
Total TOC (min)	1.56		

Subbasin Runoff Results

Total Rainfall (in) 0.78
 Total Runoff (in) 0.70
 Peak Runoff (cfs) 1.37
 Rainfall Intensity 9.300
 Weighted Runoff Coefficient 0.9000
 Time of Concentration (days hh:mm:ss) 0 00:01:34

Subbasin : {STORM-BASINS}.12

Runoff Hydrograph



Subbasin : {STORM-BASINS}.13

Input Data

Area (ac) 0.23
 Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.23	-	0.90
Composite Area & Weighted Runoff Coeff.	0.23		0.90

Time of Concentration

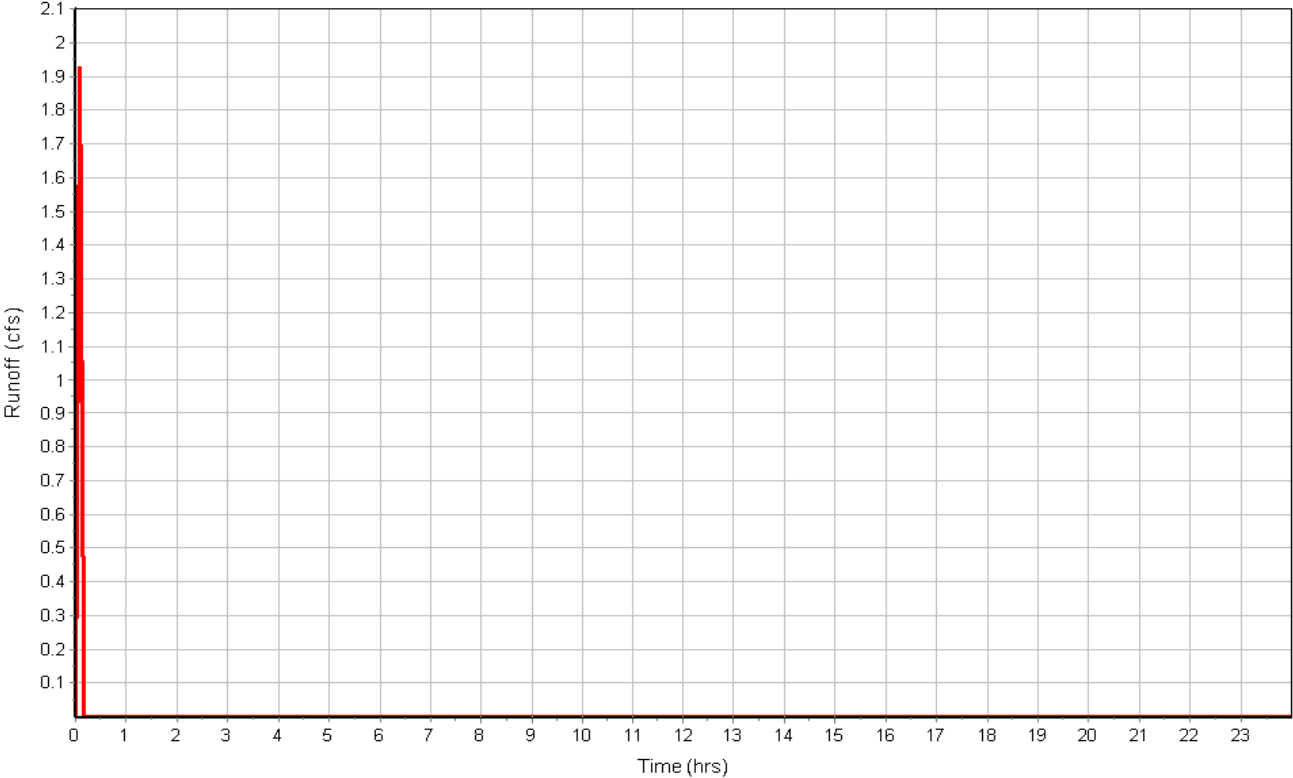
Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	407.22	0.00	0.00
Slope (%) :	2	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	2.87	0.00	0.00
Computed Flow Time (min) :	2.36	0.00	0.00
Total TOC (min)	2.36		

Subbasin Runoff Results

Total Rainfall (in) 0.78
 Total Runoff (in) 0.70
 Peak Runoff (cfs) 1.93
 Rainfall Intensity 9.300
 Weighted Runoff Coefficient 0.9000
 Time of Concentration (days hh:mm:ss) 0 00:02:22

Subbasin : {STORM-BASINS}.13

Runoff Hydrograph



Subbasin : {STORM-BASINS}.14

Input Data

Area (ac) 0.74
Weighted Runoff Coefficient 0.7200

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.74	-	0.72
Composite Area & Weighted Runoff Coeff.	0.74		0.72

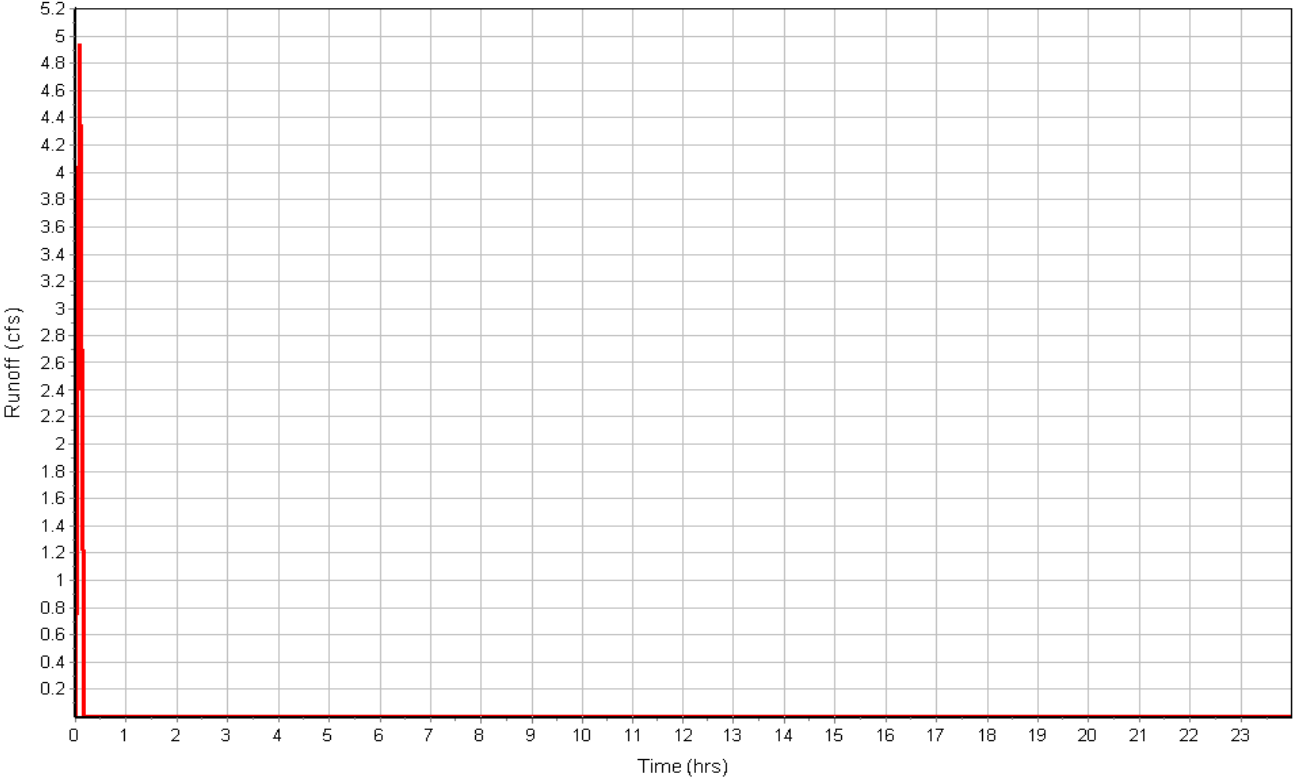
Time of Concentration

Subbasin Runoff Results

Total Rainfall (in) 0.78
Total Runoff (in) 0.56
Peak Runoff (cfs) 4.94
Rainfall Intensity 9.300
Weighted Runoff Coefficient 0.7200
Time of Concentration (days hh:mm:ss) 0 00:00:00

Subbasin : {STORM-BASINS}.14

Runoff Hydrograph



Subbasin : {STORM-BASINS}.15

Input Data

Area (ac) 1.28
Weighted Runoff Coefficient 0.7200

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	1.28	-	0.72
Composite Area & Weighted Runoff Coeff.	1.28		0.72

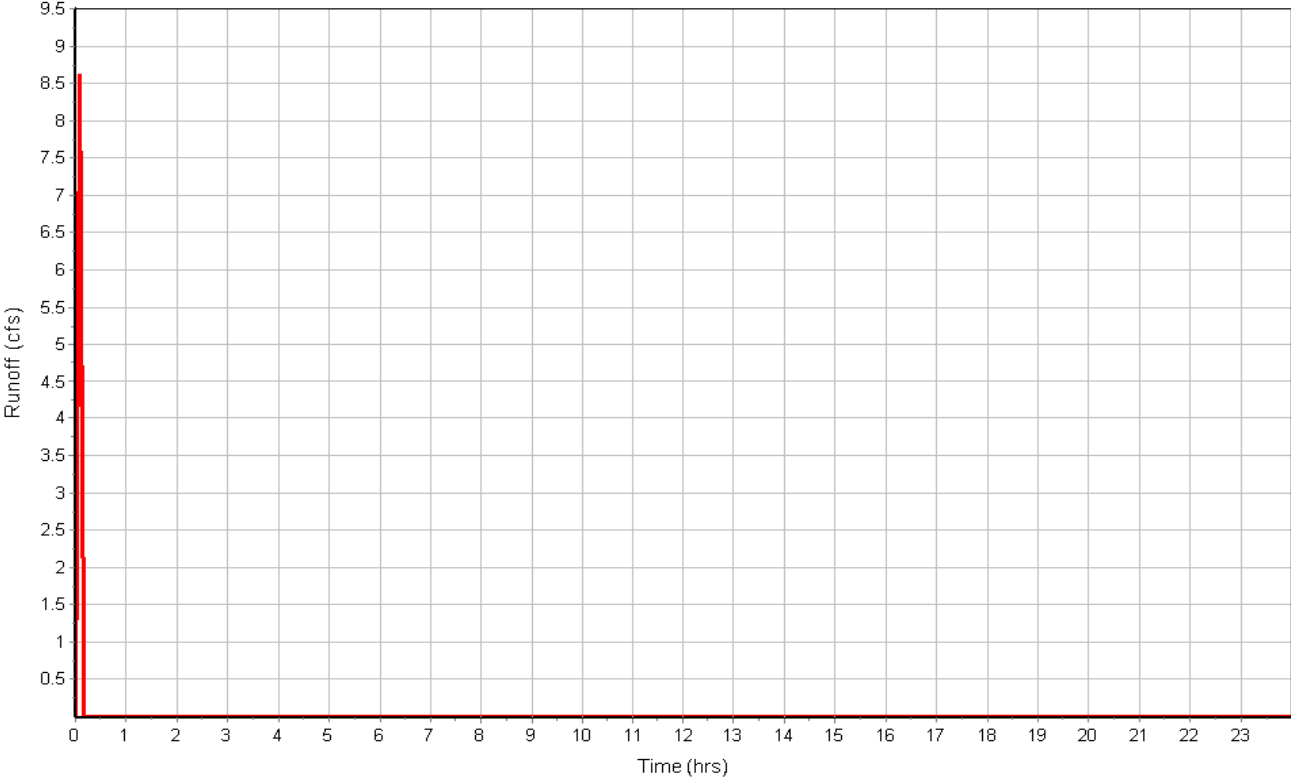
Time of Concentration

Subbasin Runoff Results

Total Rainfall (in) 0.78
Total Runoff (in) 0.56
Peak Runoff (cfs) 8.60
Rainfall Intensity 9.300
Weighted Runoff Coefficient 0.7200
Time of Concentration (days hh:mm:ss) 0 00:00:00

Subbasin : {STORM-BASINS}.15

Runoff Hydrograph



Subbasin : {STORM-BASINS}.16

Input Data

Area (ac) 0.21
 Weighted Runoff Coefficient 0.7500

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.10	-	0.90
-	0.10	-	0.60
Composite Area & Weighted Runoff Coeff.	0.20		0.75

Time of Concentration

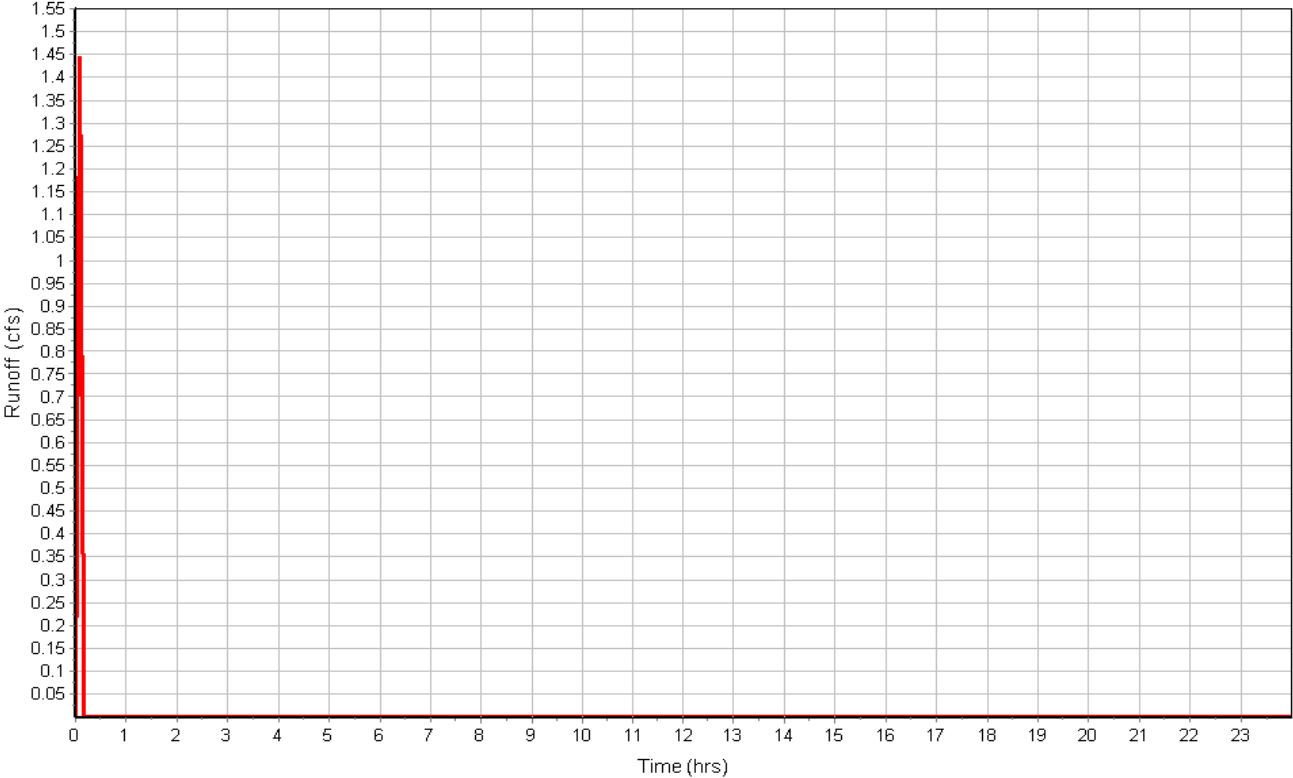
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	45.99	0.00	0.00
Slope (%) :	5	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.19	0.00	0.00
Computed Flow Time (min) :	4.01	0.00	0.00
Total TOC (min)	4.01		

Subbasin Runoff Results

Total Rainfall (in) 0.78
 Total Runoff (in) 0.58
 Peak Runoff (cfs) 1.44
 Rainfall Intensity 9.300
 Weighted Runoff Coefficient 0.7500
 Time of Concentration (days hh:mm:ss) 0 00:04:01

Subbasin : {STORM-BASINS}.16

Runoff Hydrograph



Subbasin : {STORM-BASINS}.17

Input Data

Area (ac) 0.28
 Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.28	-	0.90
Composite Area & Weighted Runoff Coeff.	0.28		0.90

Time of Concentration

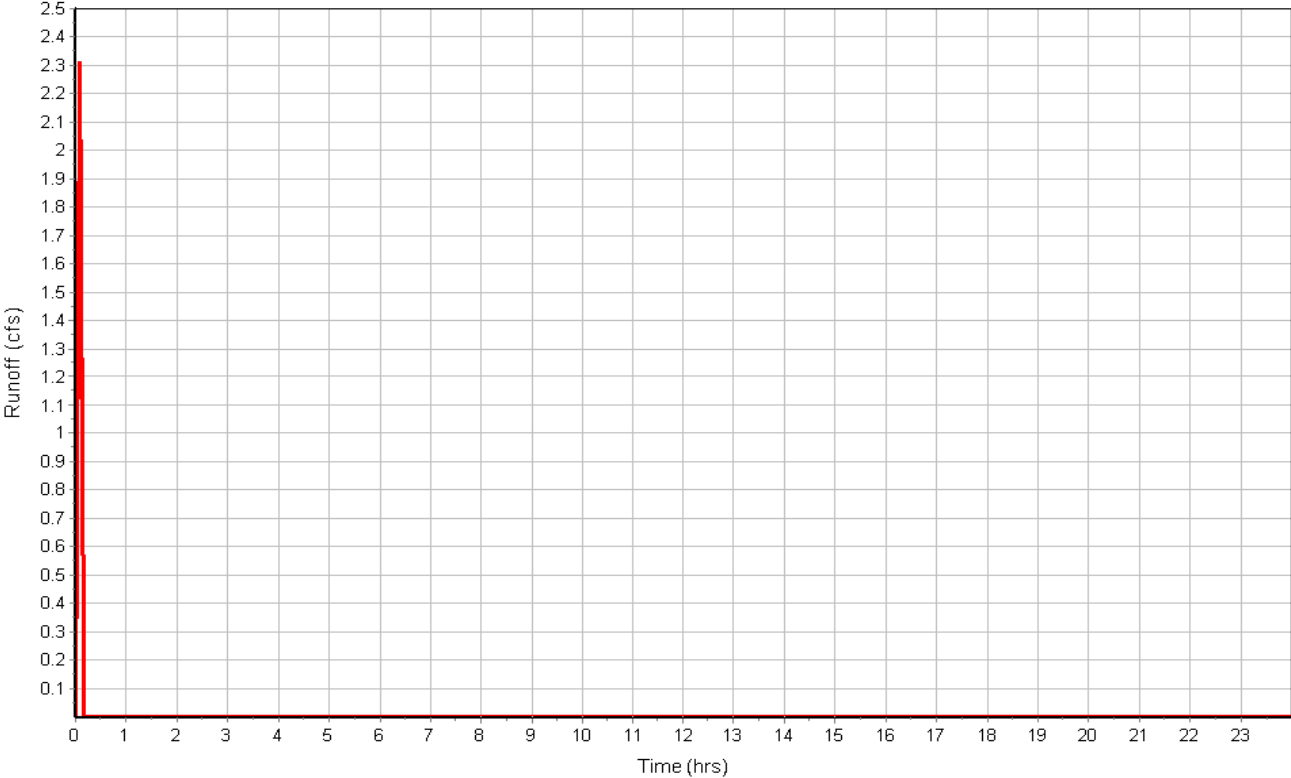
Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	400.01	0.00	0.00
Slope (%) :	3.5	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	3.80	0.00	0.00
Computed Flow Time (min) :	1.75	0.00	0.00
Total TOC (min)1.75			

Subbasin Runoff Results

Total Rainfall (in) 0.78
 Total Runoff (in) 0.70
 Peak Runoff (cfs) 2.31
 Rainfall Intensity 9.300
 Weighted Runoff Coefficient 0.9000
 Time of Concentration (days hh:mm:ss) 0 00:01:45

Subbasin : {STORM-BASINS}.17

Runoff Hydrograph



Subbasin : {STORM-BASINS}.18

Input Data

Area (ac) 3.51
 Weighted Runoff Coefficient 0.6000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	3.51	-	0.60
Composite Area & Weighted Runoff Coeff.	3.51		0.60

Time of Concentration

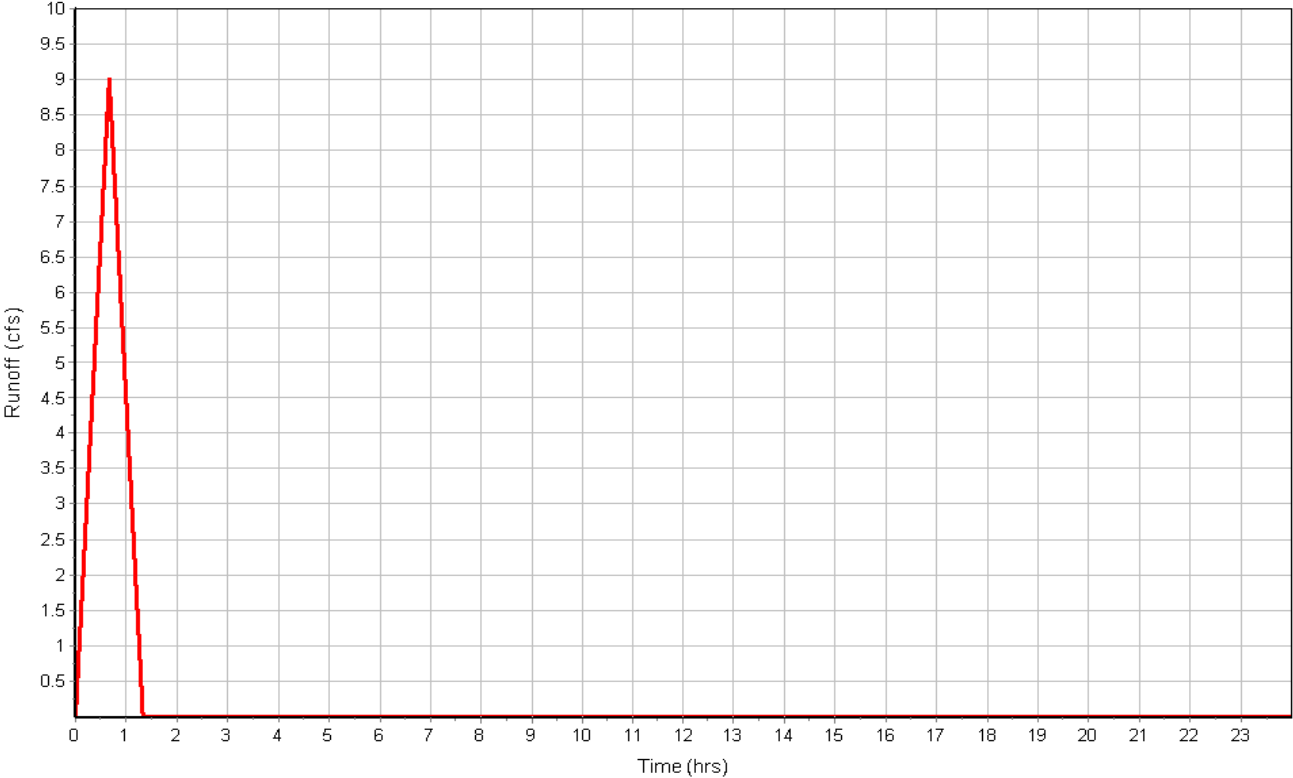
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	723.77	0.00	0.00
Slope (%) :	4	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.30	0.00	0.00
Computed Flow Time (min) :	39.75	0.00	0.00
Total TOC (min)	39.75		

Subbasin Runoff Results

Total Rainfall (in) 2.84
 Total Runoff (in) 1.70
 Peak Runoff (cfs) 9.01
 Rainfall Intensity 4.275
 Weighted Runoff Coefficient 0.6000
 Time of Concentration (days hh:mm:ss) 0 00:39:45

Subbasin : {STORM-BASINS}.18

Runoff Hydrograph



Subbasin : {STORM-BASINS}.19

Input Data

Area (ac) 0.05
Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.05	-	0.90
Composite Area & Weighted Runoff Coeff.	0.05		0.90

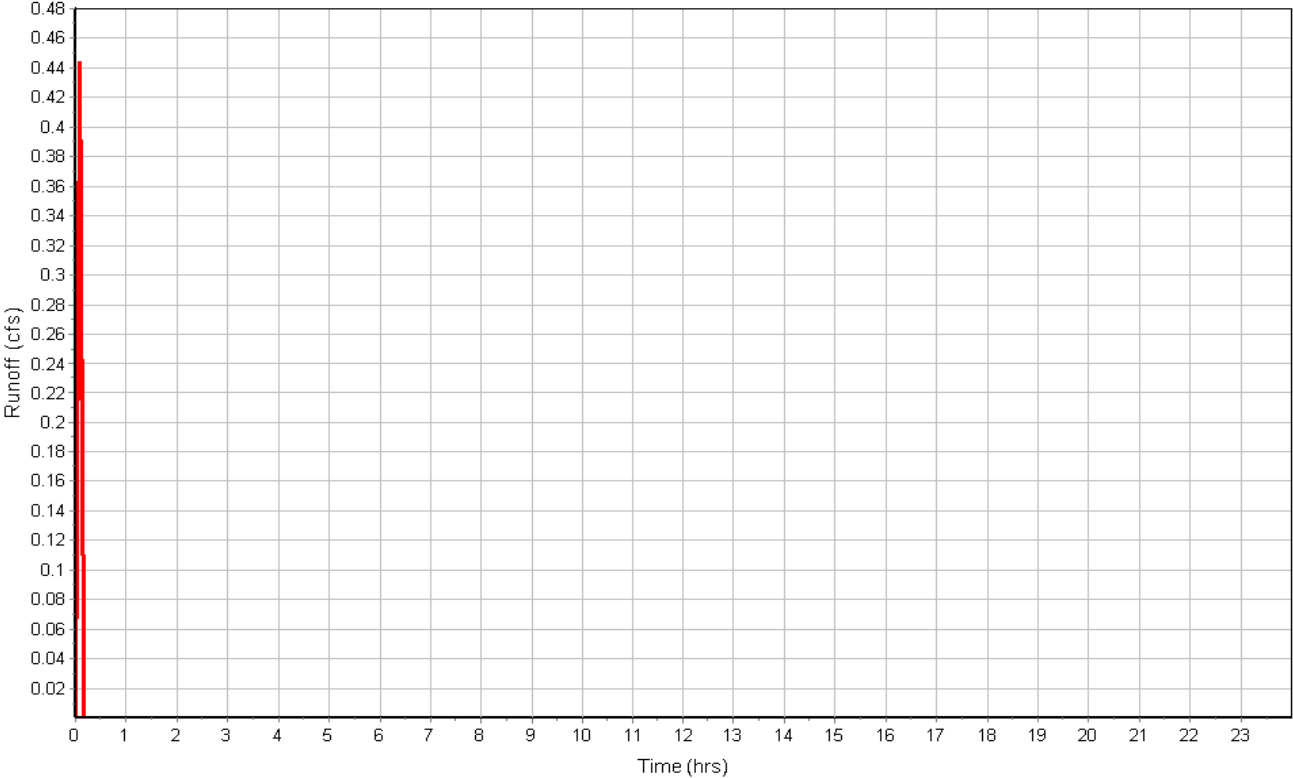
Time of Concentration

Subbasin Runoff Results

Total Rainfall (in) 0.78
Total Runoff (in) 0.70
Peak Runoff (cfs) 0.44
Rainfall Intensity 9.300
Weighted Runoff Coefficient 0.9000
Time of Concentration (days hh:mm:ss) 0 00:00:00

Subbasin : {STORM-BASINS}.19

Runoff Hydrograph



Subbasin : {STORM-BASINS}.2

Input Data

Area (ac) 0.96
 Weighted Runoff Coefficient 0.6300

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.86	-	0.60
-	0.10	-	0.90
Composite Area & Weighted Runoff Coeff.	0.96		0.63

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
	Manning's Roughness :	0.2	0.00
Flow Length (ft) :	606.64	0.00	0.00
Slope (%) :	1.8	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.21	0.00	0.00
Computed Flow Time (min) :	47.50	0.00	0.00

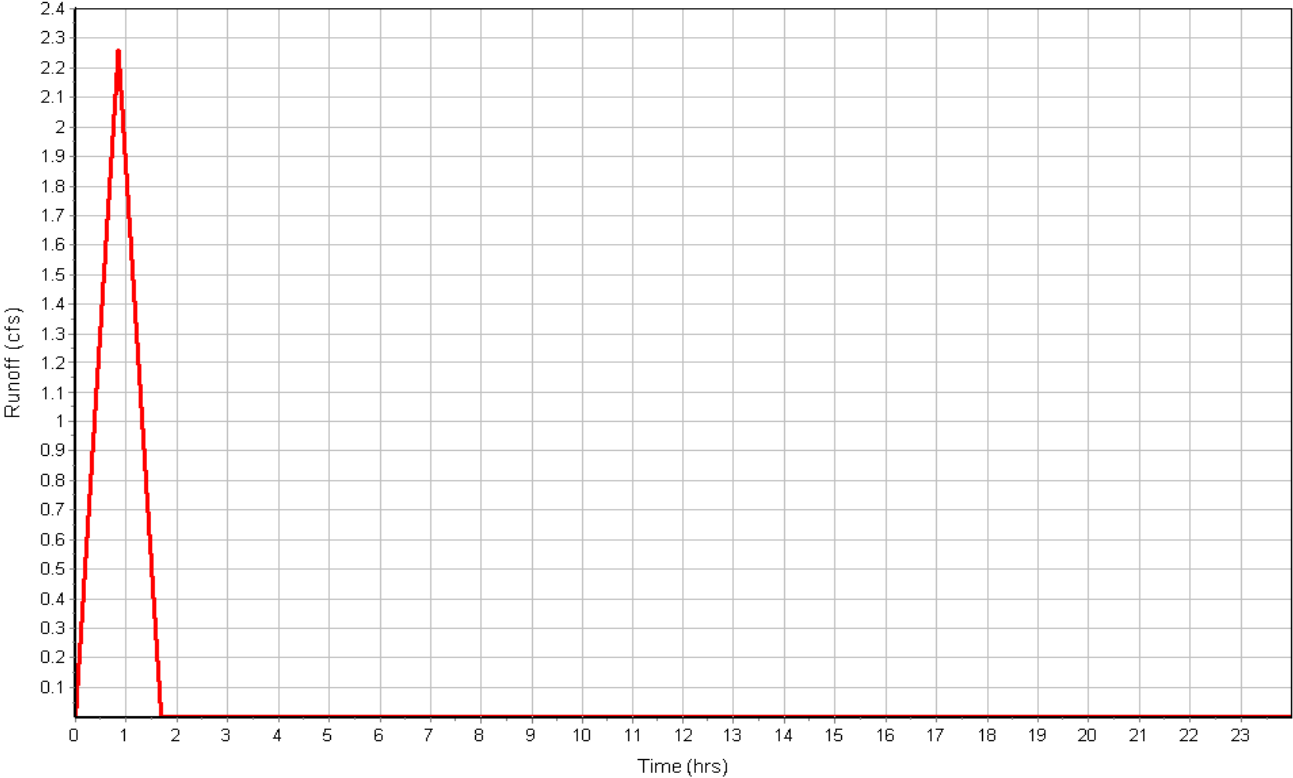
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
	Flow Length (ft) :	533.67	0.00
Slope (%) :	2	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	2.87	0.00	0.00
Computed Flow Time (min) :	3.10	0.00	0.00
Total TOC (min)	50.60		

Subbasin Runoff Results

Total Rainfall (in) 3.16
 Total Runoff (in) 1.99
 Peak Runoff (cfs) 2.26
 Rainfall Intensity 3.738
 Weighted Runoff Coefficient 0.6300
 Time of Concentration (days hh:mm:ss) 0 00:50:36

Subbasin : {STORM-BASINS}.2

Runoff Hydrograph



Subbasin : {STORM-BASINS}.20

Input Data

Area (ac) 0.19
 Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.19	-	0.90
Composite Area & Weighted Runoff Coeff.	0.19		0.90

Time of Concentration

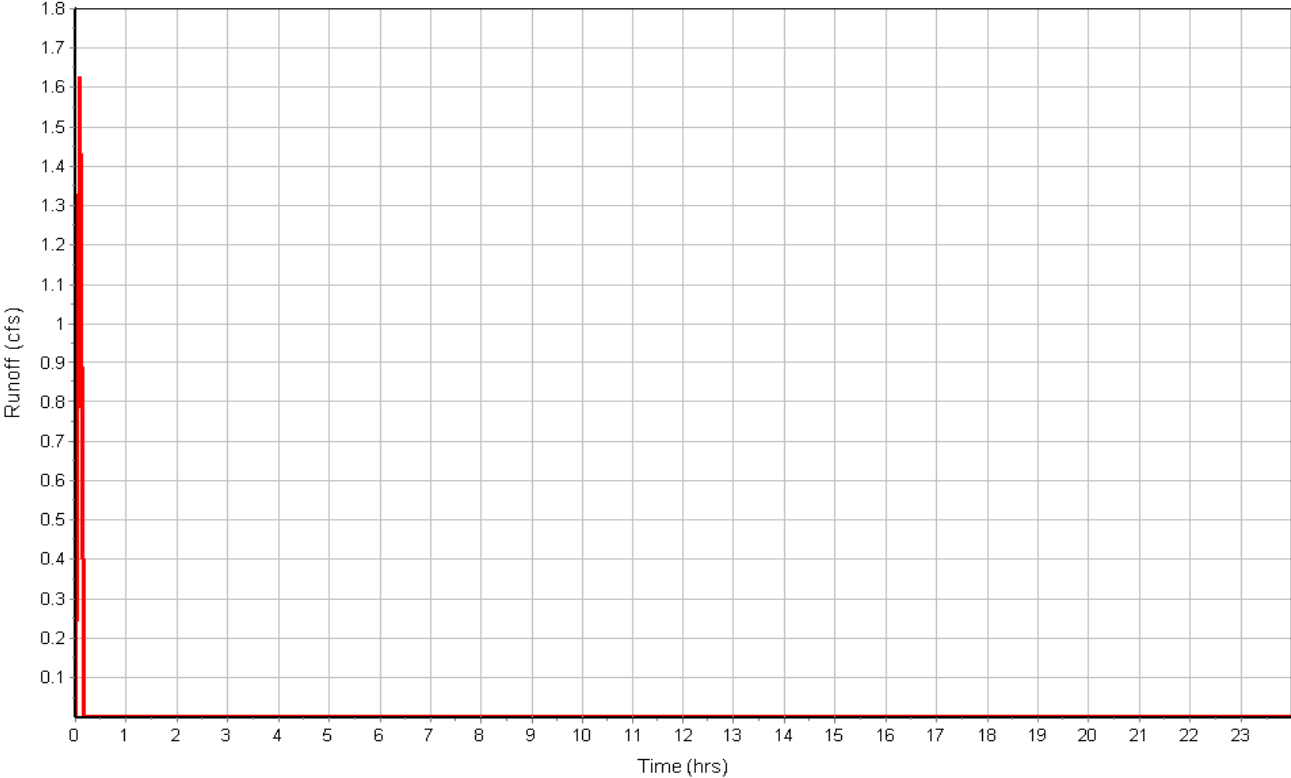
Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	319.14	0.00	0.00
Slope (%) :	2	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	2.87	0.00	0.00
Computed Flow Time (min) :	1.85	0.00	0.00
Total TOC (min)1.85			

Subbasin Runoff Results

Total Rainfall (in) 0.78
 Total Runoff (in) 0.70
 Peak Runoff (cfs) 1.62
 Rainfall Intensity 9.300
 Weighted Runoff Coefficient 0.9000
 Time of Concentration (days hh:mm:ss) 0 00:01:51

Subbasin : {STORM-BASINS}.20

Runoff Hydrograph



Subbasin : {STORM-BASINS}.21

Input Data

Area (ac) 0.22
Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.22	-	0.90
Composite Area & Weighted Runoff Coeff.	0.22		0.90

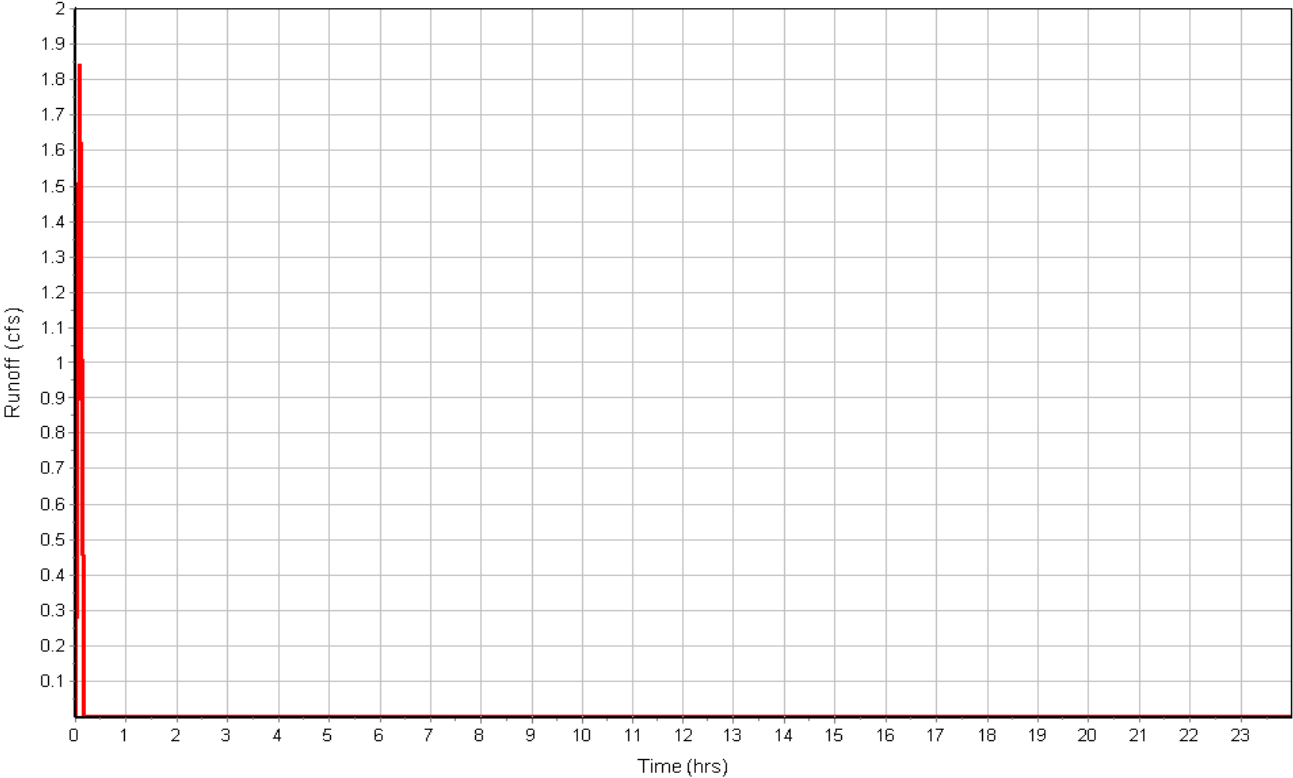
Time of Concentration

Subbasin Runoff Results

Total Rainfall (in) 0.78
Total Runoff (in) 0.70
Peak Runoff (cfs) 1.84
Rainfall Intensity 9.300
Weighted Runoff Coefficient 0.9000
Time of Concentration (days hh:mm:ss) 0 00:00:00

Subbasin : {STORM-BASINS}.21

Runoff Hydrograph



Subbasin : {STORM-BASINS}.22

Input Data

Area (ac) 0.20
Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.20	-	0.90
Composite Area & Weighted Runoff Coeff.	0.20		0.90

Time of Concentration

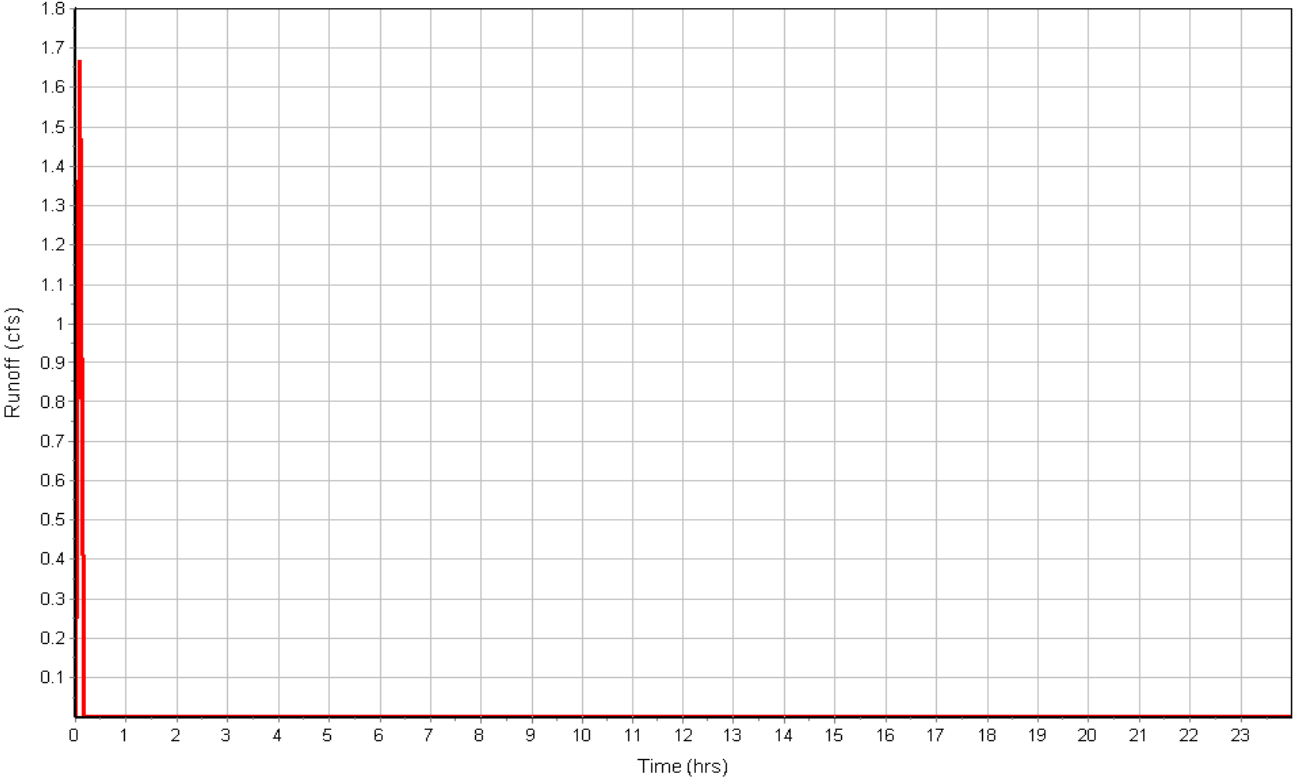
Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	364.92	0.00	0.00
Slope (%) :	3	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	3.52	0.00	0.00
Computed Flow Time (min) :	1.73	0.00	0.00
Total TOC (min)	1.73		

Subbasin Runoff Results

Total Rainfall (in) 0.78
Total Runoff (in) 0.70
Peak Runoff (cfs) 1.67
Rainfall Intensity 9.300
Weighted Runoff Coefficient 0.9000
Time of Concentration (days hh:mm:ss) 0 00:01:44

Subbasin : {STORM-BASINS}.22

Runoff Hydrograph



Subbasin : {STORM-BASINS}.23A

Input Data

Area (ac) 0.88
 Weighted Runoff Coefficient 0.6000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.88	-	0.60
Composite Area & Weighted Runoff Coeff.	0.88		0.60

Time of Concentration

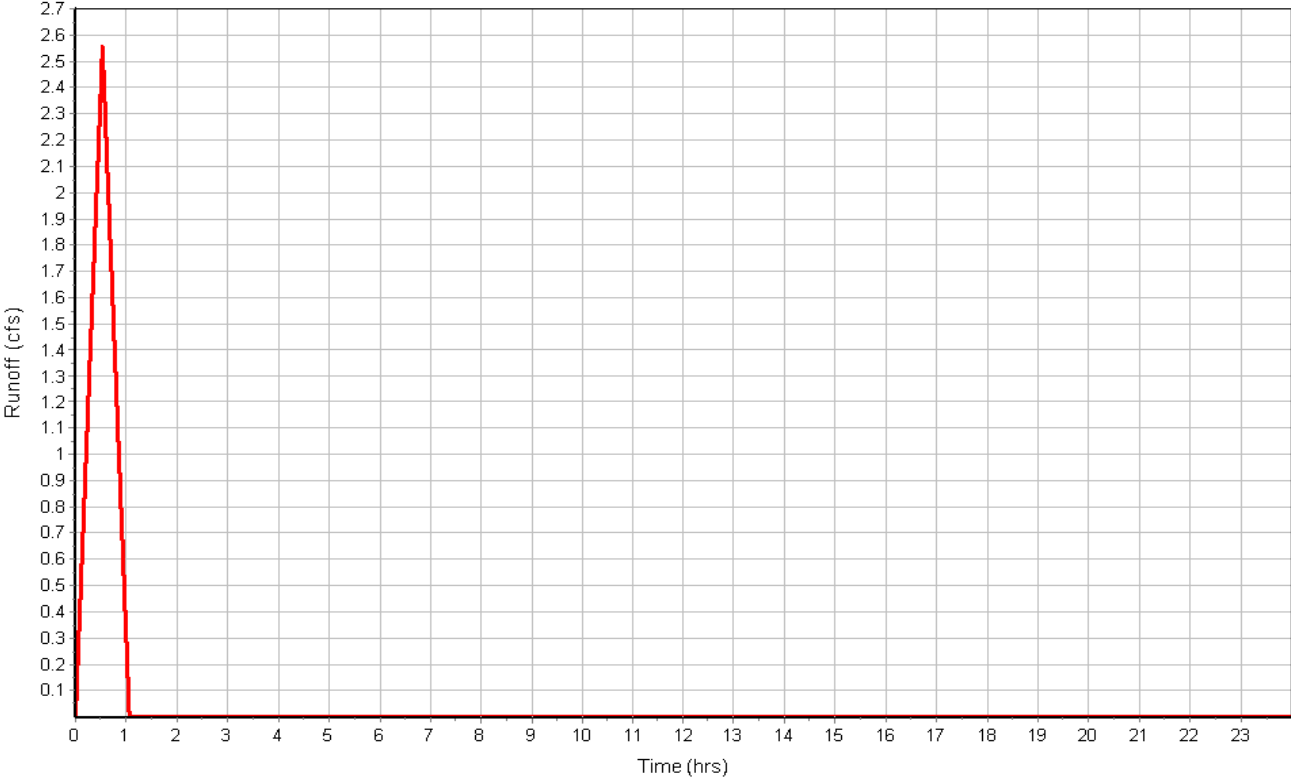
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	476.41	0.00	0.00
Slope (%) :	3	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.25	0.00	0.00
Computed Flow Time (min) :	31.91	0.00	0.00
Total TOC (min)	31.91		

Subbasin Runoff Results

Total Rainfall (in) 2.56
 Total Runoff (in) 1.54
 Peak Runoff (cfs) 2.55
 Rainfall Intensity 4.831
 Weighted Runoff Coefficient 0.6000
 Time of Concentration (days hh:mm:ss) 0 00:31:55

Subbasin : {STORM-BASINS}.23A

Runoff Hydrograph



Subbasin : {STORM-BASINS}.23B

Input Data

Area (ac) 0.21
Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.21	-	0.90
Composite Area & Weighted Runoff Coeff.	0.21		0.90

Time of Concentration

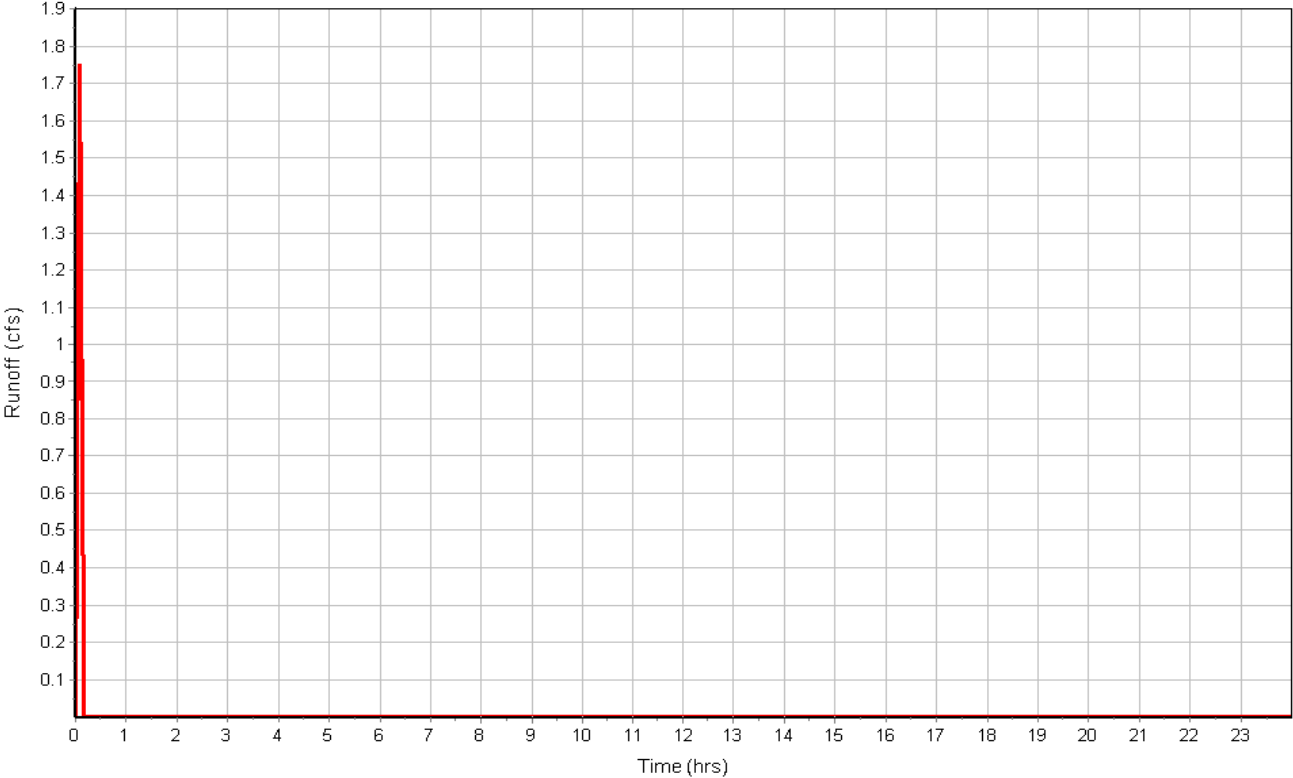
Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	294.20	0.00	0.00
Slope (%) :	2	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	2.87	0.00	0.00
Computed Flow Time (min) :	1.71	0.00	0.00
Total TOC (min)1.71			

Subbasin Runoff Results

Total Rainfall (in) 0.78
Total Runoff (in) 0.70
Peak Runoff (cfs) 1.75
Rainfall Intensity 9.300
Weighted Runoff Coefficient 0.9000
Time of Concentration (days hh:mm:ss) 0 00:01:43

Subbasin : {STORM-BASINS}.23B

Runoff Hydrograph



Subbasin : {STORM-BASINS}.26

Input Data

Area (ac) 1.06
 Weighted Runoff Coefficient 0.6000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	1.06	-	0.60
Composite Area & Weighted Runoff Coeff.	1.06		0.60

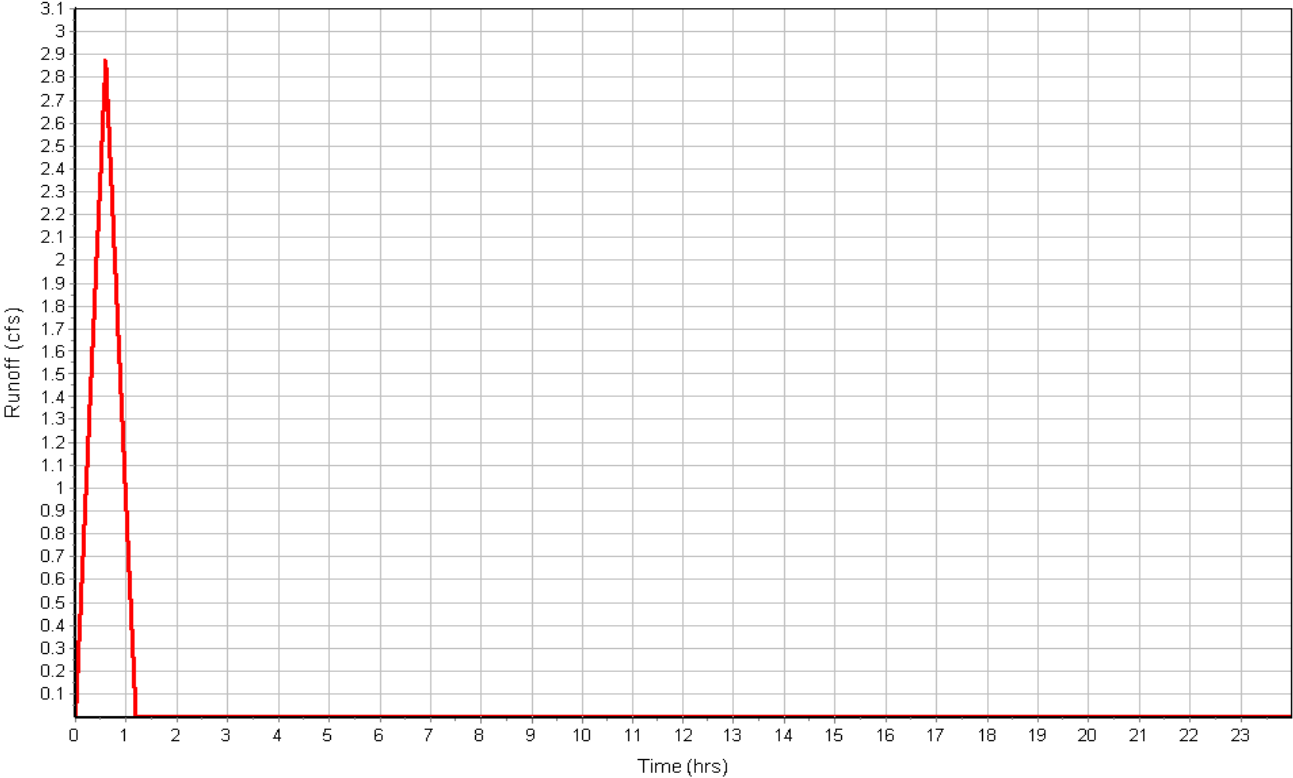
Time of Concentration

Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	361.33	0.00	0.00
Slope (%) :	1.3	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.17	0.00	0.00
Computed Flow Time (min) :	35.74	0.00	0.00
Total TOC (min)	35.74		

Subbasin Runoff Results

Total Rainfall (in) 2.70
 Total Runoff (in) 1.62
 Peak Runoff (cfs) 2.87
 Rainfall Intensity 4.536
 Weighted Runoff Coefficient 0.6000
 Time of Concentration (days hh:mm:ss) 0 00:35:44

Runoff Hydrograph



Subbasin : {STORM-BASINS}.27

Input Data

Area (ac) 0.58
Weighted Runoff Coefficient 0.7200

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.58	-	0.72
Composite Area & Weighted Runoff Coeff.	0.58		0.72

Time of Concentration

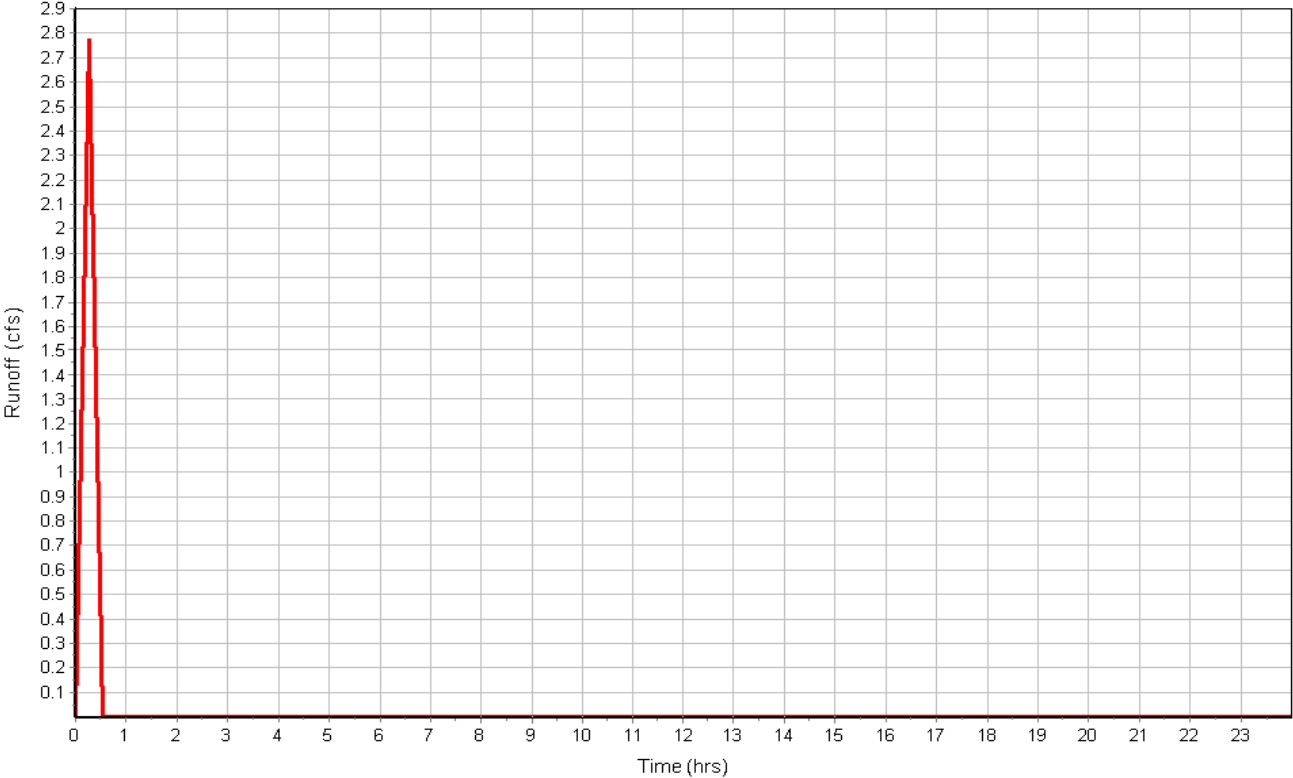
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	200	0.00	0.00
Slope (%) :	3	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.21	0.00	0.00
Computed Flow Time (min) :	15.94	0.00	0.00
Total TOC (min)	15.94		

Subbasin Runoff Results

Total Rainfall (in) 1.77
Total Runoff (in) 1.27
Peak Runoff (cfs) 2.77
Rainfall Intensity 6.619
Weighted Runoff Coefficient 0.7200
Time of Concentration (days hh:mm:ss) 0 00:15:56

Subbasin : {STORM-BASINS}.27

Runoff Hydrograph



Subbasin : {STORM-BASINS}.28

Input Data

Area (ac) 0.22
Weighted Runoff Coefficient 0.7200

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.22	-	0.72
Composite Area & Weighted Runoff Coeff.	0.22		0.72

Time of Concentration

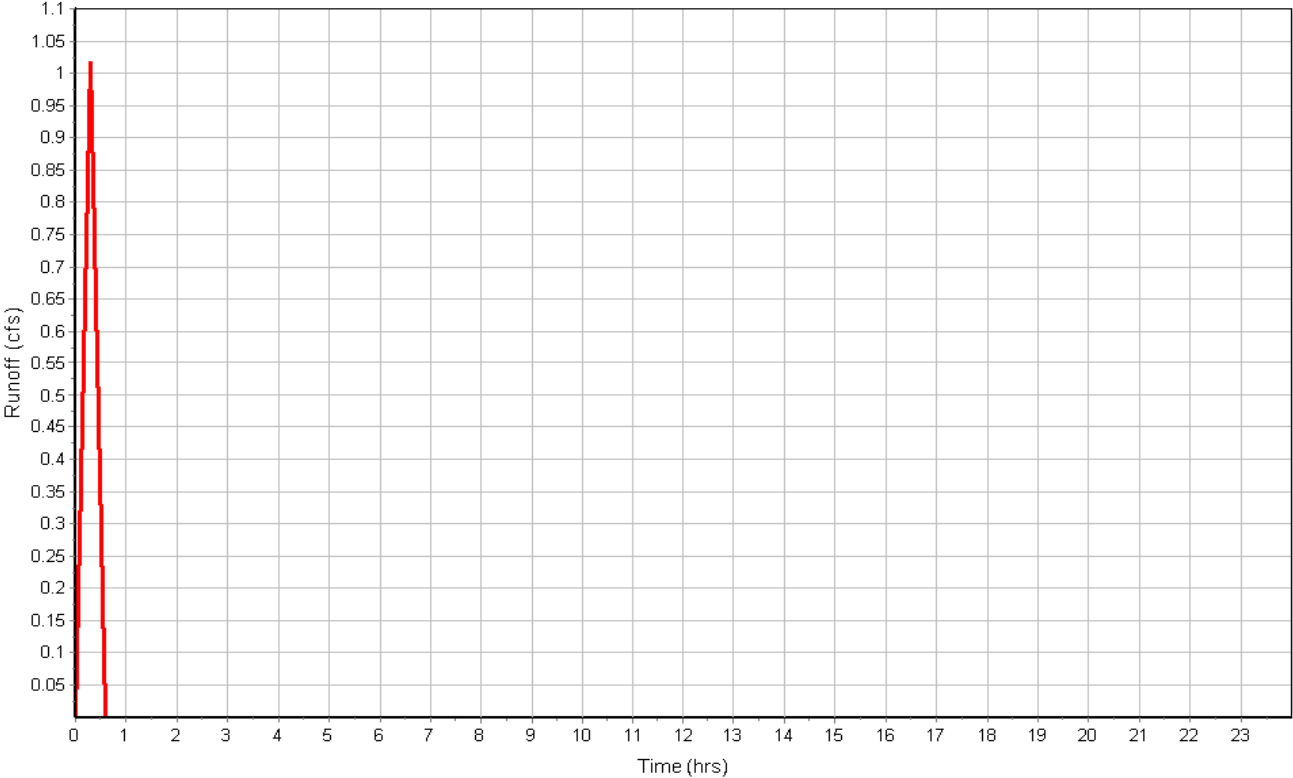
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	185	0.00	0.00
Slope (%) :	2	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.18	0.00	0.00
Computed Flow Time (min) :	17.61	0.00	0.00
Total TOC (min)	17.61		

Subbasin Runoff Results

Total Rainfall (in) 1.87
Total Runoff (in) 1.34
Peak Runoff (cfs) 1.02
Rainfall Intensity 6.333
Weighted Runoff Coefficient 0.7200
Time of Concentration (days hh:mm:ss) 0 00:17:37

Subbasin : {STORM-BASINS}.28

Runoff Hydrograph



Subbasin : {STORM-BASINS}.29

Input Data

Area (ac) 0.15
 Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.15	-	0.90
Composite Area & Weighted Runoff Coeff.	0.15		0.90

Time of Concentration

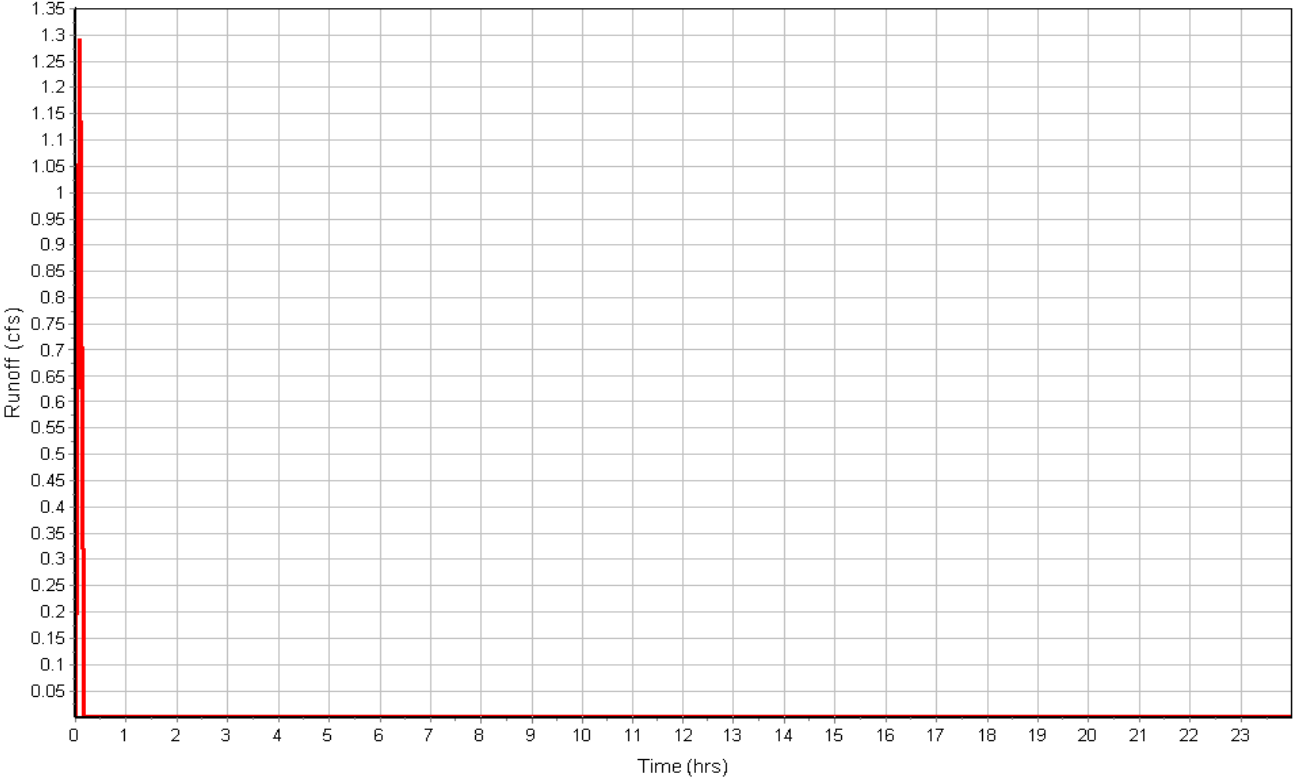
Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	223.61	0.00	0.00
Slope (%) :	2	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	2.87	0.00	0.00
Computed Flow Time (min) :	1.30	0.00	0.00
Total TOC (min)1.30			

Subbasin Runoff Results

Total Rainfall (in) 0.78
 Total Runoff (in) 0.70
 Peak Runoff (cfs) 1.29
 Rainfall Intensity 9.300
 Weighted Runoff Coefficient 0.9000
 Time of Concentration (days hh:mm:ss) 0 00:01:18

Subbasin : {STORM-BASINS}.29

Runoff Hydrograph



Subbasin : {STORM-BASINS}.3

Input Data

Area (ac) 1.34
 Weighted Runoff Coefficient 0.6300

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	1.20	-	0.60
-	0.13	-	0.90
Composite Area & Weighted Runoff Coeff.	1.33		0.63

Time of Concentration

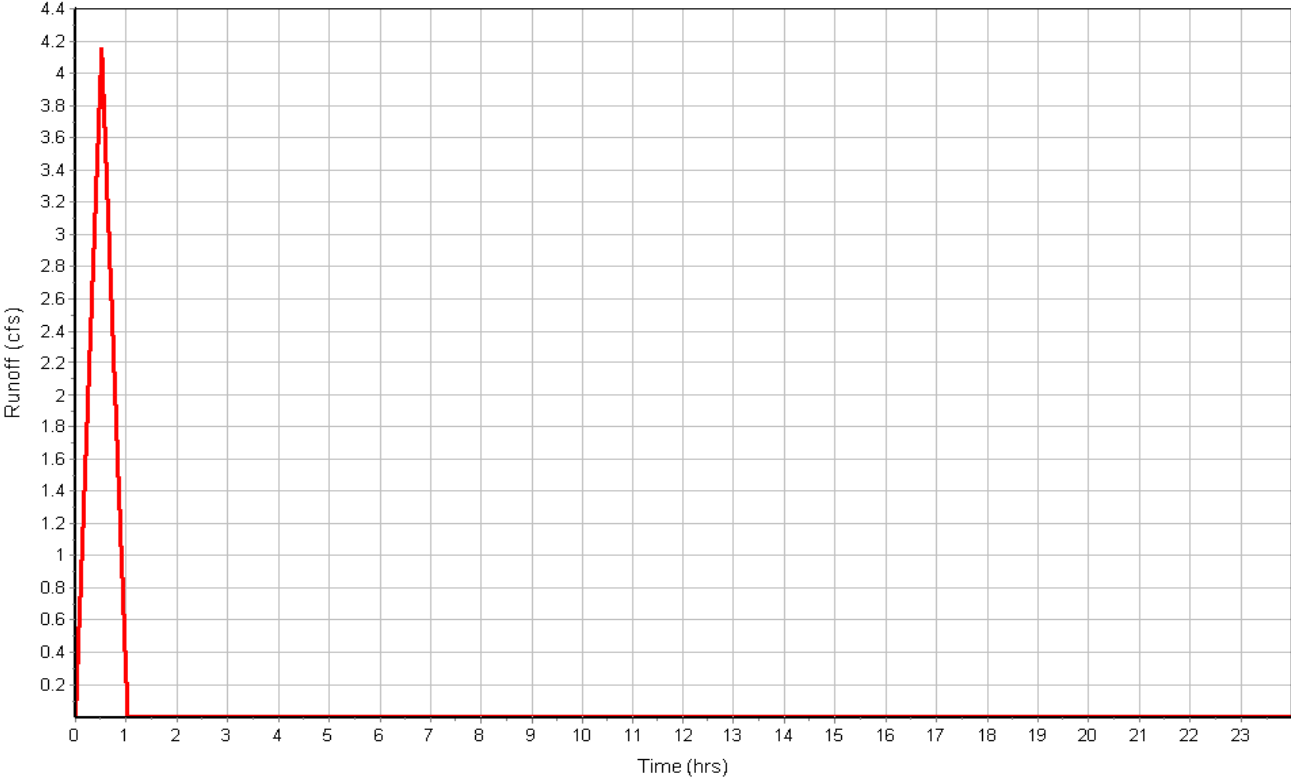
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	545.09	0.00	0.00
Slope (%) :	4.3	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.30	0.00	0.00
Computed Flow Time (min) :	30.78	0.00	0.00
Total TOC (min)	30.78		

Subbasin Runoff Results

Total Rainfall (in) 2.53
 Total Runoff (in) 1.60
 Peak Runoff (cfs) 4.15
 Rainfall Intensity 4.929
 Weighted Runoff Coefficient 0.6300
 Time of Concentration (days hh:mm:ss) 0 00:30:47

Subbasin : {STORM-BASINS}.3

Runoff Hydrograph



Subbasin : {STORM-BASINS}.30

Input Data

Area (ac) 0.12
Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.12	-	0.90
Composite Area & Weighted Runoff Coeff.	0.12		0.90

Time of Concentration

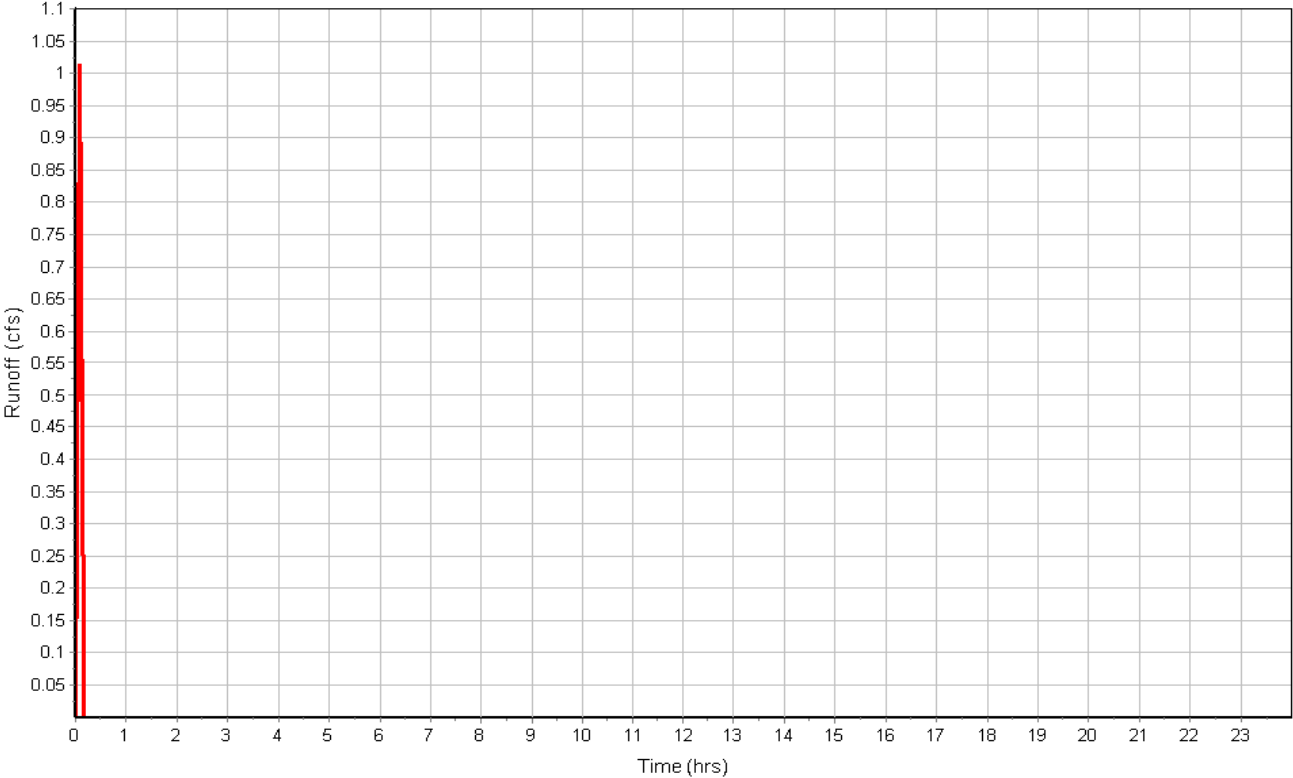
Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	222.61	0.00	0.00
Slope (%) :	2	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	2.87	0.00	0.00
Computed Flow Time (min) :	1.29	0.00	0.00
Total TOC (min)	1.29		

Subbasin Runoff Results

Total Rainfall (in) 0.78
Total Runoff (in) 0.70
Peak Runoff (cfs) 1.01
Rainfall Intensity 9.300
Weighted Runoff Coefficient 0.9000
Time of Concentration (days hh:mm:ss) 0 00:01:17

Subbasin : {STORM-BASINS}.30

Runoff Hydrograph



Subbasin : {STORM-BASINS}.31

Input Data

Area (ac) 0.12
Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.12	-	0.90
Composite Area & Weighted Runoff Coeff.	0.12		0.90

Time of Concentration

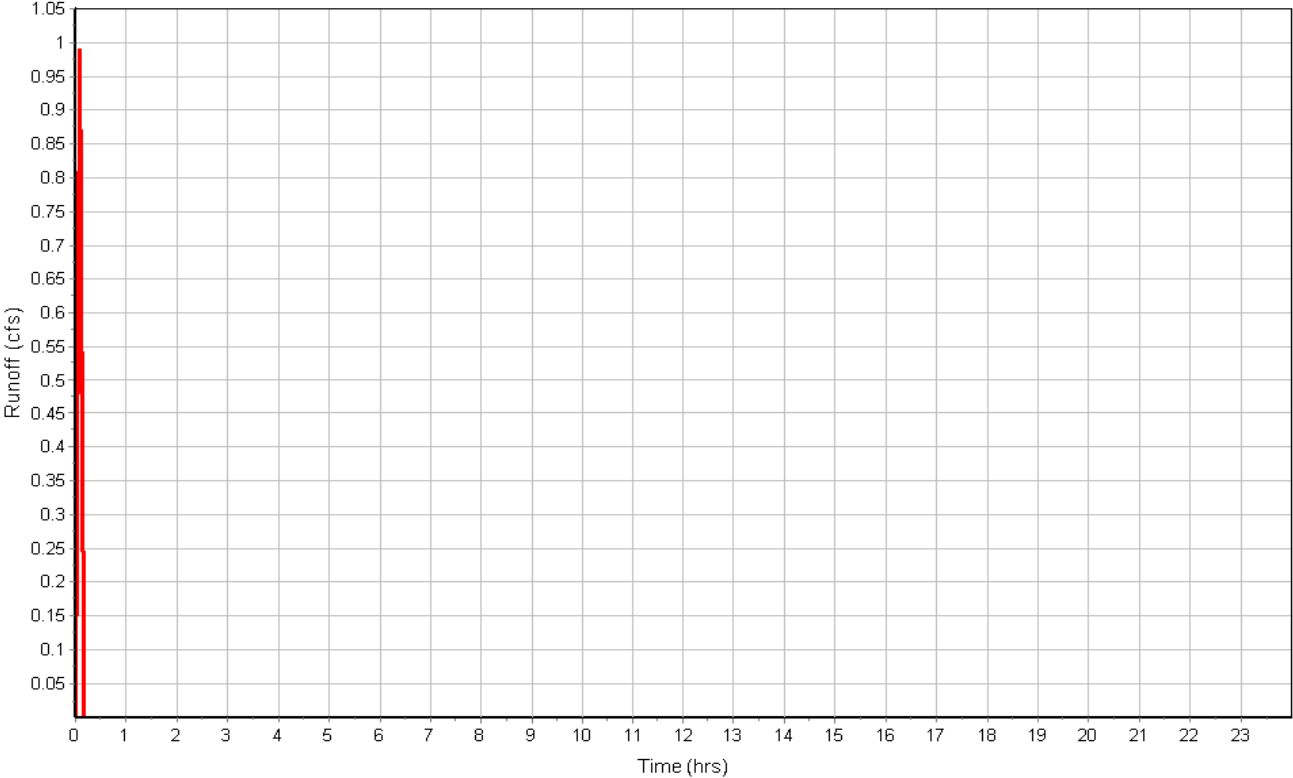
Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	258.85	0.00	0.00
Slope (%) :	2	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	2.87	0.00	0.00
Computed Flow Time (min) :	1.50	0.00	0.00
Total TOC (min)	1.50		

Subbasin Runoff Results

Total Rainfall (in) 0.78
Total Runoff (in) 0.70
Peak Runoff (cfs) 0.99
Rainfall Intensity 9.300
Weighted Runoff Coefficient 0.9000
Time of Concentration (days hh:mm:ss) 0 00:01:30

Subbasin : {STORM-BASINS}.31

Runoff Hydrograph



Subbasin : {STORM-BASINS}.4

Input Data

Area (ac) 0.17
 Weighted Runoff Coefficient 0.7500

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.00	-	0.60
-	0.00	-	0.90
Composite Area & Weighted Runoff Coeff.	0.00		0.75

Time of Concentration

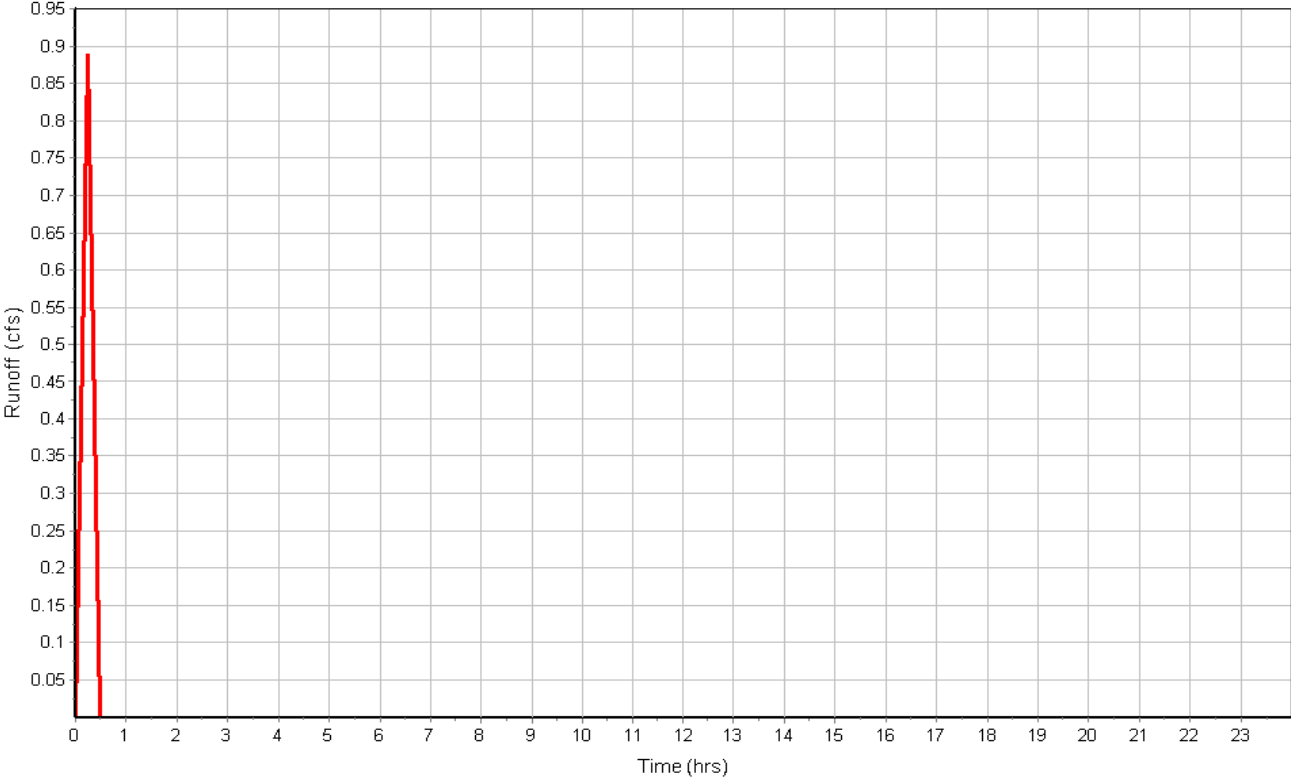
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	211.10	0.00	0.00
Slope (%) :	4.2	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.24	0.00	0.00
Computed Flow Time (min) :	14.55	0.00	0.00
Total TOC (min)	14.55		

Subbasin Runoff Results

Total Rainfall (in) 1.66
 Total Runoff (in) 1.25
 Peak Runoff (cfs) 0.89
 Rainfall Intensity 6.884
 Weighted Runoff Coefficient 0.7500
 Time of Concentration (days hh:mm:ss) 0 00:14:33

Subbasin : {STORM-BASINS}.4

Runoff Hydrograph



Subbasin : {STORM-BASINS}.5

Input Data

Area (ac) 0.46
 Weighted Runoff Coefficient 0.6900

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.32	-	0.60
-	0.14	-	0.90
Composite Area & Weighted Runoff Coeff.	0.46		0.69

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
	Manning's Roughness :	0.2	0.00
Flow Length (ft) :	175.47	0.00	0.00
Slope (%) :	3	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.20	0.00	0.00
Computed Flow Time (min) :	14.35	0.00	0.00

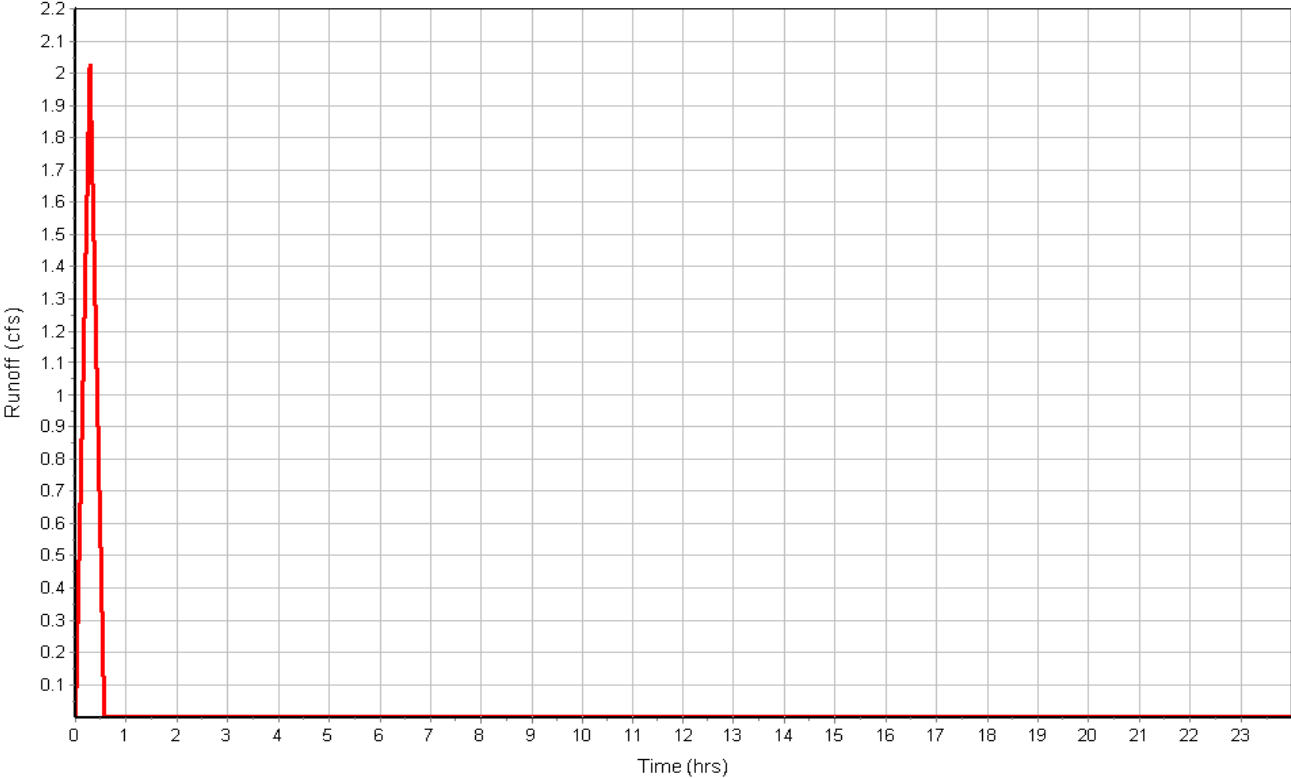
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
	Flow Length (ft) :	576.52	0.00
Slope (%) :	3	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	3.52	0.00	0.00
Computed Flow Time (min) :	2.73	0.00	0.00
Total TOC (min)	17.08		

Subbasin Runoff Results

Total Rainfall (in) 1.82
 Total Runoff (in) 1.26
 Peak Runoff (cfs) 2.02
 Rainfall Intensity 6.419
 Weighted Runoff Coefficient 0.6900
 Time of Concentration (days hh:mm:ss) 0 00:17:05

Subbasin : {STORM-BASINS}.5

Runoff Hydrograph



Subbasin : {STORM-BASINS}.6

Input Data

Area (ac) 1.73
Weighted Runoff Coefficient 0.6000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	1.73	-	0.60
Composite Area & Weighted Runoff Coeff.	1.73		0.60

Time of Concentration

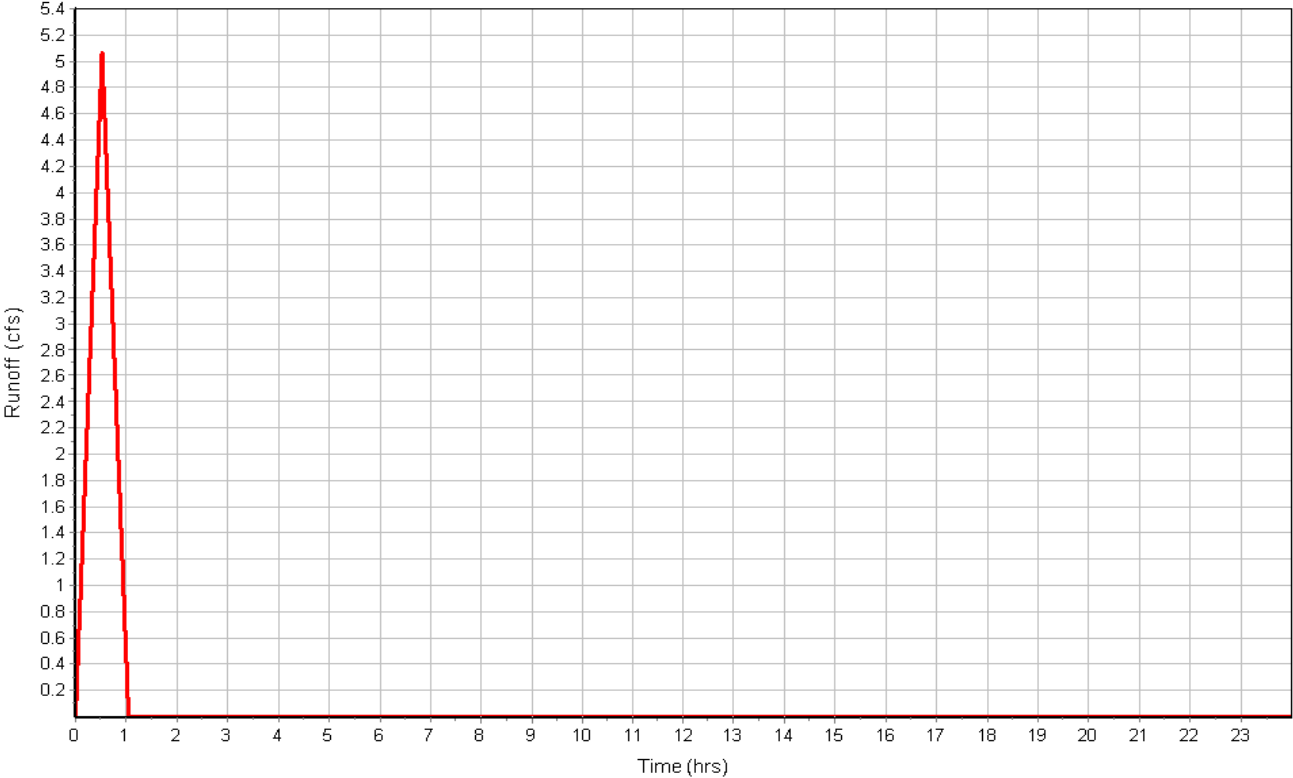
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	501.59	0.00	0.00
Slope (%) :	3.5	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.27	0.00	0.00
Computed Flow Time (min) :	31.27	0.00	0.00
Total TOC (min)	31.27		

Subbasin Runoff Results

Total Rainfall (in) 2.55
Total Runoff (in) 1.53
Peak Runoff (cfs) 5.06
Rainfall Intensity 4.886
Weighted Runoff Coefficient 0.6000
Time of Concentration (days hh:mm:ss) 0 00:31:16

Subbasin : {STORM-BASINS}.6

Runoff Hydrograph



Subbasin : {STORM-BASINS}.7A

Input Data

Area (ac) 0.38
 Weighted Runoff Coefficient 0.6600

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.30	-	0.60
-	0.08	-	0.90
Composite Area & Weighted Runoff Coeff.	0.38		0.66

Time of Concentration

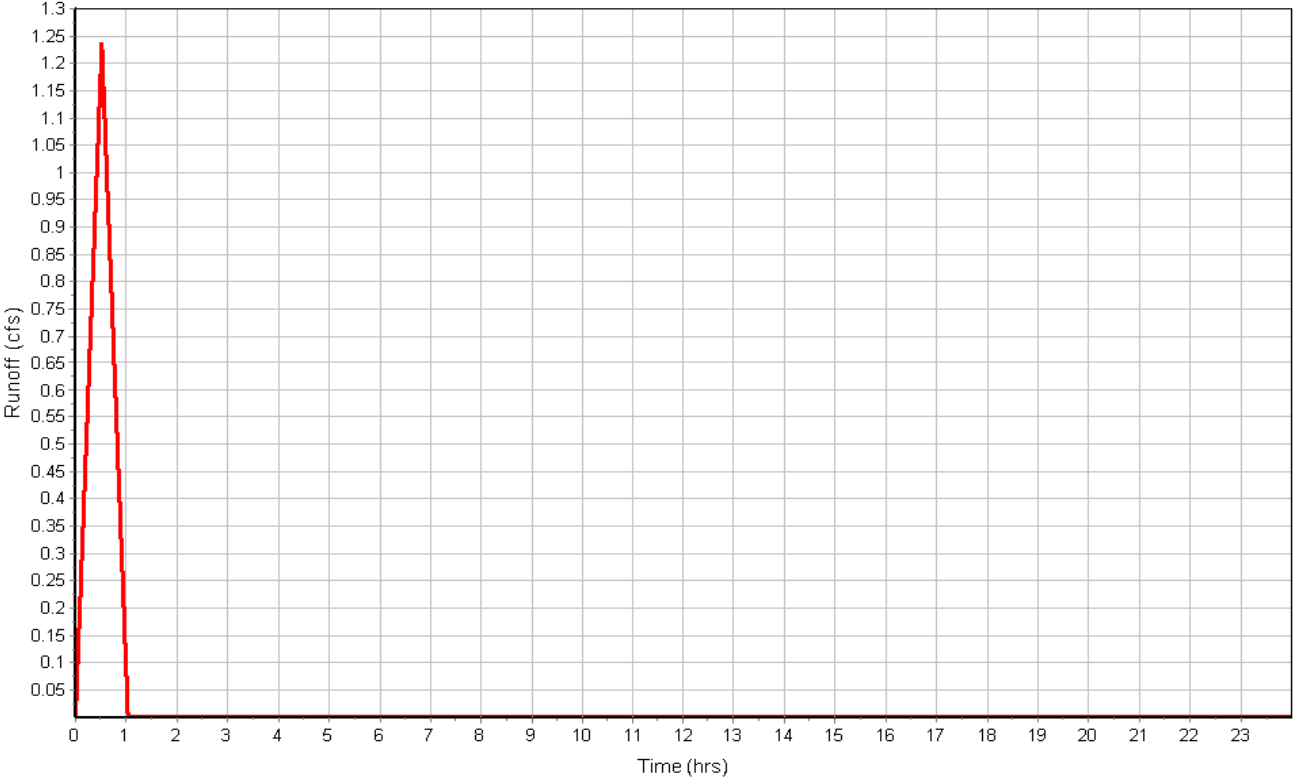
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	419.02	0.00	0.00
Slope (%) :	2.5	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.23	0.00	0.00
Computed Flow Time (min) :	30.98	0.00	0.00
Total TOC (min)	30.98		

Subbasin Runoff Results

Total Rainfall (in) 2.54
 Total Runoff (in) 1.68
 Peak Runoff (cfs) 1.24
 Rainfall Intensity 4.911
 Weighted Runoff Coefficient 0.6600
 Time of Concentration (days hh:mm:ss) 0 00:30:59

Subbasin : {STORM-BASINS}.7A

Runoff Hydrograph



Subbasin : {STORM-BASINS}.7B

Input Data

Area (ac) 0.28
 Weighted Runoff Coefficient 0.7200

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.17	-	0.60
-	0.11	-	0.90
Composite Area & Weighted Runoff Coeff.	0.28		0.72

Time of Concentration

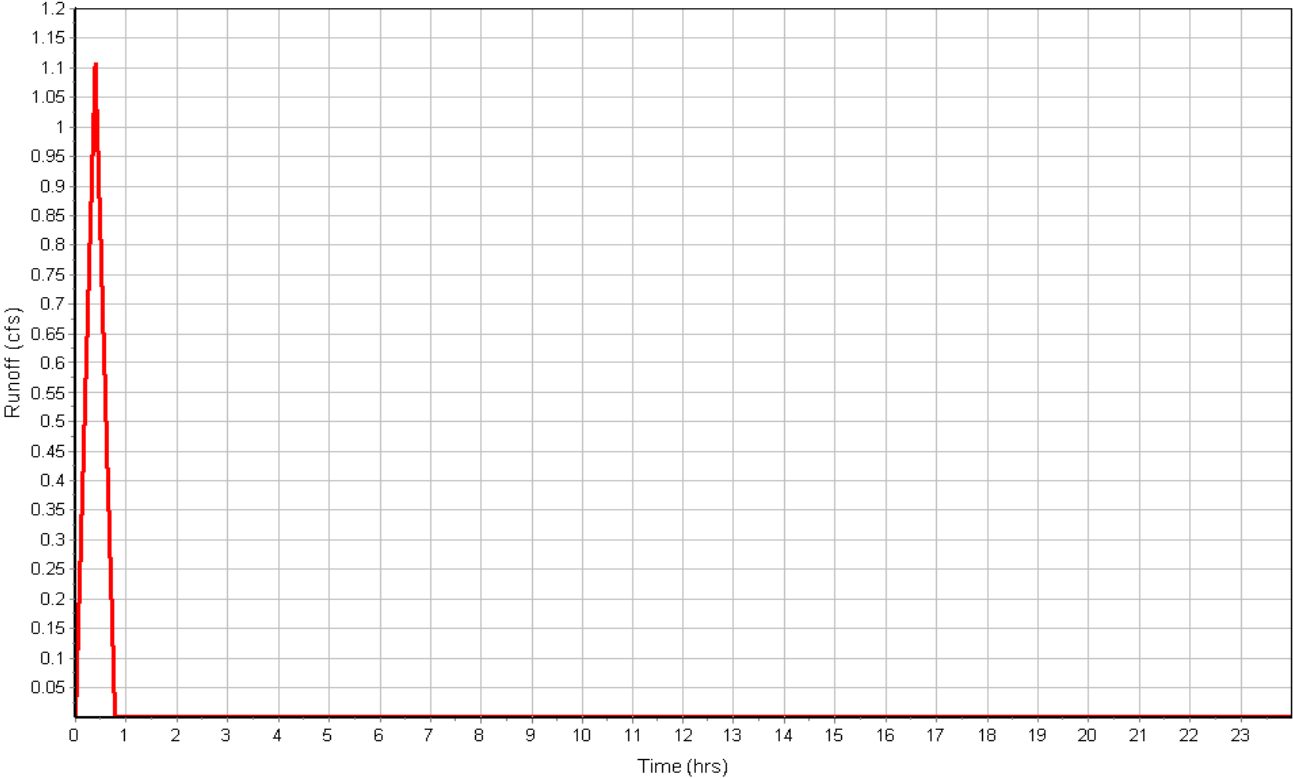
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	282.86	0.00	0.00
Slope (%) :	2.3	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.20	0.00	0.00
Computed Flow Time (min) :	23.39	0.00	0.00
Total TOC (min)	23.39		

Subbasin Runoff Results

Total Rainfall (in) 2.17
 Total Runoff (in) 1.56
 Peak Runoff (cfs) 1.11
 Rainfall Intensity 5.584
 Weighted Runoff Coefficient 0.7200
 Time of Concentration (days hh:mm:ss) 0 00:23:23

Subbasin : {STORM-BASINS}.7B

Runoff Hydrograph



Subbasin : {STORM-BASINS}.8

Input Data

Area (ac) 2.66
 Weighted Runoff Coefficient 0.6000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	2.66	-	0.60
Composite Area & Weighted Runoff Coeff.	2.66		0.60

Time of Concentration

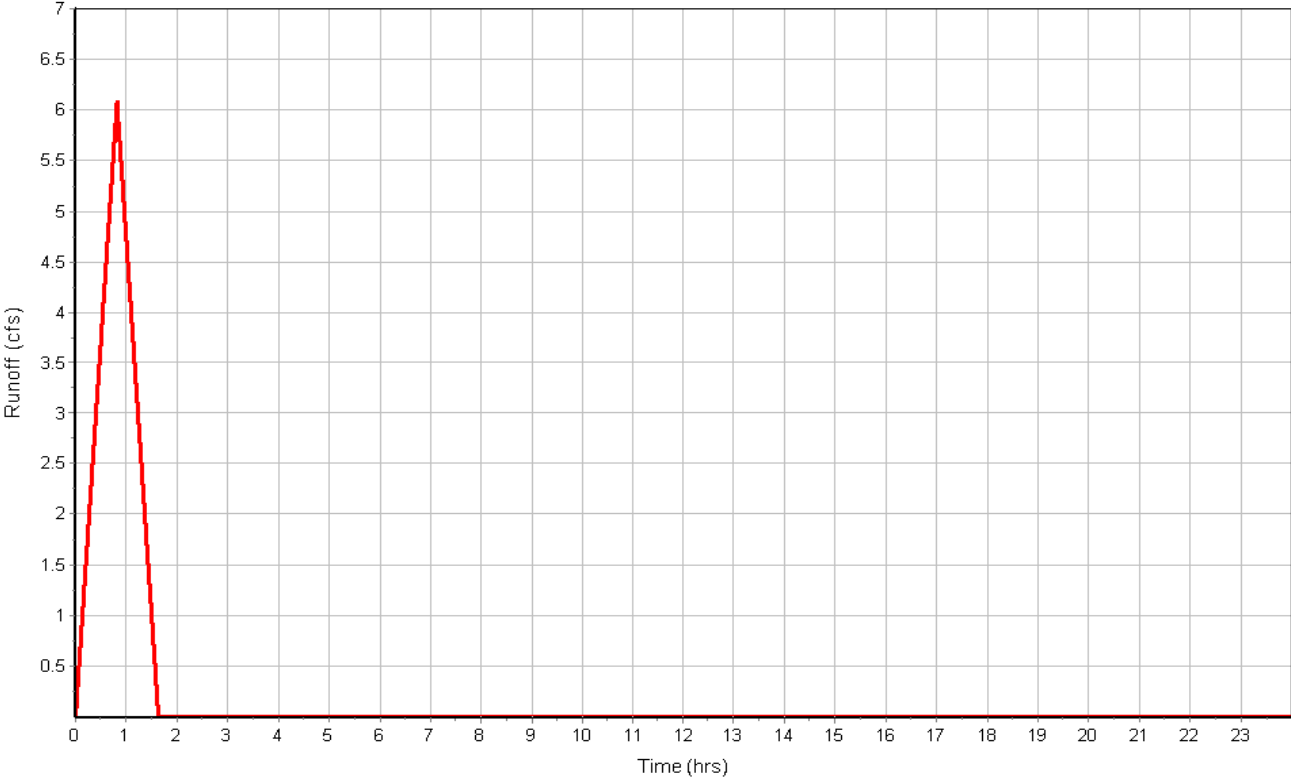
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	801.79	0.00	0.00
Slope (%) :	2.9	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.27	0.00	0.00
Computed Flow Time (min) :	49.06	0.00	0.00
Total TOC (min)	49.06		

Subbasin Runoff Results

Total Rainfall (in) 3.11
 Total Runoff (in) 1.86
 Peak Runoff (cfs) 6.08
 Rainfall Intensity 3.803
 Weighted Runoff Coefficient 0.6000
 Time of Concentration (days hh:mm:ss) 0 00:49:04

Subbasin : {STORM-BASINS}.8

Runoff Hydrograph



Subbasin : {STORM-BASINS}.9

Input Data

Area (ac) 0.06
Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.06	-	0.90
Composite Area & Weighted Runoff Coeff.	0.06		0.90

Time of Concentration

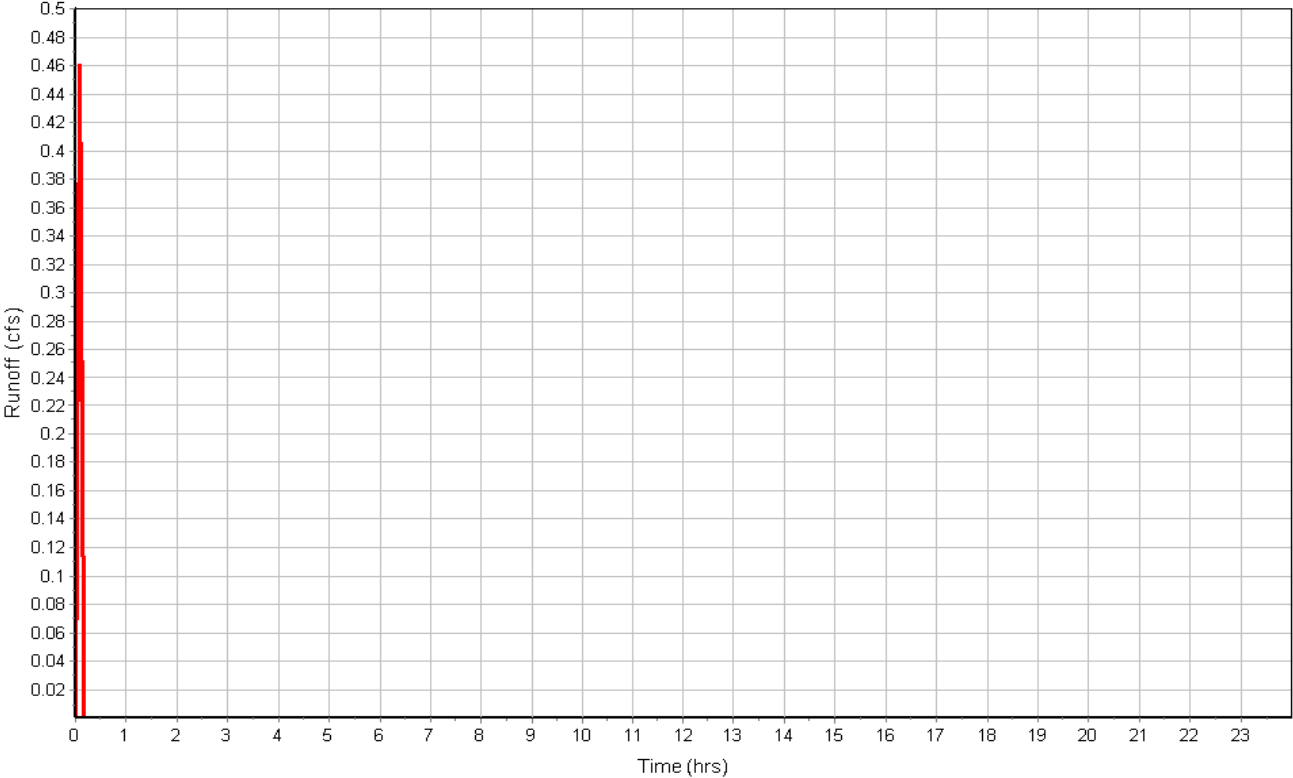
Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	93.99	0.00	0.00
Slope (%) :	2	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	2.87	0.00	0.00
Computed Flow Time (min) :	0.55	0.00	0.00
Total TOC (min)0.55			

Subbasin Runoff Results

Total Rainfall (in) 0.78
Total Runoff (in) 0.70
Peak Runoff (cfs) 0.46
Rainfall Intensity 9.300
Weighted Runoff Coefficient 0.9000
Time of Concentration (days hh:mm:ss) 0 00:00:33

Subbasin : {STORM-BASINS}.9

Runoff Hydrograph



Junction Input

SN Element ID	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Ground/Rim (Max) Offset (ft)	Initial Water Elevation (ft)	Initial Water Depth (ft)	Surcharge Elevation (ft)	Surcharge Depth (ft)	Ponded Area (ft ²)	Minimum Pipe Cover (in)
1 CB-I1	476.43	480.49	4.06	476.43	0.00	480.49	0.00	0.00	24.66
2 CONNECT-G	483.22	485.22	2.00	483.22	0.00	485.22	-0.01	0.00	0.00
3 CONNECT-I	483.38	489.38	6.00	483.38	0.00	489.38	0.00	0.00	54.00
4 FES-H2	482.37	485.12	2.75	482.37	0.00	485.12	0.00	0.00	9.00
5 Jun-01	473.29	477.00	3.71	473.29	0.00	477.00	0.00	0.00	0.00

Junction Results

SN Element ID	Peak Inflow	Peak Lateral Inflow	Max HGL Elevation Attained	Max HGL Depth Attained	Max Surcharge Depth Attained	Min Freeboard Attained	Average HGL Elevation Attained	Average HGL Depth Attained	Time of Max HGL Occurrence	Time of Peak Flooding Occurrence	Total Flooded Volume	Total Time Flooded
	(cfs)	(cfs)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(days hh:mm)	(days hh:mm)	(ac-in)	(min)
1 CB-I1	10.61	0.00	477.62	1.19	0.00	2.86	476.48	0.05	0 00:40	0 00:00	0.00	0.00
2 CONNECT-G	7.72	0.00	484.16	0.94	0.00	1.07	483.25	0.03	0 00:31	0 00:00	0.00	0.00
3 CONNECT-I	5.05	0.00	483.94	0.56	0.00	5.44	483.39	0.01	0 00:05	0 00:00	0.00	0.00
4 FES-H2	19.74	0.00	483.44	1.07	0.00	1.68	482.39	0.02	0 00:06	0 00:00	0.00	0.00
5 Jun-01	24.21	0.00	475.00	1.71	0.00	2.00	473.41	0.12	0 00:53	0 00:00	0.00	0.00

Channel Input

SN	Element ID	Length (ft)	Inlet Invert Elevation (ft)	Inlet Invert Offset (ft)	Outlet Invert Elevation (ft)	Outlet Invert Offset (ft)	Total Drop (ft)	Average Slope (%)	Shape	Height (ft)	Width (ft)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cfs)	Flap Gate
1	Gutter-05	200.35	495.00	4.05	487.00	2.90	8.00	3.9900	User-Defined	0.500	14.000	0.0130	0.5000	0.5000	0.0000	0.00	No
2	Gutter-06	200.99	495.00	4.37	487.00	3.22	8.00	3.9800	User-Defined	0.500	14.000	0.0130	0.5000	0.5000	0.0000	0.00	No
3	Gutter-07	239.28	487.00	3.22	485.61	3.25	1.39	0.5800	User-Defined	0.500	14.000	0.0130	0.5000	0.5000	0.0000	0.00	No
4	Gutter-08	240.40	485.61	3.25	480.15	3.25	5.46	2.2700	User-Defined	0.500	14.000	0.0320	0.5000	0.5000	0.0000	0.00	No
5	Gutter-09	57.48	480.15	3.25	478.65	3.80	1.50	2.6100	User-Defined	0.500	14.000	0.0320	0.5000	0.5000	0.0000	0.00	No
6	Gutter-10	192.99	480.66	4.57	478.79	3.94	1.87	0.9700	User-Defined	0.500	14.000	0.0320	0.5000	0.5000	0.0000	0.00	No
7	Gutter-12	213.95	483.97	4.97	479.50	2.59	4.47	2.0900	User-Defined	0.500	14.000	0.0320	0.5000	0.5000	0.0000	0.00	No
8	Gutter-13	213.94	491.00	4.00	483.97	4.97	7.03	3.2900	User-Defined	0.500	14.000	0.0320	0.5000	0.5000	0.0000	0.00	No
9	Gutter-14	201.82	500.50	3.77	491.00	4.00	9.50	4.7100	User-Defined	0.500	14.000	0.0320	0.5000	0.5000	0.0000	0.00	No
10	Gutter-15	201.21	500.50	2.90	491.00	3.43	9.50	4.7200	User-Defined	0.500	14.000	0.0320	0.5000	0.5000	0.0000	0.00	No
11	Gutter-16	425.27	491.00	3.43	482.00	3.93	9.00	2.1200	User-Defined	0.500	14.000	0.0320	0.5000	0.5000	0.0000	0.00	No
12	Gutter-17	292.35	485.12	1.74	480.66	4.57	4.46	1.5200	User-Defined	0.500	14.000	0.0320	0.5000	0.5000	0.0000	0.00	No
13	Gutter-23	587.46	487.00	2.90	479.00	4.50	8.00	1.3600	User-Defined	0.500	14.000	0.0320	0.5000	0.5000	0.0000	0.00	No
14	Gutter-26	57.06	490.37	6.49	485.12	1.74	5.25	9.2000	User-Defined	0.500	14.000	0.0320	0.5000	0.5000	0.0000	0.00	No

Channel Results

SN Element ID	Peak Flow	Time of Peak Flow Occurrence	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Travel Time	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Froude Number	Reported Condition
	(cfs)	(days hh:mm)	(cfs)		(ft/sec)	(min)	(ft)		(min)		
1 Gutter-05	0.43	0 00:16	9.52	0.05	3.44	0.97	0.15	0.31	0.00		
2 Gutter-06	1.25	0 00:18	9.50	0.13	3.98	0.84	0.23	0.46	0.00		
3 Gutter-07	1.26	0 00:33	3.83	0.33	1.85	2.16	0.32	0.65	0.00		
4 Gutter-08	0.05	0 00:37	7.18	0.01	1.93	2.08	0.07	0.14	0.00		
5 Gutter-09	0.00	0 00:00	7.33	0.00	0.00		0.00	0.00	0.00		
6 Gutter-10	0.22	0 00:07	4.69	0.05	2.52	1.28	0.15	0.29	0.00		
7 Gutter-12	0.14	0 00:30	6.51	0.02	1.99	1.79	0.11	0.23	0.00		
8 Gutter-13	0.00	0 00:00	9.03	0.00	0.00		0.00	0.00	0.00		
9 Gutter-14	0.16	0 00:06	10.29	0.02	4.01	0.84	0.10	0.20	0.00		
10 Gutter-15	0.40	0 00:06	10.48	0.04	4.65	0.72	0.14	0.28	0.00		
11 Gutter-16	0.00	0 00:06	7.04	0.00	0.00		0.00	0.01	0.00		
12 Gutter-17	0.29	0 00:20	5.88	0.05	2.28	2.14	0.15	0.31	0.00		
13 Gutter-23	0.56	0 00:36	5.55	0.10	2.75	3.56	0.20	0.41	0.00		
14 Gutter-26	1.08	0 00:16	14.45	0.07	3.44	0.28	0.19	0.37	0.00		

Pipe Input

SN Element ID	Length (ft)	Inlet Invert Elevation (ft)	Inlet Invert Offset (ft)	Outlet Invert Elevation (ft)	Outlet Invert Offset (ft)	Total Drop (ft)	Average Pipe Slope (%)	Pipe Shape	Pipe Diameter or Height (in)	Pipe Width (in)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cfs)	Flap Gate	No. of Barrels
1 ST-C1	92.51	483.78	0.00	483.22	0.00	0.56	0.6000	CIRCULAR	24.000	24.000	0.0130	0.5000	0.0000	0.0000	0.00	No	1
2 ST-C2	200.00	490.63	0.00	483.88	0.10	6.75	3.3800	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
3 ST-C3	32.02	490.95	0.00	490.63	0.00	0.32	1.0000	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
4 ST-CS1	24.64	473.29	0.00	473.16	0.00	0.13	0.5300	CIRCULAR	30.000	30.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
5 ST-D1	32.02	484.10	0.00	483.88	0.10	0.22	0.6900	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
6 ST-E1 (2)	133.90	487.00	0.00	483.38	0.00	3.62	2.7000	CIRCULAR	18.000	18.000	0.0130	0.5000	0.0000	0.0000	0.00	No	1
7 ST-E2 (EXIST)	200.00	496.73	0.00	487.10	0.10	9.63	4.8100	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
8 ST-E3 (EXIST)	32.02	497.60	0.00	496.83	0.10	0.77	2.4000	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
9 ST-F1 (EXIST)	32.02	487.57	0.00	487.10	0.10	0.47	1.4600	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
10 ST-G1	72.10	474.50	0.00	473.92	0.63	0.58	0.8000	CIRCULAR	30.000	30.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
11 ST-G2	31.99	474.85	0.00	474.50	0.00	0.35	1.0900	CIRCULAR	30.000	30.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
12 ST-G3	49.09	476.90	0.00	474.95	0.10	1.95	3.9700	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
13 ST-G4	238.61	482.36	0.00	476.90	0.00	5.46	2.2900	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
14 ST-G5	145.74	483.22	0.00	482.35	-0.01	0.88	0.6000	CIRCULAR	24.000	24.000	0.0130	0.0000	0.5000	0.0000	0.00	No	1
15 ST-H1	190.63	476.09	0.00	474.95	0.10	1.14	0.6000	CIRCULAR	30.000	30.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
16 ST-H2	252.90	482.37	0.00	476.19	0.10	6.18	2.4400	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
17 ST-H2A	37.10	483.38	0.00	482.37	0.00	1.01	2.7200	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
18 ST-H3	48.08	483.88	0.00	483.38	0.00	0.50	1.0400	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
19 ST-H5	378.49	485.87	0.00	483.98	0.10	1.89	0.5000	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
20 ST-H6	32.00	488.21	0.00	487.89	2.02	0.32	1.0000	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
21 ST-I1	48.08	476.43	0.00	476.19	0.10	0.24	0.5000	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
22 ST-I2	95.00	476.91	0.00	476.43	0.00	0.48	0.5100	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
23 ST-I3	212.56	479.00	0.00	477.00	0.09	2.00	0.9400	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
24 ST-I4	78.66	483.38	0.00	481.27	2.27	2.11	2.6900	CIRCULAR	18.000	18.000	0.0130	0.0000	0.5000	0.0000	0.00	No	1
25 ST-K1	32.05	477.32	-0.75	477.00	0.09	0.32	1.0000	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1

Pipe Results

SN Element ID	Peak Flow	Time of Peak Flow Occurrence	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Travel Time	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Froude Number	Reported Condition
	(cfs)	(days hh:mm)	(cfs)		(ft/sec)	(min)	(ft)		(min)		
1 ST-C1	7.72	0 00:31	17.52	0.44	5.40	0.29	0.93	0.46	0.00		Calculated
2 ST-C2	1.11	0 00:17	19.30	0.06	7.23	0.46	0.24	0.16	0.00		Calculated
3 ST-C3	0.43	0 00:14	10.50	0.04	2.93	0.18	0.21	0.14	0.00		Calculated
4 ST-CS1	24.21	0 00:53	29.79	0.81	6.76	0.06	1.71	0.68	0.00		Calculated
5 ST-D1	3.47	0 00:31	8.71	0.40	4.65	0.11	0.66	0.44	0.00		Calculated
6 ST-E1 (2)	5.05	0 00:05	17.26	0.29	8.51	0.26	0.56	0.37	0.00		Calculated
7 ST-E2 (EXIST)	2.49	0 00:05	23.05	0.11	8.60	0.39	0.33	0.22	0.00		Calculated
8 ST-E3 (EXIST)	1.38	0 00:05	16.27	0.08	6.54	0.08	0.30	0.20	0.00		Calculated
9 ST-F1 (EXIST)	1.61	0 00:05	12.70	0.13	4.93	0.11	0.36	0.24	0.00		Calculated
10 ST-G1	36.19	0 00:06	36.79	0.98	8.58	0.14	2.01	0.81	0.00		Calculated
11 ST-G2	33.77	0 00:06	42.90	0.79	9.69	0.06	1.67	0.67	0.00		Calculated
12 ST-G3	10.74	0 00:31	45.08	0.24	11.76	0.07	0.66	0.33	0.00		Calculated
13 ST-G4	10.03	0 00:32	34.22	0.29	9.47	0.42	0.74	0.37	0.00		Calculated
14 ST-G5	7.71	0 00:31	17.44	0.44	5.39	0.45	0.93	0.47	0.00		Calculated
15 ST-H1	29.91	0 00:06	31.72	0.94	7.49	0.42	1.93	0.77	0.00		Calculated
16 ST-H2	19.56	0 00:06	35.36	0.55	11.62	0.36	1.06	0.53	0.00		Calculated
17 ST-H2A	19.74	0 00:06	37.32	0.53	12.05	0.05	1.03	0.52	0.00		Calculated
18 ST-H3	18.52	0 00:06	23.11	0.80	8.22	0.10	1.35	0.68	0.00		Calculated
19 ST-H5	16.92	0 00:05	16.01	1.06	6.30	1.00	1.79	0.90	0.00		> CAPACITY
20 ST-H6	5.12	0 00:35	10.50	0.49	5.91	0.09	0.74	0.49	0.00		Calculated
21 ST-I1	10.61	0 00:40	16.00	0.66	5.44	0.15	1.19	0.60	0.00		Calculated
22 ST-I2	10.61	0 00:40	16.08	0.66	5.47	0.29	1.19	0.59	0.00		Calculated
23 ST-I3	5.58	0 00:06	10.19	0.55	5.97	0.59	0.79	0.53	0.00		Calculated
24 ST-I4	5.05	0 00:05	17.22	0.29	8.47	0.15	0.56	0.37	0.00		Calculated
25 ST-K1	9.01	0 00:40	19.20	0.47	10.69	0.05	0.72	0.48	0.00		Calculated

Inlet Input

SN Element ID	Inlet Manufacturer	Manufacturer Part Number	Inlet Location	Number of Inlets	Catchbasin Invert Elevation (ft)	Max (Rim) Elevation (ft)	Inlet Depth (ft)	Initial Water Elevation (ft)	Initial Water Depth (ft)	Ponded Area (ft ²)	Grate Clogging Factor (%)
1 CB-C1 (EXIST)	FHWA HEC-22	GENERIC	N/A	1	483.78	487.16	3.38	483.78	0.00	N/A	0.00
2 CB-C2 (EXIST)	FHWA HEC-22	GENERIC	N/A	1	490.63	495.14	4.51	490.63	0.00	N/A	0.00
3 CB-C3 (EXIST)	FHWA HEC-22	GENERIC	N/A	1	490.95	495.16	4.21	490.95	0.00	N/A	0.00
4 CB-D1 (EXIST)	FHWA HEC-22	GENERIC	N/A	1	484.10	487.17	3.07	484.10	0.00	N/A	0.00
5 CB-E1 (EXIST)	FHWA HEC-22	GENERIC	N/A	1	487.00	491.64	4.64	487.00	0.00	N/A	0.00
6 CB-E2 (EXIST)	FHWA HEC-22	GENERIC	N/A	1	496.73	501.05	4.32	496.73	0.00	N/A	0.00
7 CB-E3 (EXIST)	FHWA HEC-22	GENERIC	N/A	1	497.60	501.00	3.41	497.60	0.00	N/A	0.00
8 CB-F1 (EXIST)	FHWA HEC-22	GENERIC	N/A	1	487.57	491.28	3.71	487.57	0.00	N/A	0.00
9 CB-G2	FHWA HEC-22	GENERIC	N/A	1	474.50	479.18	4.68	474.50	0.00	0.00	0.00
10 CB-G3	FHWA HEC-22	GENERIC	N/A	1	474.85	478.79	3.94	474.85	0.00	0.00	0.00
11 CB-G4	FHWA HEC-22	GENERIC	N/A	1	476.90	480.15	3.25	476.90	0.00	N/A	0.00
12 CB-G5	FHWA HEC-22	GENERIC	N/A	1	482.36	485.61	3.25	482.36	0.00	N/A	0.00
13 CB-H1	FHWA HEC-22	GENERIC	N/A	1	476.09	480.66	4.57	476.09	0.00	N/A	0.00
14 CB-H2	FHWA HEC-22	GENERIC	N/A	1	483.38	485.12	1.74	483.38	0.00	N/A	0.00
15 CB-H3	FHWA HEC-22	GENERIC	N/A	1	483.88	490.37	6.49	483.88	0.00	N/A	0.00
16 CB-H5	FHWA HEC-22	GENERIC	N/A	1	485.87	488.55	2.68	485.87	0.00	0.00	0.00
17 CB-H6	FHWA HEC-22	GENERIC	N/A	1	488.21	488.55	0.35	488.21	0.00	0.00	0.00
18 CB-I2	FHWA HEC-22	GENERIC	N/A	1	476.91	479.97	3.06	476.91	0.00	0.00	0.00
19 CB-I3	FHWA HEC-22	GENERIC	N/A	1	479.00	483.97	4.97	479.00	0.00	N/A	0.00
20 CB-K1	FHWA HEC-22	GENERIC	N/A	1	478.07	482.00	3.93	478.07	0.00	0.00	0.00

Roadway & Gutter Input

SN Element ID	Roadway Longitudinal Slope (ft/ft)	Roadway Cross Slope (ft/ft)	Roadway Manning's Roughness	Gutter Cross Slope (ft/ft)	Gutter Width (ft)	Gutter Depression (in)	Allowable Spread (ft)
1 CB-C1 (EXIST)	0.0200	0.0200	0.0130	0.0620	1.50	0.1969	12.00
2 CB-C2 (EXIST)	0.0200	0.0500	0.0130	0.0620	2.00	0.0000	12.00
3 CB-C3 (EXIST)	0.0200	0.0500	0.0130	0.0620	2.00	0.0000	12.00
4 CB-D1 (EXIST)	0.0200	0.0200	0.0130	0.0620	1.50	0.1969	12.00
5 CB-E1 (EXIST)	0.0200	0.0200	0.0130	0.0620	1.50	0.1969	12.00
6 CB-E2 (EXIST)	0.0200	0.0200	0.0130	0.0620	1.50	0.1969	12.00
7 CB-E3 (EXIST)	0.0200	0.0200	0.0130	0.0620	1.50	0.1969	12.00
8 CB-F1 (EXIST)	0.0200	0.0200	0.0130	0.0620	1.50	0.1969	12.00
9 CB-G2	N/A	0.0200	0.0130	0.0620	1.50	0.1969	12.00
10 CB-G3	N/A	0.0200	0.0160	0.0620	1.50	0.1969	12.00
11 CB-G4	0.0200	0.0200	0.0130	0.0620	1.50	0.1969	12.00
12 CB-G5	0.0200	0.0200	0.0130	0.0620	1.50	0.1969	12.00
13 CB-H1	0.0200	0.0200	0.0130	0.0620	1.50	0.1969	12.00
14 CB-H2	0.0100	0.0200	0.0160	0.0620	1.50	0.1969	12.00
15 CB-H3	0.0200	0.0200	0.0130	0.0620	1.50	0.1969	12.00
16 CB-H5	N/A	0.0200	0.0130	0.0620	1.50	0.1969	12.00
17 CB-H6	N/A	0.0200	0.0160	0.0620	1.50	0.1969	12.00
18 CB-I2	N/A	0.0200	0.0130	0.0620	1.50	0.1969	12.00
19 CB-I3	0.0200	0.0200	0.0130	0.0620	1.50	0.1969	12.00
20 CB-K1	N/A	0.0200	0.0130	0.0833	1.50	0.1969	12.00

Inlet Results

SN Element ID	Peak Flow	Peak Lateral Inflow	Peak Flow Intercepted by Inlet	Peak Flow Bypassing Inlet	Inlet Efficiency during Peak	Max Gutter Spread during Peak	Max Gutter Water Elev. during Peak	Max Gutter Water Depth during Peak	Time of Max Depth Occurrence	Total Flooded Volume	Total Time Flooded
	(cfs)	(cfs)	(cfs)	(cfs)	(%)	(ft)	(ft)	(ft)	(days hh:mm)	(ac-in)	(min)
1 CB-C1 (EXIST)	5.31	5.06	4.00	1.31	75.34	10.60	487.43	0.27	0 00:31	0.00	0.00
2 CB-C2 (EXIST)	2.02	2.02	0.73	1.30	35.93	4.14	495.37	0.23	0 00:17	0.00	0.00
3 CB-C3 (EXIST)	0.89	0.89	0.43	0.45	48.82	2.91	495.33	0.17	0 00:14	0.00	0.00
4 CB-D1 (EXIST)	4.18	4.15	3.47	0.71	83.03	9.62	487.42	0.26	0 00:31	0.00	0.00
5 CB-E1 (EXIST)	0.98	0.96	0.98	0.00	100.00	5.12	491.81	0.17	0 00:05	0.00	0.00
6 CB-E2 (EXIST)	1.37	1.37	1.13	0.24	82.34	5.96	501.23	0.18	0 00:05	0.00	0.00
7 CB-E3 (EXIST)	1.93	1.93	1.39	0.54	71.96	6.94	501.21	0.20	0 00:05	0.00	0.00
8 CB-F1 (EXIST)	1.61	1.44	1.61	0.00	100.00	6.42	491.47	0.19	0 00:05	0.00	0.00
9 CB-G2	3.51	3.51	N/A	N/A	N/A	10.56	479.96	0.77	0 00:06	0.00	0.00
10 CB-G3	6.08	6.08	N/A	N/A	N/A	15.26	479.66	0.87	0 00:06	0.00	0.00
11 CB-G4	1.11	1.11	1.11	0.00	100.00	5.39	480.32	0.17	0 00:32	0.00	0.00
12 CB-G5	2.42	1.24	2.36	0.06	97.62	7.66	485.83	0.22	0 00:31	0.00	0.00
13 CB-H1	1.62	1.62	1.26	0.37	77.29	6.44	480.85	0.19	0 00:06	0.00	0.00
14 CB-H2	2.01	1.02	1.65	0.36	82.17	8.95	485.36	0.24	0 00:06	0.00	0.00
15 CB-H3	2.77	2.77	1.68	1.09	60.71	8.11	490.59	0.23	0 00:05	0.00	0.00
16 CB-H5	13.53	13.53	N/A	N/A	N/A	25.90	489.63	1.08	0 00:26	0.00	0.00
17 CB-H6	5.12	5.12	N/A	N/A	N/A	13.61	489.39	0.84	0 00:01	0.00	0.00
18 CB-I2	0.46	0.46	N/A	N/A	N/A	2.11	480.27	0.30	0 00:40	0.00	0.00
19 CB-I3	2.87	2.87	2.69	0.17	93.99	8.23	484.19	0.23	0 00:05	0.00	0.00
20 CB-K1	9.01	9.01	N/A	N/A	N/A	19.85	482.99	0.99	0 00:40	0.00	0.00

Storage Nodes

Storage Node : POND1

Input Data

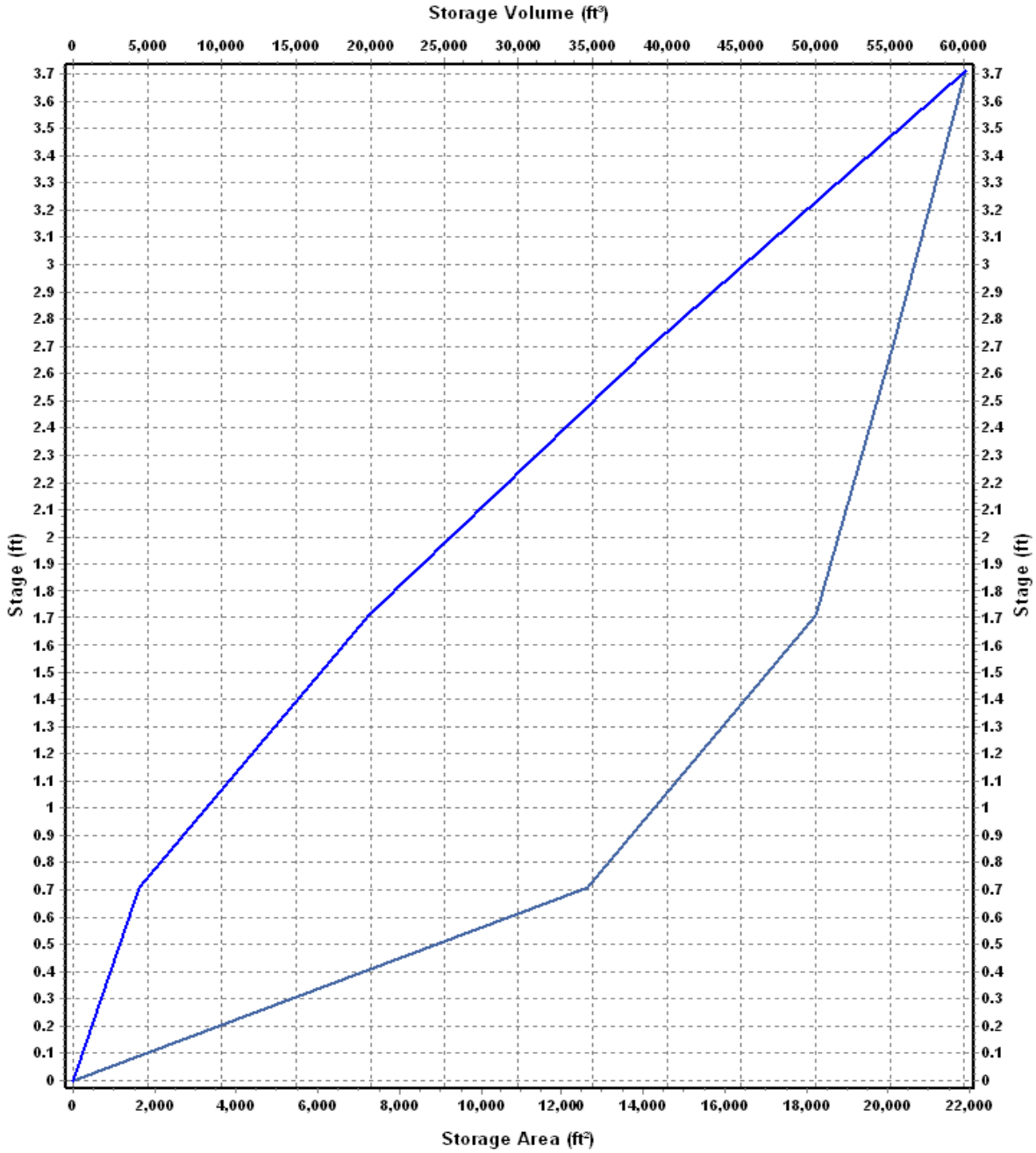
Invert Elevation (ft) 473.29
Max (Rim) Elevation (ft) 477.00
Max (Rim) Offset (ft) 3.71
Initial Water Elevation (ft) 473.29
Initial Water Depth (ft) 0.00
Ponded Area (ft²) 0.00
Evaporation Loss 0.00

Storage Area Volume Curves

Storage Curve : POND1

Stage (ft)	Storage Area (ft ²)	Storage Volume (ft ³)
0	0	0.000
0.71	12615	4478.33
1.71	18216	19893.83
2.71	20116	39059.83
3.71	21896	60065.83

Storage Area Volume Curves



— Storage Area — Storage Volume

Storage Node : POND1 (continued)

Outflow Weirs

SN Element ID	Weir Type	Flap Gate	Crest Elevation (ft)	Crest Offset (ft)	Length (ft)	Weir Total Height (ft)	Discharge Coefficient
1 Weir-02	Rectangular	No	476.00	2.71	15.00	1.00	3.33

Outflow Orifices

SN Element ID	Orifice Type	Orifice Shape	Flap Gate	Circular Orifice Diameter (in)	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
1 Orifice-01	Side	Rectangular	No		26.50	21.00	0.00	0.63

Output Summary Results

Peak Inflow (cfs)	36.61
Peak Lateral Inflow (cfs)	4.40
Peak Outflow (cfs)	24.21
Peak Exfiltration Flow Rate (cfm)	0.00
Max HGL Elevation Attained (ft)	475.95
Max HGL Depth Attained (ft)	2.66
Average HGL Elevation Attained (ft)	473.46
Average HGL Depth Attained (ft)	0.17
Time of Max HGL Occurrence (days hh:mm)	0 00:53
Total Exfiltration Volume (1000-ft ³)	0.000
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00

Project Description

File Name 16044 Kensington Place Ph 2 Drainage Post-Dev 100 YEAR.SPF
Description J:\Projects\2016 Projects\16044 Kensington Place Subdivision Lee Pengelly\Drawings\DWG\Phase 2\KENSINGTON PLACE PHASE 2 R4.dwg

Project Options

Flow Units CFS
Elevation Type Elevation
Hydrology Method Rational
Time of Concentration (TOC) Method SCS TR-55
Link Routing Method Kinematic Wave
Enable Overflow Ponding at Nodes YES
Skip Steady State Analysis Time Periods NO

Analysis Options

Start Analysis On Aug 18, 2017 00:00:00
End Analysis On Aug 19, 2017 00:00:00
Start Reporting On Aug 18, 2017 00:00:00
Antecedent Dry Days 0 days
Runoff (Dry Weather) Time Step 0 01:00:00 days hh:mm:ss
Runoff (Wet Weather) Time Step 0 00:05:00 days hh:mm:ss
Reporting Time Step 0 00:05:00 days hh:mm:ss
Routing Time Step 30 seconds

Number of Elements

	Qty
Rain Gages	0
Subbasins.....	31
Nodes.....	28
<i>Junctions</i>	5
<i>Outfalls</i>	2
<i>Flow Diversions</i>	0
<i>Inlets</i>	20
<i>Storage Nodes</i>	1
Links.....	41
<i>Channels</i>	14
<i>Pipes</i>	25
<i>Pumps</i>	0
<i>Orifices</i>	1
<i>Weirs</i>	1
<i>Outlets</i>	0
Pollutants	0
Land Uses	0

Rainfall Details

Return Period..... 100 year(s)

Subbasin Summary

SN Subbasin ID	Area (ac)	Weighted Runoff Coefficient	Total Rainfall (in)	Total Runoff (in)	Total Runoff Volume (ac-in)	Peak Runoff (cfs)	Time of Concentration (days hh:mm:ss)
1 (STORM-BASINS).1	2.38	0.6100	4.08	2.49	5.92	4.94	0 01:11:46
2 (STORM-BASINS).10	0.87	0.6300	2.69	1.70	1.48	3.27	0 00:27:10
3 (STORM-BASINS).11	0.12	0.9000	0.83	0.75	0.09	1.04	0 00:05:00
4 (STORM-BASINS).12	0.16	0.9000	0.83	0.75	0.12	1.48	0 00:05:00
5 (STORM-BASINS).13	0.23	0.9000	0.83	0.75	0.17	2.07	0 00:05:00
6 (STORM-BASINS).14	0.74	0.7200	0.83	0.60	0.44	5.31	0 00:05:00
7 (STORM-BASINS).15	1.28	0.7200	0.83	0.60	0.77	9.25	0 00:05:00
8 (STORM-BASINS).16	0.21	0.7500	0.83	0.63	0.13	1.55	0 00:05:00
9 (STORM-BASINS).17	0.28	0.9000	0.83	0.75	0.21	2.48	0 00:05:00
10 (STORM-BASINS).18	3.51	0.6000	3.21	1.93	6.76	10.19	0 00:39:45
11 (STORM-BASINS).19	0.05	0.9000	0.83	0.75	0.04	0.48	0 00:05:00
12 (STORM-BASINS).2	0.96	0.6300	3.55	2.23	2.14	2.54	0 00:50:36
13 (STORM-BASINS).20	0.19	0.9000	0.83	0.75	0.15	1.75	0 00:05:00
14 (STORM-BASINS).21	0.22	0.9000	0.83	0.75	0.17	1.98	0 00:05:00
15 (STORM-BASINS).22	0.20	0.9000	0.83	0.75	0.15	1.79	0 00:05:00
16 (STORM-BASINS).23A	0.88	0.6000	2.92	1.75	1.54	2.91	0 00:31:54
17 (STORM-BASINS).23B	0.21	0.9000	0.83	0.75	0.16	1.88	0 00:05:00
18 (STORM-BASINS).26	1.06	0.6000	3.06	1.84	1.94	3.26	0 00:35:44
19 (STORM-BASINS).27	0.58	0.7200	2.00	1.44	0.84	3.14	0 00:15:56
20 (STORM-BASINS).28	0.22	0.7200	2.12	1.52	0.34	1.15	0 00:17:36
21 (STORM-BASINS).29	0.15	0.9000	0.83	0.75	0.12	1.39	0 00:05:00
22 (STORM-BASINS).3	1.34	0.6300	2.89	1.82	2.43	4.73	0 00:30:46
23 (STORM-BASINS).30	0.12	0.9000	0.83	0.75	0.09	1.09	0 00:05:00
24 (STORM-BASINS).31	0.12	0.9000	0.83	0.75	0.09	1.06	0 00:05:00
25 (STORM-BASINS).4	0.17	0.7500	1.88	1.41	0.24	1.00	0 00:14:33
26 (STORM-BASINS).5	0.46	0.6900	2.06	1.42	0.65	2.30	0 00:17:04
27 (STORM-BASINS).6	1.73	0.6000	2.91	1.74	3.01	5.77	0 00:31:16
28 (STORM-BASINS).7A	0.38	0.6600	2.89	1.91	0.73	1.41	0 00:30:58
29 (STORM-BASINS).7B	0.28	0.7200	2.47	1.78	0.49	1.26	0 00:23:23
30 (STORM-BASINS).8	2.66	0.6000	3.49	2.10	5.58	6.83	0 00:49:03
31 (STORM-BASINS).9	0.06	0.9000	0.83	0.75	0.04	0.50	0 00:05:00

Node Summary

SN Element ID	Element Type	Invert Elevation	Ground/Rim (Max) Elevation	Initial Water Elevation	Surcharge Elevation	Ponded Area	Peak Inflow	Max HGL Elevation Attained	Max Surcharge Depth Attained	Min Freeboard	Time of Peak Flooding Occurrence	Total Flooded Volume	Total Time Flooded	
		(ft)	(ft)	(ft)	(ft)	(ft²)	(cfs)	(ft)	(ft)	(ft)	(days hh:mm)	(ac-in)	(min)	
1	CB-I1	Junction	476.43	480.49	476.43	480.49	0.00	12.03	477.72	0.00	2.76	0 00:00	0.00	0.00
2	CONNECT-G	Junction	483.22	485.22	483.22	485.22	0.00	8.34	484.20	0.00	1.03	0 00:00	0.00	0.00
3	CONNECT-I	Junction	483.38	489.38	483.38	489.38	0.00	5.43	483.96	0.00	5.42	0 00:00	0.00	0.00
4	FES-H2	Junction	482.37	485.12	482.37	485.12	0.00	20.31	483.46	0.00	1.66	0 00:00	0.00	0.00
5	Jun-01	Junction	473.29	477.00	473.29	477.00	0.00	29.66	475.33	0.00	1.67	0 00:00	0.00	0.00
6	Out-01	Outfall	473.16					29.66	475.20					
7	Out-1ST-G3	Outfall	475.00					0.00	475.00					
8	POND1	Storage Node	473.29	477.00	473.29		0.00	40.21	476.18			0.00	0.00	

Link Summary

SN Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length (ft)	Inlet Invert Elevation (ft)	Outlet Invert Elevation (ft)	Average Slope (%)	Diameter or Height (in)	Manning's Roughness	Peak Flow (cfs)	Design Flow Capacity (cfs)	Peak Flow/Design Flow Ratio	Peak Flow Velocity (ft/sec)	Peak Flow Depth (ft)	Peak Flow Depth/Total Depth Ratio	Total Time Reported (min)	Condition
1	ST-C1	Pipe	CB-C1 (EXIST) CONNECT-G	92.51	483.78	483.22	0.6000	24.000	0.0130	8.34	17.52	0.48	5.51	0.97	0.49	0.00	Calculated
2	ST-C2	Pipe	CB-C2 (EXIST) CB-C1 (EXIST)	200.00	490.63	483.88	3.3800	18.000	0.0130	1.20	19.30	0.06	7.44	0.25	0.17	0.00	Calculated
3	ST-C3	Pipe	CB-C3 (EXIST) CB-C2 (EXIST)	32.02	490.95	490.63	1.0000	18.000	0.0130	0.47	10.50	0.04	3.04	0.22	0.14	0.00	Calculated
4	ST-CS1	Pipe	Jun-01 Out-01	24.64	473.29	473.16	0.5300	30.000	0.0130	29.66	29.79	1.00	6.92	2.04	0.82	0.00	Calculated
5	ST-D1	Pipe	CB-D1 (EXIST) CB-C1 (EXIST)	32.02	484.10	483.88	0.6900	18.000	0.0130	3.75	8.71	0.43	4.75	0.69	0.46	0.00	Calculated
6	ST-E1 (2)	Pipe	CB-E1 (EXIST) CONNECT-I	133.90	487.00	483.38	2.7000	18.000	0.0130	5.43	17.26	0.31	8.67	0.58	0.39	0.00	Calculated
7	ST-E2 (EXIST)	Pipe	CB-E2 (EXIST) CB-E1 (EXIST)	200.00	496.73	487.10	4.8100	18.000	0.0130	2.60	23.05	0.11	8.71	0.34	0.23	0.00	Calculated
8	ST-E3 (EXIST)	Pipe	CB-E3 (EXIST) CB-E2 (EXIST)	32.02	497.60	496.83	2.4000	18.000	0.0130	1.44	16.27	0.09	6.64	0.30	0.20	0.00	Calculated
9	ST-F1 (EXIST)	Pipe	CB-F1 (EXIST) CB-E1 (EXIST)	32.02	487.57	487.10	1.4600	18.000	0.0130	1.78	12.70	0.14	5.07	0.38	0.25	0.00	Calculated
10	ST-G1	Pipe	CB-G2 POND1	72.10	474.50	473.92	0.8000	30.000	0.0130	39.68	36.79	1.08	8.80	2.31	0.92	0.00	> CAPACITY
11	ST-G2	Pipe	CB-G3 CB-G2	31.99	474.85	474.50	1.0900	30.000	0.0130	36.11	42.90	0.84	9.80	1.76	0.70	0.00	Calculated
12	ST-G3	Pipe	CB-G4 CB-G3	49.09	476.90	474.95	3.9700	24.000	0.0130	12.00	45.08	0.27	12.14	0.70	0.35	0.00	Calculated
13	ST-G4	Pipe	CB-G5 CB-G4	238.61	482.36	476.90	2.2900	24.000	0.0130	11.09	34.22	0.32	9.73	0.78	0.39	0.00	Calculated
14	ST-G5	Pipe	CONNECT-G CB-G5	145.74	483.22	482.35	0.6000	24.000	0.0130	8.33	17.44	0.48	5.50	0.97	0.49	0.00	Calculated
15	ST-H1	Pipe	CB-H1 CB-G3	190.63	476.09	474.95	0.6000	30.000	0.0130	31.40	31.72	0.99	7.55	2.02	0.81	0.00	Calculated
16	ST-H2	Pipe	FES-H2 CB-H1	252.90	482.37	476.19	2.4400	24.000	0.0130	20.24	35.36	0.57	11.76	1.08	0.54	0.00	Calculated
17	ST-H2A	Pipe	CB-H2 FES-H2	37.10	483.38	482.37	2.7200	24.000	0.0130	20.31	37.32	0.54	12.14	1.05	0.53	0.00	Calculated
18	ST-H3	Pipe	CB-H3 CB-H2	48.08	483.88	483.38	1.0400	24.000	0.0130	18.96	23.11	0.82	8.23	1.38	0.69	0.00	Calculated
19	ST-H5	Pipe	CB-H5 CB-H3	378.49	485.87	483.98	0.5000	24.000	0.0130	17.31	16.01	1.08	6.39	1.85	0.92	0.00	> CAPACITY
20	ST-H6	Pipe	CB-H6 CB-H5	32.00	488.21	487.89	1.0000	18.000	0.0130	5.82	10.50	0.55	6.10	0.80	0.53	0.00	Calculated
21	ST-I1	Pipe	CB-I1 CB-H1	48.08	476.43	476.19	0.5000	24.000	0.0130	12.03	16.00	0.75	5.60	1.29	0.65	0.00	Calculated
22	ST-I2	Pipe	CB-I2 CB-I1	95.00	476.91	476.43	0.5100	24.000	0.0130	12.03	16.08	0.75	5.63	1.29	0.64	0.00	Calculated
23	ST-I3	Pipe	CB-I3 CB-I2	212.56	479.00	477.00	0.9400	18.000	0.0130	6.03	10.19	0.59	6.07	0.83	0.55	0.00	Calculated
24	ST-I4	Pipe	CONNECT-I CB-I3	78.66	483.38	481.27	2.6900	18.000	0.0130	5.42	17.22	0.31	8.64	0.58	0.39	0.00	Calculated
25	ST-K1	Pipe	CB-K1 CB-I2	32.05	477.32	477.00	1.0000	18.000	0.0130	10.19	19.20	0.53	11.02	0.78	0.52	0.00	Calculated
26	Gutter-05	Channel	CB-C3 (EXIST) CB-D1 (EXIST)	200.35	495.00	487.00	3.9900	6.000	0.0130	0.50	9.52	0.05	3.49	0.16	0.33	0.00	
27	Gutter-06	Channel	CB-C2 (EXIST) CB-C1 (EXIST)	200.99	495.00	487.00	3.9800	6.000	0.0130	1.46	9.50	0.15	4.07	0.24	0.49	0.00	
28	Gutter-07	Channel	CB-C1 (EXIST) CB-G5	239.28	487.00	485.61	0.5800	6.000	0.0130	1.69	3.83	0.44	1.93	0.36	0.72	0.00	
29	Gutter-08	Channel	CB-G5 CB-G4	240.40	485.61	480.15	2.2700	6.000	0.0320	0.20	7.18	0.03	2.40	0.13	0.25	0.00	
30	Gutter-09	Channel	CB-G4 CB-G3	57.48	480.15	478.65	2.6100	6.000	0.0320	0.00	7.33	0.00	0.00	0.00	0.00	0.00	
31	Gutter-10	Channel	CB-H1 CB-G3	192.99	480.66	478.79	0.9700	6.000	0.0320	0.28	4.69	0.06	2.64	0.16	0.32	0.00	
32	Gutter-12	Channel	CB-I3 CB-I2	213.95	483.97	479.50	2.0900	6.000	0.0320	0.26	6.51	0.04	2.10	0.15	0.29	0.00	
33	Gutter-13	Channel	CB-E1 (EXIST) CB-I3	213.94	491.00	483.97	3.2900	6.000	0.0320	0.00	9.03	0.00	0.00	0.00	0.00	0.00	
34	Gutter-14	Channel	CB-E2 (EXIST) CB-E1 (EXIST)	201.82	500.50	491.00	4.7100	6.000	0.0320	0.20	10.29	0.02	4.17	0.11	0.21	0.00	
35	Gutter-15	Channel	CB-E3 (EXIST) CB-F1 (EXIST)	201.21	500.50	491.00	4.7200	6.000	0.0320	0.48	10.48	0.05	4.77	0.15	0.30	0.00	
36	Gutter-16	Channel	CB-F1 (EXIST) CB-K1	425.27	491.00	482.00	2.1200	6.000	0.0320	0.00	7.04	0.00	0.00	0.00	0.01	0.00	
37	Gutter-17	Channel	CB-H2 CB-H1	292.35	485.12	480.66	1.5200	6.000	0.0320	0.47	5.88	0.08	2.45	0.19	0.37	0.00	
38	Gutter-23	Channel	CB-D1 (EXIST) CB-G2	587.46	487.00	479.00	1.3600	6.000	0.0320	0.84	5.55	0.15	2.90	0.24	0.48	0.00	
39	Gutter-26	Channel	CB-H3 CB-H2	57.06	490.37	485.12	9.2000	6.000	0.0320	1.33	14.45	0.09	3.51	0.20	0.41	0.00	
40	Orifice-01	Orifice	POND1 Jun-01		473.29	473.29		26.500		25.93							
41	Weir-02	Weir	POND1 Jun-01		473.29	473.29				3.73							

Inlet Summary

SN Element ID	Inlet Manufacturer	Manufacturer Part Number	Inlet Location	Number of Inlets	Catchbasin Invert Elevation (ft)	Max (Rim) Elevation (ft)	Initial Water Elevation (ft)	Ponded Area (ft ²)	Peak Flow (cfs)	Peak Flow Intercepted (cfs)	Peak Flow Bypassing Inlet (cfs)	Inlet Efficiency during Peak Flow (%)	Allowable Spread (ft)	Max Gutter Spread during Peak Flow (ft)	Max Gutter Water Elev. during Peak Flow (ft)	
1	CB-C1 (EXIST)	FHWA HEC-22 GENERIC	N/A	On Grade	1	483.78	487.16	483.78	N/A	6.05	4.30	1.75	71.14	12.00	11.17	487.45
2	CB-C2 (EXIST)	FHWA HEC-22 GENERIC	N/A	On Grade	1	490.63	495.14	490.63	N/A	2.30	0.78	1.51	34.14	12.00	4.35	495.38
3	CB-C3 (EXIST)	FHWA HEC-22 GENERIC	N/A	On Grade	1	490.95	495.16	490.95	N/A	1.00	0.47	0.53	47.09	12.00	3.10	495.34
4	CB-D1 (EXIST)	FHWA HEC-22 GENERIC	N/A	On Grade	1	484.10	487.17	484.10	N/A	4.76	3.76	1.01	78.85	12.00	10.14	487.43
5	CB-E1 (EXIST)	FHWA HEC-22 GENERIC	N/A	On Grade	1	487.00	491.64	487.00	N/A	1.07	1.07	0.00	100.00	12.00	5.32	491.81
6	CB-E2 (EXIST)	FHWA HEC-22 GENERIC	N/A	On Grade	1	496.73	501.05	496.73	N/A	1.48	1.19	0.29	80.49	12.00	6.18	501.24
7	CB-E3 (EXIST)	FHWA HEC-22 GENERIC	N/A	On Grade	1	497.60	501.00	497.60	N/A	2.07	1.44	0.63	69.70	12.00	7.17	501.21
8	CB-F1 (EXIST)	FHWA HEC-22 GENERIC	N/A	On Grade	1	487.57	491.28	487.57	N/A	1.78	1.78	0.00	99.99	12.00	6.70	491.47
9	CB-G2	FHWA HEC-22 GENERIC	N/A	On Sag	1	474.50	479.18	474.50	0.00	3.79	N/A	N/A	N/A	12.00	11.12	479.97
10	CB-G3	FHWA HEC-22 GENERIC	N/A	On Sag	1	474.85	478.79	474.85	0.00	6.83	N/A	N/A	N/A	12.00	16.50	479.68
11	CB-G4	FHWA HEC-22 GENERIC	N/A	On Grade	1	476.90	480.15	476.90	N/A	1.26	1.26	0.00	100.00	12.00	5.71	480.33
12	CB-G5	FHWA HEC-22 GENERIC	N/A	On Grade	1	482.36	485.61	482.36	N/A	3.02	2.80	0.22	92.80	12.00	8.42	485.85
13	CB-H1	FHWA HEC-22 GENERIC	N/A	On Grade	1	476.09	480.66	476.09	N/A	1.75	1.31	0.44	74.91	12.00	6.64	480.86
14	CB-H2	FHWA HEC-22 GENERIC	N/A	On Grade	1	483.38	485.12	483.38	N/A	2.39	1.83	0.56	76.44	12.00	9.60	485.37
15	CB-H3	FHWA HEC-22 GENERIC	N/A	On Grade	1	483.88	490.37	483.88	N/A	3.14	1.79	1.35	57.08	12.00	8.55	490.60
16	CB-H5	FHWA HEC-22 GENERIC	N/A	On Sag	1	485.87	488.55	485.87	0.00	14.55	N/A	N/A	N/A	12.00	27.05	489.66
17	CB-H6	FHWA HEC-22 GENERIC	N/A	On Sag	1	488.21	488.55	488.21	0.00	5.82	N/A	N/A	N/A	12.00	14.82	489.41
18	CB-I2	FHWA HEC-22 GENERIC	N/A	On Sag	1	476.91	479.97	476.91	0.00	0.49	N/A	N/A	N/A	12.00	2.27	480.29
19	CB-I3	FHWA HEC-22 GENERIC	N/A	On Grade	1	479.00	483.97	479.00	N/A	3.26	2.96	0.31	90.52	12.00	8.69	484.20
20	CB-K1	FHWA HEC-22 GENERIC	N/A	On Sag	1	478.07	482.00	478.07	0.00	10.19	N/A	N/A	N/A	12.00	21.54	483.03

Subbasin Hydrology

Subbasin : {STORM-BASINS}.1

Input Data

Area (ac) 2.38
Weighted Runoff Coefficient 0.6100

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
Residential	1.66	-	0.70
Pasture	0.71	-	0.40
Composite Area & Weighted Runoff Coeff.	2.37		0.61

Time of Concentration

TOC Method : SCS TR-55

Sheet Flow Equation :

$$T_c = (0.007 * ((n * L_f)^{0.8})) / ((P^{0.5}) * (S_f^{0.4}))$$

Where :

T_c = Time of Concentration (hr)
n = Manning's roughness
L_f = Flow Length (ft)
P = 2 yr, 24 hr Rainfall (inches)
S_f = Slope (ft/ft)

Shallow Concentrated Flow Equation :

V = 16.1345 * (S_f^{0.5}) (unpaved surface)
V = 20.3282 * (S_f^{0.5}) (paved surface)
V = 15.0 * (S_f^{0.5}) (grassed waterway surface)
V = 10.0 * (S_f^{0.5}) (nearly bare & untilled surface)
V = 9.0 * (S_f^{0.5}) (cultivated straight rows surface)
V = 7.0 * (S_f^{0.5}) (short grass pasture surface)
V = 5.0 * (S_f^{0.5}) (woodland surface)
V = 2.5 * (S_f^{0.5}) (forest w/heavy litter surface)
T_c = (L_f / V) / (3600 sec/hr)

Where:

T_c = Time of Concentration (hr)
L_f = Flow Length (ft)
V = Velocity (ft/sec)
S_f = Slope (ft/ft)

Channel Flow Equation :

$$V = (1.49 * (R^{2/3})) * (S_f^{0.5}) / n$$

R = A_q / W_p
T_c = (L_f / V) / (3600 sec/hr)

Where :

T_c = Time of Concentration (hr)
L_f = Flow Length (ft)
R = Hydraulic Radius (ft)
A_q = Flow Area (ft²)
W_p = Wetted Perimeter (ft)
V = Velocity (ft/sec)
S_f = Slope (ft/ft)
n = Manning's roughness

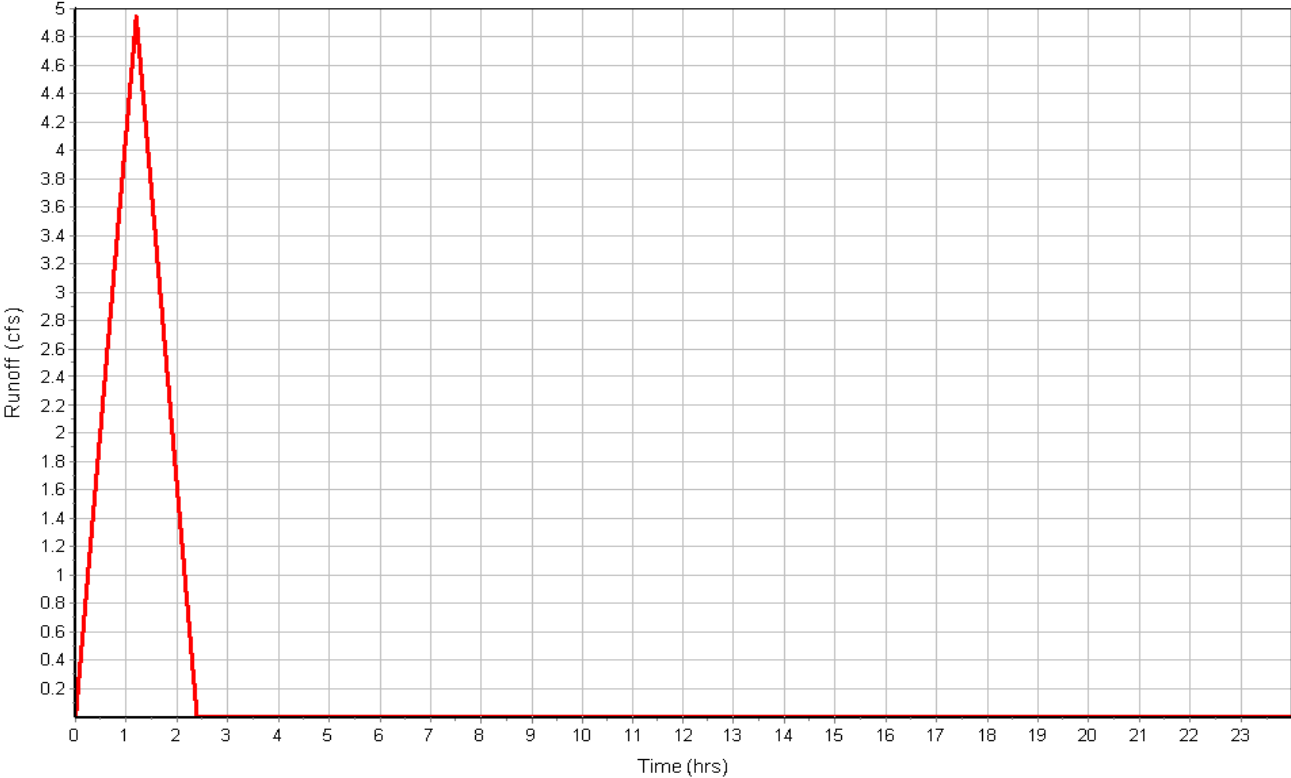
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	1221.57	0.00	0.00
Slope (%) :	2.6	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.28	0.00	0.00
Computed Flow Time (min) :	71.78	0.00	0.00
Total TOC (min)	71.78		

Subbasin Runoff Results

Total Rainfall (in)	4.08
Total Runoff (in)	2.49
Peak Runoff (cfs)	4.94
Rainfall Intensity	3.410
Weighted Runoff Coefficient	0.6100
Time of Concentration (days hh:mm:ss)	0 01:11:47

Subbasin : {STORM-BASINS}.1

Runoff Hydrograph



Subbasin : {STORM-BASINS}.10

Input Data

Area (ac) 0.87
 Weighted Runoff Coefficient 0.6300

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.78	-	0.60
-	0.09	-	0.90
Composite Area & Weighted Runoff Coeff.	0.87		0.63

Time of Concentration

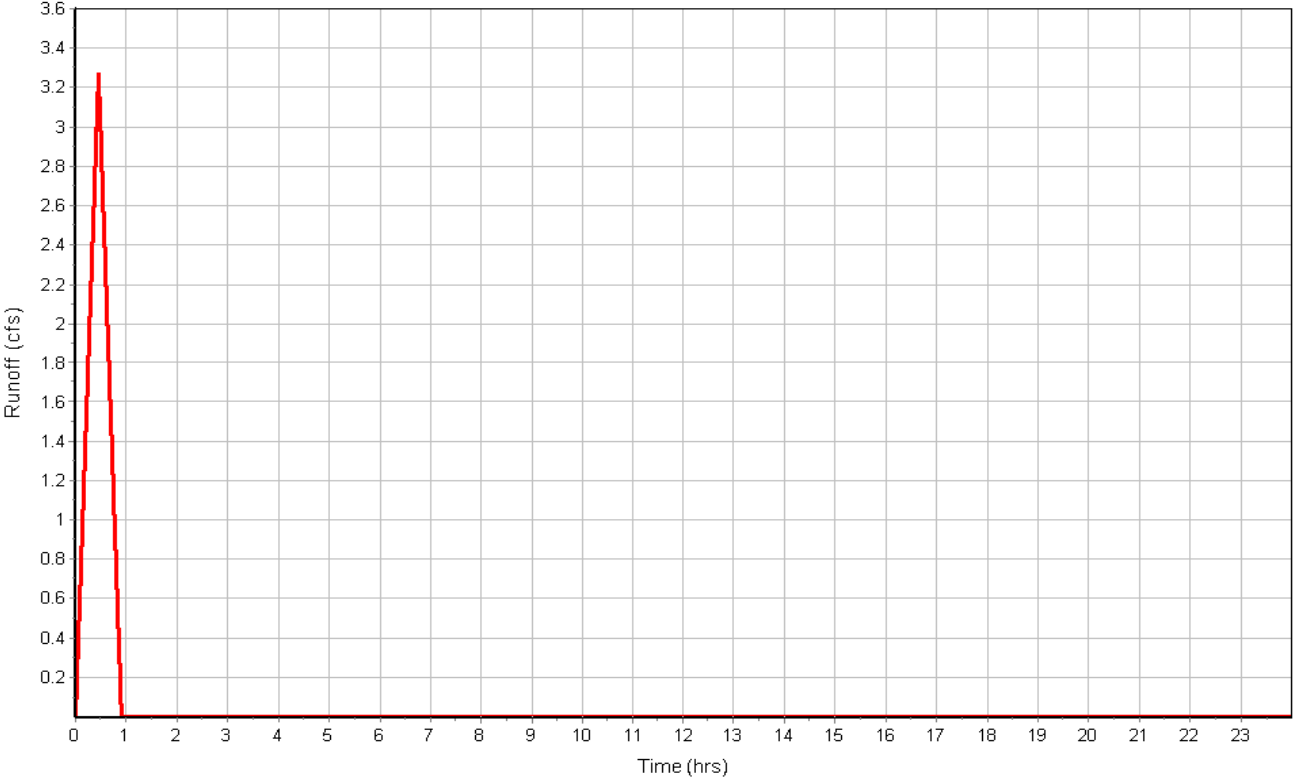
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	421.06	0.00	0.00
Slope (%) :	3.5	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.26	0.00	0.00
Computed Flow Time (min) :	27.18	0.00	0.00
Total TOC (min)	27.18		

Subbasin Runoff Results

Total Rainfall (in) 2.69
 Total Runoff (in) 1.70
 Peak Runoff (cfs) 3.27
 Rainfall Intensity 5.949
 Weighted Runoff Coefficient 0.6300
 Time of Concentration (days hh:mm:ss) 0 00:27:11

Subbasin : {STORM-BASINS}.10

Runoff Hydrograph



Subbasin : {STORM-BASINS}.11

Input Data

Area (ac) 0.12
Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.12	-	0.90
Composite Area & Weighted Runoff Coeff.	0.12		0.90

Time of Concentration

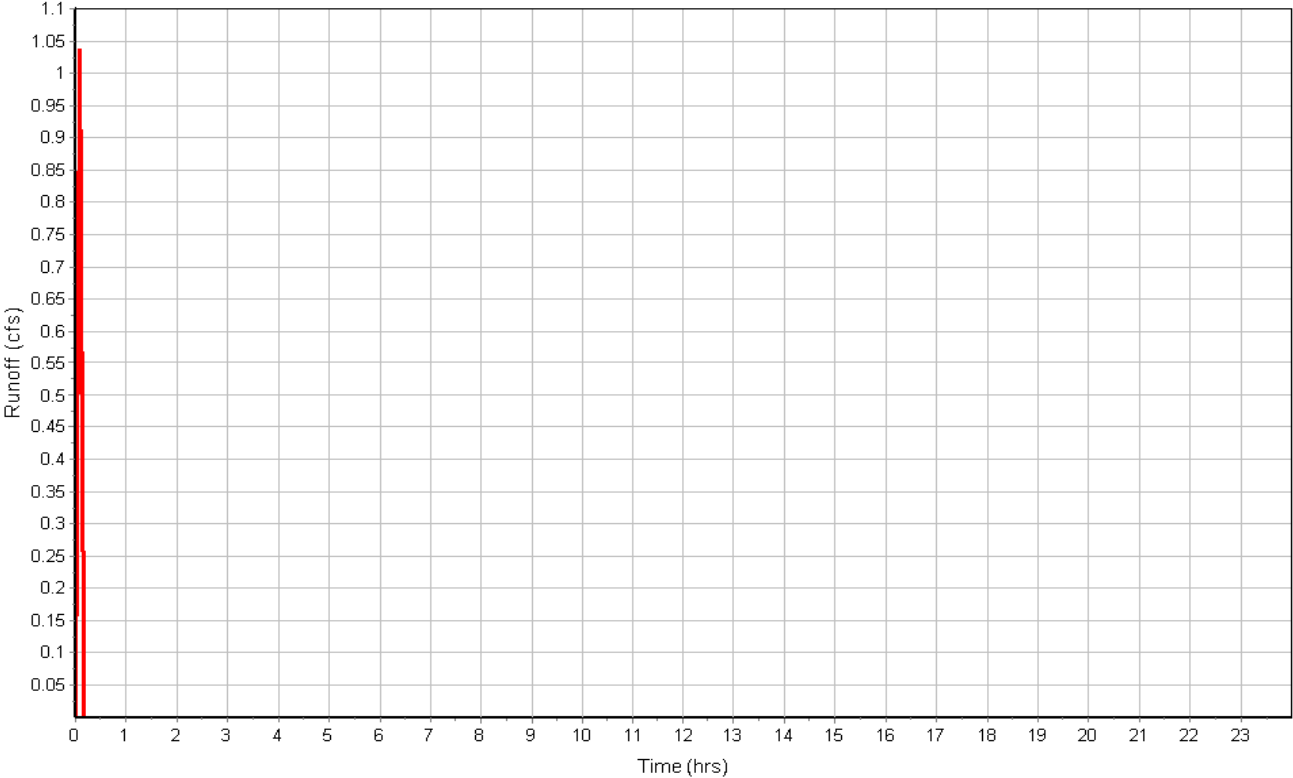
Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	251.93	0.00	0.00
Slope (%) :	4.7	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	4.41	0.00	0.00
Computed Flow Time (min) :	0.95	0.00	0.00
Total TOC (min)	0.95		

Subbasin Runoff Results

Total Rainfall (in) 0.83
Total Runoff (in) 0.75
Peak Runoff (cfs) 1.04
Rainfall Intensity 10.000
Weighted Runoff Coefficient 0.9000
Time of Concentration (days hh:mm:ss) 0 00:00:57

Subbasin : {STORM-BASINS}.11

Runoff Hydrograph



Subbasin : {STORM-BASINS}.12

Input Data

Area (ac) 0.16
 Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.16	-	0.90
Composite Area & Weighted Runoff Coeff.	0.16		0.90

Time of Concentration

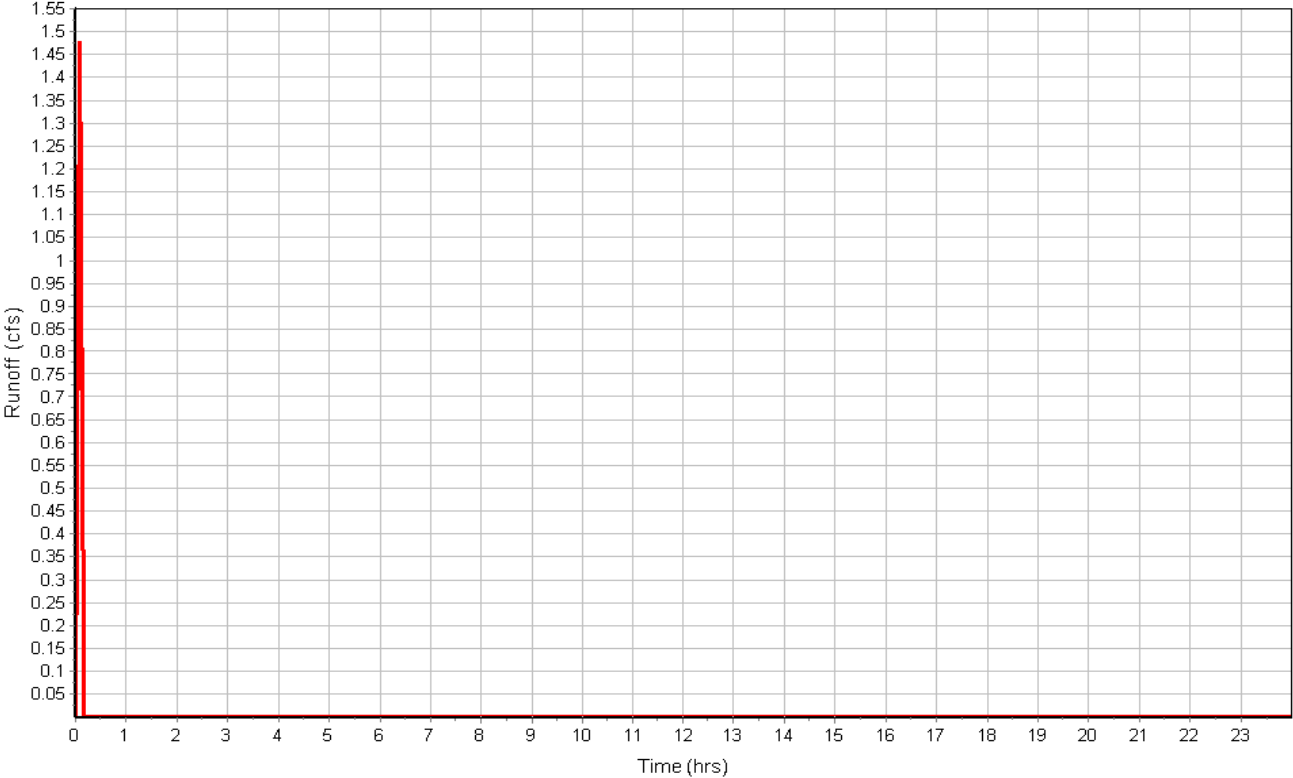
Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	261.41	0.00	0.00
Slope (%) :	1.9	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	2.80	0.00	0.00
Computed Flow Time (min) :	1.56	0.00	0.00
Total TOC (min)	1.56		

Subbasin Runoff Results

Total Rainfall (in) 0.83
 Total Runoff (in) 0.75
 Peak Runoff (cfs) 1.48
 Rainfall Intensity 10.000
 Weighted Runoff Coefficient 0.9000
 Time of Concentration (days hh:mm:ss) 0 00:01:34

Subbasin : {STORM-BASINS}.12

Runoff Hydrograph



Subbasin : {STORM-BASINS}.13

Input Data

Area (ac) 0.23
 Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.23	-	0.90
Composite Area & Weighted Runoff Coeff.	0.23		0.90

Time of Concentration

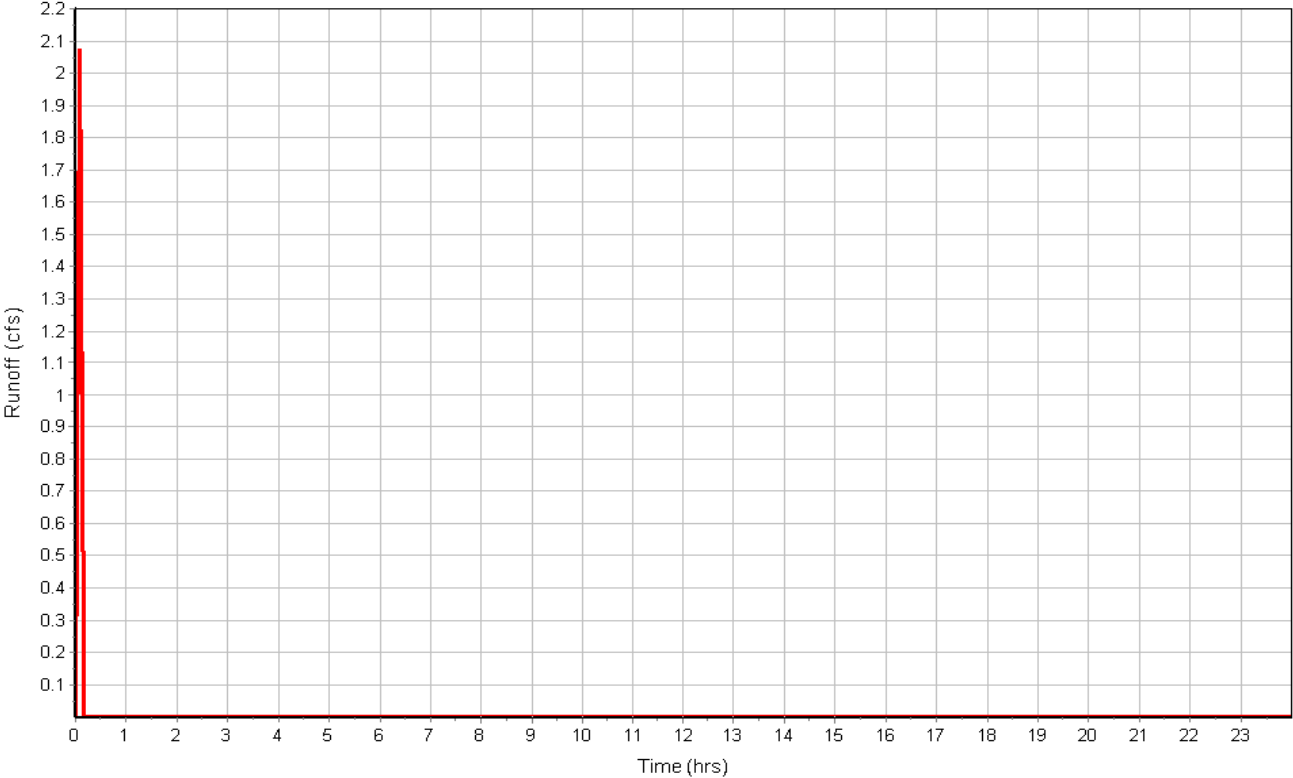
Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	407.22	0.00	0.00
Slope (%) :	2	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	2.87	0.00	0.00
Computed Flow Time (min) :	2.36	0.00	0.00
Total TOC (min)	2.36		

Subbasin Runoff Results

Total Rainfall (in) 0.83
 Total Runoff (in) 0.75
 Peak Runoff (cfs) 2.07
 Rainfall Intensity 10.000
 Weighted Runoff Coefficient 0.9000
 Time of Concentration (days hh:mm:ss) 0 00:02:22

Subbasin : {STORM-BASINS}.13

Runoff Hydrograph



Subbasin : {STORM-BASINS}.14

Input Data

Area (ac) 0.74
Weighted Runoff Coefficient 0.7200

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.74	-	0.72
Composite Area & Weighted Runoff Coeff.	0.74		0.72

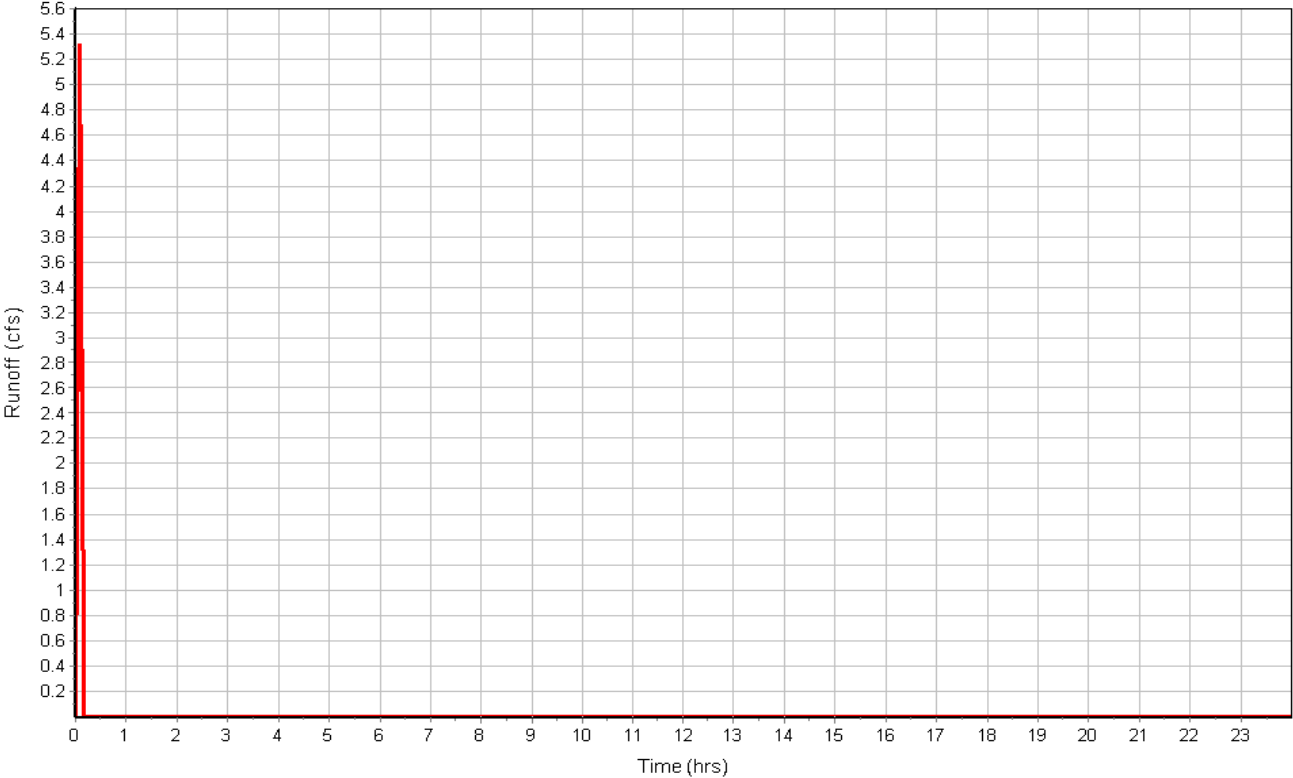
Time of Concentration

Subbasin Runoff Results

Total Rainfall (in) 0.83
Total Runoff (in) 0.60
Peak Runoff (cfs) 5.31
Rainfall Intensity 10.000
Weighted Runoff Coefficient 0.7200
Time of Concentration (days hh:mm:ss) 0 00:00:00

Subbasin : {STORM-BASINS}.14

Runoff Hydrograph



Subbasin : {STORM-BASINS}.15

Input Data

Area (ac) 1.28
Weighted Runoff Coefficient 0.7200

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	1.28	-	0.72
Composite Area & Weighted Runoff Coeff.	1.28		0.72

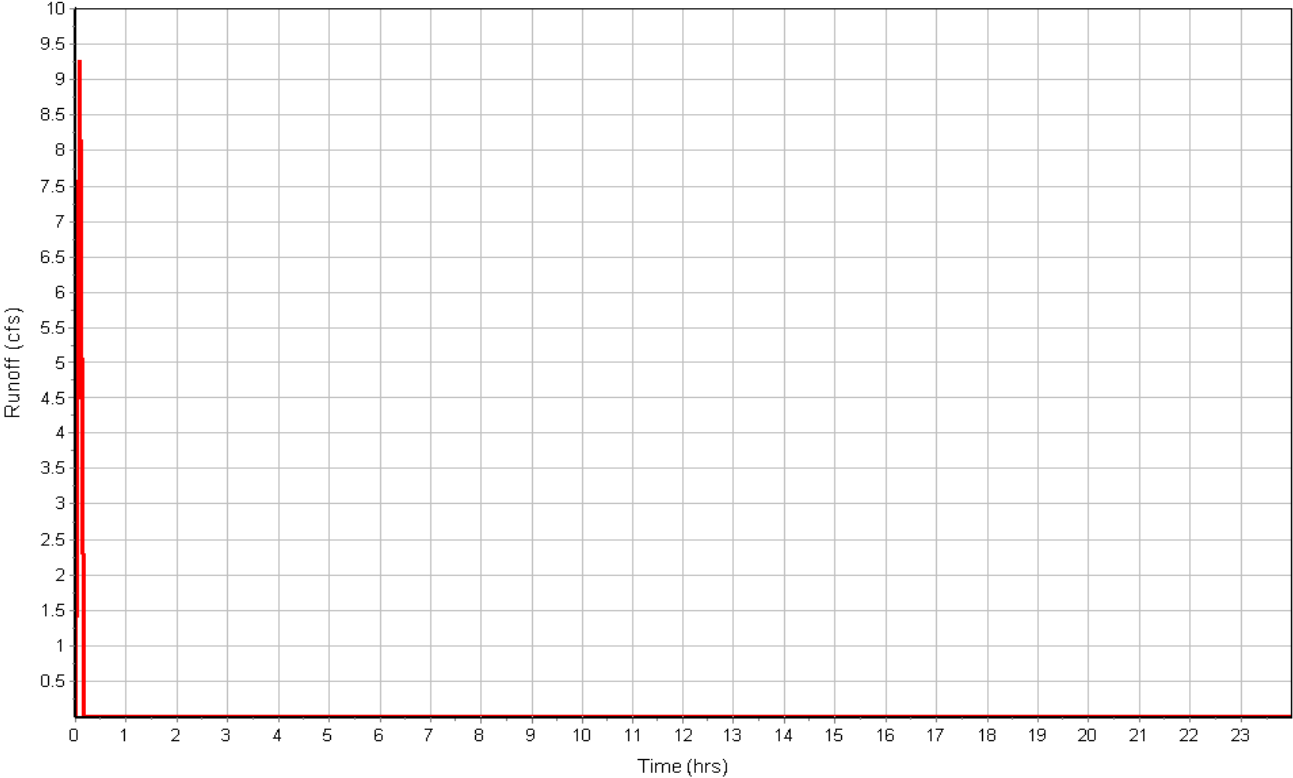
Time of Concentration

Subbasin Runoff Results

Total Rainfall (in) 0.83
Total Runoff (in) 0.60
Peak Runoff (cfs) 9.25
Rainfall Intensity 10.000
Weighted Runoff Coefficient 0.7200
Time of Concentration (days hh:mm:ss) 0 00:00:00

Subbasin : {STORM-BASINS}.15

Runoff Hydrograph



Subbasin : {STORM-BASINS}.16

Input Data

Area (ac) 0.21
 Weighted Runoff Coefficient 0.7500

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.10	-	0.90
-	0.10	-	0.60
Composite Area & Weighted Runoff Coeff.	0.20		0.75

Time of Concentration

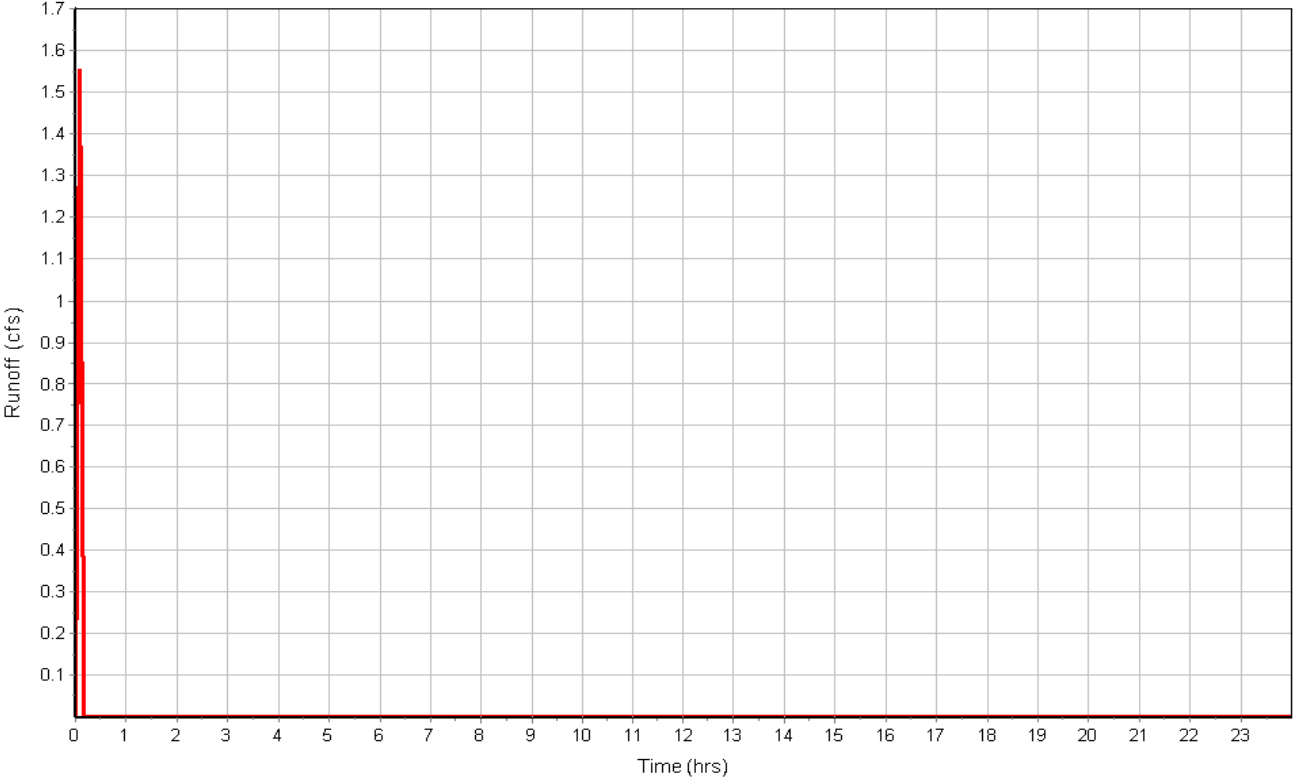
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	45.99	0.00	0.00
Slope (%) :	5	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.19	0.00	0.00
Computed Flow Time (min) :	4.01	0.00	0.00
Total TOC (min)	4.01		

Subbasin Runoff Results

Total Rainfall (in) 0.83
 Total Runoff (in) 0.63
 Peak Runoff (cfs) 1.55
 Rainfall Intensity 10.000
 Weighted Runoff Coefficient 0.7500
 Time of Concentration (days hh:mm:ss) 0 00:04:01

Subbasin : {STORM-BASINS}.16

Runoff Hydrograph



Subbasin : {STORM-BASINS}.17

Input Data

Area (ac) 0.28
 Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.28	-	0.90
Composite Area & Weighted Runoff Coeff.	0.28		0.90

Time of Concentration

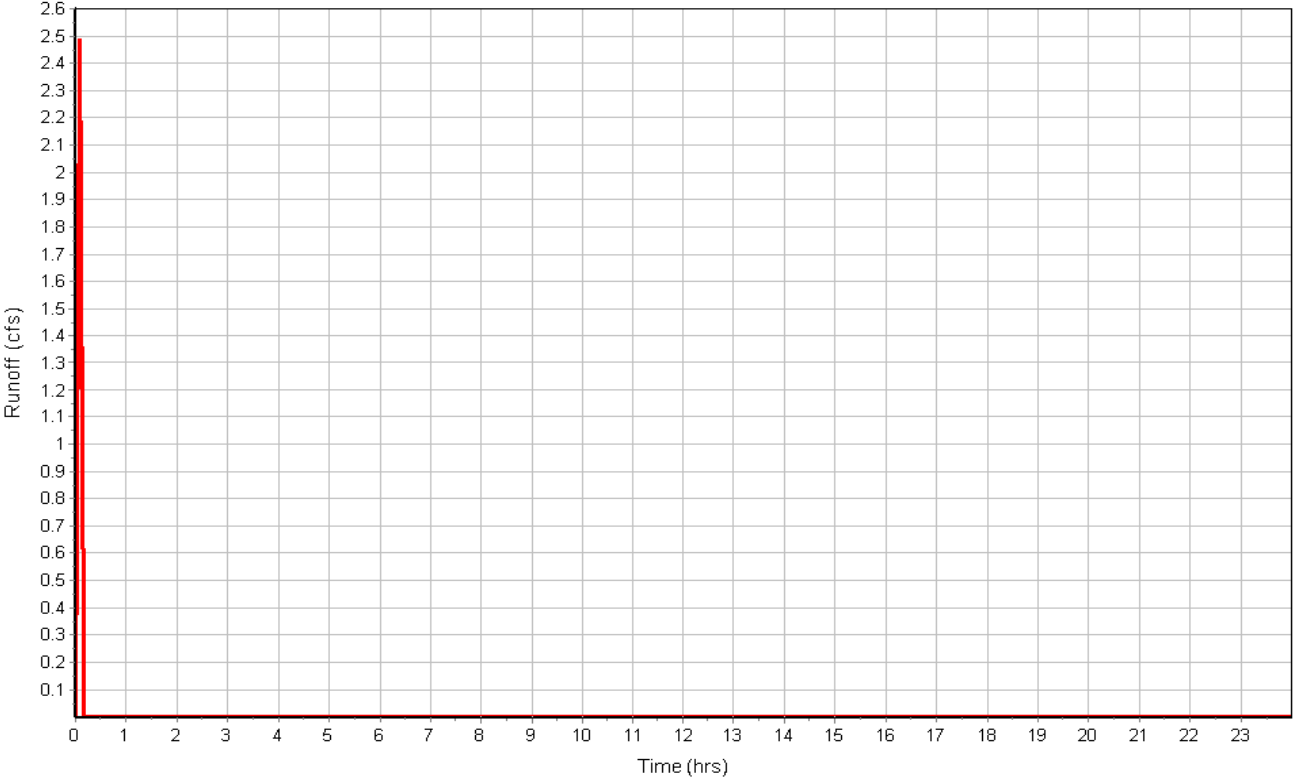
Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	400.01	0.00	0.00
Slope (%) :	3.5	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	3.80	0.00	0.00
Computed Flow Time (min) :	1.75	0.00	0.00
Total TOC (min)1.75			

Subbasin Runoff Results

Total Rainfall (in) 0.83
 Total Runoff (in) 0.75
 Peak Runoff (cfs) 2.48
 Rainfall Intensity 10.000
 Weighted Runoff Coefficient 0.9000
 Time of Concentration (days hh:mm:ss) 0 00:01:45

Subbasin : {STORM-BASINS}.17

Runoff Hydrograph



Subbasin : {STORM-BASINS}.18

Input Data

Area (ac) 3.51
Weighted Runoff Coefficient 0.6000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	3.51	-	0.60
Composite Area & Weighted Runoff Coeff.	3.51		0.60

Time of Concentration

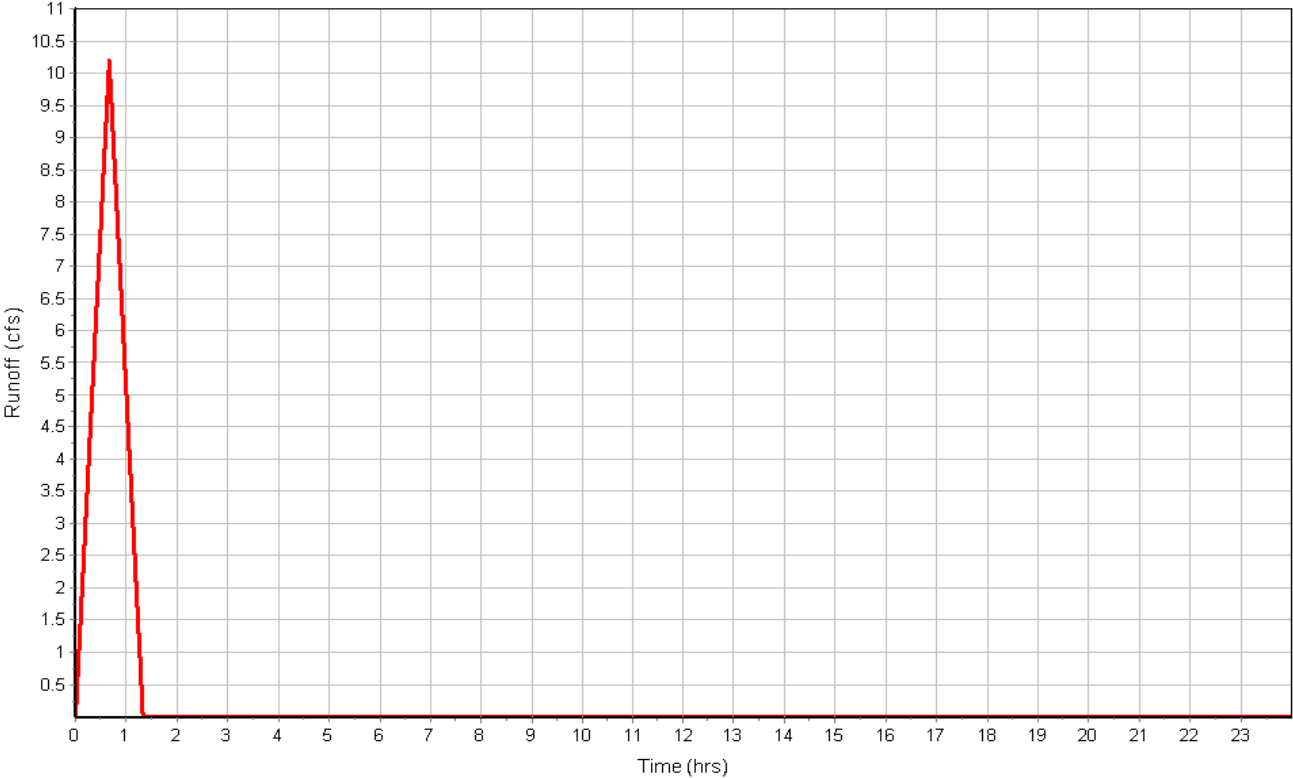
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	723.77	0.00	0.00
Slope (%) :	4	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.30	0.00	0.00
Computed Flow Time (min) :	39.75	0.00	0.00
Total TOC (min)	39.75		

Subbasin Runoff Results

Total Rainfall (in) 3.21
Total Runoff (in) 1.93
Peak Runoff (cfs) 10.19
Rainfall Intensity 4.835
Weighted Runoff Coefficient 0.6000
Time of Concentration (days hh:mm:ss) 0 00:39:45

Subbasin : {STORM-BASINS}.18

Runoff Hydrograph



Subbasin : {STORM-BASINS}.19

Input Data

Area (ac) 0.05
Weighted Runoff Coefficient 0.9000

Runoff Coefficient

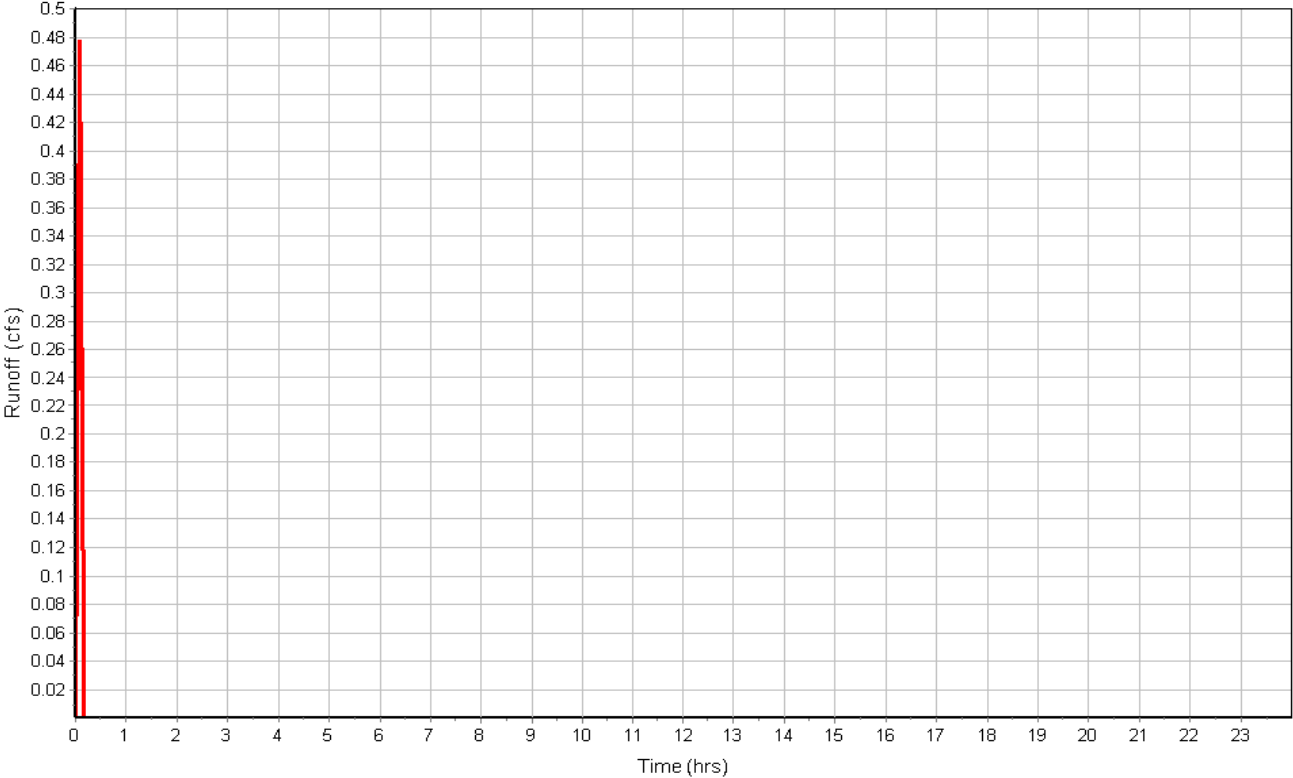
Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.05	-	0.90
Composite Area & Weighted Runoff Coeff.	0.05		0.90

Time of Concentration

Subbasin Runoff Results

Total Rainfall (in) 0.83
Total Runoff (in) 0.75
Peak Runoff (cfs) 0.48
Rainfall Intensity 10.000
Weighted Runoff Coefficient 0.9000
Time of Concentration (days hh:mm:ss) 0 00:00:00

Runoff Hydrograph



Subbasin : {STORM-BASINS}.2

Input Data

Area (ac) 0.96
 Weighted Runoff Coefficient 0.6300

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.86	-	0.60
-	0.10	-	0.90
Composite Area & Weighted Runoff Coeff.	0.96		0.63

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
	Manning's Roughness :	0.2	0.00
Flow Length (ft) :	606.64	0.00	0.00
Slope (%) :	1.8	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.21	0.00	0.00
Computed Flow Time (min) :	47.50	0.00	0.00

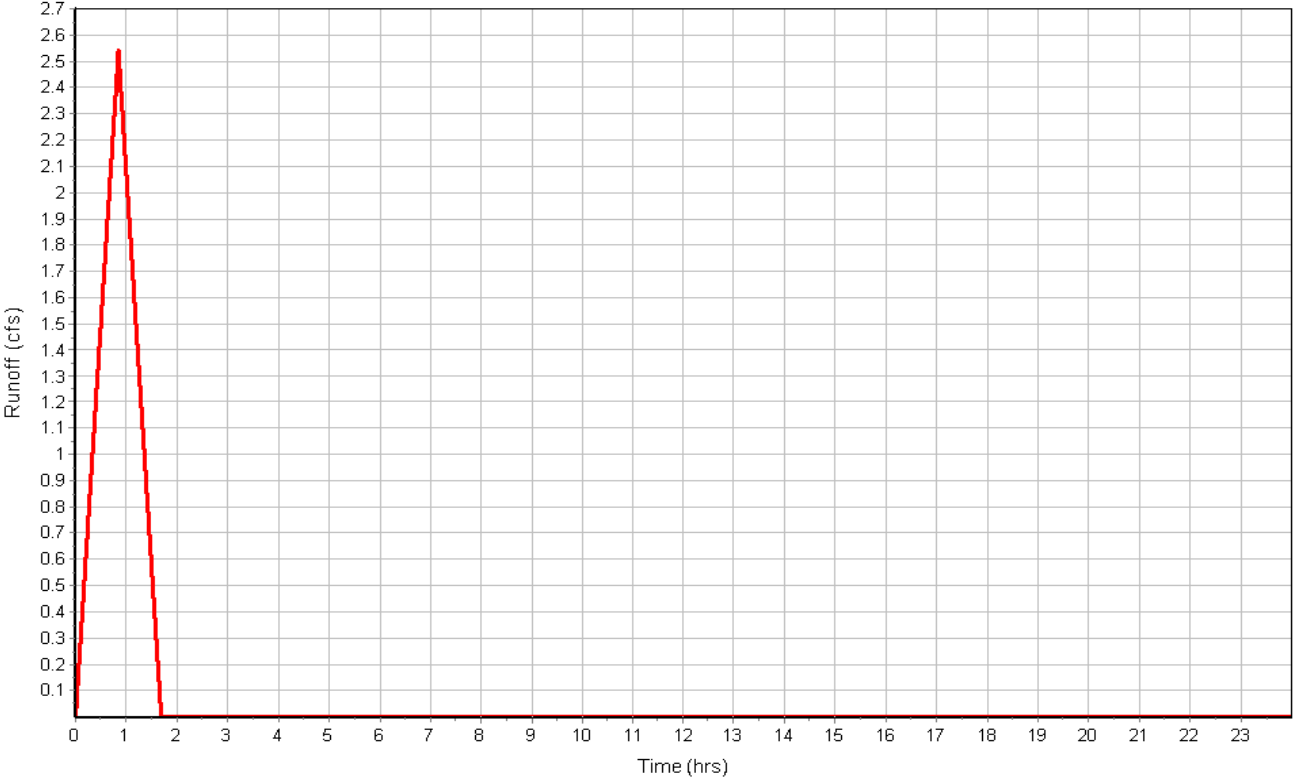
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
	Flow Length (ft) :	533.67	0.00
Slope (%) :	2	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	2.87	0.00	0.00
Computed Flow Time (min) :	3.10	0.00	0.00
Total TOC (min)	50.60		

Subbasin Runoff Results

Total Rainfall (in) 3.55
 Total Runoff (in) 2.23
 Peak Runoff (cfs) 2.54
 Rainfall Intensity 4.198
 Weighted Runoff Coefficient 0.6300
 Time of Concentration (days hh:mm:ss) 0 00:50:36

Subbasin : {STORM-BASINS}.2

Runoff Hydrograph



Subbasin : {STORM-BASINS}.20

Input Data

Area (ac) 0.19
Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.19	-	0.90
Composite Area & Weighted Runoff Coeff.	0.19		0.90

Time of Concentration

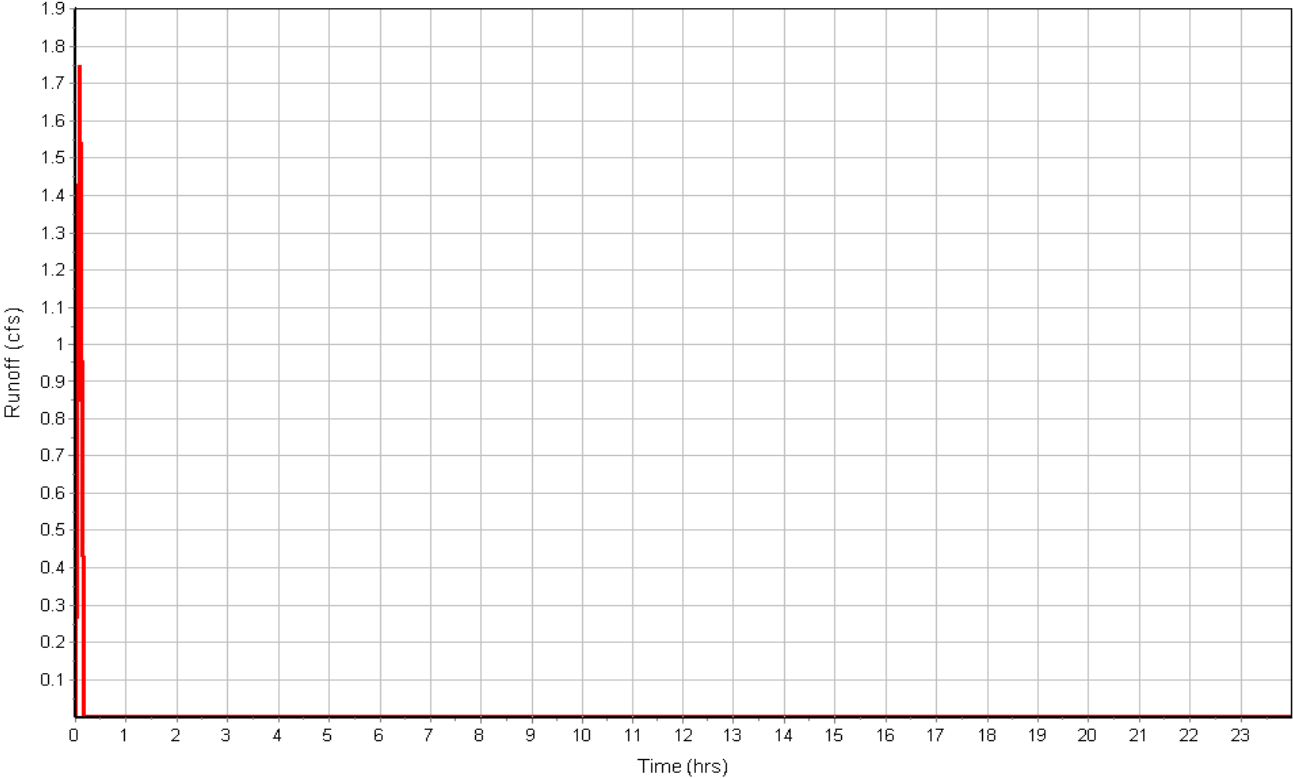
Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	319.14	0.00	0.00
Slope (%) :	2	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	2.87	0.00	0.00
Computed Flow Time (min) :	1.85	0.00	0.00
Total TOC (min)	1.85		

Subbasin Runoff Results

Total Rainfall (in) 0.83
Total Runoff (in) 0.75
Peak Runoff (cfs) 1.75
Rainfall Intensity 10.000
Weighted Runoff Coefficient 0.9000
Time of Concentration (days hh:mm:ss) 0 00:01:51

Subbasin : {STORM-BASINS}.20

Runoff Hydrograph



Subbasin : {STORM-BASINS}.21

Input Data

Area (ac) 0.22
Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.22	-	0.90
Composite Area & Weighted Runoff Coeff.	0.22		0.90

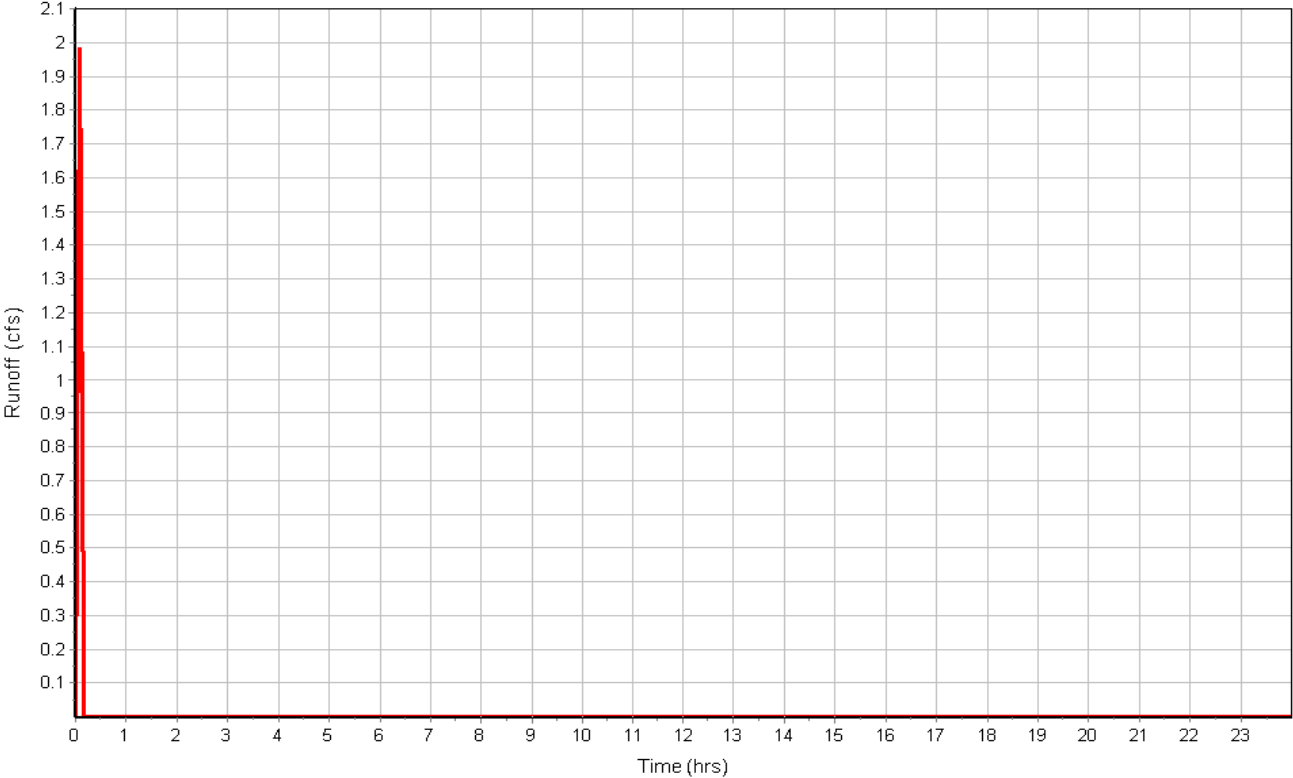
Time of Concentration

Subbasin Runoff Results

Total Rainfall (in) 0.83
Total Runoff (in) 0.75
Peak Runoff (cfs) 1.98
Rainfall Intensity 10.000
Weighted Runoff Coefficient 0.9000
Time of Concentration (days hh:mm:ss) 0 00:00:00

Subbasin : {STORM-BASINS}.21

Runoff Hydrograph



Subbasin : {STORM-BASINS}.22

Input Data

Area (ac) 0.20
 Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.20	-	0.90
Composite Area & Weighted Runoff Coeff.	0.20		0.90

Time of Concentration

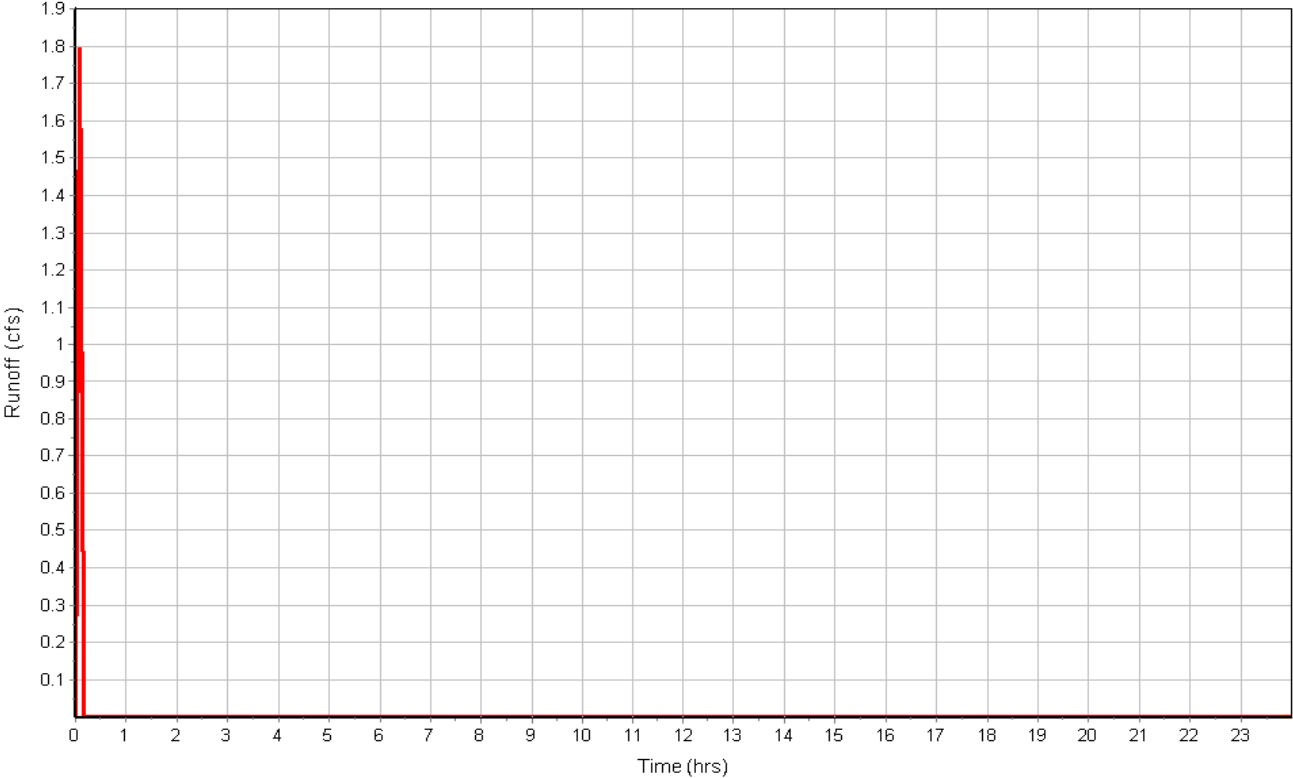
Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	364.92	0.00	0.00
Slope (%) :	3	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	3.52	0.00	0.00
Computed Flow Time (min) :	1.73	0.00	0.00
Total TOC (min)	1.73		

Subbasin Runoff Results

Total Rainfall (in) 0.83
 Total Runoff (in) 0.75
 Peak Runoff (cfs) 1.79
 Rainfall Intensity 10.000
 Weighted Runoff Coefficient 0.9000
 Time of Concentration (days hh:mm:ss) 0 00:01:44

Subbasin : {STORM-BASINS}.22

Runoff Hydrograph



Subbasin : {STORM-BASINS}.23A

Input Data

Area (ac) 0.88
Weighted Runoff Coefficient 0.6000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.88	-	0.60
Composite Area & Weighted Runoff Coeff.	0.88		0.60

Time of Concentration

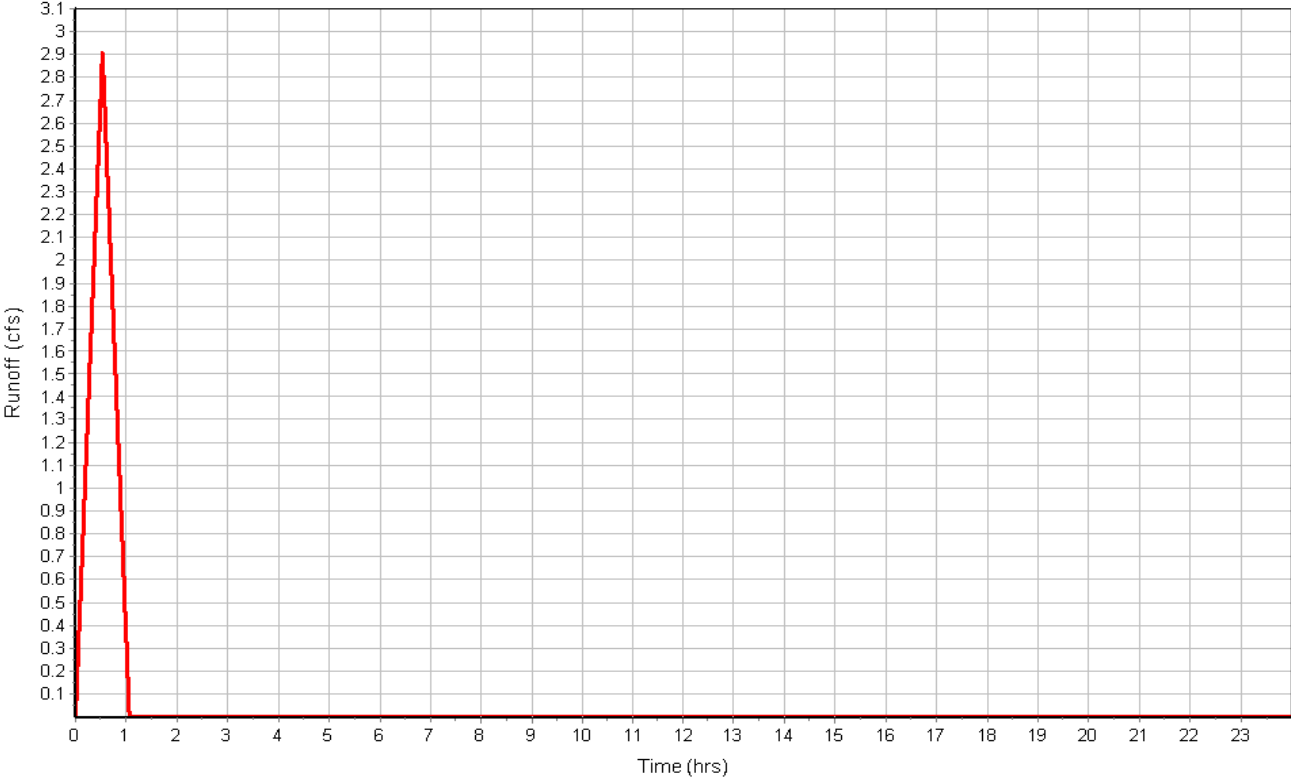
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	476.41	0.00	0.00
Slope (%) :	3	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.25	0.00	0.00
Computed Flow Time (min) :	31.91	0.00	0.00
Total TOC (min)	31.91		

Subbasin Runoff Results

Total Rainfall (in) 2.92
Total Runoff (in) 1.75
Peak Runoff (cfs) 2.91
Rainfall Intensity 5.498
Weighted Runoff Coefficient 0.6000
Time of Concentration (days hh:mm:ss) 0 00:31:55

Subbasin : {STORM-BASINS}.23A

Runoff Hydrograph



Subbasin : {STORM-BASINS}.23B

Input Data

Area (ac) 0.21
Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.21	-	0.90
Composite Area & Weighted Runoff Coeff.	0.21		0.90

Time of Concentration

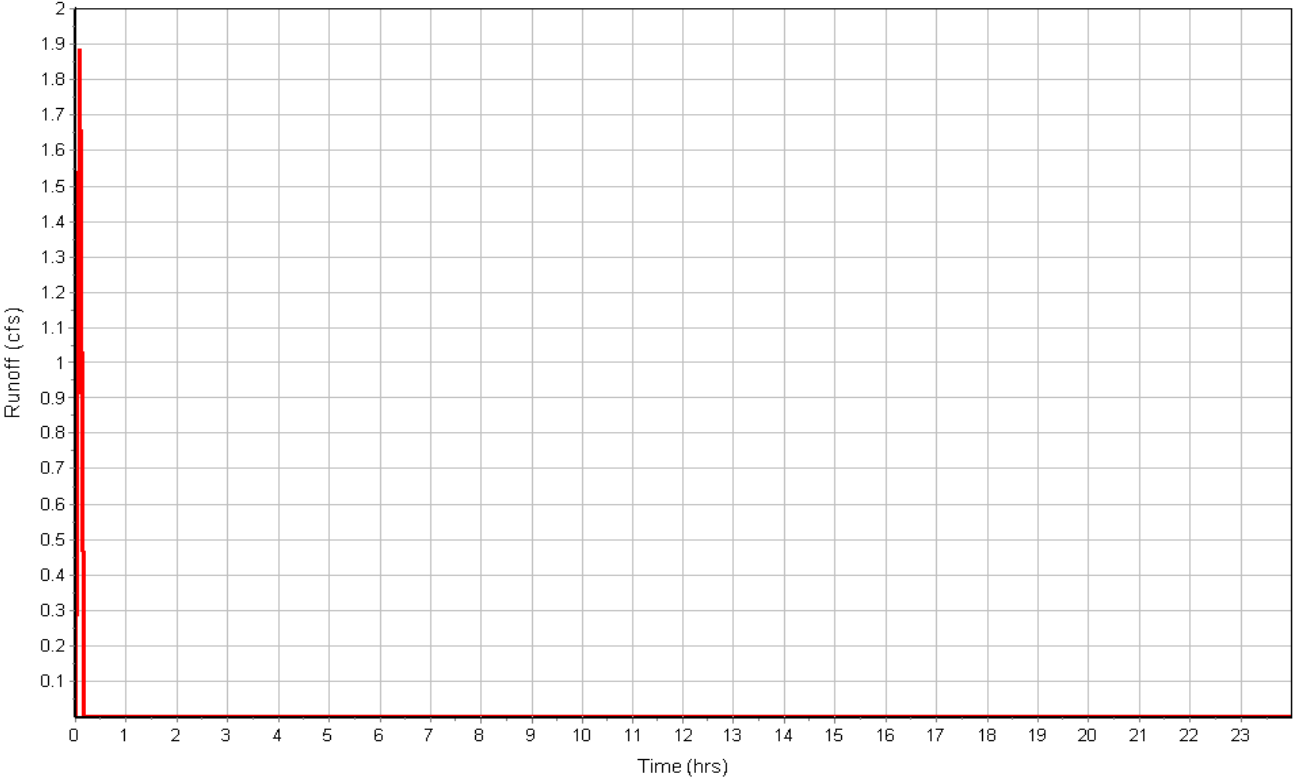
Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	294.20	0.00	0.00
Slope (%) :	2	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	2.87	0.00	0.00
Computed Flow Time (min) :	1.71	0.00	0.00
Total TOC (min)	1.71		

Subbasin Runoff Results

Total Rainfall (in) 0.83
Total Runoff (in) 0.75
Peak Runoff (cfs) 1.88
Rainfall Intensity 10.000
Weighted Runoff Coefficient 0.9000
Time of Concentration (days hh:mm:ss) 0 00:01:43

Subbasin : {STORM-BASINS}.23B

Runoff Hydrograph



Subbasin : {STORM-BASINS}.26

Input Data

Area (ac) 1.06
 Weighted Runoff Coefficient 0.6000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	1.06	-	0.60
Composite Area & Weighted Runoff Coeff.	1.06		0.60

Time of Concentration

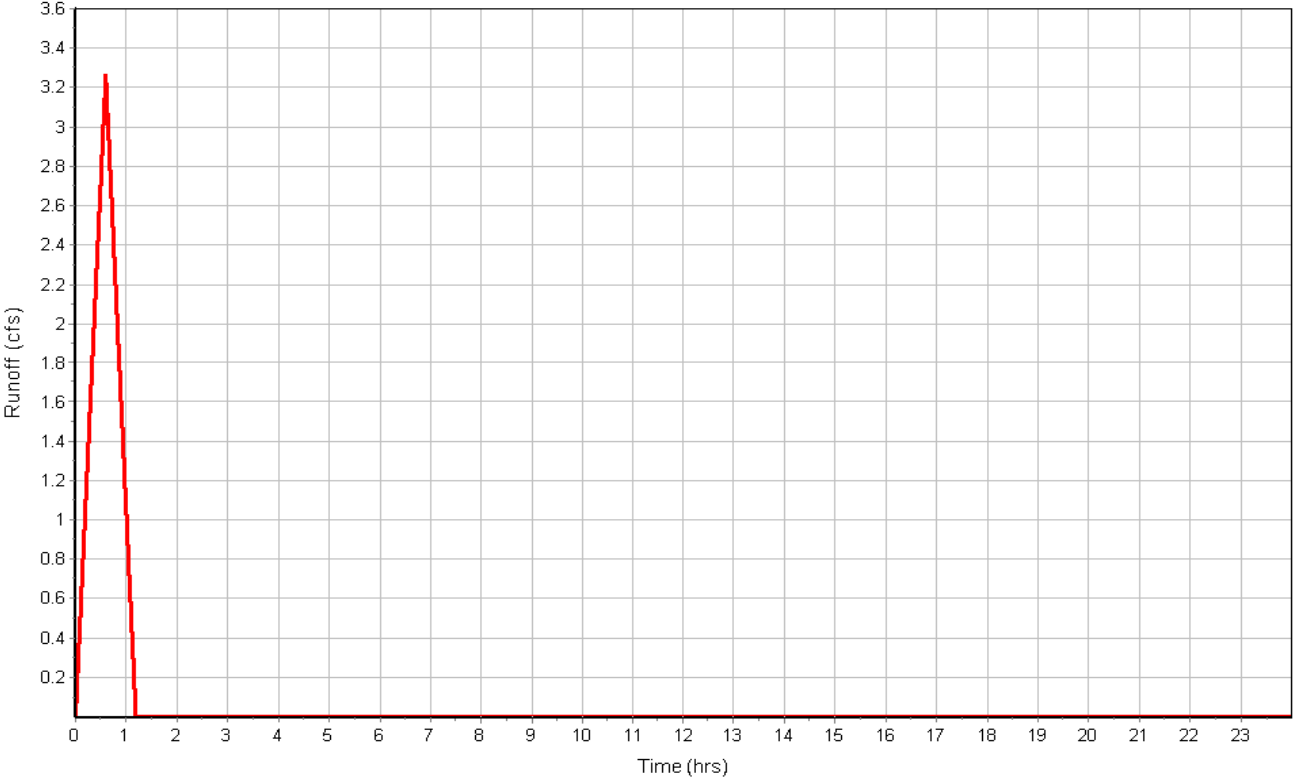
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	361.33	0.00	0.00
Slope (%) :	1.3	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.17	0.00	0.00
Computed Flow Time (min) :	35.74	0.00	0.00
Total TOC (min)	35.74		

Subbasin Runoff Results

Total Rainfall (in) 3.06
 Total Runoff (in) 1.84
 Peak Runoff (cfs) 3.26
 Rainfall Intensity 5.145
 Weighted Runoff Coefficient 0.6000
 Time of Concentration (days hh:mm:ss) 0 00:35:44

Subbasin : {STORM-BASINS}.26

Runoff Hydrograph



Subbasin : {STORM-BASINS}.27

Input Data

Area (ac) 0.58
Weighted Runoff Coefficient 0.7200

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.58	-	0.72
Composite Area & Weighted Runoff Coeff.	0.58		0.72

Time of Concentration

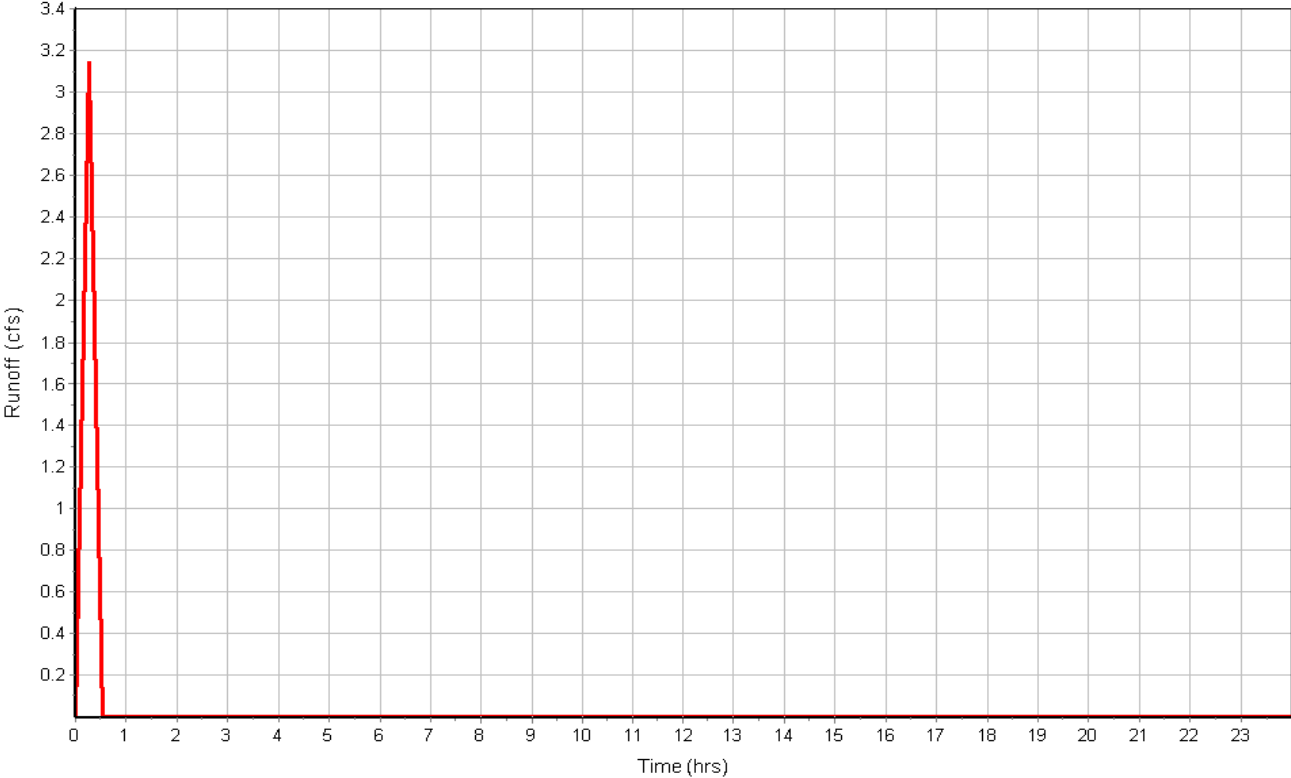
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	200	0.00	0.00
Slope (%) :	3	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.21	0.00	0.00
Computed Flow Time (min) :	15.94	0.00	0.00
Total TOC (min)	15.94		

Subbasin Runoff Results

Total Rainfall (in) 2.00
Total Runoff (in) 1.44
Peak Runoff (cfs) 3.14
Rainfall Intensity 7.500
Weighted Runoff Coefficient 0.7200
Time of Concentration (days hh:mm:ss) 0 00:15:56

Subbasin : {STORM-BASINS}.27

Runoff Hydrograph



Subbasin : {STORM-BASINS}.28

Input Data

Area (ac) 0.22
Weighted Runoff Coefficient 0.7200

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.22	-	0.72
Composite Area & Weighted Runoff Coeff.	0.22		0.72

Time of Concentration

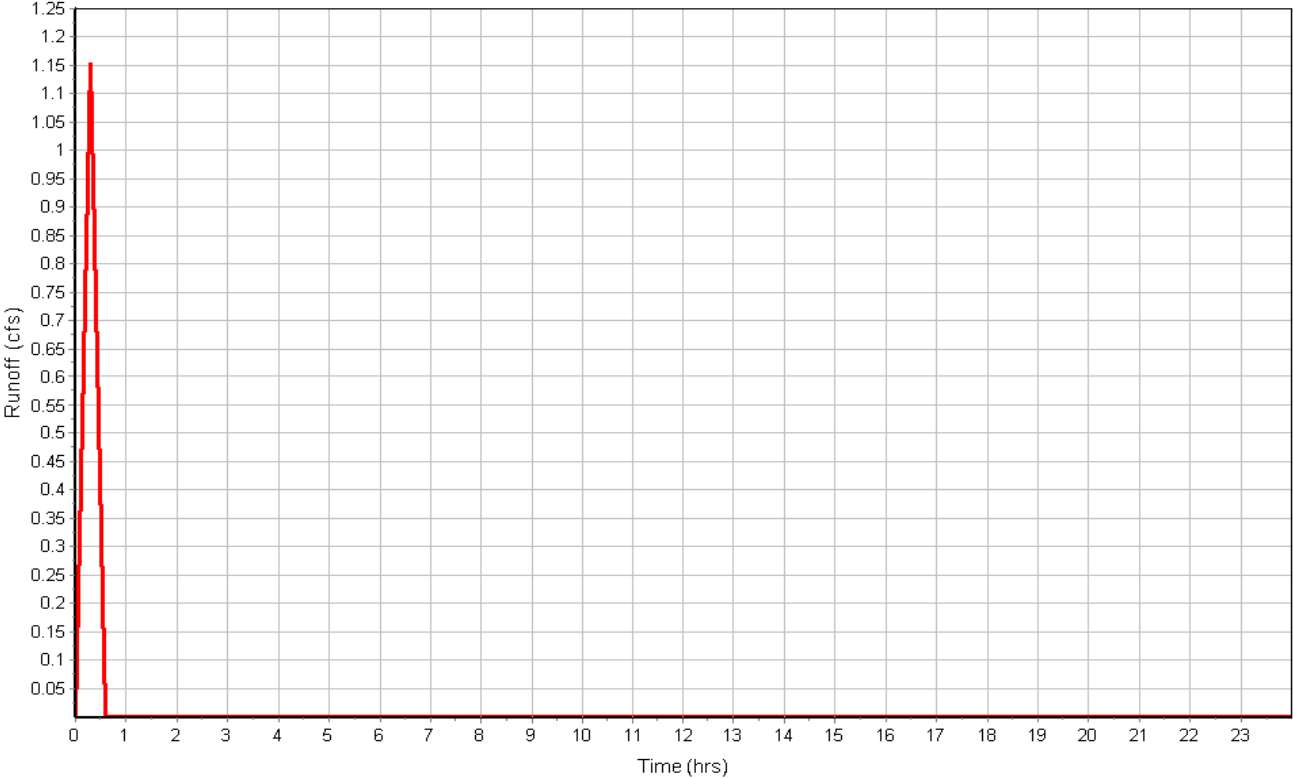
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	185	0.00	0.00
Slope (%) :	2	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.18	0.00	0.00
Computed Flow Time (min) :	17.61	0.00	0.00
Total TOC (min)	17.61		

Subbasin Runoff Results

Total Rainfall (in) 2.12
Total Runoff (in) 1.52
Peak Runoff (cfs) 1.15
Rainfall Intensity 7.182
Weighted Runoff Coefficient 0.7200
Time of Concentration (days hh:mm:ss) 0 00:17:37

Subbasin : {STORM-BASINS}.28

Runoff Hydrograph



Subbasin : {STORM-BASINS}.29

Input Data

Area (ac) 0.15
 Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.15	-	0.90
Composite Area & Weighted Runoff Coeff.	0.15		0.90

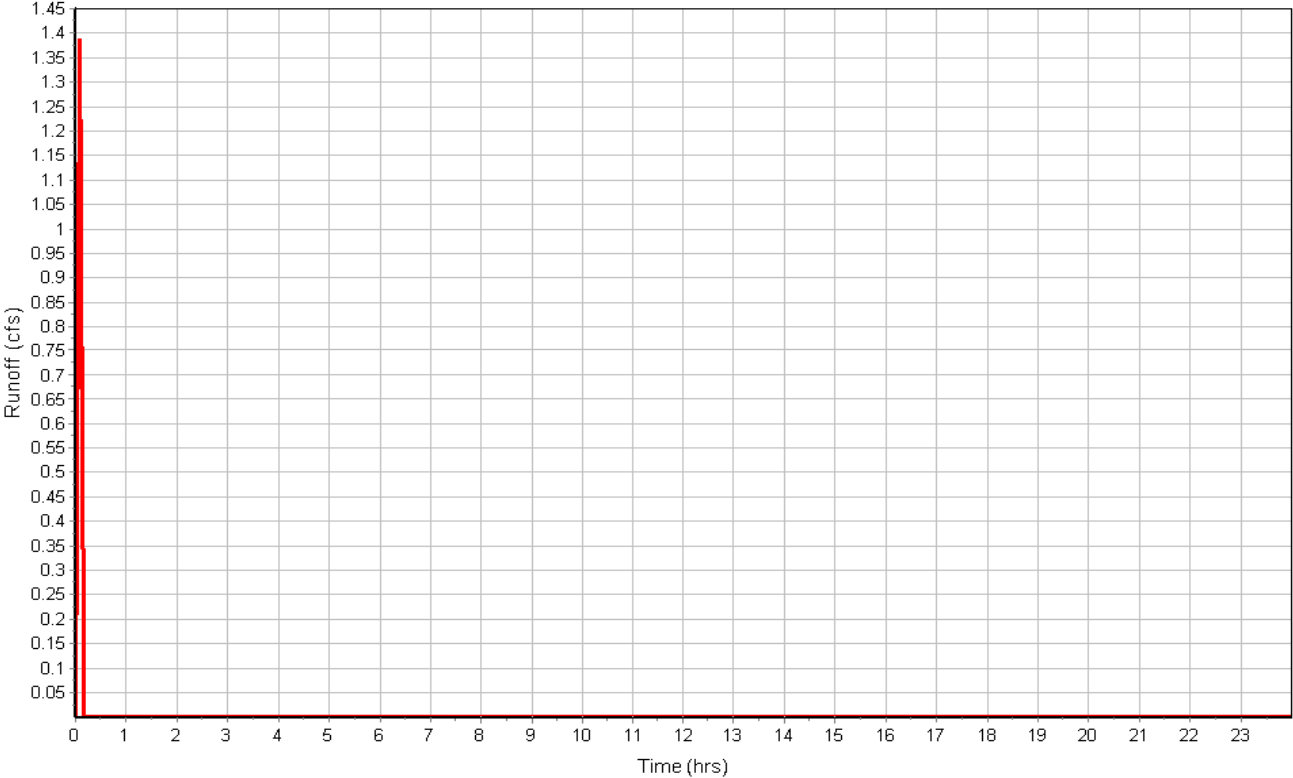
Time of Concentration

Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	223.61	0.00	0.00
Slope (%) :	2	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	2.87	0.00	0.00
Computed Flow Time (min) :	1.30	0.00	0.00
Total TOC (min)	1.30		

Subbasin Runoff Results

Total Rainfall (in) 0.83
 Total Runoff (in) 0.75
 Peak Runoff (cfs) 1.39
 Rainfall Intensity 10.000
 Weighted Runoff Coefficient 0.9000
 Time of Concentration (days hh:mm:ss) 0 00:01:18

Runoff Hydrograph



Subbasin : {STORM-BASINS}.3

Input Data

Area (ac) 1.34
 Weighted Runoff Coefficient 0.6300

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	1.20	-	0.60
-	0.13	-	0.90
Composite Area & Weighted Runoff Coeff.	1.33		0.63

Time of Concentration

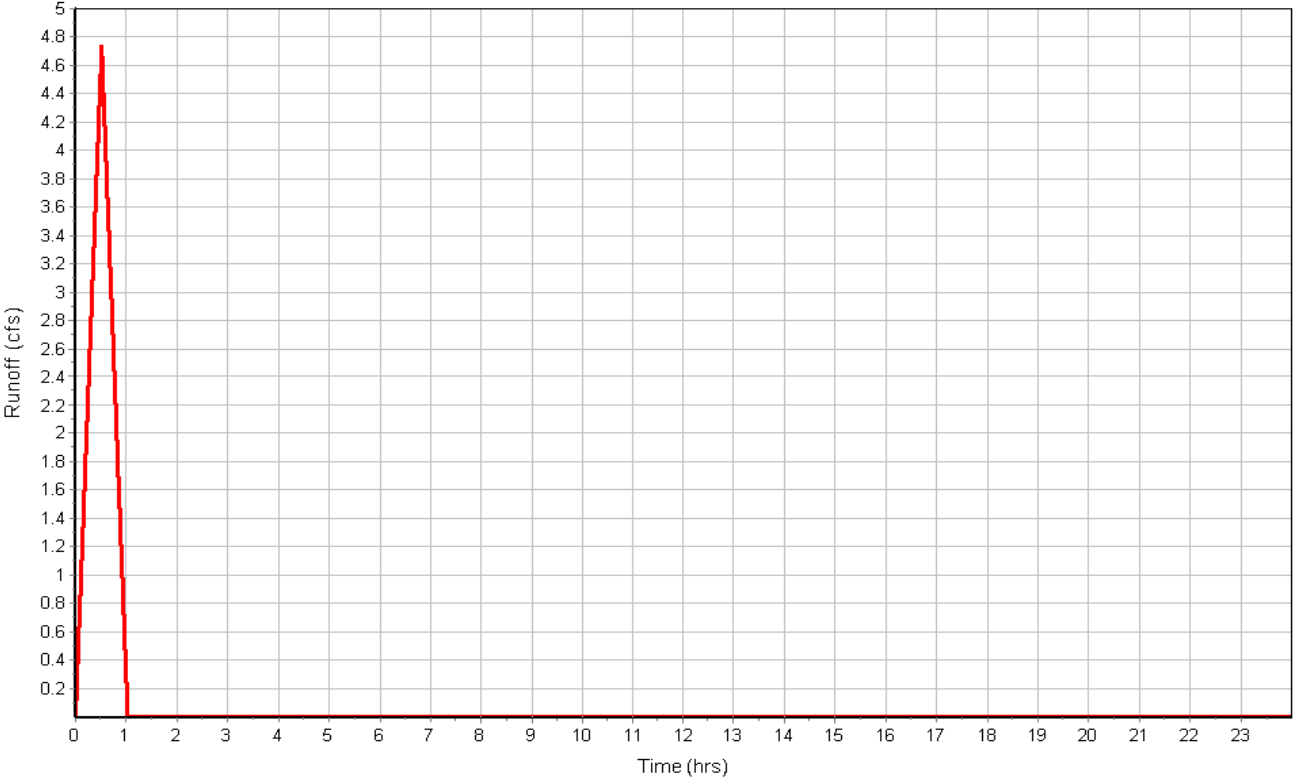
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	545.09	0.00	0.00
Slope (%) :	4.3	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.30	0.00	0.00
Computed Flow Time (min) :	30.78	0.00	0.00
Total TOC (min)	30.78		

Subbasin Runoff Results

Total Rainfall (in) 2.89
 Total Runoff (in) 1.82
 Peak Runoff (cfs) 4.73
 Rainfall Intensity 5.615
 Weighted Runoff Coefficient 0.6300
 Time of Concentration (days hh:mm:ss) 0 00:30:47

Subbasin : {STORM-BASINS}.3

Runoff Hydrograph



Subbasin : {STORM-BASINS}.30

Input Data

Area (ac) 0.12
 Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.12	-	0.90
Composite Area & Weighted Runoff Coeff.	0.12		0.90

Time of Concentration

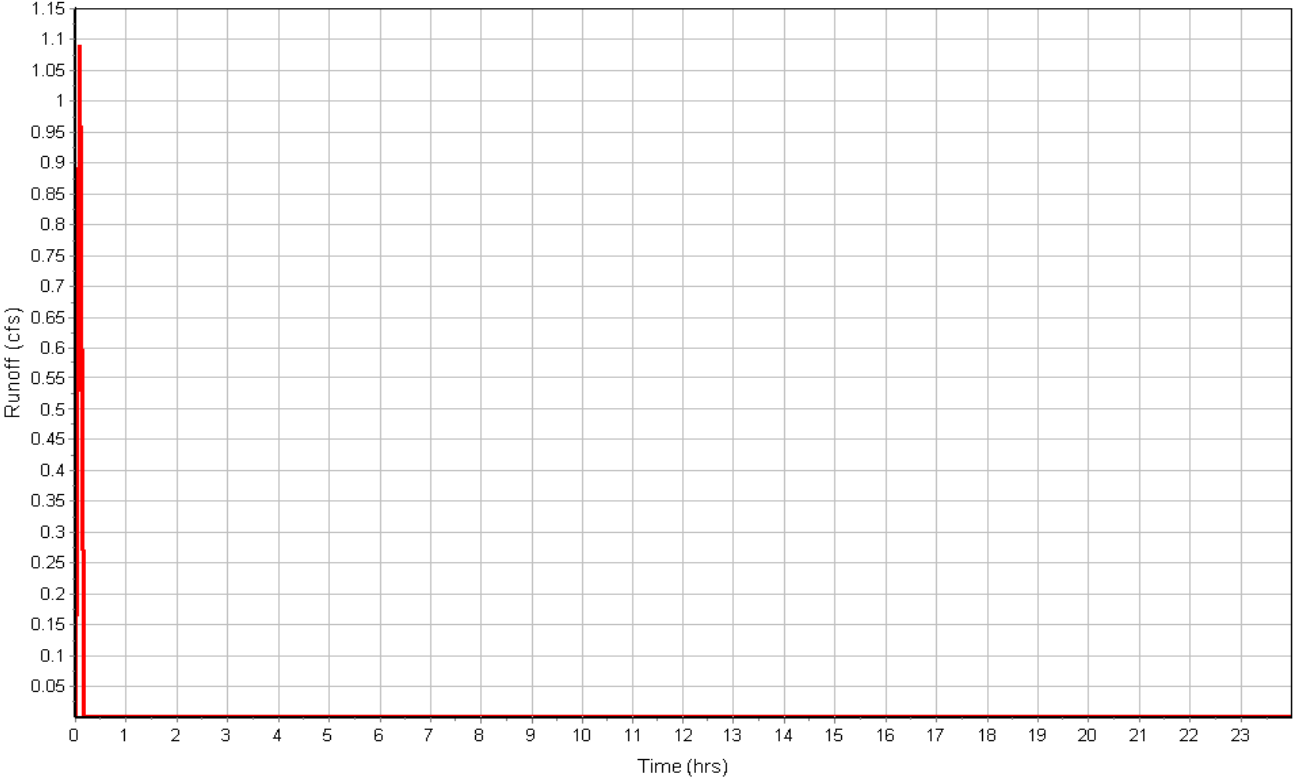
Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	222.61	0.00	0.00
Slope (%) :	2	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	2.87	0.00	0.00
Computed Flow Time (min) :	1.29	0.00	0.00
Total TOC (min)	1.29		

Subbasin Runoff Results

Total Rainfall (in) 0.83
 Total Runoff (in) 0.75
 Peak Runoff (cfs) 1.09
 Rainfall Intensity 10.000
 Weighted Runoff Coefficient 0.9000
 Time of Concentration (days hh:mm:ss) 0 00:01:17

Subbasin : {STORM-BASINS}.30

Runoff Hydrograph



Subbasin : {STORM-BASINS}.31

Input Data

Area (ac) 0.12
Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.12	-	0.90
Composite Area & Weighted Runoff Coeff.	0.12		0.90

Time of Concentration

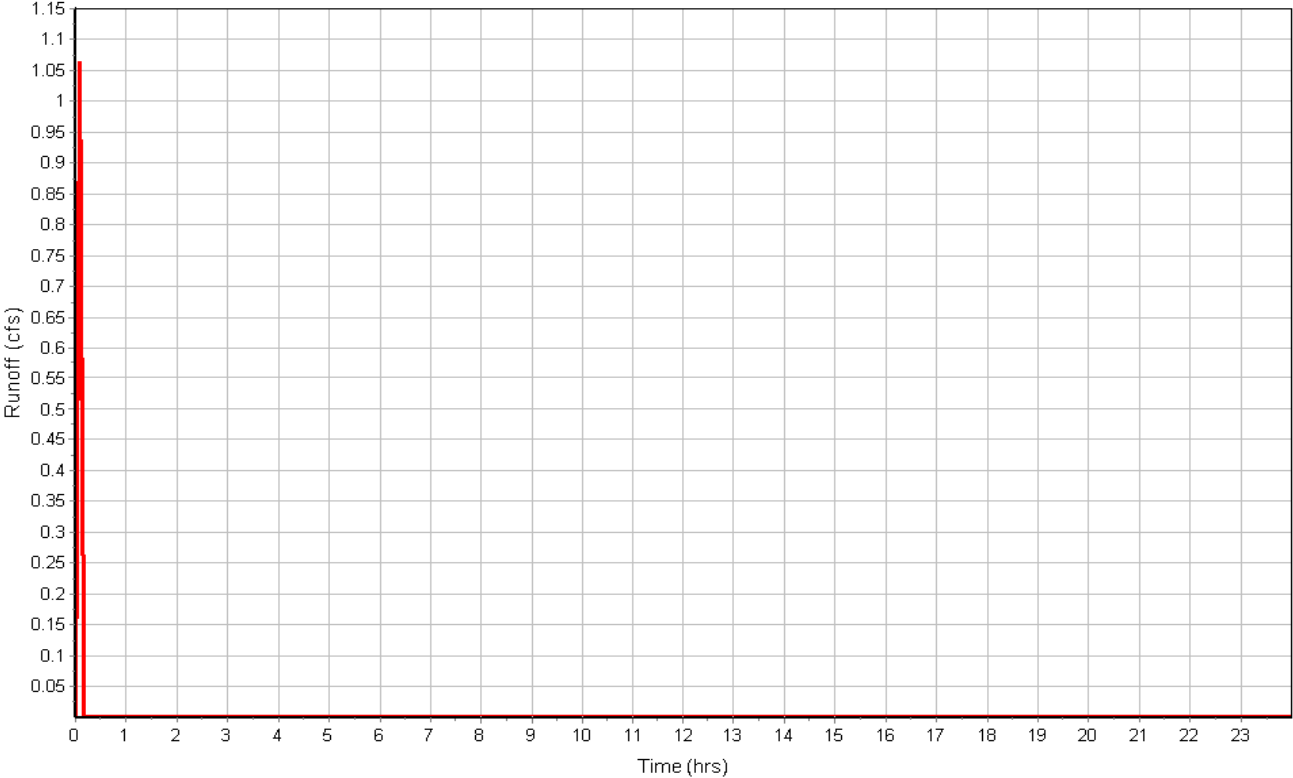
Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	258.85	0.00	0.00
Slope (%) :	2	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	2.87	0.00	0.00
Computed Flow Time (min) :	1.50	0.00	0.00
Total TOC (min)	1.50		

Subbasin Runoff Results

Total Rainfall (in) 0.83
Total Runoff (in) 0.75
Peak Runoff (cfs) 1.06
Rainfall Intensity 10.000
Weighted Runoff Coefficient 0.9000
Time of Concentration (days hh:mm:ss) 0 00:01:30

Subbasin : {STORM-BASINS}.31

Runoff Hydrograph



Subbasin : {STORM-BASINS}.4

Input Data

Area (ac) 0.17
 Weighted Runoff Coefficient 0.7500

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.00	-	0.60
-	0.00	-	0.90
Composite Area & Weighted Runoff Coeff.	0.00		0.75

Time of Concentration

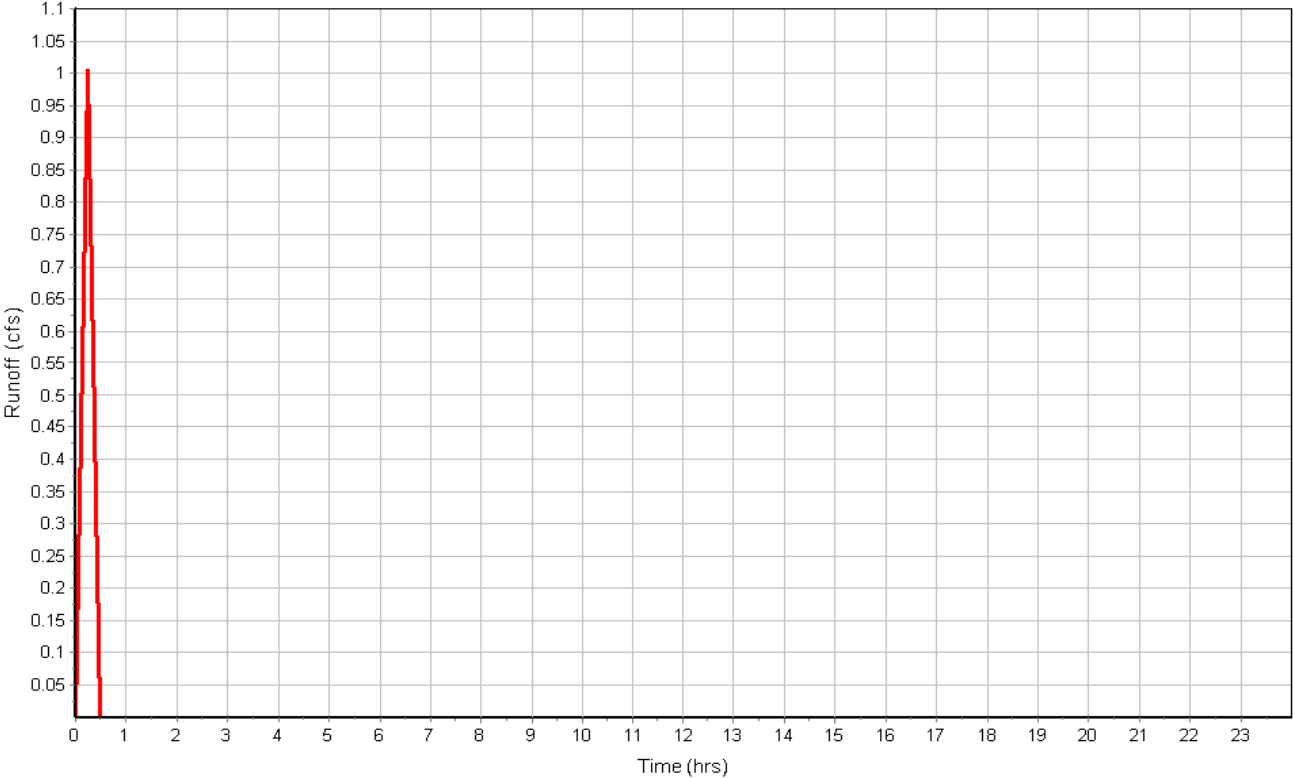
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	211.10	0.00	0.00
Slope (%) :	4.2	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.24	0.00	0.00
Computed Flow Time (min) :	14.55	0.00	0.00
Total TOC (min)	14.55		

Subbasin Runoff Results

Total Rainfall (in) 1.88
 Total Runoff (in) 1.41
 Peak Runoff (cfs) 1.00
 Rainfall Intensity 7.778
 Weighted Runoff Coefficient 0.7500
 Time of Concentration (days hh:mm:ss) 0 00:14:33

Subbasin : {STORM-BASINS}.4

Runoff Hydrograph



Subbasin : {STORM-BASINS}.5

Input Data

Area (ac) 0.46
 Weighted Runoff Coefficient 0.6900

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.32	-	0.60
-	0.14	-	0.90
Composite Area & Weighted Runoff Coeff.	0.46		0.69

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
	Manning's Roughness :	0.2	0.00
Flow Length (ft) :	175.47	0.00	0.00
Slope (%) :	3	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.20	0.00	0.00
Computed Flow Time (min) :	14.35	0.00	0.00

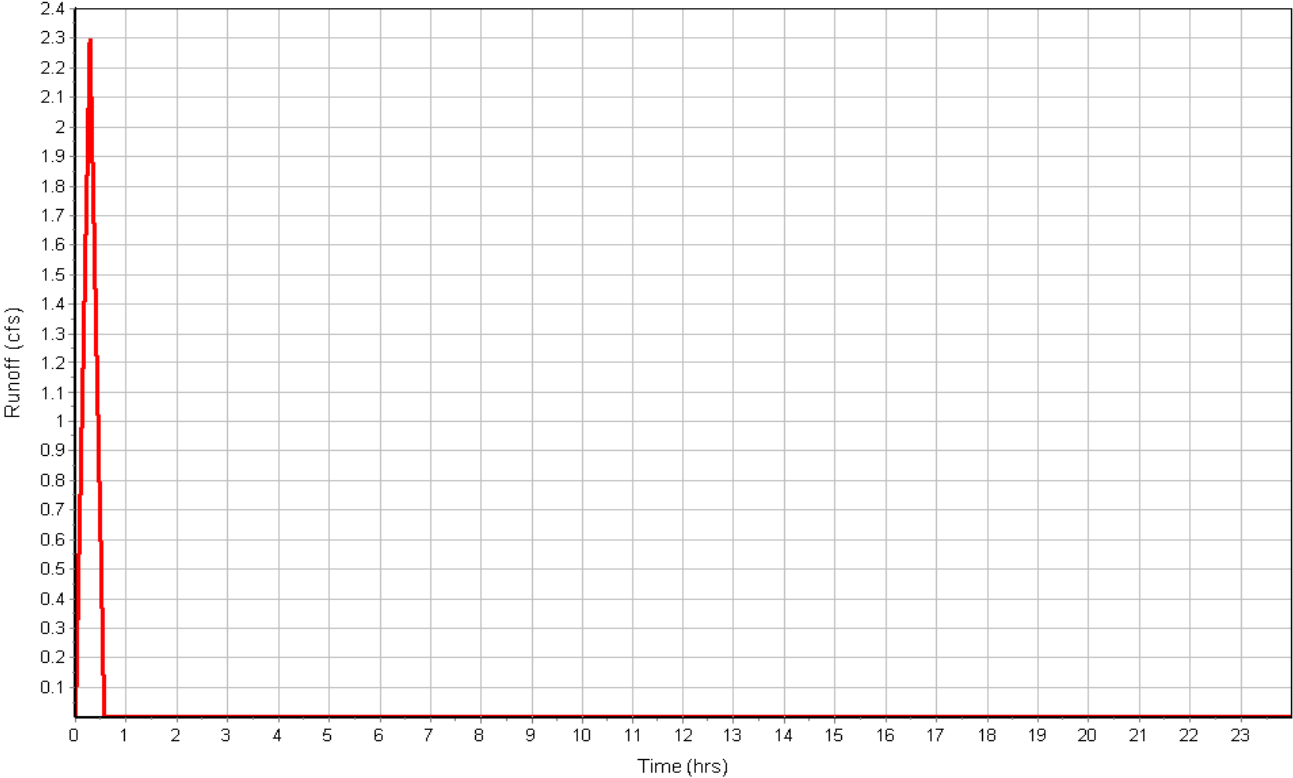
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
	Flow Length (ft) :	576.52	0.00
Slope (%) :	3	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	3.52	0.00	0.00
Computed Flow Time (min) :	2.73	0.00	0.00
Total TOC (min)	17.08		

Subbasin Runoff Results

Total Rainfall (in) 2.06
 Total Runoff (in) 1.42
 Peak Runoff (cfs) 2.30
 Rainfall Intensity 7.278
 Weighted Runoff Coefficient 0.6900
 Time of Concentration (days hh:mm:ss) 0 00:17:05

Subbasin : {STORM-BASINS}.5

Runoff Hydrograph



Subbasin : {STORM-BASINS}.6

Input Data

Area (ac) 1.73
 Weighted Runoff Coefficient 0.6000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	1.73	-	0.60
Composite Area & Weighted Runoff Coeff.	1.73		0.60

Time of Concentration

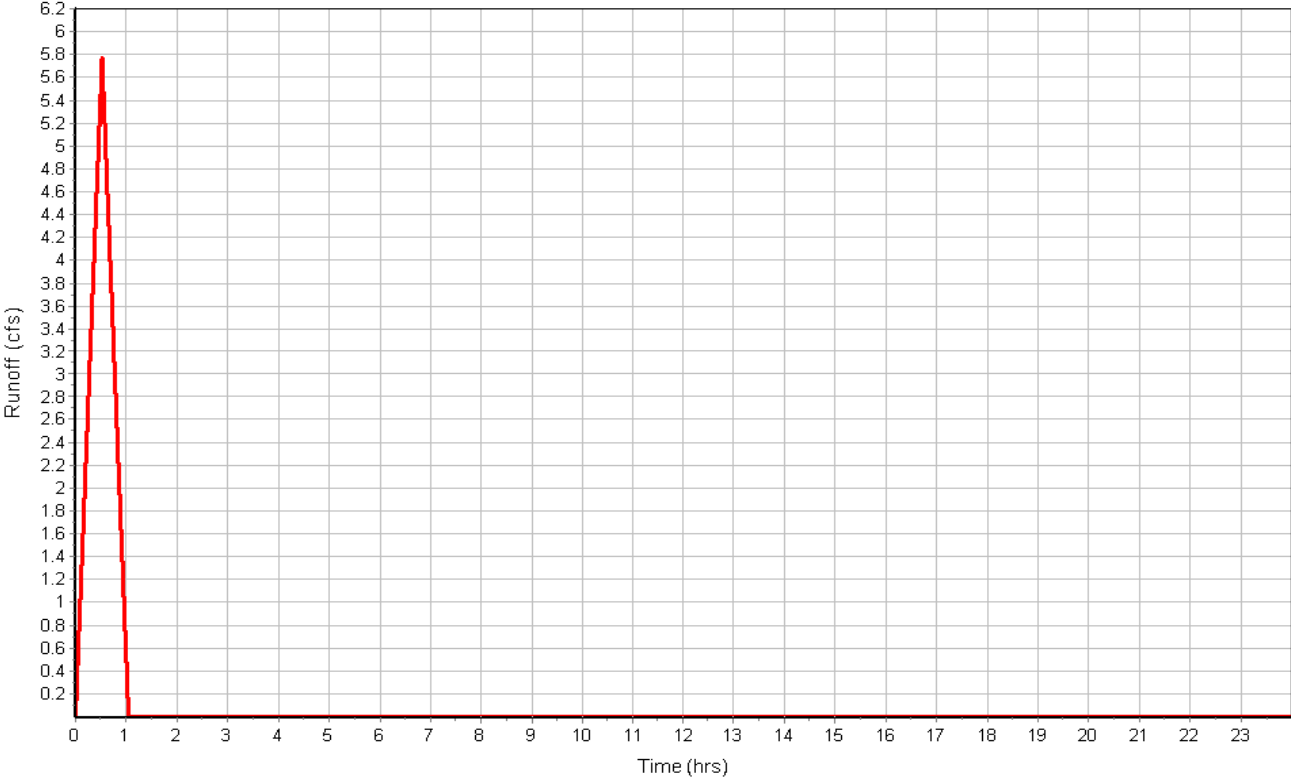
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	501.59	0.00	0.00
Slope (%) :	3.5	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.27	0.00	0.00
Computed Flow Time (min) :	31.27	0.00	0.00
Total TOC (min)	31.27		

Subbasin Runoff Results

Total Rainfall (in) 2.91
 Total Runoff (in) 1.74
 Peak Runoff (cfs) 5.77
 Rainfall Intensity 5.563
 Weighted Runoff Coefficient 0.6000
 Time of Concentration (days hh:mm:ss) 0 00:31:16

Subbasin : {STORM-BASINS}.6

Runoff Hydrograph



Subbasin : {STORM-BASINS}.7A

Input Data

Area (ac) 0.38
 Weighted Runoff Coefficient 0.6600

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.30	-	0.60
-	0.08	-	0.90
Composite Area & Weighted Runoff Coeff.	0.38		0.66

Time of Concentration

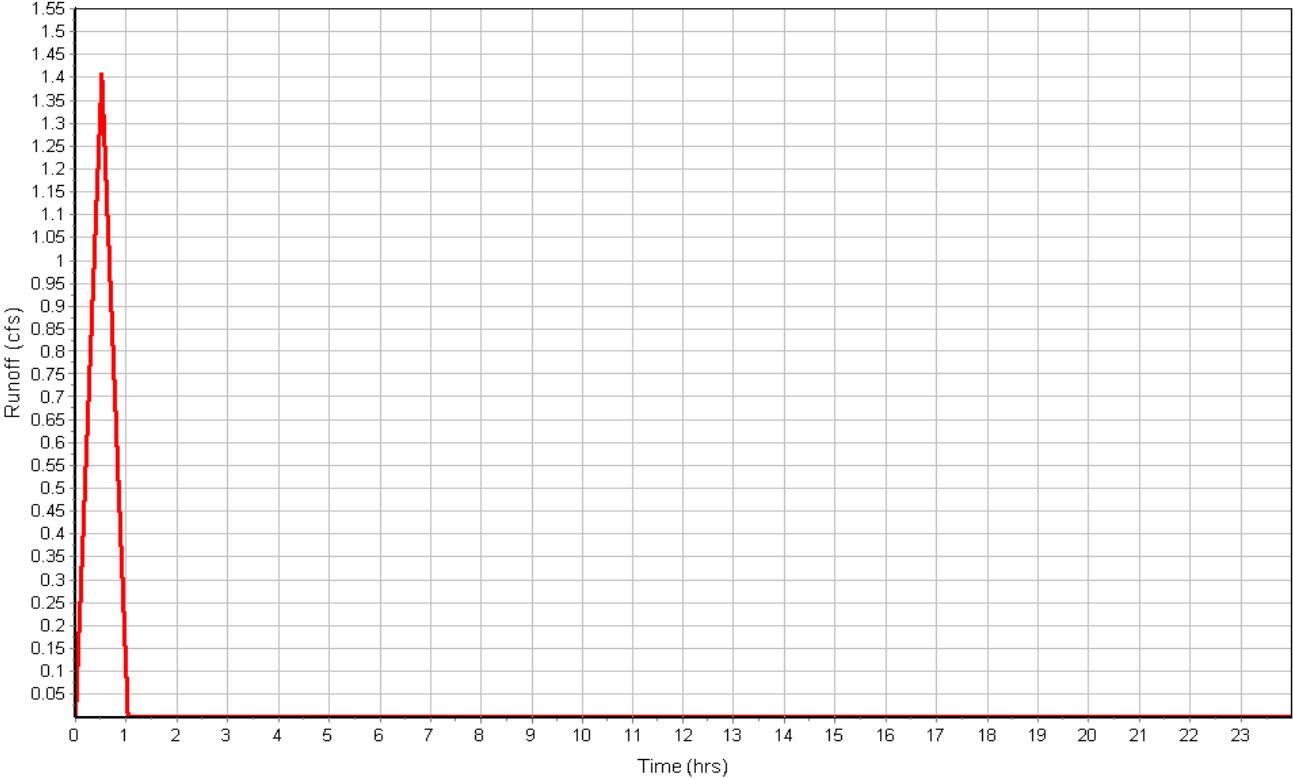
Sheet Flow Computations	Subarea A	Subarea B	Subarea C
	Manning's Roughness :	0.2	0.00
Flow Length (ft) :	419.02	0.00	0.00
Slope (%) :	2.5	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.23	0.00	0.00
Computed Flow Time (min) :	30.98	0.00	0.00
Total TOC (min)	30.98		

Subbasin Runoff Results

Total Rainfall (in) 2.89
 Total Runoff (in) 1.91
 Peak Runoff (cfs) 1.41
 Rainfall Intensity 5.594
 Weighted Runoff Coefficient 0.6600
 Time of Concentration (days hh:mm:ss) 0 00:30:59

Subbasin : {STORM-BASINS}.7A

Runoff Hydrograph



Subbasin : {STORM-BASINS}.7B

Input Data

Area (ac) 0.28
 Weighted Runoff Coefficient 0.7200

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.17	-	0.60
-	0.11	-	0.90
Composite Area & Weighted Runoff Coeff.	0.28		0.72

Time of Concentration

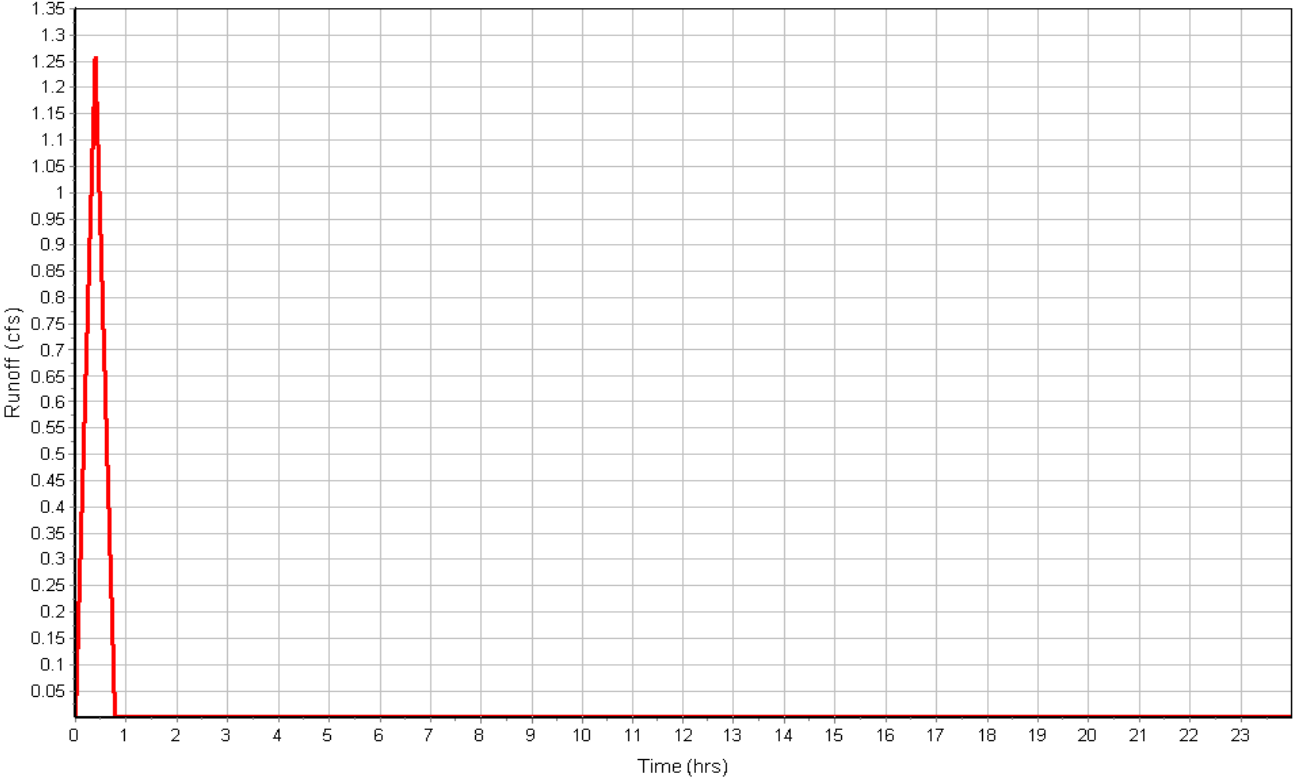
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	282.86	0.00	0.00
Slope (%) :	2.3	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.20	0.00	0.00
Computed Flow Time (min) :	23.39	0.00	0.00
Total TOC (min)	23.39		

Subbasin Runoff Results

Total Rainfall (in) 2.47
 Total Runoff (in) 1.78
 Peak Runoff (cfs) 1.26
 Rainfall Intensity 6.350
 Weighted Runoff Coefficient 0.7200
 Time of Concentration (days hh:mm:ss) 0 00:23:23

Subbasin : {STORM-BASINS}.7B

Runoff Hydrograph



Subbasin : {STORM-BASINS}.8

Input Data

Area (ac) 2.66
 Weighted Runoff Coefficient 0.6000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	2.66	-	0.60
Composite Area & Weighted Runoff Coeff.	2.66		0.60

Time of Concentration

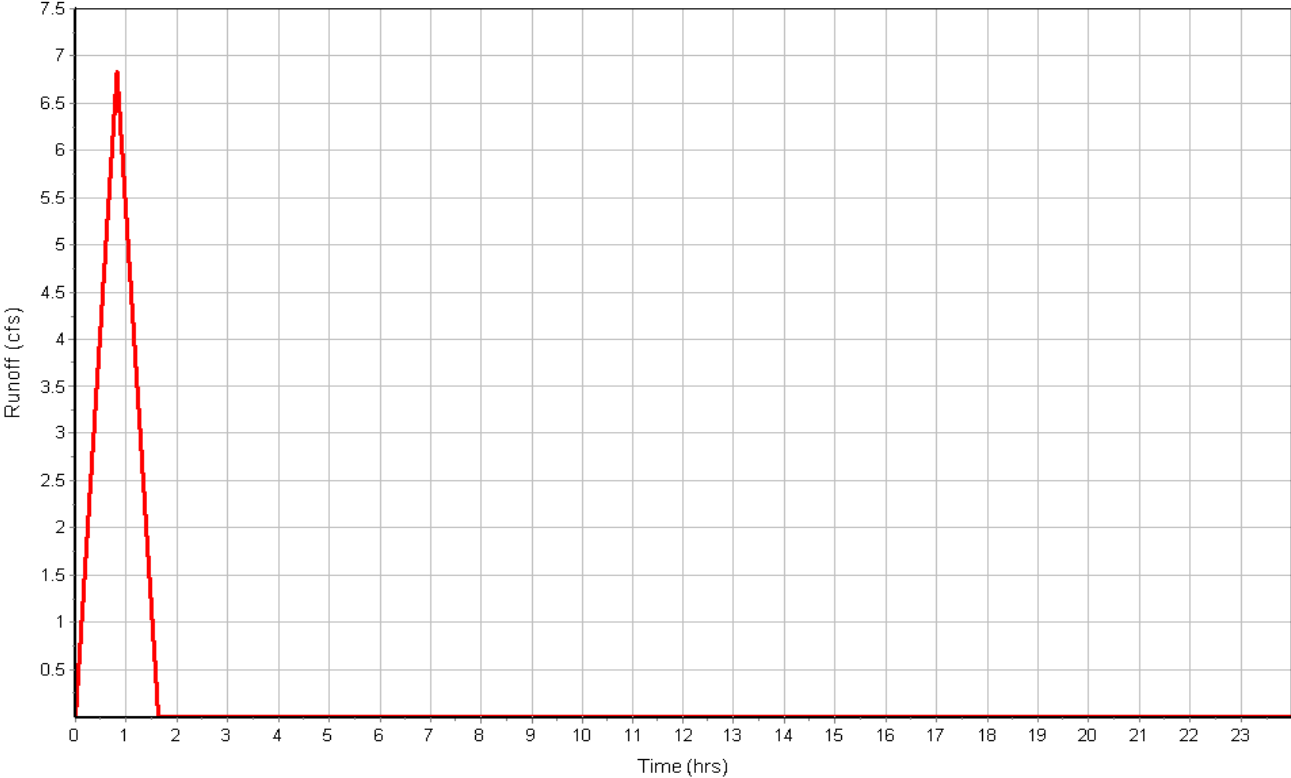
Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	0.2	0.00	0.00
Flow Length (ft) :	801.79	0.00	0.00
Slope (%) :	2.9	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.20	0.00	0.00
Velocity (ft/sec) :	0.27	0.00	0.00
Computed Flow Time (min) :	49.06	0.00	0.00
Total TOC (min)	49.06		

Subbasin Runoff Results

Total Rainfall (in) 3.49
 Total Runoff (in) 2.10
 Peak Runoff (cfs) 6.83
 Rainfall Intensity 4.275
 Weighted Runoff Coefficient 0.6000
 Time of Concentration (days hh:mm:ss) 0 00:49:04

Subbasin : {STORM-BASINS}.8

Runoff Hydrograph



Subbasin : {STORM-BASINS}.9

Input Data

Area (ac) 0.06
 Weighted Runoff Coefficient 0.9000

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.06	-	0.90
Composite Area & Weighted Runoff Coeff.	0.06		0.90

Time of Concentration

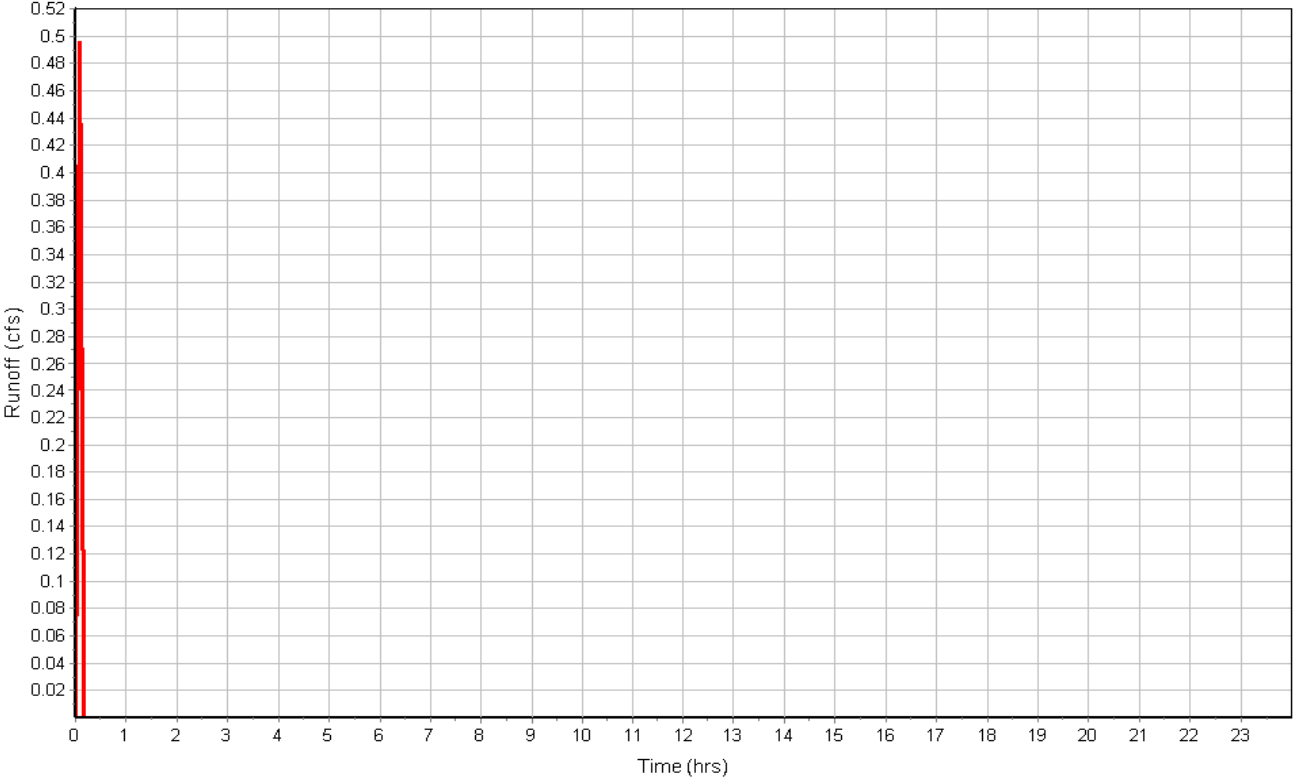
Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	93.99	0.00	0.00
Slope (%) :	2	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	2.87	0.00	0.00
Computed Flow Time (min) :	0.55	0.00	0.00
Total TOC (min)0.55			

Subbasin Runoff Results

Total Rainfall (in) 0.83
 Total Runoff (in) 0.75
 Peak Runoff (cfs) 0.50
 Rainfall Intensity 10.000
 Weighted Runoff Coefficient 0.9000
 Time of Concentration (days hh:mm:ss) 0 00:00:33

Subbasin : {STORM-BASINS}.9

Runoff Hydrograph



Junction Input

SN Element ID	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Ground/Rim (Max) Offset (ft)	Initial Water Elevation (ft)	Initial Water Depth (ft)	Surcharge Elevation (ft)	Surcharge Depth (ft)	Ponded Area (ft ²)	Minimum Pipe Cover (in)
1 CB-I1	476.43	480.49	4.06	476.43	0.00	480.49	0.00	0.00	24.66
2 CONNECT-G	483.22	485.22	2.00	483.22	0.00	485.22	-0.01	0.00	0.00
3 CONNECT-I	483.38	489.38	6.00	483.38	0.00	489.38	0.00	0.00	54.00
4 FES-H2	482.37	485.12	2.75	482.37	0.00	485.12	0.00	0.00	9.00
5 Jun-01	473.29	477.00	3.71	473.29	0.00	477.00	0.00	0.00	0.00

Junction Results

SN Element ID	Peak Inflow	Peak Lateral Inflow	Max HGL Elevation Attained	Max HGL Depth Attained	Max Surcharge Depth Attained	Min Freeboard Attained	Average HGL Elevation Attained	Average HGL Depth Attained	Time of Max HGL Occurrence	Time of Peak Flooding Occurrence	Total Flooded Volume	Total Time Flooded
	(cfs)	(cfs)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(days hh:mm)	(days hh:mm)	(ac-in)	(min)
1 CB-I1	12.03	0.00	477.72	1.29	0.00	2.76	476.48	0.05	0 00:40	0 00:00	0.00	0.00
2 CONNECT-G	8.34	0.00	484.20	0.98	0.00	1.03	483.26	0.04	0 00:31	0 00:00	0.00	0.00
3 CONNECT-I	5.43	0.00	483.96	0.58	0.00	5.42	483.39	0.01	0 00:05	0 00:00	0.00	0.00
4 FES-H2	20.31	0.00	483.46	1.09	0.00	1.66	482.39	0.02	0 00:06	0 00:00	0.00	0.00
5 Jun-01	29.66	0.00	475.33	2.04	0.00	1.67	473.42	0.13	0 00:50	0 00:00	0.00	0.00

Channel Input

SN	Element ID	Length (ft)	Inlet Invert Elevation (ft)	Inlet Invert Offset (ft)	Outlet Invert Elevation (ft)	Outlet Invert Offset (ft)	Total Drop (ft)	Average Slope (%)	Shape	Height (ft)	Width (ft)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cfs)	Flap Gate
1	Gutter-05	200.35	495.00	4.05	487.00	2.90	8.00	3.9900	User-Defined	0.500	14.000	0.0130	0.5000	0.5000	0.0000	0.00	No
2	Gutter-06	200.99	495.00	4.37	487.00	3.22	8.00	3.9800	User-Defined	0.500	14.000	0.0130	0.5000	0.5000	0.0000	0.00	No
3	Gutter-07	239.28	487.00	3.22	485.61	3.25	1.39	0.5800	User-Defined	0.500	14.000	0.0130	0.5000	0.5000	0.0000	0.00	No
4	Gutter-08	240.40	485.61	3.25	480.15	3.25	5.46	2.2700	User-Defined	0.500	14.000	0.0320	0.5000	0.5000	0.0000	0.00	No
5	Gutter-09	57.48	480.15	3.25	478.65	3.80	1.50	2.6100	User-Defined	0.500	14.000	0.0320	0.5000	0.5000	0.0000	0.00	No
6	Gutter-10	192.99	480.66	4.57	478.79	3.94	1.87	0.9700	User-Defined	0.500	14.000	0.0320	0.5000	0.5000	0.0000	0.00	No
7	Gutter-12	213.95	483.97	4.97	479.50	2.59	4.47	2.0900	User-Defined	0.500	14.000	0.0320	0.5000	0.5000	0.0000	0.00	No
8	Gutter-13	213.94	491.00	4.00	483.97	4.97	7.03	3.2900	User-Defined	0.500	14.000	0.0320	0.5000	0.5000	0.0000	0.00	No
9	Gutter-14	201.82	500.50	3.77	491.00	4.00	9.50	4.7100	User-Defined	0.500	14.000	0.0320	0.5000	0.5000	0.0000	0.00	No
10	Gutter-15	201.21	500.50	2.90	491.00	3.43	9.50	4.7200	User-Defined	0.500	14.000	0.0320	0.5000	0.5000	0.0000	0.00	No
11	Gutter-16	425.27	491.00	3.43	482.00	3.93	9.00	2.1200	User-Defined	0.500	14.000	0.0320	0.5000	0.5000	0.0000	0.00	No
12	Gutter-17	292.35	485.12	1.74	480.66	4.57	4.46	1.5200	User-Defined	0.500	14.000	0.0320	0.5000	0.5000	0.0000	0.00	No
13	Gutter-23	587.46	487.00	2.90	479.00	4.50	8.00	1.3600	User-Defined	0.500	14.000	0.0320	0.5000	0.5000	0.0000	0.00	No
14	Gutter-26	57.06	490.37	6.49	485.12	1.74	5.25	9.2000	User-Defined	0.500	14.000	0.0320	0.5000	0.5000	0.0000	0.00	No

Channel Results

SN Element ID	Peak Flow	Time of Peak Flow Occurrence	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Travel Time	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Froude Number	Reported Condition
	(cfs)	(days hh:mm)	(cfs)		(ft/sec)	(min)	(ft)		(min)		
1 Gutter-05	0.50	0 00:16	9.52	0.05	3.49	0.96	0.16	0.33	0.00		
2 Gutter-06	1.46	0 00:18	9.50	0.15	4.07	0.82	0.24	0.49	0.00		
3 Gutter-07	1.69	0 00:33	3.83	0.44	1.93	2.07	0.36	0.72	0.00		
4 Gutter-08	0.20	0 00:35	7.18	0.03	2.40	1.67	0.13	0.25	0.00		
5 Gutter-09	0.00	0 00:00	7.33	0.00	0.00		0.00	0.00	0.00		
6 Gutter-10	0.28	0 00:07	4.69	0.06	2.64	1.22	0.16	0.32	0.00		
7 Gutter-12	0.26	0 00:29	6.51	0.04	2.10	1.70	0.15	0.29	0.00		
8 Gutter-13	0.00	0 00:00	9.03	0.00	0.00		0.00	0.00	0.00		
9 Gutter-14	0.20	0 00:06	10.29	0.02	4.17	0.81	0.11	0.21	0.00		
10 Gutter-15	0.48	0 00:06	10.48	0.05	4.77	0.70	0.15	0.30	0.00		
11 Gutter-16	0.00	0 00:06	7.04	0.00	0.00		0.00	0.01	0.00		
12 Gutter-17	0.47	0 00:19	5.88	0.08	2.45	1.99	0.19	0.37	0.00		
13 Gutter-23	0.84	0 00:35	5.55	0.15	2.90	3.38	0.24	0.48	0.00		
14 Gutter-26	1.33	0 00:16	14.45	0.09	3.51	0.27	0.20	0.41	0.00		

Pipe Input

SN Element ID	Length (ft)	Inlet Invert Elevation (ft)	Inlet Invert Offset (ft)	Outlet Invert Elevation (ft)	Outlet Invert Offset (ft)	Total Drop (ft)	Average Pipe Slope (%)	Pipe Shape	Pipe Diameter or Height (in)	Pipe Width (in)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cfs)	Flap Gate	No. of Barrels
1 ST-C1	92.51	483.78	0.00	483.22	0.00	0.56	0.6000	CIRCULAR	24.000	24.000	0.0130	0.5000	0.0000	0.0000	0.00	No	1
2 ST-C2	200.00	490.63	0.00	483.88	0.10	6.75	3.3800	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
3 ST-C3	32.02	490.95	0.00	490.63	0.00	0.32	1.0000	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
4 ST-CS1	24.64	473.29	0.00	473.16	0.00	0.13	0.5300	CIRCULAR	30.000	30.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
5 ST-D1	32.02	484.10	0.00	483.88	0.10	0.22	0.6900	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
6 ST-E1 (2)	133.90	487.00	0.00	483.38	0.00	3.62	2.7000	CIRCULAR	18.000	18.000	0.0130	0.5000	0.0000	0.0000	0.00	No	1
7 ST-E2 (EXIST)	200.00	496.73	0.00	487.10	0.10	9.63	4.8100	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
8 ST-E3 (EXIST)	32.02	497.60	0.00	496.83	0.10	0.77	2.4000	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
9 ST-F1 (EXIST)	32.02	487.57	0.00	487.10	0.10	0.47	1.4600	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
10 ST-G1	72.10	474.50	0.00	473.92	0.63	0.58	0.8000	CIRCULAR	30.000	30.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
11 ST-G2	31.99	474.85	0.00	474.50	0.00	0.35	1.0900	CIRCULAR	30.000	30.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
12 ST-G3	49.09	476.90	0.00	474.95	0.10	1.95	3.9700	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
13 ST-G4	238.61	482.36	0.00	476.90	0.00	5.46	2.2900	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
14 ST-G5	145.74	483.22	0.00	482.35	-0.01	0.88	0.6000	CIRCULAR	24.000	24.000	0.0130	0.0000	0.5000	0.0000	0.00	No	1
15 ST-H1	190.63	476.09	0.00	474.95	0.10	1.14	0.6000	CIRCULAR	30.000	30.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
16 ST-H2	252.90	482.37	0.00	476.19	0.10	6.18	2.4400	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
17 ST-H2A	37.10	483.38	0.00	482.37	0.00	1.01	2.7200	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
18 ST-H3	48.08	483.88	0.00	483.38	0.00	0.50	1.0400	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
19 ST-H5	378.49	485.87	0.00	483.98	0.10	1.89	0.5000	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
20 ST-H6	32.00	488.21	0.00	487.89	2.02	0.32	1.0000	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
21 ST-I1	48.08	476.43	0.00	476.19	0.10	0.24	0.5000	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
22 ST-I2	95.00	476.91	0.00	476.43	0.00	0.48	0.5100	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
23 ST-I3	212.56	479.00	0.00	477.00	0.09	2.00	0.9400	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
24 ST-I4	78.66	483.38	0.00	481.27	2.27	2.11	2.6900	CIRCULAR	18.000	18.000	0.0130	0.0000	0.5000	0.0000	0.00	No	1
25 ST-K1	32.05	477.32	-0.75	477.00	0.09	0.32	1.0000	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1

Pipe Results

SN Element ID	Peak Flow	Time of Peak Flow Occurrence	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Travel Time	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Froude Number	Reported Condition
	(cfs)	(days hh:mm)	(cfs)		(ft/sec)	(min)	(ft)		(min)		
1 ST-C1	8.34	0 00:31	17.52	0.48	5.51	0.28	0.97	0.49	0.00		Calculated
2 ST-C2	1.20	0 00:17	19.30	0.06	7.44	0.45	0.25	0.17	0.00		Calculated
3 ST-C3	0.47	0 00:14	10.50	0.04	3.04	0.18	0.22	0.14	0.00		Calculated
4 ST-CS1	29.66	0 00:51	29.79	1.00	6.92	0.06	2.04	0.82	0.00		Calculated
5 ST-D1	3.75	0 00:31	8.71	0.43	4.75	0.11	0.69	0.46	0.00		Calculated
6 ST-E1 (2)	5.43	0 00:05	17.26	0.31	8.67	0.26	0.58	0.39	0.00		Calculated
7 ST-E2 (EXIST)	2.60	0 00:05	23.05	0.11	8.71	0.38	0.34	0.23	0.00		Calculated
8 ST-E3 (EXIST)	1.44	0 00:05	16.27	0.09	6.64	0.08	0.30	0.20	0.00		Calculated
9 ST-F1 (EXIST)	1.78	0 00:05	12.70	0.14	5.07	0.11	0.38	0.25	0.00		Calculated
10 ST-G1	39.68	0 00:07	36.79	1.08	8.80	0.14	2.31	0.92	0.00		> CAPACITY
11 ST-G2	36.11	0 00:07	42.90	0.84	9.80	0.05	1.76	0.70	0.00		Calculated
12 ST-G3	12.00	0 00:32	45.08	0.27	12.14	0.07	0.70	0.35	0.00		Calculated
13 ST-G4	11.09	0 00:32	34.22	0.32	9.73	0.41	0.78	0.39	0.00		Calculated
14 ST-G5	8.33	0 00:31	17.44	0.48	5.50	0.44	0.97	0.49	0.00		Calculated
15 ST-H1	31.40	0 00:07	31.72	0.99	7.55	0.42	2.02	0.81	0.00		Calculated
16 ST-H2	20.24	0 00:06	35.36	0.57	11.76	0.36	1.08	0.54	0.00		Calculated
17 ST-H2A	20.31	0 00:06	37.32	0.54	12.14	0.05	1.05	0.53	0.00		Calculated
18 ST-H3	18.96	0 00:06	23.11	0.82	8.23	0.10	1.38	0.69	0.00		Calculated
19 ST-H5	17.31	0 00:06	16.01	1.08	6.39	0.99	1.85	0.92	0.00		> CAPACITY
20 ST-H6	5.82	0 00:35	10.50	0.55	6.10	0.09	0.80	0.53	0.00		Calculated
21 ST-I1	12.03	0 00:40	16.00	0.75	5.60	0.14	1.29	0.65	0.00		Calculated
22 ST-I2	12.03	0 00:40	16.08	0.75	5.63	0.28	1.29	0.64	0.00		Calculated
23 ST-I3	6.03	0 00:06	10.19	0.59	6.07	0.58	0.83	0.55	0.00		Calculated
24 ST-I4	5.42	0 00:05	17.22	0.31	8.64	0.15	0.58	0.39	0.00		Calculated
25 ST-K1	10.19	0 00:40	19.20	0.53	11.02	0.05	0.78	0.52	0.00		Calculated

Inlet Input

SN Element ID	Inlet Manufacturer	Manufacturer Part Number	Inlet Location	Number of Inlets	Catchbasin Invert Elevation (ft)	Max (Rim) Elevation (ft)	Inlet Depth (ft)	Initial Water Elevation (ft)	Initial Water Depth (ft)	Ponded Area (ft ²)	Grate Clogging Factor (%)
1 CB-C1 (EXIST)	FHWA HEC-22	GENERIC	N/A	1	483.78	487.16	3.38	483.78	0.00	N/A	0.00
2 CB-C2 (EXIST)	FHWA HEC-22	GENERIC	N/A	1	490.63	495.14	4.51	490.63	0.00	N/A	0.00
3 CB-C3 (EXIST)	FHWA HEC-22	GENERIC	N/A	1	490.95	495.16	4.21	490.95	0.00	N/A	0.00
4 CB-D1 (EXIST)	FHWA HEC-22	GENERIC	N/A	1	484.10	487.17	3.07	484.10	0.00	N/A	0.00
5 CB-E1 (EXIST)	FHWA HEC-22	GENERIC	N/A	1	487.00	491.64	4.64	487.00	0.00	N/A	0.00
6 CB-E2 (EXIST)	FHWA HEC-22	GENERIC	N/A	1	496.73	501.05	4.32	496.73	0.00	N/A	0.00
7 CB-E3 (EXIST)	FHWA HEC-22	GENERIC	N/A	1	497.60	501.00	3.41	497.60	0.00	N/A	0.00
8 CB-F1 (EXIST)	FHWA HEC-22	GENERIC	N/A	1	487.57	491.28	3.71	487.57	0.00	N/A	0.00
9 CB-G2	FHWA HEC-22	GENERIC	N/A	1	474.50	479.18	4.68	474.50	0.00	0.00	0.00
10 CB-G3	FHWA HEC-22	GENERIC	N/A	1	474.85	478.79	3.94	474.85	0.00	0.00	0.00
11 CB-G4	FHWA HEC-22	GENERIC	N/A	1	476.90	480.15	3.25	476.90	0.00	N/A	0.00
12 CB-G5	FHWA HEC-22	GENERIC	N/A	1	482.36	485.61	3.25	482.36	0.00	N/A	0.00
13 CB-H1	FHWA HEC-22	GENERIC	N/A	1	476.09	480.66	4.57	476.09	0.00	N/A	0.00
14 CB-H2	FHWA HEC-22	GENERIC	N/A	1	483.38	485.12	1.74	483.38	0.00	N/A	0.00
15 CB-H3	FHWA HEC-22	GENERIC	N/A	1	483.88	490.37	6.49	483.88	0.00	N/A	0.00
16 CB-H5	FHWA HEC-22	GENERIC	N/A	1	485.87	488.55	2.68	485.87	0.00	0.00	0.00
17 CB-H6	FHWA HEC-22	GENERIC	N/A	1	488.21	488.55	0.35	488.21	0.00	0.00	0.00
18 CB-I2	FHWA HEC-22	GENERIC	N/A	1	476.91	479.97	3.06	476.91	0.00	0.00	0.00
19 CB-I3	FHWA HEC-22	GENERIC	N/A	1	479.00	483.97	4.97	479.00	0.00	N/A	0.00
20 CB-K1	FHWA HEC-22	GENERIC	N/A	1	478.07	482.00	3.93	478.07	0.00	0.00	0.00

Roadway & Gutter Input

SN Element ID	Roadway Longitudinal Slope (ft/ft)	Roadway Cross Slope (ft/ft)	Roadway Manning's Roughness	Gutter Cross Slope (ft/ft)	Gutter Width (ft)	Gutter Depression (in)	Allowable Spread (ft)
1 CB-C1 (EXIST)	0.0200	0.0200	0.0130	0.0620	1.50	0.1969	12.00
2 CB-C2 (EXIST)	0.0200	0.0500	0.0130	0.0620	2.00	0.0000	12.00
3 CB-C3 (EXIST)	0.0200	0.0500	0.0130	0.0620	2.00	0.0000	12.00
4 CB-D1 (EXIST)	0.0200	0.0200	0.0130	0.0620	1.50	0.1969	12.00
5 CB-E1 (EXIST)	0.0200	0.0200	0.0130	0.0620	1.50	0.1969	12.00
6 CB-E2 (EXIST)	0.0200	0.0200	0.0130	0.0620	1.50	0.1969	12.00
7 CB-E3 (EXIST)	0.0200	0.0200	0.0130	0.0620	1.50	0.1969	12.00
8 CB-F1 (EXIST)	0.0200	0.0200	0.0130	0.0620	1.50	0.1969	12.00
9 CB-G2	N/A	0.0200	0.0130	0.0620	1.50	0.1969	12.00
10 CB-G3	N/A	0.0200	0.0160	0.0620	1.50	0.1969	12.00
11 CB-G4	0.0200	0.0200	0.0130	0.0620	1.50	0.1969	12.00
12 CB-G5	0.0200	0.0200	0.0130	0.0620	1.50	0.1969	12.00
13 CB-H1	0.0200	0.0200	0.0130	0.0620	1.50	0.1969	12.00
14 CB-H2	0.0100	0.0200	0.0160	0.0620	1.50	0.1969	12.00
15 CB-H3	0.0200	0.0200	0.0130	0.0620	1.50	0.1969	12.00
16 CB-H5	N/A	0.0200	0.0130	0.0620	1.50	0.1969	12.00
17 CB-H6	N/A	0.0200	0.0160	0.0620	1.50	0.1969	12.00
18 CB-I2	N/A	0.0200	0.0130	0.0620	1.50	0.1969	12.00
19 CB-I3	0.0200	0.0200	0.0130	0.0620	1.50	0.1969	12.00
20 CB-K1	N/A	0.0200	0.0130	0.0833	1.50	0.1969	12.00

Inlet Results

SN Element ID	Peak Flow	Peak Lateral Inflow	Peak Flow Intercepted by Inlet	Peak Flow Bypassing Inlet	Inlet Efficiency during Peak	Max Gutter Spread during Peak	Max Gutter Water Elev. during Peak	Max Gutter Water Depth during Peak	Time of Max Depth Occurrence	Total Flooded Volume	Total Time Flooded
	(cfs)	(cfs)	(cfs)	(cfs)	(%)	(ft)	(ft)	(ft)	(days hh:mm)	(ac-in)	(min)
1 CB-C1 (EXIST)	6.05	5.76	4.30	1.75	71.14	11.17	487.45	0.29	0 00:31	0.00	0.00
2 CB-C2 (EXIST)	2.30	2.30	0.78	1.51	34.14	4.35	495.38	0.24	0 00:17	0.00	0.00
3 CB-C3 (EXIST)	1.00	1.00	0.47	0.53	47.09	3.10	495.34	0.18	0 00:14	0.00	0.00
4 CB-D1 (EXIST)	4.76	4.73	3.76	1.01	78.85	10.14	487.43	0.27	0 00:31	0.00	0.00
5 CB-E1 (EXIST)	1.07	1.03	1.07	0.00	100.00	5.32	491.81	0.17	0 00:05	0.00	0.00
6 CB-E2 (EXIST)	1.48	1.48	1.19	0.29	80.49	6.18	501.24	0.19	0 00:05	0.00	0.00
7 CB-E3 (EXIST)	2.07	2.07	1.44	0.63	69.70	7.17	501.21	0.21	0 00:05	0.00	0.00
8 CB-F1 (EXIST)	1.78	1.55	1.78	0.00	99.99	6.70	491.47	0.20	0 00:05	0.00	0.00
9 CB-G2	3.79	3.79	N/A	N/A	N/A	11.12	479.97	0.79	0 00:06	0.00	0.00
10 CB-G3	6.83	6.83	N/A	N/A	N/A	16.50	479.68	0.89	0 00:07	0.00	0.00
11 CB-G4	1.26	1.26	1.26	0.00	100.00	5.71	480.33	0.18	0 00:32	0.00	0.00
12 CB-G5	3.02	1.41	2.80	0.22	92.80	8.42	485.85	0.23	0 00:31	0.00	0.00
13 CB-H1	1.75	1.75	1.31	0.44	74.91	6.64	480.86	0.20	0 00:06	0.00	0.00
14 CB-H2	2.39	1.15	1.83	0.56	76.44	9.60	485.37	0.26	0 00:06	0.00	0.00
15 CB-H3	3.14	3.14	1.79	1.35	57.08	8.55	490.60	0.23	0 00:06	0.00	0.00
16 CB-H5	14.55	14.55	N/A	N/A	N/A	27.05	489.66	1.10	0 00:04	0.00	0.00
17 CB-H6	5.82	5.82	N/A	N/A	N/A	14.82	489.41	0.86	0 00:01	0.00	0.00
18 CB-I2	0.49	0.49	N/A	N/A	N/A	2.27	480.29	0.32	0 00:40	0.00	0.00
19 CB-I3	3.26	3.26	2.96	0.31	90.52	8.69	484.20	0.24	0 00:05	0.00	0.00
20 CB-K1	10.19	10.19	N/A	N/A	N/A	21.54	483.03	1.03	0 00:40	0.00	0.00

Storage Nodes

Storage Node : POND1

Input Data

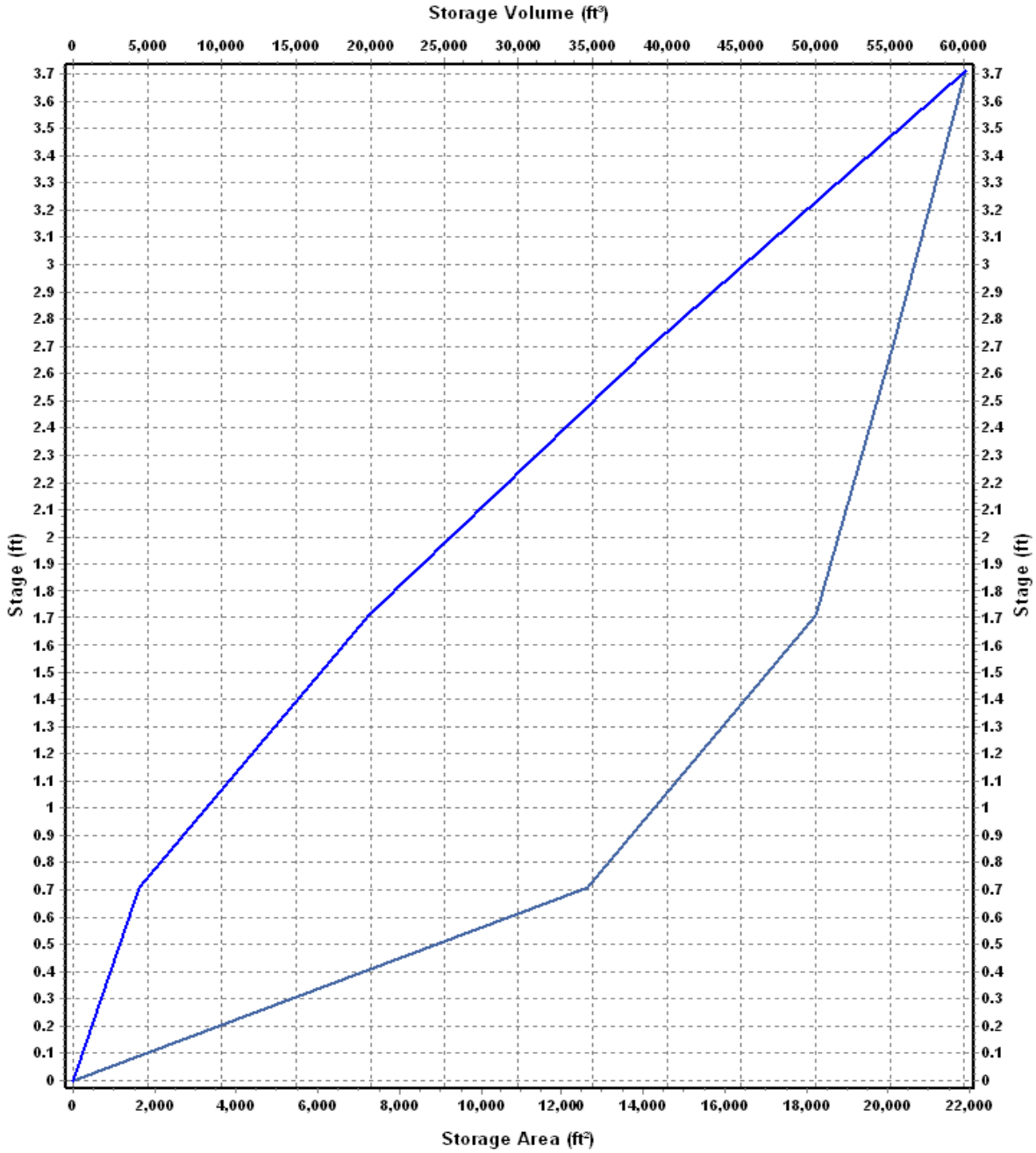
Invert Elevation (ft)	473.29
Max (Rim) Elevation (ft)	477.00
Max (Rim) Offset (ft)	3.71
Initial Water Elevation (ft)	473.29
Initial Water Depth (ft)	0.00
Ponded Area (ft ²)	0.00
Evaporation Loss	0.00

Storage Area Volume Curves

Storage Curve : POND1

Stage (ft)	Storage Area (ft ²)	Storage Volume (ft ³)
0	0	0.000
0.71	12615	4478.33
1.71	18216	19893.83
2.71	20116	39059.83
3.71	21896	60065.83

Storage Area Volume Curves



— Storage Area — Storage Volume

Storage Node : POND1 (continued)

Outflow Weirs

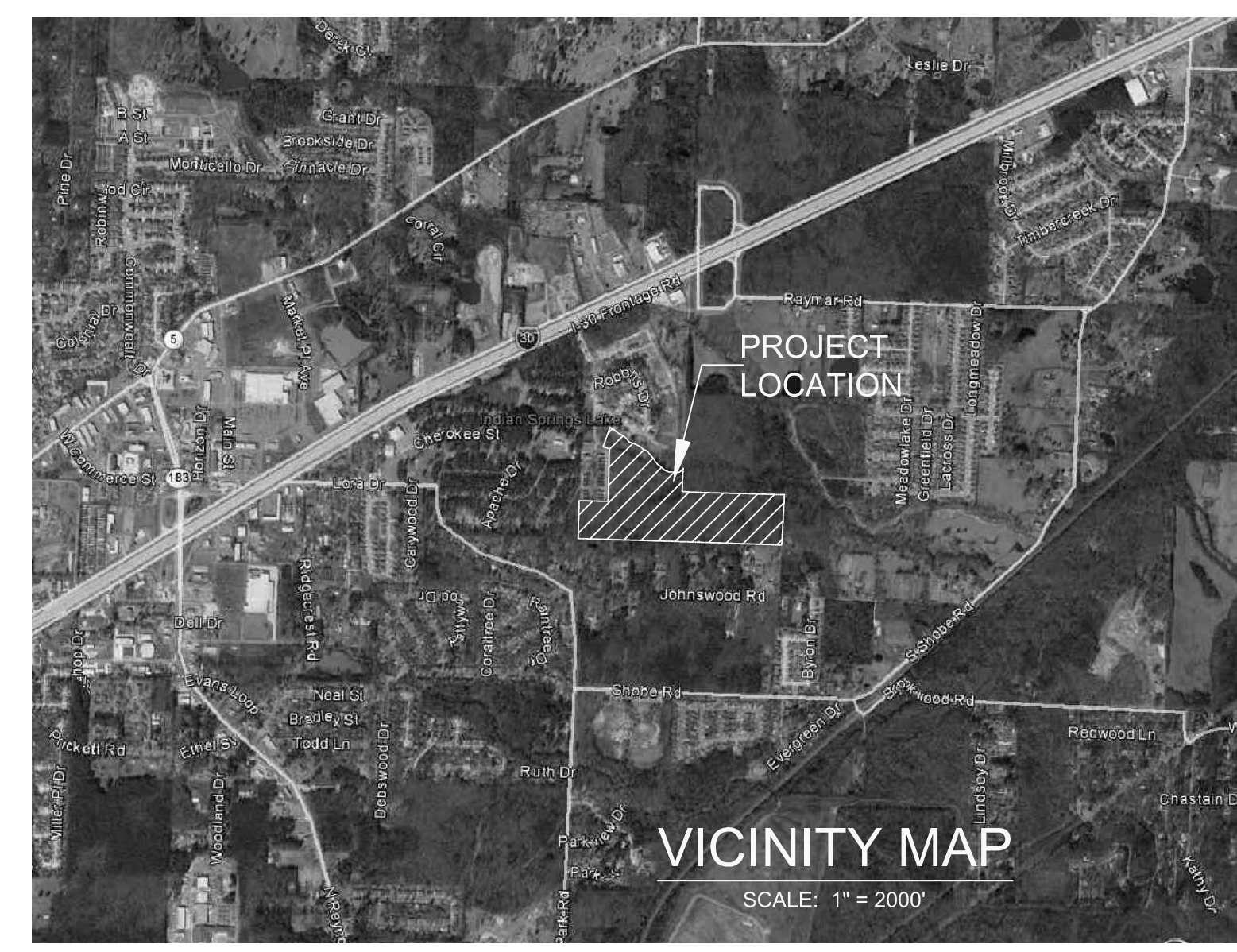
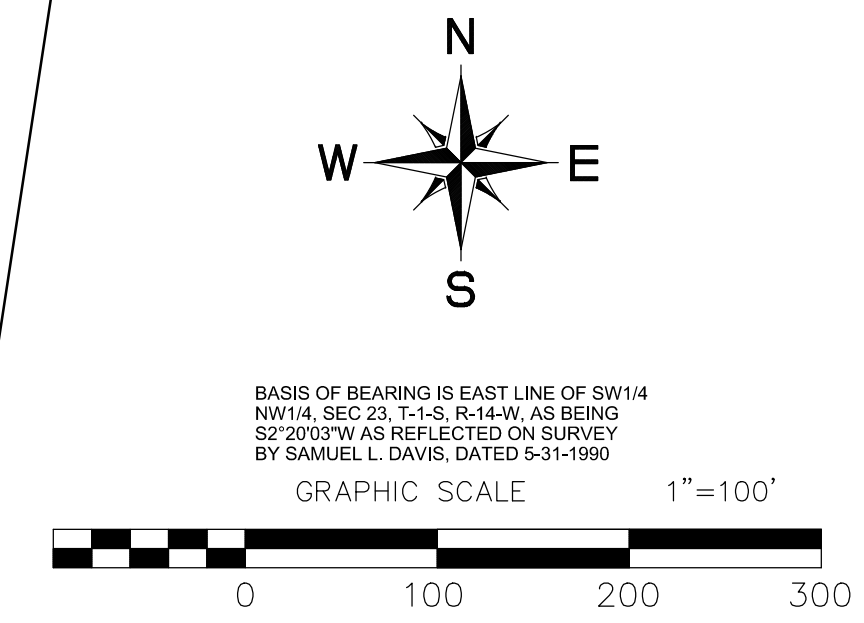
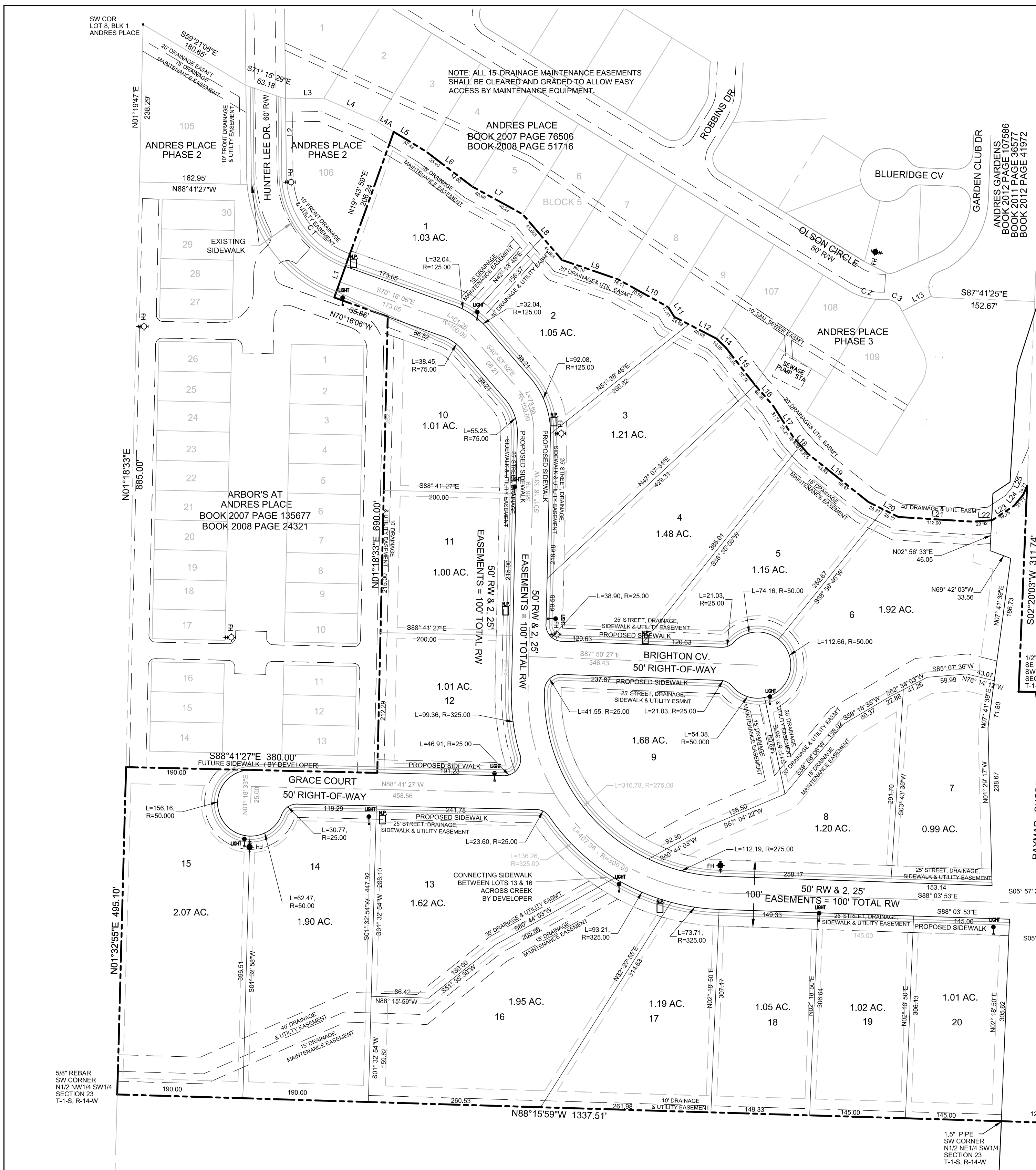
SN Element ID	Weir Type	Flap Gate	Crest Elevation (ft)	Crest Offset (ft)	Length (ft)	Weir Total Height (ft)	Discharge Coefficient
1 Weir-02	Rectangular	No	476.00	2.71	15.00	1.00	3.33

Outflow Orifices

SN Element ID	Orifice Type	Orifice Shape	Flap Gate	Circular Orifice Diameter (in)	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
1 Orifice-01	Side	Rectangular	No		26.50	21.00	0.00	0.63

Output Summary Results

Peak Inflow (cfs)	40.21
Peak Lateral Inflow (cfs)	4.94
Peak Outflow (cfs)	29.66
Peak Exfiltration Flow Rate (cfm)	0.00
Max HGL Elevation Attained (ft)	476.18
Max HGL Depth Attained (ft)	2.89
Average HGL Elevation Attained (ft)	473.48
Average HGL Depth Attained (ft)	0.19
Time of Max HGL Occurrence (days hh:mm)	0 00:50
Total Exfiltration Volume (1000-ft ³)	0.000
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00



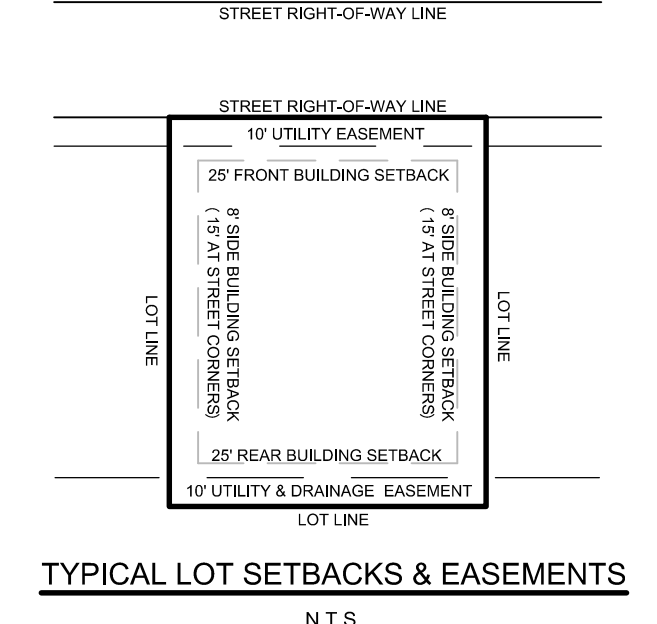
Andres Woods
Legal Description:
 Those portions of the N 1/2 of the SW 1/4 and the SW 1/4 of the NW 1/4 of Section 23, Township 1 South, Range 14 West, Saline County, Arkansas, described as follows:

Beginning at a 1" pipe marking the Northeast Corner of said N1/2 of the SW 1/4. Thence S 03° 04' 02" W along the East line thereof a distance of 658.99' to the SE Corner of the N1/2 of the NE1/4 of the SW 1/4; Thence N 88° 03' 53" W along the South line of the N1/2 of the NE1/4 of the SW 1/4 a distance of 1332.27'; Thence N 88° 15' 59" W along the South line of the N1/2 of the SW 1/4 of the SW 1/4 a distance of 1337.51'; Thence N 01° 32' 55" E a distance of 495.10' to the SW Corner of The Arbors at Andres Place; Thence S 88° 41' 27" E along the South of The Arbors at Andres Place a distance of 380.00'; Thence N 01° 15' 33" E along the East line of The Arbors at Andres Place a distance of 690.00' to the southerly right-of-way line of Hunter Lee Drive; Thence N 19° 16' 05" W along said southerly right-of-way line a distance of 85.86'; Thence N 19° 43' 59" E a distance of 60.00' to the northerly right-of-way line of Hunter Lee Drive; Thence continue N 19° 43' 59" E a distance of 236.24'; Thence S 61° 36' 59" E a distance of 57.42'; Thence S 52° 47' 10" E a distance of 87.40'; Thence S 61° 19' 55" E a distance of 87.12'; Thence S 40° 34' 58" E a distance of 91.33'; Thence S 71° 01' 44" E a distance of 89.19'; Thence S 61° 04' 42" E a distance of 87.10'; Thence S 31° 51' 27" E a distance of 17.41'; Thence S 82° 41' 02" E a distance of 71.62'; Thence S 46° 27' 23" E a distance of 19.09'; Thence S 38° 00' 03" E a distance of 72.84'; Thence S 41° 13' 43" E a distance of 40.36'; Thence S 32° 49' 35" E a distance of 56.95'; Thence S 41° 17' 13" E a distance of 33.65'; Thence S 51° 24' 09" E a distance of 117.35'; Thence S 63° 34' 28" E a distance of 50.74'; Thence S 85° 25' 15" E a distance of 112.00'; Thence N 85° 48' 48" E a distance of 23.92'; Thence N 59° 27' 47" E a distance of 39.76'; Thence N 39° 39' 38" E a distance of 21.77'; Thence N 22° 43' 07" E a distance of 14.71' to a point on the East line of said SW 1/4 NW 1/4; Thence S 02° 20' 03" W along the said East line a distance of 311.74' to the SE Corner of the said SW 1/4 NW 1/4; Thence S 88° 26' 20" E along the North line of the NE1/4 of the SW 1/4 a distance of 1341.02' to the point of beginning, containing 50.125 acres, more or less.

All of the above described property lies outside of any designated flood hazard area. Source: FEMA FIRM Map 05125C03B0D, June 19, 2012.

LINE	ARC	CHORD BEARING	RADIUS	CHORD
C1	170.34'	N35°24'00"W	140.00'	160.02'
C2	60.29'	S75°34'07"E	100.00'	59.38'
C3	28.52'	S60°09'32"E	29.00'	27.00'

LINE	BEARING	DISTANCE	LINE	BEARING	DISTANCE
L1	N19°43'59"W	60.00'	L14	S42°27'23"E	19.09'
L2	N00°41'59"W	113.59'	L15	S38°00'03"E	72.84'
L3	N89°08'50"E	58.07'	L16	S41°13'43"E	40.36'
L4	S68°16'49"E	87.85'	L17	S32°49'30"E	56.95'
L5	S58°36'59"E	29.96'	L18	S41°17'13"E	33.65'
L6	S58°36'59"E	57.42'	L19	S51°24'09"E	117.35'
L7	S52°47'10"E	87.40'	L20	S63°34'28"E	50.74'
L8	S61°19'55"E	87.12'	L21	S85°25'15"E	112.00'
L9	S40°34'58"E	91.33'	L22	N65°48'48"E	23.92'
L10	S71°01'44"E	89.19'	L23	N56°27'47"E	39.76'
L11	S61°04'42"E	87.10'	L24	N39°39'38"E	21.77'
L12	S31°51'27"E	17.41'	L25	N22°43'07"E	14.71'
L13	N62°30'53"E	50.00'			



CERTIFICATE OF SURVEYING ACCURACY
 I, Kerry D. Lane, hereby certify that this plat correctly represents a boundary survey made by me or under my supervision; that all monuments shown hereon actually exist and their location, size, type, and material are correctly shown; and that all interior lot lines have been adjusted to "as built" conditions and are accurately described on the plat and identified on the ground in terms of length and direction of the property sides as required in accordance with the city of Bryant Subdivision Rules and Regulations.

Professional Land Surveyor, #1141, Arkansas.

CERTIFICATE OF ENGINEERING ACCURACY
 I, C. Michael Bolin, hereby certify that the construction plans prepared for the development depicted by this plat, have been designed in accordance with the subdivision regulations, city standards and requirements, and applicable local, state and federal laws, and that the water, sewer, and stormwater systems are adequate to support this development.

Arkansas Professional Engineer License # 4197

CERTIFICATE OF RECORDING
 This document, number _____, filed for record _____, 20____, in Plat Book _____, Page _____.

CERTIFICATE OF FINAL PLAT APPROVAL
 Pursuant to the City of Bryant Subdivision Rules and Regulations, this document was given approval by the Bryant Planning Commission at a meeting held _____, 20____. All of the document is hereby accepted, and this certificate executed under the authority of said rules and regulations.

Date of Execution _____ Name _____
 Bryant Planning Commission

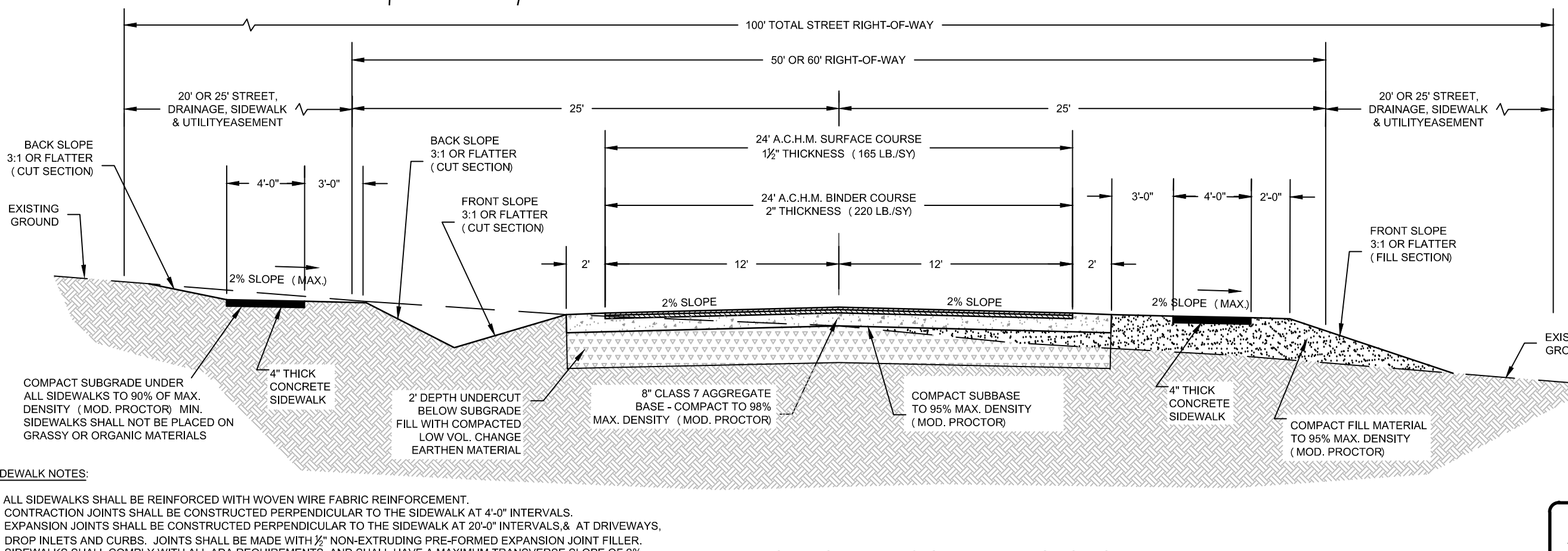
CERTIFICATE OF OWNERSHIP
 We, the undersigned, owners of the real estate shown and described herein do hereby certify that we have laid off, platted and subdivided, and do hereby lay off, plat and subdivide said real estate in accordance with the within plat.

Subdivider: Andres Woods, LLC, 1100 Ferguson Drive, Benton, AR 72015

CERTIFICATE OF RECORDING
 This document, number _____, filed for record _____, 20____, in Plat Book _____, Page _____.

DEDICATION OF STREETS AND EASEMENTS
 All streets shown on this plat are hereby dedicated to public use. Easements for the installation and maintenance of utility and drainage lines are hereby reserved across the front ten feet and the rear ten feet of each lot, and as otherwise shown on plat.

LOCATION OF BUILDING LINES
 Structures must be set back a minimum of 25 feet from the front lot lines; and be set back 25 feet from rear lot lines; and be set back a minimum of 8 feet from the interior lot lines; and be set back a minimum of 15' on the sides of corner lots; and other minimum setback lines as shown on the plat.



TYPICAL STREET & SIDEWALK SECTION
 N.T.S.

REAL ESTATE SERVICES OF SALINE CO. INC.
 1200 FERGUSON DR., SUITE 5, BENTON, ARKANSAS 72015 501-315-8866

MICHAEL BOLIN & ASSOCIATES, INC.
CONSULTING ENGINEERS
 P.O. BOX 605, BENTON, AR 72018, (501) 776-2692
 FAX (501) 776-2619 EMAIL: cmbolin@sbcglobal.net

REVISED FINAL PLAT
 ANDRES WOODS



AS-BUILT DATE: APRIL 2017
 CONTACT PERSON: M. BOLIN

SCALE: 1" = 100'
 DATE: DECEMBER 2017

REVISED FINAL PLAT ANDRES WOODS
 JOB NO. 176-ABC SHEET NO. 1 OF 1