



COMMUNITY DEVELOPMENT

333 Broadalbin Street SW, PO Box 490, Albany, Oregon 97321-0144 | BUILDING & PLANNING 541-917-7550

Staff Report

Tentative Subdivision Plat Review and Cluster Development Review

SD-02-23

December 11, 2023

Summary

The proposal is to subdivide approximately 35.32 acres of land into 176 lots for future residential development. The site is located on the east side of Lochner Road SE, south of the Greater Albany Public School property and railroad tracks, west of a manufactured home development (Columbus Greens), east of the Oak Creek Youth Correctional Facility, and north of Oak Creek. A location map is included as Attachment A. The site is located within the South Albany Area Plan (SAAP) and the Trails Framework Plan, adopted as part of the SAAP.

The project is proposed to be a five-phase cluster development with Phase One consisting of 30 lots the creation of Tracts A, B, C, and D; Phase Two consisting of 30 lots; Phase Three consisting of 30 lots; Phase Four consisting of 34 lots; and Phase Five consisting of 52 lots. The development will include public street right-of-way construction of Blue Jay Avenue, Nighthawk Street, Blackbird Avenue, Finch Street, Harrier Street, Flicker Street, Junco Street and Nuthatch Street and four public alleys; with two connections to Lochner Road SE. All proposed street names have been approved by the Albany Fire Department. Open space lots will also be provided that will be used for stormwater detention and preservation of existing wetlands. The proposed Tentative Plat is shown on Attachment B.

The following review criteria are applicable for this project: Tentative Plat Review under Albany Development Code (ADC) 11.180 and Cluster Development under ADC 11.400-11.530. These criteria are addressed in this report and must be satisfied to grant approval of this application.

Application Information

Type of Application:	Tentative Subdivision Plat for a Cluster Development of a 176-lot residential subdivision.
Review Body:	Staff Review (Type III)
Property Owner:	Loren and Lois Gerig Revocable Living Trust; 3795 Lochner Road SE, Albany, OR 97322
Applicant:	Hayden Homes; C/O Brian Thoreson; 2464 SW Glacier Place Suite 110, Redmond, OR 97756
Applicant's Agent:	A & O Engineering, LLC; C/O Scott Morris; 380 Q Street Suite 200, Springfield, OR 97477
Address/Location:	Unassigned; Lochner Road SE
Map/Tax Lot:	Linn County Assessor's Map No. 11S-03W-20; Tax Lot 606

Zoning:	Residential Single Dwelling (RS-6.5)
Overlay District:	Floodplain (/FP); Riparian Corridor (/RC); South Albany Area Plan (SAAP)
Total Land Area:	35.32 acres
Prior Land Use Approvals:	SD-04-21 (Cluster Subdivision); AN-03-20 (Annexation), ZC-04-20 (Zone Change). Prior to Annexation, a two-lot partition was processed and recorded with Linn County Oregon, Partition Plat 2020-70, C.S. 26931.

Appeals

Any person who submitted written comments during a comment period or testified at the public hearing has standing to appeal the Type III staff decision to the City Council by filing a Notice of Appeal and associated filing fee within ten days from the date the City mails the Notice of Decision.

Neighborhood Meeting

As required by ADC Table 1.100-1 and 1.140 of the July 1, 2023, Development Code in effect at the time, a neighborhood meeting for the proposal was held on August 10, at 5:00 p.m. at the Albany Main Public Library. Notice was mailed to the property owners within 1,000 feet of the subject property's property boundaries. The neighborhood meeting had five attendees including the applicant, the applicant's representatives, and city staff (see Attachment D).

Notice Information

A Notice of Filing was mailed on November 27, 2023, to owners of property located within 1,000 feet of the subject property in accordance with ADC 1.220. As of the writing date of this staff report, December 4, 2023, no comments had been received.

Staff Analysis

The Albany Development Code (ADC) includes the following review criteria for land divisions and cluster development which must be met for these applications to be approved. Code criteria are written in ***bold italics*** and are followed by findings and conclusions.

Tentative Plat Review Criteria (ADC 11.180)

Tentative Plat Review Criteria. Approval of a tentative subdivision or partition plat will be granted if the review body finds that the applicant has met all of the following criteria which apply to the development:

Criterion (1)

The proposal meets the development standards of the underlying zoning district, and applicable lot and block standards of this Article.

Findings of Fact

- 1.1 Zoning. The applicant has applied for a Tentative Subdivision Plat Review and a Cluster Development to create a 176-lot residential subdivision to be completed in five phases. The subject property is located on the east side of Lochner Road SE and consists of approximately 35.32 acres in size. The property is currently located within Residential Single Dwelling (RS-6.5) zoning district.
- 1.2 Residential Single Dwelling (RS-6.5) is intended primarily for low- to moderate-density residential development, which permits a detached, single residential dwelling unit, a duplex, or a triplex on lots 5,000 square feet or larger. Fourplexes and cluster developments are permitted on lots 7,000

square feet or larger. A location map is included as Attachment A, and the proposed Tentative Plat Maps are shown on Attachment B.

- 1.3 Lot Sizes. The ADC Table 3.190-1 contains the minimum lot size requirements for properties within the RS-6.5 zoning district. The applicant requesting the proposed subdivision be reviewed as a five-phased cluster development pursuant to the criteria and standards found in ADC 11.400-11.530. Cluster development is intended to protect and/or restore natural and other special features in the development of a site. Cluster development may provide greater flexibility, reduced and/or varied lot sizes, and more variety in permitted uses. Residential density may be transferred within the development in exchange for restoring degraded or marginal quality resources located in a Significant Natural Resource overlay district or for protecting natural or other special features of the site. The applicant has submitted a wetland study with mapped wetlands upon the site and is included as Attachment E.
- 1.4 The development standards in Table 11.495-1 supersedes the development standard in Table 3.190-1. Based upon Table 11.495-1 the RS-6.5 zoning district does not have a minimum lot size, width, or depth. Article 11.500 “Perimeter Lot Compatibility” contains standards unique to the perimeter lots in a cluster development and are addressed later in this report and included here by reference.
- 1.5 Lot and Block Standards. The lot and block standards under ADC 11.090 are addressed later in this report and are met with conditions. Those findings and conclusions are included here by reference.
- 1.6 Development Standards. No development is proposed with this application; however, according to the submittal, the applicant intends to develop each lot with a residential dwelling unit.
- 1.7 At the time of building permit processing, setback, lot coverage, and height standards will be applied to ensure construction of new dwellings meet the applicable development standards of the underlying zoning district.

Conclusions

- 1.1 Based on the factors above, the proposal meets the applicable development standards of a cluster development within the underlying zoning district and the applicable lot and block standards of Article 11.
- 1.2 This criterion is met.

Criterion (2)

Development of any remainder of property under the same ownership can be accomplished in accordance with this Code.

Findings of Fact

- 2.1 The subject property is located on the east side of Lochner Road SE, directly north of 3795 Lochner Road SE. The parcel is identified upon the Linn County Assessor’s Map as 11S-03W-20; Tax Lot 606. The land is owned in its entirety by Loren and Lois Gerig Revocable Living Trust.
- 2.2 The site consists of approximately 35.32 acres and is currently undeveloped as shown on the Tentative Plat (Attachment B).
- 2.3 The applicant proposes to develop the site through a residential cluster development which requires a minimum of 20 percent of the site to be preserved for wetland protection/enhancement, and open space (ADC 11.450). The tentative site map indicates two separate open space/wetland areas totaling 554,834 square feet (approximately 12.74 acres) to be conveyed to the future Homeowners Association (HOA). ADC 11.470(2) requires all natural areas to be subject to a restrictive covenant prohibiting further development. This standard is addressed later in this staff report and is included here by reference.

- 2.4 The applicant proposes a stormwater facility totaling 36,157 square feet to be conveyed to the City. The remainder of the land will be used for utilities such as a public roadway, sidewalks, multi-use trails, and bike easements. This comprises the entirety of the 35.32 acres, therefore there is no remaining land to be developed.
- 2.5 As proposed, there is no remaining land to develop. The subdivision does not create any remainder property.

Conclusions

- 2.1 All property included in this subdivision is under the same ownership, and there is no remainder of land to consider with this application.
- 2.2 This criterion is met.

Criterion (3)

Adjoining land can be developed or is provided access that will allow its development in accordance with this Code.

Findings of Fact

- 3.1 ADC 12.060 requires that development have frontage on or approved access to a public street currently open to traffic. This review criterion has been interpreted by the city council to require only that adjoining land either have access or be provided access to public streets. The property currently has frontage on Lochner Road SE.
- 3.2 As shown on the Tentative Plat (Attachment B), the proposed development would develop two new roads, Blue Jay Avenue and Blackbird Avenue, to connect to Lochner Road SE. The development also proposes to develop six additional interior roads designated as Finch Street, Harrier Street, Flicker Street, Junco Street, Nuthatch Street, and Nighthawk Street, and four public alleys, which will connect to Blackbird Avenue and Blue Jay Avenue. Nighthawk Avenue extends as a future connection to the property directly south of the site.
- 3.3 The property directly south of the site, 3795 Lochner Road SE has frontage onto Lochner Road SE, but currently gains access to Lochner Road SE via an easement through the subject property. The Tentative Plat shows the creation of Tract D to preserve this existing driveway through the subject property to serve the property at 3795 Lochner Road SE. As a condition of approval, Tract D must be conveyed to the property identified at 3795 Lochner Road SE at the time of recording the Final Plat for Phase One.
- 3.4 Property to the north: North of the subject property is a 29.46-acre property that is undeveloped and held by the Linn Benton School District 8J. This property has frontage onto Lochner Road SE. The subject property's northern property line contains a Bonneville Power Administration (BPA) corridor and high voltage transmission lines. The proposed land division does not affect future development of this lot.
- 3.5 Property to the south: South of the subject property are two properties totaling 42.87 acres and are held by Loren and Lois Gerig Revocable Living Trust. Tax lot 600 is developed with one single dwelling unit and has frontage to Lochner Road SE. Tax lot 607 is currently landlocked and developed with an accessory building. While Tax Lot 600 has frontage onto Lochner Road SE the property has historically accessed Lochner through an existing driveway which traverses the subject property. The Tentative Plat proposes modifying the existing driveway by re-directing the access to Blue Jay Avenue which will connect to Tract D which currently exists as part of the driveway serving Tax Lot 600. Tax Lot 607 will have new access via the newly proposed right-of-way, Nighthawk. The proposed land division does not affect the future development of these properties.

- 3.6 Property to the east: East of the subject property is an existing manufactured dwelling development, Columbus Greens, that already has street access to Columbus Street SE via Cascade Drive. Therefore, no additional access to this existing development is required from this project. The proposed land division does not affect the existing or future development of these lots.
- 3.7 Property to the west: West of the subject property is the Cox Creek Youth Correctional Facility and Sno Temp Cold Storage. Both properties have access to Lochner Road SE and/or Marion Street SE. This proposed land division does not affect the existing or future development of this property.
- 3.8 The subject property is located within the South Albany Area Plan (SAAP), which has a network of future road connections. The location of the subject property does not contain any proposed future road connections as outlined in the SAAP (Attachment I).

Conclusions

- 3.1 All adjoining properties have access to public streets through the existing transportation system, and the proposed subdivision plan will not remove that access.
- 3.2 As proposed, the new street network will connect and provide access to adjacent undeveloped land, thereby facilitating future development of those properties.
- 3.3 Based upon the site plan the applicant proposed to convey an existing driveway (Tract D) from future public right-of-way Blue Jay Avenue to serve the property at 3975 Lochner Road SE. The conveyance of Tract D is required at the recording of the Final Plat for Phase One.
- 3.4 This criterion is met with the following condition.

Condition

- Condition 1 The applicant shall convey Tract D to the property at 3795 Lochner Road SE at the time of recording the Final Plat for Phase One.

Criterion (4)

The Public Works Director has determined that transportation improvements are available to serve the proposed subdivision or partition in accordance with Article 12 or will be made available at the time of development.

Findings of Fact

- 4.1 The proposed development is a five-phase subdivision that will result in the creation of 176 residential lots and four tracts.
- 4.2 The development is located on the east side of Lochner Road SE, north of 3795 Lochner Road SE. Access to the site will be provided via two new street connections to Lochner Road SE, Blue Jay Avenue and Blackbird Avenue.
- 4.3 Lochner Road is classified as a minor arterial road and, with the exception of sidewalk, is constructed to city standards along the frontage of the site. Existing street improvements consist of curb and gutter; sidewalk on the west side of the street; a vehicle travel lane in each direction; dedicated left turn pockets at the site's north connection point, and on-street bike lanes.
- 4.4 The applicant submitted a traffic impact analysis with the application. The analysis was performed by Sandow Engineering and is dated August 25, 2023. At full buildout the development was estimated to generate 169 vehicle trips during the PM peak traffic hour.
- 4.5 Albany requires that level of service (LOS) "D" or better be maintained at signalized and all-way stop controlled intersections. The performance of two-way stop-controlled intersections is evaluated based upon the worst-case movement and not the "average" of all movements. At

two-way stop-controlled intersections, the City's minimum performance standard for the worst-case movement is a volume to capacity ratio (v/c) of 0.85.

- 4.6 The Sandow Engineering study assumed the development would be built out in year 2030 and evaluated impacts on the public street system at year 2024, 2025, and year 2030 for both the AM and PM peak hour. The evaluation included a projection of LOS and v/c for all study intersections. The study evaluated the development's impact on the operation of the following intersections:
- *34th Avenue/Marion Street* – this intersection is controlled by a traffic signal. The intersection was projected to operate at LOS “B” by the year 2024 during both the AM and PM peak hour. At year 2030 the intersection was projected to operate at LOS “C” during the AM peak hour and LOS “B” during the PM peak traffic hour.
 - *Marion Street/Lochner Road* – The intersection is a two-way stop-controlled intersection. At year 2024 the worst-case movement was projected to operate with a v/c ratio of 0.11 in the AM peak hour, and 0.12 in the PM peak hour. At year 2030 the worst-case movement was projected to operate with a v/c ratio of 0.17 in the AM peak hour, and 0.17 in the PM peak hour.
 - *Lochner Road/North Site Access* – The intersection was assumed to be stop controlled. At year 2024 the worst-case movement was projected to operate with a v/c ratio of 0.05 in the AM peak hour, and 0.03 in the PM peak hour. At year 2030 the worst-case movement was projected to operate with a v/c ratio of 0.10 in the AM peak hour, and 0.09 in the PM peak hour.
 - *Lochner Road/South Site Access* – The intersection was assumed to be stop controlled. At year 2024 the worst-case movement was projected to operate with a v/c ratio of 0.02 during the AM hour and 0.01 during the PM peak hour. At year 2030 the worst-case movement was projected to operate with a v/c ratio of 0.04 during the AM peak hour and 0.03 during the PM peak hour.
- 4.7 The Sandow engineering study concluded that with the development all study intersections would meet or exceed City performance standards through the year 2030.
- 4.8 ADC 12.040 and 2.050 require that public street and other infrastructure comply with adopted master plans and allow for conditions requiring infrastructure implementing those plans to be placed on new development.
- 4.9 ADC 12.060 requires that all streets interior and abutting new development be improved to city standards, and AC 12.210 requires that local streets have a centerline radius of at least 200 feet. The applicant's proposed tentative subdivision plan includes several locations where the proposed centerline radius of interior streets does not meet the 200-foot design standard.
- 4.10 Albany has two adopted plans that identify transportation projects within and adjacent to the subject property. Albany's Transportation System Plan (TSP) and the South Albany Area Plan (SAAP) both include projects that are either within or border this site.
- The SAAP includes a multi-use path of regional benefit. The path alignment is located within Tract A and extends from the southeast corner of this site to the BPA easement and then west along the BPA easement to Lochner Road. The path is not included in the TSP and has no identified construction funding.
 - The TSP and SAAP both include a multi-use of regional benefit along the north side of Oak Creek within the riparian buffer bordering an established significant wetland. Two isolated sections of the path alignment are on this site along its south boundary and are within Tracts B and C. Those two small segments are separated by a longer gap where the path alignment will be on the adjoining parcel to the south. The south parcel is not part of this application

and has not yet been annexed into the City. Construction of the path is eligible for a Transportation System Development Charge (TSDC) funding/credit.

- The TSP includes a design for Lochner Road that provides for a multiuse path on the east side of the road along the frontage of this site. This section of Lochner Road has, however, previously been improved to urban city standards and includes conventional on street bike lanes.
- 4.11 The SAAP multi-use path systems that border and cross the site are part of a regional looped system intended to provide both recreational and transportation functions for the entire SAAP study area. A condition imposed on any one development site to dedicate land and construct a segment of the path would need to comply with legal requirements regarding nexus and proportionality. In the case of this development the nexus requirement is probably met; portions of the path alignments are on the site, the development will have access and connect to the path systems, and future residents of the site can reasonably be expected to make use of the system. The proportionality requirement, however, would be difficult to meet for the path system in Tract A that lacks a TSDC funding component. Requiring one development to fully fund construction of an improvement with regional benefit would fail a proportionality test.
- 4.12 ADC 12.040 and 12.050 require that public street and other infrastructure comply with adopted master plans and allow for conditions requiring infrastructure implementing those plans to be placed on new development.
- 4.13 The applicant has agreed to provide an easement over Tract A to allow for the future construction and maintenance of a multi-use path. The easement would allow for future construction and operation of the path in the SAAP that extends from the southeast corner of this site north to the BPA easement and then west to Lochner Road.
- 4.14 Tract B of the development includes water quality features and will be dedicated to the City. The applicant has submitted a design proposal for both tracts showing they can also accommodate installation of the multi-use path identified in the SAAP and TSP along the north side of Oak Creek. A condition has not been imposed on this development for construction of path improvements on either tract. Determination of the precise alignment of the path and its construction can occur in the future at a time of city choosing as part of a larger path project involving use of TSDC funding. This development will be paying TSDC fees with individual lot development and thereby contribute to the future construction of the path improvements.

Conclusions

- 4.1 The development is for a five-phase subdivision that will create 176 residential lots.
- 4.2 The applicant submitted a traffic study with the application. The study evaluated the impact of traffic generated by the development would have on the transportation system. The study concluded that with the development all intersections will meet or exceed the City's performance standards at project build out in 2024 through full development at year 2030.
- 4.3 The improvement of public streets adjoining a new development are requirements of ADC 12.060. The development has frontage on Lochner Road. Lochner Road is classified as a minor arterial road and is improved to city standards, with the exception of sidewalk. The applicant has proposed dedication of 10 feet of right-of-way along the northern portion of the site and construction of sidewalk along the site's full street frontage.
- 4.4 ADC 12.040 and 12.050 require that new development comply with adopted master and infrastructure plan. The TSP and SAAP both include projects that either abut or are interior to this site:
- The SAAP includes a multi-use path project located within Tract A of this development. The path is not in the TSP, is not eligible for TSDC funding or credit, and has no identified source

of city financial participation. The applicant has agreed to provide an easement over Tract A that will allow for the future construction, operation, and maintenance of the path.

- The SAAP and TSP both include a multi-use path within a riparian buffer along the south boundary of this site. Two small sections of the path alignment are on this site, and the balance is located on the parcel to the south that is outside the city limits. The on-site areas of the path alignment are on tracts that will be dedicated to the City and can accommodate path improvements. Construction of the path can occur in the future as part of a larger path improvement with a TSDC funding component. This development will contribute to that project through payment of TSDC fees with individual lot development.
- The TSP includes a multi-use path along the east side of Lochner Road along the frontage of this development. The multi-use path along this section of Lochner Road is intended to link the off-road paths shown in the SAAP along the BPA easement and Oak Creek. Neither of those paths currently exist or will be constructed with this development. The development's frontage on the road has, however, been improved to urban city standards and includes on-street bike lanes. Conversion to a design with a multi-use path would require elimination of the existing northbound bike lane and reconstruction of the existing curb, gutter, and storm drainage system along the east side of the road. The cost to convert this section of Lochner Road from an on-street bike lane to a multi-use path would be substantial and of limited benefit because the off-street paths at each end of the development are not yet constructed. The right of way along Lochner Road being dedicated with this development will provide the City with the option of converting to a multi-use path along east side of the road with a future rehabilitation project.

- 4.5 The development will create two new local street connections to Lochner Road. Lochner Road is classified as a minor arterial street. In order to provide for the safe and efficient circulation of traffic and pedestrian movements the new approaches will need to be stop-controlled at Lochner Road and include marked crosswalks across the minor street approach.
- 4.6 Compliance with ADC 12.210 will require that the minimum centerline radius for interior local streets have a centerline radius of at least 200 feet.

Conditions

Condition 2 The applicant shall construct, to city standards, all public streets interior to the development. The right-of-way widths shall be 54 feet and the curb-to-curb widths 30 feet as identified on the Tentative Plat Map. The minimum center line radius for interior local streets shall be 200 feet.

Condition 3 Project phasing and interior street construction must demonstrate compliance with applicable Fire Code requirements relating to the need for secondary access and access point spacing.

Condition 4 Prior to the development of Phase One:

- The applicant shall dedicate 10 feet of public right-of-way along the site's 705 feet of frontage along Lochner Road as shown on Tentative Plat Map.
- The applicant shall construct a 6-foot public setback sidewalk along the site's frontage on Lochner Road.
- The applicant shall install stop signs and striped crosswalks at the two new local street connections to Lochner Road.
- The applicant shall dedicate to the City a multi-use path over Tract A for the path identified in the South Albany Area Plan (SAAP) that extends from the southeastern corner of the site north to the BPA easement, and along the BPA easement to

Lochner Road. The precise location of the easement over that alignment shall be non-specific in order to allow for flexibility in path design and alignment and allow for a path for up to 12 feet in width.

Criterion (5)

The Public Works Director has determined that public facilities and utilities are available to serve the proposed subdivision or partition in accordance with Article 12 or will be made available at the time of development.

Findings of Fact

Sanitary Sewer:

- 5.1 City utility maps show a 12-inch public sanitary sewer main in Lochner Road along the northernmost 175 feet of property frontage. A 24-inch force main runs along the south boundary of the BPA easement in the northern portion of the site. The subject property has never been connected to the public sewer system.
- 5.2 Oregon Revised Statutes (ORS) 92.090 states no subdivision plat shall be approved unless sanitary sewer service from an approved sewage disposal system is available to the lot line of every lot depicted in the proposed subdivision plat.
- 5.3 Albany Municipal Code (AMC) 10.01.010 (1) states the objective of the Albany Municipal Code requirements pertaining to public sanitary sewers is to facilitate the orderly development and extension of the wastewater collection and treatment system, and to allow the use of fees and charges to recover the costs of construction, operation, maintenance, and administration of the wastewater collection and treatment system.
- 5.4 ADC 12.490 states sewer collection mains must be extended along the full length of a property's frontage(s) along the right(s)-of-way or to a point identified by the City Engineer as necessary to accommodate likely system expansion. ADC 12.510 requires main extensions through the interior of a property to be developed where the City Engineer determines that the extension is needed to provide access to the public system for current or future service to upstream properties. Extension of the sewer across the frontage and/or through the interior of a property makes the system available to adjacent properties. Then, when the adjoining property connects, that property owner must extend the sewer in a similar manner, making the sewer available to the next properties. In this way, each property owner shares proportionately in the cost of extending sewer mains.
- 5.5 The property to the south of the subject property is within the Urban Growth Boundary and is expected to develop at some point in the future. In order for this property to develop, public sewer must be made available to serve the site. A public sewer main extension must be provided to the property to the south. The portion(s) of public sanitary sewer main that will be extended to serve the property to the south must be constructed at maximum depth to accommodate service to future development on the property.
- 5.6 AMC 15.30.010 states that a Connection Charge shall be due and payable when accessing the City's sanitary sewers from or for the benefit of any real property against which no assessment has previously been levied or for which the cost of constructing the sanitary sewer has not been paid by the property owner or predecessor thereof.
- 5.7 The minimum size of the public sanitary sewer main to be installed must be eight inches in diameter where a larger size is not needed to provide an adequate system, conform with the size of existing mains, meet future needs, or conform to the size specified by the utility's sewer system facility plan (AMC 10.01.110(2)(a)).

- 5.8 All sewer mains intended to serve multiple properties must be public, installed in public rights-of-way or public utility easements. The normal routing for the sewer main extension shall be in a dedicated street right-of-way (AMC 10.01.110(2)(b)).
- 5.9 The applicant's preliminary utility plan shows the extension of sanitary sewer main to serve the subdivision. Before any work is done on or around a public sanitary sewer main the applicant must obtain a Site Improvement Permit from the City's Engineering Division.

Water:

- 5.10 City utility maps show a 16-inch public water main in Lochner Road along the northernmost 155 feet of property frontage. The subject property has never been connected to the public water system. The City's Water Facility Plan calls for an extension of the 16-inch main in Lochner Road.
- 5.11 ORS 92.090 states no subdivision plat shall be approved unless water service from an approved water supply system is available to the lot line of each and every lot depicted in the proposed subdivision plat.
- 5.12 ADC 12.410 requires all new development to extend and/or connect to the public water system if the property is within 150 feet of an adequate public main.
- 5.13 ADC 12.450 requires that all new development within the City, where appropriate, provide for the extension of existing water lines serving the surrounding area.
- 5.14 AMC 11.01.120(2)(e) states all required public water main extensions must extend to the furthest property line(s) of the development or parcel. Main extensions may be required through the interior of a property to be developed where the City Engineer determines that the extension is needed to provide current or future looping of water mains, or to provide current or future service to adjacent properties. When the owner of a property is required to connect to the public water system, the water main must be extended across the property's entire frontage and/or through the interior of the property. Extension of the water across the property's frontage and through the interior of the property makes the system available to adjacent properties. Then, when the adjoining property connects, that property owner must extend the water mains in a similar manner, making the water available to the next properties. In this way, each property owner shares proportionately in the cost of extending water mains.
- 5.15 AMC 11.01.120(2)(c) states the City shall have the sole right to determine size, location, and type of facility to be constructed. All engineering of public water facilities shall be based on both domestic and fire protection design criteria, and in accordance with the City's water facility plan. All public water system improvements to be built under a private contract require that the developer obtain a Permit for Private Construction of Public Improvements.
- 5.16 AMC 11.01.120(2)(h) states all public main extensions must include fire hydrants and other appurtenances in a manner consistent with the recommendations of the water system facility plan, the Standard Construction Specifications, and/or the Fire Marshal.
- 5.17 AMC 11.01.120(2)(b) states all public water system improvements must be installed in public rights-of-way or public utility easements. The normal location for the public water main extensions will be in a dedicated street right-of-way.
- 5.18 A Connection Charge shall be due and payable when accessing the City's water distribution facilities from or for the benefit of any real property against which no assessment has previously been levied or for which the cost of constructing the water facilities has not been paid by the property owner or predecessor thereof (AMC 15.30.010)
- 5.19 The applicant's preliminary utility plan shows the extension of the 16-unch water main in Finch Street through the subdivision and extended to the property's southern property line in and eight-inch mains

along the other internal streets of the development. Before any work is done on or around a public water main the applicant must obtain a Site Improvement Permit from the City's Engineering Division.

Stormwater Drainage:

- 5.20 City utility maps show a 42-inch public storm drainage main in Lochner Road along the entire frontage of the subject property. These public storm drainage facilities were installed as part of the Lochner Road improvements constructed in 1996. Because the subject property was in the county at the time these improvements were made, the property owners did not participate in the cost of constructing the storm drainage improvements.
- 5.21 It is the property owner's responsibility to ensure any proposed grading, fill, excavation, or other site work does not negatively impact drainage patterns to, or from, adjacent properties. In some situations, the applicant may propose private drainage systems to address potential negative impacts to surrounding properties. Private drainage systems that include piping will require the applicant to obtain a plumbing permit from the Building Division prior to construction. Private drainage systems crossing multiple lots will require reciprocal use and maintenance easements and must be shown on the final plat. In addition, any proposed drainage systems must be shown on the construction drawings. The type of private drainage system, as well as the location and method of connection to the public system must be reviewed and approved by the City of Albany's Engineering Division.
- 5.22 ADC 12.530 states a development will be approved only where adequate provisions for storm and flood water run-off have been made, as determined by the City Engineer. Roof drains shall be discharged to a collection system approved by the City Engineer. Also, no storm water may be discharged to the public sanitary sewer system.
- 5.23 ADC 12.580 states all new development within the City must, where appropriate, provide for the extension of existing storm sewer lines or drainageways serving surrounding areas. Extensions may be required along all frontages and/or through the interior of a property to be developed where the City Engineer determines that the extension is needed to provide service to upstream properties.
- 5.24 ADC 12.550 states any public drainage facility proposed for a development must be designed large enough to accommodate the maximum potential run-off from its entire upstream drainage area, whether inside or outside of the development, as specified in the City's storm drainage facility plan or separate storm drainage studies.
- 5.25 ADC 12.560 states where it is anticipated by the City Engineer that the additional run-off resulting from the development will overload an existing drainage facility, the review body will not approve the development until provisions have been made for improvement of the potential problem.
- 5.26 The applicant has submitted a preliminary drainage plan that shows the installation of stormwater quality and detention facilities. Final design details for these storm drainage facilities will be reviewed in conjunction with the subdivision. Before any work is done on or around a public storm drainage main the applicant must obtain a Site Improvement Permit from the City's Engineering Division.
- 5.27 A Connection Charge shall be due and payable when accessing the City's storm drains from or for the benefit of any real property against which no assessment has previously been levied or for the cost of constructing the storm drains has not been paid by the property owner or predecessor thereof.
- 5.28 AMC 12.45.030 – 12.45.040 requires a post-construction stormwater quality permit be obtained for all new development and/or redevelopment projects on a parcel(s) equal to or greater than one acre, including all phases of the development. (Ord. 5841 § 3, 2014)
- 5.29 **AMC 12.45.080 Post-construction stormwater quality plan required.** Applicants for a post-construction stormwater quality plan shall submit as a part of their permit application a post-construction stormwater quality plan. Each plan shall comply with the minimum standards outlined in the engineering standards, construction standards, and the provisions of this chapter. Each post-

construction stormwater quality plan shall be reviewed, approved, and stamped by a professional licensed in Oregon as a civil or environmental engineer or landscape architect. (Ord. 5841 § 3, 2014).

- 5.30 Because the site is larger than one acre and more than 8,100 square feet of impervious surfaces will be created or replaced, the applicant must obtain a stormwater quality permit and construct stormwater quality facilities that meet all City Engineering Standards pertaining to stormwater quality.

Fire Safety:

- 5.31 The Albany Fire Department has reviewed the proposed subdivision for conformance with the 2022 Oregon Fire Code (OFC), and their comments are included as Attachment L. Fire safety requirements include street naming conventions, the provision of adequate water supply and capacity, and emergency access to and within the subdivision, including turnarounds, parking restrictions, and easements. The applicant must show compliance with fire safety standards prior to the Final Plat of Phase One.

Conclusions

- 5.1 The applicant must extend public utilities (sanitary sewer, water, storm drainage) to serve the proposed project. The extensions must be designed to provide access to these utilities for future development of surrounding properties.
- 5.2 The applicant must extend public sanitary sewer facilities into the site from Lochner Road to serve each of the proposed lots and provide a connection to the property to the south for future development.
- 5.3 The City's Water Facility Plan calls for the extension of the 16-inch water main in Lochner Road along the subject property's frontage. Public water must be made available to the property south of this site by extending a water main to the southern property line.
- 5.4 The applicant must provide stormwater detention and stormwater quality facilities for the property development.
- 5.5 Connection charges will be due for existing public infrastructure improvements in Lochner Road. These connection charges must be paid before the City will approve the Final Plat.
- 5.6 The applicant has submitted preliminary utility plans for the proposed development. While these plans appear to be generally acceptable, final design and construction details will be reviewed as part of the required permits.

Conditions

- Condition 5** Before the City will approve the final subdivision plat for each phase, the applicant must construct public sanitary sewer facilities to provide service to each of the proposed lots in the subdivision and provide for future extension to the property to the south.
- Condition 6** Before the City will approve the final subdivision plat for each phase, the applicant must construct public water facilities to provide service to each of the proposed lots in the subdivision and provide for future extension to the property to the south. The 16-inch public water main in Lochner Road must be extended to the south boundary of the subject property in Lochner Road.
- Condition 7** Before the City will approve the final subdivision plat for Phase One, the applicant must construct public storm drainage improvements to collect runoff from the proposed development. The storm drainage improvement must include stormwater detention and stormwater quality facilities generally as shown on the preliminary utility plans submitted by the applicant.

Condition 8 Before the City will approve the final subdivision plat for Phase One, the applicant must pay all connection charges associated with existing public infrastructure in Lochner Road along the frontage of the subject property.

NOTE: All required permits must be obtained through the Public Works Department before beginning work on any of the aforementioned improvements. Final design and construction details will be reviewed as part of the required permits. Reference is hereby made to the comments provided by the Public Works Department, Engineering Division.

Criterion (6)

Activities and developments within special purpose districts must comply with the regulations described in Articles 4 (Airport Approach), 6 (Natural Resources), and 7 (Historic), as applicable.

Findings of Fact

6.1 Article 4 Airport Approach Overlay District

- According to Figure 4.410-1 of the ADC, the subject property is not located within the Airport Horizontal Surface area, as indicated on the Albany Municipal Airport Approach and Clear Zone plan.

6.2 Article 6 Floodplain Overlay District

- According to the FEMA Flood Insurance Rate Map, Community Panel No. 41043C0527G dated September 29, 2010, the subject property is partially (approximately 3,065 square feet) located in Zone AE, of the Special Flood Hazard Area (aka 100-year floodplain). ADC 6.110 “Site Improvement, Land Division, and Manufactured Home Park Standards” allows a land division within the floodplain without a land use review provided “no actual development” means the floodplain area has been excluded from the land division. The submitted Tentative Plat (Attachment B) shows the area where the floodplain is located within Tract B which is to be conveyed to the City of Albany as a stormwater facility and constitutes as “no actual development”.

6.3 Article 6 Hillside Development Overlay District

- According to Chapter 11, Plate 7 of the Comprehensive Plan, the subject property is not located in the Hillside Development District.

6.4 Article 6 Riparian Corridor Overlay District and Significant Wetlands Overlay District

- Most of the subject property is shown to contain non-significant wetlands. However, along the southern portion of the subject property is located within the Significant Wetland Overlay District and the associated Riparian Corridor.
- The applicant submitted a wetland study performed by Pacific Habitat Service, dated August 13, 2021 (Attachment E). The applicant has also obtained a Wetland Delineation approval from the Oregon Department of State Lands (DSL) on June 2, 2021 (WD #2021-0033) which is valid for five years (June 2, 2026) (Attachment F).
- Pursuant to ADC 6.280(B) the City’s Local Wetland Inventory may be amended through wetland delineations approved by DSL. The applicant’s wetland study provided evidence that the portion on the property that is inventoried as a Significant Wetland and Riparian Corridor has been degraded and is not identified as a wetland.
- Based upon the wetland study performed by Pacific Habitat Service and the approved Wetland Delineation the boundary of the Significant Wetland and Riparian Corridor are no longer located within the subject property.

- 6.5 Article 6 Habitat Assessment Overlay District
- The subject property is not located within the Habitat Assessment Overlay District.
- 6.6 Article 7 Historic Overlay District
- According to Chapter 11, Plate 9 of the Comprehensive Plan, the subject property is not located within the Historic Overlay District. There are no known archaeological sites on the property.

Conclusions

- 6.1 The proposed development is not located within special purpose districts described in Article 7 (Historic Overlay District), as applicable.
- 6.2 According to the FEMA Flood Insurance Rate Map, a portion of the subject property is located within a SFHA. The proposed land division creates a tract (Tract B) to be conveyed to the City of Albany as a Stormwater Facility. This undeveloped tract meets the definition of “no actual development” pursuant to ADC 6.110 and is not subject to a floodplain development review.
- 6.3 The proposed development is not located within the Hillside Development Overlay District described in Article 6.
- 6.4 The subject property contains inventoried wetlands and has a valid Wetland Delineation through DSL. As a condition of approval, the applicant shall comply with the wetland delineation requirements and permits.
- 6.5 The approved Wetland Delineation found the inventoried Significant Wetland and associated Riparian Corridor in the southwestern portion of the property are no longer viable. The study and delineation found the boundaries of the significant wetland are located upon the property to the south (Tax Lot 600) and are not located upon the subject property.
- 6.6 This criterion is met with the following condition.

Conditions

- Condition 10 Prior to the signing of the Final Plat for each phase the applicant shall comply with the wetland delineation requirements and permits from the Oregon Department of State Lands (DSL).

Lot and Block Arrangements Review Criteria (ADC 11.090)

In any land division for single-dwelling unit residential or middle housing development, lots and blocks shall conform to the following standards in this Article and other applicable provisions of this Code:

Criterion (1)

Lot arrangement must be such that there will be no foreseeable difficulties, for reason of topography or other condition, in securing building permits to build on all lots in compliance with the requirements of this Code with the exception of lots designated Open Space.

Findings of Fact

- 1.1 The applicant submitted findings stating: “The underlying zone of the proposed property is RS-6.5. The applicant is proposing a cluster development, and the Tentative Phased Subdivision Plans show that each lot will meet the applicable dimensional requirements for Section 11.495, as applicable. Each lot will also have adequate frontage on a public street.”
- 1.2 ADC Table 3.190-1 contains the minimum lot size requirements for properties within the RS-6.5 zoning district. The applicant is requesting the proposed subdivision be reviewed as a phased cluster

development pursuant to the criteria and standards found in ADC 11.400-11.530. Cluster development is intended to protect and/or restore natural and other special features in the development of a site. Cluster development may provide greater flexibility, reduced and/or varied lot sizes, and more variety in permitted uses. Residential density may be transferred within the development in exchange for restoring degraded or marginal quality resources located in a Significant Natural Resource overlay district or for protecting natural or other special features of the site.

- 1.3 Pursuant to ADC 11.495, residential cluster development standards in Table 11.495-1 supersede the same standards in Section 3.190, Table 3.190-1. As detailed in Table 11.495 properties in the RS-6.5 zoning district do not have a minimum lot size, width, or depth, with the exception of lots on the perimeter of the cluster development.
- 1.4 The subject property is not located in an area with steep slopes. The proposed subdivision has been designed to accommodate the existing topography ensuring building permits may be issued for each lot.
- 1.5 The subject property contains identified wetlands with boundaries approved through a wetland delineation with DSL (DSL file no. WD #2021-0033). Based upon the site map submitted with the application (Attachment B) the proposed development will reserve a portion of the inventoried wetlands as open space and will not be developed.
- 1.6 Based on these factors, there will be no difficulty in obtaining building permits for all lots within the proposed development.

Conclusion

- 1.1 This criterion is met.

Criterion (2)

Lot dimensions must comply with the minimum standards of this Code. When lots are more than double the minimum area designated by the zoning district, those lots must be arranged so as to allow further subdivision and the opening of future streets where it would be necessary to serve potential lots. An urban conversion plan may be required in conjunction with submittal of tentative subdivision or partition plat.

Findings of Fact

- 2.1 The applicant proposes a residential cluster development as part of this five-phased subdivision. ADC 11.400-11.500 contains the requirements and standards for cluster developments which supersedes the lot standards found in ADC Table 3.190-1. Based upon table 11.495-1 the RS-6.5 zoning district does not have a minimum lot size, width, or depth for lots within the cluster development. Perimeter lot compatibility standards are found in ADC 11.500 and are addressed later in this staff report and are included here by reference.
- 2.2 The applicant proposes a total of 176 residential lots and four tracts to be developed in five phases. The minimum proposed lot size is 2,389 square feet and a maximum lot size of 8,820 square feet. There are no lots that are more than double the minimum (6,500 square feet) area for lots within the RS-6.5 zoning district. Three of the proposed tracts will exceed double the minimum area for lots within the RS-6.5 zoning district. These tracts are to be preserved as either wetlands/open space or stormwater facilities, which are restricted from any further development. As such an urban conversion plan is not required with this Tentative Plat.

Conclusions

- 2.1 The proposed development will create a total of 176 residential lots and four tracts with the RS-6.5 zoning district which meet the lot standards outlined in ADC 11.495 Table 11.495-1.

- 2.2 There are not any lots proposed to be greater than double the minimum lot size for the RS-6.5 zoning district. The proposed tracts which are greater than double the minimum lot size are restricted by covenant from any further development.
- 2.3 This criterion is met.

Criterion (3)

Double frontage lots shall be avoided except when necessary to provide separation of residential developments from streets of collector and arterial street status or to overcome specific disadvantages of topography and/or orientation. When driveway access from arterials is necessary for several adjoining lots, those lots must be served by a combined access driveway in order to limit possible traffic hazards on such streets. The driveway shall be designed and arranged so as to avoid requiring vehicles to back into traffic on arterials. An access control strip shall be placed along all lots abutting arterial streets requiring access onto the lesser class street where possible.

Findings of Fact

- 3.1 As shown on the Tentative Plat, Attachment B, lots 1 through 14 will abut an arterial, in addition to their primary frontage to an internal local street. No individual access points to the arterials are proposed. Double frontage lots are proposed in this instance due to the location of wetlands on the site, and to allow for preservation of the wetlands while overcoming the applicable arterial access spacing requirements.
- 3.2 This condition arises out of the necessity to provide separation from the residential development's local streets, (Blue Jay Avenue, Blackbird Avenue, Finch Street, Harrier Street, Flicker Street, Junco Street, Nuthatch Street), from the existing arterial street, (Lochner Road). Therefore, as noted above, the double frontage lots in this case are an allowable exception to this criterion.
- 3.3 Driveway access to Lochner Road is not proposed.

Conclusion

- 3.1 This criterion is met.

Criterion (4)

Side yards of a lot shall run at right angles to the street the property faces, except that on a curved street the side property line shall be radial to the curve.

Findings of Fact

- 4.1 As shown on the Tentative Plat, Attachment B, lot lines run at right angles to the streets, or radial to the curved portions of the streets. Therefore, the side yards of the lots will run at right angles as well.

Conclusion

- 4.1 This criterion is met.

Criterion (5)

The average block length shall not exceed 600 feet. Block length is defined as the distance along a street between the centerline of two intersecting through streets (Figure 11.090-1). The City may grant an exception to the average block length standard based on one or more of the conditions in subsections (a) through (c) below.

- (a) *Physical conditions preclude an average block length of 600 feet or less. Such conditions may include steep slopes or the existence of physical features, including, but not limited to: wetlands, riparian corridors, mature tree groves, or a resource under protection by State or Federal law.*
- (b) *Existing transportation or utility facilities, buildings, or other existing development on adjacent lands, including previously subdivided but vacant lots or parcels, physically preclude an average block length of 600 feet or less, considering the potential for redevelopment.*
- (c) *An existing public street or streets terminating at the boundary of the development site have a block length exceeding 600 feet or are situated such that the extension of the street(s) into the development site would create a block length exceeding 600 feet. In such cases, the average block length shall be as close to 600 feet as practicable.*

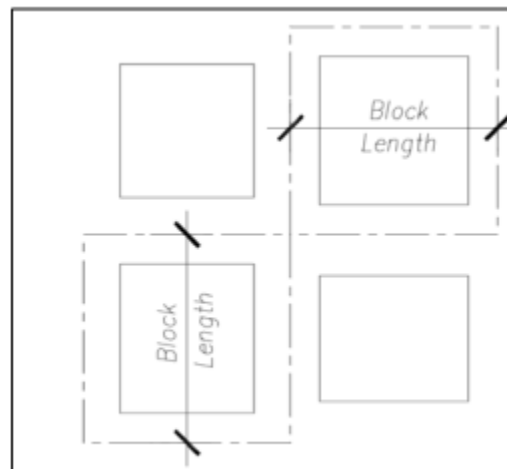


FIGURE 11.090-1. Block Length

Findings of Fact

- 5.1 The Tentative Plat, Attachment B, depicts the layout of the proposed development and the relationship between the streets at the intersections of Blue Jay Avenue with Lochner Road SE, and Blackbird Avenue with Lochner Road SE.
- 5.2 As measured along the street between the center line of two intersecting through streets, the proposed blocks within the development are as follows:
 - Finch Street to Harrier Street ~223 ft
 - Harrier Street to Flicker Street: ~255 ft
 - Flicker Street to Junco Street: ~300 ft
 - Junco Street to Nuthatch Street: ~252 ft
 - Nuthatch Street to Nighthawk Street: ~225 feet
 - Lochner Road to Finch Street: ~190
 - Average block from Blackbird Avenue to Blue Jay Avenue: ~360 feet
Average Block Length = ~240 ft.

The average block length based upon the proposed development is approximately 240 feet, which meets the average block length standard.

Conclusion

- 5.1 The average block length within the development is approximately 240 feet.
- 5.2 This criterion is met.

Criterion (6)

Off-street pedestrian pathways shall be connected to the street network and used to provide pedestrian and bicycle access in situations where a public street connection is not feasible.

Findings of Fact

- 6.1 At the time of building permit processing, off-street pedestrian pathways will be established in compliance with Articles 8 and 11 of the ADC as applicable.

Conclusion

- 6.1 This criterion is met.

Criterion (7)

With the exception of townhouse development, the minimum frontage of a lot on a cul-de-sac shall be 22 feet as measured perpendicular to the radius.

Findings of Fact

- 7.1 The tentative site map does not propose a cul-de-sac with this development.

Conclusion

- 7.1 This criterion is met.

Criterion (8)

Flag lots are allowed only when the City Engineer has determined that the dedication and improvement of a public street is not feasible or not practical. The minimum width for a flag is 22 feet, except when access is shared by an access and maintenance agreement in which case each lot shall have a minimum width of 12 feet and a combined minimum of 24 feet.

Findings of Fact

- 8.1 The applicant does not propose any flag lots with this development.

Conclusion

- 8.1 This criterion is met.

Criterion (9)

At all street intersections, an arc along the property lines shall be established so that construction of the street at maximum allowable width, centered in the right-of-way, shall require not less than a twenty-foot radius of the curb line.

Findings of Fact

- 9.1 The arcs along the property lines at all street intersections will be established so that a minimum 200-foot radius of the curb line can be constructed.

Conclusion

- 9.1 The applicant must ensure that the final subdivision plat for the development complies with this 200-foot radius requirement.

Condition

Condition 11 Prior to City approval of the final subdivision plat for each phase of the development, the applicant must demonstrate that the arc along the property lines at all street intersections are established so that the construction of the curb line has a radius that is not less than two hundred feet.

Cluster Development Criteria (ADC 11.400-11.530)

Purpose (ADC 11.400)

Cluster development is intended to protect and/or restore natural and other special features in development of a site. In return, the more flexible standards found in this section may supersede other stricter standards of this code. Cluster developments may provide greater flexibility, reduced and/or varied lot sizes, and more variety in permitted uses. Residential density may be transferred within the development in exchange for restoring degraded or marginal quality resources locating in a Significant Natural Resource Overlay District or for protecting natural or other special features of the site. Developments must satisfy high-quality master planning and design requirements.

Findings of Fact

Portions of the subject property are located within the Albany Local Wetland Inventory. The applicant had a Wetland Delineation Report, dated January 14, 2021, completed by wetland biologist, Pacific Habitat Services. The Wetland Delineation Report identified wetlands that are not on Albany's Local Wetland Inventory, as well as determined the locational boundaries of the local inventoried wetland is not located upon the subject property.

Based upon the Wetland Delineation Report (Attachment E) and approved DSL Wetland Delineation (Attachment F) the applicant proposes to dedicate two tracts (Tracts A and C) totaling approximately 12.74 acres of land with identified wetlands intended for wetland preservation. An HOA consisting of residents/property owners of this development is required to be formed to manage Tracts A and C.

Optional Nature (ADC 11.405)

Cluster development is an optional form of development. Cluster development proposals are reviewed as part of the land division, site plan, or Conditional Use application processes.

Findings of Fact

The proposed cluster development is reviewed as part of a subdivision, a land division, application process. The land division criteria are addressed earlier in this report.

Eligibility (ADC 11.410)

To be eligible to apply for cluster development, all of the following are required:

- (1) Residential Zoning. The site must be located in a residential zoning district.*
- (2) Natural and Other Special Features. The site must contain one or more of the features listed in Section 11.460.*
- (3) Professional Designer. An applicant for cluster development approval must certify in writing that a certified landscape architect, site planner, or landscape designer, approved by the Director, will be used in the planning and design process for the proposed development.*

Findings of Fact

The subject property is located within the Residential Single Dwelling (RS-6.5) zoning district, which is a residential zoning district.

The subject property contains wetlands that have been identified through a Wetland Delineation Report.

The project has been designed by a licensed civil engineer, and a natural resource specialist/wetlands biologist (Pacific Habitat Services).

Relationship to Other Regulations (ADC 11.420)

If the applicant chooses the cluster development option, and the site is deemed eligible by the City, these standards will supplement other provisions of this Code. For example, a subdivision proposed as a cluster development is also subject to other provisions of Article 11 of the Development Code. Other types of residential development are subject to Site Plan Review or Conditional Use review. These provisions apply to issuance of building permits in a cluster development and to ongoing uses and activities in a cluster development.

Findings of Fact

The applicant is proposing a residential phased subdivision applying the cluster development standards. As determined earlier in this report, the subject property is eligible for cluster development option pursuant to ADC 11.410.

The land division criteria under ADC 11.180 are addressed earlier in this report and are included here by reference.

At the time of building permit submittal, the respective building setbacks, lot coverage, and height standards of the underlying RS-6.5 zoning district will apply.

Procedure (ADC 11.430)

Cluster development proposals are reviewed as a Type III procedure.

Findings of Fact

The proposed cluster development is reviewed as a Type III procedure, in accordance with ADC 1.360.

Review Criterial (ADC 11.440)

The review criteria for a cluster development are those that apply to a particular type of development. For example, the tentative plat criteria in Article 11 apply to cluster land divisions. (See Section 11.420 for relation to the other requirements.) Also, the review body must find that the application meets the following additional criterion:

- (1) The proposed development meets all of the requirements for cluster development.*
- (2) The proposed development preserves or restores natural or other special features as identified and prioritized in ADC 11.460.*

Findings of Fact

- 1.1 The applicant proposes to create a 176-lot subdivision through a residential cluster development. Findings addressing the standards and requirements for residential cluster development are addressed in this staff report and are included here by reference.
- 1.2 The proposed cluster development is reviewed as part of a subdivision, a land division, application process. The land division criteria are addressed earlier in this report and are included here by reference. The applicant has submitted a Wetland Delineation Report (Attachment F) which indicates

there are wetlands upon the subject property. The Tentative Plat (Attachment B) has two separate tracts, Tracts A and C, to be conveyed to an HOA for the preservation of the wetlands and open space.

Conclusions

This criterion is met through compliance with conditions.

Natural Areas Requirements (ADC 11.450)

Cluster developments must provide a minimum of 20 percent of the site as permanent natural areas. Land designated as Open Space on the Comprehensive Plan or Zoning maps may not be used to fulfill this requirement.

Findings of Fact

The applicant's findings (Attachment C) provide a table with the breakdown of the tract areas intended for wetland preservation. Based upon the submitted materials, the applicant proposes approximately 12.73 acres of the subject property, 36 percent of the property, to be preserved as permanent natural areas. The subject property does not have any Open Space zoning district or Comprehensive Plan designations.

Designation of Permanent Natural Area (ADC 11.460)

The required natural area may be public or private. The minimum 20 percent of the gross acreage of the development site set aside as natural area in a cluster development should be designated in the following priority order:

- (1) The first priority for natural area designation is significant tree groves identified on the South Albany Area Plan Organizational Framework map in the Comprehensive Plan (Figure 1), and Oregon White Oak (*Quercus garryana*) trees citywide equal to or greater than six and one-half feet in circumference (approximately 25-inches in diameter) measured as defined in Article 9.203(4). For individual trees, the natural area boundary is defined as the critical root zone (as defined in Article 9.203 (1)) plus a 10-foot buffer.*
- (2) The second priority for natural area designation is natural resources within the Significant Natural Resource overlay districts that are of degraded or marginal quality and subsequently restored to good quality in accordance with the quality levels in ADC Section 6.410(5). This priority shall be satisfied in the following order:*
 - (a) Habitat for western painted and northwestern pond turtles within the Habitat Assessment Overlay (/HA), as identified by a turtle habitat assessment, that is restored to good quality.*
 - (b) Wetland within the Significant Wetland overlay district (/SW) that is restored to good quality.*
 - (c) Riparian area within the Riparian Corridor overlay district (/RC) that is restored to good quality.*

Findings of Fact

The subject property does not contain significant tree groves identified on the SAAP or the Oregon White Oak. The subject property contains a small portion of Significant Wetlands and Riparian Corridor in the southwestern corner. These local jurisdictional wetlands have been altered through a Wetland Delineation through DSL based upon a Wetland Delineation Report submitted by Pacific Habitat Services. The inventoried Significant Wetlands are not located upon the subject property and are located upon the property directly south.

- (3) The third priority for natural area designation is protection of other environmentally sensitive areas, natural and scenic features of the site. This priority shall be satisfied in the following order:*
 - (a) Good quality habitat for western painted and northwestern pond turtles near Thornton*

- Lakes within the Habitat Assessment overlay (/HA) as identified by a turtle habitat assessment.*
- (b) Good quality wetland within the Significant Wetland overlay district (/SW).*
 - (c) Good quality riparian area within the Riparian Corridor overlay district (/RC).*
 - (d) Other wetlands not within the Significant Wetland overlay district, as shown on the City's Local Wetland Inventories, or by a delineation approved by the Oregon Department of State Lands.*
 - (e) Existing channels identified in the most current version of the City of Albany Storm Water Master Plan.*
 - (f) Springs.*
 - (g) Land with natural slopes 12 percent or greater as designated by the Hillside Development overlay district (/HD).*
 - (h) Wooded area with five or more healthy trees over 25 inches in circumference (approximately eight inches in diameter) measured as defined in Article 9.203(4), if approved by the City Forester.*
 - (i) Land that provides bike or walking trails that connect to existing or proposed parks or trails, inventoried natural features, or areas zoned Open Space; or areas otherwise protected as permanent natural areas.*
 - (j) Incorporate public parks, trails, trailheads, or open space designated in the Parks, Recreation and Open Space Plan, the North Albany Refinement Plan, and the South Albany Area Plan.*
 - (k) Other features of the site unique to Albany, if approved by the Director.*

Findings of Fact

The submitted Wetland Delineation Map (Figure 6) indicates the location of the identified wetlands upon the subject property. The applicant proposes two separate tracts to preserve the wetlands upon the subject property. Tract A is proposed at 528,146 square feet and will contain inventoried wetlands B and C as delineated on Figure 6 of the Wetland Delineation (Attachment F). Tract C will consist of 26,688 square feet and will contain wetland A and the inventoried Riparian Corridor. The subject property will also contain two different trail systems. The South Albany Area Plan Trails Framework identifies a trail along the north and eastern property lines of the subject property. The applicant proposes to dedicate an easement to the City for the creation of this trail.

- (4) The fourth priority for natural area designation is to create "open spaces" in and around neighborhoods. This priority shall be satisfied by any of the following:*
- (a) Continuity of adjacent open space corridors or parkways.*
 - (b) A network of interconnected open space corridors*
 - (c) A buffer between neighborhoods.*

Findings of Fact

The subject property is located within the SAAP boundary, and the applicant is proposing to set aside approximately 12.73 acres of open space (36 percent). The applicant's narrative provides a table breakdown of land areas shown for natural resource preservation. The abutting property to the east has an open space corridor located under the same BPA easement that encumbers the subject property. The orientation of Tract A provides continuity of this adjacent open space corridor and creates a network of interconnected open space corridors. The applicant has oriented Tract A to be located upon the northern and eastern property lines of the subject property. This creates a natural buffer between the existing manufactured home development to the east and any future development to the north.

Creation of Permanent Natural Areas (ADC 11.470)

- (1) Natural areas in a cluster development may be set aside and managed in one or more of the following ways:*

- (a) *Portions of one or more individual lots; or*
 - (b) *Common ownership by residents of the development; or*
 - (c) *Third party (non-profit organization) whose primary purpose is to hold or manage the open space, subject to a reversionary clause in the event of dissolution of the non-profit organization; or*
 - (d) *Dedicated to City of Albany, if the City agrees to accept ownership and maintain the space.*
- (2) *Except for Subsection (1)(d) above, natural areas shall be subject to restrictive covenants and easements reviewed by the Community Development Director and recorded and filed when the subdivision plat for the project area is recorded. Except when allowed in 11.480, an easement shall include permanent provisions prohibiting the placement of structures, or impervious surfaces, alteration of the ground contours, or any other activity or use inconsistent with the purpose of these provisions.*

Findings of Fact

The applicant’s narrative indicates the permanent natural area will be set aside in tracts. The Tentative Plat indicates there are four Tracts proposed within the subdivision. The chart below contains the specifics for each tract:

TRACT	SQUARE FEET	PROPOSED USE/OWNERSHIP
A	528,146	Wetlands/Open Space; Convey to HOA
B	36,157	Stormwater facility; Convey to City of Albany
C	26,688	Wetlands/Open Space; Convey to HOA
D	2,551	Access Easement; Conveyed to Gerig Trust

Based upon the table above the applicant proposes to dedicate approximately 12.73 acres as natural areas to be conveyed to the future HOA. As a condition of approval, prior to recording the Final Plat for Phase One, a restrictive covenant that prohibits the placement of structures or impervious surfaces, alteration of ground contours, or any other activity or use inconsistent with the purpose of the Cluster Development provisions.

As a condition of approval, at the recording of the final plat for Phase One, a restrictive covenant that prohibits the placement of structures or impervious surfaces, alteration of ground contours, or any other activity or use inconsistent with the purpose of the Cluster Development provisions.

Condition

Condition 12 At the recording of the Final Plat for Phase One, a restrictive covenant must be filed, that prohibits the placement of structures or impervious surfaces, alteration of ground contours, or any other activity or use inconsistent with the purpose of the Cluster Development provisions.

Protection of Permanent Natural Areas (ADC 11.480)

- (1) *If any applicable overlay districts allow it, the development may encroach into permanent natural areas, only under the following circumstances:*
 - (a) *Meets the requirements of all overlay districts in Articles 4, 6, and 7; and*
 - (b) *The encroachment is necessary to meet transportation, utility infrastructure requirements, or post construction stormwater quality requirements; or*

- (c) *The encroachment is necessary to provide bike or walking trails that connect to existing or proposed parks or trails, inventoried natural features, or areas zoned Open Space or otherwise protected as permanent natural areas.*
- (2) *Permanent alteration by grading may be authorized for the purpose of natural resource enhancement, such as wetland, riparian, or wildlife habitat restoration.*
- (3) *Significant wetlands, riparian corridors, and intermittent streams preserved as natural areas in cluster development may be used for conveyance of storm waters only when the applicant has demonstrated that the discharge is compatible with the protection of the natural resource. These natural features shall not be used for drainage improvements, such as detention or retention ponds, or any other utility improvement necessary for development of the lots.*

Findings of Fact

According to the applicant's submitted materials, grading for natural resource enhancement is not planned. The submitted Tentative Plat shows the significant resources upon the subject property are not planned to convey stormwater.

- (4) *Areas set aside for permanent natural areas in cluster development cannot be further subdivided.*

Findings of Fact

Under Criterion ADC 11.470 a condition of approval requires restrictive covenants and easements (via the formation of a HOA.) to protect the dedication natural areas in Tracts A and C. The City is to be conveyed the storm water facility, Tract B, and the Gerig Trust will be conveyed Tract D for access. The recorded plat will further describe the intent/purpose of these tracts. Through compliance with the conditions set forth in this report the natural areas will be protected and not further developed or divided.

- (5) *Fences are permitted in and around the natural areas if consistent with the expressed purpose of the natural areas.*

Findings of Fact

The submitted site plan did not indicate the location of proposed fencing.

- (6) *Provisions must be established to ensure the continued maintenance of areas designated as natural areas through Cluster Development. See Section 11.470.*

Findings of Fact

Under criterion ADC 11.470, Tracts A and C are to be owned and maintained by an HOA. As a condition of approval, Covenants, Conditions and Restriction of the HOA documents are to describe the maintenance responsibility of Tracts A and C for protection of natural resources and are to be provided to the City for review prior to the recording of the final plat.

Condition

Condition 13 Prior to the signing of the Final Plat for Phase One, a copy of the Covenants, Conditions, and Restriction of the HOA documents detailing the maintenance and responsibility of Tracts A and C must be provided to the City for review.

Permitted Uses (ADC 11.490)

The uses allowed within cluster developments outside the permanent natural areas are determined by the underlying zoning district standards in Section 3.050, with the following exceptions:

- (1) *On development sites greater than 20 acres, up to 20 percent of the housing units in RS-6.5 and RS-10 may be attached single-dwelling or condominium housing.*
- (2) *On development sites greater than 50 acres, up to two acres may be developed with neighborhood commercial uses through a Conditional Use review. The maximum building footprint of commercial or office uses shall be 3,000 square feet. Commercial and office uses*

shall be limited to restaurants with no drive-through service, and convenience-oriented and personal service-oriented uses as described in Article 22.

Findings of Fact

The applicant proposes to subdivide the 35.32-acre property into 176 lots for future residential development. Single dwelling units and middle housing options are outright uses in the RS-6.5 zoning district, with triplexes, fourplexes, and cottage clusters dependent upon the lot size. Table 11.495-1 indicates the maximum density for properties within the RS-6.5 zoning district is 6 units per gross acre. The proposed 176-lot subdivision is below the maximum density of 211 units.

Development Standards (ADC 11.495)

In a cluster development, the following development standards in Table 11.495-1 supersede the same standards in Section 3.190, Table 3.190-1. The number of allowable dwelling units is based on the maximum density for the zone as specified in the following table.

TABLE 11.495-1. Allowable density ranges per zone.

Standard	RS-10	RS-6.5	RS-5 & HM	RM	RMA	OS
Max. dwelling units per gross acre (1)	4	6	8	25	35	1 (5)
Minimum Lot Size (2)	None	None	None	None	None	N/A
Minimum Lot Width	None	None	None	None	None	N/A
Minimum Lot Depth	None	None	None	None	None	N/A
Minimum front setback (3)	15 ft.	10 ft.	10 ft.	10 ft.	10 ft.	N/A
Maximum Lot Coverage (4)	70%	70%	70%	70%	75%	N/A

- (1) In Middle Housing Zoning Districts, additional density to allow for middle housing may be permitted. Density for middle housing shall be based on the minimum lot size for the housing type in the applicable zoning district.
- (2) Lots on the perimeter of the cluster development shall meet the standards in 11.500.
- (3) Except, when lots are adjacent to existing development on the same side of the street, the setback shall be within 5 feet of the adjacent house(s) setback(s).
- (4) The maximum lot coverage may be up to 100 percent for lots that provide land only for the building footprint.
- (5) Allows 1 residential unit per existing lot.

Findings of Fact

The site is a 35.32-acre property located within the RS-6.5 zoning district. The applicant proposes a 176-lot subdivision through the residential cluster development standards. The submitted Tentative Plat (Attachment B) indicates that the proposed lots meet the standards found in Table 11.495-1. Some standards, such as setbacks and lot coverage, are not reviewable at this stage of development and are reviewed with the building permit application for each dwelling.

The standards outlined in Table 11.495-1 supersedes the same standards described in Section 3.190, Table 3.190-1 with the exception found in Footnote 1 which acknowledges lots situated on the perimeter of the cluster development. Conformance with this standard is described later in this staff report and is included here by reference.

Perimeter Lot Compatibility (ADC 11.500)

The following standards and exceptions will apply to the lots on the perimeter of a proposed cluster development.

- (1) *Standards. The term “standard minimum lot size” as used in this section, means the minimum lot size allowed in the underlying base zone without any reductions in size allowed elsewhere in this Code.*
 - (a) *When the proposed cluster development abuts developed property in a lower density residential zoning district, the size of lots on the perimeter of the proposed cluster development shall be at least the standard minimum lot size allowed in the zone underlying the cluster development.*

Findings of Fact

The subject property is located within the RS-6.5 zoning district which has a “standard minimum lot size” of 6,500 square feet. The properties to the north and east are located within the RS-6.5 zoning district; the property to the south is located within Linn County and is zoned UGA-UGM-20; and the property to the west is located within the LI zoning district. The properties to the north and east are located within a residential zoning district but are not of a lower density. The property to the south is located within Albany’s Urban Growth Boundary and is located in a less dense zoning district; however, the SAAP land use plan indicates the property, upon annexation, will be the same density as the subject property. The property to the west is not located within a residential zoning district.

- (b) When the proposed cluster developed property in the same residential zoning district as the proposed cluster development, the size of lots on the perimeter of the cluster development shall be at least 70 percent of the standard minimum lot size of the underlying zoning district.*

Findings of Fact

The subject property is located within the RS-6.5 zoning district which has a “standard minimum lot size” of 6,500 square feet. The properties to the north and east are located within the RS-6.5 zoning district, which is the same residential zoning district as the subject property. In order to comply with this standard, the perimeter lots to the north and east must be at least 4,550 square feet. The submitted Tentative Plat contains three lots along the north of the development and one property along the eastern perimeter that meets this or exceeds 70 percent of the “standard minimum lot size”. Findings addressing exceptions to this standard are discussed later in this staff report and referenced here.

- (2) Exceptions. The Perimeter Lot Compatibility standards do not apply in the following cases:*

- (a) Perimeter lots that are adjacent to land that is zoned for higher density housing, mixed-use or non-residential uses, or to residentially zoned property not in residential use (such as educational, institutional, religious, or park uses).*

Findings of Fact

The subject property is located within the RS-6.5 zoning district and is surrounded by properties that are located within the RS-6.5 zoning district to the north and east; the jurisdiction of Linn County (UGA-UGM-20) to the south; and the LI zoning district to the west. This exception does not apply to this development based upon the surrounding zoning districts.

- (b) Where the same property owner owns the property abutting the proposed cluster development or when the perimeter lots share a property line with the Urban Growth Boundary.*

Findings of Fact

The subject property is located within the RS-6.5 zoning district and is surrounded by properties that are located within the RS-6.5 zoning district to the north and east; the jurisdiction of Linn County (UGA-UGM-20) to the south; and the LI zoning district to the west. The property to the south of the site is located within the Urban Growth Boundary and is currently owned by the same property owner. This exception applies to the perimeter lots along the southern boundary of the proposed development.

- (c) If a buffer area is created as a separate property along the perimeter and is at least 20 feet wide, the buffer area shall become a permanent natural area and shall meet the provisions in Sections 11.470 and 11.480.*

Findings of Fact

The applicant proposes to create a 176-lot cluster development with approximately 12.73 acres of preserved wetlands and open space. The proposed building area of the subdivision is bordered by Tract A to the north and east. This proposed Tract A is greater than 20 feet wide and creates a natural buffer area that meets the provisions of Sections 11.470 and 11.480. Based upon the location and dimensions of Tract A the perimeter lots to the north and east are exempt from meeting 70 percent of the “standard minimum lot size”.

(d) Cluster developments abutting property that is at least 1 acre in size.

Findings of Fact

The subject property is abutting properties that are at least one acre in size. Based upon the size of the abutting properties, all perimeter lots are exempt from meeting 70 percent of the “standard minimum lot size”.

South Albany Connectivity (ADC 11.530)

Developments within the South Albany Area Plan boundary shall provide a connected street and pathway network.

Findings of Fact

The subject property is located within the South Albany Area Plan boundary. Based upon the SAAP the subject property does not contain any future street connections (Attachment I). The subject property does contain areas that have been planned for two separate trail networks, the Oak Creek Loop Trail and a proposed trail (Attachment J). The Oak Creek Loop Trail is currently in the Albany Transportation System Plan (TSP) under M2a. The Tentative Plat shows proposed alignment of both required trail systems. The applicant does not propose construction of either trail at this time. As a condition of approval, the applicant must provide the City an easement for each trail alignment prior to the Final Plat for Phase One.

Overall Conclusion

As proposed and conditioned, the application under planning file SD-02-23 for a Cluster Development Tentative Plat to develop a 176-lot subdivision satisfies all applicable review criteria as outlined in this report.

Overall Conditions

Condition 1 The applicant shall convey Tract D to the property at 3795 Lochner Road SE at the time of recording the Final Plat for Phase One.

Transportation:

Condition 2 The applicant shall construct, to city standards, all public streets interior to the development. The right-of-way widths shall be 54 feet and the curb-to-curb widths 30 feet as identified on the Tentative Plat Map. The minimum center line radius for interior local streets shall be 200 feet.

Condition 3 Project phasing and interior street construction must demonstrate compliance with applicable Fire Code requirements relating to the need for secondary access and access point spacing.

Condition 4 Prior to the development of Phase One:

- The applicant shall dedicate 10 feet of public right-of-way along the site’s 705 feet of frontage along Lochner Road as shown on Tentative Plat Map.
- The applicant shall construct a six-foot public setback sidewalk along the site’s frontage on Lochner Road.

- The applicant shall install stop signs and striped crosswalks at the two new local street connections to Lochner Road.
- The applicant shall dedicate to the City a multi-use path over Tract A for the path identified in the South Albany Area Plan (SAAP) that extends from the southeastern corner of the site north to the BPA easement, and along the BPA easement to Lochner Road. The precise location of the easement over that alignment shall be non-specific in order to allow for flexibility in path design and alignment and allow for a path for up to 12 feet in width.

Utilities:

- Condition 5** Before the City will approve the final subdivision plat for each phase, the applicant must construct public sanitary sewer facilities to provide service to each of the proposed lots in the subdivision and provide for future extension to the property to the south.
- Condition 6** Before the City will approve the final subdivision plat for each phase, the applicant must construct public water facilities to provide service to each of the proposed lots in the subdivision and provide for future extension to the property to the south. The 16-inch public water main in Lochner Road must be extended to the south boundary of the subject property in Lochner Road.
- Condition 7** Before the City will approve the final subdivision plat for Phase One, the applicant must construct public storm drainage improvements to collect runoff from the proposed development. The storm drainage improvement must include stormwater detention and stormwater quality facilities generally as shown on the preliminary utility plans submitted by the applicant.
- Condition 8** Before the City will approve the final subdivision plat for Phase One, the applicant must pay all connection charges associated with existing public infrastructure in Lochner Road along the frontage of the subject property.

NOTE: All required permits must be obtained through the Public Works Department before beginning work on any of the aforementioned improvements. Final design and construction details will be reviewed as part of the required permits. Reference is hereby made to the comments provided by the Public Works Department, Engineering Division.

Lot and Block Standards:

- Condition 9** Prior to City approval of the final subdivision plat for the development, the applicant must demonstrate that the arc along the property lines at all street intersections are established so that the construction of the curb line has a radius that is not less than twenty feet.

Natural Resources:

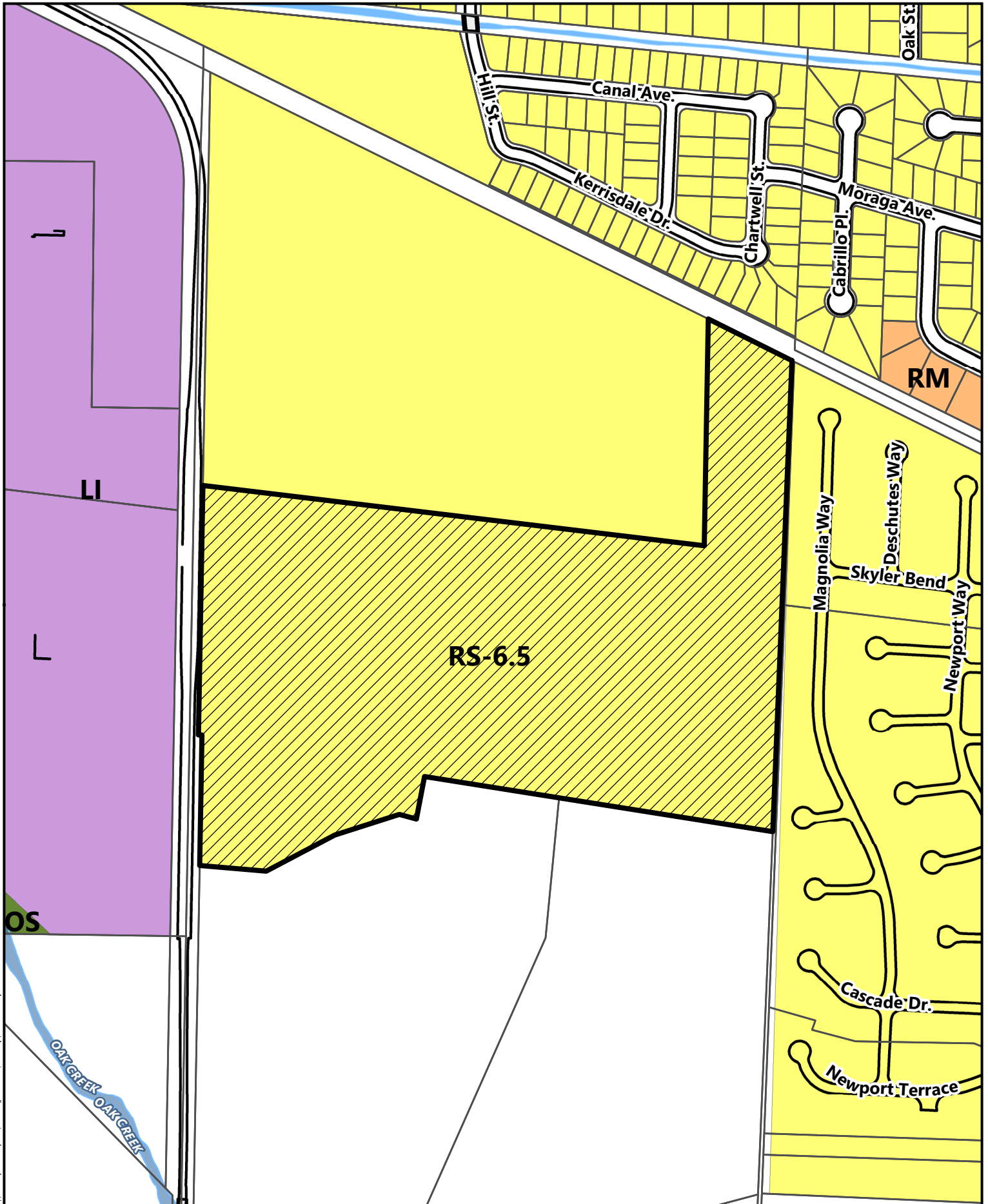
- Condition 10** Prior to the signing of the Final Plat for each phase the applicant shall comply with the wetland delineation requirements and permits from the Oregon Department of State Lands (DSL).
- Condition 11** At the recording of the Final Plat for Phase One, a restrictive covenant must be filed, that prohibits the placement of structures or impervious surfaces, alteration of ground contours, or any other activity or use inconsistent with the purpose of the Cluster Development provisions.
- Condition 12** Prior to the signing of the Final Plat for Phase One, a copy of the Covenants, Conditions, and Restriction of the HOA documents detailing the maintenance and responsibility of Tracts A and C must be provided to the City for review.

Attachments

A	Location Map
B	Site Map
C	Applicant's Narrative
D	Neighborhood Meeting Materials
E	Wetland Report
F	DSL Wetland Delineation
G	Transportation Impact Analysis
H	Stormwater Report
I	SAAP Road Network
J	SAAP Trail Network
K	FIRM Panel
L	Albany Fire Department Comments

Acronyms

ADC	Albany Development Code
AMC	Albany Municipal Code
DSL	Department of State Lands
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
GIS	Geographic Information Systems
HOA	Home Owners Association
ITE	Institute of Transportation Engineers
LI	Limited Industrial Zoning District
LOS	Level of Service
RS-6.5	Residential Medium Density Zoning District
SI	Site Improvement Permit
SAAP	South Albany Area Plan
TSP	Transportation System Plan
V/C	Volume of Capacity Ratio



\\con.cityofalbany.net\home\$\jennifac\{Desktop\}Location Map.mxd



0 50 100 200
 Feet

Unassigned; Lochner Road

Date: 9/25/2023 Map Source: City of Albany

Location Map

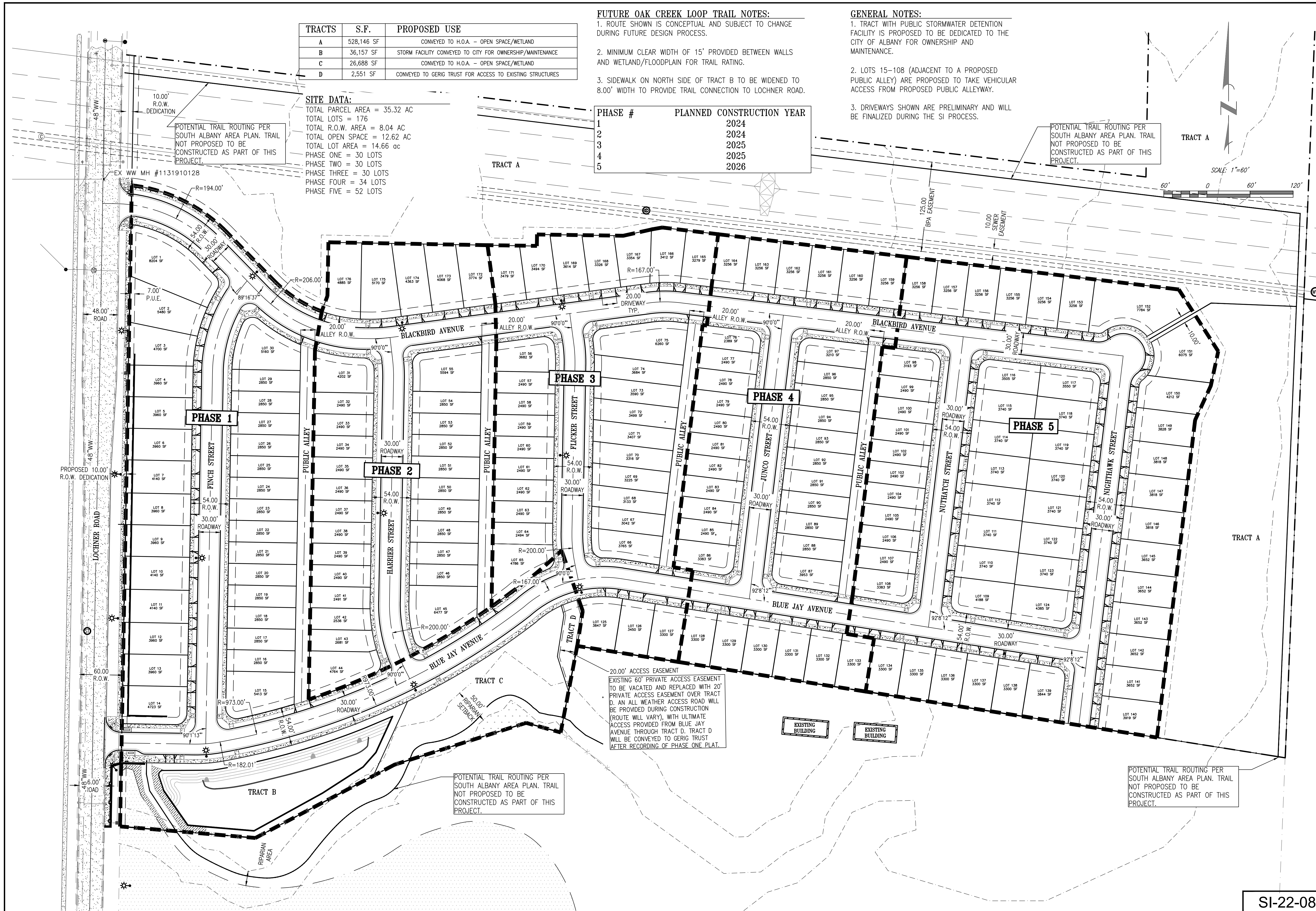
TRACTS	S.F.	PROPOSED USE
A	528,146 SF	CONVEYED TO H.O.A. - OPEN SPACE/WETLAND
B	36,157 SF	STORM FACILITY CONVEYED TO CITY FOR OWNERSHIP/MAINTENANCE
C	26,688 SF	CONVEYED TO H.O.A. - OPEN SPACE/WETLAND
D	2,551 SF	CONVEYED TO GERIG TRUST FOR ACCESS TO EXISTING STRUCTURES

SITE DATA:
 TOTAL PARCEL AREA = 35.32 AC
 TOTAL LOTS = 176
 TOTAL R.O.W. AREA = 8.04 AC
 TOTAL OPEN SPACE = 12.62 AC
 TOTAL LOT AREA = 14.66 ac
 PHASE ONE = 30 LOTS
 PHASE TWO = 30 LOTS
 PHASE THREE = 30 LOTS
 PHASE FOUR = 34 LOTS
 PHASE FIVE = 52 LOTS

FUTURE OAK CREEK LOOP TRAIL NOTES:
 1. ROUTE SHOWN IS CONCEPTUAL AND SUBJECT TO CHANGE DURING FUTURE DESIGN PROCESS.
 2. MINIMUM CLEAR WIDTH OF 15' PROVIDED BETWEEN WALLS AND WETLAND/FLOODPLAIN FOR TRAIL RATING.
 3. SIDEWALK ON NORTH SIDE OF TRACT B TO BE WIDENED TO 8.00' WIDTH TO PROVIDE TRAIL CONNECTION TO LOCHNER ROAD.

GENERAL NOTES:
 1. TRACT WITH PUBLIC STORMWATER DETENTION FACILITY IS PROPOSED TO BE DEDICATED TO THE CITY OF ALBANY FOR OWNERSHIP AND MAINTENANCE.
 2. LOTS 15-108 (ADJACENT TO A PROPOSED PUBLIC ALLEY) ARE PROPOSED TO TAKE VEHICULAR ACCESS FROM PROPOSED PUBLIC ALLEYWAY.
 3. DRIVEWAYS SHOWN ARE PRELIMINARY AND WILL BE FINALIZED DURING THE SI PROCESS.

PHASE #	PLANNED CONSTRUCTION YEAR
1	2024
2	2024
3	2025
4	2025
5	2026



A & O Engineering L.L.C.
 CIVIL ENGINEERING & SITE DEVELOPMENT CONSULTING
 380 O ST. SUITE 300
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 PHONE: (541) 302-9790
 SCOTT@aoengineeringllc.biz

REGISTERED PROFESSIONAL ENGINEER
 9141275
 OREGON
 W. D. MORGAN
 EXPIRES 12/24

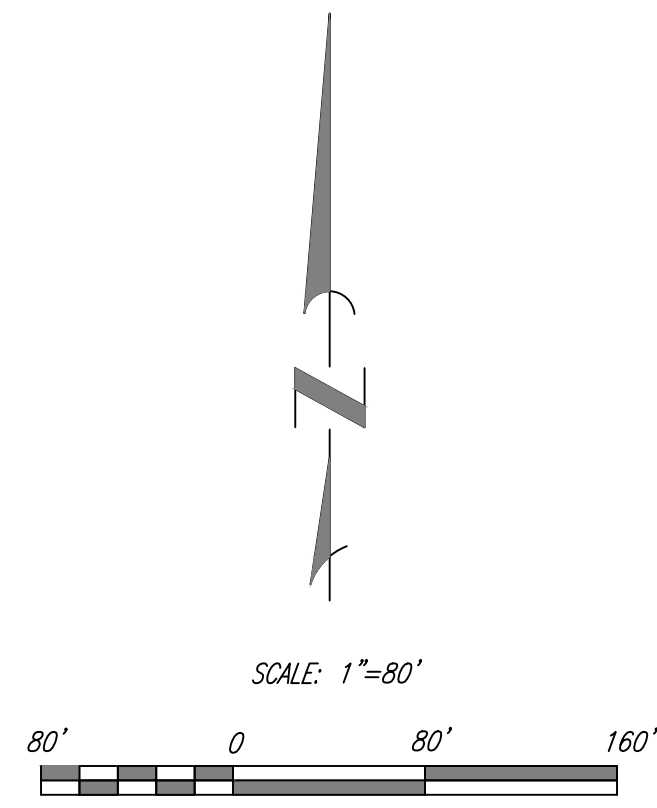
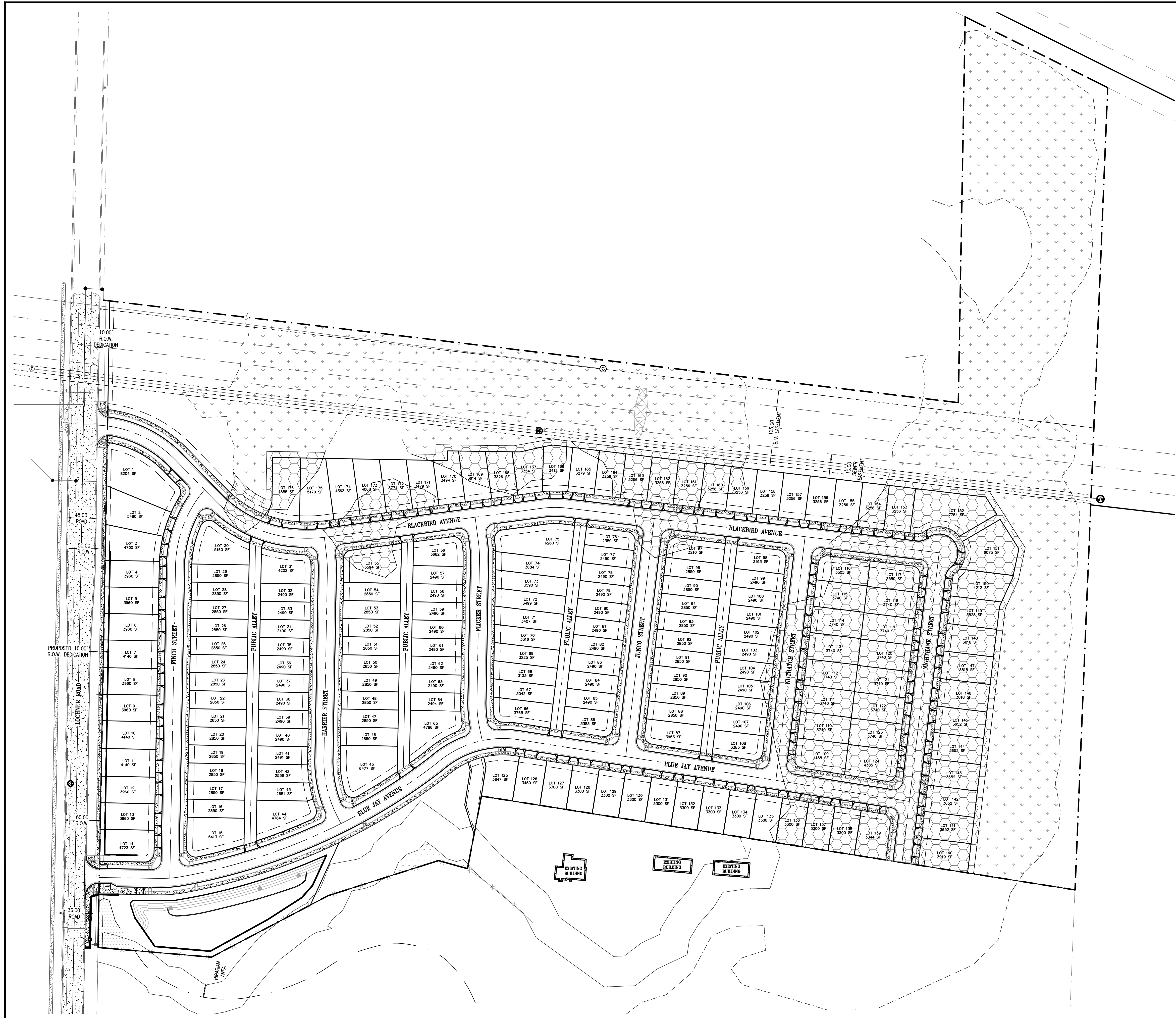
Tentative Subdivision Site Plan
 for
Meadowlark Estates Subdivision
 Albany Linn County Oregon

DATE: 8-1-22
 PROJECT No: 5231
 SCALE: 1/8"=1'-0"
 VERT: _____
 DRAWN BY: AGH
 DESIGNED BY: KDM
 REVIEWED BY: SDM

SUBMITTALS:

REVISIONS:

SI-22-08



WETLAND DATA:
 TOTAL WETLAND = 14.20 AC
 TOTAL WETLAND MITIGATION = 6.23 AC

WETLAND PERMIT NOTE:
 WETLAND FILL PERMIT HAS BEEN ISSUED
 DSL PERMIT #63643-RF

LEGEND

- WETLANDS TO BE IMPACTED
- WETLANDS TO BE PRESERVED
- ZONE AE FLOOD PLAIN AREA

A & O Engineering L.L.C.
 CIVIL ENGINEERING & SITE DEVELOPMENT CONSULTING
 380 O ST. SUITE 300
 SPRINGFIELD, OR 97477
 PHONE: (541) 302-9790
 scott@aoengineeringllc.com

Natural Resource Plan
 for
Meadowlark Estates Subdivision
 Albany Oregon
 Linn County

DATE: 8-1-22
PROJECT No: 5291
SCALE: 1/8"=1'-0"
VERT: _____
DRAWN BY: ACH
DESIGNED BY: KOM
REVIEWED BY: SEM

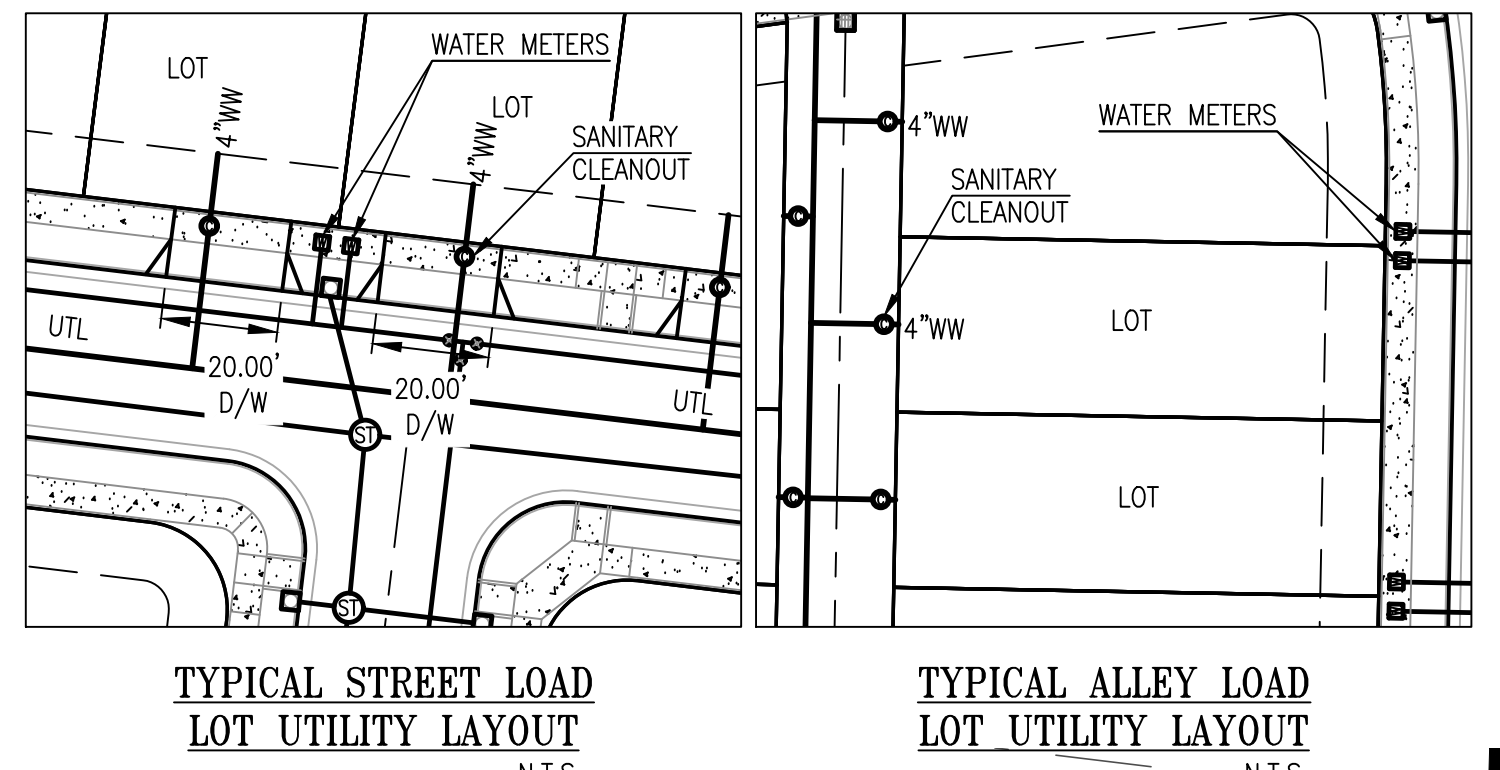
SUBMITTALS:

REVISIONS:

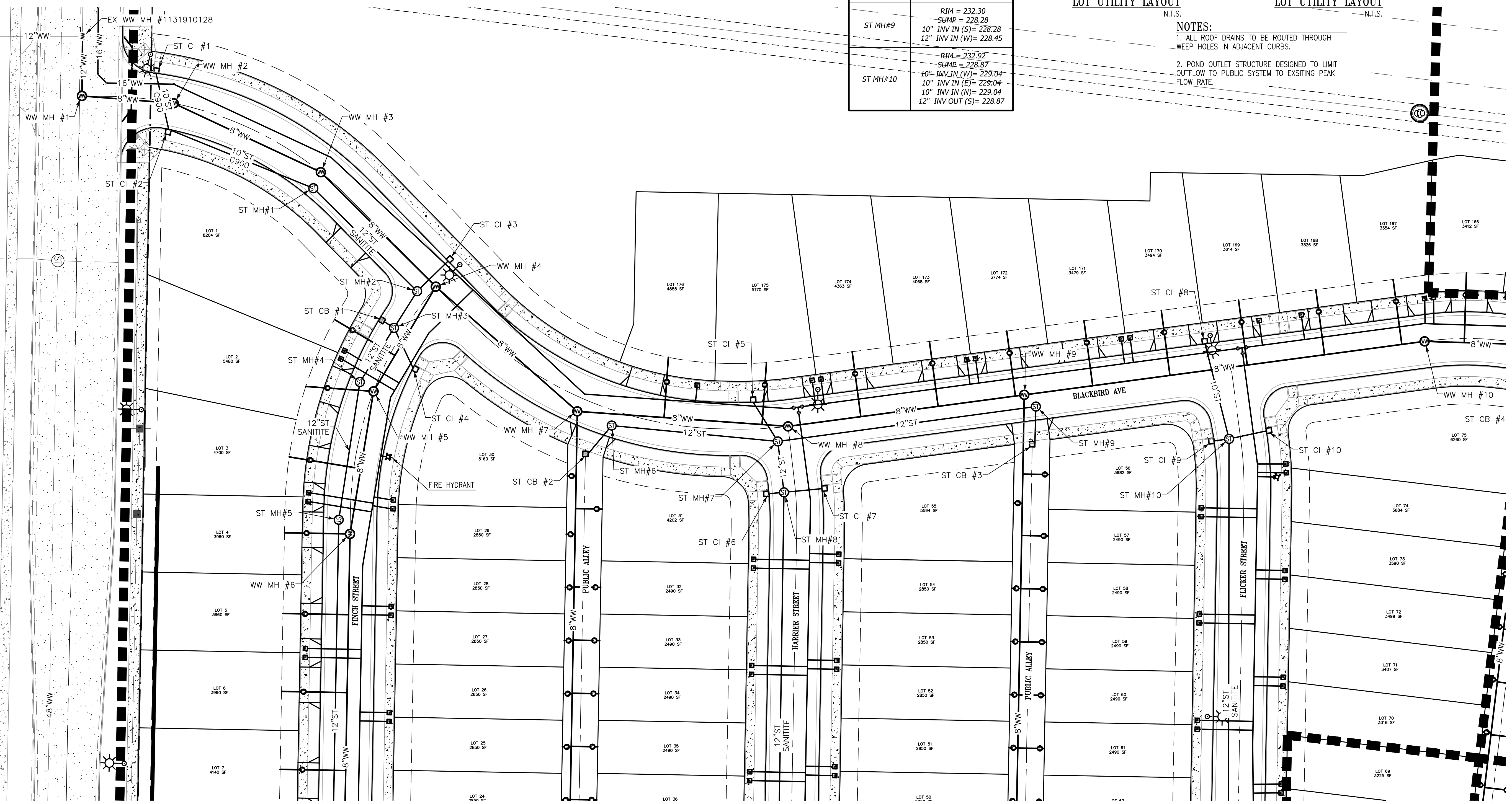
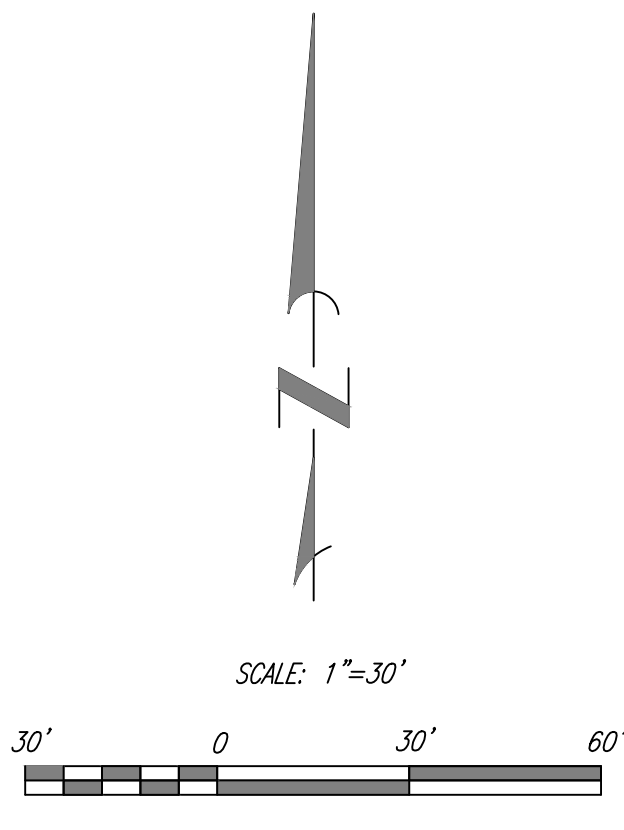
SI-22-08

SHEET
C-2.0
 3 OF 11

Wastewater Structure Table		Wastewater Structure Table		Wastewater Structure Table		Stormwater Structure Table		Stormwater Structure Table		Stormwater Structure Table	
Structure Name	Structure Details	Structure Name	Structure Details	Structure Name	Structure Details	Structure Name	Structure Details	Structure Name	Structure Details	Structure Name	Structure Details
EX WW MH #1131910128	RIM = 228.98 SUMP = 211.68 12" INV IN (S) = 211.91 12" INV IN (N) = 211.91 12" INV OUT (W) = 211.70	WW MH #5	RIM = 231.03 SUMP = 213.19 8" INV IN (S) = 213.29 8" INV OUT (NE) = 213.19	WW MH #10	RIM = 232.83 SUMP = 215.57 8" INV IN (E) = 215.67 8" INV OUT (W) = 215.57	ST CB #1	RIM = 231.02 SUMP = 225.14 10" INV OUT (SE) = 226.64	ST CI #5	RIM = 231.81 SUMP = 227.53 10" INV OUT (SE) = 229.03	ST MH#2	RIM = 231.01 SUMP = 225.13 12" INV IN (NW) = 226.83 10" INV IN (NE) = 226.79 12" INV OUT (SW) = 226.63
WW MH #1	RIM = 228.99 SUMP = 211.97 8" INV IN (E) = 212.31 12" INV OUT (N) = 211.99	WW MH #6	RIM = 231.00 SUMP = 213.62 8" INV IN (S) = 213.72 8" INV OUT (N) = 213.62			ST CB #2	RIM = 232.15 SUMP = 228.10 10" INV OUT (NE) = 229.60	ST CI #6	RIM = 232.00 SUMP = 227.21 10" INV OUT (E) = 228.71	ST MH#5	RIM = 231.01 SUMP = 224.24 12" INV IN (N) = 225.84 12" INV OUT (S) = 225.74
WW MH #2	RIM = 228.85 SUMP = 212.50 8" INV IN (SE) = 212.62 8" INV OUT (W) = 212.52	WW MH #7	RIM = 231.31 SUMP = 213.22 8" INV IN (E) = 213.44 8" INV IN (S) = 219.74 8" INV OUT (NW) = 213.24			ST CB #3	RIM = 232.37 SUMP = 226.89 10" INV OUT (N) = 228.39	ST CI #7	RIM = 232.00 SUMP = 227.28 10" INV OUT (W) = 228.78	ST MH#6	RIM = 231.25 SUMP = 227.82 10" INV IN (SW) = 229.49 12" INV OUT (S) = 229.32
WW MH #3	RIM = 229.94 SUMP = 212.96 8" INV OUT (NW) = 212.99 8" INV OUT (SE) = 213.08	WW MH #8	RIM = 231.09 SUMP = 213.89 8" INV IN (E) = 214.02 8" INV OUT (W) = 213.92			ST CI #1	RIM = 230.50 SUMP = 226.48 10" INV OUT (S) = 227.98	ST CI #8	RIM = 232.64 SUMP = 227.83 10" INV OUT (S) = 229.33	ST MH#7	RIM = 231.98 SUMP = 228.72 12" INV IN (NW) = 228.89 12" INV OUT (S) = 228.72 12" INV OUT (E) = 228.92
WW MH #4	RIM = 231.01 SUMP = 212.71 8" INV IN (NW) = 212.71 8" INV IN (SE) = 212.81 8" INV IN (SW) = 212.91	WW MH #9	RIM = 231.93 SUMP = 214.53 8" INV IN (E) = 214.66 8" INV IN (S) = 220.66 8" INV OUT (W) = 214.55			ST CI #2	RIM = 231.00 SUMP = 225.42 10" INV OUT (SW) = 226.92	ST CI #9	RIM = 232.89 SUMP = 227.58 10" INV IN (N) = 227.81 10" INV OUT (E) = 227.81	ST MH#8	RIM = 232.30 SUMP = 228.28 10" INV IN (S) = 228.28 12" INV IN (W) = 228.45
						ST CI #3	RIM = 231.02 SUMP = 225.22 10" INV OUT (NW) = 226.72	ST CI #10	RIM = 232.98 SUMP = 227.65 10" INV OUT (W) = 229.15	ST MH#9	RIM = 232.92 SUMP = 228.87 10" INV IN (W) = 229.04 10" INV IN (E) = 229.04 10" INV IN (N) = 229.04 12" INV OUT (S) = 228.87
								ST MH#1	RIM = 231.47 SUMP = 225.67 10" INV IN (W) = 227.34 12" INV OUT (SE) = 227.17	ST MH#10	



- NOTES:**
- ALL ROOF DRAINS TO BE ROUTED THROUGH WEEP HOLES IN ADJACENT CURBS.
 - POND OUTLET STRUCTURE DESIGNED TO LIMIT OUTFLOW TO PUBLIC SYSTEM TO EXISTING PEAK FLOW RATE.



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REGISTERED PROFESSIONAL ENGINEER
9141275
OREGON
EXPIRES 12/24

Utility Plan NW
for
Meadowlark Cluster Subdivision
Albany Linn County Oregon

DATE: 8-1-22
PROJECT No: 5231
SCALE: 1/8"=1'-0"
VERT: ACH
DRAWN BY: KDM
DESIGNED BY: KDM
REVIEWED BY: SDM

SUBMITTALS:

REVISIONS:

SHEET
C-4.1
6 OF 11

SI-22-08

TENTATIVE SUBDIVISION PLAN FOR MEADOWLARK ESTATES CLUSTER SUBDIVISION SEC.20 T.11S. R.3W. W.M. T.L. 606 ALBANY, LINN COUNTY, OREGON

EXISTING STORM AND SANITARY SEWER INVERTS

SDMH 1 RIM=221.55' 24" IN E IE=214.78' 24" IN W IE=214.78' 48" IN N IE=213.53' 48" OUT S IE=213.25'	SSMH 1 RIM=228.65' 12" IN N IE=211.91' 12" OUT W IE=211.70'
SDMH 2 RIM=223.19' 24" IN E IE=216.41' 48" IN N IE=215.15' 48" OUT S IE=215.02'	SSMH 2 RIM=228.06' 12" IN E IE=212.54' 12" OUT S IE=212.33'
SDMH 3 RIM=228.97' 24" IN E IE=218.81' 18" IN W IE=218.32' 48" IN N IE=217.22' 48" OUT S IE=217.02'	SSMH 3 RIM=228.58' 12" IN E IE=212.20' 12" IN W IE=212.12' 14" VERTICAL PIPE INSIDE UP TO SURFACE
SDMH 4 RIM=230.02' 18" IN W IE=220.54' 18" OUT E IE=219.26'	SSMH 4 RIM=235.57' 12" IN E IE=229.79' 8" WITH PUMP OUT W IE=231.37'

APPLICANT
HAYDEN HOMES, LLC
2464 SW GLACIER PL. STE. 110
REDMOND, OR. 97756

DESIGN ENGINEER
A & O ENGINEERING L.L.C.
380 Q STREET STE. 200
SPRINGFIELD, OREGON 97477
PHONE: (541) 302-9790
FAX: N/A

TRAFFIC ENGINEER
SANDOW ENGINEERING
160 MADISON STREET, SUITE A
EUGENE, OR 97402
PHONE: (541) 513-3376

UTILITY PROVIDERS
WATER: CITY OF ALBANY
WASTEWATER: CITY OF ALBANY
STORMWATER: CITY OF ALBANY
NATURAL GAS: NW NATURAL GAS
ELECTRIC: PACIFIC POWER
CABLE: COMCAST
PHONE: CENTURY LINK

SURVEYOR
NORTHSTAR SURVEYING
720 NW 4TH ST
CORVALLIS, OR 97330
PHONE: (541) 757-9050

GEOTECHNICAL ENGINEER
FEI TESTING AND INSPECTIONS, INC.
750 NW CORNELL AVE.
CORVALLIS, OR 97330
PHONE: (541) 757-4698

OWNER
GERIG TRUST
2089 SILVER FALLS DR. NE
SILVERTON, OR 97381

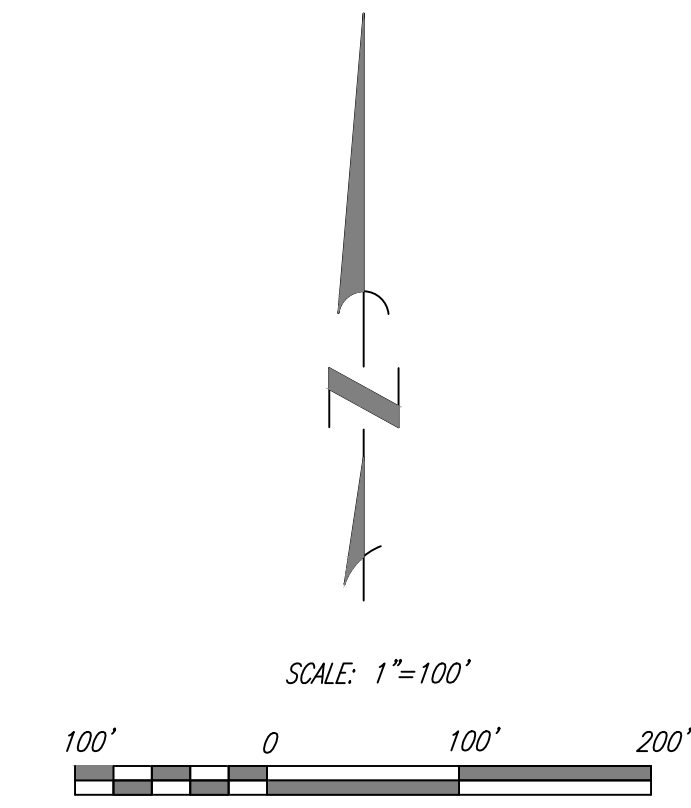
WETLAND CONSULTANT
PACIFIC HABITAT SERVICES, INC.
9450 SW COMMERCE CIRCLE, STE. 180
WILSONVILLE, OR 97070
PHONE: (503) 570-0800

CERTIFIED PLANNER
METRO PLANNING, INC.
346 A ST.
SPRINGFIELD, OR 97477
PHONE: (541) 302-9830

MAP 11S03W20
TAX LOT 603
(R5-6.5 RES. SINGLE FAMILY)



VICINITY MAP
N.T.S.



SHEET INDEX

C-1.0	COVER SHEET-EXISTING CONDITIONS
C-1.1	SITE PLAN
C-2.0	NATURAL RESOURCE PLAN
C-3.0	GRADING PLAN
C-4.0	COMPREHENSIVE UTILITY PLAN
C-4.1	UTILITY PLAN NW
C-4.2	UTILITY PLAN NE
C-4.3	UTILITY PLAN SW
C-4.4	UTILITY PLAN SE
C-5.0	CIVIL DETAILS
C-5.1	CIVIL DETAILS

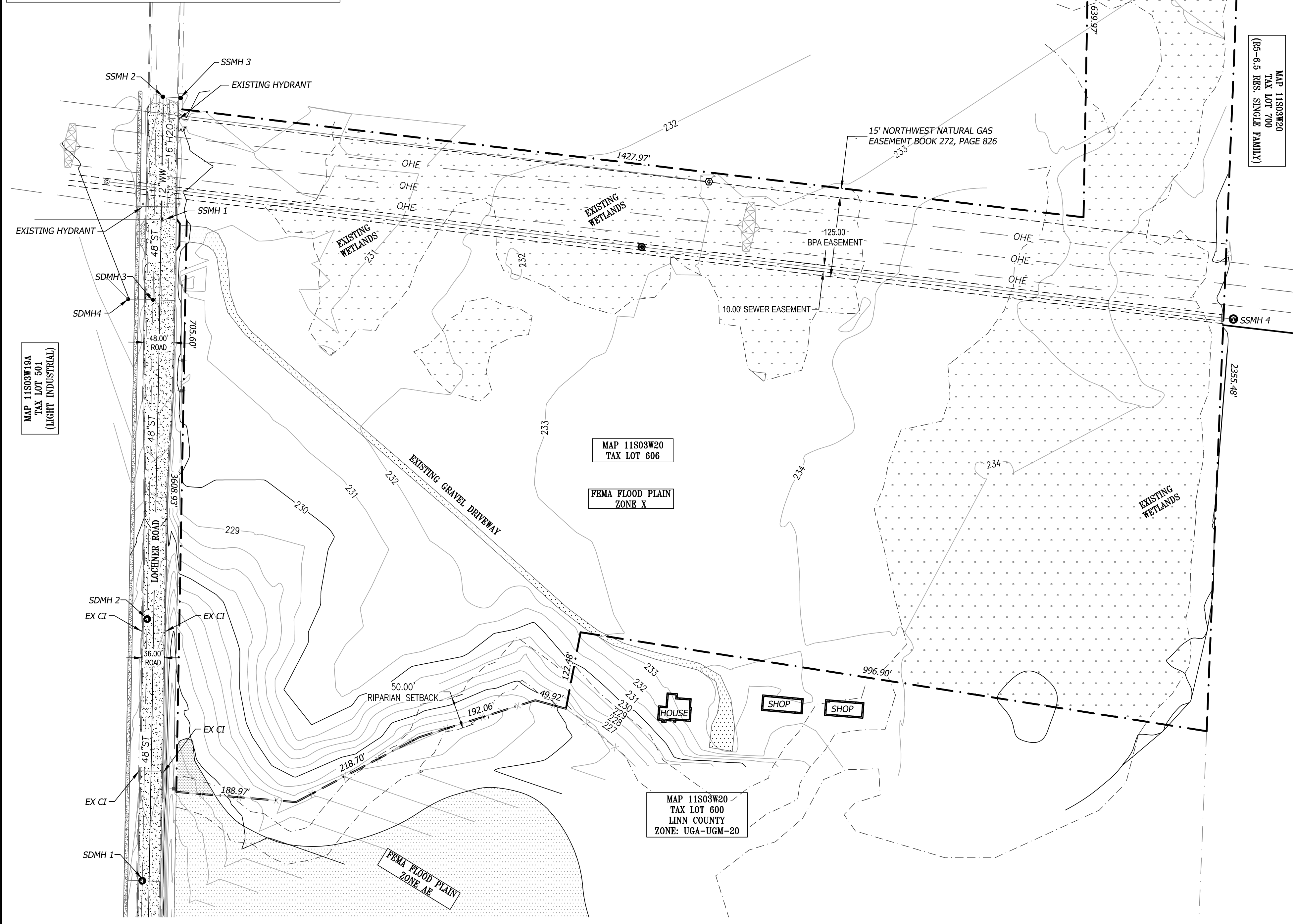
DATUM NOTE:
BENCHMARK USED FOR THIS SURVEY IS LINN COUNTY MONUMENT #93046 WITH AN ELEVATION OF 227.86 FEET, VERTICAL DATUM: NGVD 29. ELEVATIONS ARE US FEET

LEGEND

	EXISTING BOUNDARY
	ADJACENT PROPERTIES
	EXISTING CURB LINE
	EXISTING FENCE
	EXISTING WATER MAIN
	EXISTING WATER METER
	EXISTING WATER VALVE
	EXISTING FIRE HYDRANT
	EXISTING WASTEWATER SYSTEM
	EXISTING CLEANOUT
	EXISTING STORM DRAINAGE SYSTEM
	EXISTING CATCH BASIN
	EXISTING CURB INLET
	EXISTING STREET LIGHT
	EXISTING UNDERGROUND ELECTRIC
	EXISTING TRANSFORMER
	EXISTING TELEPHONE PEDESTAL
	EXISTING TELEPHONE LINE
	EXISTING GAS MAIN
	EXISTING GAS VALVE
	EXISTING WETLANDS
	ZONE AE FLOOD PLAIN AREA
	PROPOSED WATER METER
	PROPOSED WASTEWATER LINE
	PROPOSED WASTEWATER MANHOLE
	PROPOSED WASTEWATER CLEANOUT
	PROPOSED STORM LINE
	PROPOSED STORM MANHOLE
	PROPOSED STORM CLEANOUT
	PROPOSED CURB INLET

SITE NOTES:

1. THE PROPERTY IS LOCATED IN ZONE X AND ZONE AE ON FEMA FIRM MAP 41043C0527G. AREAS OF PROPERTY WITHIN ZONE AE ARE SHOWN ON MAP AND NO DEVELOPMENT IS PROPOSED WITHIN ZONE AE AREA. BASE FLOOD ELEVATION INS LISTED AS 223' (NAVD88) PER FEMA FIRM MAP. ADJUSTED TO NAVD29 BFE ROUNDS TO APPROXIMATELY 220'.
3. PARCEL WAS CREATED BY RECORDED LAND PARTITION PLAT NO. 2020-70. SUBJECT PROPERTY IS PARCEL 2 OF THIS PARTITION.
4. EXISTING LAND IS OPEN FIELD WITH AN EXISTING GRAVEL DRIVEWAY.



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aandoeengineeringllc.com

REGISTERED PROFESSIONAL ENGINEER
9141275
OREGON
MAY 2020
EXPIRES 12/24

Cover Sheet-Existing Conditions
for
Meadowlark Estates Subdivision
Albany Linn County Oregon

DATE:	8-1-22
PROJECT No.:	5291
SCALE:	AS SHOWN
DESIGNED BY:	ACH
DRAWN BY:	KJM
REVIEWED BY:	SDM

SUBMITTALS:

REVISIONS:

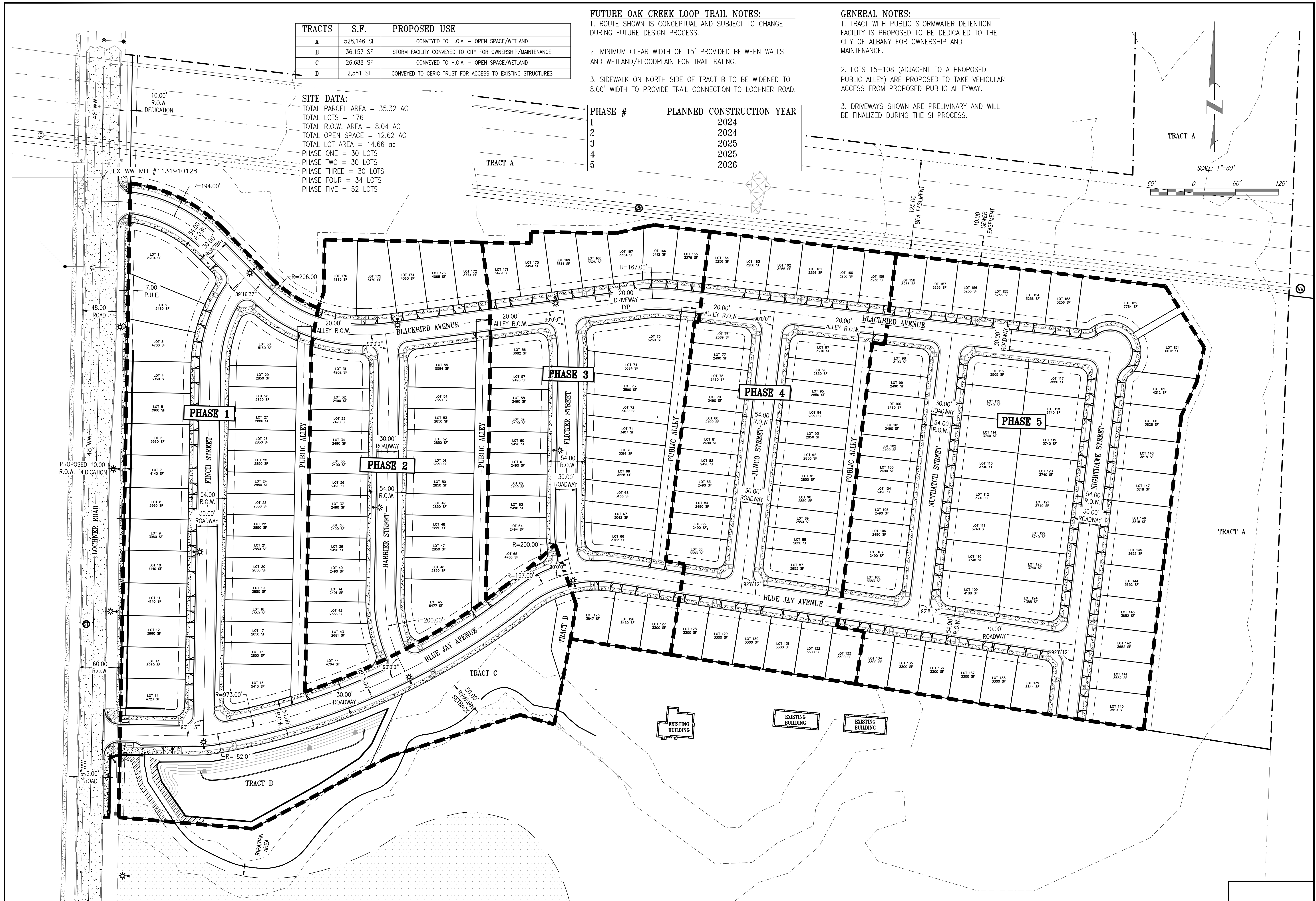
TRACTS	S.F.	PROPOSED USE
A	528,146 SF	CONVEYED TO H.O.A. - OPEN SPACE/WETLAND
B	36,157 SF	STORM FACILITY CONVEYED TO CITY FOR OWNERSHIP/MAINTENANCE
C	26,688 SF	CONVEYED TO H.O.A. - OPEN SPACE/WETLAND
D	2,551 SF	CONVEYED TO GERIG TRUST FOR ACCESS TO EXISTING STRUCTURES

SITE DATA:
 TOTAL PARCEL AREA = 35.32 AC
 TOTAL LOTS = 176
 TOTAL R.O.W. AREA = 8.04 AC
 TOTAL OPEN SPACE = 12.62 AC
 TOTAL LOT AREA = 14.66 ac
 PHASE ONE = 30 LOTS
 PHASE TWO = 30 LOTS
 PHASE THREE = 30 LOTS
 PHASE FOUR = 34 LOTS
 PHASE FIVE = 52 LOTS

FUTURE OAK CREEK LOOP TRAIL NOTES:
 1. ROUTE SHOWN IS CONCEPTUAL AND SUBJECT TO CHANGE DURING FUTURE DESIGN PROCESS.
 2. MINIMUM CLEAR WIDTH OF 15' PROVIDED BETWEEN WALLS AND WETLAND/FLOODPLAIN FOR TRAIL RATING.
 3. SIDEWALK ON NORTH SIDE OF TRACT B TO BE WIDENED TO 8.00' WIDTH TO PROVIDE TRAIL CONNECTION TO LOCHNER ROAD.

GENERAL NOTES:
 1. TRACT WITH PUBLIC STORMWATER DETENTION FACILITY IS PROPOSED TO BE DEDICATED TO THE CITY OF ALBANY FOR OWNERSHIP AND MAINTENANCE.
 2. LOTS 15-108 (ADJACENT TO A PROPOSED PUBLIC ALLEY) ARE PROPOSED TO TAKE VEHICULAR ACCESS FROM PROPOSED PUBLIC ALLEYWAY.
 3. DRIVEWAYS SHOWN ARE PRELIMINARY AND WILL BE FINALIZED DURING THE SI PROCESS.

PHASE #	PLANNED CONSTRUCTION YEAR
1	2024
2	2024
3	2025
4	2025
5	2026



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 SCOTT@AOENGINEERING.LL.C.

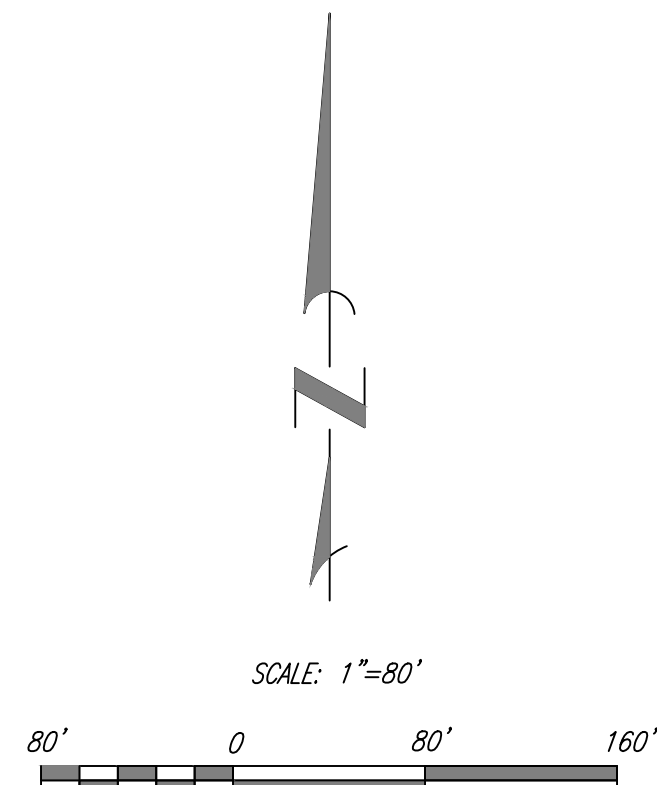
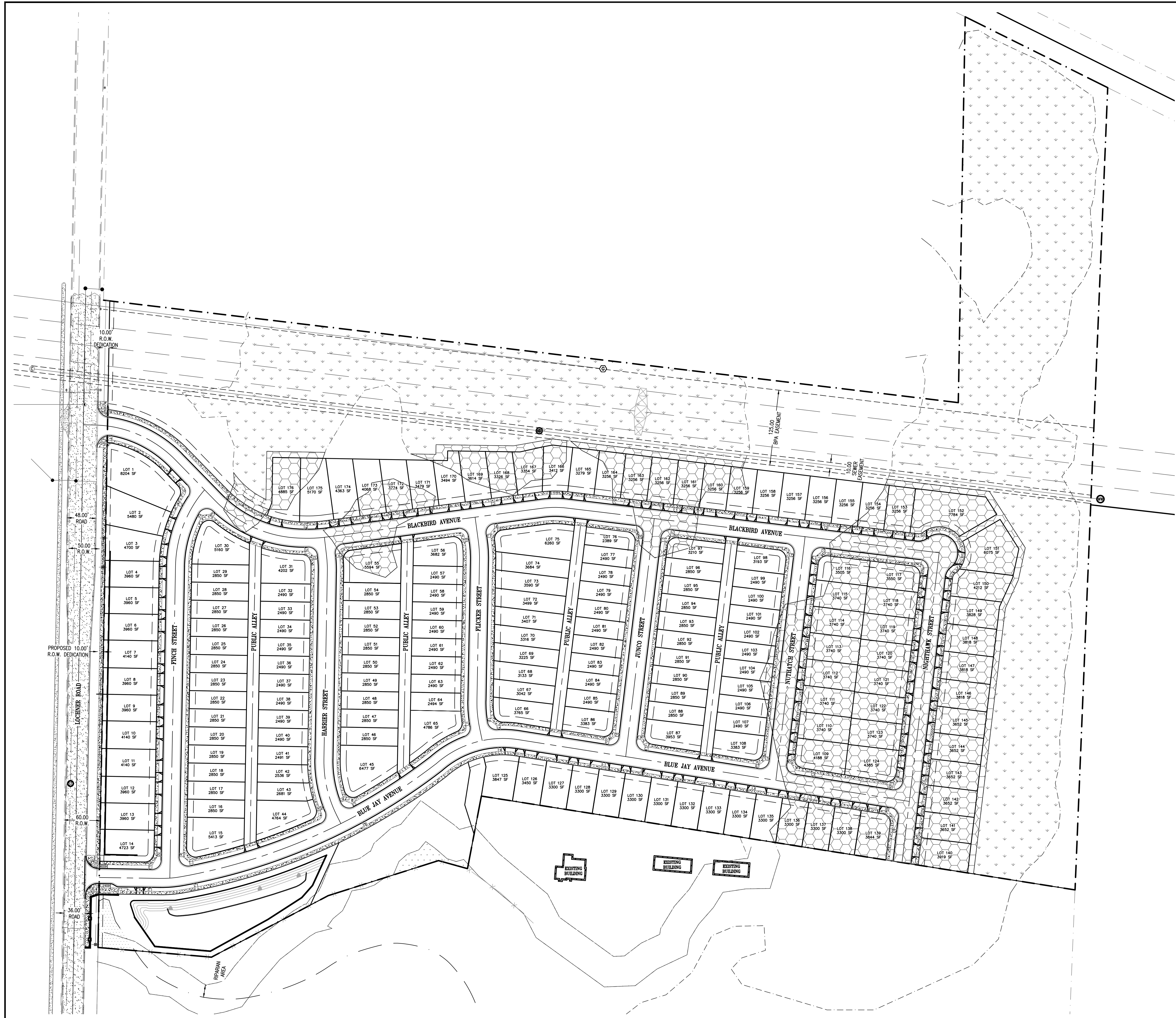
REGISTERED PROFESSIONAL ENGINEER
 9141275
 OREGON
 W. D. MONTGOMERY
 P.L.L.C.
 EXPIRES 12/24

Tentative Subdivision Site Plan
 for
Meadowlark Estates Subdivision
 Albany Linn County Oregon

DATE: 8-1-22
 PROJECT No.: 5291
 SCALE: HORIZ
 VERT: _____
 DRAWN BY: ACH
 DESIGNED BY: KOM
 REVIEWED BY: SBM




SUBMITTALS:

REVISIONS:

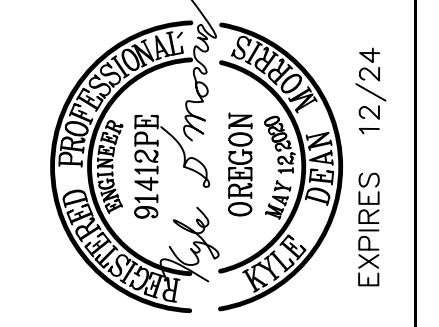


WETLAND DATA:
 TOTAL WETLAND = 14.20 AC
 TOTAL WETLAND MITIGATION = 6.23 AC

LEGEND

-  WETLANDS TO BE IMPACTED
-  WETLANDS TO BE PRESERVED
-  ZONE AE FLOOD PLAIN AREA

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 scott@aoengineeringllc.biz

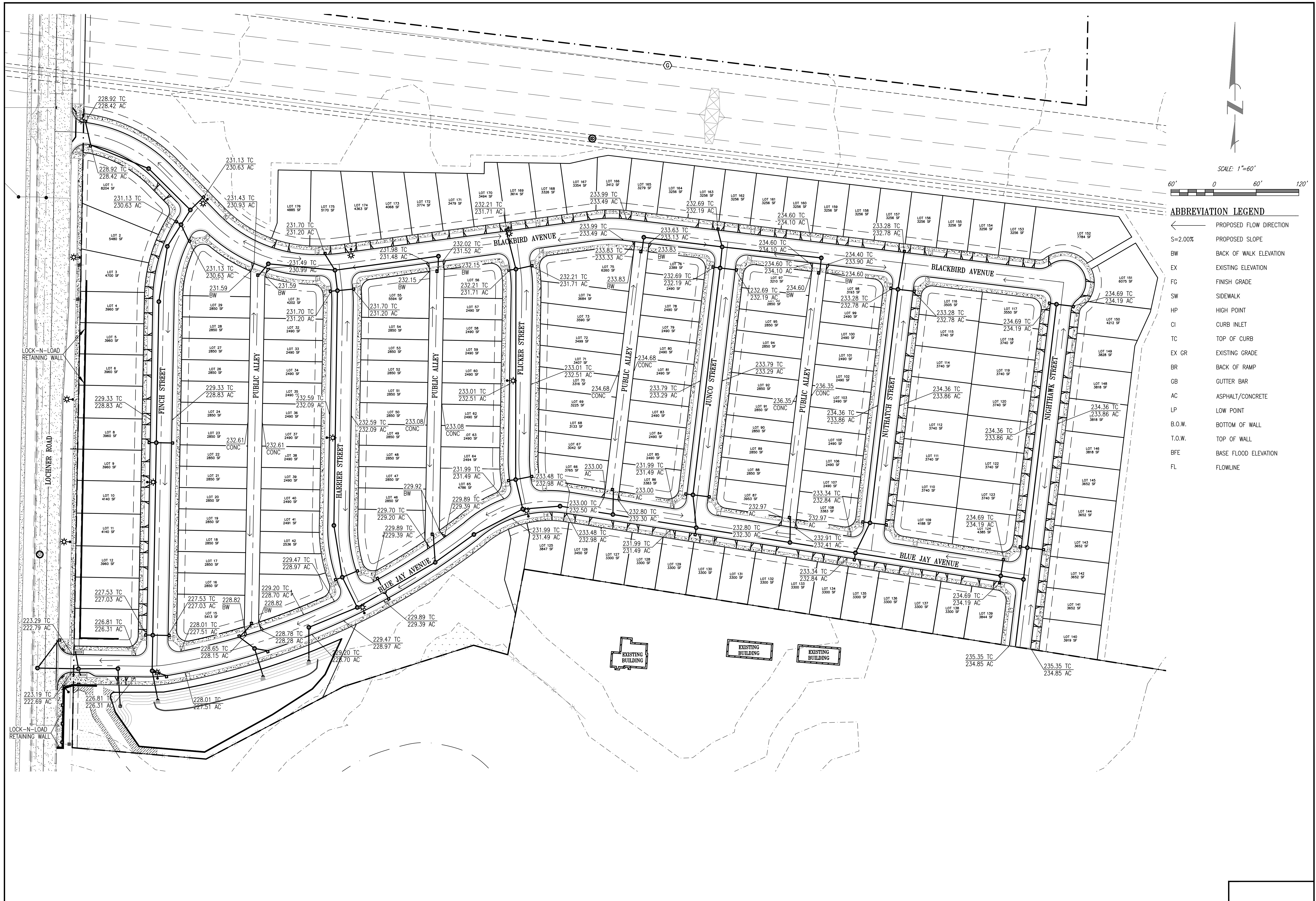


Natural Resource Plan
 for
Meadowlark Estates Subdivision
 Albany Linn County Oregon

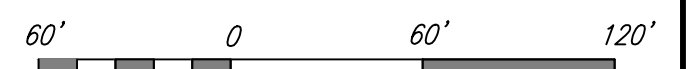
DATE: 8-1-22
 PROJECT No.: 5291
 SCALE: horiz
 VERT:
 DRAWN BY: ACH
 DESIGNED BY: KJM
 REVIEWED BY: SEM

SUBMITTALS:

REVISIONS:

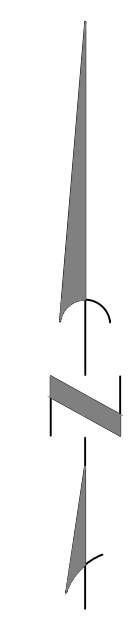


SCALE: 1"=60'



ABBREVIATION LEGEND

- ← PROPOSED FLOW DIRECTION
- S=2.00% PROPOSED SLOPE
- BW BACK OF WALK ELEVATION
- EX EXISTING ELEVATION
- FG FINISH GRADE
- SW SIDEWALK
- HP HIGH POINT
- CI CURB INLET
- TC TOP OF CURB
- EX GR EXISTING GRADE
- BR BACK OF RAMP
- GB GUTTER BAR
- AC ASPHALT/CONCRETE
- LP LOW POINT
- B.O.W. BOTTOM OF WALL
- T.O.W. TOP OF WALL
- BFE BASE FLOOD ELEVATION
- FL FLOWLINE



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PROFESSIONAL SEAL
 9141275
 OREGON
 MAY 2020
 EXPIRES 12/24

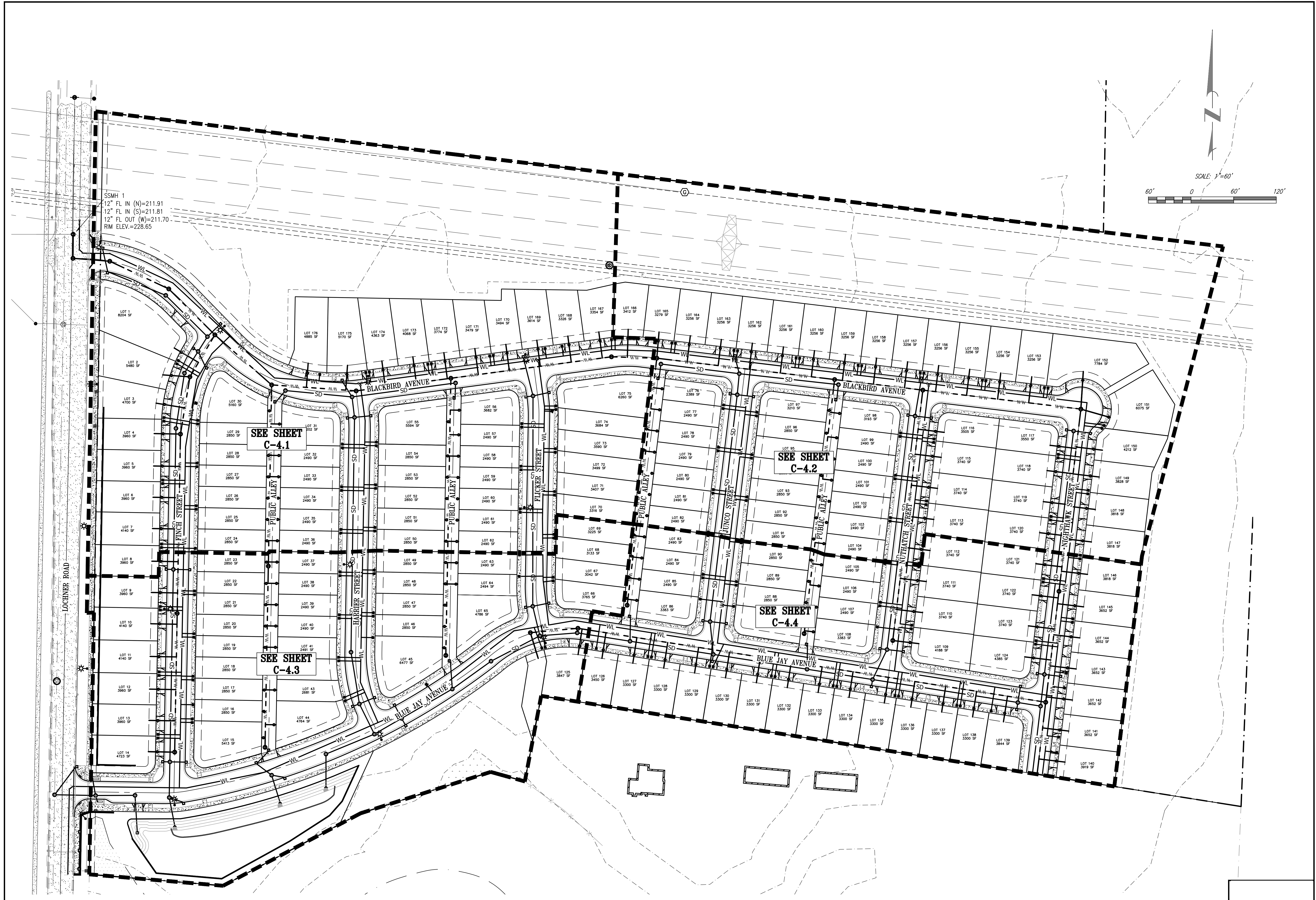
Tentative Grading Plan
 for
Meadowlark Cluster Subdivision
 Albany Linn County Oregon

DATE: 8-1-22
 PROJECT No.: 5291
 SCALE: HORIZ
 VERT:
 DRAWN BY: AGH
 DESIGNED BY: KJM
 REVIEWED BY: SJM

SUBMITTALS:

REVISIONS:

SHEET
C-3.0
 4 OF 11



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REGISTERED PROFESSIONAL ENGINEER
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 OREGON
 MAY 1988
 EXPIRES 12/24

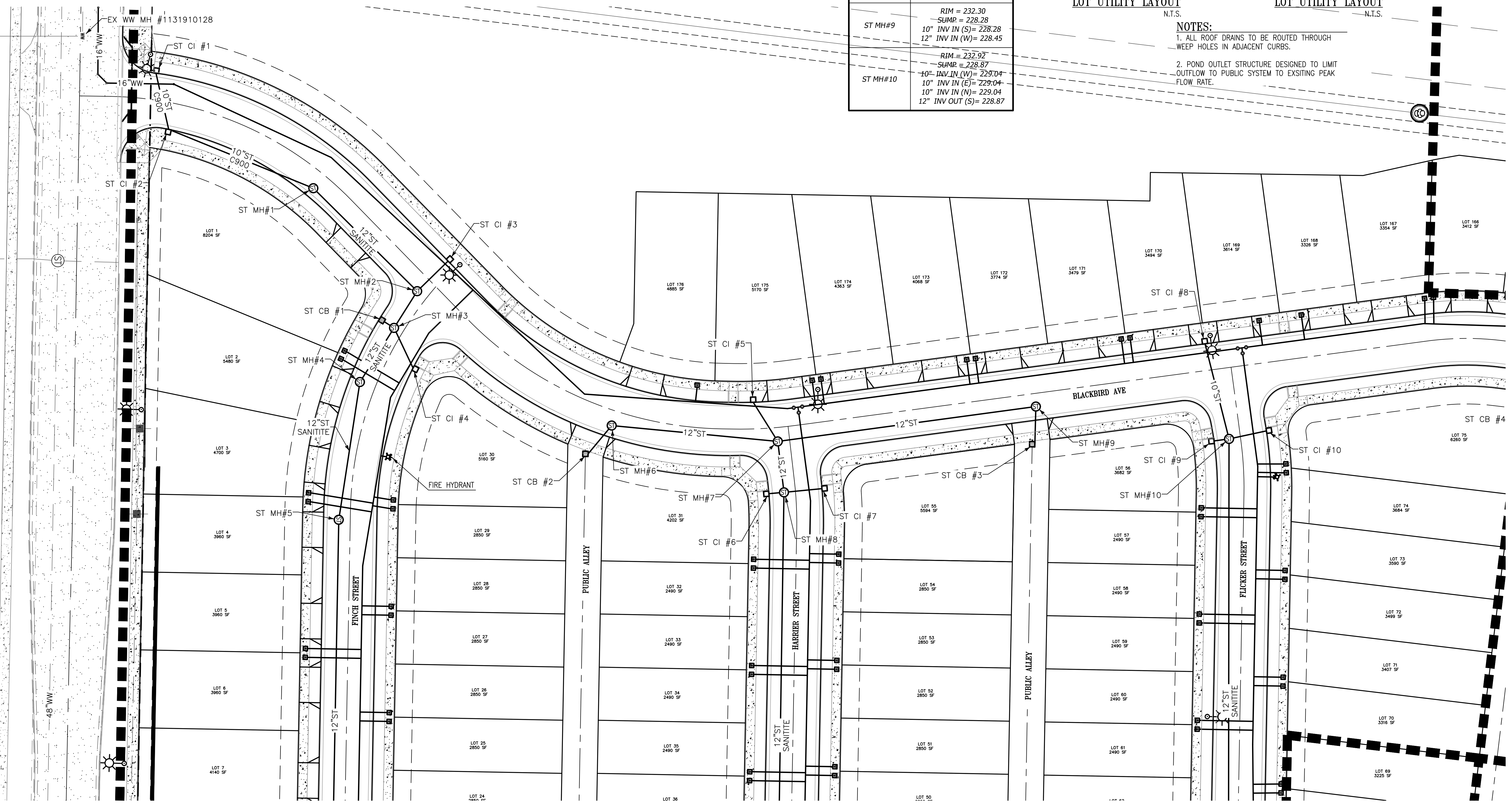
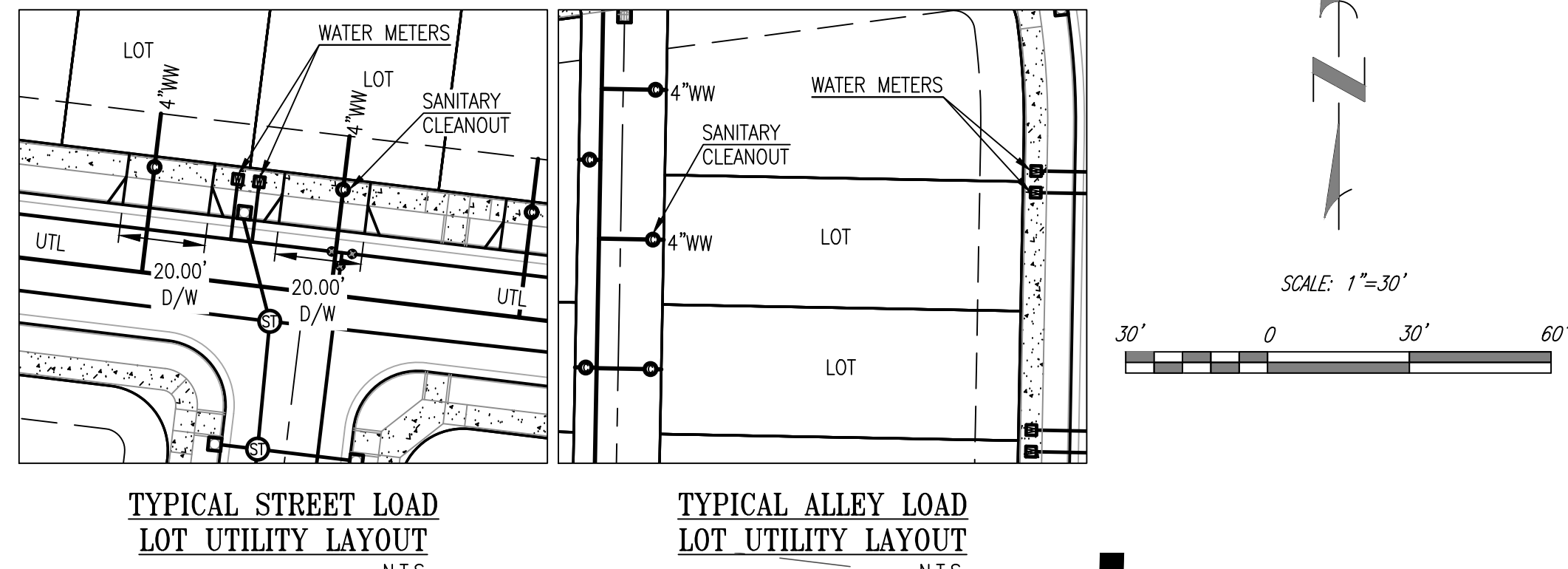
Comprehensive Utility Plan
 for
Meadowlark Cluster Subdivision
 Albany Linn County Oregon

DATE: 8-1-22
 PROJECT No.: 5291
 SCALE: horiz
 VERT:
 DRAWN BY: ACH
 DESIGNED BY: KJM
 REVIEWED BY: SDM

SUBMITTALS:

REVISIONS:

Wastewater Structure Table		Wastewater Structure Table		Wastewater Structure Table		Stormwater Structure Table		Stormwater Structure Table		Stormwater Structure Table	
Structure Name	Structure Details	Structure Name	Structure Details	Structure Name	Structure Details	Structure Name	Structure Details	Structure Name	Structure Details	Structure Name	Structure Details
EX WW MH #1131910128	RIM = 228.98 SUMP = 211.68 12" INV IN (S) = 211.91 12" INV IN (N) = 211.91 12" INV OUT (W) = 211.70	WW MH #5	RIM = 231.03 SUMP = 213.19 8" INV IN (S) = 213.29 8" INV OUT (NE) = 213.19	WW MH #10	RIM = 232.83 SUMP = 215.57 8" INV IN (E) = 215.67 8" INV OUT (W) = 215.57	ST CB #1	RIM = 231.02 SUMP = 225.14 10" INV OUT (SE) = 226.64	ST CI #5	RIM = 231.81 SUMP = 227.53 10" INV OUT (SE) = 229.03	ST MH#2	RIM = 231.01 SUMP = 225.13 12" INV IN (NW) = 226.83 10" INV IN (NE) = 226.79 12" INV OUT (SW) = 226.63
WW MH #1	RIM = 228.99 SUMP = 211.97 8" INV IN (E) = 212.31 12" INV OUT (N) = 211.99	WW MH #6	RIM = 231.00 SUMP = 213.62 8" INV IN (S) = 213.72 8" INV OUT (N) = 213.62			ST CB #2	RIM = 232.15 SUMP = 228.10 10" INV OUT (NE) = 229.60	ST CI #6	RIM = 232.00 SUMP = 227.21 10" INV OUT (E) = 228.71	ST MH#5	RIM = 231.01 SUMP = 224.24 12" INV IN (N) = 225.84 12" INV OUT (S) = 225.74
WW MH #2	RIM = 228.85 SUMP = 212.50 8" INV IN (SE) = 212.62 8" INV OUT (W) = 212.52	WW MH #7	RIM = 231.31 SUMP = 213.22 8" INV IN (E) = 213.44 8" INV IN (S) = 219.74 8" INV OUT (NW) = 213.24			ST CB #3	RIM = 232.37 SUMP = 226.89 10" INV OUT (N) = 228.39	ST CI #7	RIM = 232.00 SUMP = 227.28 10" INV OUT (W) = 228.78	ST MH#6	RIM = 231.25 SUMP = 227.82 10" INV IN (SW) = 229.49 12" INV OUT (E) = 229.32
WW MH #3	RIM = 229.94 SUMP = 212.96 8" INV OUT (NW) = 212.99 8" INV OUT (SE) = 213.08	WW MH #8	RIM = 231.09 SUMP = 213.89 8" INV IN (E) = 214.02 8" INV OUT (W) = 213.92			ST CI #1	RIM = 230.50 SUMP = 226.48 10" INV OUT (S) = 227.98	ST CI #8	RIM = 232.64 SUMP = 227.83 10" INV OUT (S) = 229.33	ST MH#7	RIM = 231.98 SUMP = 228.72 12" INV IN (NW) = 228.89 12" INV OUT (S) = 228.72 12" INV OUT (E) = 228.92
WW MH #4	RIM = 231.01 SUMP = 212.71 8" INV IN (NW) = 212.71 8" INV IN (SE) = 212.81 8" INV IN (SW) = 212.91	WW MH #9	RIM = 231.93 SUMP = 214.53 8" INV IN (E) = 214.66 8" INV IN (S) = 220.66 8" INV OUT (W) = 214.55			ST CI #2	RIM = 231.00 SUMP = 225.42 10" INV OUT (SW) = 226.92	ST CI #9	RIM = 232.89 SUMP = 227.58 10" INV OUT (E) = 229.08	ST MH#8	RIM = 232.30 SUMP = 228.28 10" INV IN (S) = 228.28 12" INV IN (W) = 228.45
						ST CI #3	RIM = 231.02 SUMP = 225.22 10" INV OUT (NW) = 226.72	ST CI #10	RIM = 232.98 SUMP = 227.65 10" INV OUT (W) = 229.15	ST MH#9	RIM = 232.92 SUMP = 228.87 10" INV IN (W) = 229.04 10" INV IN (E) = 229.04 10" INV IN (N) = 229.04 12" INV OUT (S) = 228.87
						ST CI #4		ST MH#1	RIM = 231.47 SUMP = 225.67 10" INV IN (W) = 227.34 12" INV OUT (SE) = 227.17	ST MH#10	



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OREGON
MAY 2020
EXPIRES 12/24

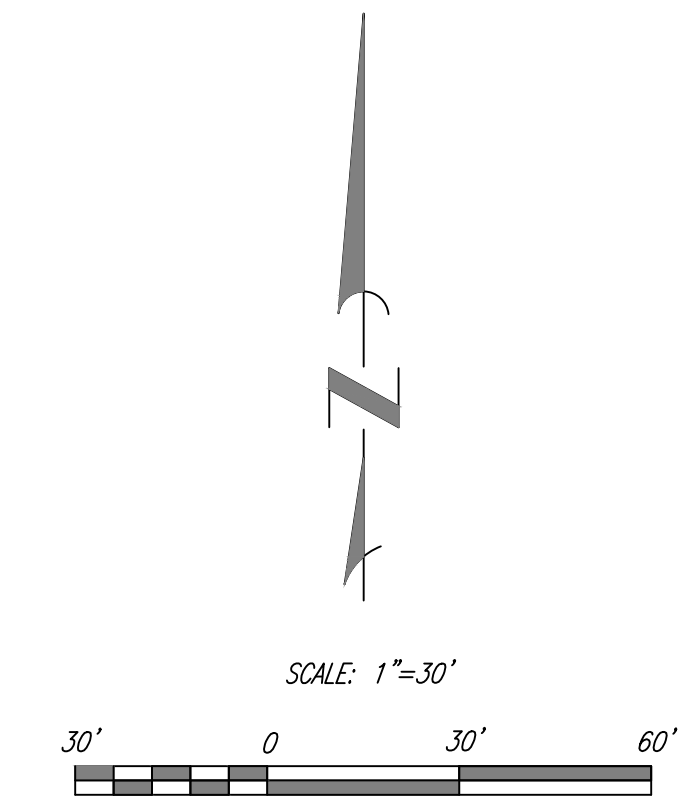
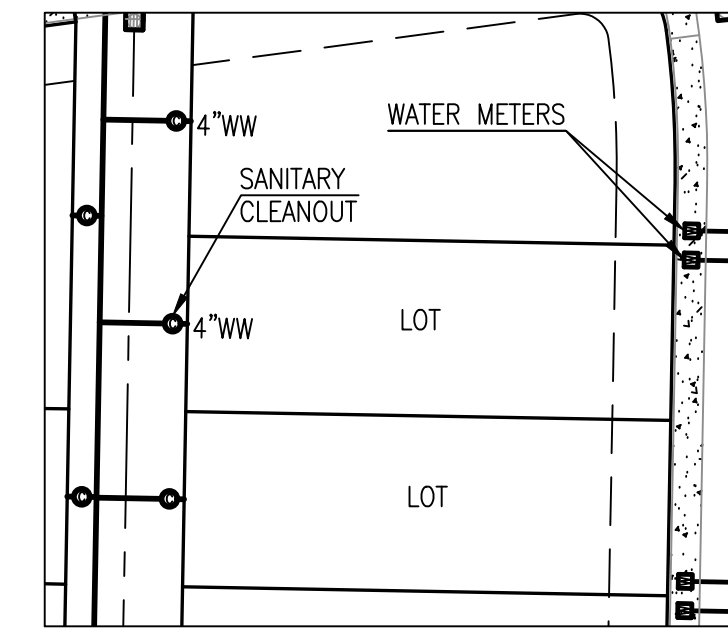
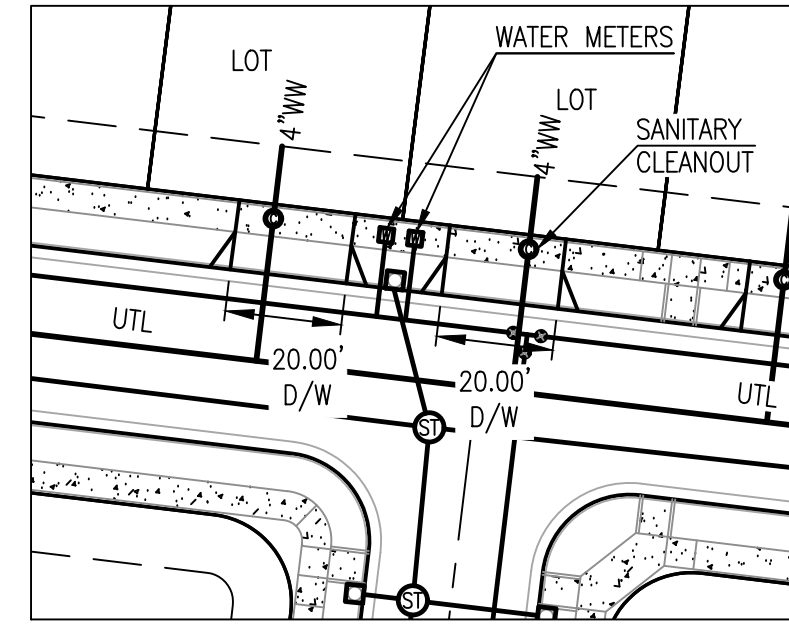
Utility Plan NW
for
Meadowlark Cluster Subdivision
Albany Linn County Oregon

DATE: 8-1-22
PROJECT No.: 5231
SCALE: horiz
DRAWN BY: ACH
DESIGNED BY: KJM
REVIEWED BY: SSM

SUBMITTALS:
REVISIONS:

SHEET
C-4.1
6 OF 11

Wastewater Structure Table		Stormwater Structure Table		Stormwater Structure Table		Stormwater Structure Table	
Structure Name	Structure Details	Structure Name	Structure Details	Structure Name	Structure Details	Structure Name	Structure Details
WW MH #11	RIM = 233.18 SUMP = 215.92 8" INV IN (E) = 216.02 8" INV IN (S) = 222.02 8" INV OUT (W) = 215.92	ST CB #4	RIM = 233.38 SUMP = 229.35 10" INV OUT (N) = 230.85	ST CI #16	RIM = 234.00 SUMP = 228.92 10" INV OUT (W) = 230.42	ST MH#15	RIM = 234.00 SUMP = 230.14 10" INV IN (N) = 230.31 10" INV IN (W) = 230.31 10" INV IN (E) = 230.31 12" INV OUT (S) = 230.14
WW MH #12	RIM = 234.00 SUMP = 217.03 8" INV IN (E) = 217.13 8" INV IN (S) = 223.13 8" INV OUT (W) = 217.03	ST CB #5	RIM = 234.00 SUMP = 229.48 10" INV OUT (N) = 230.98	ST CI #17	RIM = 234.02 SUMP = 230.00 10" INV OUT (E) = 231.50	ST MH#16	RIM = 234.00 SUMP = 231.28 10" INV IN (W) = 231.45 10" INV IN (E) = 231.45 12" INV OUT (S) = 231.28
WW MH #13	RIM = 234.00 SUMP = 217.63 8" INV IN (E) = 217.73 8" INV IN (S) = 223.73 8" INV OUT (W) = 217.63	ST CI #11	RIM = 233.44 SUMP = 228.71 10" INV OUT (S) = 230.21	ST CI #18	RIM = 234.09 SUMP = 230.07 10" INV OUT (W) = 231.57		
WW MH #14	RIM = 234.00 SUMP = 218.63 8" INV IN (S) = 218.83 4" INV IN (N) = 219.16 4" INV IN (E) = 219.16 8" INV OUT (W) = 218.63	ST CI #12	RIM = 233.48 SUMP = 228.40 10" INV OUT (E) = 229.90	ST MH#11	RIM = 233.21 SUMP = 230.57 10" INV IN (S) = 230.74 12" INV OUT (E) = 230.57		
		ST CI #13	RIM = 233.60 SUMP = 228.46 10" INV OUT (E) = 229.96	ST MH#12	RIM = 233.49 SUMP = 229.91 12" INV IN (W) = 230.11 12" INV IN (E) = 230.11 10" INV IN (N) = 230.08 12" INV OUT (S) = 229.91		
		ST CI #14	RIM = 234.00 SUMP = 229.09 10" INV OUT (S) = 230.59	ST MH#13	RIM = 233.52 SUMP = 229.68 10" INV IN (W) = 229.85 10" INV IN (E) = 229.85 12" INV IN (N) = 229.78 12" INV OUT (S) = 229.68		
		ST CI #15	RIM = 237.34 SUMP = 228.85 10" INV OUT (E) = 230.35	ST MH#14	RIM = 234.00 SUMP = 230.70 10" INV IN (S) = 230.87 12" INV OUT (W) = 230.70		

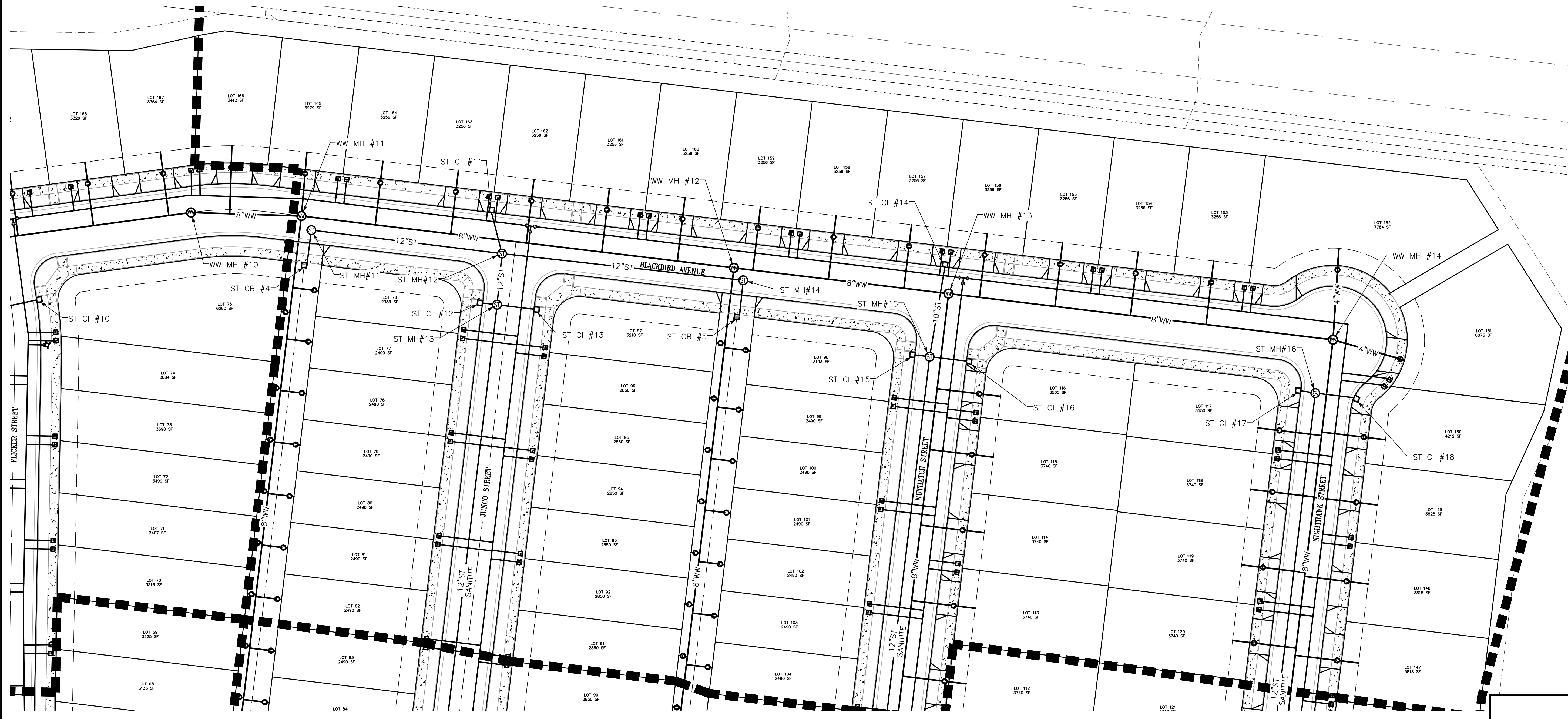


TYPICAL STREET LOAD
LOT UTILITY LAYOUT
N.T.S.

TYPICAL ALLEY LOAD
LOT UTILITY LAYOUT
N.T.S.

NOTES:

1. ALL ROOF DRAINS TO BE ROUTED THROUGH WEEP HOLES IN ADJACENT CURBS.
2. POND OUTLET STRUCTURE DESIGNED TO LIMIT OUTFLOW TO PUBLIC SYSTEM TO EXISTING PEAK FLOW RATE.



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Utility Plan NE
for
Meadowlark Cluster Subdivision
Albany Linn County Oregon

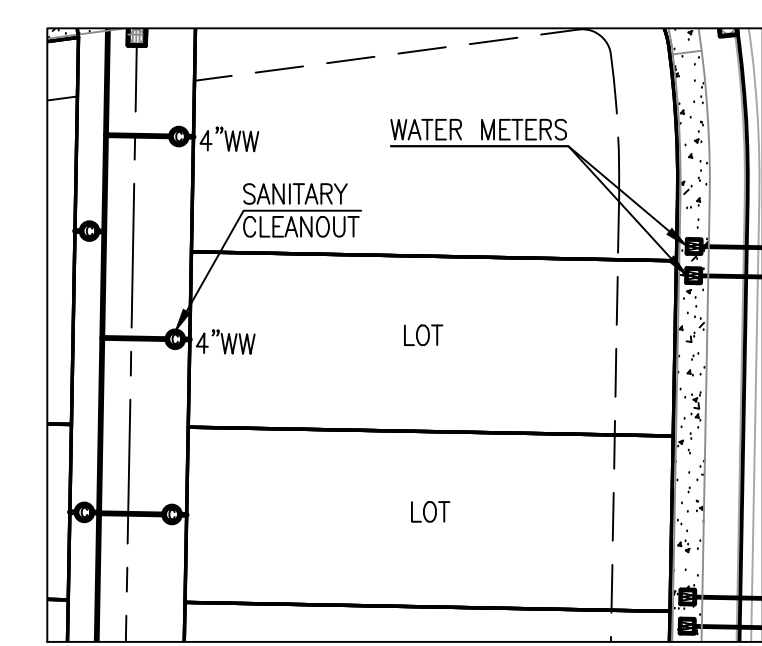
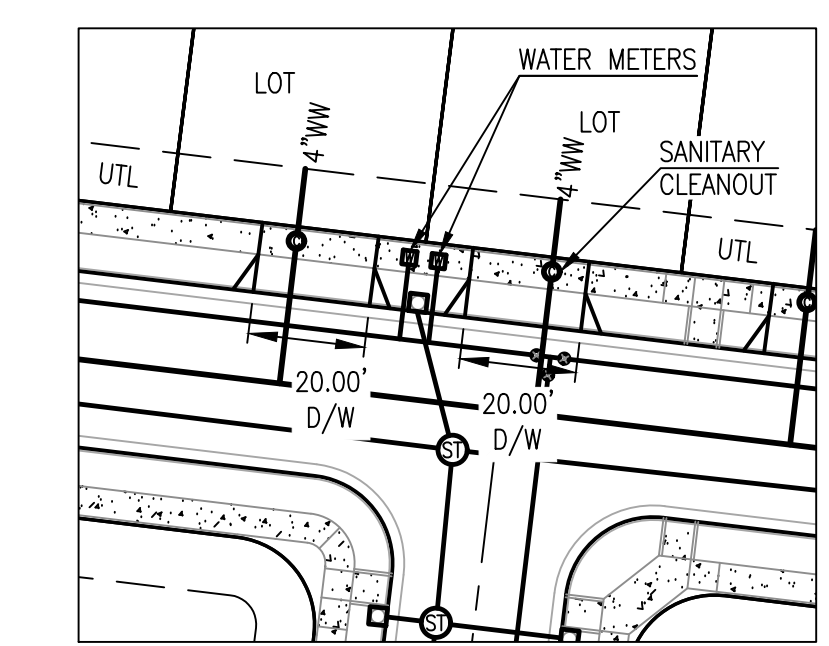
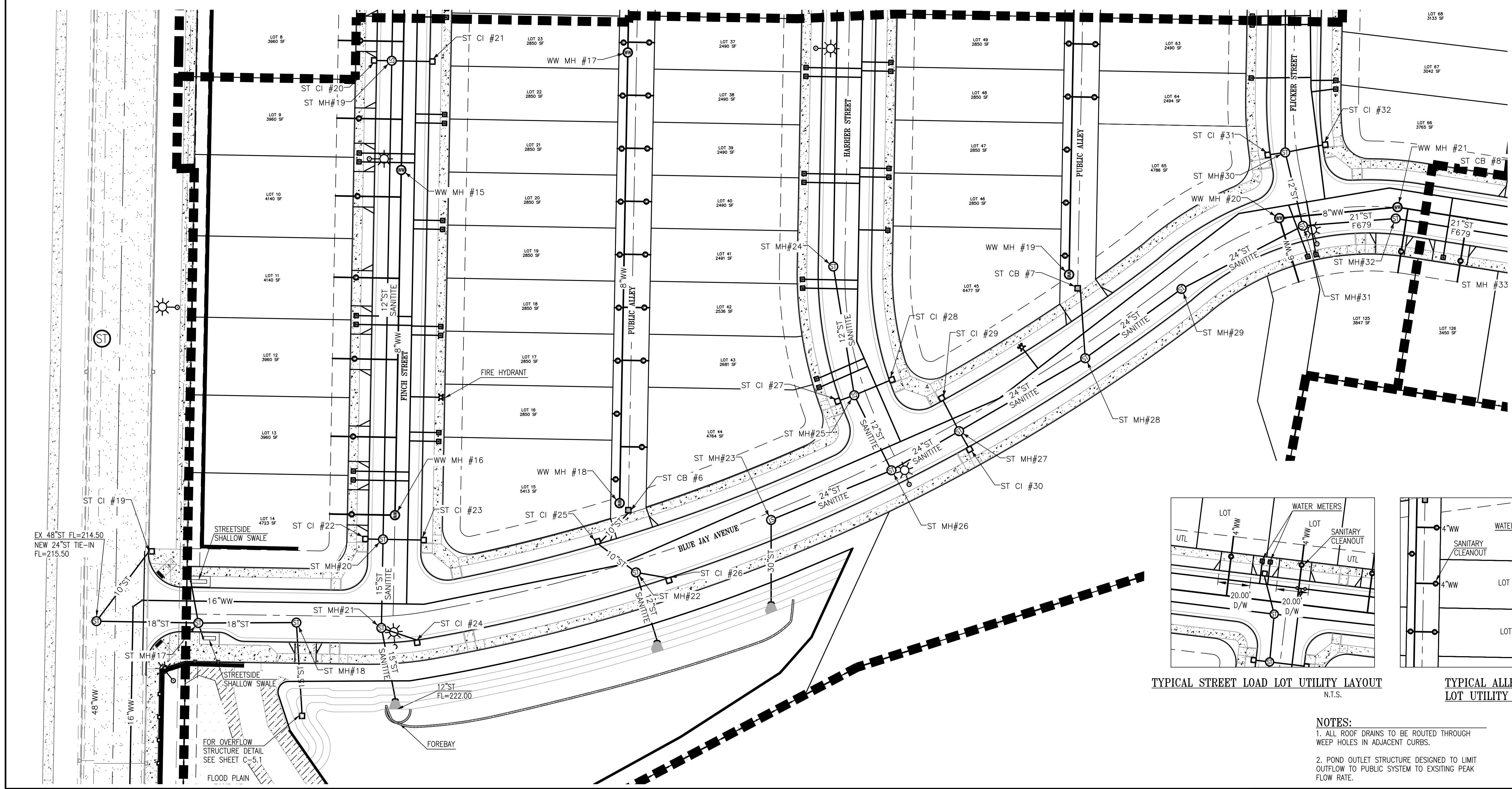
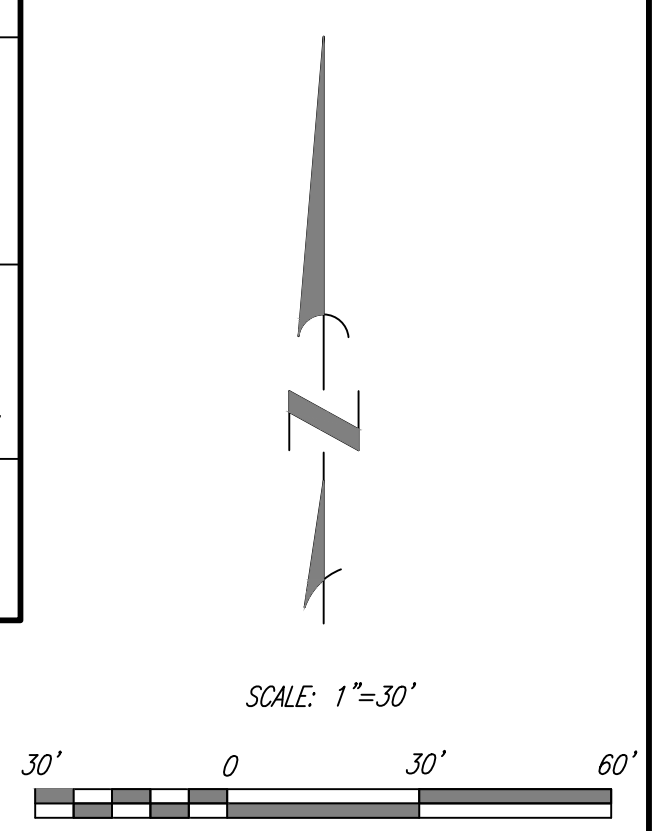
DATE: 8-1-22
PROJECT No.: 5291
SCALE: horiz
VERE: _____
DRAWN BY: ACH
DESIGNED BY: KDM
REVIEWED BY: SDM

SUBMITTALS:

REVISIONS:

SHEET
C-4.2
7 OF 11

Wastewater Structure Table		Wastewater Structure Table		Stormwater Structure Table		Stormwater Structure Table		Stormwater Structure Table		Stormwater Structure Table		Stormwater Structure Table		Stormwater Structure Table		Stormwater Structure Table	
Structure Name	Structure Details	Structure Name	Structure Details	Structure Name	Structure Details	Structure Name	Structure Details	Structure Name	Structure Details	Structure Name	Structure Details	Structure Name	Structure Details	Structure Name	Structure Details	Structure Name	Structure Details
WW MH #15	RIM = 228.01 SUMP = 214.72 8" INV IN (S)= 214.82 8" INV OUT (N)= 214.72	WW MH #21	RIM = 233.06 SUMP = 223.55 8" INV IN (W)= 223.65 8" INV OUT (E)= 223.55	EX ST MH #20	RIM = 222.72 SUMP = 214.45 18" INV IN (E)= 216.94 10" INV IN (NE)= 218.47 48" INV IN (N)= 214.47 48" INV OUT (S)= 214.45	ST CI #21	RIM = 229.30 SUMP = 223.59 10" INV OUT (W)= 225.09	ST CI #26	RIM = 230.06 SUMP = 221.96 10" INV OUT (W)= 223.46	ST CI #31	RIM = 232.71 SUMP = 226.07 10" INV OUT (E)= 227.57	ST MH#20	RIM = 225.95 SUMP = 221.92 12" INV IN (N)= 223.67 10" INV IN (W)= 223.84 10" INV IN (E)= 223.84 15" INV OUT (S)= 223.42	ST MH#25	RIM = 231.05 SUMP = 226.60 12" INV IN (N)= 226.70 10" INV IN (W)= 226.77 10" INV IN (NE)= 226.97 12" INV OUT (SE)= 226.60	ST MH#30	RIM = 232.77 SUMP = 227.52 12" INV IN (N)= 227.62 10" INV IN (W)= 227.52 10" INV IN (NE)= 227.52 12" INV OUT (S)= 227.53
WW MH #16	RIM = 226.51 SUMP = 215.61 8" INV OUT (N)= 215.61			ST CB #6	RIM = 231.00 SUMP = 222.14 10" INV OUT (SW)= 223.64	ST CI #22	RIM = 226.41 SUMP = 222.39 10" INV OUT (E)= 223.89	ST CI #27	RIM = 231.01 SUMP = 225.31 10" INV OUT (E)= 226.81	ST CI #32	RIM = 232.92 SUMP = 226.14 10" INV OUT (W)= 227.64	ST MH#21	RIM = 225.14 SUMP = 221.65 15" INV IN (N)= 223.25 10" INV IN (E)= 223.58 15" INV OUT (S)= 223.15	ST MH#26	RIM = 229.69 SUMP = 225.40 24" INV IN (NE)= 225.50 12" INV IN (NW)= 226.40 24" INV OUT (W)= 225.40	ST MH#31	RIM = 232.60 SUMP = 226.35 21" INV IN (E)= 226.60 12" INV IN (N)= 227.35 24" INV OUT (SW)= 226.35
WW MH #17	RIM = 230.34 SUMP = 220.76 8" INV IN (S)= 220.86 8" INV OUT (N)= 220.76			ST CB #7	RIM = 231.89 SUMP = 225.52 12" INV OUT (S)= 227.02	ST CI #23	RIM = 227.50 SUMP = 222.45 10" INV OUT (W)= 223.95	ST CI #28	RIM = 231.24 SUMP = 225.59 10" INV OUT (SW)= 227.09	ST MH#17	RIM = 223.25 SUMP = 217.35 18" INV IN (E)= 217.47 10" INV IN (N)= 217.57 10" INV IN (S)= 217.57 18" INV OUT (W)= 217.37	ST MH#22	RIM = 230.57 SUMP = 223.20 10" INV IN (E)= 223.36 10" INV IN (NW)= 223.36 12" INV OUT (S)= 223.20	ST MH#27	RIM = 230.32 SUMP = 225.59 24" INV IN (NE)= 225.69 10" INV IN (NW)= 225.76 10" INV IN (SE)= 225.76 24" INV OUT (SW)= 225.59	ST MH#32	RIM = 233.05 SUMP = 226.70 21" INV IN (E)= 226.80 21" INV OUT (W)= 226.70
WW MH #18	RIM = 230.97 SUMP = 221.88 8" INV OUT (N)= 221.88			ST CI #19	RIM = 223.02 SUMP = 218.64 10" INV OUT (SW)= 218.66	ST CI #24	RIM = 226.31 SUMP = 224.36 10" INV OUT (W)= 223.78	ST CI #29	RIM = 230.98 SUMP = 224.31 10" INV OUT (SE)= 225.86	ST MH#18	RIM = 225.52 SUMP = 217.82 15" INV IN (S)= 218.17 18" INV OUT (W)= 217.87	ST MH#23	RIM = 229.99 SUMP = 223.10 24" INV IN (E)= 223.60 30" INV OUT (S)= 223.10	ST MH#28	RIM = 230.49 SUMP = 225.86 24" INV IN (NE)= 225.96 12" INV IN (N)= 226.86 24" INV OUT (SW)= 225.86		
WW MH #19	RIM = 232.00 SUMP = 222.22 8" INV OUT (N)= 222.22			ST CI #20	RIM = 229.25 SUMP = 223.53 10" INV OUT (E)= 225.03	ST CI #25	RIM = 230.74 SUMP = 224.36 10" INV IN (NE)= 223.50 10" INV OUT (SE)= 223.50	ST CI #30	RIM = 229.93 SUMP = 224.31 10" INV OUT (NW)= 225.81	ST MH#19	RIM = 229.25 SUMP = 223.31 12" INV IN (N)= 224.91 10" INV IN (W)= 224.98 10" INV IN (E)= 224.98 12" INV OUT (S)= 224.81	ST MH#24	RIM = 231.38 SUMP = 227.01 12" INV IN (N)= 227.11 12" INV OUT (S)= 227.01	ST MH#29	RIM = 231.85 SUMP = 226.09 24" INV IN (NE)= 226.19 24" INV OUT (SW)= 226.09		
WW MH #20	RIM = 232.52 SUMP = 223.92 8" INV OUT (E)= 223.92 6" INV OUT (S)= 223.92																



TYPICAL STREET LOAD LOT UTILITY LAYOUT
N.T.S.

TYPICAL ALLEY LOAD LOT UTILITY LAYOUT
N.T.S.

- NOTES:**
1. ALL ROOF DRAINS TO BE ROUTED THROUGH WEEP HOLES IN ADJACENT CURBS.
 2. POND OUTLET STRUCTURE DESIGNED TO LIMIT OUTFLOW TO PUBLIC SYSTEM TO EXISTING PEAK FLOW RATE.

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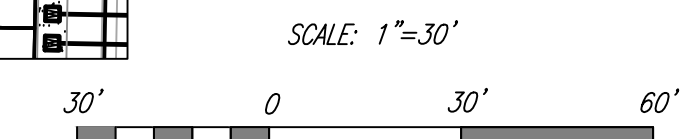
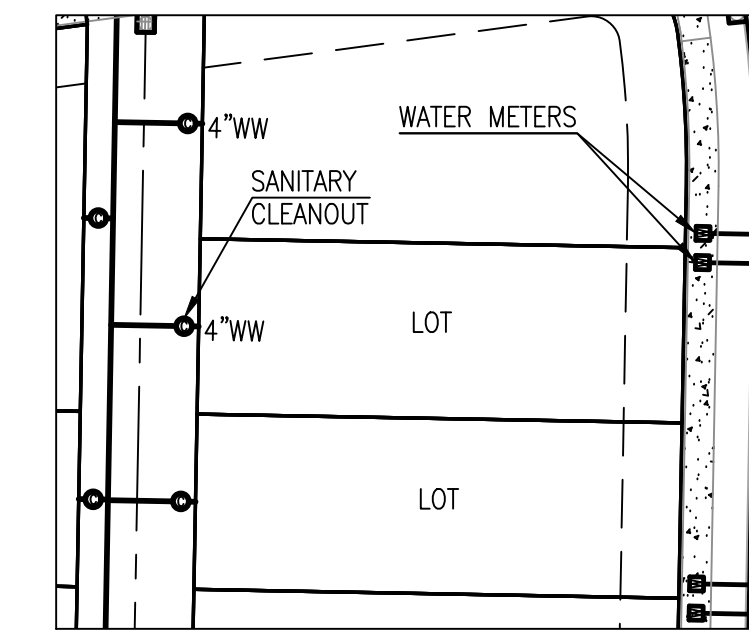
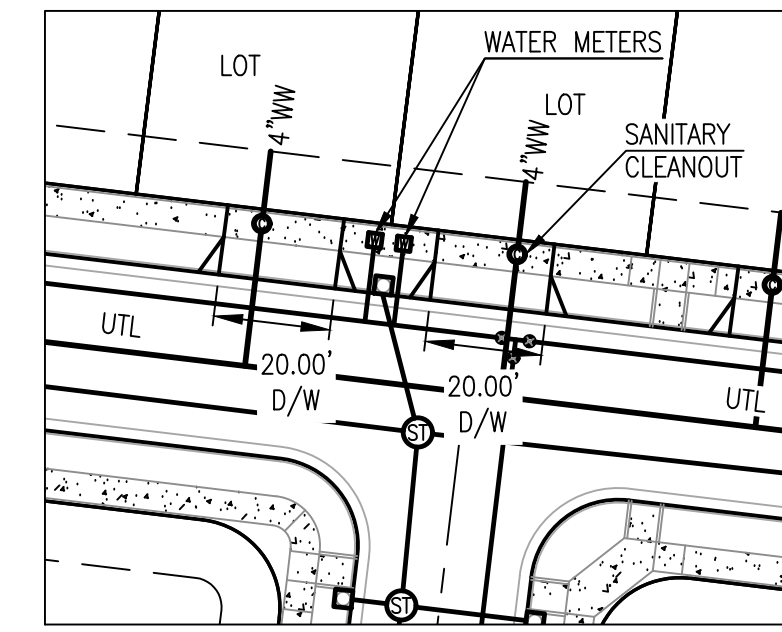
Utility Plan SW
for
Meadowlark Cluster Subdivision
Albany Linn County Oregon

DATE: 8-1-22
PROJECT No.: 5291
SCALE: HORIZ
DRAWN BY: AGH
DESIGNED BY: KJM
REVIEWED BY: SDM

SUBMITTALS:

REVISIONS:

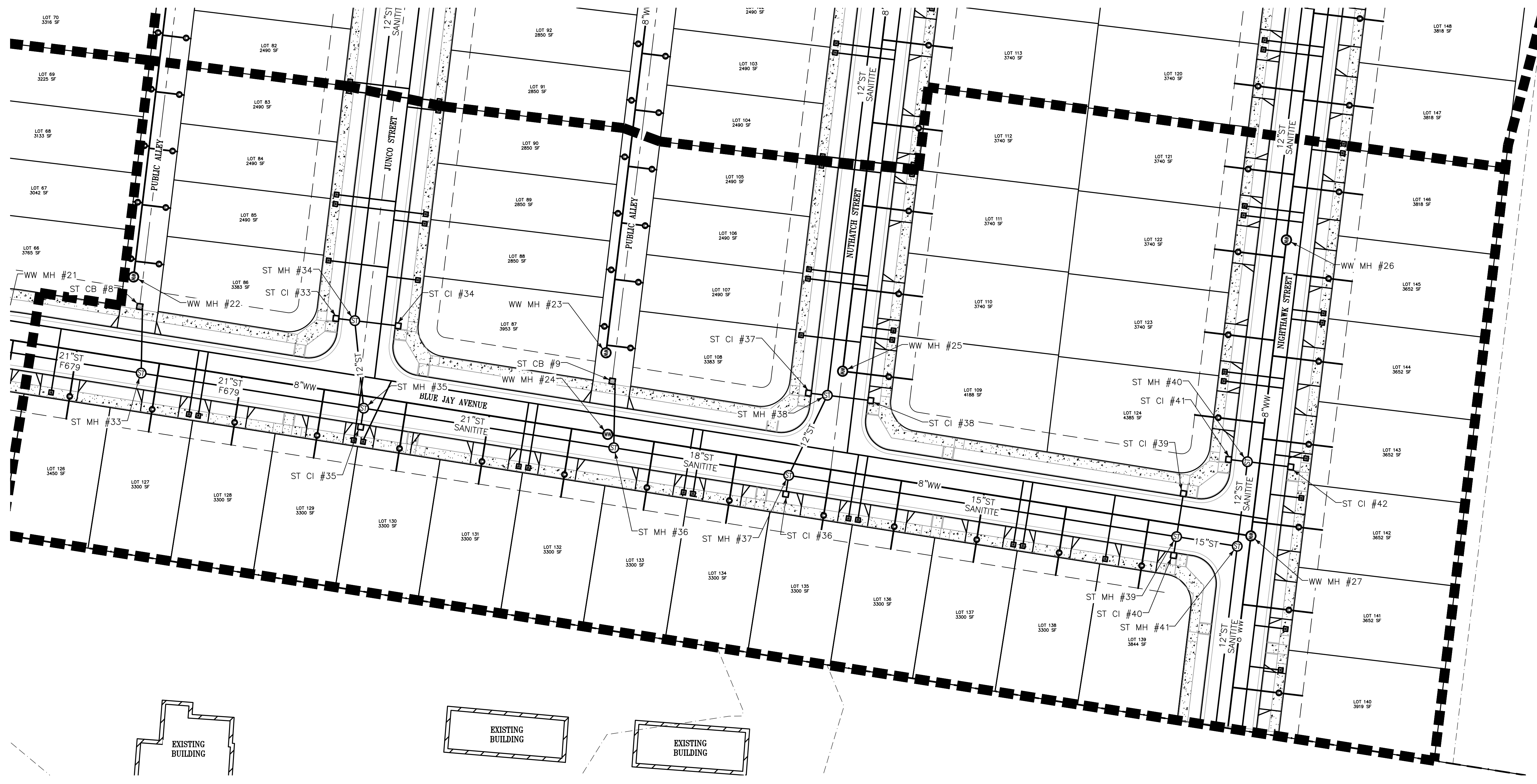
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WW MH #23	RIM = 234.00 SUMP = 224.57 8" INV OUT (N) = 224.57	ST CB #8	RIM = 233.32 SUMP = 226.55 10" INV OUT (S) = 228.05	ST CI #36	RIM = 234.00 SUMP = 227.49 10" INV OUT (N) = 228.99	ST CI #41	RIM = 234.70 SUMP = 228.45 10" INV OUT (E) = 229.95	ST MH #36	RIM = 234.00 SUMP = 227.65 18" INV IN (E) = 227.90 10" INV IN (N) = 228.57 21" INV OUT (W) = 227.65	ST MH #41	RIM = 234.85 SUMP = 229.30 12" INV IN (N) = 229.55 12" INV IN (S) = 229.55 15" INV OUT (W) = 229.30
WW MH #24	RIM = 234.00 SUMP = 222.16 8" INV IN (W) = 222.26 8" INV OUT (E) = 222.16	ST CB #9	RIM = 234.00 SUMP = 227.26 10" INV OUT (S) = 228.76	ST CI #37	RIM = 234.00 SUMP = 227.63 10" INV OUT (E) = 229.07	ST CI #42	RIM = 234.73 SUMP = 228.52 10" INV OUT (W) = 230.02	ST MH #37	RIM = 234.00 SUMP = 228.16 15" INV IN (E) = 228.41 12" INV IN (NE) = 228.66 10" INV IN (S) = 228.82 18" INV OUT (W) = 228.16		
WW MH #25	RIM = 234.00 SUMP = 225.15 8" INV OUT (N) = 225.15	ST CI #33	RIM = 233.76 SUMP = 228.40 10" INV OUT (E) = 229.90	ST CI #38	RIM = 234.00 SUMP = 227.63 10" INV OUT (W) = 229.13	ST MH #33	RIM = 233.37 SUMP = 226.95 21" INV IN (E) = 227.05 10" INV IN (N) = 227.87 21" INV OUT (W) = 226.95	ST MH #38	RIM = 234.00 SUMP = 228.85 12" INV IN (N) = 228.95 10" INV IN (W) = 229.02 10" INV IN (E) = 229.02 12" INV OUT (SW) = 228.85		
WW MH #26	RIM = 234.35 SUMP = 219.86 8" INV IN (S) = 219.96 8" INV OUT (N) = 219.86	ST CI #34	RIM = 233.89 SUMP = 227.13 10" INV OUT (W) = 228.63	ST CI #39	RIM = 234.72 SUMP = 228.12 10" INV OUT (S) = 229.62	ST MH #34	RIM = 233.80 SUMP = 228.23 12" INV IN (N) = 228.33 10" INV IN (W) = 228.40 10" INV IN (E) = 228.40 12" INV OUT (S) = 228.23	ST MH #39	RIM = 234.76 SUMP = 229.09 15" INV IN (E) = 229.19 10" INV IN (N) = 229.51 10" INV IN (S) = 229.51 15" INV OUT (W) = 229.09		
WW MH #27	RIM = 234.82 SUMP = 220.59 8" INV IN (W) = 220.79 8" INV IN (S) = 220.69 8" INV OUT (N) = 220.59	ST CI #35	RIM = 233.92 SUMP = 227.03 10" INV OUT (N) = 228.53	ST CI #40	RIM = 234.77 SUMP = 228.05 10" INV OUT (N) = 229.55	ST MH #35	RIM = 233.91 SUMP = 227.29 21" INV IN (E) = 227.39 12" INV IN (N) = 228.04 10" INV IN (S) = 228.20 21" INV OUT (W) = 227.29	ST MH #40	RIM = 234.70 SUMP = 229.74 12" INV IN (N) = 229.84 10" INV IN (W) = 229.90 10" INV IN (E) = 229.90 12" INV OUT (S) = 229.74		



TYPICAL STREET LOAD
LOT UTILITY LAYOUT
N.T.S.

TYPICAL ALLEY LOAD
LOT UTILITY LAYOUT
N.T.S.

- NOTES:
- ALL ROOF DRAINS TO BE ROUTED THROUGH WEEP HOLES IN ADJACENT CURBS.
 - POND OUTLET STRUCTURE DESIGNED TO LIMIT OUTFLOW TO PUBLIC SYSTEM TO EXISTING PEAK FLOW RATE.



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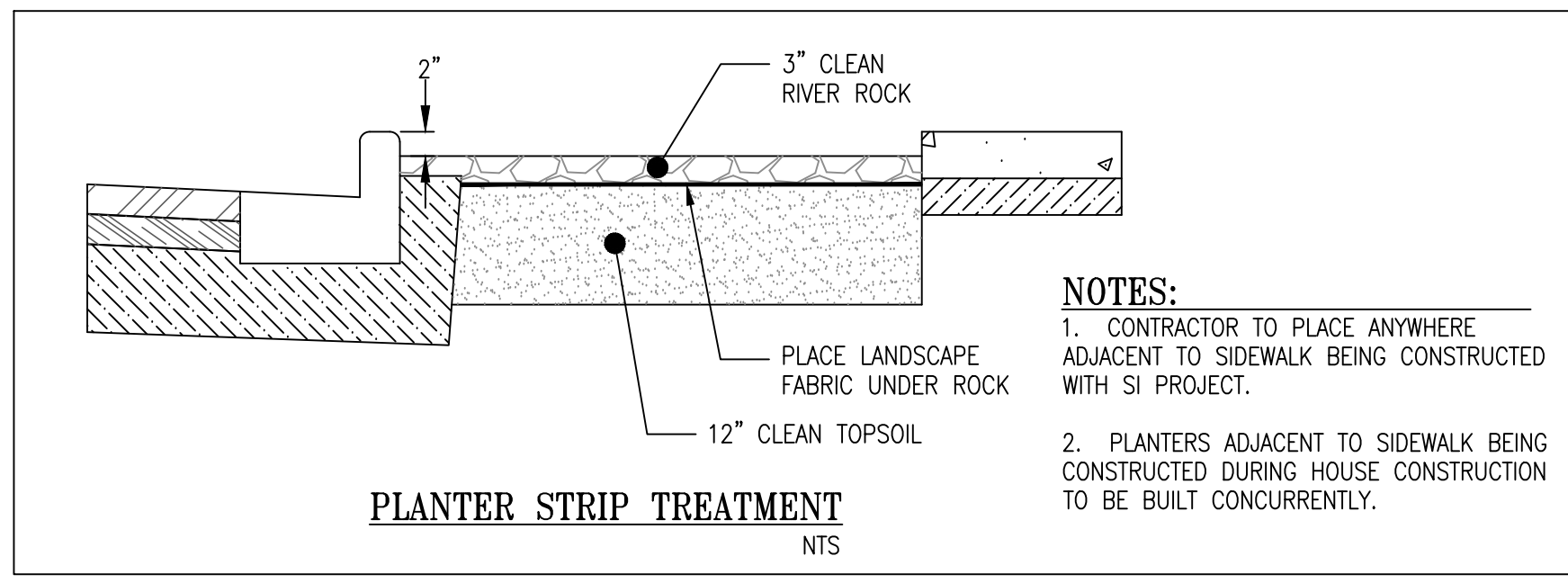
Utility Plan SE
for
Meadowlark Cluster Subdivision
Albany Linn County Oregon

DATE: 8-1-22
PROJECT No.: 5291
SCALE: horiz
DRAWN BY: ACH
DESIGNED BY: KDM
REVIEWED BY: SDM

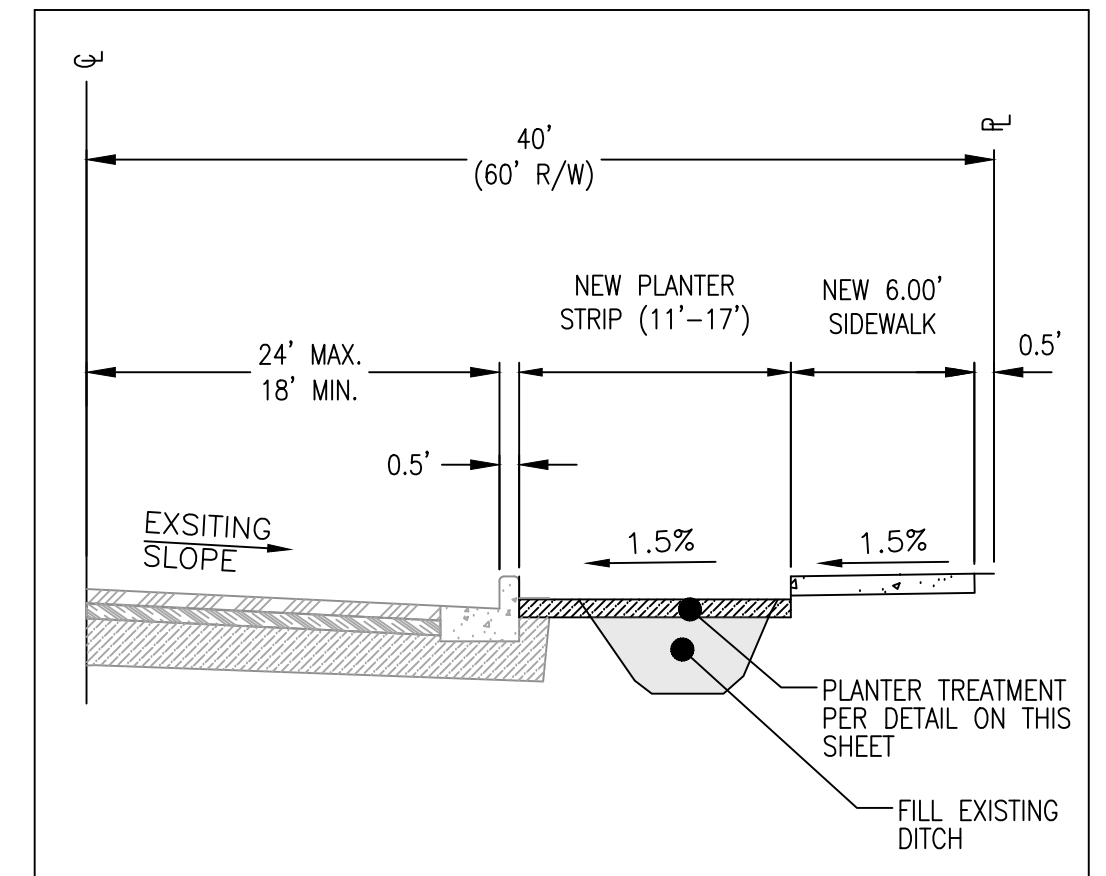
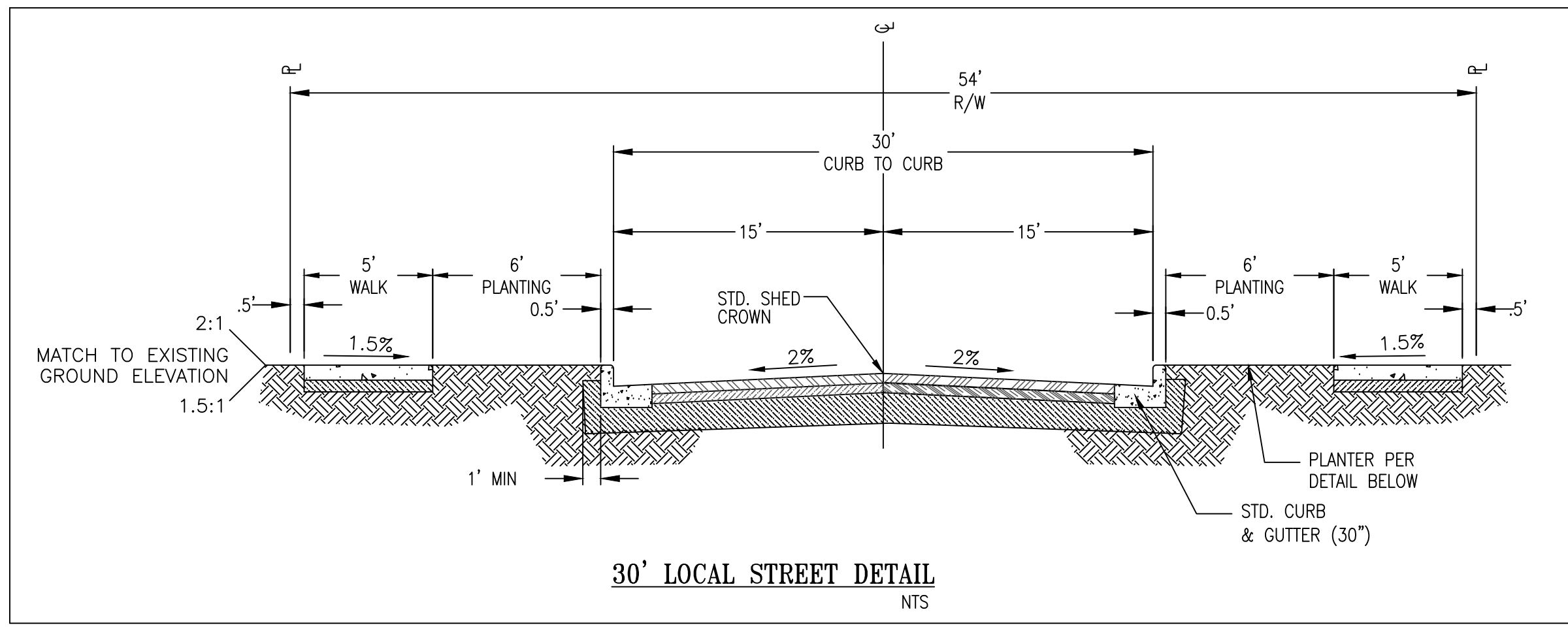
SUBMITTALS:

REVISIONS:

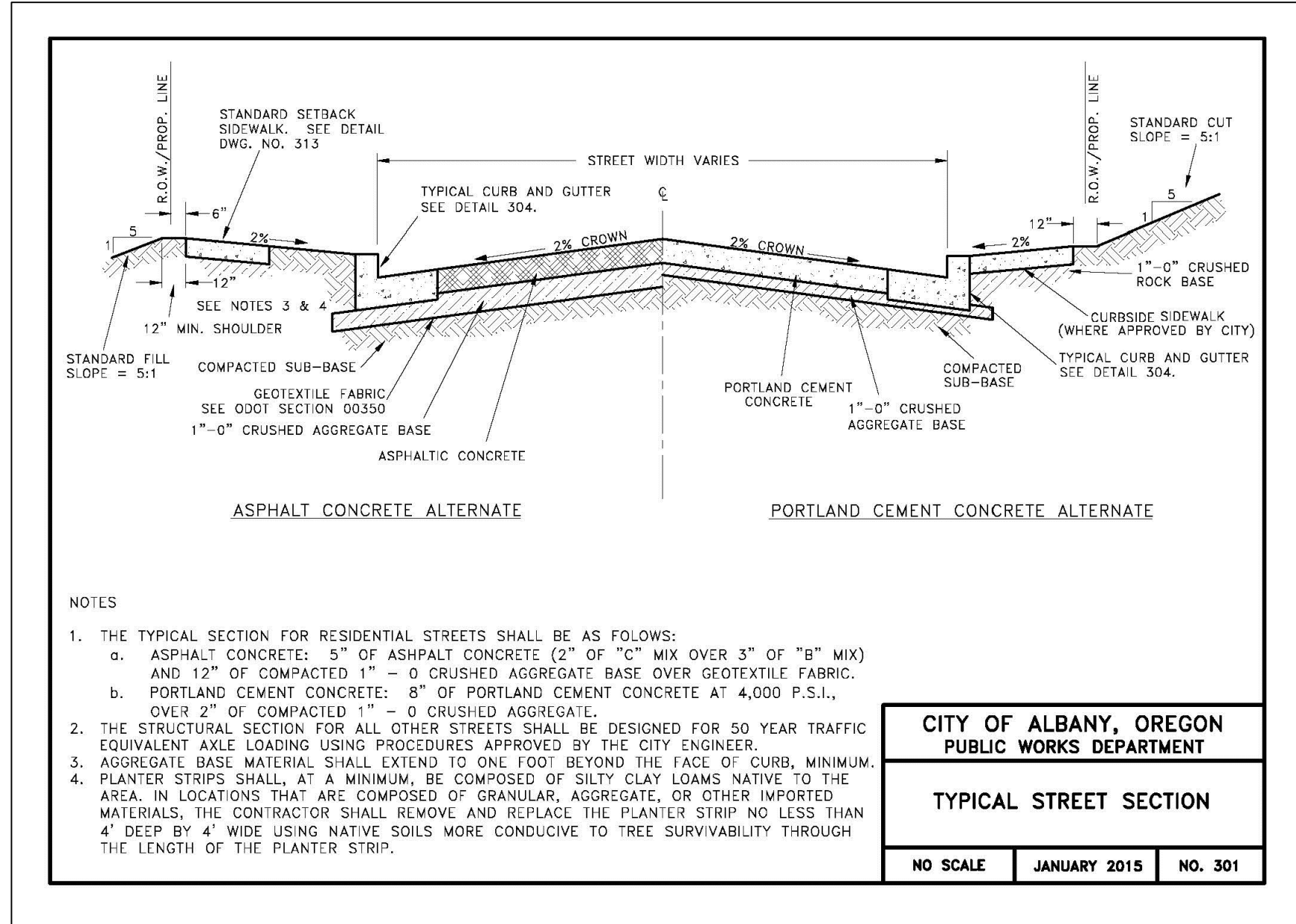
SHEET
C-4.4
9 OF 11



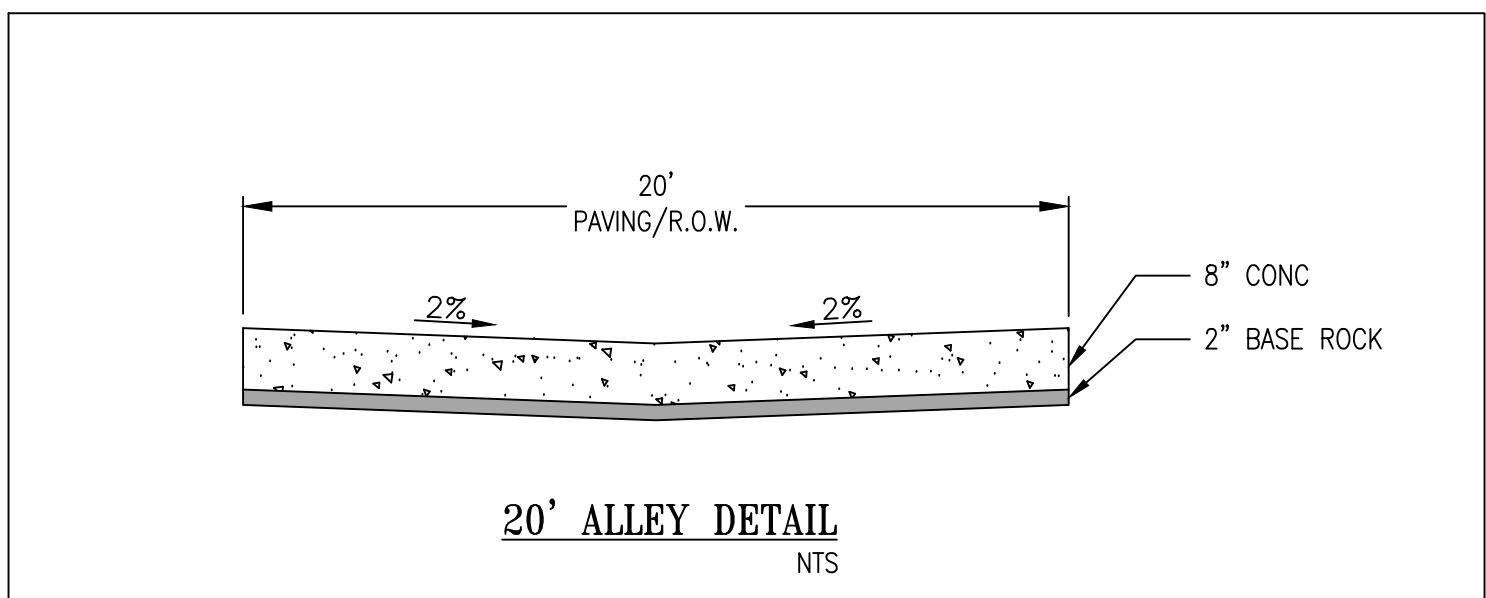
- NOTES:**
- CONTRACTOR TO PLACE ANYWHERE ADJACENT TO SIDEWALK BEING CONSTRUCTED WITH SI PROJECT.
 - PLANTERS ADJACENT TO SIDEWALK BEING CONSTRUCTED DURING HOUSE CONSTRUCTION TO BE BUILT CONCURRENTLY.



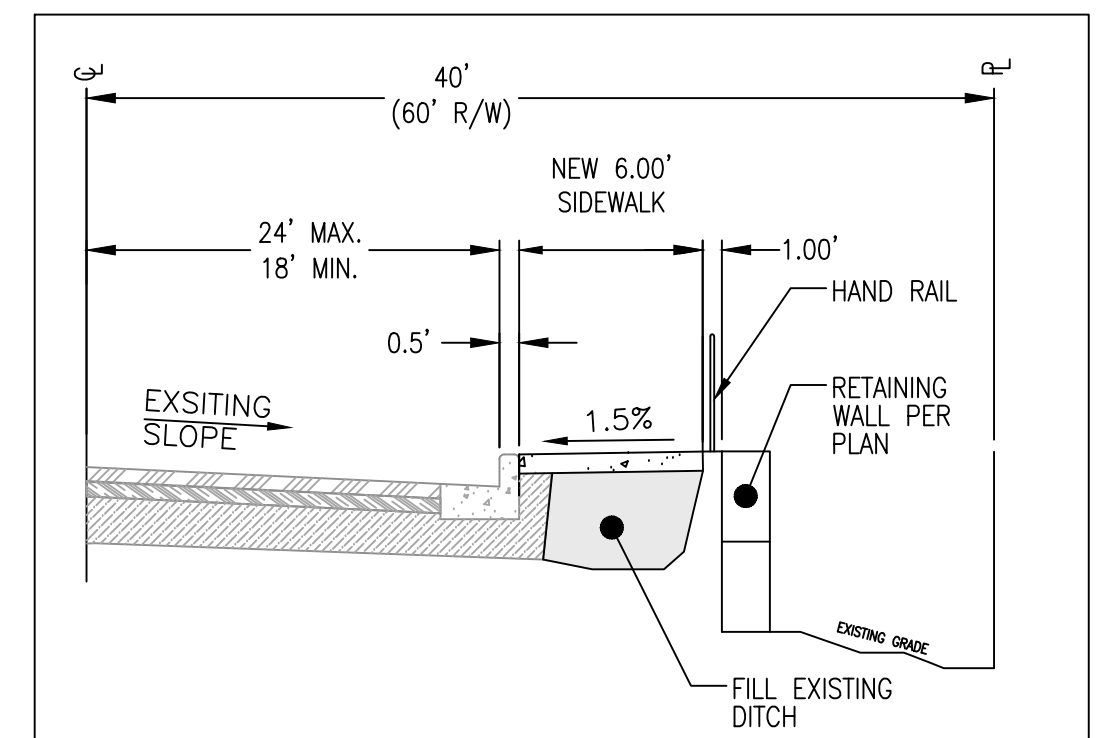
LOCHNER DRIVE SIDEWALK AND PLANTER STRIP IMPROVEMENTS
STA. 0+04.03 TO STA. 9+23.89
NTS



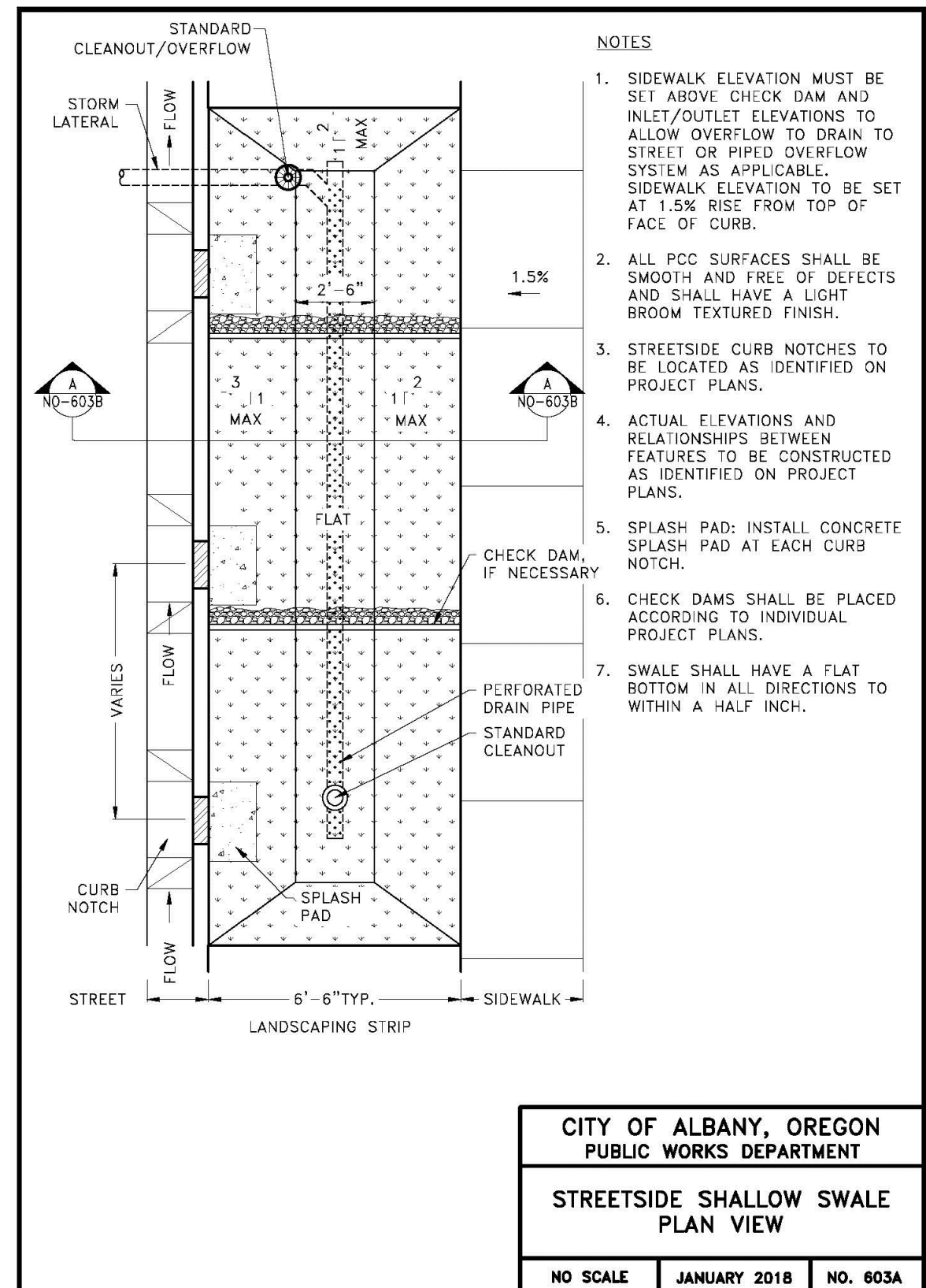
**CITY OF ALBANY, OREGON
PUBLIC WORKS DEPARTMENT**
TYPICAL STREET SECTION
NO SCALE JANUARY 2015 NO. 301



20' ALLEY DETAIL
NTS

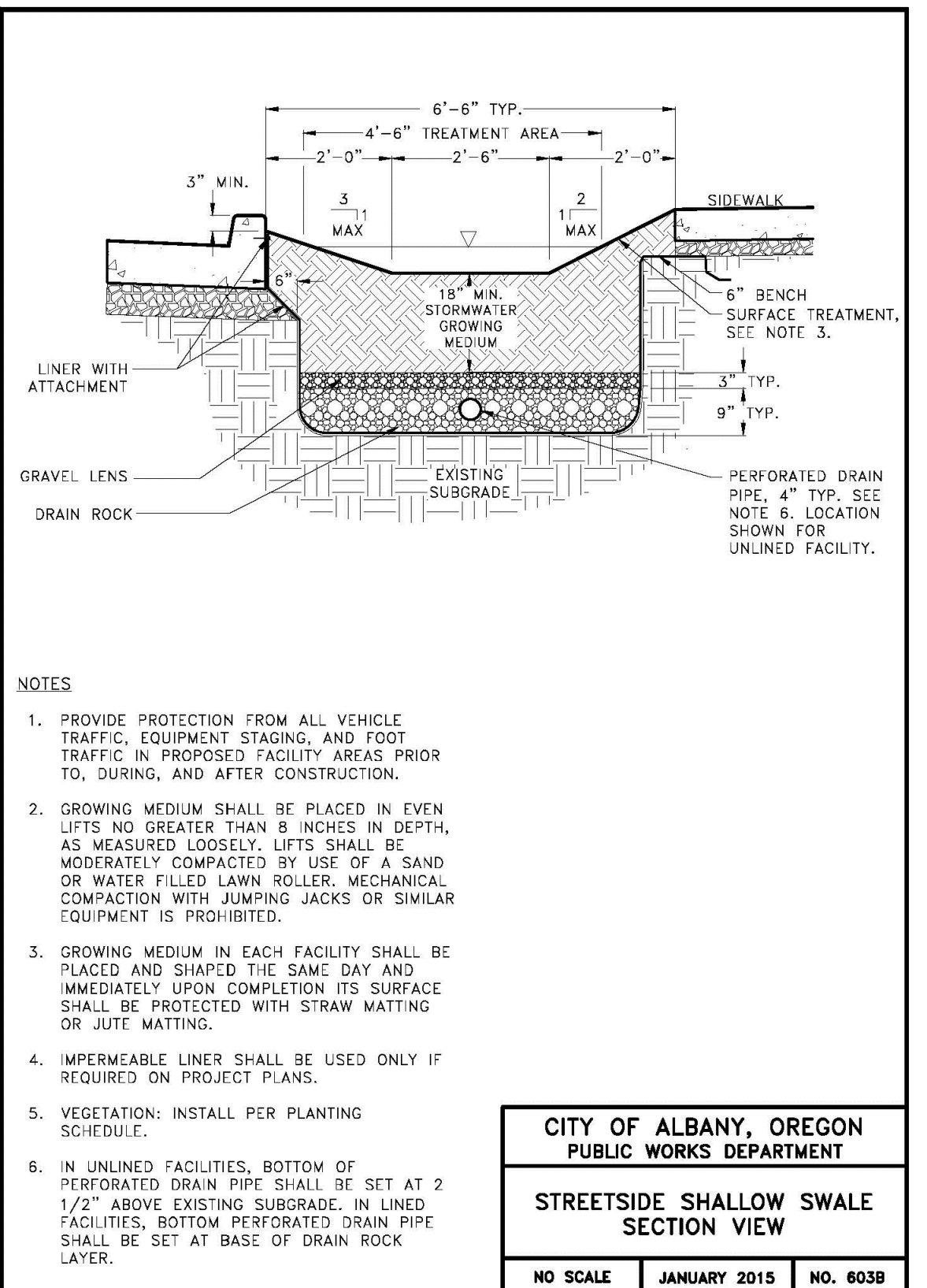


LOCHNER DRIVE SIDEWALK IMPROVEMENTS
STA. 9+91.85 TO STA. 10+76.44
NTS



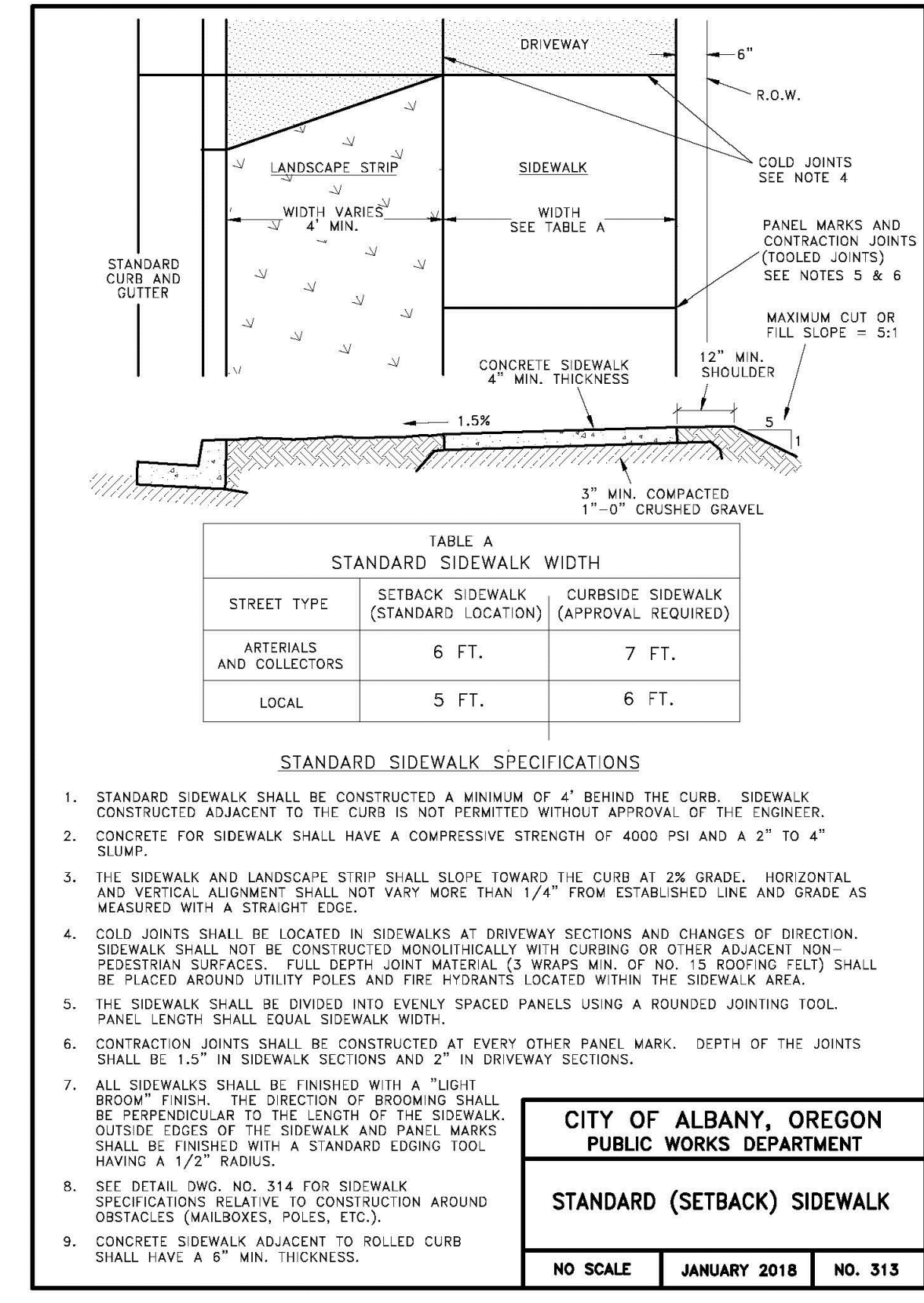
- NOTES**
- SIDEWALK ELEVATION MUST BE SET ABOVE CHECK DAM AND INLET/OUTLET ELEVATIONS TO ALLOW OVERFLOW TO DRAIN TO STREET OR PIPED OVERFLOW SYSTEM AS APPLICABLE. SIDEWALK ELEVATION TO BE SET AT 1.5% RISE FROM TOP OF FACE OF CURB.
 - ALL PCC SURFACES SHALL BE SMOOTH AND FREE OF DEFECTS AND SHALL HAVE A LIGHT BROOM TEXTURED FINISH.
 - STREETSIDE CURB NOTCHES TO BE LOCATED AS IDENTIFIED ON PROJECT PLANS.
 - ACTUAL ELEVATIONS AND RELATIONSHIPS BETWEEN FEATURES TO BE CONSTRUCTED AS IDENTIFIED ON PROJECT PLANS.
 - SPLASH PAD: INSTALL CONCRETE SPLASH PAD AT EACH CURB NOTCH.
 - CHECK DAMS SHALL BE PLACED ACCORDING TO INDIVIDUAL PROJECT PLANS.
 - SWALE SHALL HAVE A FLAT BOTTOM IN ALL DIRECTIONS TO WITHIN A HALF INCH.

**CITY OF ALBANY, OREGON
PUBLIC WORKS DEPARTMENT**
STREETSIDE SHALLOW SWALE PLAN VIEW
NO SCALE JANUARY 2018 NO. 603A



- NOTES**
- PROVIDE PROTECTION FROM ALL VEHICLE TRAFFIC, EQUIPMENT STAGING, AND FOOT TRAFFIC IN PROPOSED FACILITY AREAS PRIOR TO, DURING, AND AFTER CONSTRUCTION.
 - GROWING MEDIUM SHALL BE PLACED IN EVEN LIFTS NO GREATER THAN 8 INCHES IN DEPTH, AS MEASURED LOOSELY. LIFTS SHALL BE MODERATELY COMPACTED BY USE OF A SAND OR WATER FILLED LAWN ROLLER. MECHANICAL COMPACTON WITH JUMPING JACKS OR SIMILAR EQUIPMENT IS PROHIBITED.
 - GROWING MEDIUM IN EACH FACILITY SHALL BE PLACED AND SHAPED THE SAME DAY AND IMMEDIATELY UPON COMPLETION ITS SURFACE SHALL BE PROTECTED WITH STRAW MATTING OR JUTE MATTING.
 - IMPERMEABLE LINER SHALL BE USED ONLY IF REQUIRED ON PROJECT PLANS.
 - VEGETATION: INSTALL PER PLANTING SCHEDULE.
 - IN UNLINED FACILITIES, BOTTOM OF PERFORATED DRAIN PIPE SHALL BE SET AT 2 1/2" ABOVE EXISTING SUBGRADE. IN LINED FACILITIES, BOTTOM PERFORATED DRAIN PIPE SHALL BE SET AT BASE OF DRAIN ROCK LAYER.

**CITY OF ALBANY, OREGON
PUBLIC WORKS DEPARTMENT**
STREETSIDE SHALLOW SWALE SECTION VIEW
NO SCALE JANUARY 2015 NO. 603B

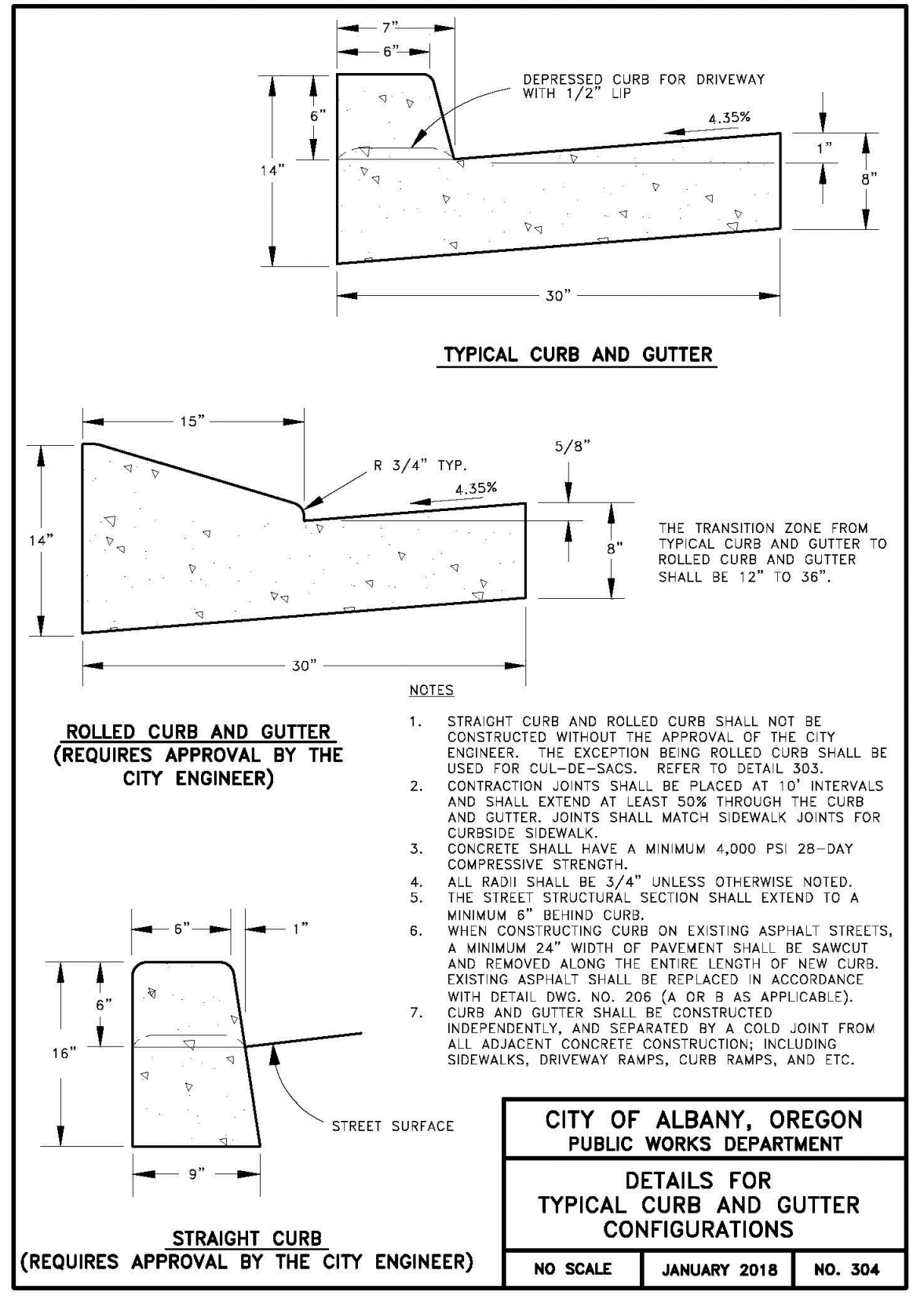


**TABLE A
STANDARD SIDEWALK WIDTH
(STANDARD LOCATION) (APPROVAL REQUIRED)**

STREET TYPE	SETBACK SIDEWALK (STANDARD LOCATION)	CURBSIDE SIDEWALK (APPROVAL REQUIRED)
ARTERIALS AND COLLECTORS	6 FT.	7 FT.
LOCAL	5 FT.	6 FT.

- STANDARD SIDEWALK SPECIFICATIONS**
- STANDARD SIDEWALK SHALL BE CONSTRUCTED A MINIMUM OF 4" BEHIND THE CURB. SIDEWALK CONSTRUCTED ADJACENT TO THE CURB IS NOT PERMITTED WITHOUT APPROVAL OF THE ENGINEER.
 - CONCRETE FOR SIDEWALK SHALL HAVE A COMPRESSIVE STRENGTH OF 4000 PSI AND A 2" TO 4" SLUMP.
 - THE SIDEWALK AND LANDSCAPE STRIP SHALL SLOPE TOWARD THE CURB AT 2% GRADE. HORIZONTAL AND VERTICAL ALIGNMENT SHALL NOT VARY MORE THAN 1/4" FROM ESTABLISHED LINE AND GRADE AS MEASURED WITH A STRAIGHT EDGE.
 - COLD JOINTS SHALL BE LOCATED IN SIDEWALKS AT DRIVEWAY SECTIONS AND CHANGES OF DIRECTION. SIDEWALK SHALL NOT BE CONSTRUCTED MONOLITHICALLY WITH CURBS OR OTHER ADJACENT NON-PEDESTRIAN SURFACES. FULL DEPTH JOINT MATERIAL (2 WIPES MAX. OF NO. 15 ROOFING FELT) SHALL BE PLACED AROUND UTILITY POLES AND FIRE HYDRANTS LOCATED WITHIN THE SIDEWALK AREA.
 - THE SIDEWALK SHALL BE DIVIDED INTO EVENLY SPACED PANELS USING A ROUNDED JOINTING TOOL. PANEL LENGTH SHALL EQUAL SIDEWALK WIDTH.
 - CONTRACTION JOINTS SHALL BE CONSTRUCTED AT EVERY OTHER PANEL MARK. DEPTH OF THE JOINTS SHALL BE 1.5" IN SIDEWALK SECTIONS AND 2" IN DRIVEWAY SECTIONS.
 - ALL SIDEWALKS SHALL BE FINISHED WITH A "LIGHT BROOM" FINISH. THE DIRECTION OF BROOMING SHALL BE PERPENDICULAR TO THE LENGTH OF THE SIDEWALK. OUTSIDE EDGES OF THE SIDEWALK AND PANEL MARKS SHALL BE FINISHED WITH A STANDARD EDGING TOOL HAVING A 1/2" RADIUS.
 - SEE DETAIL DWG. NO. 314 FOR SIDEWALK SPECIFICATIONS RELATIVE TO CONSTRUCTION AROUND OBSTACLES (MAILBOXES, POLES, ETC.).
 - CONCRETE SIDEWALK ADJACENT TO ROLLED CURB SHALL HAVE A 6" MIN. THICKNESS.

**CITY OF ALBANY, OREGON
PUBLIC WORKS DEPARTMENT**
STANDARD (SETBACK) SIDEWALK
NO SCALE JANUARY 2018 NO. 313



- ROLLED CURB AND GUTTER (REQUIRES APPROVAL BY THE CITY ENGINEER)**
- STRAIGHT CURB AND ROLLED CURB SHALL NOT BE CONSTRUCTED WITHOUT THE APPROVAL OF THE CITY ENGINEER. THE EXCEPTION BEING ROLLED CURB SHALL BE USED FOR CUL-DE-SACS. REFER TO DETAIL 303.
 - CONTRACTION JOINTS SHALL BE PLACED AT 10' INTERVALS AND SHALL EXTEND AT LEAST 50% THROUGH THE CURB AND GUTTER. JOINTS SHALL MATCH SIDEWALK JOINTS FOR CURBSIDE SIDEWALK.
 - CONCRETE SHALL HAVE A MINIMUM 4,000 PSI 28-DAY COMPRESSIVE STRENGTH.
 - ALL RADIUS SHALL BE 3/4" UNLESS OTHERWISE NOTED.
 - THE STREET STRUCTURAL SECTION SHALL EXTEND TO A MINIMUM 6" BEHIND CURB.
 - WHEN CONSTRUCTING CURB ON EXISTING ASPHALT STREETS, A MINIMUM 24" WIDTH OF PAVEMENT SHALL BE SAWCUT AND REMOVED ALONG THE ENTIRE LENGTH OF NEW CURB. EXISTING ASPHALT SHALL BE REPLACED IN ACCORDANCE WITH DETAIL DWG. NO. 306 (A OR B AS APPLICABLE).
 - CURB AND GUTTER SHALL BE CONSTRUCTED INDEPENDENTLY, AND SEPARATED BY A COLD JOINT FROM ALL ADJACENT CONCRETE CONSTRUCTION, INCLUDING SIDEWALKS, DRIVEWAY RAMPS, CURB RAMPS, AND ETC.

**CITY OF ALBANY, OREGON
PUBLIC WORKS DEPARTMENT**
DETAILS FOR TYPICAL CURB AND GUTTER CONFIGURATIONS
NO SCALE JANUARY 2018 NO. 304

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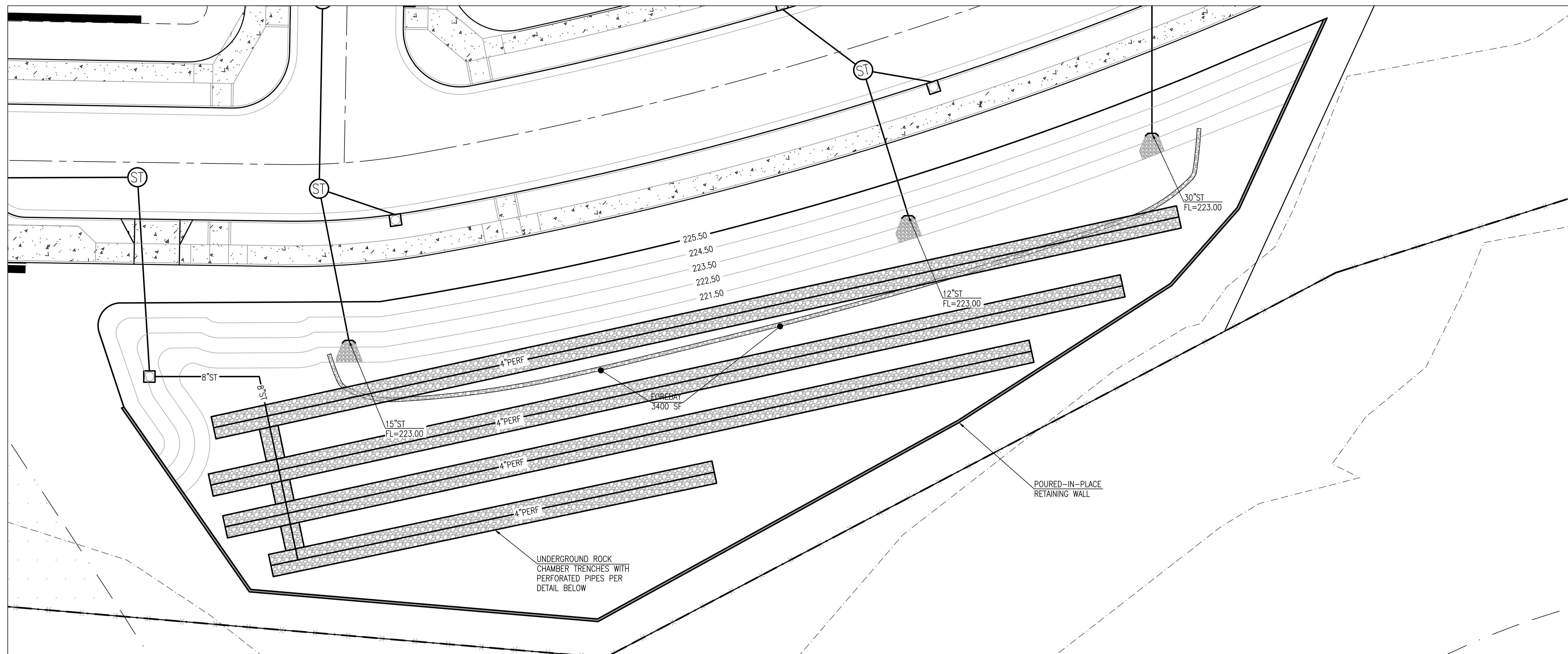
REGISTERED PROFESSIONAL ENGINEER
9141275
OREGON
MAY 2008
EXPIRES 12/24

Civil Details
for
Meadowlark Estates Subdivision
Linn County
Oregon
Albany

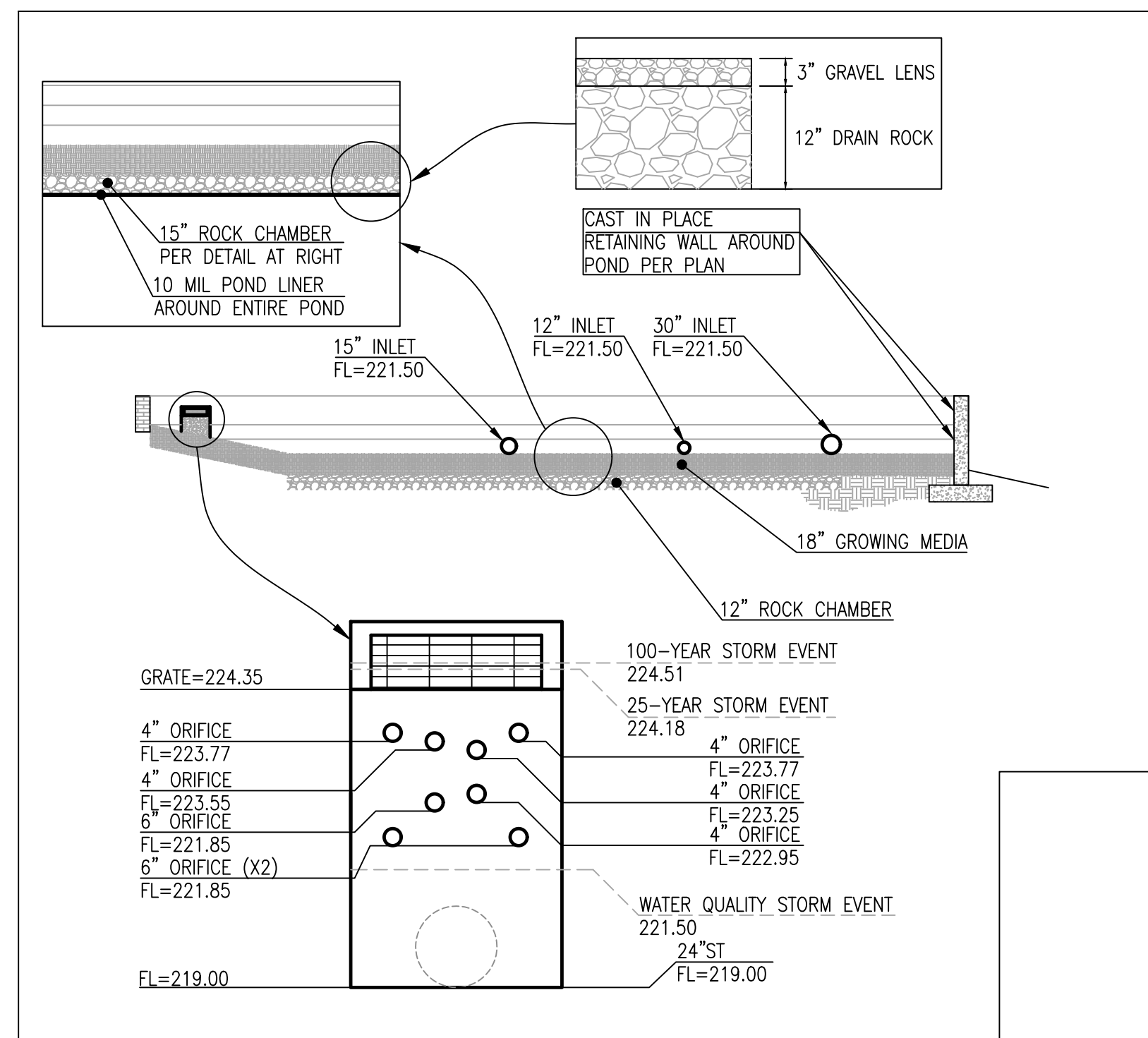
DATE: 8-1-22
PROJECT No.: 5291
SCALE: HORIZ
VERT: _____
DRAWN BY: ACH
DESIGNED BY: KJM
REVIEWED BY: SDM

SUBMITTALS:

REVISIONS:



SW DETENTION POND DETAIL
PLAN VIEW SCALE: 1"=15'



SW DETENTION POND DETAIL
CROSS-SECTION SCALE: 1"=15'

- DETENTION POND NOTES:**
- POURED-IN-PLACE BLOCK RETAINING WALL SHALL BE INSTALLED PER STRUCTURAL DRAWINGS.
 - BLOCK LANDSCAPE BLOCK RETAINING WALL TO BE INSTALLED IN COMPLIANCE WITH ALL MANUFACTURE'S SPECIFICATIONS.
 - GROWING MEDIA SHALL BE IMPORTED TOPSOIL WITH HIGH INFILTRATION CHARACTERISTICS AND ALLOW FOR GRASS SEED TO GROW, CONTRACTOR SHALL SUBMIT CUT SHEET OF MEDIA SOIL TO ENGINEER FOR APPROVAL PRIOR TO ORDERING. THE SOIL MEDIA SHALL MEET CITY OF ALBANY SPECIFICATIONS.
 - PONDS SHALL BE HYDROSEEDED WITH SUNMARK NATIVE WATER QUALITY MIX OR EQUIVALENT.
 - ROCK CHAMBER SHALL BE FILLED WITH 1/2"-2 1/2" CLEAN ROUND ROCK UNCOMPACTED.
 - FLOW-CONTROL STRUCTURE TO BE ODOT TYPE D DITCH INLET.
 - POND SHALL BE HYDROSEEDED AT TIME OF YEAR (TYPICALLY SPRING OR FALL) WHEN WEATHER SUPPORTS SUCCESSFUL SEED GERMINATION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE SUCCESSFUL SEED GERMINATION AND SHALL REPLACE SEED UNTIL SUCCESSFUL GROWTH. CONTRACTOR CAN INSTALL A TEMPORARY (ABOVE GROUND) IRRIGATION SYSTEM IF DESIRED TO PLANT DURING SUMMER MONTHS.
 - POND SHALL HAVE 4" PERFORATED PIPES CONNECTED TO THE OVERFLOW STRUCTURE AS SHOWN ON PLAN.
 - FOR FOREBAY WALL CONSTRUCTION SEE DETAIL ON THIS SHEET.

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SCOTT@AOENGINEERING.LL.C

Civil Details
for
Meadowlark Estates Subdivision
Albany Linn County Oregon

DATE:	8-1-22
PROJECT NO.:	5291
SCALE:	AS SHOWN
VERT.:	
DRAWN BY:	ACH
DESIGNED BY:	KOM
REVIEWED BY:	SJM

SUBMITTALS:	
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REVISIONS:	
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Land Use Application for Meadowlark Estates Subdivision

Submitted to:	City of Albany Planning Division 333 Broadalbin St SW Albany, OR 97321
Property Owner:	Loren Gerig 2089 Silver Falls Drive NE Silverton, OR 97381
Applicant:	Brian Thoreson Hayden Homes 2464 SW Glacier Pl Ste 110 Redmond, OR 97756
Applicant Representative:	Scott Morris, PE A & O Engineering LLC 380 Q Street Ste 200 Springfield, OR 97477 scottmorris@ao-engr.com
Site Location:	3795 Lochner Road SE
Assessors Map:	11S-03W-20; Tax Lot 600
Site size:	35.32 acres
Land Use District:	RS-6.5



Hayden Homes is pleased to submit this application for a phased subdivision to create 176 lots for the future construction of detached, single-family homes. The project site consists of one tax lot totaling 35.32 acres and is currently zoned RS-6.5.

The essential components of the Meadowlark Estates Subdivision application include:

- 176 lots that meet or exceed City standards for future, detached, single-family homes
- Preservation and enhancement of natural areas as permanent open space
- Cluster development to protect natural features, provide needed housing, and maintain anticipated housing density across the subject property.
- An interconnected public street system, including sidewalks and landscaping strips.
- Integrated on-site stormwater management system

The Meadowlark subdivision is a “needed housing” application under Oregon Revised Statute (ORS) 197.303(1)(a) as it provides detached single-family housing on buildable land, as defined in Oregon Administrative Rules OAR 660-008-0005. ORS 197.307(4) states that a local government may apply only clear and objective standards, conditions, and proceedings regulating the development of needed housing on buildable land.

This application includes the City of Albany (City) application forms, written materials, and preliminary plans necessary for the City to review and determine compliance with applicable approved criteria.

Site Description/Setting

The subject property is located in South Albany, East of Lochner Road SE (Arterial Street). The site consists of one tax lot and the total acreage is 35.32 acres.

The area is bounded to the north by railroad tracks and an agricultural field, to the south by a single-family home and associated outbuildings, open space and Oak Creek (on the adjacent tax lot), to the east by an existing housing development. A cold storage facility and the Oak Creek Youth Correctional Facility are located west of Lochner Road SE. Land use around the study area includes agriculture, single-family residential, and open space.



ADJACENT PROPERTY	ZONING	CURRENT USES
North	Urban Growth Boundary	Railroad Tracks, Agriculture
East	RS-6.5	Existing Housing Development
South	Urban Growth Boundary, RS-6.5	Open Space, Single Family homes
West	Light Industrial	Cold Storage Facility, Youth Correctional Facility

The parcel consists of generally flat topography, with elevations on site ranging from 225 to 230 feet. A Bonneville Power Administration (BPA) easement with overhead lines and transmission towers also extends along the northern side of the property. The SW portion of the site has a steeper slope to the South and has a small area of floodplain as shown on the site plan.

The subject property consists of land that has been managed for agricultural production (grass seed or hay), and is likely tilled and planted at least once a year. The area is dominated by a monoculture of tall false rye grass (*Schedonorus arundinacea*, FAC).

Criterion 1: *The proposal meets the development standards of the underlying zoning district, and applicable lot and block standards of this Article.*

11.090 Lot and Block Arrangements. *In any single-family residential land division, lots and blocks shall conform to the following standards in this Article and other applicable provisions of this Code:*

(1) Lot arrangement must be such that there will be no foreseeable difficulties, for reason of topography or other condition, in securing building permits to build on all lots in compliance with the requirements of this Code with the exception of lots designated Open Space.

The underlying zone of the proposed property is RS-6.5. The applicant is proposing a cluster development and The Tentative Phased Subdivision Plans show that each lot will meet the applicable dimensional requirements for Section 11.495, as applicable. Each lot will also have adequate frontage on a public street. See below for Cluster Subdivision standards.



(2) Lot dimensions must comply with the minimum standards of this Code. When lots are more than double the minimum area designated by the zoning district, those lots must be arranged so as to allow further subdivision and the opening of future streets where it would be necessary to serve potential lots. An urban conversion plan may be required in conjunction with submittal of tentative subdivision or partition plat.

Lochner Road SE is an Arterial Street that runs along the entire West boundary of the property and is the only potential access point for the development. Although the recommended distance between intersections is 1800 linear feet, this development is proposed to have intersections 756 feet apart (centerline to centerline). The streets have been analyzed by the project Traffic Engineer (Access Engineering LLC) and they have indicated this does not cause a safety concern. These intersections are placed as far apart as practical taking into account existing wetland and slope constraints on the property.

The lot and block arrangements have been made such that there will be no foreseeable difficulties in securing building permits to build on all lots in compliance with requirements of this Code. There are fourteen double frontage lots along Lochner Road. Lochner Road is an arterial street, therefore the double frontage lots were created to provide separation between the residential development and the road.

(3) Double frontage lots shall be avoided except when necessary to provide separation of residential developments from streets of collector and arterial street status or to overcome specific disadvantages of topography and/or orientation. When driveway access from arterials is necessary for several adjoining lots, those lots must be served by a combined access driveway in order to limit possible traffic hazards on such streets. The driveway should be designed and arranged so as to avoid requiring vehicles to back into traffic on arterials. An access control strip shall be placed along all lots abutting arterial streets requiring access onto the lesser class street where possible.

As mentioned above, there are fourteen double frontage lots proposed. This is due to Lochner Road being an arterial street. The double frontage lots are proposed so there is adequate separation between the arterial road and the proposed subdivision.

(4) Side yards of a lot shall run at right angles to the street the property faces, except that on a curved street the side property line shall be radial to the curve.

The Tentative Phased Subdivision show side yards will run at right angles to the street as far as practicable. The applicable criterion is met.



(5) The average block length shall not exceed 600 feet. Block length is defined as the distance along a street between the centerline of two intersecting through streets (Figure 11.090-1).

The Tentative Phased Subdivision Plans show blocks are planned to be less than 600 feet in length as measured from centerline to centerline. The applicable criteria are met.

(6) Off-street pedestrian pathways shall be connected to the street network and used to provide pedestrian and bicycle access in situations where a public street connection is not feasible.

The Tentative Phased Subdivision Plans show that each lot has access to a public street, and there are no dead ends or cul-de-sacs. The criteria are met. There is area set aside for a separated pedestrian/bike path in related Tracts. These are to be consistent with future paths shown in the South Albany Area Plan. No path construction is proposed with this cluster subdivision application.

With the minimum of townhouse development, the minimum frontage of a lot on a cul-de-sac shall be 22 feet as measured perpendicular to the radius.

The minimum lot frontage in the proposed subdivision is 24 feet, with most lots being above that number.

(8) Flag lots are allowed only when the City Engineer has determined that the dedication and improvement of a public street is not feasible or not practical. The minimum width for a flag is 22 feet, except when access is shared by an access and maintenance agreement in which case each lot shall have a minimum width of 12 feet and a combined minimum of 24 feet.

There are no flag lots proposed as part of this subdivision.

(9) At all street intersections, an arc along the property lines shall be established so that construction of the street at maximum allowable width, centered in the right-of-way, shall require not less than a twenty-foot radius of the curb line.

The Tentative Phased Subdivision Plans show street intersections that meet applicable standards. The criterion is met.

Criterion 2: Development of any remainder of property under the same ownership can be accomplished in accordance with the Code.

The area is bounded to the north by railroad tracks and an agricultural field, to the south by a single-family home and associated outbuildings, open space and Oak Creek (on the adjacent tax lot), to the



east by an existing housing development. A cold storage facility and the Oak Creek Youth Correctional Facility are located west of Lochner Road SE. Land use around the study area includes agriculture,

The Subject property is 35.32 acres. As shown on the Tentative Phased subdivision Plans, natural areas span 12.88 Acres. Open space covers approximately 36.9% of the parcel. More than 20% of the site is preserved as permanent natural area.

Due to environmental features (wetland area), railroad tracks and existing development (east side), the only potential future development is SouthEast of the property. The site plan includes extension of a public street and utilities to this area to allow for future development. All other areas adjacent to the site are not developable.

Criterion 3: Adjoining land can be developed or is provided access that will allow it's development in accordance with the Code.

The Tentative Phased Subdivision Plans show the applicable location, width, and grade standards for streets will be met. There are no possible connections to the North or East of the property due to wetlands and existing development. The site to the South has development potential on the Eastern side of the parcel (outside Oak Creek Riparian Setback), therefore street and utility stubs are proposed to be extended as shown on the site plan.

The existing 60 foot private access easement is to be vacated and replaced with a 20' private access easement over Tract D. An all weather access road will be provided during construction (route will vary), with ultimate access provided via Blue Jay Avenue, then through Tract D. Tract D will be conveyed to the Gerig Trust after recording of phase one plat. The will provide uninterrupted access to the existing structures on the property South of the development.

Criterion 4: The Public Works Director has determined that transportation improvements are available to serve the proposed subdivision or partition in accordance with Article 12 or will be made available at the time of development.

The planned cluster subdivision will create lots for future single-family homes. Each lot will have adequate frontage and dimensions to accommodate access, driveways, and parking. Access will be reviewed with the building permit application for each home. The applicable criteria can be met.

Criterion 5: The Public Works Director has determined that the public facilities and utilities are available to serve the proposed subdivision or partition in accordance with Article 12 or will be made available at the time of development.



The Utility Plans show the applicable requirements for sanitary sewers can or will be met. The wastewater line is proposed to be extended through the subdivision to serve all proposed lots. The wastewater line is also extended at the East end of the project for future extension to the South.

The Utility Plans show the applicable requirements for water can or will be met. Water lines are shown to be extended through the subdivision to serve all proposed lots. The water line in Finch Street is proposed to be upsized to 16" diameter and then routed back out to Lochner Road and extended to the southern property line. Water distribution line is also extended at the East end of the project for future extension to properties to the South.

The Tentative Phased Subdivision Plans show the utility easements proposed. The PUE's are proposed to be 10' on one side of all streets and 7' on the other side. Except as allowed in Section 12.400, all utilities will be located underground. The applicable criteria are met.

Criterion 6: Activities and developments within special purpose districts must comply with the regulations described in Articles 4 (Airport Approach), 6 (Natural Resources), and 7 (Historic) as applicable.

The subject property is within the Significant Natural Resource Overlay District. A wetland permit has been conditionally approved for the impact once wetland credits have been purchased. The wetland credits are proposed to be purchased after receiving approval of the land use application. A portion of the property at the South end has a small triangular shaped significant wetland that requires a 50' riparian setback as part of the Riparian Corridor Overlay. The site has been designed to avoid encroachment into this 50' riparian setback area, therefore there are no mitigation elements proposed. The extent of the significant wetland and 50' riparian setback are shown on plan sheet C-1.1.

Cluster Development Standards

11.410 Eligibility. To be eligible to apply for cluster development, all of the following are required:

(1) Residential Zoning. The site must be located in a residential zoning district.

(2) Natural and Other Special Features. The site must contain one or more of the features listed in Section 11.460

(3) Professional Designer. An applicant for cluster development approval must certify in writing that a certified landscape architect, site planner, or landscape designer, approved by the Director, will be used in the planning and design process for the proposed development.

The subject property is located in RS-6.5 zone meeting the cluster development standard. The site also contains open space and significant wetlands, meeting the cluster development standard. A & O



Engineering is the professional designer in the planning and design process for the proposed development.

11.450 Natural Area Requirements. Cluster developments must provide a minimum of 20 percent of the site as permanent natural areas. Land designated as Open Space on the Comprehensive Plan or Zoning maps may not be used to fulfill this requirement.

13.63 acres of the project are designed open space. This is approximately 39% of the site, therefore meeting the minimum 20% standard.

TRACTS	S.F.	PROPOSED USE
A	528,146	CONVEYED TO H.O.A – OPEN SPACE/WETLAND
B	36,157	STORM FACILITY CONVEYED TO CITY
C	26,688	CONVEYED TO H.O.A – OPEN SPACE/WETLAND
D	2,551	CONVEYED TO GERIG TRUST

11.460 Designation of Permanent Natural Area. The required natural area may be public or private. The minimum 20 percent of the gross acreage of the development site set aside as natural area in a cluster development shall be designated in the following priority order: [Ord. 5968, 1/14/22]

*(1) The first priority for natural area designation is significant tree groves identified on the South Albany Area Plan Organizational Framework map in the Comprehensive Plan (Figure 1), and Oregon White Oak (*Quercus garryana*) trees citywide equal to or greater than six and one-half feet in circumference (approximately 25 inches in diameter) measured as defined in Article 9.203(4). For individual trees, the natural area boundary is defined as the critical root zone (as defined in Article 9.203 (1)) plus a 10-foot buffer. [Ord. 5801, 2/13/13; Ord. 5947, 1/1/21] Albany Development Code, Article 11.11 - 15 July 1, 2023*

N/A

(2) The second priority for natural area designation is natural resources within the Significant Natural Resource overlay districts that are of degraded or marginal quality and subsequently restored to good quality in accordance with the quality levels in ADC Section 6.410(5). This priority shall be satisfied in the following order:



(a) Habitat for western painted and northwestern pond turtles within the Habitat Assessment Overlay (/HA), as identified by a turtle habitat assessment, that is restored to good quality.

(b) Wetland within the Significant Wetland overlay district (/SW) that is restored to good quality.

(c) Riparian area within the Riparian Corridor overlay district (/RC) that is restored to good quality.

The proposed site is not within the Habitat Assessment Overlay, therefore (a) is not applicable. The property does fall within the Significant Wetland overlay district. The applicant acknowledges that the property falls within the 50' buffer of the delineated riparian corridor, however there are no proposed buildings or disturbances within that 50' buffer. See sheet C-1.1 for this information.

(3) The third priority for natural area designation is protection of other environmentally sensitive areas, or natural and scenic features of the site. This priority shall be satisfied in the following order: [Ord. 5968, 1/14/22]

(a) Good quality habitat for western painted and northwestern pond turtles near Thornton Lakes within the Habitat Assessment overlay (/HA) as identified by a turtle habitat assessment.

(b) Good quality wetland within the Significant Wetland overlay district (/SW).

(c) Good quality riparian area within the Riparian Corridor overlay district (/RC).

(d) Other wetlands not within the Significant Wetland overlay district, as shown on the City's Local Wetland Inventories, or by a delineation approved by the Oregon Department of State Lands.

(e) Existing channels identified in the most current version of the City of Albany Storm Water Master Plan.

(f) Springs.

(g) Land with natural slopes 12 percent or greater as designated by the Hillside Development overlay district (/HD).

(h) Wooded area with five or more healthy trees over 25 inches in circumference (approximately eight inches in diameter) measured as defined in Article 9.203(4), if approved by the City Forester. [Ord. 5947, 1/1/21]

(i) Land that provides bike or walking trails that connect to existing or proposed parks or trails, inventoried natural features, or areas zoned Open Space; or areas otherwise protected as permanent natural areas.



(j) Incorporate public parks, trails, trailheads or open space designated in the Parks, Recreation and Open Space Plan, the North Albany Refinement Plan, and the South Albany Area Plan. [Ord. 5801, 2/13/13]

(k) Other features of the site unique to Albany, if approved by the Director.

N/A

(4) The fourth priority for natural area designation is to create “open spaces” in and around neighborhoods. This priority is satisfied by any of the following:

(a) Continuity of adjacent open space corridors or parkways.

(b) A network of interconnected open space corridors.

(c) A buffer between neighborhoods.

The site is located within the South Albany Area Plan boundary and the applicant is proposing to set aside approximately 13.57 acres as open space (39%). The open space to the North and East of the development area provides buffer between existing neighborhoods as shown on the site plans.

11.470 Creation of Permanent Natural Areas.

(1) Natural areas in a cluster development may be set aside and managed in one or more of the following ways:

(a) Portions of one or more individual lots; or

(b) Common ownership by residents of the development; or

(c) Third party (non-profit organization) whose primary purpose is to hold or manage the open space, subject to a reversionary clause in the event of dissolution of the non-profit organization; or Albany Development Code, Article 11 11 - 16 July 1, 2023

(d) Dedicated to City of Albany, if the City agrees to accept ownership and maintain the space.

The permanent natural areas will be set aside in tracts. Tract A consists of open space/wetland and it is to be conveyed to the H.O.A for maintenance. Tract B is a storm facility conveyed to the City for Ownership/maintenance. Tract C is planned to be conveyed to the H.O.A for ownership/maintenance. Tract D is to be conveyed to the Gerig Trust for access to the existing structures.

(2) Except for Subsection (1)(d) above, natural areas shall be subject to restrictive covenants and easements reviewed by the Community Development Director and recorded and filed when the subdivision plat for the project area is recorded. Except when allowed in 11.480, an easement



shall include permanent provisions prohibiting the placement of structures or impervious surfaces, alteration of the ground contours, or any other activity or use inconsistent with the purpose of these provisions.

The permanent natural areas will be set aside in tracts. Tract B will be conveyed to the City of Albany for ownership and maintenance after storm facility improvements are complete and accepted. Tract D will be conveyed to the property owner to the South after phase one plat recording. Tracts A and C will be conveyed to the HOA for ownership and maintenance.

11.480 Protection of Permanent Natural Areas.

The permanent natural area is shown on the Tentative Phased Subdivision Plans. The applicable requirements of Article 6 are met as described above in the responses to that article. Articles 4 and 7 are not applicable to this project.

11.490 Permitted Uses. The uses allowed within cluster developments outside the permanent natural areas are determined by the underlying zoning district standards in Section 3.050

The underlying zoning district is RS-6.5 which allows detached single dwelling units. Therefore this criterion is met.

11.495 Development Standards. In a cluster development, the following development standards in Table 11.495-1 supersede the same standards in Section 3.190, Table 3.190-1. The maximum density permitted by zoning district is specified in the following table.

<i>STANDARD</i>	<i>RS-6.5</i>
<i>Max dwelling units per gross acre</i>	<i>6</i>
<i>Minimum lot size</i>	<i>None</i>
<i>Minimum lot width</i>	<i>None</i>
<i>Minimum lot depth</i>	<i>None</i>
<i>Minimum front setback</i>	<i>10 ft.</i>
<i>Maximum lot coverage</i>	<i>70%</i>

Based on the RS-6.5 zoning and the acreage of the subject property, 176 single-family homes are allowed within the planned Meadowlark Estates Subdivision. The Tentative Phased Subdivision Plans show 176 lots for future single-family homes. The planned lots are configured to meet the applicable setback and lot coverage requirements. Setback and lot coverage requirements will be reviewed with the building permit application for each home. The applicable criteria are, or can be, met.



11.500 Perimeter Lot Compatibility. The following standards and exceptions will apply to the lots on the perimeter of a proposed cluster development.

(1) Standards. The term “standard minimum lot size” as used in this section, means the minimum lot size allowed in the underlying base zone without any reductions in size allowed elsewhere in this Code.

(a) When the proposed cluster development abuts developed property in a lower density residential zoning district, the size of lots on the perimeter of the proposed cluster development shall be at least the standard minimum lot size applicable to the proposed housing type that is allowed in the zone underlying the cluster development.

The subject property is zoned RS-6.5. The lowest density residential zoning district abutting the subject property is also RS-6.5. The planned cluster subdivision does not abut property in a lower density residential zoning district, and the criterion does not apply.

(b) When the proposed cluster development abuts developed property in the same residential zoning district as the proposed cluster development, the size of lots on the perimeter of the cluster development shall be at least 70 percent of the standard minimum lot size applicable to the proposed housing type that is allowed in the underlying zoning district.

The subject property is zoned RS-6.5. Abutting property to the east is zone RS-6.5. There are wetlands along the eastern perimeter of the subject property, separating existing homes to the east from the western lots planned on the subject property. The subdivision layout proposes a buffer between existing and new homes. The criterion is met.

(2) Exceptions. The Perimeter Lot Compatibility standards do not apply in the following cases:

(a) Perimeter lots that are adjacent to land that is zoned for higher density housing, mixed-use or non-residential uses, or to residentially zoned property not in residential use (such as educational, institutional, religious or park uses).

There are perimeter lots along Lochner Road. West of Lochner Road is zoned Light Industrial. This exception applies.

(b) Where the same property owner owns the property abutting the proposed cluster development or Proposed Cluster Development RS-6.5 Perimeter lots must be at least 6,500 sf Abutting Property w/ Lower Density Residential RS-10 Zoning Proposed Cluster Development RS-10.0 Perimeter lots must be at least 7,000 sf (70% of minimum lot size for underlying zoning) Abutting Property w/ Same Residential Zoning: RS-10 Albany Development Code, Article 11 11 - 18 July 1, 2023 when the perimeter lots share a property line with the Urban Growth Boundary.



The parcel south of the proposed site is owned by the same owner. This exception applies.

(c) If a buffer area is created as a separate property along the perimeter and is at least 20 feet wide, the buffer area shall become a permanent natural area and shall meet the provisions in Sections 11.470 and 11.480.

This criterion is not applicable.

(d) Cluster developments abutting property that is at least 1 acre in size.

This criterion has been met.

11.520 Street Standards for Cluster Development. Local streets in a cluster development may be constructed to the Residential Street Design for Constrained Sites as described in Section 12.122(4).

Street standards have been designed in accordance with Residential Street Design for Constrained Sites as described in section 12. In addition, many of the interior lots will be served by rear alley's to provide local streets without driveway accesses. See sheet C-1.1 for details on site layout.

11.530 South Albany Connectivity. Developments within the South Albany Area Plan boundary shall provide a connected street and pathway network.

The subject property is located in the South Albany Area Plan boundary, but the primary future trail connection is located on the property to the South. There is open space at the South end of the development in Tracts B & C that can be used by the City of Albany for a future connection (see potential route shown on sheet C-1.1 of site plan set). The applicant held a pre-application meeting with City of Albany and the discussion was to provide open space area on the north and east ends of the development to allow for a future trail connection, but not propose constructing a trail as part of this development as details of trail have not been determined by City staff. Sheet C-1.1 of the plan set shows a potential routing for this future trail, including a connection to Nighthawk Street between lots 151 & 152 located in Tract A. Therefore, this criterion is met.

**Neighborhood Meeting Report
Meadowlark Estates Subdivision**

Meeting Date: 5:00 PM, August 10th, 2023

Location: Albany Public Library

In preparation for the submission of land use application for a subdivision of the subject property, the applicant conducted a neighborhood meeting in accordance with applicable City requirements. Neighbors within 1000 feet were invited to join the meeting with a mailed notice. A general description of the application and review process were provided. Five individuals attended, and there was one call prior to the meeting.

Some of the questions asked at the meeting were:

- What is the mix/size of homes being built
- Who owns the nearby land
- If there will be street parking provided
- If there are any proposed parks in the subdivision
- If the subdivision is phased
- When is the target start date
- Will there be an HOA/how will the open space be managed

The only concern brought up was one neighbor questioning the impact on the wetlands. We explained that we had gone through the Department of State Lands to get the necessary approvals and addressed mitigation for any wetland impact.

No questions or concerns were brought up that required follow-up from the engineer or developer.

Site plan shown at meeting attached.

A & O Engineering L.L.C.
 CIVIL ENGINEERING & SITE DEVELOPMENT CONSULTING
 380 S. SUITE 300
 SPRINGFIELD, OR 97477
 PHONE: (541) 302-9790
 scott@aandoeengineering.biz



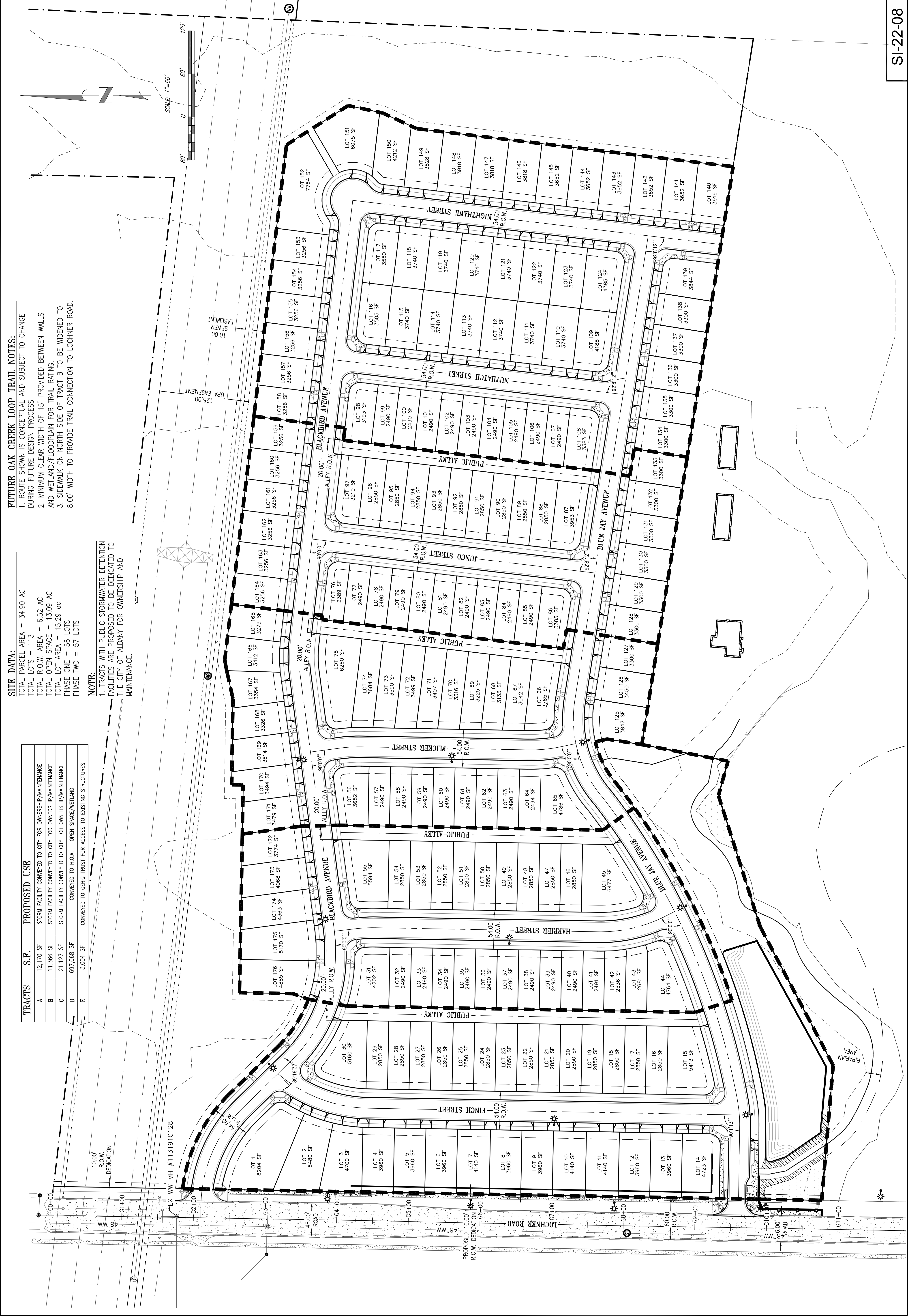
Albany
 Linn County
Meadowlark Estates Subdivision
 for
Tentative Subdivision Plan

DATE:	8-1-22
PROJECT NO.:	5291
SCALE:	HORZ: _____
VERT: _____	
DRAWN BY:	ACH
DESIGNED BY:	KDM
REVIEWED BY:	SJM

SUBMITTALS

REVISIONS

SHEET C-1.1
 2 OF 11



FUTURE OAK CREEK LOOP TRAIL NOTES:
 1. ROUTE SHOWN IS CONCEPTUAL AND SUBJECT TO CHANGE DURING FUTURE DESIGN PROCESS.
 2. MINIMUM CLEAR WIDTH OF 15' PROVIDED BETWEEN WALLS AND WETLAND/FLOODPLAIN FOR TRAIL RATING.
 3. SIDEWALK ON NORTH SIDE OF TRACT B TO BE WIDENED TO 8.00' WIDTH TO PROVIDE TRAIL CONNECTION TO LOCHNER ROAD.

SITE DATA:
 TOTAL PARCEL AREA = 34.90 AC
 TOTAL LOTS = 113
 TOTAL R.O.W. AREA = 6.52 AC
 TOTAL OPEN SPACE = 13.09 AC
 TOTAL LOT AREA = 15,29 ac
 PHASE ONE = 56 LOTS
 PHASE TWO = 57 LOTS

NOTE:
 1. TRACTS WITH PUBLIC STORMWATER DETENTION FACILITIES ARE PROPOSED TO BE DEDICATED TO THE CITY OF ALBANY FOR OWNERSHIP AND MAINTENANCE.

TRACTS	S.F.	PROPOSED USE
A	12,170 SF	STORM FACILITY CONVEYED TO CITY FOR OWNERSHIP/MAINTENANCE
B	11,366 SF	STORM FACILITY CONVEYED TO CITY FOR OWNERSHIP/MAINTENANCE
C	21,127 SF	STORM FACILITY CONVEYED TO CITY FOR OWNERSHIP/MAINTENANCE
D	697,068 SF	CONVEYED TO H.O.A. - OPEN SPACE/WETLAND
E	3,004 SF	CONVEYED TO GREGG TRUST FOR ACCESS TO EXISTING STRUCTURES

SI-22-08



A & O Engineering LLC

Oregon - Washington - Arizona

380 Q Street Suite 200 • Springfield, OR 97477

July 24, 2023,

Dear Neighbor/Property Owner

A & O Engineering LLC is holding a neighborhood meeting regarding a 176 lot subdivision for future single-family homes on an approximate 35 acre property located at 3795 Lochner Road. The subject property is shown on attached map. This is an updated layout for the previously approved project; Meadowlark Estates, approved on October 6th, 2021.

Meeting time and location:

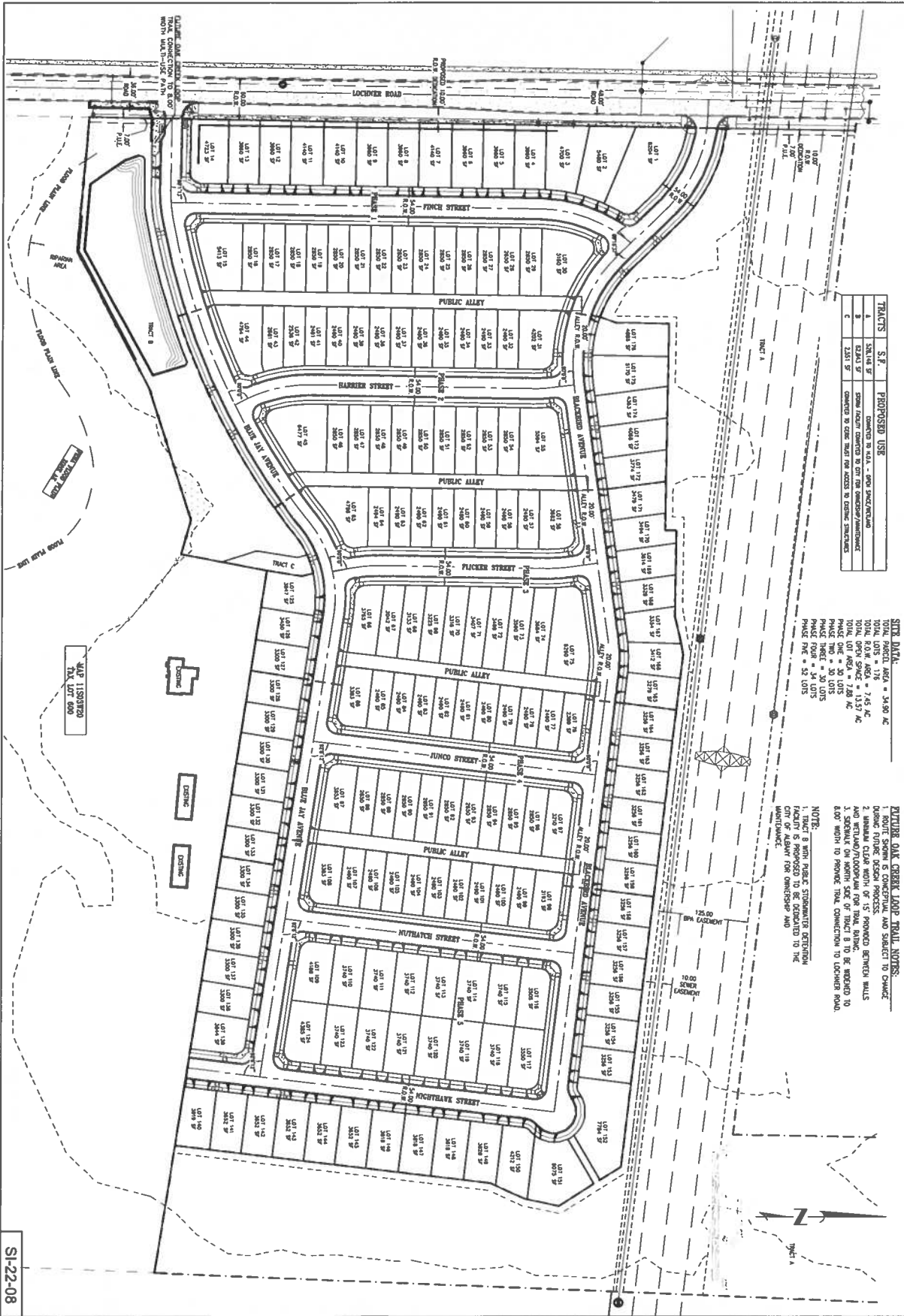
Time - Thursday August 10th - 5:00 PM

Location - Albany Public Library Meeting Room
2450 14th Ave SE
Albany, OR 97322

You are receiving this letter because you are listed as the owner of property within 1000' of the planned subdivision. This will be an open house drop-in format to answer questions about the project prior to City Submittal. Please note that the attached site plan is based on preliminary plans. This plan might be altered prior to submittal of the application to the city. We look forward to discussing this project with you. If you have any questions, feel free to contact us at (541) 302-9790 or scottmorris@ao-engr.com.

Sincerely,
A & O Engineering LLC

Scott Morris, PE



TRACTS	S.F.	PROPOSED USE
A	324,148 SF	CONVERTED TO MULTY - OPEN SPACE/RECREATION
B	82,241 SF	CONVERTED TO MULTY - OPEN SPACE/RECREATION
C	2,541 SF	CONVERTED TO OPEN SPACE/RECREATION

SITE DATA:
 TOTAL PROJECT AREA = 34,930 AC
 TOTAL PROJECT AREA = 7,45 AC
 TOTAL OPEN SPACE = 13,57 AC
 TOTAL LOT AREA = 7,28 AC
 PAVEMENT = 30 LOTS
 PAVEMENT AREA = 34 LOTS
 PAVEMENT = 32 LOTS

NOTE:
 1. ROUTE SHOWN IS CONCEPTUAL AND SUBJECT TO CHANGE.
 2. UNPAVED DRIVE NORTH OF 15' PROMISED BETWEEN WALLS AND RETIQUARD/FLOODWALL FOR TRAIL DRINK.
 3. SIDEWALK ON NORTH SIDE OF TRACT B TO BE DEIGNED TO 8.00' WIDTH TO PROVIDE TRAIL CONNECTION TO LOCKNER ROAD.
 FACILITY IS PROPOSED TO BE DEDICATED TO THE CITY OF ALABY FOR OWNERSHIP AND MAINTENANCE.

SI-22-08

SHEET C-1.2 3 OF 49	REVISIONS: _____ _____ _____	SUBMITTALS: _____ _____ _____	DATE: 8-1-22 PROJECT No.: 2281 SCALE: _____ DRAWN BY: JCH DESIGNED BY: JCH REVIEWED BY: JCH	<p>Tentative Subdivision Plan for Meadowlark Estates Subdivision Albany Linn County Oregon</p>	<p>EXPIRES 12/22</p>	<p>A & O Engineering L.L.C. CIVIL ENGINEERING & SITE DEVELOPMENT CONSULTING 388 Q. FT. AVENUE SW SPENCERFIELD, OR 97177 PHONE: (541) 862-4786 www.aandoe.com</p>
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Wetland Delineation Lochner Road SE Property Albany, Oregon

(Township 11 South, Range 3 West, Section 20, Portion of Tax lot 600)

Prepared for

James Limerick, Land Development Manager
Hayden Homes
2464 SW Glacier Place
Redmond, OR 97756

Prepared by

Carlee Michelson, Joe Thompson,
Shawn Eisner, Amy Hawkins,
John van Staveren

Pacific Habitat Services, Inc.
Wilsonville, Oregon 97070
(503) 570-0800
(503) 570-0855 FAX

PHS Project Number: 6869

January 14, 2021



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APPENDIX D: Wetland Definitions and Methodology (Client only)	

I. INTRODUCTION

Pacific Habitat Services, Inc. (PHS) conducted a wetland delineation for the Lochner Road SE development site in Albany, Oregon (Township 11 South, Range 3 West, Section 20, portion of Tax lot 600). This report presents the results of PHS's wetland delineation within the study area. Figures, including a map depicting the location of wetlands within the study area, are located in Appendix A. Data sheets documenting on-site conditions are in Appendix B. Ground-level photos of the site are located in Appendix C. A discussion of the wetland delineation methodology, provided for the client, is in Appendix D.

II. RESULTS AND DISCUSSION

A. Landscape Setting and Land Use

The study area is adjacent to and east of Lochner Road SE, and consists of the northern portion of tax lot 600 in Albany, Oregon. The study area is bounded to the north by railroad tracks and an agriculture field, to the south by a single-family home and associated outbuildings, open space and Oak Creek (on the remainder of tax lot 600), to the east by an existing housing development. A cold storage facility and the Oak Creek Youth Correctional Facility are located west of Lochner Road SE. Land use around the study area includes agriculture, single-family residential, and open space.

The study area consists of generally flat topography, with elevations on site ranging from 225 to 230 feet. A gravel driveway bisects the western portion of the study area.

The study area consists of land that has been managed for agricultural production (grass seed or hay), and is likely tilled and planted at least once a year. At the time of the site visit, the study area was planted with a monoculture of tall false rye grass (*Schedonorus arundinacea*, FAC).

There are no roadside ditches or wetlands adjacent to Lochner Road SE.

B. Site Alterations

The Google Earth historical photos of the study area from 1994 (the earliest available) through 2018 shows no changes within the site, other than different types of planted crops.

No recent fill material or deposits were observed within the study area.

C. Precipitation Data and Analysis

The Lochner Road SE study area was delineated on October 15, 2020; precipitation data for the months preceding this period is summarized below.

A WETS table for the Albany area was unavailable at the time of this report. As such, precipitation data was used from a station at the Salem Airport (McNary Field), located approximately 21.75 miles northeast of the site.

Table 1 compares the most recent monthly precipitation amounts recorded to the average monthly precipitation recorded in Salem, as well as to the normal precipitation range as identified in the Natural Resource Conservation Service's (NRCS) WETS climate table for the Salem AP (McNary Field) station. These data show that when rainfall amounts have varied most significantly from the mean, the amounts may also have fallen outside the normal range of variability for this area. For this period, August and September were within the normal range of variation for the area; however, July was below average, as only a trace amount of precipitation was observed.

Table 1: Comparison of average and observed monthly precipitation in Salem, prior to the October delineation fieldwork.

Month	Average Precipitation ¹	30% Chance Will Have		Observed Precipitation ²	Percent of Normal
		Less Than Average ¹	More Than Average ¹		
July*	0.18	0.07	0.19	Trace	0%
August	0.34	0.10	0.35	0.12	35%
September	1.40	0.55	1.70	1.36	97%

Notes: 1. Source: NRCS WETS Table for Salem AP (McNary Field) (<http://agacis.rcc-acis.org>)

2. Source: NRCS monthly precipitation data (Salem) (<http://agacis.rcc-acis.org>)

*-----Monthly rainfall was *below* the 'normal' range

**-----Monthly rainfall was *above* the 'normal' range

Total observed precipitation for the previous water year (October 1, 2019 through September 30, 2020) was 27.91 inches, which was approximately 70 percent of the normal for those months. Table 2 shows daily precipitation totals for the two weeks prior to the fieldwork conducted on October 15, 2020; as the table shows, no precipitation was recorded on the day of the delineation fieldwork.

Table 2: Daily precipitation totals for two weeks prior to and including the day of fieldwork.

Date	Precipitation (inches)	Date	Precipitation (inches)
1-Oct	0.00	9-Oct	0.10
2-Oct	0.00	10-Oct	0.85
3-Oct	0.00	11-Oct	0.31
4-Oct	0.00	12-Oct	0.23
5-Oct	0.00	13-Oct	0.16
6-Oct	0.00	14-Oct	0.00
7-Oct	0.00	15-Oct	0.00
8-Oct	0.00		

The precipitation fluctuations preceding the delineation are not expected to have affected the wetland boundary because the delineation generally relied on the presence of hydric soil indicators and micro-topography to define the wetland/upland boundary. The wetlands appear to be the result of a shallow groundwater table, and are the result of their position in the landscape rather than the result of precipitation.

PHS believes that “normal circumstances” in terms of precipitation for this site have generally prevailed during the wetland delineation fieldwork. While varied precipitation has fallen in the months leading up to the fieldwork, this is not surprising given the mid-October timeline, which is typical before the onset of significant fall rains.

D. Methods

PHS delineated the limits of the wetlands on the site based on the presence of wetland hydrology, hydric soils, and hydrophytic vegetation, in accordance with the Routine On-site Determination, as described in the *Corps of Engineers Wetland Delineation Manual, Wetlands Research Program Technical Report Y-87-1* (“The 1987 Manual”) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region*. PHS conducted the wetland delineation within the study area on October 15.

The entire study area was investigated for the presence of wetlands or other waters. Four wetlands were delineated within the study area. Wetlands A through D were delineated based on subtle topographic changes and changes from observed hydric soils to soils where no hydric indicators were observed. The presence/absence of oxidized rhizospheres (OR) was also used to determine the wetland boundaries. Vegetation within the wetland and adjacent upland generally consists of mixed, facultative grasses that are semi-regularly harvested and plowed or tilled, and was not a good indicator of the wetland/upland boundary. Due to the time of year, the grass seedlings in several of the sample points were unable to be identified. These grasses are presumed to be facultative for the purposes of the delineation.

PHS did not take additional data in areas that are topographically higher than the wetlands (other than data needed to verify the wetland/upland boundary). Sample point 15 is located in the southwestern portion of the site, in a topographically low area. This sample point is representative of the upland areas throughout the site. The upland areas do not exhibit surface indicators of wetlands (i.e. ponded surface water, or stunted/stressed vegetation, FACW or wetter vegetation, etc.).

E. Description of all Wetlands and Other Non-Wetland Waters

Wetlands A, B, C, and D

Wetlands A, B, C, and D are similar in vegetation structure, soils, and hydrology. The wetlands are located in topographically low areas within an active agriculture field. The following table outlines Wetlands A through D.

Table 3. Summary of Wetland Areas within the Lochner Road Study Area

Wetland	Size (sq. ft. / acres)	Cowardin Class	Hydrogeomorphic (HGM) Class	Dominant Vegetation
A	2,348 / 0.05	PEMC	Slope/Flats	Unidentifiable grass
B	410,379 / 9.42	PEMC	Slope/Flats	Tall false ryegrass
C	191,050 / 4.39	PEMC	Slope/Flats	Tall false ryegrass
D	15,428 / 0.35	PEMC	Slope/Flats	Tall false ryegrass
Total	619,205 / 14.2			

PEMC = Palustrine/emergent/seasonally saturated (PEMC)

Soils within Wetlands A through D meet the hydric soil criteria for Redox Dark Surface (F6) or Depleted Dark Surface (F7).

Wetlands A through D did not exhibit surface saturation, a high water table, and/or saturation within the upper 12 inches of the soil profile during the delineation; however, ORs were observed, as well as geomorphic position and/or surface water visible on aerials to satisfy hydrologic criteria. Wetland A continues offsite to the south; Wetland B continues offsite to the northwest and south; Wetland C continues off site to the north; Wetland D does not continue offsite.

F. Deviation from Local Wetland or National Wetland Inventories

The Albany (Willamette River, Calapooia River, and Oak Creek) Local Wetland Inventory (LWI) maps wetland in the southwestern portion of the study area, which is consistent with PHS' delineation of Wetland A. The LWI also maps wetland in the northern portion of the study area, just south of the railroad tracks, which is consistent with PHS' delineation of the northern portion of Wetland B. PHS, however, also delineated a large portion of the eastern study area as Wetland B, and also delineated Wetlands C and D in the central portion of the study area. This discrepancy may be due to the areas chosen for sample points within a densely vegetated agricultural field at the time of the NWI mapping.

G. Mapping Method

PHS flagged the limits of the wetlands within the study area with blue pin flags, lime green tape was used for sample point locations. A&O Engineering, Inc., then performed a professional land survey of the delineated boundaries. The accuracy of the survey and sample points 1-15 are sub-centimeter. Sample points 16 and 17 were placed on the map using field notes; the accuracy of these data points is +/- 3 feet.

H. Additional Information

None

I. Results and Conclusions

PHS delineated Wetlands A through D within the study area. The total area of wetland within the study area boundary is 619,205 square feet (14.2 acres), as summarized in Table 3 in Section E above.

J. Required Disclaimer

This report documents the investigation, best professional judgment and conclusions of the investigators. It is correct and complete to the best of our knowledge. It should be considered a Preliminary Jurisdictional Determination of wetlands and other waters and used at your own risk unless it has been reviewed and approved in writing by the Oregon Department of State Lands in accordance with OAR 141-090-0005 through 141-090-0055.

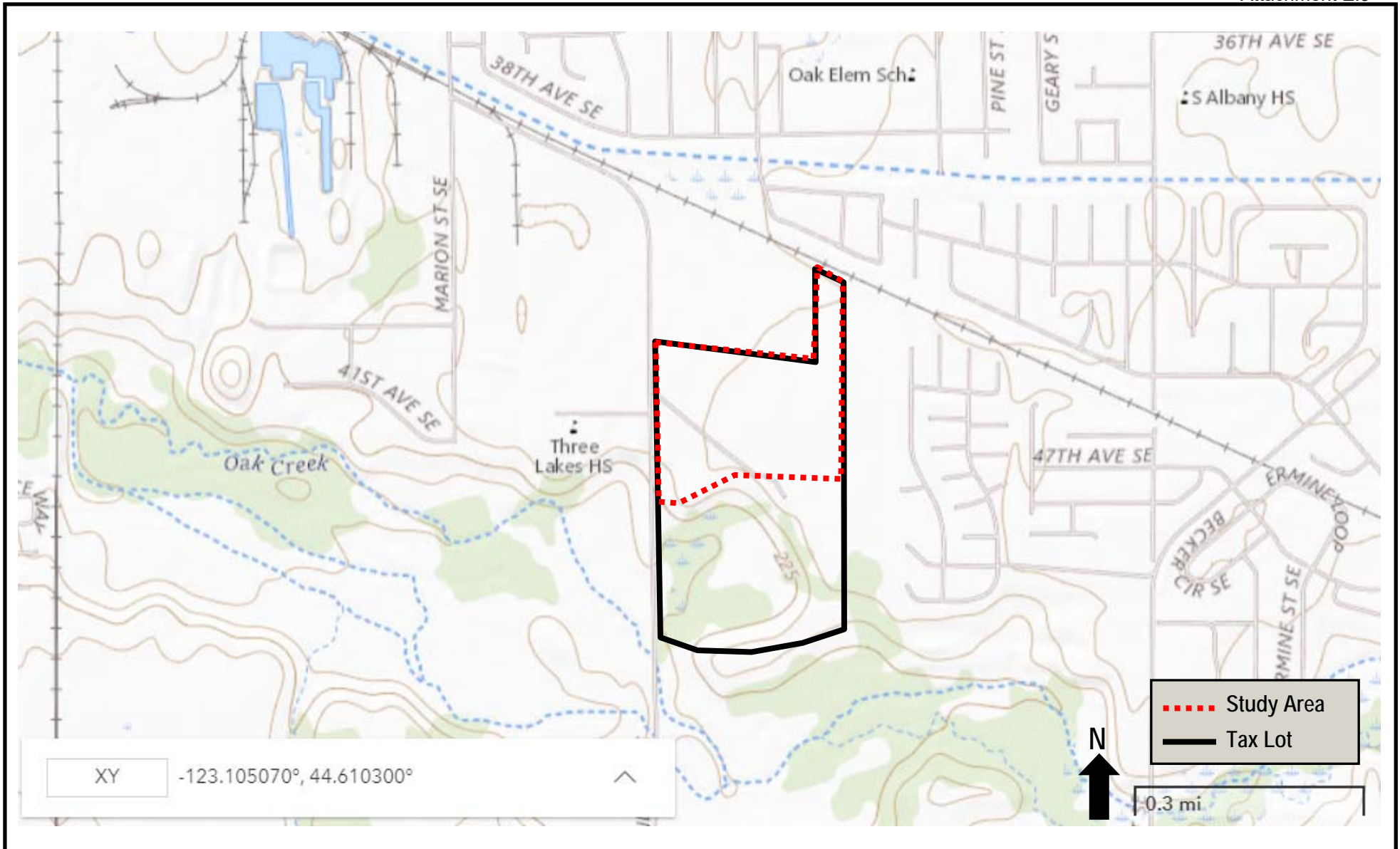
III. REFERENCES

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<https://viewer.nationalmap.gov/basic/?basemap=b1&category=ustopo&title=US%20Topo%20Download>

Appendix A

Figures





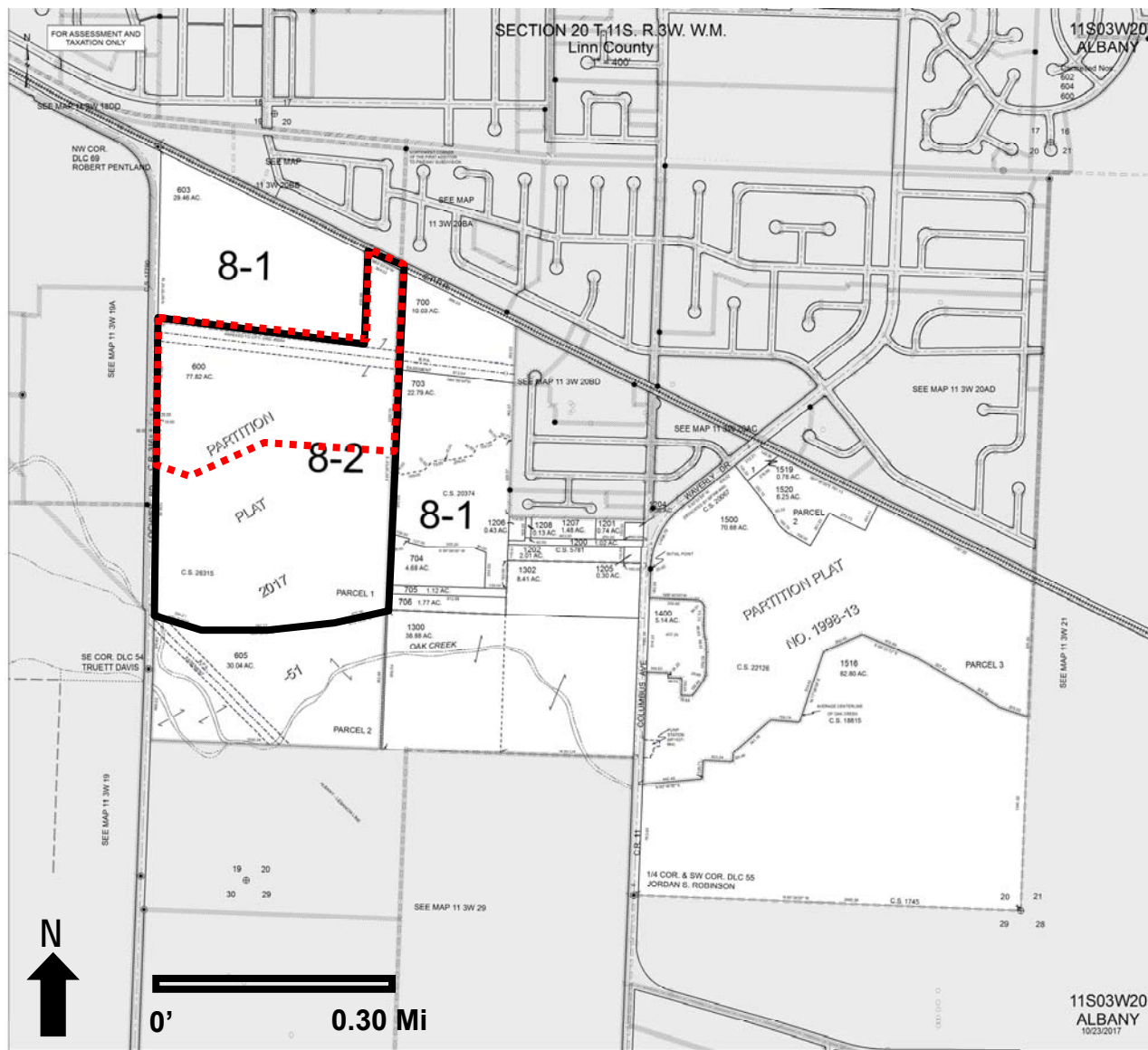
Project#6869
Date 12/16/20



Pacific Habitat Services, Inc.
9450 SW Commerce Circle, Suite 180
Wilsonville, OR 97070

General Location and Topography
Lochner Road SE Property - Albany, OR
United States Geological Survey (USGS) Tangent, Oregon 7.5 quadrangle, 2020
(viewer.nationalmap.gov/basic)

FIGURE
1



- - - - - Study Area
 Tax Lot

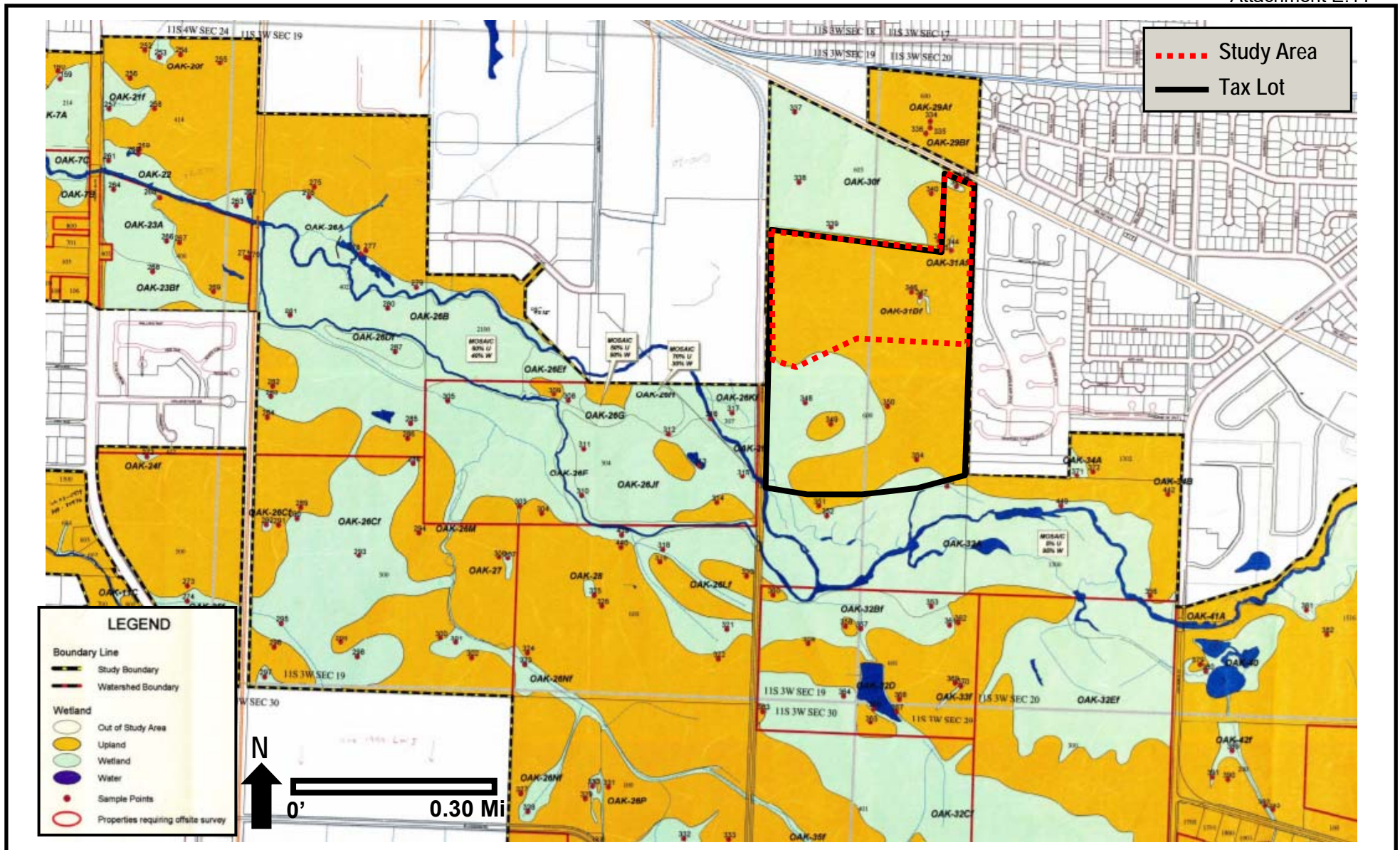
Project#6869
Date 12/16/20



Pacific Habitat Services, Inc.
9450 SW Commerce Circle, Suite 180
Wilsonville, OR 97070

Tax Lot Map
Lochner Road SE Property - Albany, OR
The Oregon Map (ormap.net)

FIGURE
2



Project#6869
Date 12/16/20



Pacific Habitat Services, Inc.
9450 SW Commerce Circle, Suite 180
Wilsonville, OR 97070

Local Wetland Inventory
Lochner Road SE Property - Albany, OR
Willamette River, Calapooia River, and Oak Creek LWI, 1999

FIGURE
3



Project #6869
 Date 12/16/20



Pacific Habitat Services, Inc.
 9450 SW Commerce Circle, Suite 180
 Wilsonville, OR 97070

Soils
 Lochner Road SE Property - Albany, OR
 Natural Resources Conservation Services, Web Soil Survey, 2020
 (websoilsurvey.sc.egov.usda.gov)

FIGURE
 4



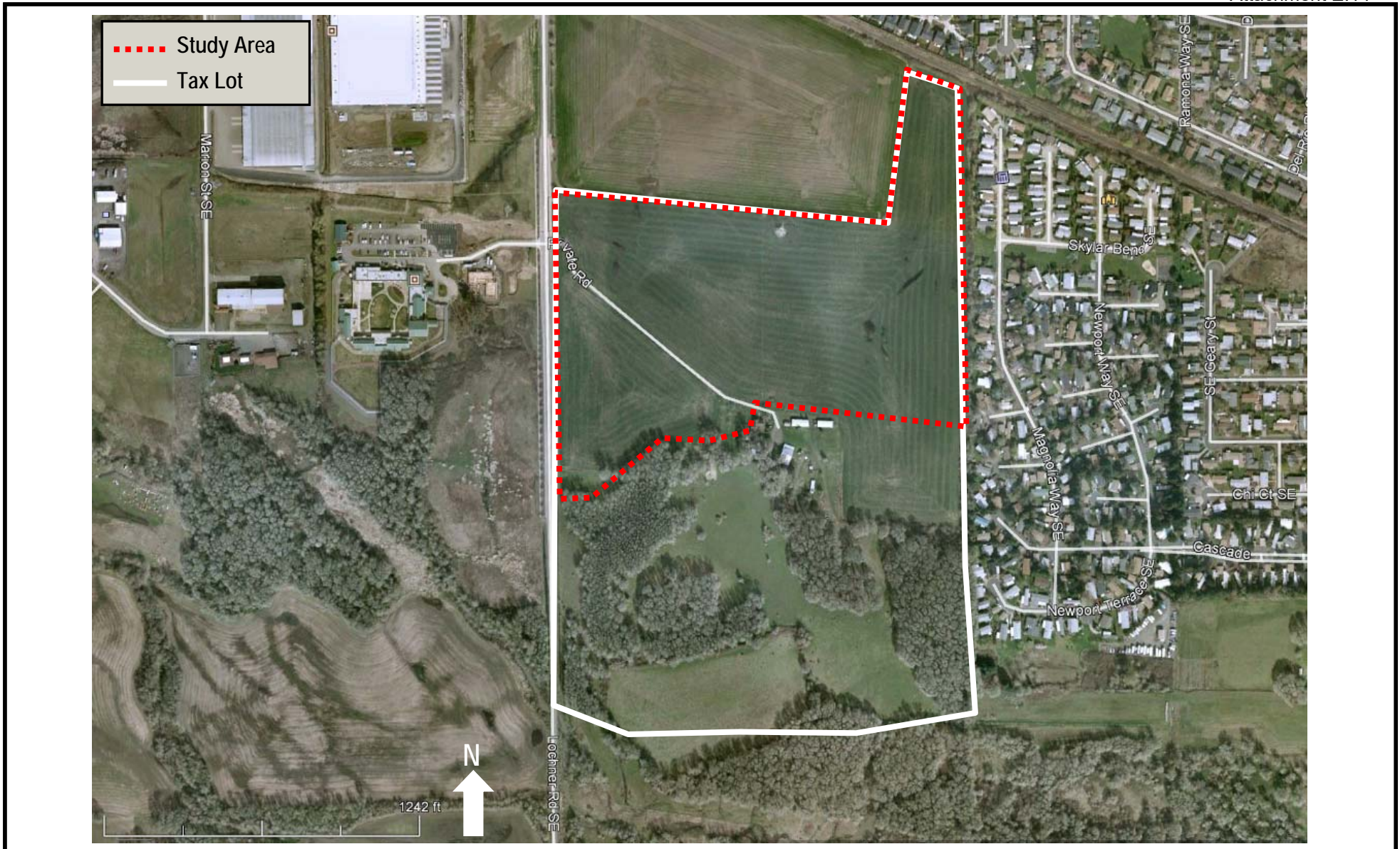
Project #6869
Date 12/16/20



Pacific Habitat Services, Inc.
9450 SW Commerce Circle, Suite 180
Wilsonville, OR 97070

July 2018 Aerial Photo
Lochner Road SE Property - Albany, OR
GoogleEarth, 2020

FIGURE
5A



Project #6869
Date 12/16/20



Pacific Habitat Services, Inc.
9450 SW Commerce Circle, Suite 180
Wilsonville, OR 97070

March 2010 Aerial Photo
Lochner Road SE Property - Albany, OR
GoogleEarth, 2020

FIGURE
5B



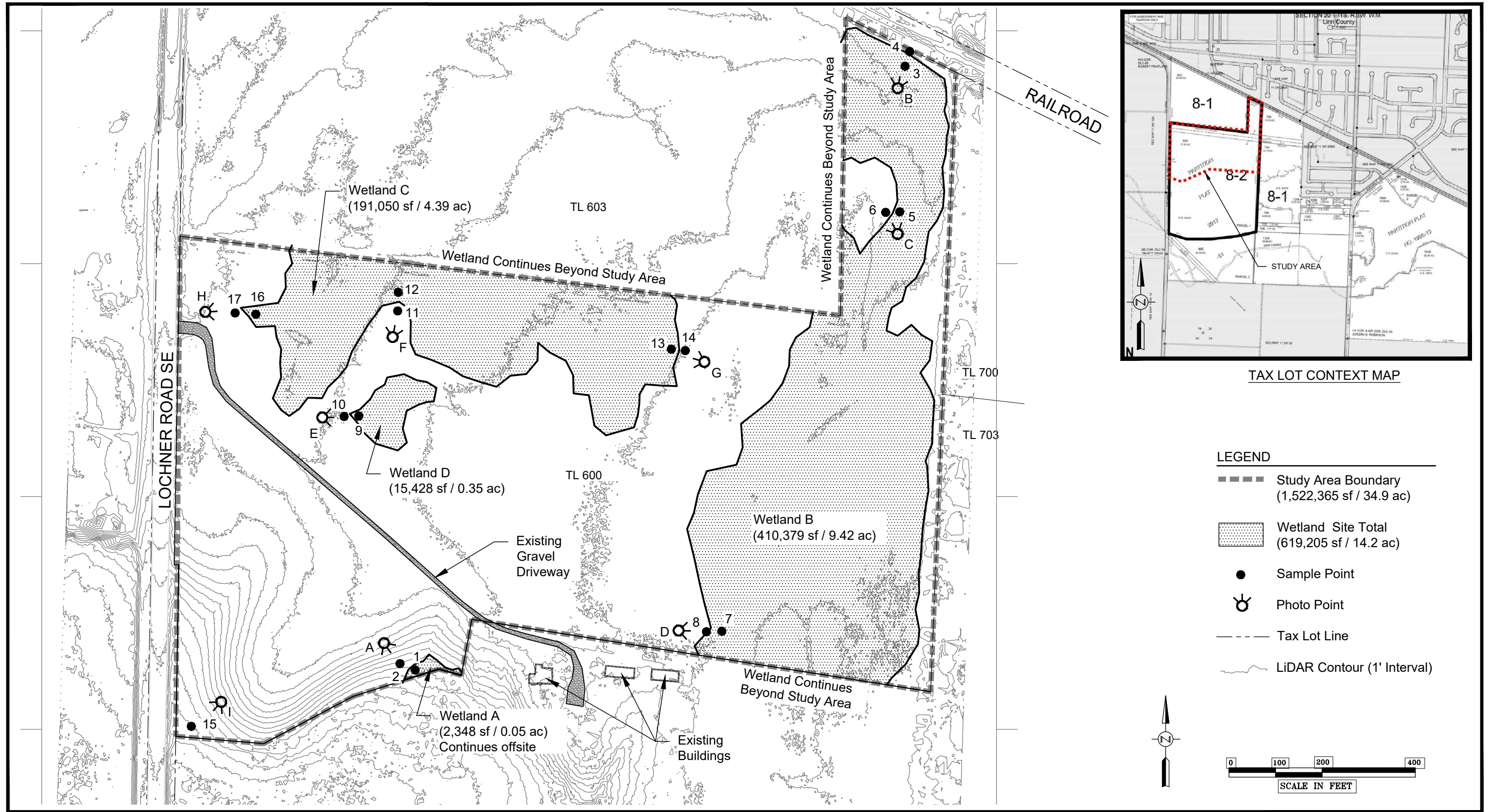
Project #6869
Date 12/16/20



Pacific Habitat Services, Inc.
9450 SW Commerce Circle, Suite 180
Wilsonville, OR 97070

April 2006 Aerial Photo
Lochner Road SE Property - Albany, OR
GoogleEarth, 2020

FIGURE
5C



Survey provided by A&O Engineering, LLC. The accuracy of the survey, study area, tax lot and sample points 1-15 are sub-centimeter. Sample points 16 and 17 were placed on the map using field notes; the accuracy of these data points is +/- 3 feet.

Wetland Delineation
Lochner Road SE Property - Albany, Oregon

FIGURE
6

1-19-2021

Appendix B

Wetland Determination Data Sheets



WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

PHS # **6869**
Attachment E.18

Project/Site: Lochner Road City/County: Albany/Linn Sampling Date: 10/15/2020
 Applicant/Owner: Hayden Homes State: OR Sampling Point: 1
 Investigator(s): JT/CM Section, Township, Range: 20/11S/3W
 Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): None Slope (%): _____
 Subregion (LRR): LRR A Lat: 44.600041° Long: -123.090571° Datum: WGS85
 Soil Map Unit Name: Woodburn silt loam, 3-12% slopes NWI Classification: PFOC
 Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (if no, explain in Remarks)
 Are vegetation _____ Soil _____ or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? (Y/N) Y
 Are vegetation _____ Soil _____ or Hydrology _____ naturally problematic? If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u>X</u>	No _____	Is Sampled Area within a Wetland?	Yes <u>X</u>	No _____
Hydric Soil Present?	Yes <u>X</u>	No _____			
Wetland Hydrology Present?	Yes <u>X</u>	No _____			

Remarks:

VEGETATION - Use scientific names of plants.

	absolute % cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
Tree Stratum (plot size: _____)				Number of Dominant Species	
1	_____	_____	_____	That are OBL, FACW, or FAC: <u>1</u> (A)	
2	_____	_____	_____	Total Number of Dominant	
3	_____	_____	_____	Species Across All Strata: <u>1</u> (B)	
4	_____	_____	_____	Percent of Dominant Species	
	<u>0</u>	= Total Cover		That are OBL, FACW, or FAC: <u>100%</u> (A/B)	
Sapling/Shrub Stratum (plot size: _____)				Prevalence Index Worksheet:	
1	_____	_____	_____	Total % Cover of _____ Multiply by: _____	
2	_____	_____	_____	OBL Species _____ x 1 = <u>0</u>	
3	_____	_____	_____	FACW species _____ x 2 = <u>0</u>	
4	_____	_____	_____	FAC Species _____ x 3 = <u>0</u>	
5	_____	_____	_____	FACU Species _____ x 4 = <u>0</u>	
	<u>0</u>	= Total Cover		UPL Species _____ x 5 = <u>0</u>	
Herb Stratum (plot size: <u>5</u>)				Column Totals <u>0</u> (A) <u>0</u> (B)	
1	<u>20</u>	<u>X</u>	<u>(FAC)</u>	Prevalence Index =B/A = <u>#DIV/0!</u>	
2	_____	_____	_____	Hydrophytic Vegetation Indicators:	
3	_____	_____	_____	_____ 1- Rapid Test for Hydrophytic Vegetation	
4	_____	_____	_____	<u>X</u> 2- Dominance Test is >50%	
5	_____	_____	_____	_____ 3-Prevalence Index is ≤ 3.0 ¹	
6	_____	_____	_____	_____ 4-Morphological Adaptations ¹ (provide supporting data in Remarks or on a separate sheet)	
7	_____	_____	_____	_____ 5- Wetland Non-Vascular Plants ¹	
8	_____	_____	_____	_____ Problematic Hydrophytic Vegetation ¹ (Explain)	
	<u>20</u>	= Total Cover		¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
Woody Vine Stratum (plot size: _____)				Hydrophytic Vegetation Present?	
1	_____	_____	_____	Yes <u>X</u> No _____	
2	_____	_____	_____		
	<u>0</u>	= Total Cover			
% Bare Ground in Herb Stratum <u>80</u>					

Remarks:
Plowed. Grass seedlings. Oregon ash is dominant to the south.

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-4	10YR 3/2	100					Silt Loam	
4-7	10YR 3/2	98	10YR 4/6	2	C	M	Silt Loam	Fine
7-10	10YR 3/2	95	7.5YR 3/4	3	C	M	Silt Loam	Fine
			10YR 4/6	2	C	PL		
10-12	10YR 3/2	95	7.5YR 3/4	5	C	M	Silt Loam	Fine

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Indicators for Problematic Hydric Soils³:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)	

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:
Plowed field.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

Secondary Indicators (2 or more required)

<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water stained Leaves (B9) (Except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water stained Leaves (B9) (MLRA1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6)	<input type="checkbox"/> Fac-Neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:

Surface Water Present? Yes No Depth (inches): _____
 Water Table Present? Yes No Depth (inches): >12
 Saturation Present? (includes capillary fringe) Yes No Depth (inches): >12

Wetland Hydrology Present?
 Yes No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

PHS # **6869**
Attachment E.20

Project/Site: Lochner Road City/County: Albany/Linn Sampling Date: 10/15/2020
 Applicant/Owner: Hayden Homes State: OR Sampling Point: 2
 Investigator(s): JT/CM/SE/MS Section, Township, Range: 20/11S/3W
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 5%
 Subregion (LRR): LRR A Lat: 44.600064° Long: -123.090617° Datum: WGS85
 Soil Map Unit Name: Woodburn silt loam, 3-12% slopes NWI Classification: None
 Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (if no, explain in Remarks)
 Are vegetation _____ Soil _____ or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? (Y/N) Y
 Are vegetation _____ Soil _____ or Hydrology _____ naturally problematic? If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u>X</u>	No _____	Is Sampled Area within a Wetland?	Yes _____	No <u>X</u>
Hydric Soil Present?	Yes _____	No <u>X</u>			
Wetland Hydrology Present?	Yes _____	No <u>X</u>			

Remarks:

VEGETATION - Use scientific names of plants.

	absolute % cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
Tree Stratum (plot size: _____)				Number of Dominant Species	
1 _____	_____	_____	_____	That are OBL, FACW, or FAC: <u>1</u> (A)	
2 _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>1</u> (B)	
3 _____	_____	_____	_____	Percent of Dominant Species	
4 _____	_____	_____	_____	That are OBL, FACW, or FAC: <u>100%</u> (A/B)	
5 _____	<u>0</u>	= Total Cover	_____	Prevalence Index Worksheet:	
Sapling/Shrub Stratum (plot size: _____)				Total % Cover of _____ Multiply by: _____	
1 _____	_____	_____	_____	OBL Species _____ x 1 = <u>0</u>	
2 _____	_____	_____	_____	FACW species _____ x 2 = <u>0</u>	
3 _____	_____	_____	_____	FAC Species _____ x 3 = <u>0</u>	
4 _____	_____	_____	_____	FACU Species _____ x 4 = <u>0</u>	
5 _____	_____	_____	_____	UPL Species _____ x 5 = <u>0</u>	
6 _____	<u>0</u>	= Total Cover	_____	Column Totals <u>0</u> (A) <u>0</u> (B)	
Herb Stratum (plot size: <u>5</u>)				Prevalence Index =B/A = <u>#DIV/0!</u>	
1 <u>Unidentified grass</u>	<u>50</u>	<u>X</u>	<u>(FAC)</u>	Hydrophytic Vegetation Indicators:	
2 _____	_____	_____	_____	_____ 1- Rapid Test for Hydrophytic Vegetation	
3 _____	_____	_____	_____	<u>X</u> 2- Dominance Test is >50%	
4 _____	_____	_____	_____	_____ 3-Prevalence Index is ≤ 3.0 ¹	
5 _____	_____	_____	_____	_____ 4-Morphological Adaptations ¹ (provide supporting data in Remarks or on a separate sheet)	
6 _____	_____	_____	_____	_____ 5- Wetland Non-Vascular Plants ¹	
7 _____	_____	_____	_____	_____ Problematic Hydrophytic Vegetation ¹ (Explain)	
8 _____	<u>50</u>	= Total Cover	_____	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
Woody Vine Stratum (plot size: _____)				Hydrophytic Vegetation Present? Yes <u>X</u> No _____	
1 _____	_____	_____	_____		
2 _____	_____	_____	_____		
	<u>0</u>	= Total Cover			
% Bare Ground in Herb Stratum <u>50</u>					

Remarks:
Monoculture crop was recently planted and emerging. Will be 100% cover, likely Schedonorus arundinaceus.

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-8	10YR 3/2	99	10YR 4/6	1	C	M	Silty Clay Loam	Fine
8-16	10YR 3/2	99	10YR 3/4	1	C	M	Silty Clay Loam	Fine

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Indicators for Problematic Hydric Soils³:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)	

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes _____ No **X**

Remarks:
Plowed field.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water stained Leaves (B9) (Except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water stained Leaves (B9) (MLRA1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6)	<input type="checkbox"/> Fac-Neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:

Surface Water Present? Yes _____ No **X** Depth (inches): _____
 Water Table Present? Yes _____ No **X** Depth (inches): **>16**
 Saturation Present? Yes _____ No **X** Depth (inches): **>16**
 (includes capillary fringe)

Wetland Hydrology Present?
 Yes _____ No **X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

PHS # **6869**
Attachment E.22

Project/Site: Lochner Road City/County: Albany/Linn Sampling Date: 10/15/2020
 Applicant/Owner: Hayden Homes State: OR Sampling Point: 3
 Investigator(s): JT/CM/SE/MS Section, Township, Range: 20/11S/3W
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): ~1%
 Subregion (LRR): LRR A Lat: 44.603783° Long: -123.086721° Datum: WGS85
 Soil Map Unit Name: Dayton silt loam NWI Classification: None
 Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (if no, explain in Remarks)
 Are vegetation _____ Soil _____ or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? (Y/N) Y
 Are vegetation _____ Soil _____ or Hydrology _____ naturally problematic? If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u>X</u>	No _____	Is Sampled Area within a Wetland?	Yes <u>X</u>	No _____
Hydric Soil Present?	Yes <u>X</u>	No _____			
Wetland Hydrology Present?	Yes <u>X</u>	No _____			

Remarks:

VEGETATION - Use scientific names of plants.

	absolute % cover	Dominant Species?	Indicator Status
Tree Stratum (plot size: _____)			
1	_____	_____	_____
2	_____	_____	_____
3	_____	_____	_____
4	_____	_____	_____
	<u>0</u>	= Total Cover	
Sapling/Shrub Stratum (plot size: _____)			
1	_____	_____	_____
2	_____	_____	_____
3	_____	_____	_____
4	_____	_____	_____
5	_____	_____	_____
	<u>0</u>	= Total Cover	
Herb Stratum (plot size: <u>5</u>)			
1	<u>Schedonorus arundinaceus</u>	<u>X</u>	<u>FAC</u>
2	_____	_____	_____
3	_____	_____	_____
4	_____	_____	_____
5	_____	_____	_____
6	_____	_____	_____
7	_____	_____	_____
8	_____	_____	_____
	<u>100</u>	= Total Cover	
Woody Vine Stratum (plot size: _____)			
1	_____	_____	_____
2	_____	_____	_____
	<u>0</u>	= Total Cover	
% Bare Ground in Herb Stratum <u>0</u>			

Dominance Test worksheet:

Number of Dominant Species
That are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species
That are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

Total % Cover of	Multiply by:	
OBL Species	x 1 =	<u>0</u>
FACW species	x 2 =	<u>0</u>
FAC Species	x 3 =	<u>0</u>
FACU Species	x 4 =	<u>0</u>
UPL Species	x 5 =	<u>0</u>
Column Totals	<u>0</u> (A)	<u>0</u> (B)

Prevalence Index =B/A = #DIV/0!

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation
X 2- Dominance Test is >50%
 _____ 3-Prevalence Index is ≤ 3.0¹
 _____ 4-Morphological Adaptations¹ (provide supporting data in Remarks or on a separate sheet)
 _____ 5- Wetland Non-Vascular Plants¹
 _____ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No _____

Remarks:
Monoculture crop.

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-4	10YR 3/2	100					Silty Clay Loam	
4-8	10YR 3/2	95	10YR 3/6	3	C	PL	Silty Clay Loam	Fine
4-8				2	C	M	Silty Clay Loam	Fine
8-14	10YR 4/1	95	10YR 3/6	5	C	M	Silty Clay Loam	Medium

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Indicators for Problematic Hydric Soils³:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input checked="" type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)	

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

Plowed field.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

Secondary Indicators (2 or more required)

<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water stained Leaves (B9) (Except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water stained Leaves (B9) (MLRA1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6)	<input type="checkbox"/> Fac-Neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:

Surface Water Present? Yes No Depth (inches): _____
 Water Table Present? Yes No Depth (inches): >14
 Saturation Present? (includes capillary fringe) Yes No Depth (inches): >14

Wetland Hydrology Present?

Yes No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

PHS # **6869**
Attachment E.24

Project/Site: Lochner Road City/County: Albany/Linn Sampling Date: 10/15/2020
 Applicant/Owner: Hayden Homes State: OR Sampling Point: 4
 Investigator(s): JT/CM Section, Township, Range: 20/11S/3W
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): ~1%
 Subregion (LRR): LRR A Lat: 44.603826° Long: -123.086712° Datum: WGS85
 Soil Map Unit Name: Dayton silt loam NWI Classification: None
 Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (if no, explain in Remarks)
 Are vegetation _____ Soil _____ or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? (Y/N) Y
 Are vegetation _____ Soil _____ or Hydrology _____ naturally problematic? If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u>X</u>	No _____	Is Sampled Area within a Wetland?	Yes _____	No <u>X</u>
Hydric Soil Present?	Yes <u>X</u>	No _____			
Wetland Hydrology Present?	Yes _____	No <u>X</u>			

Remarks:

VEGETATION - Use scientific names of plants.

	absolute % cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
Tree Stratum (plot size: _____)				Number of Dominant Species	
1	_____	_____	_____	That are OBL, FACW, or FAC: <u>2</u> (A)	
2	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>2</u> (B)	
3	_____	_____	_____	Percent of Dominant Species	
4	_____	_____	_____	That are OBL, FACW, or FAC: <u>100%</u> (A/B)	
5	<u>0</u>	= Total Cover		Prevalence Index Worksheet:	
Sapling/Shrub Stratum (plot size: <u>15</u>)				Total % Cover of _____ Multiply by: _____	
1	<u>45</u>	<u>X</u>	<u>FAC</u>	OBL Species _____ x 1 = <u>0</u>	
2	_____	_____	_____	FACW species _____ x 2 = <u>0</u>	
3	_____	_____	_____	FAC Species _____ x 3 = <u>0</u>	
4	_____	_____	_____	FACU Species _____ x 4 = <u>0</u>	
5	<u>45</u>	= Total Cover		UPL Species _____ x 5 = <u>0</u>	
Herb Stratum (plot size: <u>5</u>)				Column Totals <u>0</u> (A) <u>0</u> (B)	
1	<u>100</u>	<u>X</u>	<u>FAC</u>	Prevalence Index =B/A = <u>#DIV/0!</u>	
2	_____	_____	_____	Hydrophytic Vegetation Indicators:	
3	_____	_____	_____	_____ 1- Rapid Test for Hydrophytic Vegetation	
4	_____	_____	_____	<u>X</u> 2- Dominance Test is >50%	
5	_____	_____	_____	_____ 3-Prevalence Index is ≤ 3.0 ¹	
6	_____	_____	_____	_____ 4-Morphological Adaptations ¹ (provide supporting data in Remarks or on a separate sheet)	
7	_____	_____	_____	_____ 5- Wetland Non-Vascular Plants ¹	
8	<u>100</u>	= Total Cover		_____ Problematic Hydrophytic Vegetation ¹ (Explain)	
Woody Vine Stratum (plot size: _____)				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
1	_____	_____	_____	Hydrophytic Vegetation Present?	
2	_____	_____	_____	Yes <u>X</u> No _____	
% Bare Ground in Herb Stratum <u>0</u>					

Remarks:

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-6	10YR 3/2	100					Silty Clay Loam	
6-14	10YR 3/1	98	10YR 3/3	2	C	M	Silty Clay Loam	Fine

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Indicators for Problematic Hydric Soils³:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)	

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:
Plowed field.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water stained Leaves (B9) (Except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water stained Leaves (B9) (MLRA1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6)	<input type="checkbox"/> Fac-Neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:

Surface Water Present? Yes No Depth (inches): _____
 Water Table Present? Yes No Depth (inches): >14
 Saturation Present? Yes No Depth (inches): >14
 (includes capillary fringe)

Wetland Hydrology Present?
 Yes No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

PHS # 6869
Attachment E.26

Project/Site: Lochner Road City/County: Albany/Linn Sampling Date: 10/15/2020
 Applicant/Owner: Hayden Homes State: OR Sampling Point: 5
 Investigator(s): CM/JT/SE/MS Section, Township, Range: 20/11S/3W
 Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): None Slope (%): ~1%
 Subregion (LRR): LRR A Lat: 44.602607° Long: -123.086946° Datum: WGS85
 Soil Map Unit Name: Concord silt loam NWI Classification: None
 Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (if no, explain in Remarks)
 Are vegetation _____ Soil _____ or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? (Y/N) Y
 Are vegetation _____ Soil _____ or Hydrology _____ naturally problematic? If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u>X</u>	No _____	Is Sampled Area within a Wetland?	Yes <u>X</u>	No _____
Hydric Soil Present?	Yes <u>X</u>	No _____			
Wetland Hydrology Present?	Yes <u>X</u>	No _____			

Remarks:

VEGETATION - Use scientific names of plants.

	absolute % cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
Tree Stratum (plot size: _____)				Number of Dominant Species	
1	_____	_____	_____	That are OBL, FACW, or FAC: <u>1</u> (A)	
2	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>1</u> (B)	
3	_____	_____	_____	Percent of Dominant Species	
4	_____	_____	_____	That are OBL, FACW, or FAC: <u>100%</u> (A/B)	
5	_____	_____	_____	Prevalence Index Worksheet:	
	<u>0</u>	= Total Cover		Total % Cover of _____ Multiply by: _____	
Sapling/Shrub Stratum (plot size: _____)				OBL Species _____ x 1 = <u>0</u>	
1	_____	_____	_____	FACW species _____ x 2 = <u>0</u>	
2	_____	_____	_____	FAC Species _____ x 3 = <u>0</u>	
3	_____	_____	_____	FACU Species _____ x 4 = <u>0</u>	
4	_____	_____	_____	UPL Species _____ x 5 = <u>0</u>	
5	_____	_____	_____	Column Totals <u>0</u> (A) <u>0</u> (B)	
	<u>0</u>	= Total Cover		Prevalence Index =B/A = <u>#DIV/0!</u>	
Herb Stratum (plot size: <u>5</u>)				Hydrophytic Vegetation Indicators:	
1	<u>100</u>	<u>X</u>	<u>FAC</u>	1- Rapid Test for Hydrophytic Vegetation	
2	_____	_____	_____	<u>X</u> 2- Dominance Test is >50%	
3	_____	_____	_____	3-Prevalence Index is ≤ 3.0 ¹	
4	_____	_____	_____	4-Morphological Adaptations ¹ (provide supporting data in Remarks or on a separate sheet)	
5	_____	_____	_____	5- Wetland Non-Vascular Plants ¹	
6	_____	_____	_____	Problematic Hydrophytic Vegetation ¹ (Explain)	
7	_____	_____	_____	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
8	_____	_____	_____	Hydrophytic Vegetation Present?	
	<u>100</u>	= Total Cover		Yes <u>X</u> No _____	
Woody Vine Stratum (plot size: _____)					
1	_____	_____	_____		
2	_____	_____	_____		
	<u>0</u>	= Total Cover			
% Bare Ground in Herb Stratum <u>0</u>					

Remarks:
Monoculture crop.

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-6	10YR 3/2	98	10YR 3/6	2	C	M	Silty Clay Loam	Fine
6-13	10YR 3/2	90	7.5YR 3/4	5	C	M	Silty Clay Loam	Medium
6-13			7.5YR 3/4	5	C	PL		Fine

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Indicators for Problematic Hydric Soils³:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)	

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:
Plowed field.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water stained Leaves (B9) (Except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water stained Leaves (B9) (MLRA1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6)	<input type="checkbox"/> Fac-Neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:

Surface Water Present? Yes No Depth (inches): _____
 Water Table Present? Yes No Depth (inches): >13
 Saturation Present? Yes No Depth (inches): >13
 (includes capillary fringe)

Wetland Hydrology Present?
 Yes No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

PHS # **6869**
Attachment E.28

Project/Site: Lochner Road City/County: Albany/Linn Sampling Date: 10/15/2020
 Applicant/Owner: Hayden Homes State: OR Sampling Point: 6
 Investigator(s): JT/CM Section, Township, Range: 20/11S/3W
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): ~1%
 Subregion (LRR): LRR A Lat: 44.602628° Long: -123.087066° Datum: WGS85
 Soil Map Unit Name: Concord silt loam NWI Classification: None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (if no, explain in Remarks)
 Are vegetation _____ Soil _____ or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? (Y/N) Y
 Are vegetation _____ Soil _____ or Hydrology _____ naturally problematic? If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u>X</u>	No _____	Is Sampled Area within a Wetland?	Yes _____	No <u>X</u>
Hydric Soil Present?	Yes <u>X</u>	No _____			
Wetland Hydrology Present?	Yes _____	No <u>X</u>			

Remarks:

VEGETATION - Use scientific names of plants.

	absolute % cover	Dominant Species?	Indicator Status
Tree Stratum (plot size: _____)			
1	_____	_____	_____
2	_____	_____	_____
3	_____	_____	_____
4	_____	_____	_____
	<u>0</u>	= Total Cover	
Sapling/Shrub Stratum (plot size: _____)			
1	_____	_____	_____
2	_____	_____	_____
3	_____	_____	_____
4	_____	_____	_____
5	_____	_____	_____
	<u>0</u>	= Total Cover	
Herb Stratum (plot size: <u>5</u>)			
1	<u>Schedonorus arundinaceus</u>	<u>X</u>	<u>FAC</u>
2	_____	_____	_____
3	_____	_____	_____
4	_____	_____	_____
5	_____	_____	_____
6	_____	_____	_____
7	_____	_____	_____
8	_____	_____	_____
	<u>100</u>	= Total Cover	
Woody Vine Stratum (plot size: _____)			
1	_____	_____	_____
2	_____	_____	_____
	<u>0</u>	= Total Cover	
% Bare Ground in Herb Stratum <u>0</u>			

Dominance Test worksheet:

Number of Dominant Species
 That are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species
 That are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

Total % Cover of	Multiply by:	
OBL Species	x 1 =	<u>0</u>
FACW species	x 2 =	<u>0</u>
FAC Species	x 3 =	<u>0</u>
FACU Species	x 4 =	<u>0</u>
UPL Species	x 5 =	<u>0</u>
Column Totals	<u>0</u> (A)	<u>0</u> (B)

Prevalence Index =B/A = #DIV/0!

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation
X 2- Dominance Test is >50%
 _____ 3-Prevalence Index is ≤ 3.0¹
 _____ 4-Morphological Adaptations¹ (provide supporting data in Remarks or on a separate sheet)
 _____ 5- Wetland Non-Vascular Plants¹
 _____ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No _____

Remarks:

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-3	10YR 3/2	100					Silty Clay Loam	
3-12	10YR 3/1	98	7.5YR 3/4	2	C	M	Silty Clay Loam	
12-16	10YR 3/1	100					Silty Clay Loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Indicators for Problematic Hydric Soils³:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)	

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:
Plowed field.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water stained Leaves (B9) (Except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water stained Leaves (B9) (MLRA1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6)	<input type="checkbox"/> Fac-Neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:

Surface Water Present? Yes No Depth (inches): _____
 Water Table Present? Yes No Depth (inches): >16
 Saturation Present? Yes No Depth (inches): >16
 (includes capillary fringe)

Wetland Hydrology Present?
 Yes No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

PHS # **6869**
Attachment E.30

Project/Site: Lochner Road City/County: Albany/Linn Sampling Date: 10/15/2020
 Applicant/Owner: Hayden Homes State: OR Sampling Point: 7
 Investigator(s): JT/CM Section, Township, Range: 20/11S/3W
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 1%
 Subregion (LRR): LRR A Lat: 44.600364° Long: -123.088106° Datum: WGS85
 Soil Map Unit Name: Amity silt loam NWI Classification: None
 Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (if no, explain in Remarks)
 Are vegetation _____ Soil _____ or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? (Y/N) Y
 Are vegetation _____ Soil _____ or Hydrology _____ naturally problematic? If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u>X</u>	No _____	Is Sampled Area within a Wetland?	Yes <u>X</u>	No _____
Hydric Soil Present?	Yes <u>X</u>	No _____			
Wetland Hydrology Present?	Yes <u>X</u>	No _____			

Remarks:

VEGETATION - Use scientific names of plants.

	absolute % cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
Tree Stratum (plot size: _____)				Number of Dominant Species	
1	_____	_____	_____	That are OBL, FACW, or FAC: <u>1</u> (A)	
2	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>1</u> (B)	
3	_____	_____	_____	Percent of Dominant Species	
4	_____	_____	_____	That are OBL, FACW, or FAC: <u>100%</u> (A/B)	
5	_____	_____	_____	Prevalence Index Worksheet:	
	<u>0</u>	= Total Cover		Total % Cover of _____ Multiply by: _____	
Sapling/Shrub Stratum (plot size: _____)				OBL Species _____ x 1 = <u>0</u>	
1	_____	_____	_____	FACW species _____ x 2 = <u>0</u>	
2	_____	_____	_____	FAC Species _____ x 3 = <u>0</u>	
3	_____	_____	_____	FACU Species _____ x 4 = <u>0</u>	
4	_____	_____	_____	UPL Species _____ x 5 = <u>0</u>	
5	_____	_____	_____	Column Totals <u>0</u> (A) <u>0</u> (B)	
	<u>0</u>	= Total Cover		Prevalence Index =B/A = <u>#DIV/0!</u>	
Herb Stratum (plot size: <u>5</u>)				Hydrophytic Vegetation Indicators:	
1	<u>100</u>	<u>X</u>	<u>FAC</u>	1- Rapid Test for Hydrophytic Vegetation	
2	_____	_____	_____	<u>X</u> 2- Dominance Test is >50%	
3	_____	_____	_____	3-Prevalence Index is ≤ 3.0 ¹	
4	_____	_____	_____	4-Morphological Adaptations ¹ (provide supporting data in Remarks or on a separate sheet)	
5	_____	_____	_____	5- Wetland Non-Vascular Plants ¹	
6	_____	_____	_____	Problematic Hydrophytic Vegetation ¹ (Explain)	
7	_____	_____	_____	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
8	_____	_____	_____	Hydrophytic Vegetation Present?	
	<u>100</u>	= Total Cover		Yes <u>X</u> No _____	
Woody Vine Stratum (plot size: _____)					
1	_____	_____	_____		
2	_____	_____	_____		
	<u>0</u>	= Total Cover			
% Bare Ground in Herb Stratum <u>0</u>					

Remarks:

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-2	10YR 3/2	100					Silty Clay Loam	
2-10	10YR 3/2	95	7.5YR 3/2	5	C	M	Silty Clay Loam	Fine
10-14	10YR 3/2	95	7.5YR 3/4	3	C	M	Silty Clay Loam	Fine
			7.5YR 3/4	2	C	PL		

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Indicators for Problematic Hydric Soils³:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)	

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:
Plowed field.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

Secondary Indicators (2 or more required)

<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water stained Leaves (B9) (Except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water stained Leaves (B9) (MLRA1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6)	<input type="checkbox"/> Fac-Neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:

Surface Water Present? Yes No Depth (inches): _____
 Water Table Present? Yes No Depth (inches): >14
 Saturation Present? (includes capillary fringe) Yes No Depth (inches): >14

Wetland Hydrology Present?
Yes No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: Lochner Road City/County: Albany/Linn Sampling Date: 10/15/2020
 Applicant/Owner: Hayden Homes State: OR Sampling Point: 8
 Investigator(s): CM/JT/SE/MS Section, Township, Range: 20/11S/3W
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): <1%
 Subregion (LRR): LRR A Lat: 44.600398° Long: -123.088178° Datum: WGS85
 Soil Map Unit Name: Amity silt loam NWI Classification: None
 Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (if no, explain in Remarks)
 Are vegetation _____ Soil _____ or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? (Y/N) Y
 Are vegetation _____ Soil _____ or Hydrology _____ naturally problematic? If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u>X</u>	No _____	Is Sampled Area within a Wetland?	Yes _____	No <u>X</u>
Hydric Soil Present?	Yes _____	No <u>X</u>			
Wetland Hydrology Present?	Yes _____	No <u>X</u>			

Remarks:

VEGETATION - Use scientific names of plants.

	absolute % cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
Tree Stratum (plot size: _____)				Number of Dominant Species	
1	_____	_____	_____	That are OBL, FACW, or FAC: <u>1</u> (A)	
2	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>1</u> (B)	
3	_____	_____	_____	Percent of Dominant Species	
4	_____	_____	_____	That are OBL, FACW, or FAC: <u>100%</u> (A/B)	
5	_____	_____	_____	Prevalence Index Worksheet:	
_____ = Total Cover				Total % Cover of _____ Multiply by:	
Sapling/Shrub Stratum (plot size: _____)				OBL Species _____ x 1 = <u>0</u>	
1	_____	_____	_____	FACW species _____ x 2 = <u>0</u>	
2	_____	_____	_____	FAC Species _____ x 3 = <u>0</u>	
3	_____	_____	_____	FACU Species _____ x 4 = <u>0</u>	
4	_____	_____	_____	UPL Species _____ x 5 = <u>0</u>	
5	_____	_____	_____	Column Totals <u>0</u> (A) <u>0</u> (B)	
_____ = Total Cover				Prevalence Index =B/A = <u>#DIV/0!</u>	
Herb Stratum (plot size: <u>5</u>)				Hydrophytic Vegetation Indicators:	
1	<u>80</u>	<u>X</u>	<u>FAC</u>	1- Rapid Test for Hydrophytic Vegetation	
2	_____	_____	_____	<u>X</u> 2- Dominance Test is >50%	
3	_____	_____	_____	3-Prevalence Index is ≤ 3.0 ¹	
4	_____	_____	_____	4-Morphological Adaptations ¹ (provide supporting data in Remarks or on a separate sheet)	
5	_____	_____	_____	5- Wetland Non-Vascular Plants ¹	
6	_____	_____	_____	Problematic Hydrophytic Vegetation ¹ (Explain)	
7	_____	_____	_____		
8	_____	_____	_____		
_____ = Total Cover				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
Woody Vine Stratum (plot size: _____)				Hydrophytic Vegetation Present?	
1	_____	_____	_____	Yes <u>X</u>	No _____
2	_____	_____	_____		
_____ = Total Cover					
% Bare Ground in Herb Stratum <u>20</u>					

Remarks:
Monoculture crop.

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-4	10YR 3/2	100					Silty Clay Loam	
4-16	10YR 2/2	99	10YR 3/4	1	C	M	Silty Clay Loam	Fine
16-20	10YR 3/2	100					Silty Clay Loam	Fine

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Indicators for Problematic Hydric Soils³:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)	

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:
Plowed field.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water stained Leaves (B9) (Except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water stained Leaves (B9) (MLRA1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6)	<input type="checkbox"/> Fac-Neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____
 Water Table Present? Yes _____ No X Depth (inches): >20
 Saturation Present? Yes _____ No X Depth (inches): >20
 (includes capillary fringe)

Wetland Hydrology Present?
Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

PHS # **6869**
Attachment E.34

Project/Site: Lochner Road City/County: Albany/Linn Sampling Date: 10/16/2020
 Applicant/Owner: Hayden Homes State: OR Sampling Point: 9
 Investigator(s): SE/MS Section, Township, Range: 20/11S/3W
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 1%
 Subregion (LRR): LRR A Lat: 44.601951° Long: -123.090627° Datum: WGS85
 Soil Map Unit Name: Woodburn silt loam, 0-3% slopes NWI Classification: None
 Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (if no, explain in Remarks)
 Are vegetation _____ Soil _____ or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? (Y/N) Y
 Are vegetation _____ Soil _____ or Hydrology _____ naturally problematic? If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u>X</u>	No _____	Is Sampled Area within a Wetland?	Yes <u>X</u>	No _____
Hydric Soil Present?	Yes <u>X</u>	No _____			
Wetland Hydrology Present?	Yes <u>X</u>	No _____			

Remarks:

VEGETATION - Use scientific names of plants.

	absolute % cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
Tree Stratum (plot size: _____)				Number of Dominant Species	
1	_____	_____	_____	That are OBL, FACW, or FAC: <u>1</u> (A)	
2	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>1</u> (B)	
3	_____	_____	_____	Percent of Dominant Species	
4	_____	_____	_____	That are OBL, FACW, or FAC: <u>100%</u> (A/B)	
5	<u>0</u>	= Total Cover		Prevalence Index Worksheet:	
Sapling/Shrub Stratum (plot size: _____)				Total % Cover of _____ Multiply by: _____	
1	_____	_____	_____	OBL Species _____ x 1 = <u>0</u>	
2	_____	_____	_____	FACW species _____ x 2 = <u>0</u>	
3	_____	_____	_____	FAC Species _____ x 3 = <u>0</u>	
4	_____	_____	_____	FACU Species _____ x 4 = <u>0</u>	
5	_____	_____	_____	UPL Species _____ x 5 = <u>0</u>	
	<u>0</u>	= Total Cover		Column Totals <u>0</u> (A) <u>0</u> (B)	
Herb Stratum (plot size: <u>5</u>)				Prevalence Index =B/A = <u>#DIV/0!</u>	
1	<u>100</u>	<u>X</u>	<u>FAC</u>	Hydrophytic Vegetation Indicators:	
2	_____	_____	_____	_____ 1- Rapid Test for Hydrophytic Vegetation	
3	_____	_____	_____	<u>X</u> 2- Dominance Test is >50%	
4	_____	_____	_____	_____ 3-Prevalence Index is ≤ 3.0 ¹	
5	_____	_____	_____	_____ 4-Morphological Adaptations ¹ (provide supporting data in Remarks or on a separate sheet)	
6	_____	_____	_____	_____ 5- Wetland Non-Vascular Plants ¹	
7	_____	_____	_____	_____ Problematic Hydrophytic Vegetation ¹ (Explain)	
8	<u>100</u>	= Total Cover		¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
Woody Vine Stratum (plot size: _____)				Hydrophytic Vegetation Present? Yes <u>X</u> No _____	
1	_____	_____	_____		
2	_____	_____	_____		
	<u>0</u>	= Total Cover			
% Bare Ground in Herb Stratum _____					

Remarks:
Grass seed field. Vegetation is physically and chemically controlled.

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-7	10YR 2/2	92	10YR 4/6	3	C	PL	Sandy Loam	OR's
0-7			7.5YR 2.5/3	5	C	M		Medium
7-9	10YR 2/2	95	10YR 2.5/3	5	C	M	Sandy Loam	Fine to Medium
9-13	10YR 2/2	97	10YR 3/3	3	C	M	Sandy Loam	Fine
13-15	10YR 3/2	98	10YR 3/3	2	C	M	Sandy Loam	Fine

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Indicators for Problematic Hydric Soils³:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)	

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

Plowed field.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

Secondary Indicators (2 or more required)

<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water stained Leaves (B9) (Except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water stained Leaves (B9) (MLRA1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6)	<input type="checkbox"/> Fac-Neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:

Surface Water Present? Yes No Depth (inches): _____
 Water Table Present? Yes No Depth (inches): >15
 Saturation Present? (includes capillary fringe) Yes No Depth (inches): >15

Wetland Hydrology Present?

Yes No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

PHS # **6869**
Attachment E.36

Project/Site: Lochner Road City/County: Albany/Linn Sampling Date: 10/16/2020
 Applicant/Owner: Hayden Homes State: OR Sampling Point: 10
 Investigator(s): SE/MS Section, Township, Range: 20/11S/3W
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 1%
 Subregion (LRR): LRR A Lat: 44.601980° Long: -123.090721° Datum: WGS85
 Soil Map Unit Name: Woodburn silt loam, 0-3% slopes NWI Classification: None
 Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (if no, explain in Remarks)
 Are vegetation _____ Soil _____ or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? (Y/N) Y
 Are vegetation _____ Soil _____ or Hydrology _____ naturally problematic? If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u>X</u>	No _____	Is Sampled Area within a Wetland?	Yes _____	No <u>X</u>
Hydric Soil Present?	Yes _____	No <u>X</u>			
Wetland Hydrology Present?	Yes _____	No <u>X</u>			

Remarks:

VEGETATION - Use scientific names of plants.

	absolute % cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
Tree Stratum (plot size: _____)				Number of Dominant Species	
1	_____	_____	_____	That are OBL, FACW, or FAC: <u>1</u> (A)	
2	_____	_____	_____	Total Number of Dominant	
3	_____	_____	_____	Species Across All Strata: <u>1</u> (B)	
4	_____	_____	_____	Percent of Dominant Species	
	<u>0</u>	= Total Cover		That are OBL, FACW, or FAC: <u>100%</u> (A/B)	
Sapling/Shrub Stratum (plot size: _____)				Prevalence Index Worksheet:	
1	_____	_____	_____	Total % Cover of _____ Multiply by: _____	
2	_____	_____	_____	OBL Species _____ x 1 = <u>0</u>	
3	_____	_____	_____	FACW species _____ x 2 = <u>0</u>	
4	_____	_____	_____	FAC Species _____ x 3 = <u>0</u>	
5	_____	_____	_____	FACU Species _____ x 4 = <u>0</u>	
	<u>0</u>	= Total Cover		UPL Species _____ x 5 = <u>0</u>	
Herb Stratum (plot size: <u>5</u>)				Column Totals <u>0</u> (A) <u>0</u> (B)	
1	<u>100</u>	<u>X</u>	<u>FAC</u>	Prevalence Index =B/A = <u>#DIV/0!</u>	
2	_____	_____	_____	Hydrophytic Vegetation Indicators:	
3	_____	_____	_____	_____ 1- Rapid Test for Hydrophytic Vegetation	
4	_____	_____	_____	<u>X</u> 2- Dominance Test is >50%	
5	_____	_____	_____	_____ 3-Prevalence Index is ≤ 3.0 ¹	
6	_____	_____	_____	_____ 4-Morphological Adaptations ¹ (provide supporting	
7	_____	_____	_____	data in Remarks or on a separate sheet)	
8	_____	_____	_____	_____ 5- Wetland Non-Vascular Plants ¹	
	<u>100</u>	= Total Cover		_____ Problematic Hydrophytic Vegetation ¹ (Explain)	
Woody Vine Stratum (plot size: _____)				¹ Indicators of hydric soil and wetland hydrology must be present, unless	
1	_____	_____	_____	disturbed or problematic.	
2	_____	_____	_____	Hydrophytic	
	<u>0</u>	= Total Cover		Vegetation Present? Yes <u>X</u> No _____	
% Bare Ground in Herb Stratum _____					

Remarks:
Vegetation is physically and chemically controlled.

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-10	10YR 2/2	98	10YR 3/3	2	C	M	Sandy Loam	Fine to Medium
10-14	10YR 3/2	95	7.5YR 3/3	5	C	M	Sandy Clay Loam	Fine to Medium
14-17	10YR 3/2	95	10YR 3/4	5	C	M	Sandy Clay Loam	Medium

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Indicators for Problematic Hydric Soils³:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)	

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:
Plowed field.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

Secondary Indicators (2 or more required)

<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water stained Leaves (B9) (Except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water stained Leaves (B9) (MLRA1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6)	<input type="checkbox"/> Fac-Neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____
 Water Table Present? Yes _____ No X Depth (inches): >17
 Saturation Present? Yes _____ No X Depth (inches): >17
 (includes capillary fringe)

Wetland Hydrology Present?
Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

PHS # **6869**
Attachment E.38

Project/Site: Lochner Road City/County: Albany/Linn Sampling Date: 10/15/2020
 Applicant/Owner: Hayden Homes State: OR Sampling Point: 11
 Investigator(s): _____ Section, Township, Range: 20/11S/3W
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): <5%
 Subregion (LRR): LRR A Lat: 44.602340° Long: -123.090318° Datum: WGS85
 Soil Map Unit Name: Woodburn silt loam, 0-3% slopes NWI Classification: None
 Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (if no, explain in Remarks)
 Are vegetation _____ Soil _____ or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? (Y/N) Y
 Are vegetation _____ Soil _____ or Hydrology _____ naturally problematic? If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u>X</u>	No _____	Is Sampled Area within a Wetland?	Yes _____	No <u>X</u>
Hydric Soil Present?	Yes _____	No <u>X</u>			
Wetland Hydrology Present?	Yes _____	No <u>X</u>			

Remarks: _____

VEGETATION - Use scientific names of plants.

	absolute % cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
Tree Stratum (plot size: _____)				Number of Dominant Species	
1	_____	_____	_____	That are OBL, FACW, or FAC: <u>1</u> (A)	
2	_____	_____	_____	Total Number of Dominant	
3	_____	_____	_____	Species Across All Strata: <u>1</u> (B)	
4	_____	_____	_____	Percent of Dominant Species	
	<u>0</u>	= Total Cover		That are OBL, FACW, or FAC: <u>100%</u> (A/B)	
Sapling/Shrub Stratum (plot size: _____)				Prevalence Index Worksheet:	
1	_____	_____	_____	Total % Cover of _____ Multiply by: _____	
2	_____	_____	_____	OBL Species _____ x 1 = <u>0</u>	
3	_____	_____	_____	FACW species _____ x 2 = <u>0</u>	
4	_____	_____	_____	FAC Species _____ x 3 = <u>0</u>	
5	_____	_____	_____	FACU Species _____ x 4 = <u>0</u>	
	<u>0</u>	= Total Cover		UPL Species _____ x 5 = <u>0</u>	
Herb Stratum (plot size: <u>5</u>)				Column Totals <u>0</u> (A) <u>0</u> (B)	
1	<u>85</u>	<u>X</u>	<u>FAC</u>	Prevalence Index =B/A = <u>#DIV/0!</u>	
2	<u>10</u>		<u>FAC</u>	Hydrophytic Vegetation Indicators:	
3	_____	_____	_____	_____ 1- Rapid Test for Hydrophytic Vegetation	
4	_____	_____	_____	<u>X</u> 2- Dominance Test is >50%	
5	_____	_____	_____	<u>X</u> 3-Prevalence Index is ≤ 3.0 ¹	
6	_____	_____	_____	_____ 4-Morphological Adaptations ¹ (provide supporting data in Remarks or on a separate sheet)	
7	_____	_____	_____	_____ 5- Wetland Non-Vascular Plants ¹	
8	_____	_____	_____	_____ Problematic Hydrophytic Vegetation ¹ (Explain)	
	<u>95</u>	= Total Cover		¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
Woody Vine Stratum (plot size: _____)				Hydrophytic Vegetation Present?	
1	_____	_____	_____	Yes <u>X</u> No _____	
2	_____	_____	_____		
	<u>0</u>	= Total Cover			
% Bare Ground in Herb Stratum <u>5</u>					

Remarks: _____

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-6	10YR 4/2	100					Silt Loam	
6-9	10YR 4/2	99	5YR 5/8	1	C	PL	Silt Loam	Fine
9-16	10YR 3/2	90	5YR 5/8	10	C	PL	Silt Loam	Medium

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Indicators for Problematic Hydric Soils³:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)	

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:
Plowed field.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

Secondary Indicators (2 or more required)

<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water stained Leaves (B9) (Except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water stained Leaves (B9) (MLRA1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6)	<input type="checkbox"/> Fac-Neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____
 Water Table Present? Yes _____ No X Depth (inches): >16
 Saturation Present? Yes _____ No X Depth (inches): >16
 (includes capillary fringe)

Wetland Hydrology Present?
Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

PHS # **6869**
Attachment E.40

Project/Site: Lochner Road City/County: Albany/Linn Sampling Date: 10/15/2020
 Applicant/Owner: Hayden Homes State: OR Sampling Point: 12
 Investigator(s): MS Section, Township, Range: 20/11S/3W
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): <5%
 Subregion (LRR): LRR A Lat: 44.602406° Long: -123.090338° Datum: WGS85
 Soil Map Unit Name: Woodburn silt loam, 0-3% slopes NWI Classification: None
 Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (if no, explain in Remarks)
 Are vegetation _____ Soil _____ or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? (Y/N) Y
 Are vegetation _____ Soil _____ or Hydrology _____ naturally problematic? If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u>X</u>	No _____	Is Sampled Area within a Wetland?	Yes <u>X</u>	No _____
Hydric Soil Present?	Yes <u>X</u>	No _____			
Wetland Hydrology Present?	Yes <u>X</u>	No _____			

Remarks:

VEGETATION - Use scientific names of plants.

	absolute % cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
Tree Stratum (plot size: _____)				Number of Dominant Species	
1	_____	_____	_____	That are OBL, FACW, or FAC: <u>1</u> (A)	
2	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>1</u> (B)	
3	_____	_____	_____	Percent of Dominant Species	
4	_____	_____	_____	That are OBL, FACW, or FAC: <u>100%</u> (A/B)	
5	_____	_____	_____	Prevalence Index Worksheet:	
_____ = Total Cover			Total % Cover of _____ Multiply by:		
Sapling/Shrub Stratum (plot size: _____)				OBL Species _____ x 1 = <u>0</u>	
1	_____	_____	_____	FACW species _____ x 2 = <u>0</u>	
2	_____	_____	_____	FAC Species _____ x 3 = <u>0</u>	
3	_____	_____	_____	FACU Species _____ x 4 = <u>0</u>	
4	_____	_____	_____	UPL Species _____ x 5 = <u>0</u>	
5	_____	_____	_____	Column Totals <u>0</u> (A) <u>0</u> (B)	
_____ = Total Cover			Prevalence Index =B/A = <u>#DIV/0!</u>		
Herb Stratum (plot size: <u>5</u>)				Hydrophytic Vegetation Indicators:	
1	<u>90</u>	<u>X</u>	<u>FAC</u>	_____ 1- Rapid Test for Hydrophytic Vegetation	
2	<u>5</u>	_____	<u>FAC</u>	<u>X</u> 2- Dominance Test is >50%	
3	_____	_____	_____	_____ 3-Prevalence Index is ≤ 3.0 ¹	
4	_____	_____	_____	_____ 4-Morphological Adaptations ¹ (provide supporting data in Remarks or on a separate sheet)	
5	_____	_____	_____	_____ 5- Wetland Non-Vascular Plants ¹	
6	_____	_____	_____	_____ Problematic Hydrophytic Vegetation ¹ (Explain)	
7	_____	_____	_____	_____	
8	_____	_____	_____	_____	
_____ = Total Cover			¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.		
Woody Vine Stratum (plot size: _____)				Hydrophytic Vegetation Present?	
1	_____	_____	_____	Yes <u>X</u>	No _____
2	_____	_____	_____		
_____ = Total Cover					
% Bare Ground in Herb Stratum <u>5</u>					

Remarks:

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-3	10YR 3/3	100					Silt Loam	
3-8	10YR 3/2	95	5YR 4/6	5	C	M,PL	Silt Loam	Fine
8-14	10YR 3/2	90	7.5YR 3/4	10	C	M,PL	Silt Loam	Fine

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Indicators for Problematic Hydric Soils³:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)	

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

Plowed field.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

Secondary Indicators (2 or more required)

<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water stained Leaves (B9) (Except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water stained Leaves (B9) (MLRA1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6)	<input type="checkbox"/> Fac-Neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:

Surface Water Present? Yes No Depth (inches): _____
 Water Table Present? Yes No Depth (inches): >16
 Saturation Present? Yes No Depth (inches): >16
 (includes capillary fringe)

Wetland Hydrology Present?
Yes No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

PHS # **6869**
Attachment E.42

Project/Site: Lochner Road City/County: Albany/Linn Sampling Date: 10/15/2020
 Applicant/Owner: Hayden Homes State: OR Sampling Point: 13
 Investigator(s): JT/CM Section, Township, Range: 20/11S/3W
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): <5%
 Subregion (LRR): LRR A Lat: 44.602150° Long: -123.088998° Datum: WGS85
 Soil Map Unit Name: Concord silt loam NWI Classification: None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (if no, explain in Remarks)
 Are vegetation _____ Soil _____ or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? (Y/N) Y
 Are vegetation _____ Soil _____ or Hydrology _____ naturally problematic? If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u>X</u>	No _____	Is Sampled Area within a Wetland?	Yes <u>X</u>	No _____
Hydric Soil Present?	Yes <u>X</u>	No _____			
Wetland Hydrology Present?	Yes <u>X</u>	No _____			

Remarks:

VEGETATION - Use scientific names of plants.

	absolute % cover	Dominant Species?	Indicator Status
Tree Stratum (plot size: _____)			
1	_____	_____	_____
2	_____	_____	_____
3	_____	_____	_____
4	_____	_____	_____
	<u>0</u>	= Total Cover	
Sapling/Shrub Stratum (plot size: _____)			
1	_____	_____	_____
2	_____	_____	_____
3	_____	_____	_____
4	_____	_____	_____
5	_____	_____	_____
	<u>0</u>	= Total Cover	
Herb Stratum (plot size: <u>5</u>)			
1	<u>Schedonorus arundinaceus</u>	<u>X</u>	<u>FAC</u>
2	_____	_____	_____
3	_____	_____	_____
4	_____	_____	_____
5	_____	_____	_____
6	_____	_____	_____
7	_____	_____	_____
8	_____	_____	_____
	<u>100</u>	= Total Cover	
Woody Vine Stratum (plot size: _____)			
1	_____	_____	_____
2	_____	_____	_____
	<u>0</u>	= Total Cover	
% Bare Ground in Herb Stratum <u>0</u>			

Dominance Test worksheet:

Number of Dominant Species
That are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species
That are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

Total % Cover of	Multiply by:	
OBL Species	x 1 =	<u>0</u>
FACW species	x 2 =	<u>0</u>
FAC Species	x 3 =	<u>0</u>
FACU Species	x 4 =	<u>0</u>
UPL Species	x 5 =	<u>0</u>
Column Totals	<u>0</u> (A)	<u>0</u> (B)

Prevalence Index =B/A = #DIV/0!

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation
X 2- Dominance Test is >50%
 _____ 3-Prevalence Index is ≤ 3.0¹
 _____ 4-Morphological Adaptations¹ (provide supporting data in Remarks or on a separate sheet)
 _____ 5- Wetland Non-Vascular Plants¹
 _____ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No _____

Remarks:

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-5	10YR 3/2	100					Silty Clay Loam	
5-8	10YR 3/2	95	7.5YR 3/4	3	C	M	Silty Clay Loam	Fine
			7.5YR 3/4	2	C	PL		
8-13	10YR 3/1	90	7.5YR 3/4	10	C	M	Silty Clay Loam	Medium

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Indicators for Problematic Hydric Soils³:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)	

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:
Plowed field.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

Secondary Indicators (2 or more required)

<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water stained Leaves (B9) (Except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water stained Leaves (B9) (MLRA1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6)	<input type="checkbox"/> Fac-Neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:

Surface Water Present? Yes No Depth (inches): _____
 Water Table Present? Yes No Depth (inches): >13
 Saturation Present? (includes capillary fringe) Yes No Depth (inches): >13

Wetland Hydrology Present?
 Yes No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

PHS # **6869**
Attachment E.44

Project/Site: Lochner Road City/County: Albany/Linn Sampling Date: 10/15/2020
 Applicant/Owner: Hayden Homes State: OR Sampling Point: 14
 Investigator(s): CM/JT/SE/MS Section, Township, Range: 20/11S/3W
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): <1%
 Subregion (LRR): LRR A Lat: 44.602195° Long: -123.088831° Datum: WGS85
 Soil Map Unit Name: Concord silt loam NWI Classification: None
 Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (if no, explain in Remarks)
 Are vegetation _____ Soil _____ or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? (Y/N) Y
 Are vegetation _____ Soil _____ or Hydrology _____ naturally problematic? If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u>X</u>	No _____	Is Sampled Area within a Wetland?	Yes _____	No <u>X</u>
Hydric Soil Present?	Yes _____	No <u>X</u>			
Wetland Hydrology Present?	Yes _____	No <u>X</u>			

Remarks:

VEGETATION - Use scientific names of plants.

	absolute % cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
Tree Stratum (plot size: _____)				Number of Dominant Species	
1 _____	_____	_____	_____	That are OBL, FACW, or FAC: <u>1</u> (A)	
2 _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>1</u> (B)	
3 _____	_____	_____	_____	Percent of Dominant Species	
4 _____	_____	_____	_____	That are OBL, FACW, or FAC: <u>100%</u> (A/B)	
5 _____	<u>0</u>	= Total Cover		Prevalence Index Worksheet:	
Sapling/Shrub Stratum (plot size: _____)				Total % Cover of _____ Multiply by: _____	
1 _____	_____	_____	_____	OBL Species _____ x 1 = <u>0</u>	
2 _____	_____	_____	_____	FACW species _____ x 2 = <u>0</u>	
3 _____	_____	_____	_____	FAC Species _____ x 3 = <u>0</u>	
4 _____	_____	_____	_____	FACU Species _____ x 4 = <u>0</u>	
5 _____	_____	_____	_____	UPL Species _____ x 5 = <u>0</u>	
	<u>0</u>	= Total Cover		Column Totals <u>0</u> (A) <u>0</u> (B)	
Herb Stratum (plot size: <u>5</u>)				Prevalence Index =B/A = <u>#DIV/0!</u>	
1 <u>Schedonorus arundinaceus</u>	<u>100</u>	<u>X</u>	<u>FAC</u>	Hydrophytic Vegetation Indicators:	
2 _____	_____	_____	_____	_____ 1- Rapid Test for Hydrophytic Vegetation	
3 _____	_____	_____	_____	<u>X</u> 2- Dominance Test is >50%	
4 _____	_____	_____	_____	_____ 3-Prevalence Index is ≤ 3.0 ¹	
5 _____	_____	_____	_____	_____ 4-Morphological Adaptations ¹ (provide supporting data in Remarks or on a separate sheet)	
6 _____	_____	_____	_____	_____ 5- Wetland Non-Vascular Plants ¹	
7 _____	_____	_____	_____	_____ Problematic Hydrophytic Vegetation ¹ (Explain)	
8 _____	<u>100</u>	= Total Cover		¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
Woody Vine Stratum (plot size: _____)				Hydrophytic Vegetation Present? Yes <u>X</u> No _____	
1 _____	_____	_____	_____		
2 _____	_____	_____	_____		
	<u>0</u>	= Total Cover			
% Bare Ground in Herb Stratum <u>0</u>					

Remarks:
Monoculture crop.

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-12	10YR 3/2	98	10YR 3/3	2	C	M	Silty Clay Loam	Fine
12-14	10YR 3/1	100					Silty Clay Loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Indicators for Problematic Hydric Soils³:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)	

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:
Plowed field.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water stained Leaves (B9) (Except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water stained Leaves (B9) (MLRA1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6)	<input type="checkbox"/> Fac-Neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____
 Water Table Present? Yes _____ No X Depth (inches): >14
 Saturation Present? Yes _____ No X Depth (inches): >14
 (includes capillary fringe)

Wetland Hydrology Present?
Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: Lochner Road City/County: Albany/Linn Sampling Date: 10/15/2020
 Applicant/Owner: Hayden Homes State: OR Sampling Point: 15
 Investigator(s): CM/JT/SE/MS Section, Township, Range: 20/11S/3W
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): -5%
 Subregion (LRR): LRR A Lat: 44.599732° Long: -123.092472° Datum: WGS85
 Soil Map Unit Name: Whiteson silt loam NWI Classification: None
 Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (if no, explain in Remarks)
 Are vegetation _____ Soil _____ or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? (Y/N) Y
 Are vegetation _____ Soil _____ or Hydrology _____ naturally problematic? If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u>X</u>	No _____	Is Sampled Area within a Wetland?	Yes _____	No <u>X</u>
Hydric Soil Present?	Yes _____	No <u>X</u>			
Wetland Hydrology Present?	Yes _____	No <u>X</u>			

Remarks:

VEGETATION - Use scientific names of plants.

	absolute % cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
Tree Stratum (plot size: <u>30</u>)				Number of Dominant Species	
1 <u>Prunus avium</u>	<u>5</u>	<u>X</u>	<u>FACU</u>	That are OBL, FACW, or FAC: <u>4</u> (A)	
2 <u>Fraxinus latifolia</u>	<u>5</u>	<u>X</u>	<u>FACW</u>	Total Number of Dominant Species Across All Strata: <u>6</u> (B)	
3 _____				Percent of Dominant Species	
4 _____				That are OBL, FACW, or FAC: <u>67%</u> (A/B)	
	<u>10</u>	= Total Cover		Prevalence Index Worksheet:	
Sapling/Shrub Stratum (plot size: <u>15</u>)				Total % Cover of _____ Multiply by: _____	
1 <u>Rubus ursinus</u>	<u>20</u>	<u>X</u>	<u>FACU</u>	OBL Species _____ x 1 = <u>0</u>	
2 <u>Rubus armeniacus</u>	<u>10</u>	<u>X</u>	<u>FAC</u>	FACW species _____ x 2 = <u>0</u>	
3 _____				FAC Species _____ x 3 = <u>0</u>	
4 _____				FACU Species _____ x 4 = <u>0</u>	
5 _____				UPL Species _____ x 5 = <u>0</u>	
	<u>30</u>	= Total Cover		Column Totals <u>0</u> (A)	<u>0</u> (B)
Herb Stratum (plot size: <u>5</u>)				Prevalence Index =B/A = <u>#DIV/0!</u>	
1 <u>Phalaris arundinacea</u>	<u>80</u>	<u>X</u>	<u>FACW</u>	Hydrophytic Vegetation Indicators:	
2 <u>Schedonorus arundinaceus</u>	<u>20</u>	<u>X</u>	<u>FAC</u>	_____ 1- Rapid Test for Hydrophytic Vegetation	
3 _____				_____ <u>X</u> 2- Dominance Test is >50%	
4 _____				_____ 3-Prevalence Index is ≤ 3.0 ¹	
5 _____				_____ 4-Morphological Adaptations ¹ (provide supporting data in Remarks or on a separate sheet)	
6 _____				_____ 5- Wetland Non-Vascular Plants ¹	
7 _____				_____ Problematic Hydrophytic Vegetation ¹ (Explain)	
8 _____				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
	<u>100</u>	= Total Cover		Hydrophytic Vegetation Present?	
Woody Vine Stratum (plot size: _____)				Yes <u>X</u> No _____	
1 _____					
2 _____					
	<u>0</u>	= Total Cover			
% Bare Ground in Herb Stratum <u>0</u>					

Remarks:

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-16	10YR 3/2	100					Silty Clay Loam	
16-20	10YR 3/1	100					Silty Clay Loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Indicators for Problematic Hydric Soils³:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)	

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes _____ No **X**

Remarks:
Plowed field.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water stained Leaves (B9) (Except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water stained Leaves (B9) (MLRA1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6)	<input type="checkbox"/> Fac-Neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:

Surface Water Present? Yes _____ No **X** Depth (inches): _____
 Water Table Present? Yes _____ No **X** Depth (inches): **>20**
 Saturation Present? Yes _____ No **X** Depth (inches): **>20**
 (includes capillary fringe)

Wetland Hydrology Present?
 Yes _____ No **X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

PHS # **6869**
Attachment E.48

Project/Site: Lochner Road City/County: Albany/Linn Sampling Date: 10/15/2020
 Applicant/Owner: Hayden Homes State: OR Sampling Point: 16
 Investigator(s): MS Section, Township, Range: 20/11S/3W
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 1%
 Subregion (LRR): LRR A Lat: 44.602270° Long: -123.091842° Datum: WGS85
 Soil Map Unit Name: Amity silt loam NWI Classification: None
 Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (if no, explain in Remarks)
 Are vegetation _____ Soil _____ or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? (Y/N) Y
 Are vegetation _____ Soil _____ or Hydrology _____ naturally problematic? If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u>X</u>	No _____	Is Sampled Area within a Wetland?	Yes <u>X</u>	No _____
Hydric Soil Present?	Yes <u>X</u>	No _____			
Wetland Hydrology Present?	Yes <u>X</u>	No _____			

Remarks: _____

VEGETATION - Use scientific names of plants.

	absolute % cover	Dominant Species?	Indicator Status	
Tree Stratum (plot size: _____)				Dominance Test worksheet: Number of Dominant Species That are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That are OBL, FACW, or FAC: <u>100%</u> (A/B)
1	_____	_____	_____	
2	_____	_____	_____	
3	_____	_____	_____	
4	_____	_____	_____	
	<u>0</u>	= Total Cover		
Sapling/Shrub Stratum (plot size: _____)				
1	_____	_____	_____	
2	_____	_____	_____	
3	_____	_____	_____	
4	_____	_____	_____	
5	_____	_____	_____	
	<u>0</u>	= Total Cover		
Herb Stratum (plot size: <u>5</u>)				Prevalence Index Worksheet: Total % Cover of _____ Multiply by: _____ OBL Species _____ x 1 = <u>0</u> FACW species _____ x 2 = <u>0</u> FAC Species _____ x 3 = <u>0</u> FACU Species _____ x 4 = <u>0</u> UPL Species _____ x 5 = <u>0</u> Column Totals <u>0</u> (A) <u>0</u> (B) Prevalence Index =B/A = <u>#DIV/0!</u>
1	<u>100</u>	<u>X</u>	<u>FAC</u>	
2	_____	_____	_____	
3	_____	_____	_____	
4	_____	_____	_____	
5	_____	_____	_____	
6	_____	_____	_____	
7	_____	_____	_____	
8	_____	_____	_____	
	<u>100</u>	= Total Cover		
Woody Vine Stratum (plot size: _____)				
1	_____	_____	_____	
2	_____	_____	_____	
	<u>0</u>	= Total Cover		
% Bare Ground in Herb Stratum _____				

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation
X 2- Dominance Test is >50%
 _____ 3-Prevalence Index is ≤ 3.0¹
 _____ 4-Morphological Adaptations¹ (provide supporting data in Remarks or on a separate sheet)
 _____ 5- Wetland Non-Vascular Plants¹
 _____ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No _____

Remarks: _____

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-4	10YR 4/2	95	7.5YR 4/6	5	C	M,PL	Silt Loam	Fine
4-16	10YR 4/2	85	7.5YR 4/6	15	C	M,PL	Silt Loam	Fine

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Indicators for Problematic Hydric Soils³:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)	

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:
Plowed field.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

Secondary Indicators (2 or more required)

<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water stained Leaves (B9) (Except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water stained Leaves (B9) (MLRA1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6)	<input type="checkbox"/> Fac-Neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:

Surface Water Present? Yes No Depth (inches): _____
 Water Table Present? Yes No Depth (inches): >16
 Saturation Present? (includes capillary fringe) Yes No Depth (inches): >16

Wetland Hydrology Present?
Yes No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

PHS # **6869**
Attachment E.50

Project/Site: Lochner Road City/County: Albany/Linn Sampling Date: 10/15/2020
 Applicant/Owner: Hayden Homes State: OR Sampling Point: 17
 Investigator(s): SE/MS Section, Township, Range: 20/11S/3W
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 1%
 Subregion (LRR): LRR A Lat: 44.602246° Long: -123.092008° Datum: WGS85
 Soil Map Unit Name: Amity silt loam NWI Classification: None
 Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (if no, explain in Remarks)
 Are vegetation _____ Soil _____ or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? (Y/N) Y
 Are vegetation _____ Soil _____ or Hydrology _____ naturally problematic? If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u>X</u>	No _____	Is Sampled Area within a Wetland?	Yes _____	No <u>X</u>
Hydric Soil Present?	Yes _____	No <u>X</u>			
Wetland Hydrology Present?	Yes _____	No <u>X</u>			

Remarks:

VEGETATION - Use scientific names of plants.

	absolute % cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
Tree Stratum (plot size: _____)				Number of Dominant Species	
1	_____	_____	_____	That are OBL, FACW, or FAC: <u>1</u> (A)	
2	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>1</u> (B)	
3	_____	_____	_____	Percent of Dominant Species	
4	_____	_____	_____	That are OBL, FACW, or FAC: <u>100%</u> (A/B)	
5	_____	_____	_____	Prevalence Index Worksheet:	
	<u>0</u>	= Total Cover		Total % Cover of _____ Multiply by: _____	
Sapling/Shrub Stratum (plot size: _____)				OBL Species _____ x 1 = <u>0</u>	
1	_____	_____	_____	FACW species _____ x 2 = <u>0</u>	
2	_____	_____	_____	FAC Species _____ x 3 = <u>0</u>	
3	_____	_____	_____	FACU Species _____ x 4 = <u>0</u>	
4	_____	_____	_____	UPL Species _____ x 5 = <u>0</u>	
5	_____	_____	_____	Column Totals <u>0</u> (A) <u>0</u> (B)	
	<u>0</u>	= Total Cover		Prevalence Index =B/A = <u>#DIV/0!</u>	
Herb Stratum (plot size: <u>5</u>)				Hydrophytic Vegetation Indicators:	
1	<u>100</u>	<u>X</u>	<u>FAC</u>	1- Rapid Test for Hydrophytic Vegetation	
2	_____	_____	_____	<u>X</u> 2- Dominance Test is >50%	
3	_____	_____	_____	3-Prevalence Index is ≤ 3.0 ¹	
4	_____	_____	_____	4-Morphological Adaptations ¹ (provide supporting data in Remarks or on a separate sheet)	
5	_____	_____	_____	5- Wetland Non-Vascular Plants ¹	
6	_____	_____	_____	Problematic Hydrophytic Vegetation ¹ (Explain)	
7	_____	_____	_____	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
8	_____	_____	_____	Hydrophytic Vegetation Present?	
	<u>100</u>	= Total Cover		Yes <u>X</u> No _____	
Woody Vine Stratum (plot size: _____)					
1	_____	_____	_____		
2	_____	_____	_____		
	<u>0</u>	= Total Cover			
% Bare Ground in Herb Stratum _____					

Remarks:

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-9	10YR 3/2	97	5YR 3/4	3	C	M	Sandy Loam	Fine to Medium
9-17	10YR 3/2	100					Sandy Loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Indicators for Problematic Hydric Soils³:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)	

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

Plowed field.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

Secondary Indicators (2 or more required)

<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water stained Leaves (B9) (Except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water stained Leaves (B9) (MLRA1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6)	<input type="checkbox"/> Fac-Neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____
 Water Table Present? Yes _____ No X Depth (inches): >17
 Saturation Present? Yes _____ No X Depth (inches): >17
 (includes capillary fringe)

Wetland Hydrology Present?
Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Appendix C

Site Photos





Photo A:

Looking southeast at Sample Points 1 and 2, Wetland A.

Photo date: October 15, 2020

Photo B:

Looking northeast at Sample Points 3 and 4, Wetland B

Photo date: October 15, 2020



Project #6869
12/17/2020



Pacific Habitat Services, Inc.
9450 SW Commerce Circle, Suite 180
Wilsonville, OR 97070

Photo documentation
Lochner Road – Albany, Oregon



Photo C:

Looking northwest at Sample Points 5 and 6, Wetland B

Photo date: October 15, 2020

Photo D:

Looking east at Sample Points 7 and 8, Wetland B

Photo date: October 15, 2020



Project #6869
12/17/2020



Pacific Habitat Services, Inc.
9450 SW Commerce Circle, Suite 180
Wilsonville, OR 97070

Photo documentation
Lochner Road – Albany, Oregon

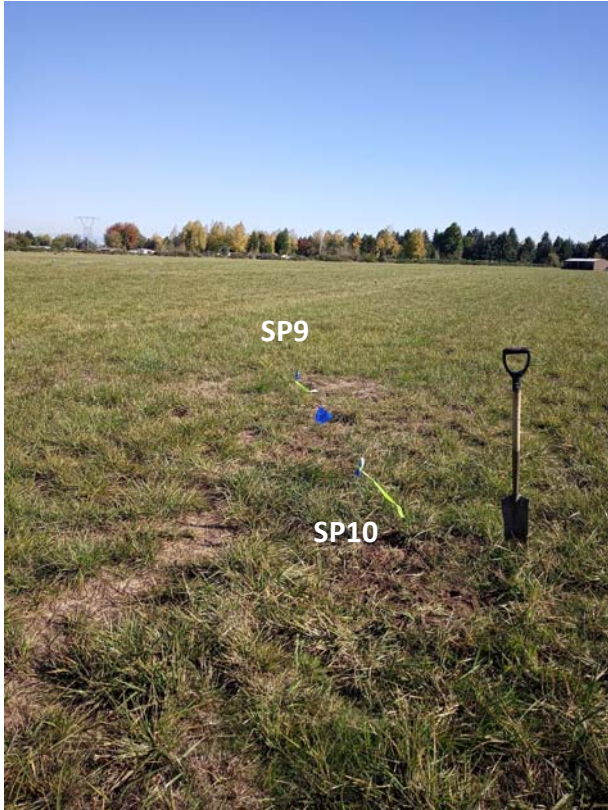


Photo E:

Looking east at Sample Points 9 and 10, Wetland D.

Photo date: October 15, 2020

Photo F:

Looking north at Sample Points 11 and 12, Wetland C.

Photo date: October 15, 2020



Project #6869
12/17/2020



Pacific Habitat Services, Inc.
9450 SW Commerce Circle, Suite 180
Wilsonville, OR 97070

Photo documentation
Lochner Road – Albany, Oregon



Photo G:

Looking northwest at Sample Points 13 and 14, Wetland C.

Photo date: October 15, 2020

Photo H:

Looking east at Sample Points 16 and 17, Wetland C.

Photo date: October 15, 2020



Project #6869
12/17/2020



Pacific Habitat Services, Inc.
9450 SW Commerce Circle, Suite 180
Wilsonville, OR 97070

Photo documentation
Lochner Road – Albany, Oregon



Photo I:

Looking southwest at Sample Point 15.

Photo date: October 15, 2020

Project #6869
12/17/2020



Pacific Habitat Services, Inc.
9450 SW Commerce Circle, Suite 180
Wilsonville, OR 97070

Photo documentation
Lochner Road – Albany, Oregon

Appendix D

Wetland Definitions and Methodology



WATERS OF THE STATE AND WETLAND DEFINITION AND CRITERIA

Regulatory Jurisdiction

Wetlands and water resources in Oregon are regulated by the Oregon Department of State Lands (DSL) under the Removal-Fill Law (ORS 196.800-196.990) and by the U.S. Army Corps of Engineers (COE) through Section 404 of the Clean Water Act.

The primary source documents for wetland delineations within Oregon is the *Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1* (Environmental Laboratory 1987) and the *Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region*, which are recognized by both DSL and COE.

Waters of the State and Wetland Definition

Waters of the State are defined as “natural waterways including all tidal and nontidal bays, intermittent streams, constantly flowing streams, lakes, wetlands and other bodies of water in this state, navigable and nonnavigable...”. “Natural waterways” is further defined as waterways created naturally by geological and hydrological processes, waterways that would be natural but for human-caused disturbances (e.g. channelized or culverted streams, impounded waters, partially drained wetlands or ponds created in wetlands)...”(DSL, 2001).

Wetlands are defined as “those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions” (DSL, 2001).

Wetland Criteria

Based on the above definition, three major factors characterize a wetland: hydrology, substrate, and biota.

Wetland Hydrology

Wetland hydrology is related to duration of saturation, frequency of saturation, and critical depth of saturation. The 1987 manual defines wetland hydrology as inundation or saturation within a major portion of the root zone (usually above 12 inches), typically for at least 12.5% of the growing season. The wetland hydrology criterion can be met, however, if saturation within the major portion of the root zone is present for only 5% of the growing season, depending on other evidence.

The growing season is defined as the portion of the year when soil temperatures at 12.0 inches below the soil surface are higher than biological zero (41 degrees Fahrenheit, 5 degrees Celsius), but also allows approximation from frost free days, based on air temperature. The growing season for any given site or location is determined from US Natural Resources Conservation Service, (formerly Soil Conservation Service) data and information.

Wetland hydrologic indicators include the following: visual observation of inundation or saturation, watermarks, drift lines, sediment deposits, and/or oxidized rhizospheres with living roots. Oxidized rhizospheres are defined as yellowish-red zones around the roots and rhizomes of some plants that grow in frequently saturated soils. Other indicators of hydrology, including algal mats or crust, iron deposits, surface soil cracks, sparsely vegetated concave surface, salt crust, aquatic invertebrates, hydrogen sulfide odor, reduced iron, iron reduction in tilled soils, and stunted or stressed plants can also be used to determine the presence of wetland hydrology.

Wetland Substrate (Soils)

Most wetlands are characterized by hydric soils. Hydric soils are those that are ponded, flooded, or saturated for long enough during the growing season to develop anaerobic conditions. Periodic saturation of soils causes alternation of reduced and oxidized conditions, which leads to the formation of redoximorphic features (gleying and mottling). Mineral hydric soils will be either gleyed or will have bright mottles and/or low matrix chroma. The redoximorphic feature known as gley is a result of greatly reduced soil conditions, which result in a characteristic grayish, bluish or greenish soil color. The term mottling is used to describe areas of contrasting color within a soil matrix. The soil matrix is the portion of the soil layer that has the predominant color. Soils that have brightly colored mottles and a low matrix chroma are indicative of a fluctuating water table.

Hydric soil indicators include organic content of greater than 50% by volume, and/or presence of redoximorphic features and dark soil matrix, as determined by the use of a Munsell Soil Color Chart. This chart establishes the chroma, value and hue of soils based on comparison with color chips. Mineral hydric soil must meet one of the 16 definitions for hydric soil indicators, or be classified as a “problem soil” in the Regional Supplement.

Wetland Biota (Vegetation)

Wetland biota is defined as hydrophytic vegetation. A hydrophyte is a plant species that is capable of growing in substrates that are periodically deficient in oxygen as a result of saturated soil conditions. The U.S. Fish and Wildlife Service, in the *National List of Plant Species that Occur in Wetlands*, has established five basic groups of vegetation based on their frequency of occurrence in wetlands. These categories, referred to as the “wetland indicator status”, are as follows: obligate wetland plants (OBL), facultative wetland (FACW), facultative (FAC), facultative upland (FACU), and obligate upland (UPL). Table 1 gives a definition of the plant indicator codes.

Table 1. Description of Wetland Plant Indicator Status Codes

Indicator Code	Status
OBL	Obligate wetland. Plants that always occur in standing water or in saturated soils.
FACW	Facultative wetland. Plants that nearly always occur in areas of prolonged flooding or require standing water or saturated soils but may, on rare occasions, occur in non-wetlands.
FAC	Facultative. Plants that occur in a variety of habitats, including wetland and mesic to xeric non-wetland habitats but commonly occur in standing water or saturated soils.
FACU	Facultative upland. Plants that typically occur in xeric or mesic non-wetland habitats but may frequently occur in standing water or saturated soils.
UPL	Obligate upland. Plants that rarely occur in water or saturated soils.

Observations of hydrology, soils, and vegetation were made using the "Routine On-site" delineation method as defined in the 1987 manual and the Regional Supplement for areas that were not currently in agricultural production. One-foot diameter soil pits were excavated to 20 inches and soil profiles were examined for hydric soil and wetland hydrology field indicators. In addition, a visual absolute-cover estimate of the dominant species of the plant community was performed using soil pit locations as a center of reference. Dominant plant species are based on estimates of absolute cover for herbaceous, and shrub species within a 5-foot radius of the sample point, and basal area cover for tree and woody vine species within a 30-foot radius of the sample point. Plant species in each vegetative layer, which are estimated at less than 20% of the total cover, are not considered to be dominant. The wetland indicator status is then used to determine if there is an overall dominance (greater than 50%) of wetland or upland plant species. If less than 50% of the dominant species are hydrophytic, then the prevalence index may be used to determine if the subdominant species are hydrophytic. If the prevalence index is less than or equal to 3, hydrophytic vegetation criterion is met.

During data collection, the soil profiles were examined for hydric soil and wetland hydrology field indicators. Plant species and cover were recorded. Data was recorded on standard data sheets which contain the information specified in the 1987 Corps Manual and the Regional Supplement.

June 3, 2021

Hayden Homes
Attn: James Limerick, Land Development Manager
2464 SW Glacier Place
Redmond, OR 97756

Re: WD # 2021-0033 **Approved**
Wetland Delineation Report for Lochner Road SE
Linn County; T11S R3W S20 TL600 (Portion)
Albany, Oak Creek Local Wetlands Inventory, Wetland OAK-31Df,
OAK-31Af

Dear Mr. Limerick:

The Department of State Lands has reviewed the wetland delineation report prepared by Pacific Habitat Services, Inc., for the site referenced above. Please note that the study area includes only a portion of the tax lot described above (see the attached map). Based upon the information presented in the report, we concur with the wetland boundaries as mapped in Figure 6 of the report. Please replace all copies of the preliminary wetland map with this final Department-approved map.

Within the study area, 4 wetlands (Wetland A, B, C and D, totaling approximately 14.2 acres) were identified. The wetlands are subject to the permit requirements of the state Removal-Fill Law. Under current regulations, a state permit is required for cumulative fill or annual excavation of 50 cubic yards or more in wetlands or below the ordinary high-water line (OHWL) of the waterway (or the 2-year recurrence interval flood elevation if OHWL cannot be determined).

This concurrence is for purposes of the state Removal-Fill Law only. We recommend that you attach a copy of this concurrence letter to any subsequent state permit application to speed application review. Federal or local permit requirements may apply as well. The U.S. Army Corps of Engineers will determine jurisdiction under the Clean Water Act, which may require submittal of a complete Wetland Delineation Report.

Please be advised that state law establishes a preference for avoidance of wetland impacts. Because measures to avoid and minimize wetland impacts may include reconfiguring parcel layout and size or development design, we recommend that you work with Department staff on appropriate site design before completing the city or county land use approval process.

This concurrence is based on information provided to the agency. The jurisdictional determination is valid for five years from the date of this letter unless new information necessitates a revision. Circumstances under which the Department may change a determination are found in OAR 141-090-0045 (available on our web site or upon request). In addition, laws enacted by the legislature and/or rules adopted by the Department may result in a change in jurisdiction; individuals and applicants are subject to the regulations that are in effect at the time of the removal-fill activity or complete permit application. The applicant, landowner, or agent may submit a request for reconsideration of this determination in writing within six months of the date of this letter.

Thank you for having the site evaluated. If you have any questions, please contact the Jurisdiction Coordinator for Linn County, Matt Unitis, at (503) 986-5262.

Sincerely,

A handwritten signature in black ink, appearing to read "Peter Ryan".

Peter Ryan, SPWS
Aquatic Resource Specialist

Enclosures

ec: John van Staveren, SPWS, Pacific Habitat Services, Inc.
City of Albany Planning Department (Maps enclosed for updating LWI)
Katharine Mott, Corps of Engineers
Charles Redon, DSL

Fully completed and signed report cover forms and applicable fees are required before report review timelines are initiated by the Department of State Lands. Make the checks payable to the Oregon Department of State Lands. To pay fees by credit card, go online at: <https://apps.oregon.gov/DSL/EPS/program?key=4>.

Attach this completed and signed form to the front of an unbound report or include a hard copy with a digital version (single PDF file of the report cover from and report, minimum 300 dpi resolution) and submit to, **Oregon Department of State Lands, 775 Summer Street NE, Suite 100, Salem, OR 97301-1279**. A single PDF of the completed cover form and report may be e-mailed to **Wetland_Delineation@dsl.state.or.us**. For submittal of PDF files larger than 10 MB, e-mail DSL instructions on how to access the file from your ftp or other file sharing website.

Contact and Authorization Information

Applicant Owner Name, Firm and Address: **James Limerick, Land Development Manager**
Hayden Homes
 2464 SW Glacier Place
 Redmond, OR 97756

Business phone # 541-508-6292
 Mobile phone # (optional)
 E-mail: jlimerick@hayden-homes.com

Authorized Legal Agent, Name and Address: _____
 Business phone # _____
 Mobile phone # _____
 E-mail: _____

I either own the property described below or I have legal authority to allow access to the property. I authorize the Department to access the property for the purpose of confirming the information in the report, after prior notification to the primary contact.

Typed/Printed Name: James Limerick Signature: *[Signature]*
 Date: _____ Special instructions regarding site access: _____

Project and Site Information

Project Name: Lochner Road SE
 Latitude: 44.601166° Longitude: -123.089385°
 decimal degree - centroid of site or start & end points of linear project
 Tax Map # 11 3 20
 Tax Lot(s) 600

Proposed Use: Development
 Residential
 Tax Map # _____
 Tax Lot(s) _____

Project Street Address (or other descriptive location):
 Lochner Road SE, north of Ellingson Road SE
 City: Albany County: Linn

Township 11S Range 3W Section 20 QQ
 Use separate sheet for additional tax and location information
 Waterway: None River Mile: n/a
 NWI Quad(s): Albany

Wetland Delineation Information

Wetland Consultant Name, Firm and Address: **Pacific Habitat Services**
Attn: John van Staveren
9450 SW Commerce Circle, Suite 180
Wilsonville, OR 97070

Phone # 503-570-0800
 Mobile phone # _____
 E-mail: JVS@pacifichabitat.com

The information and conclusions on this form and in the attached report are true and correct to the best of my knowledge.

Consultant Signature: *[Signature]* Date: 1/8/21

Primary Contact for report review and site access is Consultant Applicant/Owner Authorized Agent

Wetland/Waters Present? Yes No Study Area size: 34.9 acre Total Wetland Acreage: 14.2

Check Applicable Boxes Below

R-F permit application submitted Fee payment submitted \$475
 Mitigation bank site Fee (\$100) for resubmittal of rejected report
 Industrial Land Certification Program Site Request for Reissuance. See eligibility criteria (no fee)
 Wetland restoration/enhancement project (not mitigation) DSL # _____ Expiration Date _____
 Previous delineation/application on parcel? LWI shows wetlands or waters on parcel?
 If Known, previous DSL # _____ Wetland ID Code _____

For Office Use Only

DSL Reviewer: MU Fee Paid Date: ____ / ____ / ____ DSL WD # 2021-0033
 Date Delineation Received: 01 / 20 / 2021 Scanned: Final Scan: DSL App. # _____



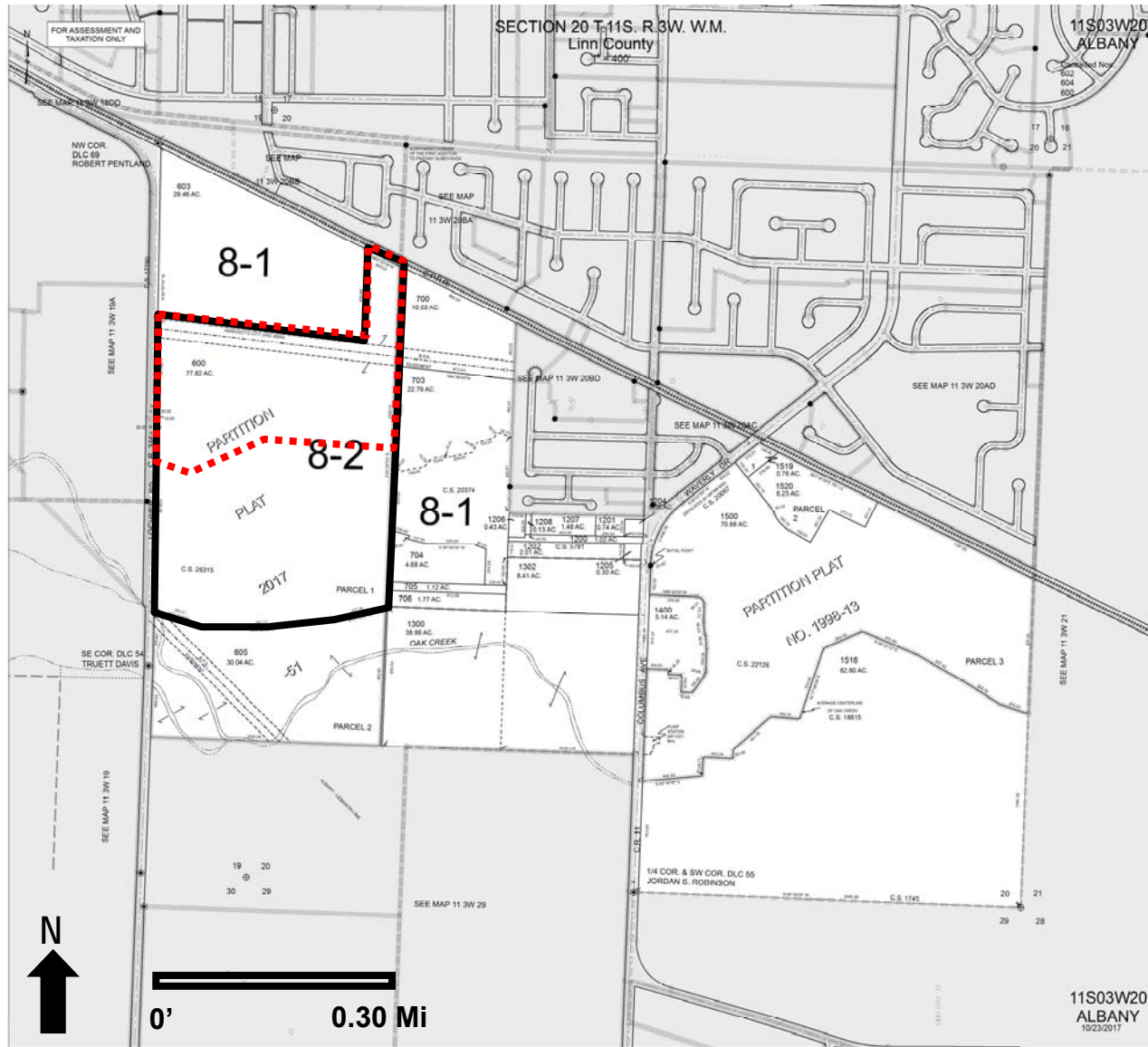
Project#6869
Date 12/16/20



Pacific Habitat Services, Inc.
9450 SW Commerce Circle, Suite 180
Wilsonville, OR 97070

General Location and Topography
Lochner Road SE Property - Albany, OR
United States Geological Survey (USGS) Tangent, Oregon 7.5 quadrangle, 2020
(viewer.nationalmap.gov/basic)

FIGURE
1



- - - - Study Area
 Tax Lot

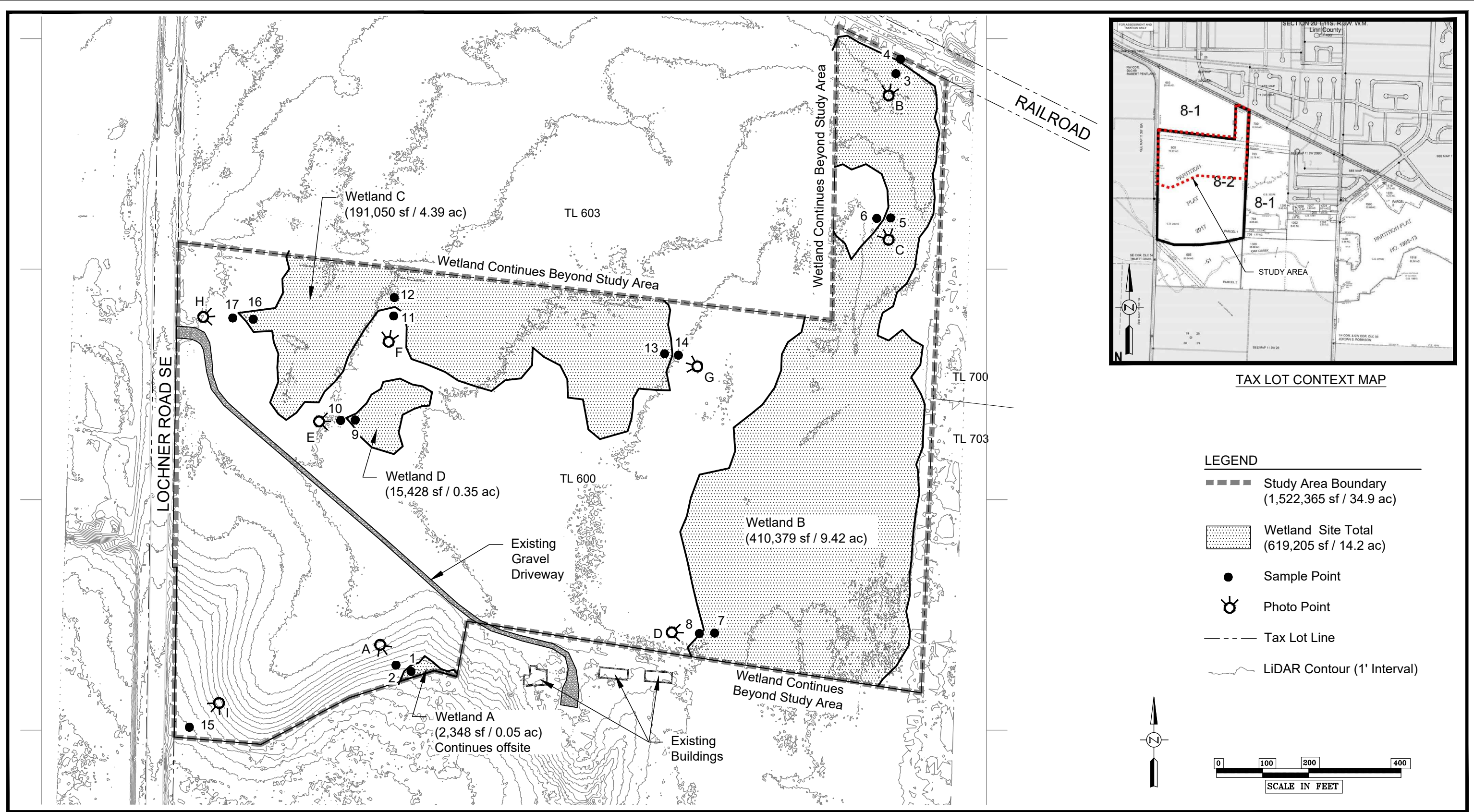
Project#6869
Date 12/16/20



Pacific Habitat Services, Inc.
9450 SW Commerce Circle, Suite 180
Wilsonville, OR 97070

Tax Lot Map
Lochner Road SE Property - Albany, OR
The Oregon Map (ormap.net)

FIGURE
2



Survey provided by A&O Engineering, LLC. The accuracy of the survey, study area, tax lot and sample points 1-15 are sub-centimeter. Sample points 16 and 17 were placed on the map using field notes; the accuracy of these data points is +/- 3 feet.

DSL WD # 2020-0033
 Approval Issued 6/3/2021
 Approval Expires 6/3/2026

Wetland Delineation
 Lochner Road SE Property - Albany, Oregon

FIGURE
6

1-19-2021

TECH MEMO

DATE: August 25, 2023

TO: City of Albany

FROM: Kelly Sandow P.E.
Sandow Engineering

RE: Update to Meadowlark Estates Subdivision Traffic Impact Analysis



RENEWAL 06/30/24

This Technical Memorandum provides an update to the Traffic Impact Analysis (TIA) for Meadowlark Subdivision (previous version May 21, 2021). The May 2021 TIA evaluated impacts for 114 single-family detached housing units. The site plan has been updated to include 176 constructed over two phases. Phase 1 is the construction of 90 units, and Phase 2 is the construction of 86 single-family units. Appendix A contains the site plan. The intersection evaluation has been updated to evaluate the impacts with 176 single-family units.

1.0 TRIP GENERATION AND DISTRIBUTION

The peak hour trips are estimated using the ITE Trip Generation Manual, 11th Ed. The most appropriate land use is 210- Single Family Detached. The independent variable for this land use is the number of units. Table 1 provides the peak hour trip generation.

TABLE 1: TRIP GENERATION PEAK HOUR

Time Period	Units	Rate	Trips	In	Out
Phase 1					
AM Peak Hour	90	$\ln(T)=0.91\ln(x)+0.12$	68	(25%) 17	(75%) 51
PM Peak Hour	90	$\ln(T)=0.94\ln(x)+0.27$	90	(63%) 57	(37%) 33
Phase 1 and 2 Total					
AM Peak Hour	176	$\ln(T)=0.91\ln(x)+0.12$	125	(25%) 31	(75%) 94
PM Peak Hour	176	$\ln(T)=0.94\ln(x)+0.27$	169	(63%) 107	(37%) 62

The trips are distributed on the street network following the same distribution pattern as the previous TIA. The trip distribution is as follows:

- 10% to/from south
- 15% to/from north on Marion St
- 45% to/from east on 34th Ave
- 30% to/from the west on 34th Ave

Figures 1 and 2 illustrate the AM peak hour trip distribution. Figures 3 and 4 illustrate the PM peak hour trip distribution.

2.0 TRAFFIC VOLUMES

The traffic counts taken for the May 2021 TIA are used for the base volumes for this analysis. The base 2021 volumes are grown to year 2023 volumes using a 2% growth rate to represent existing conditions. Phase 1 is anticipated to be completed in the year 2024, with Phase 2 completed in the year 2025. Additionally, an evaluation is to be completed for a 5-year planning horizon, year 2030. The 2% growth rate is applied to the year 2021 traffic volumes to estimate 2024, 2025, and 2030 traffic volumes.

Phase 1 development trips are added to the year 2024 background traffic volumes to represent conditions with Phase 1 complete. Phase 1 and 2 development trips are added to the year 2025 and 2030 background traffic volumes to represent conditions with the completion of the entire subdivision. The traffic volumes are illustrated in the following figures. Appendix B contains the traffic volumes.

- Figure 5: Year 2023 AM traffic volumes
- Figure 6: Year 2023 PM traffic volumes
- Figure 7: Year 2024 AM traffic volumes
- Figure 8: Year 2024 PM traffic volumes
- Figure 9: Year 2025 AM traffic volumes
- Figure 10: Year 2025 PM traffic volumes
- Figure 11: Year 2030 AM traffic volumes
- Figure 12: Year 2030 PM traffic volumes

3.0 INTERSECTION ANALYSIS

3.1 INTERSECTION OPERATION

The intersections and access connections are analyzed using the Standard Highway Capacity Manual (HCM) 6th ed. implemented in the Synchro 10 software. The results are compared to the City of Albany standards. The standards that apply are Level of Service (LOS) D for signalized intersections and a volume-to-capacity (v/c) standard of 0.85. Table 2 provides the intersection results for the AM peak hour and Table 3 for the PM peak hour. Appendix C contains the outputs.

TABLE 2: INTERSECTION ANALYSIS- PM PEAK HOUR

Intersection	Standard	2023 Background	2024 Background	2024 Build	2025 Background	2025 Build	2030 Background	2030 Build
34th at Main	LOS D	B	B	B	B	B	B	C
Marion at Lochner	v/c 0.85	0.04	0.05	0.11	0.05	0.17	0.05	0.17
Lochner at N Driveway	v/c 0.85	0.01	0.01	0.05	0.01	0.10	0.01	0.10
Lochner at S Driveway	v/c 0.85	0.00	0.00	0.02	0.00	0.04	0.00	0.04

Results are reported for critical movement at stop-controlled intersections.

TABLE 3: INTERSECTION ANALYSIS PM PEAK HOUR

Intersection	Standard	2023 Background	2024 Background	2024 Build	2025 Background	2025 Build	2030 Background	2030 Build
34th at Main	LOS D	A	B	B	B	B	B	B
Marion at Lochner	v/c 0.85	0.08	0.08	0.12	0.08	0.16	0.09	0.17
Lochner at N Driveway	v/c 0.85	0.02	0.02	0.03	0.02	0.09	0.02	0.09
Lochner at S Driveway	v/c 0.85	0.00	0.00	0.01	0.00	0.03	0.00	0.03

Results are reported for critical movement at stop-controlled intersections.

All study area intersections meet the operational standards during the AM and PM peak hours through the year 2030.

3.2 QUEUING ANALYSIS

A queuing analysis is prepared following the HCM6 Methodology implemented in SimTraffic 10. The results are represented as average and 95th percentile queue rounded to 25 feet to represent the space of an average vehicle queued (vehicle length and space between vehicles). Tables 4 and 5 provide the AM and PM peak hour queue lengths. Appendix D contains the queuing analysis outputs.

TABLE 4: QUEUING RESULTS: AM PEAK HOUR

Intersection			Available Storage (Feet)	2023		2024		2024		2025		2025		2030		2030	
				Background (Feet)		Background (Feet)		Build (Feet)		Background (Feet)		Build (Feet)		Background (Feet)		Build (Feet)	
				95 th	Avg	95 th	Avg	95 th	Avg	95 th	Avg	95 th	Avg	95 th	Avg	95 th	Avg
Marion St @ 34 th Ave	EB	L	165	25	25	25	25	25	25	25	25	25	25	25	25	25	25
	EB	T	400	25	25	25	25	25	25	25	25	25	25	25	25	25	25
	EB	R	200	25	25	25	25	25	25	25	25	25	25	25	25	25	25
	WB	L	180	50	25	50	25	75	25	50	25	75	25	75	25	100	25
	WB	TR	660	175	100	175	100	225	100	200	100	200	100	200	100	250	125
	NB	LT	510	75	25	75	25	75	50	50	25	75	50	75	25	100	50
	NB	R	130	50	25	50	25	50	25	25	25	50	25	50	25	50	25
	SB	LT	740	50	25	75	25	75	25	75	25	75	25	75	25	75	25
	SB	R	75	50	50	75	50	75	50	75	50	75	50	75	50	75	50
Marion @ Lochner	WB	LT R	1000+	25	25	25	25	25	25	25	25	25	25	25	25	25	25
	NB	LT R	1000+	25	0	0	0	0	0	0	0	0	0	25	25	25	25
	SB	LT R	350	25	25	25	25	25	25	25	25	25	25	25	25	25	25
Lochner @ N Site Access	EB	LT R	200	25	25	25	25	25	25	25	25	25	25	N/A	N/A	50	25
	WB	LT R	300	0	0	0	0	50	25	0	0	50	25	0	0	25	0
	SB	L	135	0	0	0	0	25	0	0	0	25	25	0	0	25	25
S Site Access @ Lochner	WB	LR	125	N/A	N/A	N/A	N/A	50	25	N/A	N/A	50	25	N/A	N/A	50	25

TABLE 5: QUEUING RESULTS: PM PEAK HOUR

Intersection			Available Storage (Feet)	2023 Background (Feet)		2024 Background (Feet)		2024 Build (Feet)		2025 Background (Feet)		2025 Build (Feet)		2030 Background (Feet)		2030 Build (Feet)	
				95 th	Avg	95 th	Avg	95 th	Avg	95 th	Avg	95 th	Avg	95 th	Avg	95 th	Avg
Marion St @ 34 th Ave	EB	L	165	50	25	50	25	50	25	50	25	75	25	75	25	75	25
	EB	T	400	150	75	150	75	150	100	175	100	200	125	175	100	200	125
	EB	R	200	25	25	25	25	25	25	25	25	75	25	25	25	50	25
	WB	L	180	50	5	25	25	50	25	25	25	50	25	50	25	75	25
	WB	TR	660	125	75	125	75	125	75	125	75	150	75	150	75	150	75
	NB	LT	510	75	50	75	25	75	50	75	50	100	50	75	50	100	50
	NB	R	130	50	25	50	25	50	25	50	25	75	25	50	25	75	50
	SB	LT	740	50	25	75	25	75	25	75	25	75	50	75	25	75	50
	SB	R	75	50	25	50	25	50	25	50	25	50	25	50	25	50	25
Marion @ Lochner	WB	LT R	1000+	25	25	25	25	25	25	25	25	25	25	25	25	25	25
	NB	LT R	1000+	0	0	0	0	0	0	0	25	25	0	0	25	0	
	SB	LT R	350	25	25	25	25	50	25	25	25	50	25	25	25	50	25
Lochner @ N Site Access	EB	LT R	200	50	25	25	25	25	25	50	25	50	25	50	25	50	25
	WB	LT R	300	0	0	0	0	50	25	0	0	50	25	0	0	50	25
	SB	L	135	0	0	0	0	25	25	0	0	50	25	0	0	50	25
S Site Access @ Lochner	WB	LR	125	N/A	N/A	N/A	N/A	50	25	N/A	N/A	50	25	N/A	N/A	50	25
	SB	LT	1000+	N/A	N/A	N/A	N/A	25	0	N/A	N/A	25	25	N/A	N/A	25	25

The development trips do not substantially increase queue lengths over existing conditions for the AM and PM peak hours through the year 2030.

4.0 CONCLUSIONS

The results of the evaluation are summarized as:

- All study area intersections meet the operational standards during the AM and PM peak hours through the year 2030.
- The development trips do not substantially increase queue lengths over existing conditions for the AM and PM peak hours through the year 2030.
- There is no offsite mitigation for this development proposal.

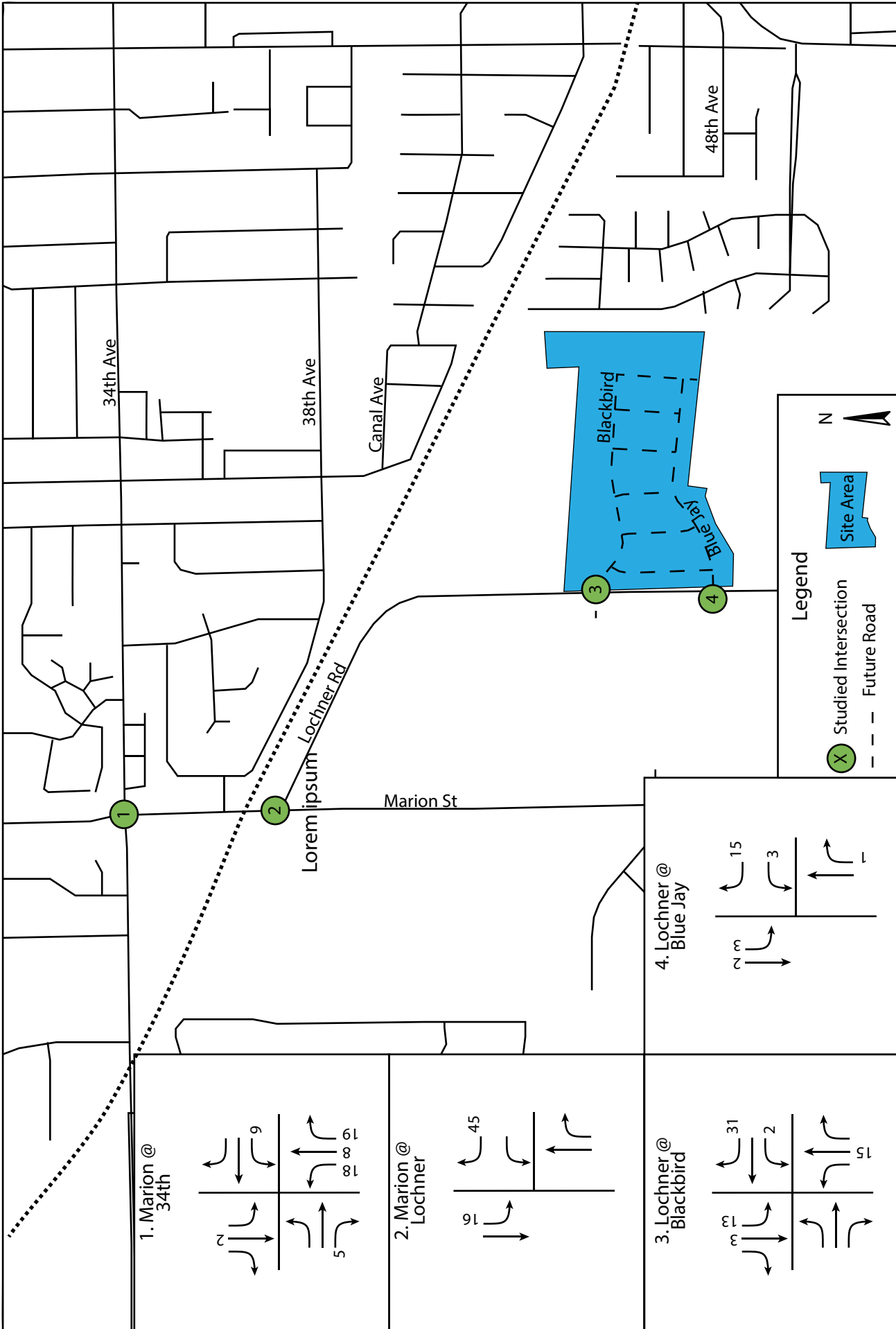
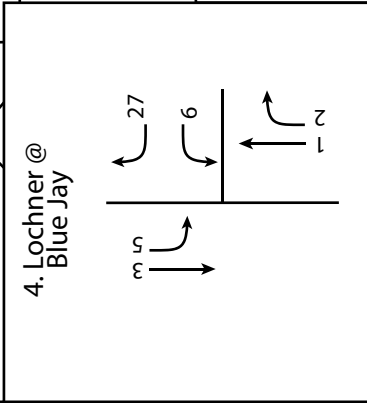
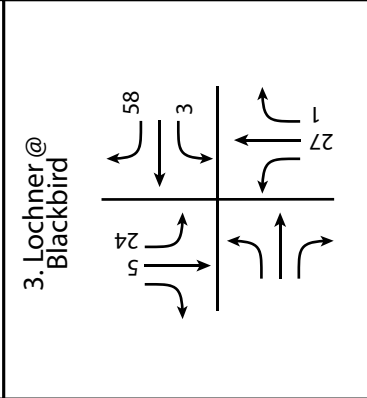
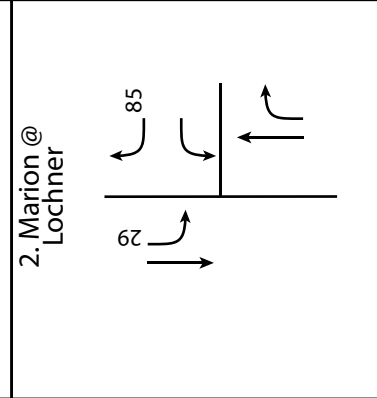
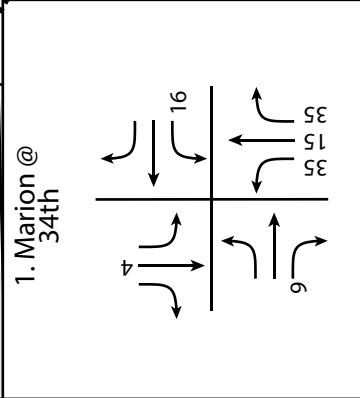
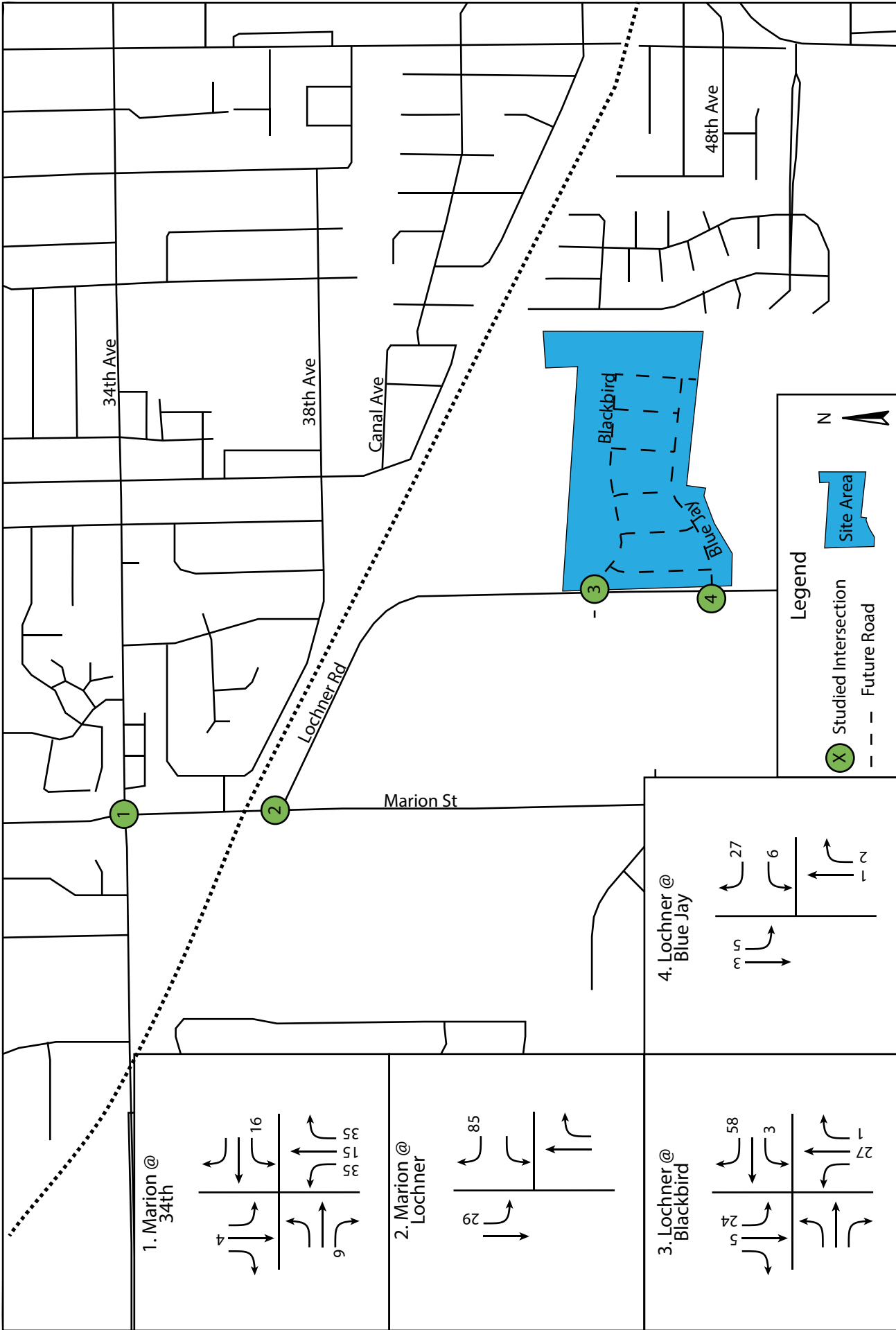


Figure 1: AM Development Trip Distribution Ph. 1

Meadowlark, Albany, Oregon



Meadowlark, Albany, Oregon

SANDOWENGINEERING

Figure 2: AM Development Trip Distribution Ph. 1 and 2 Total

160 Madison Street Suite A Eugene, Oregon 97402 - 541.513.3376 - sandowengineering.com

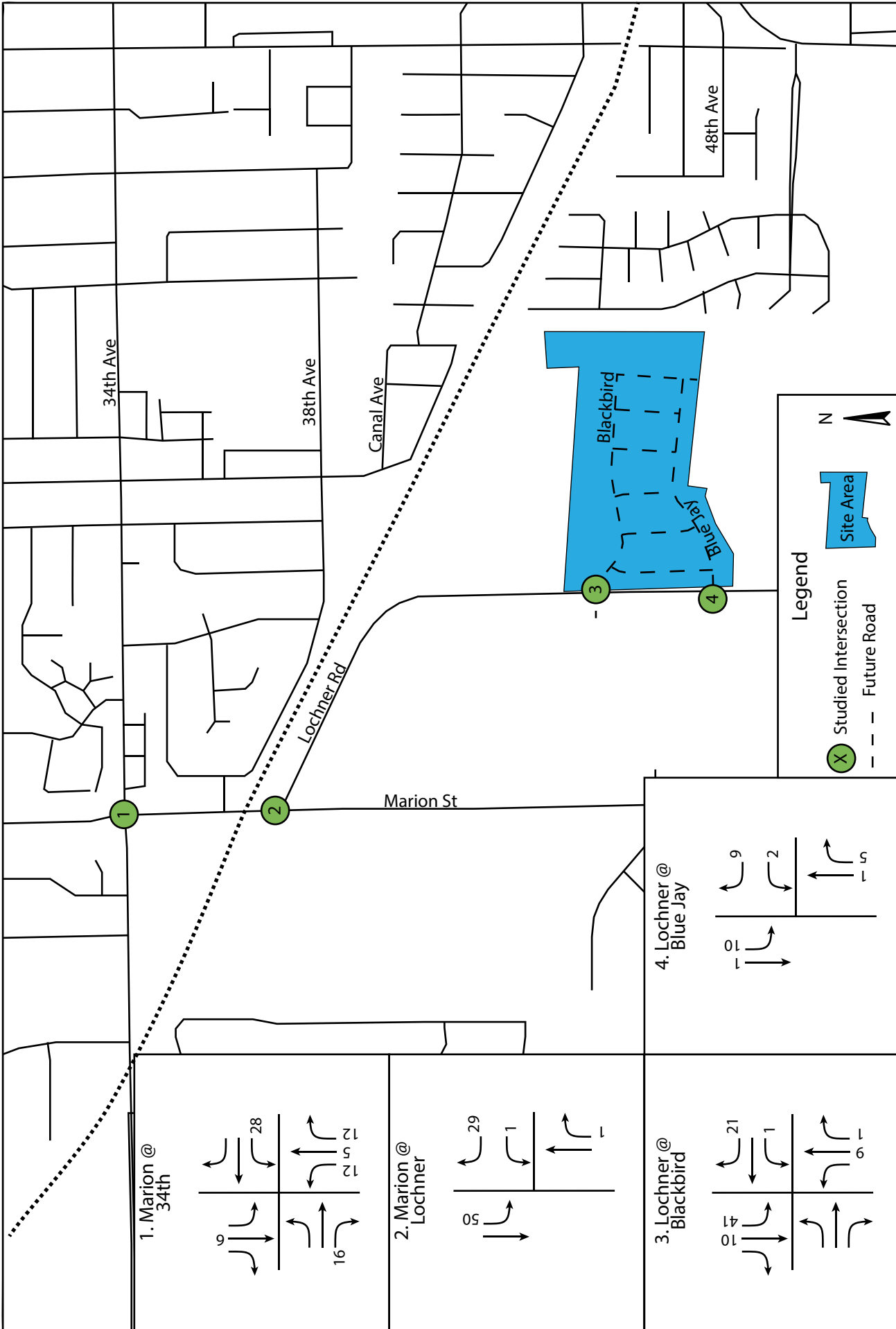


Figure 3: PM Development Trip Distribution Ph.1

Meadowlark, Albany, Oregon

SANDOWENGINEERING

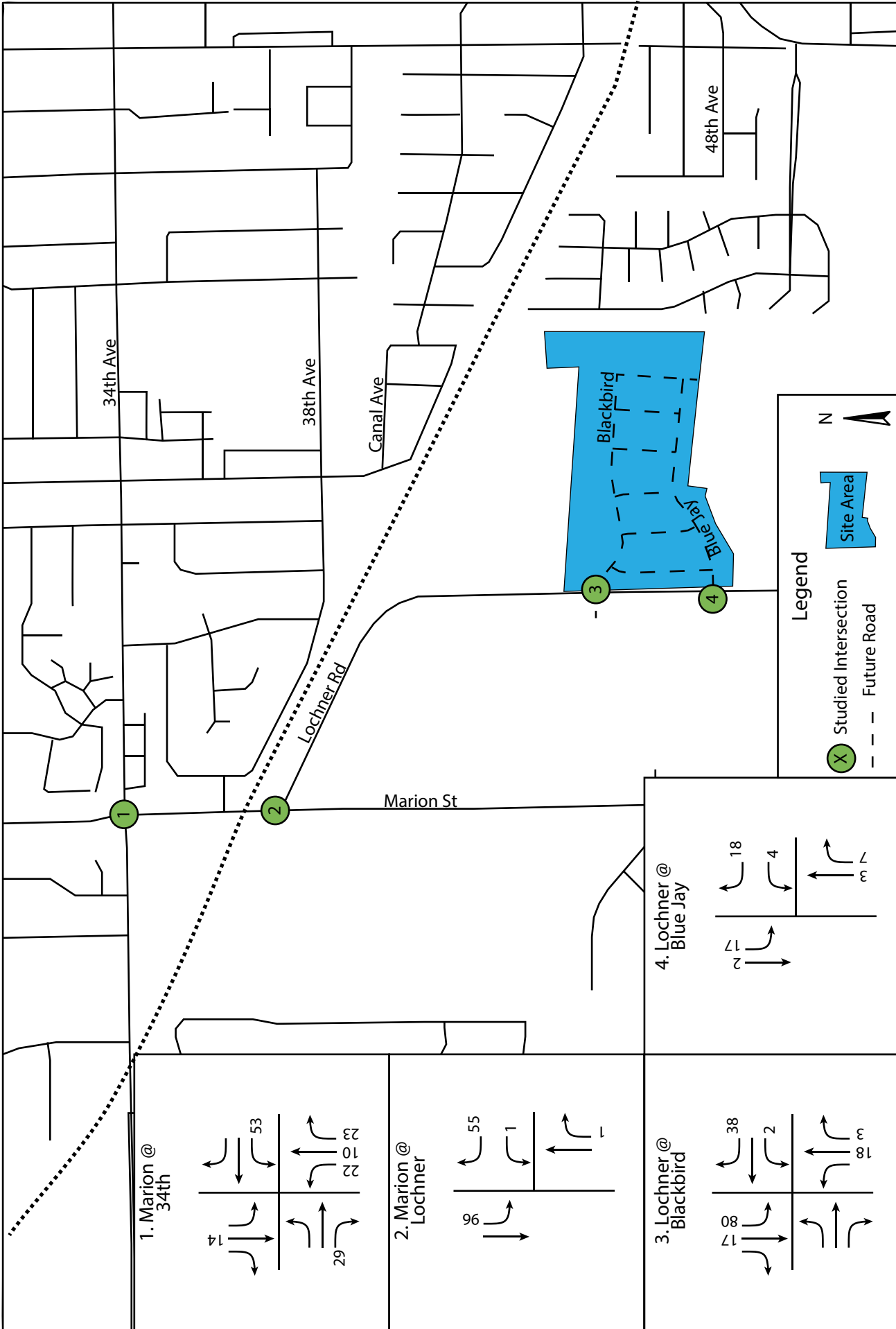


Figure 4: PM Development Trip Distribution Ph.2 and 3 Total

Meadowlark, Albany, Oregon

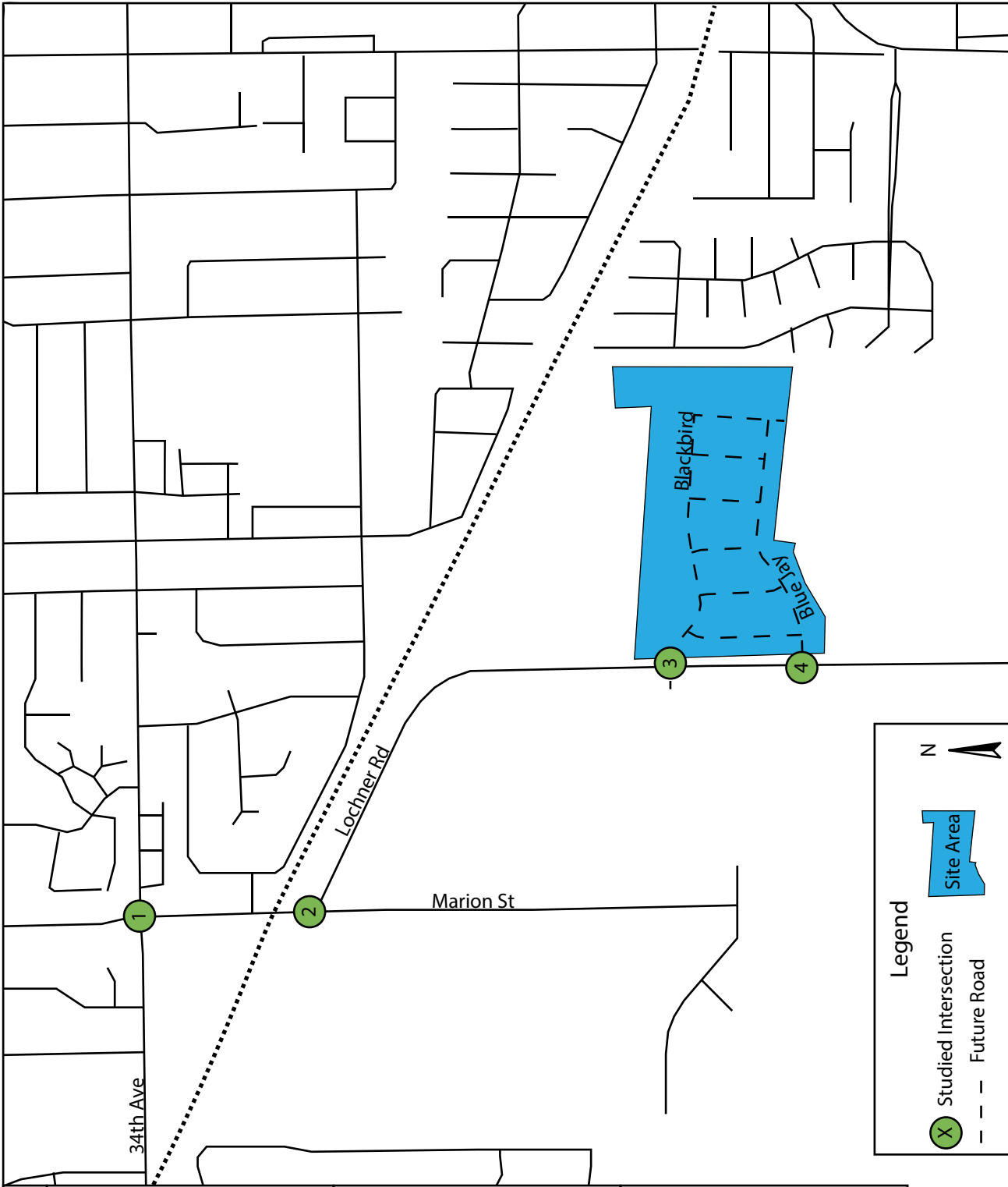
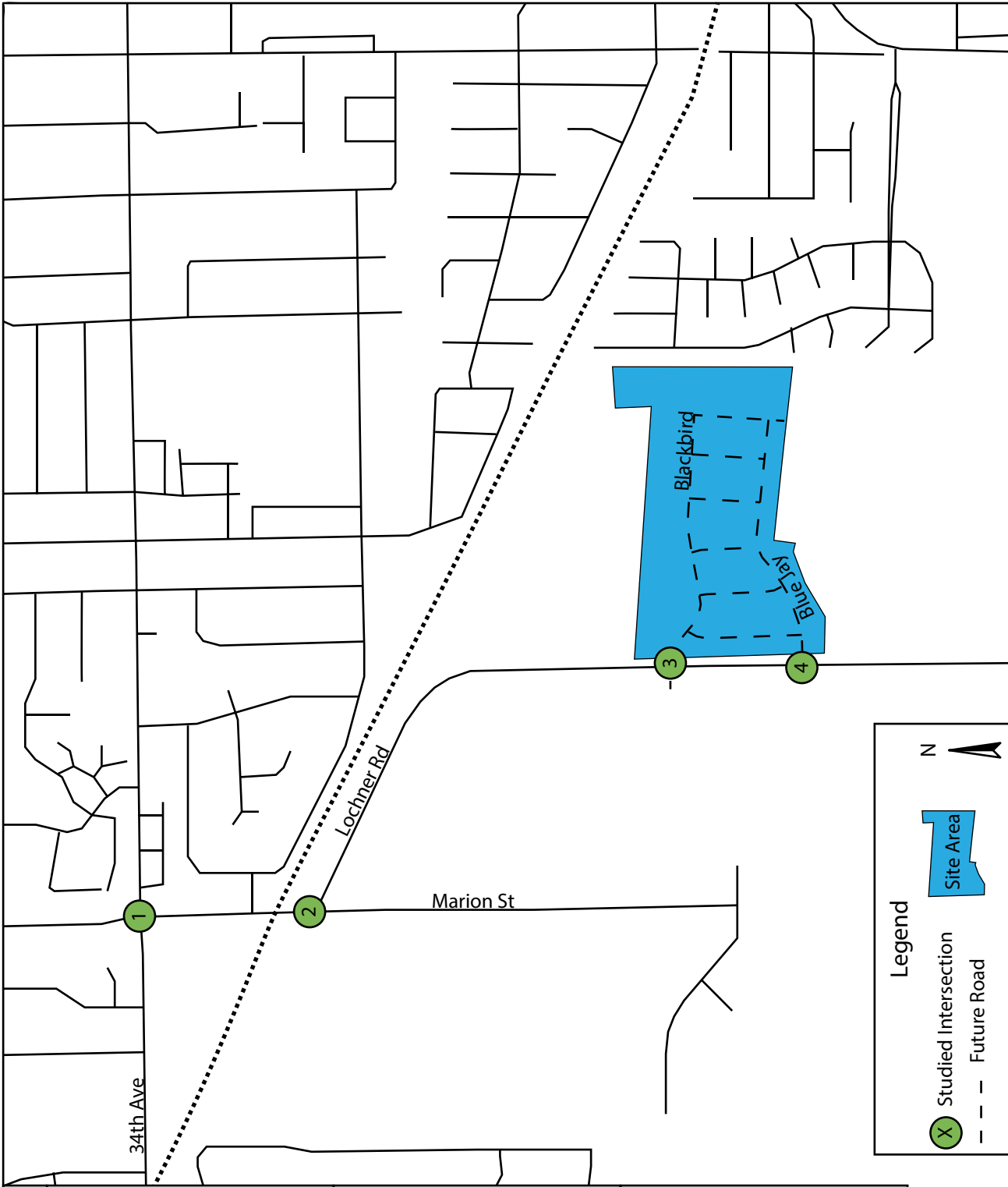


Figure 5: Year 2023 AM Peak Hour Traffic Volumes

160 Madison Street Suite A Eugene, Oregon 97402 - 541.513.3376 - sandowengineering.com

Background	
1. Marion @ 34th	
2. Marion @ Lochner	
3. Lochner @ Blackbird	

Meadowlark, Albany, Oregon



Background																	
1. Marion @ 34th	<table border="1"> <tr> <td>29</td> <td>26</td> <td>20</td> <td>393</td> <td>17</td> <td>32</td> <td>27</td> <td>28</td> </tr> <tr> <td>56</td> <td>556</td> <td>18</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>	29	26	20	393	17	32	27	28	56	556	18					
29	26	20	393	17	32	27	28										
56	556	18															
2. Marion @ Lochner	<table border="1"> <tr> <td>11</td> <td>20</td> <td>63</td> <td>0</td> <td>43</td> <td>12</td> </tr> </table>	11	20	63	0	43	12										
11	20	63	0	43	12												
3. Lochner @ Blackbird	<table border="1"> <tr> <td>40</td> <td>10</td> <td>1</td> <td>52</td> <td>0</td> </tr> </table>	40	10	1	52	0											
40	10	1	52	0													

Legend

- X Studied Intersection
- - - Future Road
- Site Area

N

Figure 6: Year 2023 PM Peak Hour Traffic Volumes

160 Madison Street Suite A Eugene, Oregon 97402 - 541.513.3376 - sandowengineering.com

Meadowlark, Albany, Oregon

SANDOWENGINEERING

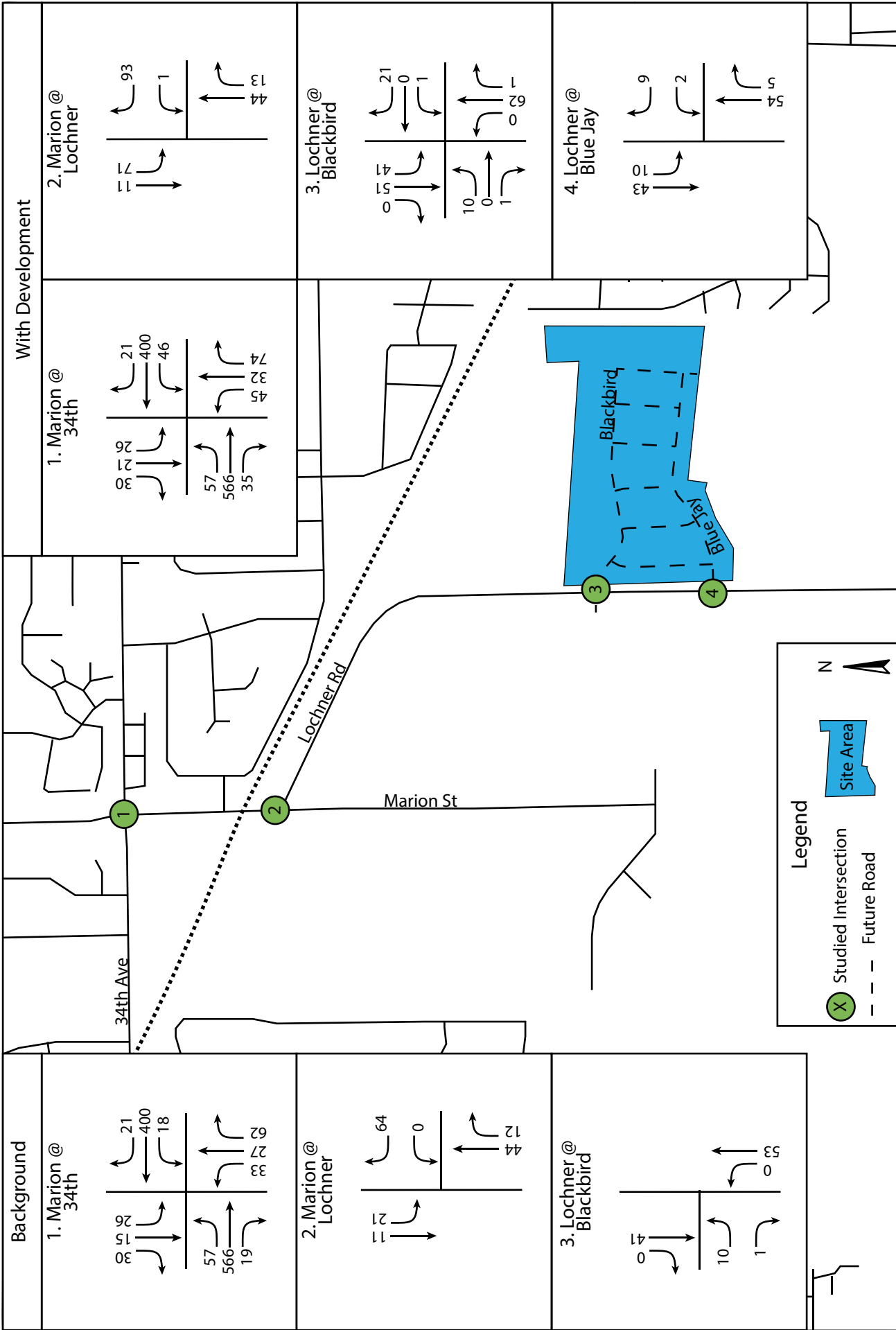


Figure 8: Year 2024 PM Peak Hour Traffic Volumes

160 Madison Street Suite A Eugene, Oregon 97402 - 541.513.3376 - sandowengineering.com

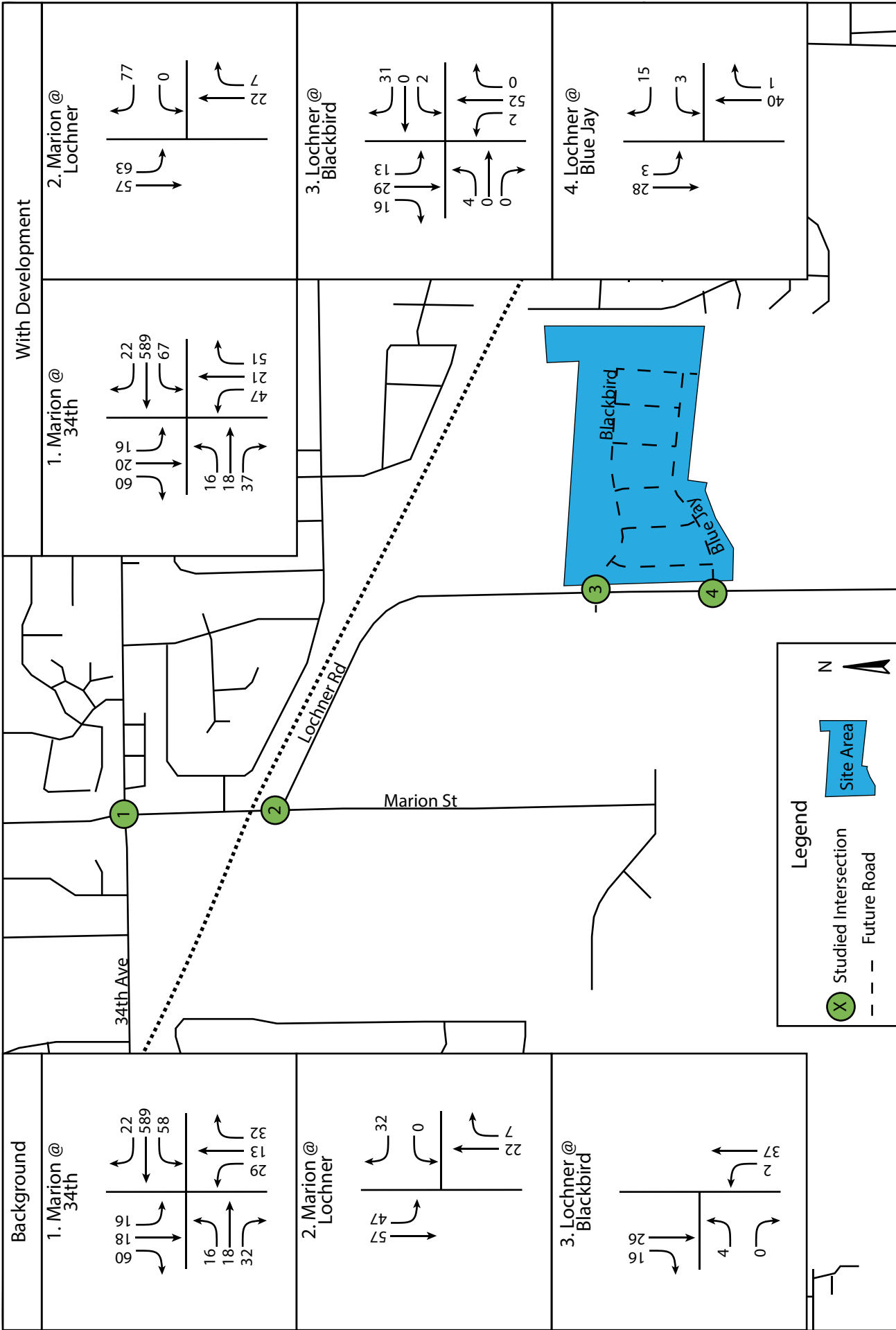


Figure 7: Year 2024 AM Peak Hour Traffic Volumes

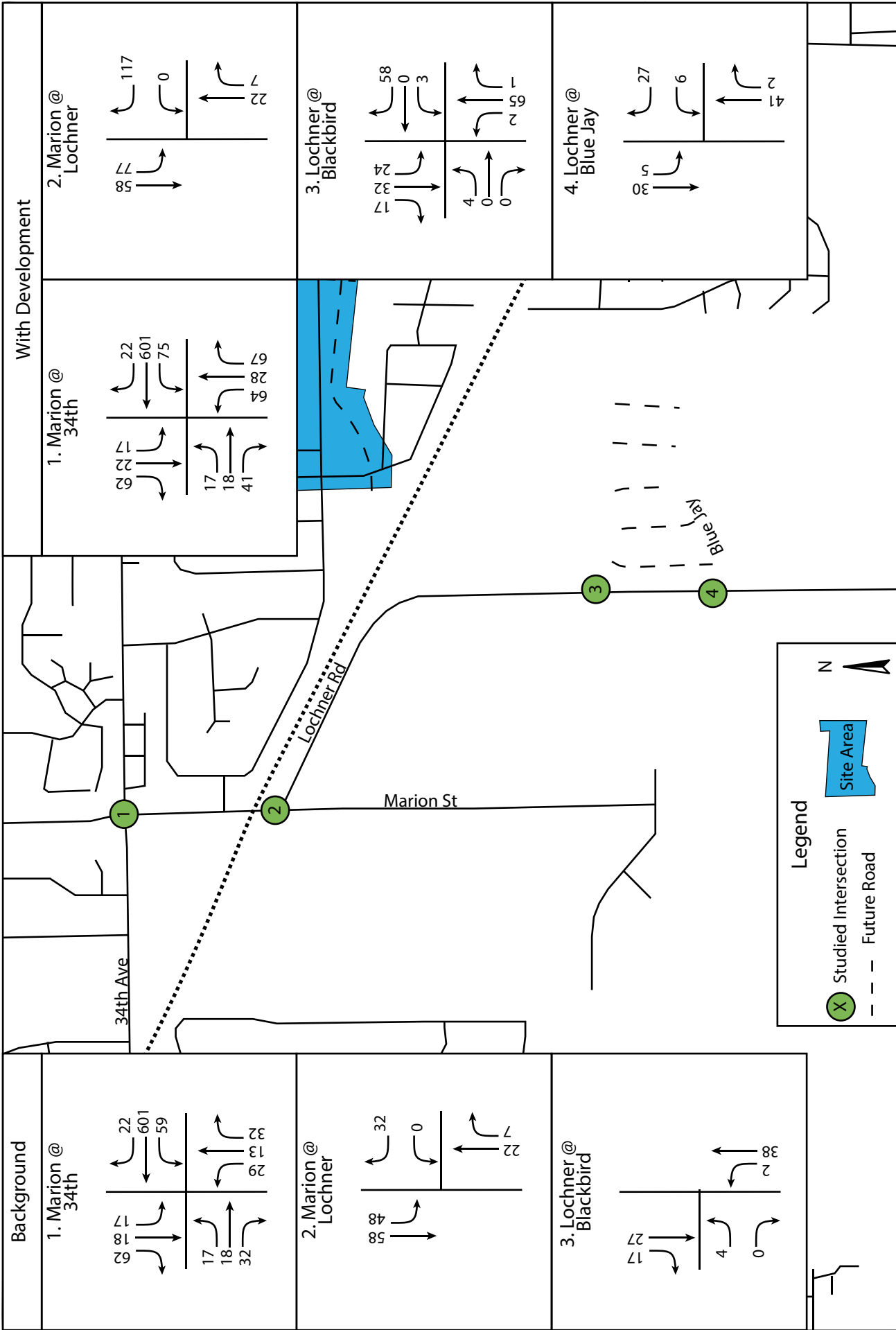


Figure 9: Year 2025 AM Peak Hour Traffic Volumes

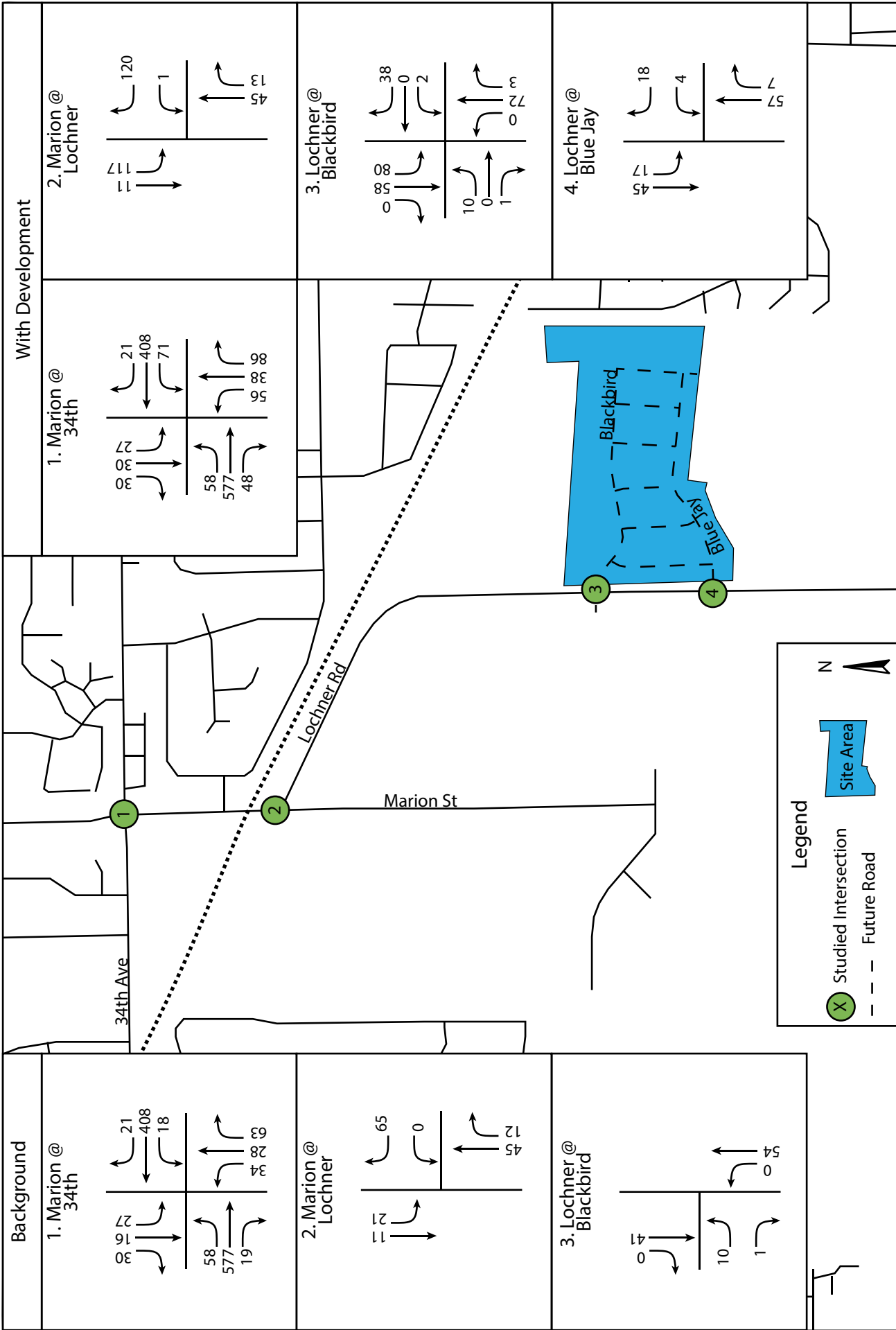


Figure 8: Year 2025 PM Peak Hour Traffic Volumes

160 Madison Street Suite A Eugene, Oregon 97402 - 541.513.3376 - sandowengineering.com

Meadowlark, Albany, Oregon

SANDOWENGINEERING

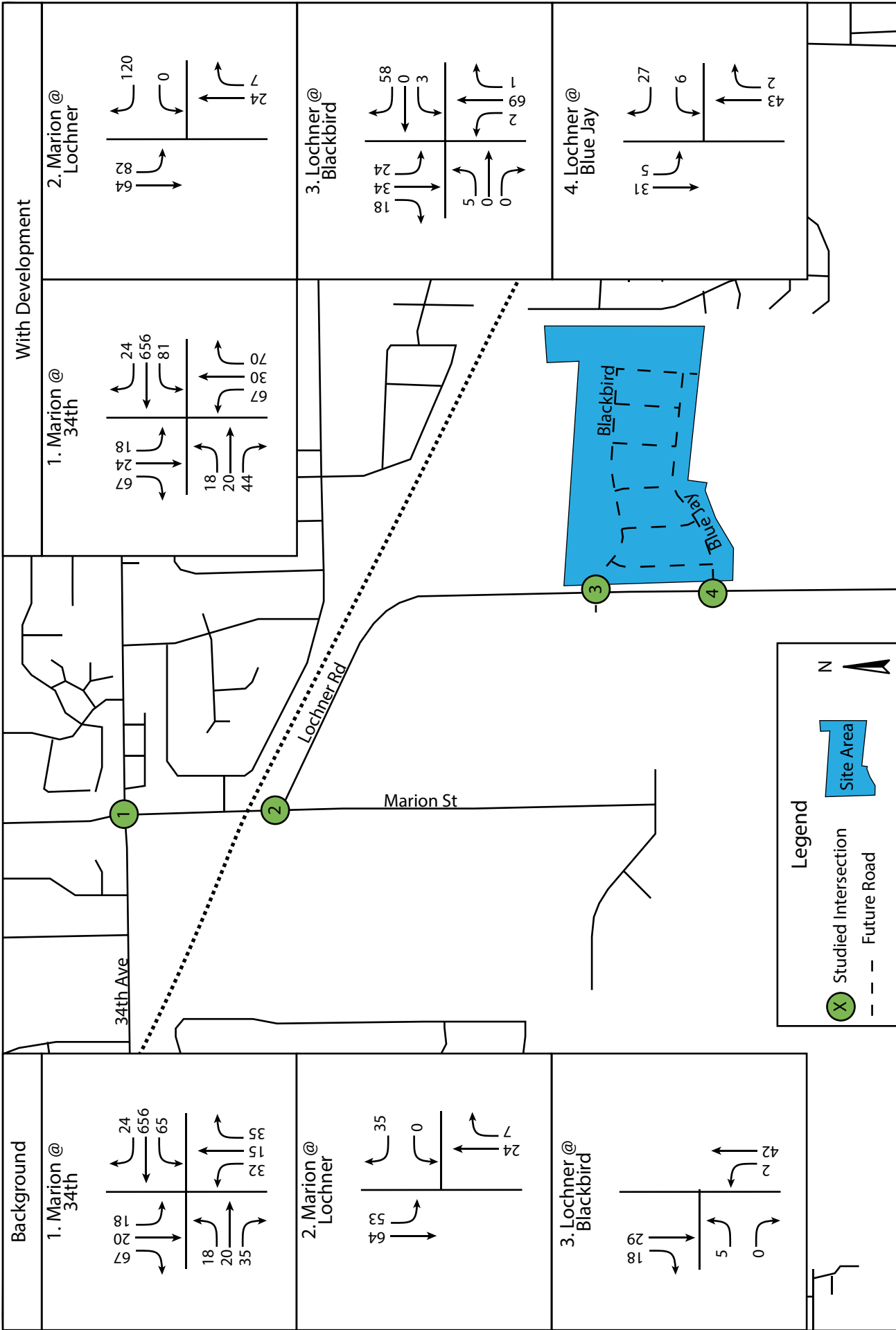


Figure 11: Year 2030 AM Peak Hour Traffic Volumes

160 Madison Street Suite A Eugene, Oregon 97402 - 541.513.3376 - sandowengineering.com

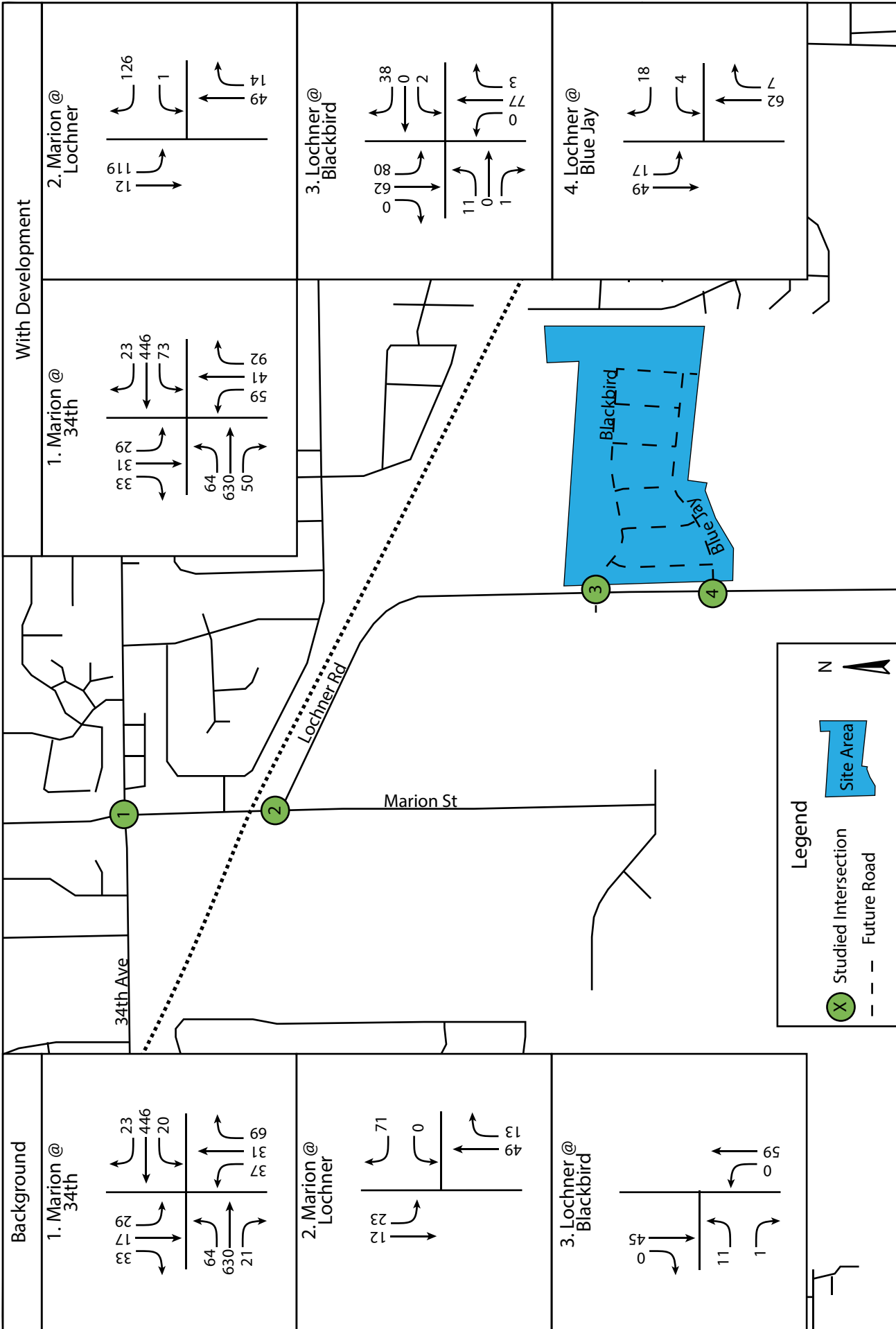


Figure 12: Year 2030 PM Peak Hour Traffic Volumes

160 Madison Street Suite A Eugene, Oregon 97402 - 541.513.3376 - sandowengineering.com

Meadowlark, Albany, Oregon

Meadowlark Estates Subdivision
Traffic Impact Analysis

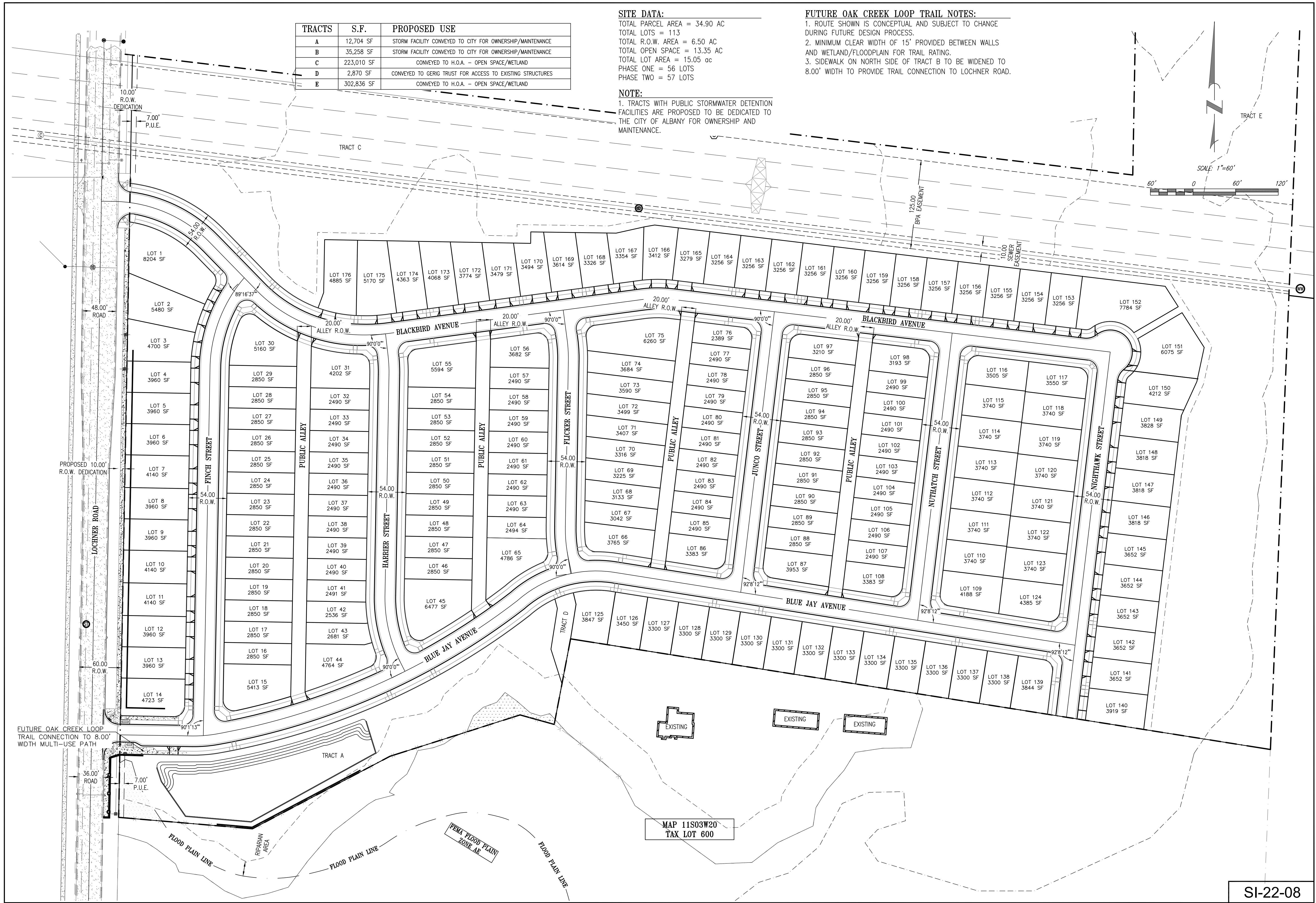
APPENDIX A: SITE PLAN

TRACTS	S.F.	PROPOSED USE
A	12,704 SF	STORM FACILITY CONVEYED TO CITY FOR OWNERSHIP/MAINTENANCE
B	35,258 SF	STORM FACILITY CONVEYED TO CITY FOR OWNERSHIP/MAINTENANCE
C	223,010 SF	CONVEYED TO H.O.A. - OPEN SPACE/WETLAND
D	2,870 SF	CONVEYED TO GERIG TRUST FOR ACCESS TO EXISTING STRUCTURES
E	302,836 SF	CONVEYED TO H.O.A. - OPEN SPACE/WETLAND

SITE DATA:
 TOTAL PARCEL AREA = 34.90 AC
 TOTAL LOTS = 113
 TOTAL R.O.W. AREA = 6.50 AC
 TOTAL OPEN SPACE = 13.35 AC
 TOTAL LOT AREA = 15.05 ac
 PHASE ONE = 56 LOTS
 PHASE TWO = 57 LOTS

FUTURE OAK CREEK LOOP TRAIL NOTES:
 1. ROUTE SHOWN IS CONCEPTUAL AND SUBJECT TO CHANGE DURING FUTURE DESIGN PROCESS.
 2. MINIMUM CLEAR WIDTH OF 15' PROVIDED BETWEEN WALLS AND WETLAND/FLOODPLAIN FOR TRAIL RATING.
 3. SIDEWALK ON NORTH SIDE OF TRACT B TO BE WIDENED TO 8.00' WIDTH TO PROVIDE TRAIL CONNECTION TO LOCHNER ROAD.

NOTE:
 1. TRACTS WITH PUBLIC STORMWATER DETENTION FACILITIES ARE PROPOSED TO BE DEDICATED TO THE CITY OF ALBANY FOR OWNERSHIP AND MAINTENANCE.



A & O Engineering L.L.C.
 CIVIL ENGINEERING & SITE DEVELOPMENT CONSULTING
 380 O ST. SUITE 300
 SPRINGFIELD, OR 97477
 PHONE: (541) 902-9790
 scott@aoengineers.com

REGISTERED PROFESSIONAL ENGINEER
 9141275
 OREGON
 12/22

Tentative Subdivision Plan
 for
Meadowlark Estates Subdivision
 Albany Linn County Oregon

DATE: 8-1-22
 PROJECT No.: 5291
 SCALE: HORIZ
 VERT: _____
 DRAWN BY: AGH
 DESIGNED BY: KJM
 REVIEWED BY: SJM

SUBMITTALS:

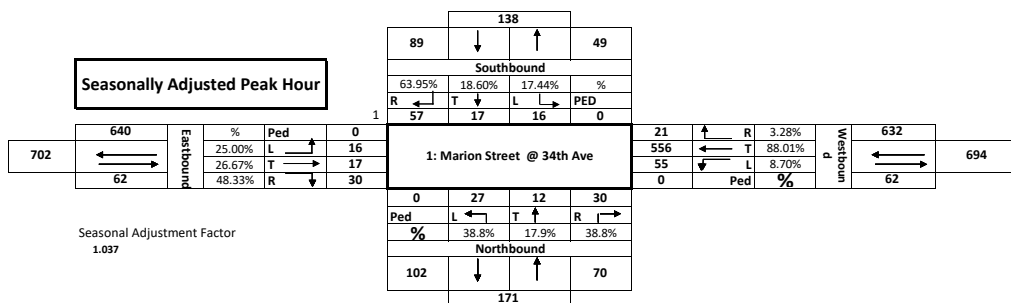
REVISIONS:

SHEET
C-1.2
 3 OF 49

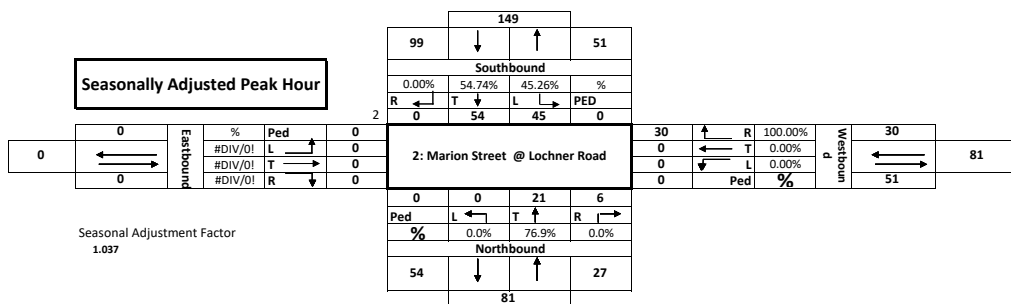
SI-22-08

Meadowlark Estates Subdivision
Traffic Impact Analysis

APPENDIX B: TRAFFIC VOLUMES



Intersection: 2: Marion Street @ Lochner Road		City: Albany																					
Counter: Access Engineering		Date: Thursday, May 13, 2021																					
Total of All Vehicles																							
Time Period		Southbound				Westbound				Northbound				Eastbound				15 Minute Volume	Hourly Volume	Pedestrians			
		Right	Thru	Left	Approach Total	Right	Thru	Left	Approach Total	Right	Thru	Left	Approach Total	Right	Thru	Left	Approach Total			SB	WB	NB	EB
7:00	7:15	0	9	5	14	6	0	0	6	5	3	0	8	0	0	0	0	28	0	0	0	0	
7:15	7:30	0	11	8	19	5	0	0	5	0	9	0	9	0	0	0	0	33	0	0	0	0	
7:30	7:45	0	13	11	24	6	0	0	6	1	3	0	4	0	0	0	0	34	0	0	0	0	
7:45	8:00	0	19	19	38	12	0	0	12	0	5	0	5	0	0	0	0	55	150	0	0	0	
8:00	8:15	0	7	3	10	2	0	0	2	0	1	0	1	0	0	0	0	13	135	0	0	0	0
8:15	8:30	0	6	4	10	5	0	0	5	1	8	0	9	0	0	0	0	24	126	0	0	0	0
8:30	8:45	0	5	4	9	5	0	0	5	0	15	0	15	0	0	0	0	29	121	0	0	0	0
8:45	9:00	0	4	6	10	12	0	0	12	1	9	0	10	0	0	0	0	32	98	0	0	0	0
9:00	9:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15	9:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30	9:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45	10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Period Total		0	74	60		53	0	0		8	53	0		0	0	0		248		0	0	0	0
PM Peak Hour Count Summary																							
Peak Volumes	Southbound				Approach	Westbound			Approach	Northbound			Approach	Eastbound			Approach	Hourly Volume	Pedestrians				
	Right	Thru	Left	Total	Right	Thru	Left	Total	Right	Thru	Left	Total	Right	Thru	Left	Total	SB		WB	NB	EB		
	0	52	43	95	0.63	0.60	0.00	0.00	0.60	0.30	0.56	0.00	0.72	0.00	0.00	0.00	0.00		150	0	0	0	0
PHF	0.00	0.68	0.57														0.68						
Trucks	0	0	0		0	0	0		0	0	0		0	0	0								
% Trucks	9%	9%	9%		0%	0%	0%		4%	4%	4%		0%	0%	0%								



2: Marion Street @ Lochner Road

Pedestrians and Cars

Time Period	Southbound				Westbound				Northbound				Eastbound				15 Minute Volume	Hourly Volume
	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left		
7:00 AM			9	5			6				5	3					28	
7:15 AM			11	8			5				0	9					33	
7:30 AM			13	11			6				1	3					34	
7:45 AM			19	19			12				0	5					55	150
8:00 AM			7	3			2				0	1					13	135
8:15 AM			6	4			5				1	8					24	126
8:30 AM			5	4			5				0	15					29	121
8:45 AM			4	6			12				1	9					32	98
9:00 AM																	0	85
9:15 AM																	0	61
9:30 AM																	0	32
9:45 AM																	0	0
Total	0	0	74	60	0	53	0	0	0	8	53	0	0	0	0	0		
Peak Hour	0	0	52	43	0	29	0	0	0	6	20	0	0	0	0	0	150	

Trucks

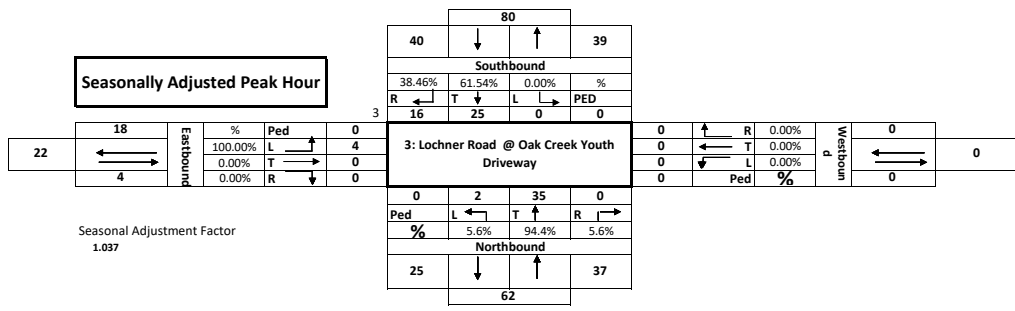
Time Period	Southbound			Westbound			Northbound			Eastbound			15 Minute Volume	Hourly Volume
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left		
7:00 AM													0	
7:15 AM													0	
7:30 AM													0	
7:45 AM													0	0
8:00 AM													0	0
8:15 AM													0	0
8:30 AM													0	0
8:45 AM													0	0
9:00 AM													0	0
9:15 AM													0	0
9:30 AM													0	0
9:45 AM													0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	
Peak Hour	0	0	0	0	0	0	0	0	0	0	0	0	0	

Bikes

Time Period	Southbound			Westbound			Northbound			Eastbound			SB	WB	NB	EB
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left				
7:00 AM													0	0	0	0
7:15 AM													0	0	0	0
7:30 AM													0	0	0	0
7:45 AM													0	0	0	0
8:00 AM													0	0	0	0
8:15 AM													0	0	0	0
8:30 AM													0	0	0	0
8:45 AM													0	0	0	0
9:00 AM													0	0	0	0
9:15 AM													0	0	0	0
9:30 AM													0	0	0	0
9:45 AM													0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Pedestrians

Time Period	NE			NW			SW			SE			SB	WB	NB	EB
	Left	Right	Total	Left	Right	Total	Left	Right	Total	Left	Right	Total				
7:00 AM			0			0			0			0	0	0	0	0
7:15 AM			0			0			0			0	0	0	0	0
7:30 AM			0			0			0			0	0	0	0	0
7:45 AM			0			0			0			0	0	0	0	0
8:00 AM			0			0			0			0	0	0	0	0
8:15 AM			0			0			0			0	0	0	0	0
8:30 AM			0			0			0			0	0	0	0	0
8:45 AM			0			0			0			0	0	0	0	0
9:00 AM			0			0			0			0	0	0	0	0
9:15 AM			0			0			0			0	0	0	0	0
9:30 AM			0			0			0			0	0	0	0	0
9:45 AM			0			0			0			0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Global Peak Hour

Intersections				
	1: Marion Street @ 34th Ave	2: Marion Street @ Lochner Road	3: Lochner Road @ Oak Creek Youth Driveway	
Time Period	Volume	Volume	Volume	Total
7:00 AM 8:00 AM	822	150	79	1051
7:15 AM 8:15 AM	794	135	81	1010
7:30 AM 8:30 AM	752	126	76	954
7:45 AM 8:45 AM	645	121	65	831
8:00 AM 9:00 AM	564	98	54	716
	822	150	81	1051

Peak Hour 7:00 AM
7:15 AM
7:30 AM
7:45 AM

Existing 2021 AM Volumes

		89		49				
		R	T	L	PED			
Ped	0	2	57	17	16	0		
L	16	1: Marion Street @ 34th Ave				558	T	631.78
T	17					52	L	62.244
R	30					0	Ped	
		0		27		12		
		Ped		L		R		
		102		51		70		
		R	T	L	PED			
Ped	0	1	0	54	45	0		
L	0	2: Marion Street @ Lochner Road				0	T	30.085
T	0					0	L	59.833
R	0					0	Ped	
		0		0		21		
		Ped		L		R		
		54		27				

		46		39				
		R	T	L	PED			
Ped	0	2	16	25	0	0		
L	0	3: Lochner Road @ Oak Creek Youth Driveway				0	T	0
T	0					0	L	0
R	0					0	Ped	0
		0		2		35		
		Ped		L		R		
		26		37				

EDIT Highlighted	
Base Year	2021
Target Year	2023
Years of Growth	2
Growth Rate Per Year	###
Growth factor	1.04

		93		51				
		R	T	L	PED			
Ped	0	2	59	17	16	0		
L	16	1: Marion Street @ 34th Ave				578	T	657
T	17					57	L	64.7
R	31					0	Ped	
		0		28		13		
		Ped		L		R		
		102		53		72		
		R	T	L	PED			
Ped	0	1	0	55	46	0		
L	0	2: Marion Street @ Lochner Road				0	T	31.3
T	0					0	L	52.9
R	0					0	Ped	
		0		0		22		
		Ped		L		R		
		56		28				

		42		41				
		R	T	L	PED			
Ped	0	2	16	26	0	0		
L	0	3: Lochner Road @ Oak Creek Youth Driveway				0	T	0
T	0					0	L	0
R	0					0	Ped	0
		0		2		37		
		Ped		L		R		
		26		39				

EDIT Highlighted	
Base Year	2021
Target Year	2024
Years of Growth	3
Growth Rate Per Year	###
Growth Factor	1.06

		95	52			
		R	T	L	PED	
	Ped	2	60	16	0	0
678	L	16	1: Marion Street @ 34th Ave			22 R
	T	13			58 T	66
66	R	32			0 Ped	

		104	54			
		R	T	L	PED	
	Ped	0	57	27	0	0
0	L	0	2: Marion Street @ Lochner Road			32 R
	T	0			0 T	31.9
0	R	0			0 Ped	53.9

		43	42			
		R	T	L	PED	
	Ped	2	16	26	0	0
19	L	4	3: Lochner Road @ Oak Creek Youth Driveway			0 R
	T	0			0 L	0
4	R	0			0 Ped	0

EDIT Highlighted	
Base Year	2021
Target Year	2025
Years of Growth	4
Growth Rate Per Year	0.020
Growth Factor	1.08

		96	53			
		R	T	L	PED	
	Ped	0	62	16	17	0
691	L	17	1: Marion Street @ 34th Ave			22 R
	T	13			60 T	67.2
67	R	32			0 Ped	

		106	55			
		R	T	L	PED	
	Ped	0	59	29	0	0
0	L	0	2: Marion Street @ Lochner Road			32 R
	T	0			0 T	32.5
0	R	0			0 Ped	54.9

		44	43			
		R	T	L	PED	
	Ped	2	17	27	0	0
19	L	4	3: Lochner Road @ Oak Creek Youth Driveway			0 R
	T	0			0 L	0
4	R	0			0 Ped	0

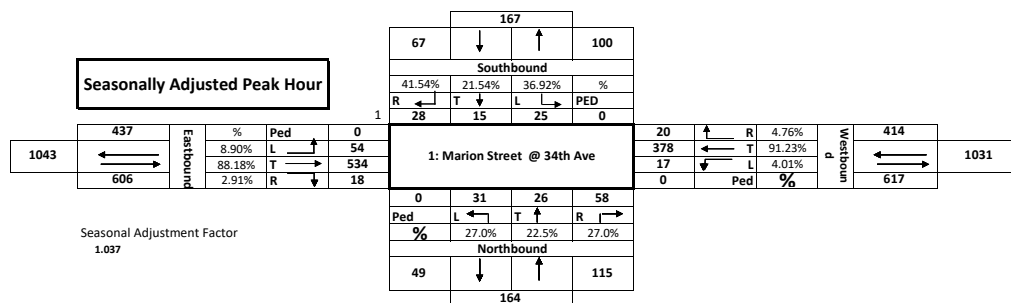
EDIT Highlighted	
Base Year	2021
Target Year	2030
Years of Growth	9
Growth Rate Per Yea #####	
Growth Factor	1.18

		105		58		
		R	T	L	PED	
		0	87	29	19	0
755	Ped	0				24
	L	0				655
	T	29				65
73	R	35				0
		0	32	15	33	
		Ped	L	T	R	
		120		60		82
		R	T	L	PED	
		0	81	53	0	
	Ped	0				35
	L	0				0
	T	0				0
	R	0				0
		0	21	24	7	
		Ped	L	T	R	
		64		32		

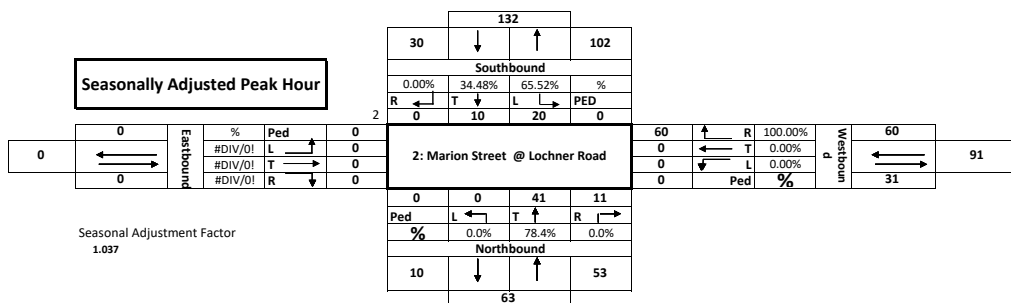
		116		60		82
		R	T	L	PED	
		0	81	53	0	
	Ped	0				35
	L	0				0
	T	0				0
	R	0				0
		0	21	24	7	
		Ped	L	T	R	
		64		32		

		48		47		
		R	T	L	PED	
		2	18	29	0	0
	Ped	0				0
	L	0				0
	T	0				0
	R	0				0
		0	2	42	0	
		Ped	L	T	R	
		29		44		

Intersection: 1: Marion Street @ 34th Ave		City: Albany																						
Counter: Access Engineering		Date: Thursday, May 13, 2021																						
Total of All Vehicles																								
Time Period	Southbound				Westbound				Northbound				Eastbound				15 Minute Volume	Hourly Volume	Pedestrians					
	Right	Thru	Left	Approach Total	Right	Thru	Left	Approach Total	Right	Thru	Left	Approach Total	Right	Thru	Left	Approach Total			SB	WB	NB	EB		
16:00	16:15	6	3	11	20	4	100	3	107	21	9	15	45	3	117	9	129	301		0	0	0	0	
16:15	16:30	7	4	4	15	3	81	2	86	11	5	10	26	8	112	12	132	259		0	0	0	0	
16:30	16:45	8	2	5	15	8	81	6	95	15	6	2	23	3	151	19	173	306		0	0	0	0	
16:45	17:00	6	5	4	15	4	102	5	111	9	5	3	17	3	135	12	150	293	1159	0	0	0	0	
17:00	17:15	9	6	14	29	5	66	4	75	17	6	7	30	9	133	13	155	289	1147	0	0	0	0	
17:15	17:30	10	5	4	19	8	85	1	94	8	2	7	17	7	148	12	167	297	1185	0	0	0	0	
17:30	17:45	6	2	7	15	8	81	6	95	10	4	2	16	10	108	15	133	259	1138	0	0	0	0	
17:45	18:00	12	4	3	19	4	83	7	94	6	4	4	14	5	106	8	119	246	1091	0	0	0	0	
18:00	18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	
18:15	18:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	
18:30	18:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	
18:45	19:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	
Count Period Total		64	31	52		44	679	34		97	41	50		48	1010	100		2250		0	0	0	0	
PM Peak Hour Count Summary																								
Peak Volumes	Southbound				Approach Total	Westbound			Approach Total	Northbound			Approach Total	Eastbound			Approach Total	PHF	Trucks	% Trucks	Pedestrians			
	Right	Thru	Left	Right		Thru	Left	Right		Thru	Left	Right		Thru	Left	Right					Thru	Left	SB	WB
	27	14	24	65	19	364	16	399	56	25	30	111	17	515	52	584	1159		0	0	0	0		
	0.84	0.70	0.55	0.81	0.59	0.89	0.67	0.90	0.67	0.69	0.50	0.62	0.53	0.85	0.68	0.84	0.95							
	0	0	0		0	0	0		0	0	0		0	0	0									
	0%	0%	0%		0%	0%	0%		0%	0%	0%		0%	0%	0%									



Intersection: 2: Marion Street @ Lochner Road		City: Albany																					
Counter: Access Engineering		Date: Thursday, May 13, 2021																					
Total of All Vehicles																							
Time Period	Southbound				Westbound				Northbound				Eastbound				15 Minute Volume	Hourly Volume	Pedestrians				
	Right	Thru	Left	Approach Total	Right	Thru	Left	Approach Total	Right	Thru	Left	Approach Total	Right	Thru	Left	Approach Total			SB	WB	NB	EB	
16:00	16:15	0	1	3	4	23	0	0	23	6	11	0	17	0	0	0	0	44	0	0	0	0	
16:15	16:30	0	3	6	9	11	0	0	11	2	14	0	16	0	0	0	0	36	0	0	0	0	
16:30	16:45	0	2	5	7	13	0	0	13	2	9	0	11	0	0	0	0	31	0	0	0	0	
16:45	17:00	0	4	5	9	11	0	0	11	1	6	0	7	0	0	0	0	27	138	0	0	0	0
17:00	17:15	0	2	11	13	14	0	0	14	3	13	0	16	0	0	0	0	43	137	0	0	0	0
17:15	17:30	0	2	5	7	6	0	0	6	0	3	0	3	0	0	0	0	16	117	0	0	0	0
17:30	17:45	0	3	6	9	11	0	1	12	1	4	0	5	0	0	0	0	26	112	0	0	0	0
17:45	18:00	0	4	2	6	6	0	0	6	2	7	0	9	0	0	0	0	21	106	0	0	0	0
18:00	18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:15	18:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:30	18:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:45	19:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Period Total		0	21	43	95	0	1	17	67	0	0	0	0	0	0	0	0	244	0	0	0	0	
PM Peak Hour Count Summary																							
Peak Volumes	Southbound				Westbound				Northbound				Eastbound				Approach Total	Hourly Volume	Pedestrians				
	Right	Thru	Left	Total	Right	Thru	Left	Total	Right	Thru	Left	Total	Right	Thru	Left	Total			SB	WB	NB	EB	
PHF	0.00	0.63	0.79	0.81	0.63	0.00	0.00	0.63	0.46	0.71	0.00	0.75	0.00	0.00	0.00	0.00	0.78	0	0	0	0		
Trucks	0	0	0		0	0	0		0	0	0		0	0	0								
% Trucks	0%	0%	0%		0%	0%	0%		10%	10%	10%		0%	0%	0%								



2: Marion Street @ Lochner Road

Pedestrians and Cars

Time Period	Southbound				Westbound				Northbound				Eastbound				15 Minute Volume	Hourly Volume
	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left		
4:00 PM			1	3			23				6	11					44	
4:15 PM			3	6			11				2	14					36	
4:30 PM			2	5			13				2	9					31	
4:45 PM			4	5			11				1	6					27	138
5:00 PM			2	11			14				3	13					43	137
5:15 PM			2	5			6				0	3					16	117
5:30 PM			3	6			11	1			1	4					26	112
5:45 PM			4	2			6				2	7					21	106
6:00 PM																	0	63
6:15 PM																	0	47
6:30 PM																	0	21
6:45 PM																	0	0
Total	0	0	21	43	0	95	0	1	0	17	67	0	0	0	0	0		
Peak Hour	0	0	10	19	0	58	0	0	0	11	40	0	0	0	0	0	138	

Trucks

Time Period	Southbound			Westbound			Northbound			Eastbound			15 Minute Volume	Hourly Volume
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left		
4:00 PM													0	
4:15 PM													0	
4:30 PM													0	
4:45 PM													0	0
5:00 PM													0	0
5:15 PM													0	0
5:30 PM													0	0
5:45 PM													0	0
6:00 PM													0	0
6:15 PM													0	0
6:30 PM													0	0
6:45 PM													0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	
Peak Hour	0	0	0	0	0	0	0	0	0	0	0	0	0	

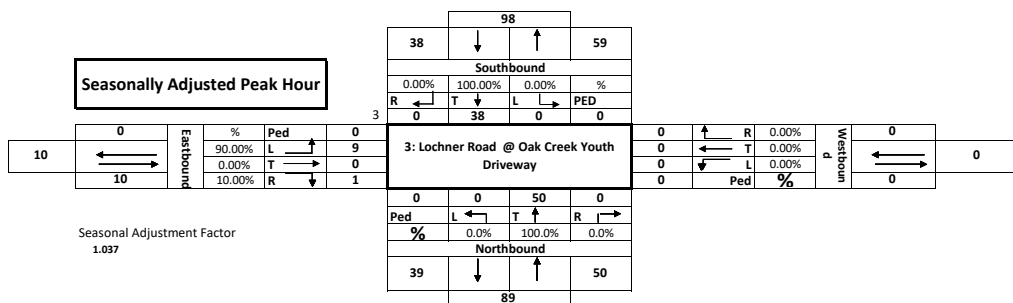
Bikes

Time Period	Southbound			Westbound			Northbound			Eastbound			SB	WB	NB	EB
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left				
4:00 PM													0	0	0	0
4:15 PM													0	0	0	0
4:30 PM													0	0	0	0
4:45 PM													0	0	0	0
5:00 PM													0	0	0	0
5:15 PM													0	0	0	0
5:30 PM													0	0	0	0
5:45 PM													0	0	0	0
6:00 PM													0	0	0	0
6:15 PM													0	0	0	0
6:30 PM													0	0	0	0
6:45 PM													0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Pedestrians

Time Period	NE			NW			SW			SE			SB	WB	NB	EB
	Left	Right	Total	Left	Right	Total	Left	Right	Total	Left	Right	Total				
4:00 PM			0			0			0			0	0	0	0	0
4:15 PM			0			0			0			0	0	0	0	0
4:30 PM			0			0			0			0	0	0	0	0
4:45 PM			0			0			0			0	0	0	0	0
5:00 PM			0			0			0			0	0	0	0	0
5:15 PM			0			0			0			0	0	0	0	0
5:30 PM			0			0			0			0	0	0	0	0
5:45 PM			0			0			0			0	0	0	0	0
6:00 PM			0			0			0			0	0	0	0	0
6:15 PM			0			0			0			0	0	0	0	0
6:30 PM			0			0			0			0	0	0	0	0
6:45 PM			0			0			0			0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Intersection: 3: Lochner Road @ Oak Creek Youth Dri City: Albany Counter: Access Engineering Date: Thursday, May 13, 2021 Total of All Vehicles																								
Time Period		Southbound				Westbound				Northbound				Eastbound				15 Minute Volume	Hourly Volume	Pedestrians				
		Right	Thru	Left	Approach Total	Right	Thru	Left	Approach Total	Right	Thru	Left	Approach Total	Right	Thru	Left	Approach Total			SB	WB	NB	EB	
16:00	16:15	0	11	0	11	0	0	0	0	0	19	0	19	0	0	5	5	35		0	0	0	0	
16:15	16:30	0	8	0	8	0	0	0	0	0	7	0	7	0	0	3	3	18		0	0	0	0	
16:30	16:45	0	9	0	9	0	0	0	0	0	12	0	12	0	0	0	0	21		0	0	0	0	
16:45	17:00	0	9	0	9	0	0	0	0	0	10	0	10	1	0	1	2	21	95	0	0	0	0	
17:00	17:15	0	13	0	13	0	0	0	0	0	12	0	12	0	0	1	1	26	86	0	0	0	0	
17:15	17:30	0	5	0	5	0	0	0	0	0	5	0	5	1	0	0	1	11	79	0	0	0	0	
17:30	17:45	0	7	0	7	0	0	0	0	0	10	0	10	0	0	2	2	19	77	0	0	0	0	
17:45	18:00	0	5	0	5	0	0	0	0	0	5	0	5	0	0	0	0	10	66	0	0	0	0	
18:00	18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	
18:15	18:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	
18:30	18:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	
18:45	19:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	
Count Period Total		0	67	0	0	0	0	0	0	0	80	0	2	0	12	0	161		0	0	0	0		
PM Peak Hour Count Summary																								
Peak Volumes	Southbound				Approach Total	Westbound			Approach Total	Northbound			Approach Total	Eastbound			Approach Total	PHF	Trucks	% Trucks	Pedestrians			
	Right	Thru	Left	Right		Thru	Left	Right		Thru	Left	Right		Thru	Left	Right					Thru	Left	SB	WB
	0	37	0	37	0	0	0	0	0	0	48	0	48	1	0	9	10	95	0	0	0	0		
	0.00	0.84	0.00	0.84	0.00	0.00	0.00	0.00	0.00	0.00	0.63	0.00	0.63	0.25	0.00	0.45	0.50	0.68						
	0	0	0		0	0	0		0	0	0		0	0	0									
	0%	0%	0%		0%	0%	0%		10%	10%	10%		0%	0%	0%									



3: Lochner Road @ Oak Creek Youth Driveway

Pedestrians and Cars

Time Period	Southbound				Westbound				Northbound				Eastbound				15 Minute Volume	Hourly Volume	
	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left			
4:00 PM			11								19				0		5	35	
4:15 PM			8								7				0		3	18	
4:30 PM			9								12				0		0	21	
4:45 PM			9								10				1		1	21	95
5:00 PM			13								12				0		1	26	86
5:15 PM			5								5				1		0	11	79
5:30 PM			7								10						2	19	77
5:45 PM			5								5						0	10	66
6:00 PM																		0	40
6:15 PM																		0	29
6:30 PM																		0	10
6:45 PM																		0	0
Total	0	0	67	0	0	0	0	0	0	0	80	0	0	2	0	12			
Peak Hour	0	0	39	0	0	0	0	0	0	0	41	0	0	1	0	5	86		

Trucks

Time Period	Southbound			Westbound			Northbound			Eastbound			15 Minute Volume	Hourly Volume
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left		
4:00 PM													0	
4:15 PM													0	
4:30 PM													0	
4:45 PM													0	0
5:00 PM													0	0
5:15 PM													0	0
5:30 PM													0	0
5:45 PM													0	0
6:00 PM													0	0
6:15 PM													0	0
6:30 PM													0	0
6:45 PM													0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	
Peak Hour	0	0	0	0	0	0	0	0	0	0	0	0	0	

Bikes

Time Period	Southbound			Westbound			Northbound			Eastbound			SB	WB	NB	EB
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left				
4:00 PM													0	0	0	0
4:15 PM													0	0	0	0
4:30 PM													0	0	0	0
4:45 PM													0	0	0	0
5:00 PM													0	0	0	0
5:15 PM													0	0	0	0
5:30 PM													0	0	0	0
5:45 PM													0	0	0	0
6:00 PM													0	0	0	0
6:15 PM													0	0	0	0
6:30 PM													0	0	0	0
6:45 PM													0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Pedestrians

Time Period	NE			NW			SW			SE			SB	WB	NB	EB
	Left	Right	Total	Left	Right	Total	Left	Right	Total	Left	Right	Total				
4:00 PM			0			0			0			0	0	0	0	0
4:15 PM			0			0			0			0	0	0	0	0
4:30 PM			0			0			0			0	0	0	0	0
4:45 PM			0			0			0			0	0	0	0	0
5:00 PM			0			0			0			0	0	0	0	0
5:15 PM			0			0			0			0	0	0	0	0
5:30 PM			0			0			0			0	0	0	0	0
5:45 PM			0			0			0			0	0	0	0	0
6:00 PM			0			0			0			0	0	0	0	0
6:15 PM			0			0			0			0	0	0	0	0
6:30 PM			0			0			0			0	0	0	0	0
6:45 PM			0			0			0			0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Global Peak Hour

Intersections				
	1: Marion Street @ 34th Ave	2: Marion Street @ Lochner Road	3: Lochner Road @ Oak Creek Youth Driveway	
Time Period	Volume	Volume	Volume	Total
4:00 PM 5:00 PM	1,159	138	95	1392
4:15 PM 5:15 PM	1,147	137	86	1370
4:30 PM 5:30 PM	1,185	117	79	1381
4:45 PM 5:45 PM	1,138	112	77	1327
5:00 PM 6:00 PM	1,091	106	66	1263
	1185	138	95	1392

Peak Hour 4:00 PM
 4:15 PM
 4:30 PM
 4:45 PM

Existing 2021 PM Volumes

		67	100		
	R	T	L	PED	
	2	28	15	25	0
Ped	0				20 R
L	54				378 T
T	53				17 L
R	18				0 Ped
	0	31	28	58	
Ped	L	T	R		
		49		115	
	R	T	L	PED	
	1	0	10	20	0
Ped	0				60 R
L	0				0 T
T	0				0 L
R	0				0 Ped
	0	0	41	11	
Ped	L	T	R		
		10		53	

		38	59		
	R	T	L	PED	
	2	0	38	0	0
Ped	0				0 R
L	0				0 T
T	0				0 L
R	1				0 Ped
	0	0	60	0	
Ped	L	T	R		
		39		50	

EDIT Highlighted	
Base Year	2021
Target Year	2023
Years of Growth	2
Growth Rate Per Year	###
Growth factor	1.04

		70	104		
	R	T	L	PED	
	2	29	15	26	0
Ped	0				20 R
L	56				363 T
T	56				17 L
R	18				0 Ped
	0	32	27	60	
Ped	L	T	R		
		51		120	
	R	T	L	PED	
	1	0	11	20	0
Ped	0				63 R
L	0				0 T
T	0				0 L
R	0				0 Ped
	0	0	43	12	
Ped	L	T	R		
		11		55	

		40	61		
	R	T	L	PED	
	2	0	40	0	0
Ped	0				0 R
L	10				0 T
T	0				0 L
R	1				0 Ped
	0	0	62	0	
Ped	L	T	R		
		41		52	

EDIT Highlighted	
Base Year	###
Target Year	###
Years of Growth	9
Growth Rate Per Yea	###
Growth factor	1.15

		80				118					
		R	T	L	PED	R	T	L	PED		
		2	33	17	29	0					
Ped	0					23	R			488	
L	0	84	1: Marion Street @ 34th Ave		466	T					
T	0	530			90	L				728	
R	0	21			0	Ped					
		0	32	31	69						
			58		130						
		35			120						
		1	0	12	29	0					
Ped	0					71	R			71	
L	0					0	T				
T	0					0	L				
R	0					0	Ped				
		0	0	49	13						
			12		62						

		45				79					
		R	T	L	PED	R	T	L	PED		
		2	0	45	0	0					
Ped	0									0	
L	0	11	3: Lochner Road @ Oak Creek Youth Driveway		0	L				0	
T	0					0	L			0	
R	0	1				0	Ped			0	
		0	0	59	0						
			47		59						






















Meadowlark Estates Subdivision
Traffic Impact Analysis

APPENDIX C: SYNCHRO OUTPUTS

HCM Signalized Intersection Capacity Analysis

3: Marion St SE & 34th Ave SE























07/14/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	17	31	57	578	22	28	13	31	16	17	59
Future Volume (vph)	16	17	31	57	578	22	28	13	31	16	17	59
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.97	1.00		0.98	1.00
Satd. Flow (prot)	1630	1716	1458	1662	1740			1675	1473		1659	1444
Flt Permitted	0.22	1.00	1.00	0.74	1.00			1.00	1.00		0.90	1.00
Satd. Flow (perm)	382	1716	1458	1303	1740			1733	1473		1531	1444
Peak-hour factor, PHF	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Adj. Flow (vph)	19	20	37	68	688	26	33	15	37	19	20	70
RTOR Reduction (vph)	0	0	17	0	2	0	0	0	34	0	0	65
Lane Group Flow (vph)	19	20	20	68	712	0	0	48	3	0	39	5
Heavy Vehicles (%)	2%	2%	2%	0%	0%	0%	1%	1%	1%	3%	3%	3%
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4		4	8			2		2	6		6
Actuated Green, G (s)	29.4	23.6	23.6	29.6	23.7			3.3	3.3		3.3	3.3
Effective Green, g (s)	31.0	24.4	24.4	30.6	24.2			3.3	3.3		3.3	3.3
Actuated g/C Ratio	0.67	0.53	0.53	0.66	0.52			0.07	0.07		0.07	0.07
Clearance Time (s)	4.8	4.8	4.8	4.5	4.5			4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.5	4.0	4.0	2.5	4.0			2.5	2.5		2.5	2.5
Lane Grp Cap (vph)	435	908	771	914	913			124	105		109	103
v/s Ratio Prot	0.01	0.01		c0.01	c0.41							
v/s Ratio Perm	0.02		0.01	0.04				c0.03	0.00		0.03	0.00
v/c Ratio	0.04	0.02	0.03	0.07	0.78			0.39	0.03		0.36	0.05
Uniform Delay, d1	3.8	5.2	5.2	2.7	8.8			20.4	19.9		20.4	19.9
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	0.0	0.0	0.0	0.0	4.5			1.5	0.1		1.5	0.1
Delay (s)	3.8	5.2	5.2	2.7	13.3			21.9	20.0		21.9	20.1
Level of Service	A	A	A	A	B			C	B		C	C
Approach Delay (s)		4.8			12.4			21.1			20.7	
Approach LOS		A			B			C			C	
Intersection Summary												
HCM 2000 Control Delay			13.4			HCM 2000 Level of Service			B			
HCM 2000 Volume to Capacity ratio			0.60									
Actuated Cycle Length (s)			46.1			Sum of lost time (s)			12.0			
Intersection Capacity Utilization			54.5%			ICU Level of Service			A			
Analysis Period (min)			15									
c Critical Lane Group												

HCM 6th Signalized Intersection Summary

3: Marion St SE & 34th Ave SE

07/14/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	17	31	57	578	22	28	13	31	16	17	59
Future Volume (veh/h)	16	17	31	57	578	22	28	13	31	16	17	59
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1723	1723	1723	1750	1750	1750	1736	1736	1736	1709	1709	1709
Adj Flow Rate, veh/h	19	20	37	68	688	26	33	15	37	19	20	70
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	0	0	0	1	1	1	3	3	3
Cap, veh/h	466	934	792	1030	888	34	219	74	170	169	124	167
Arrive On Green	0.10	0.54	0.54	0.09	0.53	0.53	0.12	0.12	0.12	0.12	0.12	0.12
Sat Flow, veh/h	1641	1723	1460	1667	1675	63	804	638	1471	500	1073	1448
Grp Volume(v), veh/h	19	20	37	68	0	714	48	0	37	39	0	70
Grp Sat Flow(s),veh/h/ln	1641	1723	1460	1667	0	1739	1442	0	1471	1572	0	1448
Q Serve(g_s), s	0.2	0.3	0.6	0.8	0.0	15.8	0.4	0.0	1.1	0.0	0.0	2.2
Cycle Q Clear(g_c), s	0.2	0.3	0.6	0.8	0.0	15.8	1.4	0.0	1.1	1.0	0.0	2.2
Prop In Lane	1.00		1.00	1.00		0.04	0.69		1.00	0.49		1.00
Lane Grp Cap(c), veh/h	466	934	792	1030	0	921	292	0	170	292	0	167
V/C Ratio(X)	0.04	0.02	0.05	0.07	0.00	0.77	0.16	0.00	0.22	0.13	0.00	0.42
Avail Cap(c_a), veh/h	609	1072	909	1185	0	1082	394	0	275	400	0	270
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	5.9	5.1	5.2	3.6	0.0	9.0	19.4	0.0	19.4	19.3	0.0	19.8
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	3.4	0.2	0.0	0.5	0.2	0.0	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.1	0.1	0.1	0.0	4.7	0.5	0.0	0.4	0.4	0.0	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	5.9	5.1	5.2	3.6	0.0	12.5	19.6	0.0	19.8	19.5	0.0	21.1
LnGrp LOS	A	A	A	A	A	B	B	A	B	B	A	C
Approach Vol, veh/h		76			782			85			109	
Approach Delay, s/veh		5.4			11.7			19.7			20.5	
Approach LOS		A			B			B			C	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		9.6	8.5	30.1		9.6	8.8	29.8				
Change Period (Y+Rc), s		4.0	4.5	4.8		4.0	4.8	* 4.8				
Max Green Setting (Gmax), s		9.0	8.5	29.2		9.0	8.2	* 30				
Max Q Clear Time (g_c+I1), s		3.4	2.8	2.6		4.2	2.2	17.8				
Green Ext Time (p_c), s		0.1	0.1	0.5		0.2	0.0	7.3				
Intersection Summary												
HCM 6th Ctrl Delay				12.8								
HCM 6th LOS				B								
Notes												
User approved pedestrian interval to be less than phase max green.												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 6th TWSC
 6: Marion St SE & Lochner Rd SE

07/14/2023

Intersection												
Int Delay, s/veh	3.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	0	0	0	31	0	22	6	46	54	0
Future Vol, veh/h	0	0	0	0	0	31	0	22	6	46	54	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	68	68	68	68	68	68	68	68	68	68	68	68
Heavy Vehicles, %	0	0	0	0	0	0	4	4	4	9	9	9
Mvmt Flow	0	0	0	0	0	46	0	32	9	68	79	0

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	275	256	79	252	252	37	79	0	0	41	0	0
Stage 1	215	215	-	37	37	-	-	-	-	-	-	-
Stage 2	60	41	-	215	215	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.14	-	-	4.19	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.236	-	-	2.281	-	-
Pot Cap-1 Maneuver	681	651	987	706	655	1041	1507	-	-	1524	-	-
Stage 1	792	729	-	984	868	-	-	-	-	-	-	-
Stage 2	957	865	-	792	729	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	628	620	987	681	624	1041	1507	-	-	1524	-	-
Mov Cap-2 Maneuver	628	620	-	681	624	-	-	-	-	-	-	-
Stage 1	792	695	-	984	868	-	-	-	-	-	-	-
Stage 2	915	865	-	755	695	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	8.6	0	3.4
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1507	-	-	-	1041	1524	-
HCM Lane V/C Ratio	-	-	-	-	0.044	0.044	-
HCM Control Delay (s)	0	-	-	0	8.6	7.5	0
HCM Lane LOS	A	-	-	A	A	A	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1	0.1	-

HCM 6th TWSC
 10: Lochner Rd SE & N Site Access

07/14/2023

Intersection												
Int Delay, s/veh	0.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	4	0	0	0	0	0	2	37	0	0	26	16
Future Vol, veh/h	4	0	0	0	0	0	2	37	0	0	26	16
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	125	-	-	140	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	68	68	68	68	68	68	68	68	68	68	68	68
Heavy Vehicles, %	0	0	0	0	0	0	3	3	3	23	23	23
Mvmt Flow	6	0	0	0	0	0	3	54	0	0	38	24

Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	110	110	50	110	122	54	62	0	0	54	0	0
Stage 1	50	50	-	60	60	-	-	-	-	-	-	-
Stage 2	60	60	-	50	62	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.13	-	-	4.33	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.227	-	-	2.407	-	-
Pot Cap-1 Maneuver	873	784	1024	873	772	1019	1535	-	-	1427	-	-
Stage 1	968	857	-	957	849	-	-	-	-	-	-	-
Stage 2	957	849	-	968	847	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	872	782	1024	872	770	1019	1535	-	-	1427	-	-
Mov Cap-2 Maneuver	872	782	-	872	770	-	-	-	-	-	-	-
Stage 1	966	857	-	955	847	-	-	-	-	-	-	-
Stage 2	955	847	-	968	847	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.2	0	0.4	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1535	-	-	872	-	1427	-
HCM Lane V/C Ratio	0.002	-	-	0.007	-	-	-
HCM Control Delay (s)	7.3	-	-	9.2	0	0	-
HCM Lane LOS	A	-	-	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-	0	-

HCM 6th TWSC
 12: S Site Access & Lochner Rd SE

07/14/2023

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		T			T
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1	0	0	0	0	0
Stage 1	0	-	-	-	-	-
Stage 2	1	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	1022	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	1022	-	-	-	-	-
Platoon blocked, %						
Mov Cap-1 Maneuver	1022	-	-	-	-	-
Mov Cap-2 Maneuver	1022	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	1022	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	-

HCM Signalized Intersection Capacity Analysis

3: Marion St SE & 34th Ave SE

07/14/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	18	32	58	589	22	29	13	32	16	18	60
Future Volume (vph)	16	18	32	58	589	22	29	13	32	16	18	60
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.97	1.00		0.98	1.00
Satd. Flow (prot)	1630	1716	1458	1662	1741			1674	1473		1660	1444
Flt Permitted	0.22	1.00	1.00	0.74	1.00			1.00	1.00		0.87	1.00
Satd. Flow (perm)	370	1716	1458	1301	1741			1733	1473		1474	1444
Peak-hour factor, PHF	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Adj. Flow (vph)	19	21	38	69	701	26	35	15	38	19	21	71
RTOR Reduction (vph)	0	0	18	0	2	0	0	0	35	0	0	66
Lane Group Flow (vph)	19	21	20	69	725	0	0	50	3	0	40	5
Heavy Vehicles (%)	2%	2%	2%	0%	0%	0%	1%	1%	1%	3%	3%	3%
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4		4	8			2		2	6		6
Actuated Green, G (s)	29.9	24.1	24.1	30.1	24.2			3.4	3.4		3.4	3.4
Effective Green, g (s)	31.5	24.9	24.9	31.1	24.7			3.4	3.4		3.4	3.4
Actuated g/C Ratio	0.67	0.53	0.53	0.67	0.53			0.07	0.07		0.07	0.07
Clearance Time (s)	4.8	4.8	4.8	4.5	4.5			4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.5	4.0	4.0	2.5	4.0			2.5	2.5		2.5	2.5
Lane Grp Cap (vph)	427	914	777	915	920			126	107		107	105
v/s Ratio Prot	0.01	0.01		c0.01	c0.42							
v/s Ratio Perm	0.02		0.01	0.04				c0.03	0.00		0.03	0.00
v/c Ratio	0.04	0.02	0.03	0.08	0.79			0.40	0.03		0.37	0.05
Uniform Delay, d1	3.9	5.2	5.2	2.7	8.9			20.7	20.1		20.6	20.1
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	0.0	0.0	0.0	0.0	4.8			1.5	0.1		1.6	0.1
Delay (s)	3.9	5.2	5.2	2.7	13.7			22.2	20.2		22.2	20.3
Level of Service	A	A	A	A	B			C	C		C	C
Approach Delay (s)		4.9			12.7			21.3			21.0	
Approach LOS		A			B			C			C	

Intersection Summary

HCM 2000 Control Delay	13.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	46.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	55.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

HCM 6th Signalized Intersection Summary

3: Marion St SE & 34th Ave SE

07/14/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	18	32	58	589	22	29	13	32	16	18	60
Future Volume (veh/h)	16	18	32	58	589	22	29	13	32	16	18	60
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1723	1723	1723	1750	1750	1750	1736	1736	1736	1709	1709	1709
Adj Flow Rate, veh/h	19	21	38	69	701	26	35	15	38	19	21	71
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	0	0	0	1	1	1	3	3	3
Cap, veh/h	459	940	796	1030	894	33	219	69	169	165	126	167
Arrive On Green	0.10	0.55	0.55	0.09	0.53	0.53	0.12	0.12	0.12	0.12	0.12	0.12
Sat Flow, veh/h	1641	1723	1460	1667	1677	62	810	604	1471	481	1096	1448
Grp Volume(v), veh/h	19	21	38	69	0	727	50	0	38	40	0	71
Grp Sat Flow(s),veh/h/ln	1641	1723	1460	1667	0	1739	1413	0	1471	1577	0	1448
Q Serve(g_s), s	0.2	0.3	0.6	0.8	0.0	16.3	0.6	0.0	1.1	0.0	0.0	2.2
Cycle Q Clear(g_c), s	0.2	0.3	0.6	0.8	0.0	16.3	1.6	0.0	1.1	1.0	0.0	2.2
Prop In Lane	1.00		1.00	1.00		0.04	0.70		1.00	0.47		1.00
Lane Grp Cap(c), veh/h	459	940	796	1030	0	927	288	0	169	291	0	167
V/C Ratio(X)	0.04	0.02	0.05	0.07	0.00	0.78	0.17	0.00	0.22	0.14	0.00	0.43
Avail Cap(c_a), veh/h	600	1063	901	1185	0	1073	388	0	272	397	0	268
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	6.0	5.1	5.2	3.6	0.0	9.1	19.7	0.0	19.5	19.5	0.0	20.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	3.8	0.2	0.0	0.5	0.2	0.0	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.1	0.1	0.1	0.0	4.9	0.5	0.0	0.4	0.4	0.0	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.1	5.1	5.2	3.6	0.0	12.9	19.9	0.0	20.0	19.7	0.0	21.3
LnGrp LOS	A	A	A	A	A	B	B	A	C	B	A	C
Approach Vol, veh/h		78			796			88				111
Approach Delay, s/veh		5.4			12.1			20.0				20.7
Approach LOS		A			B			B				C
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		9.6	8.5	30.5		9.6	8.8	30.2				
Change Period (Y+Rc), s		4.0	4.5	4.8		4.0	4.8	* 4.8				
Max Green Setting (Gmax), s		9.0	8.5	29.2		9.0	8.2	* 30				
Max Q Clear Time (g_c+I1), s		3.6	2.8	2.6		4.2	2.2	18.3				
Green Ext Time (p_c), s		0.1	0.1	0.6		0.2	0.0	7.1				

Intersection Summary

HCM 6th Ctrl Delay	13.1
HCM 6th LOS	B

Notes

- User approved pedestrian interval to be less than phase max green.
- * HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th TWSC
6: Marion St SE & Lochner Rd SE

07/14/2023

Intersection												
Int Delay, s/veh	3.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	0	0	0	32	0	22	7	47	57	0
Future Vol, veh/h	0	0	0	0	0	32	0	22	7	47	57	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	68	68	68	68	68	68	68	68	68	68	68	68
Heavy Vehicles, %	0	0	0	0	0	0	4	4	4	9	9	9
Mvmt Flow	0	0	0	0	0	47	0	32	10	69	84	0

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	283	264	84	259	259	37	84	0	0	42	0	0
Stage 1	222	222	-	37	37	-	-	-	-	-	-	-
Stage 2	61	42	-	222	222	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.14	-	-	4.19	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.236	-	-	2.281	-	-
Pot Cap-1 Maneuver	673	645	981	698	649	1041	1500	-	-	1523	-	-
Stage 1	785	723	-	984	868	-	-	-	-	-	-	-
Stage 2	955	864	-	785	723	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	619	614	981	672	618	1041	1500	-	-	1523	-	-
Mov Cap-2 Maneuver	619	614	-	672	618	-	-	-	-	-	-	-
Stage 1	785	688	-	984	868	-	-	-	-	-	-	-
Stage 2	912	864	-	747	688	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	8.6	0	3.4
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1500	-	-	-	1041	1523	-
HCM Lane V/C Ratio	-	-	-	-	0.045	0.045	-
HCM Control Delay (s)	0	-	-	0	8.6	7.5	0
HCM Lane LOS	A	-	-	A	A	A	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1	0.1	-

HCM 6th TWSC
 10: Lochner Rd SE & N Site Access

07/14/2023

Intersection												
Int Delay, s/veh	0.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	4	0	0	0	0	0	2	37	0	0	26	16
Future Vol, veh/h	4	0	0	0	0	0	2	37	0	0	26	16
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	125	-	-	140	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	68	68	68	68	68	68	68	68	68	68	68	68
Heavy Vehicles, %	0	0	0	0	0	0	3	3	3	23	23	23
Mvmt Flow	6	0	0	0	0	0	3	54	0	0	38	24

Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	110	110	50	110	122	54	62	0	0	54	0	0
Stage 1	50	50	-	60	60	-	-	-	-	-	-	-
Stage 2	60	60	-	50	62	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.13	-	-	4.33	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.227	-	-	2.407	-	-
Pot Cap-1 Maneuver	873	784	1024	873	772	1019	1535	-	-	1427	-	-
Stage 1	968	857	-	957	849	-	-	-	-	-	-	-
Stage 2	957	849	-	968	847	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	872	782	1024	872	770	1019	1535	-	-	1427	-	-
Mov Cap-2 Maneuver	872	782	-	872	770	-	-	-	-	-	-	-
Stage 1	966	857	-	955	847	-	-	-	-	-	-	-
Stage 2	955	847	-	968	847	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.2	0	0.4	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1535	-	-	872	-	1427	-
HCM Lane V/C Ratio	0.002	-	-	0.007	-	-	-
HCM Control Delay (s)	7.3	-	-	9.2	0	0	-
HCM Lane LOS	A	-	-	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-	0	-

HCM 6th TWSC
 12: S Site Access & Lochner Rd SE

07/14/2023

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		T			T
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1	0	0	0	0	0
Stage 1	0	-	-	-	-	-
Stage 2	1	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	1022	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	1022	-	-	-	-	-
Platoon blocked, %						
Mov Cap-1 Maneuver	1022	-	-	-	-	-
Mov Cap-2 Maneuver	1022	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	1022	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	-

HCM Signalized Intersection Capacity Analysis

3: Marion St SE & 34th Ave SE

07/14/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	18	37	67	589	22	47	21	51	16	20	60
Future Volume (vph)	16	18	37	67	589	22	47	21	51	16	20	60
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.97	1.00		0.98	1.00
Satd. Flow (prot)	1630	1716	1458	1662	1741			1675	1473		1662	1444
Flt Permitted	0.20	1.00	1.00	0.74	1.00			0.77	1.00		0.82	1.00
Satd. Flow (perm)	337	1716	1458	1301	1741			1329	1473		1392	1444
Peak-hour factor, PHF	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Adj. Flow (vph)	19	21	44	80	701	26	56	25	61	19	24	71
RTOR Reduction (vph)	0	0	22	0	2	0	0	0	54	0	0	63
Lane Group Flow (vph)	19	21	22	80	725	0	0	81	7	0	43	8
Heavy Vehicles (%)	2%	2%	2%	0%	0%	0%	1%	1%	1%	3%	3%	3%
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4		4	8			2		2	6		6
Actuated Green, G (s)	29.6	23.8	23.8	30.2	24.1			5.3	5.3		5.3	5.3
Effective Green, g (s)	31.2	24.6	24.6	31.2	24.6			5.3	5.3		5.3	5.3
Actuated g/C Ratio	0.64	0.51	0.51	0.64	0.51			0.11	0.11		0.11	0.11
Clearance Time (s)	4.8	4.8	4.8	4.5	4.5			4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.5	4.0	4.0	2.5	4.0			2.5	2.5		2.5	2.5
Lane Grp Cap (vph)	392	870	739	886	883			145	160		152	157
v/s Ratio Prot	0.01	0.01		c0.01	c0.42							
v/s Ratio Perm	0.02		0.02	0.05				c0.06	0.00		0.03	0.01
v/c Ratio	0.05	0.02	0.03	0.09	0.82			0.56	0.04		0.28	0.05
Uniform Delay, d1	4.7	6.0	6.0	3.2	10.1			20.5	19.3		19.9	19.3
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	0.0	0.0	0.0	0.0	6.5			3.7	0.1		0.7	0.1
Delay (s)	4.7	6.0	6.0	3.3	16.6			24.2	19.4		20.6	19.4
Level of Service	A	A	A	A	B			C	B		C	B
Approach Delay (s)		5.7			15.3			22.1			19.9	
Approach LOS		A			B			C			B	

Intersection Summary			
HCM 2000 Control Delay	15.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	48.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	55.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

HCM 6th Signalized Intersection Summary

3: Marion St SE & 34th Ave SE

07/14/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	18	37	67	589	22	47	21	51	16	20	60
Future Volume (veh/h)	16	18	37	67	589	22	47	21	51	16	20	60
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1723	1723	1723	1750	1750	1750	1736	1736	1736	1709	1709	1709
Adj Flow Rate, veh/h	19	21	44	80	701	26	56	25	61	19	24	71
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	0	0	0	1	1	1	3	3	3
Cap, veh/h	401	896	759	967	853	32	115	29	249	98	75	245
Arrive On Green	0.09	0.52	0.52	0.08	0.51	0.51	0.17	0.17	0.17	0.17	0.17	0.17
Sat Flow, veh/h	1641	1723	1460	1667	1677	62	0	171	1471	0	445	1448
Grp Volume(v), veh/h	19	21	44	80	0	727	81	0	61	43	0	71
Grp Sat Flow(s),veh/h/ln	1641	1723	1460	1667	0	1739	171	0	1471	445	0	1448
Q Serve(g_s), s	0.2	0.3	0.8	1.1	0.0	18.8	0.0	0.0	1.9	0.0	0.0	2.3
Cycle Q Clear(g_c), s	0.2	0.3	0.8	1.1	0.0	18.8	9.0	0.0	1.9	9.0	0.0	2.3
Prop In Lane	1.00		1.00	1.00		0.04	0.69		1.00	0.44		1.00
Lane Grp Cap(c), veh/h	401	896	759	967	0	885	144	0	249	173	0	245
V/C Ratio(X)	0.05	0.02	0.06	0.08	0.00	0.82	0.56	0.00	0.24	0.25	0.00	0.29
Avail Cap(c_a), veh/h	531	972	824	1108	0	982	144	0	249	173	0	245
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	7.6	6.2	6.3	4.6	0.0	11.0	23.5	0.0	19.1	19.2	0.0	19.3
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	5.6	4.3	0.0	0.4	0.6	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.1	0.2	0.2	0.0	6.5	1.1	0.0	0.6	0.4	0.0	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.6	6.2	6.4	4.6	0.0	16.6	27.8	0.0	19.5	19.8	0.0	19.8
LnGrp LOS	A	A	A	A	A	B	C	A	B	B	A	B
Approach Vol, veh/h		84			807			142				114
Approach Delay, s/veh		6.6			15.4			24.2				19.8
Approach LOS		A			B			C				B
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		13.0	8.5	31.6		13.0	8.8	31.3				
Change Period (Y+Rc), s		4.0	4.5	4.8		4.0	4.8	* 4.8				
Max Green Setting (Gmax), s		9.0	8.5	29.2		9.0	8.2	* 30				
Max Q Clear Time (g_c+I1), s		11.0	3.1	2.8		11.0	2.2	20.8				
Green Ext Time (p_c), s		0.0	0.1	0.6		0.0	0.0	5.8				

Intersection Summary

HCM 6th Ctrl Delay	16.3
HCM 6th LOS	B

Notes

- User approved pedestrian interval to be less than phase max green.
- * HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th TWSC
 6: Marion St SE & Lochner Rd SE

07/14/2023

Intersection												
Int Delay, s/veh	5.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	0	0	0	77	0	22	7	63	57	0
Future Vol, veh/h	0	0	0	0	0	77	0	22	7	63	57	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	68	68	68	68	68	68	68	68	68	68	68	68
Heavy Vehicles, %	0	0	0	0	0	0	4	4	4	9	9	9
Mvmt Flow	0	0	0	0	0	113	0	32	10	93	84	0

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	364	312	84	307	307	37	84	0	0	42	0	0
Stage 1	270	270	-	37	37	-	-	-	-	-	-	-
Stage 2	94	42	-	270	270	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.14	-	-	4.19	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.236	-	-	2.281	-	-
Pot Cap-1 Maneuver	596	606	981	649	610	1041	1500	-	-	1523	-	-
Stage 1	740	690	-	984	868	-	-	-	-	-	-	-
Stage 2	918	864	-	740	690	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	505	567	981	617	571	1041	1500	-	-	1523	-	-
Mov Cap-2 Maneuver	505	567	-	617	571	-	-	-	-	-	-	-
Stage 1	740	646	-	984	868	-	-	-	-	-	-	-
Stage 2	818	864	-	693	646	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	8.9	0	3.9
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1500	-	-	-	1041	1523	-	-
HCM Lane V/C Ratio	-	-	-	-	0.109	0.061	-	-
HCM Control Delay (s)	0	-	-	0	8.9	7.5	0	-
HCM Lane LOS	A	-	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	-	0.4	0.2	-	-

HCM 6th TWSC
 10: Lochner Rd SE & N Site Access

07/14/2023

Intersection												
Int Delay, s/veh	3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	4	0	0	2	0	31	2	52	0	13	29	16
Future Vol, veh/h	4	0	0	2	0	31	2	52	0	13	29	16
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	125	-	-	140	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	68	68	68	68	68	68	68	68	68	68	68	68
Heavy Vehicles, %	0	0	0	0	0	0	3	3	3	23	23	23
Mvmt Flow	6	0	0	3	0	46	3	76	0	19	43	24

Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	198	175	55	175	187	76	67	0	0	76	0	0
Stage 1	93	93	-	82	82	-	-	-	-	-	-	-
Stage 2	105	82	-	93	105	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.13	-	-	4.33	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.227	-	-	2.407	-	-
Pot Cap-1 Maneuver	765	722	1018	792	711	991	1528	-	-	1400	-	-
Stage 1	919	822	-	931	831	-	-	-	-	-	-	-
Stage 2	906	831	-	919	812	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	721	710	1018	782	700	991	1528	-	-	1400	-	-
Mov Cap-2 Maneuver	721	710	-	782	700	-	-	-	-	-	-	-
Stage 1	917	810	-	929	829	-	-	-	-	-	-	-
Stage 2	863	829	-	907	801	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10	8.9	0.3	1.7
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1528	-	-	721	975	1400	-	-
HCM Lane V/C Ratio	0.002	-	-	0.008	0.05	0.014	-	-
HCM Control Delay (s)	7.4	-	-	10	8.9	7.6	-	-
HCM Lane LOS	A	-	-	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0.2	0	-	-

HCM 6th TWSC
 12: S Site Access & Lochner Rd SE

07/14/2023

Intersection						
Int Delay, s/veh	2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	3	15	40	1	3	28
Future Vol, veh/h	3	15	40	1	3	28
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	16	43	1	3	30

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	80	44	0	0	44	0
Stage 1	44	-	-	-	-	-
Stage 2	36	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	922	1026	-	-	1564	-
Stage 1	978	-	-	-	-	-
Stage 2	986	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	920	1026	-	-	1564	-
Mov Cap-2 Maneuver	920	-	-	-	-	-
Stage 1	978	-	-	-	-	-
Stage 2	984	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.6	0	0.7
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	1007	1564
HCM Lane V/C Ratio	-	-	0.019	0.002
HCM Control Delay (s)	-	-	8.6	7.3
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0

HCM Signalized Intersection Capacity Analysis

3: Marion St SE & 34th Ave SE

07/14/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	18	32	59	601	22	29	13	32	17	18	62
Future Volume (vph)	17	18	32	59	601	22	29	13	32	17	18	62
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.97	1.00		0.98	1.00
Satd. Flow (prot)	1630	1716	1458	1662	1741			1674	1473		1659	1444
Flt Permitted	0.19	1.00	1.00	0.74	1.00			0.77	1.00		0.82	1.00
Satd. Flow (perm)	333	1716	1458	1301	1741			1327	1473		1393	1444
Peak-hour factor, PHF	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Adj. Flow (vph)	20	21	38	70	715	26	35	15	38	20	21	74
RTOR Reduction (vph)	0	0	18	0	2	0	0	0	34	0	0	67
Lane Group Flow (vph)	20	21	20	70	739	0	0	50	4	0	41	7
Heavy Vehicles (%)	2%	2%	2%	0%	0%	0%	1%	1%	1%	3%	3%	3%
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4		4	8			2		2	6		6
Actuated Green, G (s)	30.2	24.4	24.4	30.6	24.6			4.8	4.8		4.8	4.8
Effective Green, g (s)	31.8	25.2	25.2	31.6	25.1			4.8	4.8		4.8	4.8
Actuated g/C Ratio	0.66	0.52	0.52	0.65	0.52			0.10	0.10		0.10	0.10
Clearance Time (s)	4.8	4.8	4.8	4.5	4.5			4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.5	4.0	4.0	2.5	4.0			2.5	2.5		2.5	2.5
Lane Grp Cap (vph)	394	891	757	896	901			131	145		137	142
v/s Ratio Prot	0.01	0.01		c0.01	c0.42							
v/s Ratio Perm	0.03		0.01	0.04				c0.04	0.00		0.03	0.01
v/c Ratio	0.05	0.02	0.03	0.08	0.82			0.38	0.03		0.30	0.05
Uniform Delay, d1	4.6	5.7	5.7	3.1	9.8			20.5	19.7		20.3	19.8
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	0.0	0.0	0.0	0.0	6.3			1.4	0.1		0.9	0.1
Delay (s)	4.6	5.7	5.7	3.1	16.1			21.8	19.8		21.2	19.9
Level of Service	A	A	A	A	B			C	B		C	B
Approach Delay (s)		5.4			15.0			20.9			20.4	
Approach LOS		A			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	15.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	48.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	55.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

HCM 6th Signalized Intersection Summary

3: Marion St SE & 34th Ave SE

07/14/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	18	32	59	601	22	29	13	32	17	18	62
Future Volume (veh/h)	17	18	32	59	601	22	29	13	32	17	18	62
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1723	1723	1723	1750	1750	1750	1736	1736	1736	1709	1709	1709
Adj Flow Rate, veh/h	20	21	38	70	715	26	35	15	38	20	21	74
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	0	0	0	1	1	1	3	3	3
Cap, veh/h	450	945	801	1032	900	33	217	69	169	167	123	166
Arrive On Green	0.10	0.55	0.55	0.09	0.54	0.54	0.11	0.11	0.11	0.11	0.11	0.11
Sat Flow, veh/h	1641	1723	1460	1667	1678	61	803	600	1471	502	1069	1448
Grp Volume(v), veh/h	20	21	38	70	0	741	50	0	38	41	0	74
Grp Sat Flow(s),veh/h/ln	1641	1723	1460	1667	0	1739	1402	0	1471	1571	0	1448
Q Serve(g_s), s	0.2	0.3	0.6	0.8	0.0	16.9	0.6	0.0	1.2	0.0	0.0	2.3
Cycle Q Clear(g_c), s	0.2	0.3	0.6	0.8	0.0	16.9	1.6	0.0	1.2	1.1	0.0	2.3
Prop In Lane	1.00		1.00	1.00		0.04	0.70		1.00	0.49		1.00
Lane Grp Cap(c), veh/h	450	945	801	1032	0	933	286	0	169	289	0	166
V/C Ratio(X)	0.04	0.02	0.05	0.07	0.00	0.79	0.18	0.00	0.23	0.14	0.00	0.45
Avail Cap(c_a), veh/h	591	1054	893	1185	0	1064	383	0	270	393	0	266
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	6.2	5.1	5.1	3.5	0.0	9.2	19.9	0.0	19.7	19.7	0.0	20.3
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	4.1	0.2	0.0	0.5	0.2	0.0	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.1	0.1	0.1	0.0	5.2	0.5	0.0	0.4	0.4	0.0	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.2	5.1	5.2	3.6	0.0	13.3	20.1	0.0	20.2	19.9	0.0	21.6
LnGrp LOS	A	A	A	A	A	B	C	A	C	B	A	C
Approach Vol, veh/h		79			811			88				115
Approach Delay, s/veh		5.4			12.5			20.1				21.0
Approach LOS		A			B			C				C
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		9.6	8.5	30.9		9.6	8.8	30.6				
Change Period (Y+Rc), s		4.0	4.5	4.8		4.0	4.8	* 4.8				
Max Green Setting (Gmax), s		9.0	8.5	29.2		9.0	8.2	* 30				
Max Q Clear Time (g_c+I1), s		3.6	2.8	2.6		4.3	2.2	18.9				
Green Ext Time (p_c), s		0.1	0.1	0.6		0.2	0.0	6.9				

Intersection Summary

HCM 6th Ctrl Delay	13.5
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.
 * HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th TWSC
 6: Marion St SE & Lochner Rd SE

07/14/2023

Intersection												
Int Delay, s/veh	3.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	0	0	0	32	0	22	7	48	58	0
Future Vol, veh/h	0	0	0	0	0	32	0	22	7	48	58	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	68	68	68	68	68	68	68	68	68	68	68	68
Heavy Vehicles, %	0	0	0	0	0	0	4	4	4	9	9	9
Mvmt Flow	0	0	0	0	0	47	0	32	10	71	85	0

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	288	269	85	264	264	37	85	0	0	42	0	0
Stage 1	227	227	-	37	37	-	-	-	-	-	-	-
Stage 2	61	42	-	227	227	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.14	-	-	4.19	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.236	-	-	2.281	-	-
Pot Cap-1 Maneuver	668	641	980	693	645	1041	1499	-	-	1523	-	-
Stage 1	780	720	-	984	868	-	-	-	-	-	-	-
Stage 2	955	864	-	780	720	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	614	610	980	667	613	1041	1499	-	-	1523	-	-
Mov Cap-2 Maneuver	614	610	-	667	613	-	-	-	-	-	-	-
Stage 1	780	685	-	984	868	-	-	-	-	-	-	-
Stage 2	912	864	-	742	685	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	8.6	0	3.4
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1499	-	-	-	1041	1523	-	-
HCM Lane V/C Ratio	-	-	-	-	0.045	0.046	-	-
HCM Control Delay (s)	0	-	-	0	8.6	7.5	0	-
HCM Lane LOS	A	-	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	-	0.1	0.1	-	-

HCM 6th TWSC
 10: Lochner Rd SE & N Site Access

07/14/2023

Intersection												
Int Delay, s/veh	0.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	4	0	0	0	0	0	2	38	0	0	27	17
Future Vol, veh/h	4	0	0	0	0	0	2	38	0	0	27	17
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	125	-	-	140	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	68	68	68	68	68	68	68	68	68	68	68	68
Heavy Vehicles, %	0	0	0	0	0	0	3	3	3	23	23	23
Mvmt Flow	6	0	0	0	0	0	3	56	0	0	40	25

Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	115	115	53	115	127	56	65	0	0	56	0	0
Stage 1	53	53	-	62	62	-	-	-	-	-	-	-
Stage 2	62	62	-	53	65	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.13	-	-	4.33	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.227	-	-	2.407	-	-
Pot Cap-1 Maneuver	867	779	1020	867	767	1016	1531	-	-	1425	-	-
Stage 1	965	855	-	954	847	-	-	-	-	-	-	-
Stage 2	954	847	-	965	845	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	866	777	1020	866	765	1016	1531	-	-	1425	-	-
Mov Cap-2 Maneuver	866	777	-	866	765	-	-	-	-	-	-	-
Stage 1	963	855	-	952	845	-	-	-	-	-	-	-
Stage 2	952	845	-	965	845	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.2	0	0.4	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1531	-	-	866	-	1425	-
HCM Lane V/C Ratio	0.002	-	-	0.007	-	-	-
HCM Control Delay (s)	7.4	-	-	9.2	0	0	-
HCM Lane LOS	A	-	-	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-	0	-

HCM 6th TWSC
 12: S Site Access & Lochner Rd SE

07/14/2023

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1	0	0	0	0	0
Stage 1	0	-	-	-	-	-
Stage 2	1	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	1022	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	1022	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	1022	-	-	-	-	-
Mov Cap-2 Maneuver	1022	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	1022	-	-	-	-	-






















Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	-

HCM Signalized Intersection Capacity Analysis

3: Marion St SE & 34th Ave SE






















07/14/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	18	41	75	601	22	64	28	67	17	22	62
Future Volume (vph)	17	18	41	75	601	22	64	28	67	17	22	62
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.97	1.00		0.98	1.00
Satd. Flow (prot)	1630	1716	1458	1662	1741			1674	1473		1663	1444
Flt Permitted	0.19	1.00	1.00	0.74	1.00			0.76	1.00		0.81	1.00
Satd. Flow (perm)	318	1716	1458	1301	1741			1323	1473		1374	1444
Peak-hour factor, PHF	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Adj. Flow (vph)	20	21	49	89	715	26	76	33	80	20	26	74
RTOR Reduction (vph)	0	0	24	0	2	0	0	0	71	0	0	66
Lane Group Flow (vph)	20	21	25	89	739	0	0	109	9	0	46	8
Heavy Vehicles (%)	2%	2%	2%	0%	0%	0%	1%	1%	1%	3%	3%	3%
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4		4	8			2		2	6		6
Actuated Green, G (s)	30.4	24.5	24.5	31.0	24.8			5.7	5.7		5.7	5.7
Effective Green, g (s)	32.0	25.3	25.3	32.0	25.3			5.7	5.7		5.7	5.7
Actuated g/C Ratio	0.64	0.51	0.51	0.64	0.51			0.11	0.11		0.11	0.11
Clearance Time (s)	4.8	4.8	4.8	4.5	4.5			4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.5	4.0	4.0	2.5	4.0			2.5	2.5		2.5	2.5
Lane Grp Cap (vph)	381	873	742	886	886			151	168		157	165
v/s Ratio Prot	0.01	0.01		c0.01	c0.42							
v/s Ratio Perm	0.03		0.02	0.05				c0.08	0.01		0.03	0.01
v/c Ratio	0.05	0.02	0.03	0.10	0.83			0.72	0.05		0.29	0.05
Uniform Delay, d1	5.0	6.1	6.1	3.3	10.4			21.2	19.6		20.2	19.6
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	0.0	0.0	0.0	0.0	7.1			14.7	0.1		0.8	0.1
Delay (s)	5.0	6.1	6.1	3.4	17.5			36.0	19.7		20.9	19.7
Level of Service	A	A	A	A	B			D	B		C	B
Approach Delay (s)		5.9			16.0			29.1			20.2	
Approach LOS		A			B			C			C	
Intersection Summary												
HCM 2000 Control Delay			17.7			HCM 2000 Level of Service			B			
HCM 2000 Volume to Capacity ratio			0.69									
Actuated Cycle Length (s)			49.7			Sum of lost time (s)		12.0				
Intersection Capacity Utilization			56.2%			ICU Level of Service		B				
Analysis Period (min)			15									
c Critical Lane Group												

HCM 6th Signalized Intersection Summary

3: Marion St SE & 34th Ave SE

07/14/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	18	41	75	601	22	64	28	67	17	22	62
Future Volume (veh/h)	17	18	41	75	601	22	64	28	67	17	22	62
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1723	1723	1723	1750	1750	1750	1736	1736	1736	1709	1709	1709
Adj Flow Rate, veh/h	20	21	49	89	715	26	76	33	80	20	26	74
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	0	0	0	1	1	1	3	3	3
Cap, veh/h	393	902	764	967	859	31	114	28	248	97	77	244
Arrive On Green	0.09	0.52	0.52	0.08	0.51	0.51	0.17	0.17	0.17	0.17	0.17	0.17
Sat Flow, veh/h	1641	1723	1460	1667	1678	61	0	167	1471	0	456	1448
Grp Volume(v), veh/h	20	21	49	89	0	741	109	0	80	46	0	74
Grp Sat Flow(s),veh/h/ln	1641	1723	1460	1667	0	1739	167	0	1471	456	0	1448
Q Serve(g_s), s	0.3	0.3	0.9	1.2	0.0	19.4	0.0	0.0	2.6	0.0	0.0	2.4
Cycle Q Clear(g_c), s	0.3	0.3	0.9	1.2	0.0	19.4	9.0	0.0	2.6	9.0	0.0	2.4
Prop In Lane	1.00		1.00	1.00		0.04	0.70		1.00	0.43		1.00
Lane Grp Cap(c), veh/h	393	902	764	967	0	891	142	0	248	173	0	244
V/C Ratio(X)	0.05	0.02	0.06	0.09	0.00	0.83	0.77	0.00	0.32	0.27	0.00	0.30
Avail Cap(c_a), veh/h	522	966	819	1107	0	975	142	0	248	173	0	244
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	7.8	6.2	6.3	4.6	0.0	11.1	24.5	0.0	19.6	19.4	0.0	19.5
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	6.2	21.0	0.0	0.6	0.6	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.1	0.2	0.3	0.0	6.9	2.2	0.0	0.8	0.5	0.0	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.8	6.2	6.3	4.6	0.0	17.3	45.5	0.0	20.1	20.0	0.0	20.0
LnGrp LOS	A	A	A	A	A	B	D	A	C	C	A	C
Approach Vol, veh/h		90			830			189			120	
Approach Delay, s/veh		6.6			15.9			34.8			20.0	
Approach LOS		A			B			C			C	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		13.0	8.5	32.0		13.0	8.8	31.7				
Change Period (Y+Rc), s		4.0	4.5	4.8		4.0	4.8	* 4.8				
Max Green Setting (Gmax), s		9.0	8.5	29.2		9.0	8.2	* 30				
Max Q Clear Time (g_c+I1), s		11.0	3.2	2.9		11.0	2.3	21.4				
Green Ext Time (p_c), s		0.0	0.1	0.7		0.0	0.0	5.5				
Intersection Summary												
HCM 6th Ctrl Delay			18.5									
HCM 6th LOS			B									
Notes												
User approved pedestrian interval to be less than phase max green.												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 6th TWSC
 6: Marion St SE & Lochner Rd SE

07/14/2023

Intersection												
Int Delay, s/veh	5.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	0	0	0	117	0	22	7	77	58	0
Future Vol, veh/h	0	0	0	0	0	117	0	22	7	77	58	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	68	68	68	68	68	68	68	68	68	68	68	68
Heavy Vehicles, %	0	0	0	0	0	0	4	4	4	9	9	9
Mvmt Flow	0	0	0	0	0	172	0	32	10	113	85	0

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	434	353	85	348	348	37	85	0	0	42	0	0
Stage 1	311	311	-	37	37	-	-	-	-	-	-	-
Stage 2	123	42	-	311	311	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.14	-	-	4.19	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.236	-	-	2.281	-	-
Pot Cap-1 Maneuver	536	575	980	610	579	1041	1499	-	-	1523	-	-
Stage 1	704	662	-	984	868	-	-	-	-	-	-	-
Stage 2	886	864	-	704	662	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	421	530	980	573	534	1041	1499	-	-	1523	-	-
Mov Cap-2 Maneuver	421	530	-	573	534	-	-	-	-	-	-	-
Stage 1	704	610	-	984	868	-	-	-	-	-	-	-
Stage 2	740	864	-	649	610	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	9.1	0	4.3
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1499	-	-	-	1041	1523	-
HCM Lane V/C Ratio	-	-	-	-	0.165	0.074	-
HCM Control Delay (s)	0	-	-	0	9.1	7.6	0
HCM Lane LOS	A	-	-	A	A	A	A
HCM 95th %tile Q(veh)	0	-	-	-	0.6	0.2	-

HCM 6th TWSC
 10: Lochner Rd SE & N Site Access

07/14/2023

Intersection

Int Delay, s/veh 3.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	4	0	0	3	0	58	2	65	1	24	32	17
Future Vol, veh/h	4	0	0	3	0	58	2	65	1	24	32	17
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	125	-	-	140	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	68	68	68	68	68	68	68	68	68	68	68	68
Heavy Vehicles, %	0	0	0	0	0	0	3	3	3	23	23	23
Mvmt Flow	6	0	0	4	0	85	3	96	1	35	47	25

Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	275	233	60	233	245	97	72	0	0	97	0	0
Stage 1	130	130	-	103	103	-	-	-	-	-	-	-
Stage 2	145	103	-	130	142	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.13	-	-	4.33	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.227	-	-	2.407	-	-
Pot Cap-1 Maneuver	681	671	1011	726	661	965	1522	-	-	1375	-	-
Stage 1	878	792	-	908	814	-	-	-	-	-	-	-
Stage 2	863	814	-	878	783	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	608	653	1011	711	643	965	1522	-	-	1375	-	-
Mov Cap-2 Maneuver	608	653	-	711	643	-	-	-	-	-	-	-
Stage 1	876	772	-	906	812	-	-	-	-	-	-	-
Stage 2	785	812	-	856	763	-	-	-	-	-	-	-

Approach	EB		WB			NB			SB		
HCM Control Delay, s	11		9.2			0.2			2.5		
HCM LOS	B		A								

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1522	-	-	608	948	1375	-	-
HCM Lane V/C Ratio	0.002	-	-	0.01	0.095	0.026	-	-
HCM Control Delay (s)	7.4	-	-	11	9.2	7.7	-	-
HCM Lane LOS	A	-	-	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0.3	0.1	-	-

HCM 6th TWSC
 12: S Site Access & Lochner Rd SE

07/14/2023

Intersection						
Int Delay, s/veh	2.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	6	27	41	2	5	30
Future Vol, veh/h	6	27	41	2	5	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	29	45	2	5	33

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	89	46	0	0	47
Stage 1	46	-	-	-	-
Stage 2	43	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	912	1023	-	-	1560
Stage 1	976	-	-	-	-
Stage 2	979	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	909	1023	-	-	1560
Mov Cap-2 Maneuver	909	-	-	-	-
Stage 1	976	-	-	-	-
Stage 2	976	-	-	-	-






















Approach	WB	NB	SB
HCM Control Delay, s	8.7	0	1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	1000	1560
HCM Lane V/C Ratio	-	-	0.036	0.003
HCM Control Delay (s)	-	-	8.7	7.3
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0

HCM Signalized Intersection Capacity Analysis

3: Marion St SE & 34th Ave SE























07/13/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	19	34	63	634	24	31	14	34	18	19	65
Future Volume (vph)	18	19	34	63	634	24	31	14	34	18	19	65
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.97	1.00		0.98	1.00
Satd. Flow (prot)	1630	1716	1458	1662	1740			1675	1473		1659	1444
Flt Permitted	0.17	1.00	1.00	0.74	1.00			0.77	1.00		0.82	1.00
Satd. Flow (perm)	294	1716	1458	1299	1740			1330	1473		1395	1444
Peak-hour factor, PHF	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Adj. Flow (vph)	21	23	40	75	755	29	37	17	40	21	23	77
RTOR Reduction (vph)	0	0	19	0	2	0	0	0	36	0	0	69
Lane Group Flow (vph)	21	23	21	75	782	0	0	54	4	0	44	8
Heavy Vehicles (%)	2%	2%	2%	0%	0%	0%	1%	1%	1%	3%	3%	3%
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4		4	8			2		2	6		6
Actuated Green, G (s)	31.8	26.0	26.0	32.0	26.1			4.9	4.9		4.9	4.9
Effective Green, g (s)	33.4	26.8	26.8	33.0	26.6			4.9	4.9		4.9	4.9
Actuated g/C Ratio	0.67	0.53	0.53	0.66	0.53			0.10	0.10		0.10	0.10
Clearance Time (s)	4.8	4.8	4.8	4.5	4.5			4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.5	4.0	4.0	2.5	4.0			2.5	2.5		2.5	2.5
Lane Grp Cap (vph)	372	917	779	902	923			130	144		136	141
v/s Ratio Prot	0.01	0.01		c0.01	c0.45							
v/s Ratio Perm	0.03		0.01	0.04				c0.04	0.00		0.03	0.01
v/c Ratio	0.06	0.03	0.03	0.08	0.85			0.42	0.03		0.32	0.05
Uniform Delay, d1	4.9	5.5	5.5	3.1	10.0			21.3	20.4		21.1	20.5
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	0.0	0.0	0.0	0.0	7.5			1.6	0.1		1.0	0.1
Delay (s)	5.0	5.5	5.5	3.1	17.6			22.8	20.5		22.1	20.6
Level of Service	A	A	A	A	B			C	C		C	C
Approach Delay (s)		5.4			16.3			21.8			21.1	
Approach LOS		A			B			C			C	
Intersection Summary												
HCM 2000 Control Delay			16.5		HCM 2000 Level of Service				B			
HCM 2000 Volume to Capacity ratio			0.66									
Actuated Cycle Length (s)			50.1		Sum of lost time (s)			12.0				
Intersection Capacity Utilization			57.8%		ICU Level of Service			B				
Analysis Period (min)			15									
c Critical Lane Group												

HCM 6th Signalized Intersection Summary

3: Marion St SE & 34th Ave SE

07/13/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	19	34	63	634	24	31	14	34	18	19	65
Future Volume (veh/h)	18	19	34	63	634	24	31	14	34	18	19	65
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1723	1723	1723	1750	1750	1750	1736	1736	1736	1709	1709	1709
Adj Flow Rate, veh/h	21	23	40	75	755	29	37	17	40	21	23	77
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	0	0	0	1	1	1	3	3	3
Cap, veh/h	378	918	778	979	873	34	140	42	237	114	82	233
Arrive On Green	0.09	0.53	0.53	0.08	0.52	0.52	0.16	0.16	0.16	0.16	0.16	0.16
Sat Flow, veh/h	1641	1723	1460	1667	1674	64	168	260	1471	94	508	1448
Grp Volume(v), veh/h	21	23	40	75	0	784	54	0	40	44	0	77
Grp Sat Flow(s),veh/h/ln	1641	1723	1460	1667	0	1738	427	0	1471	602	0	1448
Q Serve(g_s), s	0.3	0.3	0.7	1.0	0.0	21.2	0.9	0.0	1.3	0.2	0.0	2.5
Cycle Q Clear(g_c), s	0.3	0.3	0.7	1.0	0.0	21.2	8.1	0.0	1.3	7.7	0.0	2.5
Prop In Lane	1.00		1.00	1.00		0.04	0.69		1.00	0.48		1.00
Lane Grp Cap(c), veh/h	378	918	778	979	0	907	181	0	237	196	0	233
V/C Ratio(X)	0.06	0.03	0.05	0.08	0.00	0.86	0.30	0.00	0.17	0.22	0.00	0.33
Avail Cap(c_a), veh/h	506	959	813	1118	0	968	190	0	246	204	0	242
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	8.1	6.0	6.1	4.4	0.0	11.2	22.0	0.0	19.5	19.7	0.0	20.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	8.2	0.7	0.0	0.2	0.4	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.1	0.2	0.2	0.0	7.8	0.7	0.0	0.4	0.5	0.0	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.2	6.0	6.1	4.4	0.0	19.5	22.7	0.0	19.7	20.2	0.0	20.6
LnGrp LOS	A	A	A	A	A	B	C	A	B	C	A	C
Approach Vol, veh/h		84			859			94			121	
Approach Delay, s/veh		6.6			18.2			21.4			20.5	
Approach LOS		A			B			C			C	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		12.8	8.5	32.8		12.8	8.8	32.5				
Change Period (Y+Rc), s		4.0	4.5	4.8		4.0	4.8	* 4.8				
Max Green Setting (Gmax), s		9.0	8.5	29.2		9.0	8.2	* 30				
Max Q Clear Time (g_c+I1), s		10.1	3.0	2.7		9.7	2.3	23.2				
Green Ext Time (p_c), s		0.0	0.1	0.6		0.0	0.0	4.6				
Intersection Summary												
HCM 6th Ctrl Delay				17.8								
HCM 6th LOS				B								
Notes												
User approved pedestrian interval to be less than phase max green.												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 6th TWSC
 6: Marion St SE & Lochner Rd SE

07/13/2023

Intersection												
Int Delay, s/veh	3.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	0	0	0	34	0	24	7	51	61	0
Future Vol, veh/h	0	0	0	0	0	34	0	24	7	51	61	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	68	68	68	68	68	68	68	68	68	68	68	68
Heavy Vehicles, %	0	0	0	0	0	0	4	4	4	9	9	9
Mvmt Flow	0	0	0	0	0	50	0	35	10	75	90	0

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	305	285	90	280	280	40	90	0	0	45	0	0
Stage 1	240	240	-	40	40	-	-	-	-	-	-	-
Stage 2	65	45	-	240	240	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.14	-	-	4.19	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.236	-	-	2.281	-	-
Pot Cap-1 Maneuver	651	628	973	676	632	1037	1493	-	-	1519	-	-
Stage 1	768	711	-	980	866	-	-	-	-	-	-	-
Stage 2	951	861	-	768	711	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	595	595	973	649	599	1037	1493	-	-	1519	-	-
Mov Cap-2 Maneuver	595	595	-	649	599	-	-	-	-	-	-	-
Stage 1	768	674	-	980	866	-	-	-	-	-	-	-
Stage 2	905	861	-	728	674	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	8.6	0	3.4
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1493	-	-	-	1037	1519	-	-
HCM Lane V/C Ratio	-	-	-	-	0.048	0.049	-	-
HCM Control Delay (s)	0	-	-	0	8.6	7.5	0	-
HCM Lane LOS	A	-	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	-	0.2	0.2	-	-

HCM 6th TWSC
 10: Lochner Rd SE & N Site Access

07/13/2023

Intersection												
Int Delay, s/veh	0.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	0	0	0	0	0	2	40	0	0	28	18
Future Vol, veh/h	5	0	0	0	0	0	2	40	0	0	28	18
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	68	68	68	68	68	68	68	68	68	68	68	68
Heavy Vehicles, %	0	0	0	0	0	0	3	3	3	23	23	23
Mvmt Flow	7	0	0	0	0	0	3	59	0	0	41	26

Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	119	119	54	119	132	59	67	0	0	59	0	0
Stage 1	54	54	-	65	65	-	-	-	-	-	-	-
Stage 2	65	65	-	54	67	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.13	-	-	4.33	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.227	-	-	2.407	-	-
Pot Cap-1 Maneuver	861	775	1019	861	762	1012	1528	-	-	1421	-	-
Stage 1	963	854	-	951	845	-	-	-	-	-	-	-
Stage 2	951	845	-	963	843	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	859	773	1019	859	760	1012	1528	-	-	1421	-	-
Mov Cap-2 Maneuver	859	773	-	859	760	-	-	-	-	-	-	-
Stage 1	961	854	-	949	843	-	-	-	-	-	-	-
Stage 2	949	843	-	963	843	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.2	0	0.4	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1528	-	-	859	-	1421	-
HCM Lane V/C Ratio	0.002	-	-	0.009	-	-	-
HCM Control Delay (s)	7.4	0	-	9.2	0	0	-
HCM Lane LOS	A	A	-	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-	0	-

HCM 6th TWSC
 12: S Site Access & Lochner Rd SE

07/13/2023

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1	0	0	0	0	0
Stage 1	0	-	-	-	-	-
Stage 2	1	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	1022	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	1022	-	-	-	-	-
Platoon blocked, %						
Mov Cap-1 Maneuver	1022	-	-	-	-	-
Mov Cap-2 Maneuver	1022	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	1022	-	-	-	-	-






















Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	-

HCM Signalized Intersection Capacity Analysis

3: Marion St SE & 34th Ave SE






















07/14/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	20	35	65	656	24	32	15	35	18	20	67
Future Volume (vph)	18	20	35	65	656	24	32	15	35	18	20	67
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.97	1.00		0.98	1.00
Satd. Flow (prot)	1630	1716	1458	1662	1741			1676	1473		1660	1444
Flt Permitted	0.17	1.00	1.00	0.74	1.00			0.77	1.00		0.82	1.00
Satd. Flow (perm)	288	1716	1458	1298	1741			1332	1473		1399	1444
Peak-hour factor, PHF	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Adj. Flow (vph)	21	24	42	77	781	29	38	18	42	21	24	80
RTOR Reduction (vph)	0	0	19	0	2	0	0	0	38	0	0	72
Lane Group Flow (vph)	21	24	23	77	808	0	0	56	4	0	45	8
Heavy Vehicles (%)	2%	2%	2%	0%	0%	0%	1%	1%	1%	3%	3%	3%
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4		4	8			2		2	6		6
Actuated Green, G (s)	34.3	28.4	28.4	34.5	28.5			5.0	5.0		5.0	5.0
Effective Green, g (s)	35.9	29.2	29.2	35.5	29.0			5.0	5.0		5.0	5.0
Actuated g/C Ratio	0.68	0.55	0.55	0.67	0.55			0.09	0.09		0.09	0.09
Clearance Time (s)	4.8	4.8	4.8	4.5	4.5			4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.5	4.0	4.0	2.5	4.0			2.5	2.5		2.5	2.5
Lane Grp Cap (vph)	366	950	807	919	958			126	139		132	137
v/s Ratio Prot	0.01	0.01		c0.01	c0.46							
v/s Ratio Perm	0.03		0.02	0.05				c0.04	0.00		0.03	0.01
v/c Ratio	0.06	0.03	0.03	0.08	0.84			0.44	0.03		0.34	0.06
Uniform Delay, d1	5.1	5.3	5.3	2.9	9.9			22.5	21.6		22.3	21.7
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	0.0	0.0	0.0	0.0	7.1			1.8	0.1		1.1	0.1
Delay (s)	5.1	5.3	5.3	3.0	17.1			24.4	21.7		23.4	21.8
Level of Service	A	A	A	A	B			C	C		C	C
Approach Delay (s)		5.3			15.9			23.2			22.4	
Approach LOS		A			B			C			C	
Intersection Summary												
HCM 2000 Control Delay			16.4		HCM 2000 Level of Service				B			
HCM 2000 Volume to Capacity ratio			0.67									
Actuated Cycle Length (s)			52.7		Sum of lost time (s)			12.0				
Intersection Capacity Utilization			59.1%		ICU Level of Service			B				
Analysis Period (min)			15									
c Critical Lane Group												

HCM 6th Signalized Intersection Summary

3: Marion St SE & 34th Ave SE

07/14/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	20	35	65	656	24	32	15	35	18	20	67
Future Volume (veh/h)	18	20	35	65	656	24	32	15	35	18	20	67
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1723	1723	1723	1750	1750	1750	1736	1736	1736	1709	1709	1709
Adj Flow Rate, veh/h	21	24	42	77	781	29	38	18	42	21	24	80
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	0	0	0	1	1	1	3	3	3
Cap, veh/h	371	969	822	1000	926	34	104	28	227	91	63	224
Arrive On Green	0.08	0.56	0.56	0.08	0.55	0.55	0.15	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	1641	1723	1460	1667	1677	62	0	182	1471	0	408	1448
Grp Volume(v), veh/h	21	24	42	77	0	810	56	0	42	45	0	80
Grp Sat Flow(s),veh/h/ln	1641	1723	1460	1667	0	1739	182	0	1471	408	0	1448
Q Serve(g_s), s	0.3	0.4	0.8	1.0	0.0	22.8	0.0	0.0	1.4	0.0	0.0	2.9
Cycle Q Clear(g_c), s	0.3	0.4	0.8	1.0	0.0	22.8	9.0	0.0	1.4	9.0	0.0	2.9
Prop In Lane	1.00		1.00	1.00		0.04	0.68		1.00	0.47		1.00
Lane Grp Cap(c), veh/h	371	969	822	1000	0	961	132	0	227	154	0	224
V/C Ratio(X)	0.06	0.02	0.05	0.08	0.00	0.84	0.43	0.00	0.18	0.29	0.00	0.36
Avail Cap(c_a), veh/h	489	1034	876	1129	0	1044	132	0	227	154	0	224
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	8.4	5.7	5.7	4.2	0.0	10.9	24.9	0.0	21.5	21.8	0.0	22.1
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	6.4	1.6	0.0	0.3	0.8	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.1	0.2	0.2	0.0	8.0	0.8	0.0	0.5	0.5	0.0	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.5	5.7	5.8	4.2	0.0	17.3	26.5	0.0	21.8	22.6	0.0	22.8
LnGrp LOS	A	A	A	A	A	B	C	A	C	C	A	C
Approach Vol, veh/h		87			887			98			125	
Approach Delay, s/veh		6.4			16.2			24.5			22.7	
Approach LOS		A			B			C			C	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		13.0	8.5	36.8		13.0	8.8	36.5				
Change Period (Y+Rc), s		4.0	4.5	4.8		4.0	4.8	* 4.8				
Max Green Setting (Gmax), s		9.0	8.5	34.2		9.0	8.2	* 35				
Max Q Clear Time (g_c+I1), s		11.0	3.0	2.8		11.0	2.3	24.8				
Green Ext Time (p_c), s		0.0	0.1	0.7		0.0	0.0	7.0				
Intersection Summary												
HCM 6th Ctrl Delay			16.8									
HCM 6th LOS			B									
Notes												
User approved pedestrian interval to be less than phase max green.												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 6th TWSC
 6: Marion St SE & Lochner Rd SE

07/14/2023

Intersection												
Int Delay, s/veh	3.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	0	0	0	35	0	24	7	53	64	0
Future Vol, veh/h	0	0	0	0	0	35	0	24	7	53	64	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	68	68	68	68	68	68	68	68	68	68	68	68
Heavy Vehicles, %	0	0	0	0	0	0	4	4	4	9	9	9
Mvmt Flow	0	0	0	0	0	51	0	35	10	78	94	0

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	316	295	94	290	290	40	94	0	0	45	0	0
Stage 1	250	250	-	40	40	-	-	-	-	-	-	-
Stage 2	66	45	-	250	250	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.14	-	-	4.19	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.236	-	-	2.281	-	-
Pot Cap-1 Maneuver	641	620	968	666	624	1037	1488	-	-	1519	-	-
Stage 1	759	704	-	980	866	-	-	-	-	-	-	-
Stage 2	950	861	-	759	704	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	584	587	968	639	590	1037	1488	-	-	1519	-	-
Mov Cap-2 Maneuver	584	587	-	639	590	-	-	-	-	-	-	-
Stage 1	759	666	-	980	866	-	-	-	-	-	-	-
Stage 2	903	861	-	718	666	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	8.7	0	3.4
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1488	-	-	-	1037	1519	-
HCM Lane V/C Ratio	-	-	-	-	0.05	0.051	-
HCM Control Delay (s)	0	-	-	0	8.7	7.5	0
HCM Lane LOS	A	-	-	A	A	A	A
HCM 95th %tile Q(veh)	0	-	-	-	0.2	0.2	-

HCM 6th TWSC
 10: Lochner Rd SE & N Site Access

07/14/2023

Intersection												
Int Delay, s/veh	0.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	5	0	0	0	0	0	2	42	0	0	29	18
Future Vol, veh/h	5	0	0	0	0	0	2	42	0	0	29	18
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	125	-	-	140	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	68	68	68	68	68	68	68	68	68	68	68	68
Heavy Vehicles, %	0	0	0	0	0	0	3	3	3	23	23	23
Mvmt Flow	7	0	0	0	0	0	3	62	0	0	43	26

Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	124	124	56	124	137	62	69	0	0	62	0	0
Stage 1	56	56	-	68	68	-	-	-	-	-	-	-
Stage 2	68	68	-	56	69	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.13	-	-	4.33	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.227	-	-	2.407	-	-
Pot Cap-1 Maneuver	855	770	1016	855	758	1009	1526	-	-	1417	-	-
Stage 1	961	852	-	947	842	-	-	-	-	-	-	-
Stage 2	947	842	-	961	841	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	854	768	1016	854	756	1009	1526	-	-	1417	-	-
Mov Cap-2 Maneuver	854	768	-	854	756	-	-	-	-	-	-	-
Stage 1	959	852	-	945	840	-	-	-	-	-	-	-
Stage 2	945	840	-	961	841	-	-	-	-	-	-	-

Approach	EB		WB			NB			SB		
HCM Control Delay, s	9.3		0			0.3			0		
HCM LOS	A		A								

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1526	-	-	854	-	1417	-	-
HCM Lane V/C Ratio	0.002	-	-	0.009	-	-	-	-
HCM Control Delay (s)	7.4	-	-	9.3	0	0	-	-
HCM Lane LOS	A	-	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	-	0	-	-

HCM 6th TWSC
 12: S Site Access & Lochner Rd SE

07/14/2023

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1	0	0	0	0	0
Stage 1	0	-	-	-	-	-
Stage 2	1	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	1022	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	1022	-	-	-	-	-
Platoon blocked, %						
Mov Cap-1 Maneuver	1022	-	-	-	-	-
Mov Cap-2 Maneuver	1022	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	1022	-	-	-	-	-






















Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	-

HCM Signalized Intersection Capacity Analysis

3: Marion St SE & 34th Ave SE






















07/14/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	20	44	81	656	24	67	30	70	18	24	67
Future Volume (vph)	18	20	44	81	656	24	67	30	70	18	24	67
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.97	1.00		0.98	1.00
Satd. Flow (prot)	1630	1716	1458	1662	1741			1675	1473		1664	1444
Flt Permitted	0.16	1.00	1.00	0.74	1.00			0.76	1.00		0.81	1.00
Satd. Flow (perm)	278	1716	1458	1298	1741			1322	1473		1377	1444
Peak-hour factor, PHF	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Adj. Flow (vph)	21	24	52	96	781	29	80	36	83	21	29	80
RTOR Reduction (vph)	0	0	24	0	2	0	0	0	74	0	0	71
Lane Group Flow (vph)	21	24	28	96	808	0	0	116	9	0	50	9
Heavy Vehicles (%)	2%	2%	2%	0%	0%	0%	1%	1%	1%	3%	3%	3%
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4		4	8			2		2	6		6
Actuated Green, G (s)	34.8	28.8	28.8	35.4	29.1			6.0	6.0		6.0	6.0
Effective Green, g (s)	36.4	29.6	29.6	36.4	29.6			6.0	6.0		6.0	6.0
Actuated g/C Ratio	0.67	0.54	0.54	0.67	0.54			0.11	0.11		0.11	0.11
Clearance Time (s)	4.8	4.8	4.8	4.5	4.5			4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.5	4.0	4.0	2.5	4.0			2.5	2.5		2.5	2.5
Lane Grp Cap (vph)	355	933	793	914	947			145	162		151	159
v/s Ratio Prot	0.01	0.01		c0.01	c0.46							
v/s Ratio Perm	0.03		0.02	0.06				c0.09	0.01		0.04	0.01
v/c Ratio	0.06	0.03	0.04	0.11	0.85			0.80	0.06		0.33	0.06
Uniform Delay, d1	5.5	5.7	5.8	3.2	10.6			23.6	21.7		22.3	21.7
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	0.1	0.0	0.0	0.0	7.8			25.5	0.1		0.9	0.1
Delay (s)	5.6	5.7	5.8	3.2	18.4			49.1	21.8		23.3	21.8
Level of Service	A	A	A	A	B			D	C		C	C
Approach Delay (s)		5.7			16.8			37.7			22.4	
Approach LOS		A			B			D			C	
Intersection Summary												
HCM 2000 Control Delay			19.6		HCM 2000 Level of Service				B			
HCM 2000 Volume to Capacity ratio			0.73									
Actuated Cycle Length (s)			54.4		Sum of lost time (s)			12.0				
Intersection Capacity Utilization			59.8%		ICU Level of Service			B				
Analysis Period (min)			15									
c Critical Lane Group												

HCM 6th Signalized Intersection Summary

3: Marion St SE & 34th Ave SE

07/14/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	20	44	81	656	24	67	30	70	18	24	67
Future Volume (veh/h)	18	20	44	81	656	24	67	30	70	18	24	67
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1723	1723	1723	1750	1750	1750	1736	1736	1736	1709	1709	1709
Adj Flow Rate, veh/h	21	24	52	96	781	29	80	36	83	21	29	80
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	0	0	0	1	1	1	3	3	3
Cap, veh/h	371	969	822	993	926	34	104	27	227	88	74	224
Arrive On Green	0.08	0.56	0.56	0.08	0.55	0.55	0.15	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	1641	1723	1460	1667	1677	62	0	173	1471	0	479	1448
Grp Volume(v), veh/h	21	24	52	96	0	810	116	0	83	50	0	80
Grp Sat Flow(s),veh/h/ln	1641	1723	1460	1667	0	1739	173	0	1471	479	0	1448
Q Serve(g_s), s	0.3	0.4	0.9	1.3	0.0	22.8	0.0	0.0	2.9	0.0	0.0	2.9
Cycle Q Clear(g_c), s	0.3	0.4	0.9	1.3	0.0	22.8	9.0	0.0	2.9	9.0	0.0	2.9
Prop In Lane	1.00		1.00	1.00		0.04	0.69		1.00	0.42		1.00
Lane Grp Cap(c), veh/h	371	969	822	993	0	961	131	0	227	162	0	224
V/C Ratio(X)	0.06	0.02	0.06	0.10	0.00	0.84	0.89	0.00	0.37	0.31	0.00	0.36
Avail Cap(c_a), veh/h	489	1034	876	1122	0	1044	131	0	227	162	0	224
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	8.4	5.7	5.8	4.2	0.0	10.9	27.2	0.0	22.1	21.8	0.0	22.1
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	6.4	45.6	0.0	0.7	0.8	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.1	0.2	0.3	0.0	8.0	3.2	0.0	1.0	0.6	0.0	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.5	5.7	5.8	4.3	0.0	17.3	72.8	0.0	22.8	22.6	0.0	22.8
LnGrp LOS	A	A	A	A	A	B	E	A	C	C	A	C
Approach Vol, veh/h		97			906			199			130	
Approach Delay, s/veh		6.4			15.9			52.0			22.7	
Approach LOS		A			B			D			C	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		13.0	8.5	36.8		13.0	8.8	36.5				
Change Period (Y+Rc), s		4.0	4.5	4.8		4.0	4.8	* 4.8				
Max Green Setting (Gmax), s		9.0	8.5	34.2		9.0	8.2	* 35				
Max Q Clear Time (g_c+I1), s		11.0	3.3	2.9		11.0	2.3	24.8				
Green Ext Time (p_c), s		0.0	0.1	0.8		0.0	0.0	7.0				
Intersection Summary												
HCM 6th Ctrl Delay				21.3								
HCM 6th LOS				C								
Notes												
User approved pedestrian interval to be less than phase max green.												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 6th TWSC
6: Marion St SE & Lochner Rd SE

07/14/2023

Intersection												
Int Delay, s/veh	5.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	0	0	0	120	0	24	7	82	64	0
Future Vol, veh/h	0	0	0	0	0	120	0	24	7	82	64	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	68	68	68	68	68	68	68	68	68	68	68	68
Heavy Vehicles, %	0	0	0	0	0	0	4	4	4	9	9	9
Mvmt Flow	0	0	0	0	0	176	0	35	10	121	94	0

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	464	381	94	376	376	40	94	0	0	45	0	0
Stage 1	336	336	-	40	40	-	-	-	-	-	-	-
Stage 2	128	45	-	336	336	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.14	-	-	4.19	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.236	-	-	2.281	-	-
Pot Cap-1 Maneuver	512	555	968	585	558	1037	1488	-	-	1519	-	-
Stage 1	682	645	-	980	866	-	-	-	-	-	-	-
Stage 2	881	861	-	682	645	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	397	508	968	548	511	1037	1488	-	-	1519	-	-
Mov Cap-2 Maneuver	397	508	-	548	511	-	-	-	-	-	-	-
Stage 1	682	591	-	980	866	-	-	-	-	-	-	-
Stage 2	731	861	-	625	591	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	9.2	0	4.3
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1488	-	-	-	1037	1519	-
HCM Lane V/C Ratio	-	-	-	-	0.17	0.079	-
HCM Control Delay (s)	0	-	-	0	9.2	7.6	0
HCM Lane LOS	A	-	-	A	A	A	A
HCM 95th %tile Q(veh)	0	-	-	-	0.6	0.3	-

HCM 6th TWSC
 10: Lochner Rd SE & N Site Access

07/14/2023

Intersection												
Int Delay, s/veh	3.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	5	0	0	3	0	58	2	69	1	24	34	18
Future Vol, veh/h	5	0	0	3	0	58	2	69	1	24	34	18
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	125	-	-	140	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	68	68	68	68	68	68	68	68	68	68	68	68
Heavy Vehicles, %	0	0	0	0	0	0	3	3	3	23	23	23
Mvmt Flow	7	0	0	4	0	85	3	101	1	35	50	26

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	283	241	63	241	254	102	76	0	0	102	0	0
Stage 1	133	133	-	108	108	-	-	-	-	-	-	-
Stage 2	150	108	-	133	146	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.13	-	-	4.33	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.227	-	-	2.407	-	-
Pot Cap-1 Maneuver	673	664	1007	717	653	959	1517	-	-	1369	-	-
Stage 1	875	790	-	902	810	-	-	-	-	-	-	-
Stage 2	857	810	-	875	780	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	600	645	1007	702	635	959	1517	-	-	1369	-	-
Mov Cap-2 Maneuver	600	645	-	702	635	-	-	-	-	-	-	-
Stage 1	873	769	-	900	808	-	-	-	-	-	-	-
Stage 2	779	808	-	853	760	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	11.1		9.2		0.2		2.4	
HCM LOS	B		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1517	-	-	600	942	1369	-	-
HCM Lane V/C Ratio	0.002	-	-	0.012	0.095	0.026	-	-
HCM Control Delay (s)	7.4	-	-	11.1	9.2	7.7	-	-
HCM Lane LOS	A	-	-	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0.3	0.1	-	-

HCM 6th TWSC
 12: S Site Access & Lochner Rd SE

07/14/2023

Intersection						
Int Delay, s/veh	2.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	6	27	43	2	5	31
Future Vol, veh/h	6	27	43	2	5	31
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	29	47	2	5	34

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	92	48	0	0	49
Stage 1	48	-	-	-	-
Stage 2	44	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	908	1021	-	-	1558
Stage 1	974	-	-	-	-
Stage 2	978	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	905	1021	-	-	1558
Mov Cap-2 Maneuver	905	-	-	-	-
Stage 1	974	-	-	-	-
Stage 2	975	-	-	-	-






















Approach	WB	NB	SB
HCM Control Delay, s	8.7	0	1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	998	1558
HCM Lane V/C Ratio	-	-	0.036	0.003
HCM Control Delay (s)	-	-	8.7	7.3
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0

HCM Signalized Intersection Capacity Analysis

3: Marion St SE & 34th Ave SE























07/14/2023

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	56	556	18	17	393	20	32	27	60	26	15	29	
Future Volume (vph)	56	556	18	17	393	20	32	27	60	26	15	29	
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.99			1.00	0.85		1.00	0.85	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.97	1.00		0.97	1.00	
Satd. Flow (prot)	1662	1750	1488	1662	1737			1703	1488		1697	1488	
Flt Permitted	0.41	1.00	1.00	0.31	1.00			0.91	1.00		0.96	1.00	
Satd. Flow (perm)	721	1750	1488	545	1737			1594	1488		1676	1488	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
Adj. Flow (vph)	59	585	19	18	414	21	34	28	63	27	16	31	
RTOR Reduction (vph)	0	0	10	0	3	0	0	0	58	0	0	28	
Lane Group Flow (vph)	59	585	9	18	432	0	0	62	5	0	43	3	
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Turn Type	pm+pt	NA	Perm	pm+pt	NA			Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8			2	2		6	6	
Permitted Phases	4		4	8			2		2	6		6	
Actuated Green, G (s)	25.1	19.0	19.0	24.3	18.6			3.4	3.4		3.4	3.4	
Effective Green, g (s)	26.7	19.8	19.8	25.3	19.1			3.4	3.4		3.4	3.4	
Actuated g/C Ratio	0.64	0.48	0.48	0.61	0.46			0.08	0.08		0.08	0.08	
Clearance Time (s)	4.8	4.8	4.8	4.5	4.5			4.0	4.0		4.0	4.0	
Vehicle Extension (s)	2.5	4.0	4.0	2.5	4.0			2.5	2.5		2.5	2.5	
Lane Grp Cap (vph)	621	836	711	500	801			130	122		137	122	
v/s Ratio Prot	c0.02	c0.33		0.01	0.25								
v/s Ratio Perm	0.05		0.01	0.02				c0.04	0.00		0.03	0.00	
v/c Ratio	0.10	0.70	0.01	0.04	0.54			0.48	0.04		0.31	0.02	
Uniform Delay, d1	2.9	8.5	5.7	3.6	8.0			18.2	17.5		17.9	17.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	2.8	0.0	0.0	0.9			2.0	0.1		1.0	0.1	
Delay (s)	2.9	11.3	5.7	3.6	8.9			20.2	17.6		18.9	17.5	
Level of Service	A	B	A	A	A			C	B		B	B	
Approach Delay (s)		10.4			8.7			18.9			18.3		
Approach LOS		B			A			B			B		
Intersection Summary													
HCM 2000 Control Delay			11.0		HCM 2000 Level of Service				B				
HCM 2000 Volume to Capacity ratio			0.55										
Actuated Cycle Length (s)			41.4		Sum of lost time (s)			12.0					
Intersection Capacity Utilization			55.2%		ICU Level of Service			B					
Analysis Period (min)			15										
c Critical Lane Group													

HCM 6th Signalized Intersection Summary

3: Marion St SE & 34th Ave SE

07/14/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	56	556	18	17	393	20	32	27	60	26	15	29
Future Volume (veh/h)	56	556	18	17	393	20	32	27	60	26	15	29
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Adj Flow Rate, veh/h	59	585	19	18	414	21	34	28	63	27	16	31
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	664	897	760	542	825	42	191	110	181	203	86	181
Arrive On Green	0.11	0.51	0.51	0.10	0.50	0.50	0.12	0.12	0.12	0.12	0.12	0.12
Sat Flow, veh/h	1667	1750	1483	1667	1651	84	553	904	1483	601	708	1483
Grp Volume(v), veh/h	59	585	19	18	0	435	62	0	63	43	0	31
Grp Sat Flow(s),veh/h/ln	1667	1750	1483	1667	0	1735	1457	0	1483	1309	0	1483
Q Serve(g_s), s	0.6	11.0	0.3	0.2	0.0	7.6	0.1	0.0	1.8	0.0	0.0	0.8
Cycle Q Clear(g_c), s	0.6	11.0	0.3	0.2	0.0	7.6	1.9	0.0	1.8	1.9	0.0	0.8
Prop In Lane	1.00		1.00	1.00		0.05	0.55		1.00	0.63		1.00
Lane Grp Cap(c), veh/h	664	897	760	542	0	866	301	0	181	289	0	181
V/C Ratio(X)	0.09	0.65	0.02	0.03	0.00	0.50	0.21	0.00	0.35	0.15	0.00	0.17
Avail Cap(c_a), veh/h	820	1163	985	708	0	1153	419	0	296	402	0	296
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	4.2	8.1	5.4	5.0	0.0	7.6	18.1	0.0	18.2	17.9	0.0	17.8
Incr Delay (d2), s/veh	0.0	1.2	0.0	0.0	0.0	0.6	0.2	0.0	0.9	0.2	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	2.7	0.1	0.0	0.0	2.0	0.6	0.0	0.6	0.4	0.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	4.2	9.2	5.5	5.0	0.0	8.2	18.3	0.0	19.0	18.0	0.0	18.1
LnGrp LOS	A	A	A	A	A	A	B	A	B	B	A	B
Approach Vol, veh/h		663			453			125			74	
Approach Delay, s/veh		8.7			8.1			18.7			18.1	
Approach LOS		A			A			B			B	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		9.5	8.5	27.1		9.5	8.8	26.8				
Change Period (Y+Rc), s		4.0	4.5	4.8		4.0	4.8	* 4.8				
Max Green Setting (Gmax), s		9.0	8.5	29.2		9.0	8.2	* 30				
Max Q Clear Time (g_c+I1), s		3.9	2.2	13.0		3.9	2.6	9.6				
Green Ext Time (p_c), s		0.2	0.0	9.3		0.1	0.0	6.1				
Intersection Summary												
HCM 6th Ctrl Delay			9.9									
HCM 6th LOS			A									
Notes												
User approved pedestrian interval to be less than phase max green.												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 6th TWSC
6: Marion St SE & Lochner Rd SE

07/14/2023

Intersection												
Int Delay, s/veh	4.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	0	0	0	63	0	43	12	20	11	0
Future Vol, veh/h	0	0	0	0	0	63	0	43	12	20	11	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	78	78	78	78	78	78	78	78	78	78
Heavy Vehicles, %	0	0	0	0	0	0	10	10	10	0	0	0
Mvmt Flow	0	0	0	0	0	81	0	55	15	26	14	0

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	169	136	14	129	129	63	14	0	0	70	0	0
Stage 1	66	66	-	63	63	-	-	-	-	-	-	-
Stage 2	103	70	-	66	66	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.2	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.29	-	-	2.2	-	-
Pot Cap-1 Maneuver	799	759	1072	849	765	1007	1553	-	-	1544	-	-
Stage 1	950	844	-	953	846	-	-	-	-	-	-	-
Stage 2	908	841	-	950	844	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	725	746	1072	838	752	1007	1553	-	-	1544	-	-
Mov Cap-2 Maneuver	725	746	-	838	752	-	-	-	-	-	-	-
Stage 1	950	830	-	953	846	-	-	-	-	-	-	-
Stage 2	835	841	-	934	830	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	8.9	0	4.8
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1553	-	-	-	1007	1544	-
HCM Lane V/C Ratio	-	-	-	-	0.08	0.017	-
HCM Control Delay (s)	0	-	-	0	8.9	7.4	0
HCM Lane LOS	A	-	-	A	A	A	A
HCM 95th %tile Q(veh)	0	-	-	-	0.3	0.1	-

HCM 6th TWSC
 10: Lochner Rd SE & N Site Access

07/14/2023

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	10	0	1	0	0	0	0	52	0	0	40	0
Future Vol, veh/h	10	0	1	0	0	0	0	52	0	0	40	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	125	-	-	140	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	68	68	68	68	68	68	68	68	68	68	68	68
Heavy Vehicles, %	0	0	0	0	0	0	10	10	10	0	0	0
Mvmt Flow	15	0	1	0	0	0	0	76	0	0	59	0

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	135	135	59	136	135	76	59	0	0	76	0	0
Stage 1	59	59	-	76	76	-	-	-	-	-	-	-
Stage 2	76	76	-	60	59	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.2	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.29	-	-	2.2	-	-
Pot Cap-1 Maneuver	841	760	1012	840	760	991	1495	-	-	1536	-	-
Stage 1	958	850	-	938	836	-	-	-	-	-	-	-
Stage 2	938	836	-	957	850	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	841	760	1012	839	760	991	1495	-	-	1536	-	-
Mov Cap-2 Maneuver	841	760	-	839	760	-	-	-	-	-	-	-
Stage 1	958	850	-	938	836	-	-	-	-	-	-	-
Stage 2	938	836	-	956	850	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.3	0	0	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1495	-	-	854	-	1536	-
HCM Lane V/C Ratio	-	-	-	0.019	-	-	-
HCM Control Delay (s)	0	-	-	9.3	0	0	-
HCM Lane LOS	A	-	-	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	-	0	-

HCM 6th TWSC
 12: S Site Access & Lochner Rd SE

07/14/2023

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1	0	0	0	0	0
Stage 1	0	-	-	-	-	-
Stage 2	1	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	1022	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	1022	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	1022	-	-	-	-	-
Mov Cap-2 Maneuver	1022	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	1022	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	-

HCM Signalized Intersection Capacity Analysis

3: Marion St SE & 34th Ave SE

07/14/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	57	566	19	18	400	21	33	27	62	26	15	30
Future Volume (vph)	57	566	19	18	400	21	33	27	62	26	15	30
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.97	1.00		0.97	1.00
Satd. Flow (prot)	1662	1750	1488	1662	1737			1703	1488		1697	1488
Flt Permitted	0.39	1.00	1.00	0.29	1.00			0.80	1.00		0.77	1.00
Satd. Flow (perm)	690	1750	1488	504	1737			1406	1488		1351	1488
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	60	596	20	19	421	22	35	28	65	27	16	32
RTOR Reduction (vph)	0	0	11	0	3	0	0	0	58	0	0	28
Lane Group Flow (vph)	60	596	9	19	440	0	0	63	7	0	43	4
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4		4	8			2		2	6		6
Actuated Green, G (s)	25.3	19.3	19.3	24.5	18.9			4.9	4.9		4.9	4.9
Effective Green, g (s)	26.9	20.1	20.1	25.5	19.4			4.9	4.9		4.9	4.9
Actuated g/C Ratio	0.62	0.47	0.47	0.59	0.45			0.11	0.11		0.11	0.11
Clearance Time (s)	4.8	4.8	4.8	4.5	4.5			4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.5	4.0	4.0	2.5	4.0			2.5	2.5		2.5	2.5
Lane Grp Cap (vph)	584	816	693	462	781			159	169		153	169
v/s Ratio Prot	c0.02	c0.34		0.01	0.25							
v/s Ratio Perm	0.05		0.01	0.02				c0.04	0.00		0.03	0.00
v/c Ratio	0.10	0.73	0.01	0.04	0.56			0.40	0.04		0.28	0.02
Uniform Delay, d1	3.4	9.3	6.2	4.2	8.7			17.7	17.0		17.5	17.0
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	0.1	3.6	0.0	0.0	1.1			1.2	0.1		0.7	0.0
Delay (s)	3.5	12.9	6.2	4.2	9.9			18.9	17.1		18.2	17.0
Level of Service	A	B	A	A	A			B	B		B	B
Approach Delay (s)		11.9			9.6			18.0			17.7	
Approach LOS		B			A			B			B	

Intersection Summary		
HCM 2000 Control Delay	12.0	HCM 2000 Level of Service
HCM 2000 Volume to Capacity ratio	0.56	B
Actuated Cycle Length (s)	43.1	Sum of lost time (s)
Intersection Capacity Utilization	55.9%	12.0
Analysis Period (min)	15	ICU Level of Service
c Critical Lane Group		B

HCM 6th Signalized Intersection Summary

3: Marion St SE & 34th Ave SE

07/14/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	57	566	19	18	400	21	33	27	62	26	15	30
Future Volume (veh/h)	57	566	19	18	400	21	33	27	62	26	15	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Adj Flow Rate, veh/h	60	596	20	19	421	22	35	28	65	27	16	32
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	660	903	765	535	829	43	180	99	180	189	78	180
Arrive On Green	0.11	0.52	0.52	0.10	0.50	0.50	0.12	0.12	0.12	0.12	0.12	0.12
Sat Flow, veh/h	1667	1750	1483	1667	1648	86	470	814	1483	497	645	1483
Grp Volume(v), veh/h	60	596	20	19	0	443	63	0	65	43	0	32
Grp Sat Flow(s),veh/h/ln	1667	1750	1483	1667	0	1734	1284	0	1483	1142	0	1483
Q Serve(g_s), s	0.7	11.4	0.3	0.2	0.0	7.8	0.2	0.0	1.8	0.0	0.0	0.9
Cycle Q Clear(g_c), s	0.7	11.4	0.3	0.2	0.0	7.8	2.6	0.0	1.8	2.6	0.0	0.9
Prop In Lane	1.00		1.00	1.00		0.05	0.56		1.00	0.63		1.00
Lane Grp Cap(c), veh/h	660	903	765	535	0	872	279	0	180	268	0	180
V/C Ratio(X)	0.09	0.66	0.03	0.04	0.00	0.51	0.23	0.00	0.36	0.16	0.00	0.18
Avail Cap(c_a), veh/h	813	1153	977	700	0	1143	395	0	293	378	0	293
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	4.2	8.1	5.4	5.0	0.0	7.6	18.3	0.0	18.4	18.0	0.0	18.0
Incr Delay (d2), s/veh	0.0	1.3	0.0	0.0	0.0	0.7	0.3	0.0	0.9	0.2	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	2.8	0.1	0.0	0.0	2.1	0.6	0.0	0.6	0.4	0.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	4.3	9.4	5.4	5.1	0.0	8.2	18.6	0.0	19.3	18.2	0.0	18.3
LnGrp LOS	A	A	A	A	A	A	B	A	B	B	A	B
Approach Vol, veh/h		676			462			128				75
Approach Delay, s/veh		8.8			8.1			18.9				18.3
Approach LOS		A			A			B				B
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		9.5	8.5	27.5		9.5	8.8	27.2				
Change Period (Y+Rc), s		4.0	4.5	4.8		4.0	4.8	* 4.8				
Max Green Setting (Gmax), s		9.0	8.5	29.2		9.0	8.2	* 30				
Max Q Clear Time (g_c+I1), s		4.6	2.2	13.4		4.6	2.7	9.8				
Green Ext Time (p_c), s		0.2	0.0	9.3		0.1	0.1	6.2				

Intersection Summary

HCM 6th Ctrl Delay	10.0
HCM 6th LOS	B

Notes

- User approved pedestrian interval to be less than phase max green.
- * HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th TWSC
6: Marion St SE & Lochner Rd SE

07/14/2023

Intersection												
Int Delay, s/veh	4.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	0	0	0	64	0	44	12	21	11	0
Future Vol, veh/h	0	0	0	0	0	64	0	44	12	21	11	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	78	78	78	78	78	78	78	78	78	78
Heavy Vehicles, %	0	0	0	0	0	0	10	10	10	9	9	9
Mvmt Flow	0	0	0	0	0	82	0	56	15	27	14	0

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	173	139	14	132	132	64	14	0	0	71	0	0
Stage 1	68	68	-	64	64	-	-	-	-	-	-	-
Stage 2	105	71	-	68	68	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.2	-	-	4.19	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.29	-	-	2.281	-	-
Pot Cap-1 Maneuver	794	756	1072	845	762	1006	1553	-	-	1486	-	-
Stage 1	947	842	-	952	846	-	-	-	-	-	-	-
Stage 2	906	840	-	947	842	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	719	742	1072	833	748	1006	1553	-	-	1486	-	-
Mov Cap-2 Maneuver	719	742	-	833	748	-	-	-	-	-	-	-
Stage 1	947	827	-	952	846	-	-	-	-	-	-	-
Stage 2	832	840	-	930	827	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	8.9	0	4.9
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1553	-	-	-	1006	1486	-	-
HCM Lane V/C Ratio	-	-	-	-	0.082	0.018	-	-
HCM Control Delay (s)	0	-	-	0	8.9	7.5	0	-
HCM Lane LOS	A	-	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	-	0.3	0.1	-	-

HCM 6th TWSC
 10: Lochner Rd SE & N Site Access

07/14/2023

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	10	0	1	0	0	0	0	53	0	0	41	0
Future Vol, veh/h	10	0	1	0	0	0	0	53	0	0	41	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	125	-	-	140	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	68	68	68	68	68	68	68	68	68	68	68	68
Heavy Vehicles, %	0	0	0	0	0	0	3	3	3	23	23	23
Mvmt Flow	15	0	1	0	0	0	0	78	0	0	60	0

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	138	138	60	139	138	78	60	0	0	78	0	0
Stage 1	60	60	-	78	78	-	-	-	-	-	-	-
Stage 2	78	78	-	61	60	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.13	-	-	4.33	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.227	-	-	2.407	-	-
Pot Cap-1 Maneuver	837	757	1011	836	757	988	1537	-	-	1398	-	-
Stage 1	957	849	-	936	834	-	-	-	-	-	-	-
Stage 2	936	834	-	955	849	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	837	757	1011	835	757	988	1537	-	-	1398	-	-
Mov Cap-2 Maneuver	837	757	-	835	757	-	-	-	-	-	-	-
Stage 1	957	849	-	936	834	-	-	-	-	-	-	-
Stage 2	936	834	-	954	849	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.3	0	0	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1537	-	-	850	-	1398	-
HCM Lane V/C Ratio	-	-	-	0.019	-	-	-
HCM Control Delay (s)	0	-	-	9.3	0	0	-
HCM Lane LOS	A	-	-	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	-	0	-

HCM 6th TWSC
 12: S Site Access & Lochner Rd SE

07/14/2023

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		T			T
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1	0	0	0	0	0
Stage 1	0	-	-	-	-	-
Stage 2	1	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	1022	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	1022	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	1022	-	-	-	-	-
Mov Cap-2 Maneuver	1022	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	1022	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	-

HCM Signalized Intersection Capacity Analysis

3: Marion St SE & 34th Ave SE

07/14/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	57	566	35	46	400	21	45	32	74	26	21	30
Future Volume (vph)	57	566	35	46	400	21	45	32	74	26	21	30
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.97	1.00		0.97	1.00
Satd. Flow (prot)	1662	1750	1488	1662	1737			1701	1488		1703	1488
Flt Permitted	0.40	1.00	1.00	0.28	1.00			0.79	1.00		0.78	1.00
Satd. Flow (perm)	703	1750	1488	490	1737			1388	1488		1372	1488
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	60	596	37	48	421	22	47	34	78	27	22	32
RTOR Reduction (vph)	0	0	20	0	3	0	0	0	69	0	0	28
Lane Group Flow (vph)	60	596	17	48	440	0	0	81	9	0	49	4
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4		4	8			2		2	6		6
Actuated Green, G (s)	25.7	19.7	19.7	25.5	19.6			5.2	5.2		5.2	5.2
Effective Green, g (s)	27.3	20.5	20.5	26.5	20.1			5.2	5.2		5.2	5.2
Actuated g/C Ratio	0.62	0.46	0.46	0.60	0.46			0.12	0.12		0.12	0.12
Clearance Time (s)	4.8	4.8	4.8	4.5	4.5			4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.5	4.0	4.0	2.5	4.0			2.5	2.5		2.5	2.5
Lane Grp Cap (vph)	583	813	691	464	791			163	175		161	175
v/s Ratio Prot	c0.02	c0.34		0.01	0.25							
v/s Ratio Perm	0.05		0.01	0.05				c0.06	0.01		0.04	0.00
v/c Ratio	0.10	0.73	0.02	0.10	0.56			0.50	0.05		0.30	0.02
Uniform Delay, d1	3.5	9.6	6.4	4.3	8.7			18.2	17.3		17.8	17.2
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	0.1	3.7	0.0	0.1	1.0			1.7	0.1		0.8	0.0
Delay (s)	3.6	13.2	6.4	4.3	9.8			20.0	17.4		18.6	17.2
Level of Service	A	B	A	A	A			B	B		B	B
Approach Delay (s)		12.0			9.3			18.7			18.0	
Approach LOS		B			A			B			B	

Intersection Summary		
HCM 2000 Control Delay	12.2	HCM 2000 Level of Service B
HCM 2000 Volume to Capacity ratio	0.57	
Actuated Cycle Length (s)	44.1	Sum of lost time (s) 12.0
Intersection Capacity Utilization	56.9%	ICU Level of Service B
Analysis Period (min)	15	
c Critical Lane Group		

HCM 6th Signalized Intersection Summary

3: Marion St SE & 34th Ave SE

07/14/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	57	566	35	46	400	21	45	32	74	26	21	30
Future Volume (veh/h)	57	566	35	46	400	21	45	32	74	26	21	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Adj Flow Rate, veh/h	60	596	37	48	421	22	47	34	78	27	22	32
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	598	858	727	472	789	41	114	50	267	112	55	267
Arrive On Green	0.10	0.49	0.49	0.09	0.48	0.48	0.18	0.18	0.18	0.18	0.18	0.18
Sat Flow, veh/h	1667	1750	1483	1667	1648	86	0	276	1483	0	308	1483
Grp Volume(v), veh/h	60	596	37	48	0	443	81	0	78	49	0	32
Grp Sat Flow(s),veh/h/ln	1667	1750	1483	1667	0	1734	276	0	1483	308	0	1483
Q Serve(g_s), s	0.8	13.2	0.7	0.6	0.0	9.0	0.0	0.0	2.3	0.0	0.0	0.9
Cycle Q Clear(g_c), s	0.8	13.2	0.7	0.6	0.0	9.0	9.0	0.0	2.3	9.0	0.0	0.9
Prop In Lane	1.00		1.00	1.00		0.05	0.58		1.00	0.55		1.00
Lane Grp Cap(c), veh/h	598	858	727	472	0	830	163	0	267	167	0	267
V/C Ratio(X)	0.10	0.69	0.05	0.10	0.00	0.53	0.50	0.00	0.29	0.29	0.00	0.12
Avail Cap(c_a), veh/h	737	1049	889	622	0	1040	163	0	267	167	0	267
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	5.4	9.9	6.7	6.6	0.0	9.1	20.0	0.0	17.8	17.9	0.0	17.2
Incr Delay (d2), s/veh	0.1	1.9	0.0	0.1	0.0	0.8	1.7	0.0	0.4	0.7	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	3.8	0.1	0.2	0.0	2.6	1.0	0.0	0.7	0.5	0.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	5.5	11.7	6.7	6.6	0.0	9.9	21.7	0.0	18.2	18.6	0.0	17.4
LnGrp LOS	A	B	A	A	A	A	C	A	B	B	A	B
Approach Vol, veh/h		693			491			159				81
Approach Delay, s/veh		10.9			9.6			20.0				18.1
Approach LOS		B			A			B				B
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		13.0	8.5	28.6		13.0	8.8	28.3				
Change Period (Y+Rc), s		4.0	4.5	4.8		4.0	4.8	* 4.8				
Max Green Setting (Gmax), s		9.0	8.5	29.2		9.0	8.2	* 30				
Max Q Clear Time (g_c+I1), s		11.0	2.6	15.2		11.0	2.8	11.0				
Green Ext Time (p_c), s		0.0	0.0	8.6		0.0	0.1	6.0				

Intersection Summary

HCM 6th Ctrl Delay	11.9
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.
 * HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th TWSC
6: Marion St SE & Lochner Rd SE

07/14/2023

Intersection												
Int Delay, s/veh	6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	0	1	0	93	0	44	13	71	11	0
Future Vol, veh/h	0	0	0	1	0	93	0	44	13	71	11	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	78	78	78	78	78	78	78	78	78	78
Heavy Vehicles, %	0	0	0	0	0	0	10	10	10	9	9	9
Mvmt Flow	0	0	0	1	0	119	0	56	17	91	14	0

Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	320	269	14	261	261	65	14	0	0	73	0	0
Stage 1	196	196	-	65	65	-	-	-	-	-	-	-
Stage 2	124	73	-	196	196	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.2	-	-	4.19	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.29	-	-	2.281	-	-
Pot Cap-1 Maneuver	637	641	1072	696	647	1005	1553	-	-	1483	-	-
Stage 1	810	742	-	951	845	-	-	-	-	-	-	-
Stage 2	885	838	-	810	742	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	535	601	1072	663	607	1005	1553	-	-	1483	-	-
Mov Cap-2 Maneuver	535	601	-	663	607	-	-	-	-	-	-	-
Stage 1	810	696	-	951	845	-	-	-	-	-	-	-
Stage 2	780	838	-	760	696	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	9.1	0	6.6
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1553	-	-	-	1000	1483	-
HCM Lane V/C Ratio	-	-	-	-	0.121	0.061	-
HCM Control Delay (s)	0	-	-	0	9.1	7.6	0
HCM Lane LOS	A	-	-	A	A	A	A
HCM 95th %tile Q(veh)	0	-	-	-	0.4	0.2	-

HCM 6th TWSC
10: Lochner Rd SE & N Site Access

07/14/2023

Intersection												
Int Delay, s/veh	3.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	10	0	1	1	0	21	0	62	1	41	51	0
Future Vol, veh/h	10	0	1	1	0	21	0	62	1	41	51	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	125	-	-	140	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	68	68	68	68	68	68	68	68	68	68	68	68
Heavy Vehicles, %	0	0	0	0	0	0	3	3	3	23	23	23
Mvmt Flow	15	0	1	1	0	31	0	91	1	60	75	0

Major/Minor	Minor2		Minor1			Major1		Major2				
Conflicting Flow All	302	287	75	288	287	92	75	0	0	92	0	0
Stage 1	195	195	-	92	92	-	-	-	-	-	-	-
Stage 2	107	92	-	196	195	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.13	-	-	4.33	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.227	-	-	2.407	-	-
Pot Cap-1 Maneuver	654	626	992	668	626	971	1518	-	-	1381	-	-
Stage 1	811	743	-	920	823	-	-	-	-	-	-	-
Stage 2	903	823	-	810	743	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	612	599	992	645	599	971	1518	-	-	1381	-	-
Mov Cap-2 Maneuver	612	599	-	645	599	-	-	-	-	-	-	-
Stage 1	811	711	-	920	823	-	-	-	-	-	-	-
Stage 2	874	823	-	774	711	-	-	-	-	-	-	-

Approach	EB		WB			NB		SB		
HCM Control Delay, s	10.8		8.9			0		3.4		
HCM LOS	B		A							

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1518	-	-	634	949	1381	-	-
HCM Lane V/C Ratio	-	-	-	0.026	0.034	0.044	-	-
HCM Control Delay (s)	0	-	-	10.8	8.9	7.7	-	-
HCM Lane LOS	A	-	-	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0.1	-	-

HCM 6th TWSC
12: S Site Access & Lochner Rd SE

07/14/2023

Intersection						
Int Delay, s/veh	1.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	2	9	54	5	10	43
Future Vol, veh/h	2	9	54	5	10	43
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	10	59	5	11	47

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	131	62	0	0	64	0
Stage 1	62	-	-	-	-	-
Stage 2	69	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	863	1003	-	-	1538	-
Stage 1	961	-	-	-	-	-
Stage 2	954	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	857	1003	-	-	1538	-
Mov Cap-2 Maneuver	857	-	-	-	-	-
Stage 1	961	-	-	-	-	-
Stage 2	947	-	-	-	-	-






















Approach	WB	NB	SB
HCM Control Delay, s	8.7	0	1.4
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	973	1538
HCM Lane V/C Ratio	-	-	0.012	0.007
HCM Control Delay (s)	-	-	8.7	7.4
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0	0

HCM Signalized Intersection Capacity Analysis

3: Marion St SE & 34th Ave SE






















07/14/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	58	577	19	18	408	21	34	28	63	27	16	30
Future Volume (vph)	58	577	19	18	408	21	34	28	63	27	16	30
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.97	1.00		0.97	1.00
Satd. Flow (prot)	1662	1750	1488	1662	1737			1703	1488		1697	1488
Flt Permitted	0.39	1.00	1.00	0.28	1.00			0.80	1.00		0.77	1.00
Satd. Flow (perm)	679	1750	1488	490	1737			1405	1488		1351	1488
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	61	607	20	19	429	22	36	29	66	28	17	32
RTOR Reduction (vph)	0	0	11	0	3	0	0	0	58	0	0	28
Lane Group Flow (vph)	61	607	9	19	448	0	0	65	8	0	45	4
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4		4	8			2		2	6		6
Actuated Green, G (s)	25.7	19.7	19.7	24.9	19.3			5.0	5.0		5.0	5.0
Effective Green, g (s)	27.3	20.5	20.5	25.9	19.8			5.0	5.0		5.0	5.0
Actuated g/C Ratio	0.63	0.47	0.47	0.59	0.45			0.11	0.11		0.11	0.11
Clearance Time (s)	4.8	4.8	4.8	4.5	4.5			4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.5	4.0	4.0	2.5	4.0			2.5	2.5		2.5	2.5
Lane Grp Cap (vph)	578	822	699	455	788			161	170		154	170
v/s Ratio Prot	c0.02	c0.35		0.01	0.26							
v/s Ratio Perm	0.05		0.01	0.02				c0.05	0.01		0.03	0.00
v/c Ratio	0.11	0.74	0.01	0.04	0.57			0.40	0.04		0.29	0.02
Uniform Delay, d1	3.4	9.4	6.2	4.2	8.8			17.9	17.2		17.7	17.1
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	0.1	3.7	0.0	0.0	1.1			1.2	0.1		0.8	0.0
Delay (s)	3.5	13.1	6.2	4.2	9.9			19.1	17.3		18.4	17.2
Level of Service	A	B	A	A	A			B	B		B	B
Approach Delay (s)		12.0			9.7			18.2			17.9	
Approach LOS		B			A			B			B	
Intersection Summary												
HCM 2000 Control Delay			12.1		HCM 2000 Level of Service				B			
HCM 2000 Volume to Capacity ratio			0.57									
Actuated Cycle Length (s)			43.6		Sum of lost time (s)			12.0				
Intersection Capacity Utilization			56.6%		ICU Level of Service			B				
Analysis Period (min)			15									
c Critical Lane Group												

HCM 6th Signalized Intersection Summary

3: Marion St SE & 34th Ave SE

07/14/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	58	577	19	18	408	21	34	28	63	27	16	30
Future Volume (veh/h)	58	577	19	18	408	21	34	28	63	27	16	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Adj Flow Rate, veh/h	61	607	20	19	429	22	36	29	66	28	17	32
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	655	909	770	529	835	43	162	85	180	168	68	180
Arrive On Green	0.10	0.52	0.52	0.10	0.51	0.51	0.12	0.12	0.12	0.12	0.12	0.12
Sat Flow, veh/h	1667	1750	1483	1667	1650	85	332	696	1483	338	561	1483
Grp Volume(v), veh/h	61	607	20	19	0	451	65	0	66	45	0	32
Grp Sat Flow(s),veh/h/ln	1667	1750	1483	1667	0	1735	1029	0	1483	899	0	1483
Q Serve(g_s), s	0.7	11.7	0.3	0.2	0.0	8.0	0.3	0.0	1.9	0.1	0.0	0.9
Cycle Q Clear(g_c), s	0.7	11.7	0.3	0.2	0.0	8.0	3.7	0.0	1.9	3.6	0.0	0.9
Prop In Lane	1.00		1.00	1.00		0.05	0.55		1.00	0.62		1.00
Lane Grp Cap(c), veh/h	655	909	770	529	0	878	247	0	180	236	0	180
V/C Ratio(X)	0.09	0.67	0.03	0.04	0.00	0.51	0.26	0.00	0.37	0.19	0.00	0.18
Avail Cap(c_a), veh/h	807	1143	969	692	0	1133	360	0	291	345	0	291
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	4.2	8.1	5.4	5.1	0.0	7.6	18.7	0.0	18.5	18.3	0.0	18.1
Incr Delay (d2), s/veh	0.0	1.4	0.0	0.0	0.0	0.7	0.4	0.0	0.9	0.3	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	2.9	0.1	0.0	0.0	2.1	0.6	0.0	0.6	0.4	0.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	4.3	9.5	5.4	5.1	0.0	8.2	19.1	0.0	19.5	18.5	0.0	18.5
LnGrp LOS	A	A	A	A	A	A	B	A	B	B	A	B
Approach Vol, veh/h		688			470			131			77	
Approach Delay, s/veh		8.9			8.1			19.3			18.5	
Approach LOS		A			A			B			B	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		9.6	8.5	27.8		9.6	8.8	27.5				
Change Period (Y+Rc), s		4.0	4.5	4.8		4.0	4.8	* 4.8				
Max Green Setting (Gmax), s		9.0	8.5	29.2		9.0	8.2	* 30				
Max Q Clear Time (g_c+I1), s		5.7	2.2	13.7		5.6	2.7	10.0				
Green Ext Time (p_c), s		0.2	0.0	9.3		0.1	0.1	6.3				
Intersection Summary												
HCM 6th Ctrl Delay				10.2								
HCM 6th LOS				B								
Notes												
User approved pedestrian interval to be less than phase max green.												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 6th TWSC
6: Marion St SE & Lochner Rd SE

07/14/2023

Intersection												
Int Delay, s/veh	4.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	0	0	0	65	0	45	12	21	11	0
Future Vol, veh/h	0	0	0	0	0	65	0	45	12	21	11	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	78	78	78	78	78	78	78	78	78	78
Heavy Vehicles, %	0	0	0	0	0	0	10	10	10	9	9	9
Mvmt Flow	0	0	0	0	0	83	0	58	15	27	14	0

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	175	141	14	134	134	66	14	0	0	73	0	0
Stage 1	68	68	-	66	66	-	-	-	-	-	-	-
Stage 2	107	73	-	68	68	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.2	-	-	4.19	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.29	-	-	2.281	-	-
Pot Cap-1 Maneuver	792	754	1072	842	760	1003	1553	-	-	1483	-	-
Stage 1	947	842	-	950	844	-	-	-	-	-	-	-
Stage 2	903	838	-	947	842	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	716	740	1072	830	746	1003	1553	-	-	1483	-	-
Mov Cap-2 Maneuver	716	740	-	830	746	-	-	-	-	-	-	-
Stage 1	947	827	-	950	844	-	-	-	-	-	-	-
Stage 2	828	838	-	930	827	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	0		8.9		0		4.9	
HCM LOS	A		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1553	-	-	-	-	1003	1483	-
HCM Lane V/C Ratio	-	-	-	-	0.083	0.018	-	-
HCM Control Delay (s)	0	-	-	0	8.9	7.5	0	-
HCM Lane LOS	A	-	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	-	0.3	0.1	-	-

HCM 6th TWSC

10: Lochner Rd SE & N Site Access

07/14/2023

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	10	0	1	0	0	0	0	54	0	0	41	0
Future Vol, veh/h	10	0	1	0	0	0	0	54	0	0	41	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	125	-	-	140	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	68	68	68	68	68	68	68	68	68	68	68	68
Heavy Vehicles, %	0	0	0	0	0	0	3	3	3	23	23	23
Mvmt Flow	15	0	1	0	0	0	0	79	0	0	60	0
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	139	139	60	140	139	79	60	0	0	79	0	0
Stage 1	60	60	-	79	79	-	-	-	-	-	-	-
Stage 2	79	79	-	61	60	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.13	-	-	4.33	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.227	-	-	2.407	-	-
Pot Cap-1 Maneuver	836	756	1011	835	756	987	1537	-	-	1396	-	-
Stage 1	957	849	-	935	833	-	-	-	-	-	-	-
Stage 2	935	833	-	955	849	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	836	756	1011	834	756	987	1537	-	-	1396	-	-
Mov Cap-2 Maneuver	836	756	-	834	756	-	-	-	-	-	-	-
Stage 1	957	849	-	935	833	-	-	-	-	-	-	-
Stage 2	935	833	-	954	849	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	9.3		0			0			0			
HCM LOS	A		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1537	-	-	849	-	1396	-	-				
HCM Lane V/C Ratio	-	-	-	0.019	-	-	-	-				
HCM Control Delay (s)	0	-	-	9.3	0	0	-	-				
HCM Lane LOS	A	-	-	A	A	A	-	-				
HCM 95th %tile Q(veh)	0	-	-	0.1	-	0	-	-				

HCM 6th TWSC
12: S Site Access & Lochner Rd SE






















07/14/2023

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		T			T
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1	0	0	0	0	0
Stage 1	0	-	-	-	-	-
Stage 2	1	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	1022	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	1022	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	1022	-	-	-	-	-
Mov Cap-2 Maneuver	1022	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	1022	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	0	0	0			
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	-	-		
HCM Lane V/C Ratio	-	-	-	-		
HCM Control Delay (s)	-	-	0	0		
HCM Lane LOS	-	-	A	A		
HCM 95th %tile Q(veh)	-	-	-	-		

HCM Signalized Intersection Capacity Analysis

3: Marion St SE & 34th Ave SE






















07/14/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	58	577	48	71	408	21	56	38	86	27	30	30
Future Volume (vph)	58	577	48	71	408	21	56	38	86	27	30	30
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.97	1.00		0.98	1.00
Satd. Flow (prot)	1662	1750	1488	1662	1737			1699	1488		1710	1488
Flt Permitted	0.40	1.00	1.00	0.26	1.00			0.78	1.00		0.80	1.00
Satd. Flow (perm)	695	1750	1488	462	1737			1369	1488		1404	1488
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	61	607	51	75	429	22	59	40	91	28	32	32
RTOR Reduction (vph)	0	0	27	0	3	0	0	0	80	0	0	28
Lane Group Flow (vph)	61	607	24	75	448	0	0	99	11	0	60	4
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4		4	8			2		2	6		6
Actuated Green, G (s)	26.3	20.2	20.2	26.5	20.3			5.6	5.6		5.6	5.6
Effective Green, g (s)	27.9	21.0	21.0	27.5	20.8			5.6	5.6		5.6	5.6
Actuated g/C Ratio	0.62	0.46	0.46	0.61	0.46			0.12	0.12		0.12	0.12
Clearance Time (s)	4.8	4.8	4.8	4.5	4.5			4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.5	4.0	4.0	2.5	4.0			2.5	2.5		2.5	2.5
Lane Grp Cap (vph)	575	811	689	457	797			169	183		173	183
v/s Ratio Prot	0.02	c0.35		c0.02	0.26							
v/s Ratio Perm	0.05		0.02	0.08				c0.07	0.01		0.04	0.00
v/c Ratio	0.11	0.75	0.03	0.16	0.56			0.59	0.06		0.35	0.02
Uniform Delay, d1	3.7	10.0	6.6	4.5	8.9			18.8	17.5		18.2	17.4
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	0.1	4.1	0.0	0.1	1.1			4.2	0.1		0.9	0.0
Delay (s)	3.8	14.0	6.7	4.6	10.0			23.0	17.6		19.1	17.5
Level of Service	A	B	A	A	B			C	B		B	B
Approach Delay (s)		12.6			9.3			20.4			18.5	
Approach LOS		B			A			C			B	
Intersection Summary												
HCM 2000 Control Delay			12.8			HCM 2000 Level of Service			B			
HCM 2000 Volume to Capacity ratio			0.60									
Actuated Cycle Length (s)			45.3			Sum of lost time (s)		12.0				
Intersection Capacity Utilization			59.4%			ICU Level of Service			B			
Analysis Period (min)			15									
c Critical Lane Group												

HCM 6th Signalized Intersection Summary

3: Marion St SE & 34th Ave SE

07/14/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	58	577	48	71	408	21	56	38	86	27	30	30
Future Volume (veh/h)	58	577	48	71	408	21	56	38	86	27	30	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Adj Flow Rate, veh/h	61	607	51	75	429	22	59	40	91	28	32	32
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	574	844	715	446	777	40	112	46	290	103	75	290
Arrive On Green	0.09	0.48	0.48	0.09	0.47	0.47	0.20	0.20	0.20	0.20	0.20	0.20
Sat Flow, veh/h	1667	1750	1483	1667	1650	85	0	235	1483	0	383	1483
Grp Volume(v), veh/h	61	607	51	75	0	451	99	0	91	60	0	32
Grp Sat Flow(s),veh/h/ln	1667	1750	1483	1667	0	1735	235	0	1483	383	0	1483
Q Serve(g_s), s	0.8	14.1	0.9	1.1	0.0	9.5	0.0	0.0	2.7	0.0	0.0	0.9
Cycle Q Clear(g_c), s	0.8	14.1	0.9	1.1	0.0	9.5	10.0	0.0	2.7	10.0	0.0	0.9
Prop In Lane	1.00		1.00	1.00		0.05	0.60		1.00	0.47		1.00
Lane Grp Cap(c), veh/h	574	844	715	446	0	816	158	0	290	178	0	290
V/C Ratio(X)	0.11	0.72	0.07	0.17	0.00	0.55	0.63	0.00	0.31	0.34	0.00	0.11
Avail Cap(c_a), veh/h	711	991	840	593	0	983	158	0	290	178	0	290
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	5.9	10.5	7.1	7.3	0.0	9.7	21.3	0.0	17.7	17.8	0.0	16.9
Incr Delay (d2), s/veh	0.1	2.5	0.1	0.1	0.0	0.8	6.8	0.0	0.5	0.8	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	4.3	0.2	0.3	0.0	2.9	1.4	0.0	0.8	0.6	0.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	5.9	13.0	7.2	7.4	0.0	10.5	28.1	0.0	18.1	18.6	0.0	17.1
LnGrp LOS	A	B	A	A	A	B	C	A	B	B	A	B
Approach Vol, veh/h		719			526			190				92
Approach Delay, s/veh		12.0			10.1			23.3				18.1
Approach LOS		B			B			C				B
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		14.0	8.5	28.7		14.0	8.8	28.4				
Change Period (Y+Rc), s		4.0	4.5	4.8		4.0	4.8	* 4.8				
Max Green Setting (Gmax), s		10.0	8.5	28.2		10.0	8.2	* 29				
Max Q Clear Time (g_c+I1), s		12.0	3.1	16.1		12.0	2.8	11.5				
Green Ext Time (p_c), s		0.0	0.1	7.8		0.0	0.1	5.8				
Intersection Summary												
HCM 6th Ctrl Delay				13.1								
HCM 6th LOS				B								
Notes												
User approved pedestrian interval to be less than phase max green.												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 6th TWSC

6: Marion St SE & Lochner Rd SE

07/14/2023

Intersection												
Int Delay, s/veh	6.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	0	1	0	120	0	45	13	117	11	0
Future Vol, veh/h	0	0	0	1	0	120	0	45	13	117	11	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	78	78	78	78	78	78	78	78	78	78
Heavy Vehicles, %	0	0	0	0	0	0	10	10	10	9	9	9
Mvmt Flow	0	0	0	1	0	154	0	58	17	150	14	0

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	458	389	14	381	381	67	14	0	0	75	0	0
Stage 1	314	314	-	67	67	-	-	-	-	-	-	-
Stage 2	144	75	-	314	314	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.2	-	-	4.19	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.29	-	-	2.281	-	-
Pot Cap-1 Maneuver	516	549	1072	581	555	1002	1553	-	-	1481	-	-
Stage 1	701	660	-	948	843	-	-	-	-	-	-	-
Stage 2	864	836	-	701	660	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	402	493	1072	536	498	1002	1553	-	-	1481	-	-
Mov Cap-2 Maneuver	402	493	-	536	498	-	-	-	-	-	-	-
Stage 1	701	593	-	948	843	-	-	-	-	-	-	-
Stage 2	731	836	-	629	593	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	9.3	0	7
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1553	-	-	-	995	1481	-	-
HCM Lane V/C Ratio	-	-	-	-	0.156	0.101	-	-
HCM Control Delay (s)	0	-	-	0	9.3	7.7	0	-
HCM Lane LOS	A	-	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	-	0.6	0.3	-	-

HCM 6th TWSC
10: Lochner Rd SE & N Site Access

07/14/2023

Intersection												
Int Delay, s/veh	4.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	10	0	1	2	0	38	0	72	3	80	58	0
Future Vol, veh/h	10	0	1	2	0	38	0	72	3	80	58	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	125	-	-	140	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	68	68	68	68	68	68	68	68	68	68	68	68
Heavy Vehicles, %	0	0	0	0	0	0	3	3	3	23	23	23
Mvmt Flow	15	0	1	3	0	56	0	106	4	118	85	0

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	457	431	85	430	429	108	85	0	0	110	0	0
Stage 1	321	321	-	108	108	-	-	-	-	-	-	-
Stage 2	136	110	-	322	321	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.13	-	-	4.33	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.227	-	-	2.407	-	-
Pot Cap-1 Maneuver	517	520	980	539	521	951	1505	-	-	1359	-	-
Stage 1	695	655	-	902	810	-	-	-	-	-	-	-
Stage 2	872	808	-	694	655	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	454	475	980	502	476	951	1505	-	-	1359	-	-
Mov Cap-2 Maneuver	454	475	-	502	476	-	-	-	-	-	-	-
Stage 1	695	598	-	902	810	-	-	-	-	-	-	-
Stage 2	821	808	-	633	598	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	12.8		9.2		0		4.6	
HCM LOS	B		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1505	-	-	477	910	1359	-	-
HCM Lane V/C Ratio	-	-	-	0.034	0.065	0.087	-	-
HCM Control Delay (s)	0	-	-	12.8	9.2	7.9	-	-
HCM Lane LOS	A	-	-	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.2	0.3	-	-

HCM 6th TWSC
12: S Site Access & Lochner Rd SE






















07/14/2023

Intersection						
Int Delay, s/veh	2.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	18	57	7	17	45
Future Vol, veh/h	4	18	57	7	17	45
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	20	62	8	18	49
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	151	66	0	0	70	0
Stage 1	66	-	-	-	-	-
Stage 2	85	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	841	998	-	-	1531	-
Stage 1	957	-	-	-	-	-
Stage 2	938	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	831	998	-	-	1531	-
Mov Cap-2 Maneuver	831	-	-	-	-	-
Stage 1	957	-	-	-	-	-
Stage 2	927	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	8.8	0	2			
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	963	1531		
HCM Lane V/C Ratio	-	-	0.025	0.012		
HCM Control Delay (s)	-	-	8.8	7.4		
HCM Lane LOS	-	-	A	A		
HCM 95th %tile Q(veh)	-	-	0.1	0		

HCM Signalized Intersection Capacity Analysis

3: Marion St SE & 34th Ave SE






















07/13/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	61	609	20	19	430	22	35	30	66	28	17	32
Future Volume (vph)	61	609	20	19	430	22	35	30	66	28	17	32
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.97	1.00		0.97	1.00
Satd. Flow (prot)	1662	1750	1488	1662	1737			1704	1488		1698	1488
Flt Permitted	0.37	1.00	1.00	0.26	1.00			0.81	1.00		0.77	1.00
Satd. Flow (perm)	644	1750	1488	453	1737			1412	1488		1350	1488
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	64	641	21	20	453	23	37	32	69	29	18	34
RTOR Reduction (vph)	0	0	11	0	3	0	0	0	61	0	0	30
Lane Group Flow (vph)	64	641	10	20	473	0	0	69	8	0	47	4
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4		4	8			2		2	6		6
Actuated Green, G (s)	26.8	20.7	20.7	25.8	20.2			5.0	5.0		5.0	5.0
Effective Green, g (s)	28.4	21.5	21.5	26.8	20.7			5.0	5.0		5.0	5.0
Actuated g/C Ratio	0.64	0.48	0.48	0.60	0.46			0.11	0.11		0.11	0.11
Clearance Time (s)	4.8	4.8	4.8	4.5	4.5			4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.5	4.0	4.0	2.5	4.0			2.5	2.5		2.5	2.5
Lane Grp Cap (vph)	567	843	717	437	806			158	166		151	166
v/s Ratio Prot	c0.02	c0.37		0.01	0.27							
v/s Ratio Perm	0.05		0.01	0.02				c0.05	0.01		0.03	0.00
v/c Ratio	0.11	0.76	0.01	0.05	0.59			0.44	0.05		0.31	0.02
Uniform Delay, d1	3.4	9.4	6.0	4.3	8.8			18.5	17.7		18.2	17.6
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	0.1	4.3	0.0	0.0	1.3			1.4	0.1		0.9	0.0
Delay (s)	3.5	13.8	6.0	4.4	10.1			19.9	17.8		19.1	17.7
Level of Service	A	B	A	A	B			B	B		B	B
Approach Delay (s)		12.6			9.9			18.8			18.5	
Approach LOS		B			A			B			B	
Intersection Summary												
HCM 2000 Control Delay			12.6			HCM 2000 Level of Service			B			
HCM 2000 Volume to Capacity ratio			0.59									
Actuated Cycle Length (s)			44.6			Sum of lost time (s)		12.0				
Intersection Capacity Utilization			58.6%			ICU Level of Service			B			
Analysis Period (min)			15									
c Critical Lane Group												

HCM 6th Signalized Intersection Summary

3: Marion St SE & 34th Ave SE

07/13/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	61	609	20	19	430	22	35	30	66	28	17	32
Future Volume (veh/h)	61	609	20	19	430	22	35	30	66	28	17	32
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Adj Flow Rate, veh/h	64	641	21	20	453	23	37	32	69	29	18	34
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	613	902	764	483	831	42	140	81	218	147	60	218
Arrive On Green	0.10	0.52	0.52	0.09	0.50	0.50	0.15	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	1667	1750	1483	1667	1651	84	182	552	1483	190	411	1483
Grp Volume(v), veh/h	64	641	21	20	0	476	69	0	69	47	0	34
Grp Sat Flow(s),veh/h/ln	1667	1750	1483	1667	0	1735	734	0	1483	601	0	1483
Q Serve(g_s), s	0.8	13.7	0.3	0.2	0.0	9.2	0.3	0.0	2.0	0.1	0.0	1.0
Cycle Q Clear(g_c), s	0.8	13.7	0.3	0.2	0.0	9.2	5.9	0.0	2.0	5.8	0.0	1.0
Prop In Lane	1.00		1.00	1.00		0.05	0.54		1.00	0.62		1.00
Lane Grp Cap(c), veh/h	613	902	764	483	0	873	221	0	218	207	0	218
V/C Ratio(X)	0.10	0.71	0.03	0.04	0.00	0.55	0.31	0.00	0.32	0.23	0.00	0.16
Avail Cap(c_a), veh/h	756	1075	911	637	0	1065	278	0	273	262	0	273
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	4.8	9.1	5.8	5.9	0.0	8.3	18.9	0.0	18.6	18.5	0.0	18.2
Incr Delay (d2), s/veh	0.1	2.1	0.0	0.0	0.0	0.8	0.6	0.0	0.6	0.4	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	3.8	0.1	0.1	0.0	2.6	0.7	0.0	0.6	0.5	0.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	4.9	11.2	5.8	5.9	0.0	9.1	19.5	0.0	19.3	18.9	0.0	18.4
LnGrp LOS	A	B	A	A	A	A	B	A	B	B	A	B
Approach Vol, veh/h		726			496			138				81
Approach Delay, s/veh		10.5			8.9			19.4				18.7
Approach LOS		B			A			B				B
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		11.4	8.5	29.2		11.4	8.8	28.9				
Change Period (Y+Rc), s		4.0	4.5	4.8		4.0	4.8	* 4.8				
Max Green Setting (Gmax), s		9.0	8.5	29.2		9.0	8.2	* 30				
Max Q Clear Time (g_c+I1), s		7.9	2.2	15.7		7.8	2.8	11.2				
Green Ext Time (p_c), s		0.1	0.0	8.8		0.0	0.1	6.5				
Intersection Summary												
HCM 6th Ctrl Delay				11.3								
HCM 6th LOS				B								
Notes												
User approved pedestrian interval to be less than phase max green.												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 6th TWSC
6: Marion St SE & Lochner Rd SE

07/13/2023

Intersection												
Int Delay, s/veh	4.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	0	0	0	69	0	47	13	22	12	0
Future Vol, veh/h	0	0	0	0	0	69	0	47	13	22	12	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	78	78	78	78	78	78	78	78	78	78
Heavy Vehicles, %	0	0	0	0	0	0	10	10	10	9	9	9
Mvmt Flow	0	0	0	0	0	88	0	60	17	28	15	0

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	184	148	15	140	140	69	15	0	0	77	0	0
Stage 1	71	71	-	69	69	-	-	-	-	-	-	-
Stage 2	113	77	-	71	71	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.2	-	-	4.19	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.29	-	-	2.281	-	-
Pot Cap-1 Maneuver	781	747	1070	835	755	1000	1552	-	-	1478	-	-
Stage 1	944	840	-	946	841	-	-	-	-	-	-	-
Stage 2	897	835	-	944	840	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	701	733	1070	823	741	1000	1552	-	-	1478	-	-
Mov Cap-2 Maneuver	701	733	-	823	741	-	-	-	-	-	-	-
Stage 1	944	824	-	946	841	-	-	-	-	-	-	-
Stage 2	818	835	-	926	824	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	8.9	0	4.8
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1552	-	-	-	1000	1478	-
HCM Lane V/C Ratio	-	-	-	-	0.088	0.019	-
HCM Control Delay (s)	0	-	-	0	8.9	7.5	0
HCM Lane LOS	A	-	-	A	A	A	A
HCM 95th %tile Q(veh)	0	-	-	-	0.3	0.1	-

HCM 6th TWSC

10: Lochner Rd SE & N Site Access

07/13/2023

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	11	0	1	0	0	0	0	57	0	0	44	0
Future Vol, veh/h	11	0	1	0	0	0	0	57	0	0	44	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	68	68	68	68	68	68	68	68	68	68	68	68
Heavy Vehicles, %	0	0	0	0	0	0	3	3	3	23	23	23
Mvmt Flow	16	0	1	0	0	0	0	84	0	0	65	0
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	149	149	65	150	149	84	65	0	0	84	0	0
Stage 1	65	65	-	84	84	-	-	-	-	-	-	-
Stage 2	84	84	-	66	65	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.13	-	-	4.33	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.227	-	-	2.407	-	-
Pot Cap-1 Maneuver	824	746	1005	822	746	981	1531	-	-	1390	-	-
Stage 1	951	845	-	929	829	-	-	-	-	-	-	-
Stage 2	929	829	-	950	845	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	824	746	1005	821	746	981	1531	-	-	1390	-	-
Mov Cap-2 Maneuver	824	746	-	821	746	-	-	-	-	-	-	-
Stage 1	951	845	-	929	829	-	-	-	-	-	-	-
Stage 2	929	829	-	949	845	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	9.4		0			0			0			
HCM LOS	A		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1531	-	-	837	-	1390	-	-				
HCM Lane V/C Ratio	-	-	-	0.021	-	-	-	-				
HCM Control Delay (s)	0	-	-	9.4	0	0	-	-				
HCM Lane LOS	A	-	-	A	A	A	-	-				
HCM 95th %tile Q(veh)	0	-	-	0.1	-	0	-	-				

HCM 6th TWSC
12: S Site Access & Lochner Rd SE






















07/13/2023

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		T			T
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1	0	0	0	0	0
Stage 1	0	-	-	-	-	-
Stage 2	1	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	1022	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	1022	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	1022	-	-	-	-	-
Mov Cap-2 Maneuver	1022	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	1022	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	0	0	0			
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	-	-		
HCM Lane V/C Ratio	-	-	-	-		
HCM Control Delay (s)	-	-	0	0		
HCM Lane LOS	-	-	A	A		
HCM 95th %tile Q(veh)	-	-	-	-		

HCM Signalized Intersection Capacity Analysis

3: Marion St SE & 34th Ave SE






















07/14/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	64	630	21	20	446	23	37	31	69	29	17	33
Future Volume (vph)	64	630	21	20	446	23	37	31	69	29	17	33
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.97	1.00		0.97	1.00
Satd. Flow (prot)	1662	1750	1488	1662	1737			1704	1488		1696	1488
Flt Permitted	0.36	1.00	1.00	0.24	1.00			0.80	1.00		0.77	1.00
Satd. Flow (perm)	628	1750	1488	426	1737			1407	1488		1339	1488
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	67	663	22	21	469	24	39	33	73	31	18	35
RTOR Reduction (vph)	0	0	11	0	3	0	0	0	65	0	0	31
Lane Group Flow (vph)	67	663	11	21	490	0	0	72	8	0	49	4
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4		4	8			2		2	6		6
Actuated Green, G (s)	27.5	21.4	21.4	26.7	21.0			5.0	5.0		5.0	5.0
Effective Green, g (s)	29.1	22.2	22.2	27.7	21.5			5.0	5.0		5.0	5.0
Actuated g/C Ratio	0.64	0.49	0.49	0.61	0.47			0.11	0.11		0.11	0.11
Clearance Time (s)	4.8	4.8	4.8	4.5	4.5			4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.5	4.0	4.0	2.5	4.0			2.5	2.5		2.5	2.5
Lane Grp Cap (vph)	559	855	727	428	822			154	163		147	163
v/s Ratio Prot	c0.02	c0.38		0.01	0.28							
v/s Ratio Perm	0.06		0.01	0.02				c0.05	0.01		0.04	0.00
v/c Ratio	0.12	0.78	0.01	0.05	0.60			0.47	0.05		0.33	0.02
Uniform Delay, d1	3.4	9.5	6.0	4.4	8.8			19.0	18.1		18.7	18.0
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	0.1	4.7	0.0	0.0	1.4			1.6	0.1		1.0	0.0
Delay (s)	3.5	14.3	6.0	4.4	10.1			20.6	18.2		19.6	18.1
Level of Service	A	B	A	A	B			C	B		B	B
Approach Delay (s)		13.1			9.9			19.4			19.0	
Approach LOS		B			A			B			B	
Intersection Summary												
HCM 2000 Control Delay			12.9		HCM 2000 Level of Service				B			
HCM 2000 Volume to Capacity ratio			0.61									
Actuated Cycle Length (s)			45.4		Sum of lost time (s)			12.0				
Intersection Capacity Utilization			60.0%		ICU Level of Service				B			
Analysis Period (min)			15									
c Critical Lane Group												

HCM 6th Signalized Intersection Summary

3: Marion St SE & 34th Ave SE

07/14/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	64	630	21	20	446	23	37	31	69	29	17	33
Future Volume (veh/h)	64	630	21	20	446	23	37	31	69	29	17	33
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Adj Flow Rate, veh/h	67	663	22	21	469	24	39	33	73	31	18	35
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	571	889	753	439	819	42	108	56	257	114	39	257
Arrive On Green	0.09	0.51	0.51	0.09	0.50	0.50	0.17	0.17	0.17	0.17	0.17	0.17
Sat Flow, veh/h	1667	1750	1483	1667	1650	84	2	321	1483	2	225	1483
Grp Volume(v), veh/h	67	663	22	21	0	493	72	0	73	49	0	35
Grp Sat Flow(s),veh/h/ln	1667	1750	1483	1667	0	1735	324	0	1483	227	0	1483
Q Serve(g_s), s	0.9	15.6	0.4	0.3	0.0	10.4	0.0	0.0	2.2	0.0	0.0	1.0
Cycle Q Clear(g_c), s	0.9	15.6	0.4	0.3	0.0	10.4	9.0	0.0	2.2	9.0	0.0	1.0
Prop In Lane	1.00		1.00	1.00		0.05	0.54		1.00	0.63		1.00
Lane Grp Cap(c), veh/h	571	889	753	439	0	861	163	0	257	153	0	257
V/C Ratio(X)	0.12	0.75	0.03	0.05	0.00	0.57	0.44	0.00	0.28	0.32	0.00	0.14
Avail Cap(c_a), veh/h	706	1013	858	584	0	1004	163	0	258	153	0	258
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	5.5	10.1	6.4	6.9	0.0	9.2	19.6	0.0	18.6	19.3	0.0	18.1
Incr Delay (d2), s/veh	0.1	3.0	0.0	0.0	0.0	0.9	1.4	0.0	0.4	0.9	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	4.7	0.1	0.1	0.0	3.1	0.8	0.0	0.7	0.5	0.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	5.6	13.1	6.4	6.9	0.0	10.0	21.0	0.0	19.1	20.1	0.0	18.3
LnGrp LOS	A	B	A	A	A	B	C	A	B	C	A	B
Approach Vol, veh/h		752			514			145				84
Approach Delay, s/veh		12.3			9.9			20.0				19.4
Approach LOS		B			A			C				B
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		13.0	8.5	30.3		13.0	8.8	30.0				
Change Period (Y+Rc), s		4.0	4.5	4.8		4.0	4.8	* 4.8				
Max Green Setting (Gmax), s		9.0	8.5	29.2		9.0	8.2	* 30				
Max Q Clear Time (g_c+I1), s		11.0	2.3	17.6		11.0	2.9	12.4				
Green Ext Time (p_c), s		0.0	0.0	8.0		0.0	0.1	6.5				
Intersection Summary												
HCM 6th Ctrl Delay			12.6									
HCM 6th LOS			B									
Notes												
User approved pedestrian interval to be less than phase max green.												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 6th TWSC

6: Marion St SE & Lochner Rd SE

07/14/2023

Intersection												
Int Delay, s/veh	4.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	0	0	0	71	0	49	13	23	12	0
Future Vol, veh/h	0	0	0	0	0	71	0	49	13	23	12	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	78	78	78	78	78	78	78	78	78	78
Heavy Vehicles, %	0	0	0	0	0	0	10	10	10	9	9	9
Mvmt Flow	0	0	0	0	0	91	0	63	17	29	15	0

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	190	153	15	145	145	72	15	0	0	80	0	0
Stage 1	73	73	-	72	72	-	-	-	-	-	-	-
Stage 2	117	80	-	73	73	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.2	-	-	4.19	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.29	-	-	2.281	-	-
Pot Cap-1 Maneuver	774	742	1070	828	750	996	1552	-	-	1475	-	-
Stage 1	942	838	-	943	839	-	-	-	-	-	-	-
Stage 2	892	832	-	942	838	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	693	727	1070	816	735	996	1552	-	-	1475	-	-
Mov Cap-2 Maneuver	693	727	-	816	735	-	-	-	-	-	-	-
Stage 1	942	821	-	943	839	-	-	-	-	-	-	-
Stage 2	810	832	-	923	821	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	9	0	4.9
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1552	-	-	-	996	1475	-	-
HCM Lane V/C Ratio	-	-	-	-	0.091	0.02	-	-
HCM Control Delay (s)	0	-	-	0	9	7.5	0	-
HCM Lane LOS	A	-	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	-	0.3	0.1	-	-

HCM 6th TWSC
10: Lochner Rd SE & N Site Access

07/14/2023

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	11	0	1	0	0	0	0	59	0	0	45	0
Future Vol, veh/h	11	0	1	0	0	0	0	59	0	0	45	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	125	-	-	140	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	68	68	68	68	68	68	68	68	68	68	68	68
Heavy Vehicles, %	0	0	0	0	0	0	3	3	3	23	23	23
Mvmt Flow	16	0	1	0	0	0	0	87	0	0	66	0

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	153	153	66	154	153	87	66	0	0	87	0	0
Stage 1	66	66	-	87	87	-	-	-	-	-	-	-
Stage 2	87	87	-	67	66	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.13	-	-	4.33	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.227	-	-	2.407	-	-
Pot Cap-1 Maneuver	819	742	1003	817	742	977	1529	-	-	1387	-	-
Stage 1	950	844	-	926	827	-	-	-	-	-	-	-
Stage 2	926	827	-	948	844	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	819	742	1003	816	742	977	1529	-	-	1387	-	-
Mov Cap-2 Maneuver	819	742	-	816	742	-	-	-	-	-	-	-
Stage 1	950	844	-	926	827	-	-	-	-	-	-	-
Stage 2	926	827	-	947	844	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.4	0	0	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1529	-	-	832	-	1387	-	-
HCM Lane V/C Ratio	-	-	-	0.021	-	-	-	-
HCM Control Delay (s)	0	-	-	9.4	0	0	-	-
HCM Lane LOS	A	-	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	-	0	-	-

HCM 6th TWSC
12: S Site Access & Lochner Rd SE






















07/14/2023

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1	0	0	0	0	0
Stage 1	0	-	-	-	-	-
Stage 2	1	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	1022	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	1022	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	1022	-	-	-	-	-
Mov Cap-2 Maneuver	1022	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	1022	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	0	0	0			
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	-	-		
HCM Lane V/C Ratio	-	-	-	-		
HCM Control Delay (s)	-	-	0	0		
HCM Lane LOS	-	-	A	A		
HCM 95th %tile Q(veh)	-	-	-	-		

HCM Signalized Intersection Capacity Analysis

3: Marion St SE & 34th Ave SE






















07/14/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	64	630	50	73	446	23	59	41	92	29	31	33
Future Volume (vph)	64	630	50	73	446	23	59	41	92	29	31	33
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.97	1.00		0.98	1.00
Satd. Flow (prot)	1662	1750	1488	1662	1737			1700	1488		1709	1488
Flt Permitted	0.36	1.00	1.00	0.23	1.00			0.78	1.00		0.79	1.00
Satd. Flow (perm)	634	1750	1488	399	1737			1368	1488		1388	1488
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	67	663	53	77	469	24	62	43	97	31	33	35
RTOR Reduction (vph)	0	0	28	0	3	0	0	0	85	0	0	31
Lane Group Flow (vph)	67	663	25	77	490	0	0	105	12	0	64	4
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4		4	8			2		2	6		6
Actuated Green, G (s)	28.0	21.8	21.8	28.0	21.8			5.8	5.8		5.8	5.8
Effective Green, g (s)	29.6	22.6	22.6	29.0	22.3			5.8	5.8		5.8	5.8
Actuated g/C Ratio	0.63	0.48	0.48	0.62	0.47			0.12	0.12		0.12	0.12
Clearance Time (s)	4.8	4.8	4.8	4.5	4.5			4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.5	4.0	4.0	2.5	4.0			2.5	2.5		2.5	2.5
Lane Grp Cap (vph)	551	839	713	425	822			168	183		170	183
v/s Ratio Prot	0.02	c0.38		c0.03	0.28							
v/s Ratio Perm	0.06		0.02	0.09				c0.08	0.01		0.05	0.00
v/c Ratio	0.12	0.79	0.04	0.18	0.60			0.62	0.07		0.38	0.02
Uniform Delay, d1	3.8	10.3	6.5	4.8	9.1			19.6	18.3		19.0	18.2
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	0.1	5.4	0.0	0.1	1.4			6.1	0.1		1.0	0.0
Delay (s)	3.8	15.7	6.5	5.0	10.5			25.8	18.4		20.0	18.2
Level of Service	A	B	A	A	B			C	B		C	B
Approach Delay (s)		14.0			9.7			22.2			19.4	
Approach LOS		B			A			C			B	
Intersection Summary												
HCM 2000 Control Delay			13.9		HCM 2000 Level of Service				B			
HCM 2000 Volume to Capacity ratio			0.65									
Actuated Cycle Length (s)			47.1		Sum of lost time (s)			12.0				
Intersection Capacity Utilization			62.9%		ICU Level of Service				B			
Analysis Period (min)			15									
c Critical Lane Group												

HCM 6th Signalized Intersection Summary

3: Marion St SE & 34th Ave SE

07/14/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	64	630	50	73	446	23	59	41	92	29	31	33
Future Volume (veh/h)	64	630	50	73	446	23	59	41	92	29	31	33
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Adj Flow Rate, veh/h	67	663	53	77	469	24	62	43	97	31	33	35
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	552	868	736	416	800	41	109	46	282	102	68	282
Arrive On Green	0.09	0.50	0.50	0.09	0.48	0.48	0.19	0.19	0.19	0.19	0.19	0.19
Sat Flow, veh/h	1667	1750	1483	1667	1650	84	0	240	1483	0	359	1483
Grp Volume(v), veh/h	67	663	53	77	0	493	105	0	97	64	0	35
Grp Sat Flow(s),veh/h/ln	1667	1750	1483	1667	0	1735	240	0	1483	359	0	1483
Q Serve(g_s), s	0.9	16.2	1.0	1.1	0.0	10.8	0.0	0.0	3.0	0.0	0.0	1.0
Cycle Q Clear(g_c), s	0.9	16.2	1.0	1.1	0.0	10.8	10.0	0.0	3.0	10.0	0.0	1.0
Prop In Lane	1.00		1.00	1.00		0.05	0.59		1.00	0.48		1.00
Lane Grp Cap(c), veh/h	552	868	736	416	0	841	154	0	282	170	0	282
V/C Ratio(X)	0.12	0.76	0.07	0.18	0.00	0.59	0.68	0.00	0.34	0.38	0.00	0.12
Avail Cap(c_a), veh/h	685	965	818	559	0	956	154	0	282	170	0	282
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	6.0	10.7	6.9	7.8	0.0	9.8	22.3	0.0	18.5	18.5	0.0	17.7
Incr Delay (d2), s/veh	0.1	3.7	0.1	0.2	0.0	1.0	10.6	0.0	0.5	1.0	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	5.2	0.2	0.3	0.0	3.3	1.7	0.0	0.9	0.7	0.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.1	14.4	7.0	7.9	0.0	10.7	32.9	0.0	19.0	19.5	0.0	17.8
LnGrp LOS	A	B	A	A	A	B	C	A	B	B	A	B
Approach Vol, veh/h		783			570			202				99
Approach Delay, s/veh		13.2			10.4			26.2				18.9
Approach LOS		B			B			C				B
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		14.0	8.5	30.1		14.0	8.8	29.8				
Change Period (Y+Rc), s		4.0	4.5	4.8		4.0	4.8	* 4.8				
Max Green Setting (Gmax), s		10.0	8.5	28.2		10.0	8.2	* 29				
Max Q Clear Time (g_c+I1), s		12.0	3.1	18.2		12.0	2.9	12.8				
Green Ext Time (p_c), s		0.0	0.1	7.1		0.0	0.1	6.1				
Intersection Summary												
HCM 6th Ctrl Delay			14.2									
HCM 6th LOS			B									
Notes												
User approved pedestrian interval to be less than phase max green.												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 6th TWSC

6: Marion St SE & Lochner Rd SE

07/14/2023

Intersection												
Int Delay, s/veh	6.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	0	1	0	126	0	49	14	119	12	0
Future Vol, veh/h	0	0	0	1	0	126	0	49	14	119	12	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	78	78	78	78	78	78	78	78	78	78
Heavy Vehicles, %	0	0	0	0	0	0	10	10	10	9	9	9
Mvmt Flow	0	0	0	1	0	162	0	63	18	153	15	0

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	474	402	15	393	393	72	15	0	0	81	0	0
Stage 1	321	321	-	72	72	-	-	-	-	-	-	-
Stage 2	153	81	-	321	321	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.2	-	-	4.19	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.29	-	-	2.281	-	-
Pot Cap-1 Maneuver	504	540	1070	570	546	996	1552	-	-	1473	-	-
Stage 1	695	655	-	943	839	-	-	-	-	-	-	-
Stage 2	854	832	-	695	655	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	388	483	1070	524	489	996	1552	-	-	1473	-	-
Mov Cap-2 Maneuver	388	483	-	524	489	-	-	-	-	-	-	-
Stage 1	695	586	-	943	839	-	-	-	-	-	-	-
Stage 2	715	832	-	622	586	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	0		9.4		0		7	
HCM LOS	A		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1552	-	-	-	989	1473	-	-
HCM Lane V/C Ratio	-	-	-	-	0.165	0.104	-	-
HCM Control Delay (s)	0	-	-	0	9.4	7.7	0	-
HCM Lane LOS	A	-	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	-	0.6	0.3	-	-

HCM 6th TWSC
10: Lochner Rd SE & N Site Access

07/14/2023

Intersection												
Int Delay, s/veh	4.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	11	0	1	2	0	38	0	77	3	80	62	0
Future Vol, veh/h	11	0	1	2	0	38	0	77	3	80	62	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	125	-	-	140	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	68	68	68	68	68	68	68	68	68	68	68	68
Heavy Vehicles, %	0	0	0	0	0	0	3	3	3	23	23	23
Mvmt Flow	16	0	1	3	0	56	0	113	4	118	91	0

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	470	444	91	443	442	115	91	0	0	117	0	0
Stage 1	327	327	-	115	115	-	-	-	-	-	-	-
Stage 2	143	117	-	328	327	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.13	-	-	4.33	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.227	-	-	2.407	-	-
Pot Cap-1 Maneuver	507	511	972	528	513	943	1498	-	-	1351	-	-
Stage 1	690	651	-	895	804	-	-	-	-	-	-	-
Stage 2	865	803	-	689	651	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	445	467	972	492	468	943	1498	-	-	1351	-	-
Mov Cap-2 Maneuver	445	467	-	492	468	-	-	-	-	-	-	-
Stage 1	690	594	-	895	804	-	-	-	-	-	-	-
Stage 2	814	803	-	628	594	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	13		9.3		0		4.5	
HCM LOS	B		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1498	-	-	466	902	1351	-	-
HCM Lane V/C Ratio	-	-	-	0.038	0.065	0.087	-	-
HCM Control Delay (s)	0	-	-	13	9.3	7.9	-	-
HCM Lane LOS	A	-	-	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.2	0.3	-	-

HCM 6th TWSC
12: S Site Access & Lochner Rd SE

07/14/2023

Intersection						
Int Delay, s/veh	2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	18	62	7	17	49
Future Vol, veh/h	4	18	62	7	17	49
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	20	67	8	18	53

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	160	71	0	0	75
Stage 1	71	-	-	-	-
Stage 2	89	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	831	991	-	-	1524
Stage 1	952	-	-	-	-
Stage 2	934	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	821	991	-	-	1524
Mov Cap-2 Maneuver	821	-	-	-	-
Stage 1	952	-	-	-	-
Stage 2	923	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.9	0	1.9
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	955	1524
HCM Lane V/C Ratio	-	-	0.025	0.012
HCM Control Delay (s)	-	-	8.9	7.4
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0

Meadowlark Estates Subdivision
Traffic Impact Analysis

APPENDIX D: QUEUING OUTPUTS

Queuing and Blocking Report

2023 AM Background

07/14/2023

Intersection: 3: Marion St SE & 34th Ave SE, Interval #1

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	LT	R	LT	R
Maximum Queue (ft)	24	18	16	29	175	51	22	42	48
Average Queue (ft)	10	5	5	12	114	27	14	22	31
95th Queue (ft)	29	22	17	33	187	55	30	48	51
Link Distance (ft)		734			671	917		546	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	170		200	150			150		70
Storage Blk Time (%)					2			0	0
Queuing Penalty (veh)					1			0	0

Intersection: 3: Marion St SE & 34th Ave SE, Interval #2

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	LT	R	LT	R
Maximum Queue (ft)	29	30	20	32	177	69	34	47	62
Average Queue (ft)	8	4	4	12	74	25	13	21	30
95th Queue (ft)	27	19	15	32	140	55	32	48	55
Link Distance (ft)		734			671	917		546	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	170		200	150			150		70
Storage Blk Time (%)					0			0	0
Queuing Penalty (veh)					0			0	0

Intersection: 3: Marion St SE & 34th Ave SE, All Intervals

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	LT	R	LT	R
Maximum Queue (ft)	30	35	21	36	192	69	34	51	63
Average Queue (ft)	9	4	4	12	84	26	13	21	31
95th Queue (ft)	27	20	16	32	157	55	32	48	54
Link Distance (ft)		734			671	917		546	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	170		200	150			150		70
Storage Blk Time (%)					1			0	0
Queuing Penalty (veh)					0			0	0

Queuing and Blocking Report
2023 AM Background

07/14/2023

Intersection: 6: Marion St SE & Lochner Rd SE, Interval #1

Movement	WB	SB
Directions Served	LTR	LTR
Maximum Queue (ft)	20	39
Average Queue (ft)	11	6
95th Queue (ft)	22	31
Link Distance (ft)	1402	917
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: Marion St SE & Lochner Rd SE, Interval #2

Movement	WB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	14	4	18
Average Queue (ft)	7	0	1
95th Queue (ft)	16	3	10
Link Distance (ft)	1402	544	917
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 6: Marion St SE & Lochner Rd SE, All Intervals

Movement	WB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	20	4	39
Average Queue (ft)	8	0	2
95th Queue (ft)	18	3	17
Link Distance (ft)	1402	544	917
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Queuing and Blocking Report
2023 AM Background

07/14/2023

Intersection: 10: Lochner Rd SE & N Site Access, Interval #1

Movement	EB
Directions Served	LTR
Maximum Queue (ft)	30
Average Queue (ft)	7
95th Queue (ft)	28
Link Distance (ft)	604
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 10: Lochner Rd SE & N Site Access, Interval #2

Movement	EB
Directions Served	LTR
Maximum Queue (ft)	30
Average Queue (ft)	3
95th Queue (ft)	17
Link Distance (ft)	604
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 10: Lochner Rd SE & N Site Access, All Intervals

Movement	EB
Directions Served	LTR
Maximum Queue (ft)	30
Average Queue (ft)	4
95th Queue (ft)	20
Link Distance (ft)	604
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Queuing and Blocking Report 2023 AM Background

07/14/2023

Intersection: 12: S Site Access & Lochner Rd SE, Interval #1

Movement

Directions Served
 Maximum Queue (ft)
 Average Queue (ft)
 95th Queue (ft)
 Link Distance (ft)
 Upstream Blk Time (%)
 Queuing Penalty (veh)
 Storage Bay Dist (ft)
 Storage Blk Time (%)
 Queuing Penalty (veh)

Intersection: 12: S Site Access & Lochner Rd SE, Interval #2

Movement

Directions Served
 Maximum Queue (ft)
 Average Queue (ft)
 95th Queue (ft)
 Link Distance (ft)
 Upstream Blk Time (%)
 Queuing Penalty (veh)
 Storage Bay Dist (ft)
 Storage Blk Time (%)
 Queuing Penalty (veh)

Intersection: 12: S Site Access & Lochner Rd SE, All Intervals

Movement

Directions Served
 Maximum Queue (ft)
 Average Queue (ft)
 95th Queue (ft)
 Link Distance (ft)
 Upstream Blk Time (%)
 Queuing Penalty (veh)
 Storage Bay Dist (ft)
 Storage Blk Time (%)
 Queuing Penalty (veh)

Network Summary

Network wide Queuing Penalty, Interval #1: 1
 Network wide Queuing Penalty, Interval #2: 0
 Network wide Queuing Penalty, All Intervals: 1

Queuing and Blocking Report
2024 AM Build

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Intersection: 3: Marion St SE & 34th Ave SE, Interval #1

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	LT	R	LT	R
Maximum Queue (ft)	27	21	21	68	250	70	42	63	77
Average Queue (ft)	9	7	7	26	151	43	21	25	41
95th Queue (ft)	29	27	22	91	297	75	45	63	76
Link Distance (ft)		734			671	917		546	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	170		200	150			150		70
Storage Blk Time (%)					6			0	2
Queuing Penalty (veh)					5			0	1

Intersection: 3: Marion St SE & 34th Ave SE, Interval #2

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	LT	R	LT	R
Maximum Queue (ft)	28	28	24	45	188	76	30	60	70
Average Queue (ft)	6	4	6	14	87	33	17	22	31
95th Queue (ft)	24	18	20	38	160	67	33	55	63
Link Distance (ft)		734			671	917		546	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	170		200	150			150		70
Storage Blk Time (%)					1			0	0
Queuing Penalty (veh)					1			0	0

Intersection: 3: Marion St SE & 34th Ave SE, All Intervals

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	LT	R	LT	R
Maximum Queue (ft)	34	30	28	76	269	86	42	68	85
Average Queue (ft)	7	4	6	17	102	36	18	23	33
95th Queue (ft)	25	20	20	56	208	69	37	57	67
Link Distance (ft)		734			671	917		546	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	170		200	150			150		70
Storage Blk Time (%)					2			0	1
Queuing Penalty (veh)					2			0	0

Queuing and Blocking Report
2024 AM Build

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Intersection: 6: Marion St SE & Lochner Rd SE, Interval #1

Movement	WB	SB
Directions Served	LTR	LTR
Maximum Queue (ft)	16	12
Average Queue (ft)	13	3
95th Queue (ft)	19	19
Link Distance (ft)	1402	917
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: Marion St SE & Lochner Rd SE, Interval #2

Movement	WB	SB
Directions Served	LTR	LTR
Maximum Queue (ft)	20	50
Average Queue (ft)	11	4
95th Queue (ft)	18	24
Link Distance (ft)	1402	917
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: Marion St SE & Lochner Rd SE, All Intervals

Movement	WB	SB
Directions Served	LTR	LTR
Maximum Queue (ft)	20	50
Average Queue (ft)	11	4
95th Queue (ft)	19	23
Link Distance (ft)	1402	917
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Queuing and Blocking Report
2024 AM Build

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Intersection: 10: Lochner Rd SE & N Site Access, Interval #1

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	L	L
Maximum Queue (ft)	31	28	6	20
Average Queue (ft)	6	22	0	1
95th Queue (ft)	26	40	0	8
Link Distance (ft)	604	558		
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			125	140
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 10: Lochner Rd SE & N Site Access, Interval #2

Movement	EB	WB	SB
Directions Served	LTR	LTR	L
Maximum Queue (ft)	30	33	5
Average Queue (ft)	2	15	0
95th Queue (ft)	14	38	4
Link Distance (ft)	604	558	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			140
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 10: Lochner Rd SE & N Site Access, All Intervals

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	L	L
Maximum Queue (ft)	31	33	6	20
Average Queue (ft)	3	17	0	0
95th Queue (ft)	18	40	0	6
Link Distance (ft)	604	558		
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			125	140
Storage Blk Time (%)				
Queuing Penalty (veh)				

Queuing and Blocking Report

2024 AM Build

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Intersection: 12: S Site Access & Lochner Rd SE, Interval #1

Movement	WB
Directions Served	LR
Maximum Queue (ft)	31
Average Queue (ft)	11
95th Queue (ft)	36
Link Distance (ft)	442
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 12: S Site Access & Lochner Rd SE, Interval #2

Movement	WB
Directions Served	LR
Maximum Queue (ft)	40
Average Queue (ft)	15
95th Queue (ft)	41
Link Distance (ft)	442
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 12: S Site Access & Lochner Rd SE, All Intervals

Movement	WB
Directions Served	LR
Maximum Queue (ft)	40
Average Queue (ft)	14
95th Queue (ft)	40
Link Distance (ft)	442
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty, Interval #1: 6
Network wide Queuing Penalty, Interval #2: 1
Network wide Queuing Penalty, All Intervals: 2

Queuing and Blocking Report 2024 AM Background

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Intersection: 3: Marion St SE & 34th Ave SE, Interval #1

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	LT	R	LT	R
Maximum Queue (ft)	29	17	23	67	206	69	22	55	65
Average Queue (ft)	11	5	5	20	122	33	13	30	37
95th Queue (ft)	31	19	21	70	205	72	29	64	67
Link Distance (ft)		734			671	917		546	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	170		200	150			150		70
Storage Blk Time (%)					3			1	1
Queuing Penalty (veh)					2			1	0

Intersection: 3: Marion St SE & 34th Ave SE, Interval #2

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	LT	R	LT	R
Maximum Queue (ft)	28	26	20	38	181	48	36	67	67
Average Queue (ft)	5	3	5	11	79	21	13	23	30
95th Queue (ft)	21	15	16	33	149	47	33	52	56
Link Distance (ft)		734			671	917		546	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	170		200	150			150		70
Storage Blk Time (%)					1			1	0
Queuing Penalty (veh)					0			0	0

Intersection: 3: Marion St SE & 34th Ave SE, All Intervals

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	LT	R	LT	R
Maximum Queue (ft)	33	26	24	67	218	69	36	68	74
Average Queue (ft)	6	3	5	13	90	24	13	25	31
95th Queue (ft)	24	16	18	45	169	55	32	56	59
Link Distance (ft)		734			671	917		546	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	170		200	150			150		70
Storage Blk Time (%)					1			1	0
Queuing Penalty (veh)					1			0	0

Queuing and Blocking Report
2024 AM Background

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Intersection: 6: Marion St SE & Lochner Rd SE, Interval #1

Movement	WB	SB
Directions Served	LTR	LTR
Maximum Queue (ft)	15	22
Average Queue (ft)	10	6
95th Queue (ft)	18	27
Link Distance (ft)	1402	917
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: Marion St SE & Lochner Rd SE, Interval #2

Movement	WB	SB
Directions Served	LTR	LTR
Maximum Queue (ft)	14	32
Average Queue (ft)	6	2
95th Queue (ft)	15	19
Link Distance (ft)	1402	917
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: Marion St SE & Lochner Rd SE, All Intervals

Movement	WB	SB
Directions Served	LTR	LTR
Maximum Queue (ft)	15	42
Average Queue (ft)	7	3
95th Queue (ft)	16	22
Link Distance (ft)	1402	917
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Queuing and Blocking Report
2024 AM Background

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Intersection: 10: Lochner Rd SE & N Site Access, Interval #1

Movement	EB
Directions Served	LTR
Maximum Queue (ft)	24
Average Queue (ft)	6
95th Queue (ft)	26
Link Distance (ft)	604
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 10: Lochner Rd SE & N Site Access, Interval #2

Movement	EB
Directions Served	LTR
Maximum Queue (ft)	24
Average Queue (ft)	2
95th Queue (ft)	14
Link Distance (ft)	604
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 10: Lochner Rd SE & N Site Access, All Intervals

Movement	EB
Directions Served	LTR
Maximum Queue (ft)	30
Average Queue (ft)	3
95th Queue (ft)	18
Link Distance (ft)	604
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Queuing and Blocking Report

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Intersection: 12: S Site Access & Lochner Rd SE, Interval #1

Movement

Directions Served
 Maximum Queue (ft)
 Average Queue (ft)
 95th Queue (ft)
 Link Distance (ft)
 Upstream Blk Time (%)
 Queuing Penalty (veh)
 Storage Bay Dist (ft)
 Storage Blk Time (%)
 Queuing Penalty (veh)

Intersection: 12: S Site Access & Lochner Rd SE, Interval #2

Movement

Directions Served
 Maximum Queue (ft)
 Average Queue (ft)
 95th Queue (ft)
 Link Distance (ft)
 Upstream Blk Time (%)
 Queuing Penalty (veh)
 Storage Bay Dist (ft)
 Storage Blk Time (%)
 Queuing Penalty (veh)

Intersection: 12: S Site Access & Lochner Rd SE, All Intervals

Movement

Directions Served
 Maximum Queue (ft)
 Average Queue (ft)
 95th Queue (ft)
 Link Distance (ft)
 Upstream Blk Time (%)
 Queuing Penalty (veh)
 Storage Bay Dist (ft)
 Storage Blk Time (%)
 Queuing Penalty (veh)

Network Summary

Network wide Queuing Penalty, Interval #1: 3
 Network wide Queuing Penalty, Interval #2: 1
 Network wide Queuing Penalty, All Intervals: 1

Queuing and Blocking Report
2025 AM Background

07/14/2023

Intersection: 3: Marion St SE & 34th Ave SE, Interval #1

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	LT	R	LT	R
Maximum Queue (ft)	28	21	15	59	248	56	22	66	74
Average Queue (ft)	10	6	8	18	124	26	11	27	43
95th Queue (ft)	30	23	19	67	275	57	28	69	78
Link Distance (ft)		734			671	917		546	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	170		200	150			150		70
Storage Blk Time (%)					5			2	1
Queuing Penalty (veh)					4			1	0

Intersection: 3: Marion St SE & 34th Ave SE, Interval #2

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	LT	R	LT	R
Maximum Queue (ft)	24	25	29	58	179	52	22	72	86
Average Queue (ft)	7	2	5	10	79	22	13	23	37
95th Queue (ft)	24	14	20	41	150	50	29	58	67
Link Distance (ft)		734			671	917		546	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	170		200	150			150		70
Storage Blk Time (%)					1			1	1
Queuing Penalty (veh)					0			0	0

Intersection: 3: Marion St SE & 34th Ave SE, All Intervals

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	LT	R	LT	R
Maximum Queue (ft)	28	25	29	88	258	56	22	80	87
Average Queue (ft)	8	3	6	12	90	23	12	24	38
95th Queue (ft)	25	17	20	49	192	52	29	61	70
Link Distance (ft)		734			671	917		546	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	170		200	150			150		70
Storage Blk Time (%)					2			1	1
Queuing Penalty (veh)					1			1	0

Queuing and Blocking Report
2025 AM Background

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Intersection: 6: Marion St SE & Lochner Rd SE, Interval #1

Movement	WB	SB
Directions Served	LTR	LTR
Maximum Queue (ft)	15	24
Average Queue (ft)	10	6
95th Queue (ft)	18	32
Link Distance (ft)	1402	917
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: Marion St SE & Lochner Rd SE, Interval #2

Movement	WB	SB
Directions Served	LTR	LTR
Maximum Queue (ft)	14	12
Average Queue (ft)	6	1
95th Queue (ft)	15	8
Link Distance (ft)	1402	917
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: Marion St SE & Lochner Rd SE, All Intervals

Movement	WB	SB
Directions Served	LTR	LTR
Maximum Queue (ft)	15	24
Average Queue (ft)	7	2
95th Queue (ft)	16	17
Link Distance (ft)	1402	917
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Queuing and Blocking Report
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Intersection: 10: Lochner Rd SE & N Site Access, Interval #1

Movement	EB
Directions Served	LTR
Maximum Queue (ft)	30
Average Queue (ft)	8
95th Queue (ft)	29
Link Distance (ft)	604
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 10: Lochner Rd SE & N Site Access, Interval #2

Movement	EB
Directions Served	LTR
Maximum Queue (ft)	25
Average Queue (ft)	2
95th Queue (ft)	14
Link Distance (ft)	604
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 10: Lochner Rd SE & N Site Access, All Intervals

Movement	EB
Directions Served	LTR
Maximum Queue (ft)	31
Average Queue (ft)	3
95th Queue (ft)	19
Link Distance (ft)	604
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Queuing and Blocking Report

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Intersection: 12: S Site Access & Lochner Rd SE, Interval #1

Movement

Directions Served
 Maximum Queue (ft)
 Average Queue (ft)
 95th Queue (ft)
 Link Distance (ft)
 Upstream Blk Time (%)
 Queuing Penalty (veh)
 Storage Bay Dist (ft)
 Storage Blk Time (%)
 Queuing Penalty (veh)

Intersection: 12: S Site Access & Lochner Rd SE, Interval #2

Movement

Directions Served
 Maximum Queue (ft)
 Average Queue (ft)
 95th Queue (ft)
 Link Distance (ft)
 Upstream Blk Time (%)
 Queuing Penalty (veh)
 Storage Bay Dist (ft)
 Storage Blk Time (%)
 Queuing Penalty (veh)

Intersection: 12: S Site Access & Lochner Rd SE, All Intervals

Movement

Directions Served
 Maximum Queue (ft)
 Average Queue (ft)
 95th Queue (ft)
 Link Distance (ft)
 Upstream Blk Time (%)
 Queuing Penalty (veh)
 Storage Bay Dist (ft)
 Storage Blk Time (%)
 Queuing Penalty (veh)

Network Summary

Network wide Queuing Penalty, Interval #1: 5
 Network wide Queuing Penalty, Interval #2: 1
 Network wide Queuing Penalty, All Intervals: 2

Queuing and Blocking Report
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Intersection: 3: Marion St SE & 34th Ave SE, Interval #1

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	LT	R	LT	R
Maximum Queue (ft)	36	21	23	122	239	81	39	66	61
Average Queue (ft)	10	6	8	38	139	48	24	27	36
95th Queue (ft)	35	21	24	111	253	81	38	64	69
Link Distance (ft)		734			671	917		546	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	170		200	150			150		70
Storage Blk Time (%)					5			1	1
Queuing Penalty (veh)					4			1	1

Intersection: 3: Marion St SE & 34th Ave SE, Interval #2

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	LT	R	LT	R
Maximum Queue (ft)	24	19	17	42	172	89	58	57	80
Average Queue (ft)	7	2	6	15	88	37	20	25	36
95th Queue (ft)	24	13	18	40	153	72	43	54	75
Link Distance (ft)		734			671	917		546	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	170		200	150			150		70
Storage Blk Time (%)					1			0	1
Queuing Penalty (veh)					0			0	0

Intersection: 3: Marion St SE & 34th Ave SE, All Intervals

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	LT	R	LT	R
Maximum Queue (ft)	37	21	25	127	251	93	58	70	84
Average Queue (ft)	8	3	7	20	101	40	21	26	36
95th Queue (ft)	27	15	20	65	188	75	43	57	74
Link Distance (ft)		734			671	917		546	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	170		200	150			150		70
Storage Blk Time (%)					2			1	1
Queuing Penalty (veh)					1			0	0

Queuing and Blocking Report
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Intersection: 6: Marion St SE & Lochner Rd SE, Interval #1

Movement	WB	SB
Directions Served	LTR	LTR
Maximum Queue (ft)	38	34
Average Queue (ft)	19	2
95th Queue (ft)	35	13
Link Distance (ft)	1402	917
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: Marion St SE & Lochner Rd SE, Interval #2

Movement	WB	SB
Directions Served	LTR	LTR
Maximum Queue (ft)	30	18
Average Queue (ft)	14	2
95th Queue (ft)	24	14
Link Distance (ft)	1402	917
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: Marion St SE & Lochner Rd SE, All Intervals

Movement	WB	SB
Directions Served	LTR	LTR
Maximum Queue (ft)	39	40
Average Queue (ft)	15	2
95th Queue (ft)	28	14
Link Distance (ft)	1402	917
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Queuing and Blocking Report
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Intersection: 10: Lochner Rd SE & N Site Access, Interval #1

Movement	EB	WB	SB
Directions Served	LTR	LTR	L
Maximum Queue (ft)	24	38	26
Average Queue (ft)	7	28	4
95th Queue (ft)	28	45	27
Link Distance (ft)	604	558	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			140
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 10: Lochner Rd SE & N Site Access, Interval #2

Movement	EB	WB	SB
Directions Served	LTR	LTR	L
Maximum Queue (ft)	31	42	24
Average Queue (ft)	4	24	1
95th Queue (ft)	21	42	12
Link Distance (ft)	604	558	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			140
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 10: Lochner Rd SE & N Site Access, All Intervals

Movement	EB	WB	SB
Directions Served	LTR	LTR	L
Maximum Queue (ft)	31	47	40
Average Queue (ft)	5	25	2
95th Queue (ft)	23	43	17
Link Distance (ft)	604	558	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			140
Storage Blk Time (%)			
Queuing Penalty (veh)			

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Intersection: 12: S Site Access & Lochner Rd SE, Interval #1

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	50	6
Average Queue (ft)	23	1
95th Queue (ft)	52	9
Link Distance (ft)	442	645
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 12: S Site Access & Lochner Rd SE, Interval #2

Movement	WB
Directions Served	LR
Maximum Queue (ft)	42
Average Queue (ft)	21
95th Queue (ft)	46
Link Distance (ft)	442
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 12: S Site Access & Lochner Rd SE, All Intervals

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	50	6
Average Queue (ft)	22	0
95th Queue (ft)	48	4
Link Distance (ft)	442	645
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty, Interval #1: 5
Network wide Queuing Penalty, Interval #2: 1
Network wide Queuing Penalty, All Intervals: 2

Queuing and Blocking Report
2028 AM Background

07/13/2023

Intersection: 3: Marion St SE & 34th Ave SE, Interval #1

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	LT	R	LT	R
Maximum Queue (ft)	18	9	20	92	294	56	30	81	76
Average Queue (ft)	7	2	8	29	166	32	16	40	45
95th Queue (ft)	22	13	21	106	307	57	36	81	81
Link Distance (ft)		734			671	917		546	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	170		200	150			150		70
Storage Blk Time (%)					9			3	2
Queuing Penalty (veh)					7			2	1

Intersection: 3: Marion St SE & 34th Ave SE, Interval #2

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	LT	R	LT	R
Maximum Queue (ft)	24	22	16	39	184	73	31	95	74
Average Queue (ft)	6	3	4	10	85	26	14	29	35
95th Queue (ft)	22	14	15	32	163	63	33	71	68
Link Distance (ft)		734			671	917		546	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	170		200	150			150		70
Storage Blk Time (%)					1			1	0
Queuing Penalty (veh)					1			1	0

Intersection: 3: Marion St SE & 34th Ave SE, All Intervals

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	LT	R	LT	R
Maximum Queue (ft)	24	22	21	98	294	76	35	109	83
Average Queue (ft)	6	3	5	14	104	27	15	31	38
95th Queue (ft)	22	14	17	59	217	62	34	74	72
Link Distance (ft)		734			671	917		546	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	170		200	150			150		70
Storage Blk Time (%)					3			1	1
Queuing Penalty (veh)					2			1	0

Queuing and Blocking Report
2028 AM Background

07/13/2023

Intersection: 6: Marion St SE & Lochner Rd SE, Interval #1

Movement	WB	SB
Directions Served	LTR	LTR
Maximum Queue (ft)	14	23
Average Queue (ft)	11	7
95th Queue (ft)	16	29
Link Distance (ft)	1402	917
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: Marion St SE & Lochner Rd SE, Interval #2

Movement	WB	SB
Directions Served	LTR	LTR
Maximum Queue (ft)	19	23
Average Queue (ft)	8	1
95th Queue (ft)	18	10
Link Distance (ft)	1402	917
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: Marion St SE & Lochner Rd SE, All Intervals

Movement	WB	SB
Directions Served	LTR	LTR
Maximum Queue (ft)	19	35
Average Queue (ft)	8	2
95th Queue (ft)	18	17
Link Distance (ft)	1402	917
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Queuing and Blocking Report
2028 AM Background

07/13/2023

Intersection: 10: Lochner Rd SE & N Site Access, Interval #1

Movement	EB
Directions Served	LTR
Maximum Queue (ft)	34
Average Queue (ft)	7
95th Queue (ft)	29
Link Distance (ft)	610
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 10: Lochner Rd SE & N Site Access, Interval #2

Movement	EB
Directions Served	LTR
Maximum Queue (ft)	30
Average Queue (ft)	2
95th Queue (ft)	16
Link Distance (ft)	610
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 10: Lochner Rd SE & N Site Access, All Intervals

Movement	EB
Directions Served	LTR
Maximum Queue (ft)	34
Average Queue (ft)	3
95th Queue (ft)	20
Link Distance (ft)	610
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Queuing and Blocking Report

2028 AM Background

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Intersection: 12: S Site Access & Lochner Rd SE, Interval #1

Movement

Directions Served
 Maximum Queue (ft)
 Average Queue (ft)
 95th Queue (ft)
 Link Distance (ft)
 Upstream Blk Time (%)
 Queuing Penalty (veh)
 Storage Bay Dist (ft)
 Storage Blk Time (%)
 Queuing Penalty (veh)

Intersection: 12: S Site Access & Lochner Rd SE, Interval #2

Movement

Directions Served
 Maximum Queue (ft)
 Average Queue (ft)
 95th Queue (ft)
 Link Distance (ft)
 Upstream Blk Time (%)
 Queuing Penalty (veh)
 Storage Bay Dist (ft)
 Storage Blk Time (%)
 Queuing Penalty (veh)

Intersection: 12: S Site Access & Lochner Rd SE, All Intervals

Movement

Directions Served
 Maximum Queue (ft)
 Average Queue (ft)
 95th Queue (ft)
 Link Distance (ft)
 Upstream Blk Time (%)
 Queuing Penalty (veh)
 Storage Bay Dist (ft)
 Storage Blk Time (%)
 Queuing Penalty (veh)

Network Summary

Network wide Queuing Penalty, Interval #1: 9
 Network wide Queuing Penalty, Interval #2: 1
 Network wide Queuing Penalty, All Intervals: 3

Queuing and Blocking Report
2030 AM Background

07/14/2023

Intersection: 3: Marion St SE & 34th Ave SE, Interval #1

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	LT	R	LT	R
Maximum Queue (ft)	26	13	15	64	217	55	35	61	80
Average Queue (ft)	10	3	4	20	139	27	19	35	43
95th Queue (ft)	30	17	15	70	230	59	39	71	80
Link Distance (ft)		734			671	917		546	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	170		200	150			150		70
Storage Blk Time (%)					5			1	3
Queuing Penalty (veh)					4			1	1

Intersection: 3: Marion St SE & 34th Ave SE, Interval #2

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	LT	R	LT	R
Maximum Queue (ft)	24	25	24	97	185	64	34	70	82
Average Queue (ft)	8	3	6	16	87	28	13	23	33
95th Queue (ft)	26	16	20	59	155	56	32	58	66
Link Distance (ft)		734			671	917		546	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	170		200	150			150		70
Storage Blk Time (%)					1			0	1
Queuing Penalty (veh)					0			0	0

Intersection: 3: Marion St SE & 34th Ave SE, All Intervals

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	LT	R	LT	R
Maximum Queue (ft)	28	26	24	97	230	72	44	76	84
Average Queue (ft)	9	3	5	17	99	28	15	26	36
95th Queue (ft)	27	17	19	62	182	57	34	62	70
Link Distance (ft)		734			671	917		546	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	170		200	150			150		70
Storage Blk Time (%)					2			1	1
Queuing Penalty (veh)					1			0	1

Queuing and Blocking Report
2030 AM Background

07/14/2023

Intersection: 6: Marion St SE & Lochner Rd SE, Interval #1

Movement	WB	SB
Directions Served	LTR	LTR
Maximum Queue (ft)	15	24
Average Queue (ft)	9	3
95th Queue (ft)	18	19
Link Distance (ft)	1402	917
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: Marion St SE & Lochner Rd SE, Interval #2

Movement	WB	SB
Directions Served	LTR	LTR
Maximum Queue (ft)	16	30
Average Queue (ft)	7	2
95th Queue (ft)	16	14
Link Distance (ft)	1402	917
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: Marion St SE & Lochner Rd SE, All Intervals

Movement	WB	SB
Directions Served	LTR	LTR
Maximum Queue (ft)	16	30
Average Queue (ft)	7	2
95th Queue (ft)	17	15
Link Distance (ft)	1402	917
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Queuing and Blocking Report
2030 AM Background

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Intersection: 10: Lochner Rd SE & N Site Access, Interval #1

Movement	EB
Directions Served	LTR
Maximum Queue (ft)	30
Average Queue (ft)	8
95th Queue (ft)	30
Link Distance (ft)	604
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 10: Lochner Rd SE & N Site Access, Interval #2

Movement	EB
Directions Served	LTR
Maximum Queue (ft)	31
Average Queue (ft)	4
95th Queue (ft)	22
Link Distance (ft)	604
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 10: Lochner Rd SE & N Site Access, All Intervals

Movement	EB
Directions Served	LTR
Maximum Queue (ft)	31
Average Queue (ft)	5
95th Queue (ft)	24
Link Distance (ft)	604
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Queuing and Blocking Report
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Intersection: 12: S Site Access & Lochner Rd SE, Interval #1

Movement

Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 12: S Site Access & Lochner Rd SE, Interval #2

Movement

Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 12: S Site Access & Lochner Rd SE, All Intervals

Movement

Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Network Summary

Network wide Queuing Penalty, Interval #1: 6
Network wide Queuing Penalty, Interval #2: 1
Network wide Queuing Penalty, All Intervals: 2

Queuing and Blocking Report
2030 AM Build

07/14/2023

Intersection: 3: Marion St SE & 34th Ave SE, Interval #1

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	LT	R	LT	R
Maximum Queue (ft)	36	21	26	144	308	107	27	62	62
Average Queue (ft)	10	6	6	33	180	63	21	31	40
95th Queue (ft)	33	23	21	109	307	115	34	66	73
Link Distance (ft)		734			671	917		546	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	170		200	150			150		70
Storage Blk Time (%)					10	0		1	2
Queuing Penalty (veh)					9	0		1	1

Intersection: 3: Marion St SE & 34th Ave SE, Interval #2

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	LT	R	LT	R
Maximum Queue (ft)	28	22	28	127	216	81	45	64	59
Average Queue (ft)	7	4	8	19	97	41	23	23	30
95th Queue (ft)	24	18	23	68	182	73	45	55	56
Link Distance (ft)		734			671	917		546	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	170		200	150			150		70
Storage Blk Time (%)					2			1	0
Queuing Penalty (veh)					1			0	0

Intersection: 3: Marion St SE & 34th Ave SE, All Intervals

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	LT	R	LT	R
Maximum Queue (ft)	41	26	33	149	311	111	50	72	63
Average Queue (ft)	8	5	7	23	117	46	23	25	33
95th Queue (ft)	27	19	23	80	230	87	43	58	61
Link Distance (ft)		734			671	917		546	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	170		200	150			150		70
Storage Blk Time (%)					4	0		1	1
Queuing Penalty (veh)					3	0		0	0

Queuing and Blocking Report
2030 AM Build

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Intersection: 6: Marion St SE & Lochner Rd SE, Interval #1

Movement	WB	SB
Directions Served	LTR	LTR
Maximum Queue (ft)	30	29
Average Queue (ft)	17	5
95th Queue (ft)	31	33
Link Distance (ft)	1402	917
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: Marion St SE & Lochner Rd SE, Interval #2

Movement	WB	SB
Directions Served	LTR	LTR
Maximum Queue (ft)	34	18
Average Queue (ft)	14	2
95th Queue (ft)	24	13
Link Distance (ft)	1402	917
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: Marion St SE & Lochner Rd SE, All Intervals

Movement	WB	SB
Directions Served	LTR	LTR
Maximum Queue (ft)	40	41
Average Queue (ft)	15	2
95th Queue (ft)	26	20
Link Distance (ft)	1402	917
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Queuing and Blocking Report
2030 AM Build

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Intersection: 10: Lochner Rd SE & N Site Access, Interval #1

Movement	EB	WB	SB
Directions Served	LTR	LTR	L
Maximum Queue (ft)	31	46	18
Average Queue (ft)	6	29	3
95th Queue (ft)	26	47	22
Link Distance (ft)	604	558	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			140
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 10: Lochner Rd SE & N Site Access, Interval #2

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	L	L
Maximum Queue (ft)	31	43	6	16
Average Queue (ft)	4	23	0	1
95th Queue (ft)	21	43	5	9
Link Distance (ft)	604	558		
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			125	140
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 10: Lochner Rd SE & N Site Access, All Intervals

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	L	L
Maximum Queue (ft)	31	48	6	23
Average Queue (ft)	5	25	0	1
95th Queue (ft)	23	45	4	13
Link Distance (ft)	604	558		
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			125	140
Storage Blk Time (%)				
Queuing Penalty (veh)				

Queuing and Blocking Report
2030 AM Build

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Intersection: 12: S Site Access & Lochner Rd SE, Interval #1

Movement	WB
Directions Served	LR
Maximum Queue (ft)	35
Average Queue (ft)	22
95th Queue (ft)	48
Link Distance (ft)	442
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 12: S Site Access & Lochner Rd SE, Interval #2

Movement	WB
Directions Served	LR
Maximum Queue (ft)	50
Average Queue (ft)	19
95th Queue (ft)	47
Link Distance (ft)	442
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 12: S Site Access & Lochner Rd SE, All Intervals

Movement	WB
Directions Served	LR
Maximum Queue (ft)	55
Average Queue (ft)	20
95th Queue (ft)	48
Link Distance (ft)	442
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty, Interval #1: 11
Network wide Queuing Penalty, Interval #2: 2
Network wide Queuing Penalty, All Intervals: 4

Queuing and Blocking Report 2023 PM Background

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Intersection: 3: Marion St SE & 34th Ave SE, Interval #1

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	LT	R	LT	R
Maximum Queue (ft)	34	137	17	24	117	60	68	46	39
Average Queue (ft)	16	73	4	12	59	29	28	24	21
95th Queue (ft)	40	135	15	30	118	62	72	56	47
Link Distance (ft)		734			671	917		546	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	170		200	150			150		70
Storage Blk Time (%)		0						0	0
Queuing Penalty (veh)		0						0	0

Intersection: 3: Marion St SE & 34th Ave SE, Interval #2

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	LT	R	LT	R
Maximum Queue (ft)	76	152	14	37	150	78	44	52	48
Average Queue (ft)	20	73	2	10	62	34	21	24	17
95th Queue (ft)	56	135	11	30	117	64	42	53	44
Link Distance (ft)		734			671	917		546	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	170		200	150			150		70
Storage Blk Time (%)		0			0			0	0
Queuing Penalty (veh)		0			0			0	0

Intersection: 3: Marion St SE & 34th Ave SE, All Intervals

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	LT	R	LT	R
Maximum Queue (ft)	81	160	18	37	150	78	69	56	52
Average Queue (ft)	19	73	3	10	61	32	23	24	18
95th Queue (ft)	53	135	12	30	117	64	52	54	45
Link Distance (ft)		734			671	917		546	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	170		200	150			150		70
Storage Blk Time (%)		0			0			0	0
Queuing Penalty (veh)		0			0			0	0

Queuing and Blocking Report
2023 PM Background

07/14/2023

Intersection: 6: Marion St SE & Lochner Rd SE, Interval #1

Movement	WB	SB
Directions Served	LTR	LTR
Maximum Queue (ft)	16	12
Average Queue (ft)	12	3
95th Queue (ft)	18	16
Link Distance (ft)	1402	917
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: Marion St SE & Lochner Rd SE, Interval #2

Movement	WB	SB
Directions Served	LTR	LTR
Maximum Queue (ft)	16	21
Average Queue (ft)	10	1
95th Queue (ft)	18	13
Link Distance (ft)	1402	917
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: Marion St SE & Lochner Rd SE, All Intervals

Movement	WB	SB
Directions Served	LTR	LTR
Maximum Queue (ft)	16	21
Average Queue (ft)	11	2
95th Queue (ft)	18	14
Link Distance (ft)	1402	917
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Queuing and Blocking Report
2023 PM Background

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Intersection: 10: Lochner Rd SE & N Site Access, Interval #1

Movement	EB
Directions Served	LTR
Maximum Queue (ft)	24
Average Queue (ft)	9
95th Queue (ft)	31
Link Distance (ft)	604
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 10: Lochner Rd SE & N Site Access, Interval #2

Movement	EB
Directions Served	LTR
Maximum Queue (ft)	31
Average Queue (ft)	8
95th Queue (ft)	30
Link Distance (ft)	604
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 10: Lochner Rd SE & N Site Access, All Intervals

Movement	EB
Directions Served	LTR
Maximum Queue (ft)	31
Average Queue (ft)	8
95th Queue (ft)	30
Link Distance (ft)	604
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Queuing and Blocking Report

2023 PM Background

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Intersection: 12: S Site Access & Lochner Rd SE, Interval #1

Movement

Directions Served
 Maximum Queue (ft)
 Average Queue (ft)
 95th Queue (ft)
 Link Distance (ft)
 Upstream Blk Time (%)
 Queuing Penalty (veh)
 Storage Bay Dist (ft)
 Storage Blk Time (%)
 Queuing Penalty (veh)

Intersection: 12: S Site Access & Lochner Rd SE, Interval #2

Movement

Directions Served
 Maximum Queue (ft)
 Average Queue (ft)
 95th Queue (ft)
 Link Distance (ft)
 Upstream Blk Time (%)
 Queuing Penalty (veh)
 Storage Bay Dist (ft)
 Storage Blk Time (%)
 Queuing Penalty (veh)

Intersection: 12: S Site Access & Lochner Rd SE, All Intervals

Movement

Directions Served
 Maximum Queue (ft)
 Average Queue (ft)
 95th Queue (ft)
 Link Distance (ft)
 Upstream Blk Time (%)
 Queuing Penalty (veh)
 Storage Bay Dist (ft)
 Storage Blk Time (%)
 Queuing Penalty (veh)

Network Summary

Network wide Queuing Penalty, Interval #1: 0
 Network wide Queuing Penalty, Interval #2: 0
 Network wide Queuing Penalty, All Intervals: 0

Queuing and Blocking Report
2024 PM Background

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Intersection: 3: Marion St SE & 34th Ave SE, Interval #1

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	LT	R	LT	R
Maximum Queue (ft)	43	173	3	24	106	64	37	52	50
Average Queue (ft)	22	88	1	11	61	27	21	30	26
95th Queue (ft)	46	160	8	30	112	65	44	59	54
Link Distance (ft)		734			671	917		546	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	170		200	150			150		70
Storage Blk Time (%)		1			0			0	0
Queuing Penalty (veh)		1			0			0	0

Intersection: 3: Marion St SE & 34th Ave SE, Interval #2

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	LT	R	LT	R
Maximum Queue (ft)	52	156	18	28	153	70	63	61	40
Average Queue (ft)	18	75	2	9	64	29	23	26	16
95th Queue (ft)	43	134	12	28	125	59	48	55	43
Link Distance (ft)		734			671	917		546	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	170		200	150			150		70
Storage Blk Time (%)		0			0			0	0
Queuing Penalty (veh)		0			0			0	0

Intersection: 3: Marion St SE & 34th Ave SE, All Intervals

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	LT	R	LT	R
Maximum Queue (ft)	52	185	18	28	153	74	63	62	50
Average Queue (ft)	19	78	2	9	64	29	23	27	19
95th Queue (ft)	44	141	11	28	122	61	47	56	47
Link Distance (ft)		734			671	917		546	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	170		200	150			150		70
Storage Blk Time (%)		0			0			0	0
Queuing Penalty (veh)		0			0			0	0

Queuing and Blocking Report
2024 PM Background

07/14/2023

Intersection: 6: Marion St SE & Lochner Rd SE, Interval #1

Movement	WB	SB
Directions Served	LTR	LTR
Maximum Queue (ft)	15	12
Average Queue (ft)	12	2
95th Queue (ft)	19	13
Link Distance (ft)	1402	917
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: Marion St SE & Lochner Rd SE, Interval #2

Movement	WB	SB
Directions Served	LTR	LTR
Maximum Queue (ft)	16	32
Average Queue (ft)	10	2
95th Queue (ft)	18	17
Link Distance (ft)	1402	917
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: Marion St SE & Lochner Rd SE, All Intervals

Movement	WB	SB
Directions Served	LTR	LTR
Maximum Queue (ft)	16	38
Average Queue (ft)	10	2
95th Queue (ft)	18	16
Link Distance (ft)	1402	917
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Queuing and Blocking Report
2024 PM Background

07/14/2023

Intersection: 10: Lochner Rd SE & N Site Access, Interval #1

Movement	EB
Directions Served	LTR
Maximum Queue (ft)	31
Average Queue (ft)	15
95th Queue (ft)	40
Link Distance (ft)	604
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 10: Lochner Rd SE & N Site Access, Interval #2

Movement	EB
Directions Served	LTR
Maximum Queue (ft)	31
Average Queue (ft)	5
95th Queue (ft)	25
Link Distance (ft)	604
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 10: Lochner Rd SE & N Site Access, All Intervals

Movement	EB
Directions Served	LTR
Maximum Queue (ft)	31
Average Queue (ft)	8
95th Queue (ft)	29
Link Distance (ft)	604
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Queuing and Blocking Report

2024 PM Background

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Intersection: 12: S Site Access & Lochner Rd SE, Interval #1

Movement

Directions Served
 Maximum Queue (ft)
 Average Queue (ft)
 95th Queue (ft)
 Link Distance (ft)
 Upstream Blk Time (%)
 Queuing Penalty (veh)
 Storage Bay Dist (ft)
 Storage Blk Time (%)
 Queuing Penalty (veh)

Intersection: 12: S Site Access & Lochner Rd SE, Interval #2

Movement

Directions Served
 Maximum Queue (ft)
 Average Queue (ft)
 95th Queue (ft)
 Link Distance (ft)
 Upstream Blk Time (%)
 Queuing Penalty (veh)
 Storage Bay Dist (ft)
 Storage Blk Time (%)
 Queuing Penalty (veh)

Intersection: 12: S Site Access & Lochner Rd SE, All Intervals

Movement

Directions Served
 Maximum Queue (ft)
 Average Queue (ft)
 95th Queue (ft)
 Link Distance (ft)
 Upstream Blk Time (%)
 Queuing Penalty (veh)
 Storage Bay Dist (ft)
 Storage Blk Time (%)
 Queuing Penalty (veh)

Network Summary

Network wide Queuing Penalty, Interval #1: 1
 Network wide Queuing Penalty, Interval #2: 0
 Network wide Queuing Penalty, All Intervals: 0

Queuing and Blocking Report
2024 PM Build

07/14/2023

Intersection: 3: Marion St SE & 34th Ave SE, Interval #1

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	LT	R	LT	R
Maximum Queue (ft)	38	165	19	32	127	76	48	56	31
Average Queue (ft)	19	98	7	19	76	42	23	31	16
95th Queue (ft)	41	162	23	38	136	71	47	58	41
Link Distance (ft)		734			671	917		546	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	170		200	150			150		70
Storage Blk Time (%)		0			0			1	
Queuing Penalty (veh)		0			0			0	

Intersection: 3: Marion St SE & 34th Ave SE, Interval #2

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	LT	R	LT	R
Maximum Queue (ft)	52	177	18	54	147	98	64	72	52
Average Queue (ft)	19	87	5	19	62	41	25	28	19
95th Queue (ft)	45	147	17	43	116	78	52	61	49
Link Distance (ft)		734			671	917		546	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	170		200	150			150		70
Storage Blk Time (%)		0			0			0	0
Queuing Penalty (veh)		0			0			0	0

Intersection: 3: Marion St SE & 34th Ave SE, All Intervals

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	LT	R	LT	R
Maximum Queue (ft)	52	188	23	55	151	102	64	72	52
Average Queue (ft)	19	90	5	19	65	41	24	28	18
95th Queue (ft)	44	151	18	42	122	77	50	60	47
Link Distance (ft)		734			671	917		546	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	170		200	150			150		70
Storage Blk Time (%)		0			0			1	0
Queuing Penalty (veh)		0			0			0	0

Queuing and Blocking Report
2024 PM Build

07/14/2023

Intersection: 6: Marion St SE & Lochner Rd SE, Interval #1

Movement	WB	SB
Directions Served	LTR	LTR
Maximum Queue (ft)	25	37
Average Queue (ft)	15	10
95th Queue (ft)	25	38
Link Distance (ft)	1402	917
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: Marion St SE & Lochner Rd SE, Interval #2

Movement	WB	SB
Directions Served	LTR	LTR
Maximum Queue (ft)	29	52
Average Queue (ft)	12	7
95th Queue (ft)	22	33
Link Distance (ft)	1402	917
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: Marion St SE & Lochner Rd SE, All Intervals

Movement	WB	SB
Directions Served	LTR	LTR
Maximum Queue (ft)	33	57
Average Queue (ft)	13	8
95th Queue (ft)	23	35
Link Distance (ft)	1402	917
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Queuing and Blocking Report
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Intersection: 10: Lochner Rd SE & N Site Access, Interval #1

Movement	EB	WB	SB
Directions Served	LTR	LTR	L
Maximum Queue (ft)	24	28	38
Average Queue (ft)	9	17	8
95th Queue (ft)	31	39	34
Link Distance (ft)	604	558	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			140
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 10: Lochner Rd SE & N Site Access, Interval #2

Movement	EB	WB	SB
Directions Served	LTR	LTR	L
Maximum Queue (ft)	31	28	35
Average Queue (ft)	7	10	3
95th Queue (ft)	28	32	21
Link Distance (ft)	604	558	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			140
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 10: Lochner Rd SE & N Site Access, All Intervals

Movement	EB	WB	SB
Directions Served	LTR	LTR	L
Maximum Queue (ft)	31	28	48
Average Queue (ft)	7	12	4
95th Queue (ft)	29	34	25
Link Distance (ft)	604	558	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			140
Storage Blk Time (%)			
Queuing Penalty (veh)			

Queuing and Blocking Report

2024 PM Build

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Intersection: 12: S Site Access & Lochner Rd SE, Interval #1

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	31	6
Average Queue (ft)	14	1
95th Queue (ft)	38	9
Link Distance (ft)	442	645
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 12: S Site Access & Lochner Rd SE, Interval #2

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	31	6
Average Queue (ft)	8	0
95th Queue (ft)	30	5
Link Distance (ft)	442	645
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 12: S Site Access & Lochner Rd SE, All Intervals

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	31	12
Average Queue (ft)	9	0
95th Queue (ft)	32	6
Link Distance (ft)	442	645
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty, Interval #1: 1
 Network wide Queuing Penalty, Interval #2: 1
 Network wide Queuing Penalty, All Intervals: 1

Queuing and Blocking Report
2025 PM Background

07/14/2023

Intersection: 3: Marion St SE & 34th Ave SE, Interval #1

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	LT	R	LT	R
Maximum Queue (ft)	30	149	13	28	104	48	43	52	39
Average Queue (ft)	19	89	5	10	61	27	23	29	15
95th Queue (ft)	42	165	16	31	112	54	46	61	42
Link Distance (ft)		734			671	917		546	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	170		200	150			150		70
Storage Blk Time (%)		0			0			0	0
Queuing Penalty (veh)		0			0			0	0

Intersection: 3: Marion St SE & 34th Ave SE, Interval #2

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	LT	R	LT	R
Maximum Queue (ft)	46	193	18	29	133	77	61	69	52
Average Queue (ft)	18	83	3	8	63	33	25	28	18
95th Queue (ft)	41	155	14	26	116	64	51	58	46
Link Distance (ft)		734			671	917		546	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	170		200	150			150		70
Storage Blk Time (%)		0			0			1	0
Queuing Penalty (veh)		0			0			0	0

Intersection: 3: Marion St SE & 34th Ave SE, All Intervals

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	LT	R	LT	R
Maximum Queue (ft)	46	200	18	32	141	77	65	69	56
Average Queue (ft)	18	84	4	8	62	32	25	28	17
95th Queue (ft)	42	157	15	28	115	62	50	59	45
Link Distance (ft)		734			671	917		546	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	170		200	150			150		70
Storage Blk Time (%)		0			0			1	0
Queuing Penalty (veh)		0			0			0	0

Queuing and Blocking Report
2025 PM Background

07/14/2023

Intersection: 6: Marion St SE & Lochner Rd SE, Interval #1

Movement	WB	SB
Directions Served	LTR	LTR
Maximum Queue (ft)	19	18
Average Queue (ft)	12	3
95th Queue (ft)	21	17
Link Distance (ft)	1402	917
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: Marion St SE & Lochner Rd SE, Interval #2

Movement	WB	SB
Directions Served	LTR	LTR
Maximum Queue (ft)	20	27
Average Queue (ft)	11	3
95th Queue (ft)	19	19
Link Distance (ft)	1402	917
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: Marion St SE & Lochner Rd SE, All Intervals

Movement	WB	SB
Directions Served	LTR	LTR
Maximum Queue (ft)	24	33
Average Queue (ft)	11	3
95th Queue (ft)	20	18
Link Distance (ft)	1402	917
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Queuing and Blocking Report
2025 PM Background

07/14/2023

Intersection: 10: Lochner Rd SE & N Site Access, Interval #1

Movement	EB
Directions Served	LTR
Maximum Queue (ft)	31
Average Queue (ft)	17
95th Queue (ft)	42
Link Distance (ft)	604
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 10: Lochner Rd SE & N Site Access, Interval #2

Movement	EB
Directions Served	LTR
Maximum Queue (ft)	31
Average Queue (ft)	8
95th Queue (ft)	29
Link Distance (ft)	604
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 10: Lochner Rd SE & N Site Access, All Intervals

Movement	EB
Directions Served	LTR
Maximum Queue (ft)	31
Average Queue (ft)	10
95th Queue (ft)	33
Link Distance (ft)	604
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Queuing and Blocking Report
2025 PM Background

07/14/2023

Intersection: 12: S Site Access & Lochner Rd SE, Interval #1

Movement

Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 12: S Site Access & Lochner Rd SE, Interval #2

Movement

Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 12: S Site Access & Lochner Rd SE, All Intervals

Movement

Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Network Summary

Network wide Queuing Penalty, Interval #1: 0
Network wide Queuing Penalty, Interval #2: 1
Network wide Queuing Penalty, All Intervals: 0

Queuing and Blocking Report
2025 PM Build

07/14/2023

Intersection: 3: Marion St SE & 34th Ave SE, Interval #1

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	LT	R	LT	R
Maximum Queue (ft)	105	207	59	58	132	86	61	76	65
Average Queue (ft)	33	113	23	32	77	52	32	39	27
95th Queue (ft)	104	218	107	61	133	89	65	83	63
Link Distance (ft)		734			671	917		546	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	170		200	150			150		70
Storage Blk Time (%)		2			0			4	0
Queuing Penalty (veh)		2			0			1	0

Intersection: 3: Marion St SE & 34th Ave SE, Interval #2

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	LT	R	LT	R
Maximum Queue (ft)	46	219	66	47	170	99	70	76	40
Average Queue (ft)	17	100	10	22	70	44	29	36	20
95th Queue (ft)	38	175	47	46	135	80	58	68	45
Link Distance (ft)		734			671	917		546	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	170		200	150			150		70
Storage Blk Time (%)		1	0		0	0		1	0
Queuing Penalty (veh)		1	0		0	0		0	0

Intersection: 3: Marion St SE & 34th Ave SE, All Intervals

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	LT	R	LT	R
Maximum Queue (ft)	106	256	104	63	177	103	73	87	65
Average Queue (ft)	21	103	13	24	72	46	29	36	22
95th Queue (ft)	62	187	66	50	135	83	60	72	51
Link Distance (ft)		734			671	917		546	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	170		200	150			150		70
Storage Blk Time (%)		1	0		0	0		2	0
Queuing Penalty (veh)		1	0		0	0		1	0

Queuing and Blocking Report
2025 PM Build

07/14/2023

Intersection: 6: Marion St SE & Lochner Rd SE, Interval #1

Movement	WB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	24	11	48
Average Queue (ft)	16	2	19
95th Queue (ft)	27	13	54
Link Distance (ft)	1402	544	917
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 6: Marion St SE & Lochner Rd SE, Interval #2

Movement	WB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	29	8	43
Average Queue (ft)	13	0	7
95th Queue (ft)	22	6	30
Link Distance (ft)	1402	544	917
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 6: Marion St SE & Lochner Rd SE, All Intervals

Movement	WB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	33	18	48
Average Queue (ft)	14	1	10
95th Queue (ft)	23	8	38
Link Distance (ft)	1402	544	917
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Queuing and Blocking Report
2025 PM Build

07/14/2023

Intersection: 10: Lochner Rd SE & N Site Access, Interval #1

Movement	EB	WB	SB
Directions Served	LTR	LTR	L
Maximum Queue (ft)	29	42	53
Average Queue (ft)	12	26	14
95th Queue (ft)	37	47	47
Link Distance (ft)	604	558	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			140
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 10: Lochner Rd SE & N Site Access, Interval #2

Movement	EB	WB	SB
Directions Served	LTR	LTR	L
Maximum Queue (ft)	31	32	42
Average Queue (ft)	9	18	4
95th Queue (ft)	31	40	23
Link Distance (ft)	604	558	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			140
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 10: Lochner Rd SE & N Site Access, All Intervals

Movement	EB	WB	SB
Directions Served	LTR	LTR	L
Maximum Queue (ft)	35	46	54
Average Queue (ft)	9	20	6
95th Queue (ft)	33	43	31
Link Distance (ft)	604	558	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			140
Storage Blk Time (%)			
Queuing Penalty (veh)			

Queuing and Blocking Report
2025 PM Build

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Intersection: 12: S Site Access & Lochner Rd SE, Interval #1

Movement	WB
Directions Served	LR
Maximum Queue (ft)	31
Average Queue (ft)	17
95th Queue (ft)	42
Link Distance (ft)	442
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 12: S Site Access & Lochner Rd SE, Interval #2

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	31	17
Average Queue (ft)	14	1
95th Queue (ft)	39	10
Link Distance (ft)	442	645
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 12: S Site Access & Lochner Rd SE, All Intervals

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	31	17
Average Queue (ft)	15	1
95th Queue (ft)	40	8
Link Distance (ft)	442	645
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty, Interval #1: 4
 Network wide Queuing Penalty, Interval #2: 2
 Network wide Queuing Penalty, All Intervals: 2

Queuing and Blocking Report
2028 PM Background

07/13/2023

Intersection: 3: Marion St SE & 34th Ave SE, Interval #1

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	LT	R	LT	R
Maximum Queue (ft)	30	172	14	24	143	69	53	54	39
Average Queue (ft)	17	95	3	10	79	40	25	28	20
95th Queue (ft)	36	178	12	29	149	71	51	62	47
Link Distance (ft)		734			671	917		546	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	170		200	150			150		70
Storage Blk Time (%)		1			0			1	0
Queuing Penalty (veh)		1			0			0	0

Intersection: 3: Marion St SE & 34th Ave SE, Interval #2

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	LT	R	LT	R
Maximum Queue (ft)	51	157	18	37	153	77	61	64	43
Average Queue (ft)	20	86	4	10	67	34	25	27	19
95th Queue (ft)	42	144	16	31	133	70	49	58	44
Link Distance (ft)		734			671	917		546	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	170		200	150			150		70
Storage Blk Time (%)		0			0			0	0
Queuing Penalty (veh)		0			0			0	0

Intersection: 3: Marion St SE & 34th Ave SE, All Intervals

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	LT	R	LT	R
Maximum Queue (ft)	51	192	18	37	167	86	66	64	48
Average Queue (ft)	19	88	4	10	70	35	25	28	19
95th Queue (ft)	41	153	15	30	137	70	50	59	45
Link Distance (ft)		734			671	917		546	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	170		200	150			150		70
Storage Blk Time (%)		0			0			0	0
Queuing Penalty (veh)		0			0			0	0

Queuing and Blocking Report
2028 PM Background

07/13/2023

Intersection: 6: Marion St SE & Lochner Rd SE, Interval #1

Movement	WB	SB
Directions Served	LTR	LTR
Maximum Queue (ft)	19	16
Average Queue (ft)	13	2
95th Queue (ft)	20	18
Link Distance (ft)	1402	917
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: Marion St SE & Lochner Rd SE, Interval #2

Movement	WB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	20	4	20
Average Queue (ft)	11	0	2
95th Queue (ft)	21	3	15
Link Distance (ft)	1402	544	917
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 6: Marion St SE & Lochner Rd SE, All Intervals

Movement	WB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	24	4	30
Average Queue (ft)	12	0	2
95th Queue (ft)	21	3	16
Link Distance (ft)	1402	544	917
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Queuing and Blocking Report
2028 PM Background

07/13/2023

Intersection: 10: Lochner Rd SE & N Site Access, Interval #1

Movement	EB
Directions Served	LTR
Maximum Queue (ft)	31
Average Queue (ft)	15
95th Queue (ft)	40
Link Distance (ft)	610
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 10: Lochner Rd SE & N Site Access, Interval #2

Movement	EB
Directions Served	LTR
Maximum Queue (ft)	36
Average Queue (ft)	8
95th Queue (ft)	32
Link Distance (ft)	610
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 10: Lochner Rd SE & N Site Access, All Intervals

Movement	EB
Directions Served	LTR
Maximum Queue (ft)	36
Average Queue (ft)	10
95th Queue (ft)	34
Link Distance (ft)	610
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Queuing and Blocking Report

2028 PM Background

07/13/2023

Intersection: 12: S Site Access & Lochner Rd SE, Interval #1

Movement

Directions Served
 Maximum Queue (ft)
 Average Queue (ft)
 95th Queue (ft)
 Link Distance (ft)
 Upstream Blk Time (%)
 Queuing Penalty (veh)
 Storage Bay Dist (ft)
 Storage Blk Time (%)
 Queuing Penalty (veh)

Intersection: 12: S Site Access & Lochner Rd SE, Interval #2

Movement

Directions Served
 Maximum Queue (ft)
 Average Queue (ft)
 95th Queue (ft)
 Link Distance (ft)
 Upstream Blk Time (%)
 Queuing Penalty (veh)
 Storage Bay Dist (ft)
 Storage Blk Time (%)
 Queuing Penalty (veh)

Intersection: 12: S Site Access & Lochner Rd SE, All Intervals

Movement

Directions Served
 Maximum Queue (ft)
 Average Queue (ft)
 95th Queue (ft)
 Link Distance (ft)
 Upstream Blk Time (%)
 Queuing Penalty (veh)
 Storage Bay Dist (ft)
 Storage Blk Time (%)
 Queuing Penalty (veh)

Network Summary

Network wide Queuing Penalty, Interval #1: 1
 Network wide Queuing Penalty, Interval #2: 0
 Network wide Queuing Penalty, All Intervals: 0

Queuing and Blocking Report
2030 PM Background

07/14/2023

Intersection: 3: Marion St SE & 34th Ave SE, Interval #1

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	LT	R	LT	R
Maximum Queue (ft)	51	182	14	24	156	55	57	70	56
Average Queue (ft)	25	97	3	9	78	34	26	31	25
95th Queue (ft)	54	184	14	27	151	64	55	69	61
Link Distance (ft)		734			671	917		546	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	170		200	150			150		70
Storage Blk Time (%)		1			1			3	0
Queuing Penalty (veh)		1			0			1	0

Intersection: 3: Marion St SE & 34th Ave SE, Interval #2

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	LT	R	LT	R
Maximum Queue (ft)	76	183	22	42	173	81	58	64	55
Average Queue (ft)	22	91	4	10	74	38	23	26	22
95th Queue (ft)	57	159	18	33	139	70	48	56	50
Link Distance (ft)		734			671	917		546	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	170		200	150			150		70
Storage Blk Time (%)		0			1			0	0
Queuing Penalty (veh)		0			0			0	0

Intersection: 3: Marion St SE & 34th Ave SE, All Intervals

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	LT	R	LT	R
Maximum Queue (ft)	88	195	23	42	182	81	64	77	64
Average Queue (ft)	23	92	4	10	75	37	24	27	23
95th Queue (ft)	57	166	17	31	142	69	50	60	53
Link Distance (ft)		734			671	917		546	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	170		200	150			150		70
Storage Blk Time (%)		1			1			1	0
Queuing Penalty (veh)		1			0			0	0

Queuing and Blocking Report
2030 PM Background

07/14/2023

Intersection: 6: Marion St SE & Lochner Rd SE, Interval #1

Movement	WB	SB
Directions Served	LTR	LTR
Maximum Queue (ft)	30	12
Average Queue (ft)	16	1
95th Queue (ft)	30	9
Link Distance (ft)	1402	917
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: Marion St SE & Lochner Rd SE, Interval #2

Movement	WB	SB
Directions Served	LTR	LTR
Maximum Queue (ft)	20	12
Average Queue (ft)	11	1
95th Queue (ft)	19	7
Link Distance (ft)	1402	917
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: Marion St SE & Lochner Rd SE, All Intervals

Movement	WB	SB
Directions Served	LTR	LTR
Maximum Queue (ft)	30	24
Average Queue (ft)	12	1
95th Queue (ft)	23	8
Link Distance (ft)	1402	917
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Queuing and Blocking Report
2030 PM Background

07/14/2023

Intersection: 10: Lochner Rd SE & N Site Access, Interval #1

Movement	EB
Directions Served	LTR
Maximum Queue (ft)	25
Average Queue (ft)	12
95th Queue (ft)	37
Link Distance (ft)	604
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 10: Lochner Rd SE & N Site Access, Interval #2

Movement	EB
Directions Served	LTR
Maximum Queue (ft)	31
Average Queue (ft)	10
95th Queue (ft)	33
Link Distance (ft)	604
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 10: Lochner Rd SE & N Site Access, All Intervals

Movement	EB
Directions Served	LTR
Maximum Queue (ft)	31
Average Queue (ft)	10
95th Queue (ft)	34
Link Distance (ft)	604
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Queuing and Blocking Report
2030 PM Background

07/14/2023

Intersection: 12: S Site Access & Lochner Rd SE, Interval #1

Movement

Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 12: S Site Access & Lochner Rd SE, Interval #2

Movement

Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 12: S Site Access & Lochner Rd SE, All Intervals

Movement

Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Network Summary

Network wide Queuing Penalty, Interval #1: 2
Network wide Queuing Penalty, Interval #2: 1
Network wide Queuing Penalty, All Intervals: 1

Queuing and Blocking Report
2030 PM Build

07/14/2023

Intersection: 3: Marion St SE & 34th Ave SE, Interval #1

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	LT	R	LT	R
Maximum Queue (ft)	105	232	17	59	164	85	68	99	69
Average Queue (ft)	29	140	6	28	93	51	33	44	26
95th Queue (ft)	83	231	18	59	161	94	66	102	65
Link Distance (ft)		734			671	917		546	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	170		200	150			150		70
Storage Blk Time (%)		3			1	0		4	0
Queuing Penalty (veh)		4			1	0		1	0

Intersection: 3: Marion St SE & 34th Ave SE, Interval #2

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	LT	R	LT	R
Maximum Queue (ft)	52	207	68	73	142	85	75	74	51
Average Queue (ft)	21	111	11	28	75	44	32	36	20
95th Queue (ft)	47	185	48	58	128	76	62	70	48
Link Distance (ft)		734			671	917		546	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	170		200	150			150		70
Storage Blk Time (%)		1			0			1	0
Queuing Penalty (veh)		1			0			0	0

Intersection: 3: Marion St SE & 34th Ave SE, All Intervals

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	LT	R	LT	R
Maximum Queue (ft)	106	237	68	73	169	98	81	104	76
Average Queue (ft)	23	118	10	28	79	46	32	38	22
95th Queue (ft)	59	199	43	58	138	81	63	79	52
Link Distance (ft)		734			671	917		546	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	170		200	150			150		70
Storage Blk Time (%)		2			0	0		2	0
Queuing Penalty (veh)		2			0	0		1	0

Queuing and Blocking Report
2030 PM Build

07/14/2023

Intersection: 6: Marion St SE & Lochner Rd SE, Interval #1

Movement	WB	SB
Directions Served	LTR	LTR
Maximum Queue (ft)	25	43
Average Queue (ft)	18	15
95th Queue (ft)	32	45
Link Distance (ft)	1402	917
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: Marion St SE & Lochner Rd SE, Interval #2

Movement	WB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	30	7	48
Average Queue (ft)	15	0	7
95th Queue (ft)	27	4	34
Link Distance (ft)	1402	544	917
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 6: Marion St SE & Lochner Rd SE, All Intervals

Movement	WB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	35	7	58
Average Queue (ft)	16	0	9
95th Queue (ft)	28	4	38
Link Distance (ft)	1402	544	917
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Queuing and Blocking Report
2030 PM Build

07/14/2023

Intersection: 10: Lochner Rd SE & N Site Access, Interval #1

Movement	EB	WB	SB
Directions Served	LTR	LTR	L
Maximum Queue (ft)	39	42	40
Average Queue (ft)	19	27	13
95th Queue (ft)	46	45	41
Link Distance (ft)	604	558	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			140
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 10: Lochner Rd SE & N Site Access, Interval #2

Movement	EB	WB	SB
Directions Served	LTR	LTR	L
Maximum Queue (ft)	31	38	40
Average Queue (ft)	8	17	5
95th Queue (ft)	30	40	25
Link Distance (ft)	604	558	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			140
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 10: Lochner Rd SE & N Site Access, All Intervals

Movement	EB	WB	SB
Directions Served	LTR	LTR	L
Maximum Queue (ft)	39	42	44
Average Queue (ft)	11	19	7
95th Queue (ft)	35	43	30
Link Distance (ft)	604	558	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			140
Storage Blk Time (%)			
Queuing Penalty (veh)			

Queuing and Blocking Report
2030 PM Build

07/14/2023

Intersection: 12: S Site Access & Lochner Rd SE, Interval #1

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	31	6
Average Queue (ft)	15	1
95th Queue (ft)	40	9
Link Distance (ft)	442	645
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 12: S Site Access & Lochner Rd SE, Interval #2

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	36	22
Average Queue (ft)	19	2
95th Queue (ft)	43	14
Link Distance (ft)	442	645
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 12: S Site Access & Lochner Rd SE, All Intervals


Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	36	22
Average Queue (ft)	18	2
95th Queue (ft)	43	13
Link Distance (ft)	442	645
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty, Interval #1: 7
 Network wide Queuing Penalty, Interval #2: 2
 Network wide Queuing Penalty, All Intervals: 3

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Stormwater Report

Project: Meadowlark Estates Subdivision
Location: Lochner Road SE, Albany, OR
Prepared By: Dylan McIver, EIT
Reviewed by: Kyle Morris, PE
Date: 9/7/2023
Type of Project: Residential Subdivision



Expires: 12/24

Project Overview

Meadowlark Estates is a proposed single family residential subdivision with 176 lots on a 35.32-acre parcel. The property is located at 3795 Lochner Road SE and has a large BPA transmission main running east-west on the north side of the property. There is an existing 42" stormwater trunk line within Lochner Road SE right of way flowing to the south and discharging into Oak Creek. Stormwater runoff from the subdivision is proposed to discharge treated stormwater into the existing 42" trunk line in Lochner Road SE at pre-construction peak flow rates.

To meet City of Albany detention and treatment requirements for stormwater runoff in the subdivision it is proposed to construct one stormwater quality pond and two streetside stormwater swales. Stormwater runoff from roofs and roadways will be routed to the pond via underground piping within the subdivision and roadway runoff into the swales will be done via sheet drainage through curb notches. All roof runoff is proposed to discharge into the adjacent streets through weepholes in the curb.

Existing Conditions

The property currently is an open grass field with a private gravel driveway running through to provide access to an existing house south of the property. Web Soil Survey lists the following soil types as present on the site:

#3	Amity Silt Loam	HSG C/D
#27	Concord Silt Loam	HSG C/D
#33	Dayton Silt Loam	HSG D
#100	Whiteson Silt Loam	HSG D
#106A	Woodburn Silt Loam, 0 to 3 percent slopes	HSG D
#106C	Woodburn Silt Loam, 3 to 12 percent slopes	HSG C

The total parcel area is 35.32 acres; however, the new development area is approximately 23.206 acres, and this will be used for existing conditions analysis. The existing site within the development area slopes toward the southwest where runoff leaves the site. The eventual discharge flows down to Oak Creek. Below are tables summarizing the physical characteristics of the existing site:

Table 1: Existing site physical characteristics.

Land Type & Description	Total Acreage	Curve Number
Pasture/grassland/range, Poor, HSG D	23.206	89

Table 2: Pre-Construction Peak Flowrates

Storm Event	Existing Peak Flowrate (cfs)
2-Year	3.80
5-Year	4.87
10-Year	6.32
25-Year	7.98

Infiltration

Infiltration testing was performed by F.E.I. Testing & Inspection, Inc. and a geotechnical report was prepared on October 29th, 2020 which includes the results from the testing. In summary, five infiltration tests were performed throughout the site and the following results were measured:

Table 3: Summary of geotechnical soil tests.

Test Number	Test Depth (Inches)	Soil Type	Measured Infiltration Rate (In./hr.)
P-1	47	Clayey Silt with sand	2.0
P-2	42	Clayey Silt with sand	1.0
P-3	42	Silty Clay with sand	0.2
P-4	49	Clayey Silt with sand	2.0
P-5	25	Silty Clay	0.1

Tests 1 through 5 was conducted on the northwest, central, northeast, southeast, and southwest portions of the site respectively. F.E.I.'s full report is attached in the appendix with this report. Infiltration to existing soils was not considered for the proposed ponds due to their proximity to the ground slope to the south. Due to this and groundwater concerns listed below, the pond will be lined and perforated pipes installed within the rock chambers. For imported soil mediums within the pond and planters an exfiltration rate of 2.0 in/hr was used for the infiltration rate into rock chambers.

Groundwater elevations were measured 12/22/21 by A & O Engineering and the following table shows the results:

Table 4: Summary of groundwater elevations during the winter.

Pond	Groundwater EL (ft)	Pond Flowline EL (ft)	Rock Chamber EI (ft)
SW Pond	219.06	221.50	219.00

Proposed Destination

Treated and detained on-site stormwater runoff is proposed to be routed offsite into an existing 42" stormwater line in Lochner Road SE ROW to the west. The post-construction peak flowrate will be controlled by detention facilities to be at or below the pre-development peak flow rates.

Post Construction

To work with the proposed layout and the existing site contours it is proposed to split the stormwater drainage from the site into two separate systems: the southwest site entrance will be routed into a pair of roadside stormwater swales, and the remainder of the site will be routed to the water quality detention pond.

The full buildout of this subdivision will include 176 single family lots. Also included was 1.47 acres of potential future development located south of Phase 6. A basin map summarizing drainage basin details for the finished subdivision and potential future development is included in the appendix of this report.

The detention pond uses 4:1 slopes along the north side of the pond and transitions into 4-foot vertical poured-in-place concrete wall along the south side of the pond. This wall is required due to space constraints and existing grade changes in the southwest corner of the site.

The tables below summarize the physical characteristics of the pond and planters:

Table 5: Pond Open Storage Area.

Pond:	Bottom of Pond EL (ft)	Bottom of Pond Area (sf)	Top of Pond EL (ft)	Top of Pond Area (sf)	Side Slopes (H:V)
Detention Pond	221.50	16,108	225.50	21,919	4:1

Table 6: Stormwater Planter Storage Area.

Pond:	Planter Open Storage Area (sf)	Top of Open Storage EL (ft)	Bottom of Open Storage EL (ft)	Imported Soil Section Area (sf)	Bottom of Imported Soil Section EL (ft)	Rock Chamber Storage Area	Bottom of Rock Chamber EL (ft)
Swale 1	72.00	222.95	221.95	72.00	220.45	60.00	219.70
Swale 2	67.00	223.30	222.30	67.00	220.80	58.00	220.05

In addition to the open pond area provided above, the pond is proposed to have 18" of imported soil and a 12" rock chamber with 4" perforated discharge pipes due to infiltration not being utilized. The stormwater planters are proposed to have 18" of growing medium and 9" of rock per City of Albany Standard Drawing 604B. The following table summarizes storage capacities for the stormwater ponds and planters:

Table 7: Storage capacities for each pond and planter. (Soil media & rock chamber)

Pond:	Open Storage Capacity (cf)	Growing Media Storage Capacity-10% void space (cf)	Rock Chamber Capacity-35% Void Space (cf)	Total Storage (cf)
Detention Pond	75,859	3,288	1,750	80,897
Swale 1	67	11	16	93
Swale 2	63	10	15	88

Hydraulic Calculations

HydroCAD software was utilized to calculate existing condition peak flows leaving the site from the development area. Assumed individual lot impervious area was 70% impervious and 30% grass cover. Below are some important parameters utilized in calculating the existing conditions peak flowrates leaving the site from the development area:

Runoff Method: Santa Barbara Urban Hydrograph (SBUH)
 Area: 23.206 acres
 Curve Number: 93 70% Lot Coverage Weighted (70% CN 98 for impervious lot area, 30% CN 80 for grass, HSG D)

Land Description:	98 Paved roads w/curbs & sewers, HSG D 80 >75% Grass cover, Fair, HSG D Pasture/grassland/range, HSG D
Time of Concentration:	73.0 minutes for inflow into the Single Pond Existing Conditions 7.7 minutes for inflow into Swale Existing Conditions (Details for this included with HydroCAD node report)
Storm Type:	Type IA 24-hr
Storm Events:	Water Quality – 1 inch 2-Year Storm – 2.47 inches 5-Year Storm – 2.86 inches 10-Year Storm – 3.37 inches 25-Year Storm – 3.94 inches 100-Year Storm – 4.50 inches

To ensure stormwater structures will not cause flooding, the following hydraulic elevations were calculated for a post-construction site:

Table 8: Hydraulic elevations within ponds and planters during each storm event.

Pond:	Lowest Orifice EL. (ft)	Water Quality Peak EL. (ft)	2-Year Peak EL. (ft)	5-Year Peak EL. (ft)	10-Year Peak EL. (ft)	25-Year Peak EL. (ft)	25-Year Freeboard Available (ft)	100-Year Peak EL. (ft)	Facility Top EL. (ft)
Detention Pond	221.85	221.50	222.87	223.25	223.70	224.18	1.32	224.51	225.50
Swale 1	222.70	221.97	222.05	222.06	222.07	222.08	N/A	222.09	222.95
Swale 2	223.05	222.33	222.39	222.40	222.42	222.43	N/A	222.44	223.30

Curve numbers used in the model include 93 for impervious lot area, HSG D, 98 for impervious ROW, HSG D, 80 for >75% grass cover, fair, HSG D, and 89 for Pasture/grassland/range, HSG D was used for the pre-construction existing conditions. The city of Albany requires a type IA 24-hr design storm for each of 2-, 5-, 10-, and 25-year rainfall events. As shown, the pond completely contains stormwater runoff from the site during each storm event with the required 1-foot of freeboard per city of Albany stormwater design standards and thus is adequate to protect the subdivision from flooding. The stormwater swales are designed using sizing factors within the City of Albany Engineering Standards, Division E. Excess flow for the 100-year storm is designed to be handled by the 48" angled overflow grates atop the pond outflow structure without the water level rising above the top of pond elevations. In the table above it is shown that the overflows operate effectively to keep stormwater contained within the facilities during the 100-year event.

The following table list both the pre-construction and post-construction peak flowrates for each design storm:

Table 9: Pre-Construction Peak Flowrates

Storm Event	Existing Peak Flowrate (cfs)	Proposed Peak Flowrate (cfs)
2-Year	3.80	3.79
5-Year	4.87	4.86
10-Year	6.32	6.31
25-Year	7.98	7.97

As shown in the above table, the proposed peak flow rates are lower than the peak flows for existing conditions. The existing peak flowrate was calculated using the Santa Barbara Urban Hydrograph method. Using existing soil surface conditions, travel distance and depth of surface runoff, along with the storm type and intensities detailed on page 5 of this report, a hydrograph showing the peak flows for each storm event was produced. Similar methodology is used to produce the post construction peak flow rates with the addition of outflow controls of various sizes and elevations. These outflow controls were adjusted until the peak flowrate from the proposed development is at or below the pre-construction peak flowrates. All calculation details can be found in the attached HydroCAD report in nodes 42R named Pre-Construction Peak Flow, and 39R named Post-Construction Peak Flow.

Pollution Control

The stormwater from the pollution control event will be 100% treated prior to discharging into the existing stormwater pipe in Lochner Road. The detention pond allows for filtration through imported soil medium into a rock chamber with perforated piping. The streetside planters allow filtration through soil media into rock chambers with perforated piping.

The storm facilities will be vegetated to assist in treatment of stormwater runoff. This growing medium treats stormwater runoff as filtration occurs. The detention pond rock chamber, as well as all the proposed planters will drain into perforated piping to discharge treated stormwater into the designated location under Lochner Road SE.

As shown in table 8, all stormwater filtrates through the soil medium while the peak water elevation remains below the lowest outflow structure orifice. Thus, stormwater from the site will be adequately treated.

Conclusion

The proposed stormwater system will adequately serve the new development. Post construction peak flows will be lower than the peak flow rates from the existing condition. Therefore, the storm management system meets detention requirements.

Peak water elevations during water quality storm events do not rise above the lowest orifices. This means the ponds have enough capacity to allow the runoff to 100% filtrate through soil media and thus the storm management system meets pollution control requirements.

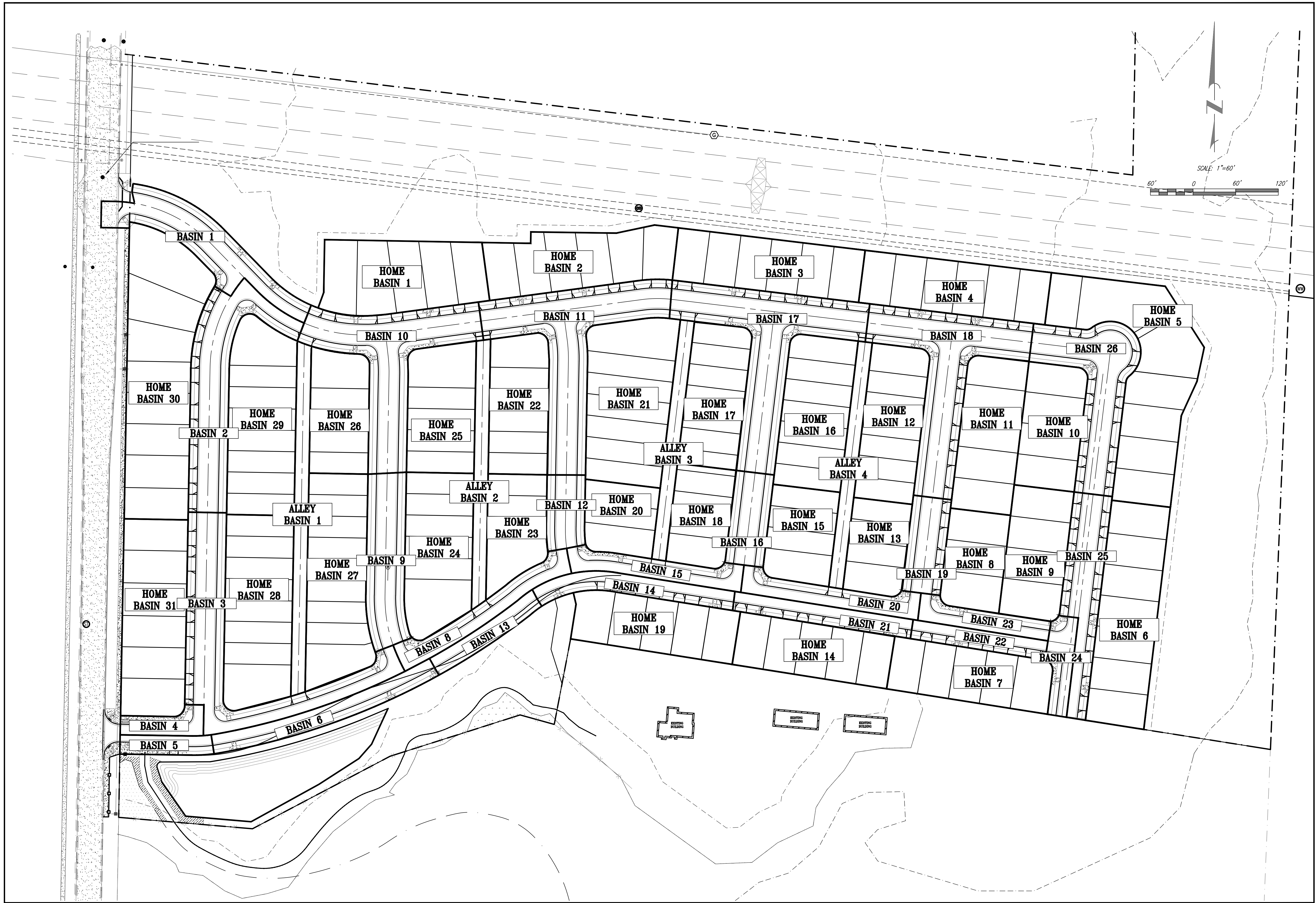
The system models to contain runoff within the storm system thereby protecting public safety and removing the potential for property damage.

Appendix

- FlowMaster Pipe Sizing
- Drainage Basin Map
- HydroCAD Report
- Geotech report prepared by FEI, October 29, 2020

PipeSizing.fm8 Report

Label	Roughness Coefficient	Channel Slope (%)	Diameter (in)	Velocity (ft/s)	Discharge Full (ft ³ /s)
10" D3034/C900	0.010	0.37000	10.00	3.18	1.73
12" Sanitite	0.012	0.42000	12.00	3.18	2.50
15" Sanitite	0.012	0.33000	15.00	3.28	4.02
18" Sanitite	0.012	0.27000	18.00	3.35	5.91
21" F679	0.012	0.23000	21.00	3.42	8.23
24" Sanitite	0.012	0.20000	24.00	3.49	10.96
30" Sanitite	0.012	0.20000	30.00	4.05	19.87



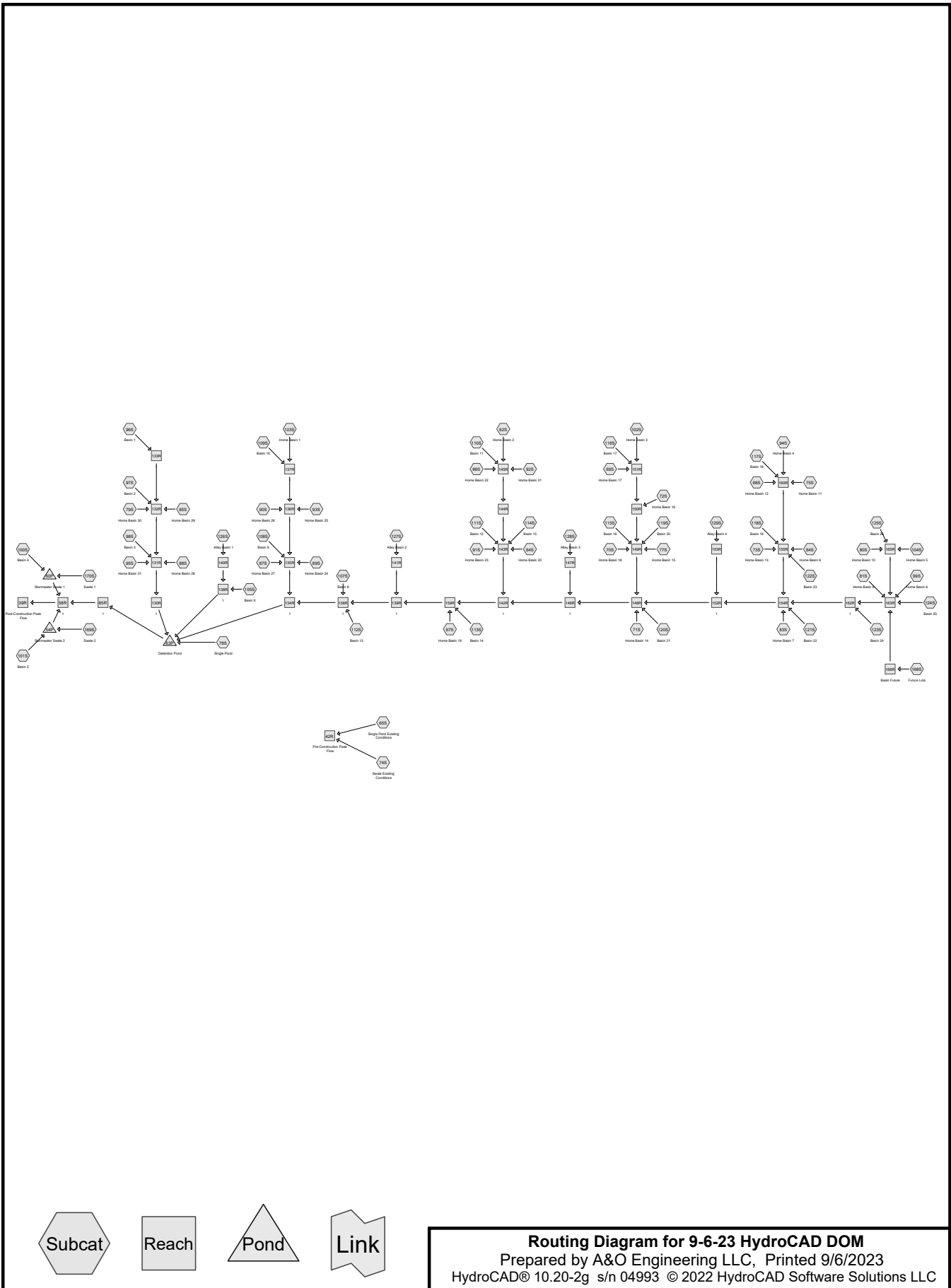
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Tentative Subdivision Basin Map
 for
Meadowlark Estates Subdivision
 Albany Linn County Oregon

DATE:	9-7-23
PROJECT NO.:	5231
SCALE:	AS SHOWN
DRAWN BY:	DOM
DESIGNED BY:	DOM
REVIEWED BY:	KOM

SUBMITTALS:	
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REVISIONS:	
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Project Notes

Albany code requires assuming 2,700 SF of impervious area per single family residence. The remainder of each private lot area is assumed to be grass cover with an HSG rating of C.

REDESIGN:

Weighting 70% lot coverage (CN 98) and 30% grass (CN 80), the weighted CN comes out to 93.

Albany code requires:

Pre-post matching for 2 through 25-year.

Water quality storm (DEQ's is more stringent, higher intensity)

Max 4' deep pond with 1' of freeboard included.

Overflow system for the 100-year.

Storm pipe capacities for the 25-year storm

Minimum velocity @ full capacity is 3 ft/s

Minimum manning n of 0.01 or manufacturer's specs, whatever is higher

See flowmaster calcs, sizes are based on absolute minimum slope that meets requirements plus 0.05% as a safety factor for all pipes.

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Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	01-Water Quality	Type IA 24-hr		Default	24.00	1	1.00	2
2	02-2 Year	Type IA 24-hr		Default	24.00	1	2.47	2
3	05-5 Year	Type IA 24-hr		Default	24.00	1	2.86	2
4	10-10 Year	Type IA 24-hr		Default	24.00	1	3.37	2
5	25-25 Year	Type IA 24-hr		Default	24.00	1	3.94	2
6	50-50 Year	Type IA 24-hr		Default	24.00	1	4.38	2
7	100-Year	Type IA 24-hr		Default	24.00	1	4.50	2

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Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
14.657	93	70% Lot Coverage Weighted (64S, 67S, 68S, 69S, 70S, 71S, 72S, 73S, 75S, 77S, 79S, 80S, 81S, 82S, 83S, 84S, 85S, 86S, 87S, 88S, 89S, 90S, 91S, 92S, 93S, 94S, 95S, 99S, 102S, 103S, 104S, 168S)
23.206	89	Pasture/grassland/range, Poor, HSG D (65S, 74S)
8.043	98	Paved roads w/curbs & sewers, HSG D (96S, 97S, 98S, 100S, 101S, 105S, 107S, 108S, 109S, 110S, 111S, 112S, 113S, 114S, 115S, 116S, 117S, 118S, 119S, 120S, 121S, 122S, 123S, 124S, 125S, 126S, 127S, 128S, 129S, 168S)
0.506	98	Water Surface, HSG D (78S, 169S, 170S)
46.412	92	TOTAL AREA

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Soil Listing (selected nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
0.000	HSG C	
31.755	HSG D	65S, 74S, 78S, 96S, 97S, 98S, 100S, 101S, 105S, 107S, 108S, 109S, 110S, 111S, 112S, 113S, 114S, 115S, 116S, 117S, 118S, 119S, 120S, 121S, 122S, 123S, 124S, 125S, 126S, 127S, 128S, 129S, 168S, 169S, 170S
14.657	Other	64S, 67S, 68S, 69S, 70S, 71S, 72S, 73S, 75S, 77S, 79S, 80S, 81S, 82S, 83S, 84S, 85S, 86S, 87S, 88S, 89S, 90S, 91S, 92S, 93S, 94S, 95S, 99S, 102S, 103S, 104S, 168S
46.412		TOTAL AREA

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Ground Covers (selected nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.000	0.000	14.657	14.657	70% Lot Coverage Weighted	64 S, 67 S, 68 S, 69 S, 70 S, 71 S, 72 S, 73 S, 75 S, 77 S, 79 S, 80 S, 81 S, 82 S, 83 S, 84 S, 85 S, 86 S, 87 S, 88 S, 89 S, 90 S, 91 S,

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Ground Covers (selected nodes) (continued)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.000	23.206	0.000	23.206	Pasture/grassland/range, Poor	65 S, 74 S
0.000	0.000	0.000	8.043	0.000	8.043	Paved roads w/curbs & sewers	96 S, 97 S, 98 S, 10 0S, 10 1S, 10 5S, 10 7S, 10 8S, 10 9S, 11 0S, 11 1S, 11 2S, 11 3S, 11 4S, 11 5S,

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Ground Covers (selected nodes) (continued)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.000	0.506	0.000	0.506	Water Surface	78 S, 16 9S, 17 0S
0.000	0.000	0.000	31.755	14.657	46.412	TOTAL AREA	

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Pipe Listing (selected nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Width (inches)	Diam/Height (inches)	Inside-Fill (inches)
1	63P	219.00	218.80	100.0	0.0020	0.010	0.0	24.0	0.0

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Time span=0.00-32.00 hrs, dt=0.05 hrs, 641 points
 Runoff by SBUH method, Split Pervious/Imperv.
 Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment64S: Home Basin 20	Runoff Area=9,940 sf 0.00% Impervious Runoff Depth=0.45" Tc=10.0 min CN=93/0 Runoff=0.02 cfs 0.009 af
Subcatchment65S: Single Pond Existing	Runoff Area=23.038 ac 0.00% Impervious Runoff Depth>0.28" Flow Length=1,526' Slope=0.0076 '/' Tc=73.0 min CN=89/0 Runoff=0.49 cfs 0.547 af
Subcatchment67S: Home Basin 19	Runoff Area=17,197 sf 0.00% Impervious Runoff Depth=0.45" Tc=10.0 min CN=93/0 Runoff=0.04 cfs 0.015 af
Subcatchment68S: Home Basin 12	Runoff Area=18,133 sf 0.00% Impervious Runoff Depth=0.45" Tc=10.0 min CN=93/0 Runoff=0.04 cfs 0.016 af
Subcatchment69S: Home Basin 17	Runoff Area=16,661 sf 0.00% Impervious Runoff Depth=0.45" Tc=10.0 min CN=93/0 Runoff=0.04 cfs 0.014 af
Subcatchment70S: Home Basin 18	Runoff Area=11,596 sf 0.00% Impervious Runoff Depth=0.45" Tc=10.0 min CN=93/0 Runoff=0.03 cfs 0.010 af
Subcatchment71S: Home Basin 14	Runoff Area=16,444 sf 0.00% Impervious Runoff Depth=0.45" Tc=10.0 min CN=93/0 Runoff=0.04 cfs 0.014 af
Subcatchment72S: Home Basin 16	Runoff Area=20,310 sf 0.00% Impervious Runoff Depth=0.45" Tc=10.0 min CN=93/0 Runoff=0.04 cfs 0.017 af
Subcatchment73S: Home Basin 13	Runoff Area=10,807 sf 0.00% Impervious Runoff Depth=0.45" Tc=10.0 min CN=93/0 Runoff=0.02 cfs 0.009 af
Subcatchment74S: Swale Existing	Runoff Area=0.168 ac 0.00% Impervious Runoff Depth=0.28" Flow Length=105' Slope=0.0565 '/' Tc=10.0 min CN=89/0 Runoff=0.01 cfs 0.004 af
Subcatchment75S: Home Basin 11	Runoff Area=18,483 sf 0.00% Impervious Runoff Depth=0.45" Tc=10.0 min CN=93/0 Runoff=0.04 cfs 0.016 af
Subcatchment77S: Home Basin 15	Runoff Area=12,503 sf 0.00% Impervious Runoff Depth=0.45" Tc=10.0 min CN=93/0 Runoff=0.03 cfs 0.011 af
Subcatchment78S: Single Pond	Runoff Area=21,919 sf 100.00% Impervious Runoff Depth=0.79" Tc=0.0 min CN=0/98 Runoff=0.10 cfs 0.033 af
Subcatchment79S: Home Basin 30	Runoff Area=38,416 sf 0.00% Impervious Runoff Depth=0.45" Tc=10.0 min CN=93/0 Runoff=0.08 cfs 0.033 af
Subcatchment80S: Home Basin 10	Runoff Area=14,789 sf 0.00% Impervious Runoff Depth=0.45" Tc=10.0 min CN=93/0 Runoff=0.03 cfs 0.013 af
Subcatchment81S: Home Basin 9	Runoff Area=15,575 sf 0.00% Impervious Runoff Depth=0.45" Tc=10.0 min CN=93/0 Runoff=0.03 cfs 0.013 af

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Subcatchment82S: Home Basin 2	Runoff Area=20,667 sf 0.00% Impervious Runoff Depth=0.45" Tc=10.0 min CN=93/0 Runoff=0.04 cfs 0.018 af
Subcatchment83S: Home Basin 7	Runoff Area=17,032 sf 0.00% Impervious Runoff Depth=0.45" Tc=10.0 min CN=93/0 Runoff=0.04 cfs 0.015 af
Subcatchment84S: Home Basin 8	Runoff Area=11,668 sf 0.00% Impervious Runoff Depth=0.45" Tc=10.0 min CN=93/0 Runoff=0.03 cfs 0.010 af
Subcatchment85S: Home Basin 29	Runoff Area=25,118 sf 0.00% Impervious Runoff Depth=0.45" Tc=10.0 min CN=93/0 Runoff=0.05 cfs 0.022 af
Subcatchment86S: Home Basin 22	Runoff Area=16,159 sf 0.00% Impervious Runoff Depth=0.45" Tc=10.0 min CN=93/0 Runoff=0.03 cfs 0.014 af
Subcatchment87S: Home Basin 27	Runoff Area=24,839 sf 0.00% Impervious Runoff Depth=0.45" Tc=10.0 min CN=93/0 Runoff=0.05 cfs 0.021 af
Subcatchment88S: Home Basin 28	Runoff Area=25,318 sf 0.00% Impervious Runoff Depth=0.45" Tc=10.0 min CN=93/0 Runoff=0.05 cfs 0.022 af
Subcatchment89S: Home Basin 24	Runoff Area=20,676 sf 0.00% Impervious Runoff Depth=0.45" Tc=10.0 min CN=93/0 Runoff=0.04 cfs 0.018 af
Subcatchment90S: Home Basin 26	Runoff Area=14,135 sf 0.00% Impervious Runoff Depth=0.45" Tc=10.0 min CN=93/0 Runoff=0.03 cfs 0.012 af
Subcatchment91S: Home Basin 23	Runoff Area=12,271 sf 0.00% Impervious Runoff Depth=0.45" Tc=10.0 min CN=93/0 Runoff=0.03 cfs 0.011 af
Subcatchment92S: Home Basin 21	Runoff Area=27,019 sf 0.00% Impervious Runoff Depth=0.45" Tc=10.0 min CN=93/0 Runoff=0.06 cfs 0.023 af
Subcatchment93S: Home Basin 25	Runoff Area=17,012 sf 0.00% Impervious Runoff Depth=0.45" Tc=10.0 min CN=93/0 Runoff=0.04 cfs 0.015 af
Subcatchment94S: Home Basin 4	Runoff Area=19,535 sf 0.00% Impervious Runoff Depth=0.45" Tc=10.0 min CN=93/0 Runoff=0.04 cfs 0.017 af
Subcatchment95S: Home Basin 31	Runoff Area=24,883 sf 0.00% Impervious Runoff Depth=0.45" Tc=10.0 min CN=93/0 Runoff=0.05 cfs 0.021 af
Subcatchment96S: Basin 1	Runoff Area=15,045 sf 100.00% Impervious Runoff Depth=0.79" Tc=10.0 min CN=0/98 Runoff=0.07 cfs 0.023 af
Subcatchment97S: Basin 2	Runoff Area=19,824 sf 100.00% Impervious Runoff Depth=0.79" Tc=10.0 min CN=0/98 Runoff=0.09 cfs 0.030 af
Subcatchment98S: Basin 3	Runoff Area=23,416 sf 100.00% Impervious Runoff Depth=0.79" Tc=10.0 min CN=0/98 Runoff=0.10 cfs 0.035 af

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Subcatchment99S: Home Basin 6	Runoff Area=25,997 sf 0.00% Impervious Runoff Depth=0.45" Tc=10.0 min CN=93/0 Runoff=0.06 cfs 0.022 af
Subcatchment100S: Basin 4	Runoff Area=3,650 sf 100.00% Impervious Runoff Depth=0.79" Tc=10.0 min CN=0/98 Runoff=0.02 cfs 0.006 af
Subcatchment101S: Basin 5	Runoff Area=3,523 sf 100.00% Impervious Runoff Depth=0.79" Tc=10.0 min CN=0/98 Runoff=0.02 cfs 0.005 af
Subcatchment102S: Home Basin 3	Runoff Area=19,559 sf 0.00% Impervious Runoff Depth=0.45" Tc=10.0 min CN=93/0 Runoff=0.04 cfs 0.017 af
Subcatchment103S: Home Basin 1	Runoff Area=22,288 sf 0.00% Impervious Runoff Depth=0.45" Tc=10.0 min CN=93/0 Runoff=0.05 cfs 0.019 af
Subcatchment104S: Home Basin 5	Runoff Area=33,512 sf 0.00% Impervious Runoff Depth=0.45" Tc=10.0 min CN=93/0 Runoff=0.07 cfs 0.029 af
Subcatchment105S: Basin 6	Runoff Area=8,965 sf 100.00% Impervious Runoff Depth=0.79" Tc=10.0 min CN=0/98 Runoff=0.04 cfs 0.014 af
Subcatchment107S: Basin 8	Runoff Area=8,177 sf 100.00% Impervious Runoff Depth=0.79" Tc=10.0 min CN=0/98 Runoff=0.04 cfs 0.012 af
Subcatchment108S: Basin 9	Runoff Area=13,130 sf 100.00% Impervious Runoff Depth=0.79" Tc=10.0 min CN=0/98 Runoff=0.06 cfs 0.020 af
Subcatchment109S: Basin 10	Runoff Area=22,902 sf 100.00% Impervious Runoff Depth=0.79" Tc=10.0 min CN=0/98 Runoff=0.10 cfs 0.035 af
Subcatchment110S: Basin 11	Runoff Area=25,748 sf 100.00% Impervious Runoff Depth=0.79" Tc=10.0 min CN=0/98 Runoff=0.12 cfs 0.039 af
Subcatchment111S: Basin 12	Runoff Area=5,562 sf 100.00% Impervious Runoff Depth=0.79" Tc=10.0 min CN=0/98 Runoff=0.02 cfs 0.008 af
Subcatchment112S: Basin 13	Runoff Area=4,702 sf 100.00% Impervious Runoff Depth=0.79" Tc=10.0 min CN=0/98 Runoff=0.02 cfs 0.007 af
Subcatchment113S: Basin 14	Runoff Area=7,669 sf 100.00% Impervious Runoff Depth=0.79" Tc=10.0 min CN=0/98 Runoff=0.03 cfs 0.012 af
Subcatchment114S: Basin 15	Runoff Area=7,261 sf 100.00% Impervious Runoff Depth=0.79" Tc=10.0 min CN=0/98 Runoff=0.03 cfs 0.011 af
Subcatchment115S: Basin 16	Runoff Area=7,066 sf 100.00% Impervious Runoff Depth=0.79" Tc=10.0 min CN=0/98 Runoff=0.03 cfs 0.011 af
Subcatchment116S: Basin 17	Runoff Area=26,003 sf 100.00% Impervious Runoff Depth=0.79" Tc=10.0 min CN=0/98 Runoff=0.12 cfs 0.039 af

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Subcatchment 117S: Basin 18	Runoff Area=23,761 sf 100.00% Impervious Runoff Depth=0.79" Tc=10.0 min CN=0/98 Runoff=0.11 cfs 0.036 af
Subcatchment 118S: Basin 19	Runoff Area=7,309 sf 100.00% Impervious Runoff Depth=0.79" Tc=10.0 min CN=0/98 Runoff=0.03 cfs 0.011 af
Subcatchment 119S: Basin 20	Runoff Area=7,535 sf 100.00% Impervious Runoff Depth=0.79" Tc=10.0 min CN=0/98 Runoff=0.03 cfs 0.011 af
Subcatchment 120S: Basin 21	Runoff Area=6,846 sf 100.00% Impervious Runoff Depth=0.79" Tc=10.0 min CN=0/98 Runoff=0.03 cfs 0.010 af
Subcatchment 121S: Basin 22	Runoff Area=5,182 sf 100.00% Impervious Runoff Depth=0.79" Tc=10.0 min CN=0/98 Runoff=0.02 cfs 0.008 af
Subcatchment 122S: Basin 23	Runoff Area=5,456 sf 100.00% Impervious Runoff Depth=0.79" Tc=10.0 min CN=0/98 Runoff=0.02 cfs 0.008 af
Subcatchment 123S: Basin 24	Runoff Area=4,510 sf 100.00% Impervious Runoff Depth=0.79" Tc=10.0 min CN=0/98 Runoff=0.02 cfs 0.007 af
Subcatchment 124S: Basin 25	Runoff Area=13,271 sf 100.00% Impervious Runoff Depth=0.79" Tc=10.0 min CN=0/98 Runoff=0.06 cfs 0.020 af
Subcatchment 125S: Basin 26	Runoff Area=18,452 sf 100.00% Impervious Runoff Depth=0.79" Tc=10.0 min CN=0/98 Runoff=0.08 cfs 0.028 af
Subcatchment 126S: Alley Basin 1	Runoff Area=9,860 sf 100.00% Impervious Runoff Depth=0.79" Tc=10.0 min CN=0/98 Runoff=0.04 cfs 0.015 af
Subcatchment 127S: Alley Basin 2	Runoff Area=7,461 sf 100.00% Impervious Runoff Depth=0.79" Tc=10.0 min CN=0/98 Runoff=0.03 cfs 0.011 af
Subcatchment 128S: Alley Basin 3	Runoff Area=6,782 sf 100.00% Impervious Runoff Depth=0.79" Tc=10.0 min CN=0/98 Runoff=0.03 cfs 0.010 af
Subcatchment 129S: Alley Basin 4	Runoff Area=6,970 sf 100.00% Impervious Runoff Depth=0.79" Tc=10.0 min CN=0/98 Runoff=0.03 cfs 0.011 af
Subcatchment 168S: Future Lots	Runoff Area=64,223 sf 37.85% Impervious Runoff Depth=0.58" Tc=10.0 min CN=93/98 Runoff=0.19 cfs 0.071 af
Subcatchment 169S: Swale 2	Runoff Area=67 sf 100.00% Impervious Runoff Depth=0.79" Tc=0.0 min CN=0/98 Runoff=0.00 cfs 0.000 af
Subcatchment 170S: Swale 1	Runoff Area=72 sf 100.00% Impervious Runoff Depth=0.79" Tc=0.0 min CN=0/98 Runoff=0.00 cfs 0.000 af
Reach 39R: Post-Construction Peak Flow	Inflow=2.01 cfs 1.113 af Outflow=2.01 cfs 1.113 af

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Reach 42R: Pre-Construction Peak Flow	Inflow=0.50 cfs 0.551 af Outflow=0.50 cfs 0.551 af
Reach 58R: 1	Inflow=2.01 cfs 1.113 af Outflow=2.01 cfs 1.113 af
Reach 85R: 1	Inflow=1.99 cfs 1.102 af Outflow=1.99 cfs 1.102 af
Reach 130R: 1	Inflow=0.51 cfs 0.186 af Outflow=0.51 cfs 0.186 af
Reach 131R: 1	Inflow=0.51 cfs 0.186 af Outflow=0.51 cfs 0.186 af
Reach 132R: 1	Inflow=0.29 cfs 0.108 af Outflow=0.29 cfs 0.108 af
Reach 133R: 1	Inflow=0.07 cfs 0.023 af Outflow=0.07 cfs 0.023 af
Reach 134R: 1	Inflow=2.32 cfs 0.855 af Outflow=2.32 cfs 0.855 af
Reach 135R: 1	Inflow=0.37 cfs 0.140 af Outflow=0.37 cfs 0.140 af
Reach 136R: 1	Inflow=0.22 cfs 0.081 af Outflow=0.22 cfs 0.081 af
Reach 137R: 1	Inflow=0.15 cfs 0.054 af Outflow=0.15 cfs 0.054 af
Reach 138R: 1	Inflow=0.08 cfs 0.028 af Outflow=0.08 cfs 0.028 af
Reach 139R: 1	Inflow=1.89 cfs 0.695 af Outflow=1.89 cfs 0.695 af
Reach 140R: 1	Inflow=0.04 cfs 0.015 af Outflow=0.04 cfs 0.015 af
Reach 141R: 1	Inflow=0.03 cfs 0.011 af Outflow=0.03 cfs 0.011 af
Reach 142R: 1	Inflow=1.79 cfs 0.658 af Outflow=1.79 cfs 0.658 af
Reach 143R: 1	Inflow=0.36 cfs 0.133 af Outflow=0.36 cfs 0.133 af

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Reach 144R: 1	Inflow=0.25 cfs 0.094 af Outflow=0.25 cfs 0.094 af
Reach 145R: 1	Inflow=0.25 cfs 0.094 af Outflow=0.25 cfs 0.094 af
Reach 146R: 1	Inflow=1.43 cfs 0.525 af Outflow=1.43 cfs 0.525 af
Reach 147R: 1	Inflow=0.03 cfs 0.010 af Outflow=0.03 cfs 0.010 af
Reach 148R: 1	Inflow=1.40 cfs 0.515 af Outflow=1.40 cfs 0.515 af
Reach 149R: 1	Inflow=0.36 cfs 0.131 af Outflow=0.36 cfs 0.131 af
Reach 150R: 1	Inflow=0.24 cfs 0.088 af Outflow=0.24 cfs 0.088 af
Reach 151R: 1	Inflow=0.19 cfs 0.071 af Outflow=0.19 cfs 0.071 af
Reach 152R: 1	Inflow=0.98 cfs 0.360 af Outflow=0.98 cfs 0.360 af
Reach 153R: 1	Inflow=0.03 cfs 0.011 af Outflow=0.03 cfs 0.011 af
Reach 154R: 1	Inflow=0.94 cfs 0.349 af Outflow=0.94 cfs 0.349 af
Reach 155R: 1	Inflow=0.33 cfs 0.123 af Outflow=0.33 cfs 0.123 af
Reach 158R: 1	Inflow=1.95 cfs 0.715 af Outflow=1.95 cfs 0.715 af
Reach 159R: 1	Inflow=1.86 cfs 0.684 af Outflow=1.86 cfs 0.684 af
Reach 160R: 1	Inflow=0.23 cfs 0.084 af Outflow=0.23 cfs 0.084 af
Reach 162R: 1	Inflow=0.55 cfs 0.203 af Outflow=0.55 cfs 0.203 af
Reach 163R: 1	Inflow=0.53 cfs 0.197 af Outflow=0.53 cfs 0.197 af

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Reach 165R: 1Inflow=0.19 cfs 0.070 af
Outflow=0.19 cfs 0.070 af**Reach 166R: Basin Future**Inflow=0.19 cfs 0.071 af
Outflow=0.19 cfs 0.071 af**Pond 54P: Stormwater Swale 2**Peak Elev=222.33' Storage=27 cf Inflow=0.02 cfs 0.005 af
Outflow=0.01 cfs 0.005 af**Pond 60P: Stormwater Swale 1**Peak Elev=221.97' Storage=28 cf Inflow=0.02 cfs 0.006 af
Outflow=0.01 cfs 0.006 af**Pond 63P: Detention Pond**Peak Elev=221.50' Storage=5,053 cf Inflow=3.01 cfs 1.103 af
Outflow=1.99 cfs 1.102 af

Total Runoff Area = 46.412 ac Runoff Volume = 1.665 af Average Runoff Depth = 0.43"
81.58% Pervious = 37.863 ac 18.42% Impervious = 8.549 ac

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Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Subcatchment 64S: Home Basin 20

Runoff = 0.02 cfs @ 8.00 hrs, Volume= 0.009 af, Depth= 0.45"
 Routed to Reach 143R : 1

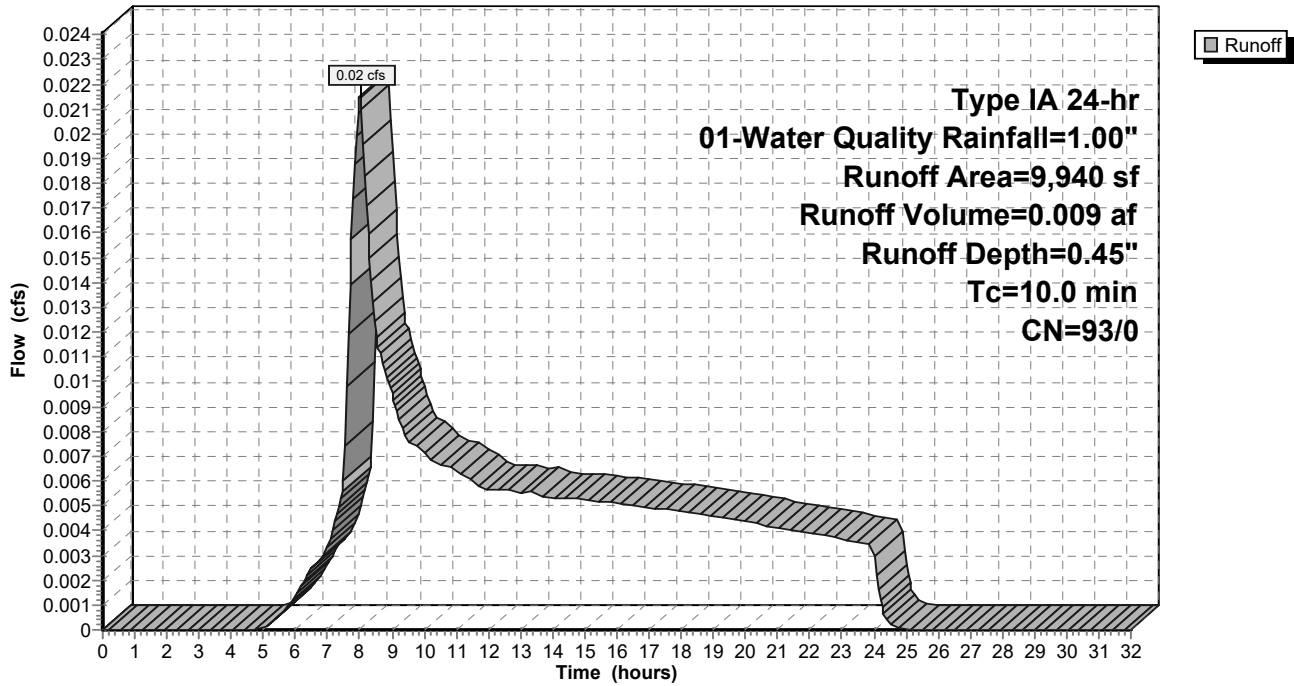
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 01-Water Quality Rainfall=1.00"

Area (sf)	CN	Description
* 9,940	93	70% Lot Coverage Weighted
9,940	93	100.00% Pervious Area

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

Subcatchment 64S: Home Basin 20

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Subcatchment 65S: Single Pond Existing Conditions

Runoff = 0.49 cfs @ 9.15 hrs, Volume= 0.547 af, Depth> 0.28"
 Routed to Reach 42R : Pre-Construction Peak Flow

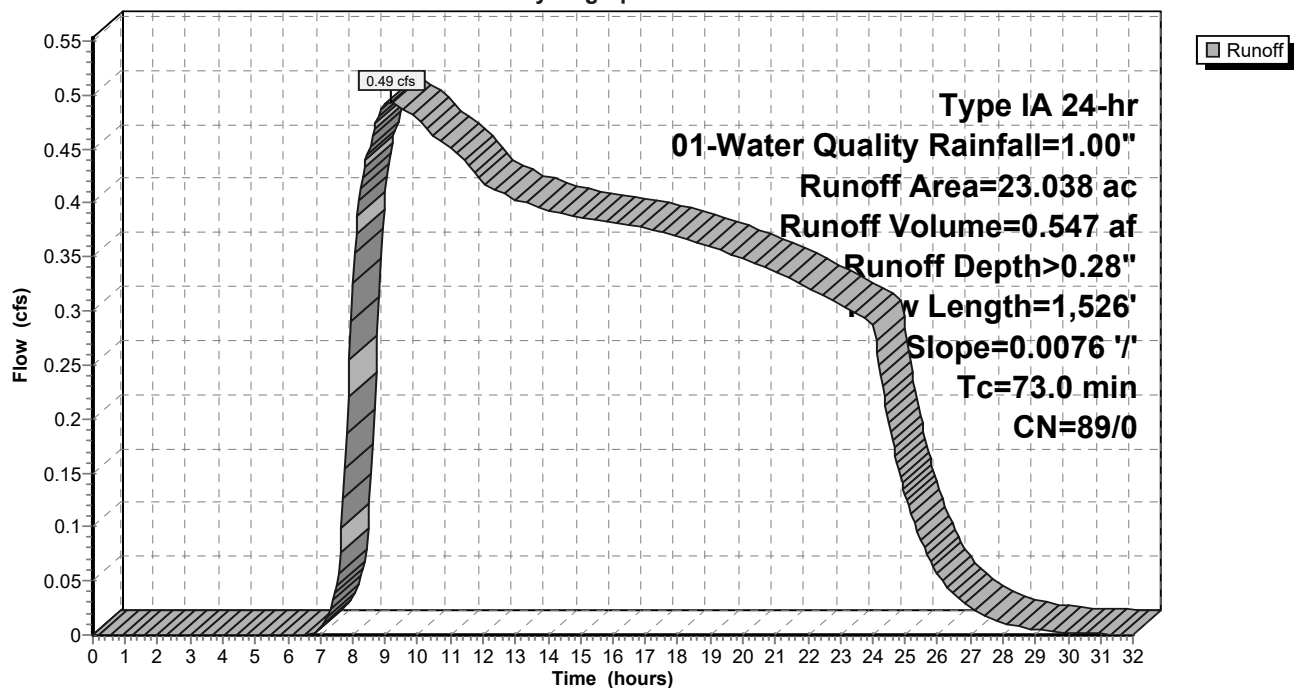
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 01-Water Quality Rainfall=1.00"

Area (ac)	CN	Description
23.038	89	Pasture/grassland/range, Poor, HSG D
23.038	89	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
39.5	300	0.0076	0.13		Sheet Flow, Grass: Short n= 0.150 P2= 2.47"
33.5	1,226	0.0076	0.61		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
73.0	1,526	Total			

Subcatchment 65S: Single Pond Existing Conditions

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Subcatchment 67S: Home Basin 19

Runoff = 0.04 cfs @ 8.00 hrs, Volume= 0.015 af, Depth= 0.45"
 Routed to Reach 159R : 1

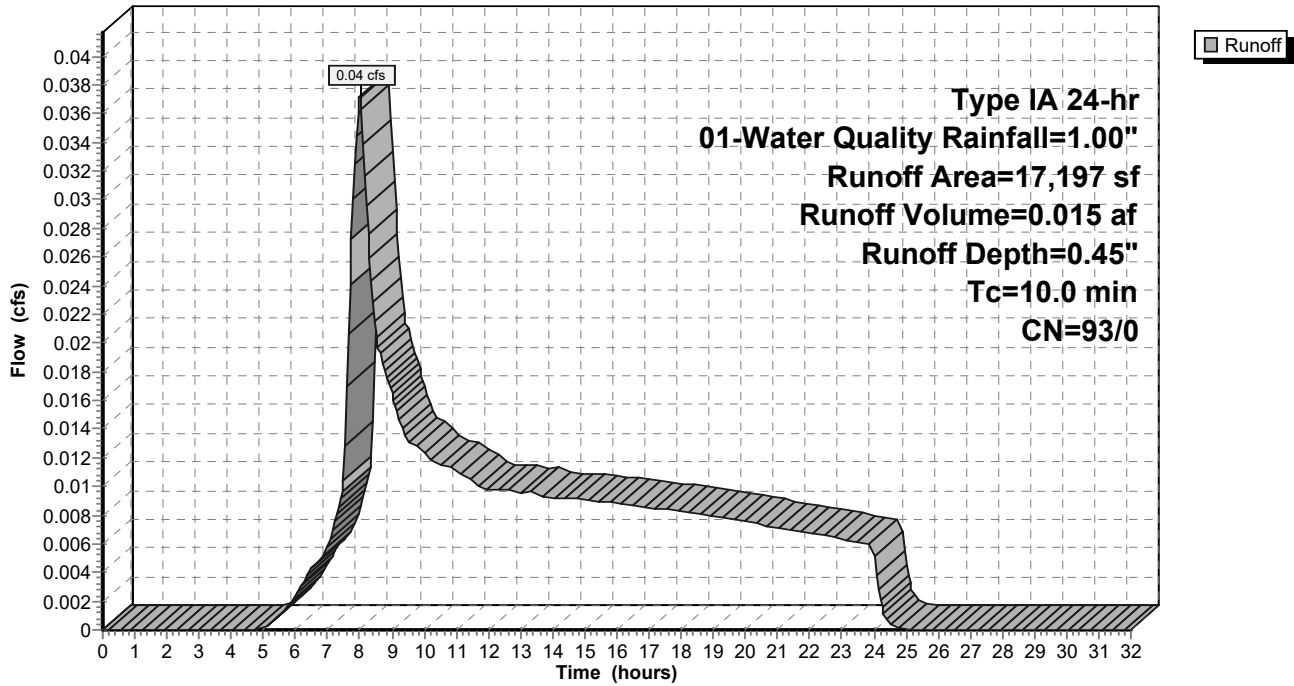
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 01-Water Quality Rainfall=1.00"

Area (sf)	CN	Description
* 17,197	93	70% Lot Coverage Weighted
17,197	93	100.00% Pervious Area

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

Subcatchment 67S: Home Basin 19

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Subcatchment 68S: Home Basin 12

Runoff = 0.04 cfs @ 8.00 hrs, Volume= 0.016 af, Depth= 0.45"
 Routed to Reach 160R : 1

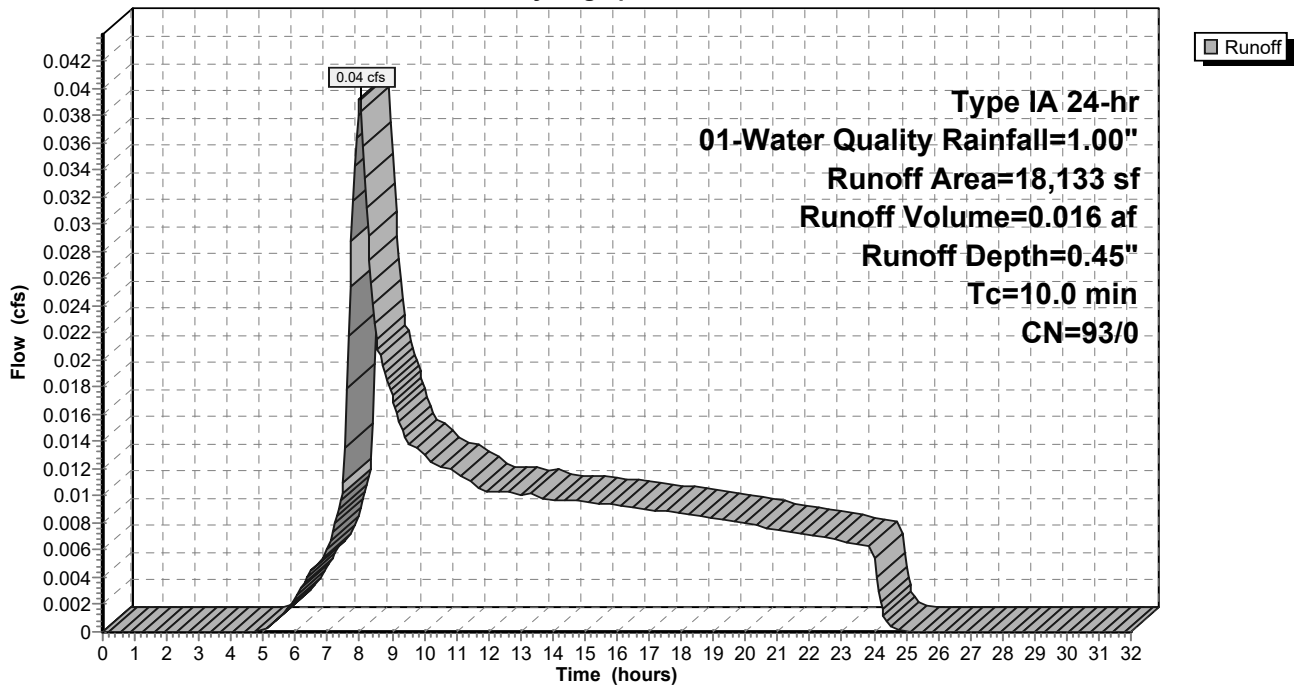
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 01-Water Quality Rainfall=1.00"

Area (sf)	CN	Description
* 18,133	93	70% Lot Coverage Weighted
18,133	93	100.00% Pervious Area

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

Subcatchment 68S: Home Basin 12

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Subcatchment 69S: Home Basin 17

Runoff = 0.04 cfs @ 8.00 hrs, Volume= 0.014 af, Depth= 0.45"
 Routed to Reach 151R : 1

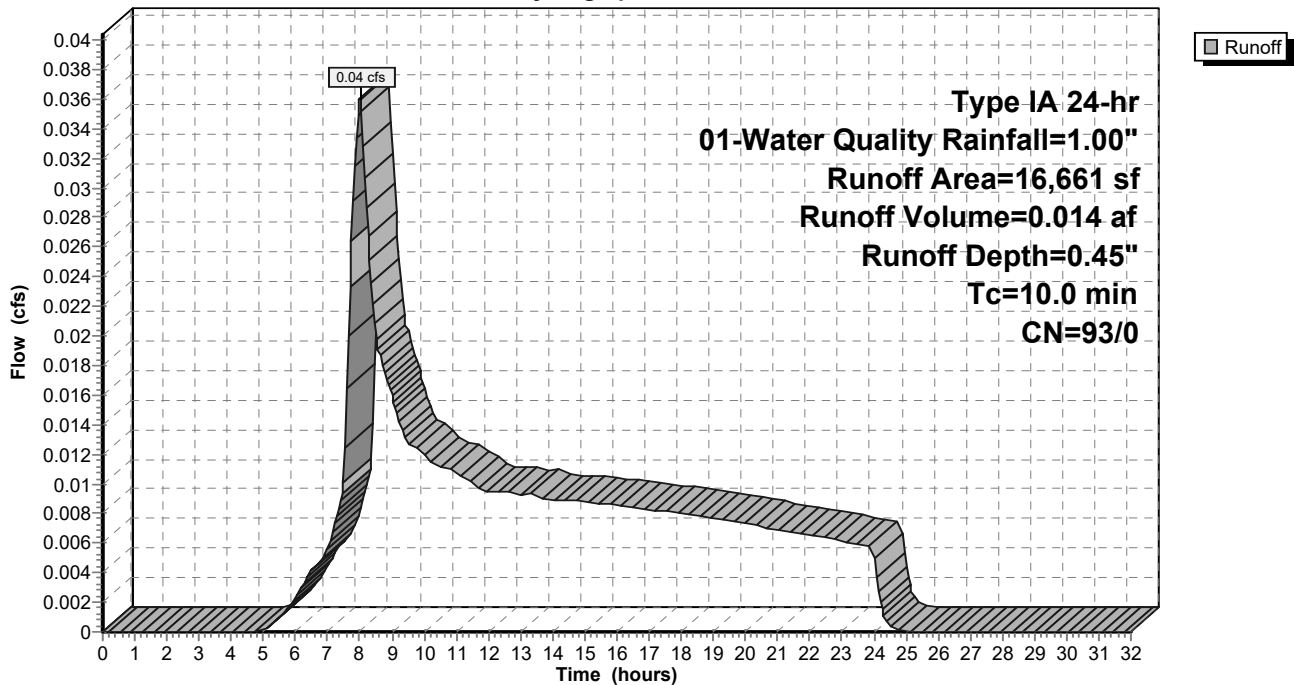
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 01-Water Quality Rainfall=1.00"

Area (sf)	CN	Description
* 16,661	93	70% Lot Coverage Weighted
16,661	93	100.00% Pervious Area

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

Subcatchment 69S: Home Basin 17

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Subcatchment 70S: Home Basin 18

Runoff = 0.03 cfs @ 8.00 hrs, Volume= 0.010 af, Depth= 0.45"
 Routed to Reach 149R : 1

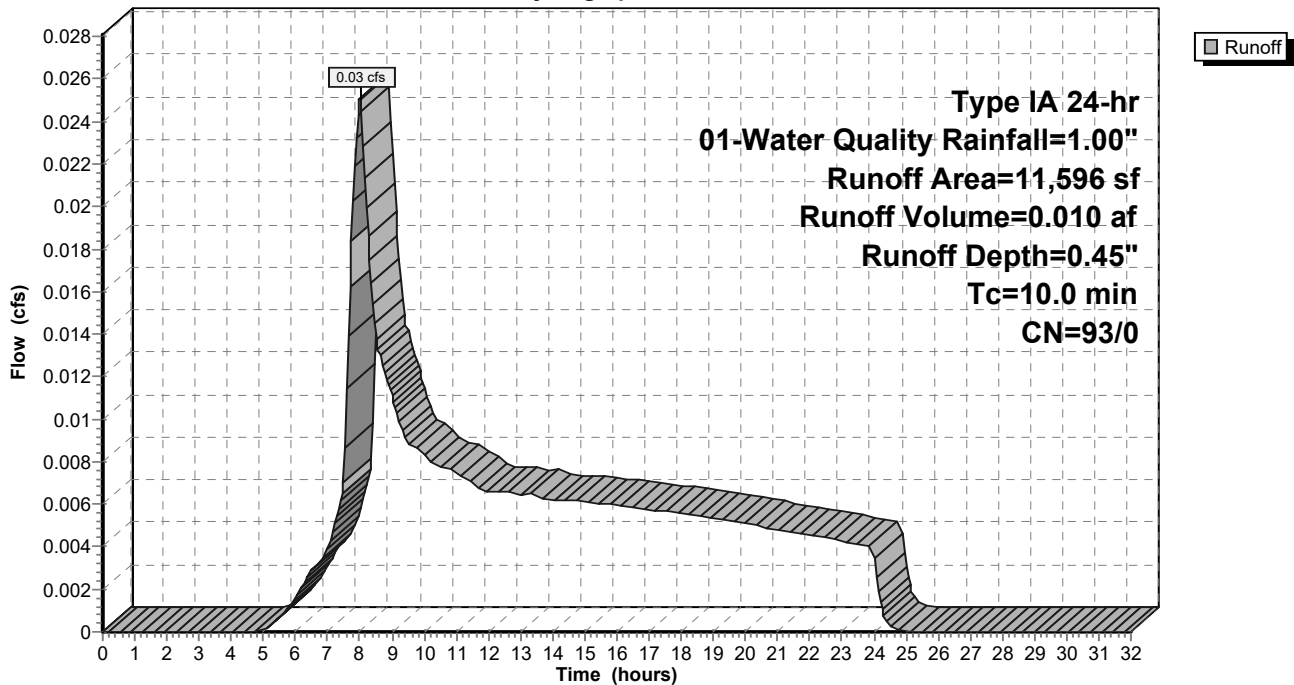
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 01-Water Quality Rainfall=1.00"

Area (sf)	CN	Description
* 11,596	93	70% Lot Coverage Weighted
11,596	93	100.00% Pervious Area

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

Subcatchment 70S: Home Basin 18

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Subcatchment 71S: Home Basin 14

Runoff = 0.04 cfs @ 8.00 hrs, Volume= 0.014 af, Depth= 0.45"
 Routed to Reach 148R : 1

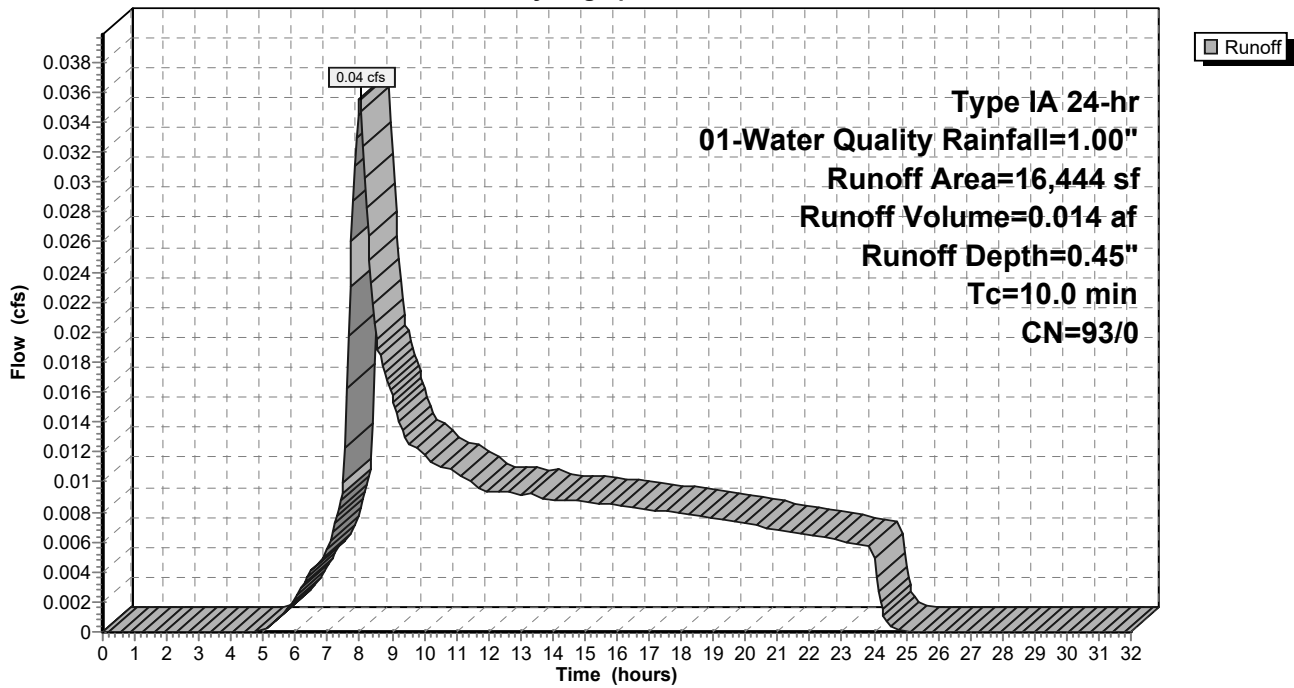
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 01-Water Quality Rainfall=1.00"

Area (sf)	CN	Description
* 16,444	93	70% Lot Coverage Weighted
16,444	93	100.00% Pervious Area

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

Subcatchment 71S: Home Basin 14

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Subcatchment 72S: Home Basin 16

Runoff = 0.04 cfs @ 8.00 hrs, Volume= 0.017 af, Depth= 0.45"
 Routed to Reach 150R : 1

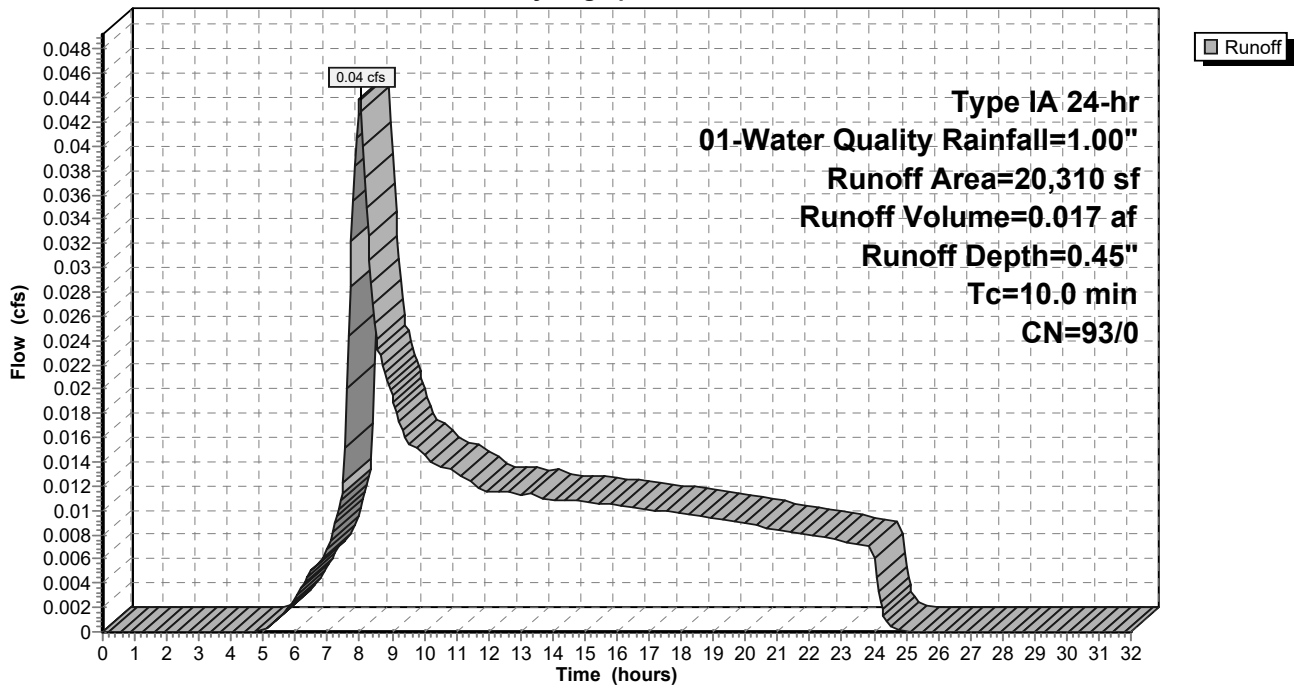
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 01-Water Quality Rainfall=1.00"

Area (sf)	CN	Description
* 20,310	93	70% Lot Coverage Weighted
20,310	93	100.00% Pervious Area

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

Subcatchment 72S: Home Basin 16

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Subcatchment 73S: Home Basin 13

Runoff = 0.02 cfs @ 8.00 hrs, Volume= 0.009 af, Depth= 0.45"
 Routed to Reach 155R : 1

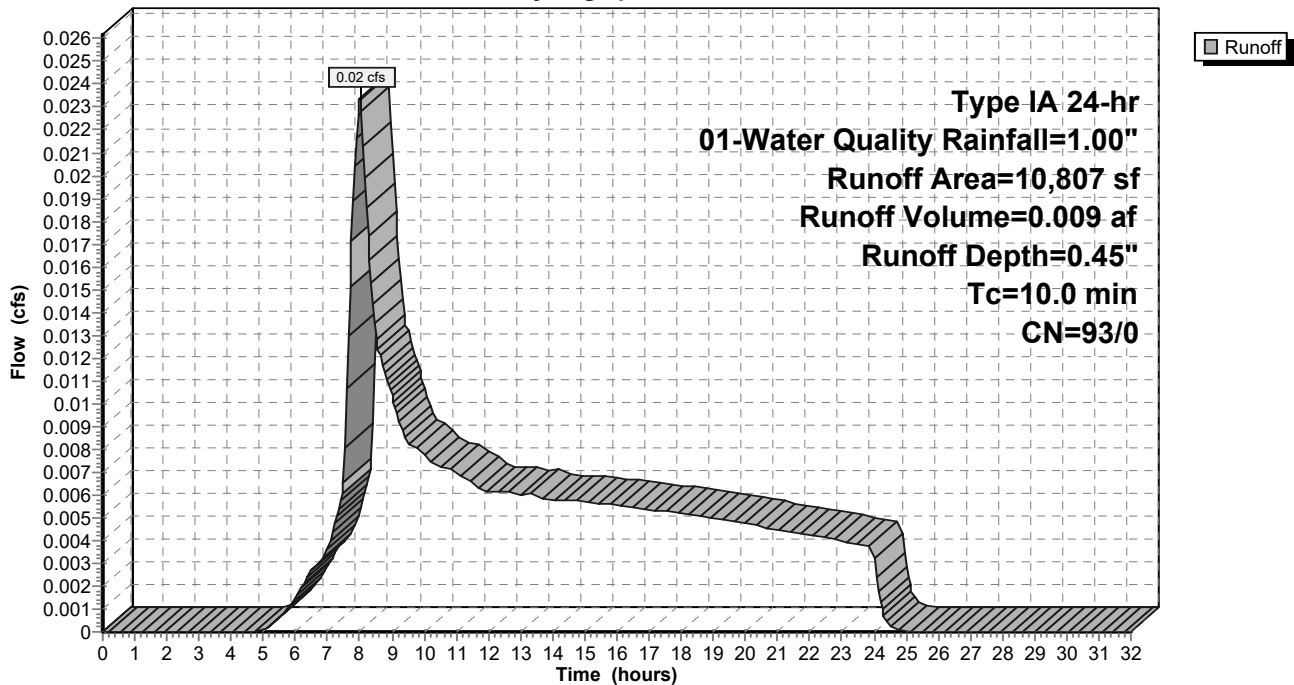
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 01-Water Quality Rainfall=1.00"

Area (sf)	CN	Description
* 10,807	93	70% Lot Coverage Weighted
10,807	93	100.00% Pervious Area

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

Subcatchment 73S: Home Basin 13

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Subcatchment 74S: Swale Existing Conditions

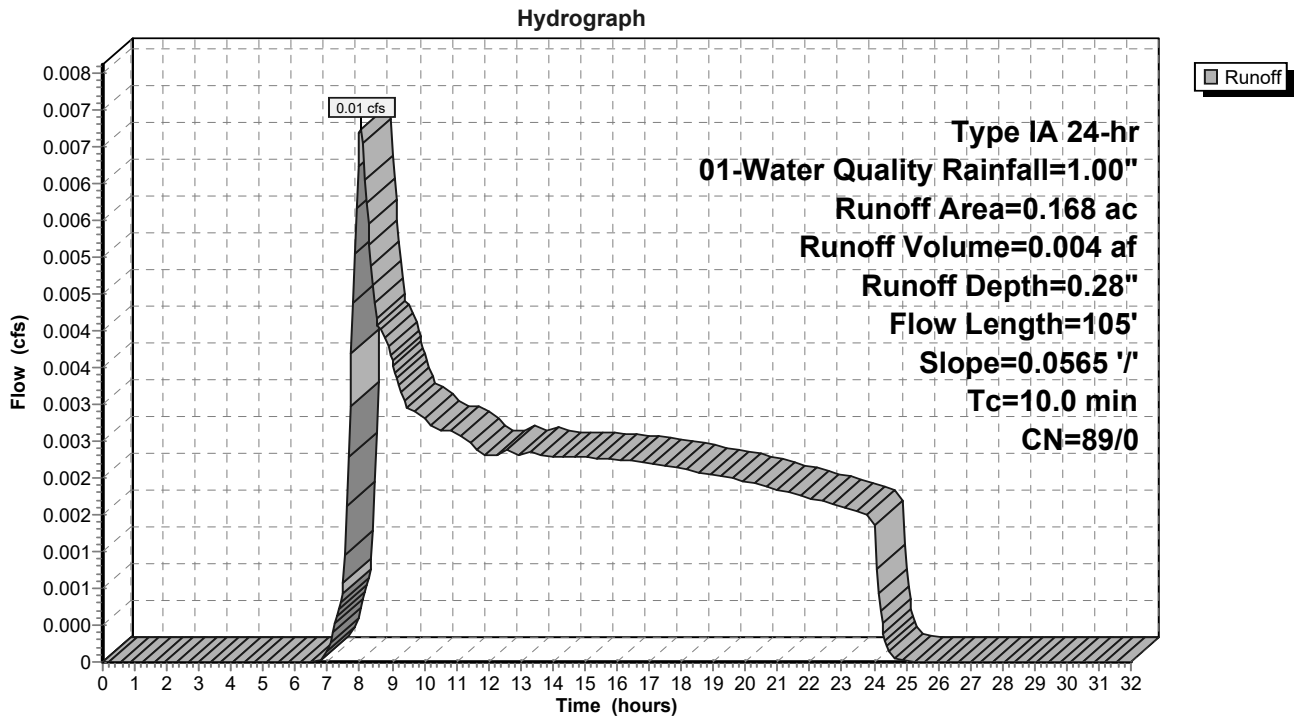
Runoff = 0.01 cfs @ 8.03 hrs, Volume= 0.004 af, Depth= 0.28"
 Routed to Reach 42R : Pre-Construction Peak Flow

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 01-Water Quality Rainfall=1.00"

Area (ac)	CN	Description
0.168	89	Pasture/grassland/range, Poor, HSG D
0.168	89	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.7	105	0.0565	0.23		Sheet Flow, Grass: Short n= 0.150 P2= 2.47"
7.7	105	Total, Increased to minimum Tc = 10.0 min			

Subcatchment 74S: Swale Existing Conditions



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Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Subcatchment 75S: Home Basin 11

Runoff = 0.04 cfs @ 8.00 hrs, Volume= 0.016 af, Depth= 0.45"
 Routed to Reach 160R : 1

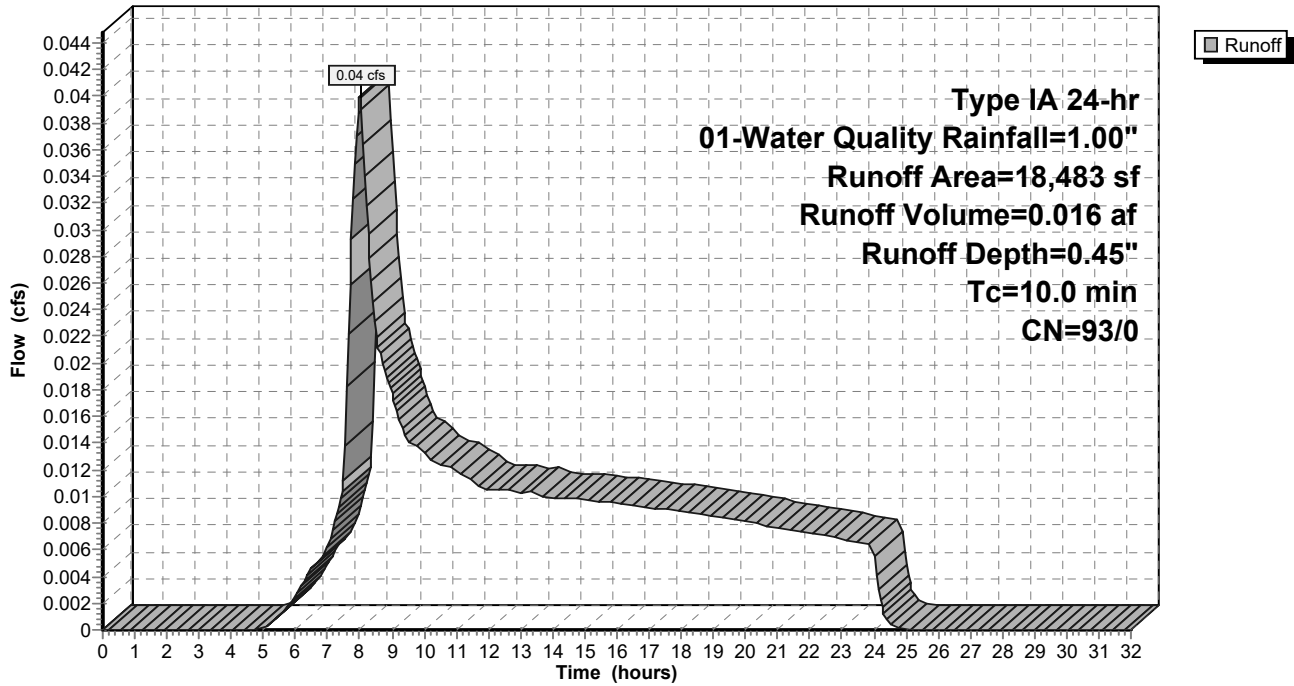
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 01-Water Quality Rainfall=1.00"

Area (sf)	CN	Description
* 18,483	93	70% Lot Coverage Weighted
18,483	93	100.00% Pervious Area

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

Subcatchment 75S: Home Basin 11

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Subcatchment 77S: Home Basin 15

Runoff = 0.03 cfs @ 8.00 hrs, Volume= 0.011 af, Depth= 0.45"
 Routed to Reach 149R : 1

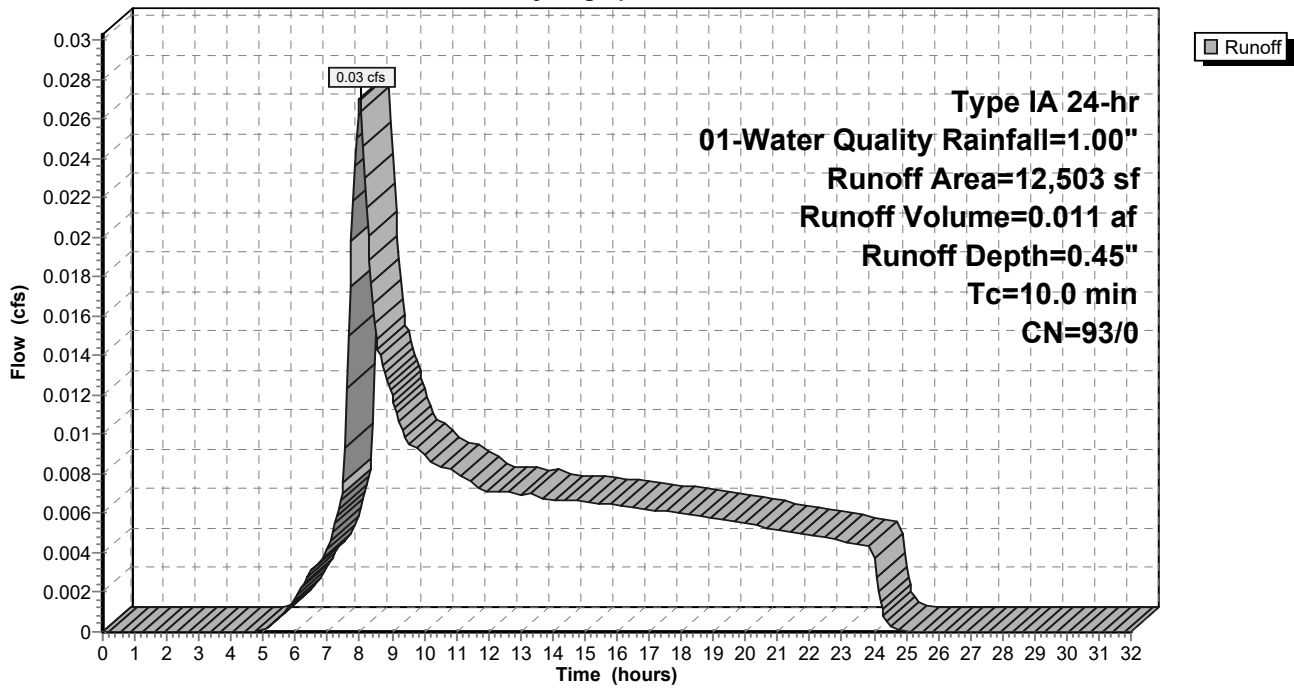
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 01-Water Quality Rainfall=1.00"

Area (sf)	CN	Description
* 12,503	93	70% Lot Coverage Weighted
12,503	93	100.00% Pervious Area

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

Subcatchment 77S: Home Basin 15

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Subcatchment 78S: Single Pond

[46] Hint: Tc=0 (Instant runoff peak depends on dt)

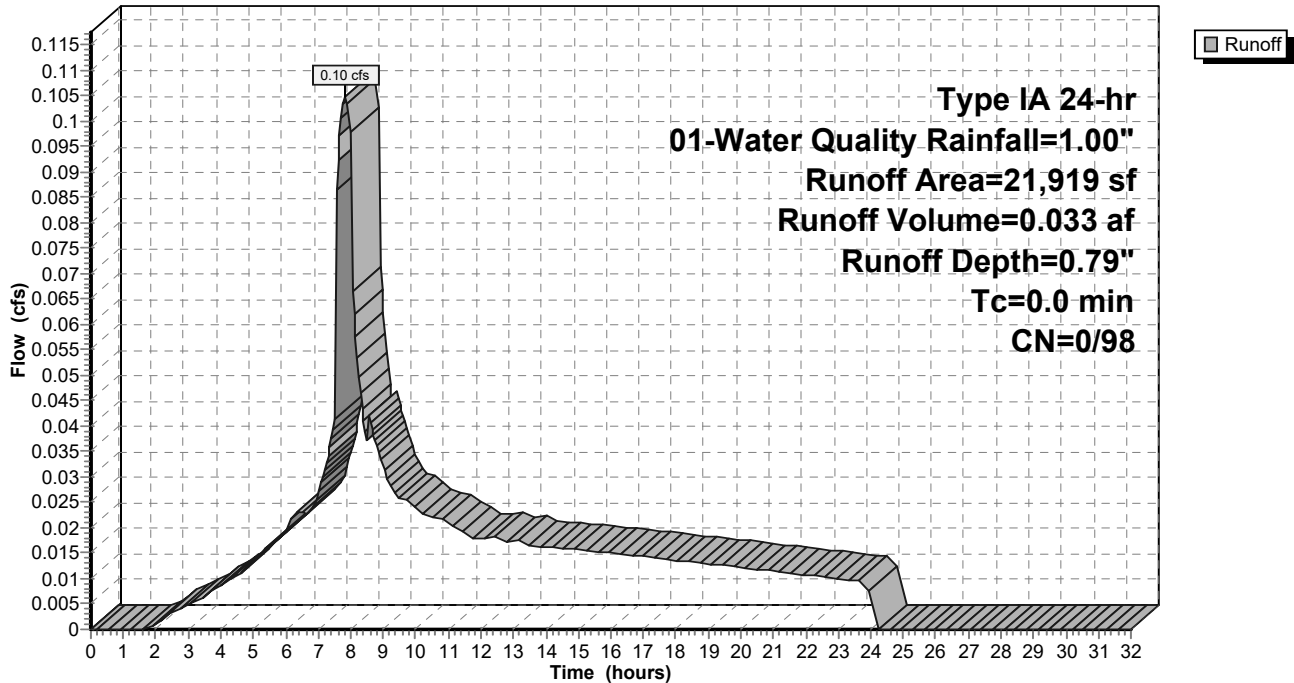
Runoff = 0.10 cfs @ 7.83 hrs, Volume= 0.033 af, Depth= 0.79"
 Routed to Pond 63P : Detention Pond

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 01-Water Quality Rainfall=1.00"

Area (sf)	CN	Description
21,919	98	Water Surface, HSG D
21,919	98	100.00% Impervious Area

Subcatchment 78S: Single Pond

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Subcatchment 79S: Home Basin 30

Runoff = 0.08 cfs @ 8.00 hrs, Volume= 0.033 af, Depth= 0.45"
 Routed to Reach 132R : 1

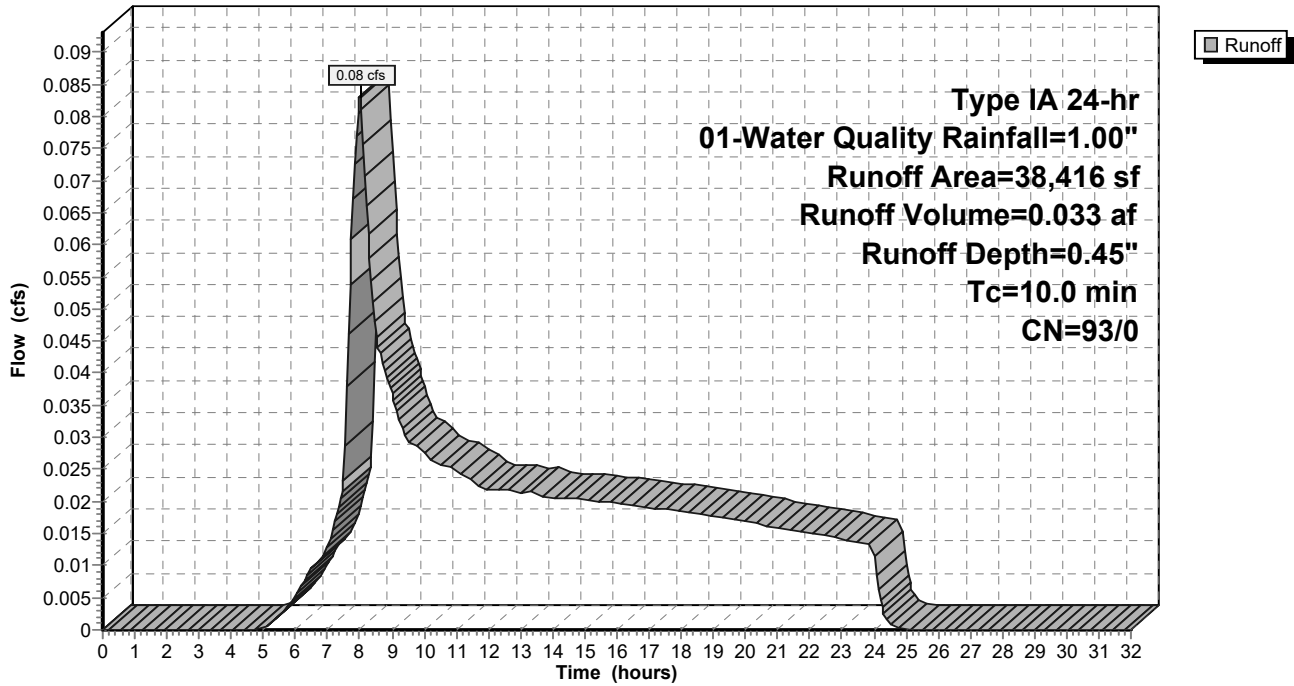
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 01-Water Quality Rainfall=1.00"

Area (sf)	CN	Description
* 38,416	93	70% Lot Coverage Weighted
38,416	93	100.00% Pervious Area

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

Subcatchment 79S: Home Basin 30

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Subcatchment 80S: Home Basin 10

Runoff = 0.03 cfs @ 8.00 hrs, Volume= 0.013 af, Depth= 0.45"
 Routed to Reach 165R : 1

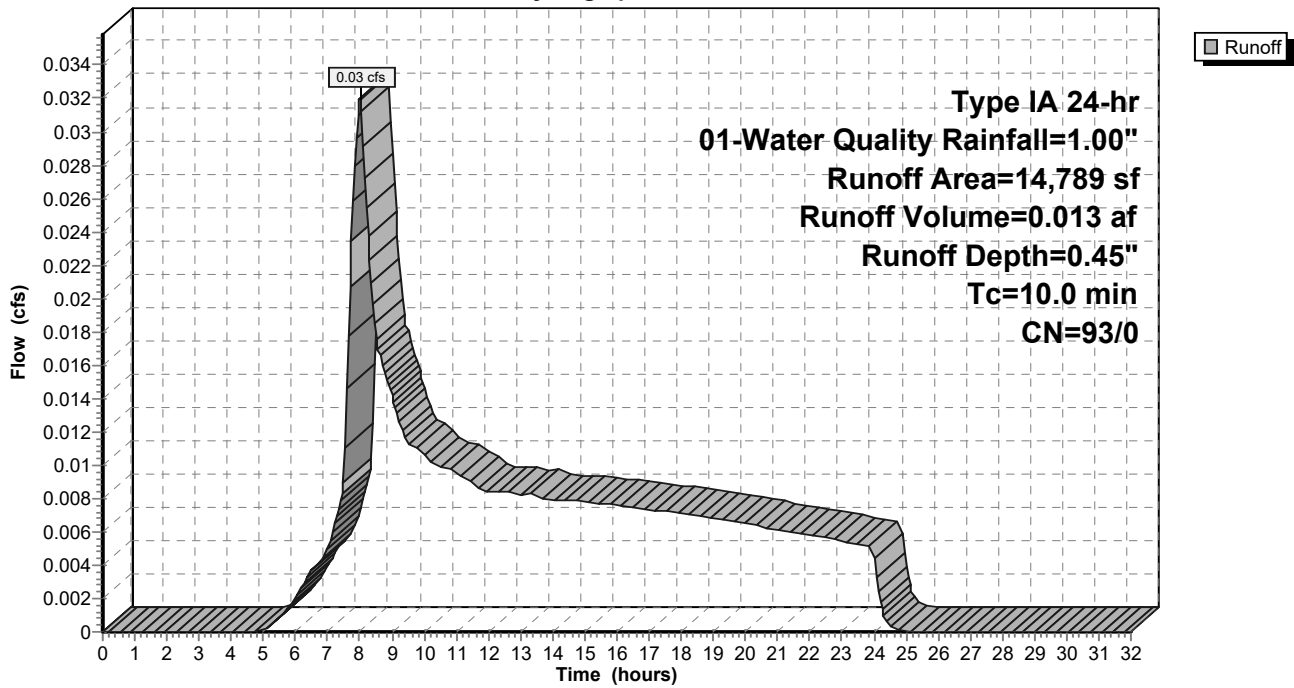
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 01-Water Quality Rainfall=1.00"

Area (sf)	CN	Description
* 14,789	93	70% Lot Coverage Weighted
14,789	93	100.00% Pervious Area

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

Subcatchment 80S: Home Basin 10

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Subcatchment 81S: Home Basin 9

Runoff = 0.03 cfs @ 8.00 hrs, Volume= 0.013 af, Depth= 0.45"
 Routed to Reach 163R : 1

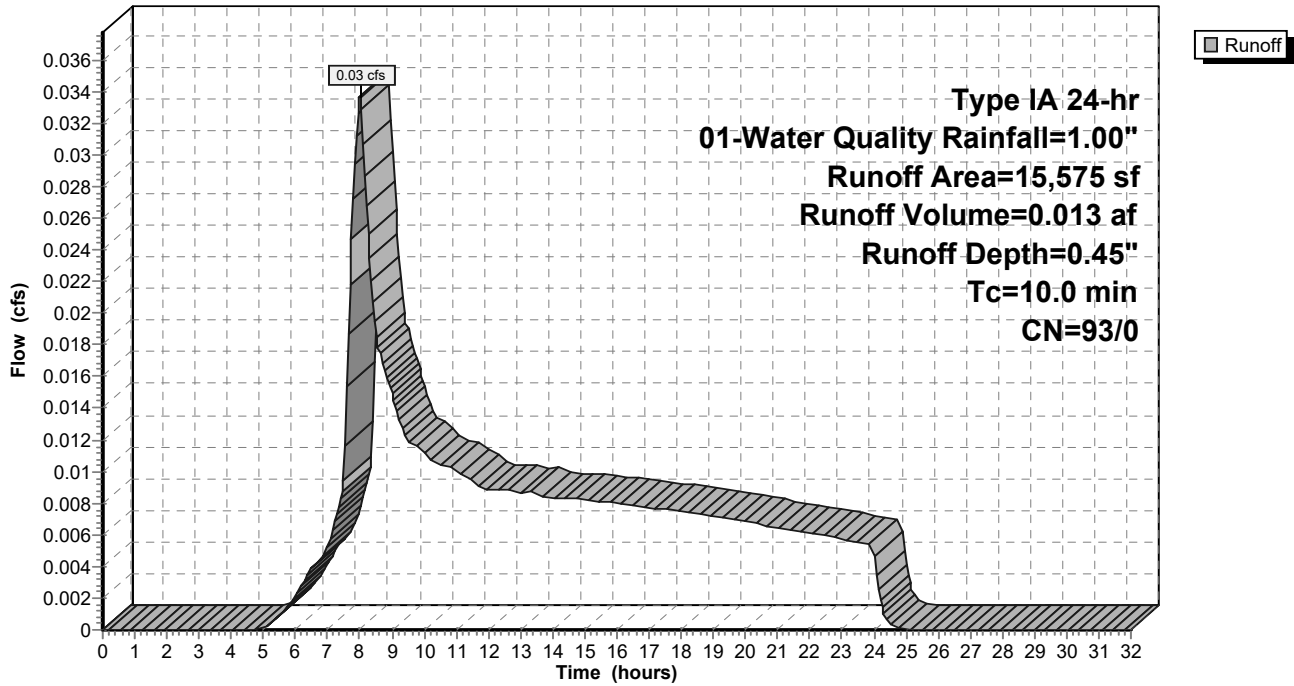
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 01-Water Quality Rainfall=1.00"

Area (sf)	CN	Description
* 15,575	93	70% Lot Coverage Weighted
15,575	93	100.00% Pervious Area

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

Subcatchment 81S: Home Basin 9

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Subcatchment 82S: Home Basin 2

Runoff = 0.04 cfs @ 8.00 hrs, Volume= 0.018 af, Depth= 0.45"
 Routed to Reach 145R : 1

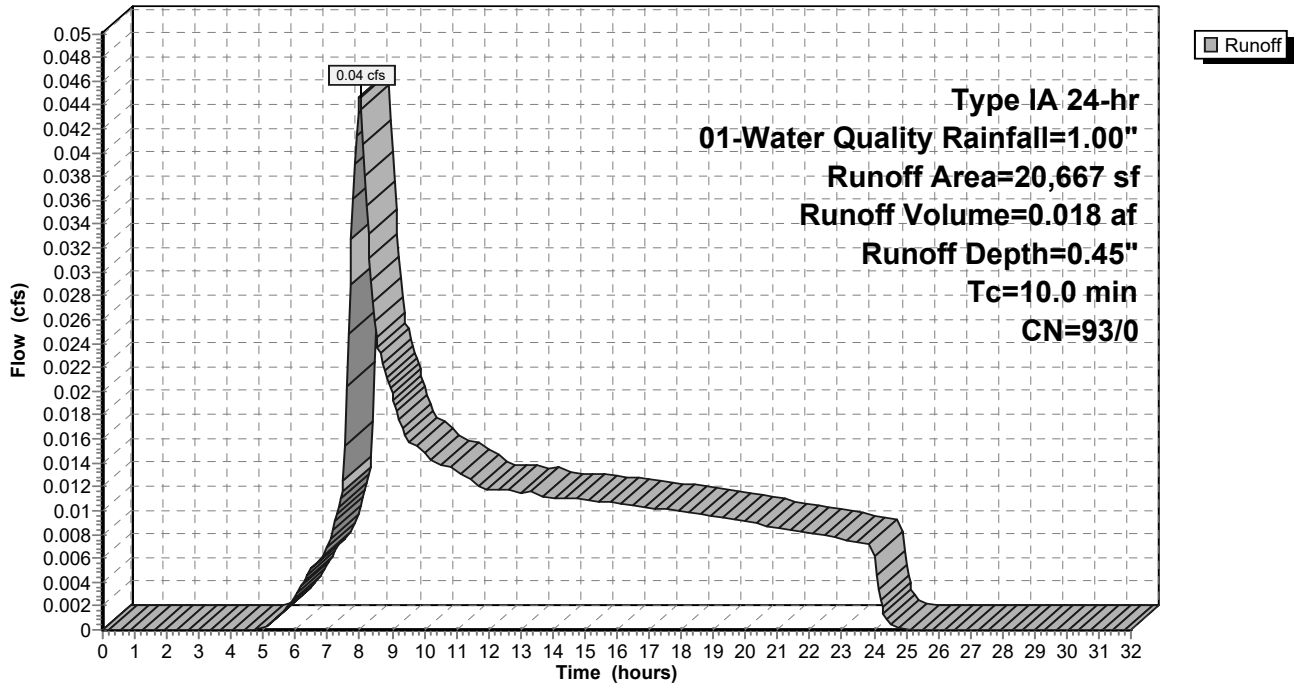
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 01-Water Quality Rainfall=1.00"

Area (sf)	CN	Description
* 20,667	93	70% Lot Coverage Weighted
20,667	93	100.00% Pervious Area

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

Subcatchment 82S: Home Basin 2

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Subcatchment 83S: Home Basin 7

Runoff = 0.04 cfs @ 8.00 hrs, Volume= 0.015 af, Depth= 0.45"
 Routed to Reach 154R : 1

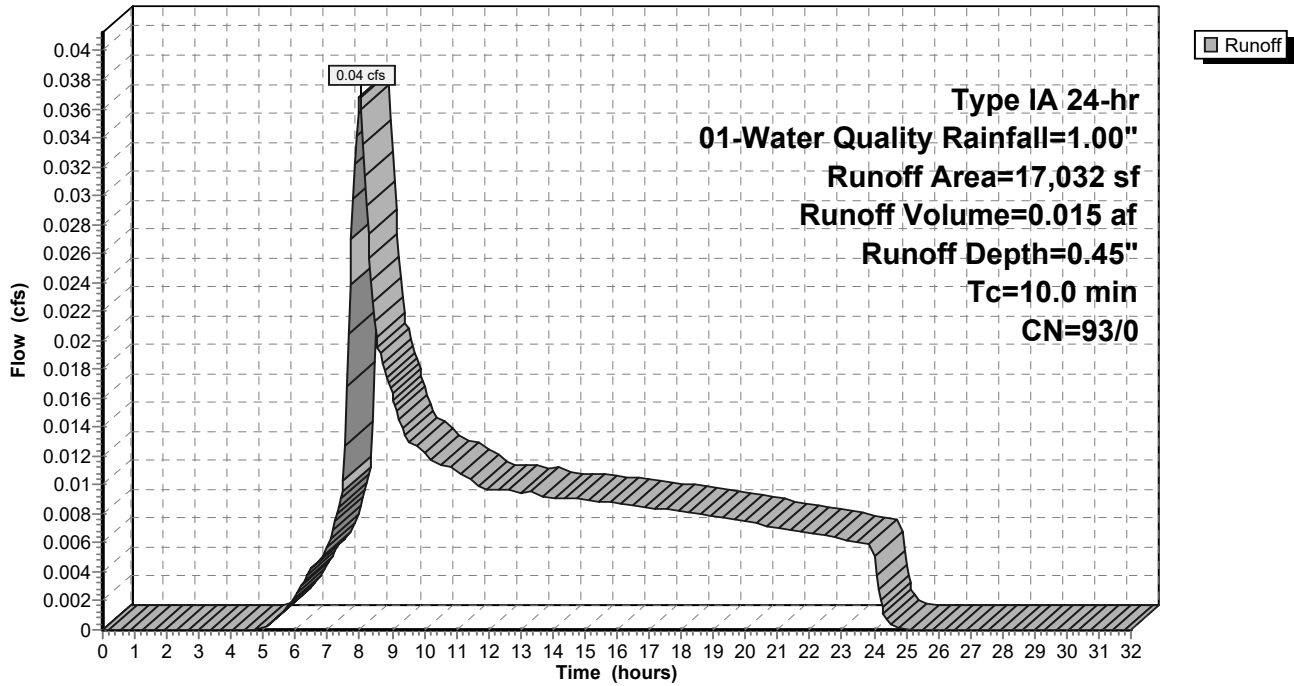
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 01-Water Quality Rainfall=1.00"

Area (sf)	CN	Description
* 17,032	93	70% Lot Coverage Weighted
17,032	93	100.00% Pervious Area

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

Subcatchment 83S: Home Basin 7

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Subcatchment 84S: Home Basin 8

Runoff = 0.03 cfs @ 8.00 hrs, Volume= 0.010 af, Depth= 0.45"
 Routed to Reach 155R : 1

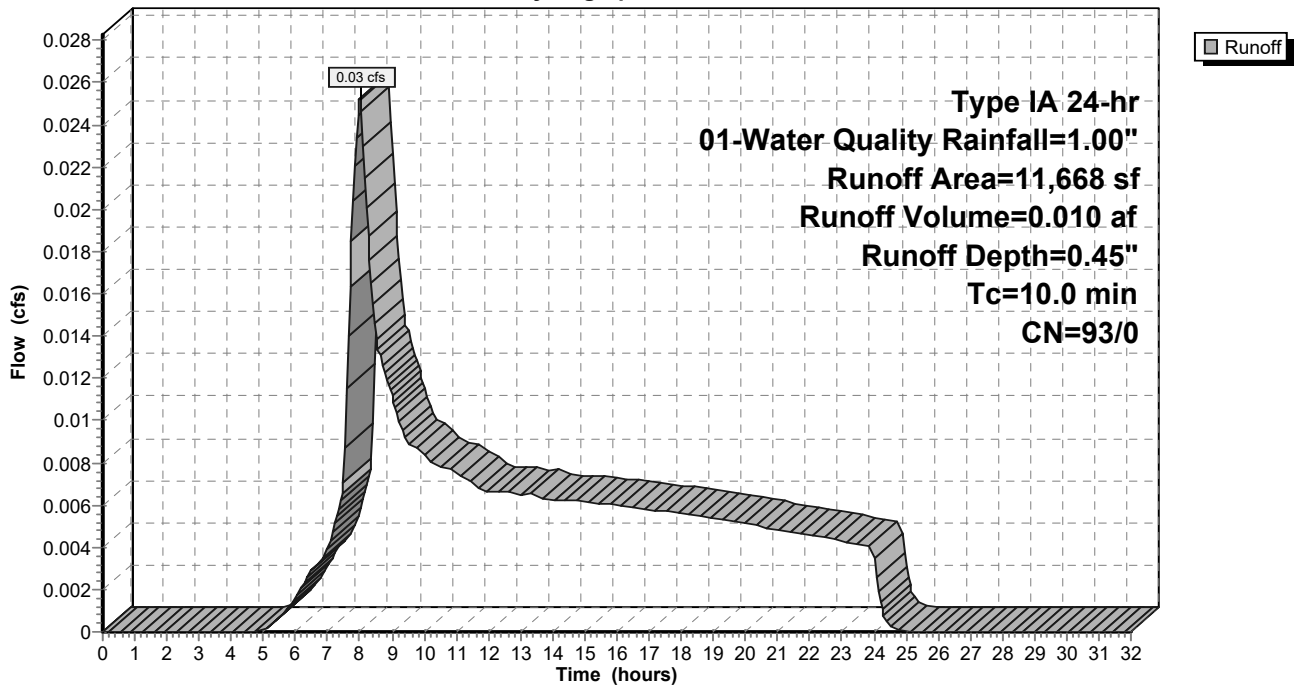
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 01-Water Quality Rainfall=1.00"

Area (sf)	CN	Description
* 11,668	93	70% Lot Coverage Weighted
11,668	93	100.00% Pervious Area

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

Subcatchment 84S: Home Basin 8

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Subcatchment 85S: Home Basin 29

Runoff = 0.05 cfs @ 8.00 hrs, Volume= 0.022 af, Depth= 0.45"
 Routed to Reach 132R : 1

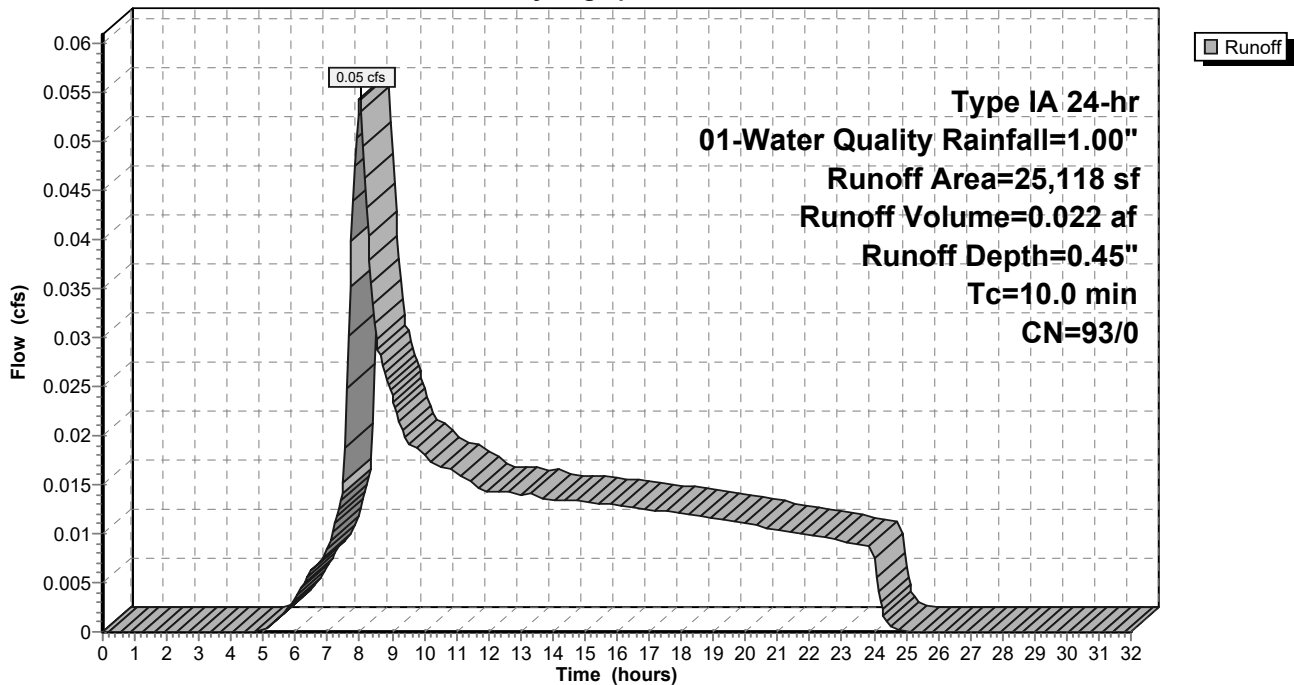
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 01-Water Quality Rainfall=1.00"

Area (sf)	CN	Description
* 25,118	93	70% Lot Coverage Weighted
25,118	93	100.00% Pervious Area

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

Subcatchment 85S: Home Basin 29

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Subcatchment 86S: Home Basin 22

Runoff = 0.03 cfs @ 8.00 hrs, Volume= 0.014 af, Depth= 0.45"
 Routed to Reach 145R : 1

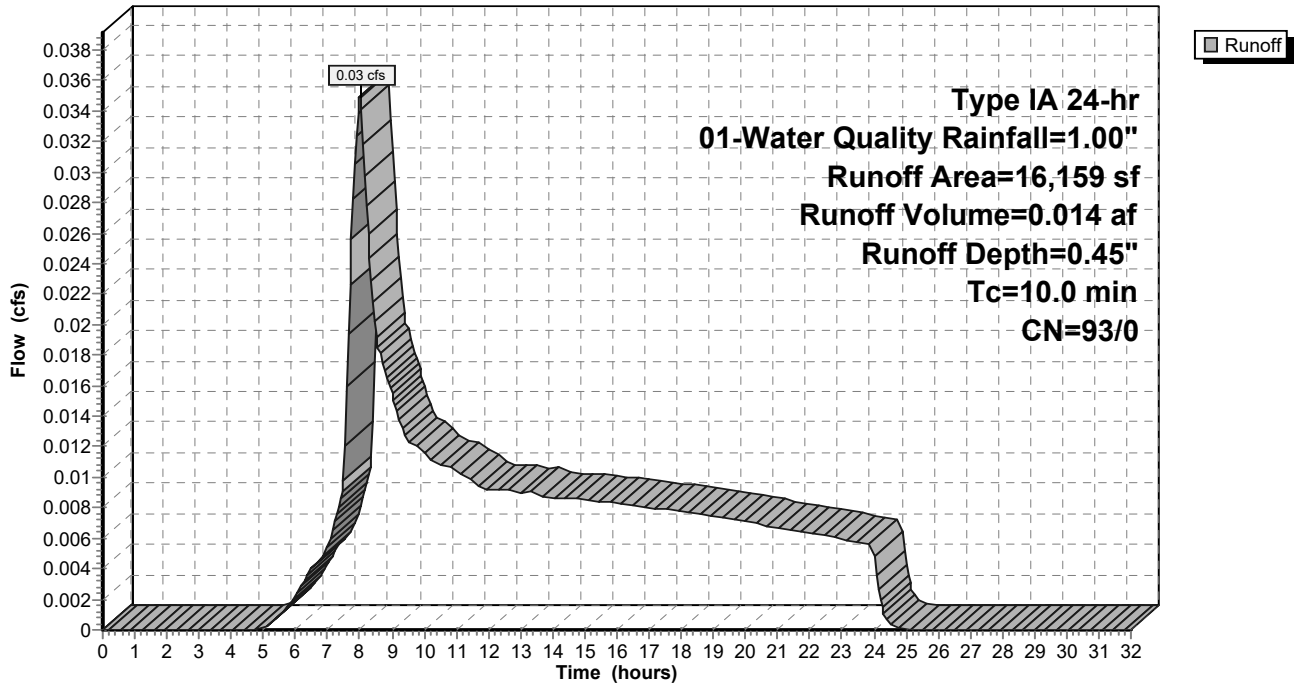
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 01-Water Quality Rainfall=1.00"

Area (sf)	CN	Description
* 16,159	93	70% Lot Coverage Weighted
16,159	93	100.00% Pervious Area

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

Subcatchment 86S: Home Basin 22

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Subcatchment 87S: Home Basin 27

Runoff = 0.05 cfs @ 8.00 hrs, Volume= 0.021 af, Depth= 0.45"
 Routed to Reach 135R : 1

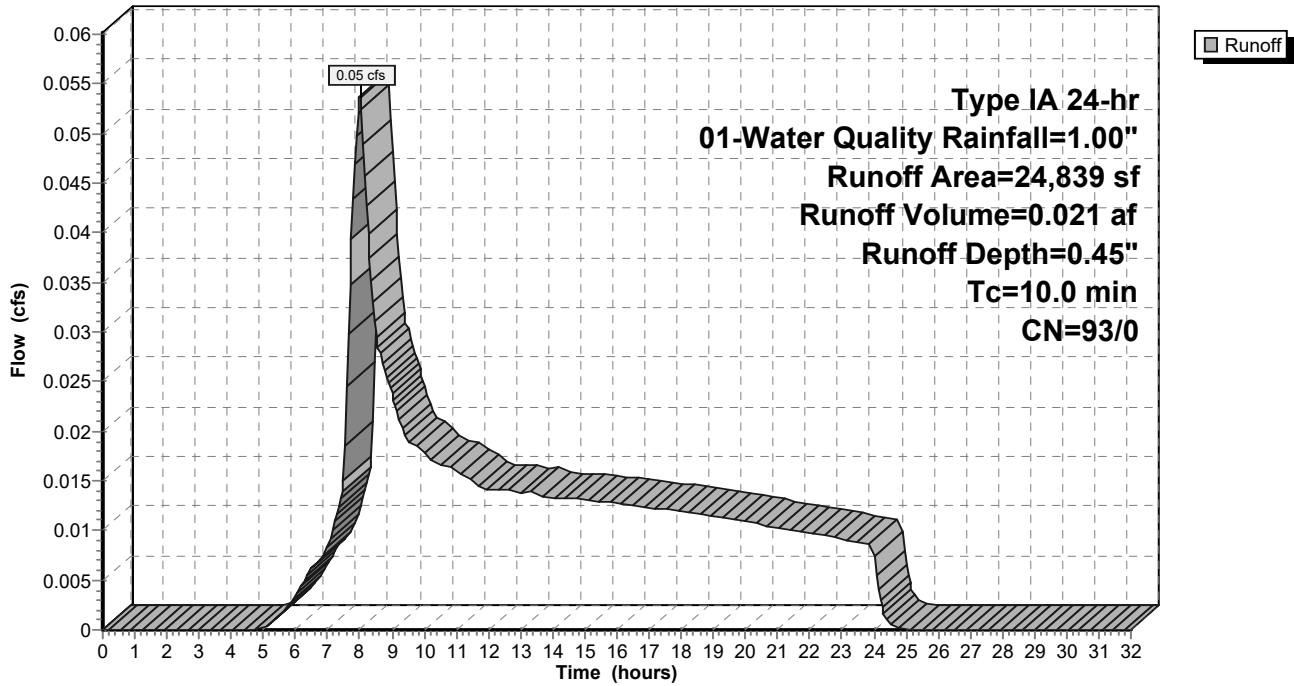
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 01-Water Quality Rainfall=1.00"

Area (sf)	CN	Description
* 24,839	93	70% Lot Coverage Weighted
24,839	93	100.00% Pervious Area

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

Subcatchment 87S: Home Basin 27

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Subcatchment 88S: Home Basin 28

Runoff = 0.05 cfs @ 8.00 hrs, Volume= 0.022 af, Depth= 0.45"
 Routed to Reach 131R : 1

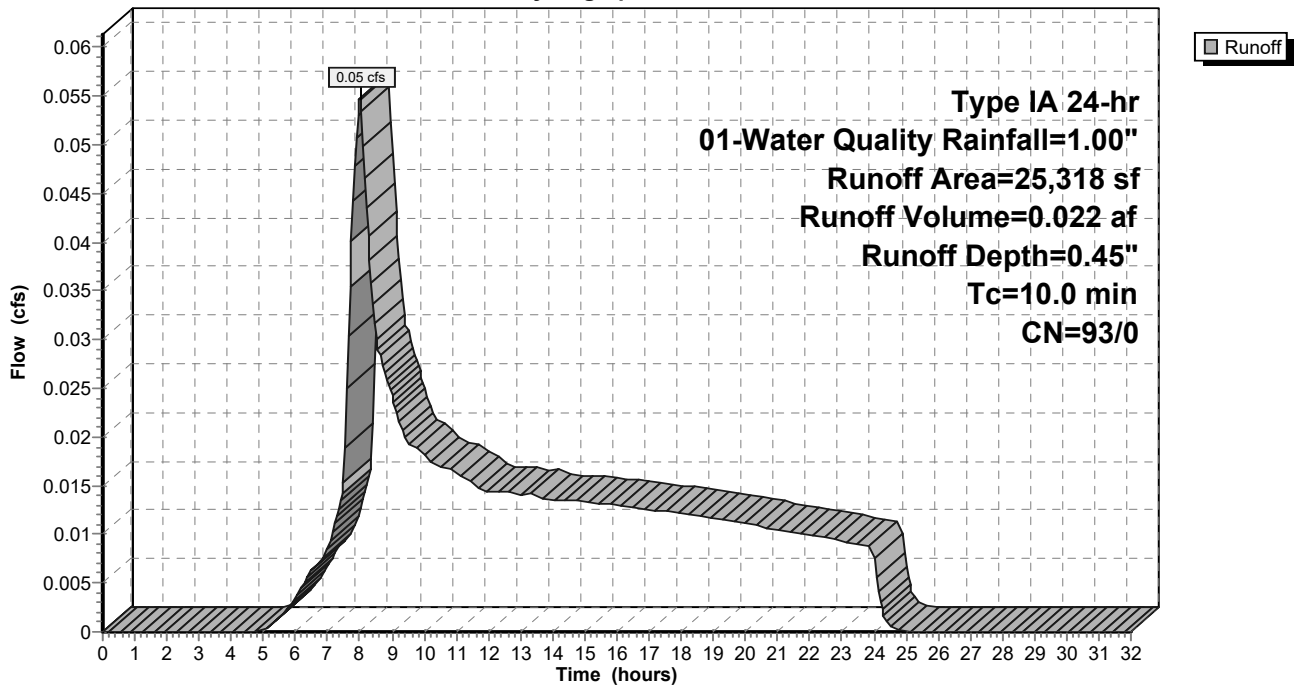
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 01-Water Quality Rainfall=1.00"

Area (sf)	CN	Description
* 25,318	93	70% Lot Coverage Weighted
25,318	93	100.00% Pervious Area

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

Subcatchment 88S: Home Basin 28

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Subcatchment 89S: Home Basin 24

Runoff = 0.04 cfs @ 8.00 hrs, Volume= 0.018 af, Depth= 0.45"
 Routed to Reach 135R : 1

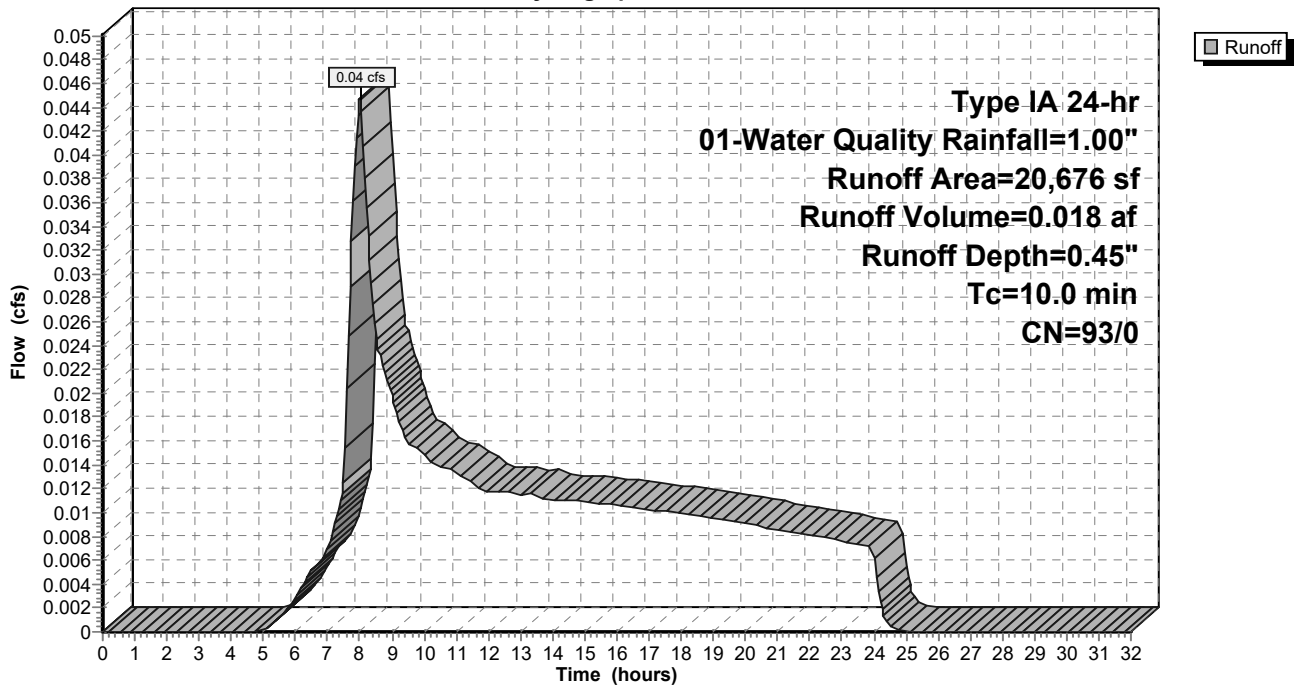
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 01-Water Quality Rainfall=1.00"

Area (sf)	CN	Description
* 20,676	93	70% Lot Coverage Weighted
20,676	93	100.00% Pervious Area

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

Subcatchment 89S: Home Basin 24

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Subcatchment 90S: Home Basin 26

Runoff = 0.03 cfs @ 8.00 hrs, Volume= 0.012 af, Depth= 0.45"
 Routed to Reach 136R : 1

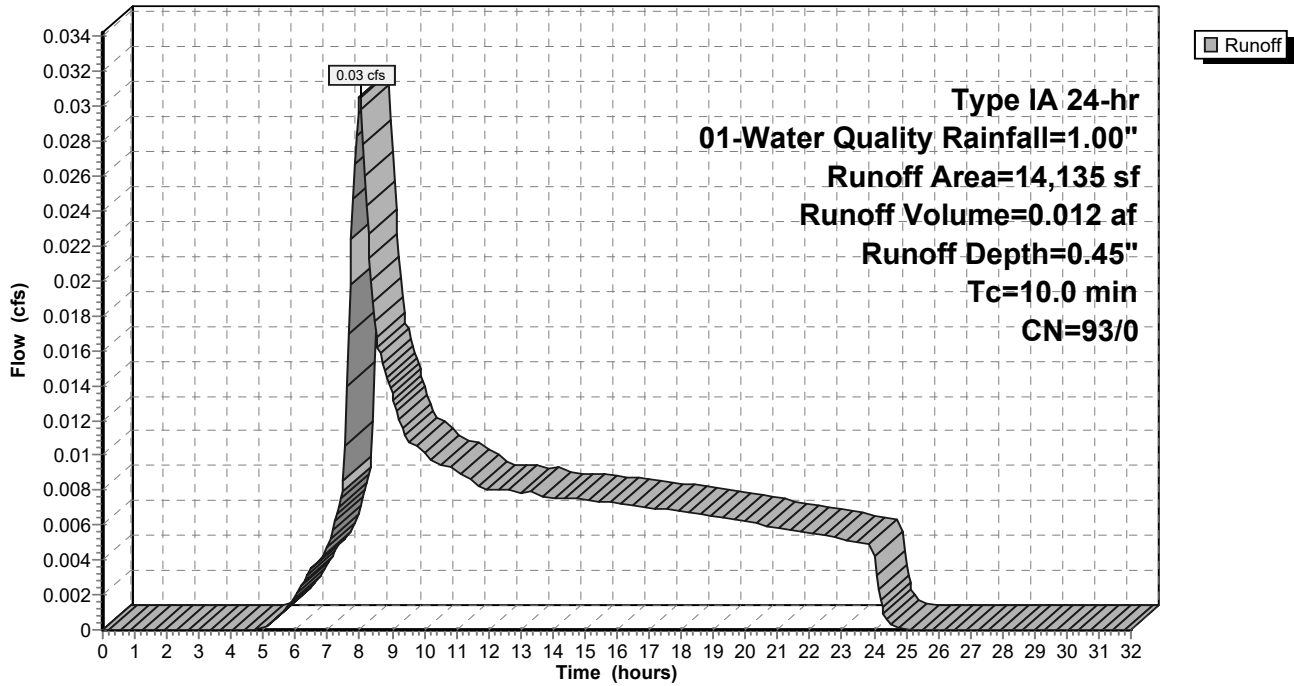
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 01-Water Quality Rainfall=1.00"

Area (sf)	CN	Description
* 14,135	93	70% Lot Coverage Weighted
14,135	93	100.00% Pervious Area

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

Subcatchment 90S: Home Basin 26

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Subcatchment 91S: Home Basin 23

Runoff = 0.03 cfs @ 8.00 hrs, Volume= 0.011 af, Depth= 0.45"
 Routed to Reach 143R : 1

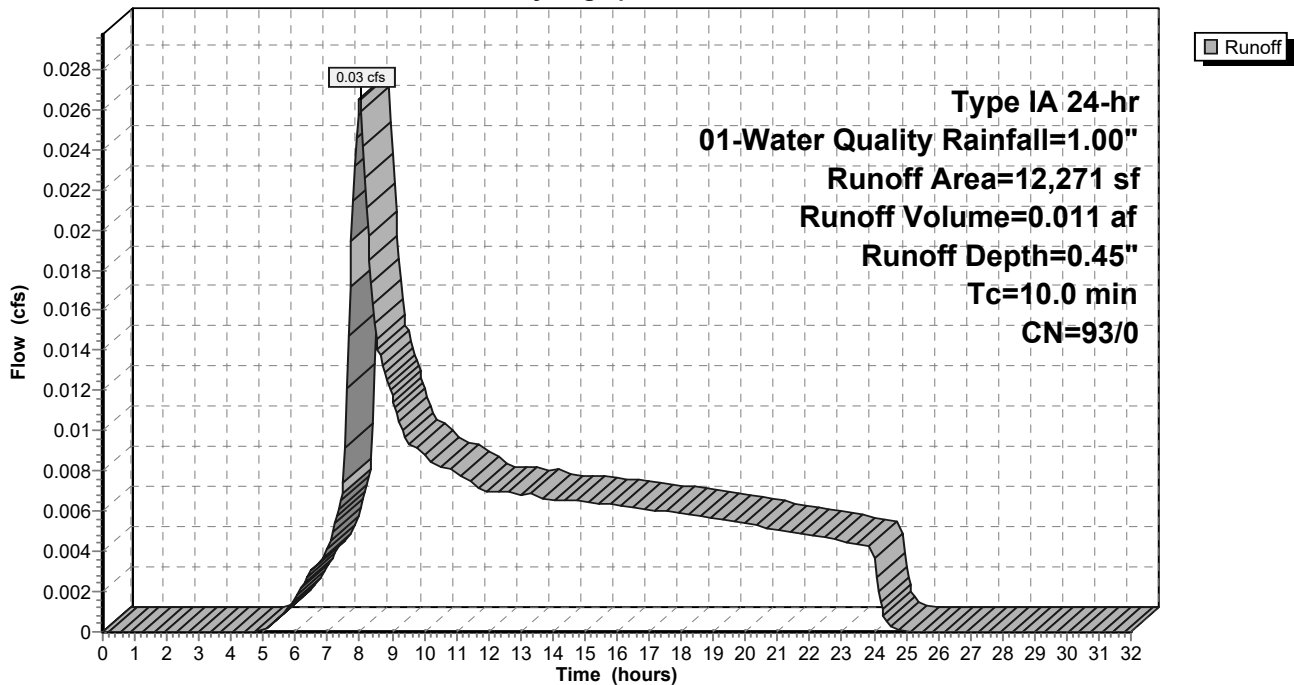
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 01-Water Quality Rainfall=1.00"

Area (sf)	CN	Description
* 12,271	93	70% Lot Coverage Weighted
12,271	93	100.00% Pervious Area

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

Subcatchment 91S: Home Basin 23

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Subcatchment 92S: Home Basin 21

Runoff = 0.06 cfs @ 8.00 hrs, Volume= 0.023 af, Depth= 0.45"
 Routed to Reach 145R : 1

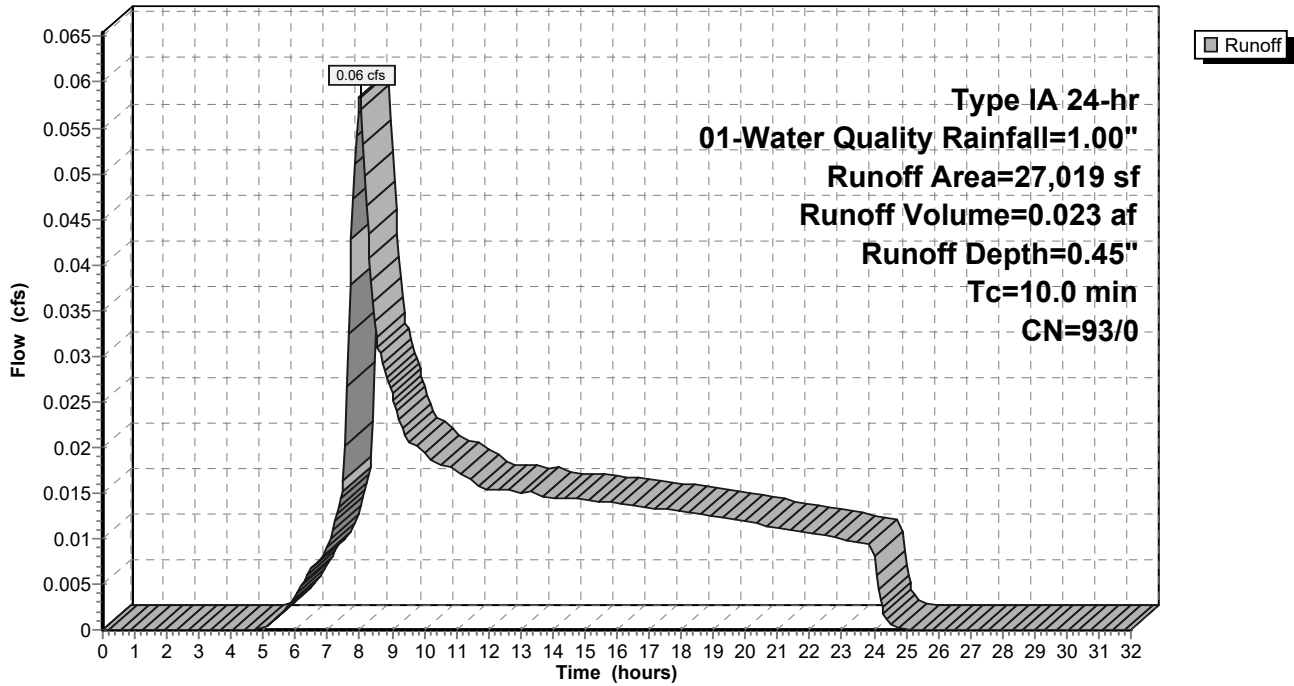
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 01-Water Quality Rainfall=1.00"

Area (sf)	CN	Description
* 27,019	93	70% Lot Coverage Weighted
27,019	93	100.00% Pervious Area

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

Subcatchment 92S: Home Basin 21

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Subcatchment 93S: Home Basin 25

Runoff = 0.04 cfs @ 8.00 hrs, Volume= 0.015 af, Depth= 0.45"
 Routed to Reach 136R : 1

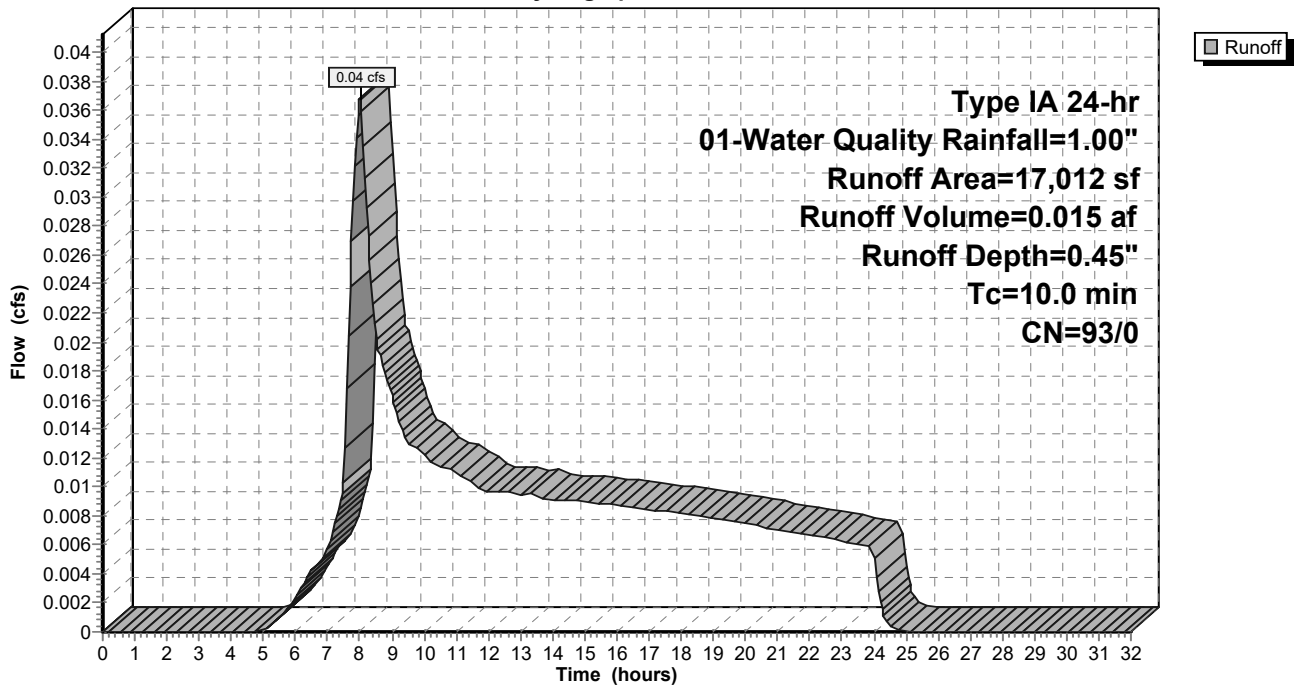
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 01-Water Quality Rainfall=1.00"

Area (sf)	CN	Description
* 17,012	93	70% Lot Coverage Weighted
17,012	93	100.00% Pervious Area

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

Subcatchment 93S: Home Basin 25

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Subcatchment 94S: Home Basin 4

Runoff = 0.04 cfs @ 8.00 hrs, Volume= 0.017 af, Depth= 0.45"
 Routed to Reach 160R : 1

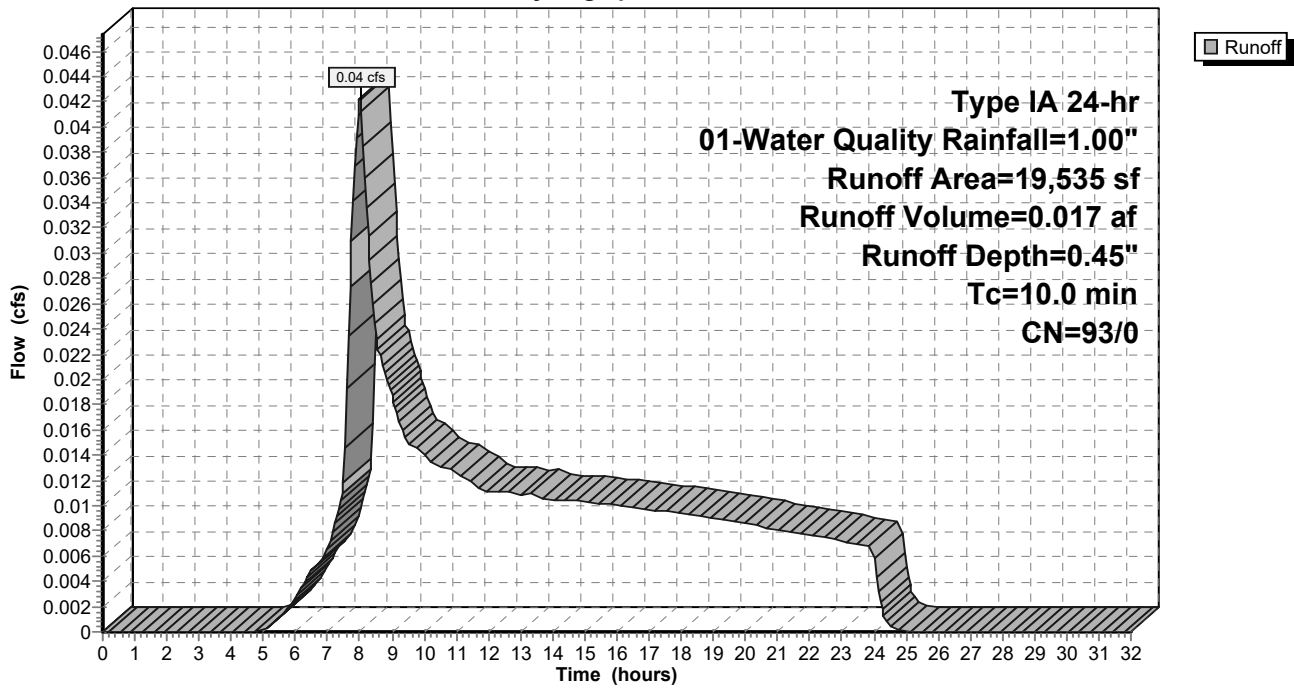
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 01-Water Quality Rainfall=1.00"

Area (sf)	CN	Description
* 19,535	93	70% Lot Coverage Weighted
19,535	93	100.00% Pervious Area

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

Subcatchment 94S: Home Basin 4

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Subcatchment 95S: Home Basin 31

Runoff = 0.05 cfs @ 8.00 hrs, Volume= 0.021 af, Depth= 0.45"
 Routed to Reach 131R : 1

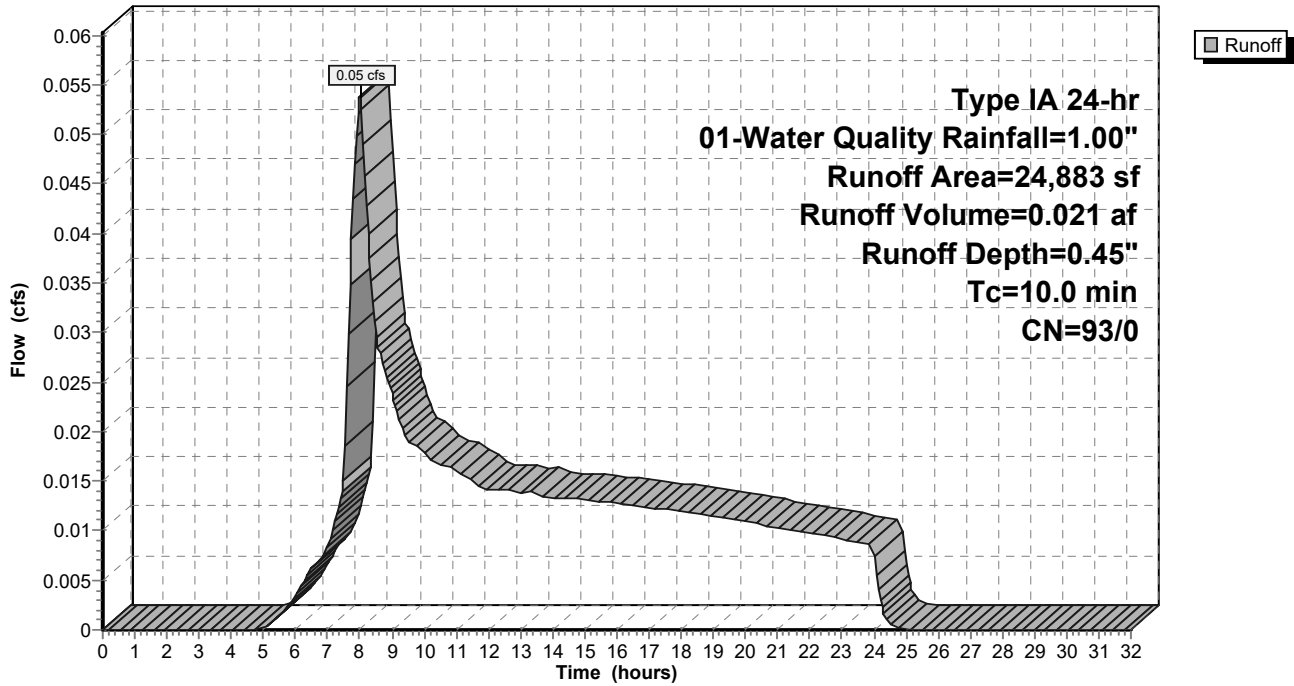
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 01-Water Quality Rainfall=1.00"

Area (sf)	CN	Description
* 24,883	93	70% Lot Coverage Weighted
24,883	93	100.00% Pervious Area

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

Subcatchment 95S: Home Basin 31

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Subcatchment 96S: Basin 1

Runoff = 0.07 cfs @ 7.98 hrs, Volume= 0.023 af, Depth= 0.79"
 Routed to Reach 133R : 1

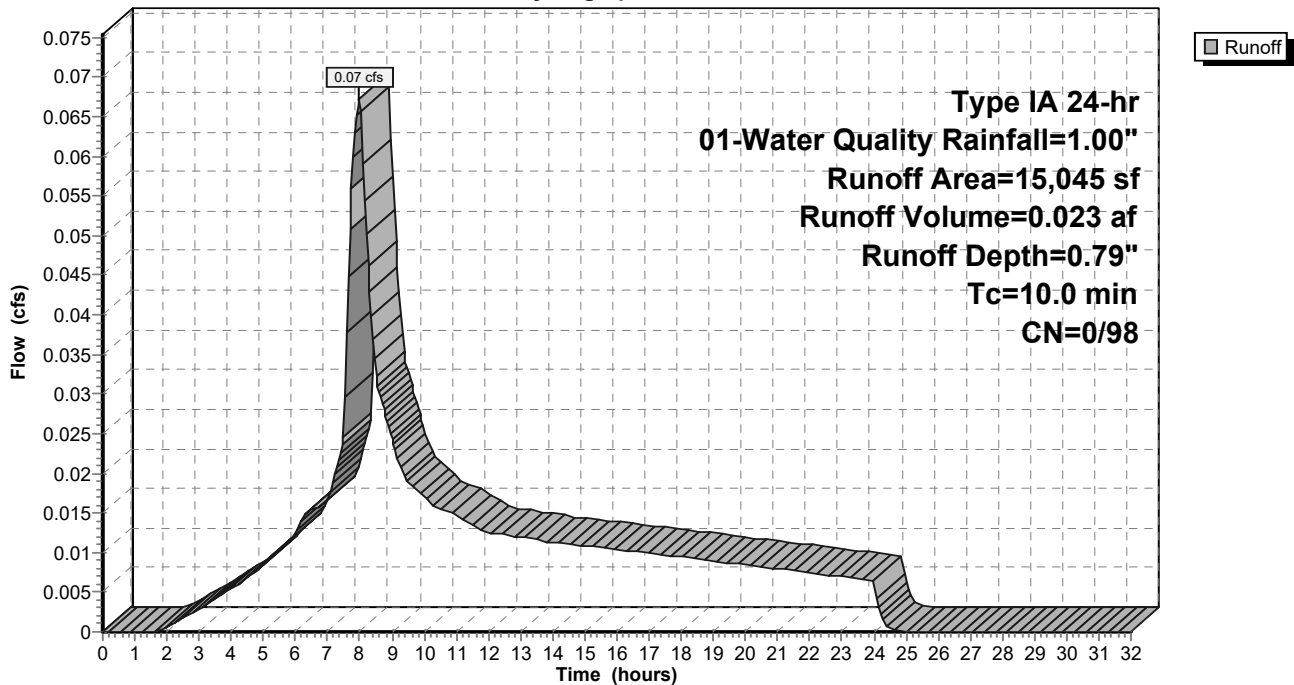
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 01-Water Quality Rainfall=1.00"

Area (sf)	CN	Description
15,045	98	Paved roads w/curbs & sewers, HSG D
15,045	98	100.00% Impervious Area

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

Subcatchment 96S: Basin 1

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Subcatchment 97S: Basin 2

Runoff = 0.09 cfs @ 7.98 hrs, Volume= 0.030 af, Depth= 0.79"
 Routed to Reach 132R : 1

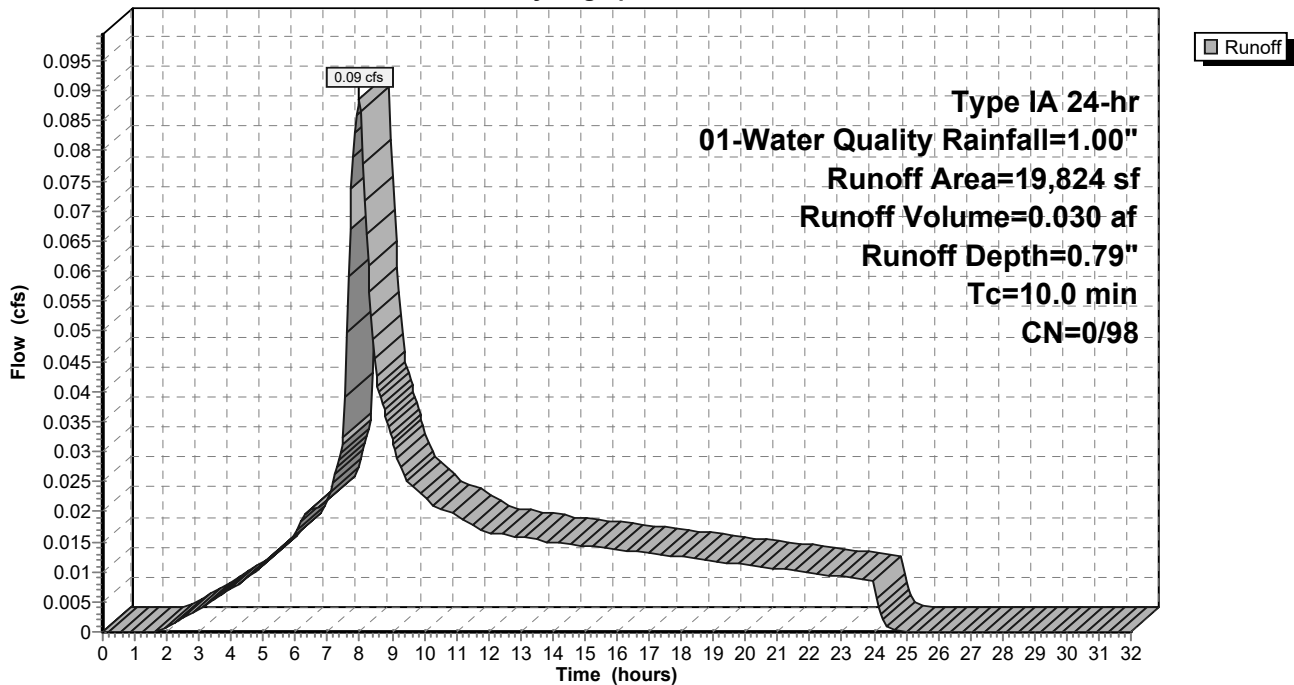
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 01-Water Quality Rainfall=1.00"

Area (sf)	CN	Description
19,824	98	Paved roads w/curbs & sewers, HSG D
19,824	98	100.00% Impervious Area

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

Subcatchment 97S: Basin 2

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Subcatchment 98S: Basin 3

Runoff = 0.10 cfs @ 7.98 hrs, Volume= 0.035 af, Depth= 0.79"
 Routed to Reach 131R : 1

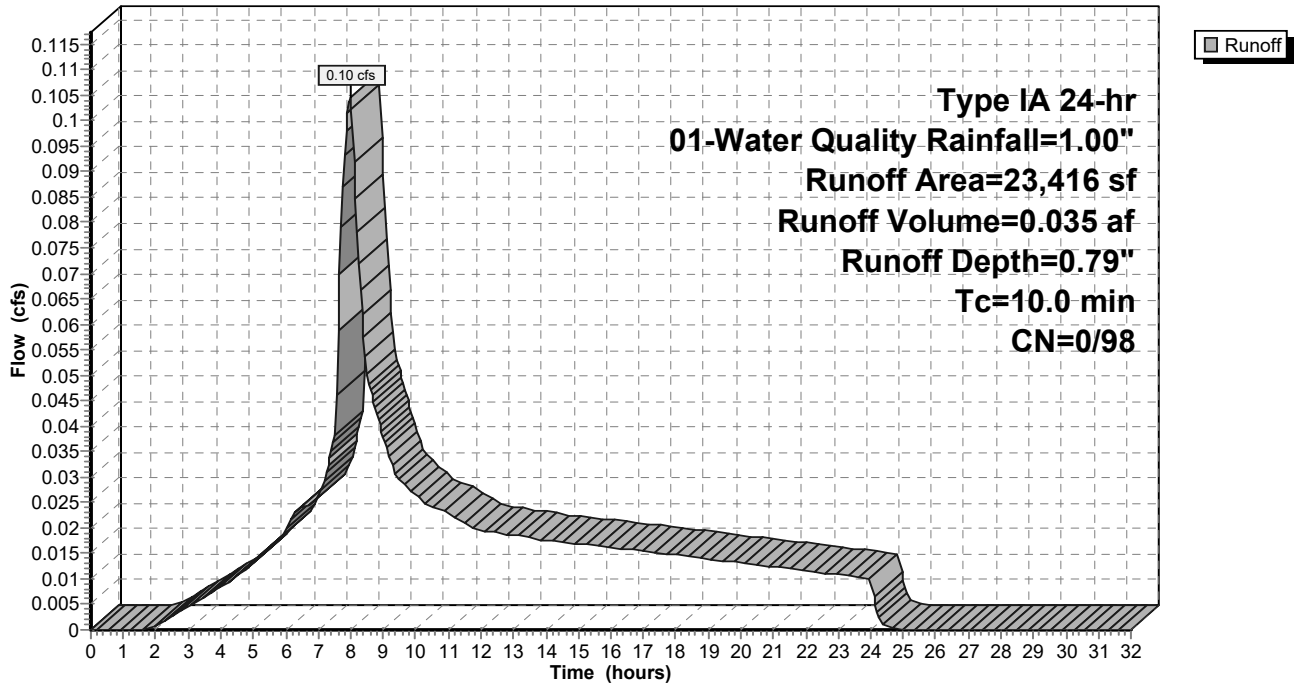
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 01-Water Quality Rainfall=1.00"

Area (sf)	CN	Description
23,416	98	Paved roads w/curbs & sewers, HSG D
23,416	98	100.00% Impervious Area

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

Subcatchment 98S: Basin 3

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Subcatchment 99S: Home Basin 6

Runoff = 0.06 cfs @ 8.00 hrs, Volume= 0.022 af, Depth= 0.45"
 Routed to Reach 163R : 1

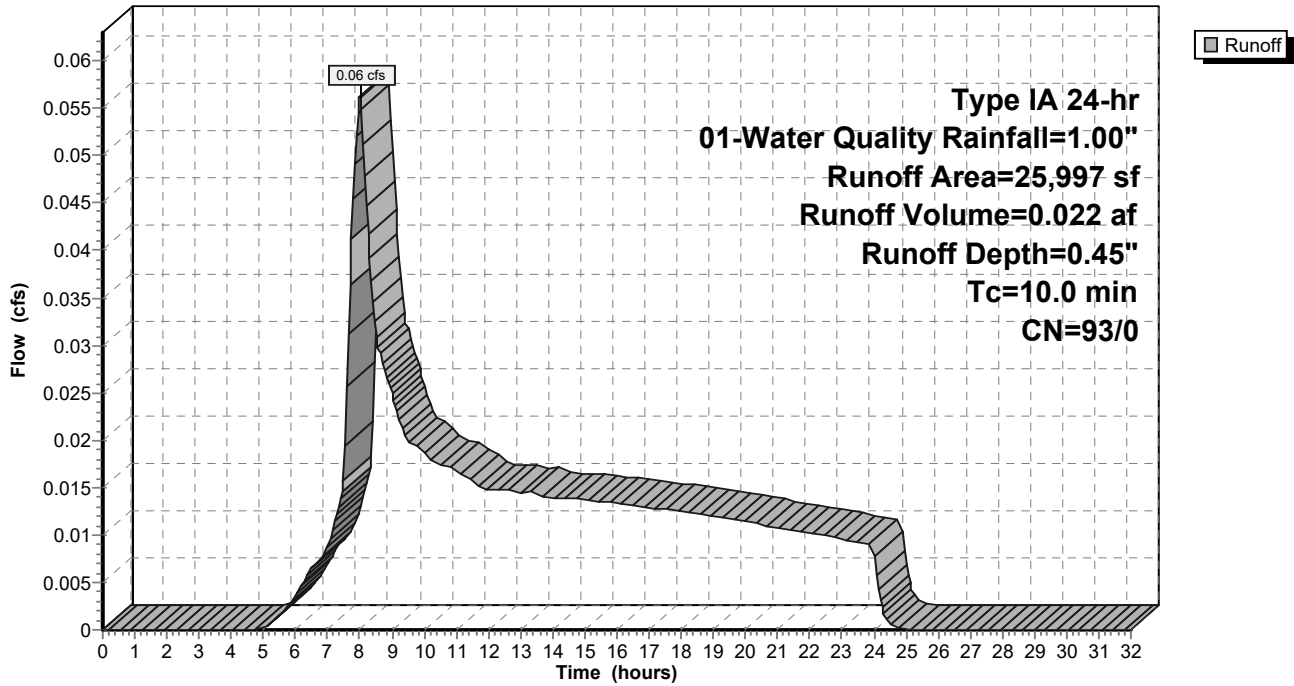
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 01-Water Quality Rainfall=1.00"

Area (sf)	CN	Description
* 25,997	93	70% Lot Coverage Weighted
25,997	93	100.00% Pervious Area

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

Subcatchment 99S: Home Basin 6

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Subcatchment 100S: Basin 4

Runoff = 0.02 cfs @ 7.98 hrs, Volume= 0.006 af, Depth= 0.79"
 Routed to Pond 60P : Stormwater Swale 1

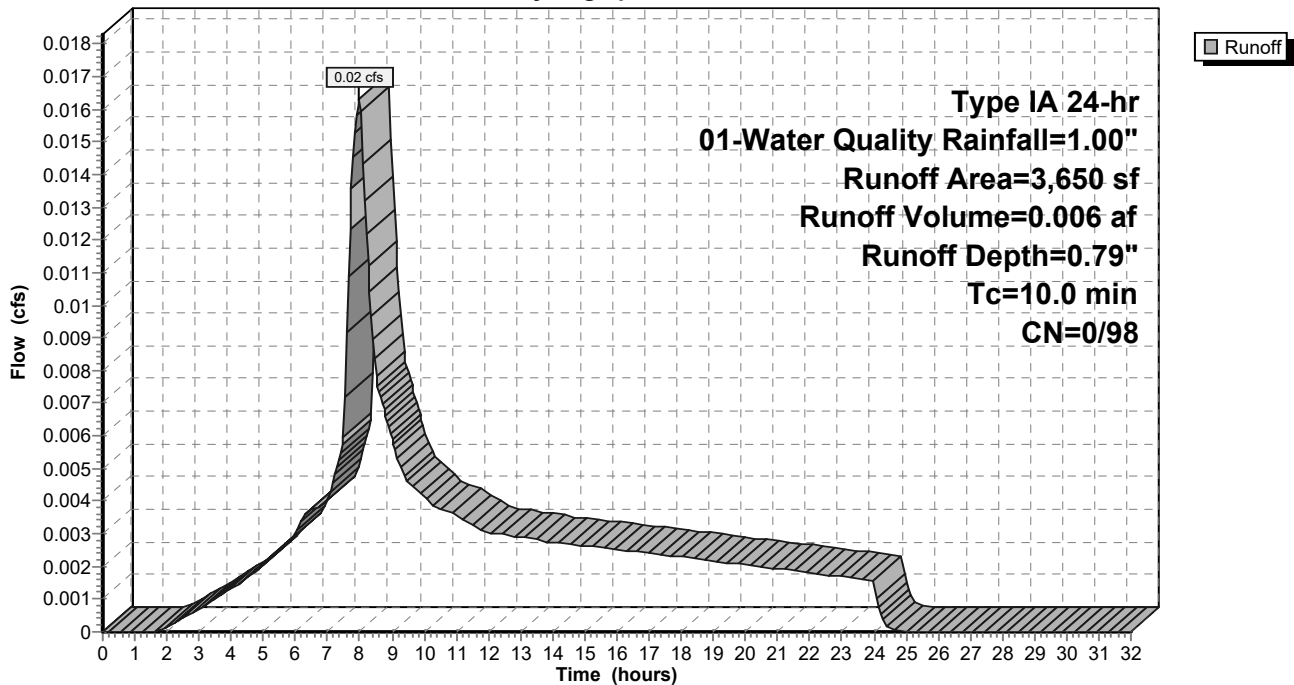
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 01-Water Quality Rainfall=1.00"

Area (sf)	CN	Description
3,650	98	Paved roads w/curbs & sewers, HSG D
3,650	98	100.00% Impervious Area

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

Subcatchment 100S: Basin 4

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Subcatchment 101S: Basin 5

Runoff = 0.02 cfs @ 7.98 hrs, Volume= 0.005 af, Depth= 0.79"
 Routed to Pond 54P : Stormwater Swale 2

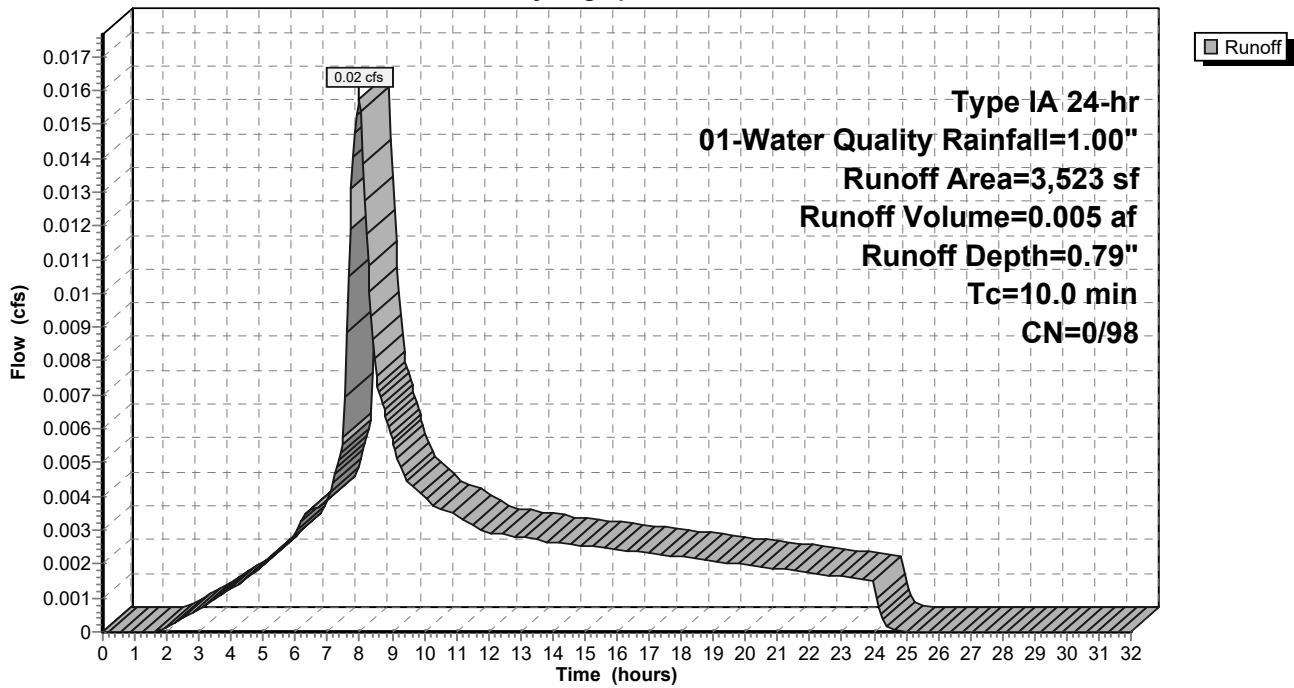
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 01-Water Quality Rainfall=1.00"

Area (sf)	CN	Description
3,523	98	Paved roads w/curbs & sewers, HSG D
3,523	98	100.00% Impervious Area

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

Subcatchment 101S: Basin 5

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Subcatchment 102S: Home Basin 3

Runoff = 0.04 cfs @ 8.00 hrs, Volume= 0.017 af, Depth= 0.45"
 Routed to Reach 151R : 1

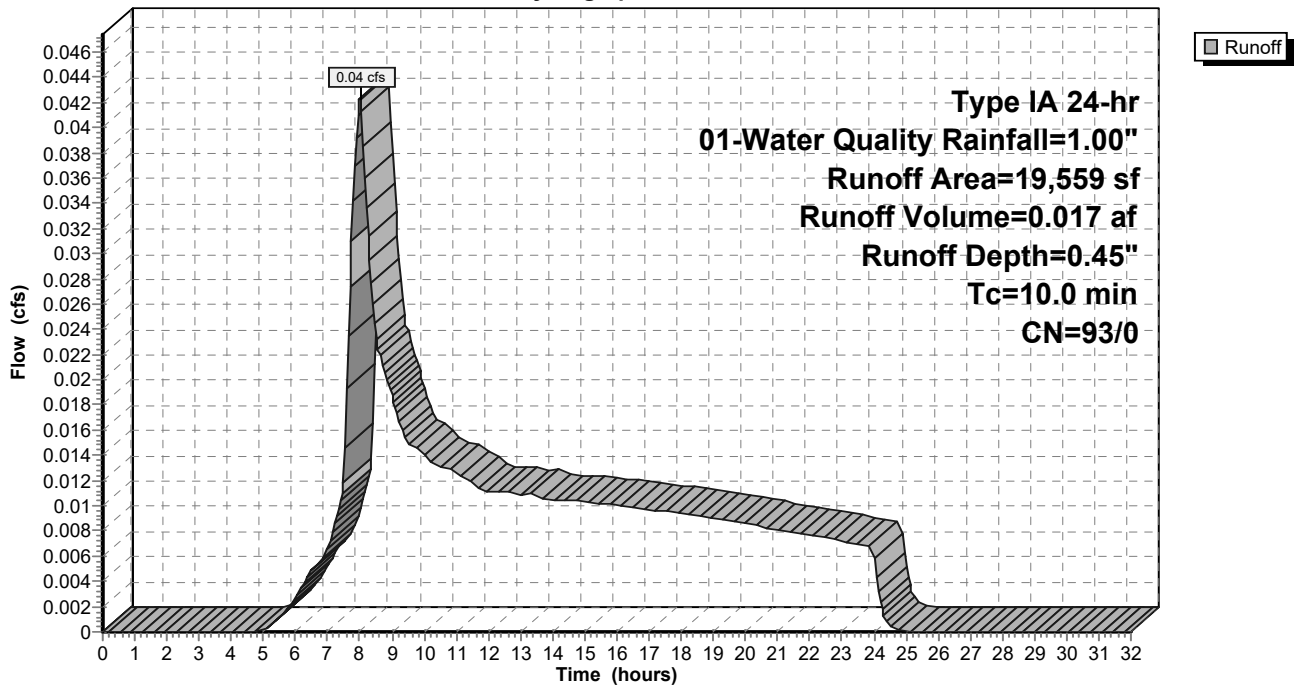
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 01-Water Quality Rainfall=1.00"

Area (sf)	CN	Description
* 19,559	93	70% Lot Coverage Weighted
19,559	93	100.00% Pervious Area

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

Subcatchment 102S: Home Basin 3

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Subcatchment 103S: Home Basin 1

Runoff = 0.05 cfs @ 8.00 hrs, Volume= 0.019 af, Depth= 0.45"
 Routed to Reach 137R : 1

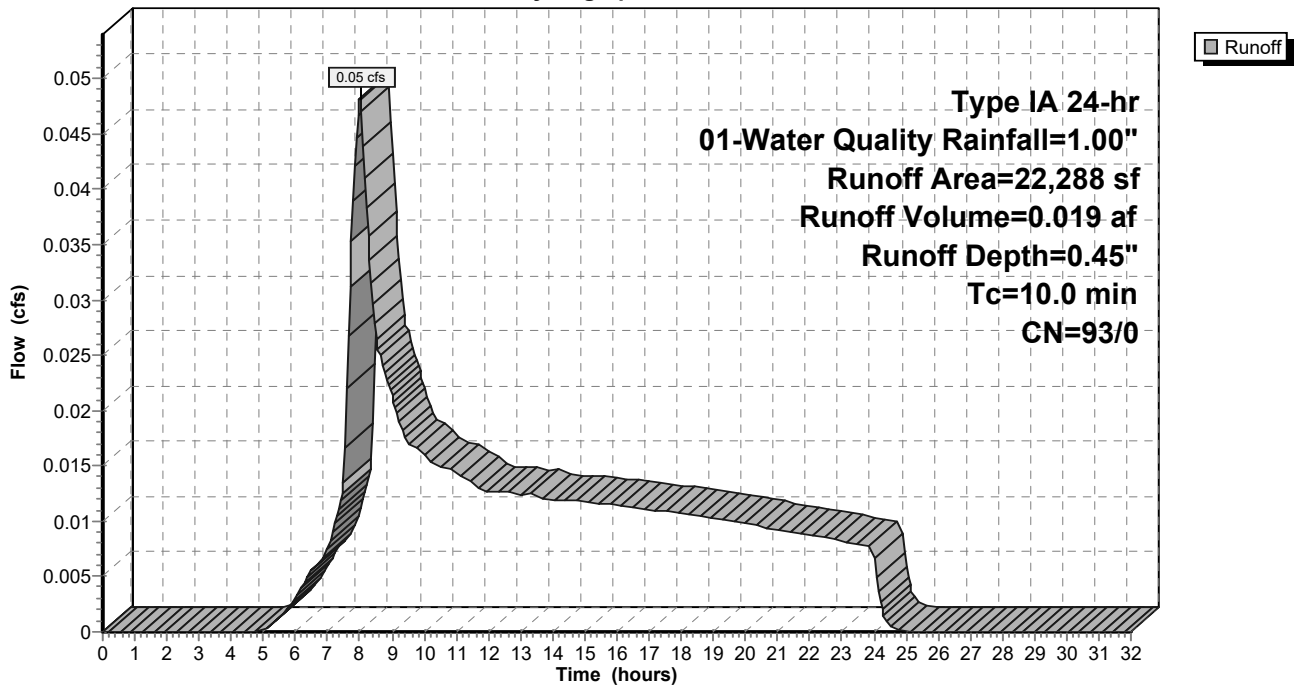
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 01-Water Quality Rainfall=1.00"

Area (sf)	CN	Description
* 22,288	93	70% Lot Coverage Weighted
22,288	93	100.00% Pervious Area

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

Subcatchment 103S: Home Basin 1

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Subcatchment 104S: Home Basin 5

Runoff = 0.07 cfs @ 8.00 hrs, Volume= 0.029 af, Depth= 0.45"
 Routed to Reach 165R : 1

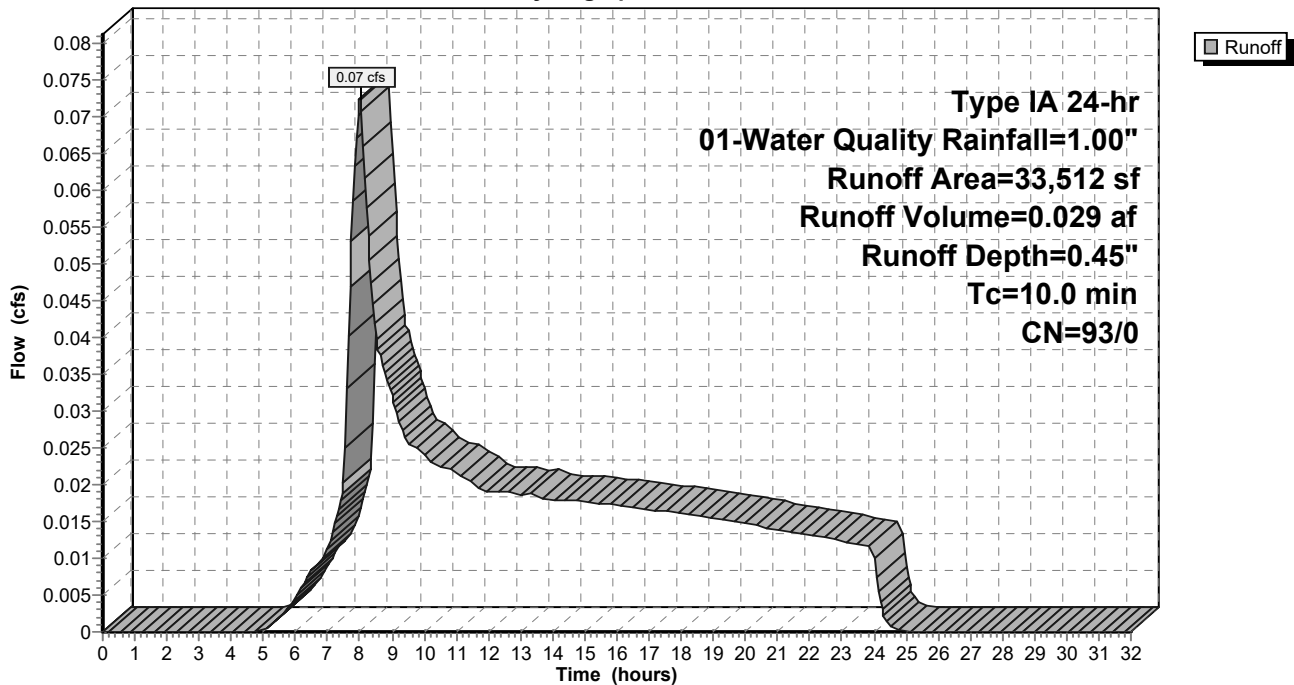
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 01-Water Quality Rainfall=1.00"

Area (sf)	CN	Description
* 33,512	93	70% Lot Coverage Weighted
33,512	93	100.00% Pervious Area

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

Subcatchment 104S: Home Basin 5

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Subcatchment 105S: Basin 6

Runoff = 0.04 cfs @ 7.98 hrs, Volume= 0.014 af, Depth= 0.79"
 Routed to Reach 138R : 1

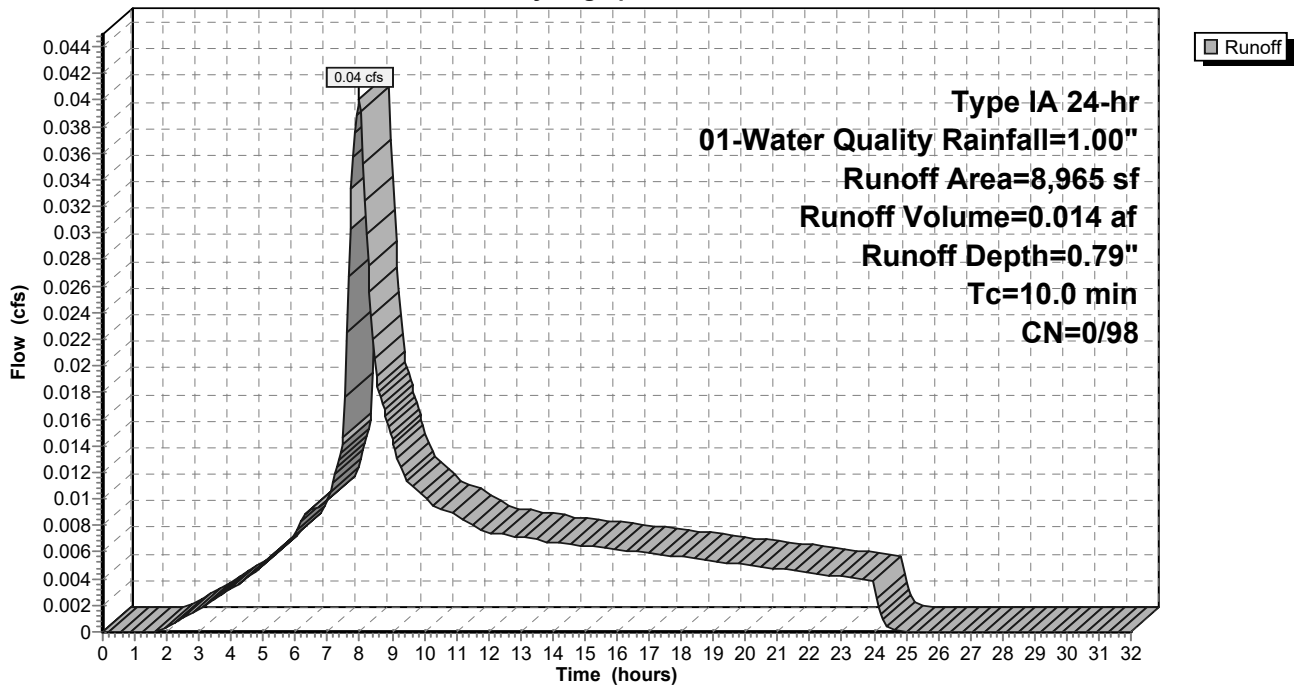
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 01-Water Quality Rainfall=1.00"

Area (sf)	CN	Description
8,965	98	Paved roads w/curbs & sewers, HSG D
8,965	98	100.00% Impervious Area

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

Subcatchment 105S: Basin 6

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Subcatchment 107S: Basin 8

Runoff = 0.04 cfs @ 7.98 hrs, Volume= 0.012 af, Depth= 0.79"
 Routed to Reach 158R : 1

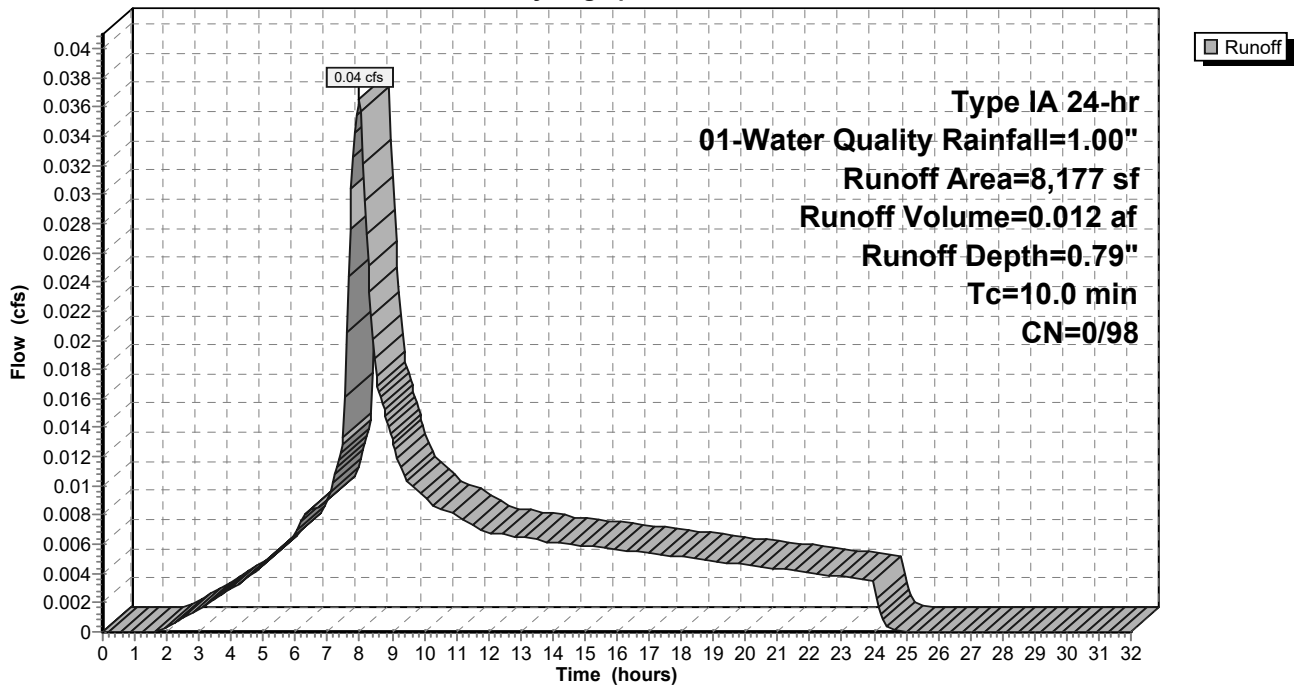
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 01-Water Quality Rainfall=1.00"

Area (sf)	CN	Description
8,177	98	Paved roads w/curbs & sewers, HSG D
8,177	98	100.00% Impervious Area

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

Subcatchment 107S: Basin 8

Hydrograph



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Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Subcatchment 108S: Basin 9

Runoff = 0.06 cfs @ 7.98 hrs, Volume= 0.020 af, Depth= 0.79"
 Routed to Reach 135R : 1

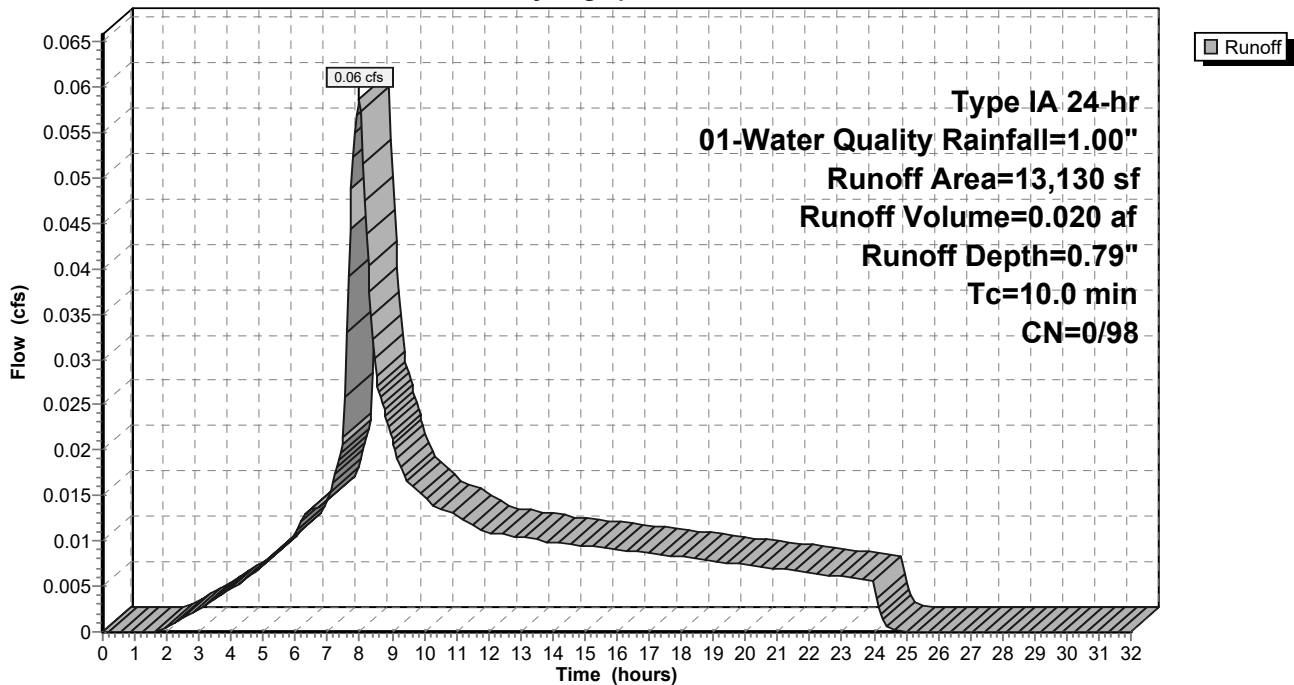
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 01-Water Quality Rainfall=1.00"

Area (sf)	CN	Description
13,130	98	Paved roads w/curbs & sewers, HSG D
13,130	98	100.00% Impervious Area

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

Subcatchment 108S: Basin 9

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Subcatchment 109S: Basin 10

Runoff = 0.10 cfs @ 7.98 hrs, Volume= 0.035 af, Depth= 0.79"
 Routed to Reach 137R : 1

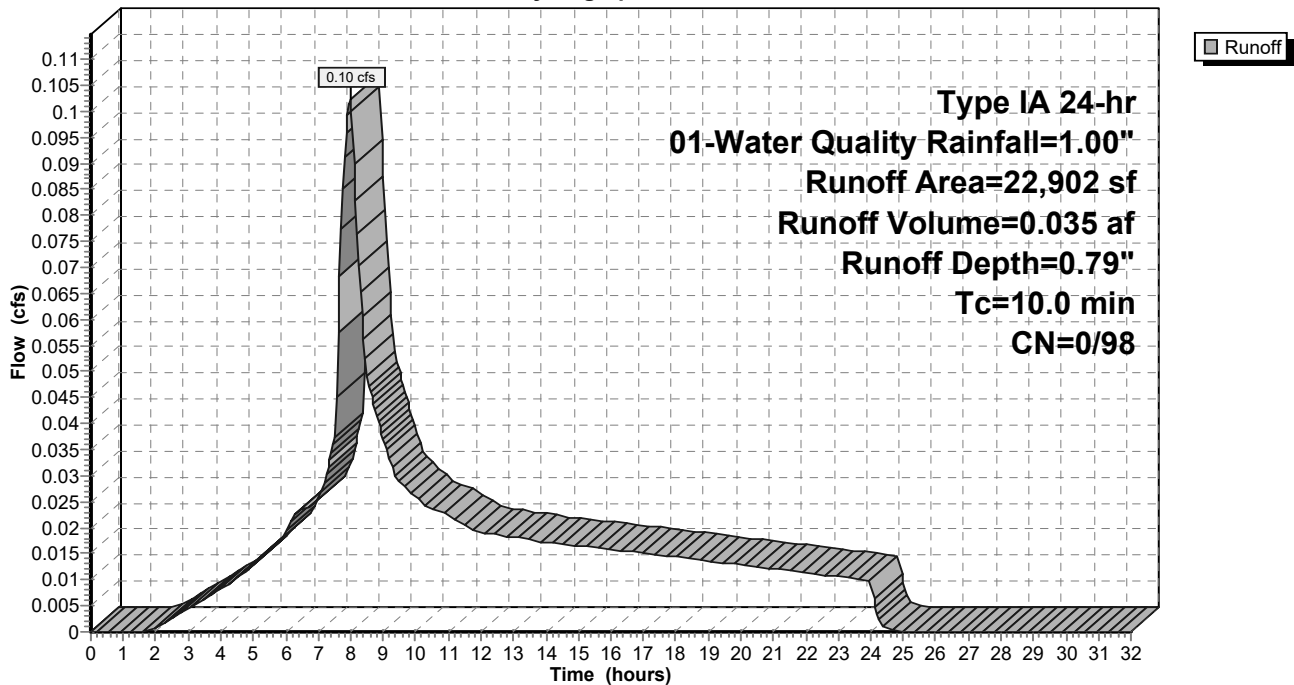
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 01-Water Quality Rainfall=1.00"

Area (sf)	CN	Description
22,902	98	Paved roads w/curbs & sewers, HSG D
22,902	98	100.00% Impervious Area

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

Subcatchment 109S: Basin 10

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Subcatchment 110S: Basin 11

Runoff = 0.12 cfs @ 7.98 hrs, Volume= 0.039 af, Depth= 0.79"
 Routed to Reach 145R : 1

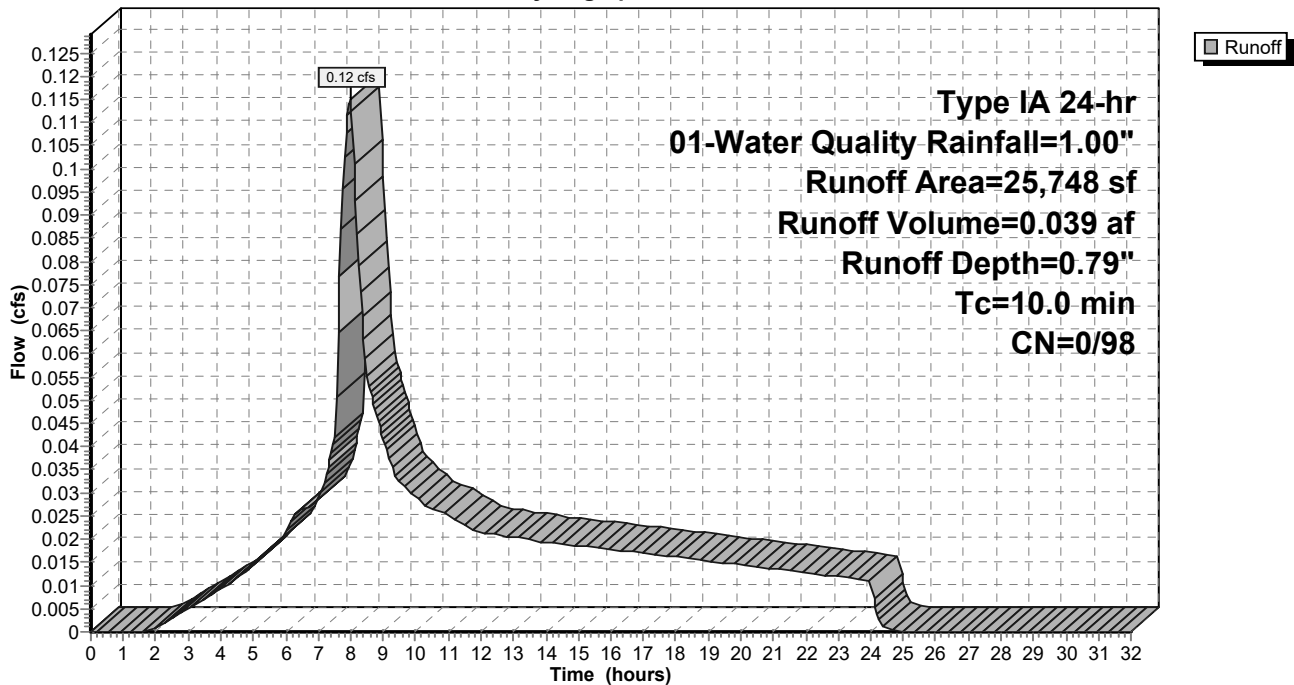
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 01-Water Quality Rainfall=1.00"

Area (sf)	CN	Description
25,748	98	Paved roads w/curbs & sewers, HSG D
25,748	98	100.00% Impervious Area

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

Subcatchment 110S: Basin 11

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Subcatchment 111S: Basin 12

Runoff = 0.02 cfs @ 7.98 hrs, Volume= 0.008 af, Depth= 0.79"
 Routed to Reach 143R : 1

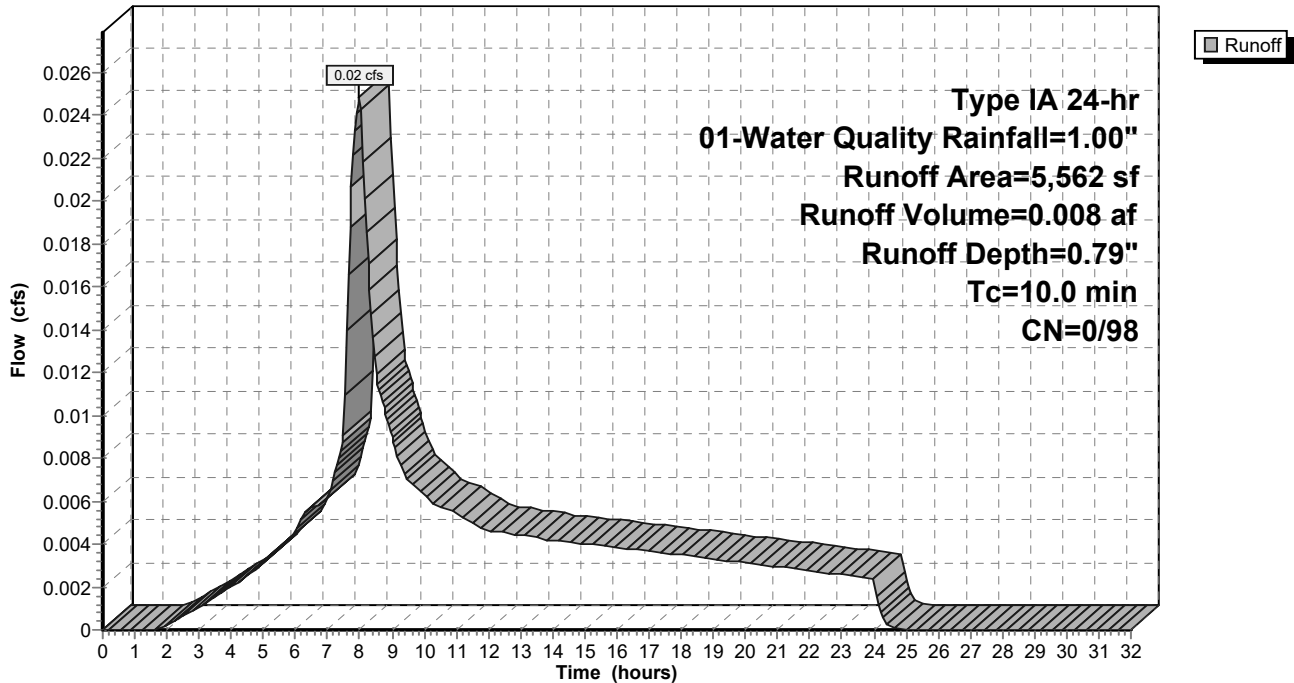
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 01-Water Quality Rainfall=1.00"

Area (sf)	CN	Description
5,562	98	Paved roads w/curbs & sewers, HSG D
5,562	98	100.00% Impervious Area

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

Subcatchment 111S: Basin 12

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Subcatchment 112S: Basin 13

Runoff = 0.02 cfs @ 7.98 hrs, Volume= 0.007 af, Depth= 0.79"
 Routed to Reach 158R : 1

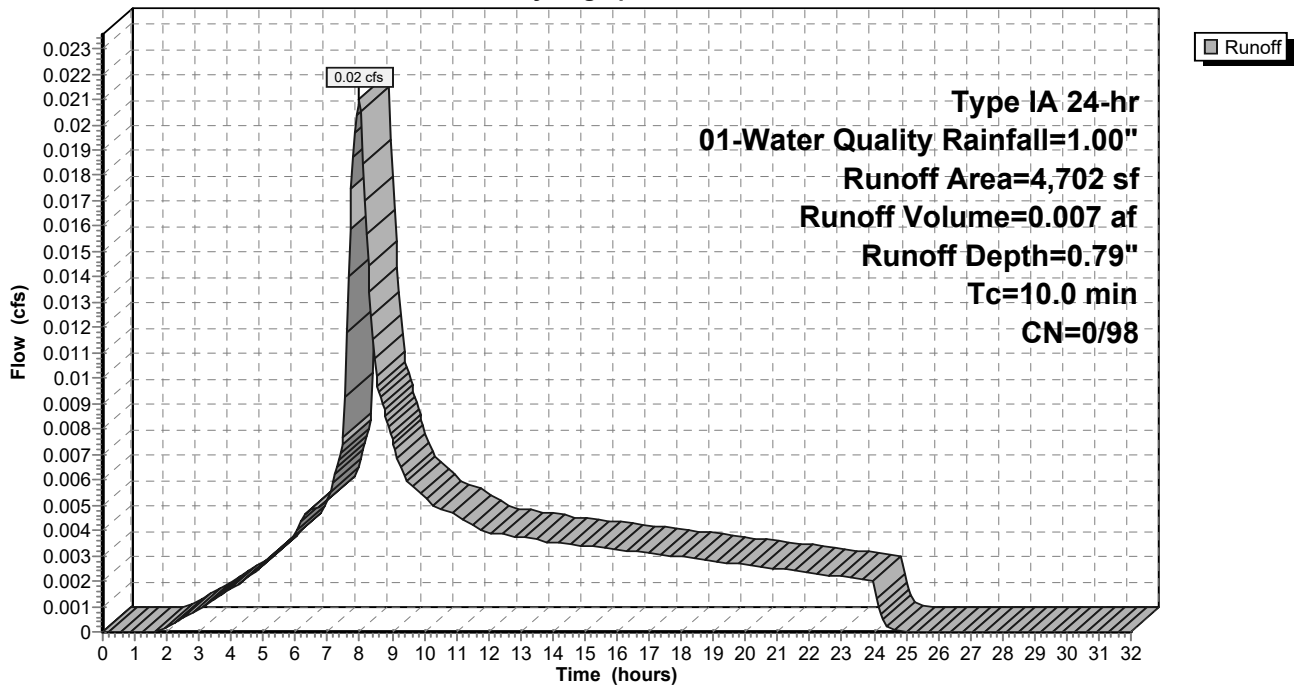
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 01-Water Quality Rainfall=1.00"

Area (sf)	CN	Description
4,702	98	Paved roads w/curbs & sewers, HSG D
4,702	98	100.00% Impervious Area

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

Subcatchment 112S: Basin 13

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Subcatchment 113S: Basin 14

Runoff = 0.03 cfs @ 7.98 hrs, Volume= 0.012 af, Depth= 0.79"
 Routed to Reach 159R : 1

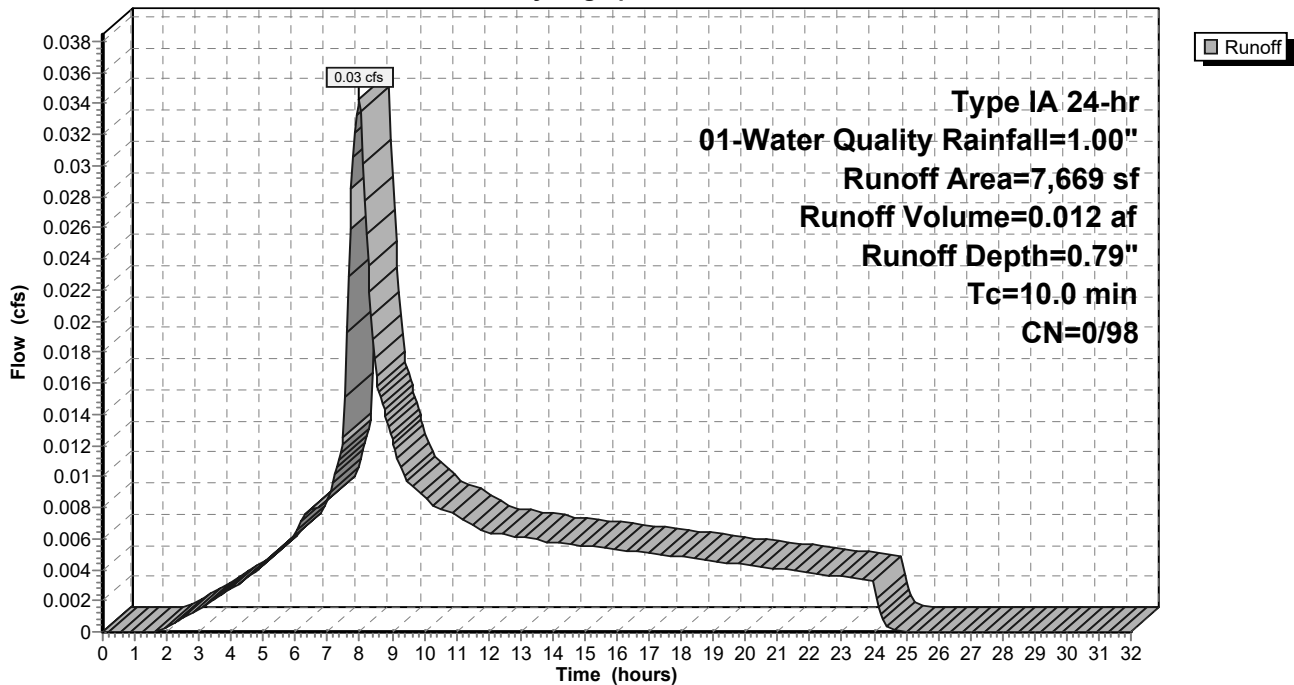
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 01-Water Quality Rainfall=1.00"

Area (sf)	CN	Description
7,669	98	Paved roads w/curbs & sewers, HSG D
7,669	98	100.00% Impervious Area

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

Subcatchment 113S: Basin 14

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Subcatchment 114S: Basin 15

Runoff = 0.03 cfs @ 7.98 hrs, Volume= 0.011 af, Depth= 0.79"
 Routed to Reach 143R : 1

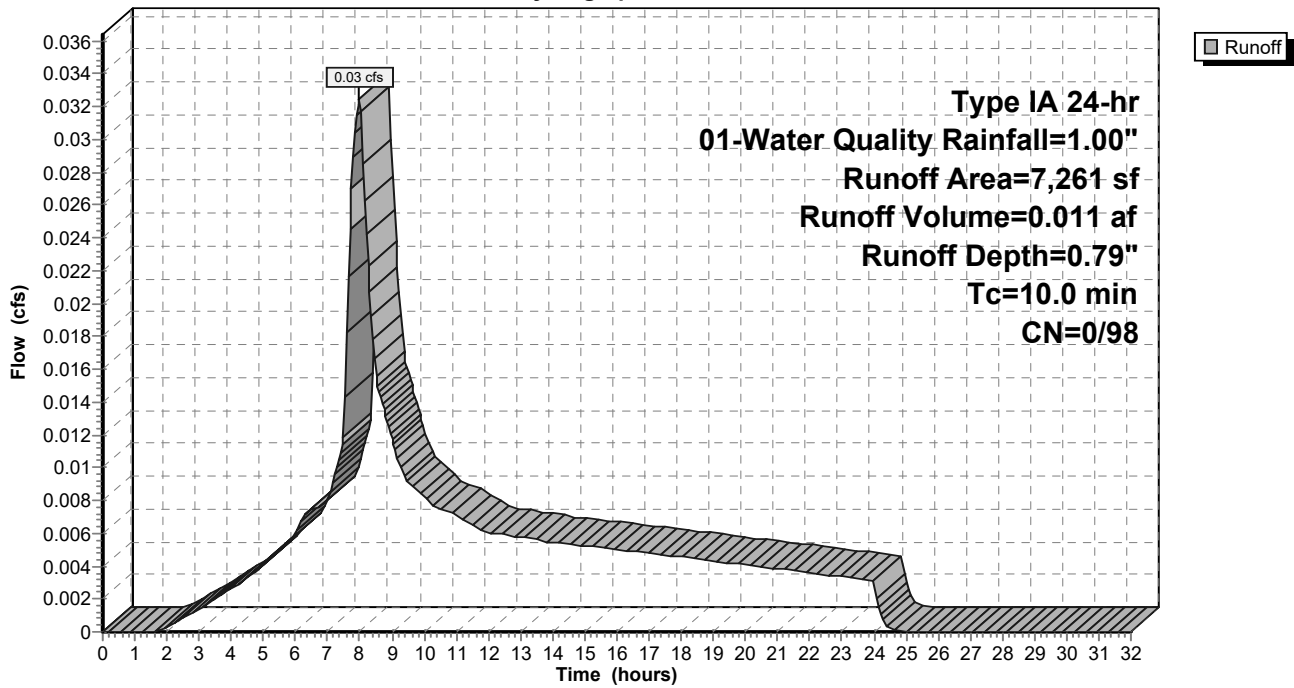
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 01-Water Quality Rainfall=1.00"

Area (sf)	CN	Description
7,261	98	Paved roads w/curbs & sewers, HSG D
7,261	98	100.00% Impervious Area

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

Subcatchment 114S: Basin 15

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Subcatchment 115S: Basin 16

Runoff = 0.03 cfs @ 7.98 hrs, Volume= 0.011 af, Depth= 0.79"
 Routed to Reach 149R : 1

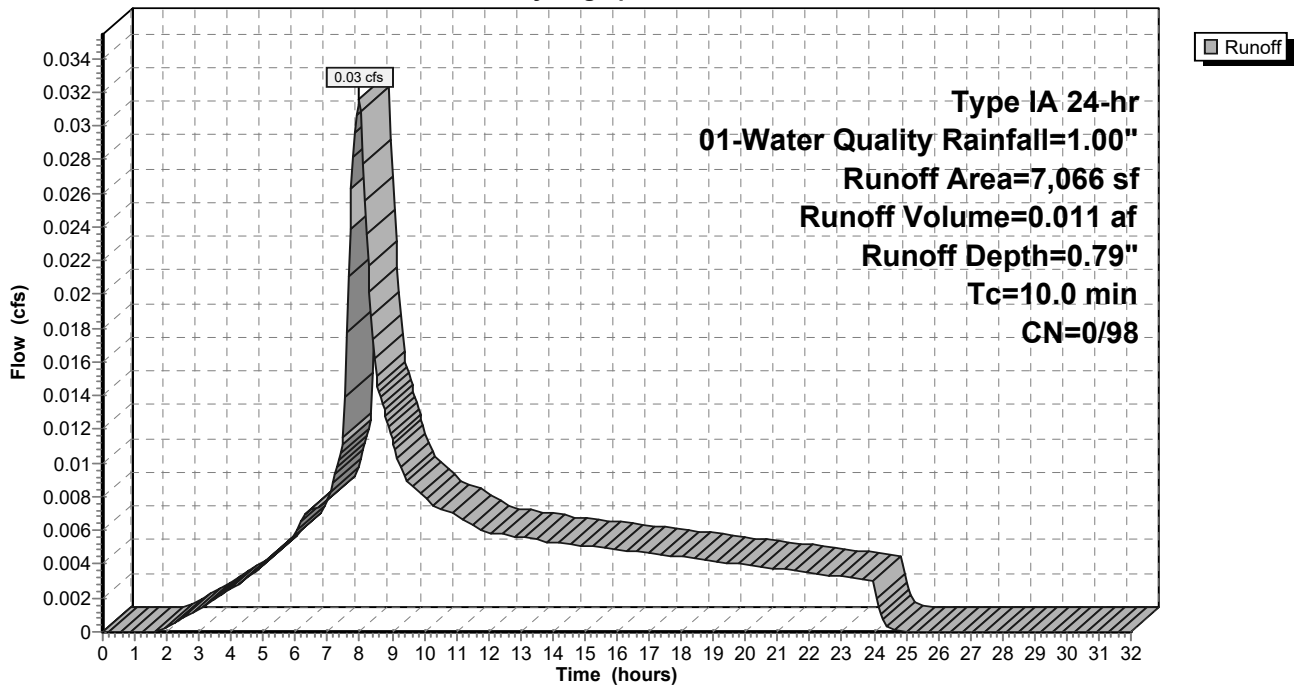
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 01-Water Quality Rainfall=1.00"

Area (sf)	CN	Description
7,066	98	Paved roads w/curbs & sewers, HSG D
7,066	98	100.00% Impervious Area

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

Subcatchment 115S: Basin 16

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Subcatchment 116S: Basin 17

Runoff = 0.12 cfs @ 7.98 hrs, Volume= 0.039 af, Depth= 0.79"
 Routed to Reach 151R : 1

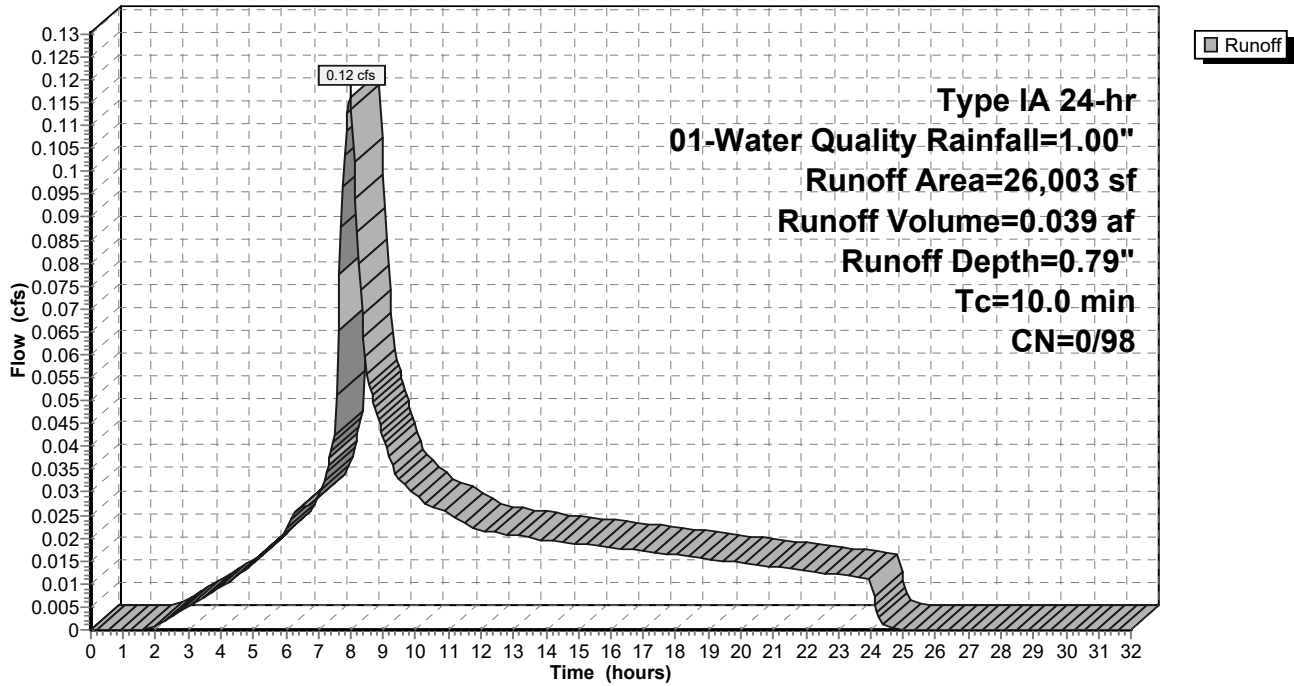
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 01-Water Quality Rainfall=1.00"

Area (sf)	CN	Description
26,003	98	Paved roads w/curbs & sewers, HSG D
26,003	98	100.00% Impervious Area

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

Subcatchment 116S: Basin 17

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Subcatchment 117S: Basin 18

Runoff = 0.11 cfs @ 7.98 hrs, Volume= 0.036 af, Depth= 0.79"
 Routed to Reach 160R : 1

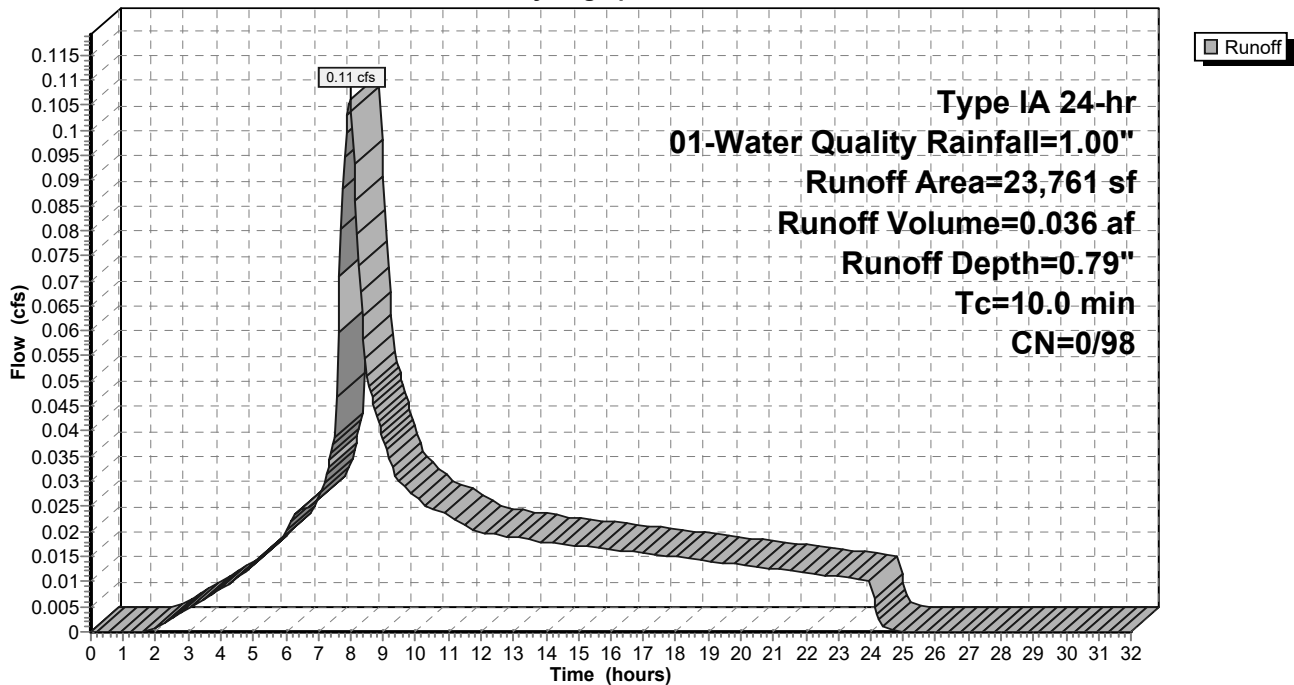
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 01-Water Quality Rainfall=1.00"

Area (sf)	CN	Description
23,761	98	Paved roads w/curbs & sewers, HSG D
23,761	98	100.00% Impervious Area

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

Subcatchment 117S: Basin 18

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Subcatchment 118S: Basin 19

Runoff = 0.03 cfs @ 7.98 hrs, Volume= 0.011 af, Depth= 0.79"
 Routed to Reach 155R : 1

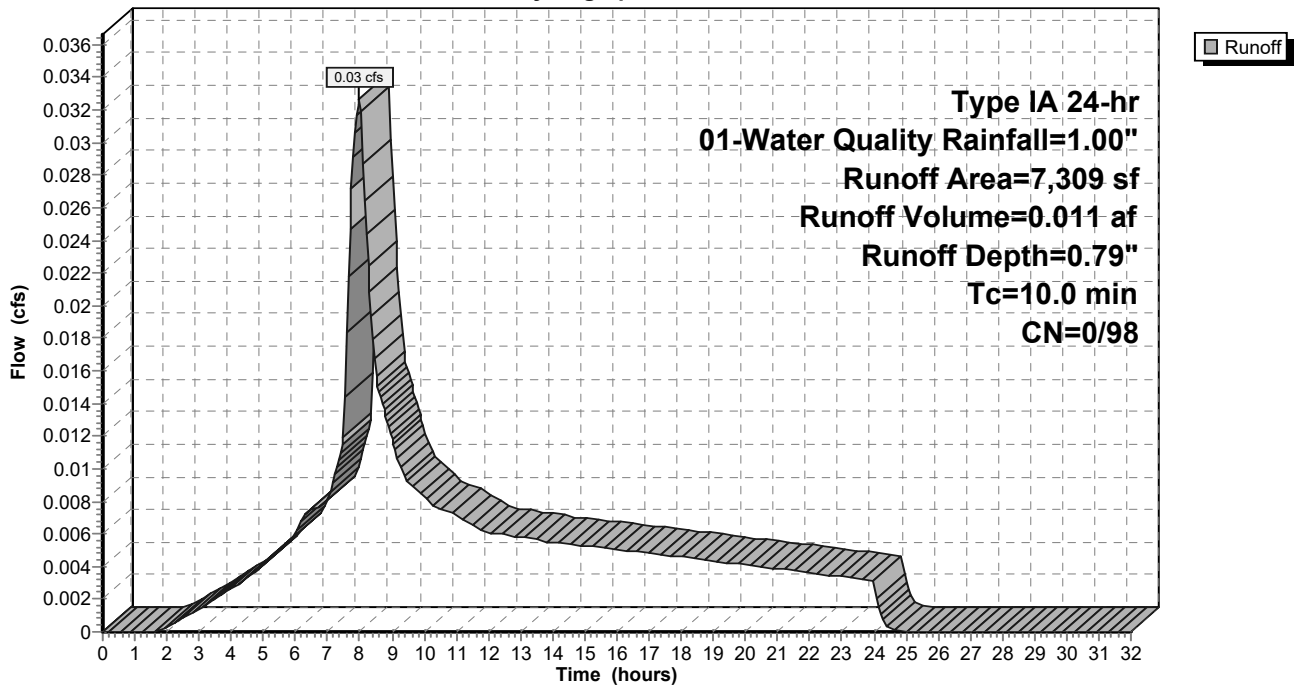
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 01-Water Quality Rainfall=1.00"

Area (sf)	CN	Description
7,309	98	Paved roads w/curbs & sewers, HSG D
7,309	98	100.00% Impervious Area

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

Subcatchment 118S: Basin 19

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Subcatchment 119S: Basin 20

Runoff = 0.03 cfs @ 7.98 hrs, Volume= 0.011 af, Depth= 0.79"
 Routed to Reach 149R : 1

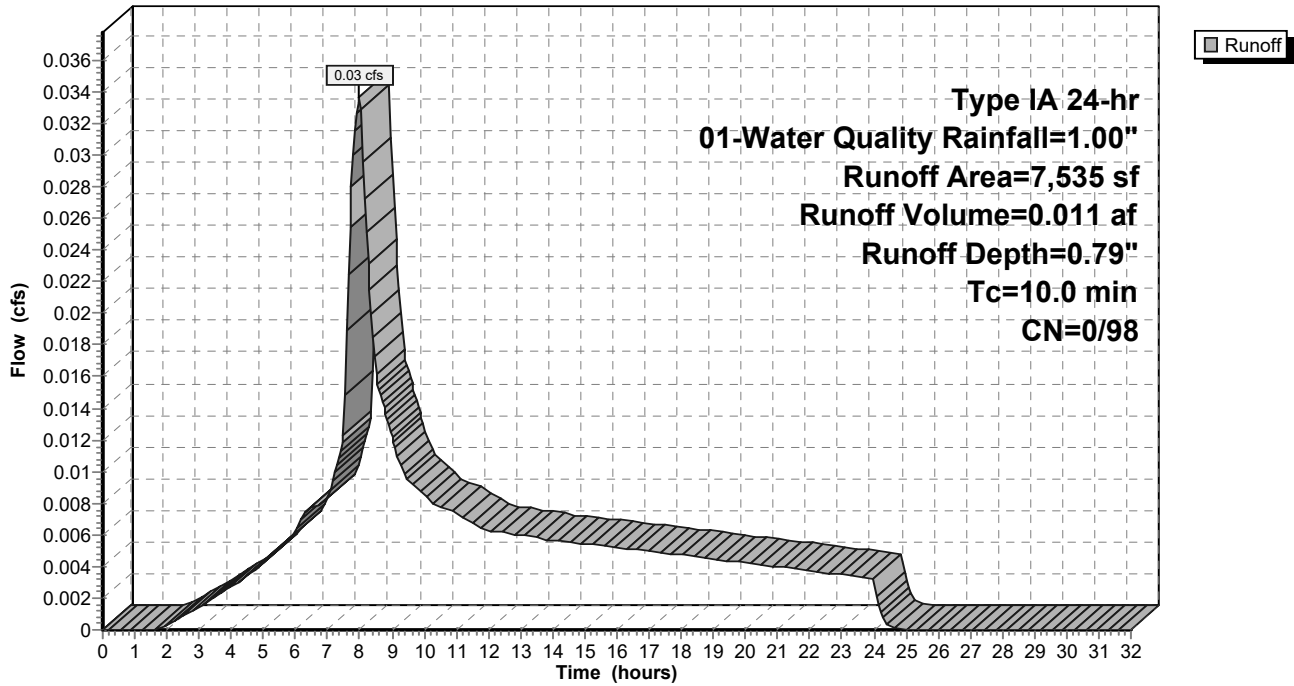
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 01-Water Quality Rainfall=1.00"

Area (sf)	CN	Description
7,535	98	Paved roads w/curbs & sewers, HSG D
7,535	98	100.00% Impervious Area

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

Subcatchment 119S: Basin 20

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Subcatchment 120S: Basin 21

Runoff = 0.03 cfs @ 7.98 hrs, Volume= 0.010 af, Depth= 0.79"
 Routed to Reach 148R : 1

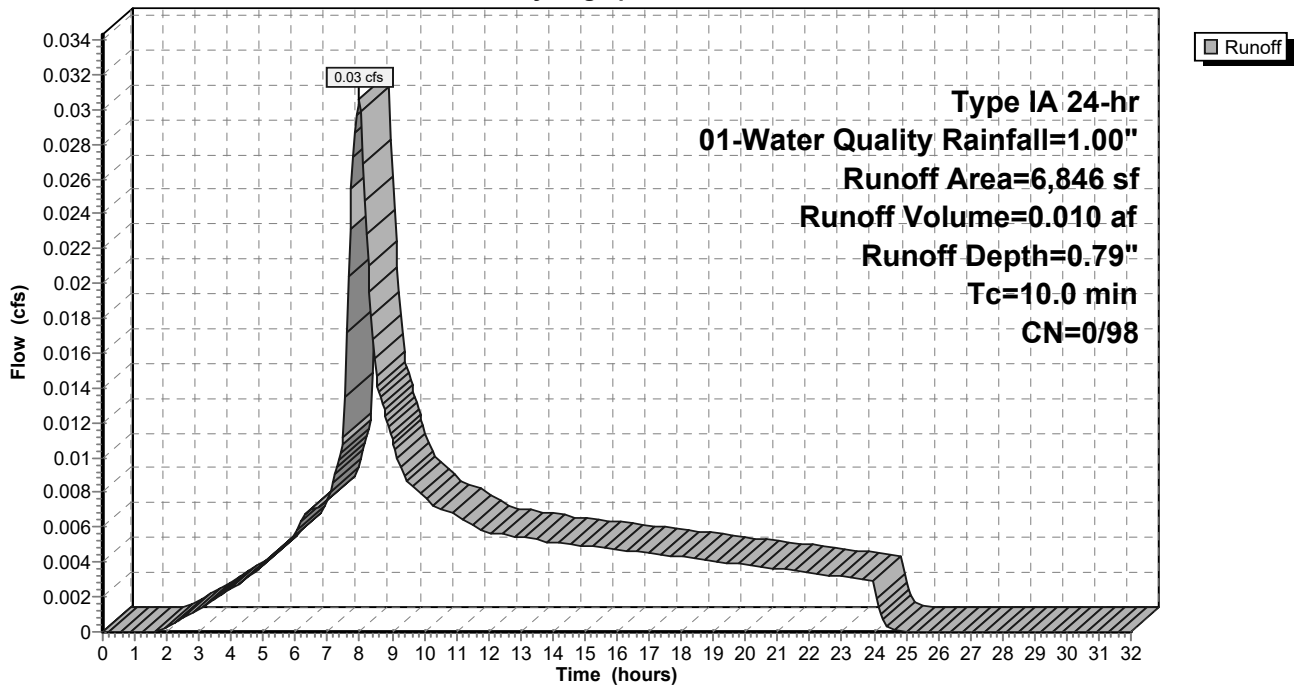
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 01-Water Quality Rainfall=1.00"

Area (sf)	CN	Description
6,846	98	Paved roads w/curbs & sewers, HSG D
6,846	98	100.00% Impervious Area

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

Subcatchment 120S: Basin 21

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Subcatchment 121S: Basin 22

Runoff = 0.02 cfs @ 7.98 hrs, Volume= 0.008 af, Depth= 0.79"
 Routed to Reach 154R : 1

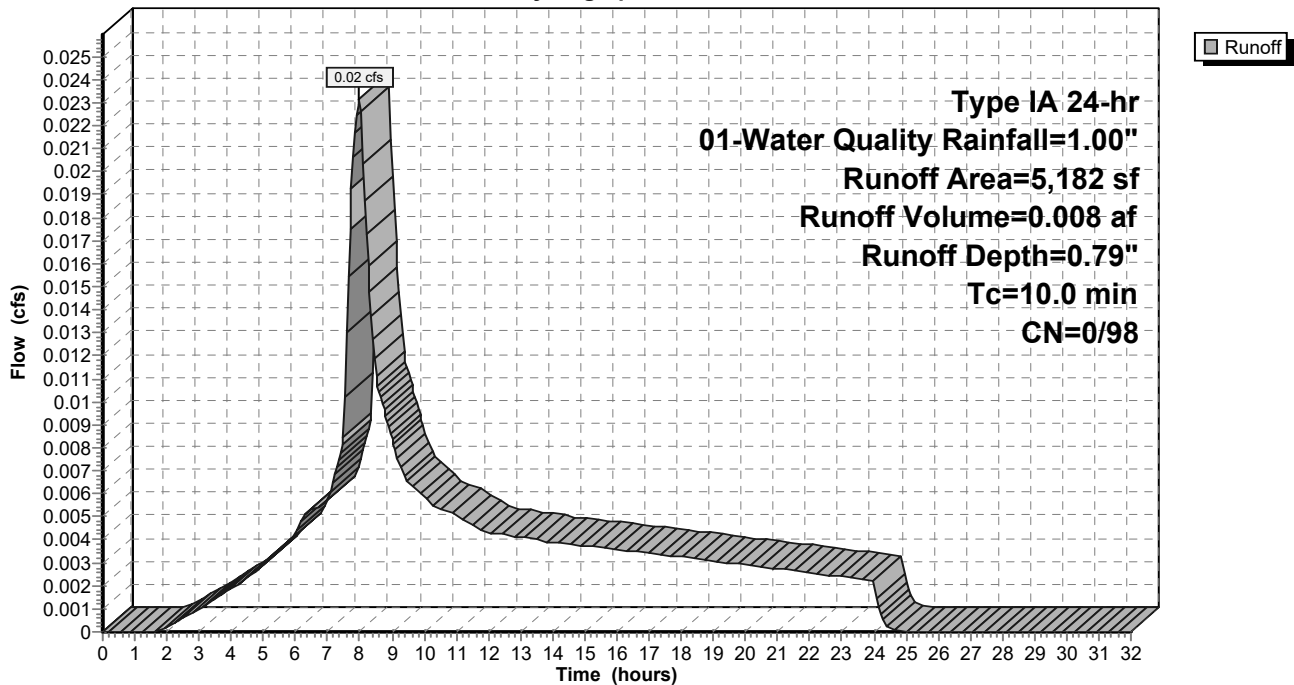
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 01-Water Quality Rainfall=1.00"

Area (sf)	CN	Description
5,182	98	Paved roads w/curbs & sewers, HSG D
5,182	98	100.00% Impervious Area

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

Subcatchment 121S: Basin 22

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Subcatchment 122S: Basin 23

Runoff = 0.02 cfs @ 7.98 hrs, Volume= 0.008 af, Depth= 0.79"
 Routed to Reach 155R : 1

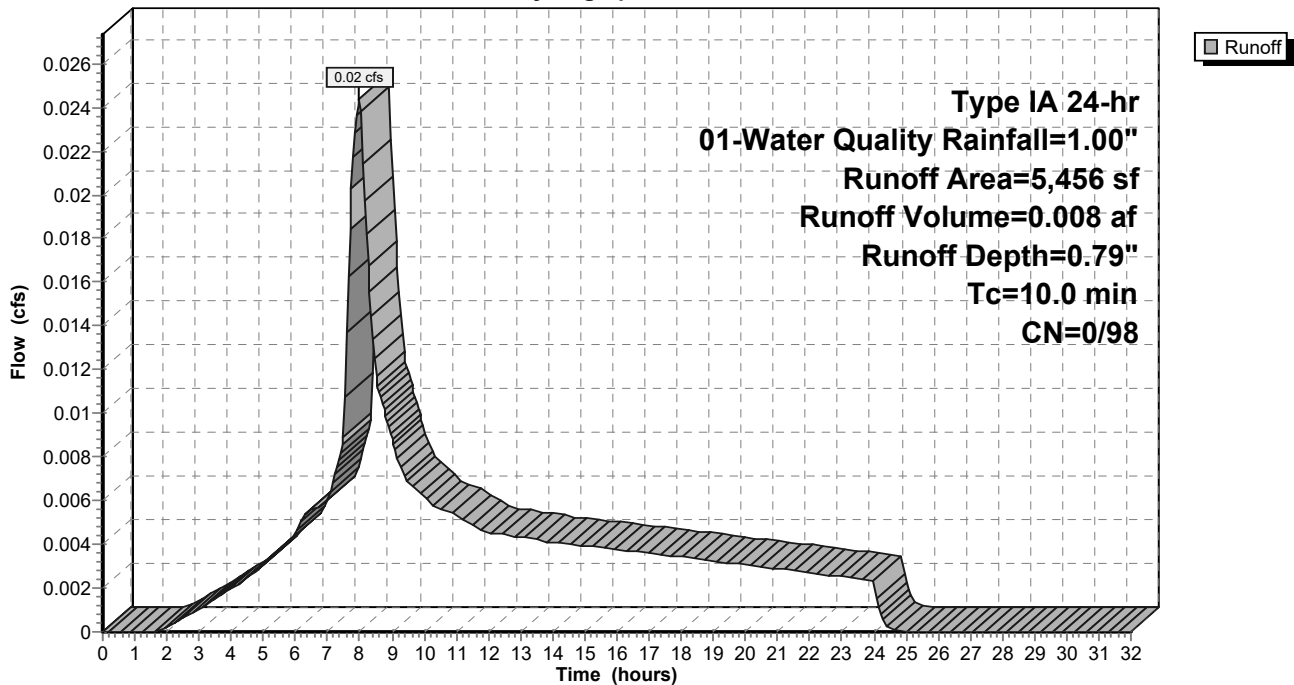
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 01-Water Quality Rainfall=1.00"

Area (sf)	CN	Description
5,456	98	Paved roads w/curbs & sewers, HSG D
5,456	98	100.00% Impervious Area

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

Subcatchment 122S: Basin 23

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Subcatchment 123S: Basin 24

Runoff = 0.02 cfs @ 7.98 hrs, Volume= 0.007 af, Depth= 0.79"
 Routed to Reach 162R : 1

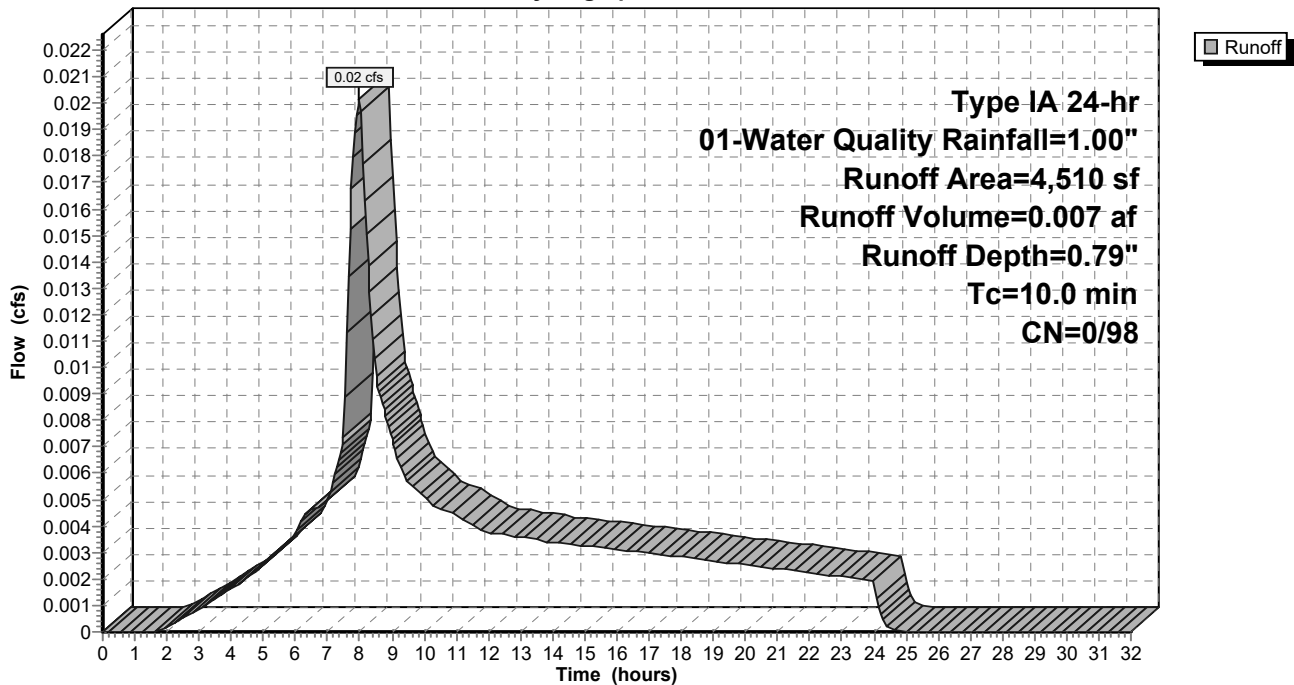
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 01-Water Quality Rainfall=1.00"

Area (sf)	CN	Description
4,510	98	Paved roads w/curbs & sewers, HSG D
4,510	98	100.00% Impervious Area

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

Subcatchment 123S: Basin 24

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Subcatchment 124S: Basin 25

Runoff = 0.06 cfs @ 7.98 hrs, Volume= 0.020 af, Depth= 0.79"
 Routed to Reach 163R : 1

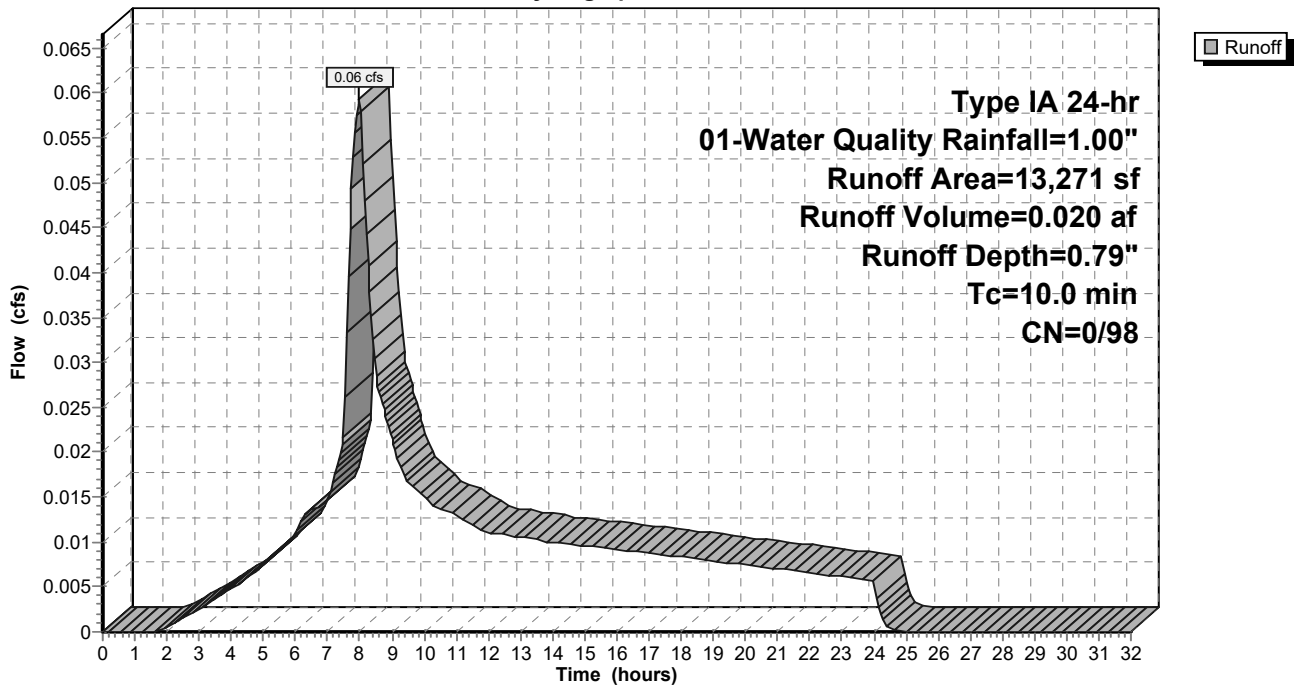
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 01-Water Quality Rainfall=1.00"

Area (sf)	CN	Description
13,271	98	Paved roads w/curbs & sewers, HSG D
13,271	98	100.00% Impervious Area

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

Subcatchment 124S: Basin 25

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Subcatchment 125S: Basin 26

Runoff = 0.08 cfs @ 7.98 hrs, Volume= 0.028 af, Depth= 0.79"
 Routed to Reach 165R : 1

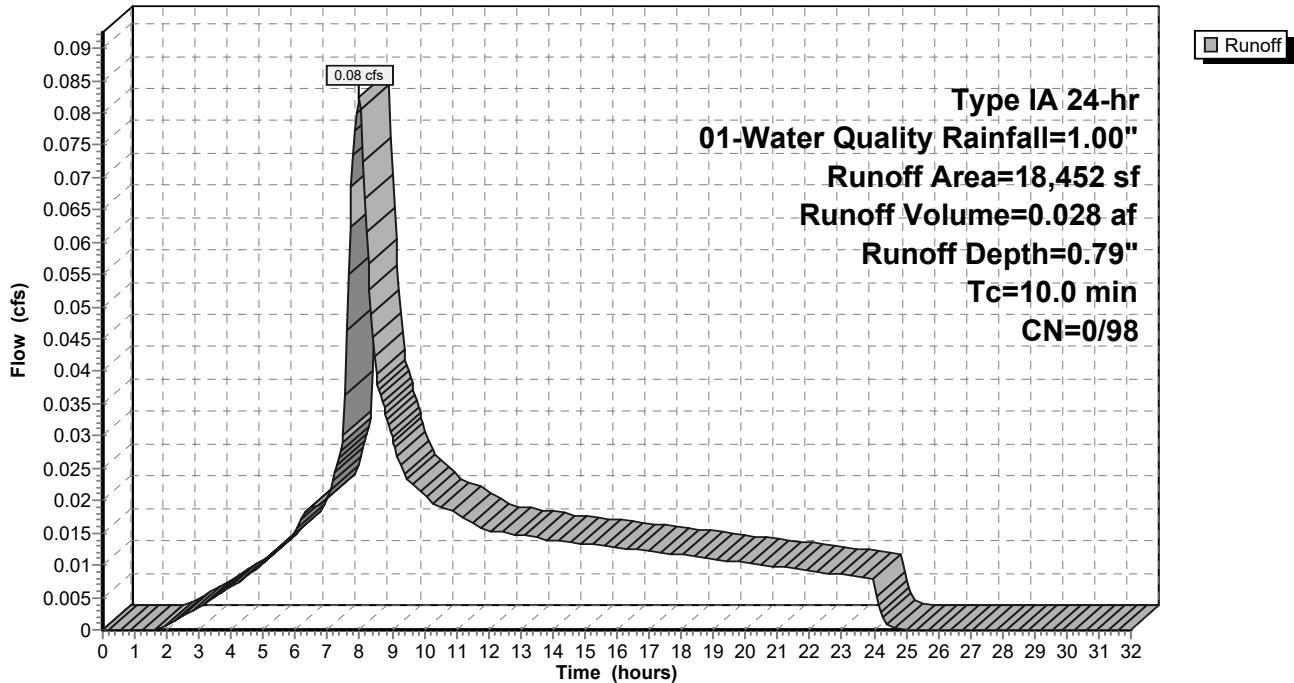
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 01-Water Quality Rainfall=1.00"

Area (sf)	CN	Description
18,452	98	Paved roads w/curbs & sewers, HSG D
18,452	98	100.00% Impervious Area

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

Subcatchment 125S: Basin 26

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Subcatchment 126S: Alley Basin 1

Runoff = 0.04 cfs @ 7.98 hrs, Volume= 0.015 af, Depth= 0.79"
 Routed to Reach 140R : 1

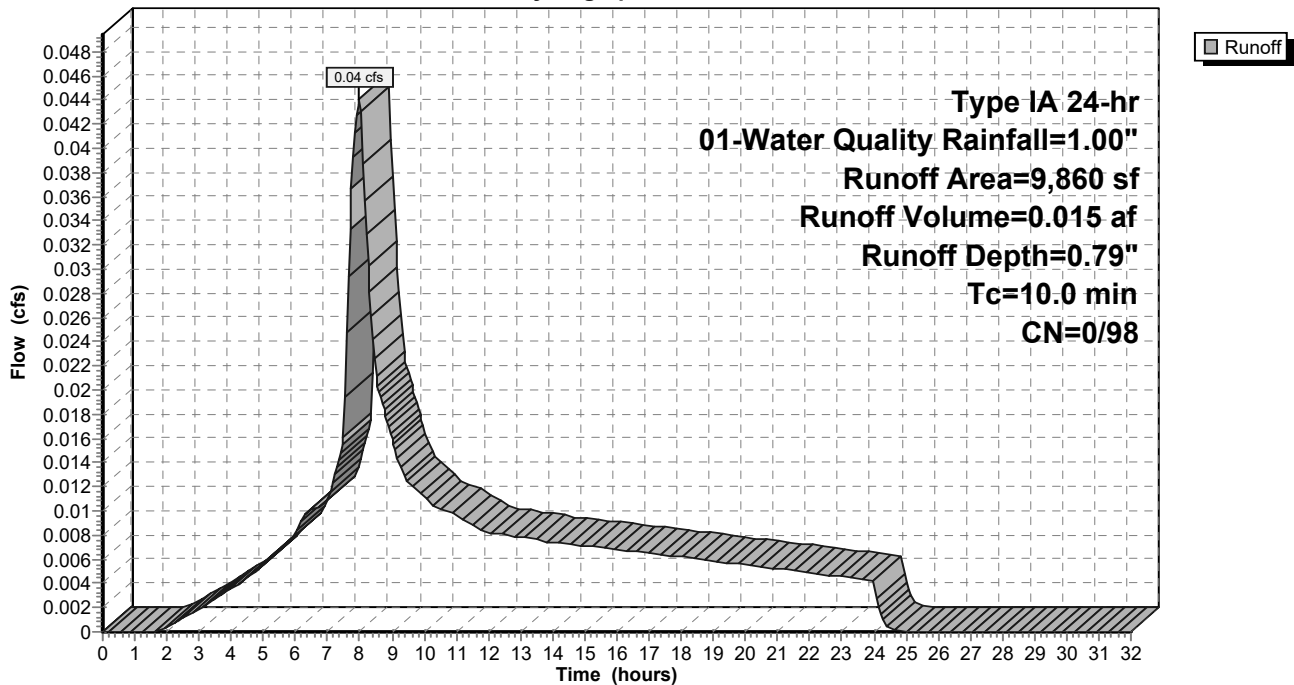
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 01-Water Quality Rainfall=1.00"

Area (sf)	CN	Description
9,860	98	Paved roads w/curbs & sewers, HSG D
9,860	98	100.00% Impervious Area

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

Subcatchment 126S: Alley Basin 1

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Subcatchment 127S: Alley Basin 2

Runoff = 0.03 cfs @ 7.98 hrs, Volume= 0.011 af, Depth= 0.79"
 Routed to Reach 141R : 1

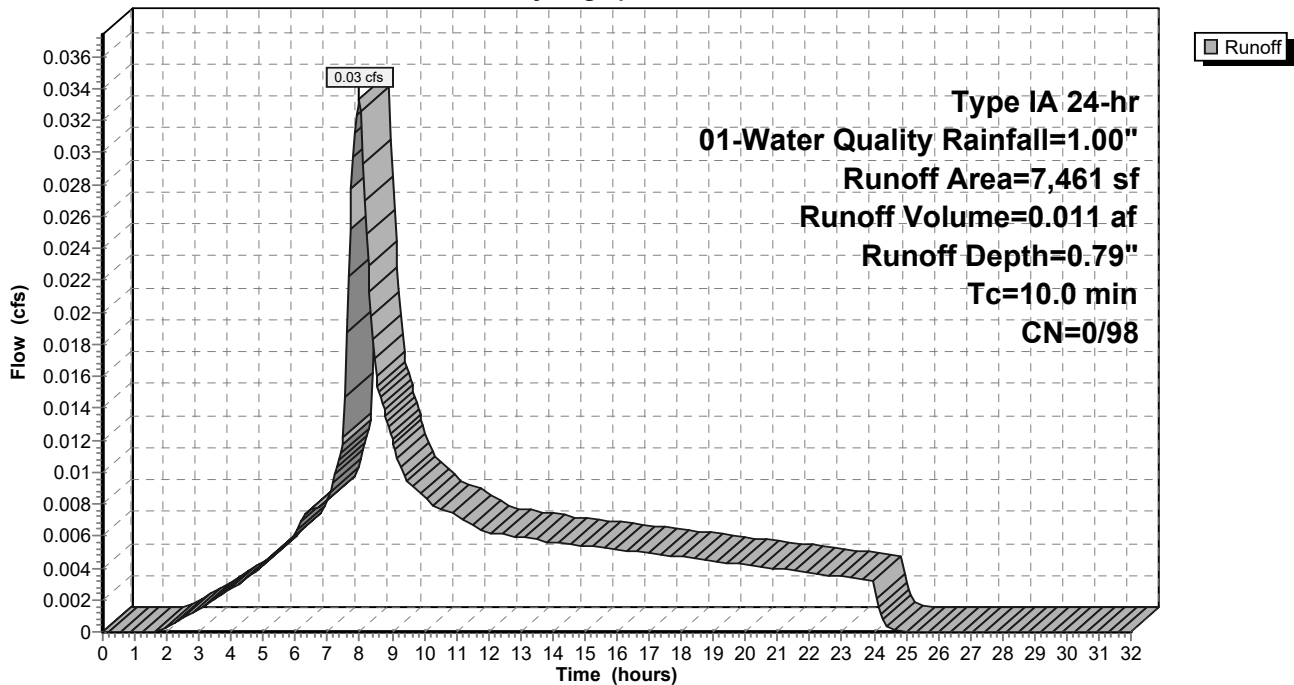
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 01-Water Quality Rainfall=1.00"

Area (sf)	CN	Description
7,461	98	Paved roads w/curbs & sewers, HSG D
7,461	98	100.00% Impervious Area

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

Subcatchment 127S: Alley Basin 2

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Subcatchment 128S: Alley Basin 3

Runoff = 0.03 cfs @ 7.98 hrs, Volume= 0.010 af, Depth= 0.79"
 Routed to Reach 147R : 1

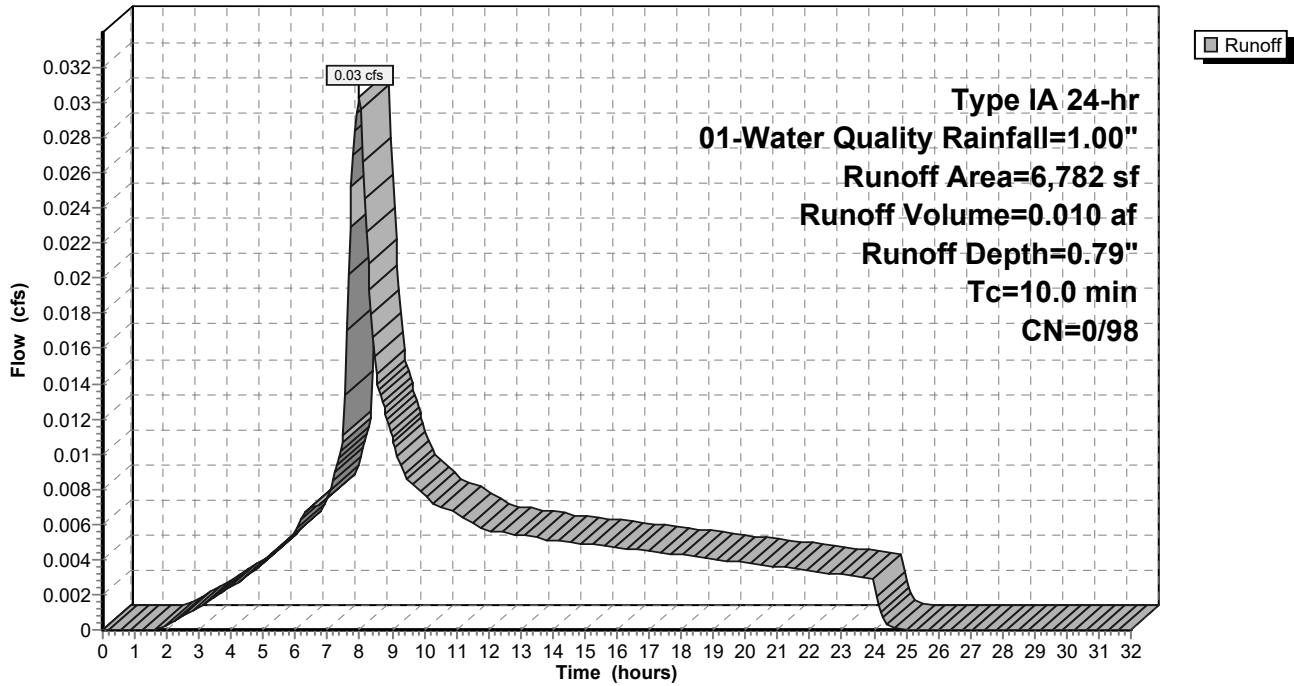
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 01-Water Quality Rainfall=1.00"

Area (sf)	CN	Description
6,782	98	Paved roads w/curbs & sewers, HSG D
6,782	98	100.00% Impervious Area

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

Subcatchment 128S: Alley Basin 3

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Subcatchment 129S: Alley Basin 4

Runoff = 0.03 cfs @ 7.98 hrs, Volume= 0.011 af, Depth= 0.79"
 Routed to Reach 153R : 1

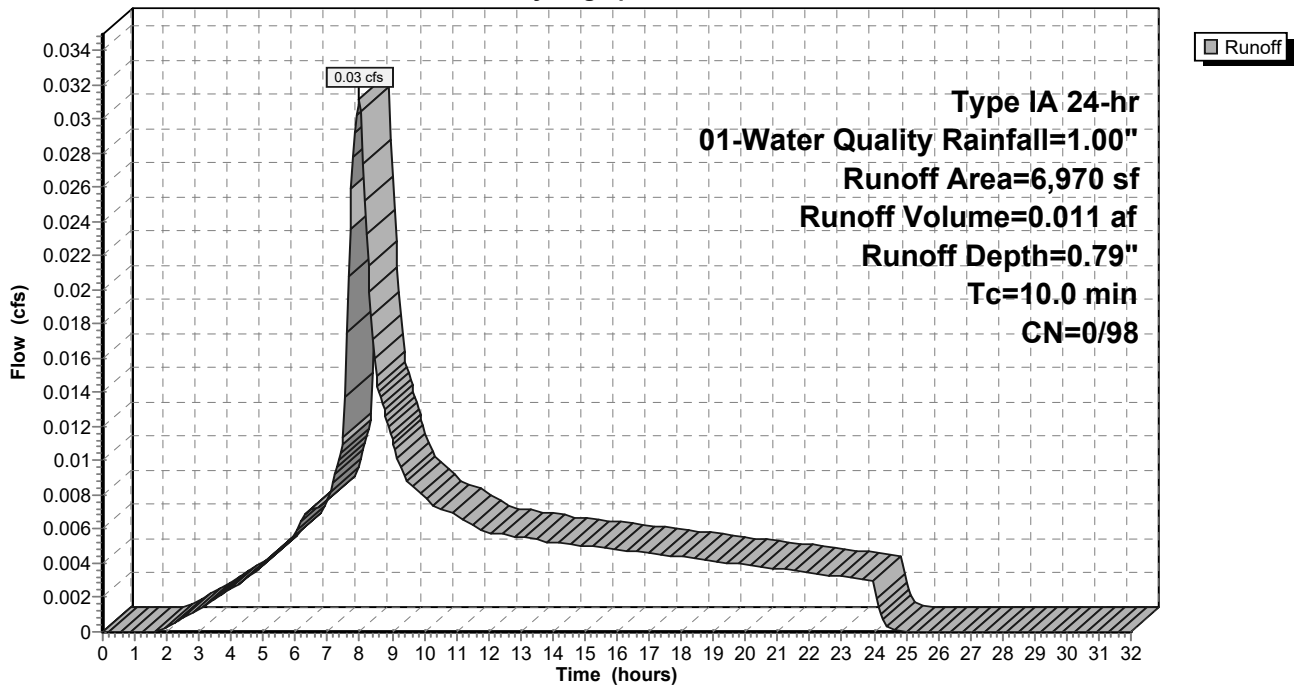
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 01-Water Quality Rainfall=1.00"

Area (sf)	CN	Description
6,970	98	Paved roads w/curbs & sewers, HSG D
6,970	98	100.00% Impervious Area

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

Subcatchment 129S: Alley Basin 4

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Subcatchment 168S: Future Lots

Runoff = 0.19 cfs @ 7.99 hrs, Volume= 0.071 af, Depth= 0.58"
 Routed to Reach 166R : Basin Future

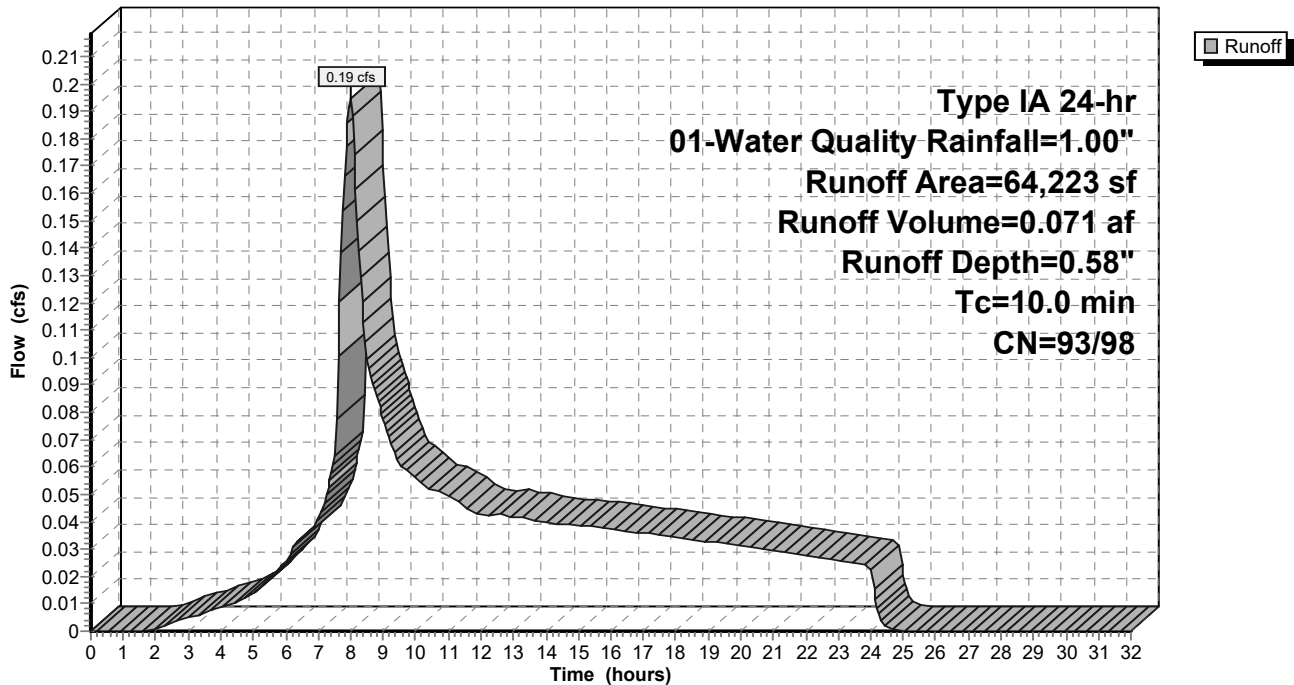
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 01-Water Quality Rainfall=1.00"

	Area (sf)	CN	Description
*	39,915	93	70% Lot Coverage Weighted
	24,308	98	Paved roads w/curbs & sewers, HSG D
	64,223	95	Weighted Average
	39,915	93	62.15% Pervious Area
	24,308	98	37.85% Impervious Area

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

Subcatchment 168S: Future Lots

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Subcatchment 169S: Swale 2

[46] Hint: Tc=0 (Instant runoff peak depends on dt)

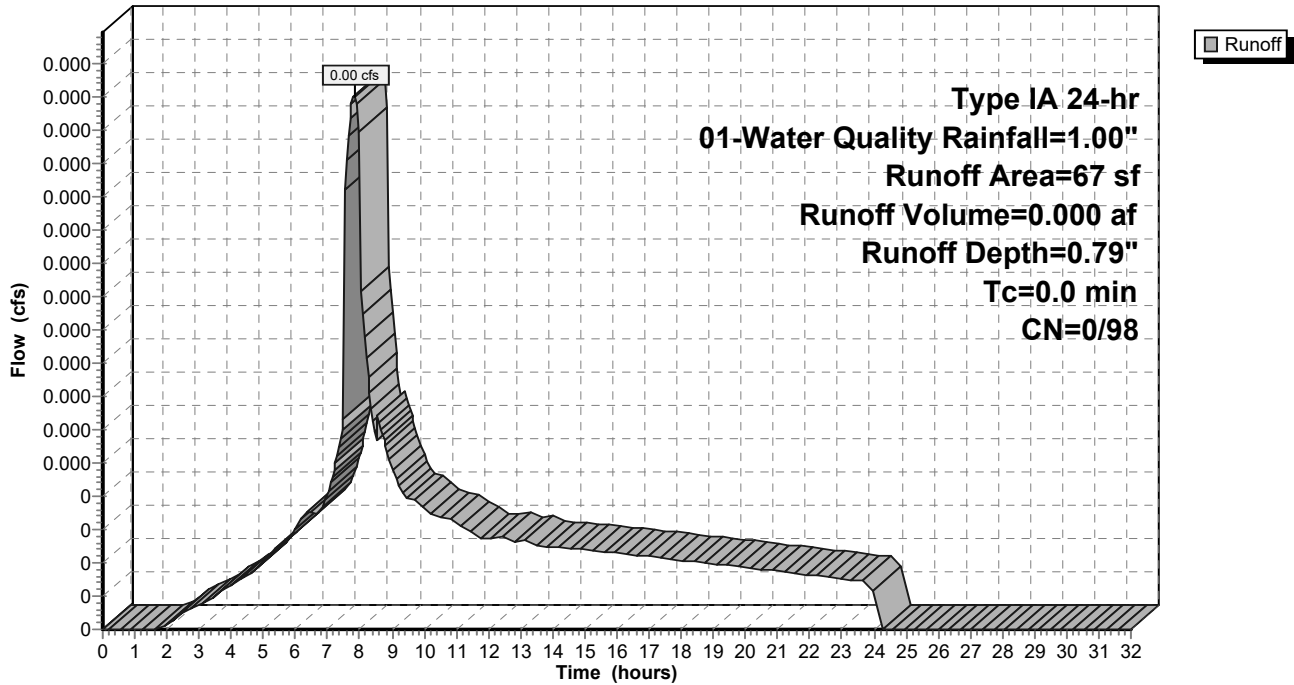
Runoff = 0.00 cfs @ 7.83 hrs, Volume= 0.000 af, Depth= 0.79"
 Routed to Pond 54P : Stormwater Swale 2

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 01-Water Quality Rainfall=1.00"

Area (sf)	CN	Description
67	98	Water Surface, HSG D
67	98	100.00% Impervious Area

Subcatchment 169S: Swale 2

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Subcatchment 170S: Swale 1

[46] Hint: Tc=0 (Instant runoff peak depends on dt)

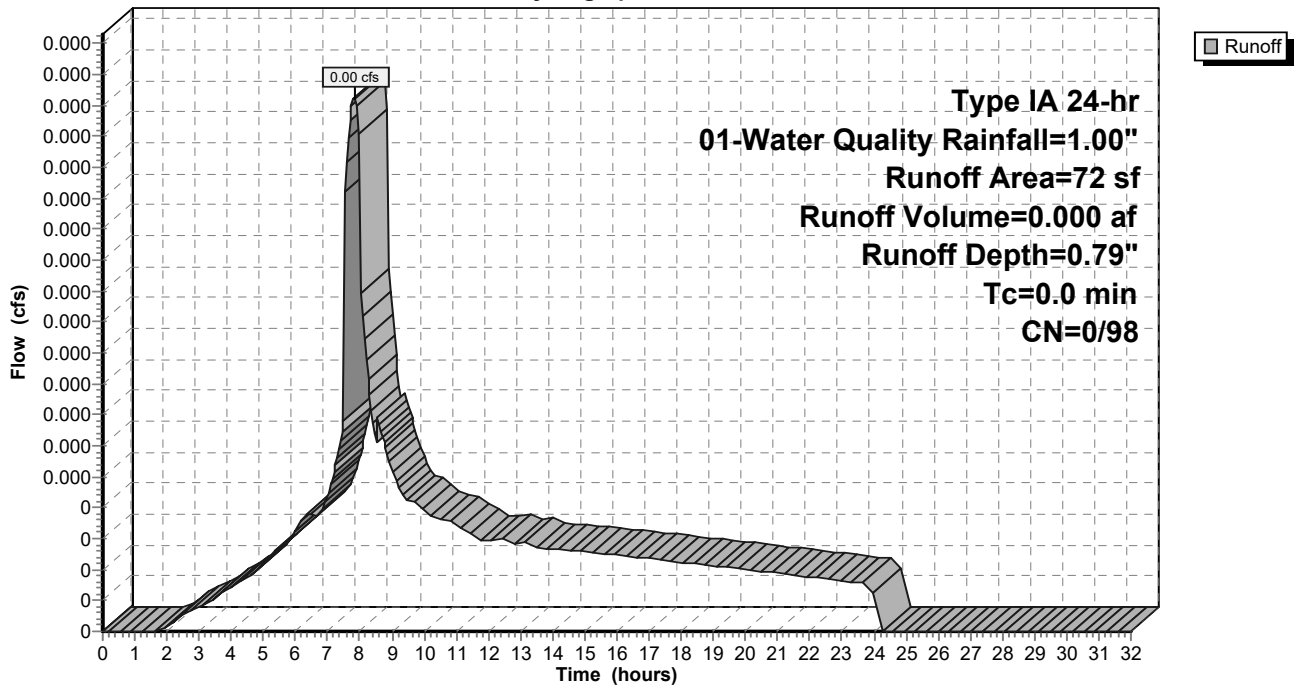
Runoff = 0.00 cfs @ 7.83 hrs, Volume= 0.000 af, Depth= 0.79"
 Routed to Pond 60P : Stormwater Swale 1

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 01-Water Quality Rainfall=1.00"

Area (sf)	CN	Description
72	98	Water Surface, HSG D
72	98	100.00% Impervious Area

Subcatchment 170S: Swale 1

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 01-Water Quality Rainfall=1.00"

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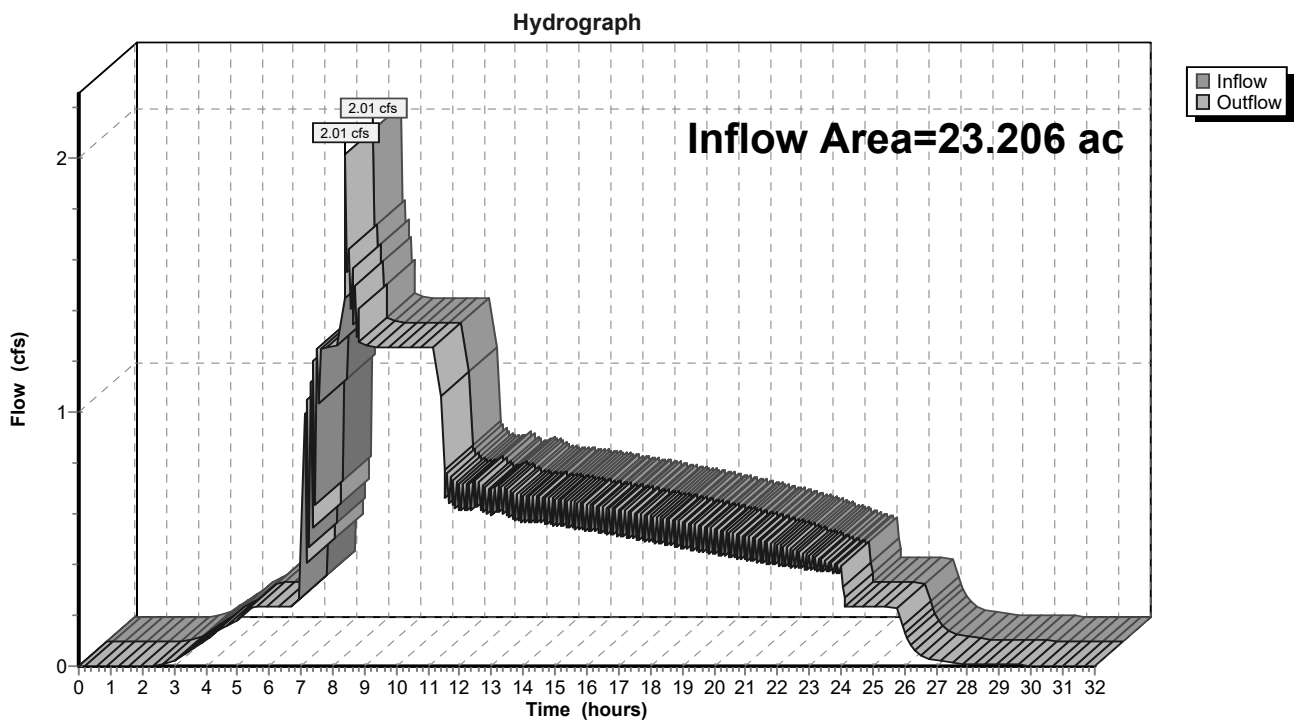
Summary for Reach 39R: Post-Construction Peak Flow

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

Inflow Area = 23.206 ac, 36.84% Impervious, Inflow Depth > 0.58" for 01-Water Quality event
 Inflow = 2.01 cfs @ 8.40 hrs, Volume= 1.113 af
 Outflow = 2.01 cfs @ 8.40 hrs, Volume= 1.113 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 39R: Post-Construction Peak Flow



9-6-23 HydroCAD DOM

Type IA 24-hr 01-Water Quality Rainfall=1.00"

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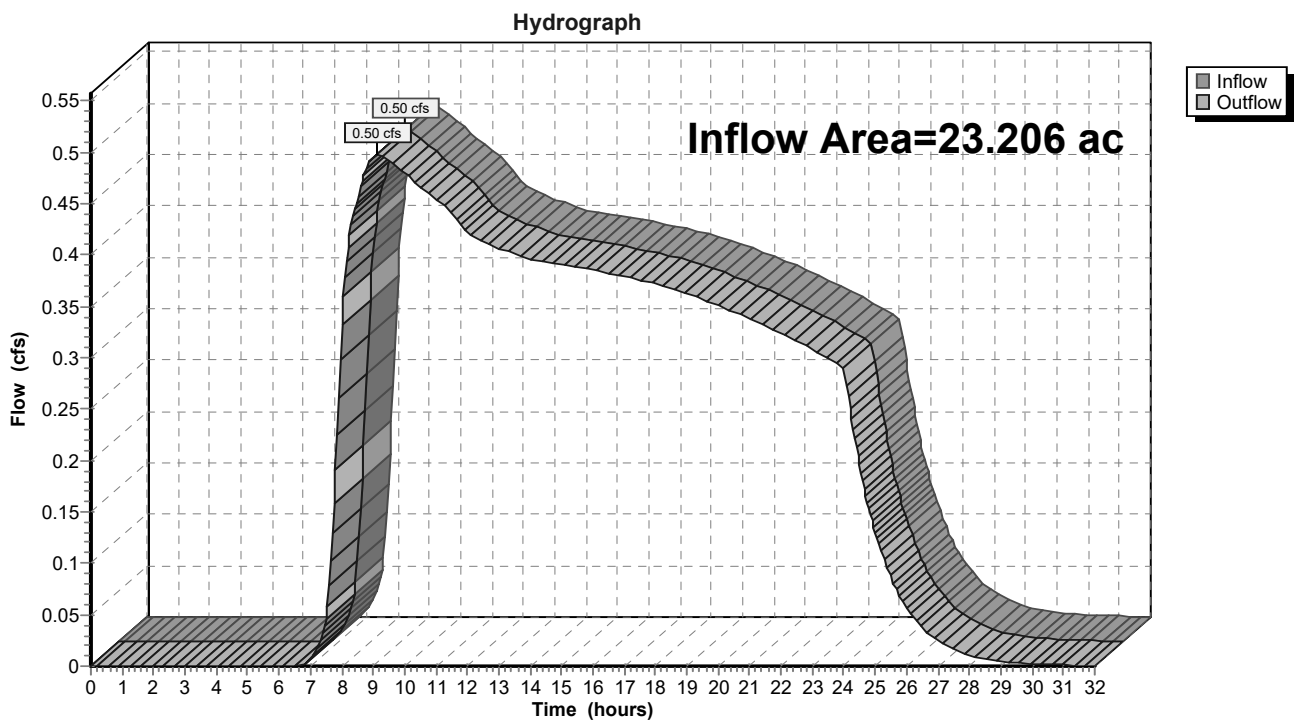
Summary for Reach 42R: Pre-Construction Peak Flow

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

Inflow Area = 23.206 ac, 0.00% Impervious, Inflow Depth > 0.28" for 01-Water Quality event
 Inflow = 0.50 cfs @ 9.13 hrs, Volume= 0.551 af
 Outflow = 0.50 cfs @ 9.13 hrs, Volume= 0.551 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 42R: Pre-Construction Peak Flow



9-6-23 HydroCAD DOM

Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Reach 58R: 1

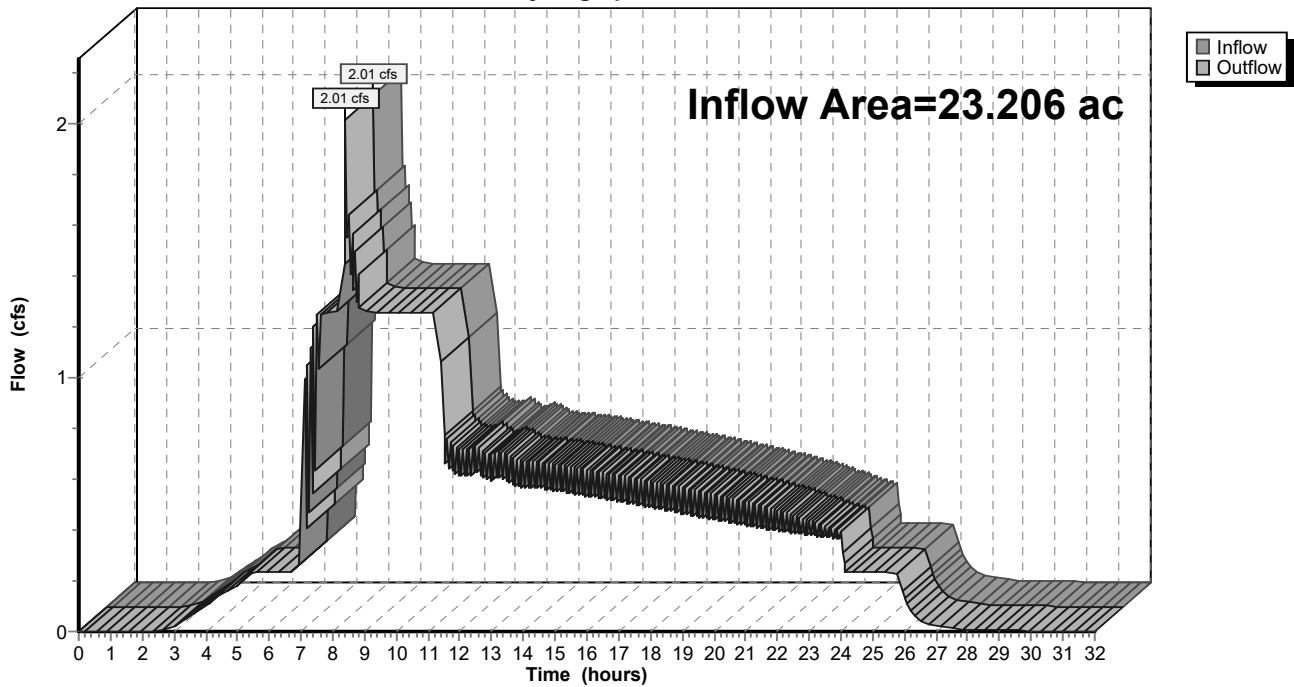
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 23.206 ac, 36.84% Impervious, Inflow Depth > 0.58" for 01-Water Quality event
 Inflow = 2.01 cfs @ 8.40 hrs, Volume= 1.113 af
 Outflow = 2.01 cfs @ 8.40 hrs, Volume= 1.113 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 39R : Post-Construction Peak Flow

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 58R: 1

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Reach 85R: 1

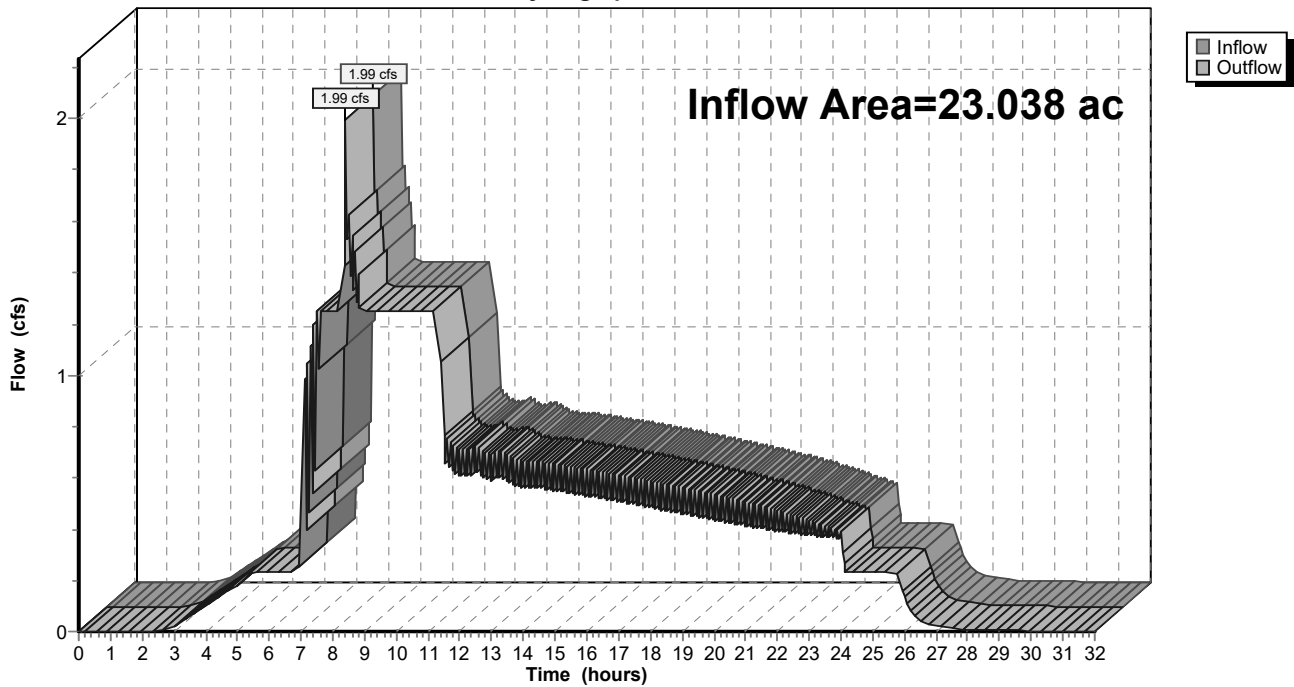
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 23.038 ac, 36.38% Impervious, Inflow Depth > 0.57" for 01-Water Quality event
 Inflow = 1.99 cfs @ 8.40 hrs, Volume= 1.102 af
 Outflow = 1.99 cfs @ 8.40 hrs, Volume= 1.102 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 58R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 85R: 1

Hydrograph



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Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Reach 130R: 1

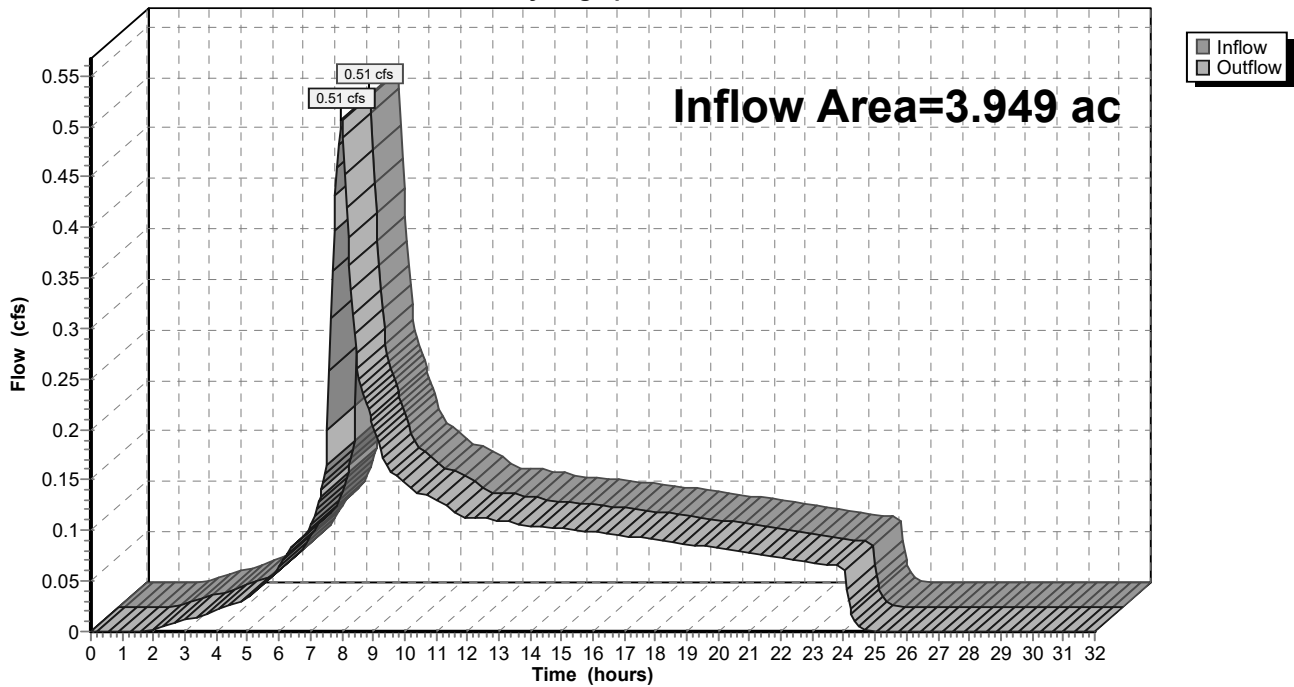
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.949 ac, 33.88% Impervious, Inflow Depth = 0.57" for 01-Water Quality event
 Inflow = 0.51 cfs @ 7.99 hrs, Volume= 0.186 af
 Outflow = 0.51 cfs @ 7.99 hrs, Volume= 0.186 af, Atten= 0%, Lag= 0.0 min
 Routed to Pond 63P : Detention Pond

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 130R: 1

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Reach 131R: 1

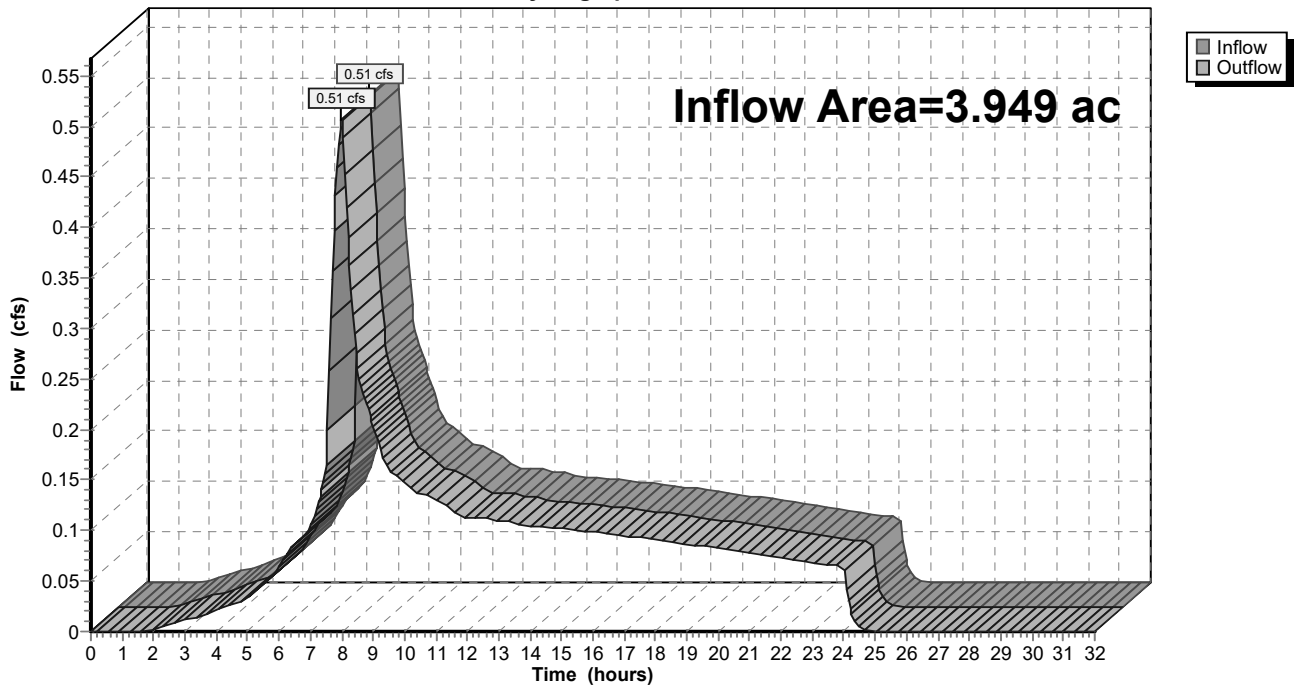
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.949 ac, 33.88% Impervious, Inflow Depth = 0.57" for 01-Water Quality event
 Inflow = 0.51 cfs @ 7.99 hrs, Volume= 0.186 af
 Outflow = 0.51 cfs @ 7.99 hrs, Volume= 0.186 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 130R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 131R: 1

Hydrograph



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Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Reach 132R: 1

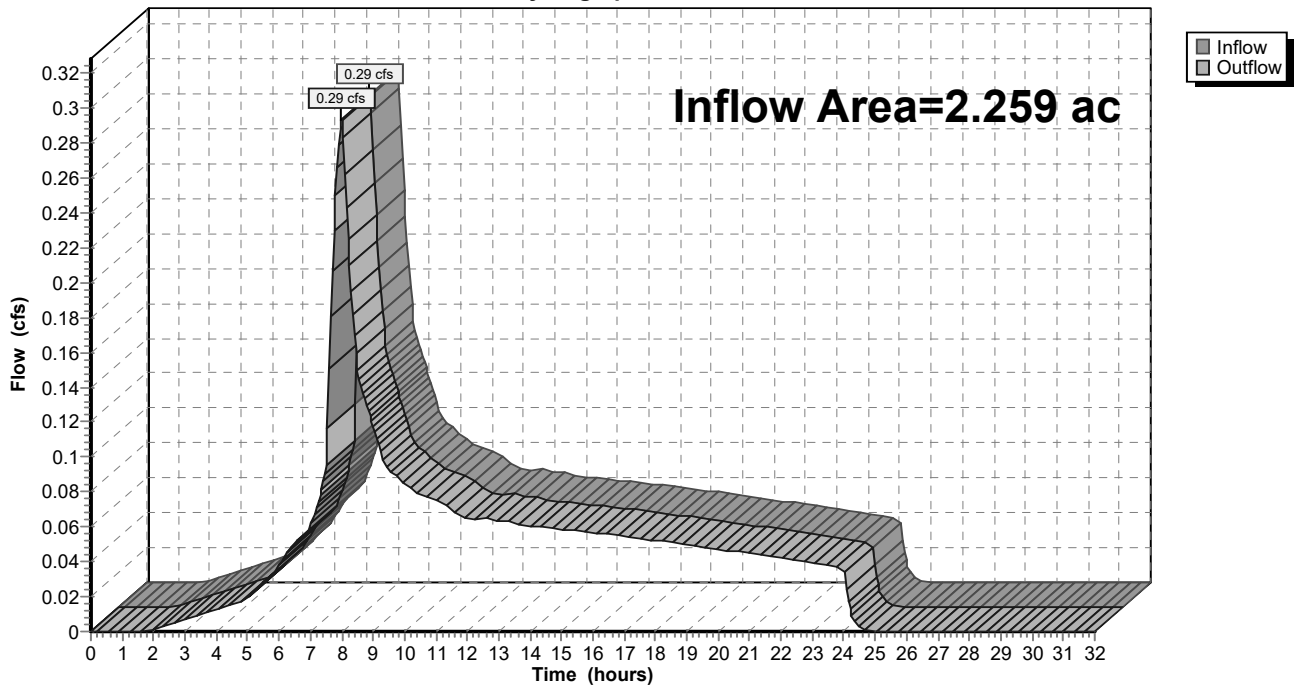
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 2.259 ac, 35.43% Impervious, Inflow Depth = 0.57" for 01-Water Quality event
 Inflow = 0.29 cfs @ 7.99 hrs, Volume= 0.108 af
 Outflow = 0.29 cfs @ 7.99 hrs, Volume= 0.108 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 131R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 132R: 1

Hydrograph



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Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Reach 133R: 1

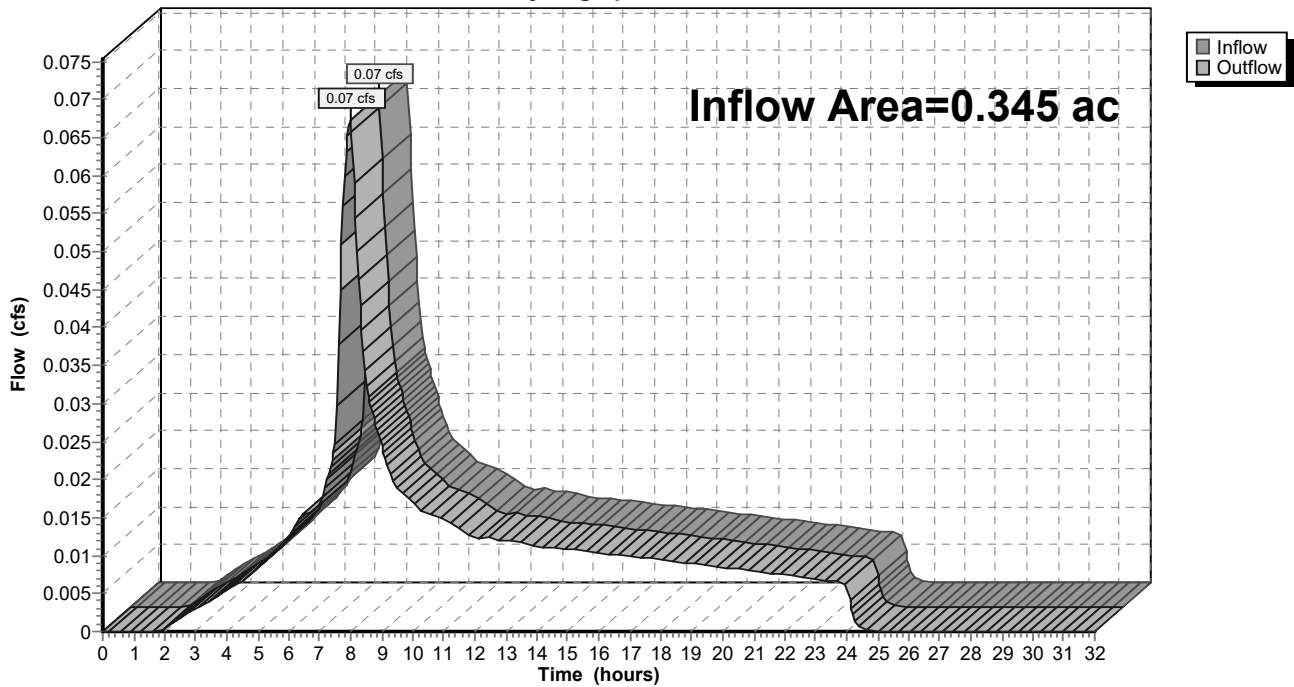
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.345 ac, 100.00% Impervious, Inflow Depth = 0.79" for 01-Water Quality event
 Inflow = 0.07 cfs @ 7.98 hrs, Volume= 0.023 af
 Outflow = 0.07 cfs @ 7.98 hrs, Volume= 0.023 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 132R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 133R: 1

Hydrograph



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Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Reach 134R: 1

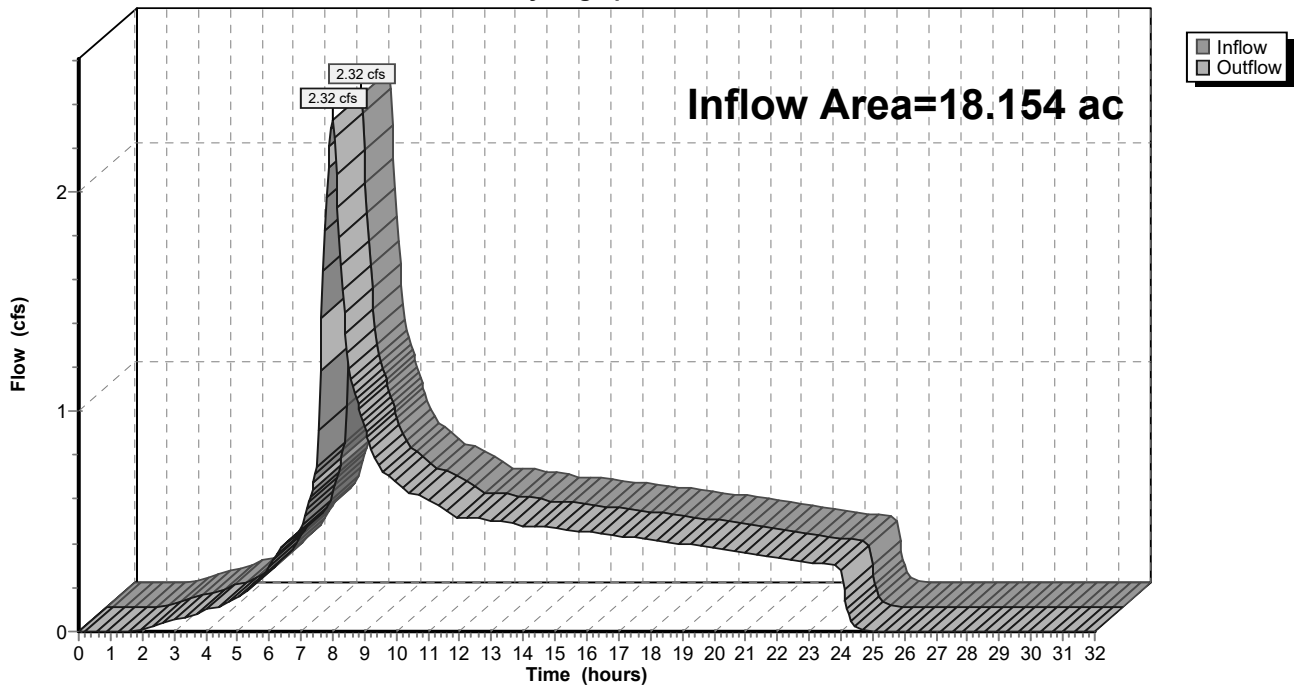
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 18.154 ac, 33.65% Impervious, Inflow Depth = 0.56" for 01-Water Quality event
 Inflow = 2.32 cfs @ 7.99 hrs, Volume= 0.855 af
 Outflow = 2.32 cfs @ 7.99 hrs, Volume= 0.855 af, Atten= 0%, Lag= 0.0 min
 Routed to Pond 63P : Detention Pond

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 134R: 1

Hydrograph



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Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Reach 135R: 1

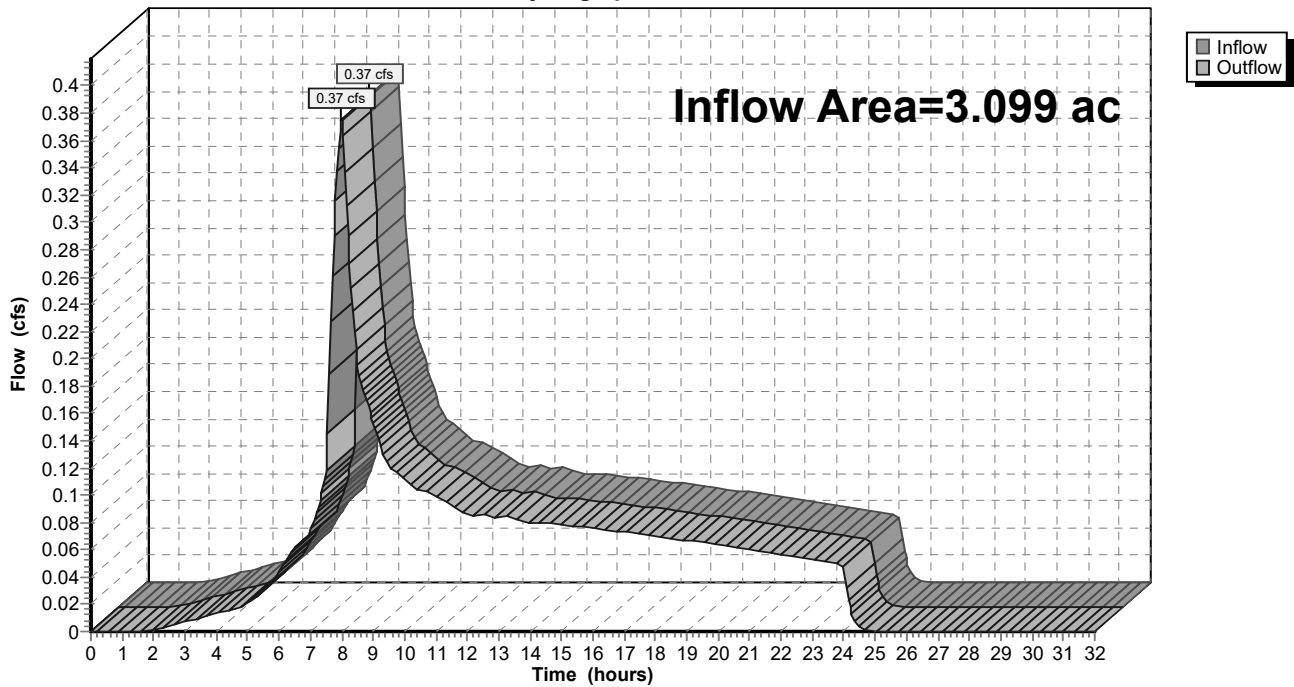
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.099 ac, 26.69% Impervious, Inflow Depth = 0.54" for 01-Water Quality event
 Inflow = 0.37 cfs @ 7.99 hrs, Volume= 0.140 af
 Outflow = 0.37 cfs @ 7.99 hrs, Volume= 0.140 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 134R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 135R: 1

Hydrograph



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Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Reach 136R: 1

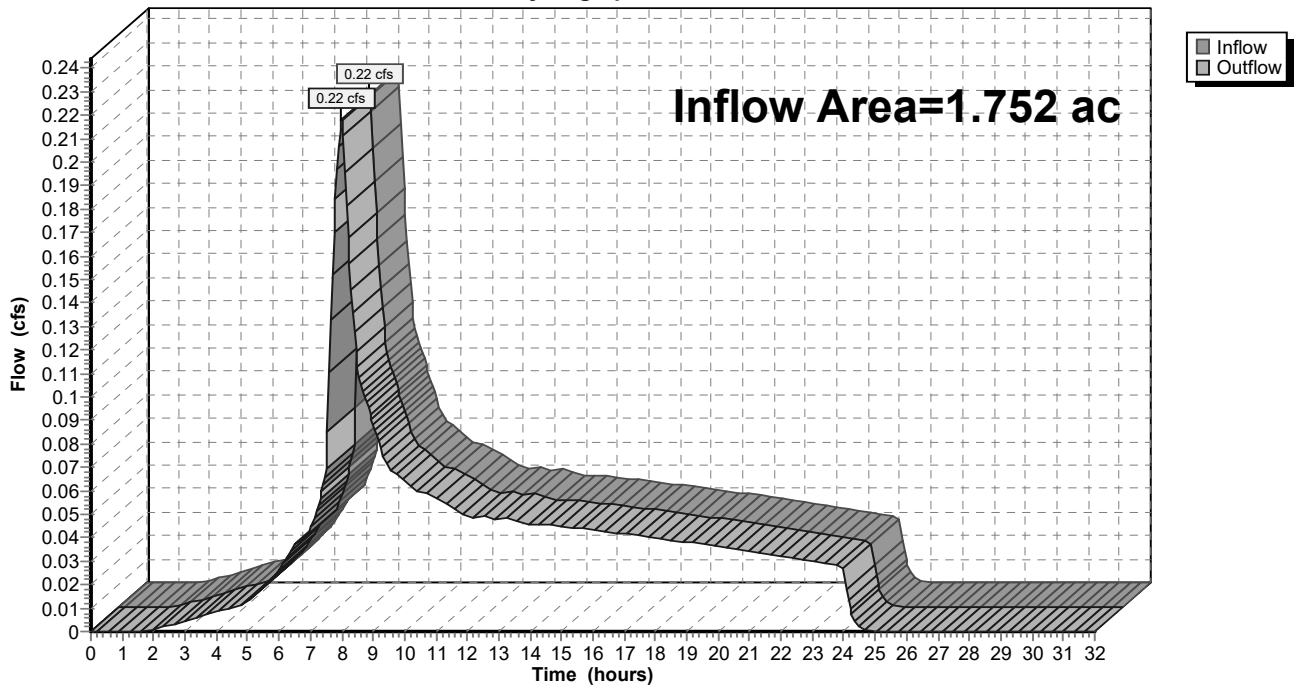
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.752 ac, 30.00% Impervious, Inflow Depth = 0.55" for 01-Water Quality event
 Inflow = 0.22 cfs @ 7.99 hrs, Volume= 0.081 af
 Outflow = 0.22 cfs @ 7.99 hrs, Volume= 0.081 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 135R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 136R: 1

Hydrograph



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Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Reach 137R: 1

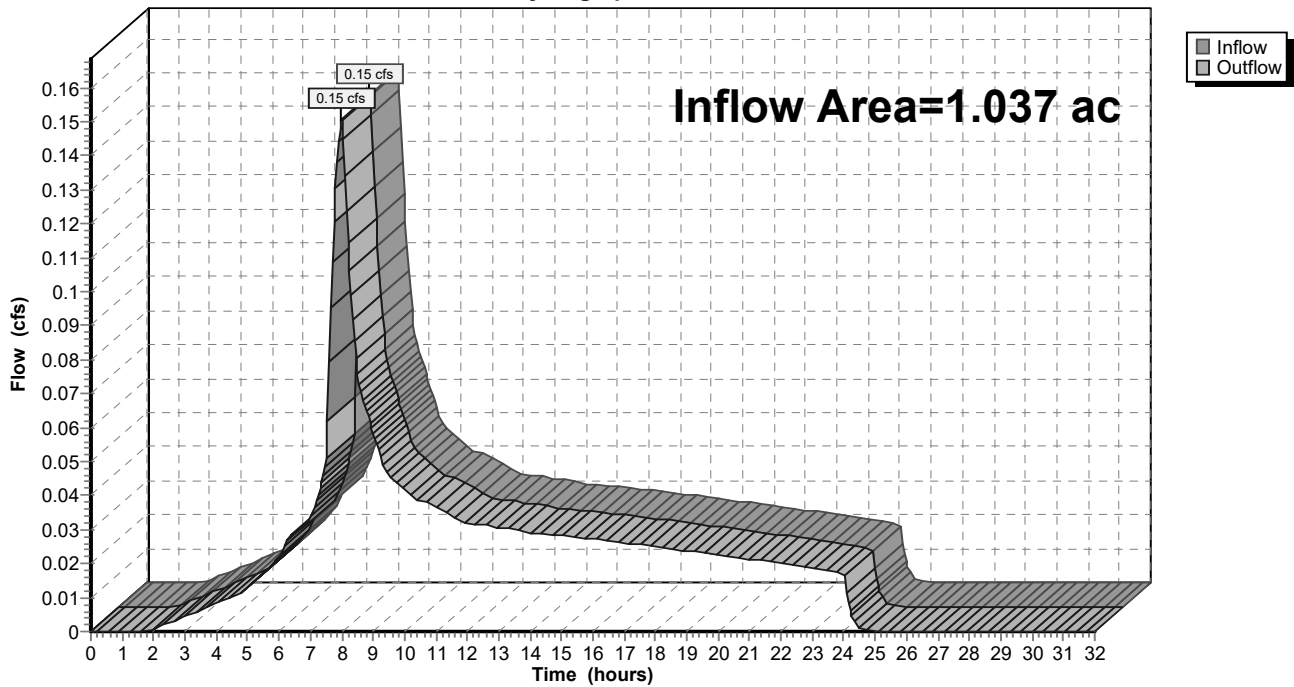
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.037 ac, 50.68% Impervious, Inflow Depth = 0.62" for 01-Water Quality event
 Inflow = 0.15 cfs @ 7.99 hrs, Volume= 0.054 af
 Outflow = 0.15 cfs @ 7.99 hrs, Volume= 0.054 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 136R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 137R: 1

Hydrograph



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Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Reach 138R: 1

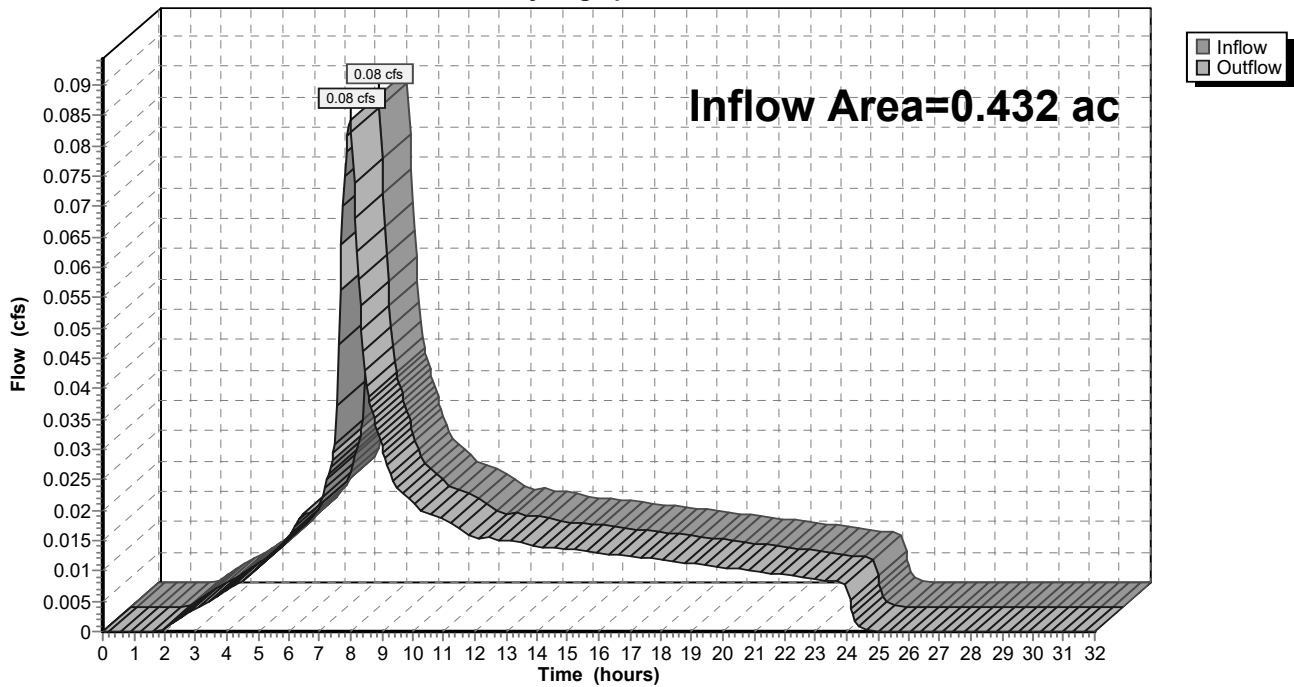
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.432 ac, 100.00% Impervious, Inflow Depth = 0.79" for 01-Water Quality event
 Inflow = 0.08 cfs @ 7.98 hrs, Volume= 0.028 af
 Outflow = 0.08 cfs @ 7.98 hrs, Volume= 0.028 af, Atten= 0%, Lag= 0.0 min
 Routed to Pond 63P : Detention Pond

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 138R: 1

Hydrograph



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Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Reach 139R: 1

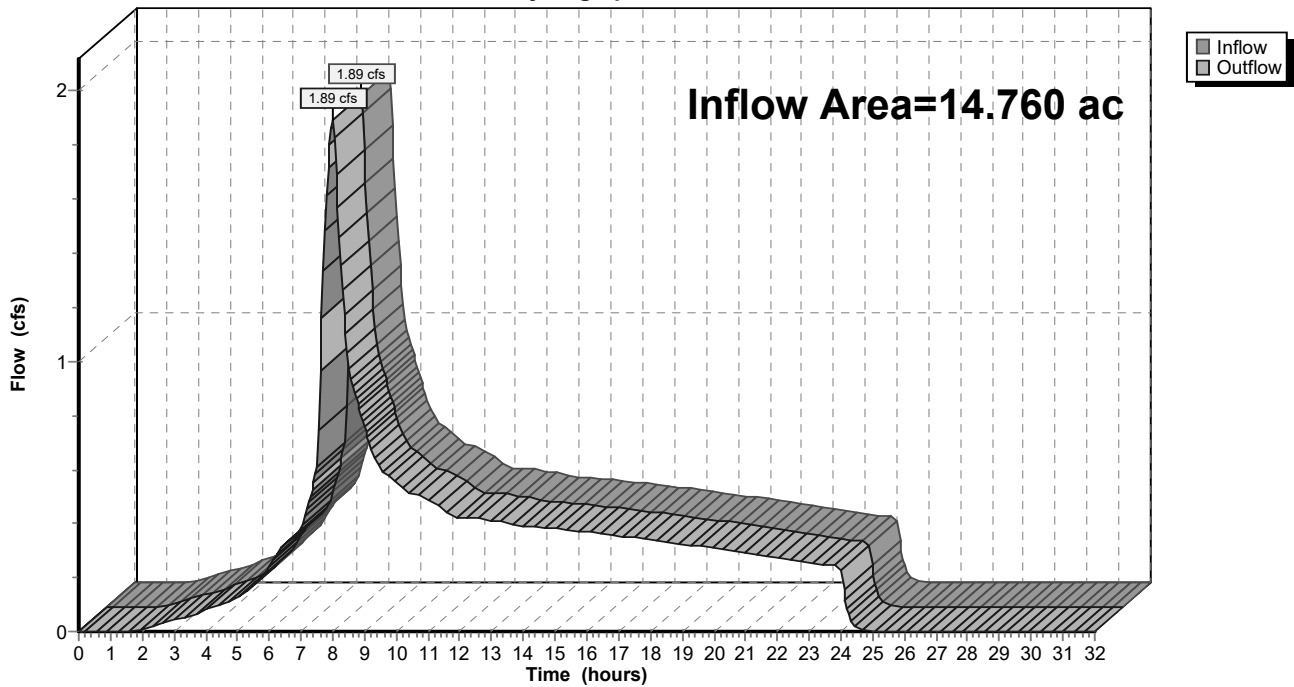
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 14.760 ac, 33.78% Impervious, Inflow Depth = 0.57" for 01-Water Quality event
 Inflow = 1.89 cfs @ 7.99 hrs, Volume= 0.695 af
 Outflow = 1.89 cfs @ 7.99 hrs, Volume= 0.695 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 158R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 139R: 1

Hydrograph



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Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Reach 140R: 1

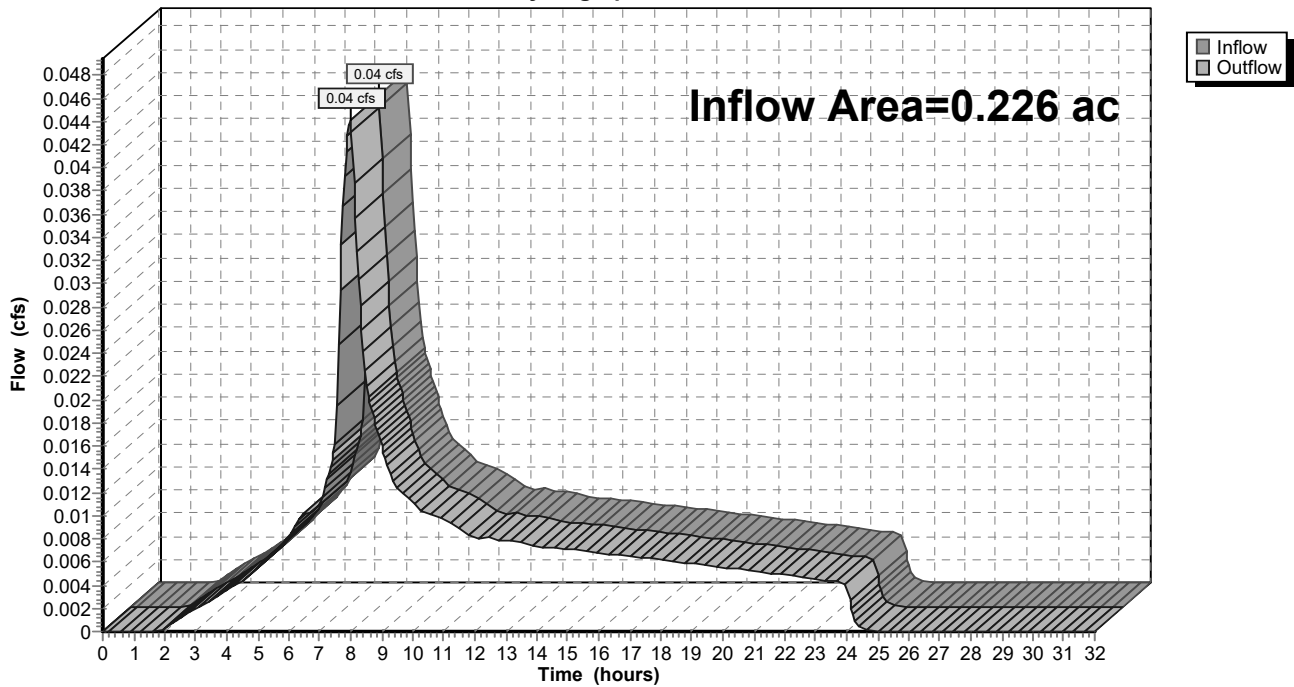
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.226 ac, 100.00% Impervious, Inflow Depth = 0.79" for 01-Water Quality event
 Inflow = 0.04 cfs @ 7.98 hrs, Volume= 0.015 af
 Outflow = 0.04 cfs @ 7.98 hrs, Volume= 0.015 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 138R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 140R: 1

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Reach 141R: 1

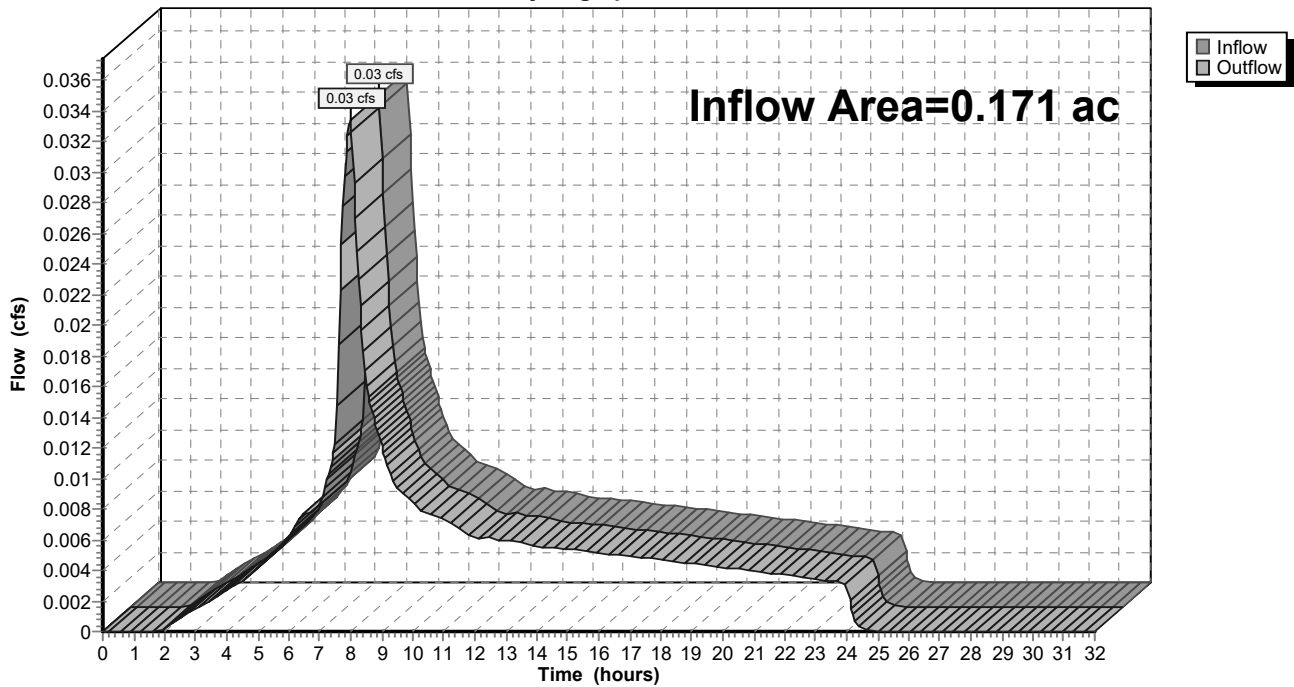
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.171 ac, 100.00% Impervious, Inflow Depth = 0.79" for 01-Water Quality event
 Inflow = 0.03 cfs @ 7.98 hrs, Volume= 0.011 af
 Outflow = 0.03 cfs @ 7.98 hrs, Volume= 0.011 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 139R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 141R: 1

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Reach 142R: 1

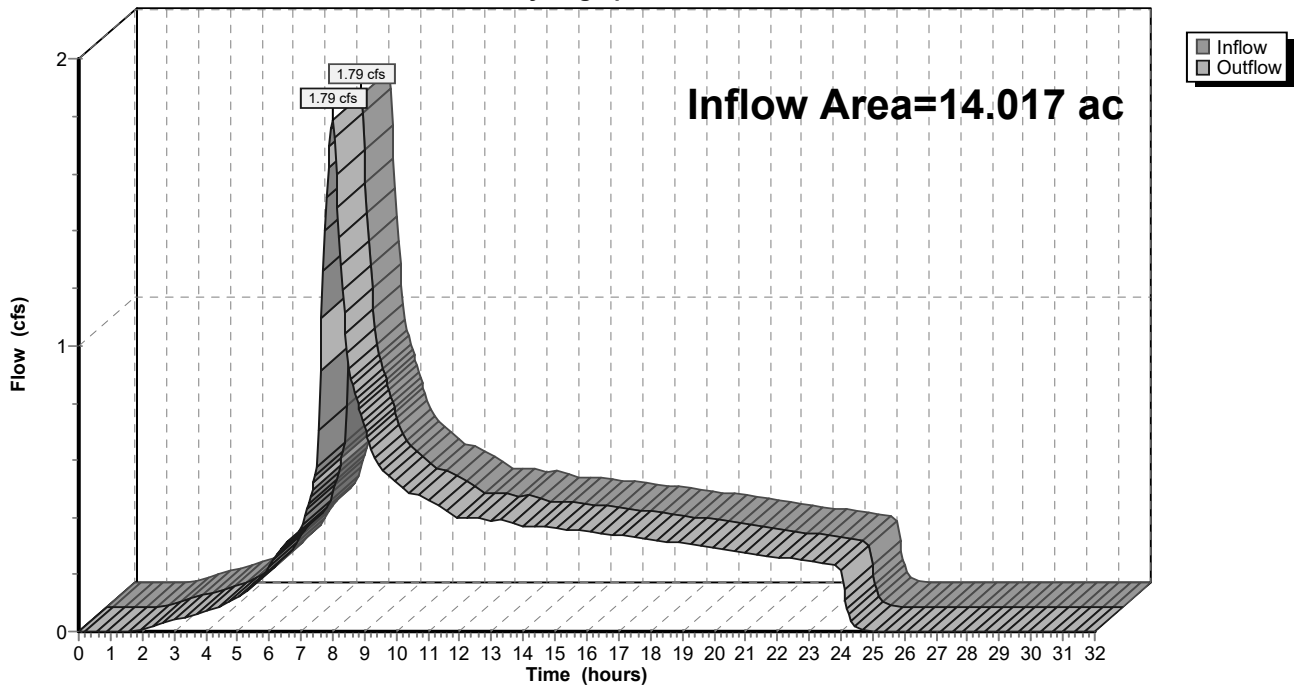
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 14.017 ac, 33.09% Impervious, Inflow Depth = 0.56" for 01-Water Quality event
 Inflow = 1.79 cfs @ 7.99 hrs, Volume= 0.658 af
 Outflow = 1.79 cfs @ 7.99 hrs, Volume= 0.658 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 159R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 142R: 1

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Reach 143R: 1

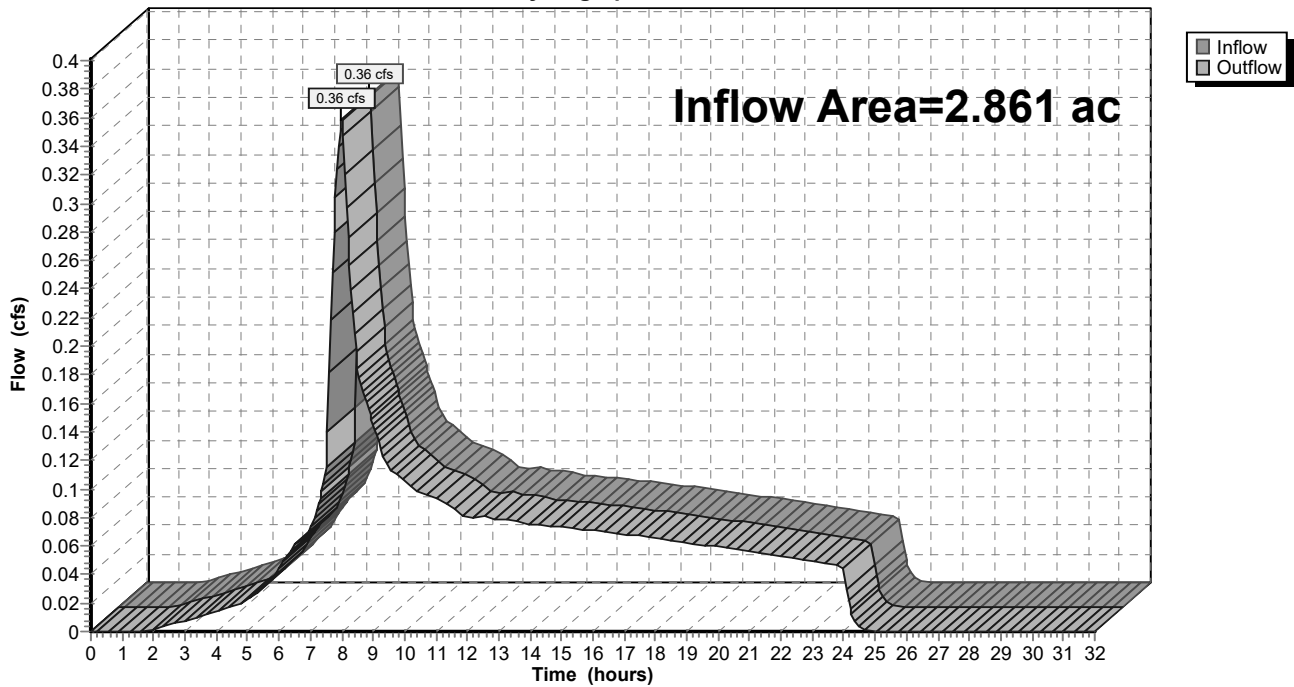
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 2.861 ac, 30.95% Impervious, Inflow Depth = 0.56" for 01-Water Quality event
 Inflow = 0.36 cfs @ 7.99 hrs, Volume= 0.133 af
 Outflow = 0.36 cfs @ 7.99 hrs, Volume= 0.133 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 142R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 143R: 1

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Reach 144R: 1

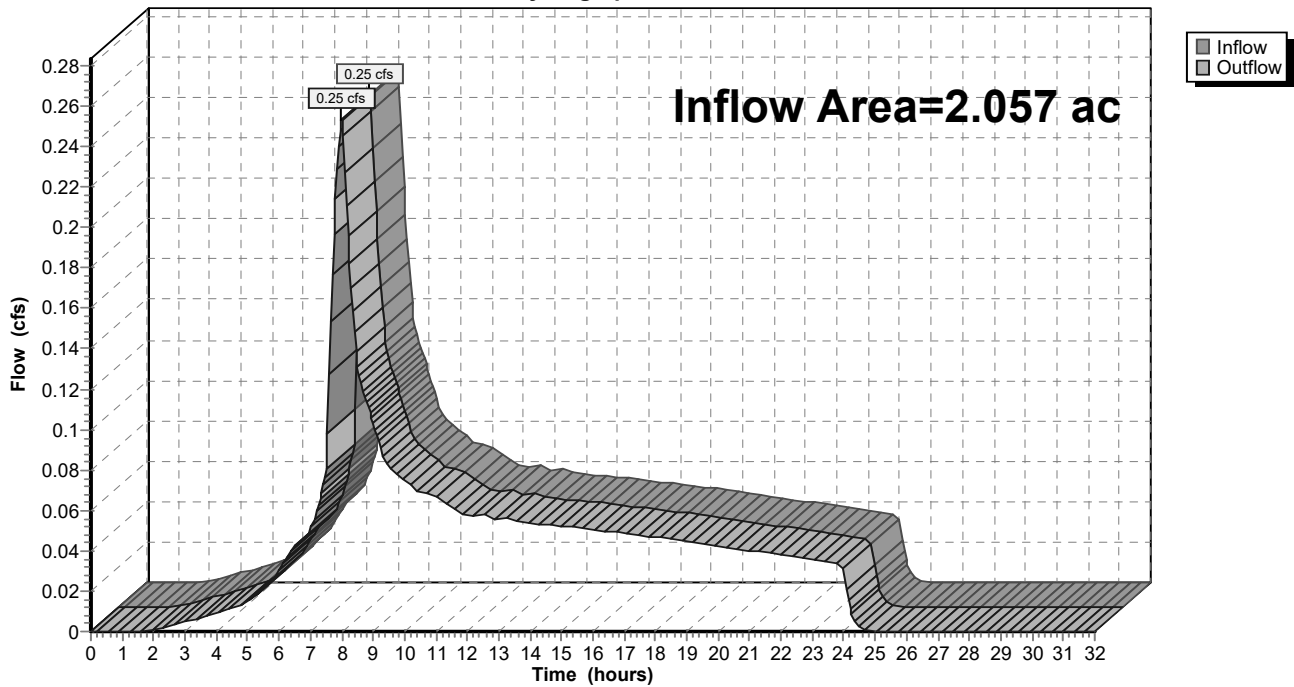
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 2.057 ac, 28.74% Impervious, Inflow Depth = 0.55" for 01-Water Quality event
 Inflow = 0.25 cfs @ 7.99 hrs, Volume= 0.094 af
 Outflow = 0.25 cfs @ 7.99 hrs, Volume= 0.094 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 143R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 144R: 1

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Reach 145R: 1

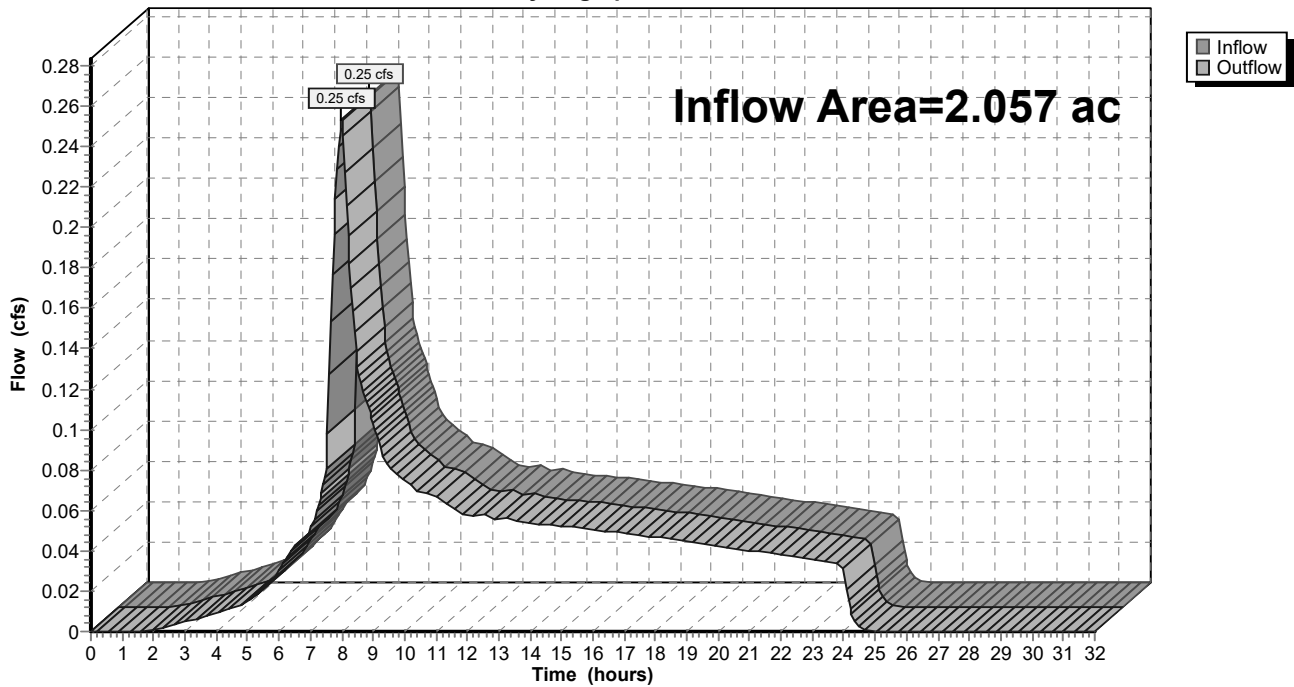
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 2.057 ac, 28.74% Impervious, Inflow Depth = 0.55" for 01-Water Quality event
 Inflow = 0.25 cfs @ 7.99 hrs, Volume= 0.094 af
 Outflow = 0.25 cfs @ 7.99 hrs, Volume= 0.094 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 144R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 145R: 1

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Reach 146R: 1

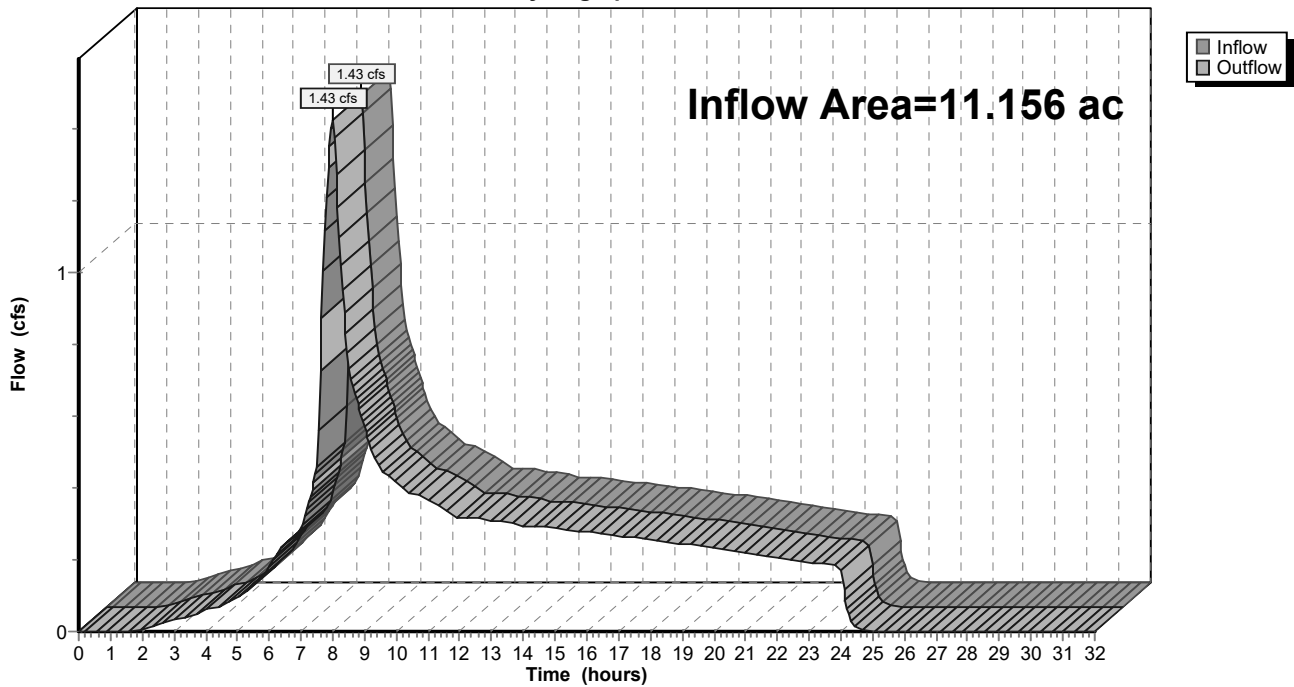
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 11.156 ac, 33.63% Impervious, Inflow Depth = 0.56" for 01-Water Quality event
 Inflow = 1.43 cfs @ 7.99 hrs, Volume= 0.525 af
 Outflow = 1.43 cfs @ 7.99 hrs, Volume= 0.525 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 142R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 146R: 1

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Reach 147R: 1

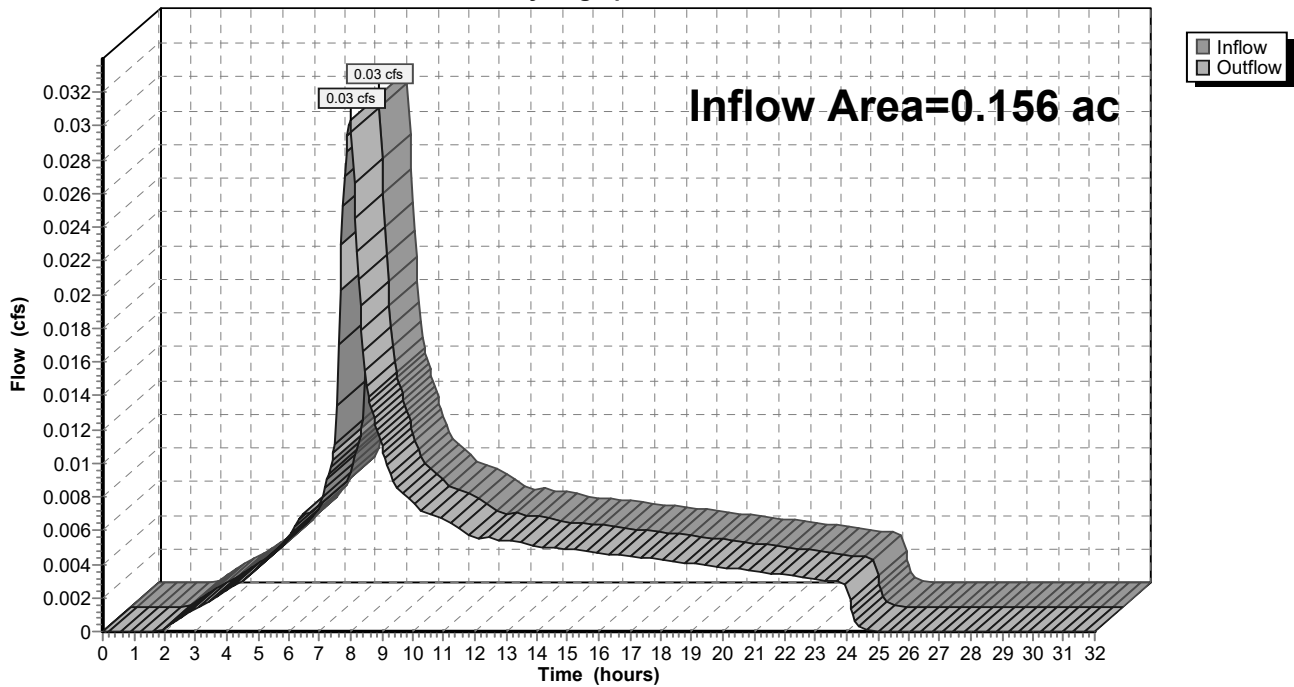
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.156 ac, 100.00% Impervious, Inflow Depth = 0.79" for 01-Water Quality event
 Inflow = 0.03 cfs @ 7.98 hrs, Volume= 0.010 af
 Outflow = 0.03 cfs @ 7.98 hrs, Volume= 0.010 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 146R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 147R: 1

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Reach 148R: 1

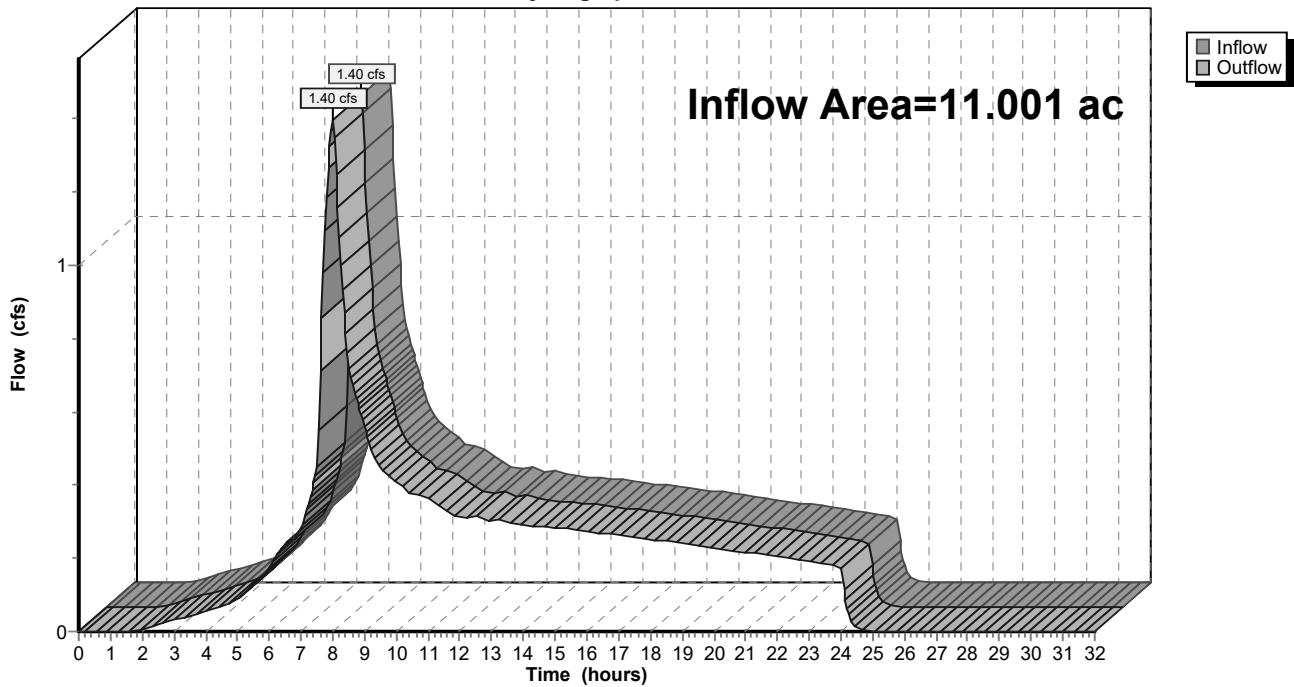
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 11.001 ac, 32.69% Impervious, Inflow Depth = 0.56" for 01-Water Quality event
 Inflow = 1.40 cfs @ 7.99 hrs, Volume= 0.515 af
 Outflow = 1.40 cfs @ 7.99 hrs, Volume= 0.515 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 146R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 148R: 1

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Reach 149R: 1

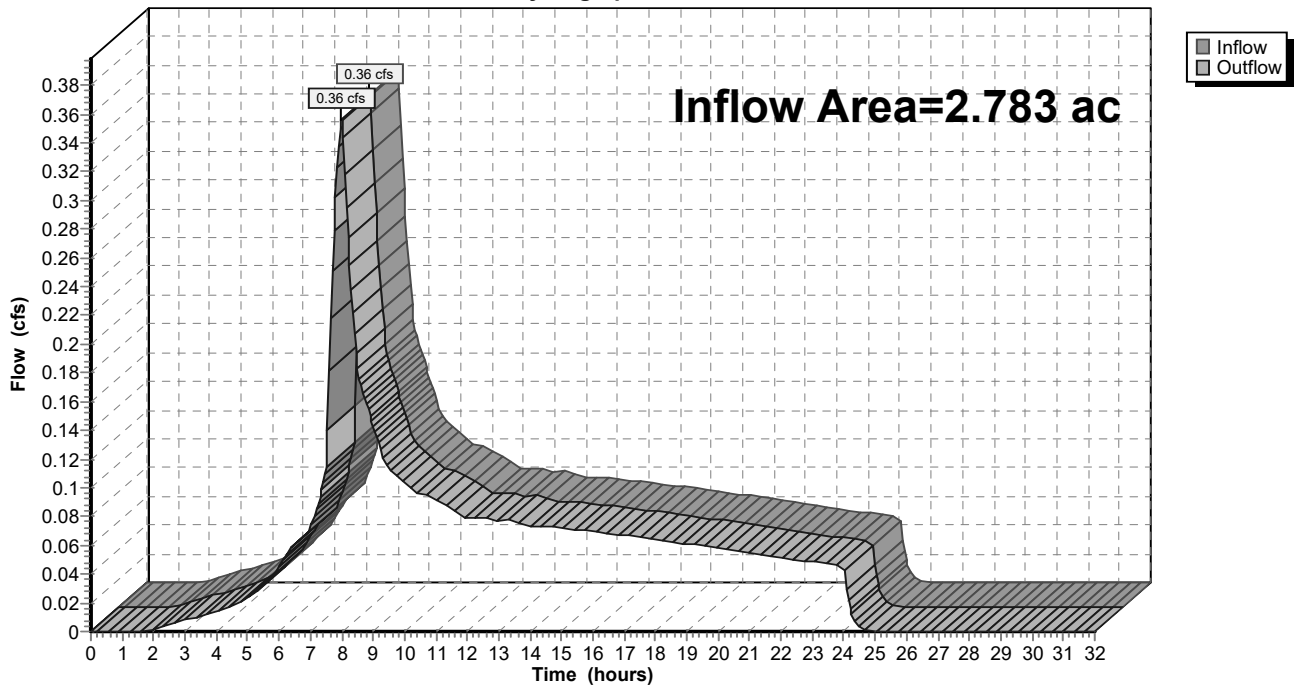
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 2.783 ac, 33.49% Impervious, Inflow Depth = 0.56" for 01-Water Quality event
 Inflow = 0.36 cfs @ 7.99 hrs, Volume= 0.131 af
 Outflow = 0.36 cfs @ 7.99 hrs, Volume= 0.131 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 148R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 149R: 1

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Reach 150R: 1

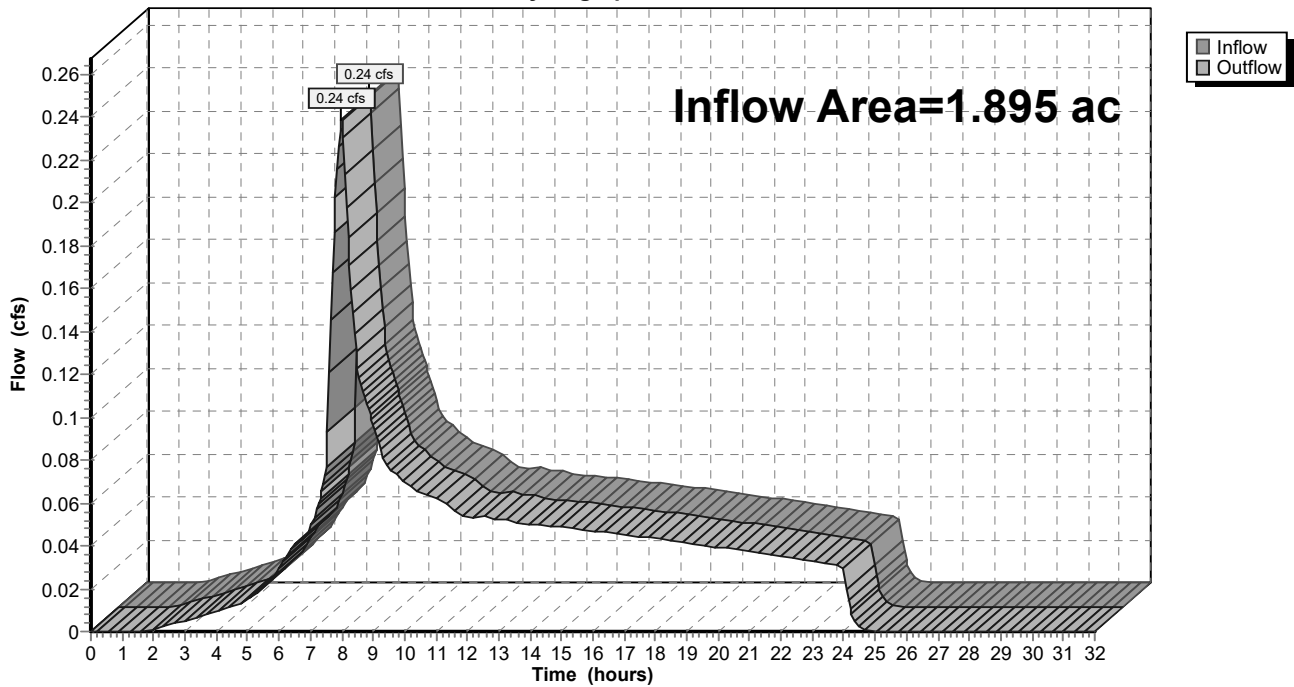
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.895 ac, 31.51% Impervious, Inflow Depth = 0.56" for 01-Water Quality event
 Inflow = 0.24 cfs @ 7.99 hrs, Volume= 0.088 af
 Outflow = 0.24 cfs @ 7.99 hrs, Volume= 0.088 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 149R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 150R: 1

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Reach 151R: 1

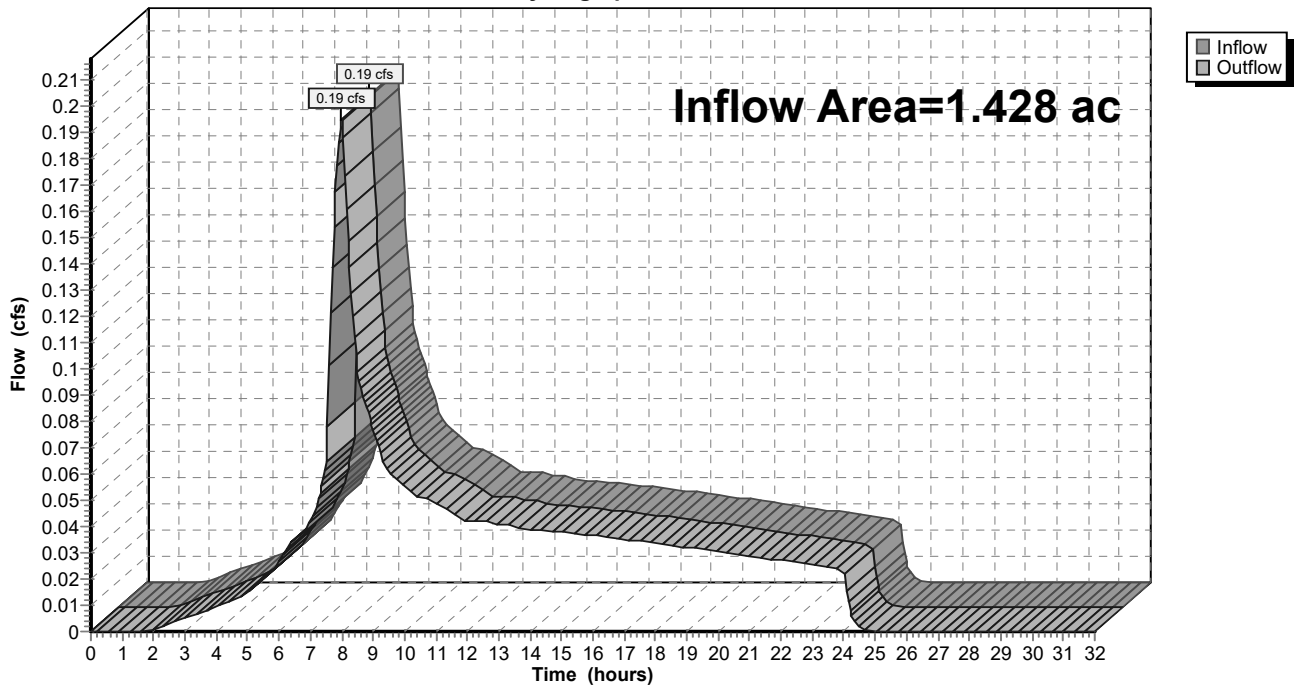
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.428 ac, 41.79% Impervious, Inflow Depth = 0.59" for 01-Water Quality event
 Inflow = 0.19 cfs @ 7.99 hrs, Volume= 0.071 af
 Outflow = 0.19 cfs @ 7.99 hrs, Volume= 0.071 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 150R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 151R: 1

Hydrograph



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Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Reach 152R: 1

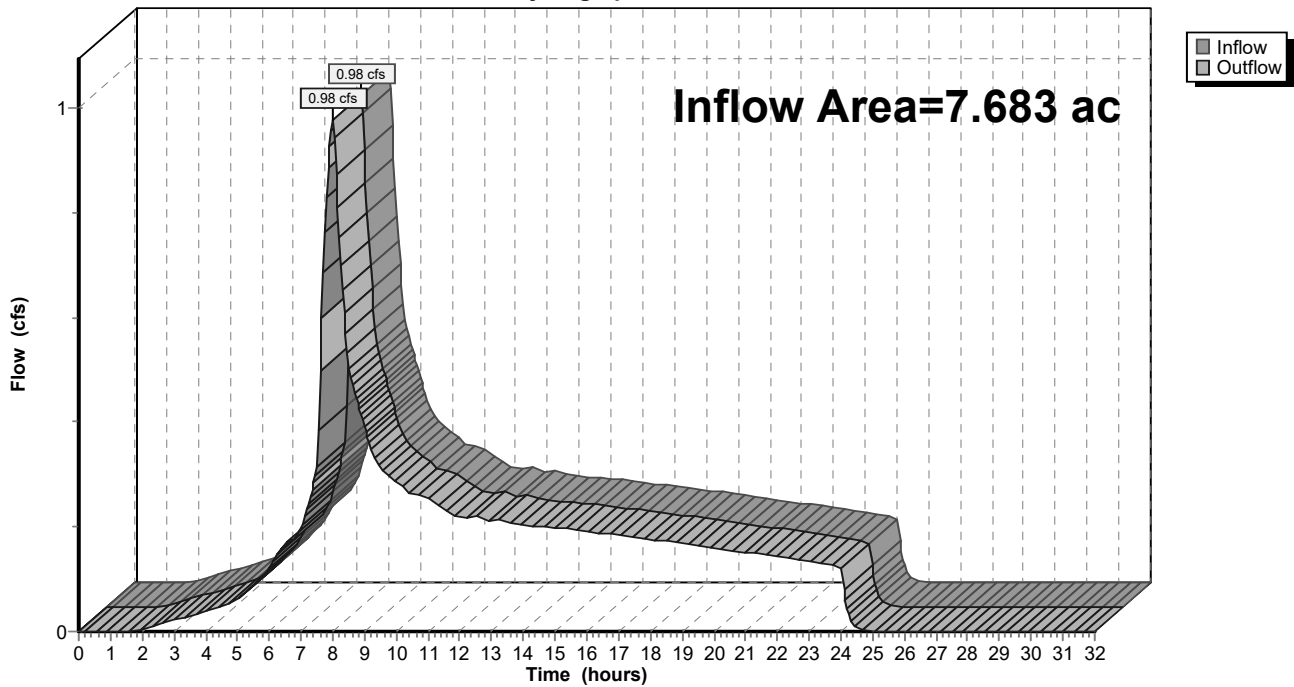
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 7.683 ac, 32.64% Impervious, Inflow Depth = 0.56" for 01-Water Quality event
 Inflow = 0.98 cfs @ 7.99 hrs, Volume= 0.360 af
 Outflow = 0.98 cfs @ 7.99 hrs, Volume= 0.360 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 148R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 152R: 1

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Reach 153R: 1

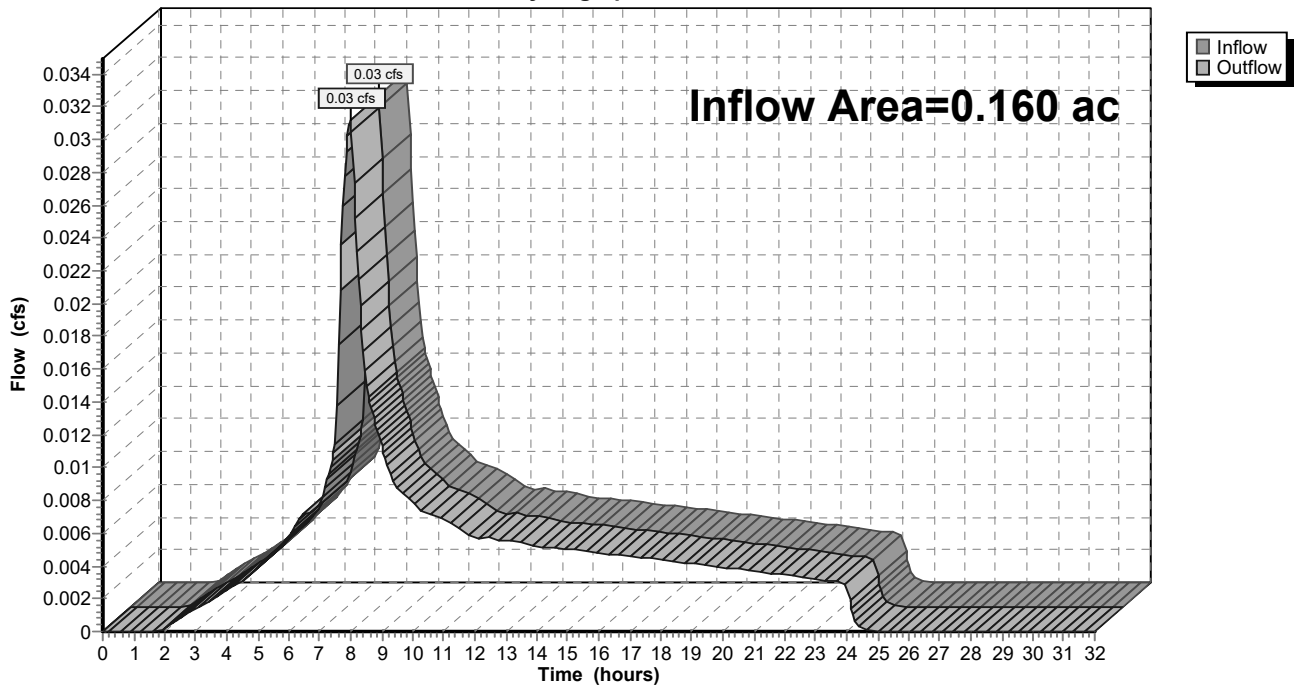
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.160 ac, 100.00% Impervious, Inflow Depth = 0.79" for 01-Water Quality event
 Inflow = 0.03 cfs @ 7.98 hrs, Volume= 0.011 af
 Outflow = 0.03 cfs @ 7.98 hrs, Volume= 0.011 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 152R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 153R: 1

Hydrograph



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Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Reach 154R: 1

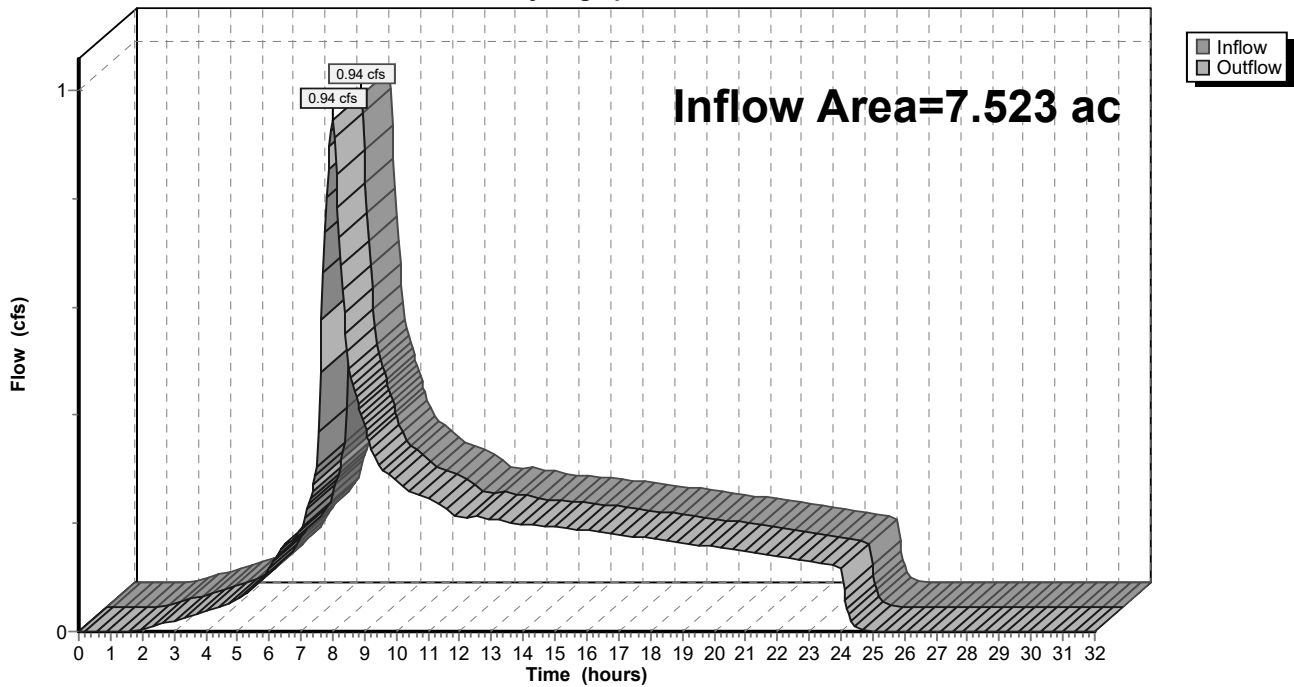
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 7.523 ac, 31.20% Impervious, Inflow Depth = 0.56" for 01-Water Quality event
 Inflow = 0.94 cfs @ 7.99 hrs, Volume= 0.349 af
 Outflow = 0.94 cfs @ 7.99 hrs, Volume= 0.349 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 152R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 154R: 1

Hydrograph



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Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Reach 155R: 1

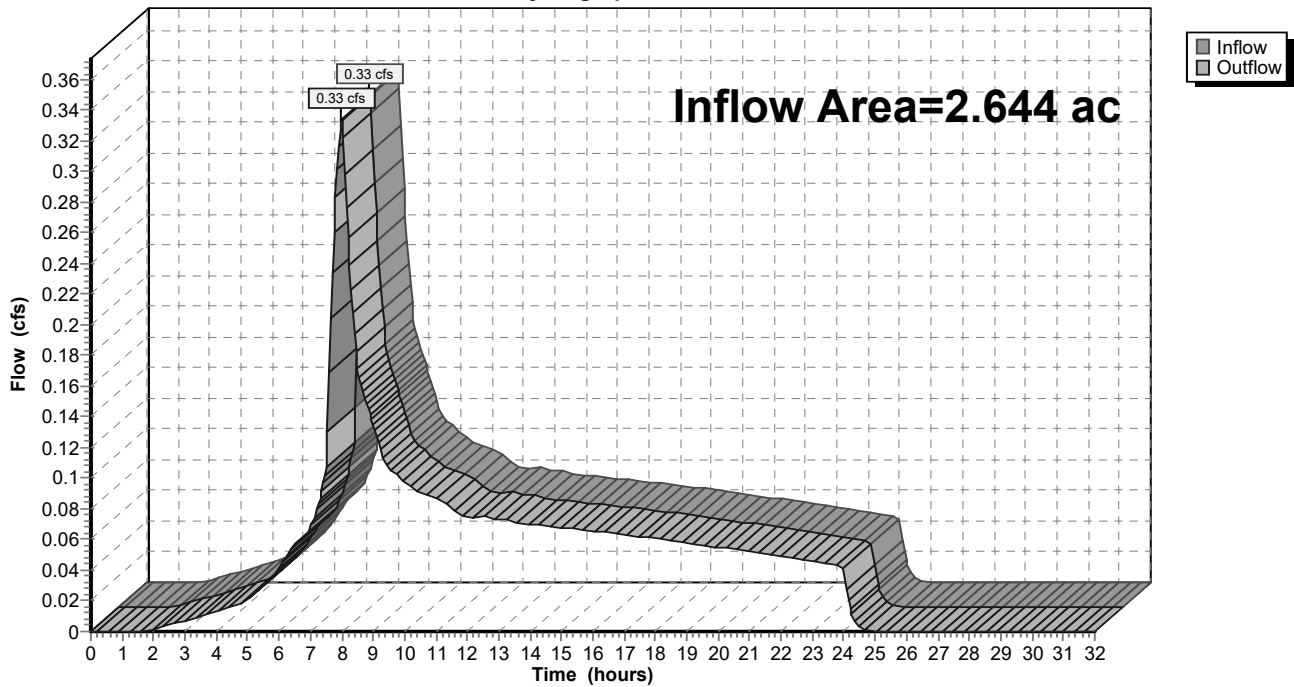
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 2.644 ac, 31.72% Impervious, Inflow Depth = 0.56" for 01-Water Quality event
 Inflow = 0.33 cfs @ 7.99 hrs, Volume= 0.123 af
 Outflow = 0.33 cfs @ 7.99 hrs, Volume= 0.123 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 154R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 155R: 1

Hydrograph



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Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Reach 158R: 1

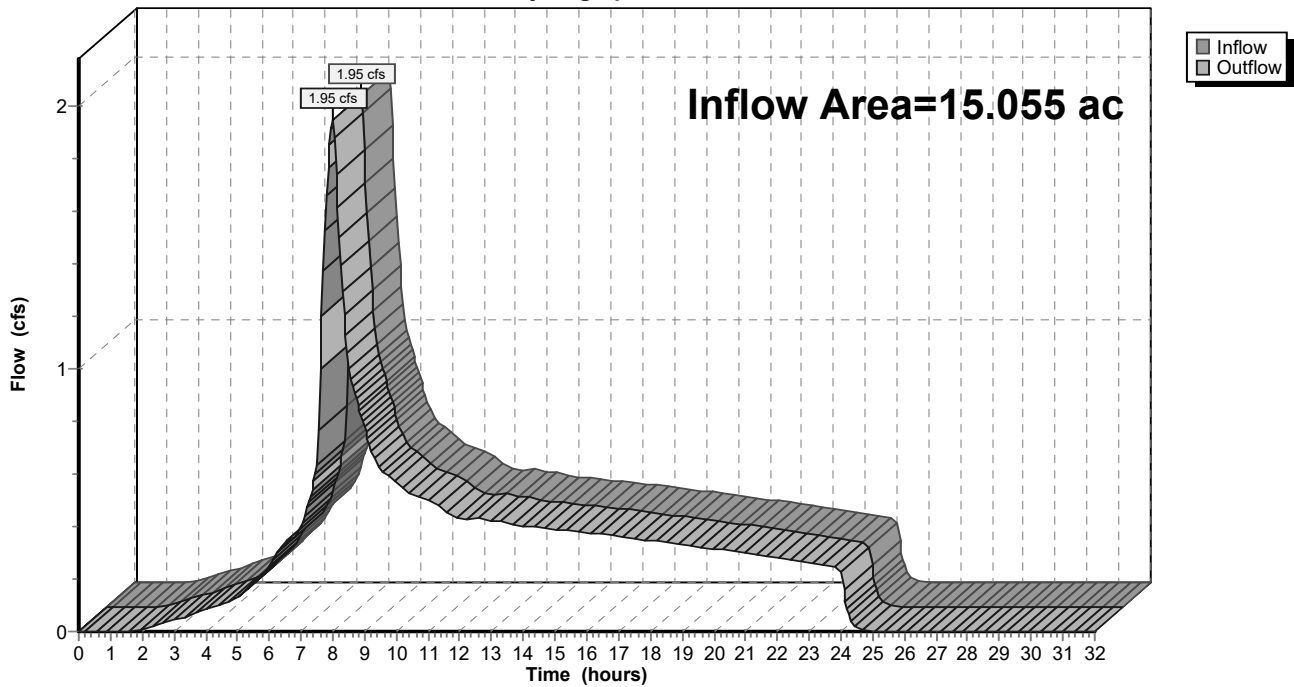
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 15.055 ac, 35.08% Impervious, Inflow Depth = 0.57" for 01-Water Quality event
 Inflow = 1.95 cfs @ 7.99 hrs, Volume= 0.715 af
 Outflow = 1.95 cfs @ 7.99 hrs, Volume= 0.715 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 134R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 158R: 1

Hydrograph



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Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Reach 159R: 1

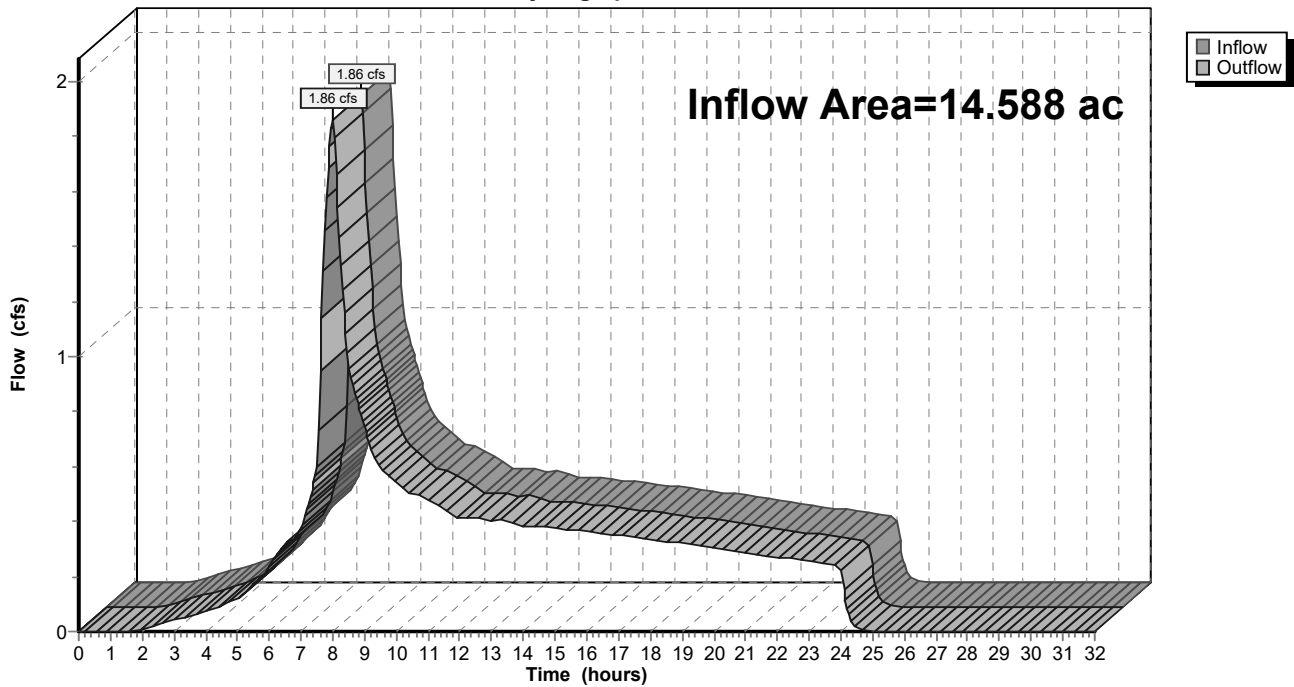
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 14.588 ac, 33.00% Impervious, Inflow Depth = 0.56" for 01-Water Quality event
 Inflow = 1.86 cfs @ 7.99 hrs, Volume= 0.684 af
 Outflow = 1.86 cfs @ 7.99 hrs, Volume= 0.684 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 139R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 159R: 1

Hydrograph



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Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Reach 160R: 1

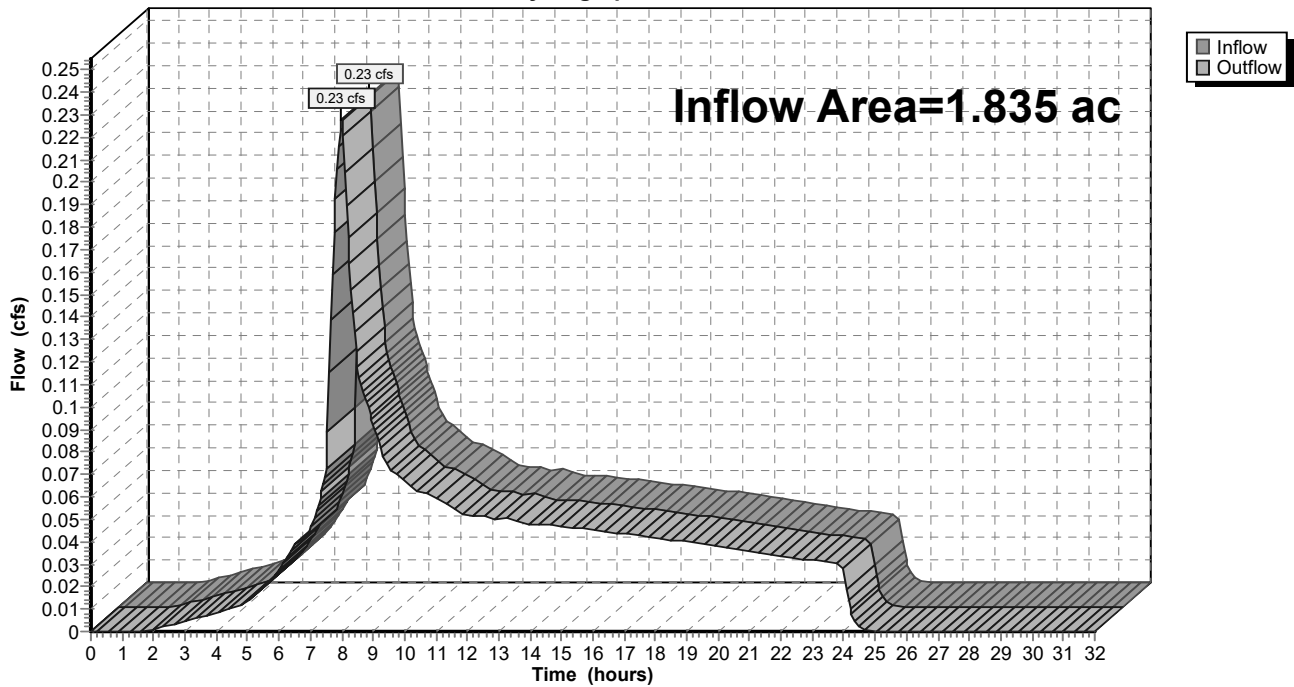
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.835 ac, 29.73% Impervious, Inflow Depth = 0.55" for 01-Water Quality event
 Inflow = 0.23 cfs @ 7.99 hrs, Volume= 0.084 af
 Outflow = 0.23 cfs @ 7.99 hrs, Volume= 0.084 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 155R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 160R: 1

Hydrograph



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Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Reach 162R: 1

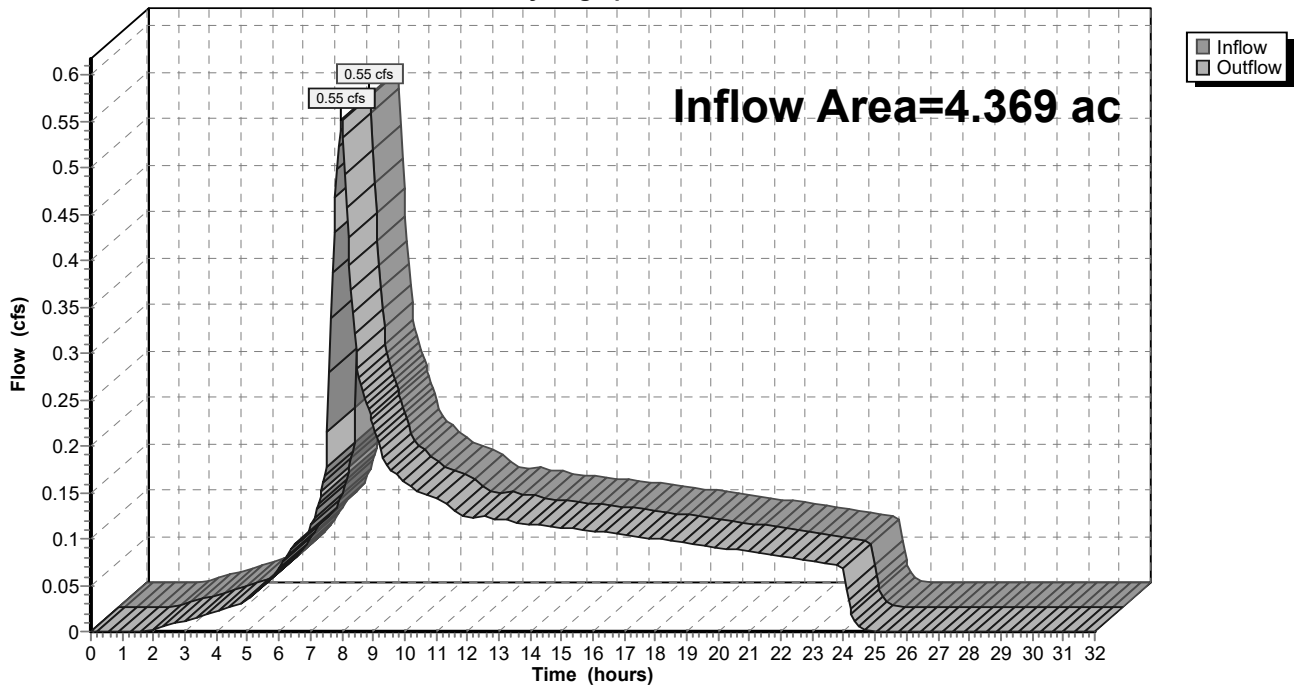
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 4.369 ac, 31.81% Impervious, Inflow Depth = 0.56" for 01-Water Quality event
 Inflow = 0.55 cfs @ 7.99 hrs, Volume= 0.203 af
 Outflow = 0.55 cfs @ 7.99 hrs, Volume= 0.203 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 154R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 162R: 1

Hydrograph



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Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Reach 163R: 1

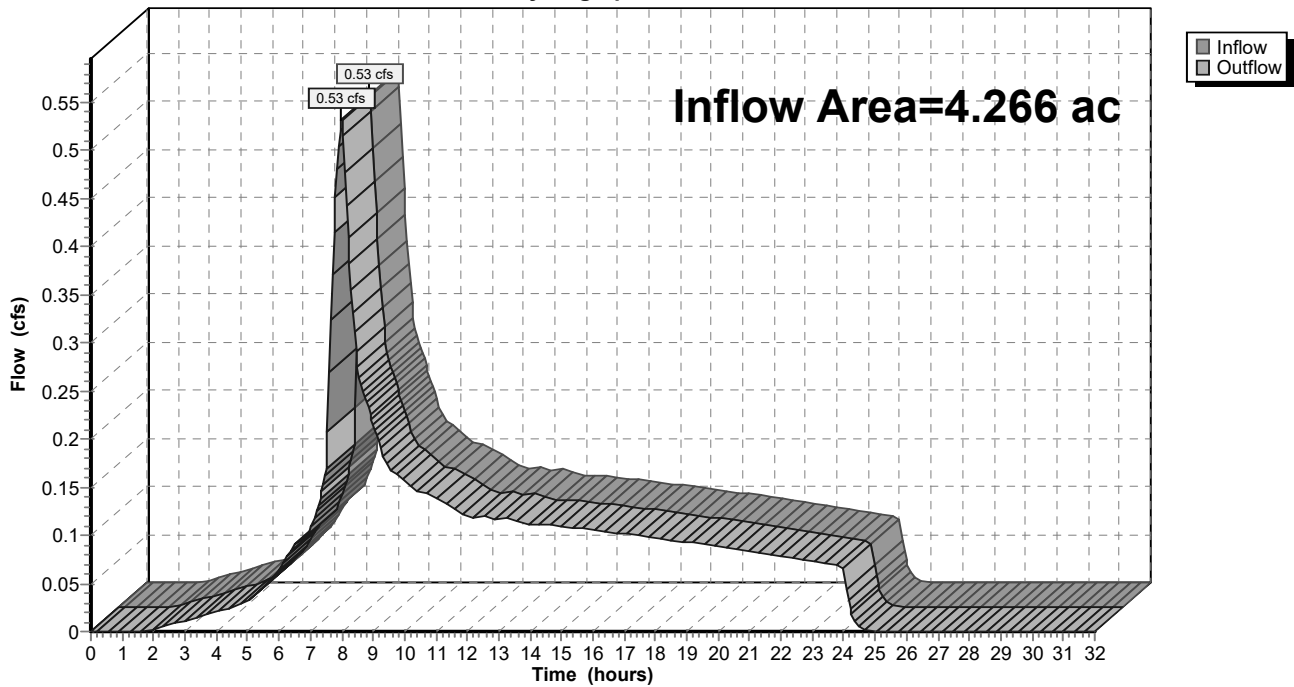
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 4.266 ac, 30.15% Impervious, Inflow Depth = 0.55" for 01-Water Quality event
 Inflow = 0.53 cfs @ 7.99 hrs, Volume= 0.197 af
 Outflow = 0.53 cfs @ 7.99 hrs, Volume= 0.197 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 162R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 163R: 1

Hydrograph



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Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Reach 165R: 1

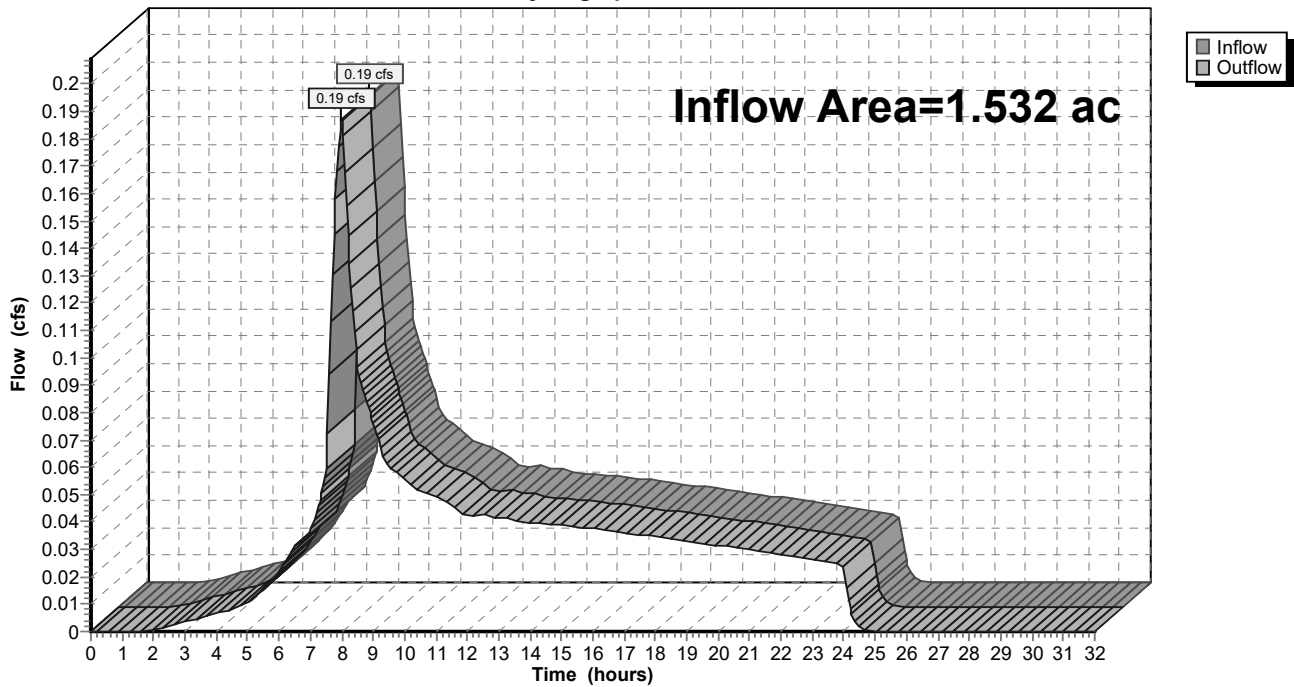
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.532 ac, 27.64% Impervious, Inflow Depth = 0.54" for 01-Water Quality event
 Inflow = 0.19 cfs @ 7.99 hrs, Volume= 0.070 af
 Outflow = 0.19 cfs @ 7.99 hrs, Volume= 0.070 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 163R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 165R: 1

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Reach 166R: Basin Future

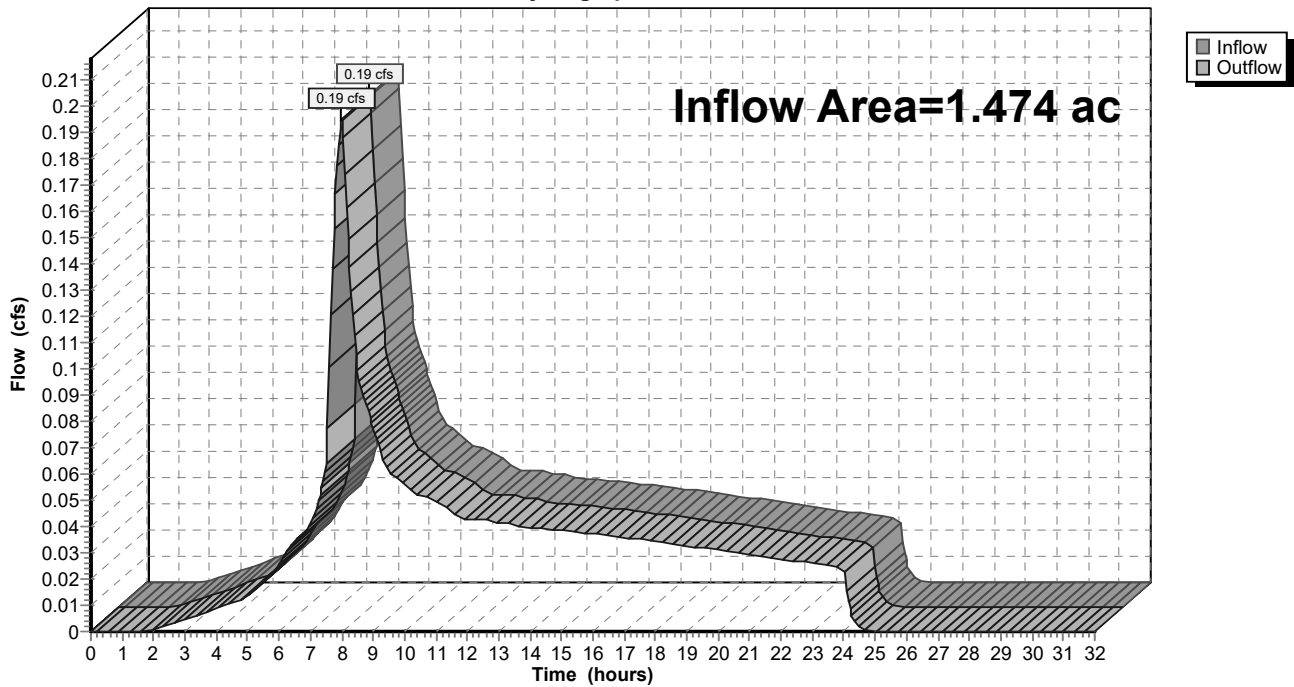
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.474 ac, 37.85% Impervious, Inflow Depth = 0.58" for 01-Water Quality event
 Inflow = 0.19 cfs @ 7.99 hrs, Volume= 0.071 af
 Outflow = 0.19 cfs @ 7.99 hrs, Volume= 0.071 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 163R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 166R: Basin Future

Hydrograph



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Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Pond 54P: Stormwater Swale 2

[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=33)

Inflow Area = 0.082 ac, 100.00% Impervious, Inflow Depth = 0.79" for 01-Water Quality event
 Inflow = 0.02 cfs @ 7.98 hrs, Volume= 0.005 af
 Outflow = 0.01 cfs @ 8.25 hrs, Volume= 0.005 af, Atten= 31%, Lag= 16.1 min
 Primary = 0.01 cfs @ 8.25 hrs, Volume= 0.005 af
 Routed to Reach 58R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Peak Elev= 222.33' @ 8.25 hrs Surf.Area= 184 sf Storage= 27 cf
 Flood Elev= 223.30' Surf.Area= 192 sf Storage= 88 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 54.3 min (772.9 - 718.7)

Volume	Invert	Avail.Storage	Storage Description
#1	222.30'	63 cf	Open Storage (Irregular) Listed below (Recalc)
#2	220.80'	10 cf	Imported Soil (Irregular) Listed below (Recalc) 101 cf Overall x 10.0% Voids
#3	220.05'	15 cf	Rock Chamber (Irregular) Listed below (Recalc) 44 cf Overall x 35.0% Voids
		88 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
222.30	59	33.0	0	0	59
223.30	67	34.0	63	63	93

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
220.80	67	34.0	0	0	67
222.30	67	34.0	101	101	118

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
220.05	58	33.0	0	0	58
220.80	58	33.0	44	44	83

Device	Routing	Invert	Outlet Devices
#1	Primary	220.05'	2.000 in/hr Perf Pipes over Surface area
#2	Primary	223.05'	4.0" Horiz. 4" Overflow Pipe C= 0.600 Limited to weir flow at low heads
#3	Primary	222.30'	10.0" Vert. 10" Outflow Pipe C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.01 cfs @ 8.25 hrs HW=222.33' TW=0.00' (Dynamic Tailwater)

- 1=Perf Pipes (Exfiltration Controls 0.01 cfs)
- 2=4" Overflow Pipe (Controls 0.00 cfs)
- 3=10" Outflow Pipe (Orifice Controls 0.00 cfs @ 0.54 fps)

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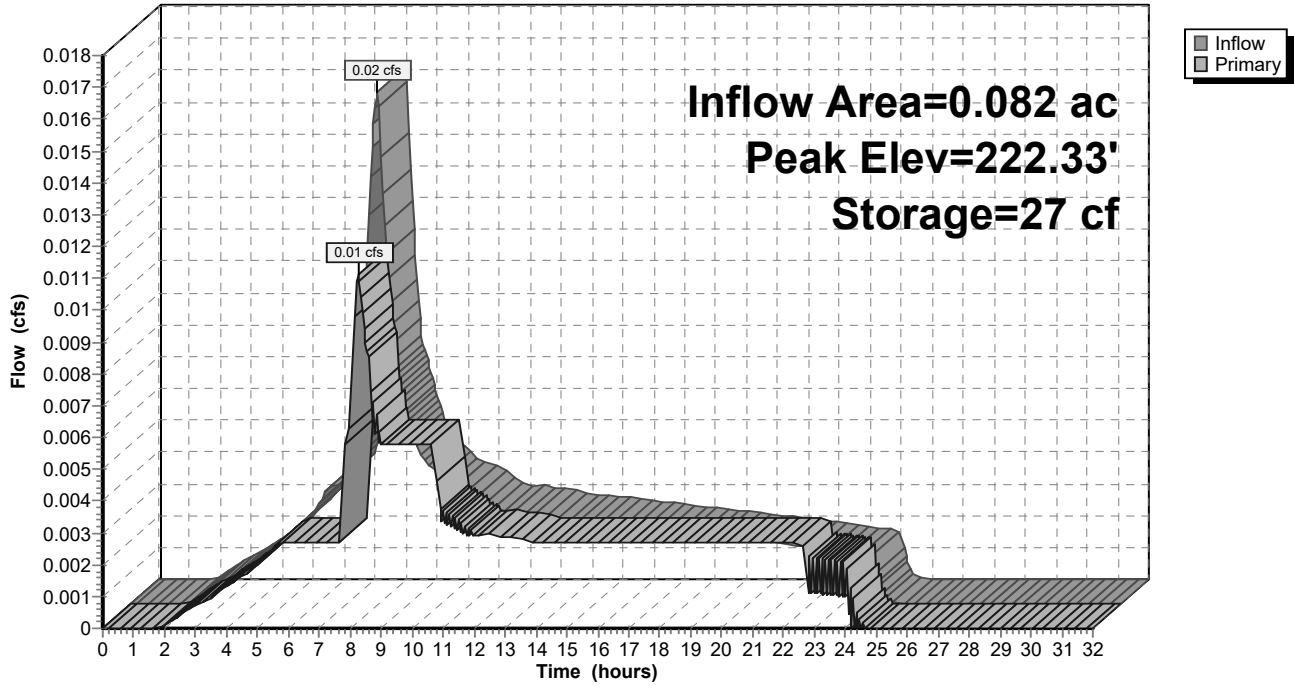
Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Pond 54P: Stormwater Swale 2

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Summary for Pond 60P: Stormwater Swale 1

[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=34)

Inflow Area = 0.085 ac, 100.00% Impervious, Inflow Depth = 0.79" for 01-Water Quality event
 Inflow = 0.02 cfs @ 7.98 hrs, Volume= 0.006 af
 Outflow = 0.01 cfs @ 8.26 hrs, Volume= 0.006 af, Atten= 32%, Lag= 16.7 min
 Primary = 0.01 cfs @ 8.26 hrs, Volume= 0.006 af
 Routed to Reach 58R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Peak Elev= 221.97' @ 8.26 hrs Surf.Area= 194 sf Storage= 28 cf
 Flood Elev= 222.95' Surf.Area= 204 sf Storage= 93 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 54.4 min (773.0 - 718.7)

Volume	Invert	Avail.Storage	Storage Description
#1	221.95'	67 cf	Open Storage (Irregular) Listed below (Recalc)
#2	220.45'	11 cf	Imported Soil (Irregular) Listed below (Recalc) 108 cf Overall x 10.0% Voids
#3	219.70'	16 cf	Rock Chamber (Irregular) Listed below (Recalc) 45 cf Overall x 35.0% Voids
		93 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
221.95	62	34.0	0	0	62
222.95	72	36.0	67	67	99

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
220.45	72	36.0	0	0	72
221.95	72	36.0	108	108	126

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
219.70	60	34.0	0	0	60
220.45	60	34.0	45	45	86

Device	Routing	Invert	Outlet Devices
#1	Primary	219.70'	2.000 in/hr Perf Pipes over Surface area
#2	Primary	222.70'	4.0" Horiz. 4" Overflow Pipe C= 0.600 Limited to weir flow at low heads
#3	Primary	221.95'	10.0" Vert. 10" Outflow Pipe C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.01 cfs @ 8.26 hrs HW=221.97' TW=0.00' (Dynamic Tailwater)

- 1=Perf Pipes (Exfiltration Controls 0.01 cfs)
- 2=4" Overflow Pipe (Controls 0.00 cfs)
- 3=10" Outflow Pipe (Orifice Controls 0.00 cfs @ 0.53 fps)

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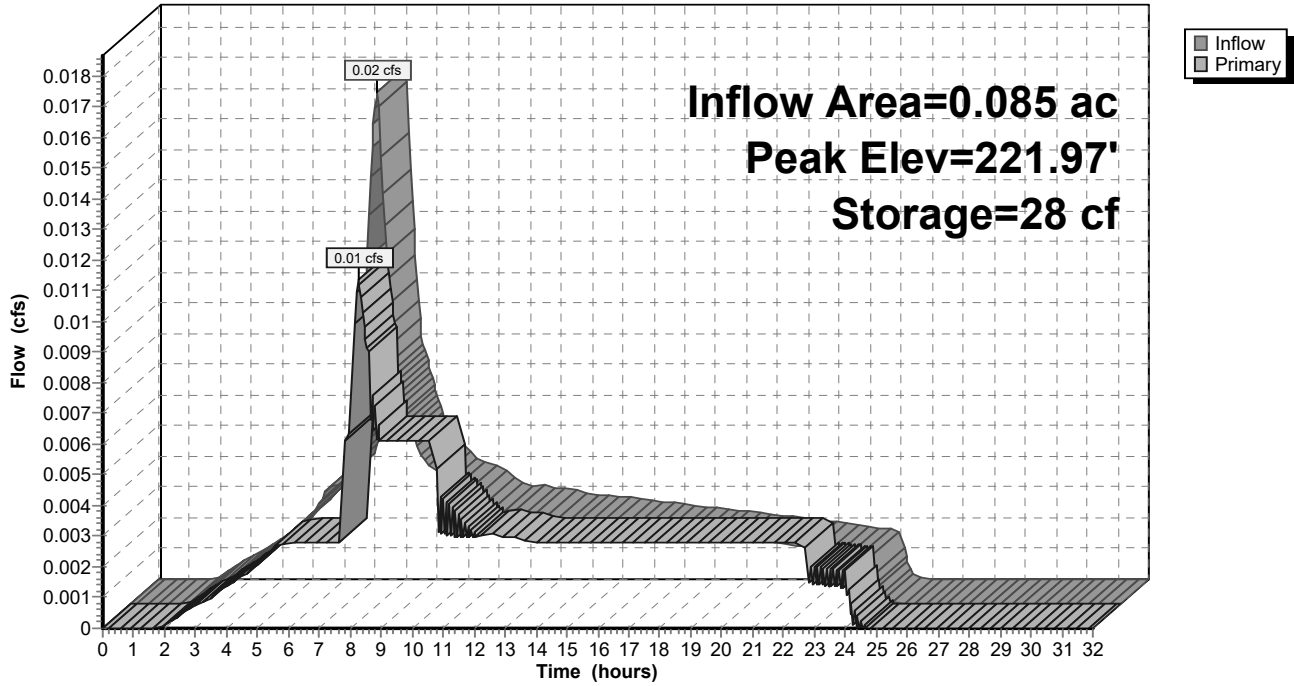
Type IA 24-hr 01-Water Quality Rainfall=1.00"

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Pond 60P: Stormwater Swale 1

Hydrograph



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Summary for Pond 63P: Detention Pond

[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=133)

Inflow Area = 23.038 ac, 36.38% Impervious, Inflow Depth = 0.57" for 01-Water Quality event
 Inflow = 3.01 cfs @ 7.99 hrs, Volume= 1.103 af
 Outflow = 1.99 cfs @ 8.40 hrs, Volume= 1.102 af, Atten= 34%, Lag= 24.8 min
 Primary = 1.99 cfs @ 8.40 hrs, Volume= 1.102 af
 Routed to Reach 85R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Peak Elev= 221.50' @ 8.40 hrs Surf.Area= 43,028 sf Storage= 5,053 cf
 Flood Elev= 225.50' Surf.Area= 48,838 sf Storage= 80,897 cf

Plug-Flow detention time= 52.7 min calculated for 1.100 af (100% of inflow)
 Center-of-Mass det. time= 52.5 min (822.9 - 770.5)

Volume	Invert	Avail.Storage	Storage Description
#1	221.50'	75,859 cf	Open Storage (Irregular) Listed below (Recalc)
#2	220.00'	3,288 cf	Growing Medium (Irregular) Listed below (Recalc) 32,879 cf Overall x 10.0% Voids
#3	219.00'	1,750 cf	Rock Chamber (Prismatic) Listed below (Recalc) 5,000 cf Overall x 35.0% Voids
		80,897 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
221.50	16,108	696.8	0	0	16,108
222.50	17,511	717.0	16,805	16,805	18,488
223.50	18,943	738.5	18,222	35,027	21,082
224.50	20,410	754.7	19,672	54,699	23,147
225.50	21,919	770.9	21,160	75,859	25,257

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
220.00	21,919	770.9	0	0	21,919
221.50	21,919	770.9	32,879	32,879	23,075

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
219.00	5,000	0	0
220.00	5,000	5,000	5,000

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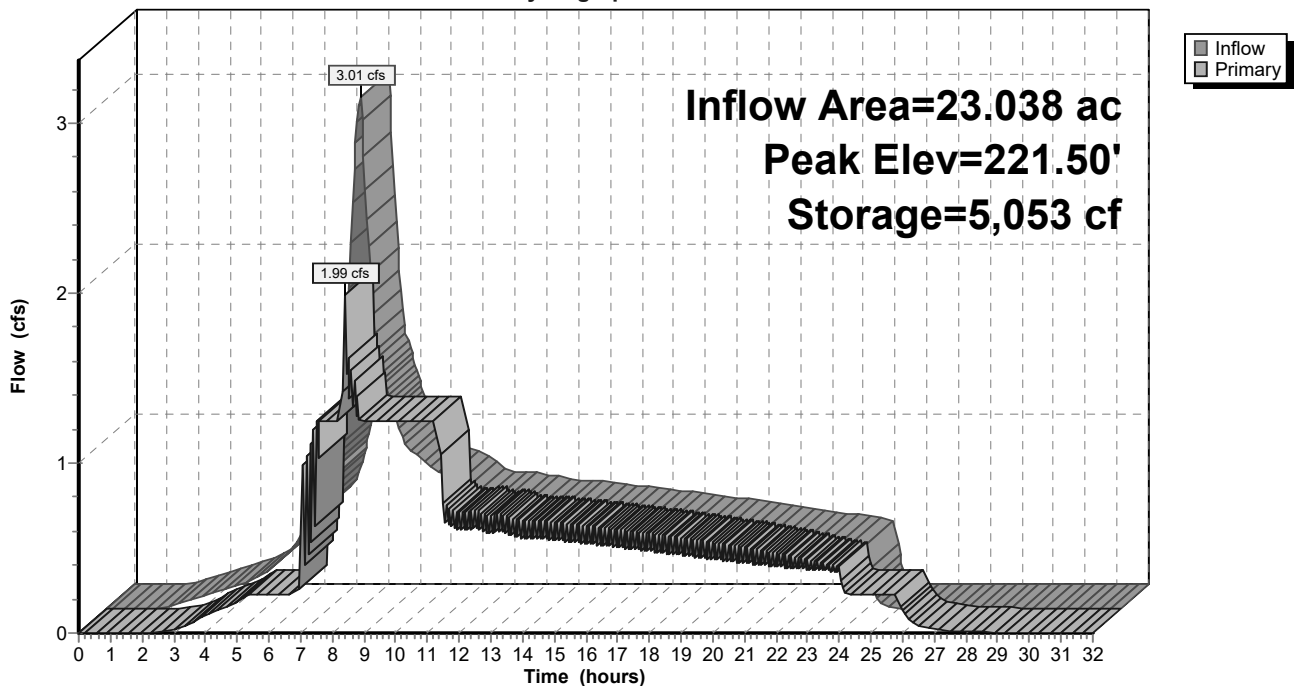
Device	Routing	Invert	Outlet Devices
#1	Primary	219.00'	24.0" Round 24" Pipe L= 100.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 219.00' / 218.80' S= 0.0020 '/ Cc= 0.900 n= 0.010, Flow Area= 3.14 sf
#2	Device 1	219.00'	2.000 in/hr 4" Perf Pipes over Surface area
#3	Device 1	221.85'	6.0" Vert. 2x6" Orifice X 2.00 C= 0.600 Limited to weir flow at low heads
#4	Device 1	222.78'	6.0" Vert. 6" Orifice C= 0.600 Limited to weir flow at low heads
#5	Device 1	222.95'	6.0" Vert. 6" Orifice C= 0.600 Limited to weir flow at low heads
#6	Device 1	223.25'	4.0" Vert. 4" Orifice C= 0.600 Limited to weir flow at low heads
#7	Device 1	223.55'	4.0" Vert. 4" Orifice C= 0.600 Limited to weir flow at low heads
#8	Device 1	223.77'	4.0" Vert. 2x4" Orifice X 2.00 C= 0.600 Limited to weir flow at low heads
#9	Device 1	224.35'	48.0" x 48.0" Horiz. 48" Overflow C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.99 cfs @ 8.40 hrs HW=221.50' TW=0.00' (Dynamic Tailwater)

- 1=24" Pipe (Passes 1.99 cfs of 14.70 cfs potential flow)
- 2=4" Perf Pipes (Exfiltration Controls 1.99 cfs)
- 3=2x6" Orifice (Controls 0.00 cfs)
- 4=6" Orifice (Controls 0.00 cfs)
- 5=6" Orifice (Controls 0.00 cfs)
- 6=4" Orifice (Controls 0.00 cfs)
- 7=4" Orifice (Controls 0.00 cfs)
- 8=2x4" Orifice (Controls 0.00 cfs)
- 9=48" Overflow (Controls 0.00 cfs)

Pond 63P: Detention Pond

Hydrograph



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Time span=0.00-32.00 hrs, dt=0.05 hrs, 641 points
 Runoff by SBUH method, Split Pervious/Imperv.
 Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment64S: Home Basin 20	Runoff Area=9,940 sf 0.00% Impervious Runoff Depth=1.75" Tc=10.0 min CN=93/0 Runoff=0.10 cfs 0.033 af
Subcatchment65S: Single Pond Existing	Runoff Area=23.038 ac 0.00% Impervious Runoff Depth>1.43" Flow Length=1,526' Slope=0.0076 1' Tc=73.0 min CN=89/0 Runoff=3.76 cfs 2.742 af
Subcatchment67S: Home Basin 19	Runoff Area=17,197 sf 0.00% Impervious Runoff Depth=1.75" Tc=10.0 min CN=93/0 Runoff=0.17 cfs 0.058 af
Subcatchment68S: Home Basin 12	Runoff Area=18,133 sf 0.00% Impervious Runoff Depth=1.75" Tc=10.0 min CN=93/0 Runoff=0.18 cfs 0.061 af
Subcatchment69S: Home Basin 17	Runoff Area=16,661 sf 0.00% Impervious Runoff Depth=1.75" Tc=10.0 min CN=93/0 Runoff=0.16 cfs 0.056 af
Subcatchment70S: Home Basin 18	Runoff Area=11,596 sf 0.00% Impervious Runoff Depth=1.75" Tc=10.0 min CN=93/0 Runoff=0.11 cfs 0.039 af
Subcatchment71S: Home Basin 14	Runoff Area=16,444 sf 0.00% Impervious Runoff Depth=1.75" Tc=10.0 min CN=93/0 Runoff=0.16 cfs 0.055 af
Subcatchment72S: Home Basin 16	Runoff Area=20,310 sf 0.00% Impervious Runoff Depth=1.75" Tc=10.0 min CN=93/0 Runoff=0.20 cfs 0.068 af
Subcatchment73S: Home Basin 13	Runoff Area=10,807 sf 0.00% Impervious Runoff Depth=1.75" Tc=10.0 min CN=93/0 Runoff=0.11 cfs 0.036 af
Subcatchment74S: Swale Existing	Runoff Area=0.168 ac 0.00% Impervious Runoff Depth=1.43" Flow Length=105' Slope=0.0565 1' Tc=10.0 min CN=89/0 Runoff=0.06 cfs 0.020 af
Subcatchment75S: Home Basin 11	Runoff Area=18,483 sf 0.00% Impervious Runoff Depth=1.75" Tc=10.0 min CN=93/0 Runoff=0.18 cfs 0.062 af
Subcatchment77S: Home Basin 15	Runoff Area=12,503 sf 0.00% Impervious Runoff Depth=1.75" Tc=10.0 min CN=93/0 Runoff=0.12 cfs 0.042 af
Subcatchment78S: Single Pond	Runoff Area=21,919 sf 100.00% Impervious Runoff Depth=2.24" Tc=0.0 min CN=0/98 Runoff=0.29 cfs 0.094 af
Subcatchment79S: Home Basin 30	Runoff Area=38,416 sf 0.00% Impervious Runoff Depth=1.75" Tc=10.0 min CN=93/0 Runoff=0.38 cfs 0.129 af
Subcatchment80S: Home Basin 10	Runoff Area=14,789 sf 0.00% Impervious Runoff Depth=1.75" Tc=10.0 min CN=93/0 Runoff=0.14 cfs 0.050 af
Subcatchment81S: Home Basin 9	Runoff Area=15,575 sf 0.00% Impervious Runoff Depth=1.75" Tc=10.0 min CN=93/0 Runoff=0.15 cfs 0.052 af

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Subcatchment82S: Home Basin 2	Runoff Area=20,667 sf 0.00% Impervious Runoff Depth=1.75" Tc=10.0 min CN=93/0 Runoff=0.20 cfs 0.069 af
Subcatchment83S: Home Basin 7	Runoff Area=17,032 sf 0.00% Impervious Runoff Depth=1.75" Tc=10.0 min CN=93/0 Runoff=0.17 cfs 0.057 af
Subcatchment84S: Home Basin 8	Runoff Area=11,668 sf 0.00% Impervious Runoff Depth=1.75" Tc=10.0 min CN=93/0 Runoff=0.11 cfs 0.039 af
Subcatchment85S: Home Basin 29	Runoff Area=25,118 sf 0.00% Impervious Runoff Depth=1.75" Tc=10.0 min CN=93/0 Runoff=0.25 cfs 0.084 af
Subcatchment86S: Home Basin 22	Runoff Area=16,159 sf 0.00% Impervious Runoff Depth=1.75" Tc=10.0 min CN=93/0 Runoff=0.16 cfs 0.054 af
Subcatchment87S: Home Basin 27	Runoff Area=24,839 sf 0.00% Impervious Runoff Depth=1.75" Tc=10.0 min CN=93/0 Runoff=0.24 cfs 0.083 af
Subcatchment88S: Home Basin 28	Runoff Area=25,318 sf 0.00% Impervious Runoff Depth=1.75" Tc=10.0 min CN=93/0 Runoff=0.25 cfs 0.085 af
Subcatchment89S: Home Basin 24	Runoff Area=20,676 sf 0.00% Impervious Runoff Depth=1.75" Tc=10.0 min CN=93/0 Runoff=0.20 cfs 0.069 af
Subcatchment90S: Home Basin 26	Runoff Area=14,135 sf 0.00% Impervious Runoff Depth=1.75" Tc=10.0 min CN=93/0 Runoff=0.14 cfs 0.047 af
Subcatchment91S: Home Basin 23	Runoff Area=12,271 sf 0.00% Impervious Runoff Depth=1.75" Tc=10.0 min CN=93/0 Runoff=0.12 cfs 0.041 af
Subcatchment92S: Home Basin 21	Runoff Area=27,019 sf 0.00% Impervious Runoff Depth=1.75" Tc=10.0 min CN=93/0 Runoff=0.26 cfs 0.091 af
Subcatchment93S: Home Basin 25	Runoff Area=17,012 sf 0.00% Impervious Runoff Depth=1.75" Tc=10.0 min CN=93/0 Runoff=0.17 cfs 0.057 af
Subcatchment94S: Home Basin 4	Runoff Area=19,535 sf 0.00% Impervious Runoff Depth=1.75" Tc=10.0 min CN=93/0 Runoff=0.19 cfs 0.065 af
Subcatchment95S: Home Basin 31	Runoff Area=24,883 sf 0.00% Impervious Runoff Depth=1.75" Tc=10.0 min CN=93/0 Runoff=0.24 cfs 0.083 af
Subcatchment96S: Basin 1	Runoff Area=15,045 sf 100.00% Impervious Runoff Depth=2.24" Tc=10.0 min CN=0/98 Runoff=0.19 cfs 0.064 af
Subcatchment97S: Basin 2	Runoff Area=19,824 sf 100.00% Impervious Runoff Depth=2.24" Tc=10.0 min CN=0/98 Runoff=0.25 cfs 0.085 af
Subcatchment98S: Basin 3	Runoff Area=23,416 sf 100.00% Impervious Runoff Depth=2.24" Tc=10.0 min CN=0/98 Runoff=0.29 cfs 0.100 af

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Subcatchment99S: Home Basin 6	Runoff Area=25,997 sf 0.00% Impervious Runoff Depth=1.75" Tc=10.0 min CN=93/0 Runoff=0.25 cfs 0.087 af
Subcatchment100S: Basin 4	Runoff Area=3,650 sf 100.00% Impervious Runoff Depth=2.24" Tc=10.0 min CN=0/98 Runoff=0.05 cfs 0.016 af
Subcatchment101S: Basin 5	Runoff Area=3,523 sf 100.00% Impervious Runoff Depth=2.24" Tc=10.0 min CN=0/98 Runoff=0.04 cfs 0.015 af
Subcatchment102S: Home Basin 3	Runoff Area=19,559 sf 0.00% Impervious Runoff Depth=1.75" Tc=10.0 min CN=93/0 Runoff=0.19 cfs 0.066 af
Subcatchment103S: Home Basin 1	Runoff Area=22,288 sf 0.00% Impervious Runoff Depth=1.75" Tc=10.0 min CN=93/0 Runoff=0.22 cfs 0.075 af
Subcatchment104S: Home Basin 5	Runoff Area=33,512 sf 0.00% Impervious Runoff Depth=1.75" Tc=10.0 min CN=93/0 Runoff=0.33 cfs 0.112 af
Subcatchment105S: Basin 6	Runoff Area=8,965 sf 100.00% Impervious Runoff Depth=2.24" Tc=10.0 min CN=0/98 Runoff=0.11 cfs 0.038 af
Subcatchment107S: Basin 8	Runoff Area=8,177 sf 100.00% Impervious Runoff Depth=2.24" Tc=10.0 min CN=0/98 Runoff=0.10 cfs 0.035 af
Subcatchment108S: Basin 9	Runoff Area=13,130 sf 100.00% Impervious Runoff Depth=2.24" Tc=10.0 min CN=0/98 Runoff=0.16 cfs 0.056 af
Subcatchment109S: Basin 10	Runoff Area=22,902 sf 100.00% Impervious Runoff Depth=2.24" Tc=10.0 min CN=0/98 Runoff=0.28 cfs 0.098 af
Subcatchment110S: Basin 11	Runoff Area=25,748 sf 100.00% Impervious Runoff Depth=2.24" Tc=10.0 min CN=0/98 Runoff=0.32 cfs 0.110 af
Subcatchment111S: Basin 12	Runoff Area=5,562 sf 100.00% Impervious Runoff Depth=2.24" Tc=10.0 min CN=0/98 Runoff=0.07 cfs 0.024 af
Subcatchment112S: Basin 13	Runoff Area=4,702 sf 100.00% Impervious Runoff Depth=2.24" Tc=10.0 min CN=0/98 Runoff=0.06 cfs 0.020 af
Subcatchment113S: Basin 14	Runoff Area=7,669 sf 100.00% Impervious Runoff Depth=2.24" Tc=10.0 min CN=0/98 Runoff=0.10 cfs 0.033 af
Subcatchment114S: Basin 15	Runoff Area=7,261 sf 100.00% Impervious Runoff Depth=2.24" Tc=10.0 min CN=0/98 Runoff=0.09 cfs 0.031 af
Subcatchment115S: Basin 16	Runoff Area=7,066 sf 100.00% Impervious Runoff Depth=2.24" Tc=10.0 min CN=0/98 Runoff=0.09 cfs 0.030 af
Subcatchment116S: Basin 17	Runoff Area=26,003 sf 100.00% Impervious Runoff Depth=2.24" Tc=10.0 min CN=0/98 Runoff=0.32 cfs 0.111 af

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Subcatchment117S: Basin 18	Runoff Area=23,761 sf 100.00% Impervious Runoff Depth=2.24" Tc=10.0 min CN=0/98 Runoff=0.30 cfs 0.102 af
Subcatchment118S: Basin 19	Runoff Area=7,309 sf 100.00% Impervious Runoff Depth=2.24" Tc=10.0 min CN=0/98 Runoff=0.09 cfs 0.031 af
Subcatchment119S: Basin 20	Runoff Area=7,535 sf 100.00% Impervious Runoff Depth=2.24" Tc=10.0 min CN=0/98 Runoff=0.09 cfs 0.032 af
Subcatchment120S: Basin 21	Runoff Area=6,846 sf 100.00% Impervious Runoff Depth=2.24" Tc=10.0 min CN=0/98 Runoff=0.09 cfs 0.029 af
Subcatchment121S: Basin 22	Runoff Area=5,182 sf 100.00% Impervious Runoff Depth=2.24" Tc=10.0 min CN=0/98 Runoff=0.06 cfs 0.022 af
Subcatchment122S: Basin 23	Runoff Area=5,456 sf 100.00% Impervious Runoff Depth=2.24" Tc=10.0 min CN=0/98 Runoff=0.07 cfs 0.023 af
Subcatchment123S: Basin 24	Runoff Area=4,510 sf 100.00% Impervious Runoff Depth=2.24" Tc=10.0 min CN=0/98 Runoff=0.06 cfs 0.019 af
Subcatchment124S: Basin 25	Runoff Area=13,271 sf 100.00% Impervious Runoff Depth=2.24" Tc=10.0 min CN=0/98 Runoff=0.16 cfs 0.057 af
Subcatchment125S: Basin 26	Runoff Area=18,452 sf 100.00% Impervious Runoff Depth=2.24" Tc=10.0 min CN=0/98 Runoff=0.23 cfs 0.079 af
Subcatchment126S: Alley Basin 1	Runoff Area=9,860 sf 100.00% Impervious Runoff Depth=2.24" Tc=10.0 min CN=0/98 Runoff=0.12 cfs 0.042 af
Subcatchment127S: Alley Basin 2	Runoff Area=7,461 sf 100.00% Impervious Runoff Depth=2.24" Tc=10.0 min CN=0/98 Runoff=0.09 cfs 0.032 af
Subcatchment128S: Alley Basin 3	Runoff Area=6,782 sf 100.00% Impervious Runoff Depth=2.24" Tc=10.0 min CN=0/98 Runoff=0.08 cfs 0.029 af
Subcatchment129S: Alley Basin 4	Runoff Area=6,970 sf 100.00% Impervious Runoff Depth=2.24" Tc=10.0 min CN=0/98 Runoff=0.09 cfs 0.030 af
Subcatchment168S: Future Lots	Runoff Area=64,223 sf 37.85% Impervious Runoff Depth=1.94" Tc=10.0 min CN=93/98 Runoff=0.69 cfs 0.238 af
Subcatchment169S: Swale 2	Runoff Area=67 sf 100.00% Impervious Runoff Depth=2.24" Tc=0.0 min CN=0/98 Runoff=0.00 cfs 0.000 af
Subcatchment170S: Swale 1	Runoff Area=72 sf 100.00% Impervious Runoff Depth=2.24" Tc=0.0 min CN=0/98 Runoff=0.00 cfs 0.000 af
Reach 39R: Post-ConstructionPeak Flow	Inflow=3.79 cfs 3.734 af Outflow=3.79 cfs 3.734 af

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Reach 42R: Pre-Construction Peak Flow	Inflow=3.80 cfs 2.762 af Outflow=3.80 cfs 2.762 af
Reach 58R: 1	Inflow=3.79 cfs 3.734 af Outflow=3.79 cfs 3.734 af
Reach 85R: 1	Inflow=3.76 cfs 3.703 af Outflow=3.76 cfs 3.703 af
Reach 130R: 1	Inflow=1.84 cfs 0.631 af Outflow=1.84 cfs 0.631 af
Reach 131R: 1	Inflow=1.84 cfs 0.631 af Outflow=1.84 cfs 0.631 af
Reach 132R: 1	Inflow=1.06 cfs 0.362 af Outflow=1.06 cfs 0.362 af
Reach 133R: 1	Inflow=0.19 cfs 0.064 af Outflow=0.19 cfs 0.064 af
Reach 134R: 1	Inflow=8.45 cfs 2.899 af Outflow=8.45 cfs 2.899 af
Reach 135R: 1	Inflow=1.42 cfs 0.486 af Outflow=1.42 cfs 0.486 af
Reach 136R: 1	Inflow=0.81 cfs 0.277 af Outflow=0.81 cfs 0.277 af
Reach 137R: 1	Inflow=0.50 cfs 0.173 af Outflow=0.50 cfs 0.173 af
Reach 138R: 1	Inflow=0.23 cfs 0.081 af Outflow=0.23 cfs 0.081 af
Reach 139R: 1	Inflow=6.87 cfs 2.357 af Outflow=6.87 cfs 2.357 af
Reach 140R: 1	Inflow=0.12 cfs 0.042 af Outflow=0.12 cfs 0.042 af
Reach 141R: 1	Inflow=0.09 cfs 0.032 af Outflow=0.09 cfs 0.032 af
Reach 142R: 1	Inflow=6.51 cfs 2.235 af Outflow=6.51 cfs 2.235 af
Reach 143R: 1	Inflow=1.32 cfs 0.454 af Outflow=1.32 cfs 0.454 af

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Reach 144R: 1	Inflow=0.95 cfs 0.324 af Outflow=0.95 cfs 0.324 af
Reach 145R: 1	Inflow=0.95 cfs 0.324 af Outflow=0.95 cfs 0.324 af
Reach 146R: 1	Inflow=5.19 cfs 1.781 af Outflow=5.19 cfs 1.781 af
Reach 147R: 1	Inflow=0.08 cfs 0.029 af Outflow=0.08 cfs 0.029 af
Reach 148R: 1	Inflow=5.11 cfs 1.752 af Outflow=5.11 cfs 1.752 af
Reach 149R: 1	Inflow=1.29 cfs 0.444 af Outflow=1.29 cfs 0.444 af
Reach 150R: 1	Inflow=0.88 cfs 0.301 af Outflow=0.88 cfs 0.301 af
Reach 151R: 1	Inflow=0.68 cfs 0.233 af Outflow=0.68 cfs 0.233 af
Reach 152R: 1	Inflow=3.57 cfs 1.224 af Outflow=3.57 cfs 1.224 af
Reach 153R: 1	Inflow=0.09 cfs 0.030 af Outflow=0.09 cfs 0.030 af
Reach 154R: 1	Inflow=3.48 cfs 1.194 af Outflow=3.48 cfs 1.194 af
Reach 155R: 1	Inflow=1.22 cfs 0.420 af Outflow=1.22 cfs 0.420 af
Reach 158R: 1	Inflow=7.03 cfs 2.413 af Outflow=7.03 cfs 2.413 af
Reach 159R: 1	Inflow=6.78 cfs 2.325 af Outflow=6.78 cfs 2.325 af
Reach 160R: 1	Inflow=0.85 cfs 0.290 af Outflow=0.85 cfs 0.290 af
Reach 162R: 1	Inflow=2.02 cfs 0.694 af Outflow=2.02 cfs 0.694 af
Reach 163R: 1	Inflow=1.97 cfs 0.675 af Outflow=1.97 cfs 0.675 af

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Reach 165R: 1Inflow=0.70 cfs 0.241 af
Outflow=0.70 cfs 0.241 af**Reach 166R: Basin Future**Inflow=0.69 cfs 0.238 af
Outflow=0.69 cfs 0.238 af**Pond 54P: Stormwater Swale 2**Peak Elev=222.39' Storage=31 cf Inflow=0.04 cfs 0.015 af
Outflow=0.04 cfs 0.015 af**Pond 60P: Stormwater Swale 1**Peak Elev=222.05' Storage=33 cf Inflow=0.05 cfs 0.016 af
Outflow=0.05 cfs 0.016 af**Pond 63P: Detention Pond**Peak Elev=222.87' Storage=28,382 cf Inflow=10.80 cfs 3.704 af
Outflow=3.76 cfs 3.703 af

Total Runoff Area = 46.412 ac Runoff Volume = 6.498 af Average Runoff Depth = 1.68"
81.58% Pervious = 37.863 ac 18.42% Impervious = 8.549 ac

9-6-23 HydroCAD DOM

Type IA 24-hr 02-2 Year Rainfall=2.47"

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Summary for Subcatchment 64S: Home Basin 20

Runoff = 0.10 cfs @ 7.99 hrs, Volume= 0.033 af, Depth= 1.75"
 Routed to Reach 143R : 1

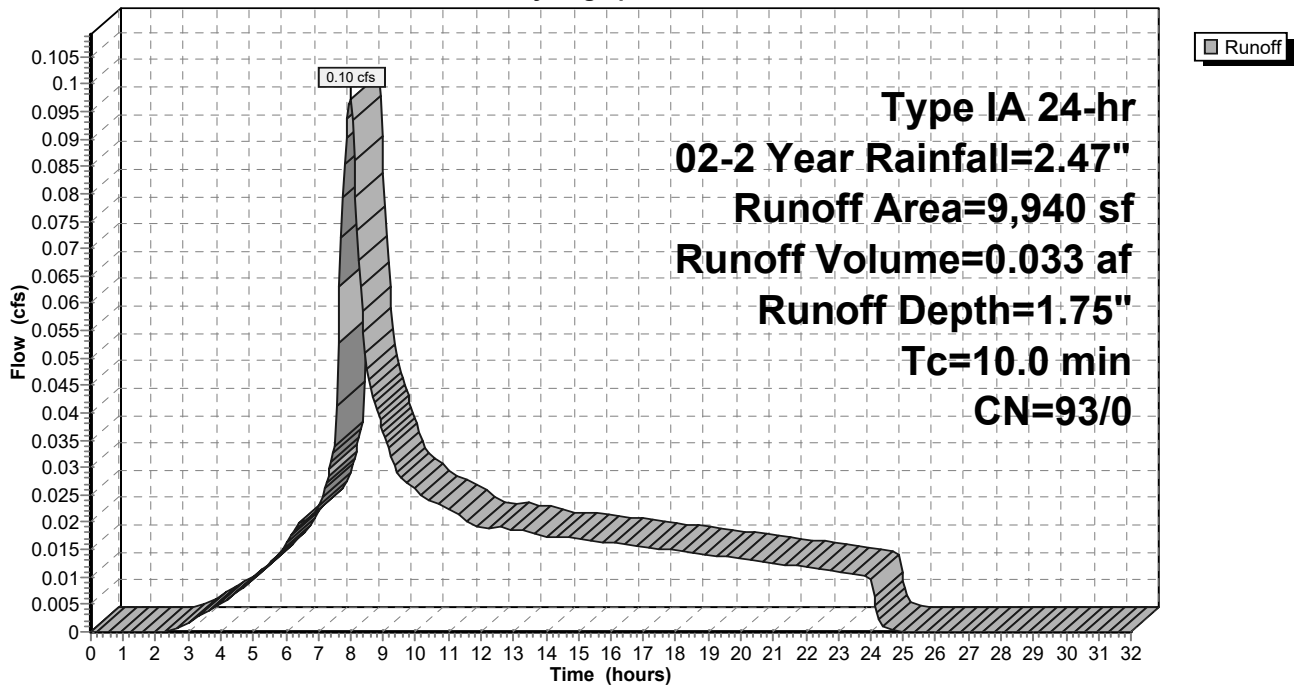
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 02-2 Year Rainfall=2.47"

Area (sf)	CN	Description
* 9,940	93	70% Lot Coverage Weighted
9,940	93	100.00% Pervious Area

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

Subcatchment 64S: Home Basin 20

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 02-2 Year Rainfall=2.47"

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Summary for Subcatchment 65S: Single Pond Existing Conditions

Runoff = 3.76 cfs @ 8.33 hrs, Volume= 2.742 af, Depth> 1.43"
 Routed to Reach 42R : Pre-Construction Peak Flow

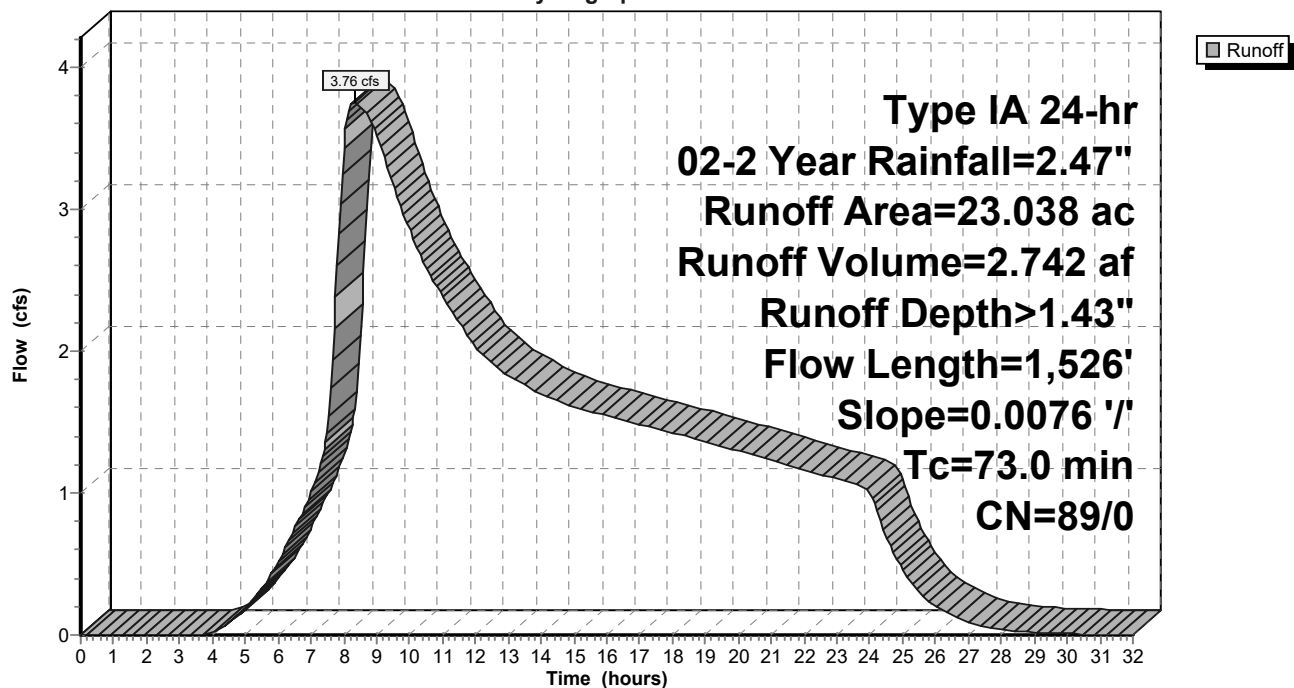
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 02-2 Year Rainfall=2.47"

Area (ac)	CN	Description
23.038	89	Pasture/grassland/range, Poor, HSG D
23.038	89	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
39.5	300	0.0076	0.13		Sheet Flow, Grass: Short n= 0.150 P2= 2.47"
33.5	1,226	0.0076	0.61		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
73.0	1,526	Total			

Subcatchment 65S: Single Pond Existing Conditions

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 02-2 Year Rainfall=2.47"

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Summary for Subcatchment 67S: Home Basin 19

Runoff = 0.17 cfs @ 7.99 hrs, Volume= 0.058 af, Depth= 1.75"
 Routed to Reach 159R : 1

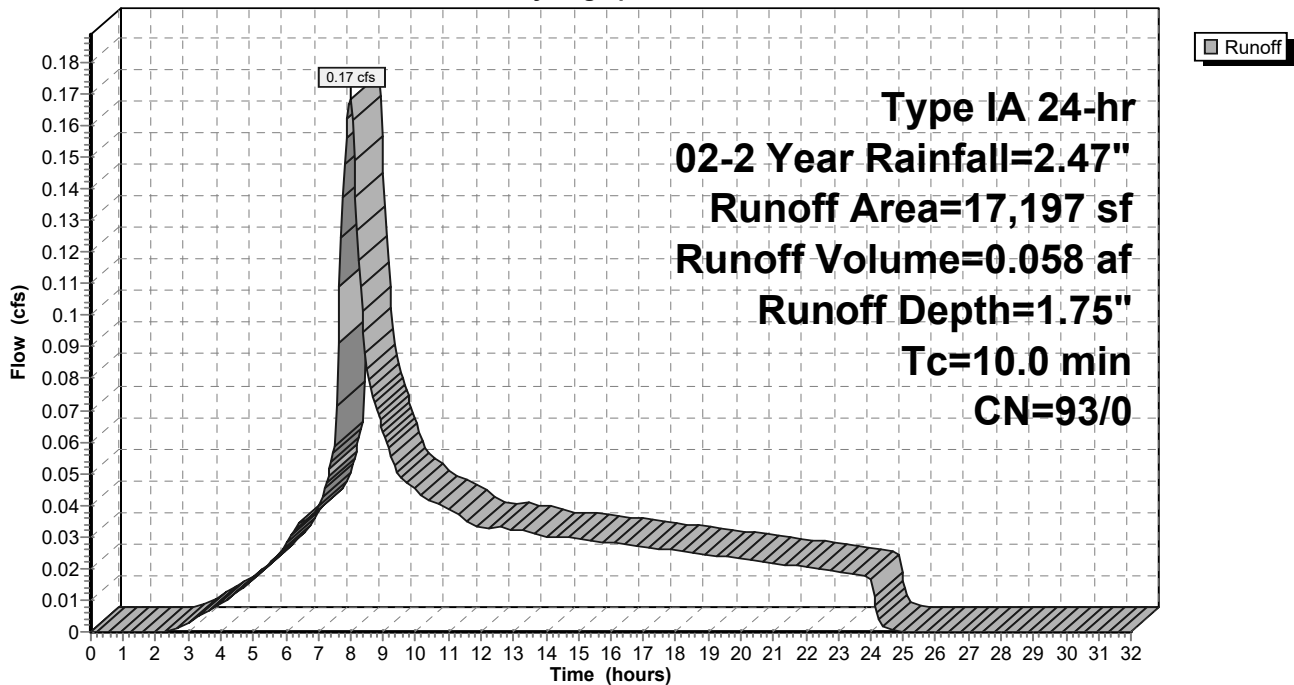
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 02-2 Year Rainfall=2.47"

Area (sf)	CN	Description
* 17,197	93	70% Lot Coverage Weighted
17,197	93	100.00% Pervious Area

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

Subcatchment 67S: Home Basin 19

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 02-2 Year Rainfall=2.47"

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Summary for Subcatchment 68S: Home Basin 12

Runoff = 0.18 cfs @ 7.99 hrs, Volume= 0.061 af, Depth= 1.75"
 Routed to Reach 160R : 1

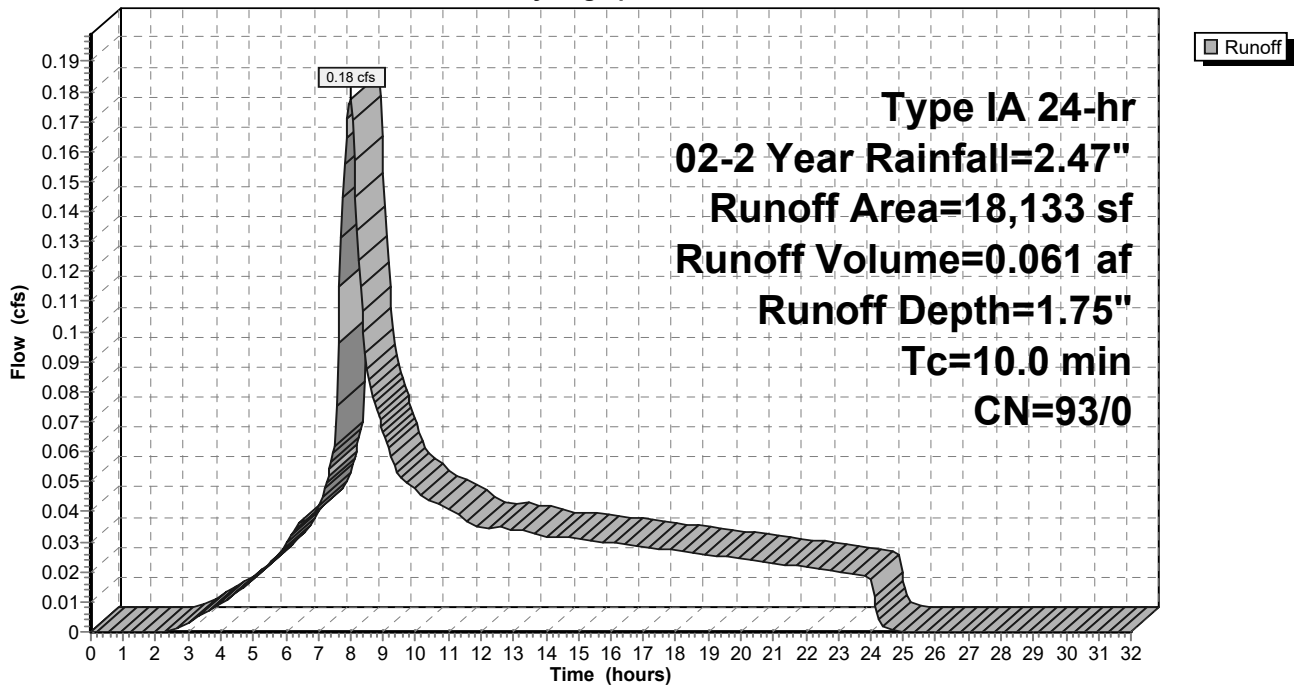
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 02-2 Year Rainfall=2.47"

Area (sf)	CN	Description
* 18,133	93	70% Lot Coverage Weighted
18,133	93	100.00% Pervious Area

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

Subcatchment 68S: Home Basin 12

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 02-2 Year Rainfall=2.47"

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Summary for Subcatchment 69S: Home Basin 17

Runoff = 0.16 cfs @ 7.99 hrs, Volume= 0.056 af, Depth= 1.75"
 Routed to Reach 151R : 1

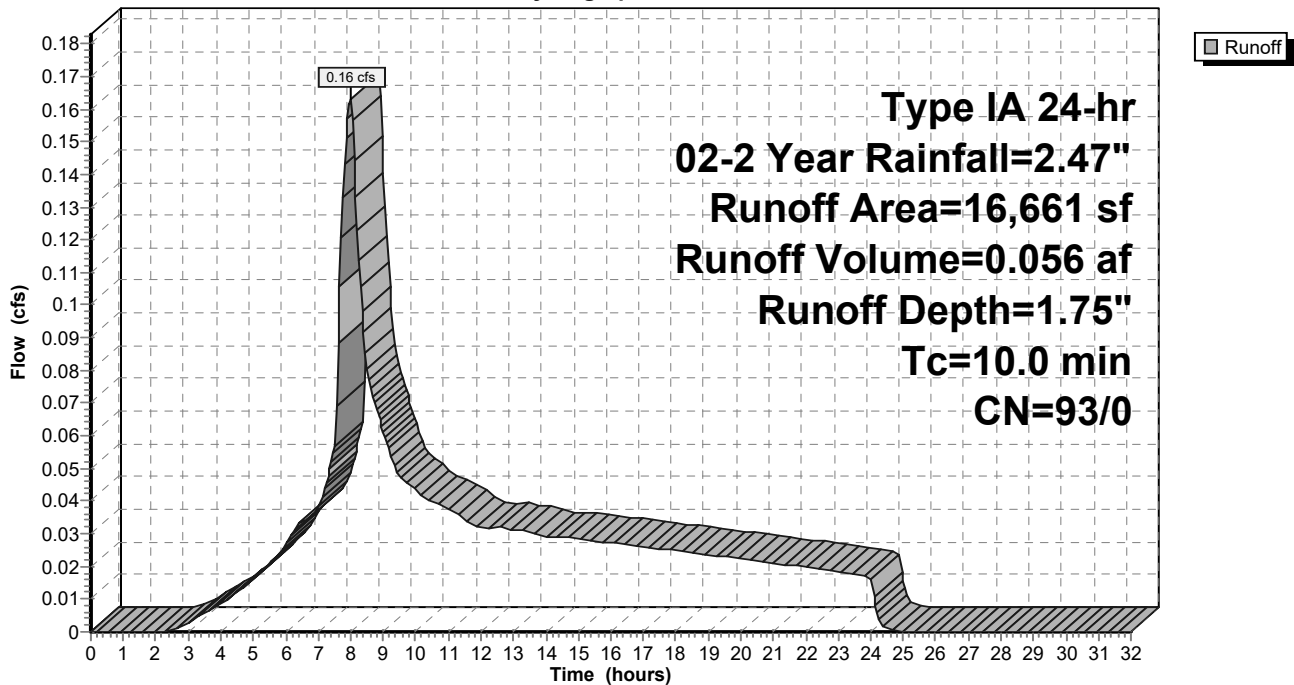
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 02-2 Year Rainfall=2.47"

Area (sf)	CN	Description
* 16,661	93	70% Lot Coverage Weighted
16,661	93	100.00% Pervious Area

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

Subcatchment 69S: Home Basin 17

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 02-2 Year Rainfall=2.47"

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Summary for Subcatchment 70S: Home Basin 18

Runoff = 0.11 cfs @ 7.99 hrs, Volume= 0.039 af, Depth= 1.75"
 Routed to Reach 149R : 1

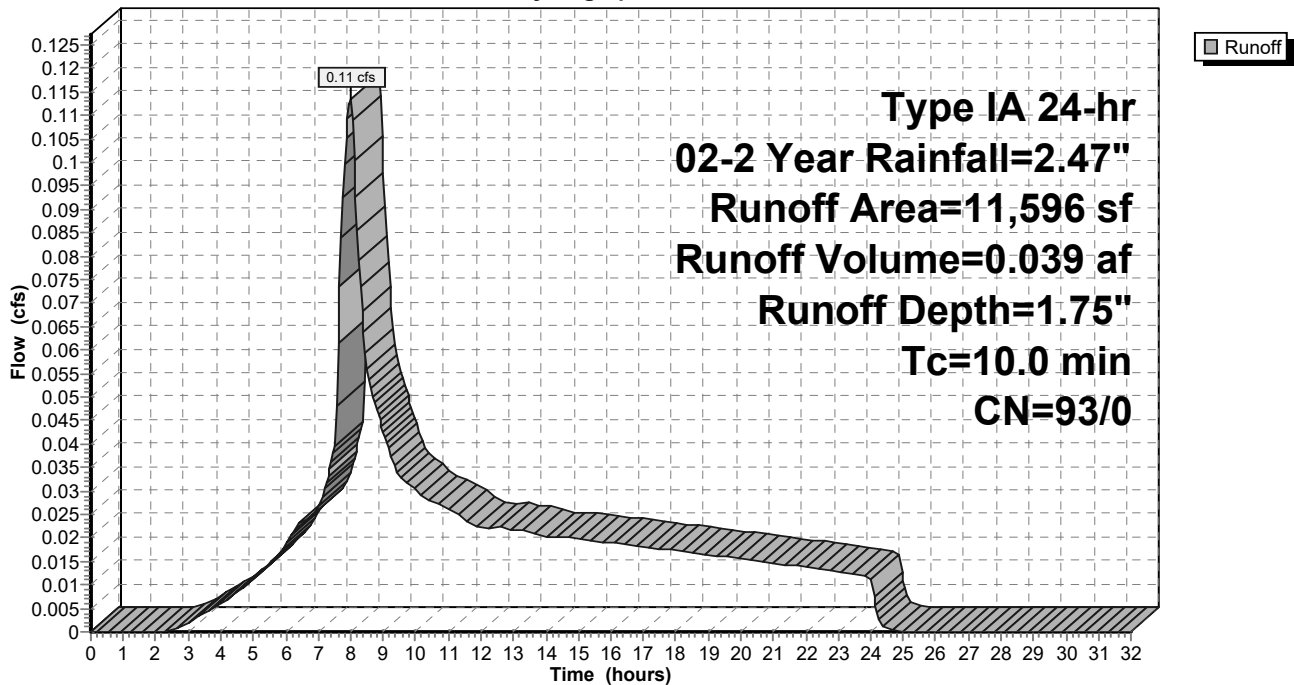
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 02-2 Year Rainfall=2.47"

Area (sf)	CN	Description
* 11,596	93	70% Lot Coverage Weighted
11,596	93	100.00% Pervious Area

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

Subcatchment 70S: Home Basin 18

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 02-2 Year Rainfall=2.47"

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Summary for Subcatchment 71S: Home Basin 14

Runoff = 0.16 cfs @ 7.99 hrs, Volume= 0.055 af, Depth= 1.75"
 Routed to Reach 148R : 1

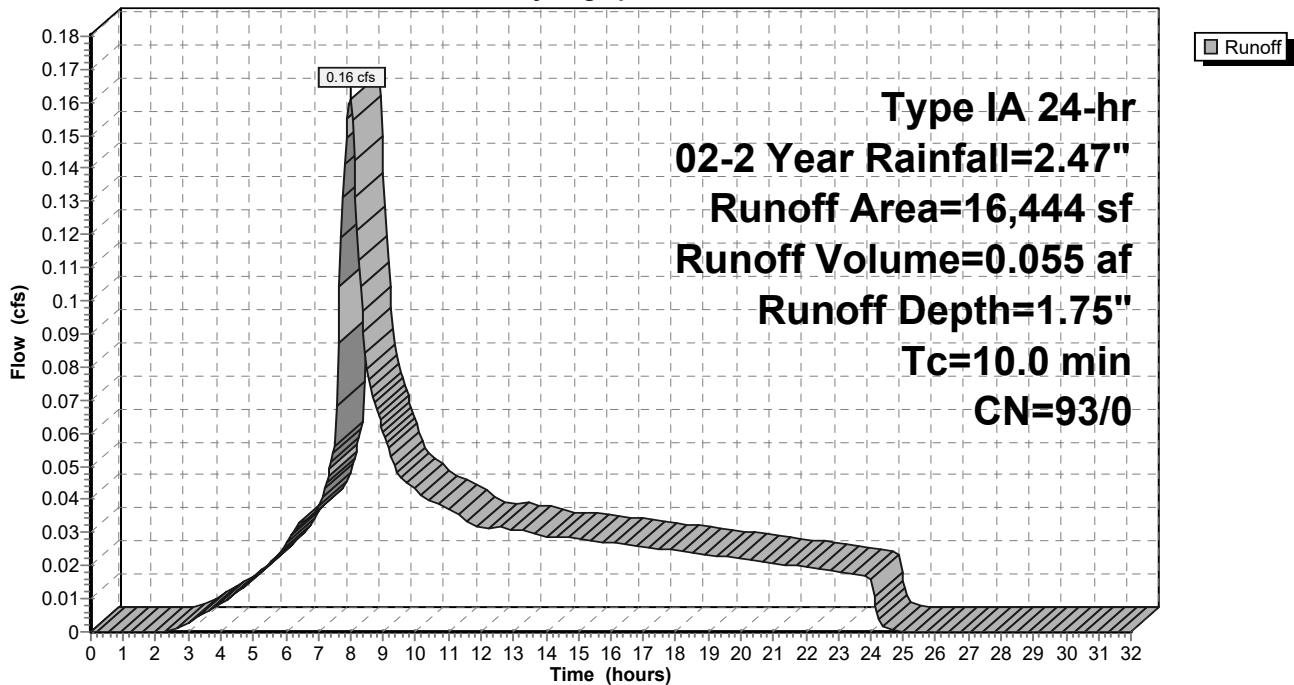
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 02-2 Year Rainfall=2.47"

Area (sf)	CN	Description
* 16,444	93	70% Lot Coverage Weighted
16,444	93	100.00% Pervious Area

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

Subcatchment 71S: Home Basin 14

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 02-2 Year Rainfall=2.47"

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Summary for Subcatchment 72S: Home Basin 16

Runoff = 0.20 cfs @ 7.99 hrs, Volume= 0.068 af, Depth= 1.75"
 Routed to Reach 150R : 1

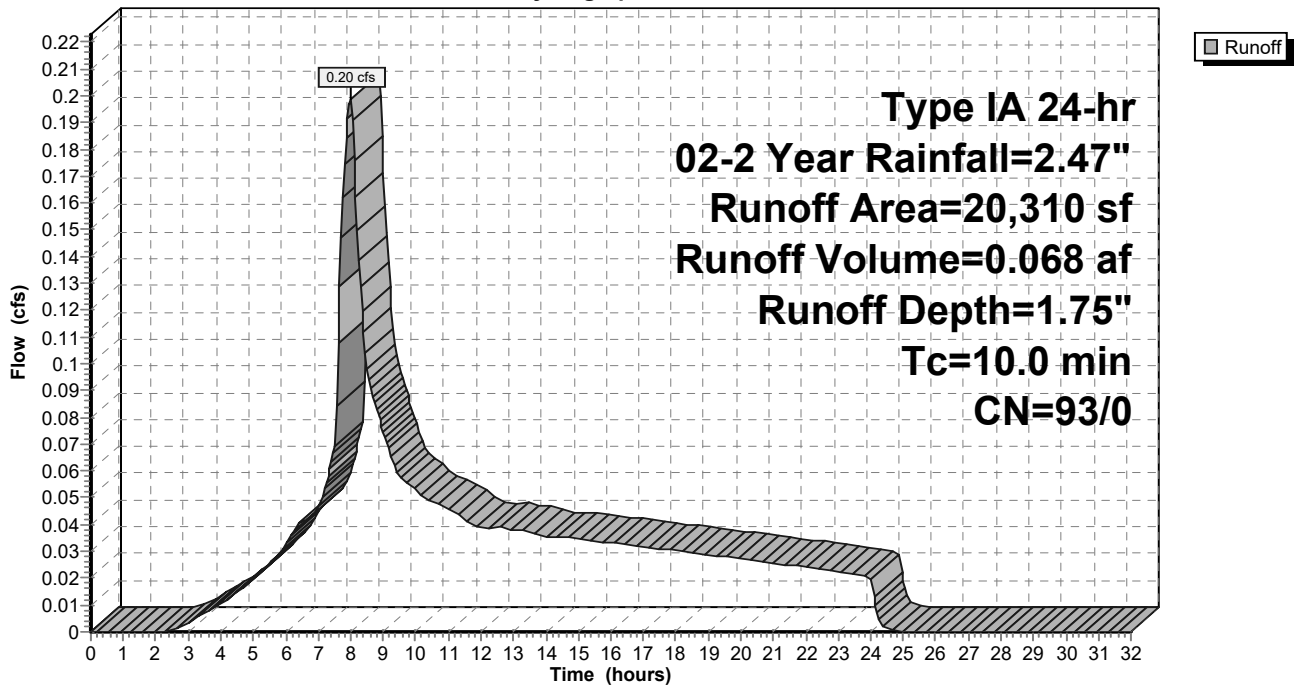
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 02-2 Year Rainfall=2.47"

Area (sf)	CN	Description
* 20,310	93	70% Lot Coverage Weighted
20,310	93	100.00% Pervious Area

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

Subcatchment 72S: Home Basin 16

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 02-2 Year Rainfall=2.47"

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Summary for Subcatchment 73S: Home Basin 13

Runoff = 0.11 cfs @ 7.99 hrs, Volume= 0.036 af, Depth= 1.75"
 Routed to Reach 155R : 1

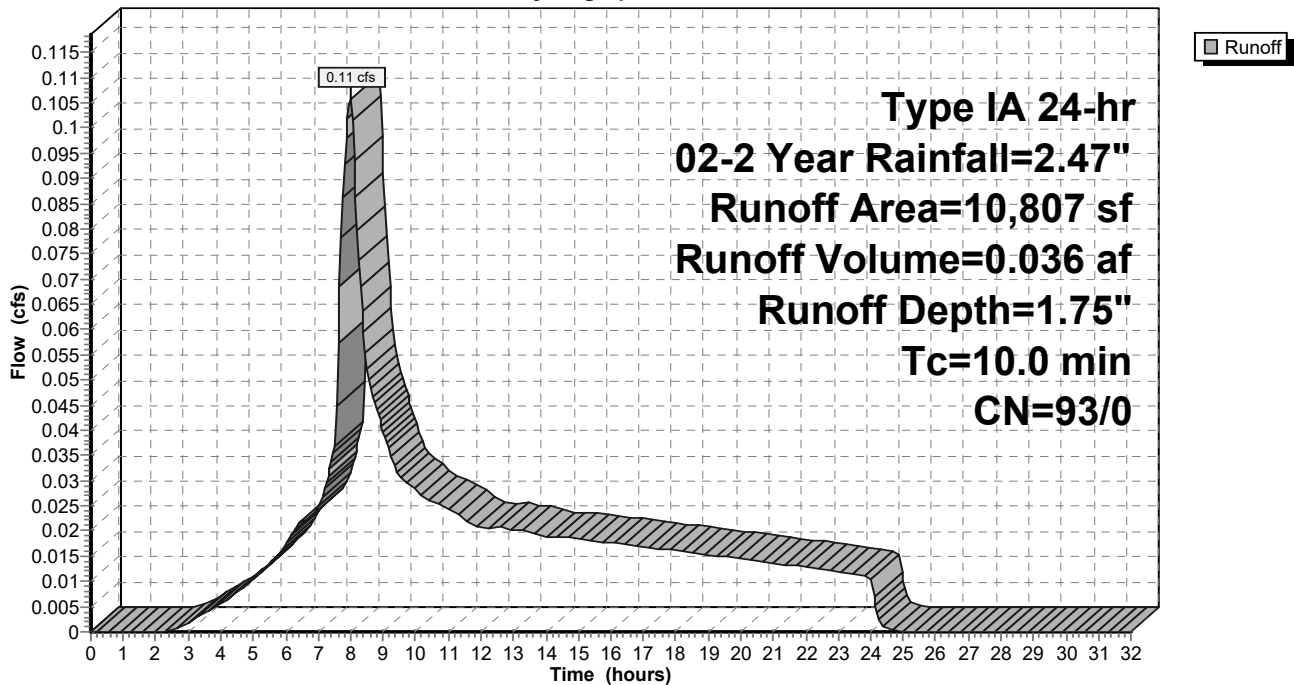
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 02-2 Year Rainfall=2.47"

Area (sf)	CN	Description
* 10,807	93	70% Lot Coverage Weighted
10,807	93	100.00% Pervious Area

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

Subcatchment 73S: Home Basin 13

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 02-2 Year Rainfall=2.47"

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Summary for Subcatchment 74S: Swale Existing Conditions

Runoff = 0.06 cfs @ 7.99 hrs, Volume= 0.020 af, Depth= 1.43"
 Routed to Reach 42R : Pre-Construction Peak Flow

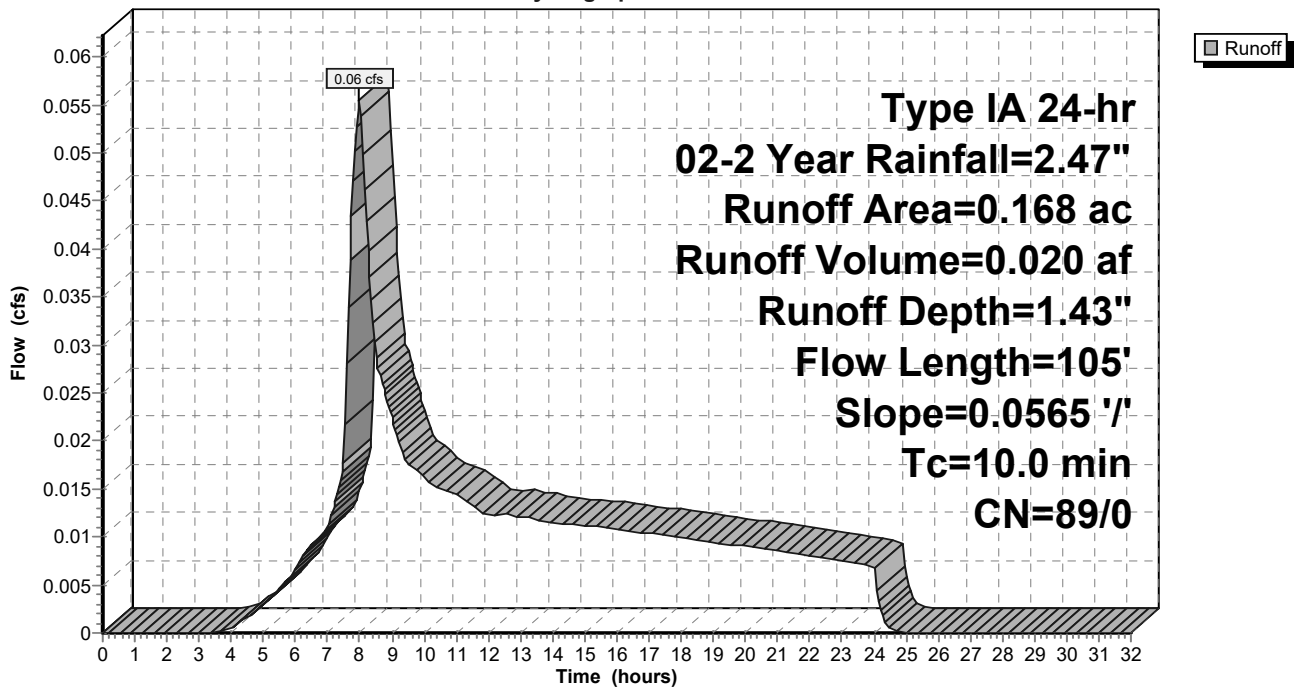
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 02-2 Year Rainfall=2.47"

Area (ac)	CN	Description
0.168	89	Pasture/grassland/range, Poor, HSG D
0.168	89	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.7	105	0.0565	0.23		Sheet Flow, Grass: Short n= 0.150 P2= 2.47"
7.7	105	Total, Increased to minimum Tc = 10.0 min			

Subcatchment 74S: Swale Existing Conditions

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 02-2 Year Rainfall=2.47"

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Summary for Subcatchment 75S: Home Basin 11

Runoff = 0.18 cfs @ 7.99 hrs, Volume= 0.062 af, Depth= 1.75"
 Routed to Reach 160R : 1

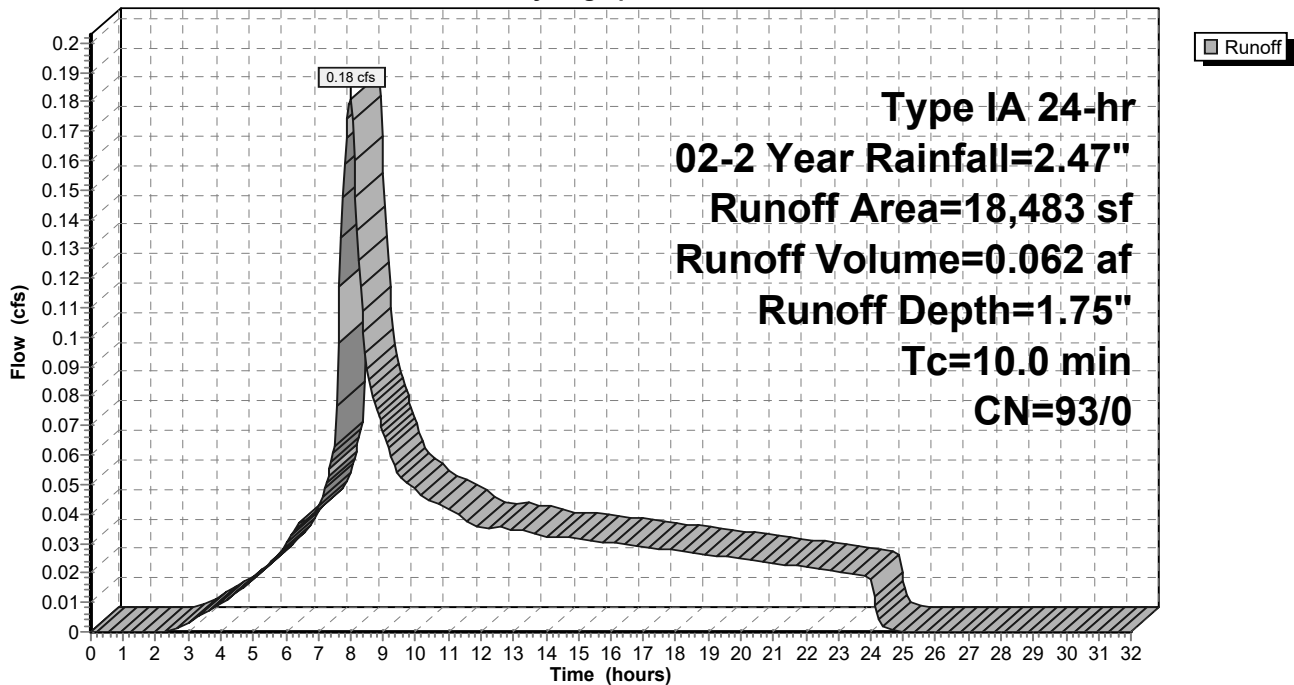
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 02-2 Year Rainfall=2.47"

Area (sf)	CN	Description
* 18,483	93	70% Lot Coverage Weighted
18,483	93	100.00% Pervious Area

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

Subcatchment 75S: Home Basin 11

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 02-2 Year Rainfall=2.47"

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Summary for Subcatchment 77S: Home Basin 15

Runoff = 0.12 cfs @ 7.99 hrs, Volume= 0.042 af, Depth= 1.75"
 Routed to Reach 149R : 1

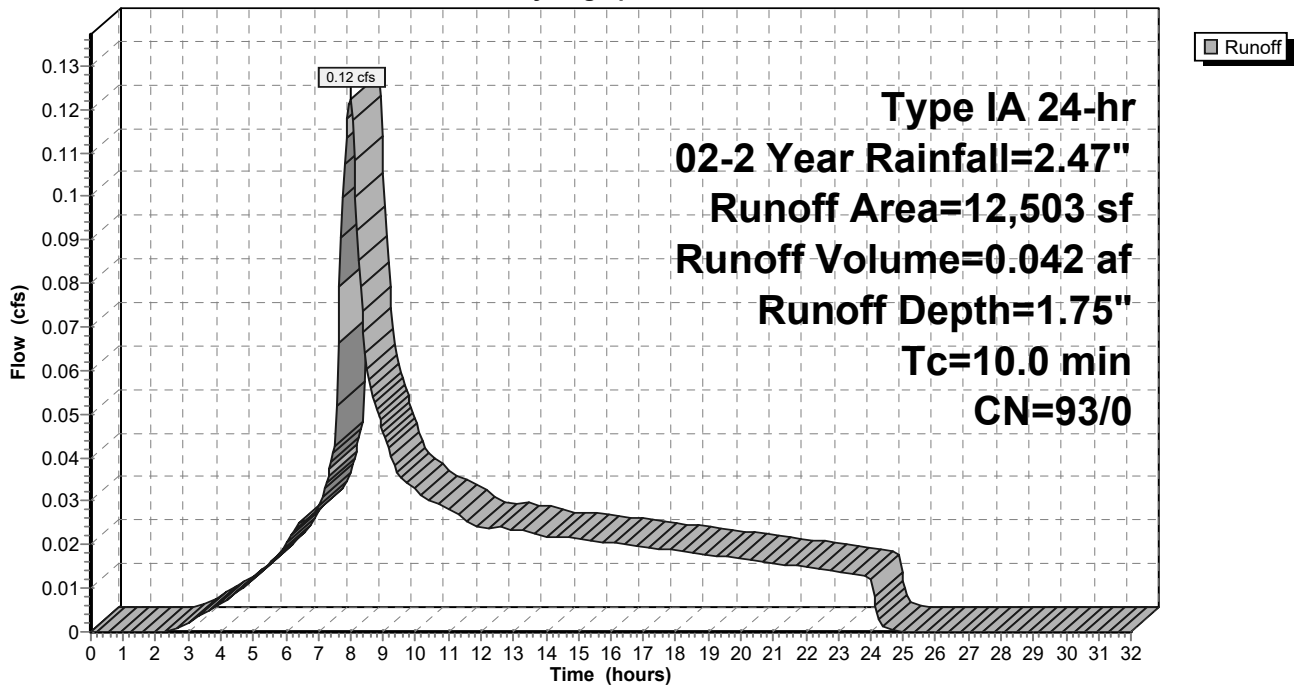
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 02-2 Year Rainfall=2.47"

Area (sf)	CN	Description
* 12,503	93	70% Lot Coverage Weighted
12,503	93	100.00% Pervious Area

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

Subcatchment 77S: Home Basin 15

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 02-2 Year Rainfall=2.47"

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Summary for Subcatchment 78S: Single Pond

[46] Hint: Tc=0 (Instant runoff peak depends on dt)

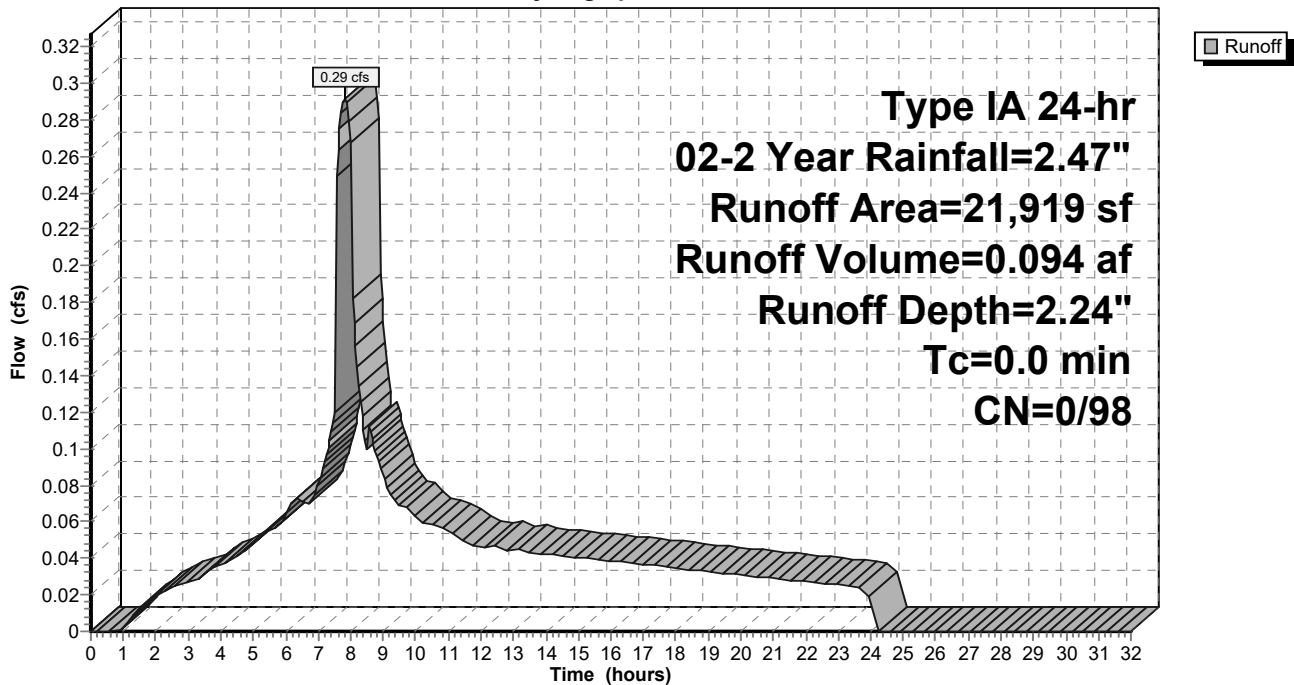
Runoff = 0.29 cfs @ 7.81 hrs, Volume= 0.094 af, Depth= 2.24"
 Routed to Pond 63P : Detention Pond

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 02-2 Year Rainfall=2.47"

Area (sf)	CN	Description
21,919	98	Water Surface, HSG D
21,919	98	100.00% Impervious Area

Subcatchment 78S: Single Pond

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 02-2 Year Rainfall=2.47"

Prepared by A&O Engineering LLC

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Summary for Subcatchment 79S: Home Basin 30

Runoff = 0.38 cfs @ 7.99 hrs, Volume= 0.129 af, Depth= 1.75"
 Routed to Reach 132R : 1

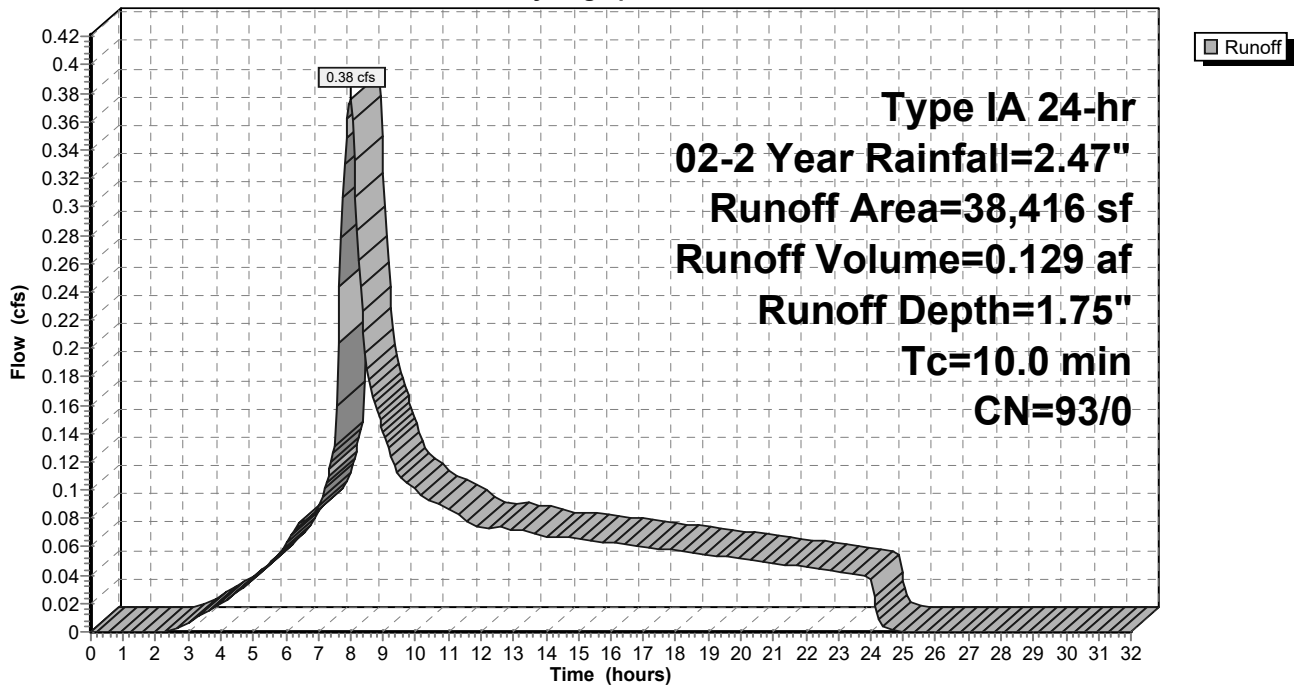
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 02-2 Year Rainfall=2.47"

Area (sf)	CN	Description
* 38,416	93	70% Lot Coverage Weighted
38,416	93	100.00% Pervious Area

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

Subcatchment 79S: Home Basin 30

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 02-2 Year Rainfall=2.47"

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Summary for Subcatchment 80S: Home Basin 10

Runoff = 0.14 cfs @ 7.99 hrs, Volume= 0.050 af, Depth= 1.75"
 Routed to Reach 165R : 1

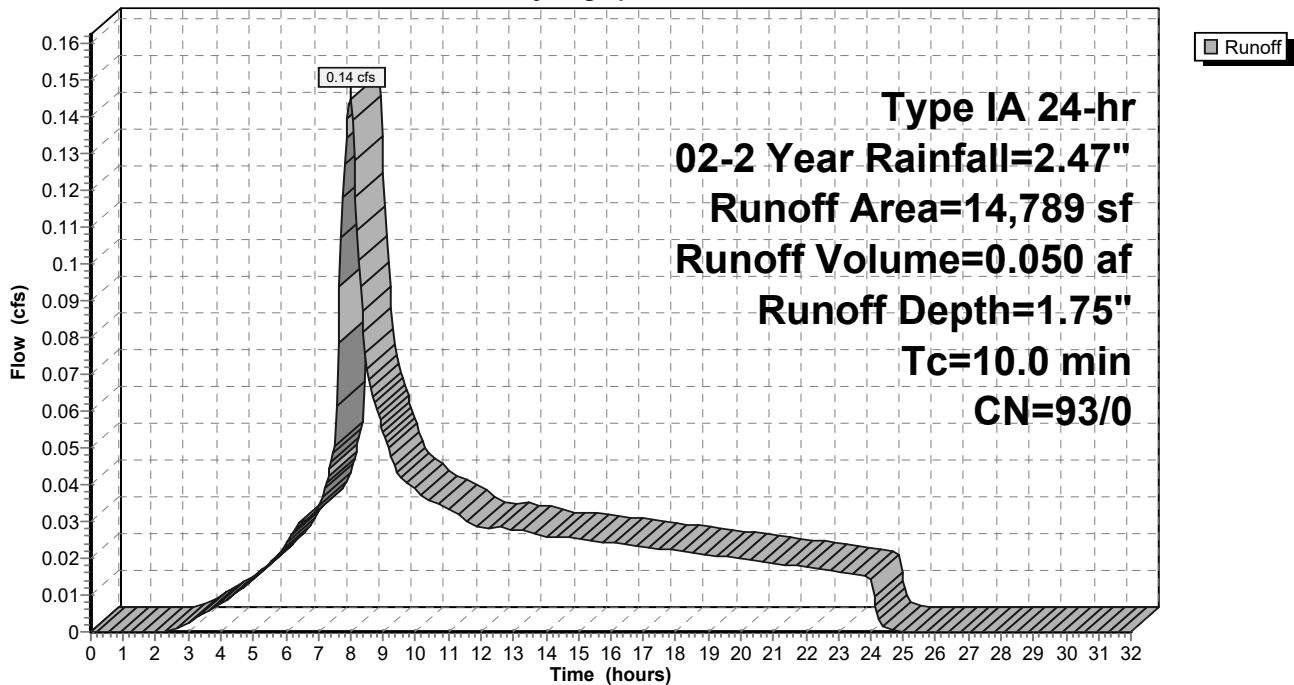
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 02-2 Year Rainfall=2.47"

Area (sf)	CN	Description
* 14,789	93	70% Lot Coverage Weighted
14,789	93	100.00% Pervious Area

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

Subcatchment 80S: Home Basin 10

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 02-2 Year Rainfall=2.47"

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Summary for Subcatchment 81S: Home Basin 9

Runoff = 0.15 cfs @ 7.99 hrs, Volume= 0.052 af, Depth= 1.75"
 Routed to Reach 163R : 1

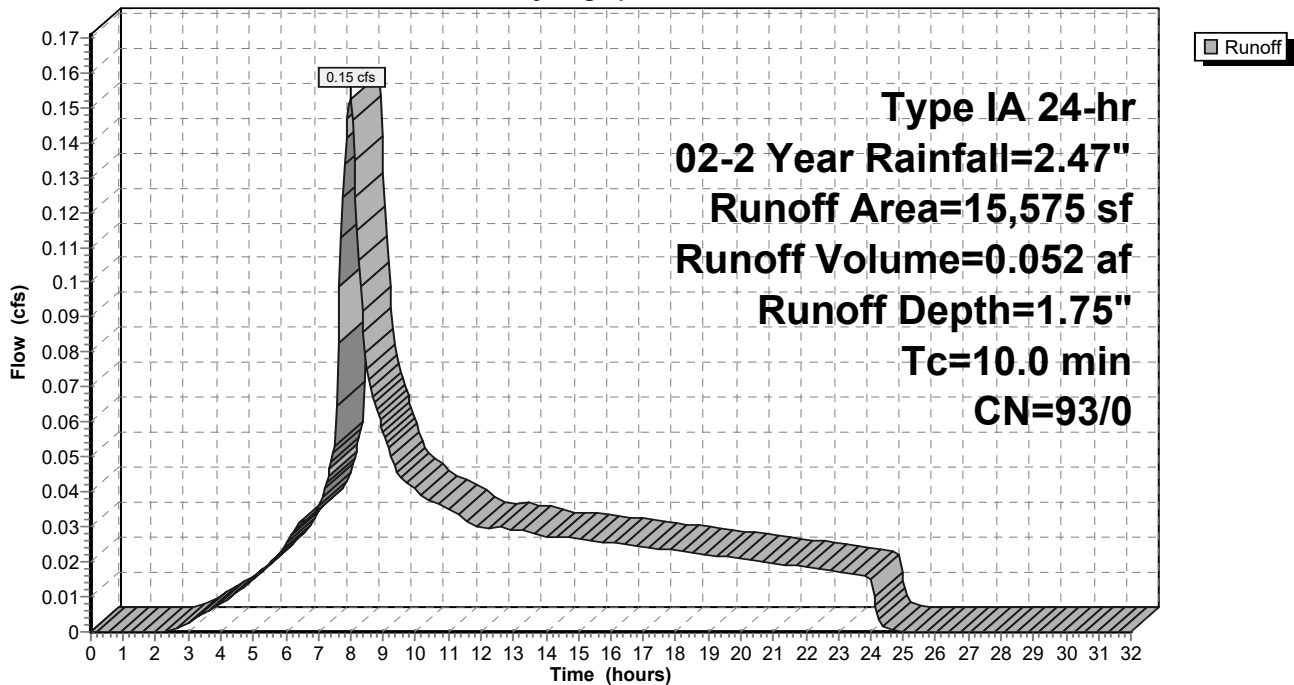
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 02-2 Year Rainfall=2.47"

Area (sf)	CN	Description
* 15,575	93	70% Lot Coverage Weighted
15,575	93	100.00% Pervious Area

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

Subcatchment 81S: Home Basin 9

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 02-2 Year Rainfall=2.47"

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Summary for Subcatchment 82S: Home Basin 2

Runoff = 0.20 cfs @ 7.99 hrs, Volume= 0.069 af, Depth= 1.75"
 Routed to Reach 145R : 1

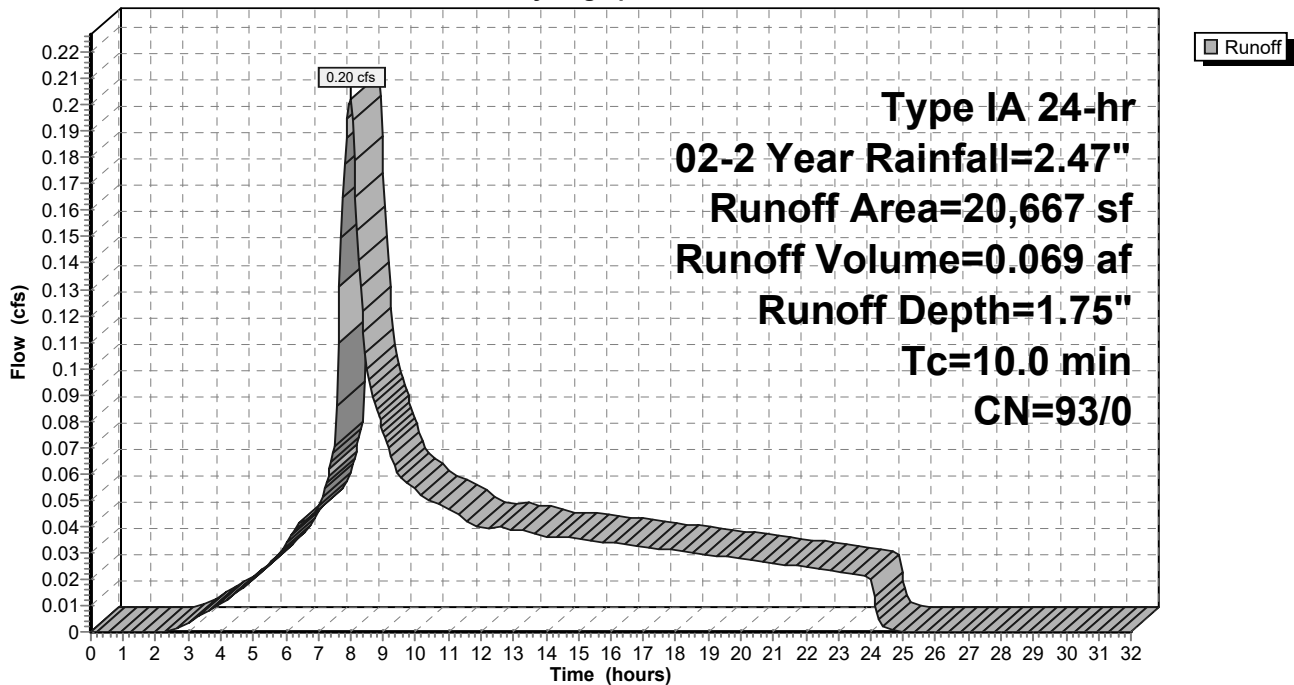
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 02-2 Year Rainfall=2.47"

Area (sf)	CN	Description
* 20,667	93	70% Lot Coverage Weighted
20,667	93	100.00% Pervious Area

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

Subcatchment 82S: Home Basin 2

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 02-2 Year Rainfall=2.47"

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Summary for Subcatchment 83S: Home Basin 7

Runoff = 0.17 cfs @ 7.99 hrs, Volume= 0.057 af, Depth= 1.75"
 Routed to Reach 154R : 1

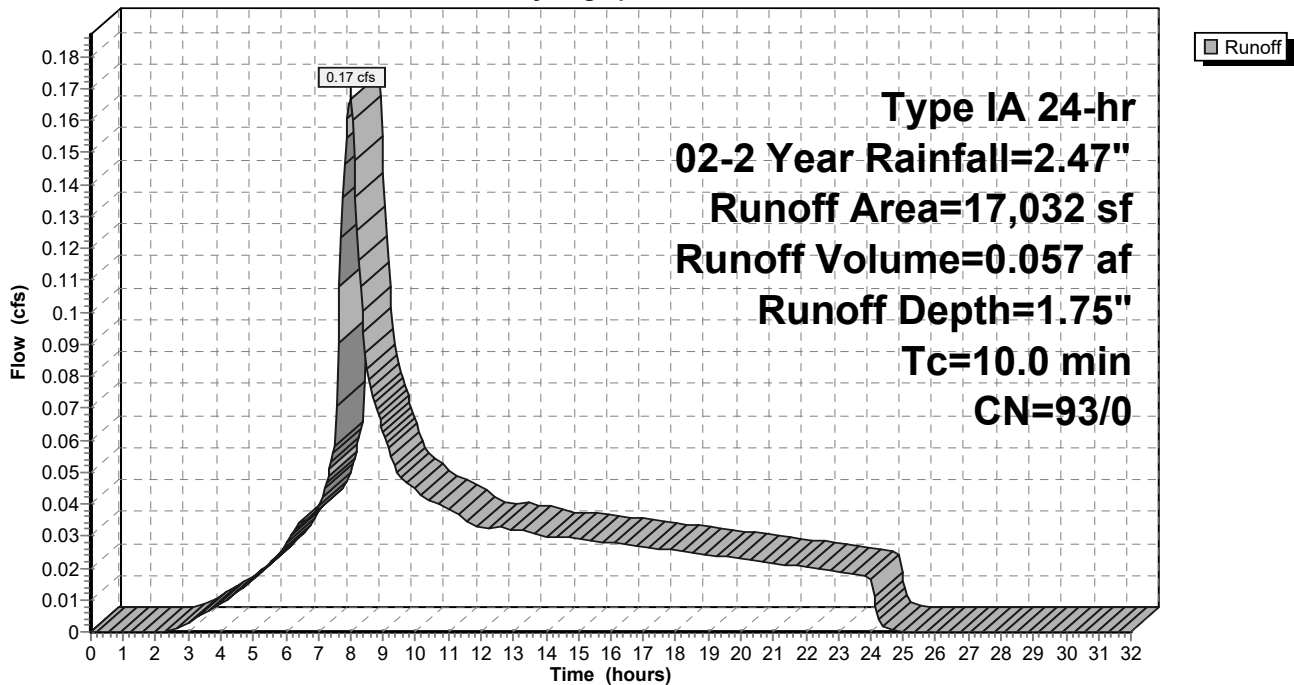
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 02-2 Year Rainfall=2.47"

Area (sf)	CN	Description
* 17,032	93	70% Lot Coverage Weighted
17,032	93	100.00% Pervious Area

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

Subcatchment 83S: Home Basin 7

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 02-2 Year Rainfall=2.47"

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Summary for Subcatchment 84S: Home Basin 8

Runoff = 0.11 cfs @ 7.99 hrs, Volume= 0.039 af, Depth= 1.75"
 Routed to Reach 155R : 1

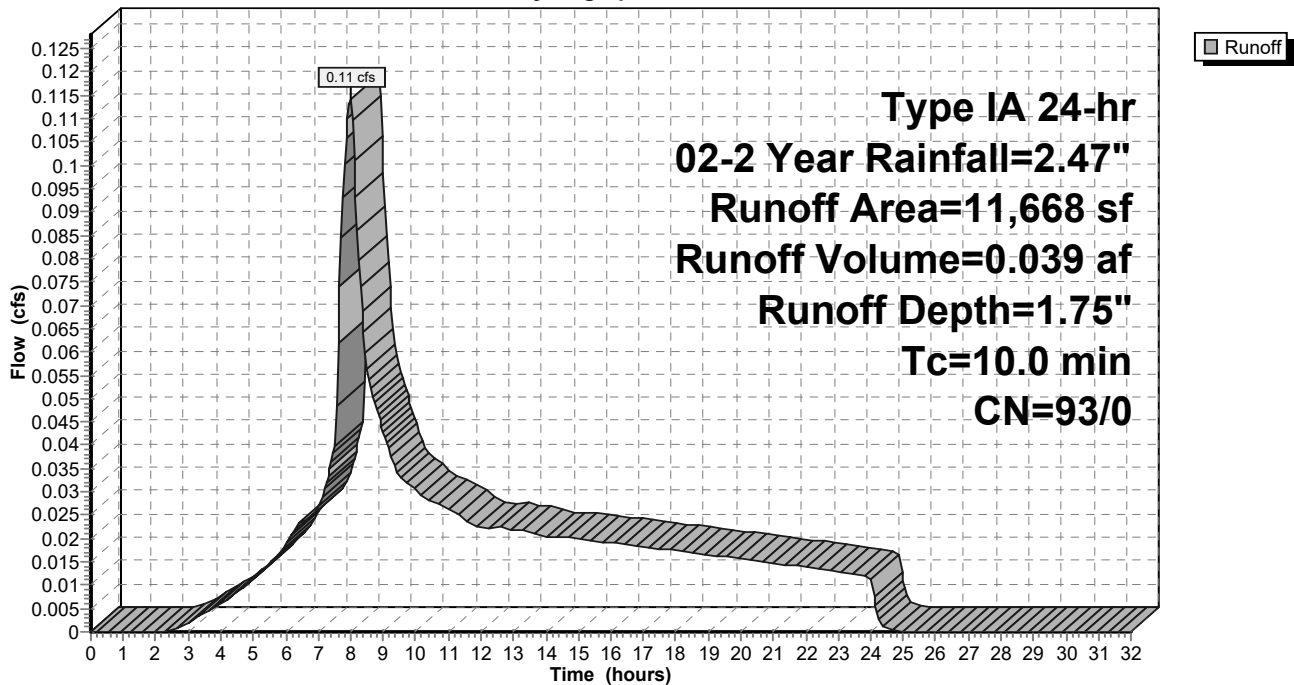
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 02-2 Year Rainfall=2.47"

Area (sf)	CN	Description
* 11,668	93	70% Lot Coverage Weighted
11,668	93	100.00% Pervious Area

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

Subcatchment 84S: Home Basin 8

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 02-2 Year Rainfall=2.47"

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Summary for Subcatchment 85S: Home Basin 29

Runoff = 0.25 cfs @ 7.99 hrs, Volume= 0.084 af, Depth= 1.75"
 Routed to Reach 132R : 1

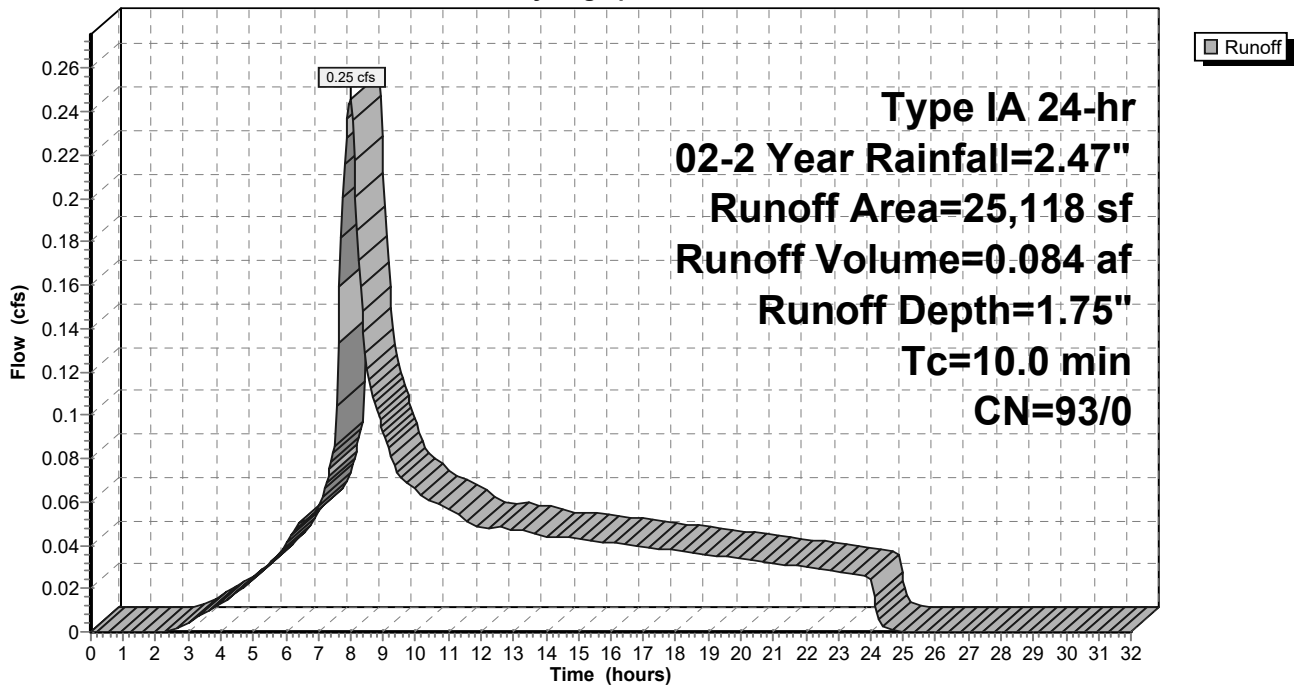
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 02-2 Year Rainfall=2.47"

Area (sf)	CN	Description
* 25,118	93	70% Lot Coverage Weighted
25,118	93	100.00% Pervious Area

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

Subcatchment 85S: Home Basin 29

Hydrograph



9-6-23 HydroCAD DOM

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Type IA 24-hr 02-2 Year Rainfall=2.47"

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Summary for Subcatchment 86S: Home Basin 22

Runoff = 0.16 cfs @ 7.99 hrs, Volume= 0.054 af, Depth= 1.75"
 Routed to Reach 145R : 1

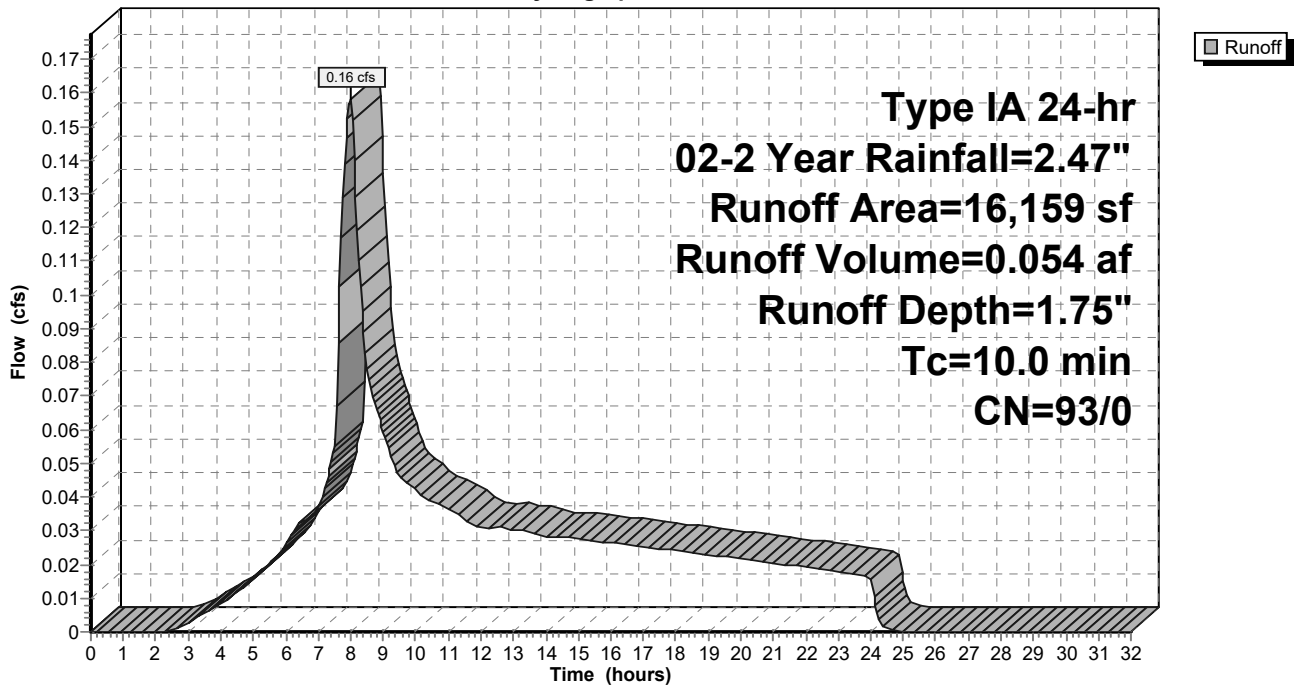
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 02-2 Year Rainfall=2.47"

Area (sf)	CN	Description
* 16,159	93	70% Lot Coverage Weighted
16,159	93	100.00% Pervious Area

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

Subcatchment 86S: Home Basin 22

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 02-2 Year Rainfall=2.47"

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Summary for Subcatchment 87S: Home Basin 27

Runoff = 0.24 cfs @ 7.99 hrs, Volume= 0.083 af, Depth= 1.75"
 Routed to Reach 135R : 1

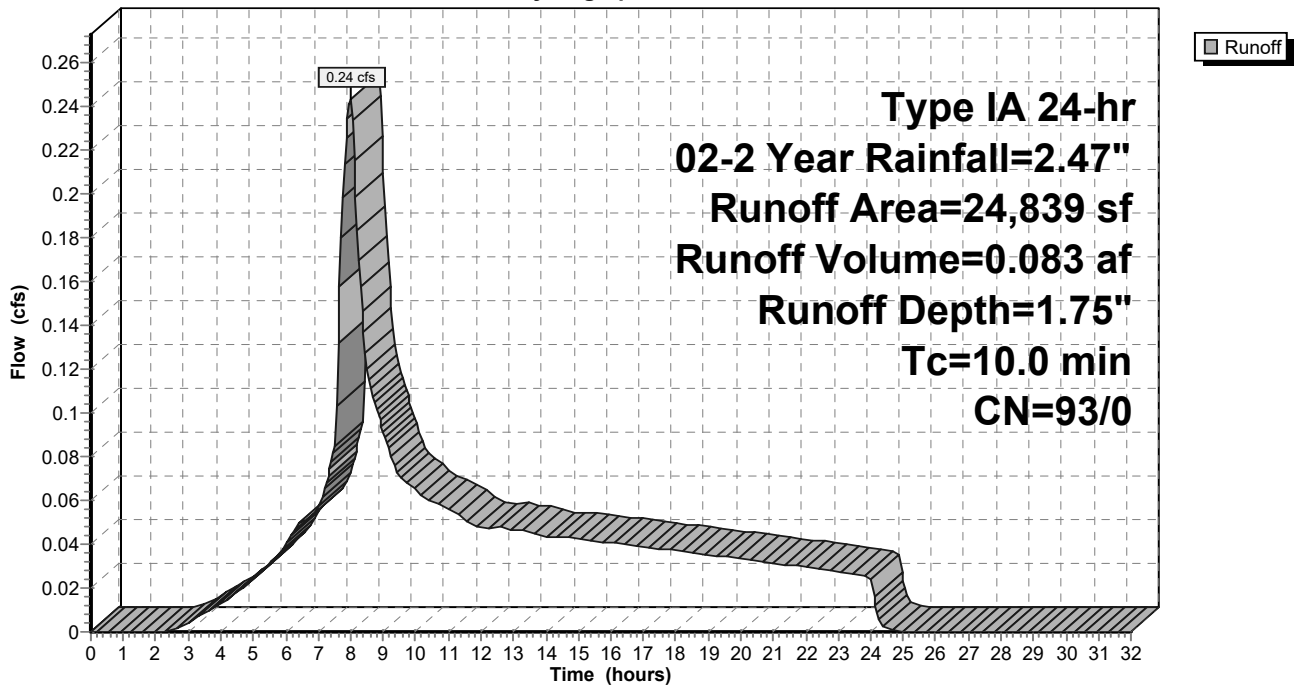
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 02-2 Year Rainfall=2.47"

Area (sf)	CN	Description
* 24,839	93	70% Lot Coverage Weighted
24,839	93	100.00% Pervious Area

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

Subcatchment 87S: Home Basin 27

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 02-2 Year Rainfall=2.47"

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Summary for Subcatchment 88S: Home Basin 28

Runoff = 0.25 cfs @ 7.99 hrs, Volume= 0.085 af, Depth= 1.75"
 Routed to Reach 131R : 1

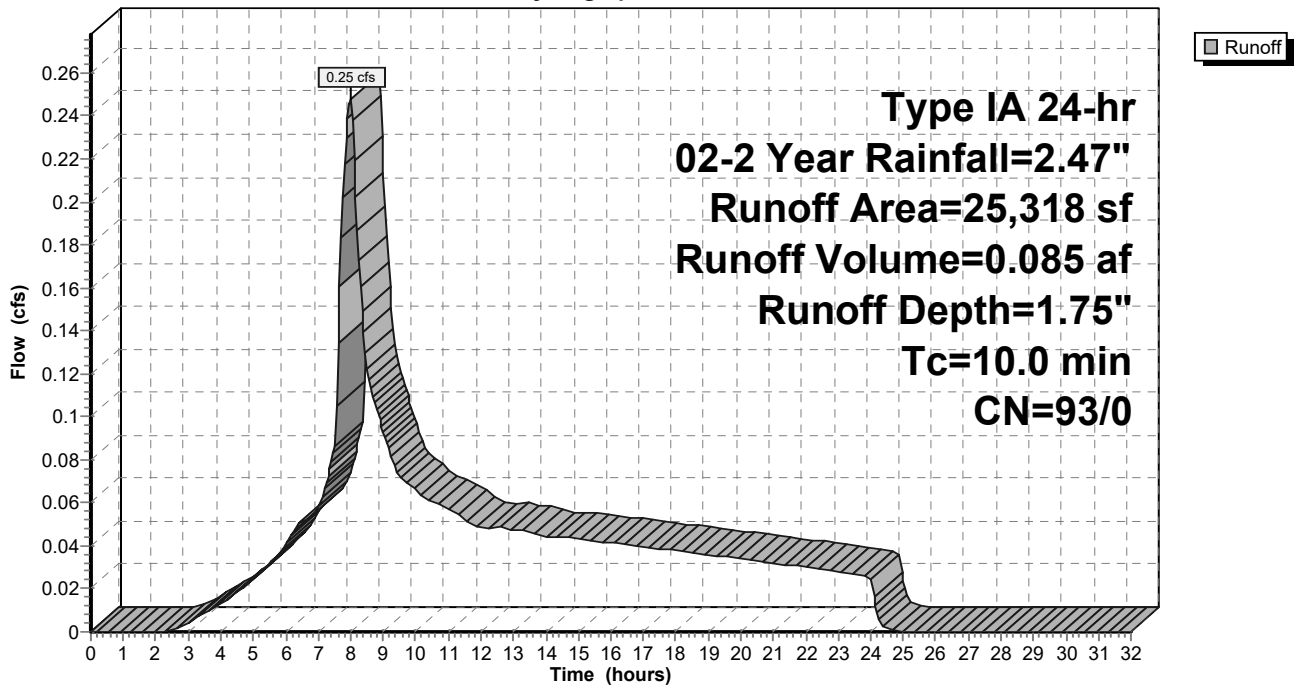
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 02-2 Year Rainfall=2.47"

Area (sf)	CN	Description
* 25,318	93	70% Lot Coverage Weighted
25,318	93	100.00% Pervious Area

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

Subcatchment 88S: Home Basin 28

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 02-2 Year Rainfall=2.47"

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Summary for Subcatchment 89S: Home Basin 24

Runoff = 0.20 cfs @ 7.99 hrs, Volume= 0.069 af, Depth= 1.75"
 Routed to Reach 135R : 1

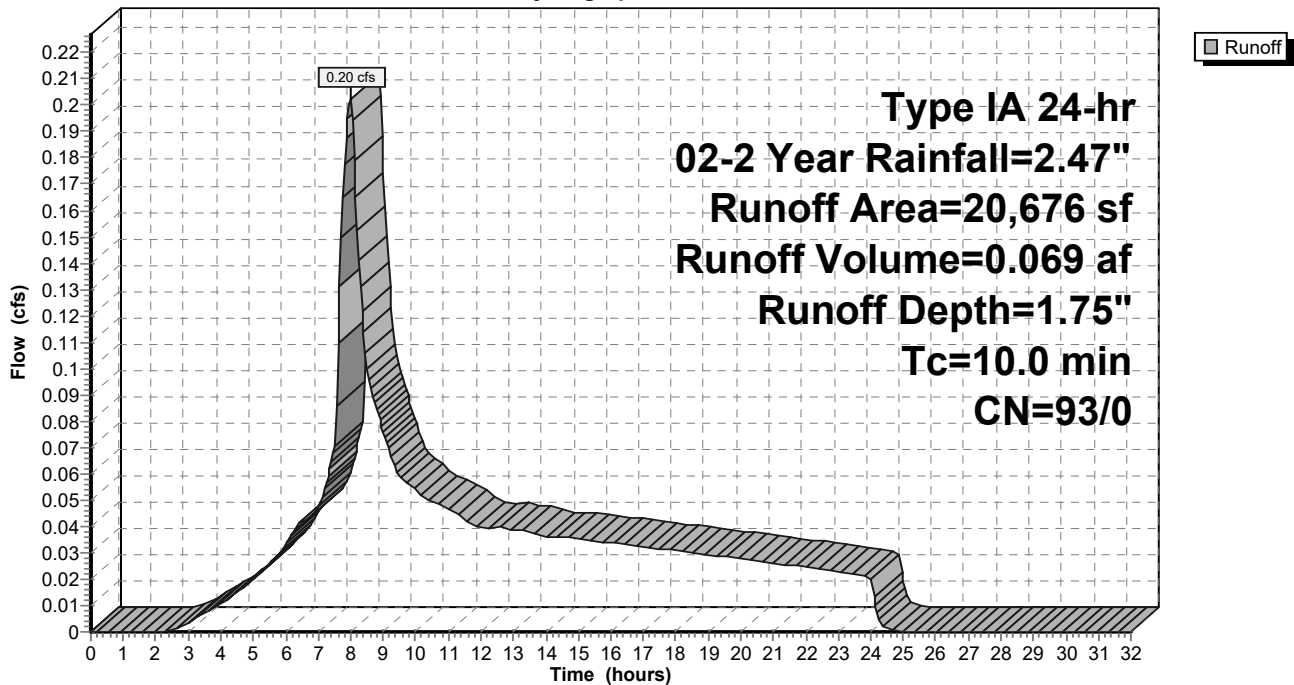
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 02-2 Year Rainfall=2.47"

Area (sf)	CN	Description
* 20,676	93	70% Lot Coverage Weighted
20,676	93	100.00% Pervious Area

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

Subcatchment 89S: Home Basin 24

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 02-2 Year Rainfall=2.47"

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Summary for Subcatchment 90S: Home Basin 26

Runoff = 0.14 cfs @ 7.99 hrs, Volume= 0.047 af, Depth= 1.75"
 Routed to Reach 136R : 1

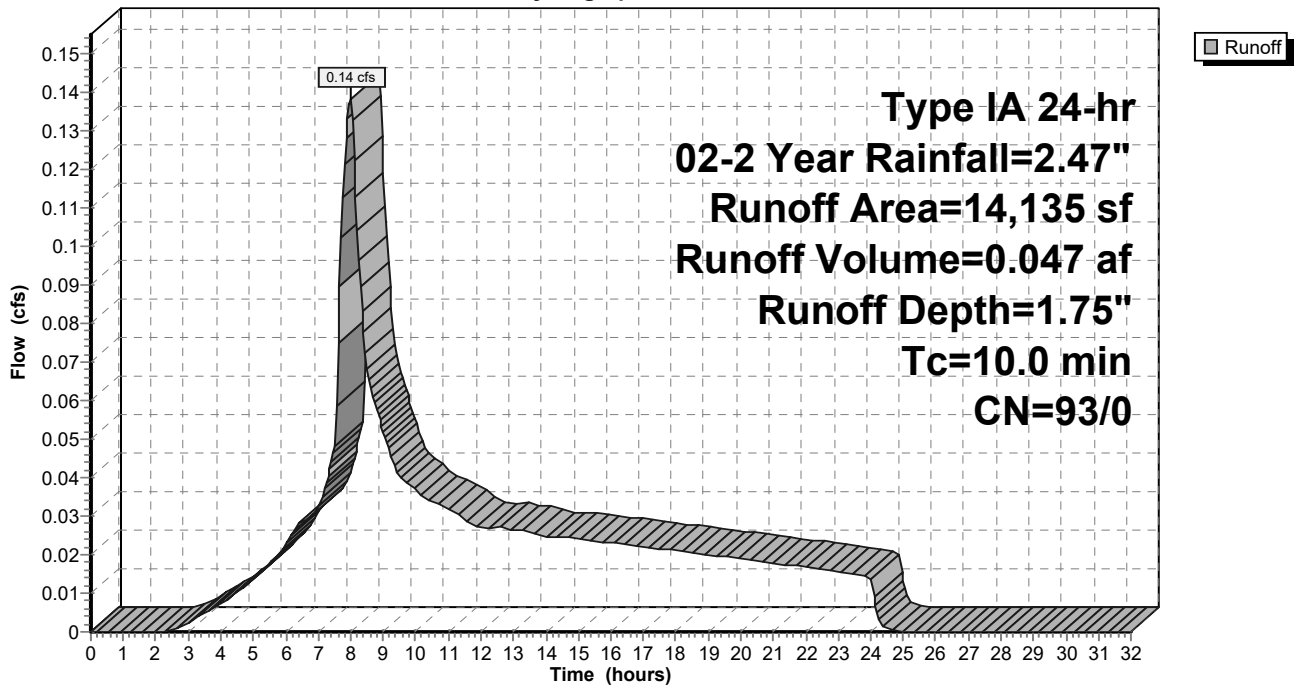
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 02-2 Year Rainfall=2.47"

Area (sf)	CN	Description
* 14,135	93	70% Lot Coverage Weighted
14,135	93	100.00% Pervious Area

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

Subcatchment 90S: Home Basin 26

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 02-2 Year Rainfall=2.47"

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Summary for Subcatchment 91S: Home Basin 23

Runoff = 0.12 cfs @ 7.99 hrs, Volume= 0.041 af, Depth= 1.75"
 Routed to Reach 143R : 1

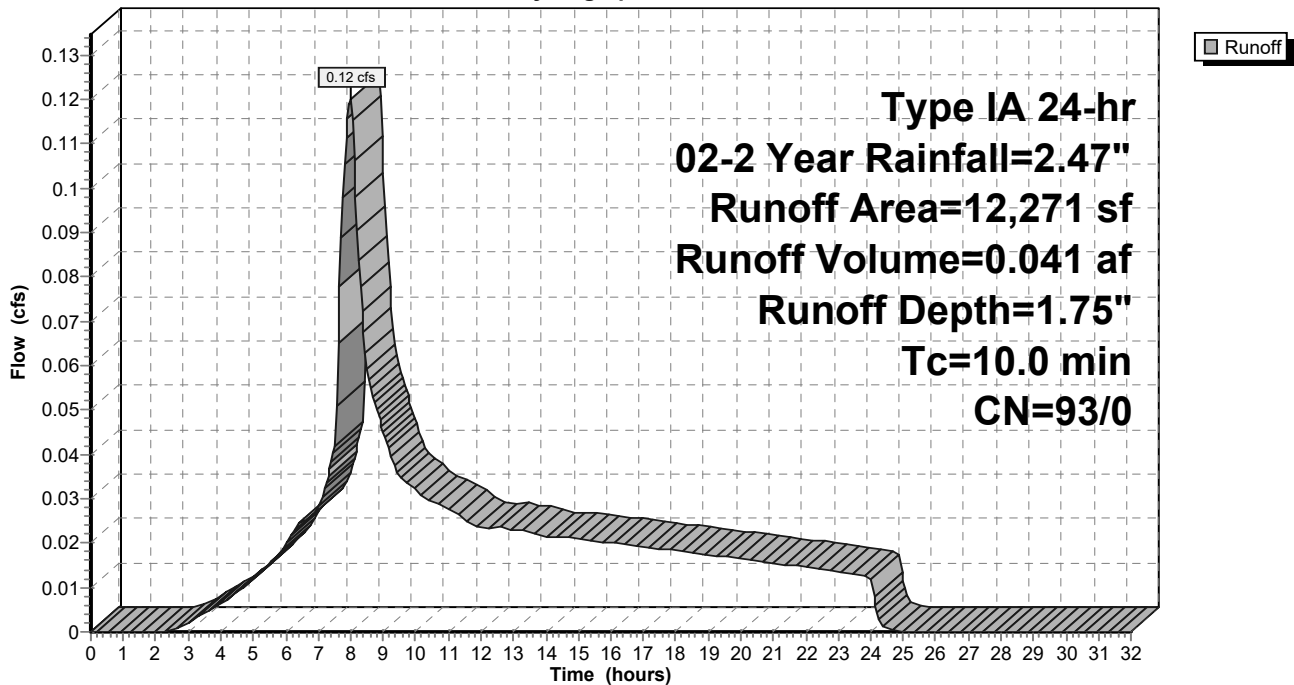
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 02-2 Year Rainfall=2.47"

Area (sf)	CN	Description
* 12,271	93	70% Lot Coverage Weighted
12,271	93	100.00% Pervious Area

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

Subcatchment 91S: Home Basin 23

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 02-2 Year Rainfall=2.47"

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Summary for Subcatchment 92S: Home Basin 21

Runoff = 0.26 cfs @ 7.99 hrs, Volume= 0.091 af, Depth= 1.75"
 Routed to Reach 145R : 1

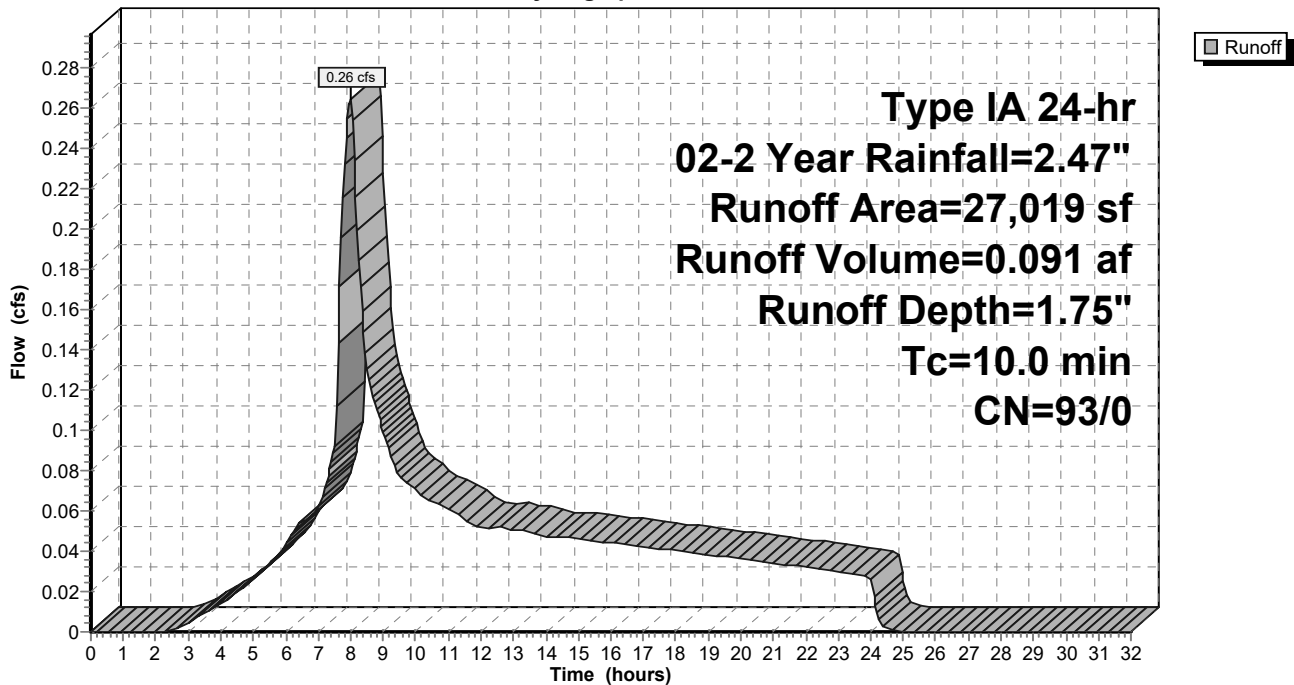
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 02-2 Year Rainfall=2.47"

Area (sf)	CN	Description
* 27,019	93	70% Lot Coverage Weighted
27,019	93	100.00% Pervious Area

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

Subcatchment 92S: Home Basin 21

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 02-2 Year Rainfall=2.47"

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Summary for Subcatchment 93S: Home Basin 25

Runoff = 0.17 cfs @ 7.99 hrs, Volume= 0.057 af, Depth= 1.75"
 Routed to Reach 136R : 1

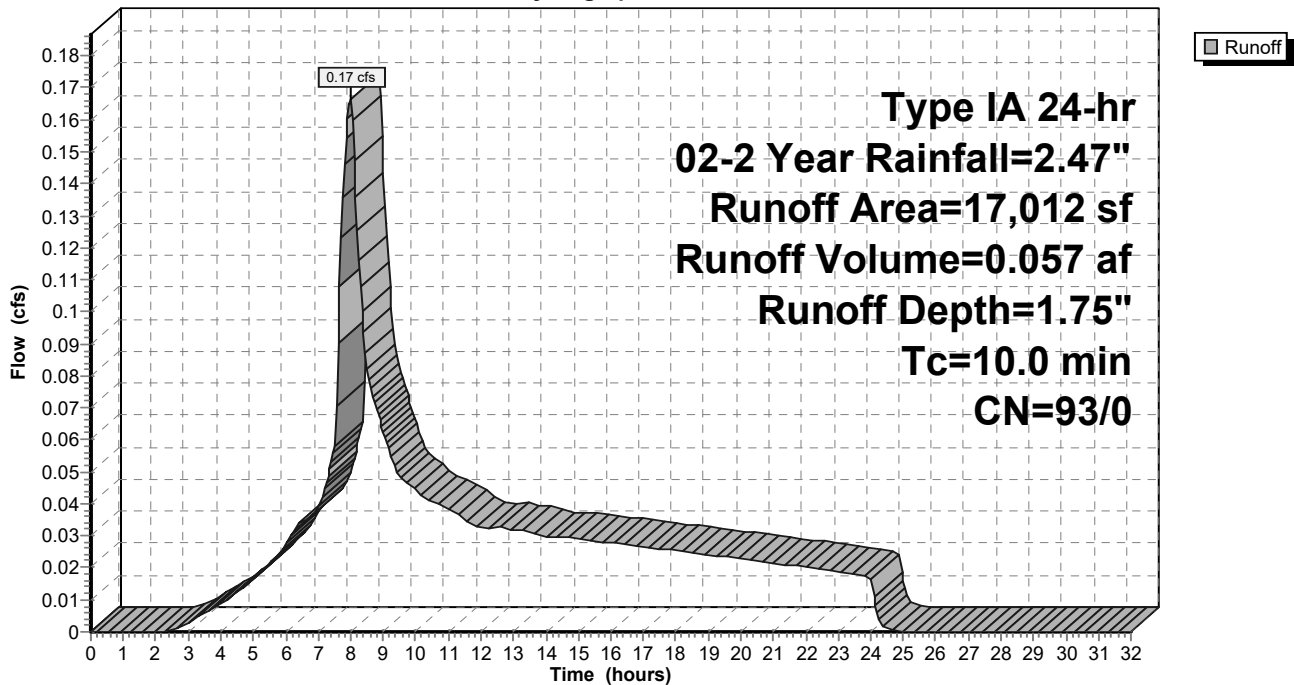
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 02-2 Year Rainfall=2.47"

Area (sf)	CN	Description
* 17,012	93	70% Lot Coverage Weighted
17,012	93	100.00% Pervious Area

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

Subcatchment 93S: Home Basin 25

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 02-2 Year Rainfall=2.47"

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Summary for Subcatchment 94S: Home Basin 4

Runoff = 0.19 cfs @ 7.99 hrs, Volume= 0.065 af, Depth= 1.75"
 Routed to Reach 160R : 1

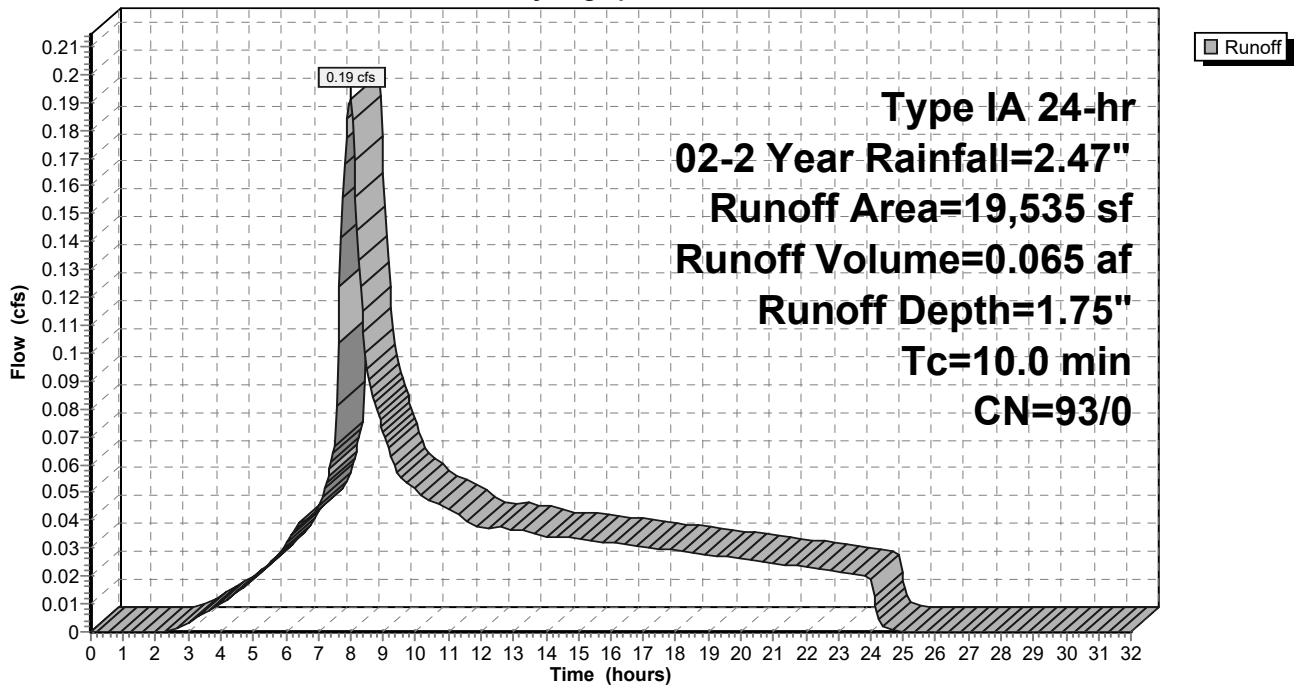
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 02-2 Year Rainfall=2.47"

Area (sf)	CN	Description
* 19,535	93	70% Lot Coverage Weighted
19,535	93	100.00% Pervious Area

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

Subcatchment 94S: Home Basin 4

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 02-2 Year Rainfall=2.47"

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Summary for Subcatchment 95S: Home Basin 31

Runoff = 0.24 cfs @ 7.99 hrs, Volume= 0.083 af, Depth= 1.75"
 Routed to Reach 131R : 1

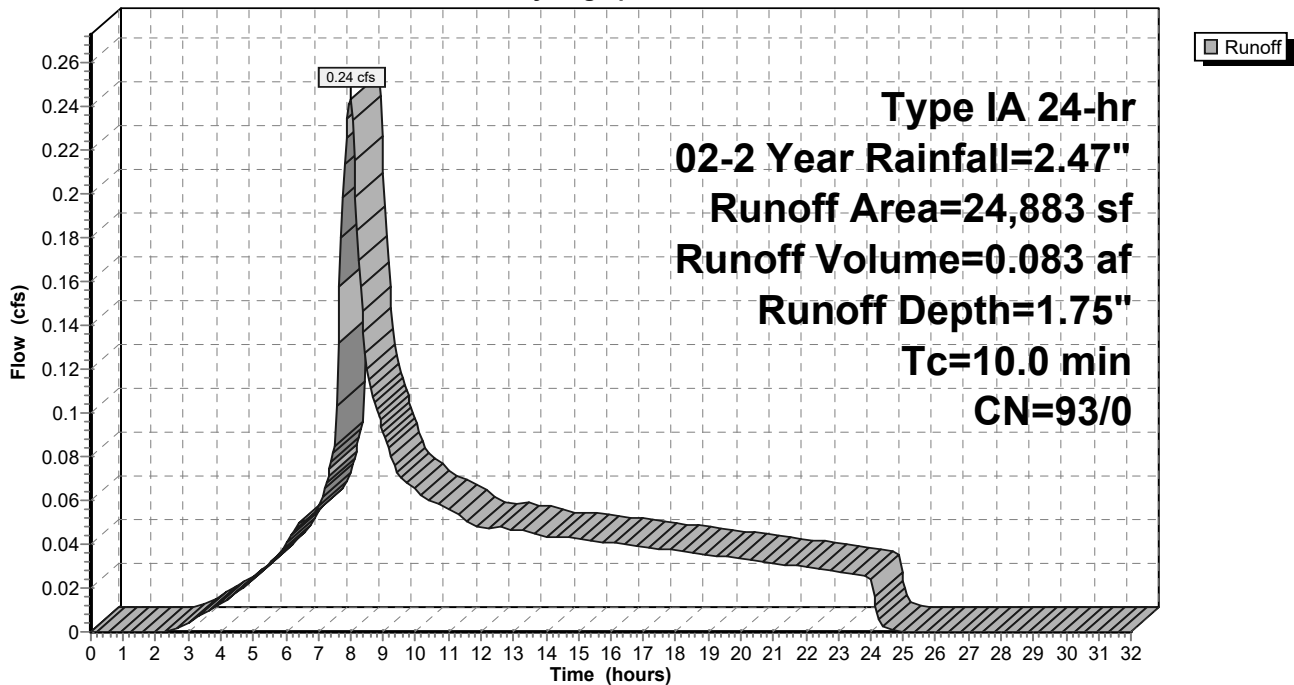
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 02-2 Year Rainfall=2.47"

Area (sf)	CN	Description
* 24,883	93	70% Lot Coverage Weighted
24,883	93	100.00% Pervious Area

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

Subcatchment 95S: Home Basin 31

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 02-2 Year Rainfall=2.47"

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Summary for Subcatchment 96S: Basin 1

Runoff = 0.19 cfs @ 7.98 hrs, Volume= 0.064 af, Depth= 2.24"
 Routed to Reach 133R : 1

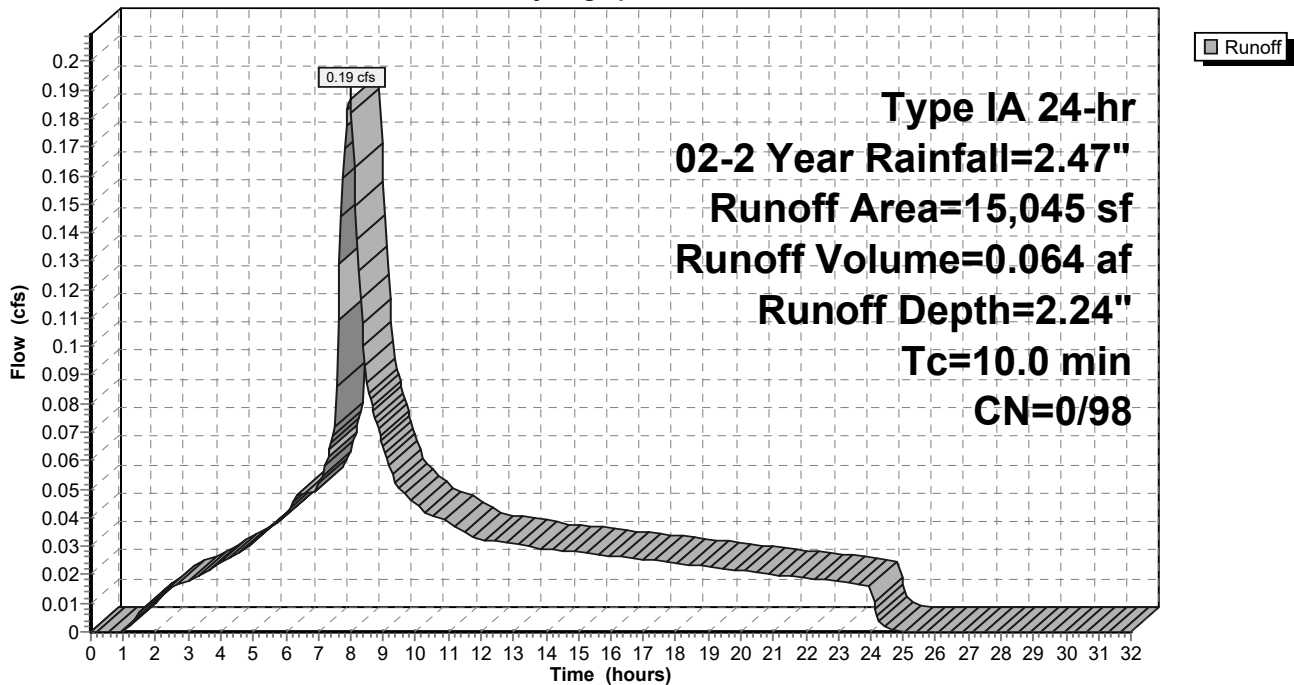
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 02-2 Year Rainfall=2.47"

Area (sf)	CN	Description
15,045	98	Paved roads w/curbs & sewers, HSG D
15,045	98	100.00% Impervious Area

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

Subcatchment 96S: Basin 1

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 02-2 Year Rainfall=2.47"

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Summary for Subcatchment 97S: Basin 2

Runoff = 0.25 cfs @ 7.98 hrs, Volume= 0.085 af, Depth= 2.24"
 Routed to Reach 132R : 1

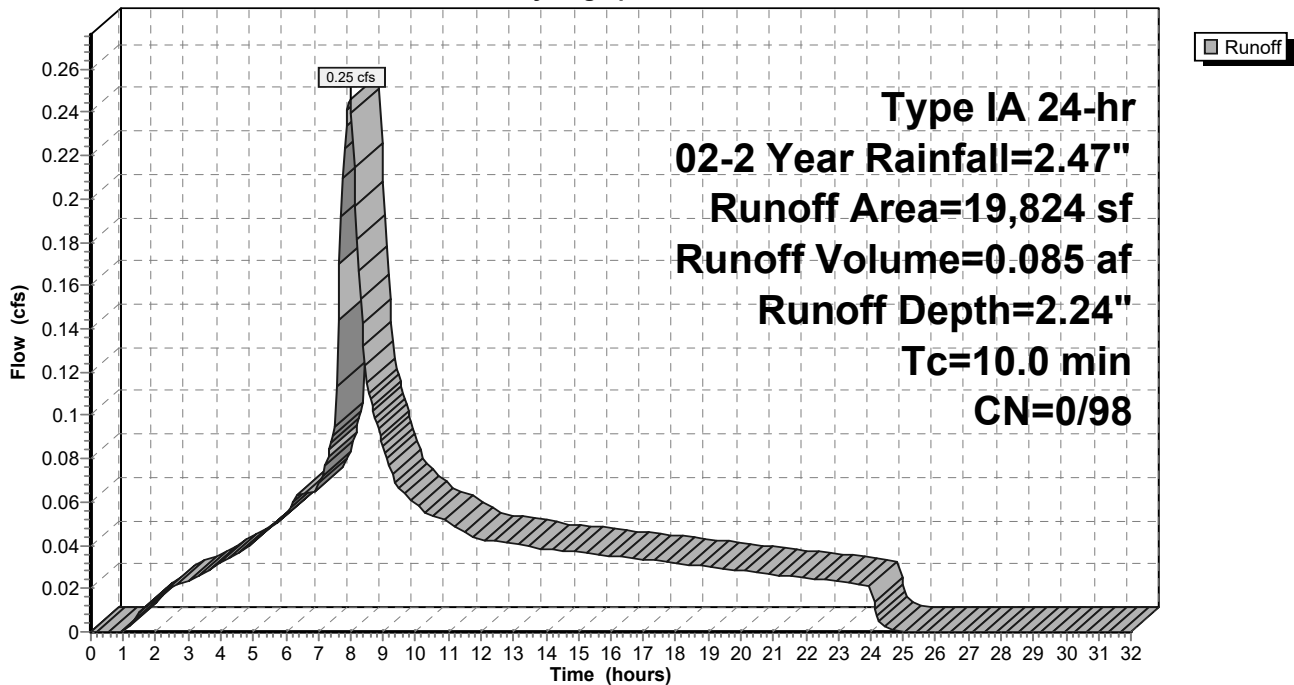
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 02-2 Year Rainfall=2.47"

Area (sf)	CN	Description
19,824	98	Paved roads w/curbs & sewers, HSG D
19,824	98	100.00% Impervious Area

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

Subcatchment 97S: Basin 2

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 02-2 Year Rainfall=2.47"

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Summary for Subcatchment 98S: Basin 3

Runoff = 0.29 cfs @ 7.98 hrs, Volume= 0.100 af, Depth= 2.24"
 Routed to Reach 131R : 1

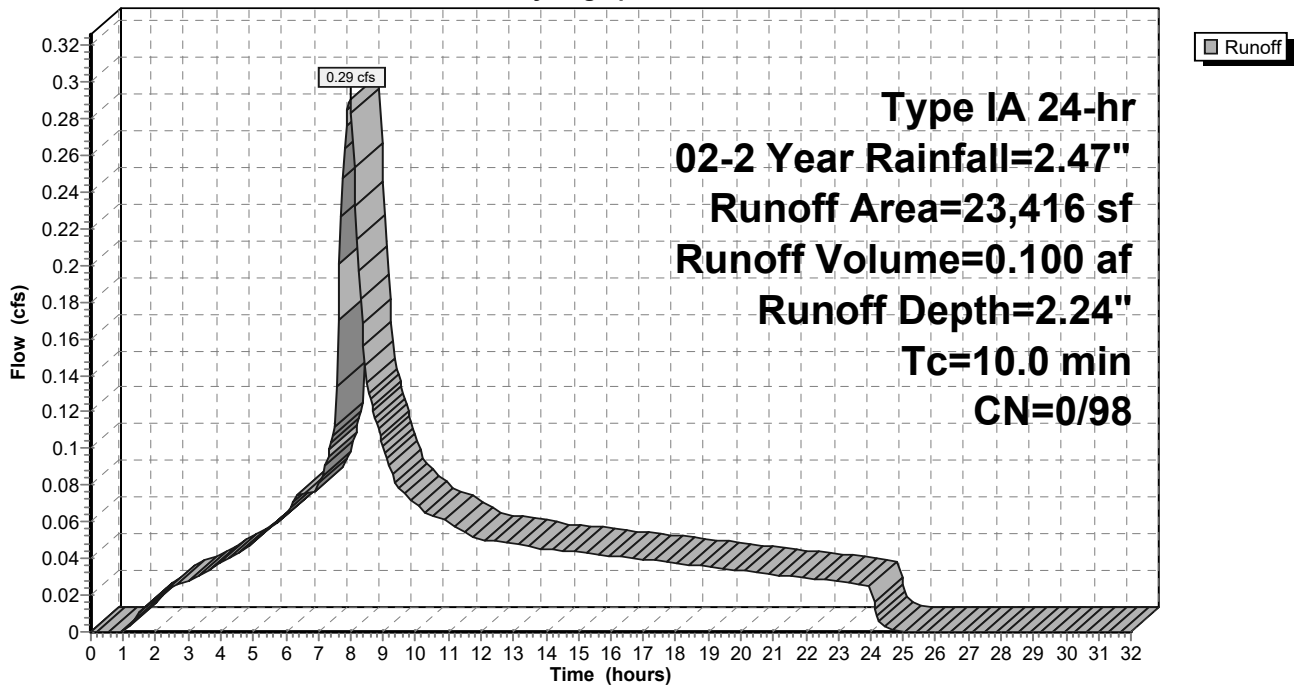
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 02-2 Year Rainfall=2.47"

Area (sf)	CN	Description
23,416	98	Paved roads w/curbs & sewers, HSG D
23,416	98	100.00% Impervious Area

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

Subcatchment 98S: Basin 3

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 02-2 Year Rainfall=2.47"

Prepared by A&O Engineering LLC

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Summary for Subcatchment 99S: Home Basin 6

Runoff = 0.25 cfs @ 7.99 hrs, Volume= 0.087 af, Depth= 1.75"
 Routed to Reach 163R : 1

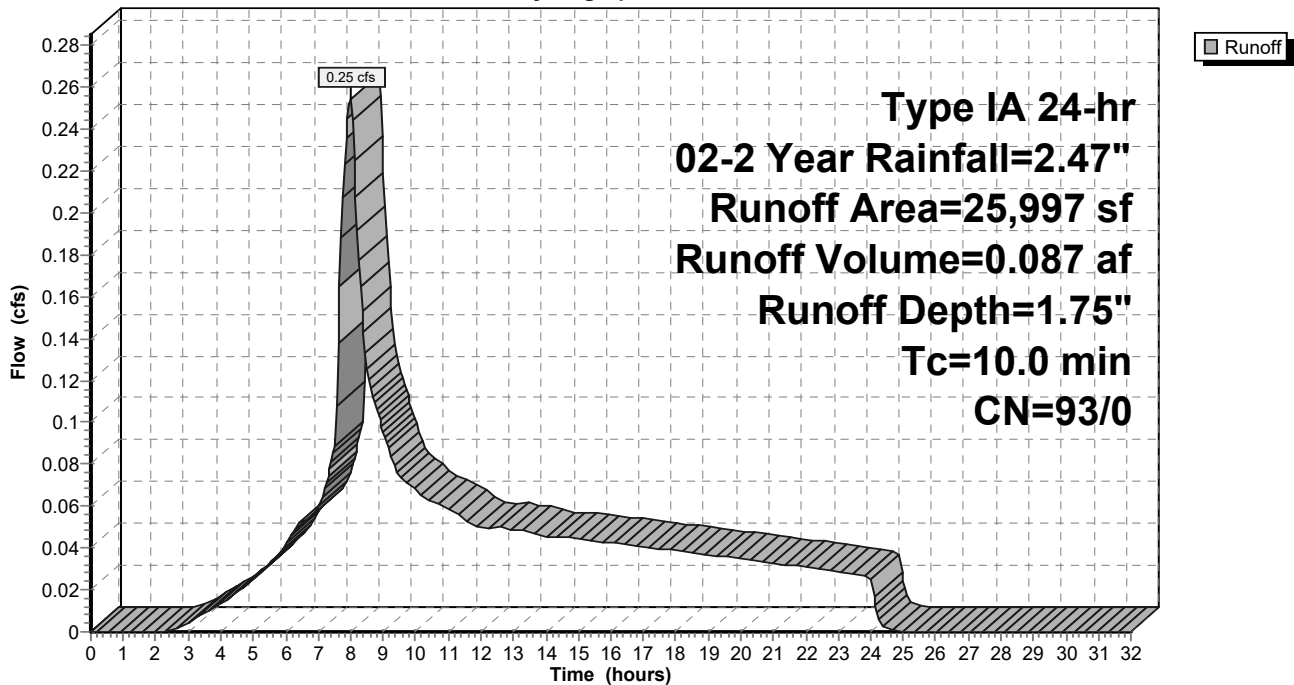
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 02-2 Year Rainfall=2.47"

Area (sf)	CN	Description
* 25,997	93	70% Lot Coverage Weighted
25,997	93	100.00% Pervious Area

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

Subcatchment 99S: Home Basin 6

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 02-2 Year Rainfall=2.47"

Prepared by A&O Engineering LLC

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Summary for Subcatchment 100S: Basin 4

Runoff = 0.05 cfs @ 7.98 hrs, Volume= 0.016 af, Depth= 2.24"
 Routed to Pond 60P : Stormwater Swale 1

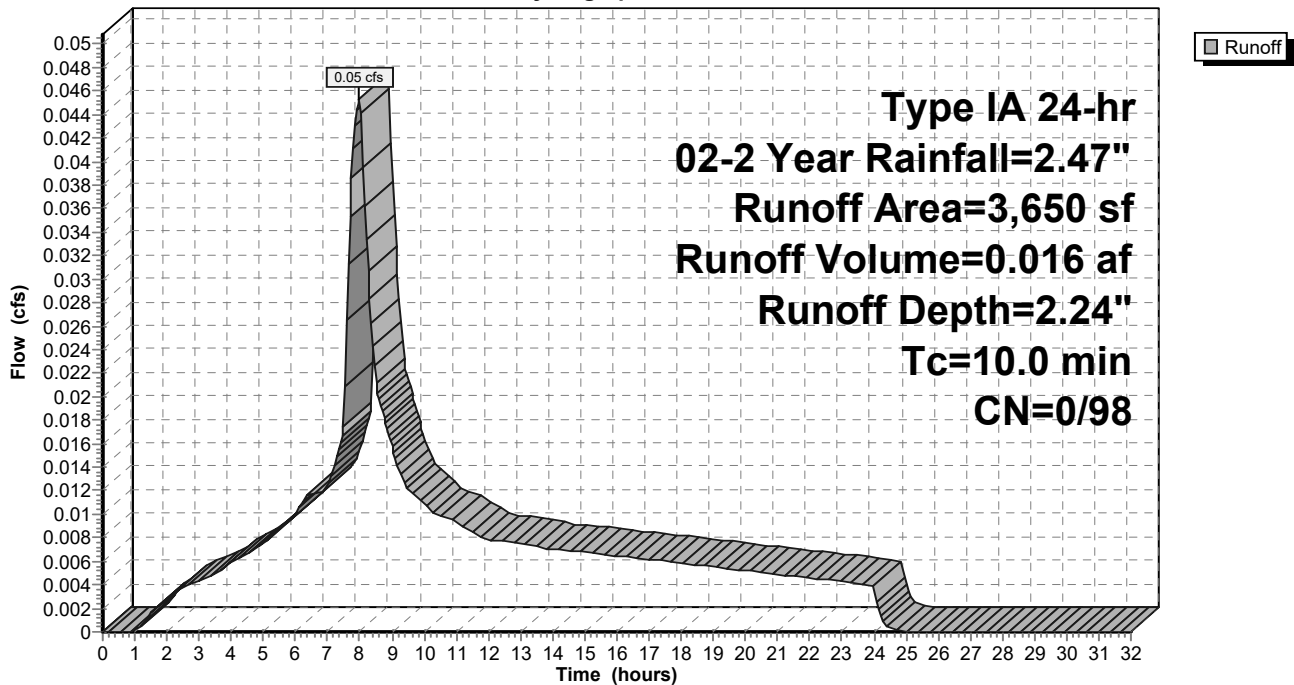
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 02-2 Year Rainfall=2.47"

Area (sf)	CN	Description
3,650	98	Paved roads w/curbs & sewers, HSG D
3,650	98	100.00% Impervious Area

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

Subcatchment 100S: Basin 4

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 02-2 Year Rainfall=2.47"

Prepared by A&O Engineering LLC

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Summary for Subcatchment 101S: Basin 5

Runoff = 0.04 cfs @ 7.98 hrs, Volume= 0.015 af, Depth= 2.24"
 Routed to Pond 54P : Stormwater Swale 2

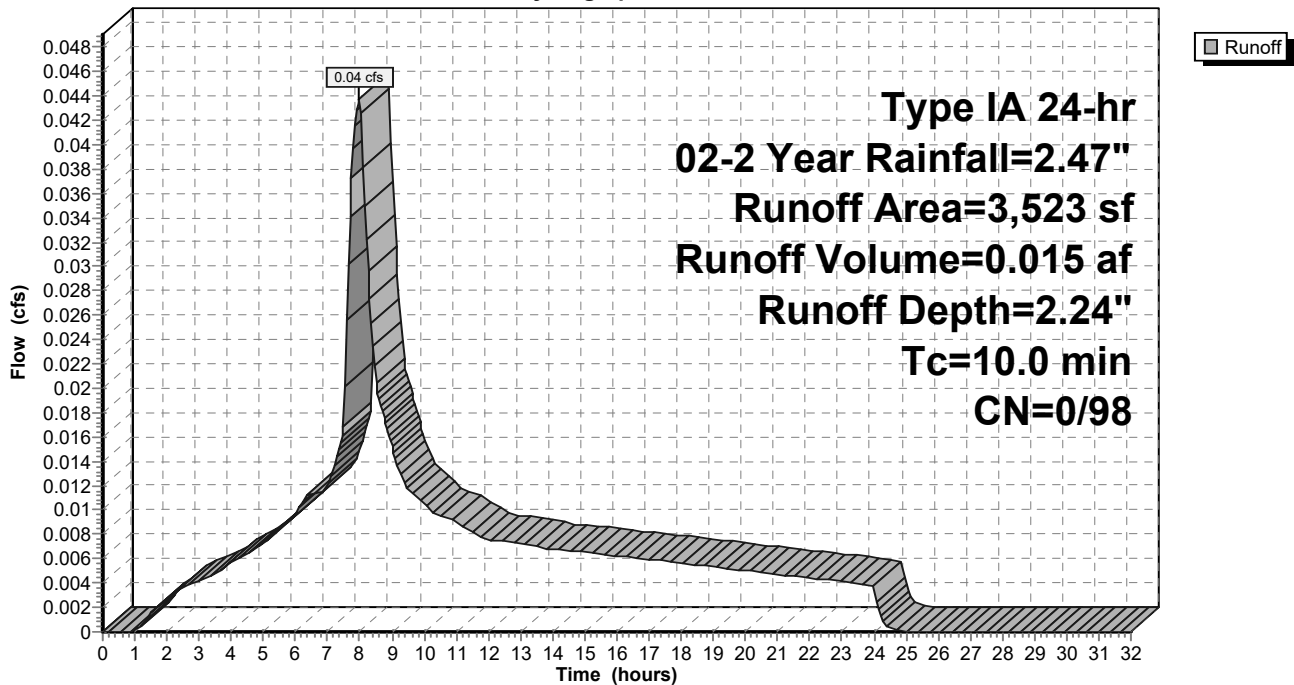
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 02-2 Year Rainfall=2.47"

Area (sf)	CN	Description
3,523	98	Paved roads w/curbs & sewers, HSG D
3,523	98	100.00% Impervious Area

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

Subcatchment 101S: Basin 5

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 02-2 Year Rainfall=2.47"

Prepared by A&O Engineering LLC

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Summary for Subcatchment 102S: Home Basin 3

Runoff = 0.19 cfs @ 7.99 hrs, Volume= 0.066 af, Depth= 1.75"
 Routed to Reach 151R : 1

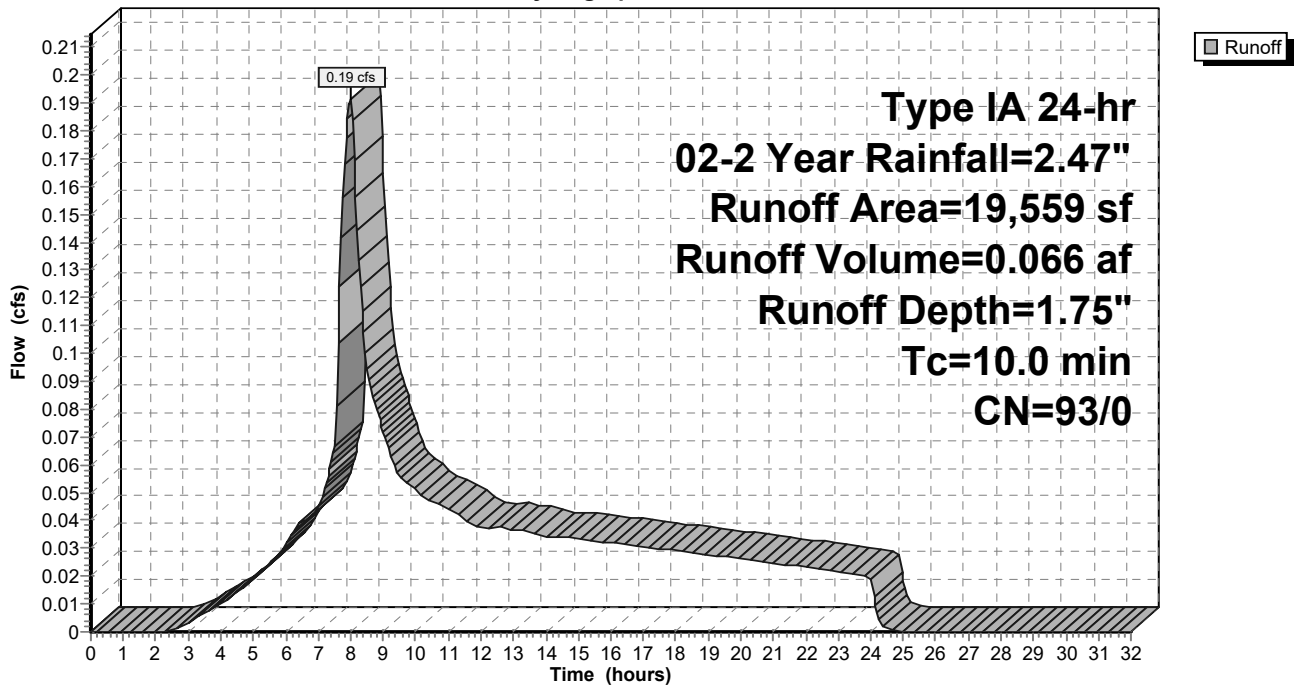
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 02-2 Year Rainfall=2.47"

Area (sf)	CN	Description
* 19,559	93	70% Lot Coverage Weighted
19,559	93	100.00% Pervious Area

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

Subcatchment 102S: Home Basin 3

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 02-2 Year Rainfall=2.47"

Prepared by A&O Engineering LLC

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Summary for Subcatchment 103S: Home Basin 1

Runoff = 0.22 cfs @ 7.99 hrs, Volume= 0.075 af, Depth= 1.75"
 Routed to Reach 137R : 1

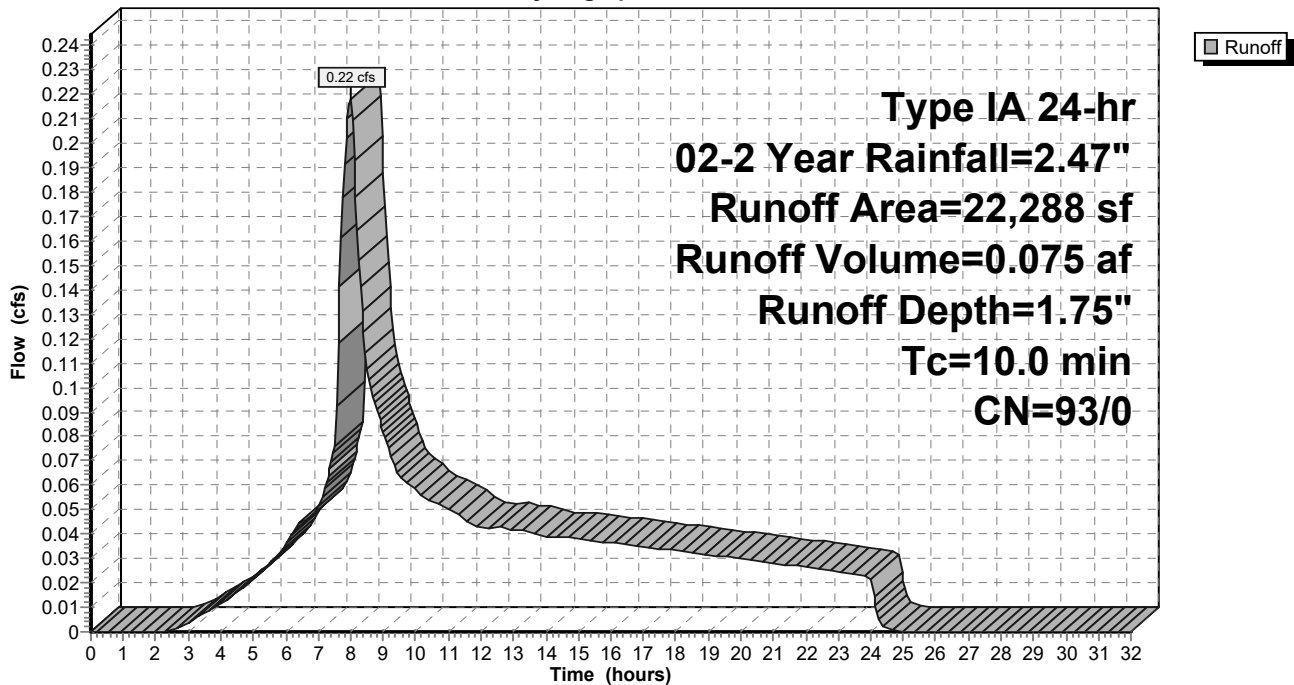
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 02-2 Year Rainfall=2.47"

Area (sf)	CN	Description
* 22,288	93	70% Lot Coverage Weighted
22,288	93	100.00% Pervious Area

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

Subcatchment 103S: Home Basin 1

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 02-2 Year Rainfall=2.47"

Prepared by A&O Engineering LLC

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Summary for Subcatchment 104S: Home Basin 5

Runoff = 0.33 cfs @ 7.99 hrs, Volume= 0.112 af, Depth= 1.75"
 Routed to Reach 165R : 1

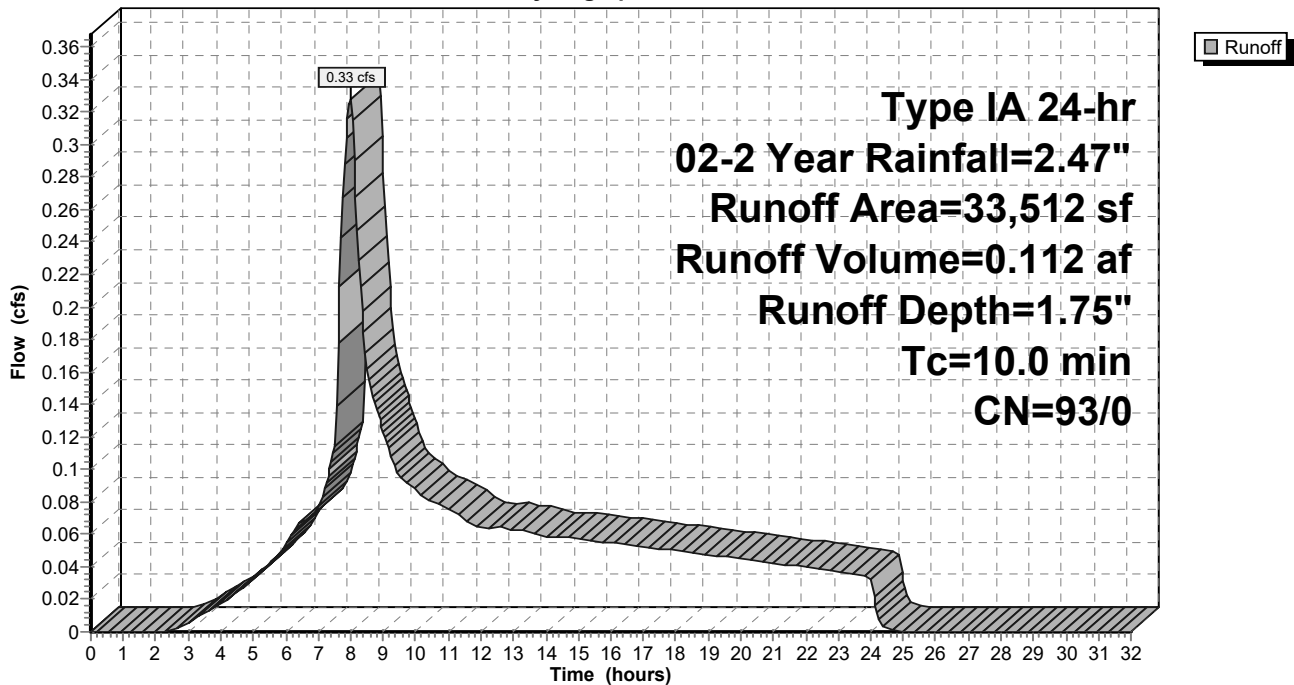
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 02-2 Year Rainfall=2.47"

Area (sf)	CN	Description
* 33,512	93	70% Lot Coverage Weighted
33,512	93	100.00% Pervious Area

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

Subcatchment 104S: Home Basin 5

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 02-2 Year Rainfall=2.47"

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Summary for Subcatchment 105S: Basin 6

Runoff = 0.11 cfs @ 7.98 hrs, Volume= 0.038 af, Depth= 2.24"
 Routed to Reach 138R : 1

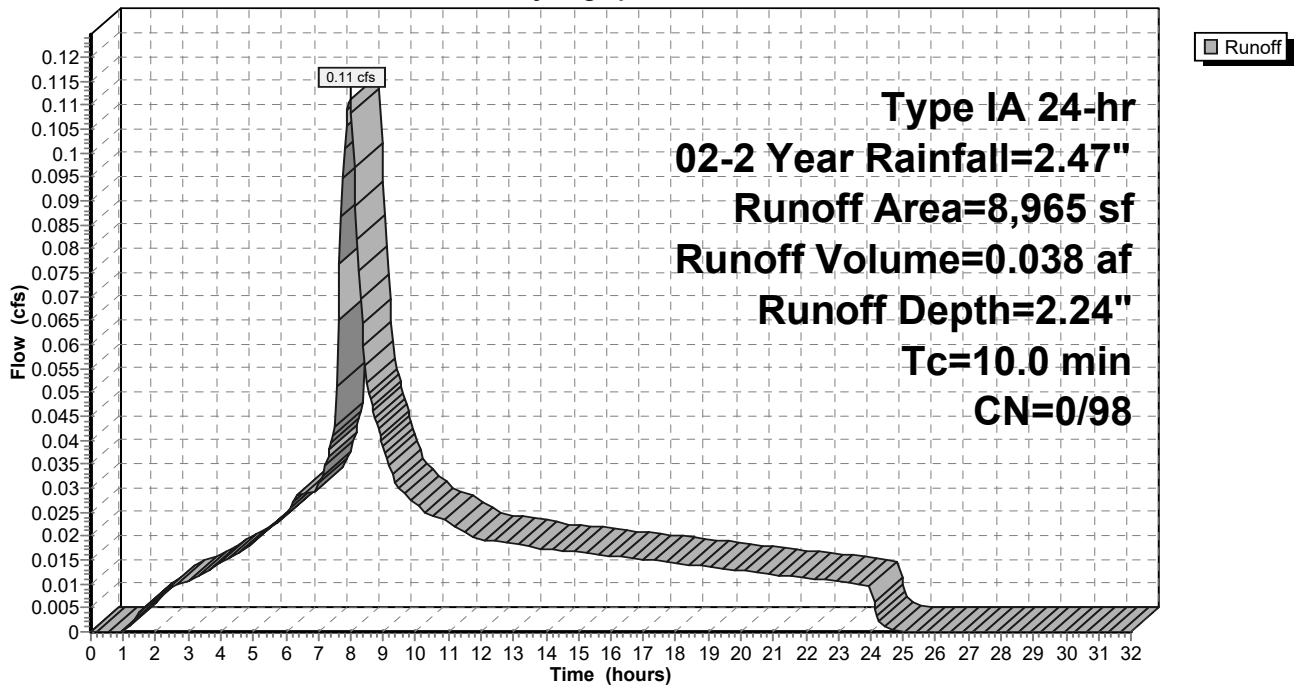
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 02-2 Year Rainfall=2.47"

Area (sf)	CN	Description
8,965	98	Paved roads w/curbs & sewers, HSG D
8,965	98	100.00% Impervious Area

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

Subcatchment 105S: Basin 6

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 02-2 Year Rainfall=2.47"

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Summary for Subcatchment 107S: Basin 8

Runoff = 0.10 cfs @ 7.98 hrs, Volume= 0.035 af, Depth= 2.24"
 Routed to Reach 158R : 1

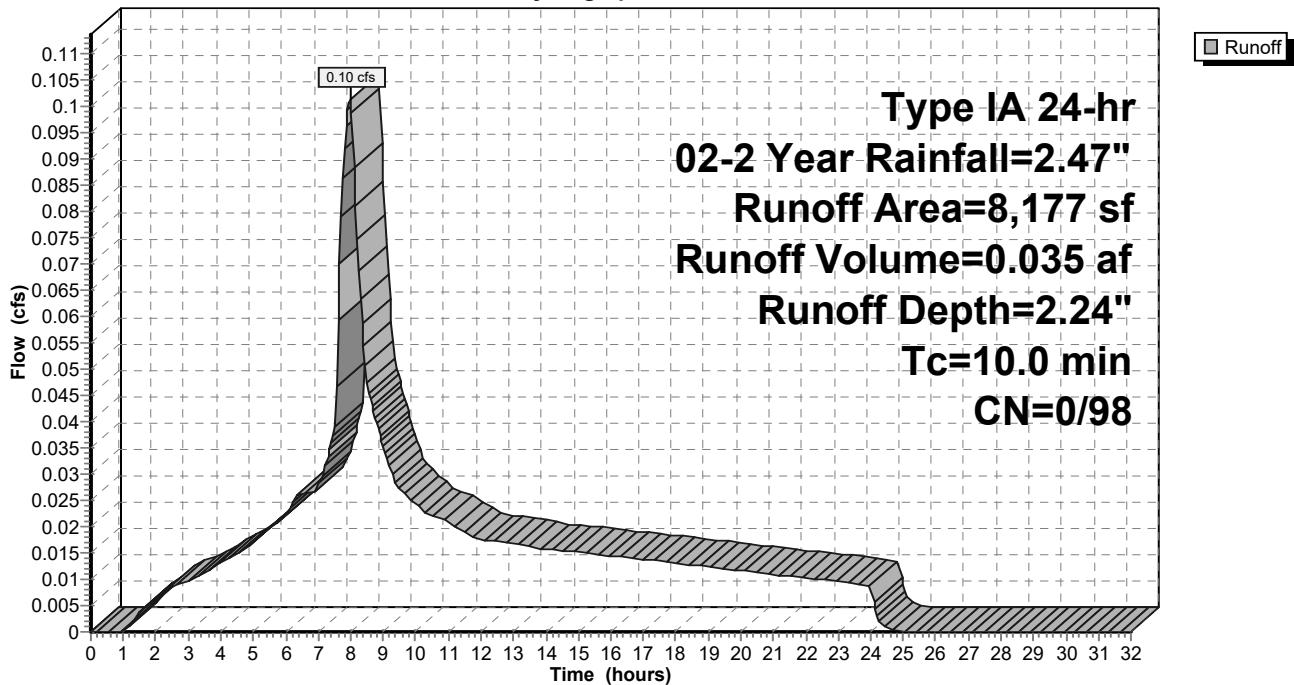
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 02-2 Year Rainfall=2.47"

Area (sf)	CN	Description
8,177	98	Paved roads w/curbs & sewers, HSG D
8,177	98	100.00% Impervious Area

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

Subcatchment 107S: Basin 8

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 02-2 Year Rainfall=2.47"

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Summary for Subcatchment 108S: Basin 9

Runoff = 0.16 cfs @ 7.98 hrs, Volume= 0.056 af, Depth= 2.24"
 Routed to Reach 135R : 1

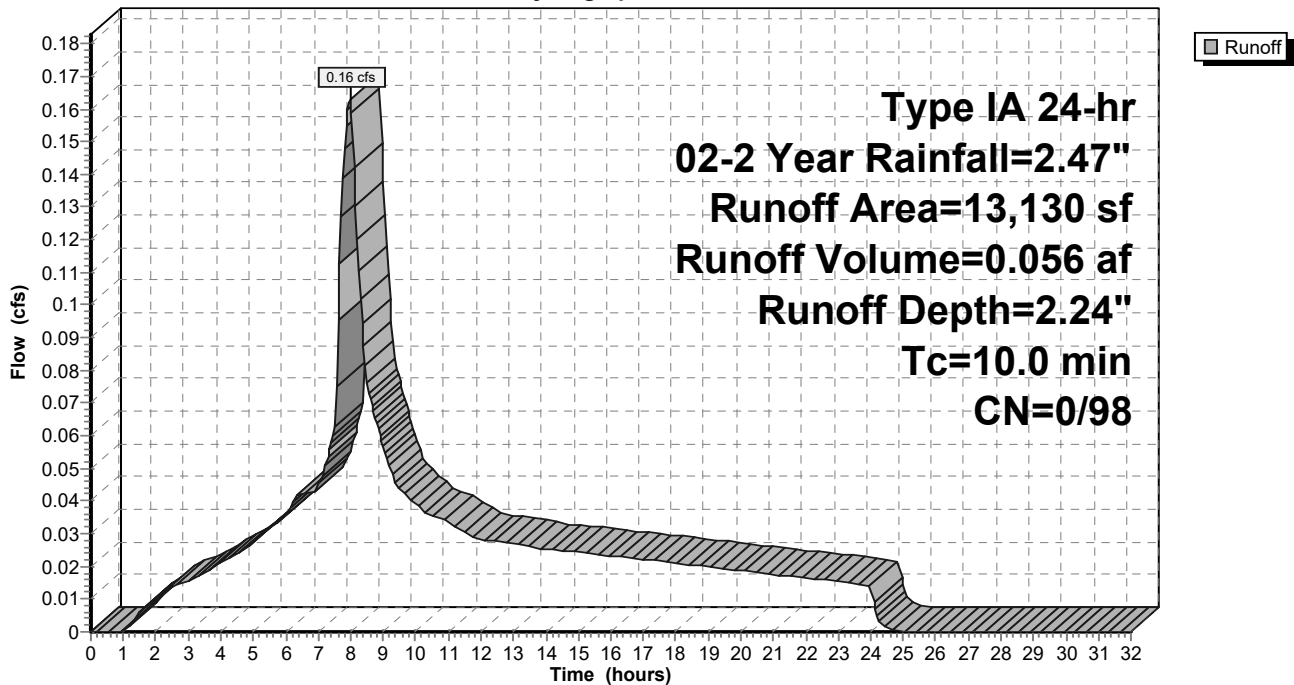
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 02-2 Year Rainfall=2.47"

Area (sf)	CN	Description
13,130	98	Paved roads w/curbs & sewers, HSG D
13,130	98	100.00% Impervious Area

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

Subcatchment 108S: Basin 9

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 02-2 Year Rainfall=2.47"

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Summary for Subcatchment 109S: Basin 10

Runoff = 0.28 cfs @ 7.98 hrs, Volume= 0.098 af, Depth= 2.24"
 Routed to Reach 137R : 1

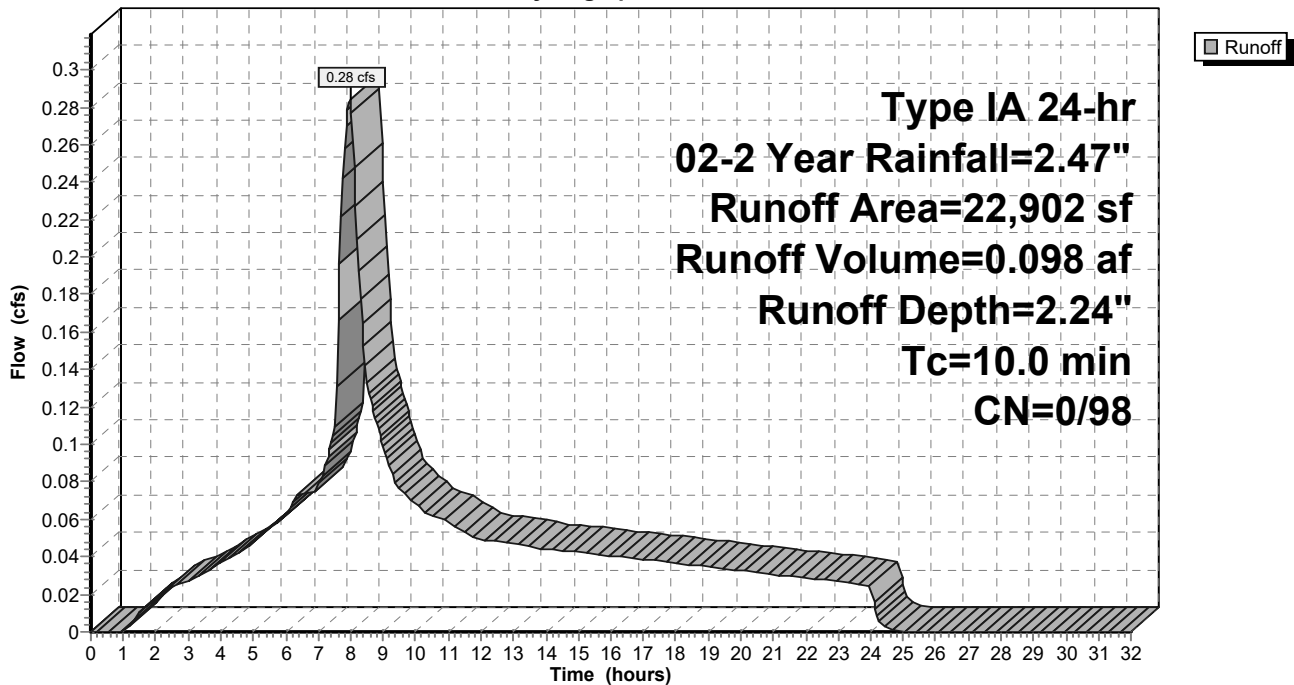
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 02-2 Year Rainfall=2.47"

Area (sf)	CN	Description
22,902	98	Paved roads w/curbs & sewers, HSG D
22,902	98	100.00% Impervious Area

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

Subcatchment 109S: Basin 10

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 02-2 Year Rainfall=2.47"

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Summary for Subcatchment 110S: Basin 11

Runoff = 0.32 cfs @ 7.98 hrs, Volume= 0.110 af, Depth= 2.24"
 Routed to Reach 145R : 1

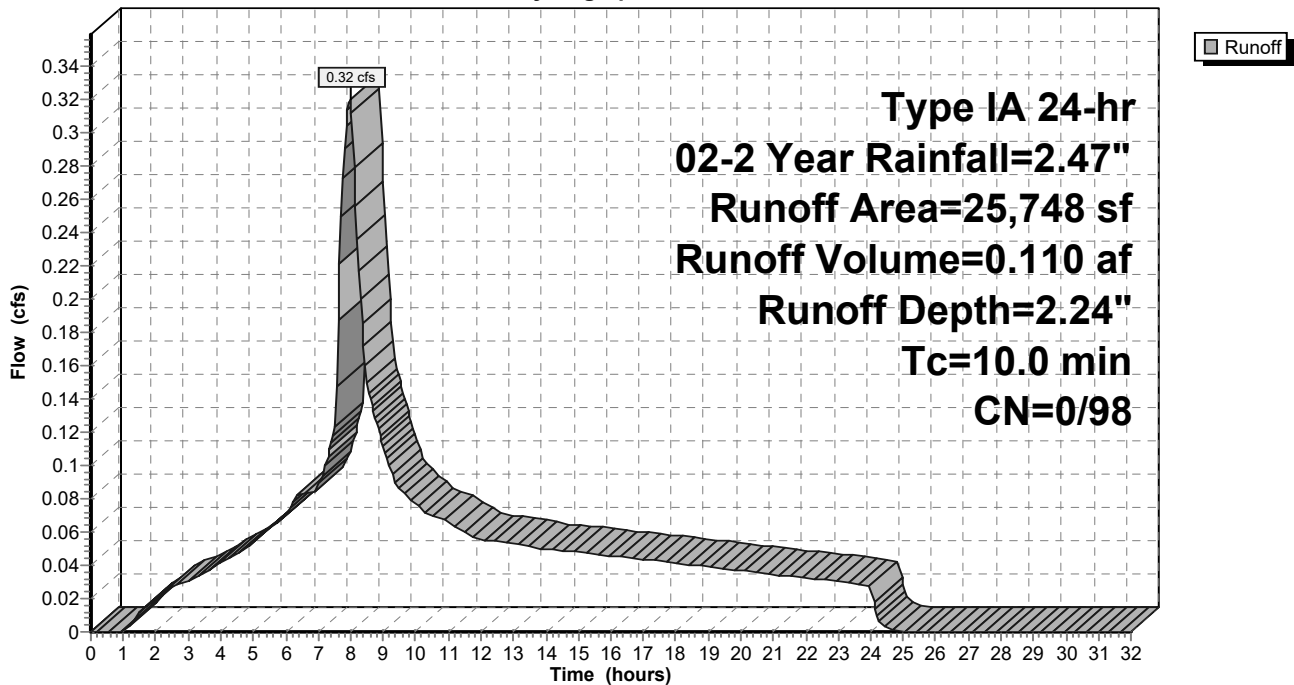
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 02-2 Year Rainfall=2.47"

Area (sf)	CN	Description
25,748	98	Paved roads w/curbs & sewers, HSG D
25,748	98	100.00% Impervious Area

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

Subcatchment 110S: Basin 11

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 02-2 Year Rainfall=2.47"

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Summary for Subcatchment 111S: Basin 12

Runoff = 0.07 cfs @ 7.98 hrs, Volume= 0.024 af, Depth= 2.24"
 Routed to Reach 143R : 1

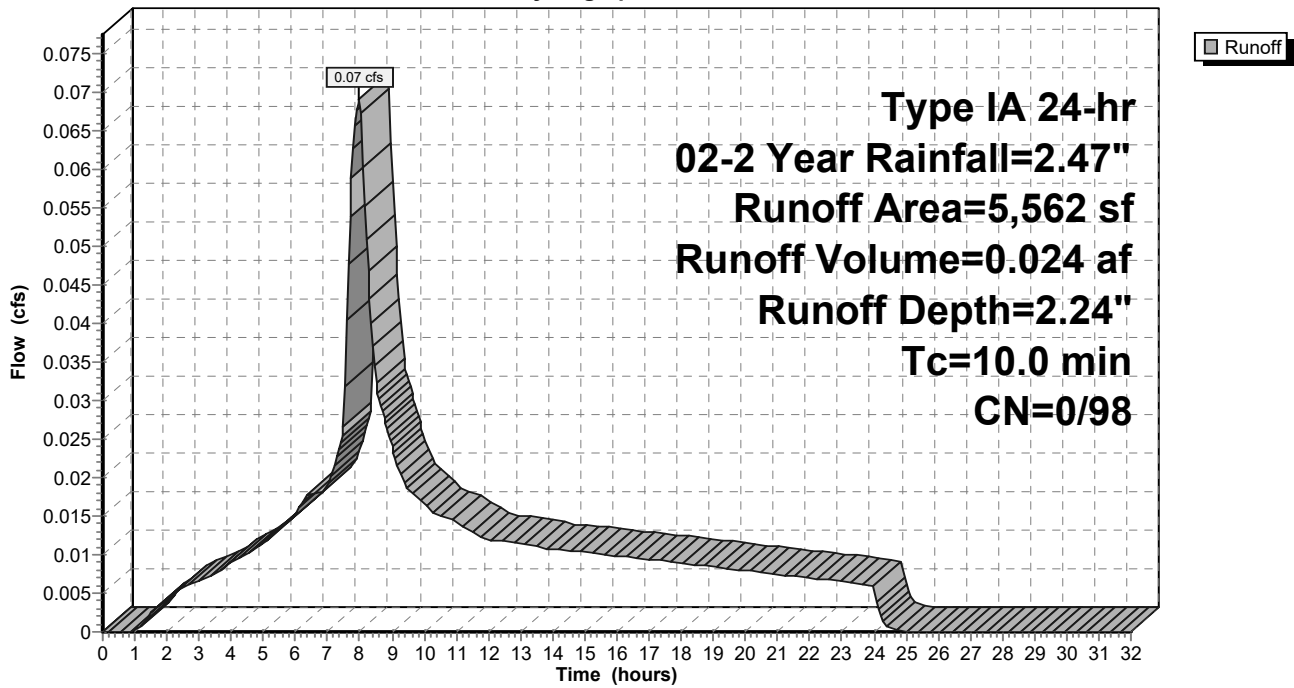
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 02-2 Year Rainfall=2.47"

Area (sf)	CN	Description
5,562	98	Paved roads w/curbs & sewers, HSG D
5,562	98	100.00% Impervious Area

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

Subcatchment 111S: Basin 12

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 02-2 Year Rainfall=2.47"

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Summary for Subcatchment 112S: Basin 13

Runoff = 0.06 cfs @ 7.98 hrs, Volume= 0.020 af, Depth= 2.24"
 Routed to Reach 158R : 1

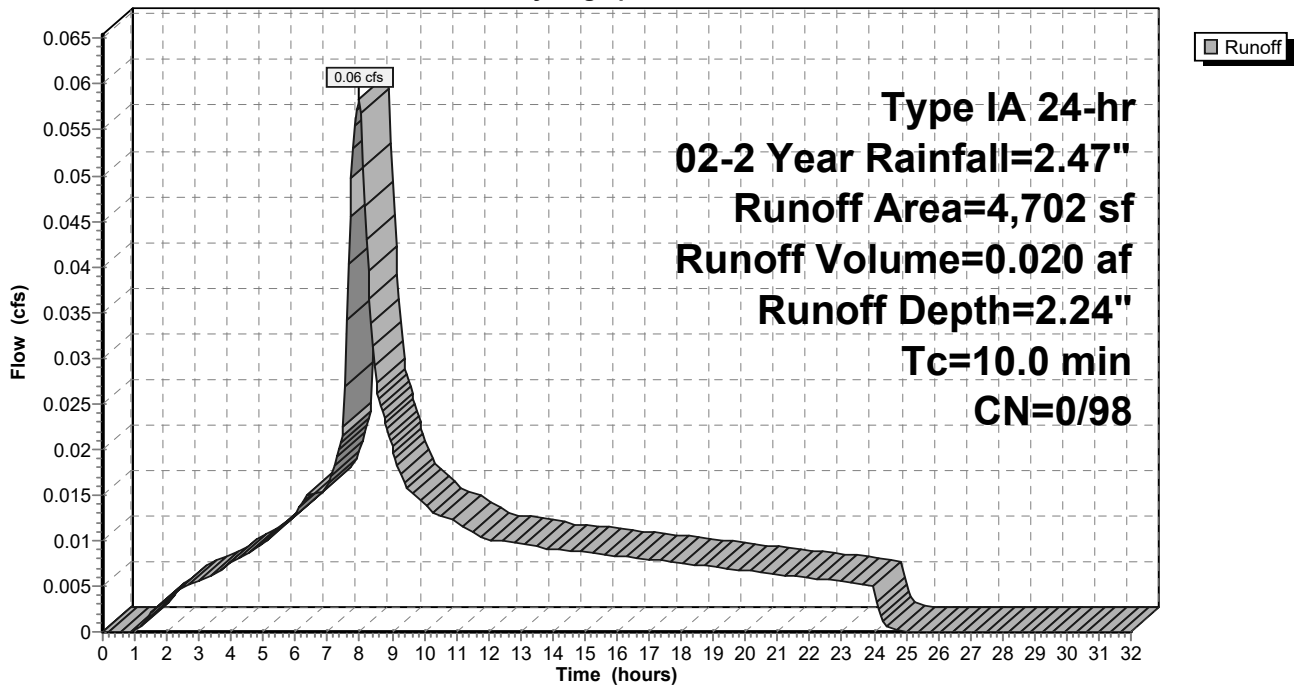
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 02-2 Year Rainfall=2.47"

Area (sf)	CN	Description
4,702	98	Paved roads w/curbs & sewers, HSG D
4,702	98	100.00% Impervious Area

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

Subcatchment 112S: Basin 13

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 02-2 Year Rainfall=2.47"

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Summary for Subcatchment 113S: Basin 14

Runoff = 0.10 cfs @ 7.98 hrs, Volume= 0.033 af, Depth= 2.24"
 Routed to Reach 159R : 1

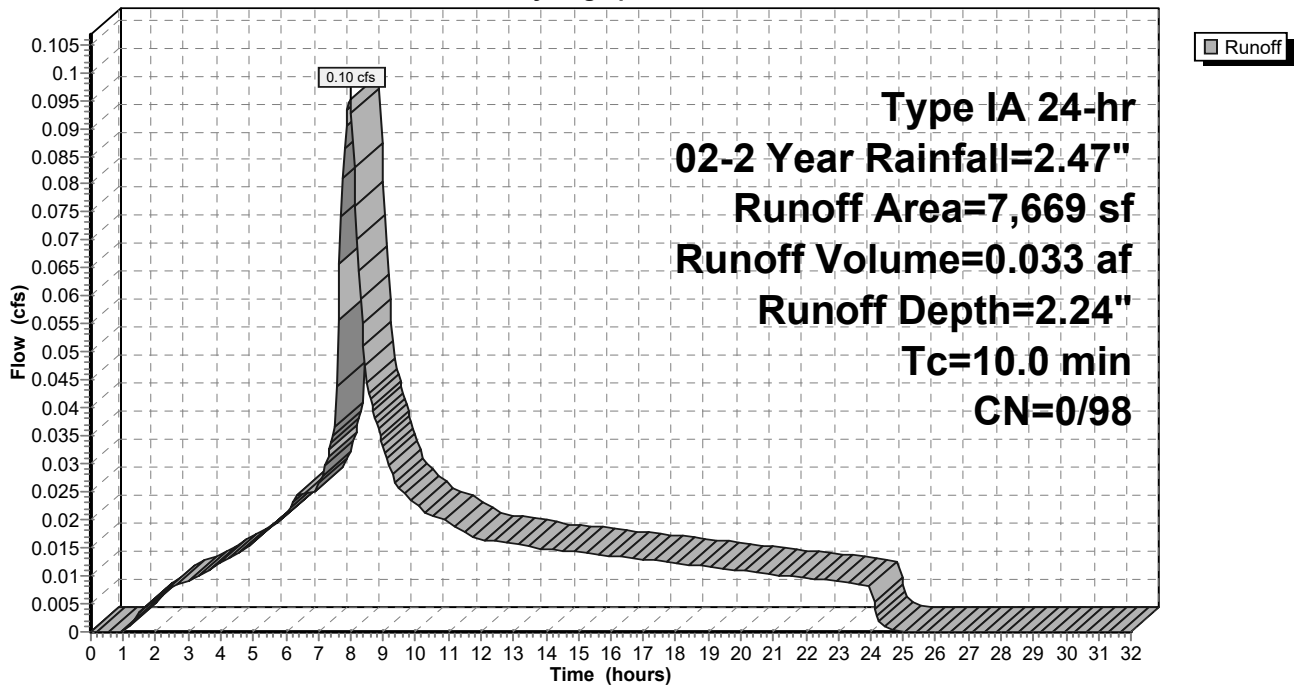
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 02-2 Year Rainfall=2.47"

Area (sf)	CN	Description
7,669	98	Paved roads w/curbs & sewers, HSG D
7,669	98	100.00% Impervious Area

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

Subcatchment 113S: Basin 14

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 02-2 Year Rainfall=2.47"

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Summary for Subcatchment 114S: Basin 15

Runoff = 0.09 cfs @ 7.98 hrs, Volume= 0.031 af, Depth= 2.24"
 Routed to Reach 143R : 1

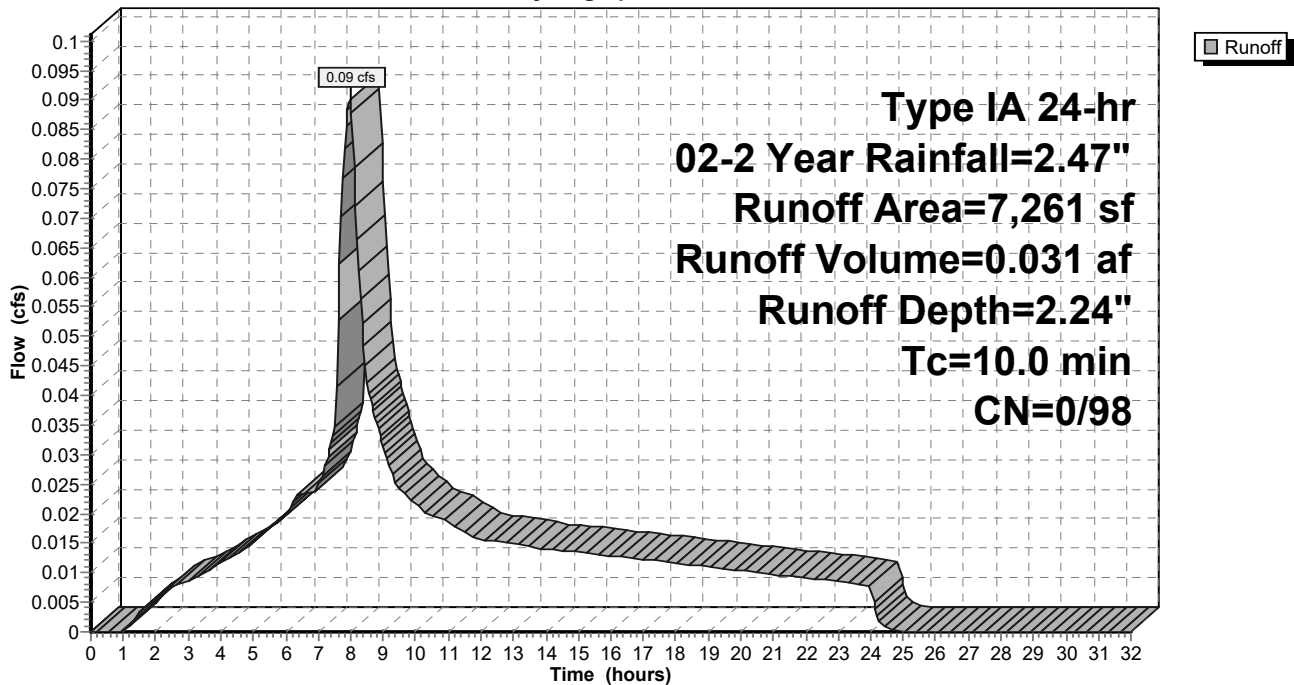
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 02-2 Year Rainfall=2.47"

Area (sf)	CN	Description
7,261	98	Paved roads w/curbs & sewers, HSG D
7,261	98	100.00% Impervious Area

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

Subcatchment 114S: Basin 15

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 02-2 Year Rainfall=2.47"

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Summary for Subcatchment 115S: Basin 16

Runoff = 0.09 cfs @ 7.98 hrs, Volume= 0.030 af, Depth= 2.24"
 Routed to Reach 149R : 1

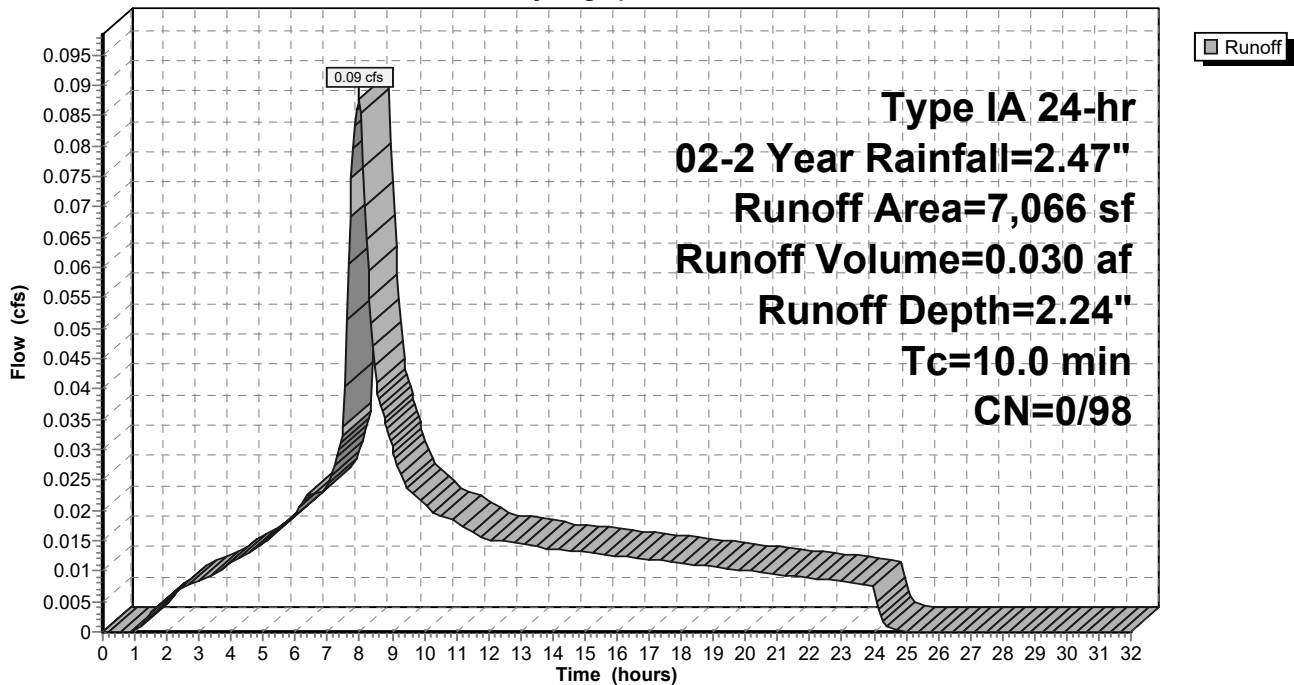
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 02-2 Year Rainfall=2.47"

Area (sf)	CN	Description
7,066	98	Paved roads w/curbs & sewers, HSG D
7,066	98	100.00% Impervious Area

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

Subcatchment 115S: Basin 16

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 02-2 Year Rainfall=2.47"

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Summary for Subcatchment 116S: Basin 17

Runoff = 0.32 cfs @ 7.98 hrs, Volume= 0.111 af, Depth= 2.24"
 Routed to Reach 151R : 1

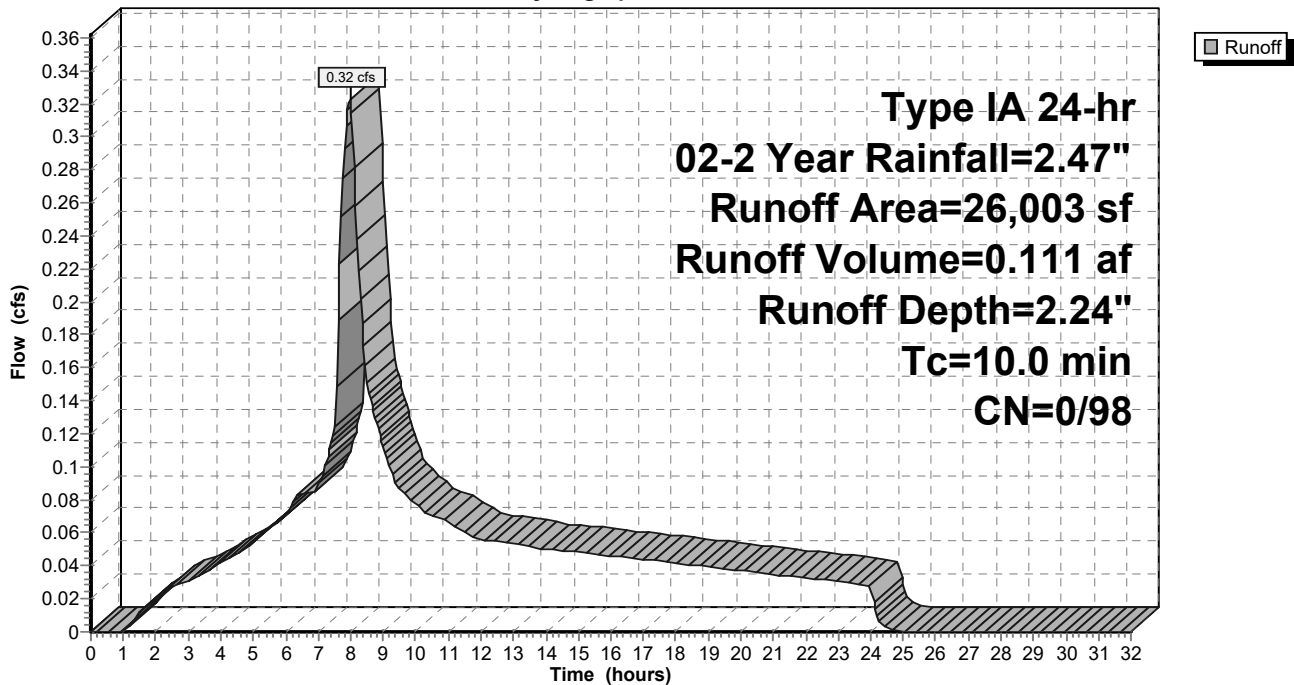
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 02-2 Year Rainfall=2.47"

Area (sf)	CN	Description
26,003	98	Paved roads w/curbs & sewers, HSG D
26,003	98	100.00% Impervious Area

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

Subcatchment 116S: Basin 17

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 02-2 Year Rainfall=2.47"

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Summary for Subcatchment 117S: Basin 18

Runoff = 0.30 cfs @ 7.98 hrs, Volume= 0.102 af, Depth= 2.24"
 Routed to Reach 160R : 1

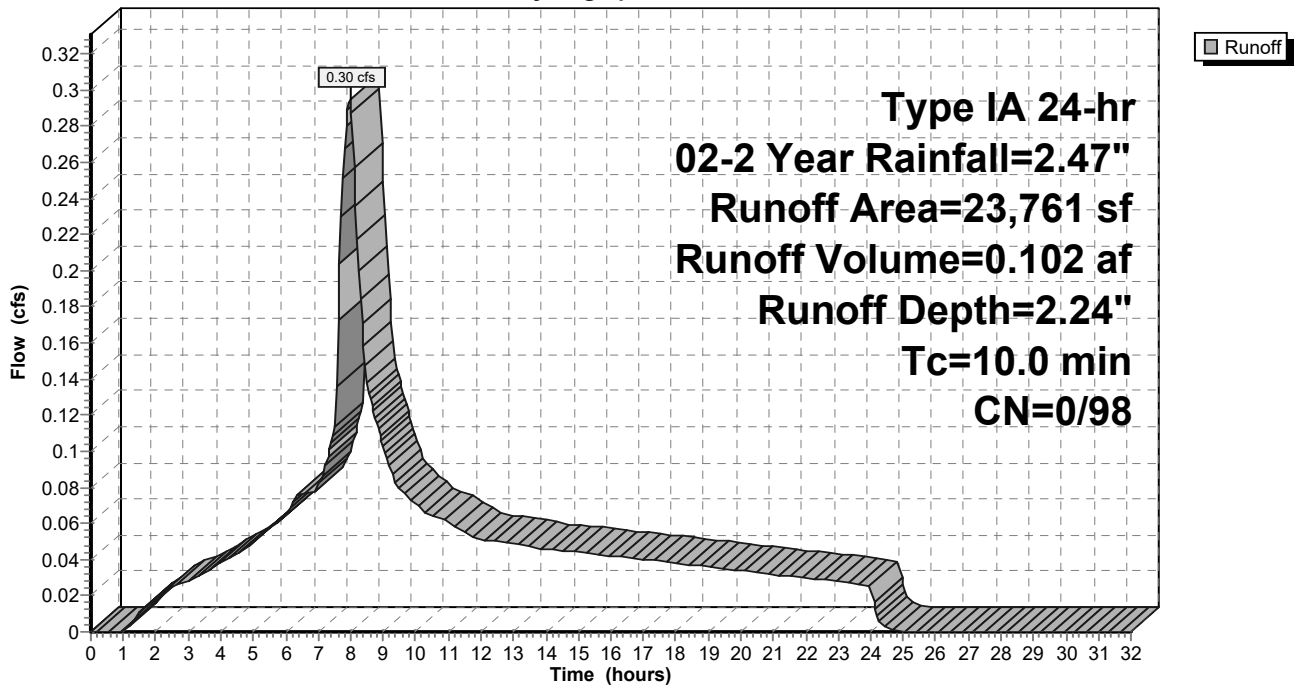
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 02-2 Year Rainfall=2.47"

Area (sf)	CN	Description
23,761	98	Paved roads w/curbs & sewers, HSG D
23,761	98	100.00% Impervious Area

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

Subcatchment 117S: Basin 18

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 02-2 Year Rainfall=2.47"

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Summary for Subcatchment 118S: Basin 19

Runoff = 0.09 cfs @ 7.98 hrs, Volume= 0.031 af, Depth= 2.24"
 Routed to Reach 155R : 1

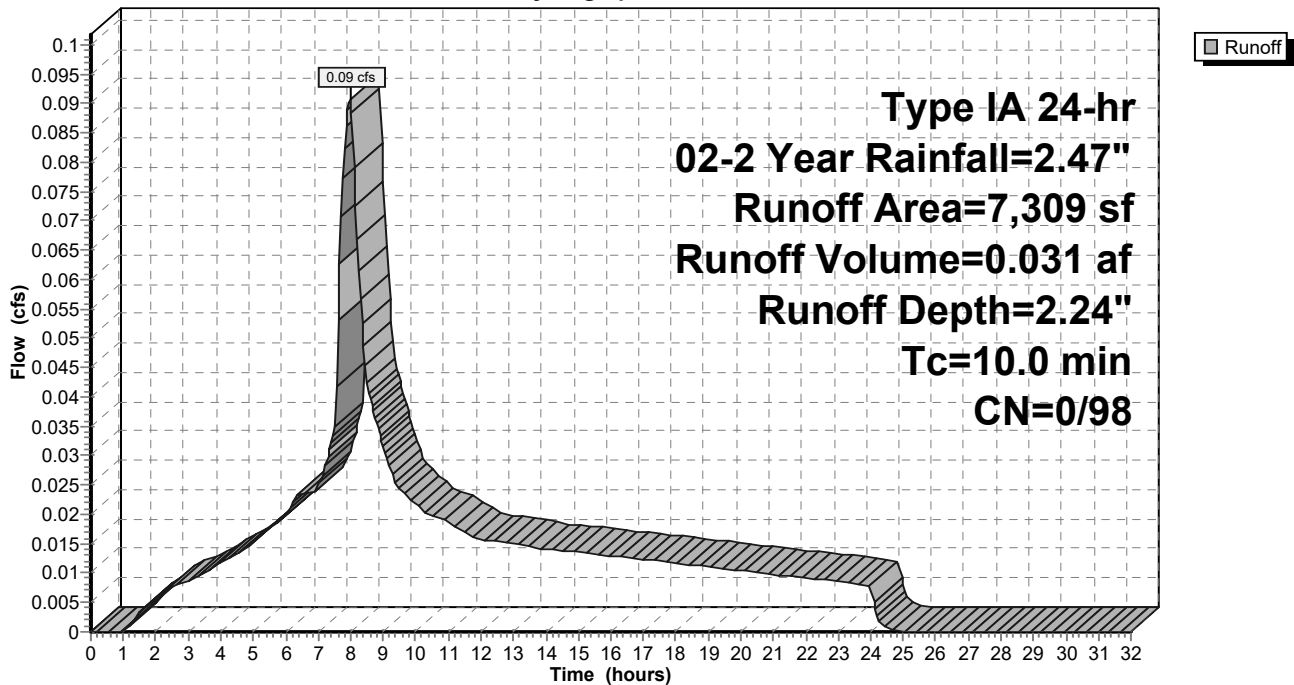
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 02-2 Year Rainfall=2.47"

Area (sf)	CN	Description
7,309	98	Paved roads w/curbs & sewers, HSG D
7,309	98	100.00% Impervious Area

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

Subcatchment 118S: Basin 19

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 02-2 Year Rainfall=2.47"

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Summary for Subcatchment 119S: Basin 20

Runoff = 0.09 cfs @ 7.98 hrs, Volume= 0.032 af, Depth= 2.24"
 Routed to Reach 149R : 1

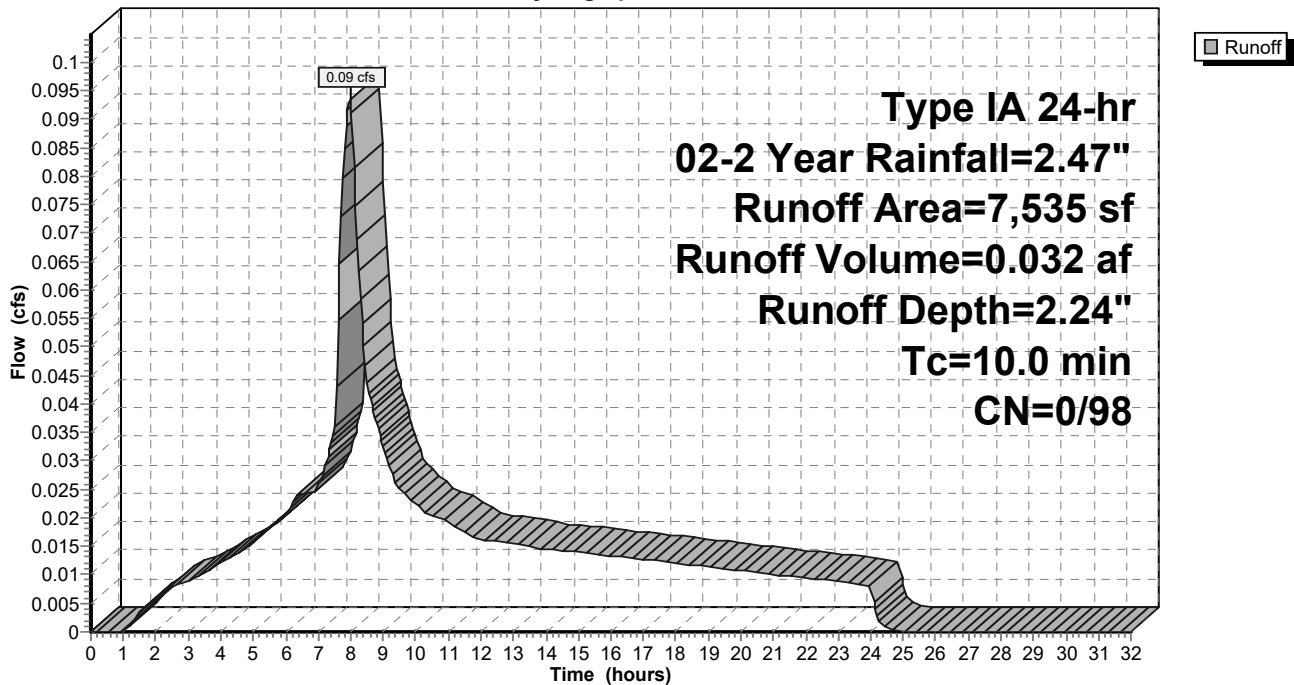
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 02-2 Year Rainfall=2.47"

Area (sf)	CN	Description
7,535	98	Paved roads w/curbs & sewers, HSG D
7,535	98	100.00% Impervious Area

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

Subcatchment 119S: Basin 20

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 02-2 Year Rainfall=2.47"

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Summary for Subcatchment 120S: Basin 21

Runoff = 0.09 cfs @ 7.98 hrs, Volume= 0.029 af, Depth= 2.24"
 Routed to Reach 148R : 1

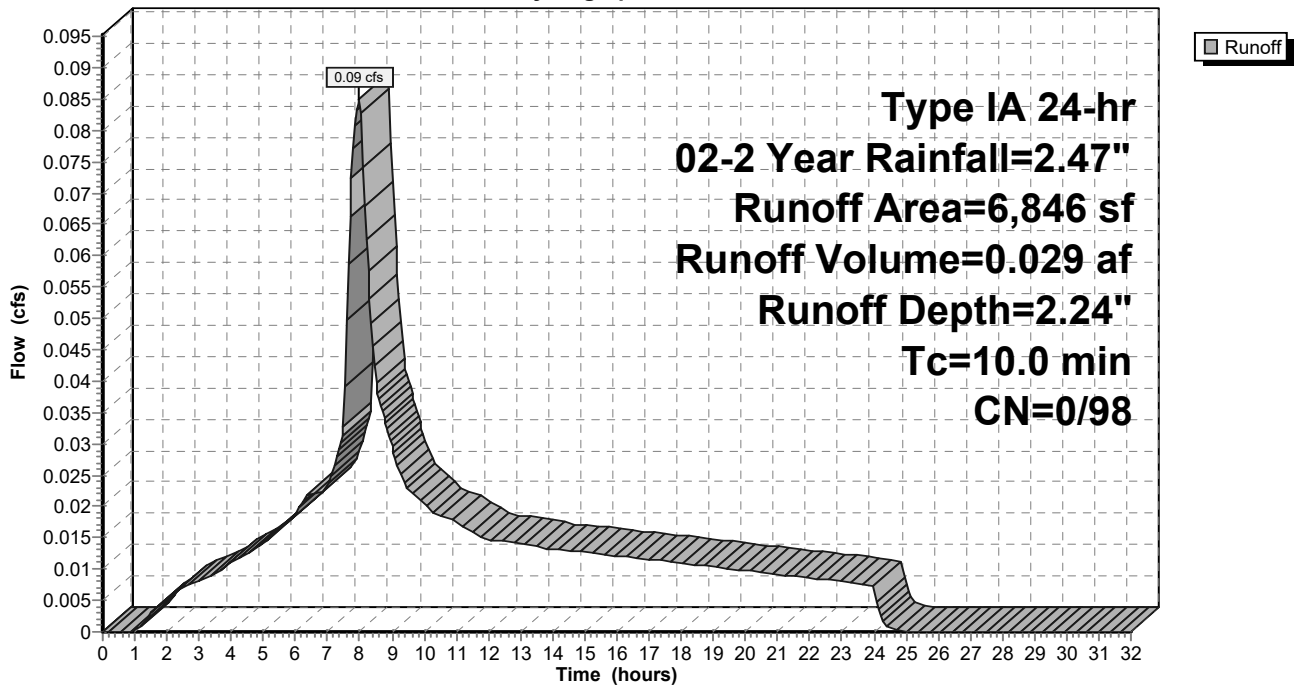
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 02-2 Year Rainfall=2.47"

Area (sf)	CN	Description
6,846	98	Paved roads w/curbs & sewers, HSG D
6,846	98	100.00% Impervious Area

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

Subcatchment 120S: Basin 21

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 02-2 Year Rainfall=2.47"

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Summary for Subcatchment 121S: Basin 22

Runoff = 0.06 cfs @ 7.98 hrs, Volume= 0.022 af, Depth= 2.24"
 Routed to Reach 154R : 1

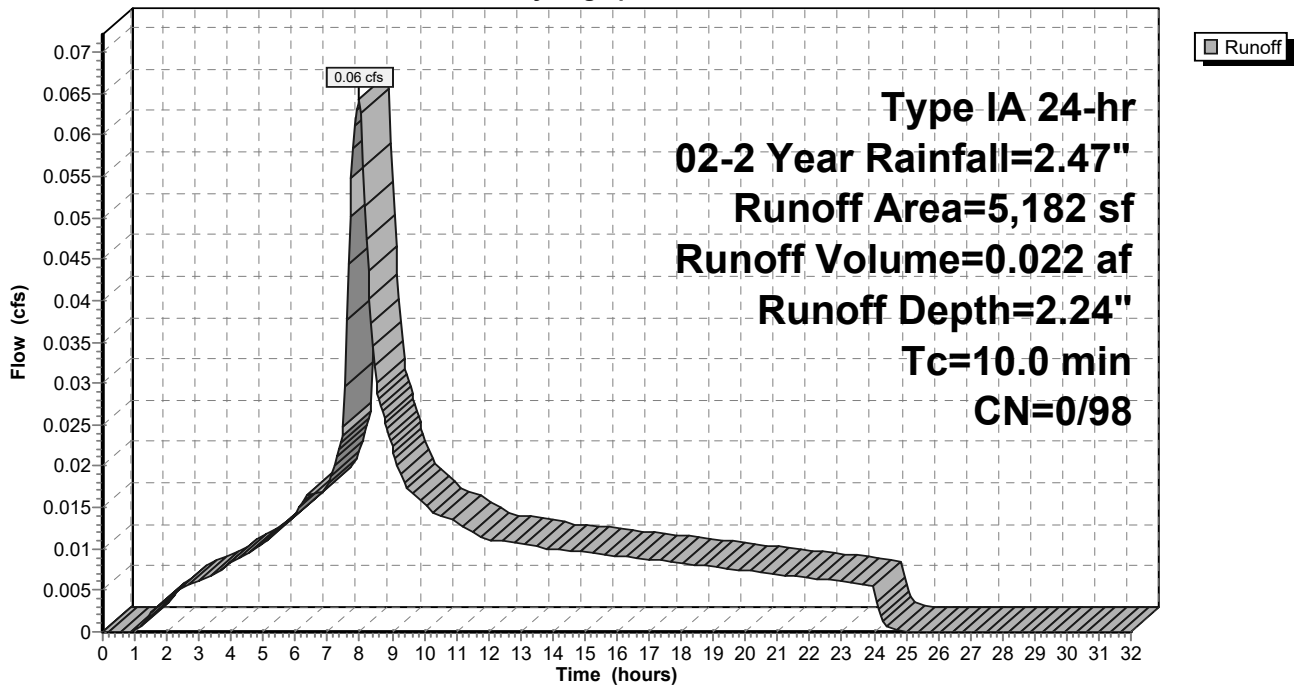
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 02-2 Year Rainfall=2.47"

Area (sf)	CN	Description
5,182	98	Paved roads w/curbs & sewers, HSG D
5,182	98	100.00% Impervious Area

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

Subcatchment 121S: Basin 22

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 02-2 Year Rainfall=2.47"

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Summary for Subcatchment 122S: Basin 23

Runoff = 0.07 cfs @ 7.98 hrs, Volume= 0.023 af, Depth= 2.24"
 Routed to Reach 155R : 1

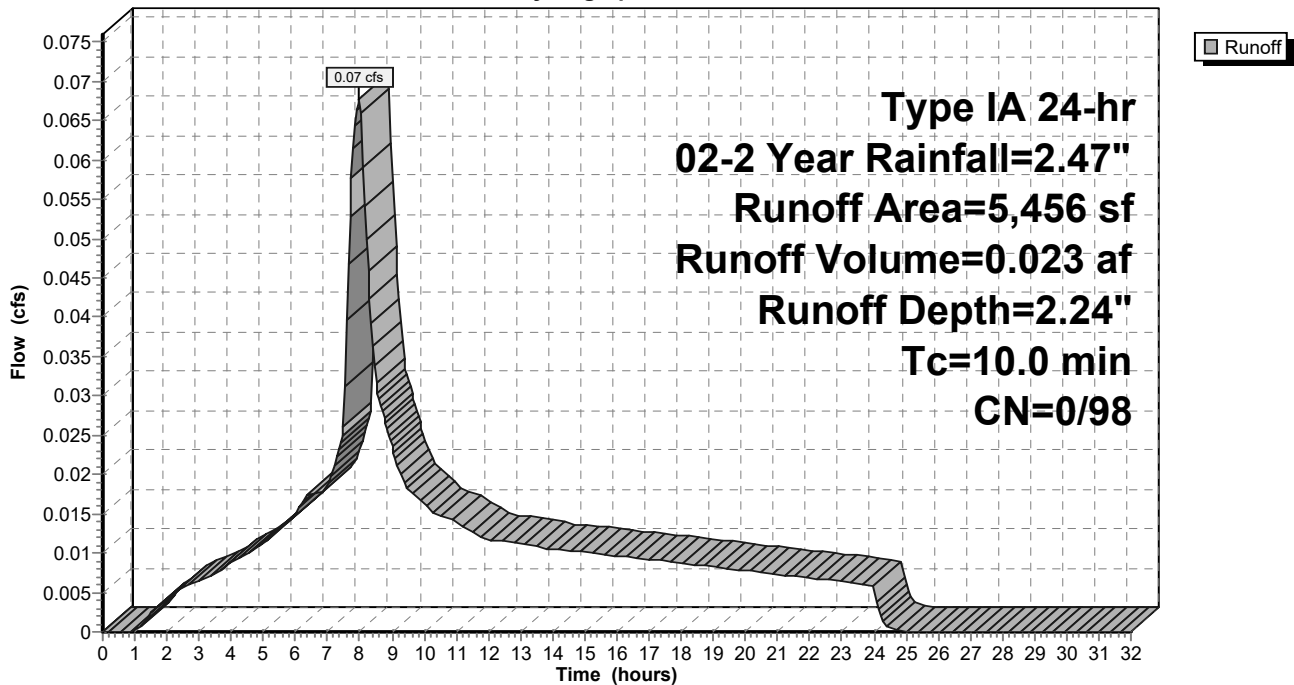
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 02-2 Year Rainfall=2.47"

Area (sf)	CN	Description
5,456	98	Paved roads w/curbs & sewers, HSG D
5,456	98	100.00% Impervious Area

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

Subcatchment 122S: Basin 23

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 02-2 Year Rainfall=2.47"

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Summary for Subcatchment 123S: Basin 24

Runoff = 0.06 cfs @ 7.98 hrs, Volume= 0.019 af, Depth= 2.24"
 Routed to Reach 162R : 1

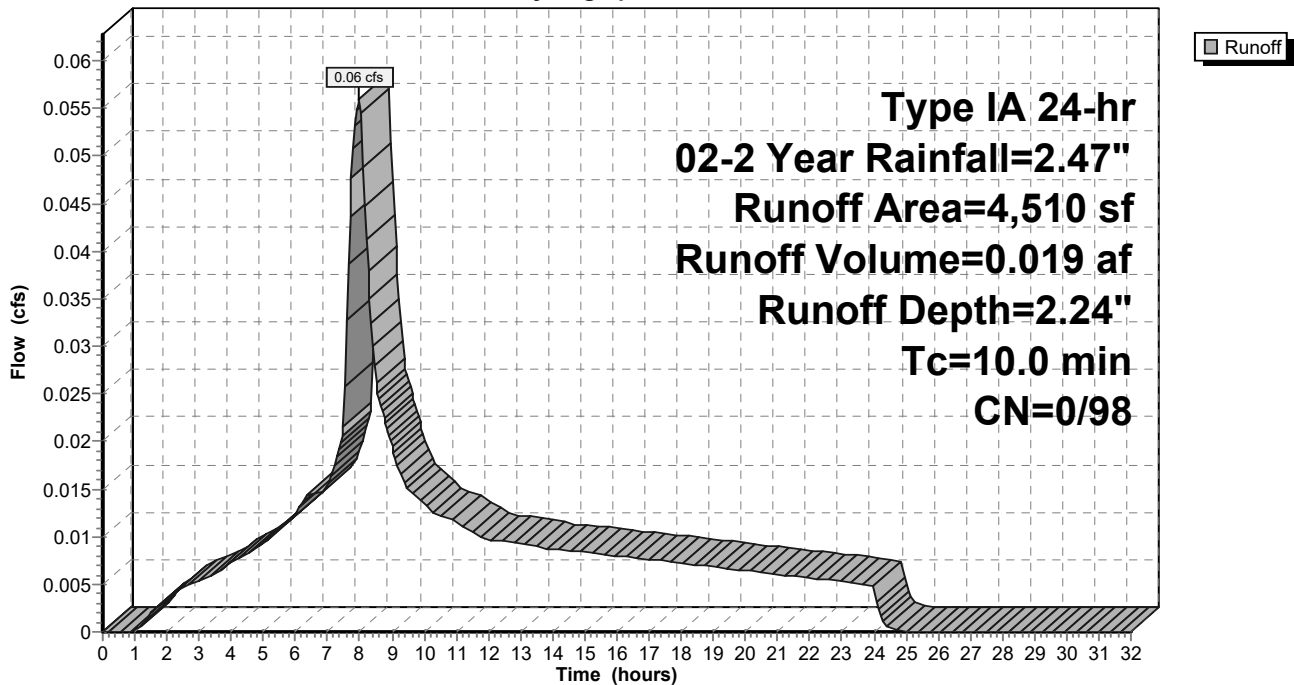
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 02-2 Year Rainfall=2.47"

Area (sf)	CN	Description
4,510	98	Paved roads w/curbs & sewers, HSG D
4,510	98	100.00% Impervious Area

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

Subcatchment 123S: Basin 24

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 02-2 Year Rainfall=2.47"

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Summary for Subcatchment 124S: Basin 25

Runoff = 0.16 cfs @ 7.98 hrs, Volume= 0.057 af, Depth= 2.24"
 Routed to Reach 163R : 1

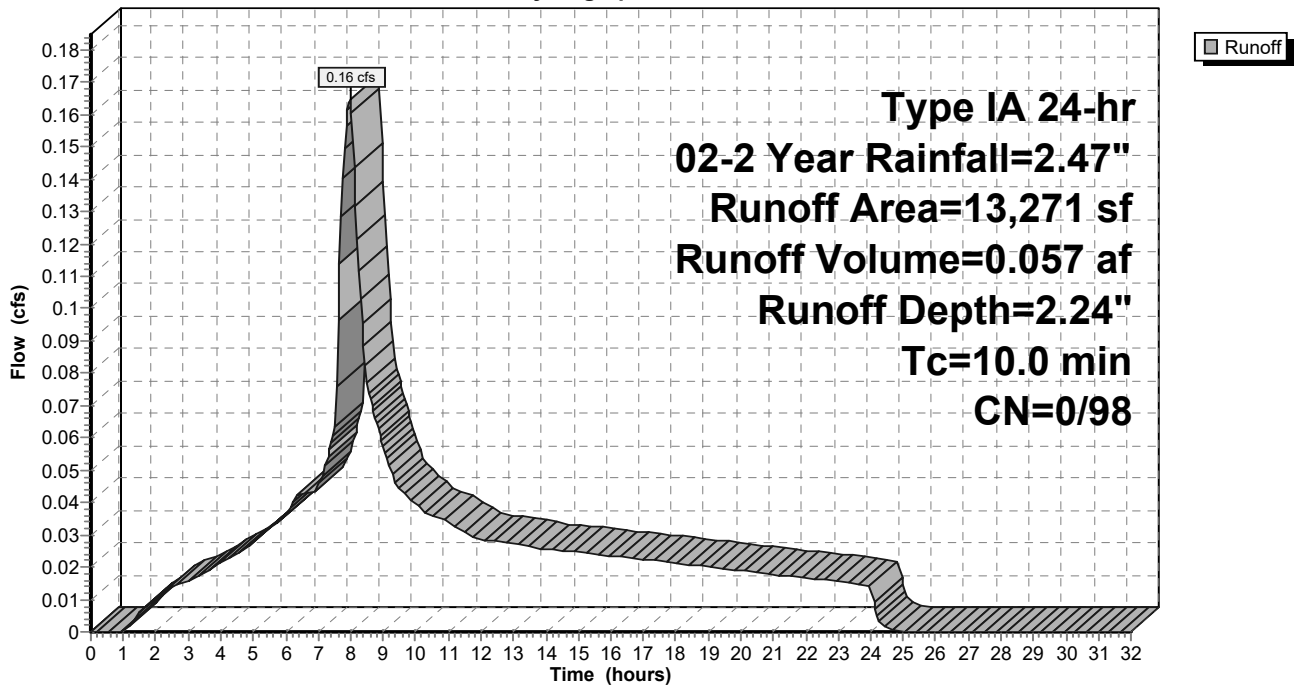
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 02-2 Year Rainfall=2.47"

Area (sf)	CN	Description
13,271	98	Paved roads w/curbs & sewers, HSG D
13,271	98	100.00% Impervious Area

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

Subcatchment 124S: Basin 25

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 02-2 Year Rainfall=2.47"

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Summary for Subcatchment 125S: Basin 26

Runoff = 0.23 cfs @ 7.98 hrs, Volume= 0.079 af, Depth= 2.24"
 Routed to Reach 165R : 1

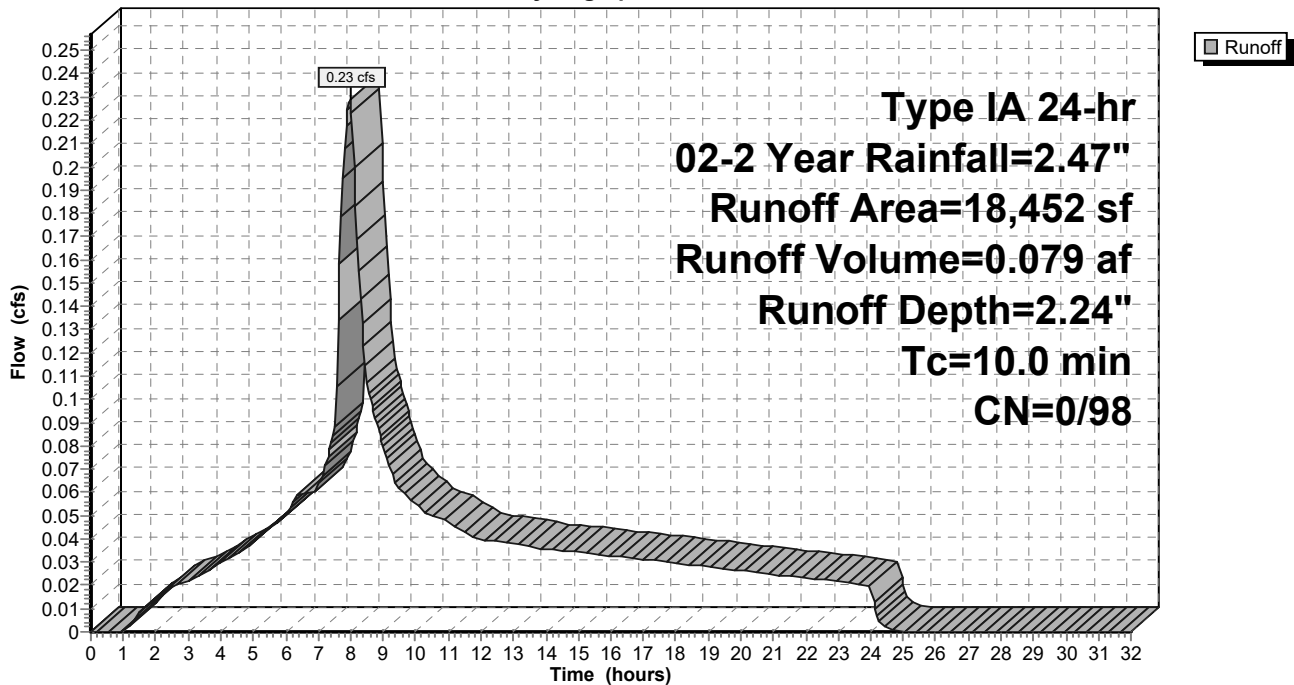
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 02-2 Year Rainfall=2.47"

Area (sf)	CN	Description
18,452	98	Paved roads w/curbs & sewers, HSG D
18,452	98	100.00% Impervious Area

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

Subcatchment 125S: Basin 26

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 02-2 Year Rainfall=2.47"

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Summary for Subcatchment 126S: Alley Basin 1

Runoff = 0.12 cfs @ 7.98 hrs, Volume= 0.042 af, Depth= 2.24"
 Routed to Reach 140R : 1

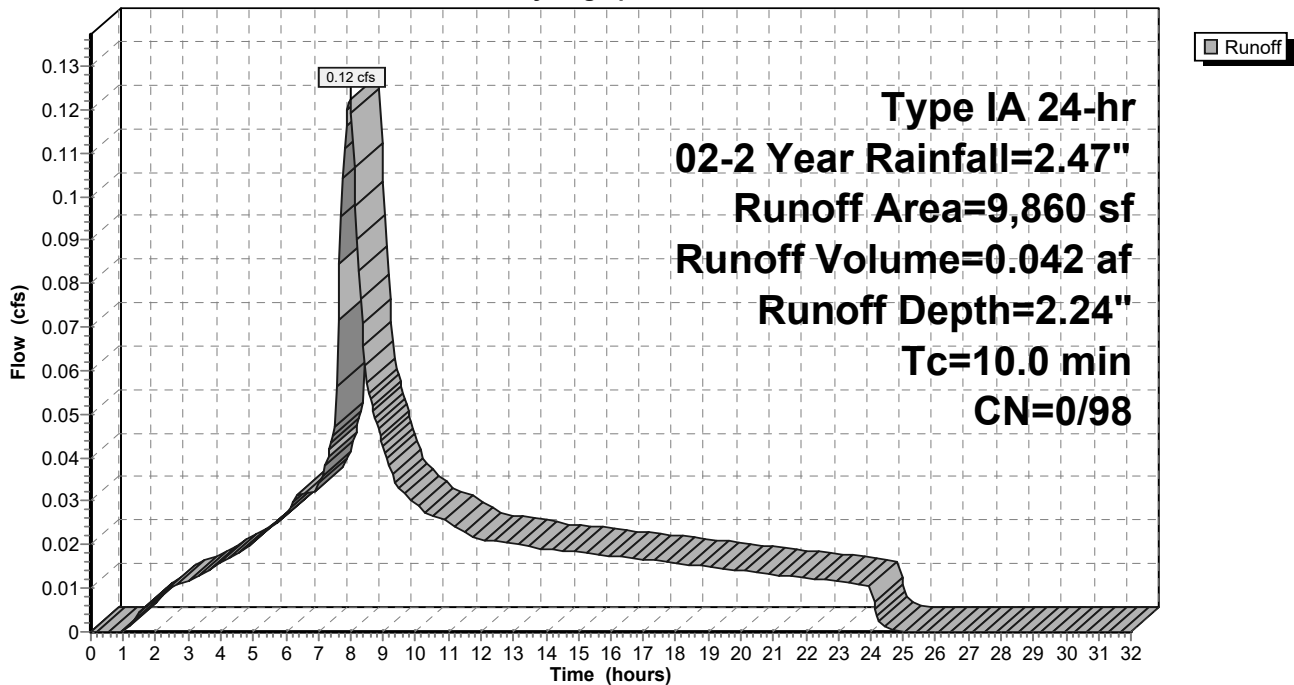
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 02-2 Year Rainfall=2.47"

Area (sf)	CN	Description
9,860	98	Paved roads w/curbs & sewers, HSG D
9,860	98	100.00% Impervious Area

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

Subcatchment 126S: Alley Basin 1

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 02-2 Year Rainfall=2.47"

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Summary for Subcatchment 127S: Alley Basin 2

Runoff = 0.09 cfs @ 7.98 hrs, Volume= 0.032 af, Depth= 2.24"
 Routed to Reach 141R : 1

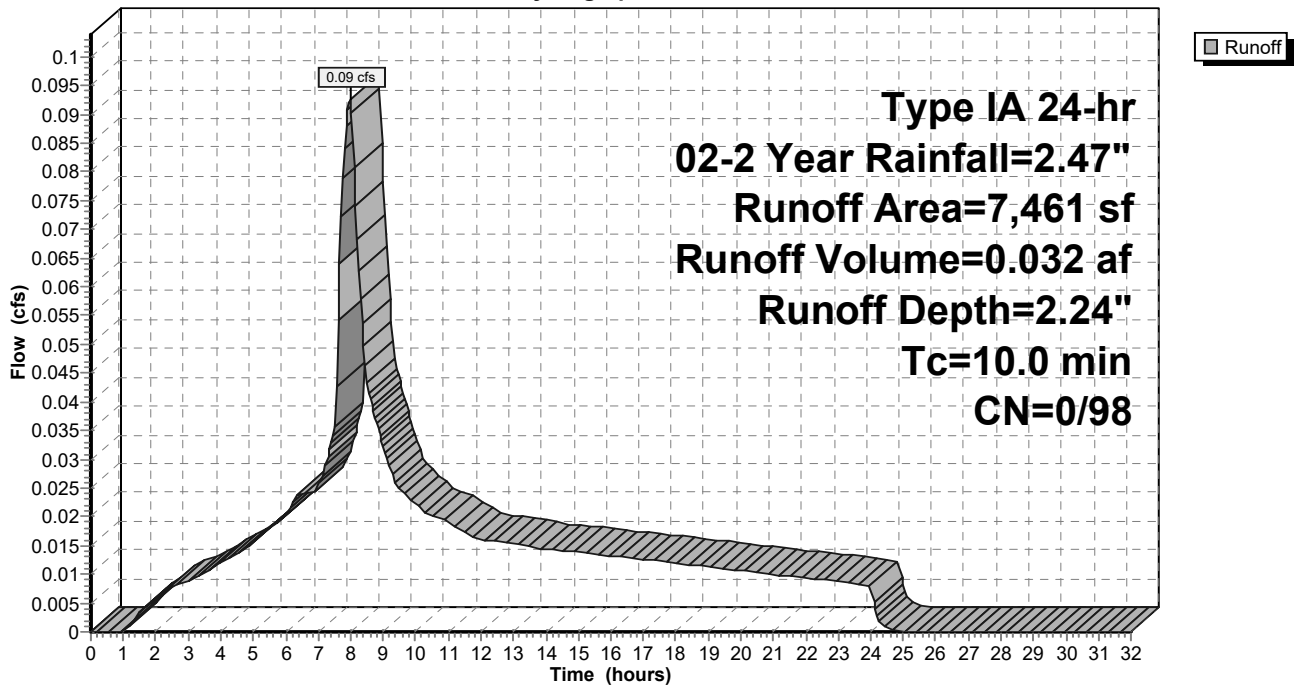
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 02-2 Year Rainfall=2.47"

Area (sf)	CN	Description
7,461	98	Paved roads w/curbs & sewers, HSG D
7,461	98	100.00% Impervious Area

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

Subcatchment 127S: Alley Basin 2

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 02-2 Year Rainfall=2.47"

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Summary for Subcatchment 128S: Alley Basin 3

Runoff = 0.08 cfs @ 7.98 hrs, Volume= 0.029 af, Depth= 2.24"
 Routed to Reach 147R : 1

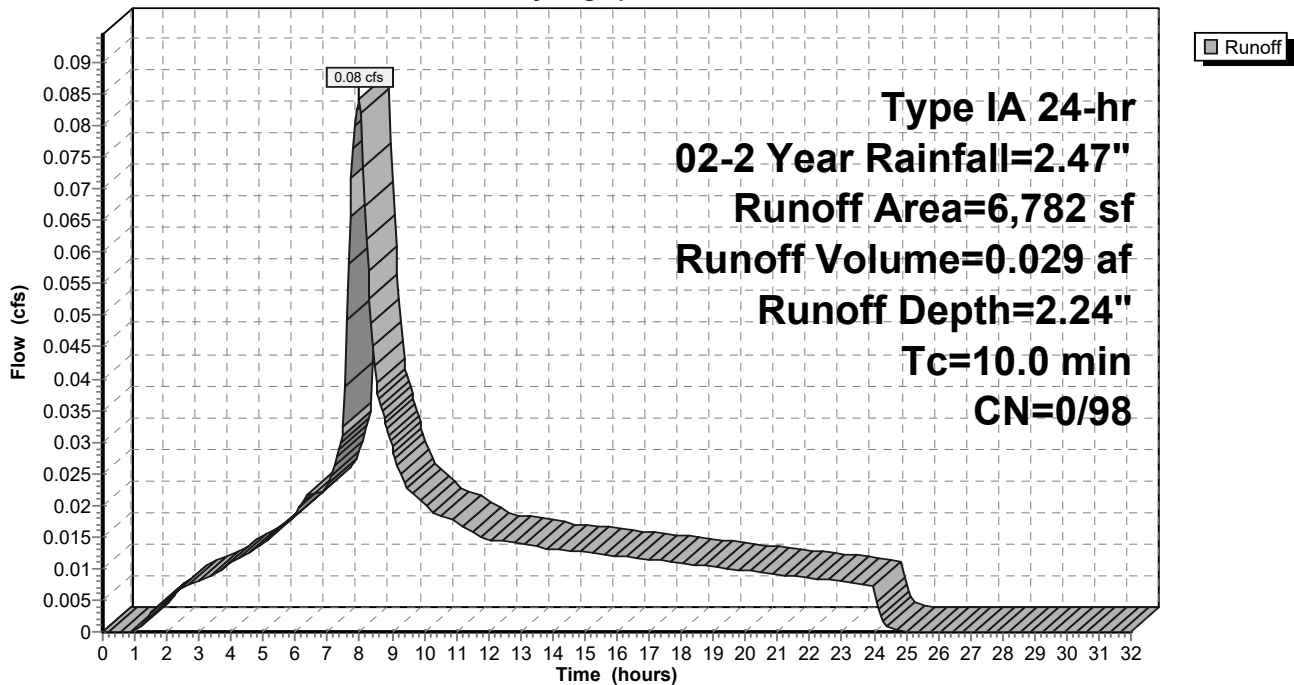
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 02-2 Year Rainfall=2.47"

Area (sf)	CN	Description
6,782	98	Paved roads w/curbs & sewers, HSG D
6,782	98	100.00% Impervious Area

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

Subcatchment 128S: Alley Basin 3

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 02-2 Year Rainfall=2.47"

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Summary for Subcatchment 129S: Alley Basin 4

Runoff = 0.09 cfs @ 7.98 hrs, Volume= 0.030 af, Depth= 2.24"
 Routed to Reach 153R : 1

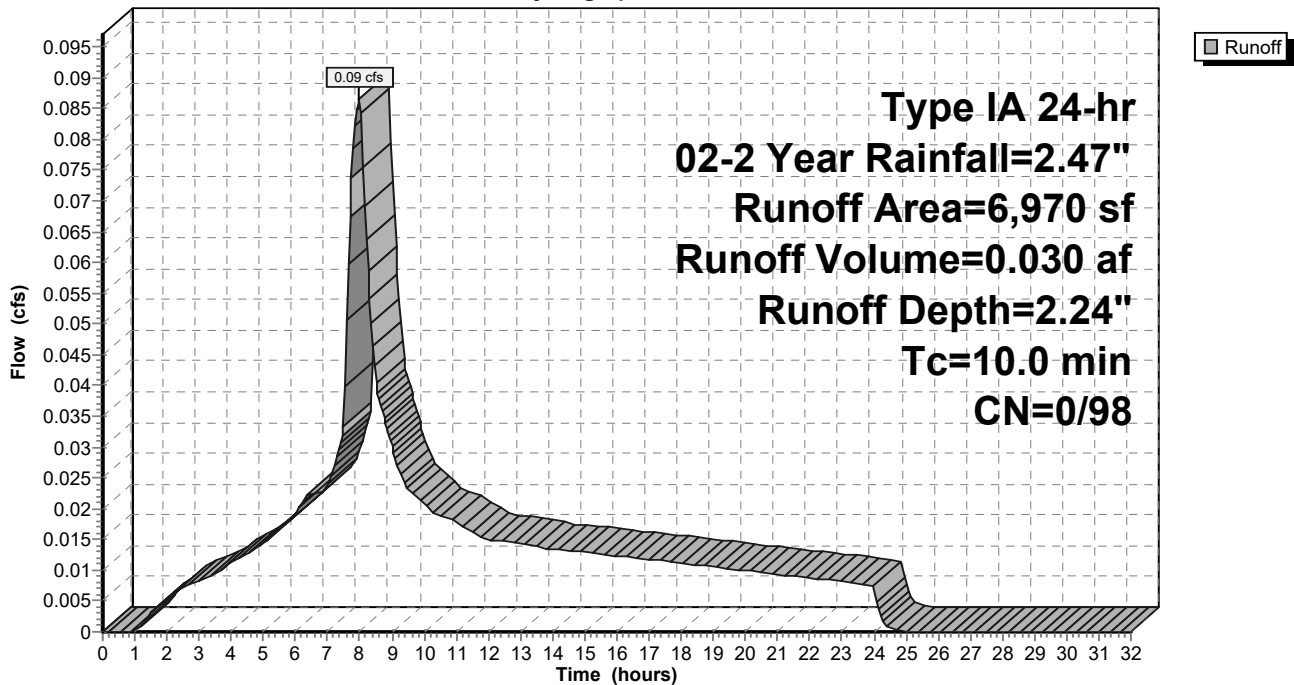
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 02-2 Year Rainfall=2.47"

Area (sf)	CN	Description
6,970	98	Paved roads w/curbs & sewers, HSG D
6,970	98	100.00% Impervious Area

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

Subcatchment 129S: Alley Basin 4

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 02-2 Year Rainfall=2.47"

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Summary for Subcatchment 168S: Future Lots

Runoff = 0.69 cfs @ 7.98 hrs, Volume= 0.238 af, Depth= 1.94"
 Routed to Reach 166R : Basin Future

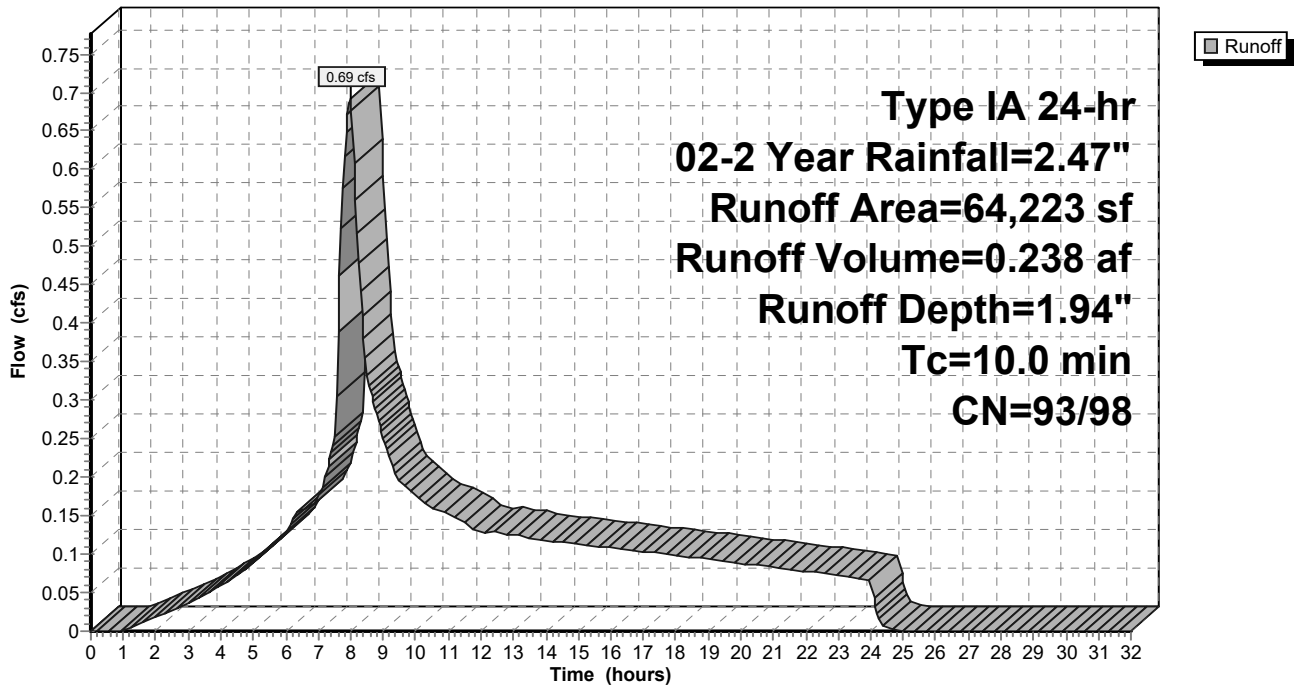
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 02-2 Year Rainfall=2.47"

	Area (sf)	CN	Description
*	39,915	93	70% Lot Coverage Weighted
	24,308	98	Paved roads w/curbs & sewers, HSG D
	64,223	95	Weighted Average
	39,915	93	62.15% Pervious Area
	24,308	98	37.85% Impervious Area

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

Subcatchment 168S: Future Lots

Hydrograph



9-6-23 HydroCAD DOM

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Type IA 24-hr 02-2 Year Rainfall=2.47"

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Summary for Subcatchment 169S: Swale 2

[46] Hint: Tc=0 (Instant runoff peak depends on dt)

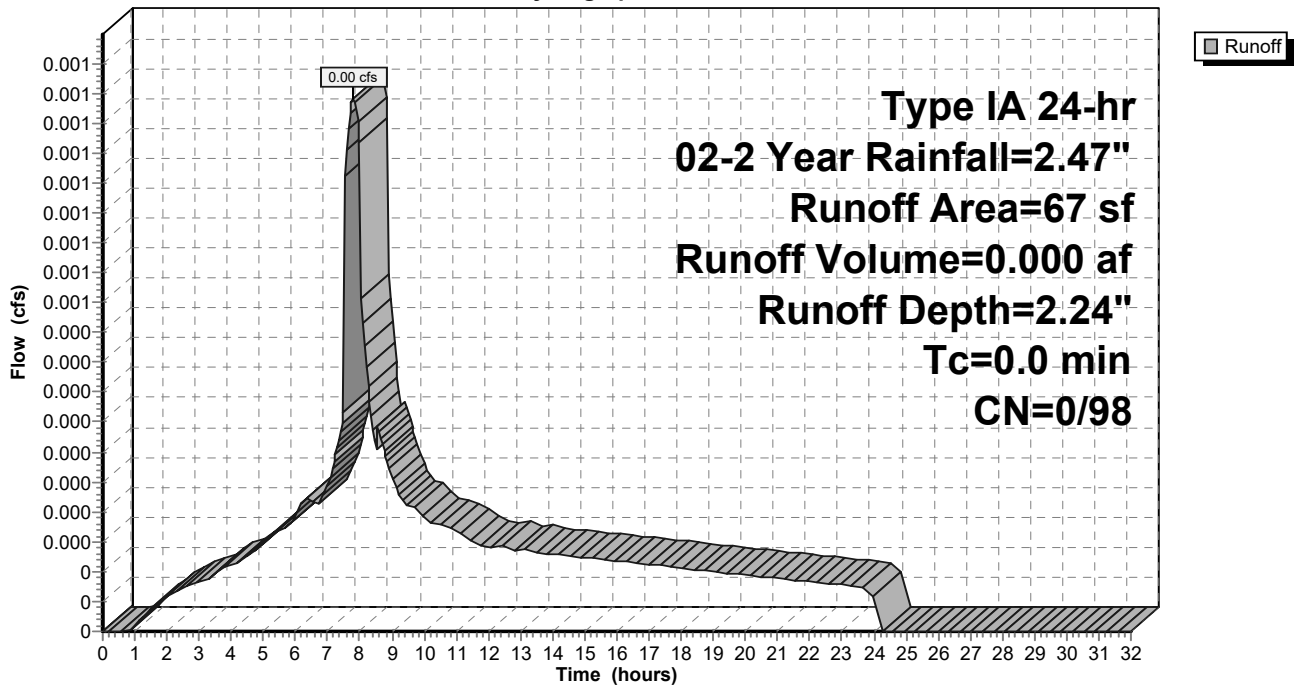
Runoff = 0.00 cfs @ 7.81 hrs, Volume= 0.000 af, Depth= 2.24"
 Routed to Pond 54P : Stormwater Swale 2

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 02-2 Year Rainfall=2.47"

Area (sf)	CN	Description
67	98	Water Surface, HSG D
67	98	100.00% Impervious Area

Subcatchment 169S: Swale 2

Hydrograph



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Summary for Subcatchment 170S: Swale 1

[46] Hint: Tc=0 (Instant runoff peak depends on dt)

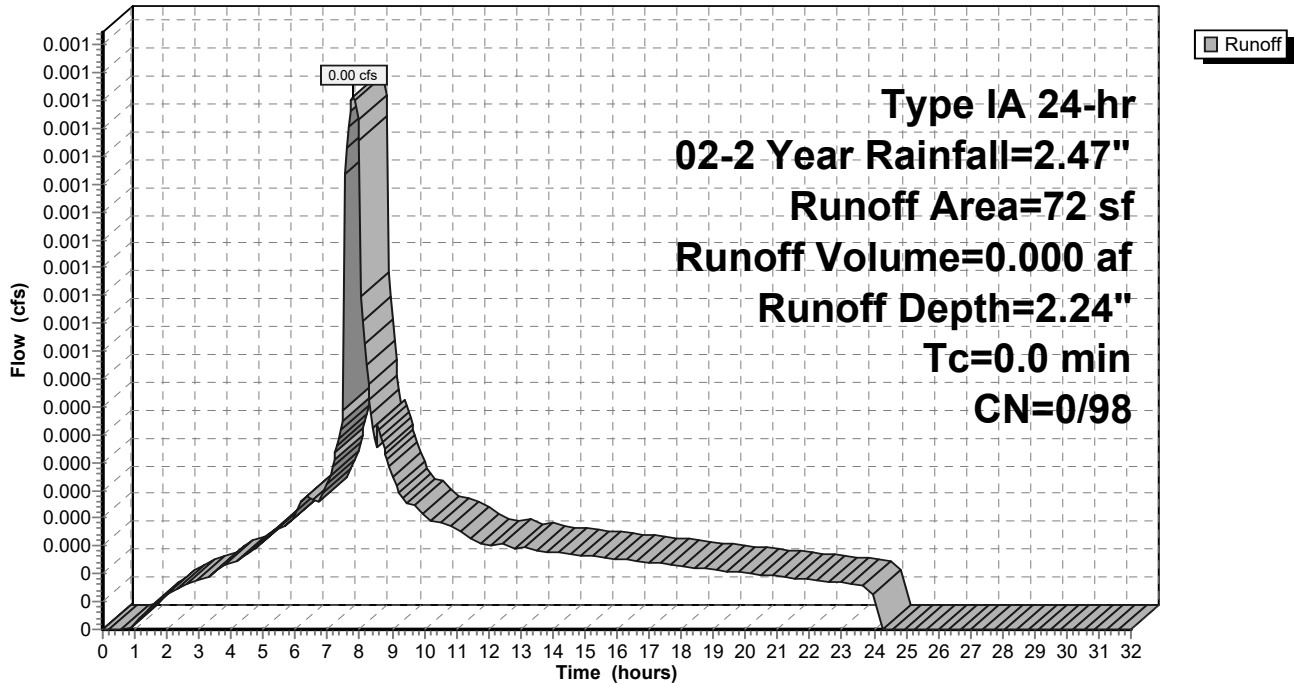
Runoff = 0.00 cfs @ 7.81 hrs, Volume= 0.000 af, Depth= 2.24"
 Routed to Pond 60P : Stormwater Swale 1

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 02-2 Year Rainfall=2.47"

Area (sf)	CN	Description
72	98	Water Surface, HSG D
72	98	100.00% Impervious Area

Subcatchment 170S: Swale 1

Hydrograph



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Type IA 24-hr 02-2 Year Rainfall=2.47"

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Summary for Reach 39R: Post-Construction Peak Flow

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

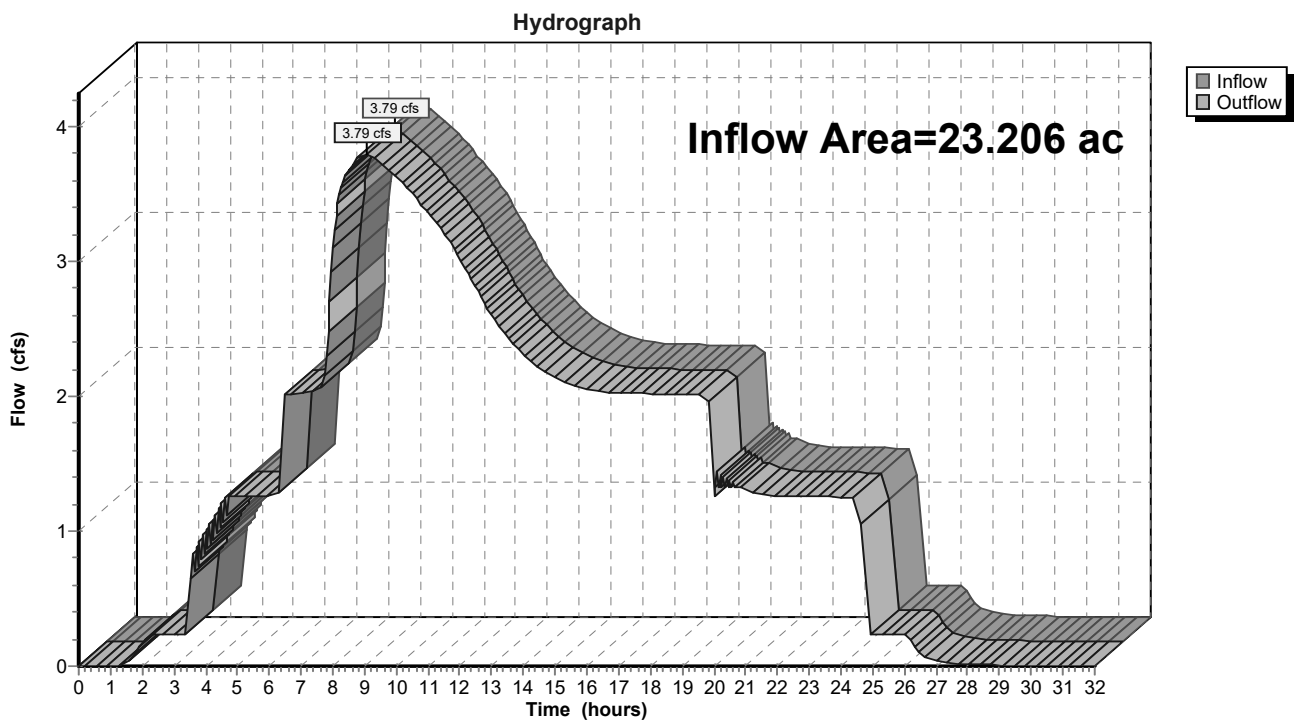
Inflow Area = 23.206 ac, 36.84% Impervious, Inflow Depth > 1.93" for 02-2 Year event

Inflow = 3.79 cfs @ 9.04 hrs, Volume= 3.734 af

Outflow = 3.79 cfs @ 9.04 hrs, Volume= 3.734 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 39R: Post-Construction Peak Flow



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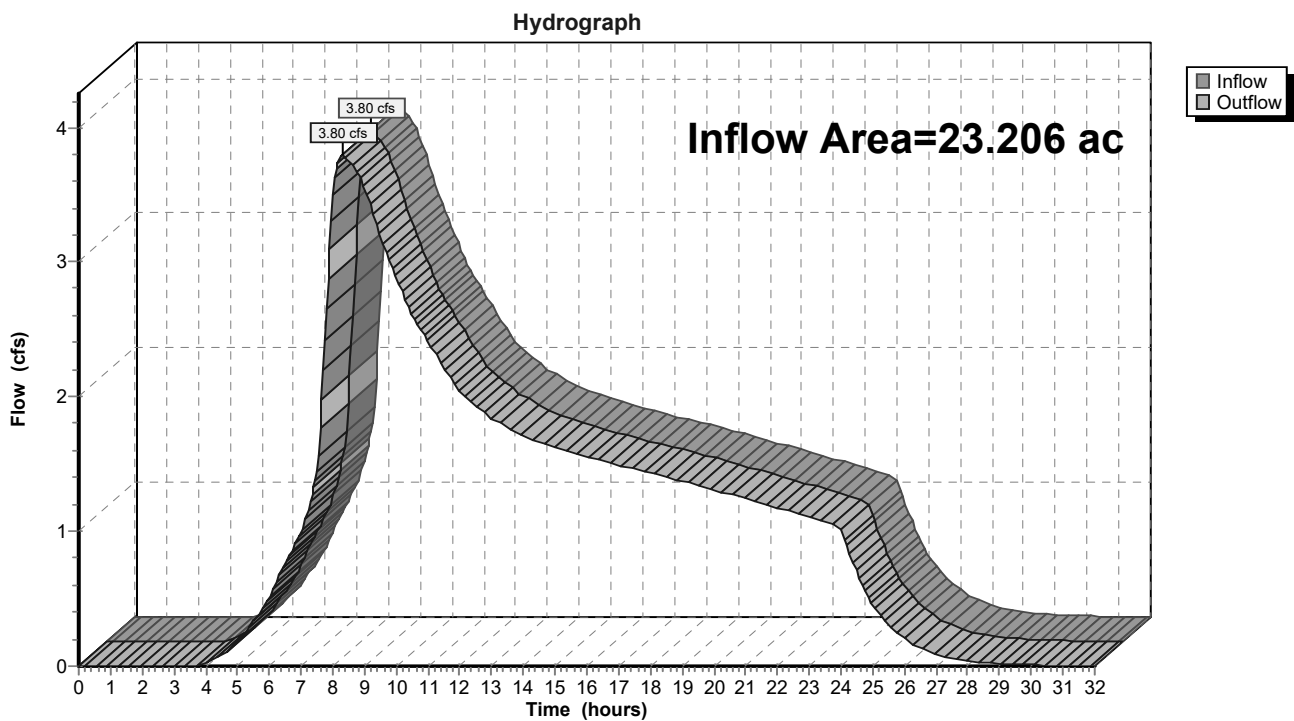
Summary for Reach 42R: Pre-Construction Peak Flow

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

Inflow Area = 23.206 ac, 0.00% Impervious, Inflow Depth > 1.43" for 02-2 Year event
 Inflow = 3.80 cfs @ 8.32 hrs, Volume= 2.762 af
 Outflow = 3.80 cfs @ 8.32 hrs, Volume= 2.762 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 42R: Pre-Construction Peak Flow



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Summary for Reach 58R: 1

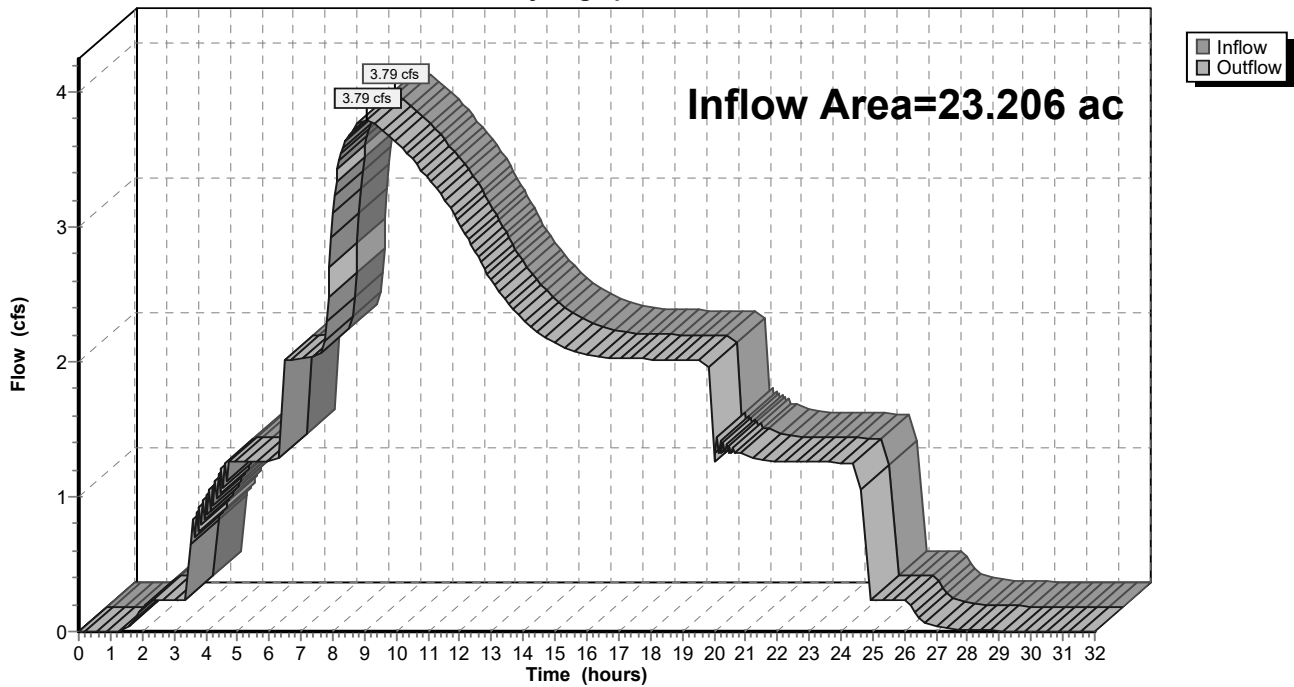
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 23.206 ac, 36.84% Impervious, Inflow Depth > 1.93" for 02-2 Year event
 Inflow = 3.79 cfs @ 9.04 hrs, Volume= 3.734 af
 Outflow = 3.79 cfs @ 9.04 hrs, Volume= 3.734 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 39R : Post-Construction Peak Flow

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 58R: 1

Hydrograph



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Type IA 24-hr 02-2 Year Rainfall=2.47"

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Summary for Reach 85R: 1

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

Inflow Area = 23.038 ac, 36.38% Impervious, Inflow Depth > 1.93" for 02-2 Year event

Inflow = 3.76 cfs @ 9.07 hrs, Volume= 3.703 af

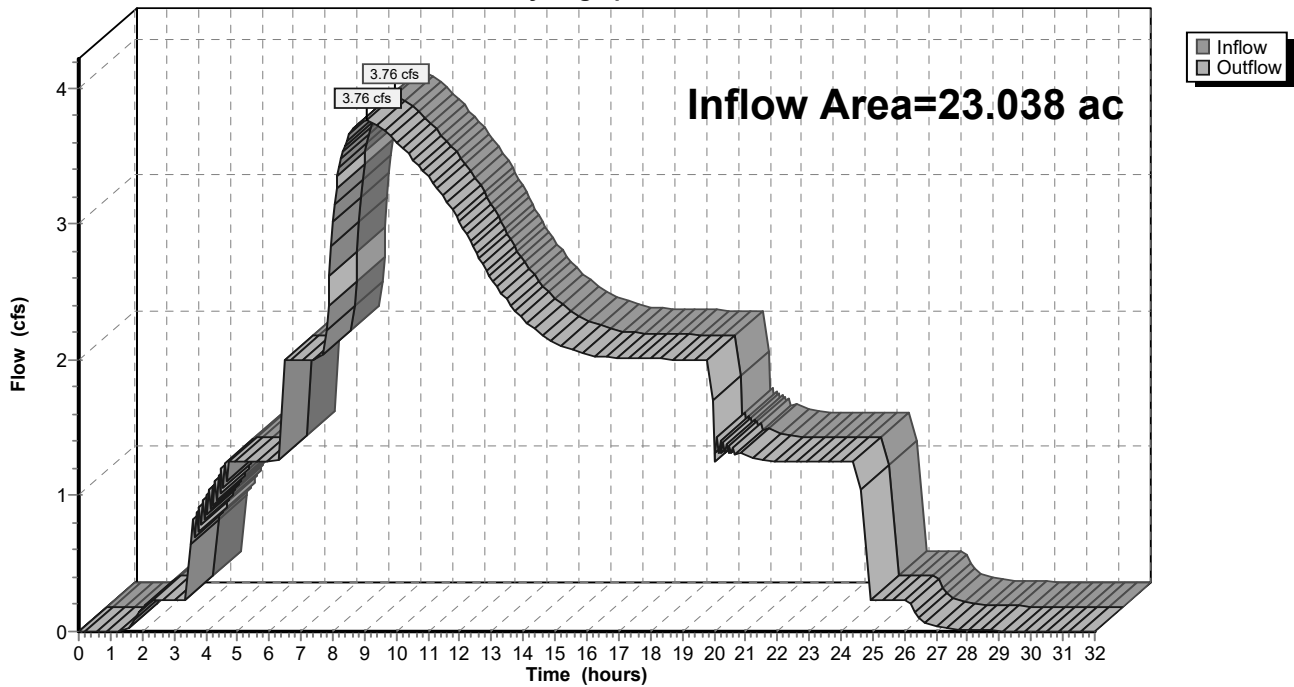
Outflow = 3.76 cfs @ 9.07 hrs, Volume= 3.703 af, Atten= 0%, Lag= 0.0 min

Routed to Reach 58R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 85R: 1

Hydrograph



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Type IA 24-hr 02-2 Year Rainfall=2.47"

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Summary for Reach 130R: 1

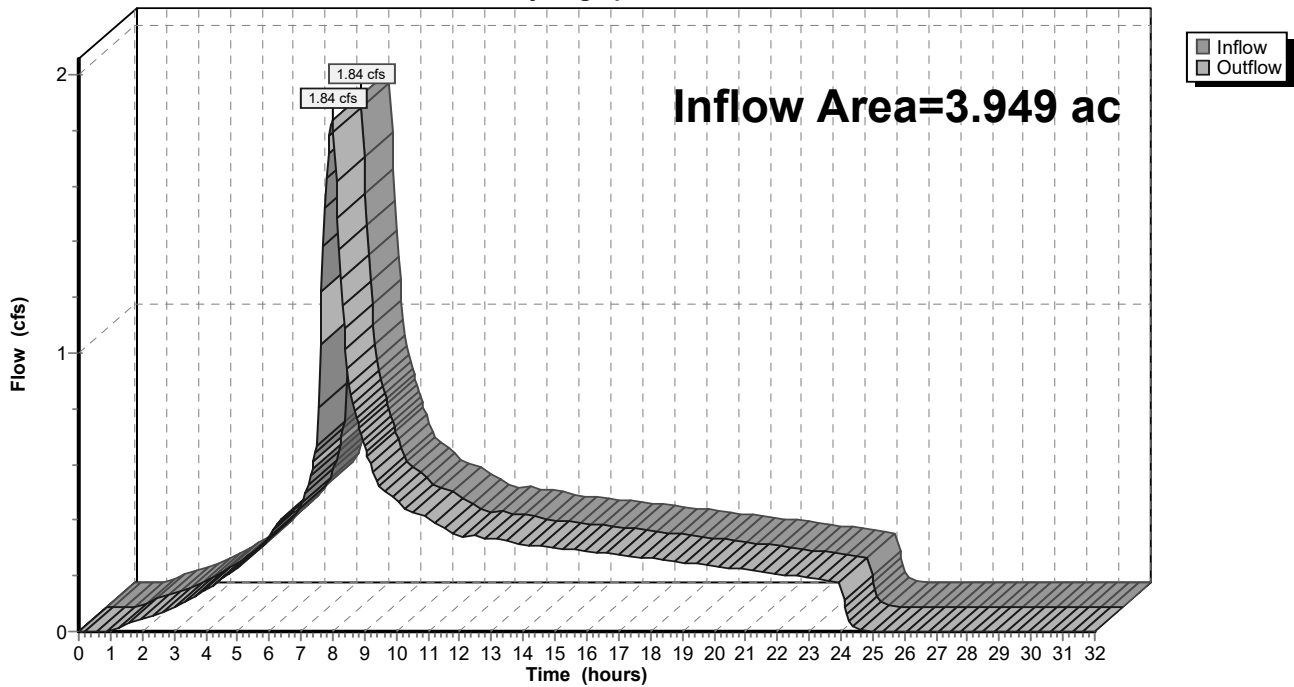
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.949 ac, 33.88% Impervious, Inflow Depth = 1.92" for 02-2 Year event
 Inflow = 1.84 cfs @ 7.98 hrs, Volume= 0.631 af
 Outflow = 1.84 cfs @ 7.98 hrs, Volume= 0.631 af, Atten= 0%, Lag= 0.0 min
 Routed to Pond 63P : Detention Pond

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 130R: 1

Hydrograph



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Type IA 24-hr 02-2 Year Rainfall=2.47"

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Summary for Reach 131R: 1

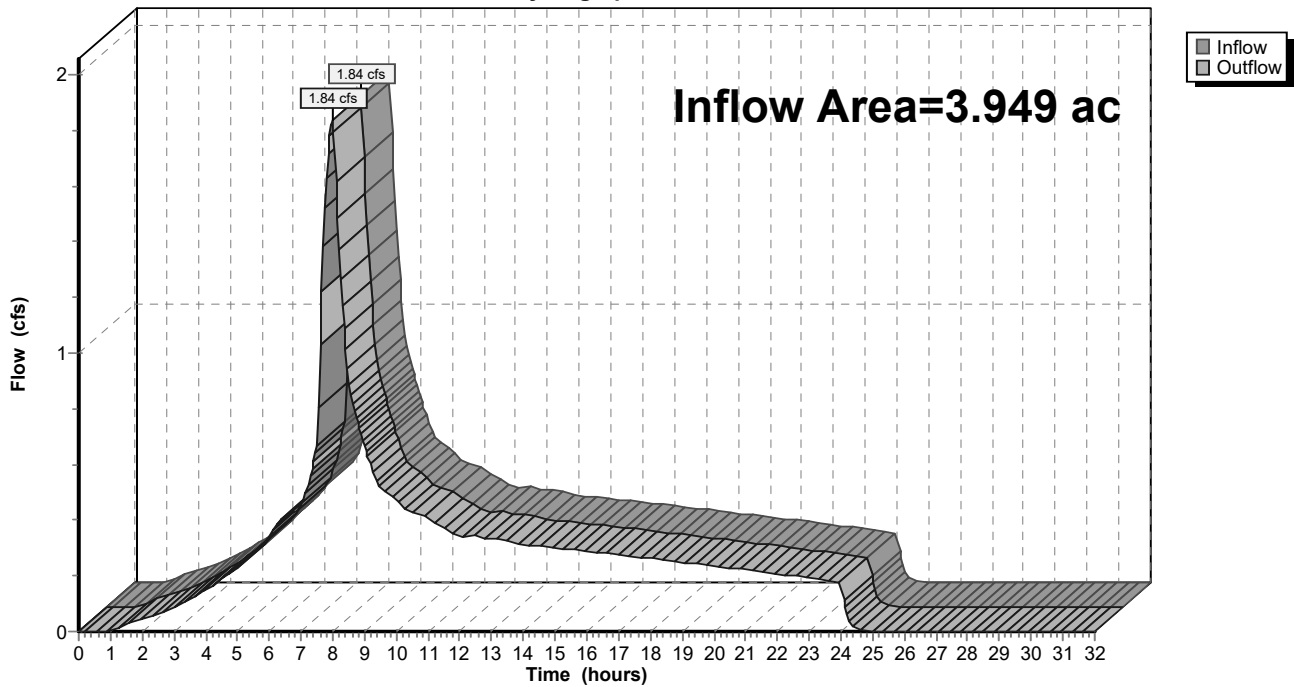
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.949 ac, 33.88% Impervious, Inflow Depth = 1.92" for 02-2 Year event
 Inflow = 1.84 cfs @ 7.98 hrs, Volume= 0.631 af
 Outflow = 1.84 cfs @ 7.98 hrs, Volume= 0.631 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 130R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 131R: 1

Hydrograph



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Summary for Reach 132R: 1

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

Inflow Area = 2.259 ac, 35.43% Impervious, Inflow Depth = 1.92" for 02-2 Year event

Inflow = 1.06 cfs @ 7.98 hrs, Volume= 0.362 af

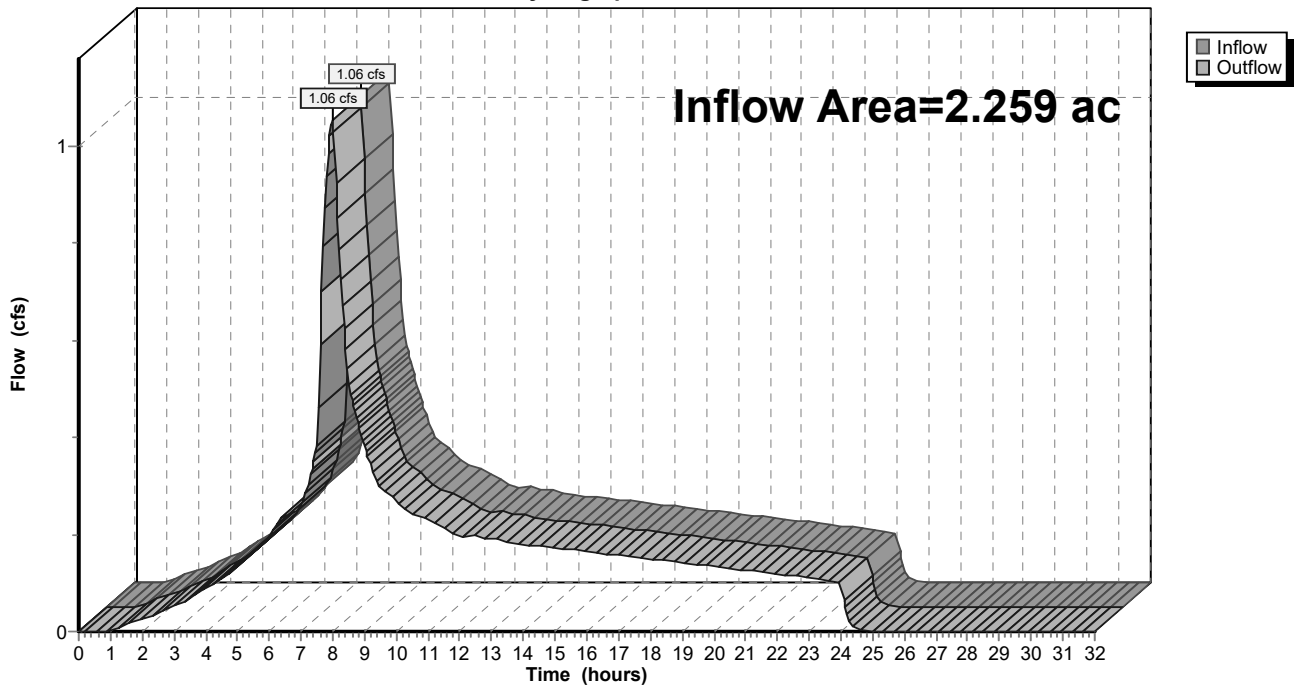
Outflow = 1.06 cfs @ 7.98 hrs, Volume= 0.362 af, Atten= 0%, Lag= 0.0 min

Routed to Reach 131R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 132R: 1

Hydrograph



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Summary for Reach 133R: 1

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

Inflow Area = 0.345 ac, 100.00% Impervious, Inflow Depth = 2.24" for 02-2 Year event

Inflow = 0.19 cfs @ 7.98 hrs, Volume= 0.064 af

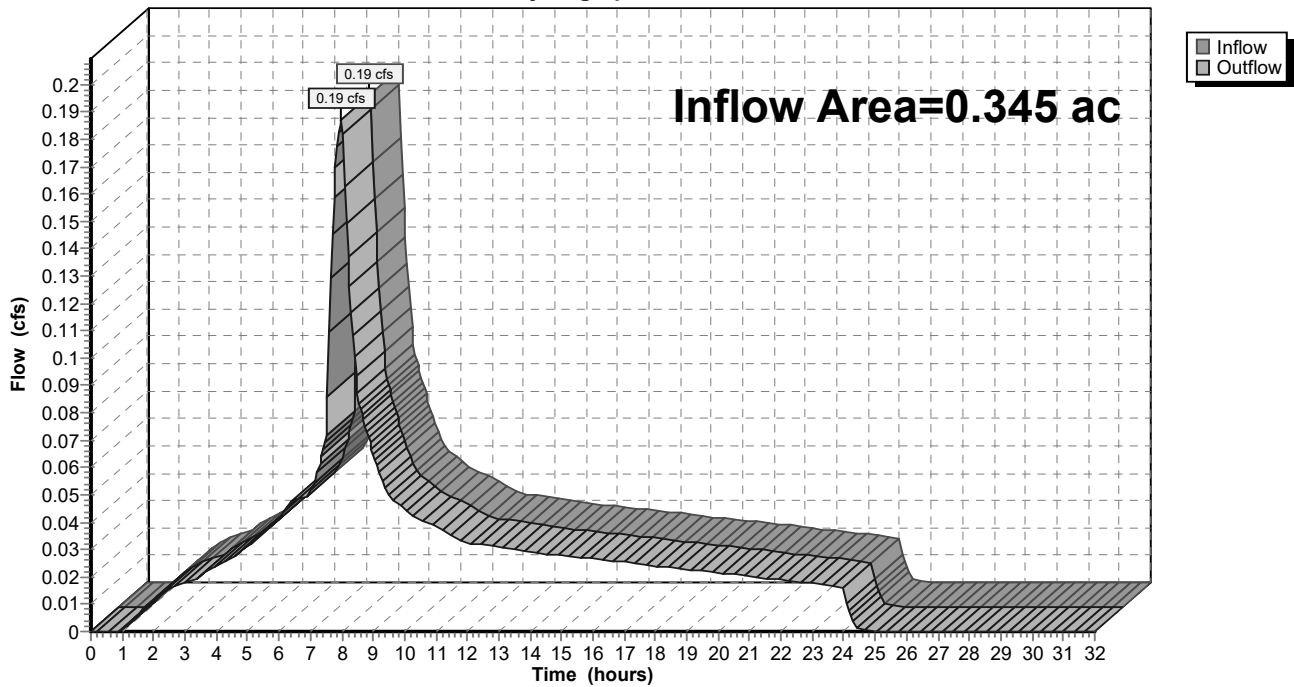
Outflow = 0.19 cfs @ 7.98 hrs, Volume= 0.064 af, Atten= 0%, Lag= 0.0 min

Routed to Reach 132R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 133R: 1

Hydrograph



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Summary for Reach 134R: 1

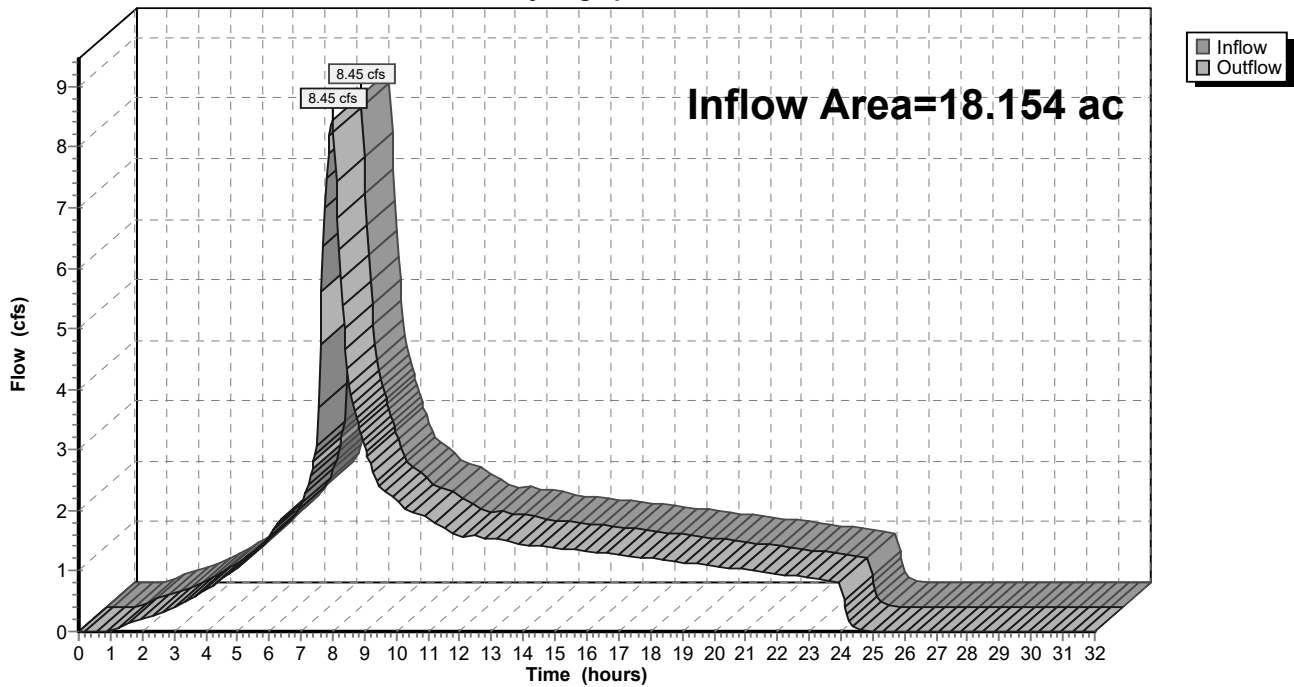
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 18.154 ac, 33.65% Impervious, Inflow Depth = 1.92" for 02-2 Year event
 Inflow = 8.45 cfs @ 7.98 hrs, Volume= 2.899 af
 Outflow = 8.45 cfs @ 7.98 hrs, Volume= 2.899 af, Atten= 0%, Lag= 0.0 min
 Routed to Pond 63P : Detention Pond

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 134R: 1

Hydrograph



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Summary for Reach 135R: 1

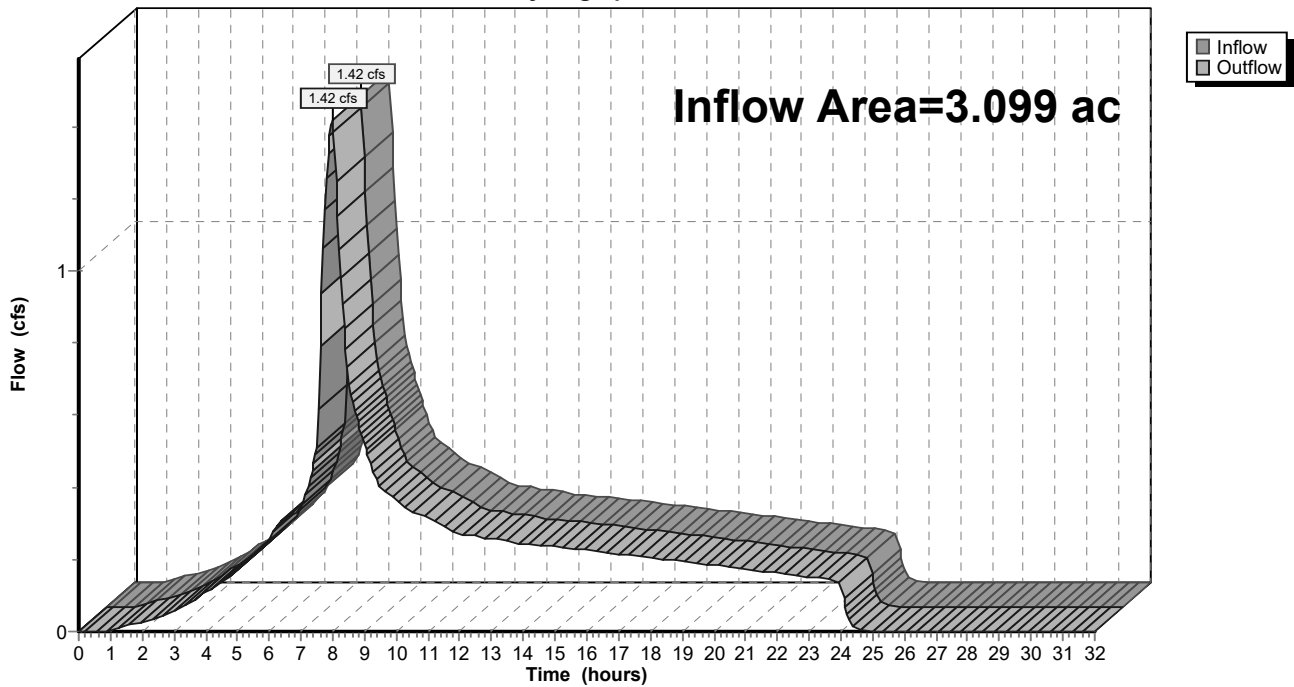
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.099 ac, 26.69% Impervious, Inflow Depth = 1.88" for 02-2 Year event
 Inflow = 1.42 cfs @ 7.98 hrs, Volume= 0.486 af
 Outflow = 1.42 cfs @ 7.98 hrs, Volume= 0.486 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 134R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 135R: 1

Hydrograph



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Summary for Reach 136R: 1

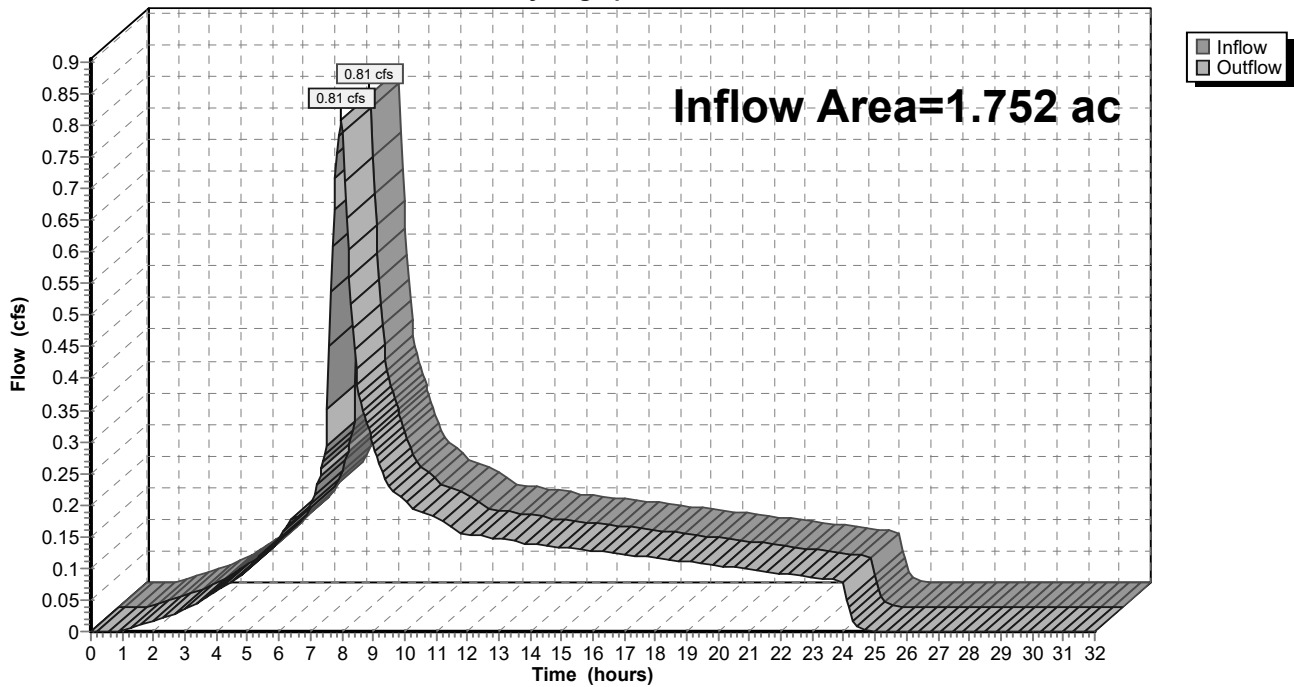
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.752 ac, 30.00% Impervious, Inflow Depth = 1.90" for 02-2 Year event
 Inflow = 0.81 cfs @ 7.98 hrs, Volume= 0.277 af
 Outflow = 0.81 cfs @ 7.98 hrs, Volume= 0.277 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 135R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 136R: 1

Hydrograph



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Summary for Reach 137R: 1

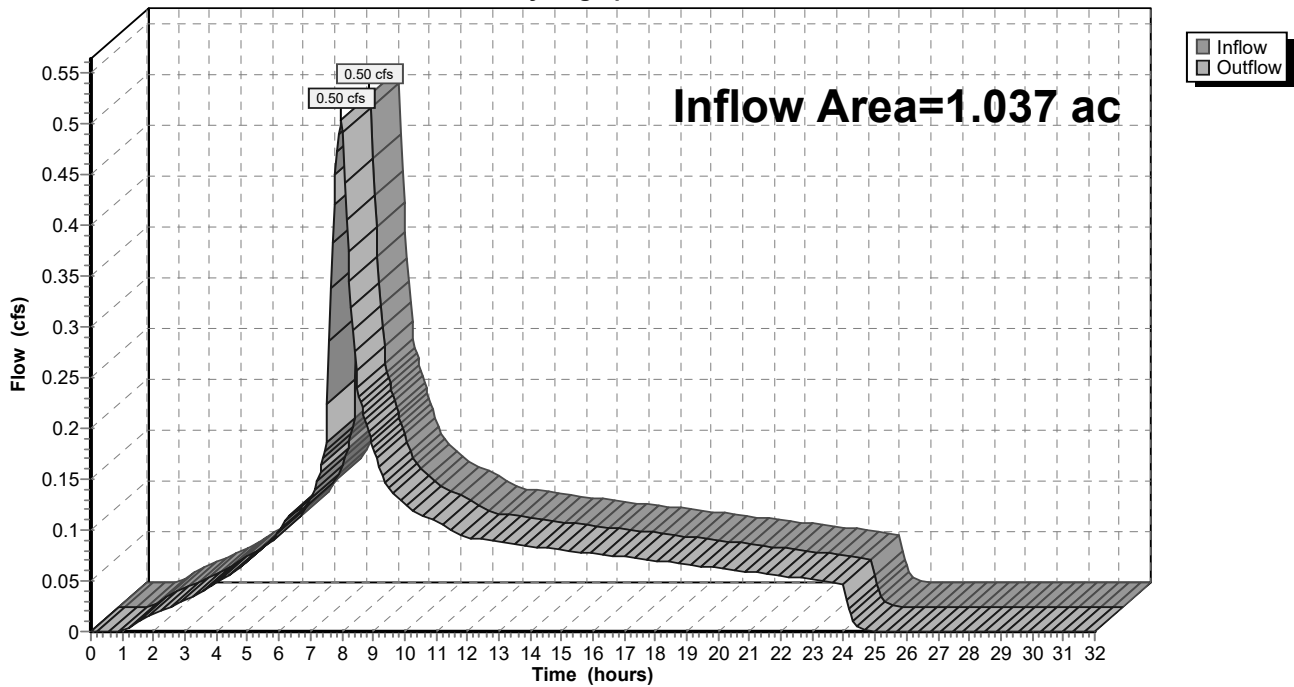
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.037 ac, 50.68% Impervious, Inflow Depth = 2.00" for 02-2 Year event
 Inflow = 0.50 cfs @ 7.98 hrs, Volume= 0.173 af
 Outflow = 0.50 cfs @ 7.98 hrs, Volume= 0.173 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 136R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 137R: 1

Hydrograph



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Summary for Reach 138R: 1

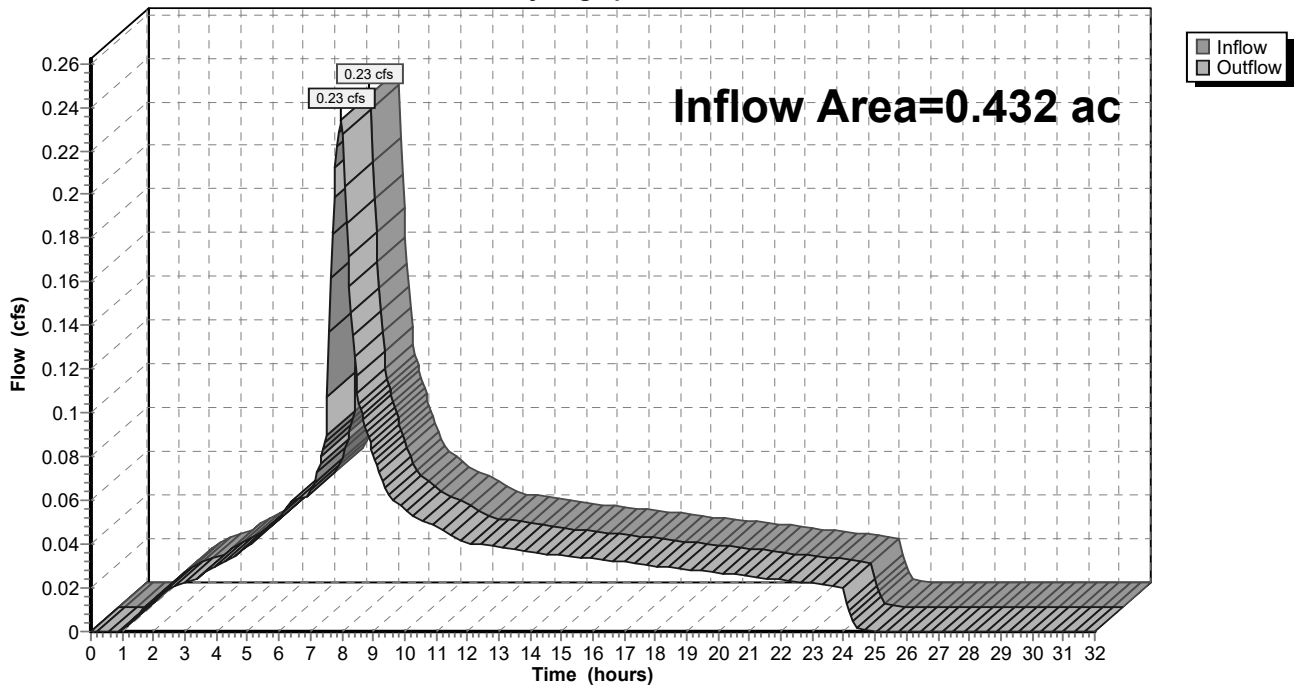
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.432 ac, 100.00% Impervious, Inflow Depth = 2.24" for 02-2 Year event
 Inflow = 0.23 cfs @ 7.98 hrs, Volume= 0.081 af
 Outflow = 0.23 cfs @ 7.98 hrs, Volume= 0.081 af, Atten= 0%, Lag= 0.0 min
 Routed to Pond 63P : Detention Pond

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 138R: 1

Hydrograph



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Type IA 24-hr 02-2 Year Rainfall=2.47"

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Summary for Reach 139R: 1

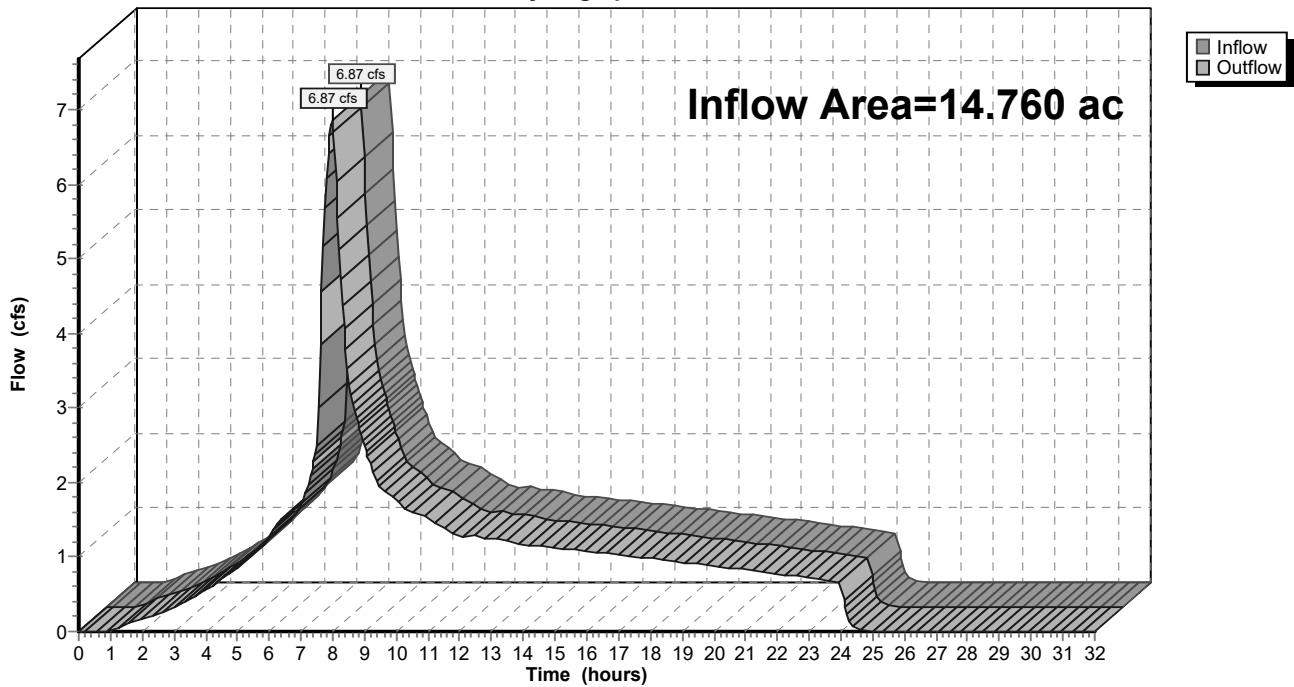
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 14.760 ac, 33.78% Impervious, Inflow Depth = 1.92" for 02-2 Year event
 Inflow = 6.87 cfs @ 7.98 hrs, Volume= 2.357 af
 Outflow = 6.87 cfs @ 7.98 hrs, Volume= 2.357 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 158R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 139R: 1

Hydrograph



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Summary for Reach 140R: 1

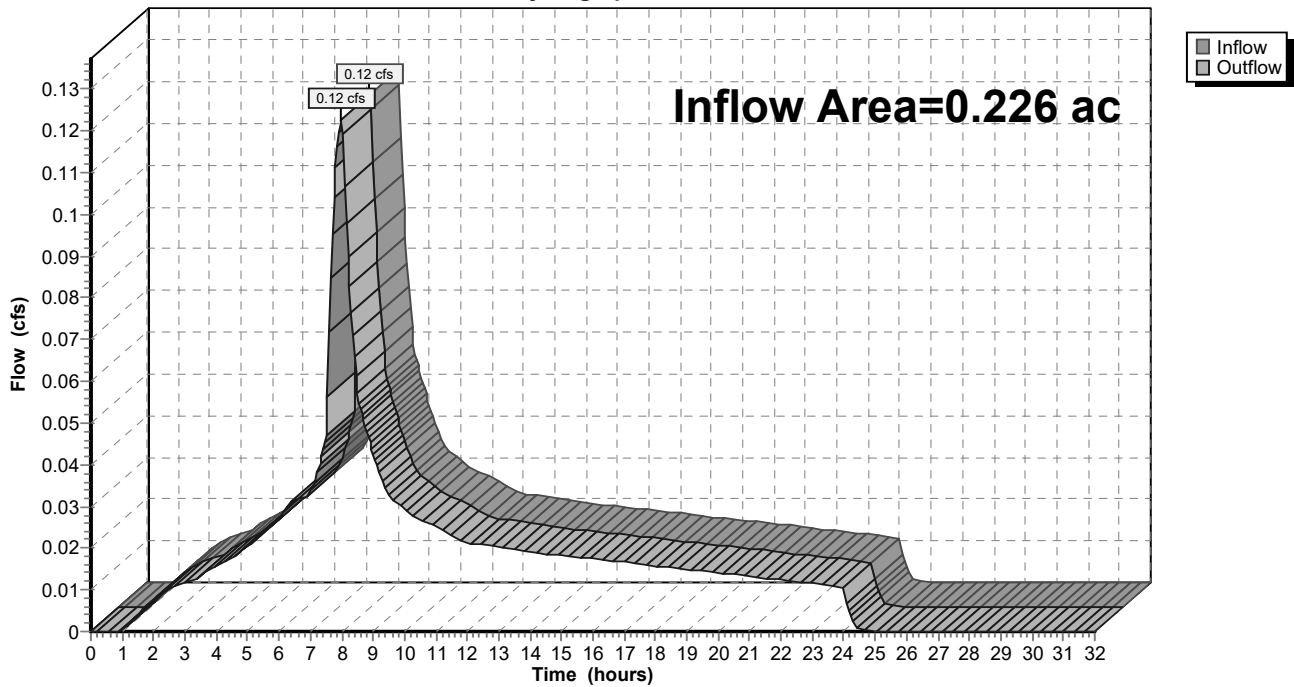
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.226 ac, 100.00% Impervious, Inflow Depth = 2.24" for 02-2 Year event
 Inflow = 0.12 cfs @ 7.98 hrs, Volume= 0.042 af
 Outflow = 0.12 cfs @ 7.98 hrs, Volume= 0.042 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 138R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 140R: 1

Hydrograph



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Type IA 24-hr 02-2 Year Rainfall=2.47"

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Summary for Reach 141R: 1

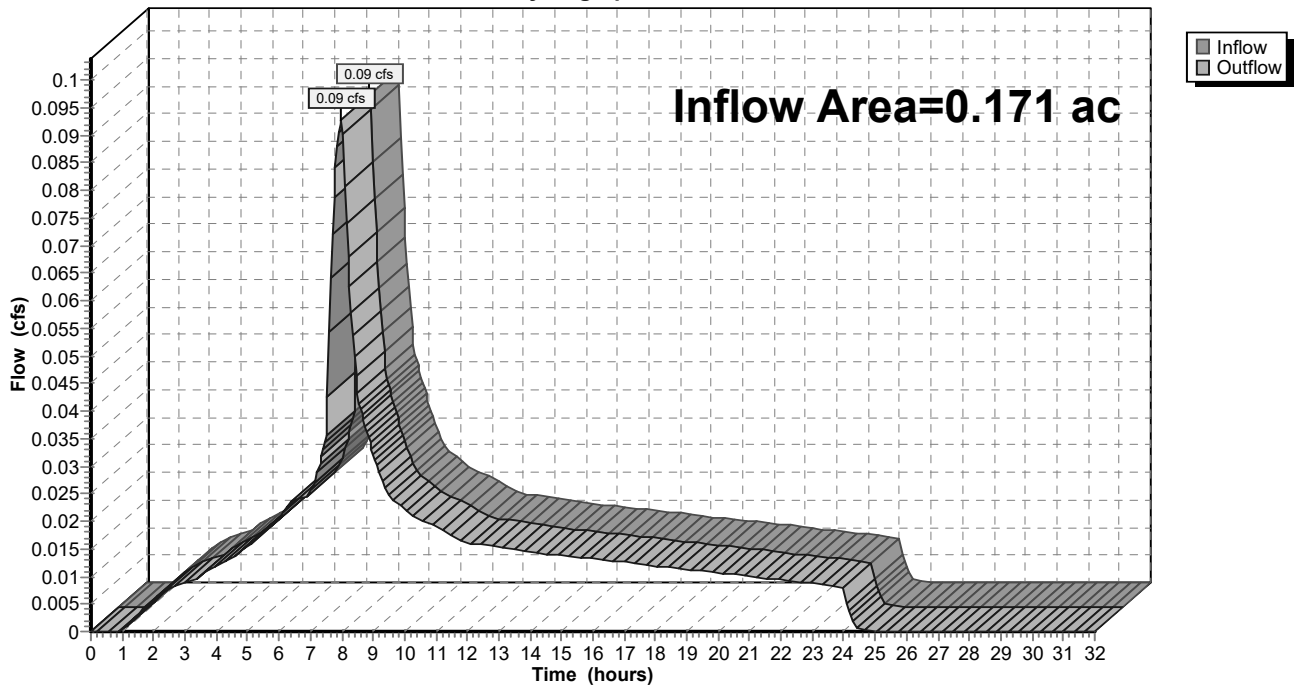
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.171 ac, 100.00% Impervious, Inflow Depth = 2.24" for 02-2 Year event
 Inflow = 0.09 cfs @ 7.98 hrs, Volume= 0.032 af
 Outflow = 0.09 cfs @ 7.98 hrs, Volume= 0.032 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 139R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 141R: 1

Hydrograph



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Summary for Reach 142R: 1

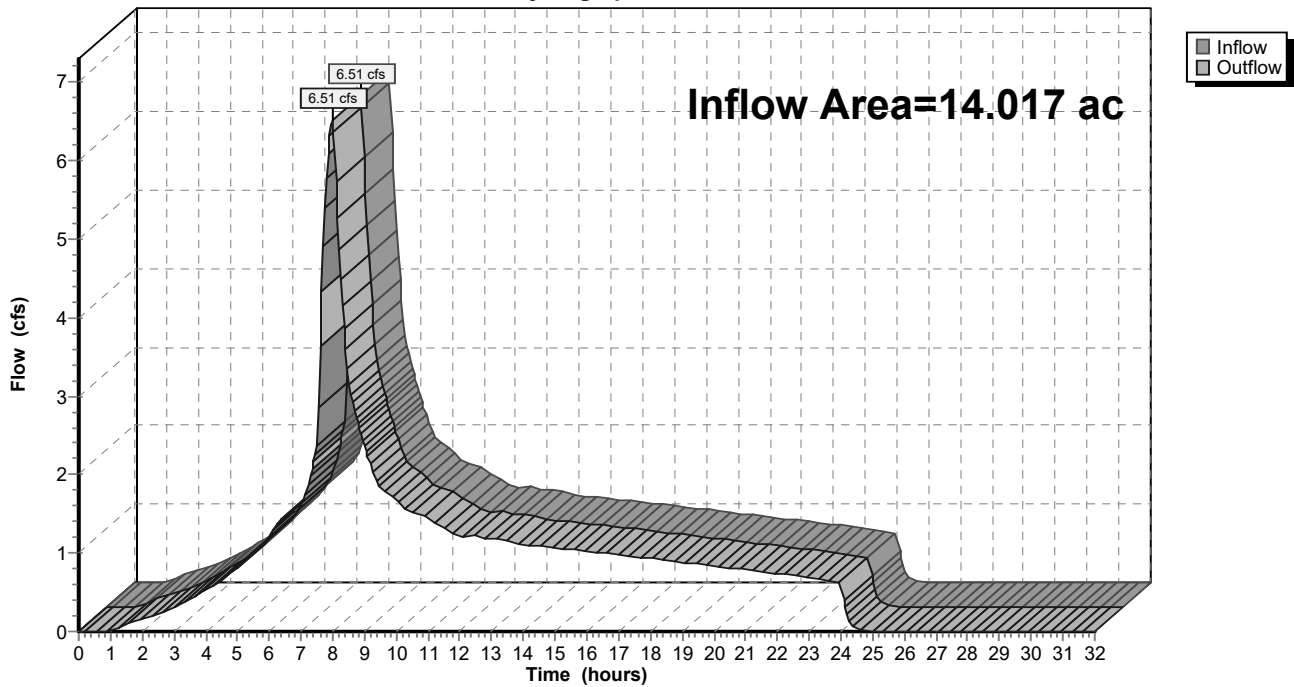
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 14.017 ac, 33.09% Impervious, Inflow Depth = 1.91" for 02-2 Year event
 Inflow = 6.51 cfs @ 7.98 hrs, Volume= 2.235 af
 Outflow = 6.51 cfs @ 7.98 hrs, Volume= 2.235 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 159R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 142R: 1

Hydrograph



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Summary for Reach 143R: 1

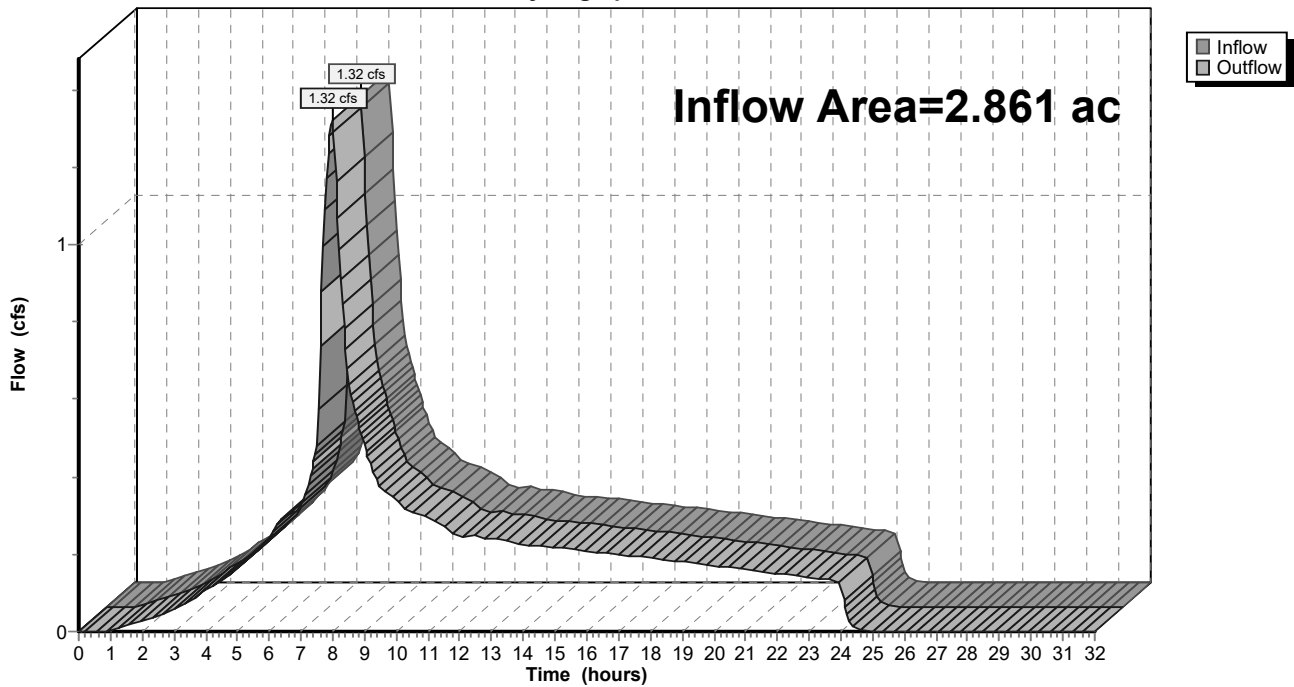
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 2.861 ac, 30.95% Impervious, Inflow Depth = 1.90" for 02-2 Year event
 Inflow = 1.32 cfs @ 7.98 hrs, Volume= 0.454 af
 Outflow = 1.32 cfs @ 7.98 hrs, Volume= 0.454 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 142R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 143R: 1

Hydrograph



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Summary for Reach 144R: 1

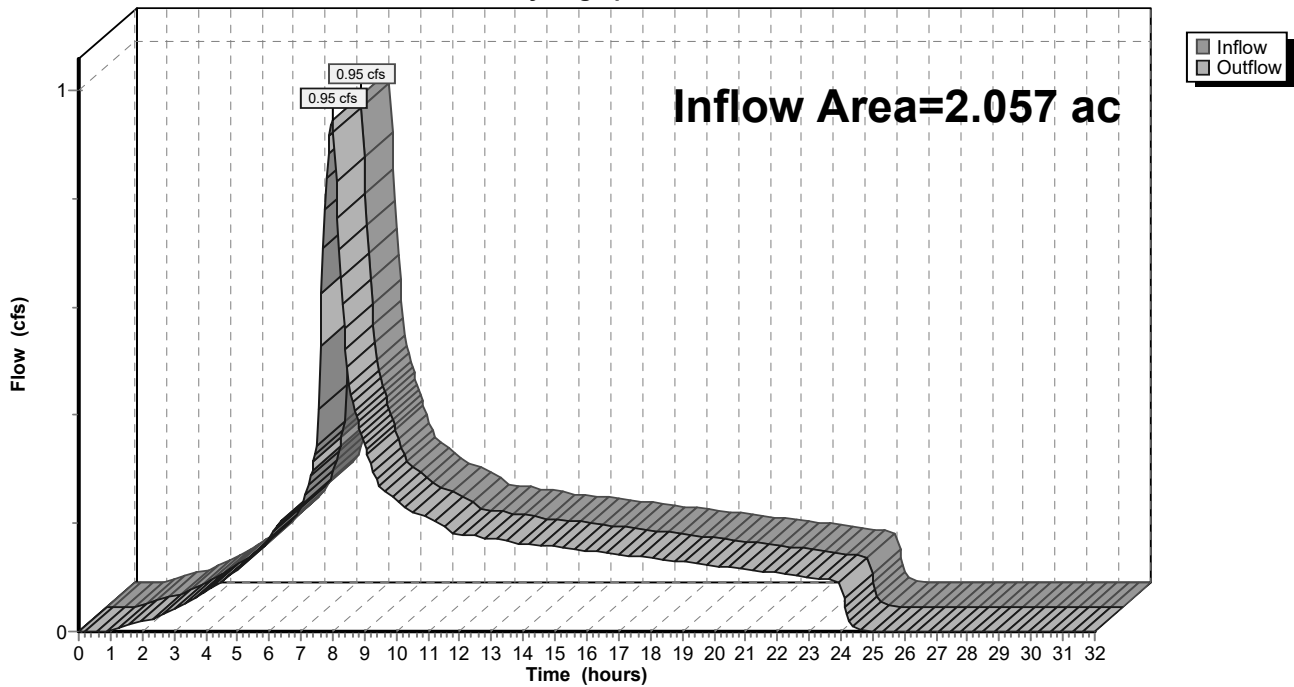
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 2.057 ac, 28.74% Impervious, Inflow Depth = 1.89" for 02-2 Year event
 Inflow = 0.95 cfs @ 7.98 hrs, Volume= 0.324 af
 Outflow = 0.95 cfs @ 7.98 hrs, Volume= 0.324 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 143R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 144R: 1

Hydrograph



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Type IA 24-hr 02-2 Year Rainfall=2.47"

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Summary for Reach 145R: 1

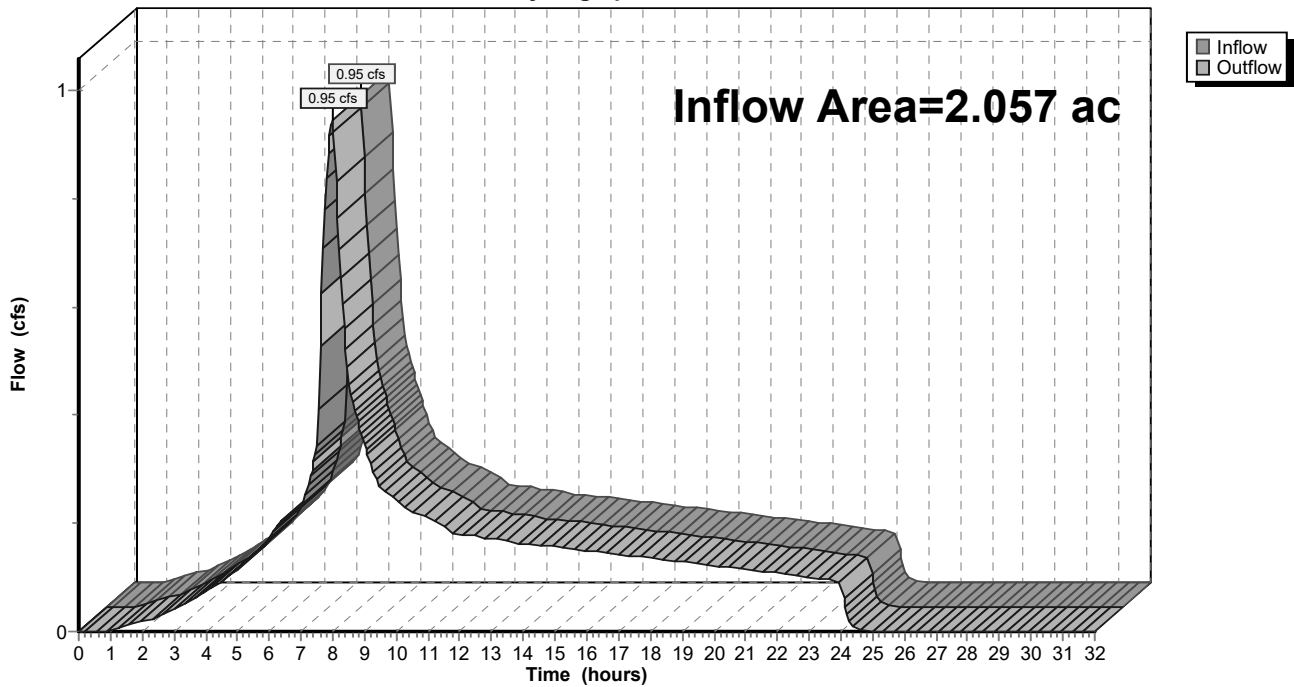
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 2.057 ac, 28.74% Impervious, Inflow Depth = 1.89" for 02-2 Year event
 Inflow = 0.95 cfs @ 7.98 hrs, Volume= 0.324 af
 Outflow = 0.95 cfs @ 7.98 hrs, Volume= 0.324 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 144R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 145R: 1

Hydrograph



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Summary for Reach 146R: 1

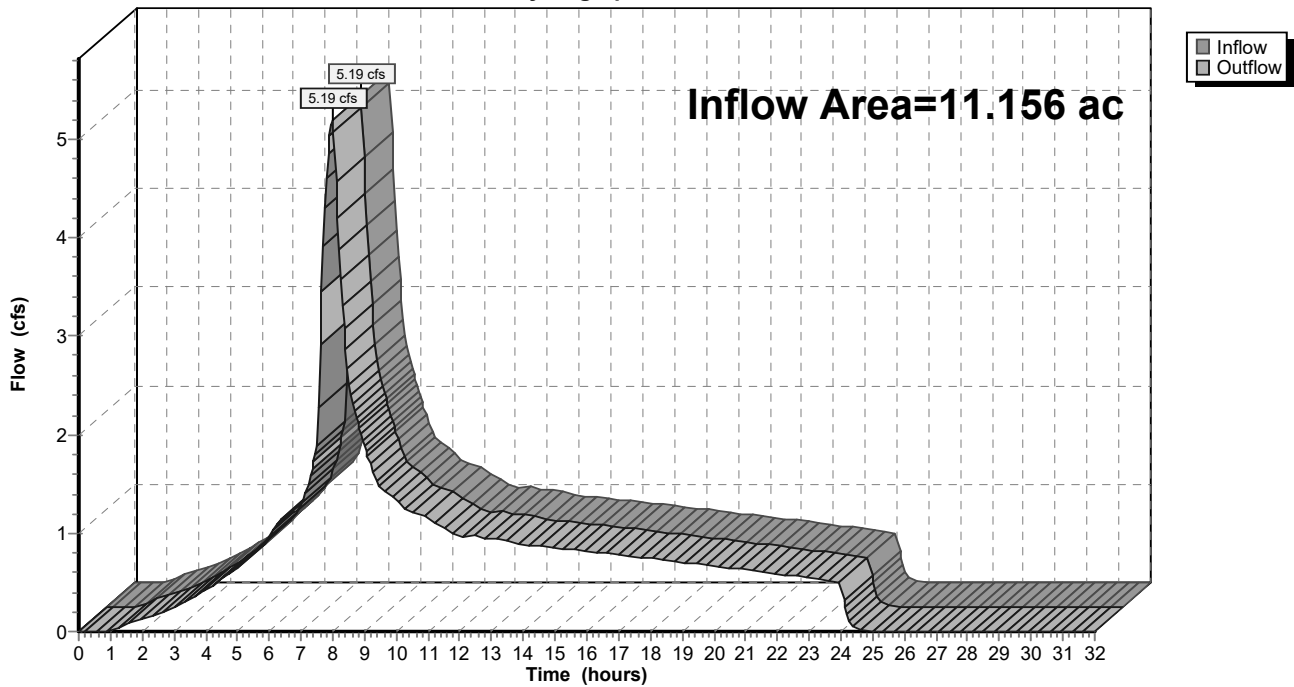
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 11.156 ac, 33.63% Impervious, Inflow Depth = 1.92" for 02-2 Year event
 Inflow = 5.19 cfs @ 7.98 hrs, Volume= 1.781 af
 Outflow = 5.19 cfs @ 7.98 hrs, Volume= 1.781 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 142R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 146R: 1

Hydrograph



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Summary for Reach 147R: 1

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

Inflow Area = 0.156 ac, 100.00% Impervious, Inflow Depth = 2.24" for 02-2 Year event

Inflow = 0.08 cfs @ 7.98 hrs, Volume= 0.029 af

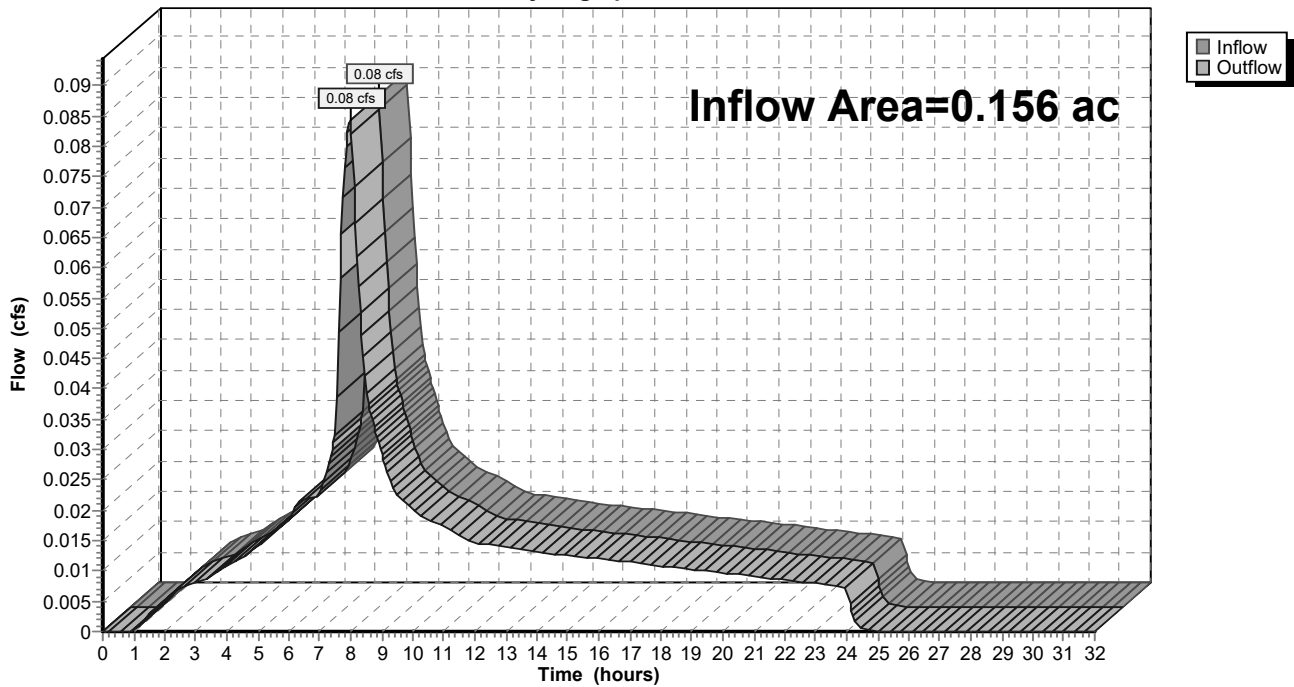
Outflow = 0.08 cfs @ 7.98 hrs, Volume= 0.029 af, Atten= 0%, Lag= 0.0 min

Routed to Reach 146R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 147R: 1

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 02-2 Year Rainfall=2.47"

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Summary for Reach 148R: 1

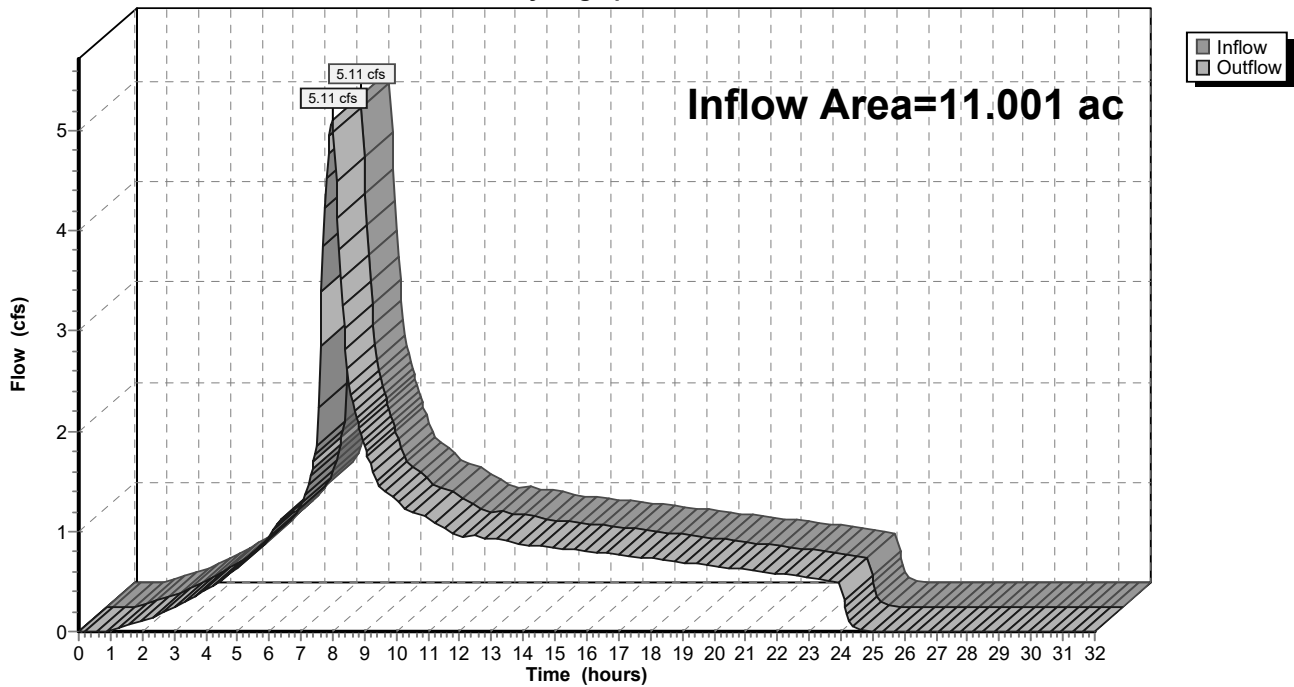
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 11.001 ac, 32.69% Impervious, Inflow Depth = 1.91" for 02-2 Year event
 Inflow = 5.11 cfs @ 7.98 hrs, Volume= 1.752 af
 Outflow = 5.11 cfs @ 7.98 hrs, Volume= 1.752 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 146R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 148R: 1

Hydrograph



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Summary for Reach 149R: 1

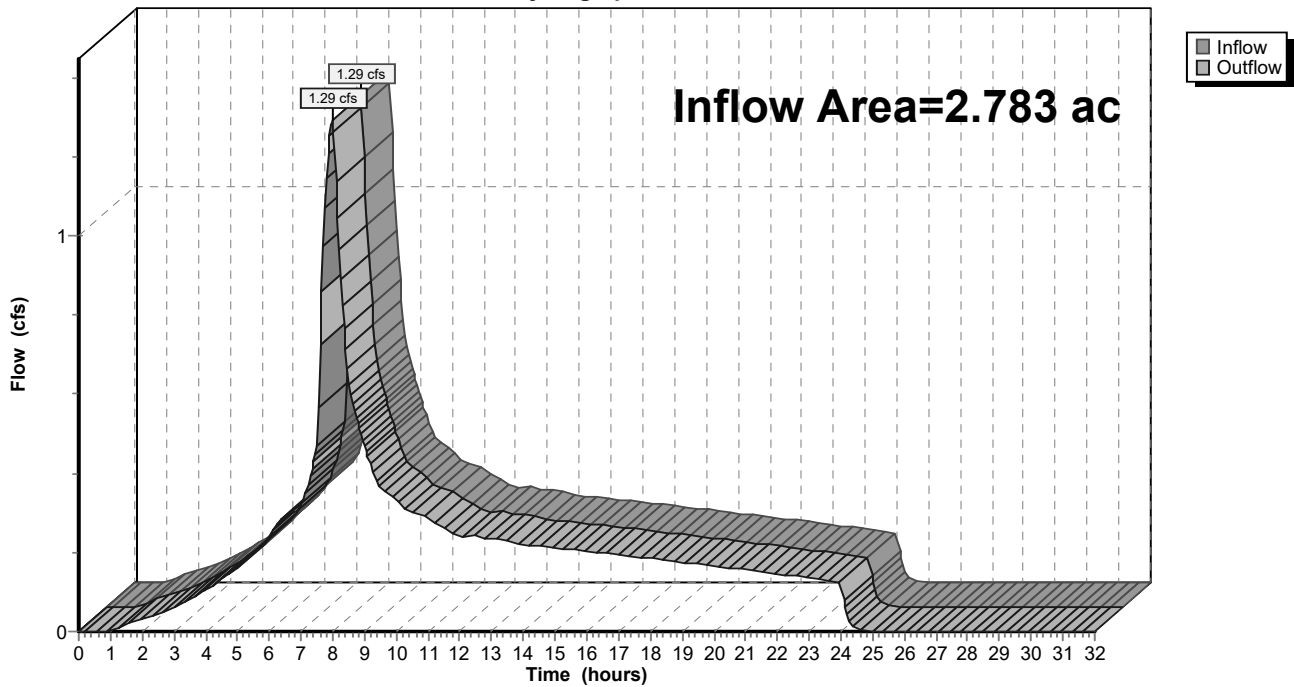
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 2.783 ac, 33.49% Impervious, Inflow Depth = 1.92" for 02-2 Year event
 Inflow = 1.29 cfs @ 7.98 hrs, Volume= 0.444 af
 Outflow = 1.29 cfs @ 7.98 hrs, Volume= 0.444 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 148R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 149R: 1

Hydrograph



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Summary for Reach 150R: 1

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

Inflow Area = 1.895 ac, 31.51% Impervious, Inflow Depth = 1.91" for 02-2 Year event

Inflow = 0.88 cfs @ 7.98 hrs, Volume= 0.301 af

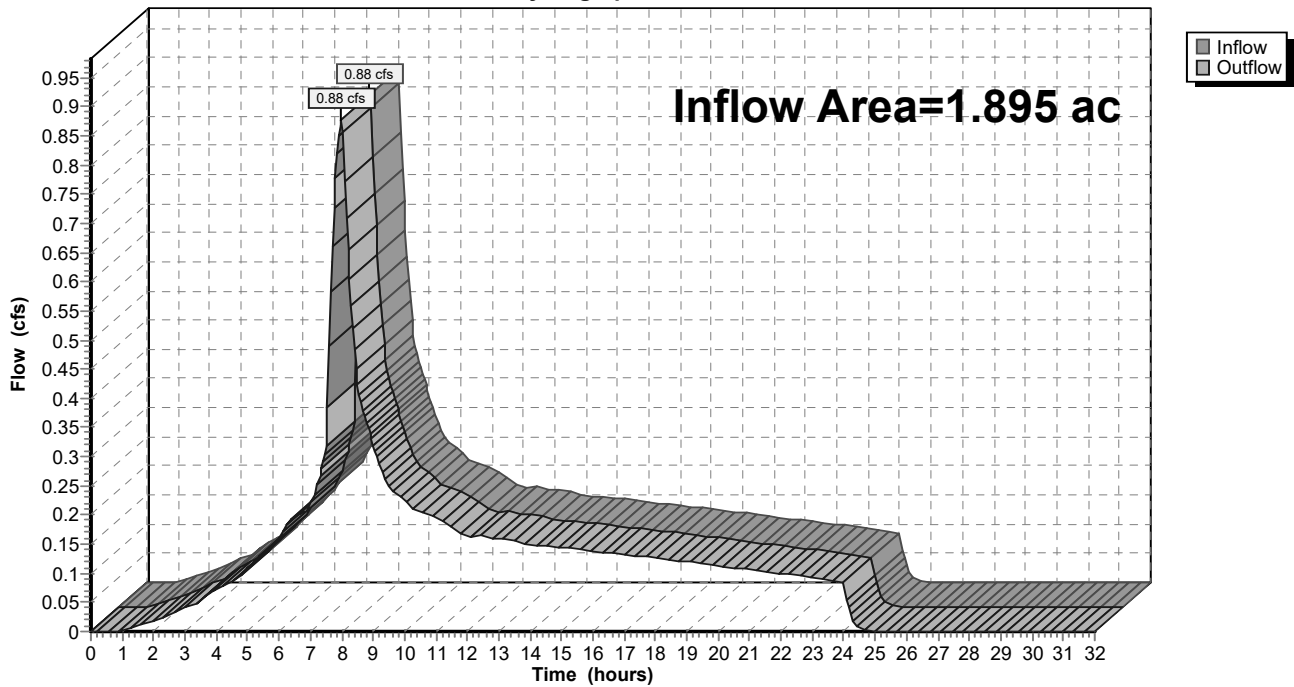
Outflow = 0.88 cfs @ 7.98 hrs, Volume= 0.301 af, Atten= 0%, Lag= 0.0 min

Routed to Reach 149R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 150R: 1

Hydrograph



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Summary for Reach 151R: 1

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

Inflow Area = 1.428 ac, 41.79% Impervious, Inflow Depth = 1.96" for 02-2 Year event

Inflow = 0.68 cfs @ 7.98 hrs, Volume= 0.233 af

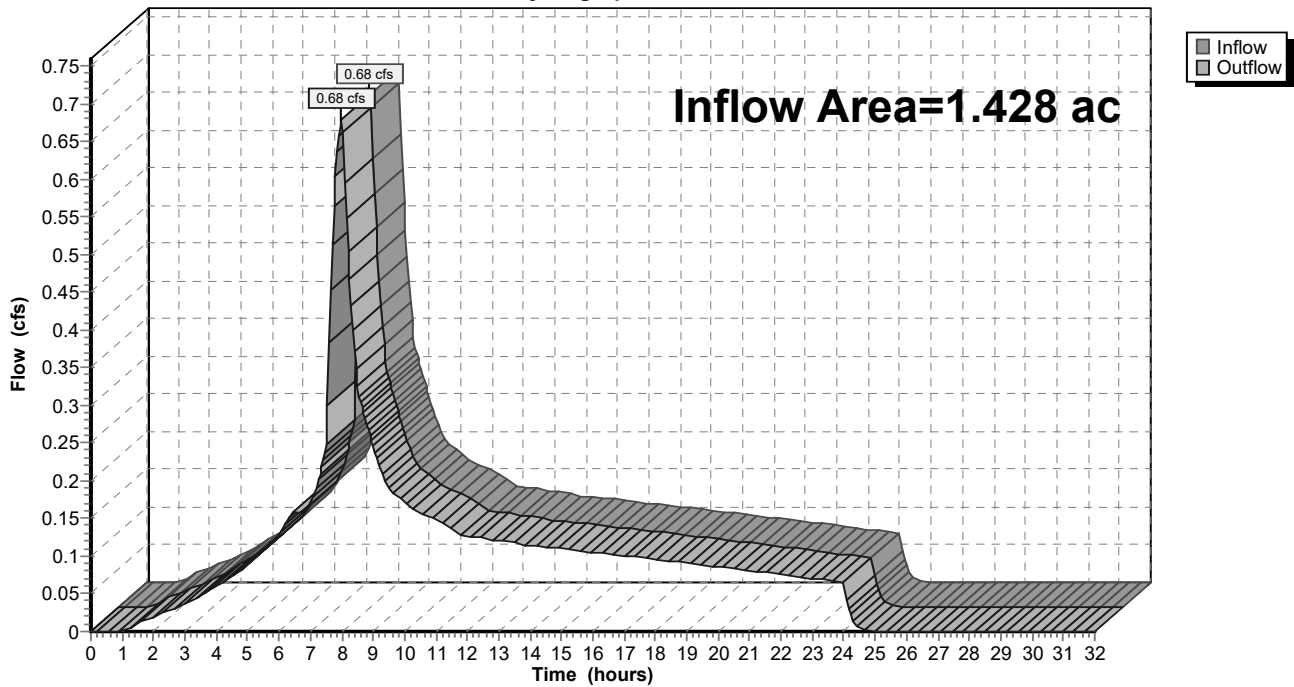
Outflow = 0.68 cfs @ 7.98 hrs, Volume= 0.233 af, Atten= 0%, Lag= 0.0 min

Routed to Reach 150R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 151R: 1

Hydrograph



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Summary for Reach 152R: 1

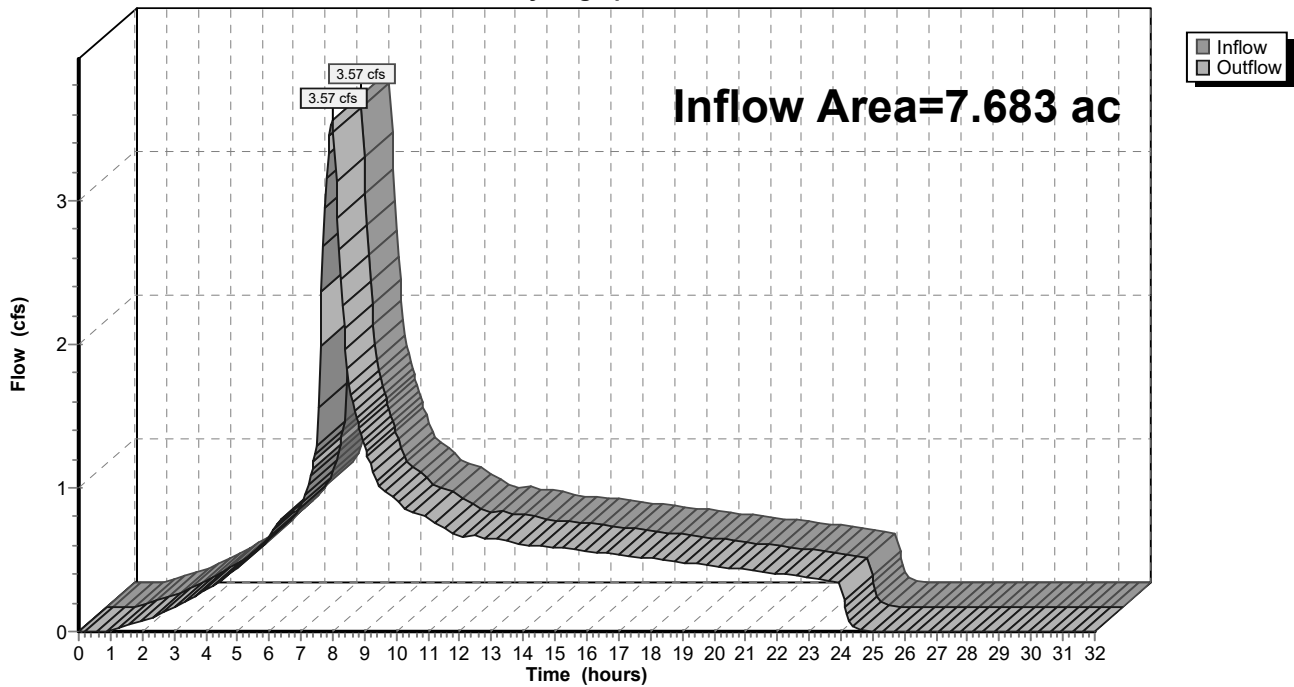
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 7.683 ac, 32.64% Impervious, Inflow Depth = 1.91" for 02-2 Year event
 Inflow = 3.57 cfs @ 7.98 hrs, Volume= 1.224 af
 Outflow = 3.57 cfs @ 7.98 hrs, Volume= 1.224 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 148R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 152R: 1

Hydrograph



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Summary for Reach 153R: 1

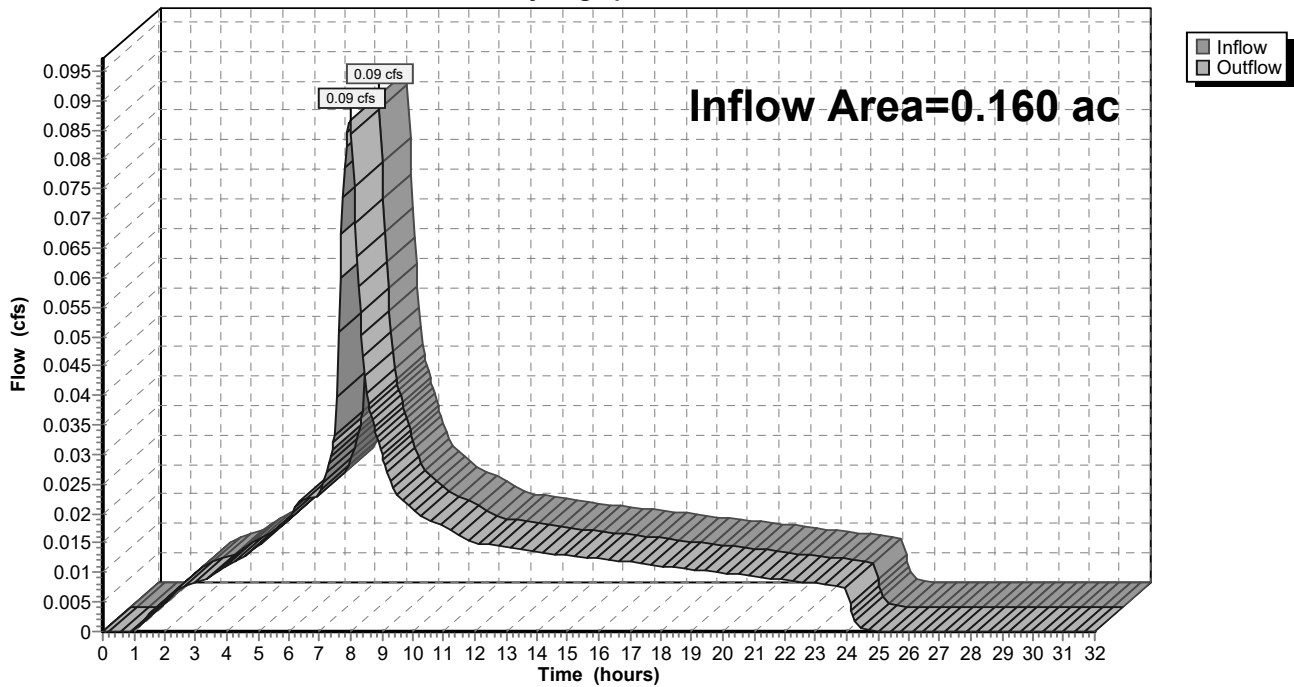
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.160 ac, 100.00% Impervious, Inflow Depth = 2.24" for 02-2 Year event
 Inflow = 0.09 cfs @ 7.98 hrs, Volume= 0.030 af
 Outflow = 0.09 cfs @ 7.98 hrs, Volume= 0.030 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 152R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 153R: 1

Hydrograph



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Summary for Reach 154R: 1

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

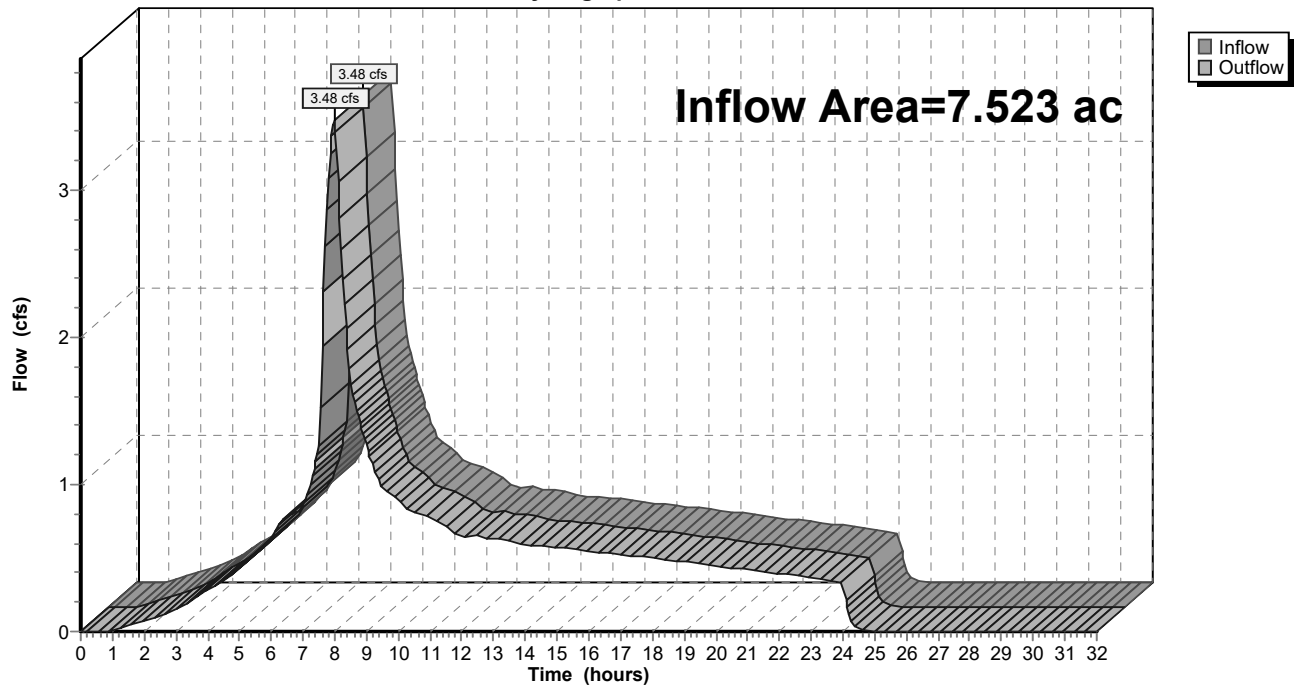
Inflow Area = 7.523 ac, 31.20% Impervious, Inflow Depth = 1.90" for 02-2 Year event

Inflow = 3.48 cfs @ 7.98 hrs, Volume= 1.194 af

Outflow = 3.48 cfs @ 7.98 hrs, Volume= 1.194 af, Atten= 0%, Lag= 0.0 min

Routed to Reach 152R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 154R: 1**Hydrograph**

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Summary for Reach 155R: 1

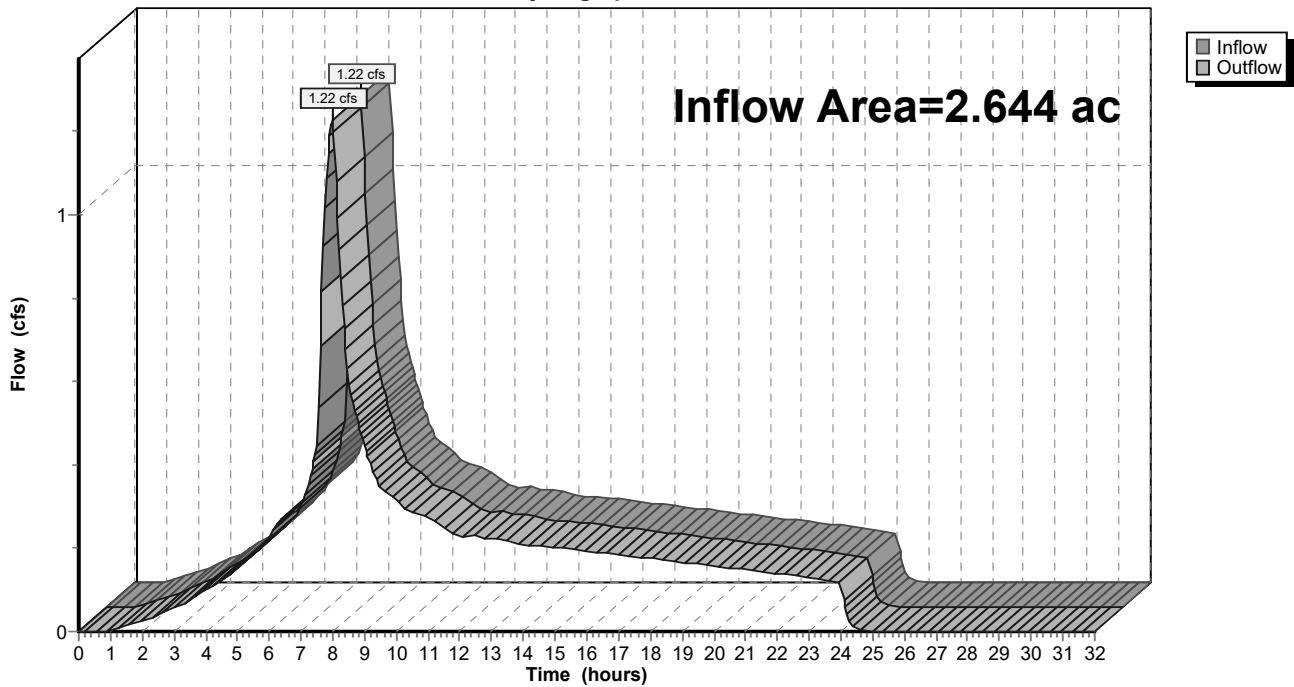
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 2.644 ac, 31.72% Impervious, Inflow Depth = 1.91" for 02-2 Year event
 Inflow = 1.22 cfs @ 7.98 hrs, Volume= 0.420 af
 Outflow = 1.22 cfs @ 7.98 hrs, Volume= 0.420 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 154R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 155R: 1

Hydrograph



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Summary for Reach 158R: 1

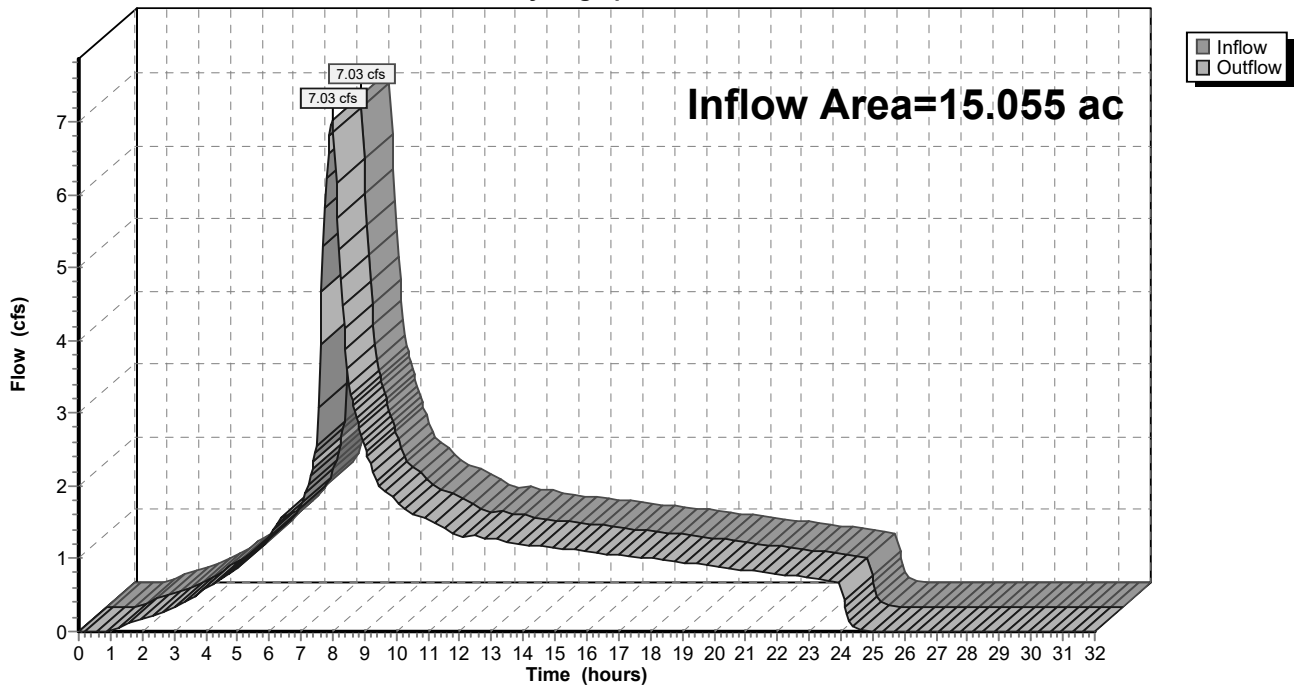
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 15.055 ac, 35.08% Impervious, Inflow Depth = 1.92" for 02-2 Year event
 Inflow = 7.03 cfs @ 7.98 hrs, Volume= 2.413 af
 Outflow = 7.03 cfs @ 7.98 hrs, Volume= 2.413 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 134R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 158R: 1

Hydrograph



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Summary for Reach 159R: 1

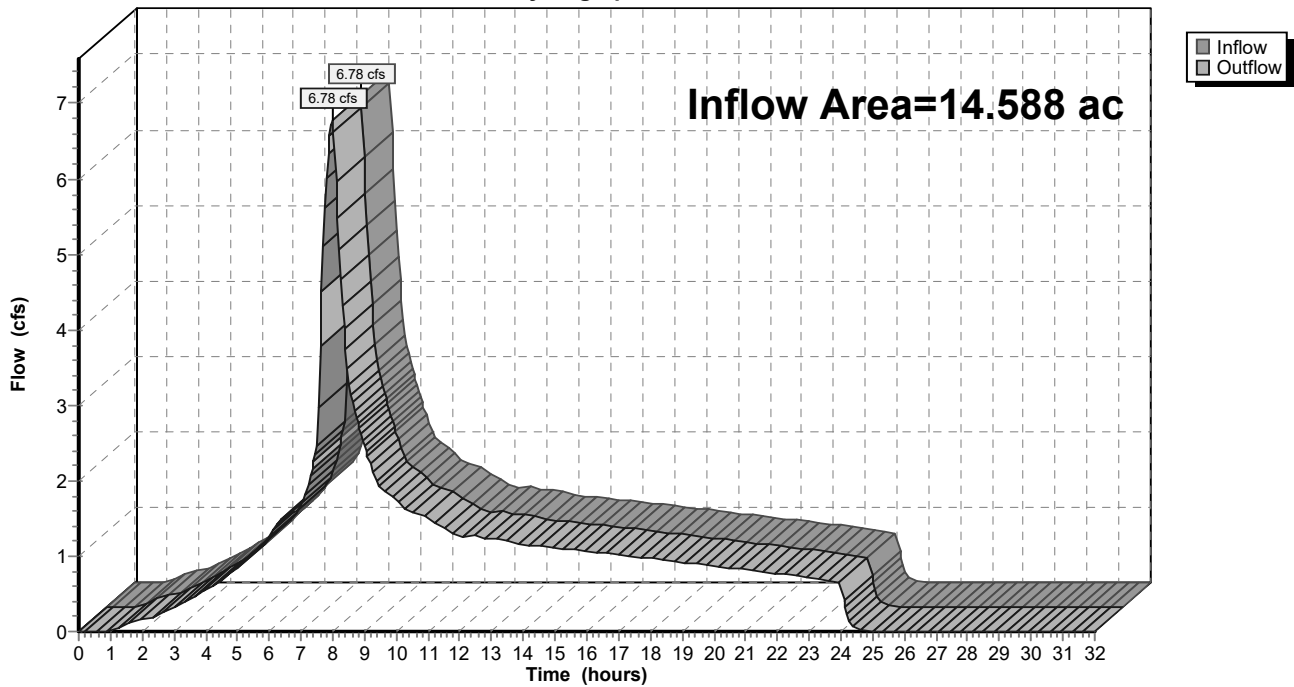
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 14.588 ac, 33.00% Impervious, Inflow Depth = 1.91" for 02-2 Year event
 Inflow = 6.78 cfs @ 7.98 hrs, Volume= 2.325 af
 Outflow = 6.78 cfs @ 7.98 hrs, Volume= 2.325 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 139R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 159R: 1

Hydrograph



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Summary for Reach 160R: 1

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

Inflow Area = 1.835 ac, 29.73% Impervious, Inflow Depth = 1.90" for 02-2 Year event

Inflow = 0.85 cfs @ 7.98 hrs, Volume= 0.290 af

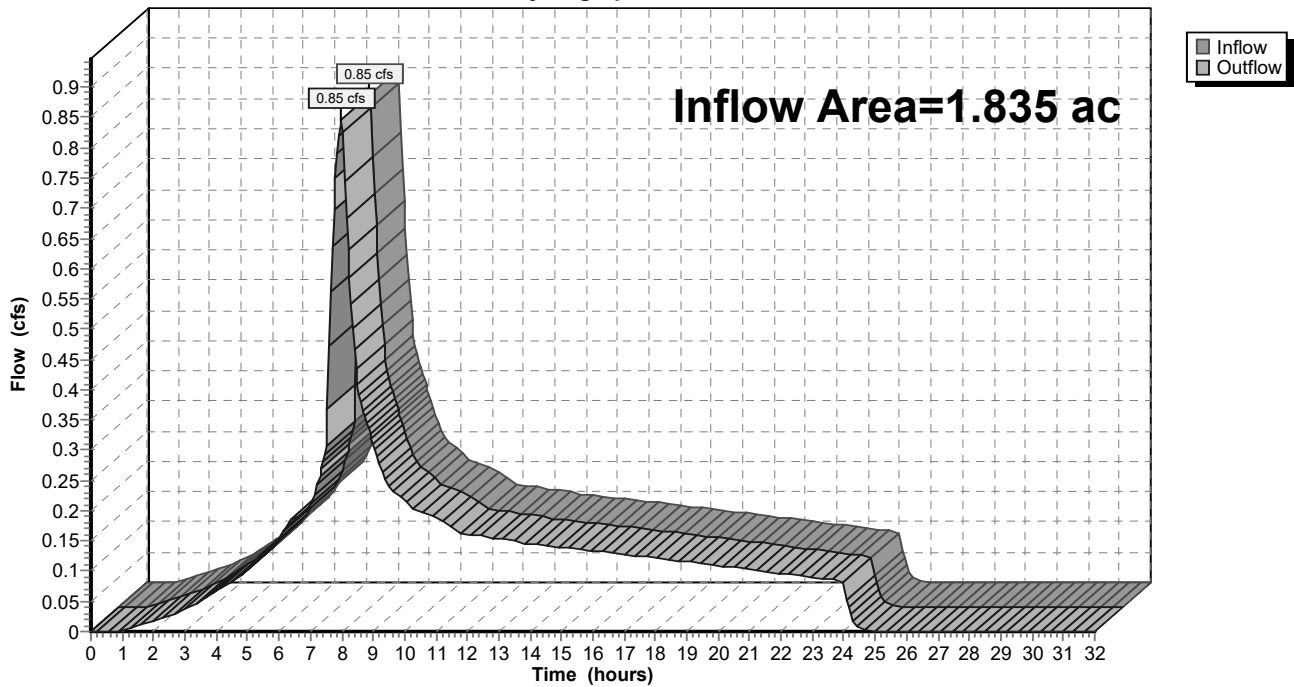
Outflow = 0.85 cfs @ 7.98 hrs, Volume= 0.290 af, Atten= 0%, Lag= 0.0 min

Routed to Reach 155R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 160R: 1

Hydrograph



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Summary for Reach 162R: 1

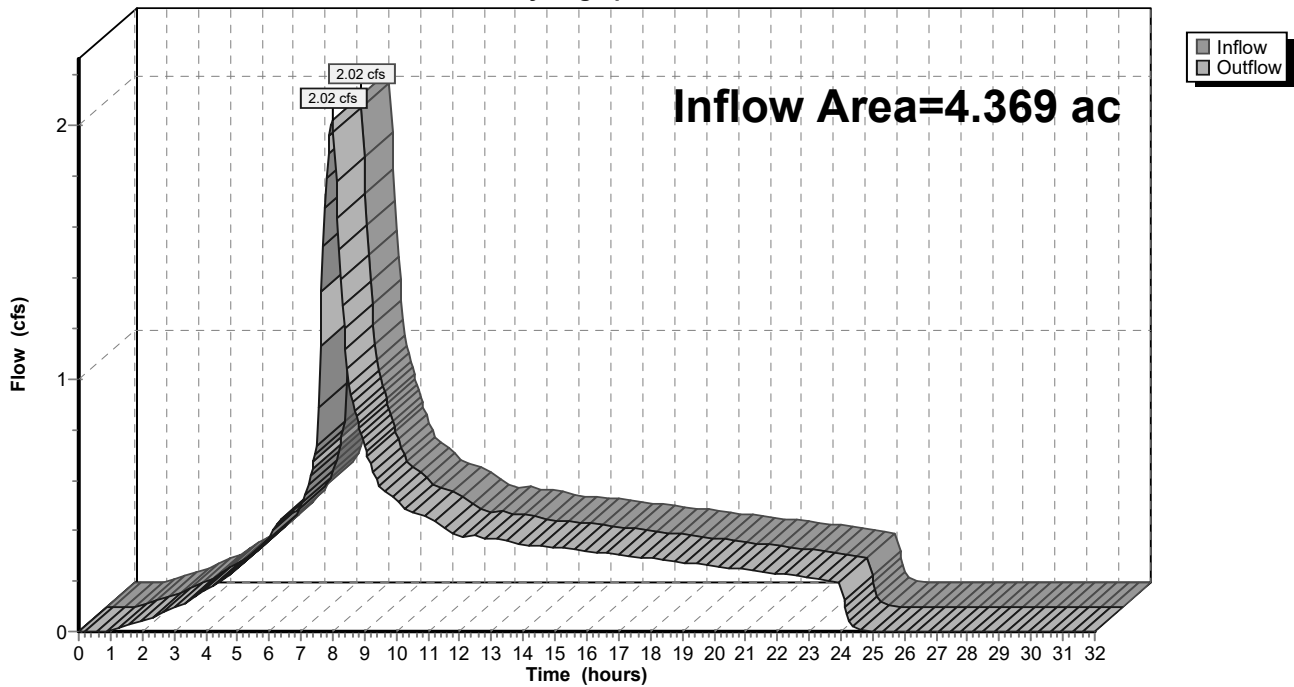
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 4.369 ac, 31.81% Impervious, Inflow Depth = 1.91" for 02-2 Year event
 Inflow = 2.02 cfs @ 7.98 hrs, Volume= 0.694 af
 Outflow = 2.02 cfs @ 7.98 hrs, Volume= 0.694 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 154R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 162R: 1

Hydrograph



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Summary for Reach 163R: 1

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

Inflow Area = 4.266 ac, 30.15% Impervious, Inflow Depth = 1.90" for 02-2 Year event

Inflow = 1.97 cfs @ 7.98 hrs, Volume= 0.675 af

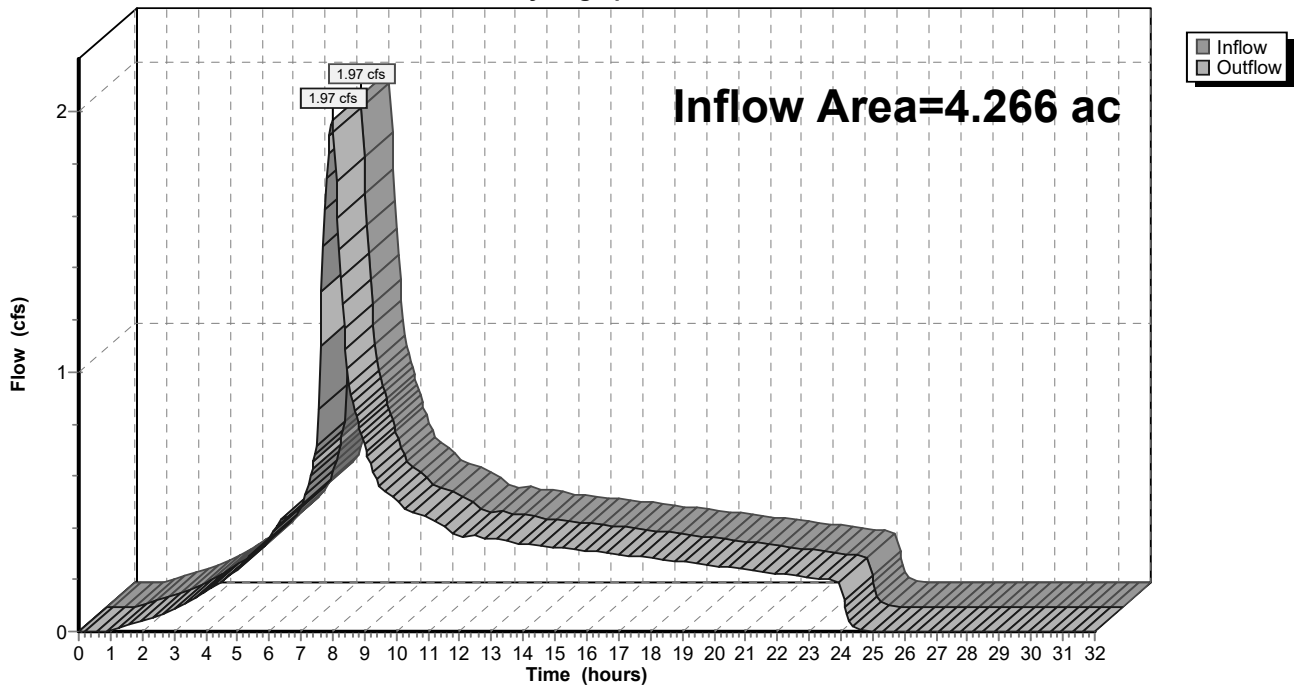
Outflow = 1.97 cfs @ 7.98 hrs, Volume= 0.675 af, Atten= 0%, Lag= 0.0 min

Routed to Reach 162R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 163R: 1

Hydrograph



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Summary for Reach 165R: 1

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

Inflow Area = 1.532 ac, 27.64% Impervious, Inflow Depth = 1.89" for 02-2 Year event

Inflow = 0.70 cfs @ 7.98 hrs, Volume= 0.241 af

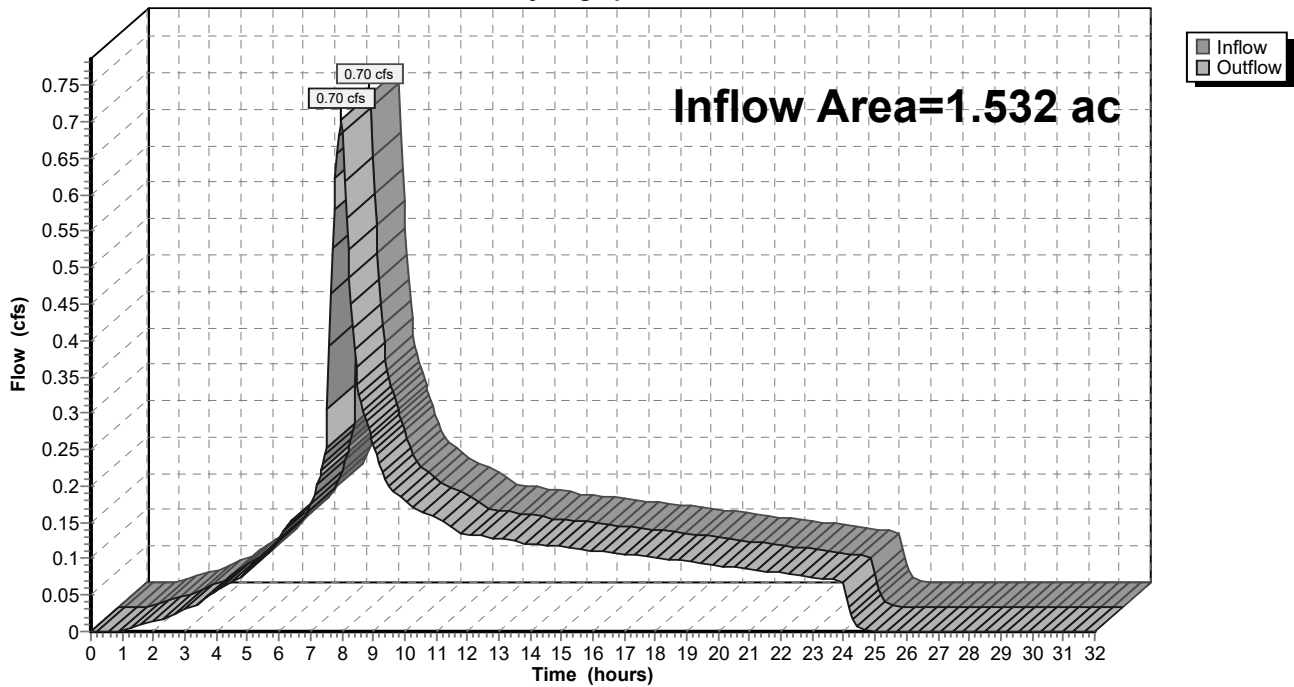
Outflow = 0.70 cfs @ 7.98 hrs, Volume= 0.241 af, Atten= 0%, Lag= 0.0 min

Routed to Reach 163R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 165R: 1

Hydrograph



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Summary for Reach 166R: Basin Future

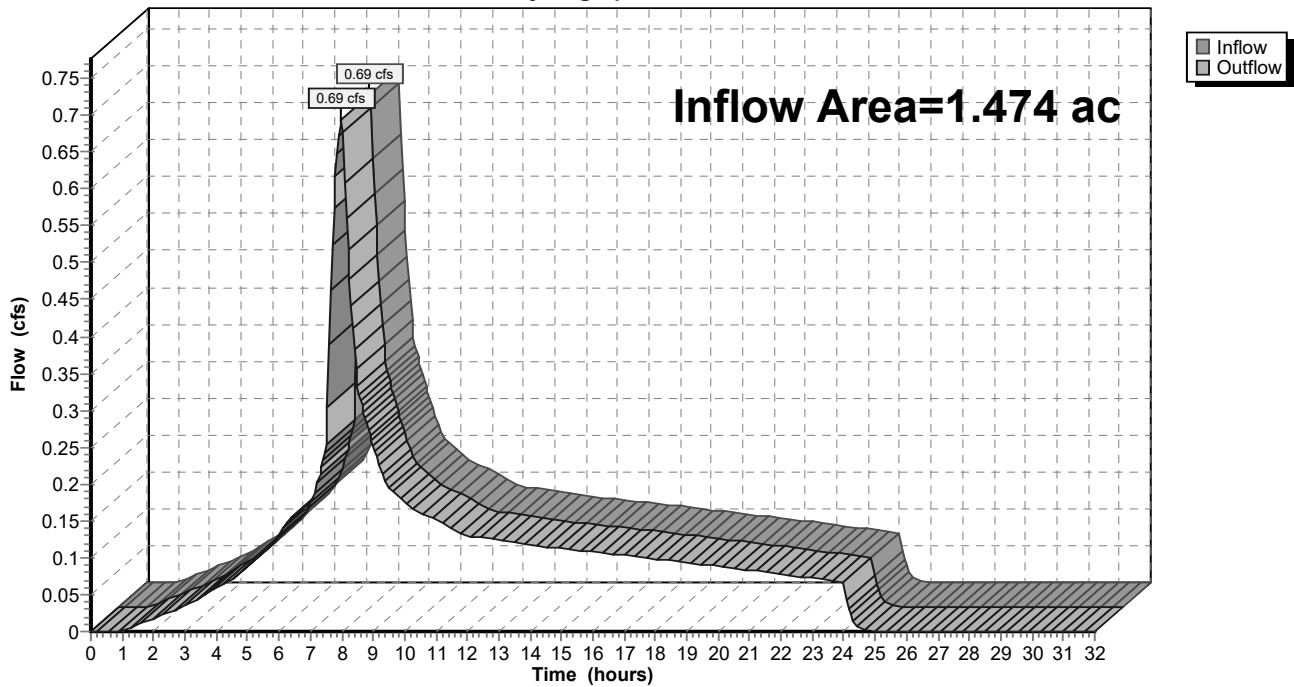
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.474 ac, 37.85% Impervious, Inflow Depth = 1.94" for 02-2 Year event
 Inflow = 0.69 cfs @ 7.98 hrs, Volume= 0.238 af
 Outflow = 0.69 cfs @ 7.98 hrs, Volume= 0.238 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 163R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 166R: Basin Future

Hydrograph



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Summary for Pond 54P: Stormwater Swale 2

[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=66)

Inflow Area = 0.082 ac, 100.00% Impervious, Inflow Depth = 2.24" for 02-2 Year event
 Inflow = 0.04 cfs @ 7.98 hrs, Volume= 0.015 af
 Outflow = 0.04 cfs @ 7.99 hrs, Volume= 0.015 af, Atten= 0%, Lag= 0.6 min
 Primary = 0.04 cfs @ 7.99 hrs, Volume= 0.015 af
 Routed to Reach 58R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Peak Elev= 222.39' @ 7.99 hrs Surf.Area= 185 sf Storage= 31 cf
 Flood Elev= 223.30' Surf.Area= 192 sf Storage= 88 cf

Plug-Flow detention time= 44.2 min calculated for 0.015 af (100% of inflow)
 Center-of-Mass det. time= 44.3 min (723.3 - 679.0)

Volume	Invert	Avail.Storage	Storage Description
#1	222.30'	63 cf	Open Storage (Irregular) Listed below (Recalc)
#2	220.80'	10 cf	Imported Soil (Irregular) Listed below (Recalc) 101 cf Overall x 10.0% Voids
#3	220.05'	15 cf	Rock Chamber (Irregular) Listed below (Recalc) 44 cf Overall x 35.0% Voids
		88 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
222.30	59	33.0	0	0	59
223.30	67	34.0	63	63	93

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
220.80	67	34.0	0	0	67
222.30	67	34.0	101	101	118

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
220.05	58	33.0	0	0	58
220.80	58	33.0	44	44	83

Device	Routing	Invert	Outlet Devices
#1	Primary	220.05'	2.000 in/hr Perf Pipes over Surface area
#2	Primary	223.05'	4.0" Horiz. 4" Overflow Pipe C= 0.600 Limited to weir flow at low heads
#3	Primary	222.30'	10.0" Vert. 10" Outflow Pipe C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.04 cfs @ 7.99 hrs HW=222.39' TW=0.00' (Dynamic Tailwater)

- 1=Perf Pipes (Exfiltration Controls 0.01 cfs)
- 2=4" Overflow Pipe (Controls 0.00 cfs)
- 3=10" Outflow Pipe (Orifice Controls 0.04 cfs @ 1.05 fps)

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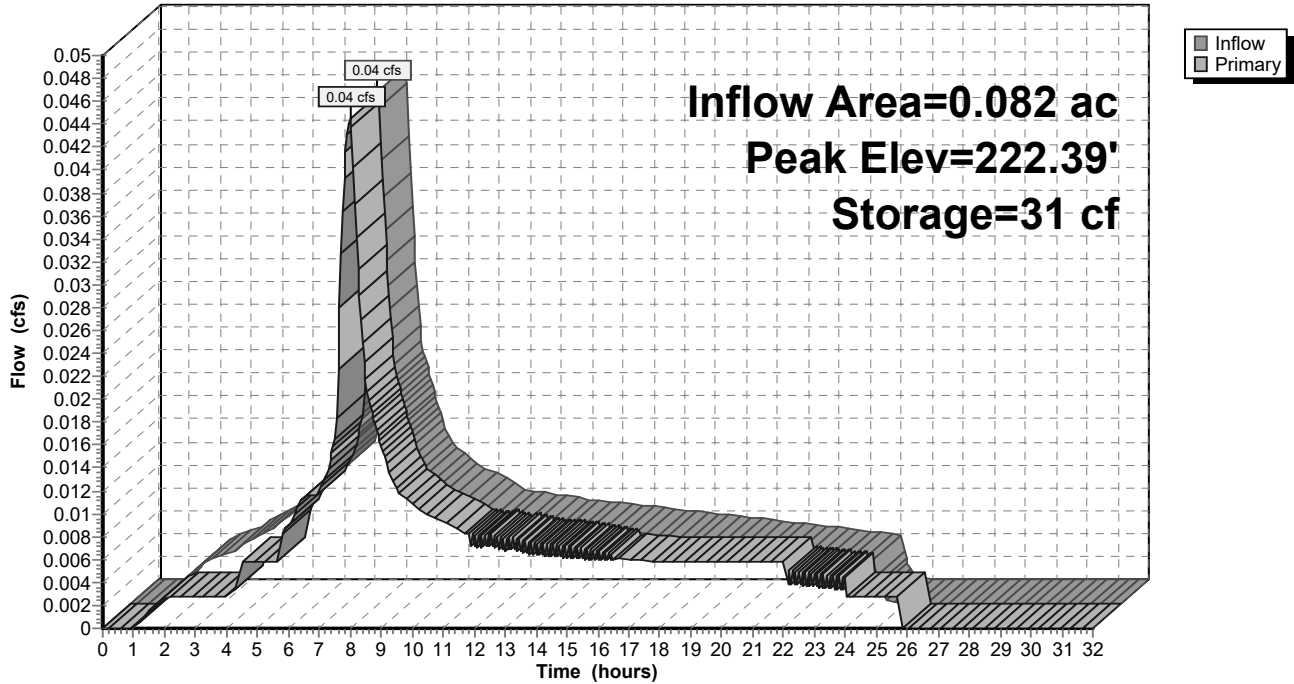
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Pond 54P: Stormwater Swale 2

Hydrograph



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Summary for Pond 60P: Stormwater Swale 1

[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=21)

Inflow Area = 0.085 ac, 100.00% Impervious, Inflow Depth = 2.24" for 02-2 Year event
 Inflow = 0.05 cfs @ 7.98 hrs, Volume= 0.016 af
 Outflow = 0.05 cfs @ 7.99 hrs, Volume= 0.016 af, Atten= 1%, Lag= 0.6 min
 Primary = 0.05 cfs @ 7.99 hrs, Volume= 0.016 af
 Routed to Reach 58R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Peak Elev= 222.05' @ 7.99 hrs Surf.Area= 195 sf Storage= 33 cf
 Flood Elev= 222.95' Surf.Area= 204 sf Storage= 93 cf

Plug-Flow detention time= 44.4 min calculated for 0.016 af (100% of inflow)
 Center-of-Mass det. time= 44.5 min (723.5 - 679.0)

Volume	Invert	Avail.Storage	Storage Description
#1	221.95'	67 cf	Open Storage (Irregular) Listed below (Recalc)
#2	220.45'	11 cf	Imported Soil (Irregular) Listed below (Recalc) 108 cf Overall x 10.0% Voids
#3	219.70'	16 cf	Rock Chamber (Irregular) Listed below (Recalc) 45 cf Overall x 35.0% Voids
		93 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
221.95	62	34.0	0	0	62
222.95	72	36.0	67	67	99

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
220.45	72	36.0	0	0	72
221.95	72	36.0	108	108	126

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
219.70	60	34.0	0	0	60
220.45	60	34.0	45	45	86

Device	Routing	Invert	Outlet Devices
#1	Primary	219.70'	2.000 in/hr Perf Pipes over Surface area
#2	Primary	222.70'	4.0" Horiz. 4" Overflow Pipe C= 0.600 Limited to weir flow at low heads
#3	Primary	221.95'	10.0" Vert. 10" Outflow Pipe C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.05 cfs @ 7.99 hrs HW=222.05' TW=0.00' (Dynamic Tailwater)

- 1=Perf Pipes (Exfiltration Controls 0.01 cfs)
- 2=4" Overflow Pipe (Controls 0.00 cfs)
- 3=10" Outflow Pipe (Orifice Controls 0.04 cfs @ 1.06 fps)

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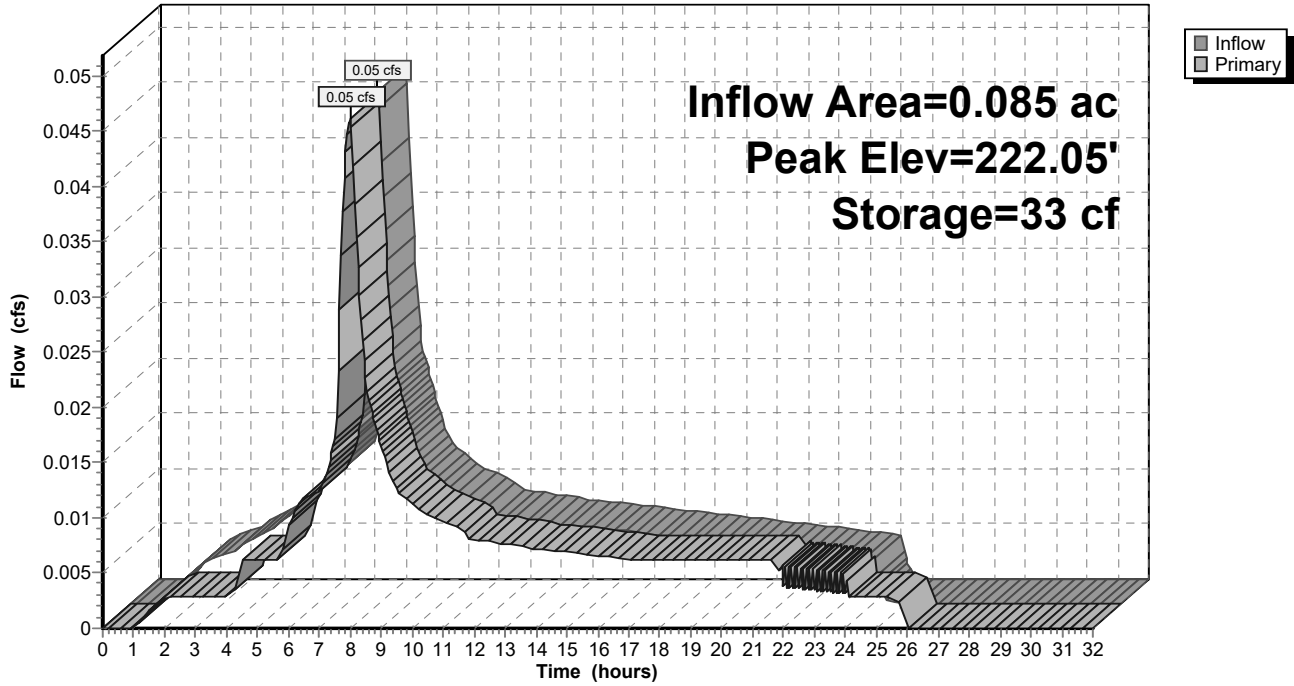
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Pond 60P: Stormwater Swale 1

Hydrograph



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Summary for Pond 63P: Detention Pond

[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=16)

Inflow Area = 23.038 ac, 36.38% Impervious, Inflow Depth = 1.93" for 02-2 Year event
 Inflow = 10.80 cfs @ 7.98 hrs, Volume= 3.704 af
 Outflow = 3.76 cfs @ 9.07 hrs, Volume= 3.703 af, Atten= 65%, Lag= 65.1 min
 Primary = 3.76 cfs @ 9.07 hrs, Volume= 3.703 af
 Routed to Reach 85R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Peak Elev= 222.87' @ 9.07 hrs Surf.Area= 44,950 sf Storage= 28,382 cf
 Flood Elev= 225.50' Surf.Area= 48,838 sf Storage= 80,897 cf

Plug-Flow detention time= 88.4 min calculated for 3.697 af (100% of inflow)
 Center-of-Mass det. time= 88.4 min (804.8 - 716.3)

Volume	Invert	Avail.Storage	Storage Description
#1	221.50'	75,859 cf	Open Storage (Irregular) Listed below (Recalc)
#2	220.00'	3,288 cf	Growing Medium (Irregular) Listed below (Recalc) 32,879 cf Overall x 10.0% Voids
#3	219.00'	1,750 cf	Rock Chamber (Prismatic) Listed below (Recalc) 5,000 cf Overall x 35.0% Voids
		80,897 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
221.50	16,108	696.8	0	0	16,108
222.50	17,511	717.0	16,805	16,805	18,488
223.50	18,943	738.5	18,222	35,027	21,082
224.50	20,410	754.7	19,672	54,699	23,147
225.50	21,919	770.9	21,160	75,859	25,257

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
220.00	21,919	770.9	0	0	21,919
221.50	21,919	770.9	32,879	32,879	23,075

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
219.00	5,000	0	0
220.00	5,000	5,000	5,000

9-6-23 HydroCAD DOM

Type IA 24-hr 02-2 Year Rainfall=2.47"

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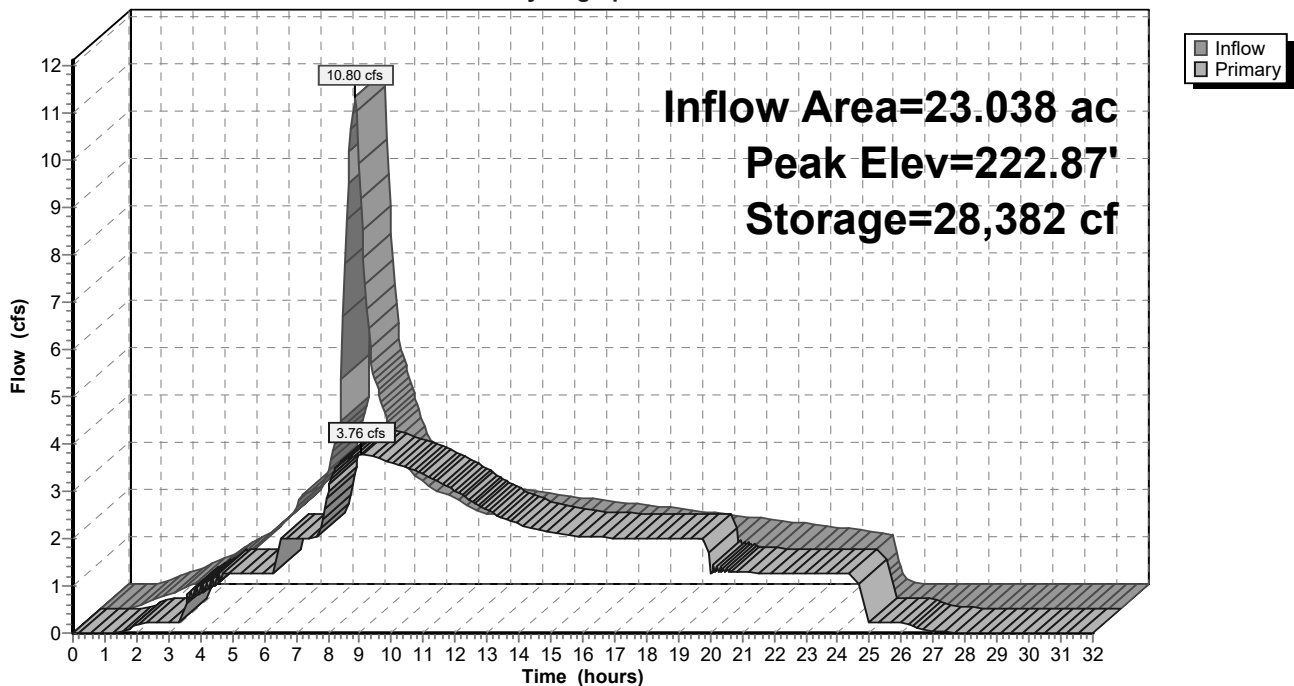
Device	Routing	Invert	Outlet Devices
#1	Primary	219.00'	24.0" Round 24" Pipe L= 100.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 219.00' / 218.80' S= 0.0020' /' Cc= 0.900 n= 0.010, Flow Area= 3.14 sf
#2	Device 1	219.00'	2.000 in/hr 4" Perf Pipes over Surface area
#3	Device 1	221.85'	6.0" Vert. 2x6" Orifice X 2.00 C= 0.600 Limited to weir flow at low heads
#4	Device 1	222.78'	6.0" Vert. 6" Orifice C= 0.600 Limited to weir flow at low heads
#5	Device 1	222.95'	6.0" Vert. 6" Orifice C= 0.600 Limited to weir flow at low heads
#6	Device 1	223.25'	4.0" Vert. 4" Orifice C= 0.600 Limited to weir flow at low heads
#7	Device 1	223.55'	4.0" Vert. 4" Orifice C= 0.600 Limited to weir flow at low heads
#8	Device 1	223.77'	4.0" Vert. 2x4" Orifice X 2.00 C= 0.600 Limited to weir flow at low heads
#9	Device 1	224.35'	48.0" x 48.0" Horiz. 48" Overflow C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=3.76 cfs @ 9.07 hrs HW=222.87' TW=0.00' (Dynamic Tailwater)

- 1=24" Pipe (Passes 3.76 cfs of 22.60 cfs potential flow)
- 2=4" Perf Pipes (Exfiltration Controls 2.08 cfs)
- 3=2x6" Orifice (Orifice Controls 1.66 cfs @ 4.22 fps)
- 4=6" Orifice (Orifice Controls 0.02 cfs @ 1.01 fps)
- 5=6" Orifice (Controls 0.00 cfs)
- 6=4" Orifice (Controls 0.00 cfs)
- 7=4" Orifice (Controls 0.00 cfs)
- 8=2x4" Orifice (Controls 0.00 cfs)
- 9=48" Overflow (Controls 0.00 cfs)

Pond 63P: Detention Pond

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 05-5 Year Rainfall=2.86"

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Time span=0.00-32.00 hrs, dt=0.05 hrs, 641 points
 Runoff by SBUH method, Split Pervious/Imperv.
 Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment64S: Home Basin 20	Runoff Area=9,940 sf 0.00% Impervious Runoff Depth=2.12" Tc=10.0 min CN=93/0 Runoff=0.12 cfs 0.040 af
Subcatchment65S: Single Pond Existing	Runoff Area=23.038 ac 0.00% Impervious Runoff Depth>1.77" Flow Length=1,526' Slope=0.0076 '/' Tc=73.0 min CN=89/0 Runoff=4.82 cfs 3.405 af
Subcatchment67S: Home Basin 19	Runoff Area=17,197 sf 0.00% Impervious Runoff Depth=2.12" Tc=10.0 min CN=93/0 Runoff=0.21 cfs 0.070 af
Subcatchment68S: Home Basin 12	Runoff Area=18,133 sf 0.00% Impervious Runoff Depth=2.12" Tc=10.0 min CN=93/0 Runoff=0.22 cfs 0.074 af
Subcatchment69S: Home Basin 17	Runoff Area=16,661 sf 0.00% Impervious Runoff Depth=2.12" Tc=10.0 min CN=93/0 Runoff=0.20 cfs 0.068 af
Subcatchment70S: Home Basin 18	Runoff Area=11,596 sf 0.00% Impervious Runoff Depth=2.12" Tc=10.0 min CN=93/0 Runoff=0.14 cfs 0.047 af
Subcatchment71S: Home Basin 14	Runoff Area=16,444 sf 0.00% Impervious Runoff Depth=2.12" Tc=10.0 min CN=93/0 Runoff=0.20 cfs 0.067 af
Subcatchment72S: Home Basin 16	Runoff Area=20,310 sf 0.00% Impervious Runoff Depth=2.12" Tc=10.0 min CN=93/0 Runoff=0.24 cfs 0.082 af
Subcatchment73S: Home Basin 13	Runoff Area=10,807 sf 0.00% Impervious Runoff Depth=2.12" Tc=10.0 min CN=93/0 Runoff=0.13 cfs 0.044 af
Subcatchment74S: Swale Existing	Runoff Area=0.168 ac 0.00% Impervious Runoff Depth=1.77" Flow Length=105' Slope=0.0565 '/' Tc=10.0 min CN=89/0 Runoff=0.07 cfs 0.025 af
Subcatchment75S: Home Basin 11	Runoff Area=18,483 sf 0.00% Impervious Runoff Depth=2.12" Tc=10.0 min CN=93/0 Runoff=0.22 cfs 0.075 af
Subcatchment77S: Home Basin 15	Runoff Area=12,503 sf 0.00% Impervious Runoff Depth=2.12" Tc=10.0 min CN=93/0 Runoff=0.15 cfs 0.051 af
Subcatchment78S: Single Pond	Runoff Area=21,919 sf 100.00% Impervious Runoff Depth=2.63" Tc=0.0 min CN=0/98 Runoff=0.34 cfs 0.110 af
Subcatchment79S: Home Basin 30	Runoff Area=38,416 sf 0.00% Impervious Runoff Depth=2.12" Tc=10.0 min CN=93/0 Runoff=0.46 cfs 0.156 af
Subcatchment80S: Home Basin 10	Runoff Area=14,789 sf 0.00% Impervious Runoff Depth=2.12" Tc=10.0 min CN=93/0 Runoff=0.18 cfs 0.060 af
Subcatchment81S: Home Basin 9	Runoff Area=15,575 sf 0.00% Impervious Runoff Depth=2.12" Tc=10.0 min CN=93/0 Runoff=0.19 cfs 0.063 af

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Subcatchment82S: Home Basin 2	Runoff Area=20,667 sf 0.00% Impervious Runoff Depth=2.12" Tc=10.0 min CN=93/0 Runoff=0.25 cfs 0.084 af
Subcatchment83S: Home Basin 7	Runoff Area=17,032 sf 0.00% Impervious Runoff Depth=2.12" Tc=10.0 min CN=93/0 Runoff=0.20 cfs 0.069 af
Subcatchment84S: Home Basin 8	Runoff Area=11,668 sf 0.00% Impervious Runoff Depth=2.12" Tc=10.0 min CN=93/0 Runoff=0.14 cfs 0.047 af
Subcatchment85S: Home Basin 29	Runoff Area=25,118 sf 0.00% Impervious Runoff Depth=2.12" Tc=10.0 min CN=93/0 Runoff=0.30 cfs 0.102 af
Subcatchment86S: Home Basin 22	Runoff Area=16,159 sf 0.00% Impervious Runoff Depth=2.12" Tc=10.0 min CN=93/0 Runoff=0.19 cfs 0.066 af
Subcatchment87S: Home Basin 27	Runoff Area=24,839 sf 0.00% Impervious Runoff Depth=2.12" Tc=10.0 min CN=93/0 Runoff=0.30 cfs 0.101 af
Subcatchment88S: Home Basin 28	Runoff Area=25,318 sf 0.00% Impervious Runoff Depth=2.12" Tc=10.0 min CN=93/0 Runoff=0.30 cfs 0.103 af
Subcatchment89S: Home Basin 24	Runoff Area=20,676 sf 0.00% Impervious Runoff Depth=2.12" Tc=10.0 min CN=93/0 Runoff=0.25 cfs 0.084 af
Subcatchment90S: Home Basin 26	Runoff Area=14,135 sf 0.00% Impervious Runoff Depth=2.12" Tc=10.0 min CN=93/0 Runoff=0.17 cfs 0.057 af
Subcatchment91S: Home Basin 23	Runoff Area=12,271 sf 0.00% Impervious Runoff Depth=2.12" Tc=10.0 min CN=93/0 Runoff=0.15 cfs 0.050 af
Subcatchment92S: Home Basin 21	Runoff Area=27,019 sf 0.00% Impervious Runoff Depth=2.12" Tc=10.0 min CN=93/0 Runoff=0.32 cfs 0.110 af
Subcatchment93S: Home Basin 25	Runoff Area=17,012 sf 0.00% Impervious Runoff Depth=2.12" Tc=10.0 min CN=93/0 Runoff=0.20 cfs 0.069 af
Subcatchment94S: Home Basin 4	Runoff Area=19,535 sf 0.00% Impervious Runoff Depth=2.12" Tc=10.0 min CN=93/0 Runoff=0.23 cfs 0.079 af
Subcatchment95S: Home Basin 31	Runoff Area=24,883 sf 0.00% Impervious Runoff Depth=2.12" Tc=10.0 min CN=93/0 Runoff=0.30 cfs 0.101 af
Subcatchment96S: Basin 1	Runoff Area=15,045 sf 100.00% Impervious Runoff Depth=2.63" Tc=10.0 min CN=0/98 Runoff=0.22 cfs 0.076 af
Subcatchment97S: Basin 2	Runoff Area=19,824 sf 100.00% Impervious Runoff Depth=2.63" Tc=10.0 min CN=0/98 Runoff=0.29 cfs 0.100 af
Subcatchment98S: Basin 3	Runoff Area=23,416 sf 100.00% Impervious Runoff Depth=2.63" Tc=10.0 min CN=0/98 Runoff=0.34 cfs 0.118 af

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Subcatchment99S: Home Basin 6	Runoff Area=25,997 sf 0.00% Impervious Runoff Depth=2.12" Tc=10.0 min CN=93/0 Runoff=0.31 cfs 0.105 af
Subcatchment100S: Basin 4	Runoff Area=3,650 sf 100.00% Impervious Runoff Depth=2.63" Tc=10.0 min CN=0/98 Runoff=0.05 cfs 0.018 af
Subcatchment101S: Basin 5	Runoff Area=3,523 sf 100.00% Impervious Runoff Depth=2.63" Tc=10.0 min CN=0/98 Runoff=0.05 cfs 0.018 af
Subcatchment102S: Home Basin 3	Runoff Area=19,559 sf 0.00% Impervious Runoff Depth=2.12" Tc=10.0 min CN=93/0 Runoff=0.23 cfs 0.079 af
Subcatchment103S: Home Basin 1	Runoff Area=22,288 sf 0.00% Impervious Runoff Depth=2.12" Tc=10.0 min CN=93/0 Runoff=0.27 cfs 0.090 af
Subcatchment104S: Home Basin 5	Runoff Area=33,512 sf 0.00% Impervious Runoff Depth=2.12" Tc=10.0 min CN=93/0 Runoff=0.40 cfs 0.136 af
Subcatchment105S: Basin 6	Runoff Area=8,965 sf 100.00% Impervious Runoff Depth=2.63" Tc=10.0 min CN=0/98 Runoff=0.13 cfs 0.045 af
Subcatchment107S: Basin 8	Runoff Area=8,177 sf 100.00% Impervious Runoff Depth=2.63" Tc=10.0 min CN=0/98 Runoff=0.12 cfs 0.041 af
Subcatchment108S: Basin 9	Runoff Area=13,130 sf 100.00% Impervious Runoff Depth=2.63" Tc=10.0 min CN=0/98 Runoff=0.19 cfs 0.066 af
Subcatchment109S: Basin 10	Runoff Area=22,902 sf 100.00% Impervious Runoff Depth=2.63" Tc=10.0 min CN=0/98 Runoff=0.33 cfs 0.115 af
Subcatchment110S: Basin 11	Runoff Area=25,748 sf 100.00% Impervious Runoff Depth=2.63" Tc=10.0 min CN=0/98 Runoff=0.37 cfs 0.129 af
Subcatchment111S: Basin 12	Runoff Area=5,562 sf 100.00% Impervious Runoff Depth=2.63" Tc=10.0 min CN=0/98 Runoff=0.08 cfs 0.028 af
Subcatchment112S: Basin 13	Runoff Area=4,702 sf 100.00% Impervious Runoff Depth=2.63" Tc=10.0 min CN=0/98 Runoff=0.07 cfs 0.024 af
Subcatchment113S: Basin 14	Runoff Area=7,669 sf 100.00% Impervious Runoff Depth=2.63" Tc=10.0 min CN=0/98 Runoff=0.11 cfs 0.039 af
Subcatchment114S: Basin 15	Runoff Area=7,261 sf 100.00% Impervious Runoff Depth=2.63" Tc=10.0 min CN=0/98 Runoff=0.11 cfs 0.037 af
Subcatchment115S: Basin 16	Runoff Area=7,066 sf 100.00% Impervious Runoff Depth=2.63" Tc=10.0 min CN=0/98 Runoff=0.10 cfs 0.036 af
Subcatchment116S: Basin 17	Runoff Area=26,003 sf 100.00% Impervious Runoff Depth=2.63" Tc=10.0 min CN=0/98 Runoff=0.38 cfs 0.131 af

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Subcatchment 117S: Basin 18	Runoff Area=23,761 sf 100.00% Impervious Runoff Depth=2.63" Tc=10.0 min CN=0/98 Runoff=0.34 cfs 0.119 af
Subcatchment 118S: Basin 19	Runoff Area=7,309 sf 100.00% Impervious Runoff Depth=2.63" Tc=10.0 min CN=0/98 Runoff=0.11 cfs 0.037 af
Subcatchment 119S: Basin 20	Runoff Area=7,535 sf 100.00% Impervious Runoff Depth=2.63" Tc=10.0 min CN=0/98 Runoff=0.11 cfs 0.038 af
Subcatchment 120S: Basin 21	Runoff Area=6,846 sf 100.00% Impervious Runoff Depth=2.63" Tc=10.0 min CN=0/98 Runoff=0.10 cfs 0.034 af
Subcatchment 121S: Basin 22	Runoff Area=5,182 sf 100.00% Impervious Runoff Depth=2.63" Tc=10.0 min CN=0/98 Runoff=0.08 cfs 0.026 af
Subcatchment 122S: Basin 23	Runoff Area=5,456 sf 100.00% Impervious Runoff Depth=2.63" Tc=10.0 min CN=0/98 Runoff=0.08 cfs 0.027 af
Subcatchment 123S: Basin 24	Runoff Area=4,510 sf 100.00% Impervious Runoff Depth=2.63" Tc=10.0 min CN=0/98 Runoff=0.07 cfs 0.023 af
Subcatchment 124S: Basin 25	Runoff Area=13,271 sf 100.00% Impervious Runoff Depth=2.63" Tc=10.0 min CN=0/98 Runoff=0.19 cfs 0.067 af
Subcatchment 125S: Basin 26	Runoff Area=18,452 sf 100.00% Impervious Runoff Depth=2.63" Tc=10.0 min CN=0/98 Runoff=0.27 cfs 0.093 af
Subcatchment 126S: Alley Basin 1	Runoff Area=9,860 sf 100.00% Impervious Runoff Depth=2.63" Tc=10.0 min CN=0/98 Runoff=0.14 cfs 0.050 af
Subcatchment 127S: Alley Basin 2	Runoff Area=7,461 sf 100.00% Impervious Runoff Depth=2.63" Tc=10.0 min CN=0/98 Runoff=0.11 cfs 0.038 af
Subcatchment 128S: Alley Basin 3	Runoff Area=6,782 sf 100.00% Impervious Runoff Depth=2.63" Tc=10.0 min CN=0/98 Runoff=0.10 cfs 0.034 af
Subcatchment 129S: Alley Basin 4	Runoff Area=6,970 sf 100.00% Impervious Runoff Depth=2.63" Tc=10.0 min CN=0/98 Runoff=0.10 cfs 0.035 af
Subcatchment 168S: Future Lots	Runoff Area=64,223 sf 37.85% Impervious Runoff Depth=2.31" Tc=10.0 min CN=93/98 Runoff=0.83 cfs 0.284 af
Subcatchment 169S: Swale 2	Runoff Area=67 sf 100.00% Impervious Runoff Depth=2.63" Tc=0.0 min CN=0/98 Runoff=0.00 cfs 0.000 af
Subcatchment 170S: Swale 1	Runoff Area=72 sf 100.00% Impervious Runoff Depth=2.63" Tc=0.0 min CN=0/98 Runoff=0.00 cfs 0.000 af
Reach 39R: Post-Construction Peak Flow	Inflow=4.86 cfs 4.462 af Outflow=4.86 cfs 4.462 af

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Reach 42R: Pre-Construction Peak Flow	Inflow=4.87 cfs 3.430 af Outflow=4.87 cfs 3.430 af
Reach 58R: 1	Inflow=4.86 cfs 4.462 af Outflow=4.86 cfs 4.462 af
Reach 85R: 1	Inflow=4.82 cfs 4.425 af Outflow=4.82 cfs 4.425 af
Reach 130R: 1	Inflow=2.20 cfs 0.754 af Outflow=2.20 cfs 0.754 af
Reach 131R: 1	Inflow=2.20 cfs 0.754 af Outflow=2.20 cfs 0.754 af
Reach 132R: 1	Inflow=1.26 cfs 0.433 af Outflow=1.26 cfs 0.433 af
Reach 133R: 1	Inflow=0.22 cfs 0.076 af Outflow=0.22 cfs 0.076 af
Reach 134R: 1	Inflow=10.12 cfs 3.467 af Outflow=10.12 cfs 3.467 af
Reach 135R: 1	Inflow=1.70 cfs 0.583 af Outflow=1.70 cfs 0.583 af
Reach 136R: 1	Inflow=0.97 cfs 0.332 af Outflow=0.97 cfs 0.332 af
Reach 137R: 1	Inflow=0.60 cfs 0.206 af Outflow=0.60 cfs 0.206 af
Reach 138R: 1	Inflow=0.27 cfs 0.095 af Outflow=0.27 cfs 0.095 af
Reach 139R: 1	Inflow=8.23 cfs 2.819 af Outflow=8.23 cfs 2.819 af
Reach 140R: 1	Inflow=0.14 cfs 0.050 af Outflow=0.14 cfs 0.050 af
Reach 141R: 1	Inflow=0.11 cfs 0.038 af Outflow=0.11 cfs 0.038 af
Reach 142R: 1	Inflow=7.81 cfs 2.673 af Outflow=7.81 cfs 2.673 af
Reach 143R: 1	Inflow=1.59 cfs 0.543 af Outflow=1.59 cfs 0.543 af

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Reach 144R: 1	Inflow=1.14 cfs 0.388 af Outflow=1.14 cfs 0.388 af
Reach 145R: 1	Inflow=1.14 cfs 0.388 af Outflow=1.14 cfs 0.388 af
Reach 146R: 1	Inflow=6.22 cfs 2.130 af Outflow=6.22 cfs 2.130 af
Reach 147R: 1	Inflow=0.10 cfs 0.034 af Outflow=0.10 cfs 0.034 af
Reach 148R: 1	Inflow=6.12 cfs 2.096 af Outflow=6.12 cfs 2.096 af
Reach 149R: 1	Inflow=1.55 cfs 0.531 af Outflow=1.55 cfs 0.531 af
Reach 150R: 1	Inflow=1.05 cfs 0.360 af Outflow=1.05 cfs 0.360 af
Reach 151R: 1	Inflow=0.81 cfs 0.278 af Outflow=0.81 cfs 0.278 af
Reach 152R: 1	Inflow=4.28 cfs 1.464 af Outflow=4.28 cfs 1.464 af
Reach 153R: 1	Inflow=0.10 cfs 0.035 af Outflow=0.10 cfs 0.035 af
Reach 154R: 1	Inflow=4.17 cfs 1.429 af Outflow=4.17 cfs 1.429 af
Reach 155R: 1	Inflow=1.47 cfs 0.503 af Outflow=1.47 cfs 0.503 af
Reach 158R: 1	Inflow=8.42 cfs 2.884 af Outflow=8.42 cfs 2.884 af
Reach 159R: 1	Inflow=8.12 cfs 2.782 af Outflow=8.12 cfs 2.782 af
Reach 160R: 1	Inflow=1.02 cfs 0.347 af Outflow=1.02 cfs 0.347 af
Reach 162R: 1	Inflow=2.43 cfs 0.831 af Outflow=2.43 cfs 0.831 af
Reach 163R: 1	Inflow=2.36 cfs 0.808 af Outflow=2.36 cfs 0.808 af

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Reach 165R: 1Inflow=0.84 cfs 0.289 af
Outflow=0.84 cfs 0.289 af**Reach 166R: Basin Future**Inflow=0.83 cfs 0.284 af
Outflow=0.83 cfs 0.284 af**Pond 54P: Stormwater Swale 2**Peak Elev=222.40' Storage=31 cf Inflow=0.05 cfs 0.018 af
Outflow=0.05 cfs 0.018 af**Pond 60P: Stormwater Swale 1**Peak Elev=222.06' Storage=33 cf Inflow=0.05 cfs 0.019 af
Outflow=0.05 cfs 0.019 af**Pond 63P: Detention Pond**Peak Elev=223.25' Storage=35,410 cf Inflow=12.93 cfs 4.426 af
Outflow=4.82 cfs 4.425 af

Total Runoff Area = 46.412 ac Runoff Volume = 7.893 af Average Runoff Depth = 2.04"
81.58% Pervious = 37.863 ac 18.42% Impervious = 8.549 ac

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Summary for Subcatchment 64S: Home Basin 20

Runoff = 0.12 cfs @ 7.98 hrs, Volume= 0.040 af, Depth= 2.12"
 Routed to Reach 143R : 1

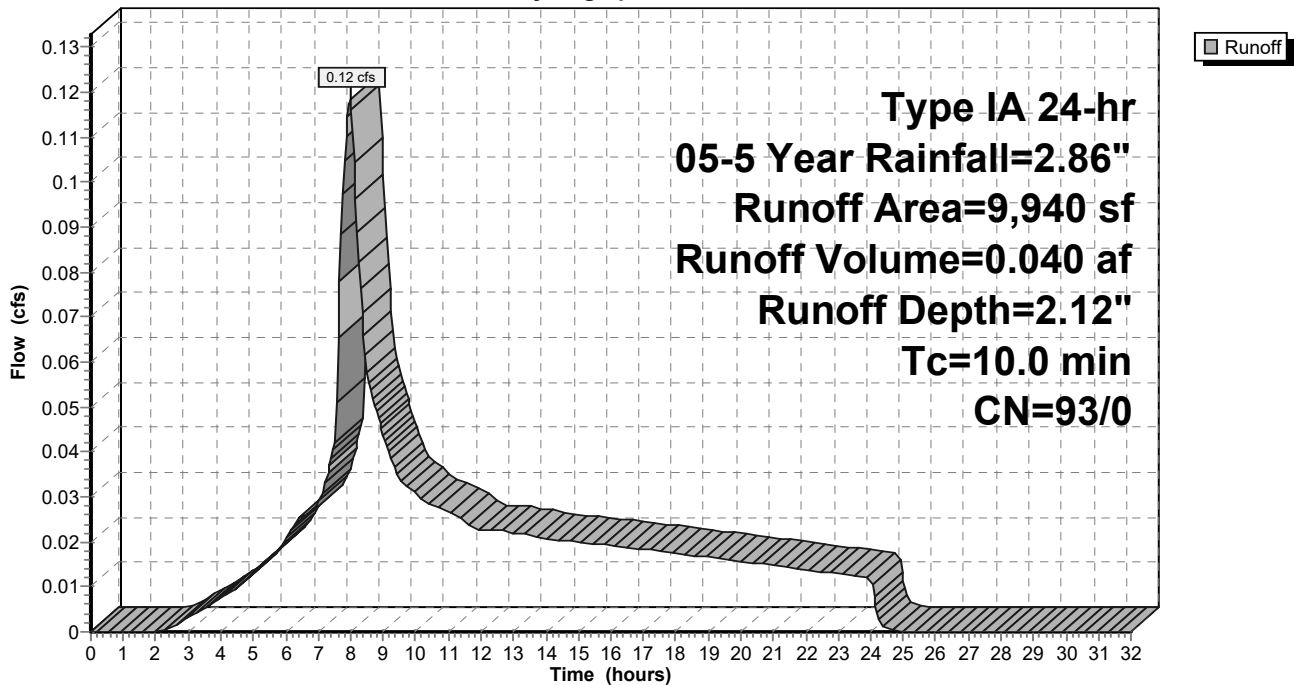
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 05-5 Year Rainfall=2.86"

Area (sf)	CN	Description
* 9,940	93	70% Lot Coverage Weighted
9,940	93	100.00% Pervious Area

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

Subcatchment 64S: Home Basin 20

Hydrograph



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Summary for Subcatchment 65S: Single Pond Existing Conditions

Runoff = 4.82 cfs @ 8.31 hrs, Volume= 3.405 af, Depth> 1.77"
 Routed to Reach 42R : Pre-Construction Peak Flow

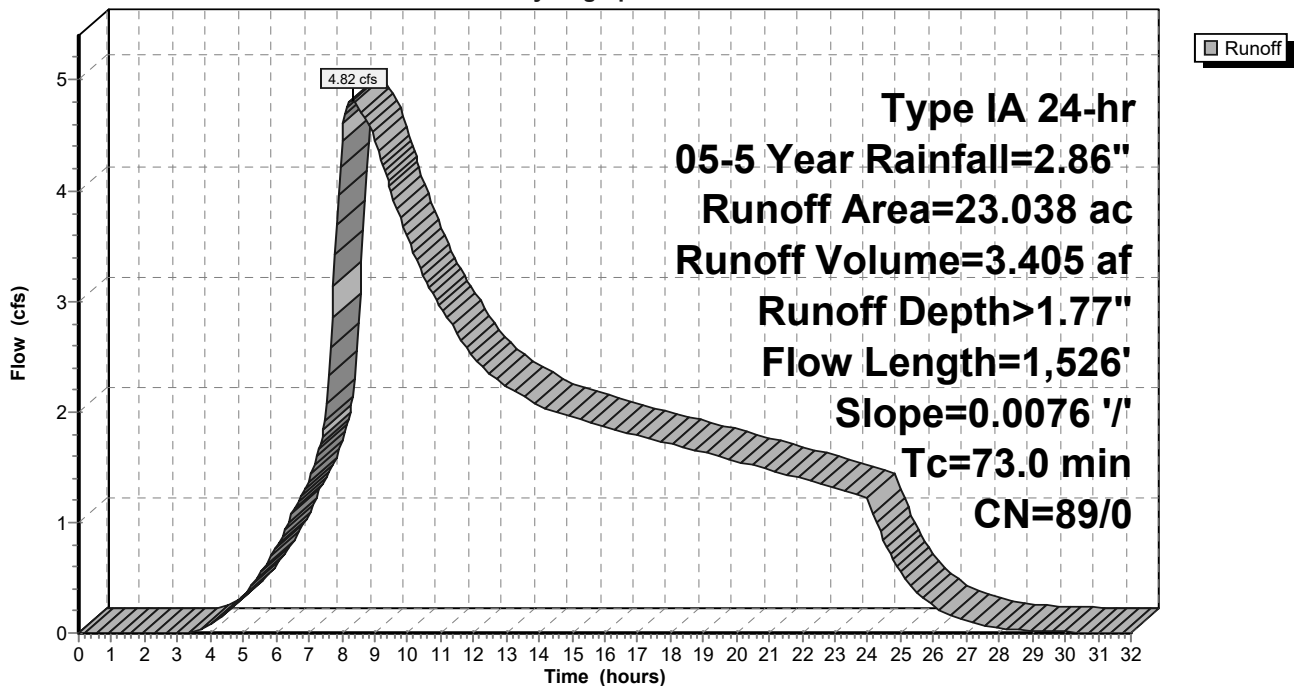
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 05-5 Year Rainfall=2.86"

Area (ac)	CN	Description
23.038	89	Pasture/grassland/range, Poor, HSG D
23.038	89	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
39.5	300	0.0076	0.13		Sheet Flow, Grass: Short n= 0.150 P2= 2.47"
33.5	1,226	0.0076	0.61		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
73.0	1,526	Total			

Subcatchment 65S: Single Pond Existing Conditions

Hydrograph



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Type IA 24-hr 05-5 Year Rainfall=2.86"

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Summary for Subcatchment 67S: Home Basin 19

Runoff = 0.21 cfs @ 7.98 hrs, Volume= 0.070 af, Depth= 2.12"
 Routed to Reach 159R : 1

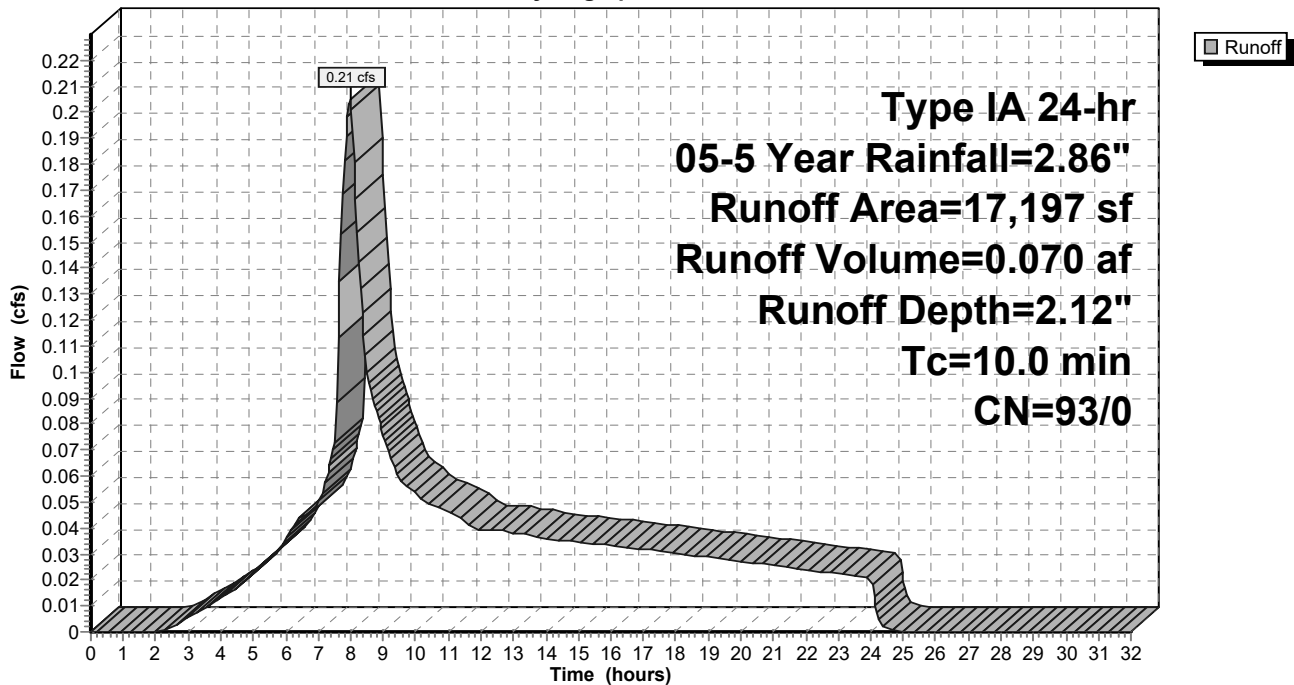
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 05-5 Year Rainfall=2.86"

Area (sf)	CN	Description
* 17,197	93	70% Lot Coverage Weighted
17,197	93	100.00% Pervious Area

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

Subcatchment 67S: Home Basin 19

Hydrograph



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Summary for Subcatchment 68S: Home Basin 12

Runoff = 0.22 cfs @ 7.98 hrs, Volume= 0.074 af, Depth= 2.12"
 Routed to Reach 160R : 1

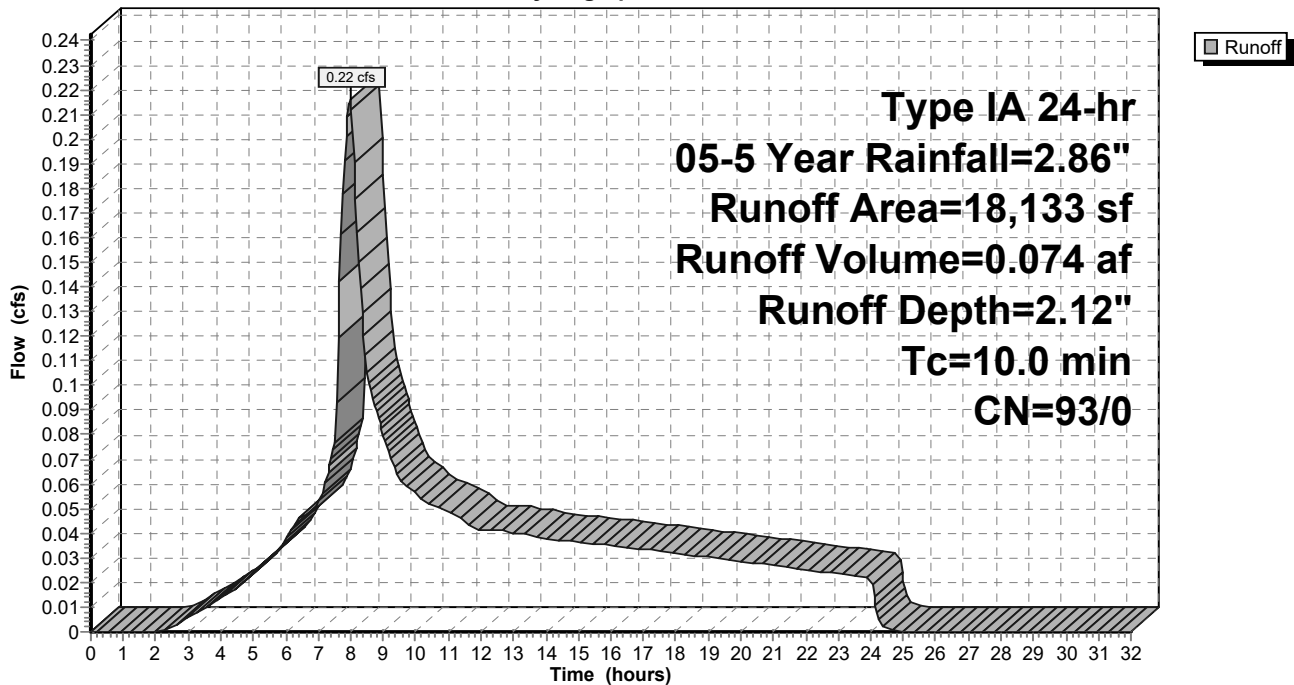
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 05-5 Year Rainfall=2.86"

Area (sf)	CN	Description
* 18,133	93	70% Lot Coverage Weighted
18,133	93	100.00% Pervious Area

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

Subcatchment 68S: Home Basin 12

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 05-5 Year Rainfall=2.86"

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Summary for Subcatchment 69S: Home Basin 17

Runoff = 0.20 cfs @ 7.98 hrs, Volume= 0.068 af, Depth= 2.12"
 Routed to Reach 151R : 1

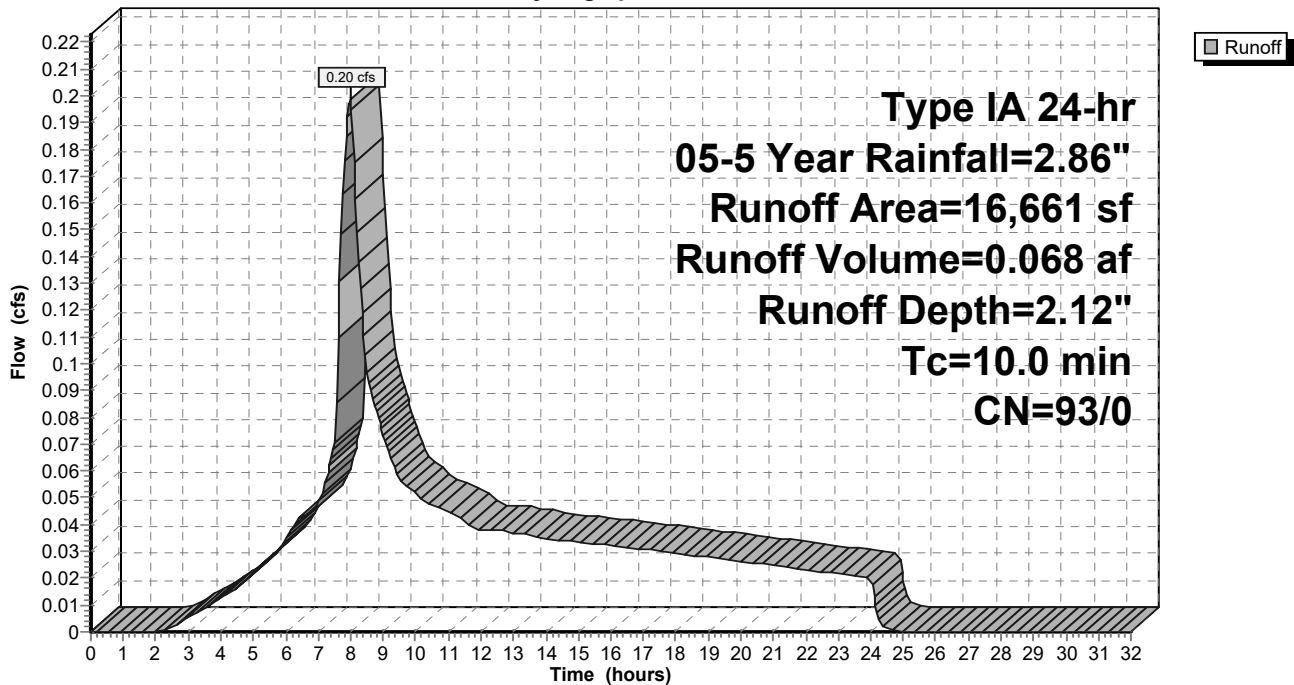
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 05-5 Year Rainfall=2.86"

Area (sf)	CN	Description
* 16,661	93	70% Lot Coverage Weighted
16,661	93	100.00% Pervious Area

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

Subcatchment 69S: Home Basin 17

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 05-5 Year Rainfall=2.86"

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Summary for Subcatchment 70S: Home Basin 18

Runoff = 0.14 cfs @ 7.98 hrs, Volume= 0.047 af, Depth= 2.12"
 Routed to Reach 149R : 1

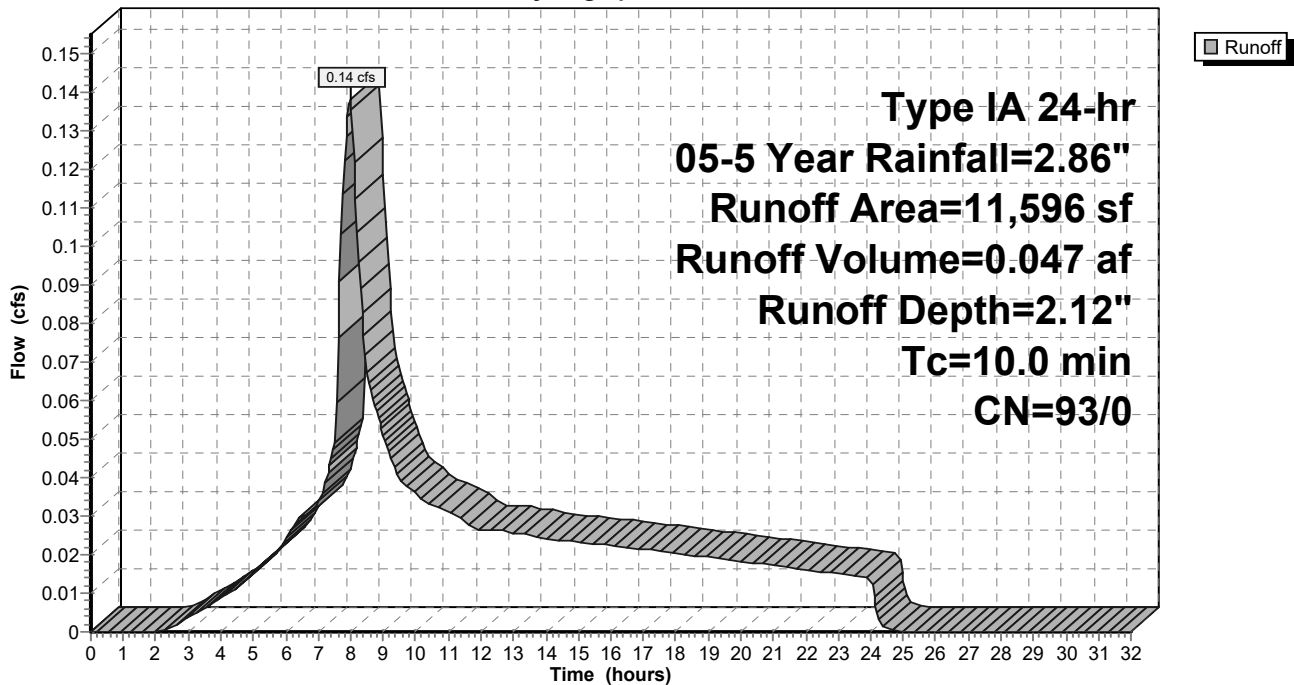
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 05-5 Year Rainfall=2.86"

Area (sf)	CN	Description
* 11,596	93	70% Lot Coverage Weighted
11,596	93	100.00% Pervious Area

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

Subcatchment 70S: Home Basin 18

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 05-5 Year Rainfall=2.86"

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Summary for Subcatchment 71S: Home Basin 14

Runoff = 0.20 cfs @ 7.98 hrs, Volume= 0.067 af, Depth= 2.12"
 Routed to Reach 148R : 1

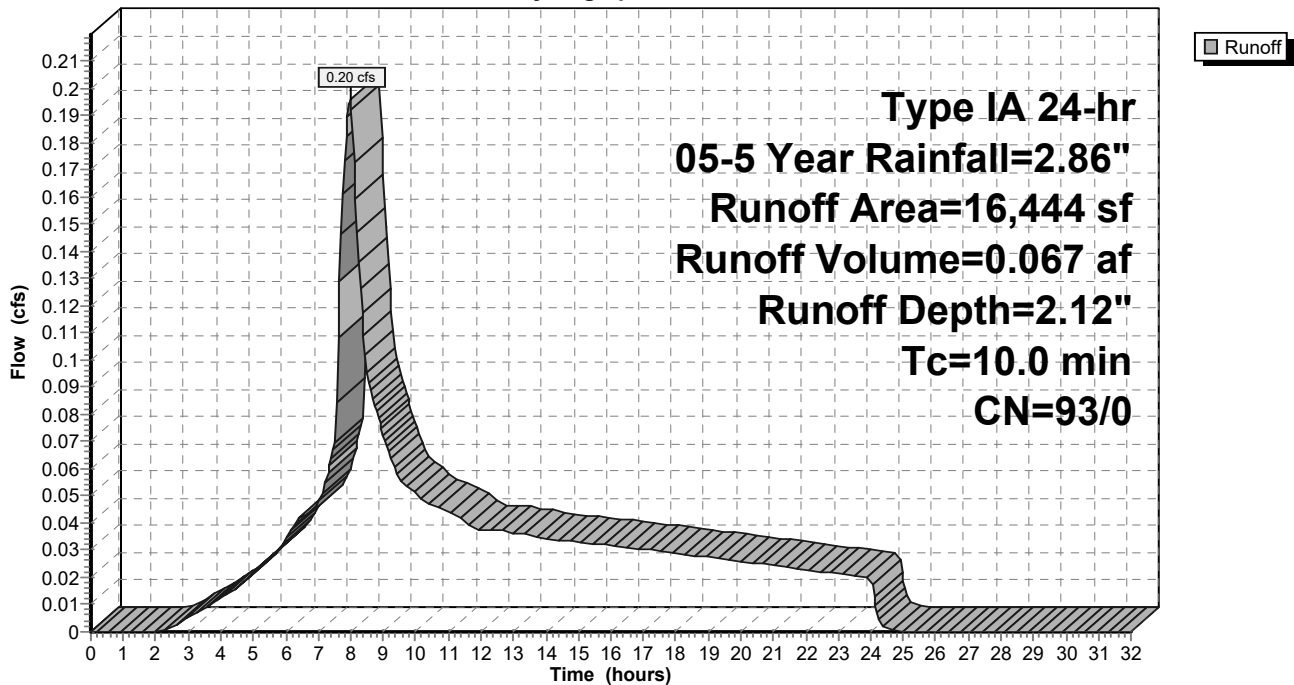
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 05-5 Year Rainfall=2.86"

Area (sf)	CN	Description
* 16,444	93	70% Lot Coverage Weighted
16,444	93	100.00% Pervious Area

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

Subcatchment 71S: Home Basin 14

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 05-5 Year Rainfall=2.86"

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Summary for Subcatchment 72S: Home Basin 16

Runoff = 0.24 cfs @ 7.98 hrs, Volume= 0.082 af, Depth= 2.12"
 Routed to Reach 150R : 1

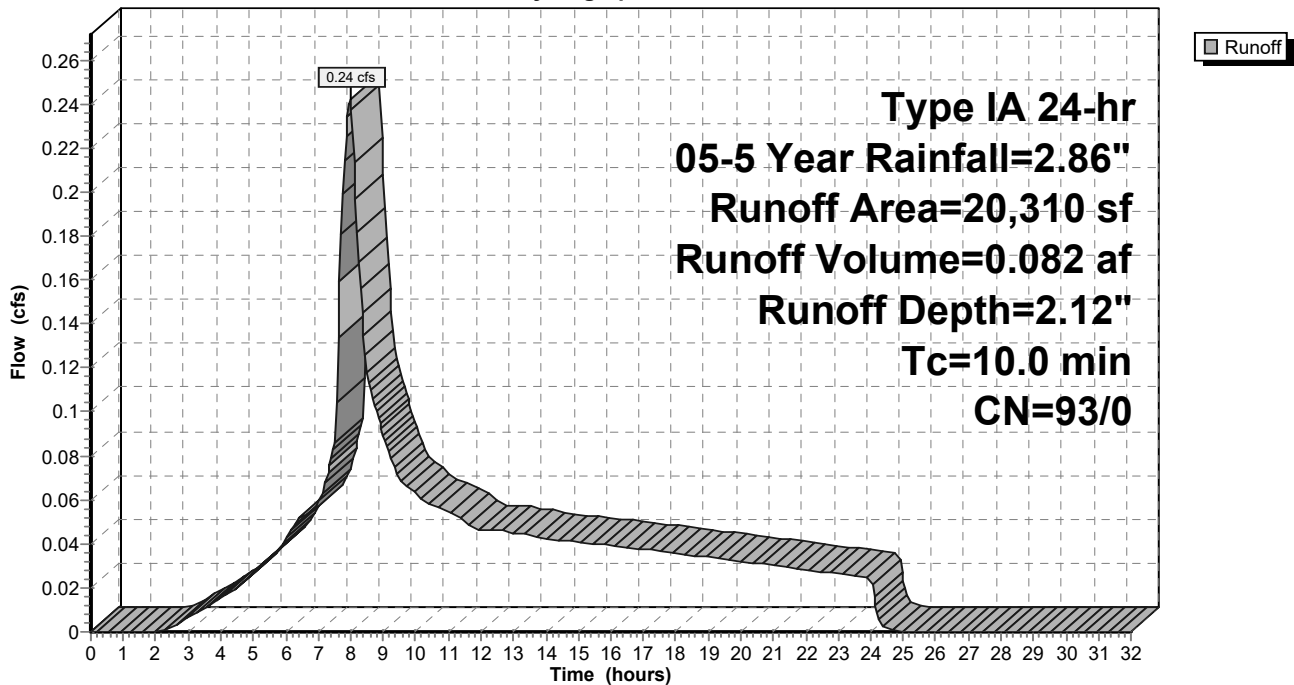
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 05-5 Year Rainfall=2.86"

Area (sf)	CN	Description
* 20,310	93	70% Lot Coverage Weighted
20,310	93	100.00% Pervious Area

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

Subcatchment 72S: Home Basin 16

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 05-5 Year Rainfall=2.86"

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Summary for Subcatchment 73S: Home Basin 13

Runoff = 0.13 cfs @ 7.98 hrs, Volume= 0.044 af, Depth= 2.12"
 Routed to Reach 155R : 1

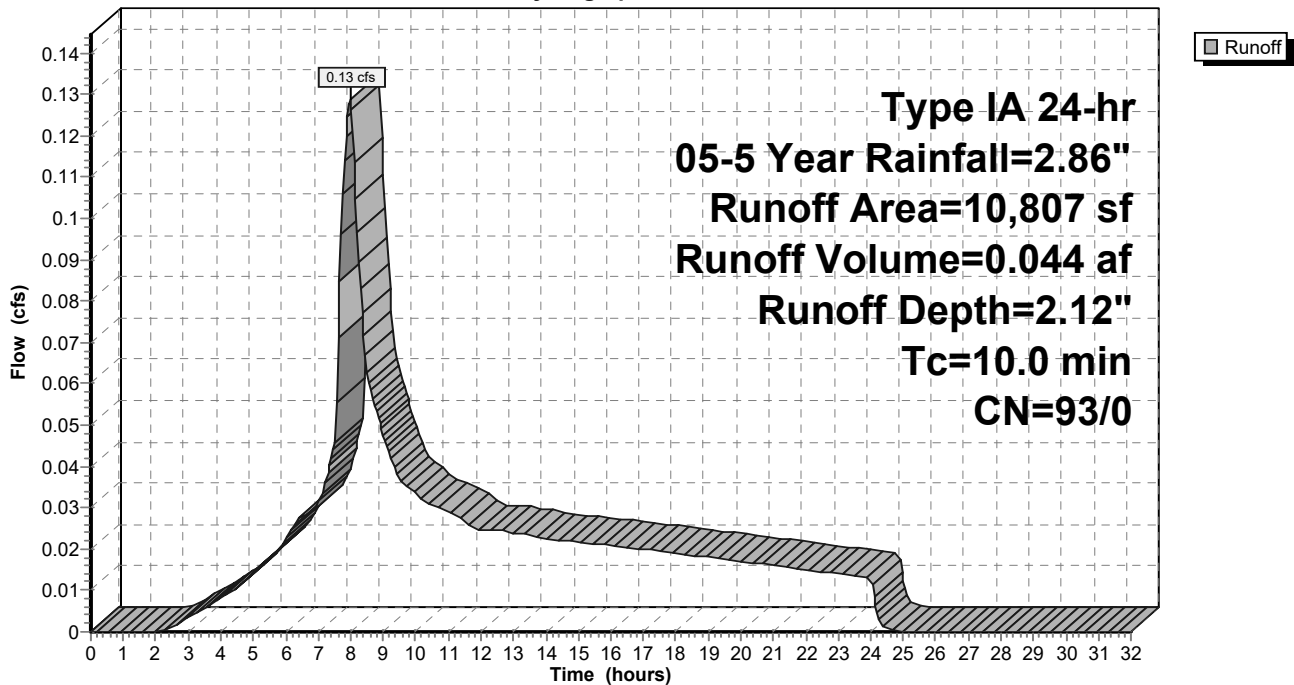
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 05-5 Year Rainfall=2.86"

Area (sf)	CN	Description
* 10,807	93	70% Lot Coverage Weighted
10,807	93	100.00% Pervious Area

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

Subcatchment 73S: Home Basin 13

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 05-5 Year Rainfall=2.86"

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Summary for Subcatchment 74S: Swale Existing Conditions

Runoff = 0.07 cfs @ 7.99 hrs, Volume= 0.025 af, Depth= 1.77"
 Routed to Reach 42R : Pre-Construction Peak Flow

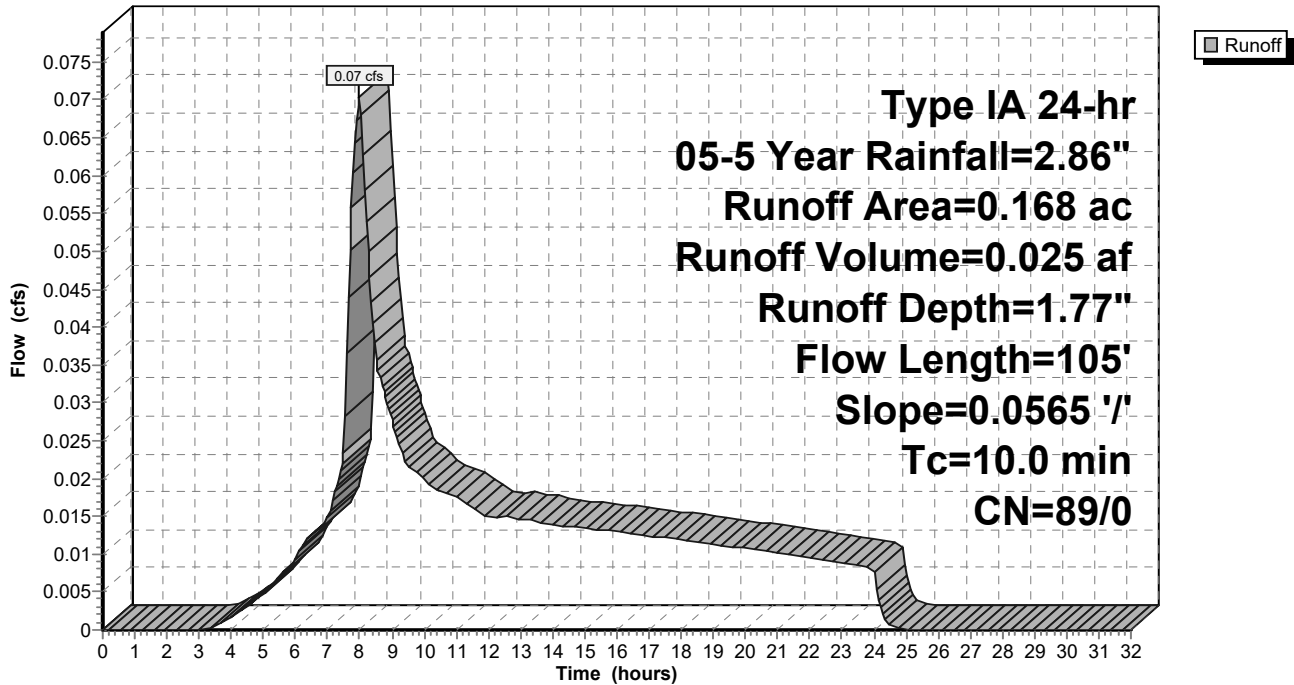
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 05-5 Year Rainfall=2.86"

Area (ac)	CN	Description
0.168	89	Pasture/grassland/range, Poor, HSG D
0.168	89	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.7	105	0.0565	0.23		Sheet Flow, Grass: Short n= 0.150 P2= 2.47"
7.7	105	Total, Increased to minimum Tc = 10.0 min			

Subcatchment 74S: Swale Existing Conditions

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 05-5 Year Rainfall=2.86"

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Summary for Subcatchment 75S: Home Basin 11

Runoff = 0.22 cfs @ 7.98 hrs, Volume= 0.075 af, Depth= 2.12"
 Routed to Reach 160R : 1

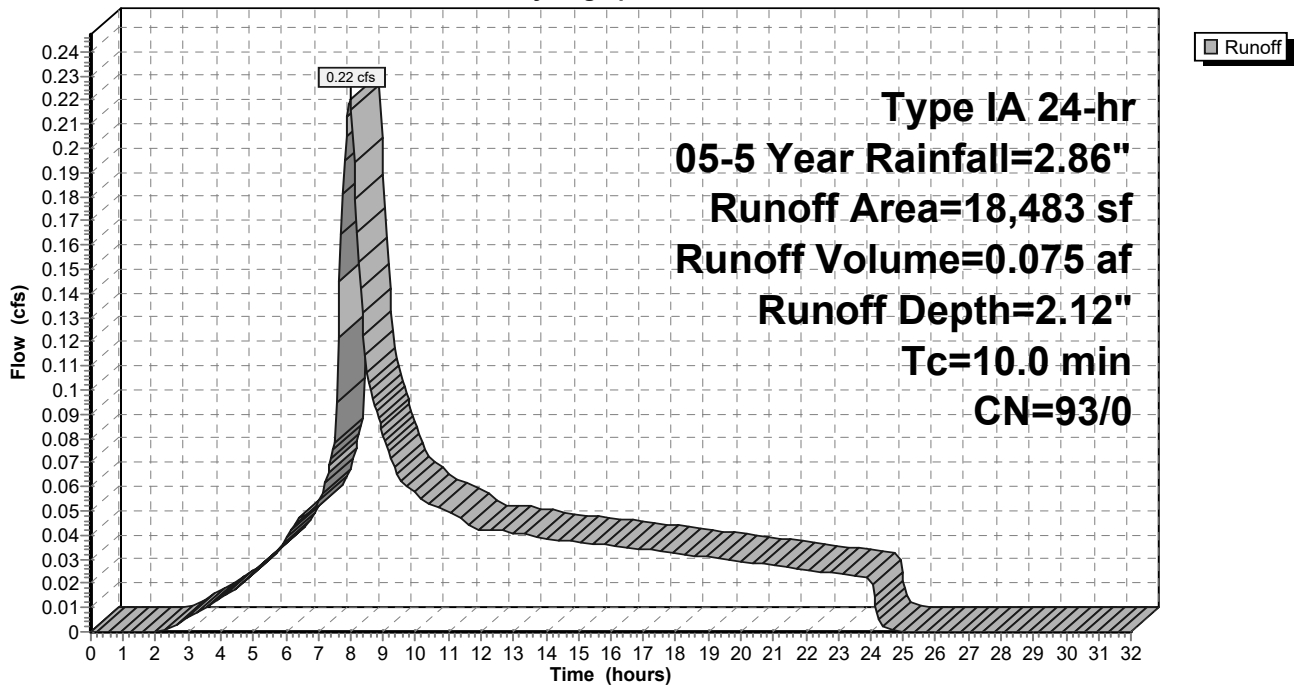
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 05-5 Year Rainfall=2.86"

Area (sf)	CN	Description
* 18,483	93	70% Lot Coverage Weighted
18,483	93	100.00% Pervious Area

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

Subcatchment 75S: Home Basin 11

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 05-5 Year Rainfall=2.86"

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Summary for Subcatchment 77S: Home Basin 15

Runoff = 0.15 cfs @ 7.98 hrs, Volume= 0.051 af, Depth= 2.12"
 Routed to Reach 149R : 1

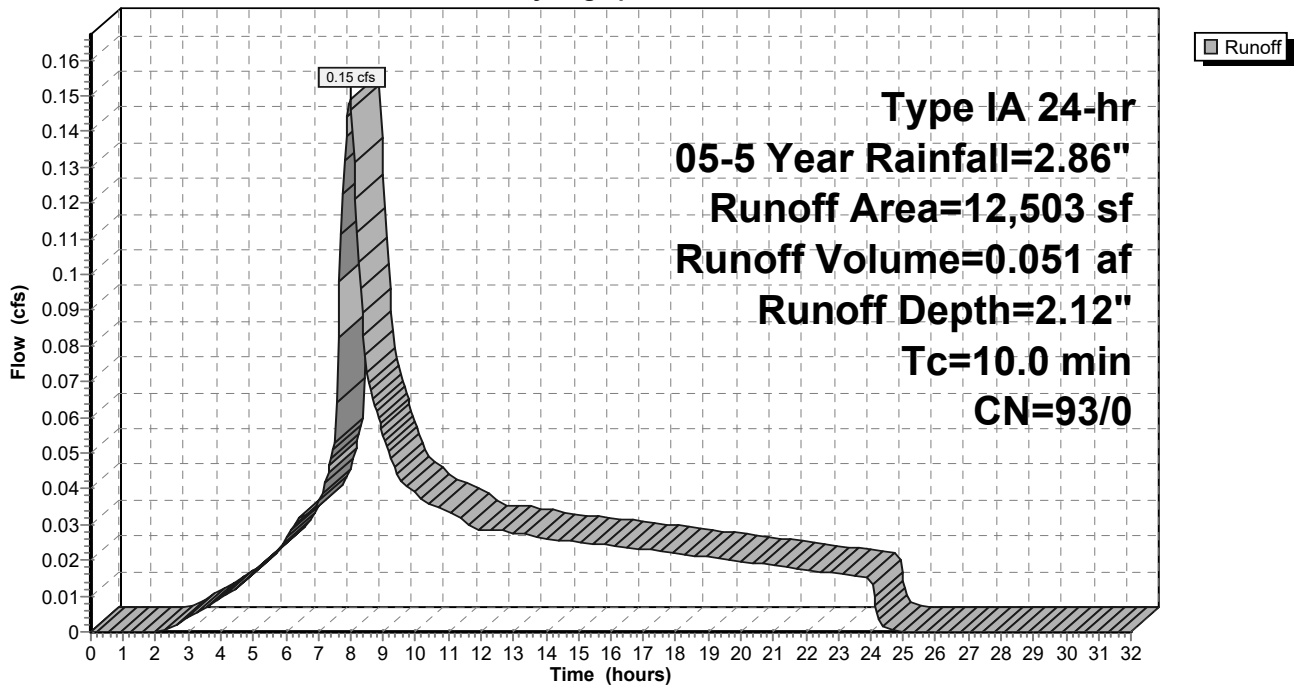
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 05-5 Year Rainfall=2.86"

Area (sf)	CN	Description
* 12,503	93	70% Lot Coverage Weighted
12,503	93	100.00% Pervious Area

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

Subcatchment 77S: Home Basin 15

Hydrograph



9-6-23 HydroCAD DOM

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Type IA 24-hr 05-5 Year Rainfall=2.86"

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Summary for Subcatchment 78S: Single Pond

[46] Hint: Tc=0 (Instant runoff peak depends on dt)

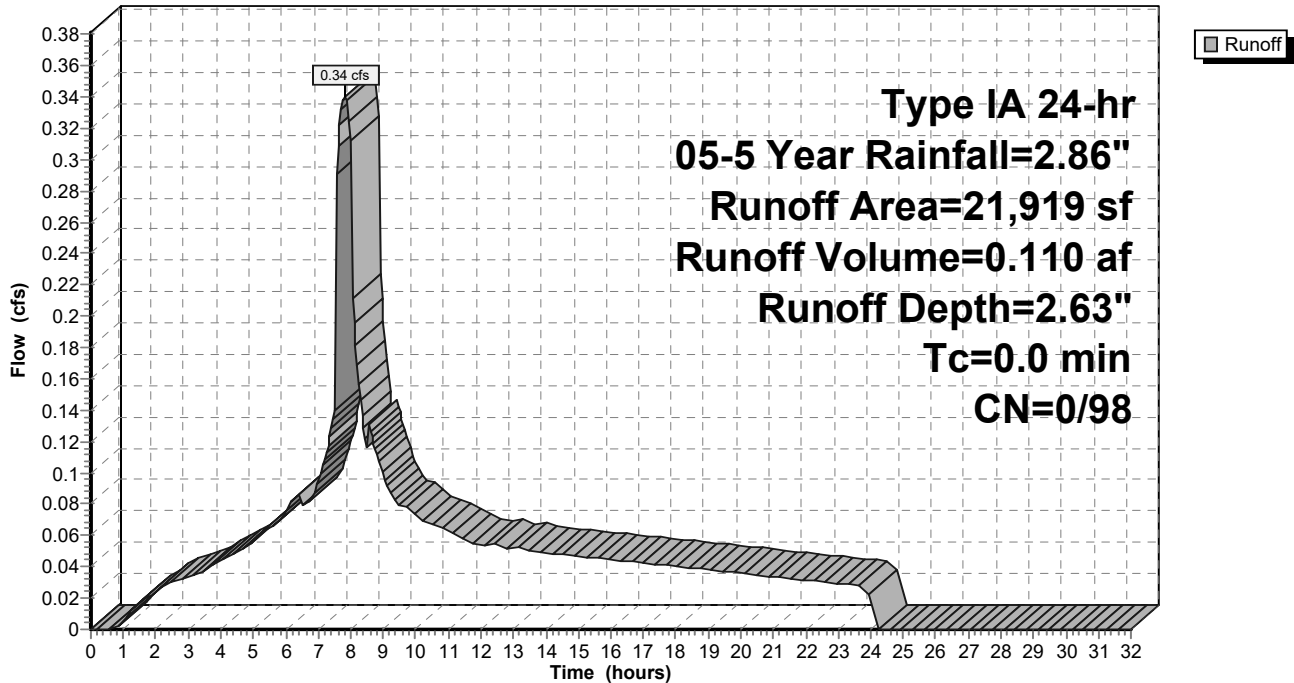
Runoff = 0.34 cfs @ 7.81 hrs, Volume= 0.110 af, Depth= 2.63"
 Routed to Pond 63P : Detention Pond

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 05-5 Year Rainfall=2.86"

Area (sf)	CN	Description
21,919	98	Water Surface, HSG D
21,919	98	100.00% Impervious Area

Subcatchment 78S: Single Pond

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 05-5 Year Rainfall=2.86"

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Summary for Subcatchment 79S: Home Basin 30

Runoff = 0.46 cfs @ 7.98 hrs, Volume= 0.156 af, Depth= 2.12"
 Routed to Reach 132R : 1

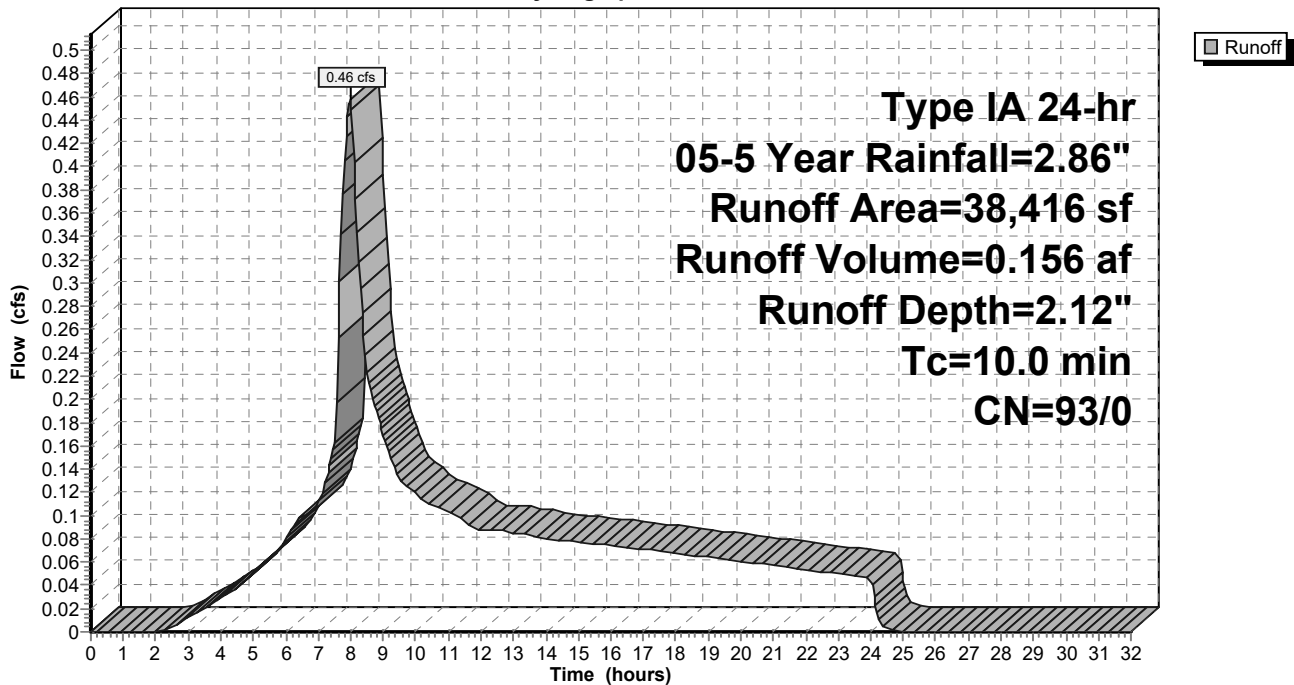
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 05-5 Year Rainfall=2.86"

Area (sf)	CN	Description
* 38,416	93	70% Lot Coverage Weighted
38,416	93	100.00% Pervious Area

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

Subcatchment 79S: Home Basin 30

Hydrograph



9-6-23 HydroCAD DOM

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Type IA 24-hr 05-5 Year Rainfall=2.86"

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Summary for Subcatchment 80S: Home Basin 10

Runoff = 0.18 cfs @ 7.98 hrs, Volume= 0.060 af, Depth= 2.12"
 Routed to Reach 165R : 1

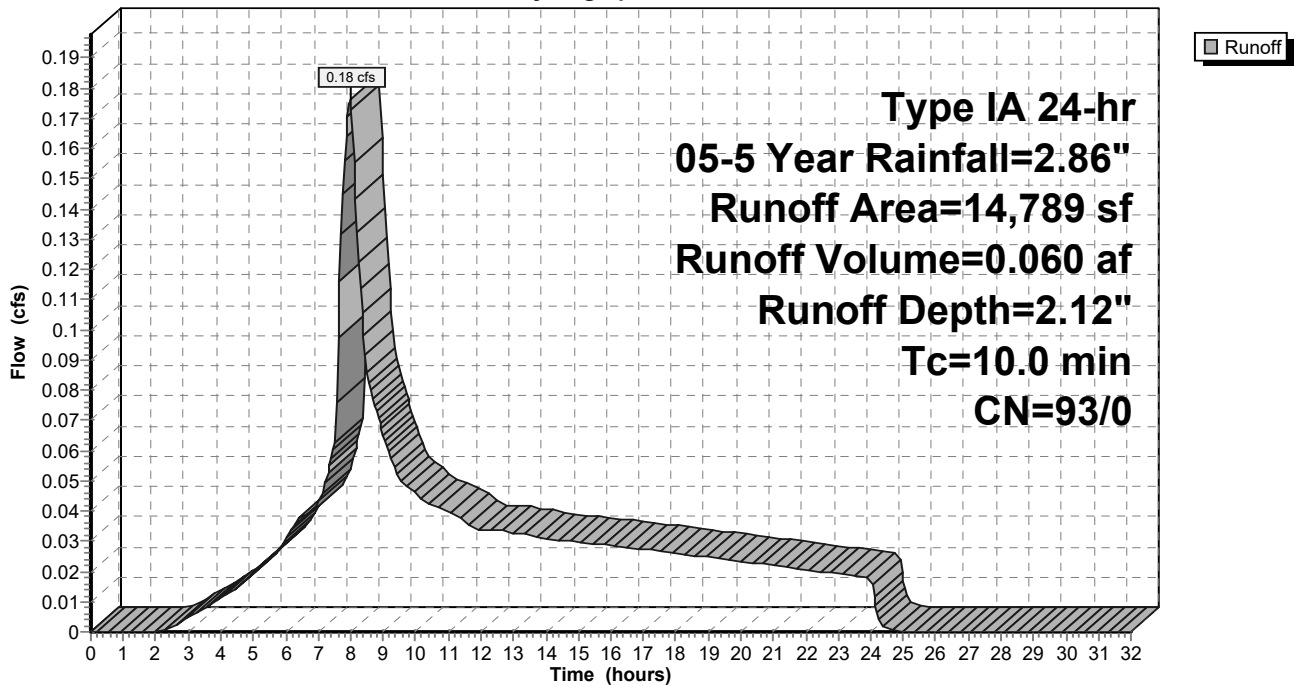
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 05-5 Year Rainfall=2.86"

Area (sf)	CN	Description
* 14,789	93	70% Lot Coverage Weighted
14,789	93	100.00% Pervious Area

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

Subcatchment 80S: Home Basin 10

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 05-5 Year Rainfall=2.86"

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Summary for Subcatchment 81S: Home Basin 9

Runoff = 0.19 cfs @ 7.98 hrs, Volume= 0.063 af, Depth= 2.12"
 Routed to Reach 163R : 1

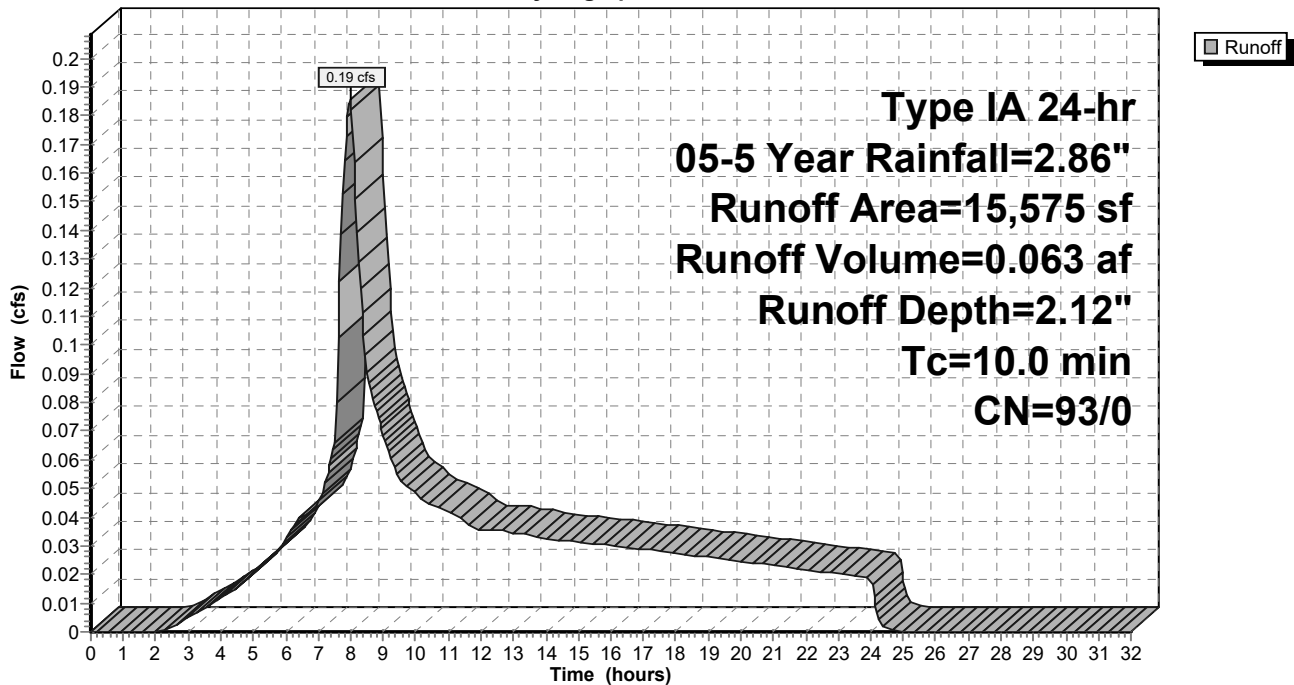
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 05-5 Year Rainfall=2.86"

Area (sf)	CN	Description
* 15,575	93	70% Lot Coverage Weighted
15,575	93	100.00% Pervious Area

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

Subcatchment 81S: Home Basin 9

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 05-5 Year Rainfall=2.86"

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Summary for Subcatchment 82S: Home Basin 2

Runoff = 0.25 cfs @ 7.98 hrs, Volume= 0.084 af, Depth= 2.12"
 Routed to Reach 145R : 1

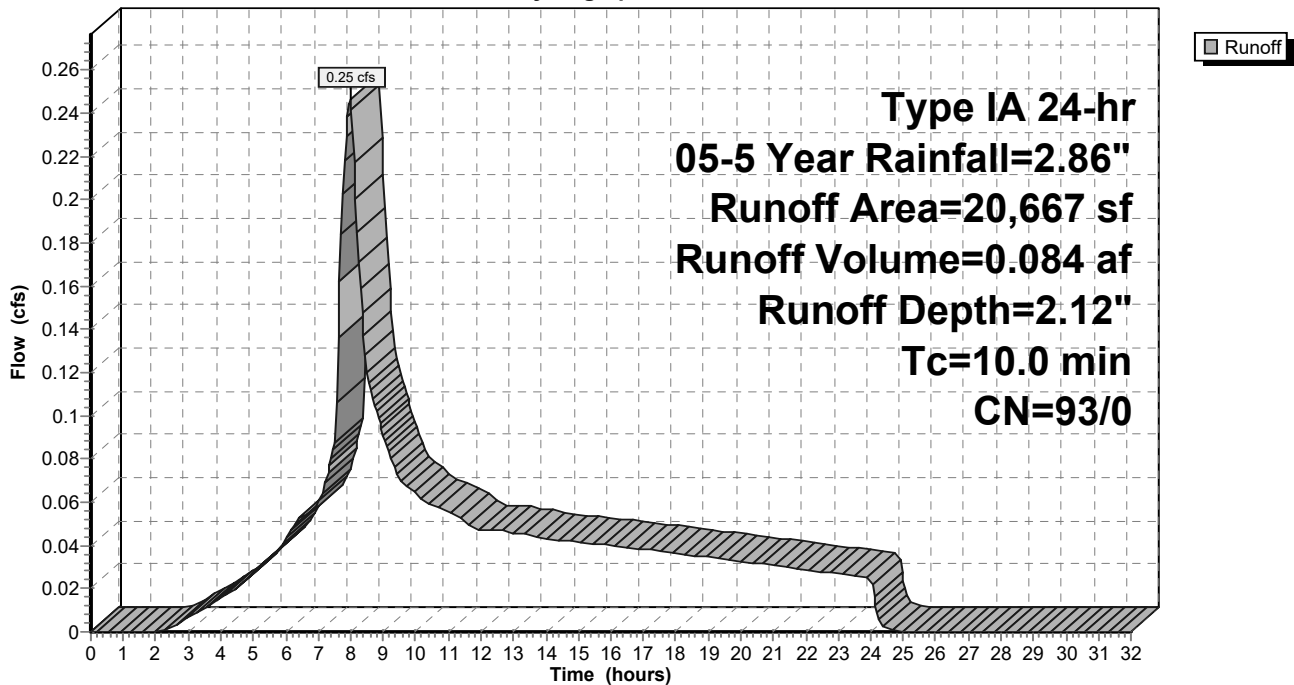
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 05-5 Year Rainfall=2.86"

Area (sf)	CN	Description
* 20,667	93	70% Lot Coverage Weighted
20,667	93	100.00% Pervious Area

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

Subcatchment 82S: Home Basin 2

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 05-5 Year Rainfall=2.86"

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Summary for Subcatchment 83S: Home Basin 7

Runoff = 0.20 cfs @ 7.98 hrs, Volume= 0.069 af, Depth= 2.12"
 Routed to Reach 154R : 1

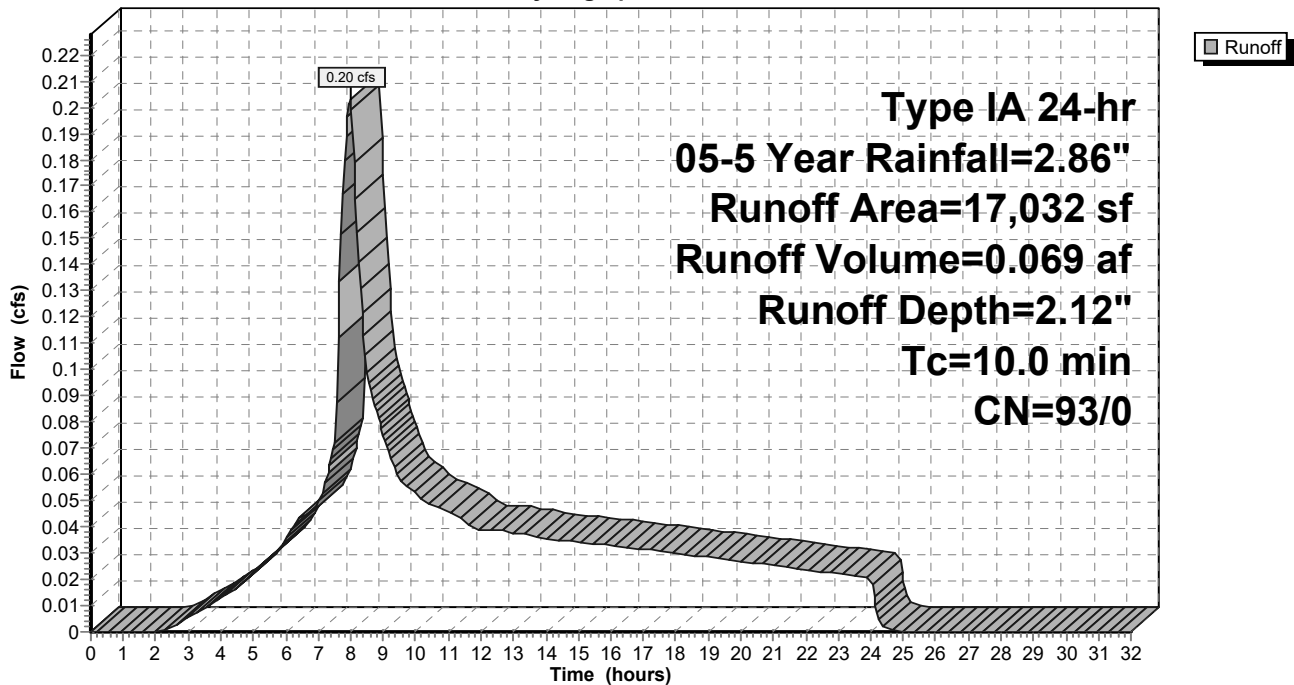
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 05-5 Year Rainfall=2.86"

Area (sf)	CN	Description
* 17,032	93	70% Lot Coverage Weighted
17,032	93	100.00% Pervious Area

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

Subcatchment 83S: Home Basin 7

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 05-5 Year Rainfall=2.86"

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Summary for Subcatchment 84S: Home Basin 8

Runoff = 0.14 cfs @ 7.98 hrs, Volume= 0.047 af, Depth= 2.12"
 Routed to Reach 155R : 1

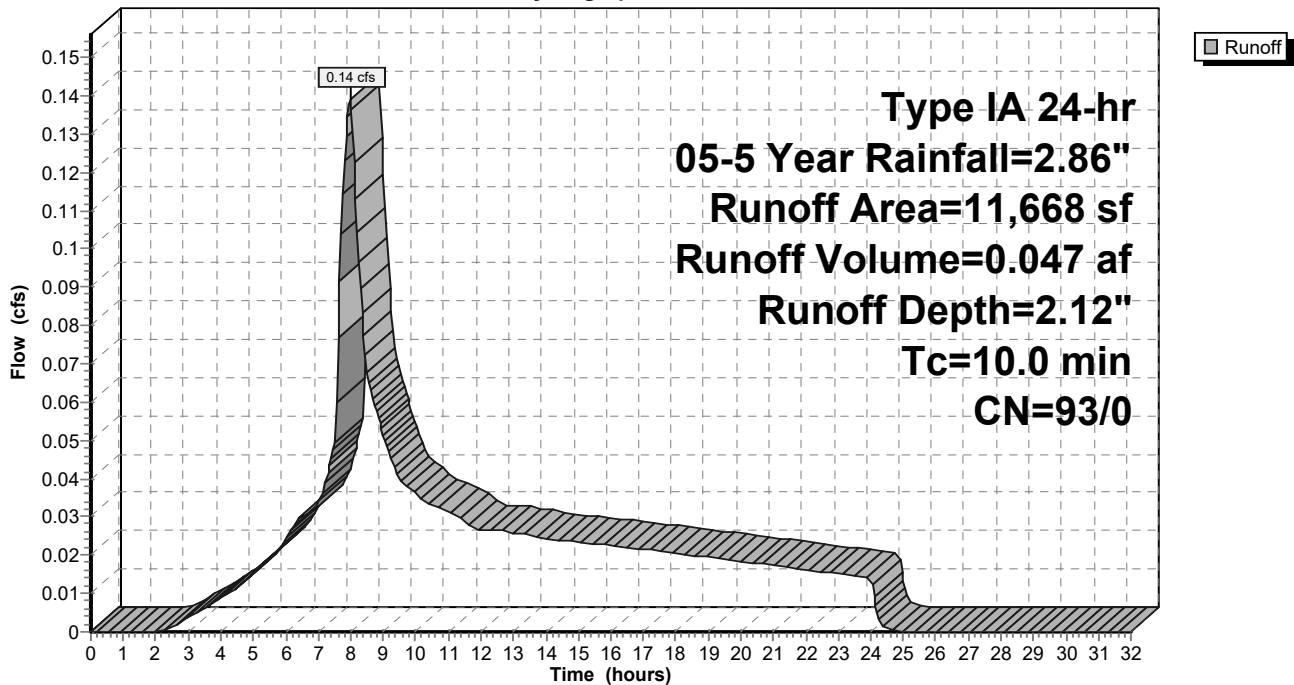
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 05-5 Year Rainfall=2.86"

Area (sf)	CN	Description
* 11,668	93	70% Lot Coverage Weighted
11,668	93	100.00% Pervious Area

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

Subcatchment 84S: Home Basin 8

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 05-5 Year Rainfall=2.86"

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Summary for Subcatchment 85S: Home Basin 29

Runoff = 0.30 cfs @ 7.98 hrs, Volume= 0.102 af, Depth= 2.12"
 Routed to Reach 132R : 1

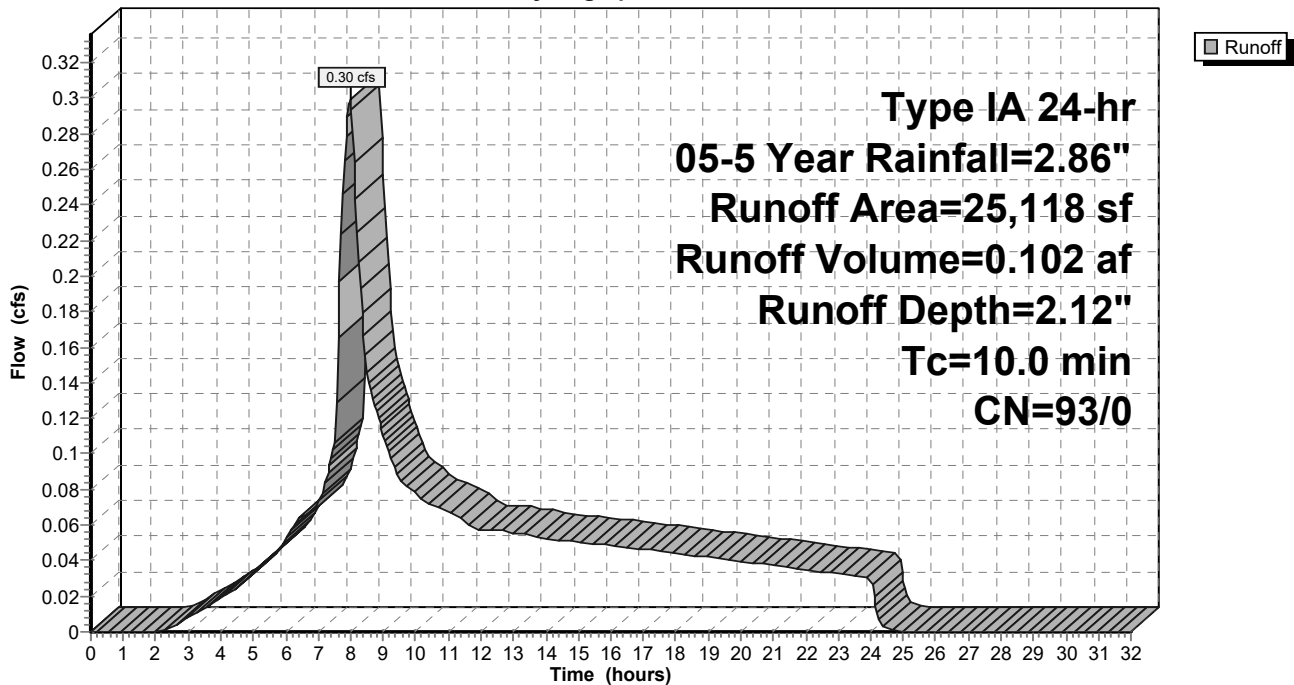
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 05-5 Year Rainfall=2.86"

Area (sf)	CN	Description
* 25,118	93	70% Lot Coverage Weighted
25,118	93	100.00% Pervious Area

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

Subcatchment 85S: Home Basin 29

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 05-5 Year Rainfall=2.86"

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Summary for Subcatchment 86S: Home Basin 22

Runoff = 0.19 cfs @ 7.98 hrs, Volume= 0.066 af, Depth= 2.12"
 Routed to Reach 145R : 1

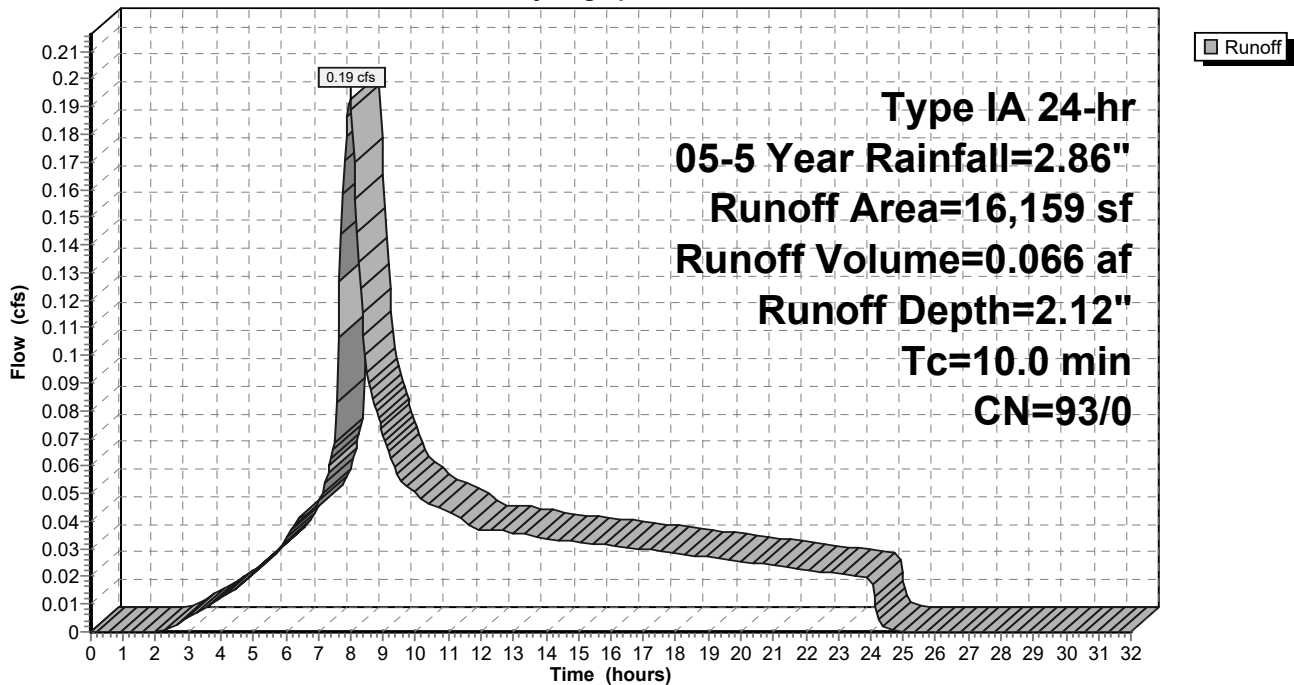
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 05-5 Year Rainfall=2.86"

Area (sf)	CN	Description
* 16,159	93	70% Lot Coverage Weighted
16,159	93	100.00% Pervious Area

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

Subcatchment 86S: Home Basin 22

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 05-5 Year Rainfall=2.86"

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Summary for Subcatchment 87S: Home Basin 27

Runoff = 0.30 cfs @ 7.98 hrs, Volume= 0.101 af, Depth= 2.12"
 Routed to Reach 135R : 1

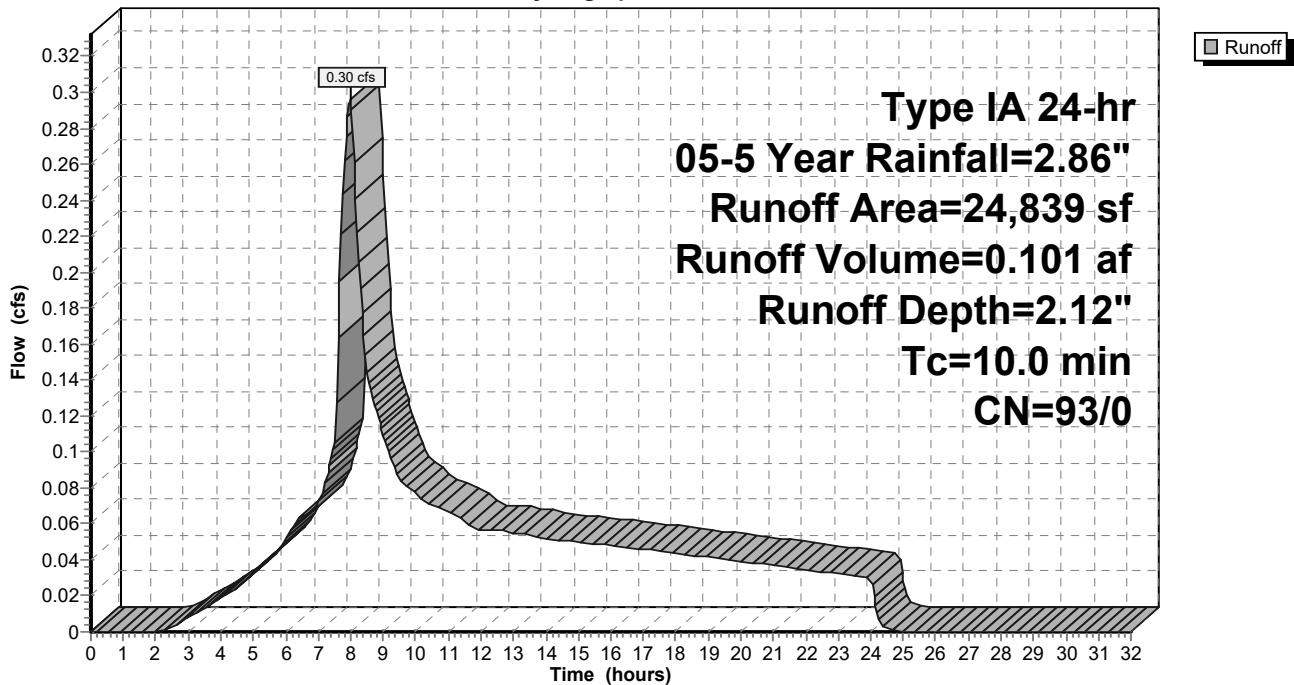
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 05-5 Year Rainfall=2.86"

Area (sf)	CN	Description
* 24,839	93	70% Lot Coverage Weighted
24,839	93	100.00% Pervious Area

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

Subcatchment 87S: Home Basin 27

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 05-5 Year Rainfall=2.86"

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Summary for Subcatchment 88S: Home Basin 28

Runoff = 0.30 cfs @ 7.98 hrs, Volume= 0.103 af, Depth= 2.12"
 Routed to Reach 131R : 1

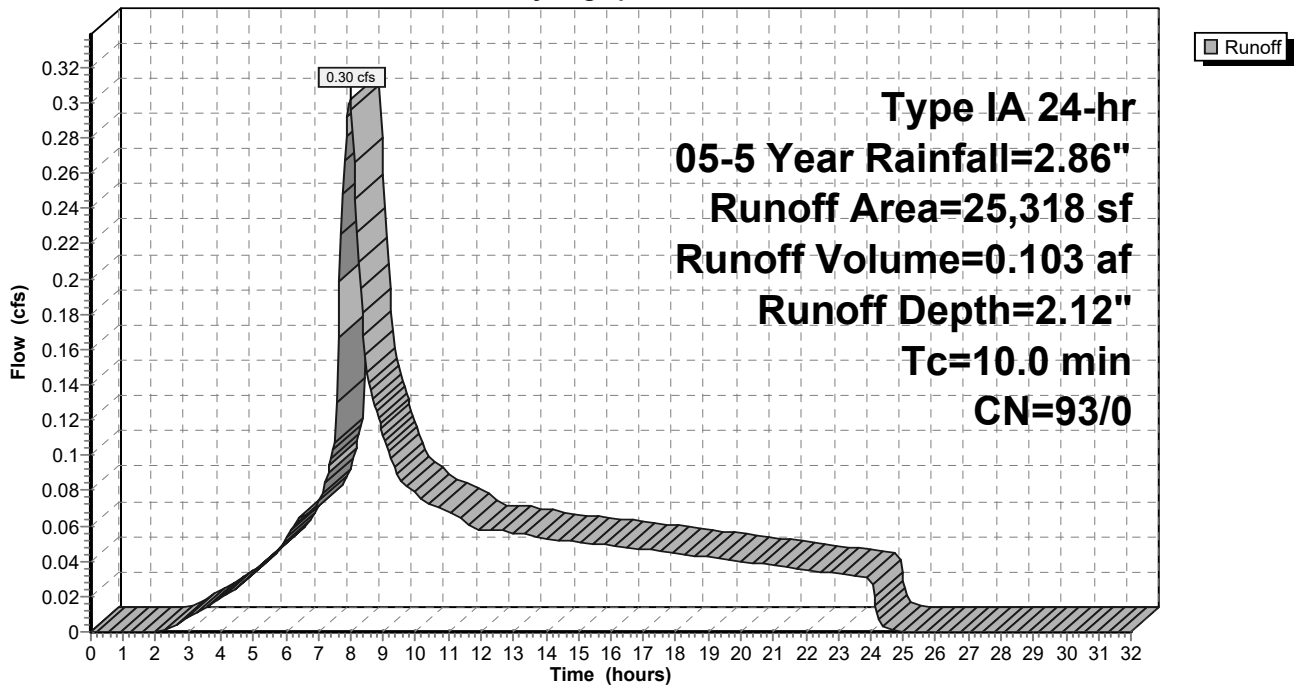
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 05-5 Year Rainfall=2.86"

Area (sf)	CN	Description
* 25,318	93	70% Lot Coverage Weighted
25,318	93	100.00% Pervious Area

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

Subcatchment 88S: Home Basin 28

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 05-5 Year Rainfall=2.86"

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Summary for Subcatchment 89S: Home Basin 24

Runoff = 0.25 cfs @ 7.98 hrs, Volume= 0.084 af, Depth= 2.12"
 Routed to Reach 135R : 1

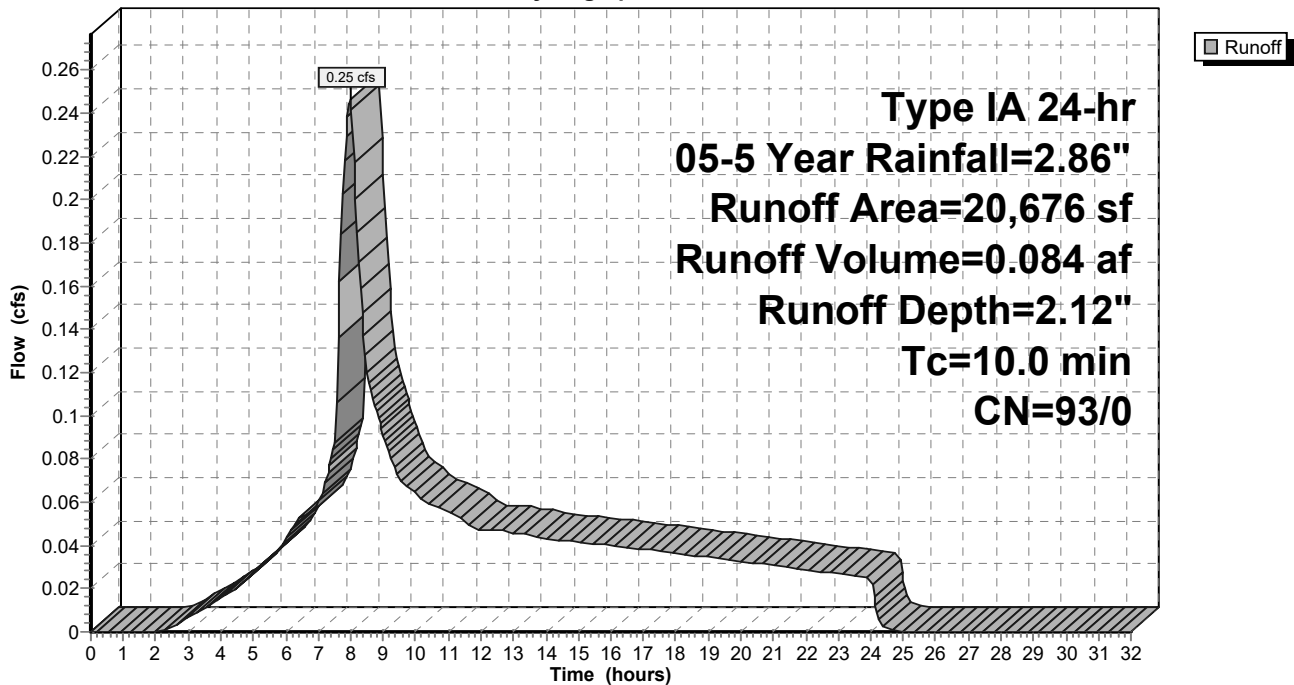
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 05-5 Year Rainfall=2.86"

Area (sf)	CN	Description
* 20,676	93	70% Lot Coverage Weighted
20,676	93	100.00% Pervious Area

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

Subcatchment 89S: Home Basin 24

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 05-5 Year Rainfall=2.86"

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Summary for Subcatchment 90S: Home Basin 26

Runoff = 0.17 cfs @ 7.98 hrs, Volume= 0.057 af, Depth= 2.12"
 Routed to Reach 136R : 1

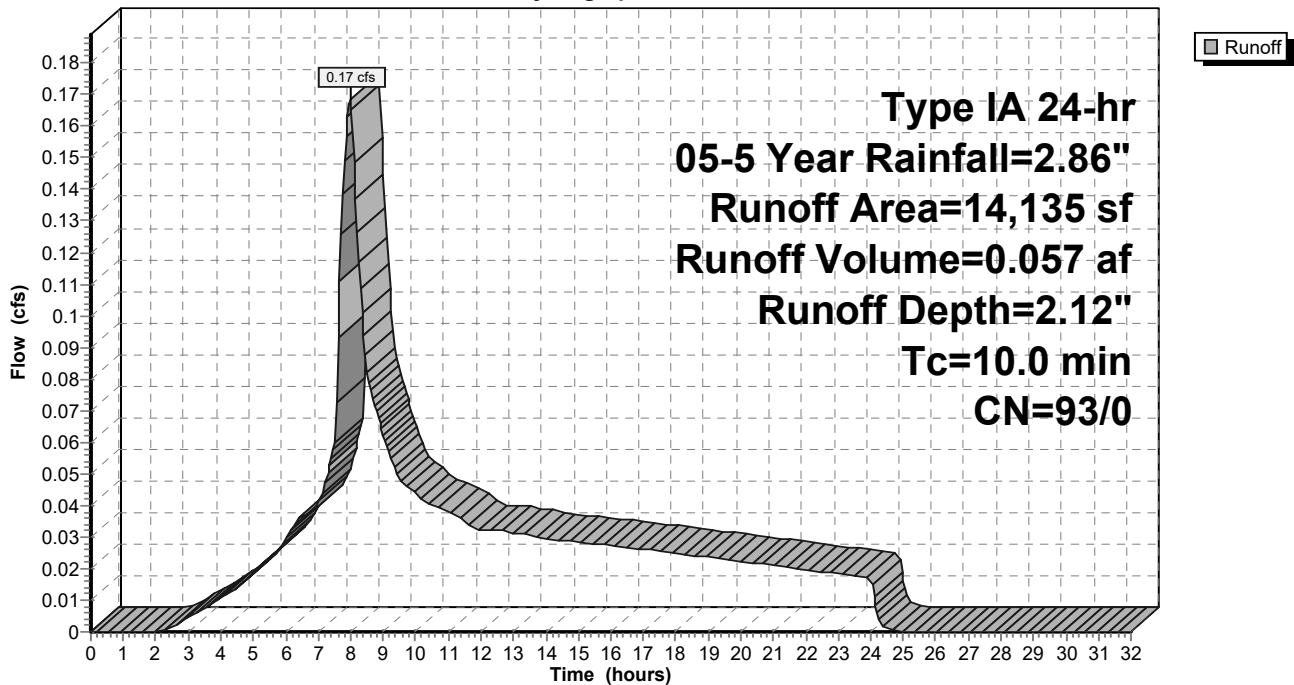
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 05-5 Year Rainfall=2.86"

Area (sf)	CN	Description
* 14,135	93	70% Lot Coverage Weighted
14,135	93	100.00% Pervious Area

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

Subcatchment 90S: Home Basin 26

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 05-5 Year Rainfall=2.86"

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Summary for Subcatchment 91S: Home Basin 23

Runoff = 0.15 cfs @ 7.98 hrs, Volume= 0.050 af, Depth= 2.12"
 Routed to Reach 143R : 1

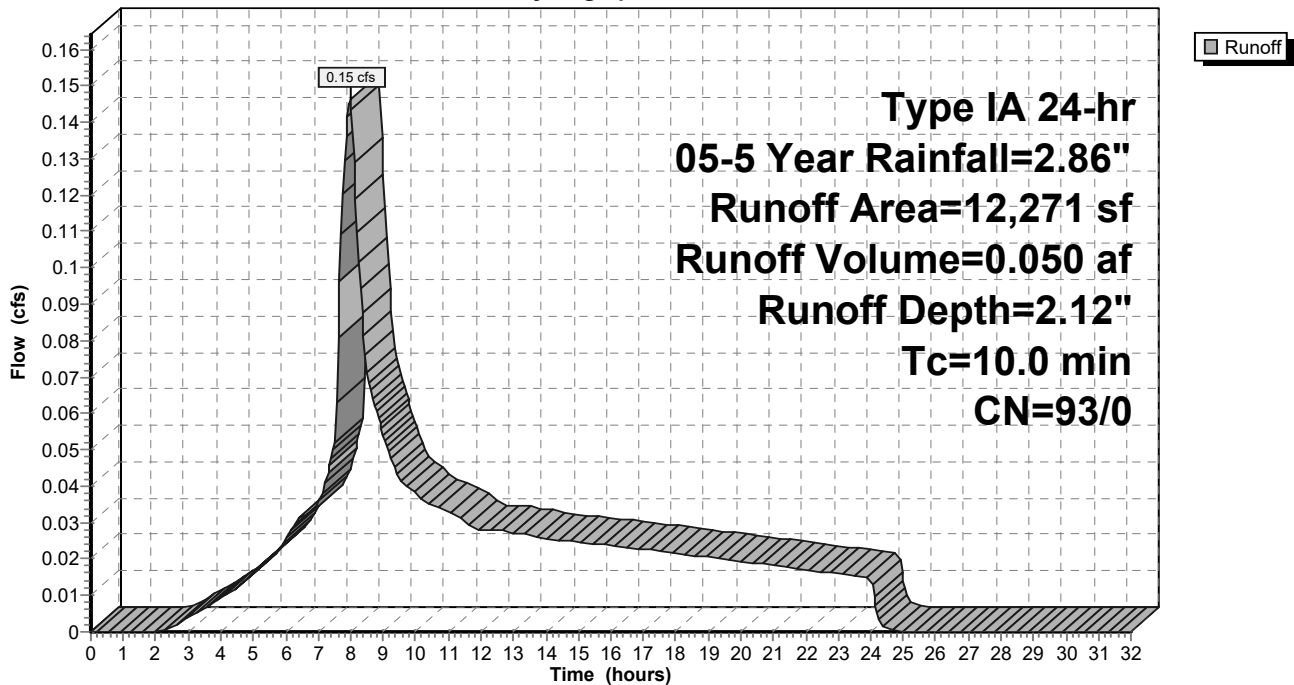
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 05-5 Year Rainfall=2.86"

Area (sf)	CN	Description
* 12,271	93	70% Lot Coverage Weighted
12,271	93	100.00% Pervious Area

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

Subcatchment 91S: Home Basin 23

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 05-5 Year Rainfall=2.86"

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Summary for Subcatchment 92S: Home Basin 21

Runoff = 0.32 cfs @ 7.98 hrs, Volume= 0.110 af, Depth= 2.12"
 Routed to Reach 145R : 1

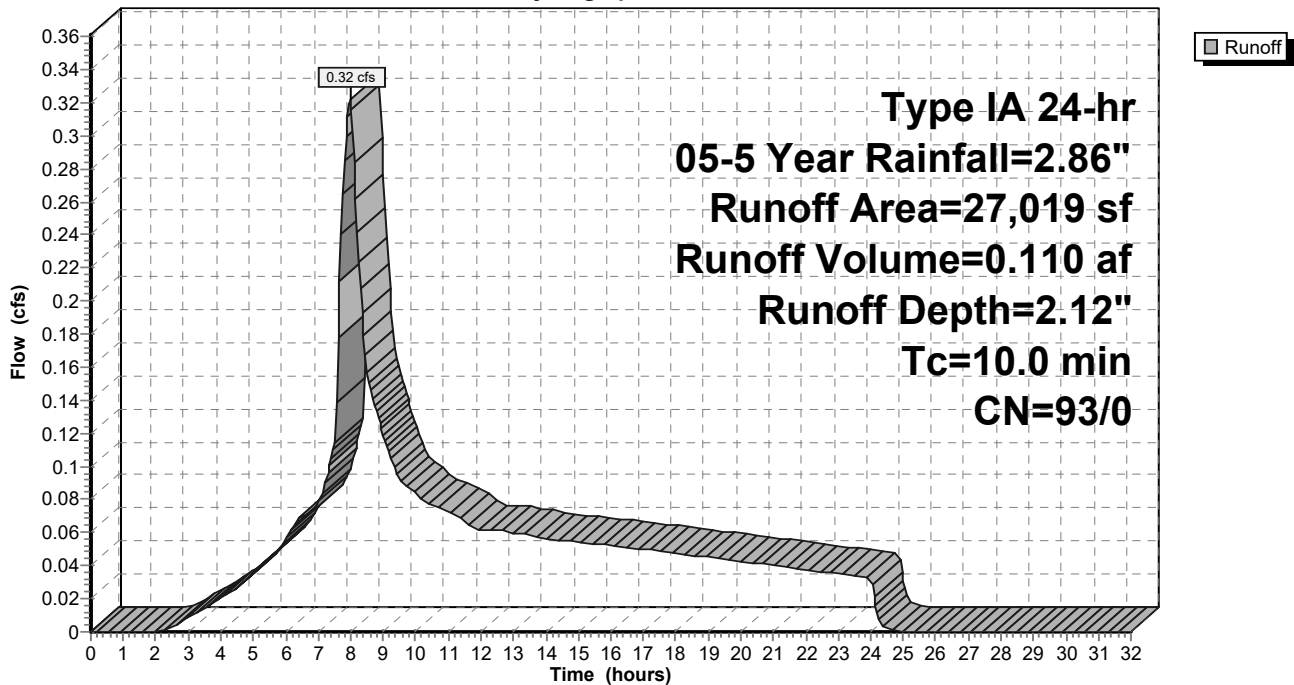
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 05-5 Year Rainfall=2.86"

Area (sf)	CN	Description
* 27,019	93	70% Lot Coverage Weighted
27,019	93	100.00% Pervious Area

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

Subcatchment 92S: Home Basin 21

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 05-5 Year Rainfall=2.86"

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Summary for Subcatchment 93S: Home Basin 25

Runoff = 0.20 cfs @ 7.98 hrs, Volume= 0.069 af, Depth= 2.12"
 Routed to Reach 136R : 1

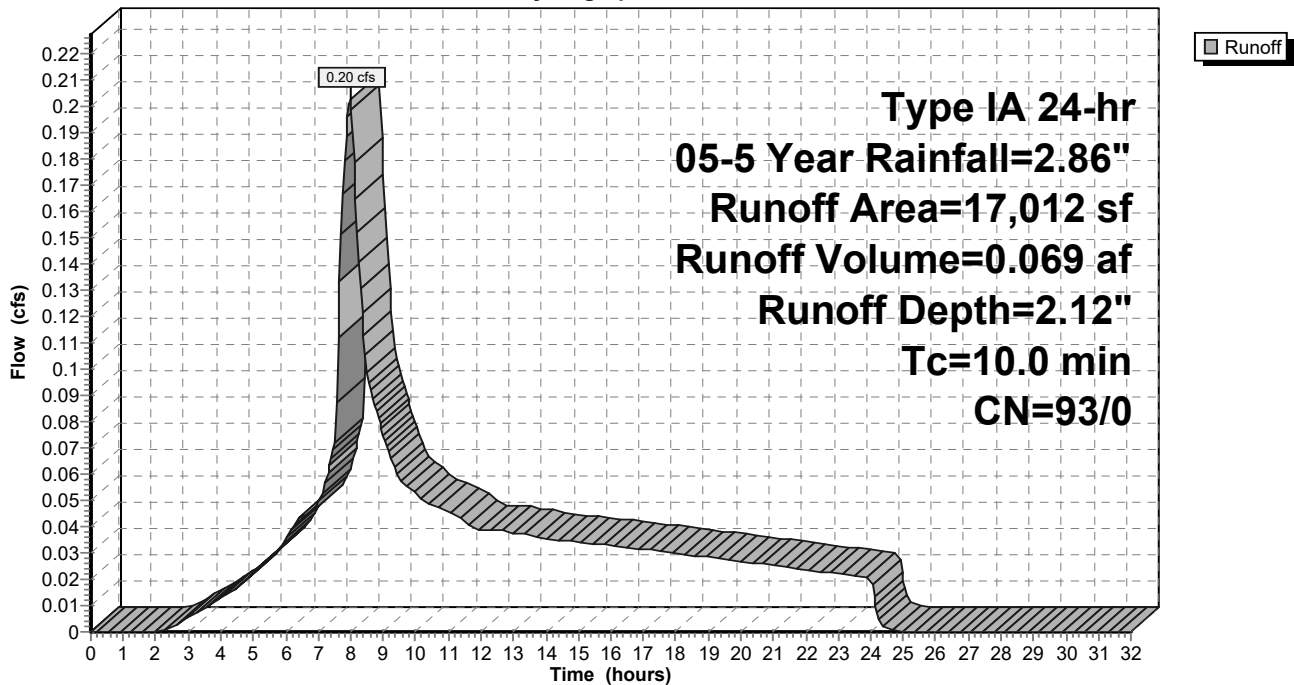
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 05-5 Year Rainfall=2.86"

Area (sf)	CN	Description
* 17,012	93	70% Lot Coverage Weighted
17,012	93	100.00% Pervious Area

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

Subcatchment 93S: Home Basin 25

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 05-5 Year Rainfall=2.86"

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Summary for Subcatchment 94S: Home Basin 4

Runoff = 0.23 cfs @ 7.98 hrs, Volume= 0.079 af, Depth= 2.12"
 Routed to Reach 160R : 1

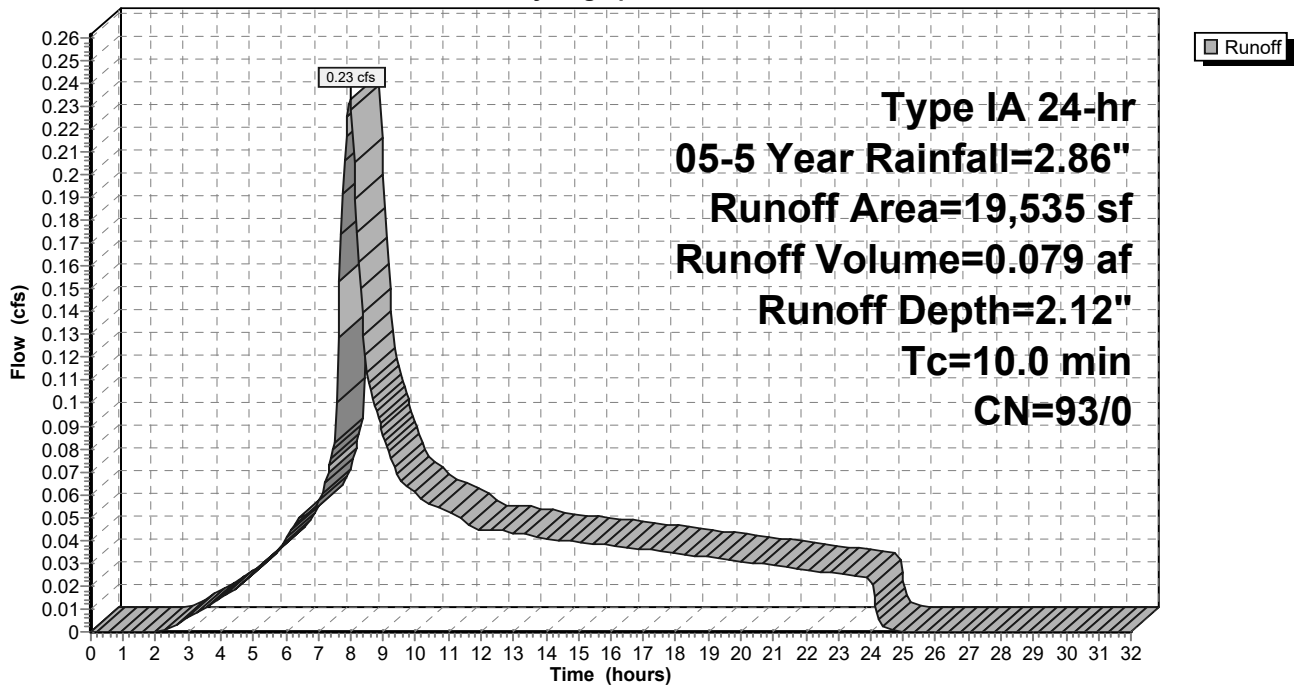
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 05-5 Year Rainfall=2.86"

Area (sf)	CN	Description
* 19,535	93	70% Lot Coverage Weighted
19,535	93	100.00% Pervious Area

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

Subcatchment 94S: Home Basin 4

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 05-5 Year Rainfall=2.86"

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Summary for Subcatchment 95S: Home Basin 31

Runoff = 0.30 cfs @ 7.98 hrs, Volume= 0.101 af, Depth= 2.12"
 Routed to Reach 131R : 1

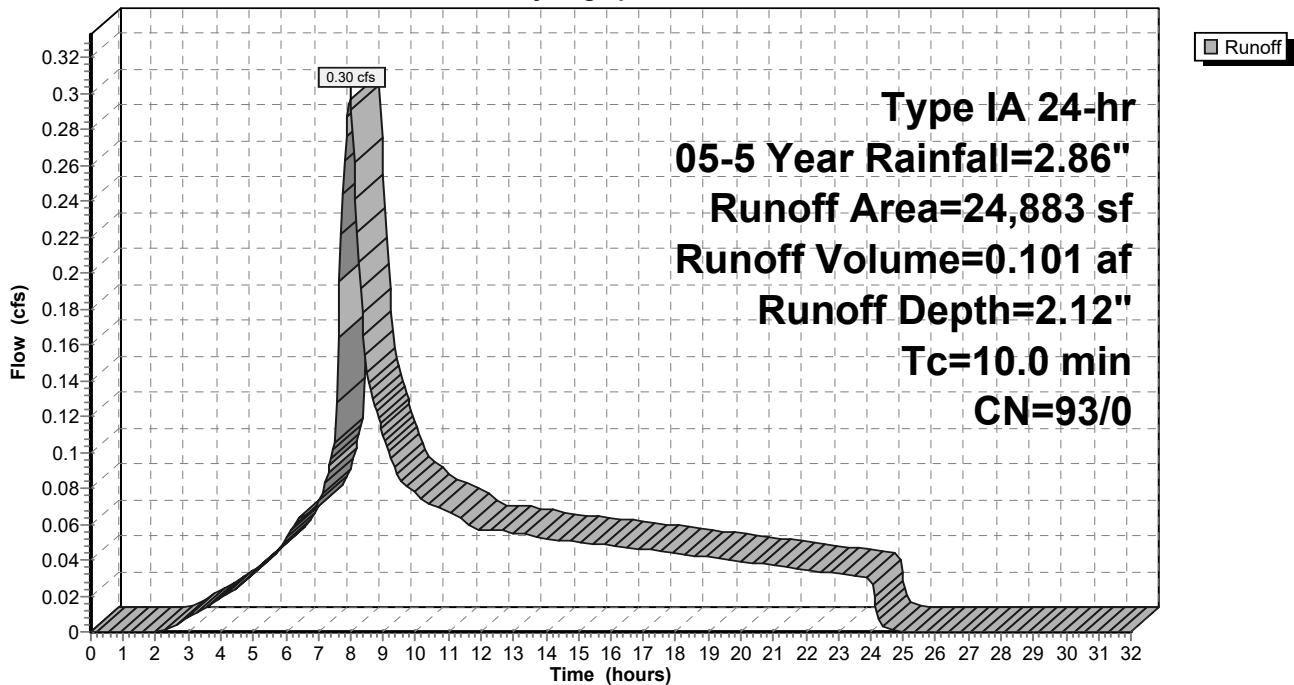
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 05-5 Year Rainfall=2.86"

Area (sf)	CN	Description
* 24,883	93	70% Lot Coverage Weighted
24,883	93	100.00% Pervious Area

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

Subcatchment 95S: Home Basin 31

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 05-5 Year Rainfall=2.86"

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Summary for Subcatchment 96S: Basin 1

Runoff = 0.22 cfs @ 7.98 hrs, Volume= 0.076 af, Depth= 2.63"
 Routed to Reach 133R : 1

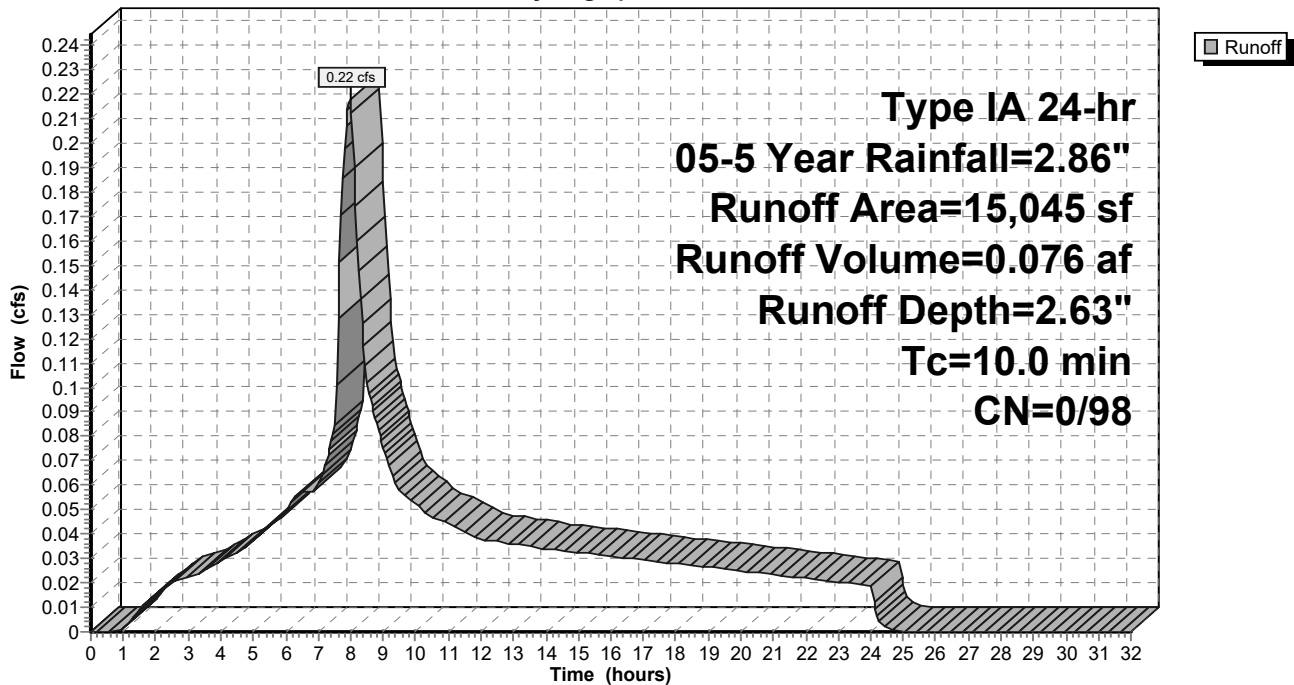
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 05-5 Year Rainfall=2.86"

Area (sf)	CN	Description
15,045	98	Paved roads w/curbs & sewers, HSG D
15,045	98	100.00% Impervious Area

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

Subcatchment 96S: Basin 1

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 05-5 Year Rainfall=2.86"

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Summary for Subcatchment 97S: Basin 2

Runoff = 0.29 cfs @ 7.98 hrs, Volume= 0.100 af, Depth= 2.63"
 Routed to Reach 132R : 1

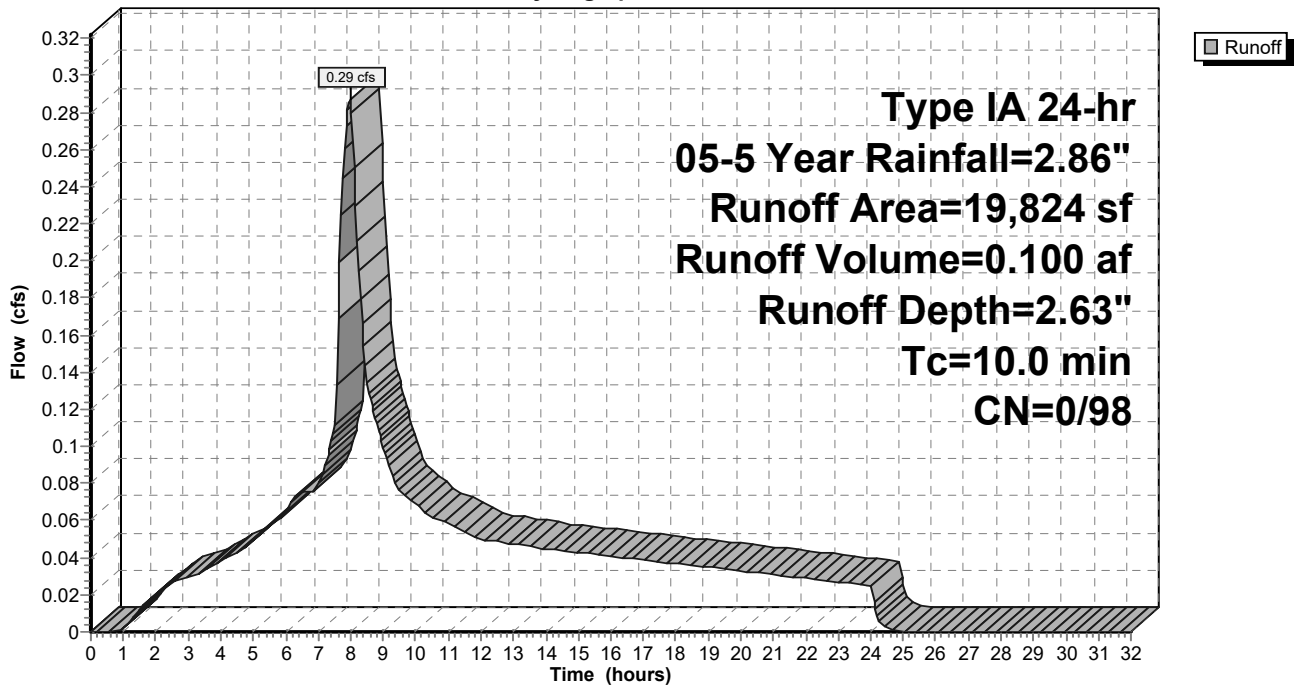
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 05-5 Year Rainfall=2.86"

Area (sf)	CN	Description
19,824	98	Paved roads w/curbs & sewers, HSG D
19,824	98	100.00% Impervious Area

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

Subcatchment 97S: Basin 2

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 05-5 Year Rainfall=2.86"

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Summary for Subcatchment 98S: Basin 3

Runoff = 0.34 cfs @ 7.98 hrs, Volume= 0.118 af, Depth= 2.63"
 Routed to Reach 131R : 1

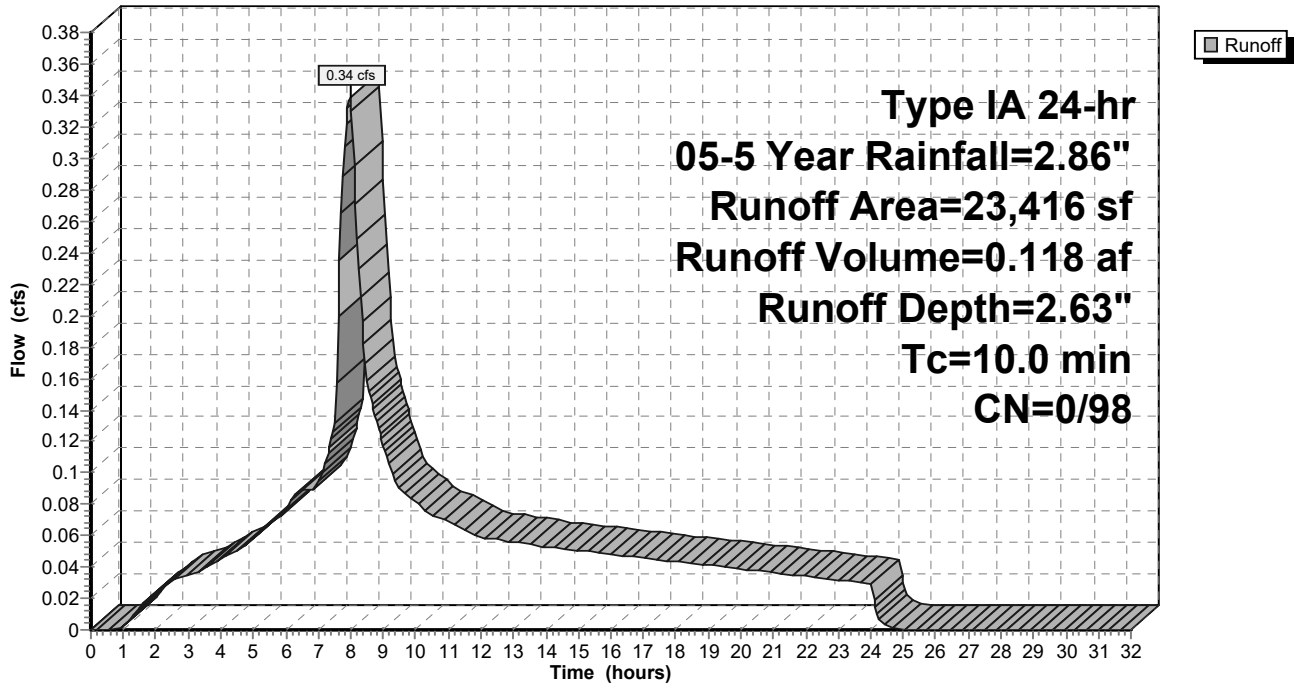
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 05-5 Year Rainfall=2.86"

Area (sf)	CN	Description
23,416	98	Paved roads w/curbs & sewers, HSG D
23,416	98	100.00% Impervious Area

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

Subcatchment 98S: Basin 3

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 05-5 Year Rainfall=2.86"

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Summary for Subcatchment 99S: Home Basin 6

Runoff = 0.31 cfs @ 7.98 hrs, Volume= 0.105 af, Depth= 2.12"
 Routed to Reach 163R : 1

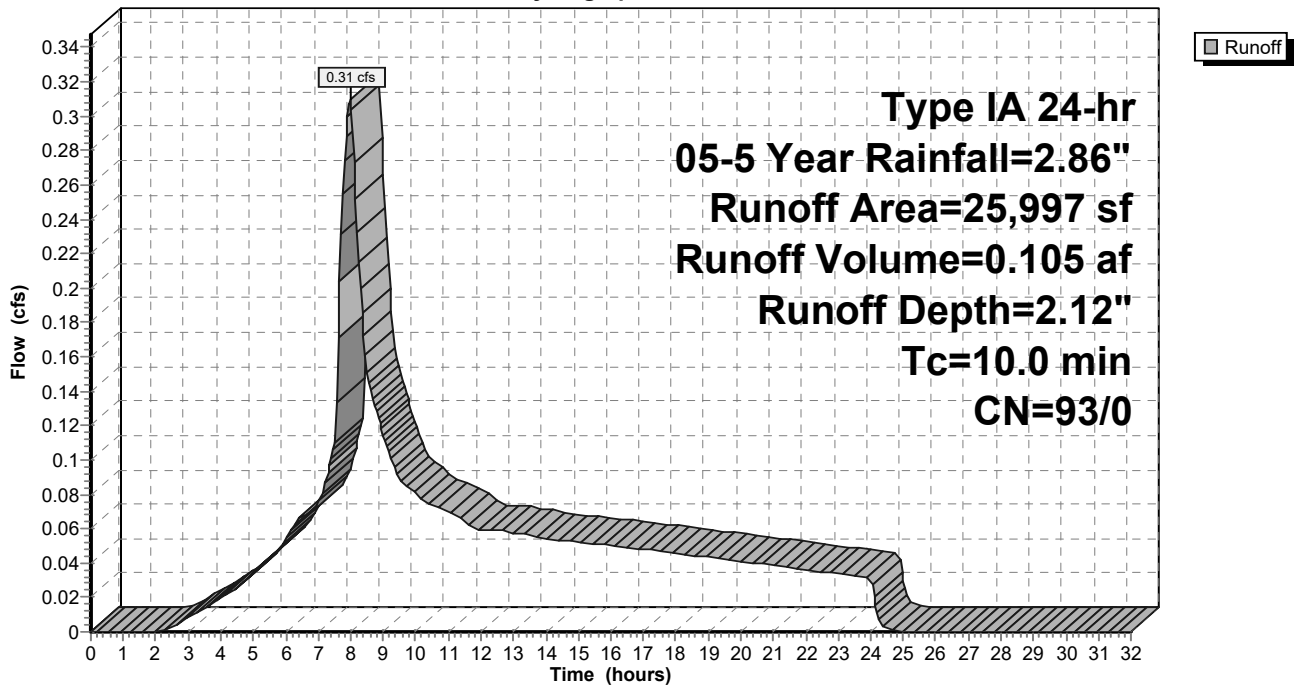
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 05-5 Year Rainfall=2.86"

Area (sf)	CN	Description
* 25,997	93	70% Lot Coverage Weighted
25,997	93	100.00% Pervious Area

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

Subcatchment 99S: Home Basin 6

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 05-5 Year Rainfall=2.86"

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Summary for Subcatchment 100S: Basin 4

Runoff = 0.05 cfs @ 7.98 hrs, Volume= 0.018 af, Depth= 2.63"
 Routed to Pond 60P : Stormwater Swale 1

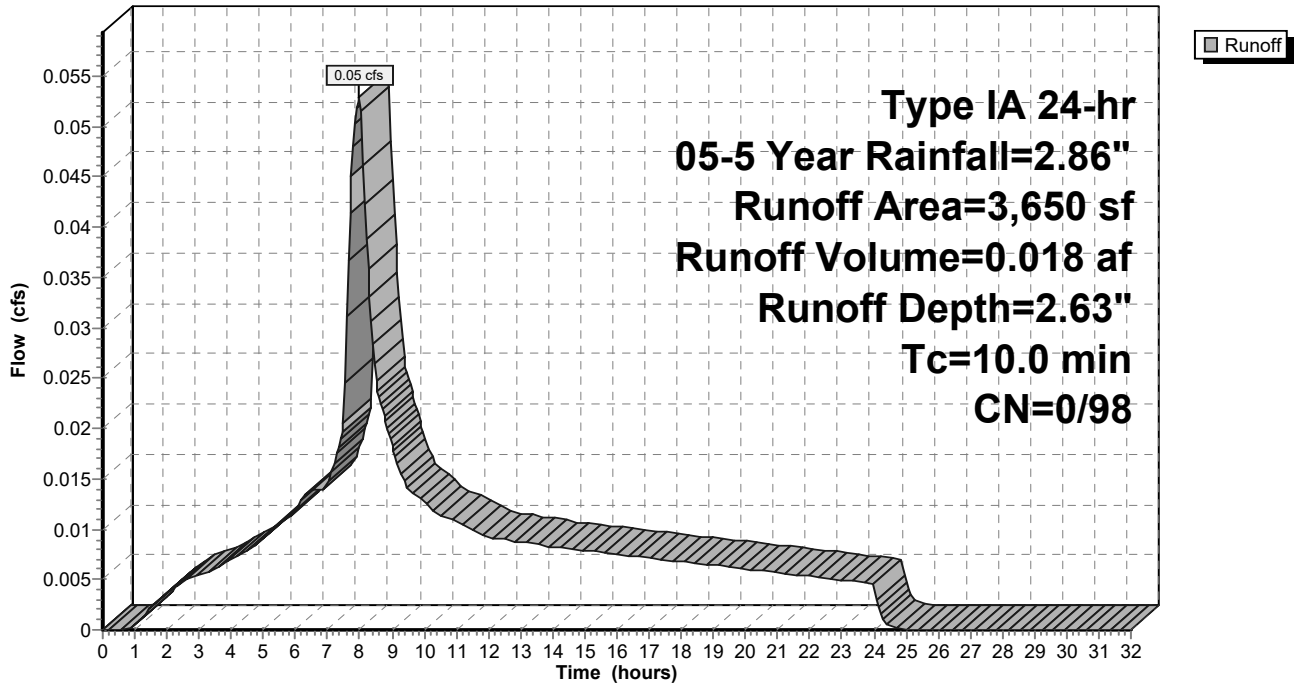
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 05-5 Year Rainfall=2.86"

Area (sf)	CN	Description
3,650	98	Paved roads w/curbs & sewers, HSG D
3,650	98	100.00% Impervious Area

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

Subcatchment 100S: Basin 4

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 05-5 Year Rainfall=2.86"

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Summary for Subcatchment 101S: Basin 5

Runoff = 0.05 cfs @ 7.98 hrs, Volume= 0.018 af, Depth= 2.63"
 Routed to Pond 54P : Stormwater Swale 2

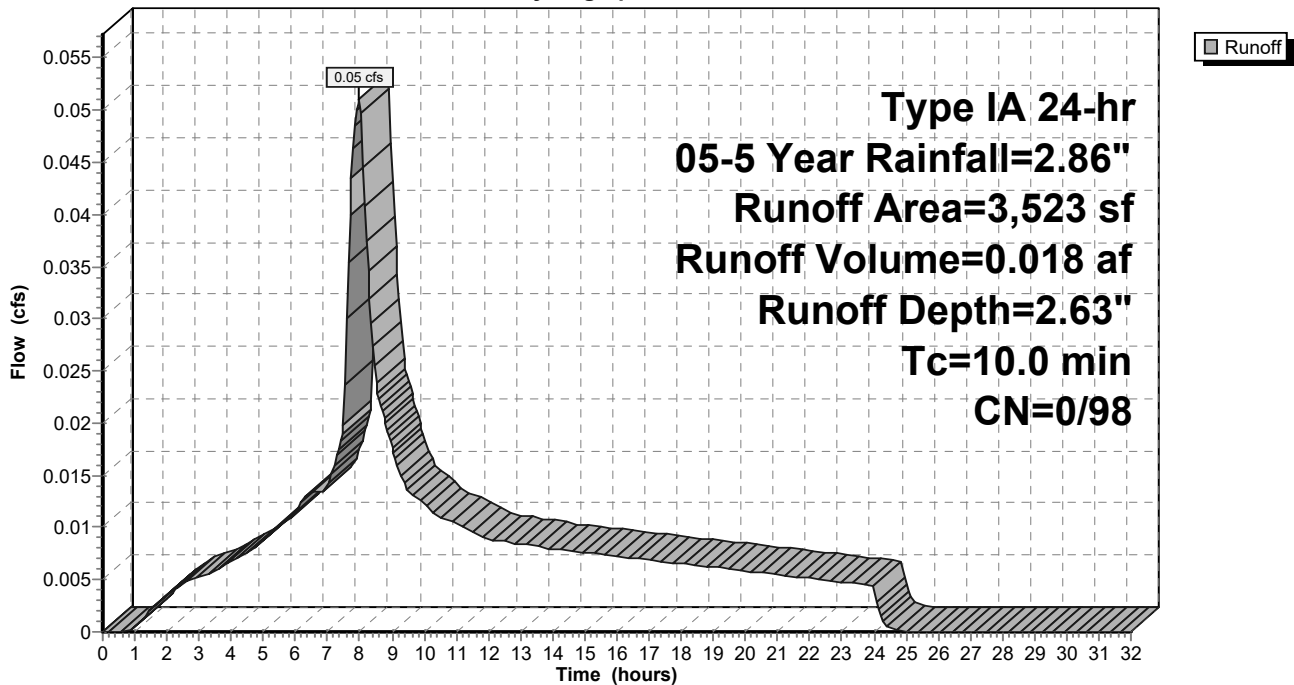
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 05-5 Year Rainfall=2.86"

Area (sf)	CN	Description
3,523	98	Paved roads w/curbs & sewers, HSG D
3,523	98	100.00% Impervious Area

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

Subcatchment 101S: Basin 5

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 05-5 Year Rainfall=2.86"

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Summary for Subcatchment 102S: Home Basin 3

Runoff = 0.23 cfs @ 7.98 hrs, Volume= 0.079 af, Depth= 2.12"
 Routed to Reach 151R : 1

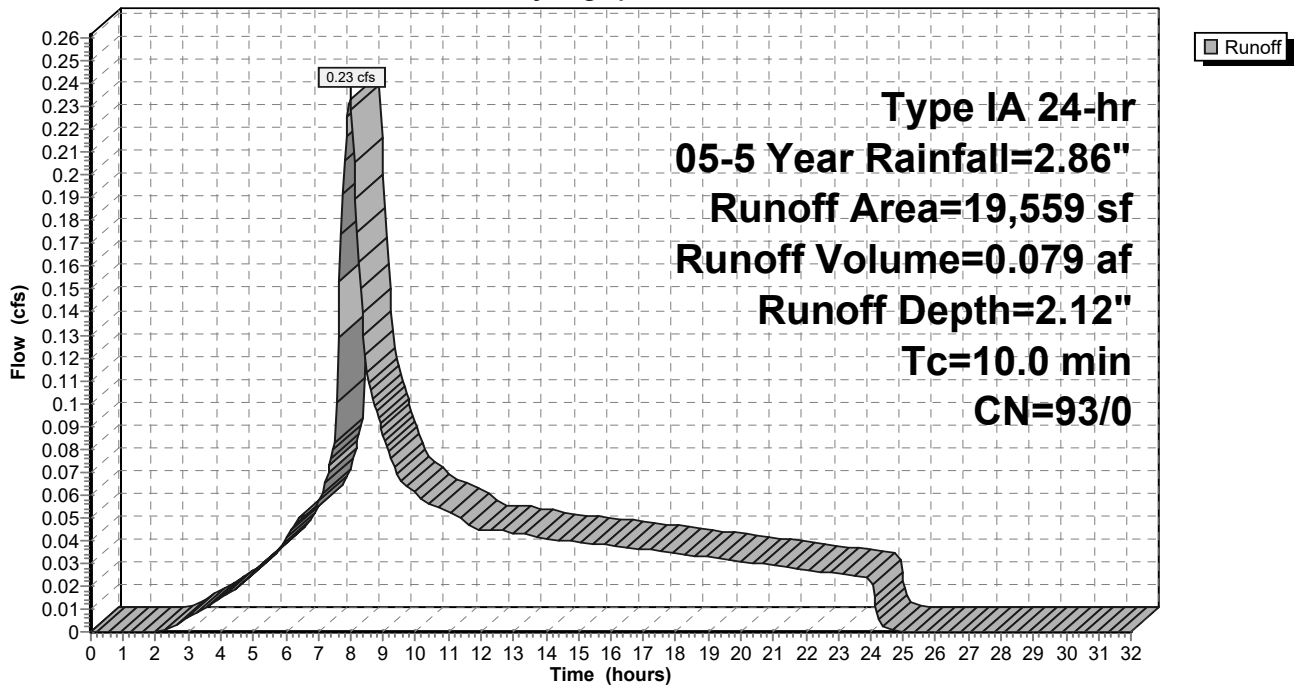
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 05-5 Year Rainfall=2.86"

Area (sf)	CN	Description
* 19,559	93	70% Lot Coverage Weighted
19,559	93	100.00% Pervious Area

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

Subcatchment 102S: Home Basin 3

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 05-5 Year Rainfall=2.86"

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Summary for Subcatchment 103S: Home Basin 1

Runoff = 0.27 cfs @ 7.98 hrs, Volume= 0.090 af, Depth= 2.12"
 Routed to Reach 137R : 1

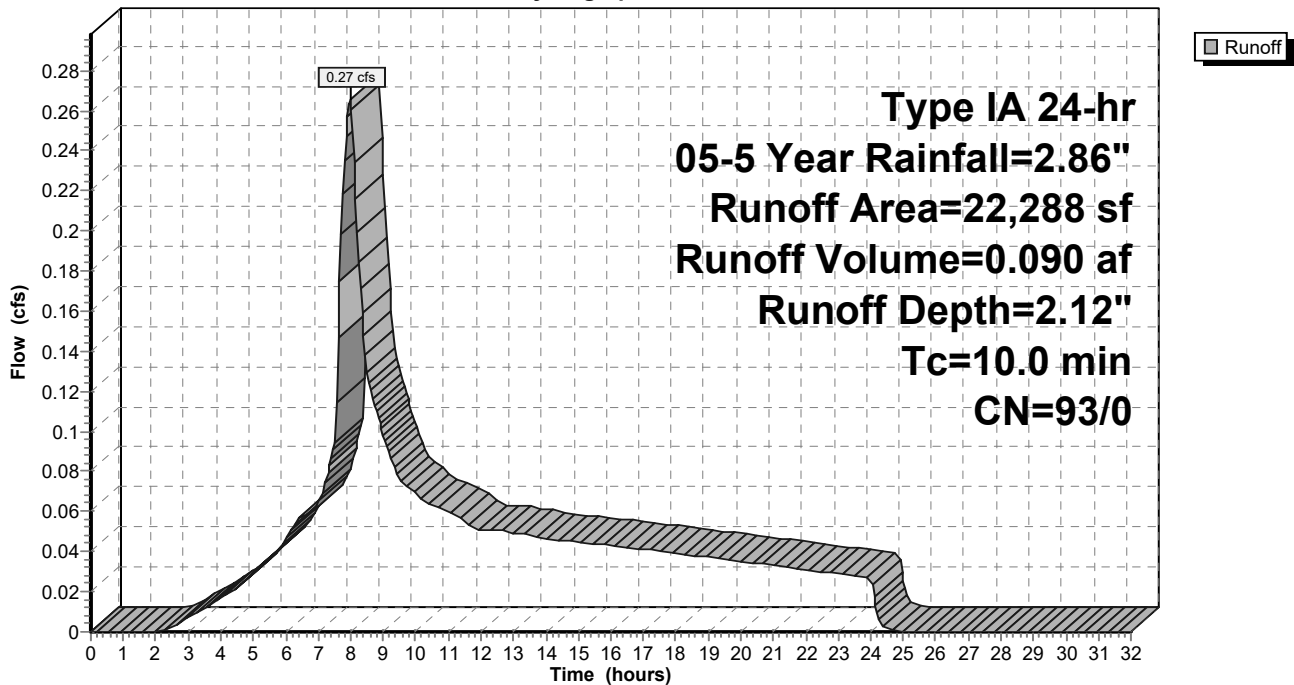
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 05-5 Year Rainfall=2.86"

Area (sf)	CN	Description
* 22,288	93	70% Lot Coverage Weighted
22,288	93	100.00% Pervious Area

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

Subcatchment 103S: Home Basin 1

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 05-5 Year Rainfall=2.86"

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Summary for Subcatchment 104S: Home Basin 5

Runoff = 0.40 cfs @ 7.98 hrs, Volume= 0.136 af, Depth= 2.12"
 Routed to Reach 165R : 1

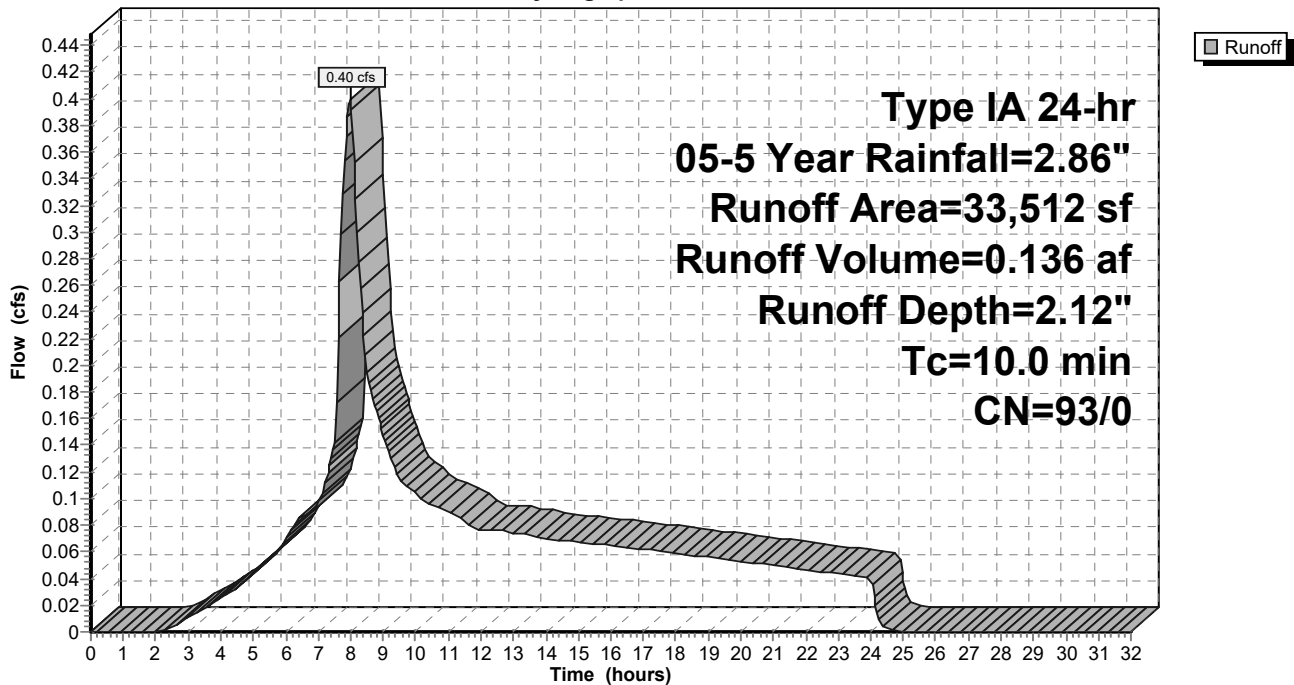
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 05-5 Year Rainfall=2.86"

Area (sf)	CN	Description
* 33,512	93	70% Lot Coverage Weighted
33,512	93	100.00% Pervious Area

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

Subcatchment 104S: Home Basin 5

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 05-5 Year Rainfall=2.86"

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Summary for Subcatchment 105S: Basin 6

Runoff = 0.13 cfs @ 7.98 hrs, Volume= 0.045 af, Depth= 2.63"
 Routed to Reach 138R : 1

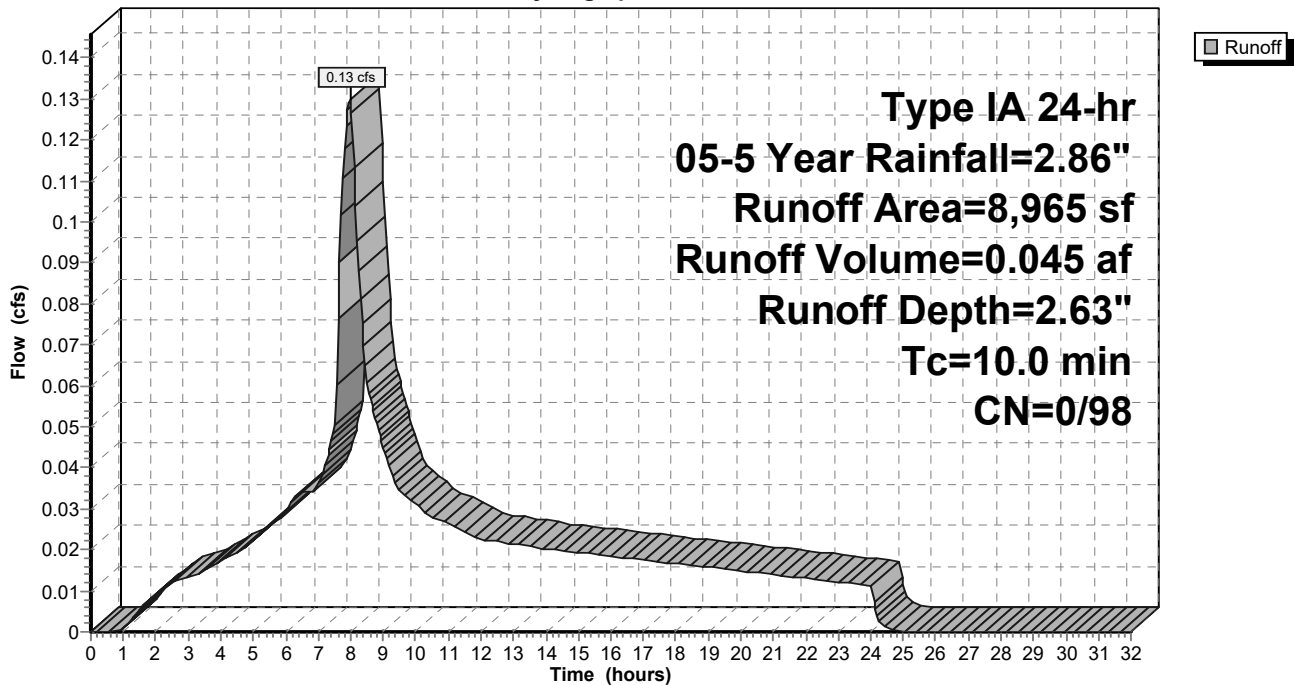
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 05-5 Year Rainfall=2.86"

Area (sf)	CN	Description
8,965	98	Paved roads w/curbs & sewers, HSG D
8,965	98	100.00% Impervious Area

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

Subcatchment 105S: Basin 6

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 05-5 Year Rainfall=2.86"

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Summary for Subcatchment 107S: Basin 8

Runoff = 0.12 cfs @ 7.98 hrs, Volume= 0.041 af, Depth= 2.63"
 Routed to Reach 158R : 1

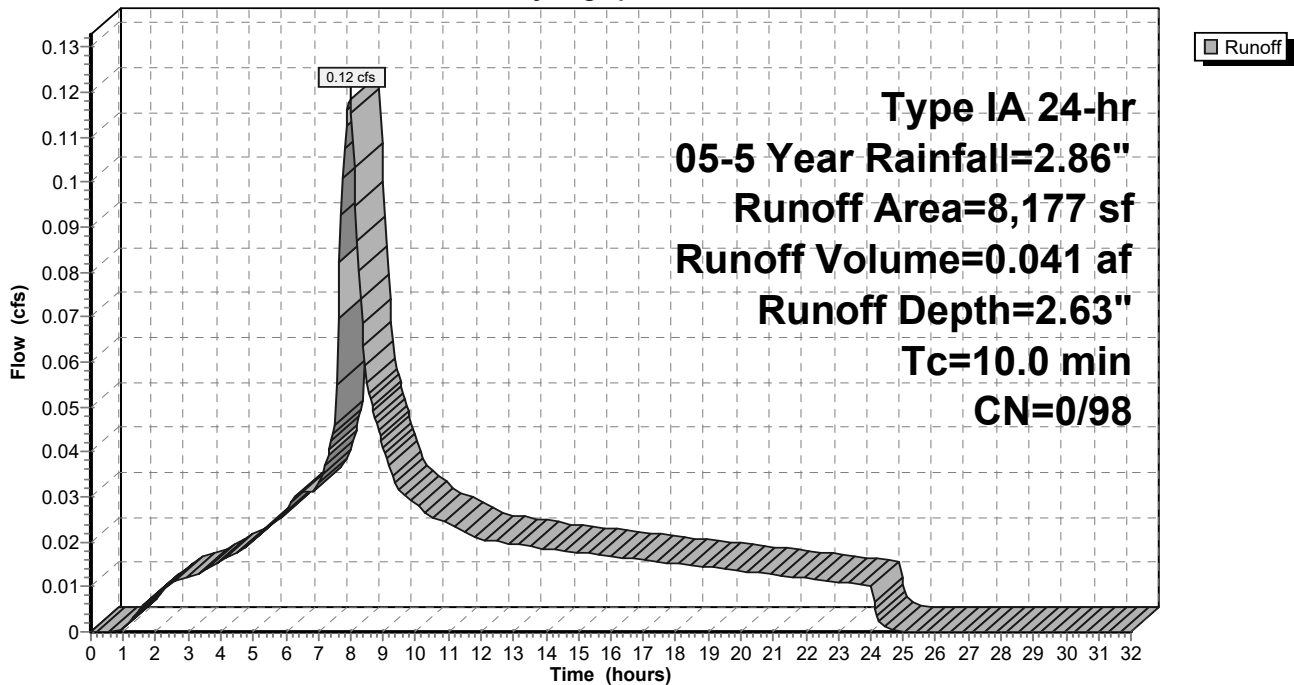
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 05-5 Year Rainfall=2.86"

Area (sf)	CN	Description
8,177	98	Paved roads w/curbs & sewers, HSG D
8,177	98	100.00% Impervious Area

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

Subcatchment 107S: Basin 8

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 05-5 Year Rainfall=2.86"

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Summary for Subcatchment 108S: Basin 9

Runoff = 0.19 cfs @ 7.98 hrs, Volume= 0.066 af, Depth= 2.63"
 Routed to Reach 135R : 1

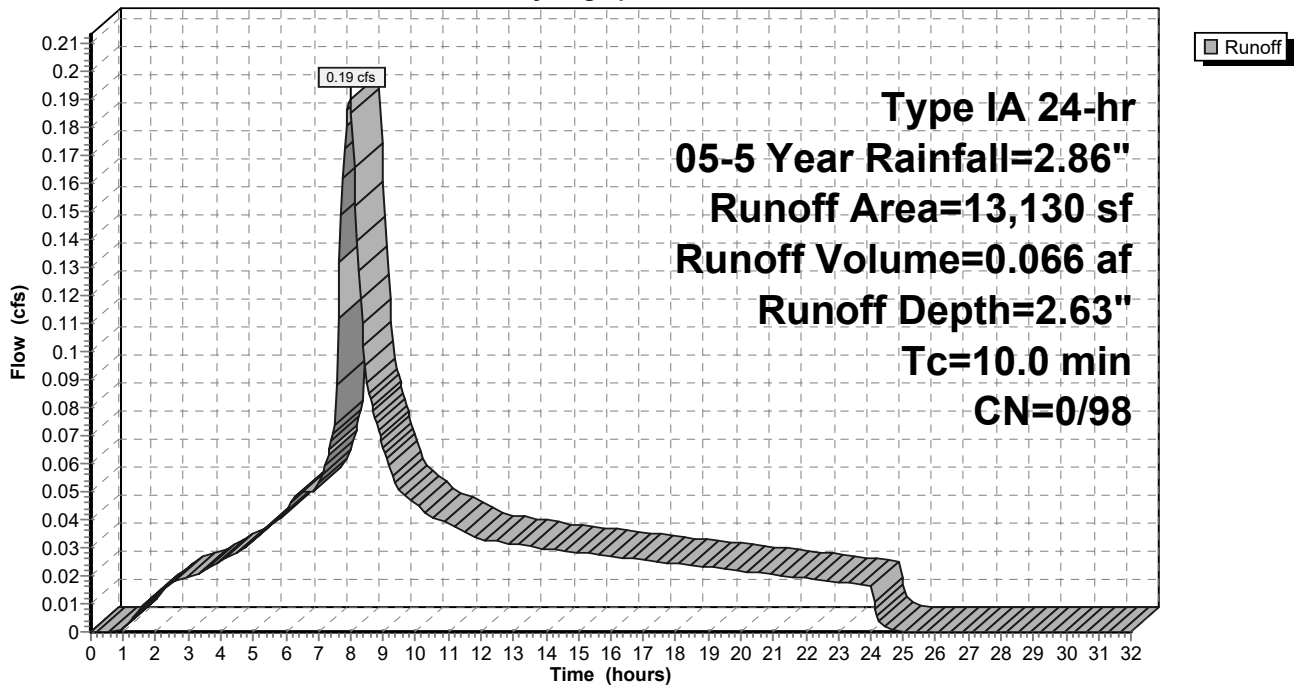
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 05-5 Year Rainfall=2.86"

Area (sf)	CN	Description
13,130	98	Paved roads w/curbs & sewers, HSG D
13,130	98	100.00% Impervious Area

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

Subcatchment 108S: Basin 9

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 05-5 Year Rainfall=2.86"

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Summary for Subcatchment 109S: Basin 10

Runoff = 0.33 cfs @ 7.98 hrs, Volume= 0.115 af, Depth= 2.63"
 Routed to Reach 137R : 1

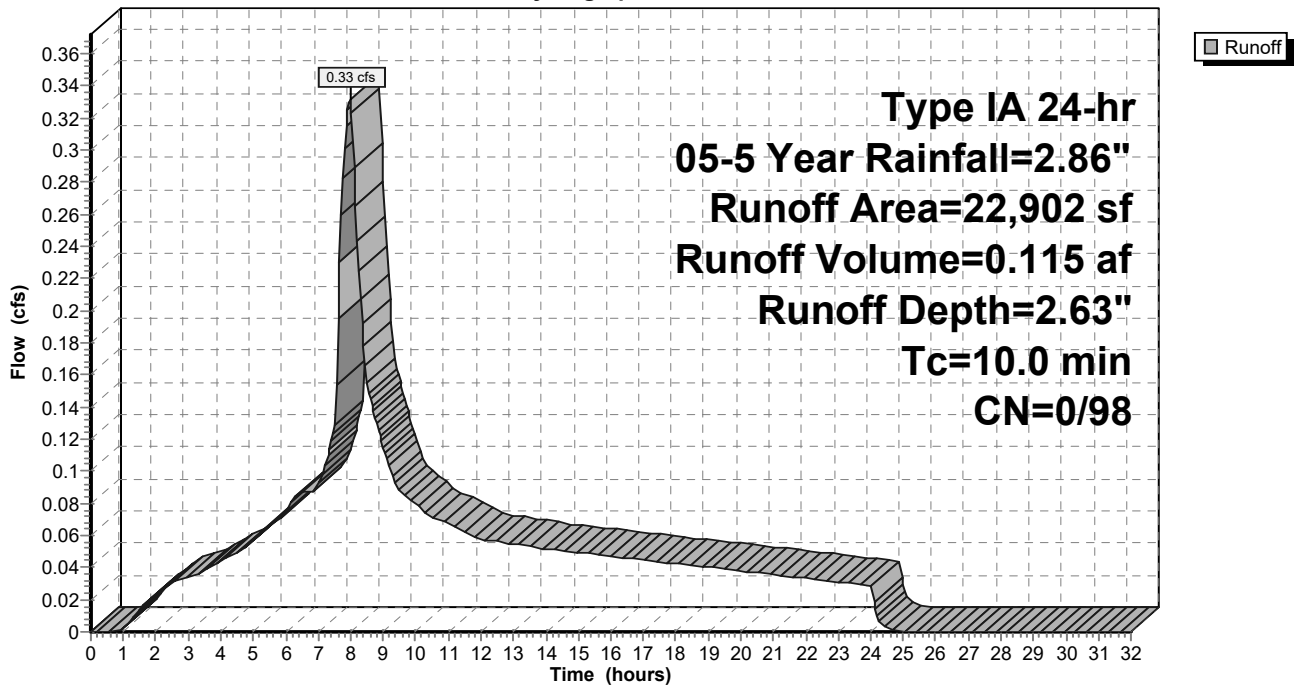
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 05-5 Year Rainfall=2.86"

Area (sf)	CN	Description
22,902	98	Paved roads w/curbs & sewers, HSG D
22,902	98	100.00% Impervious Area

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

Subcatchment 109S: Basin 10

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 05-5 Year Rainfall=2.86"

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Summary for Subcatchment 110S: Basin 11

Runoff = 0.37 cfs @ 7.98 hrs, Volume= 0.129 af, Depth= 2.63"
 Routed to Reach 145R : 1

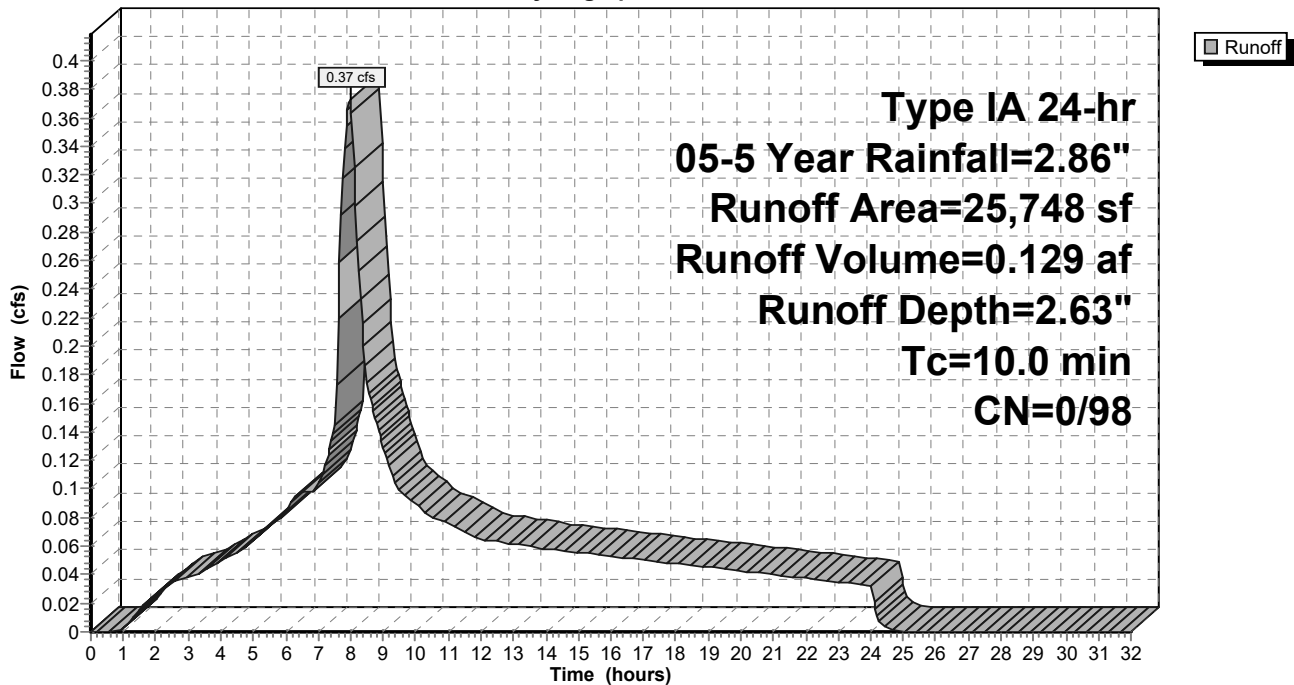
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 05-5 Year Rainfall=2.86"

Area (sf)	CN	Description
25,748	98	Paved roads w/curbs & sewers, HSG D
25,748	98	100.00% Impervious Area

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

Subcatchment 110S: Basin 11

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 05-5 Year Rainfall=2.86"

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Summary for Subcatchment 111S: Basin 12

Runoff = 0.08 cfs @ 7.98 hrs, Volume= 0.028 af, Depth= 2.63"
 Routed to Reach 143R : 1

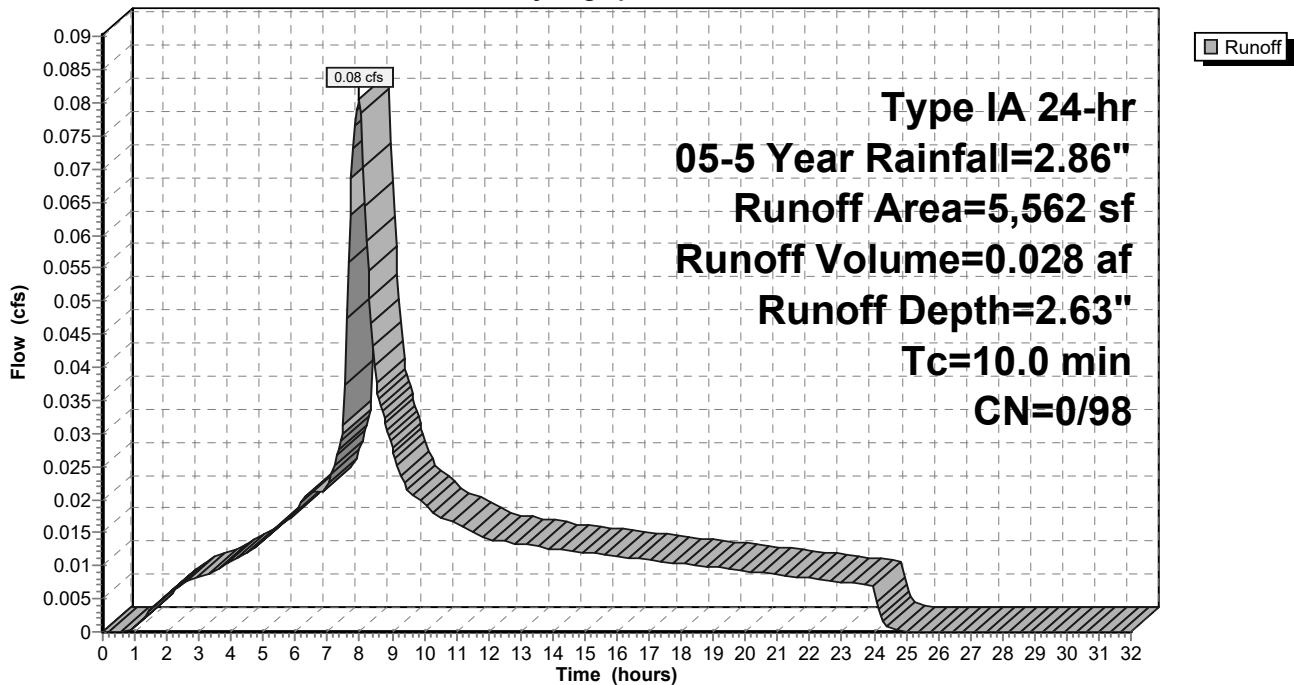
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 05-5 Year Rainfall=2.86"

Area (sf)	CN	Description
5,562	98	Paved roads w/curbs & sewers, HSG D
5,562	98	100.00% Impervious Area

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

Subcatchment 111S: Basin 12

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 05-5 Year Rainfall=2.86"

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Summary for Subcatchment 112S: Basin 13

Runoff = 0.07 cfs @ 7.98 hrs, Volume= 0.024 af, Depth= 2.63"
 Routed to Reach 158R : 1

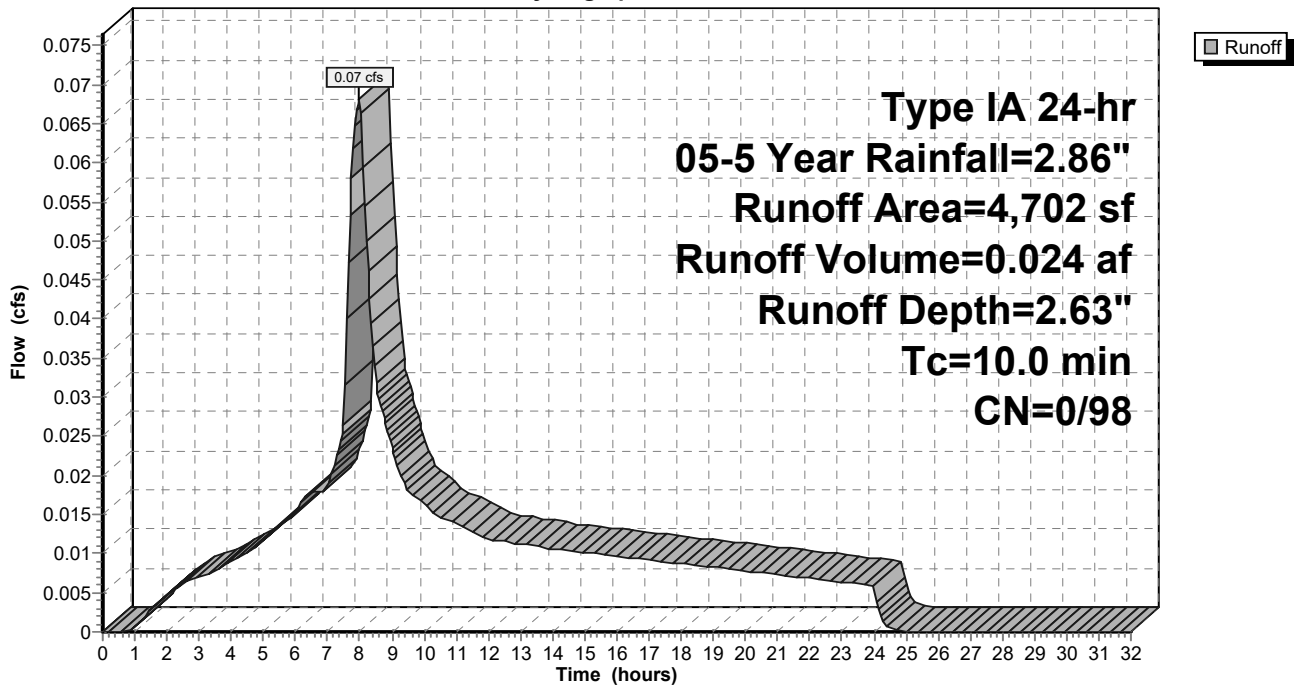
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 05-5 Year Rainfall=2.86"

Area (sf)	CN	Description
4,702	98	Paved roads w/curbs & sewers, HSG D
4,702	98	100.00% Impervious Area

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

Subcatchment 112S: Basin 13

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 05-5 Year Rainfall=2.86"

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Summary for Subcatchment 113S: Basin 14

Runoff = 0.11 cfs @ 7.98 hrs, Volume= 0.039 af, Depth= 2.63"
 Routed to Reach 159R : 1

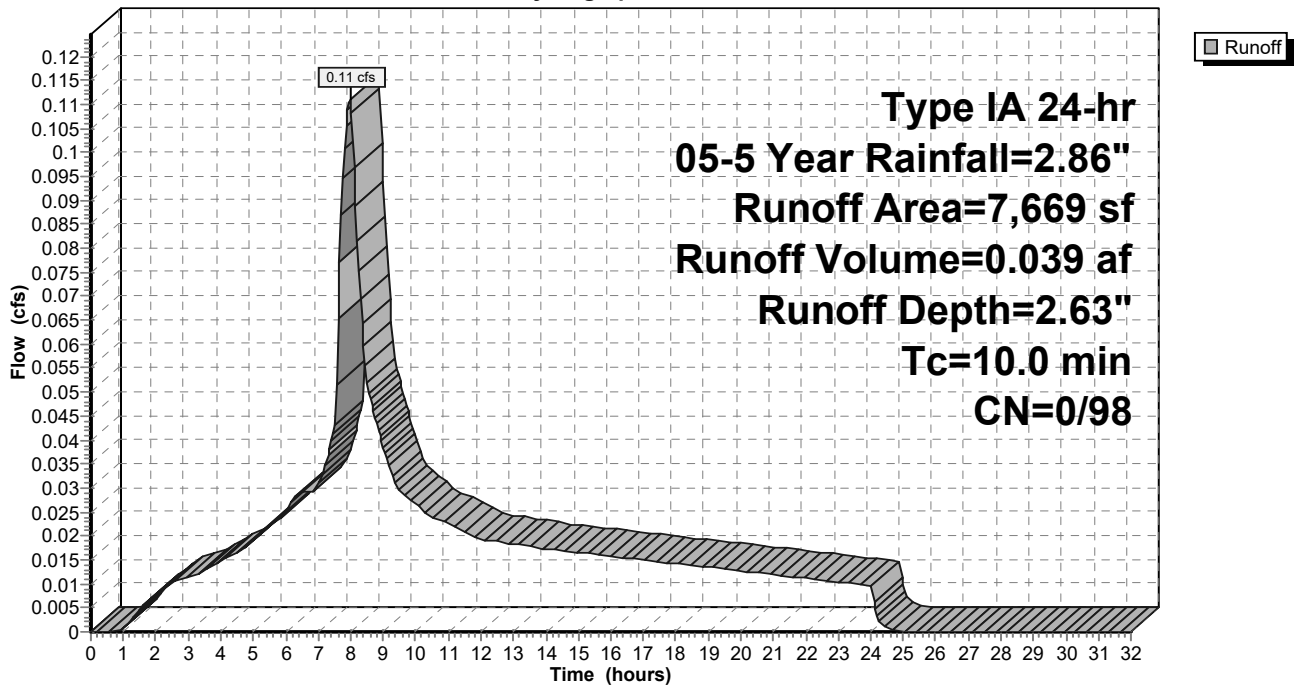
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 05-5 Year Rainfall=2.86"

Area (sf)	CN	Description
7,669	98	Paved roads w/curbs & sewers, HSG D
7,669	98	100.00% Impervious Area

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

Subcatchment 113S: Basin 14

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 05-5 Year Rainfall=2.86"

Prepared by A&O Engineering LLC

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Summary for Subcatchment 114S: Basin 15

Runoff = 0.11 cfs @ 7.98 hrs, Volume= 0.037 af, Depth= 2.63"
 Routed to Reach 143R : 1

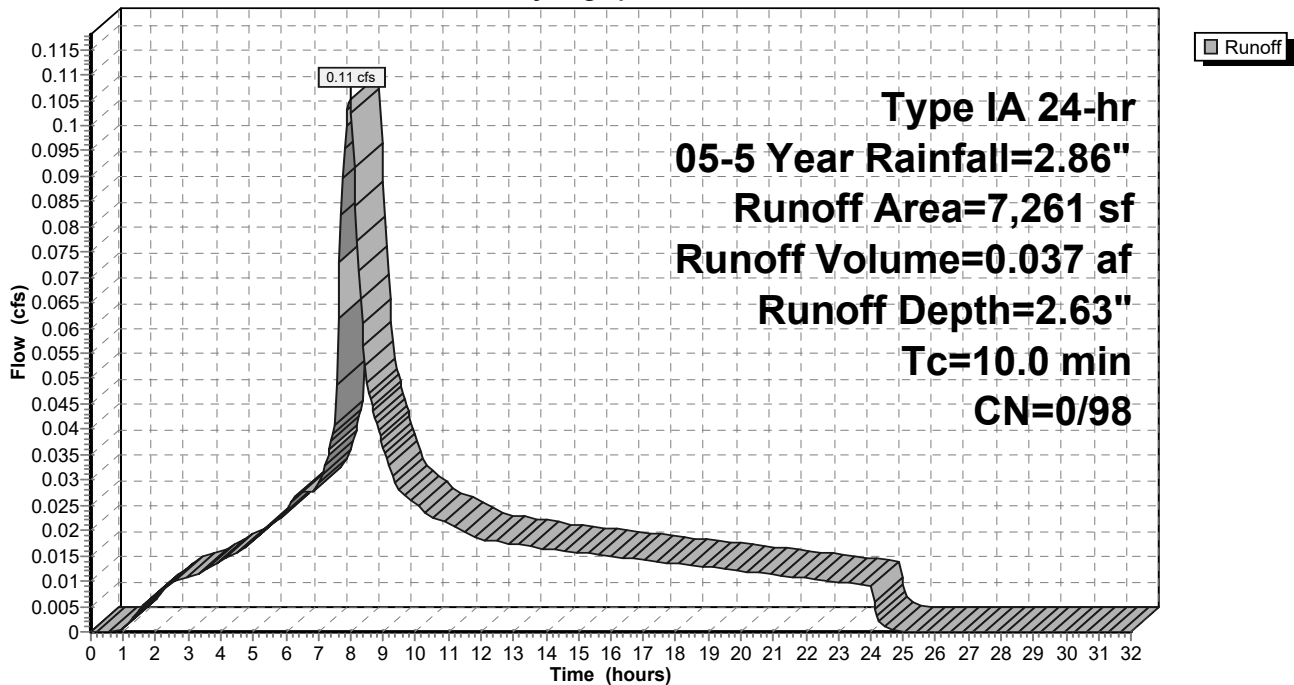
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 05-5 Year Rainfall=2.86"

Area (sf)	CN	Description
7,261	98	Paved roads w/curbs & sewers, HSG D
7,261	98	100.00% Impervious Area

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

Subcatchment 114S: Basin 15

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 05-5 Year Rainfall=2.86"

Prepared by A&O Engineering LLC

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Summary for Subcatchment 115S: Basin 16

Runoff = 0.10 cfs @ 7.98 hrs, Volume= 0.036 af, Depth= 2.63"
 Routed to Reach 149R : 1

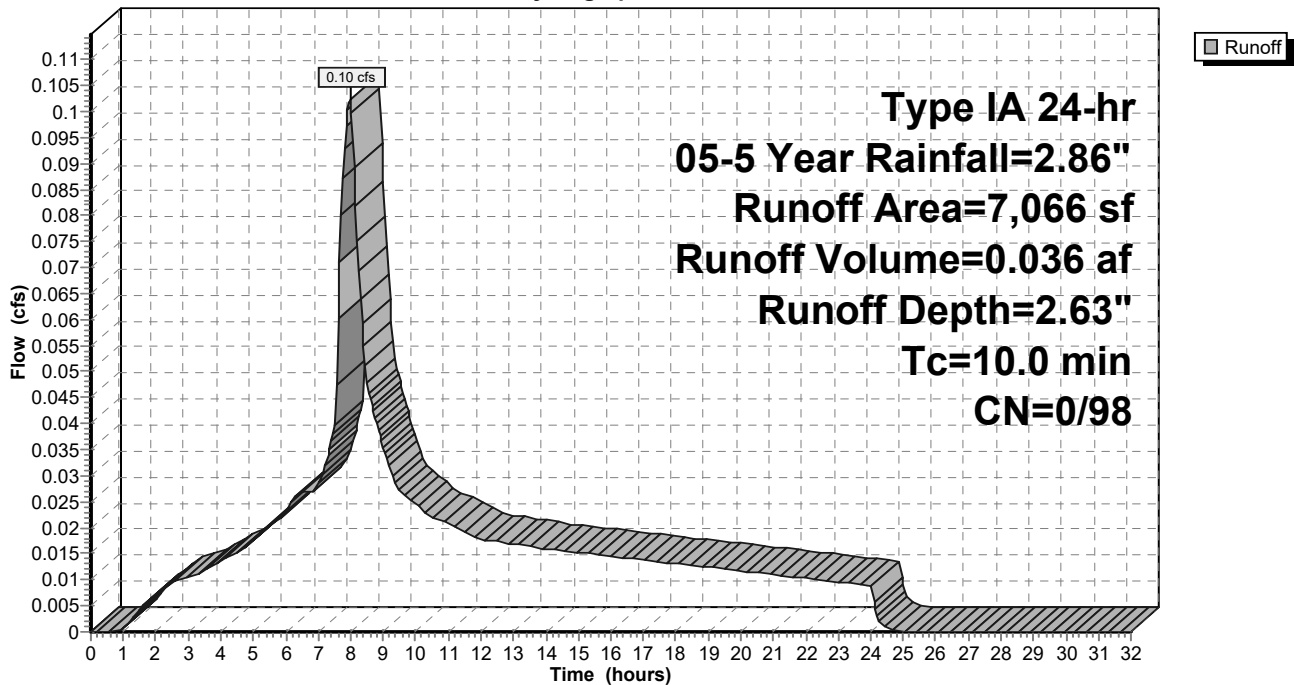
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 05-5 Year Rainfall=2.86"

Area (sf)	CN	Description
7,066	98	Paved roads w/curbs & sewers, HSG D
7,066	98	100.00% Impervious Area

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

Subcatchment 115S: Basin 16

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 05-5 Year Rainfall=2.86"

Prepared by A&O Engineering LLC

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Summary for Subcatchment 116S: Basin 17

Runoff = 0.38 cfs @ 7.98 hrs, Volume= 0.131 af, Depth= 2.63"
 Routed to Reach 151R : 1

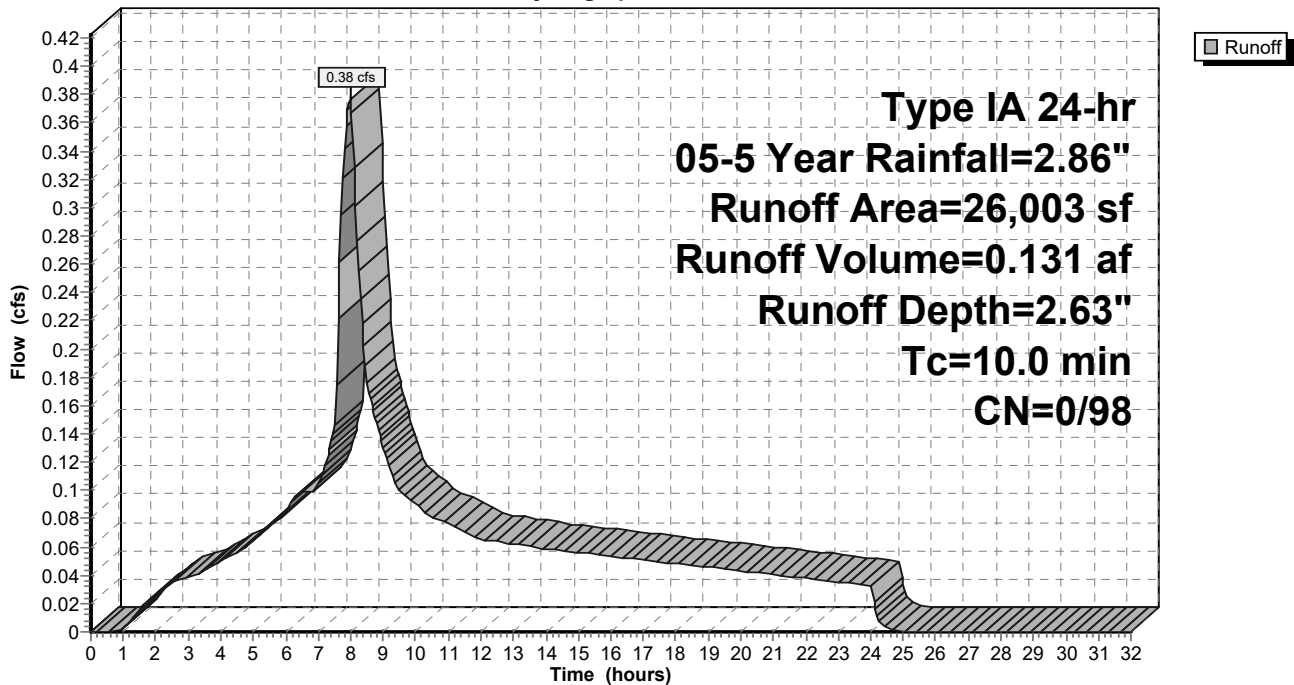
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 05-5 Year Rainfall=2.86"

Area (sf)	CN	Description
26,003	98	Paved roads w/curbs & sewers, HSG D
26,003	98	100.00% Impervious Area

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

Subcatchment 116S: Basin 17

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 05-5 Year Rainfall=2.86"

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Summary for Subcatchment 117S: Basin 18

Runoff = 0.34 cfs @ 7.98 hrs, Volume= 0.119 af, Depth= 2.63"
 Routed to Reach 160R : 1

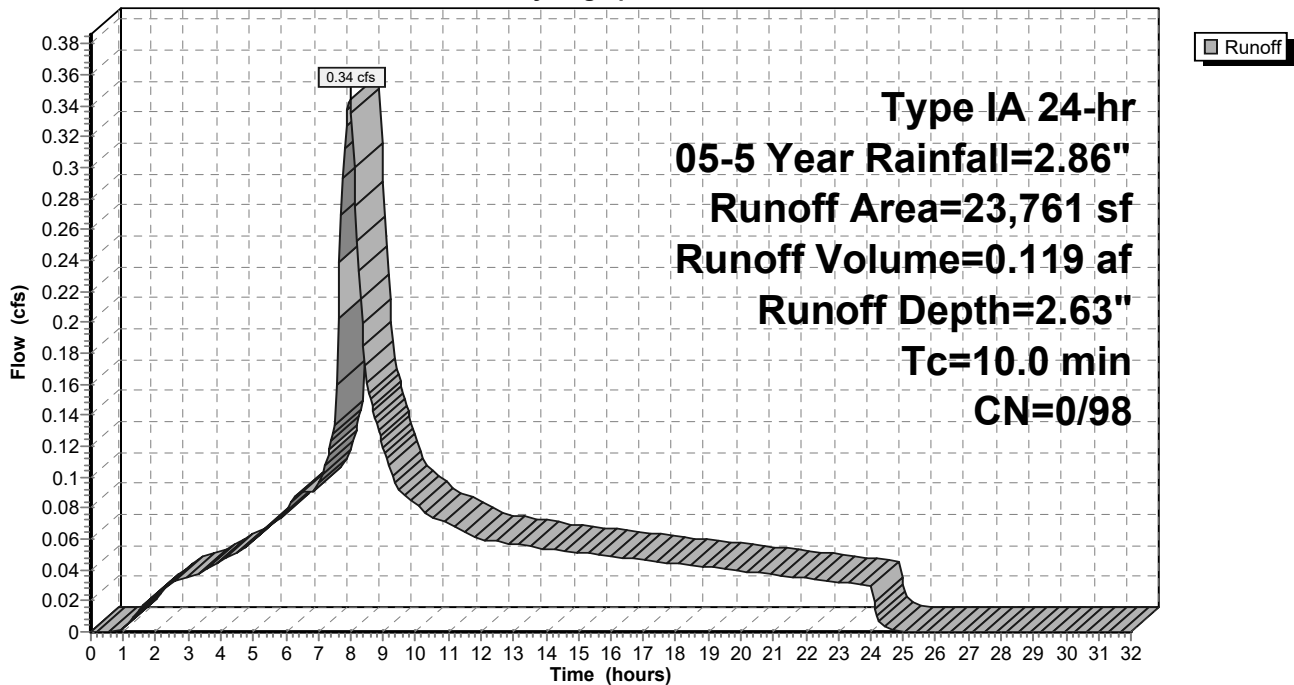
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 05-5 Year Rainfall=2.86"

Area (sf)	CN	Description
23,761	98	Paved roads w/curbs & sewers, HSG D
23,761	98	100.00% Impervious Area

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

Subcatchment 117S: Basin 18

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 05-5 Year Rainfall=2.86"

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Summary for Subcatchment 118S: Basin 19

Runoff = 0.11 cfs @ 7.98 hrs, Volume= 0.037 af, Depth= 2.63"
 Routed to Reach 155R : 1

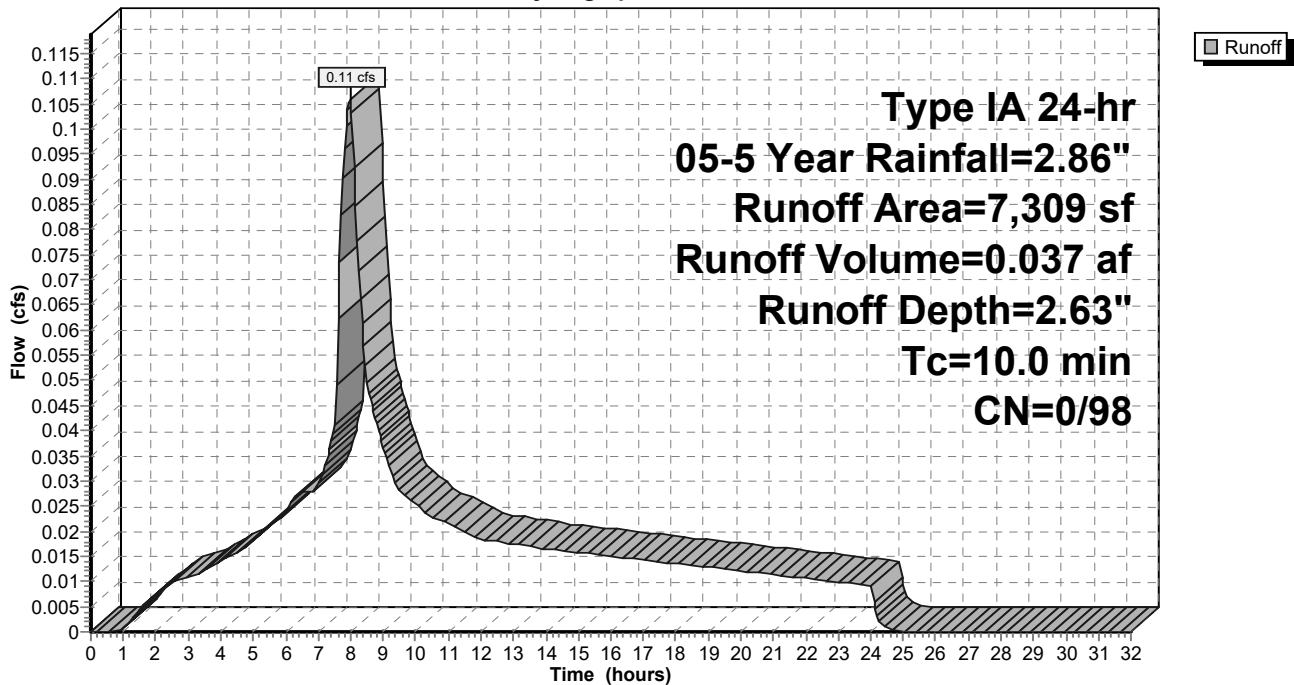
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 05-5 Year Rainfall=2.86"

Area (sf)	CN	Description
7,309	98	Paved roads w/curbs & sewers, HSG D
7,309	98	100.00% Impervious Area

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

Subcatchment 118S: Basin 19

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 05-5 Year Rainfall=2.86"

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Summary for Subcatchment 119S: Basin 20

Runoff = 0.11 cfs @ 7.98 hrs, Volume= 0.038 af, Depth= 2.63"
 Routed to Reach 149R : 1

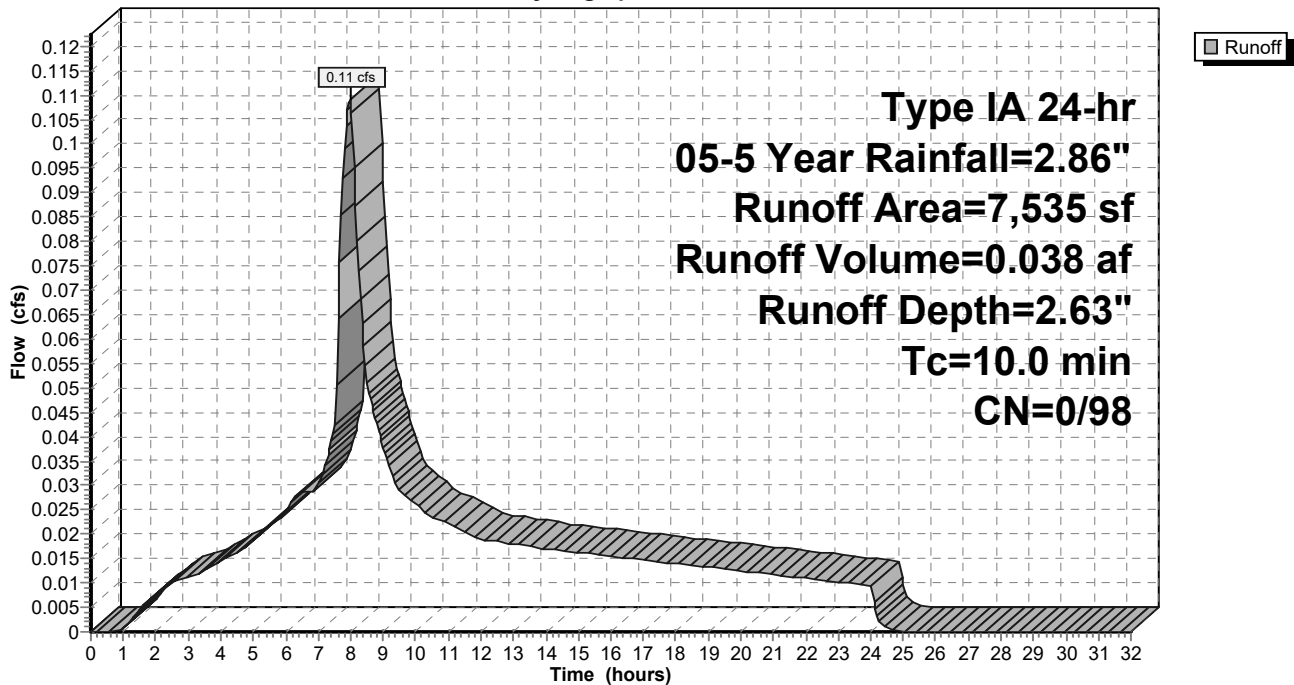
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 05-5 Year Rainfall=2.86"

Area (sf)	CN	Description
7,535	98	Paved roads w/curbs & sewers, HSG D
7,535	98	100.00% Impervious Area

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

Subcatchment 119S: Basin 20

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 05-5 Year Rainfall=2.86"

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Summary for Subcatchment 120S: Basin 21

Runoff = 0.10 cfs @ 7.98 hrs, Volume= 0.034 af, Depth= 2.63"
 Routed to Reach 148R : 1

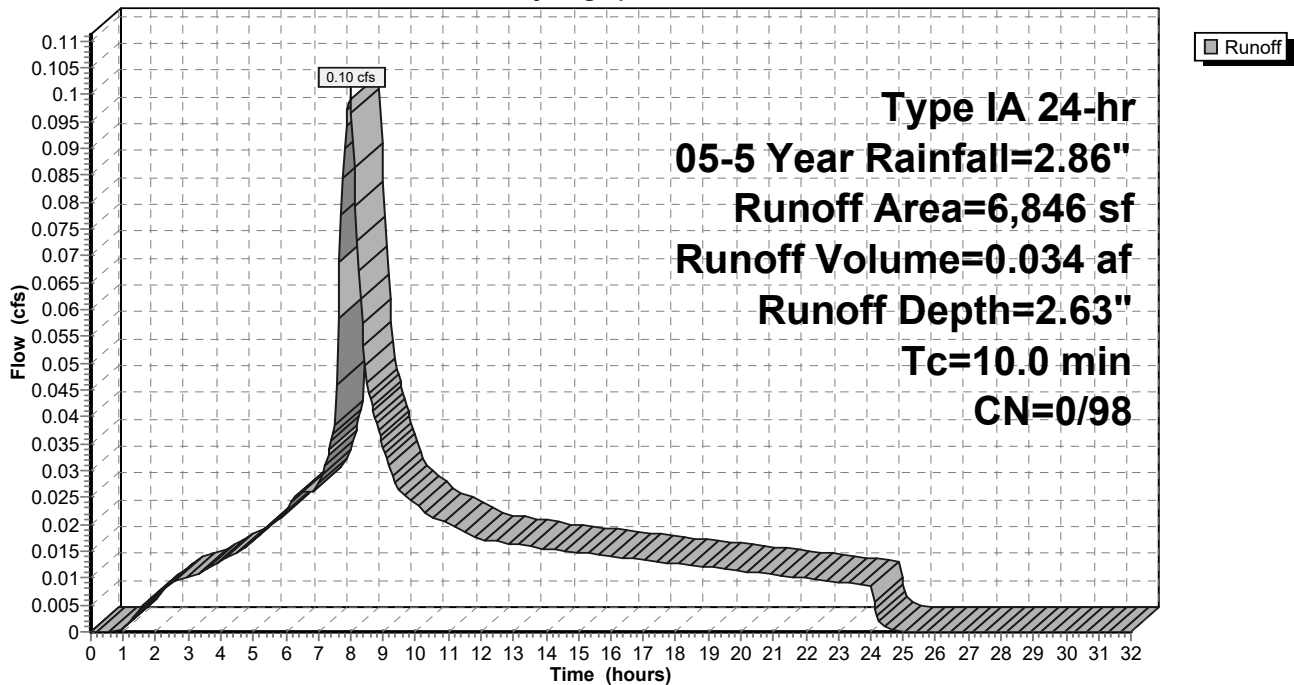
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 05-5 Year Rainfall=2.86"

Area (sf)	CN	Description
6,846	98	Paved roads w/curbs & sewers, HSG D
6,846	98	100.00% Impervious Area

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

Subcatchment 120S: Basin 21

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 05-5 Year Rainfall=2.86"

Prepared by A&O Engineering LLC

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Summary for Subcatchment 121S: Basin 22

Runoff = 0.08 cfs @ 7.98 hrs, Volume= 0.026 af, Depth= 2.63"
 Routed to Reach 154R : 1

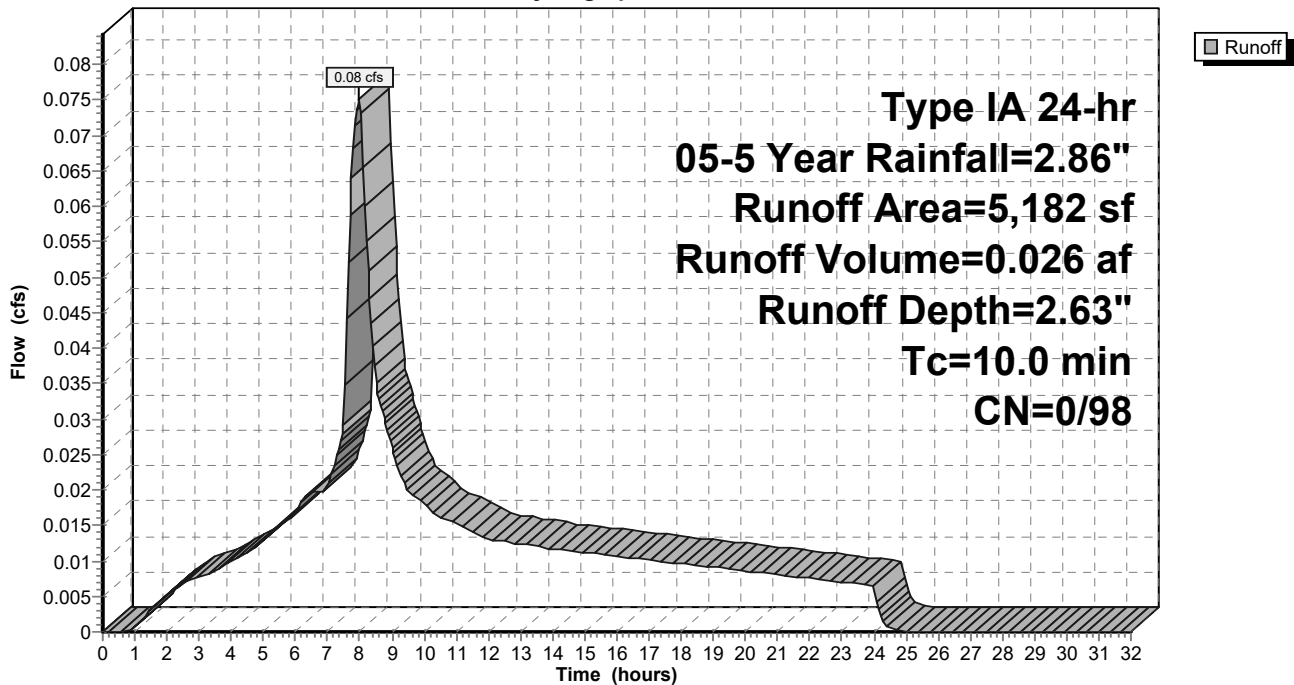
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 05-5 Year Rainfall=2.86"

Area (sf)	CN	Description
5,182	98	Paved roads w/curbs & sewers, HSG D
5,182	98	100.00% Impervious Area

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

Subcatchment 121S: Basin 22

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 05-5 Year Rainfall=2.86"

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Summary for Subcatchment 122S: Basin 23

Runoff = 0.08 cfs @ 7.98 hrs, Volume= 0.027 af, Depth= 2.63"
 Routed to Reach 155R : 1

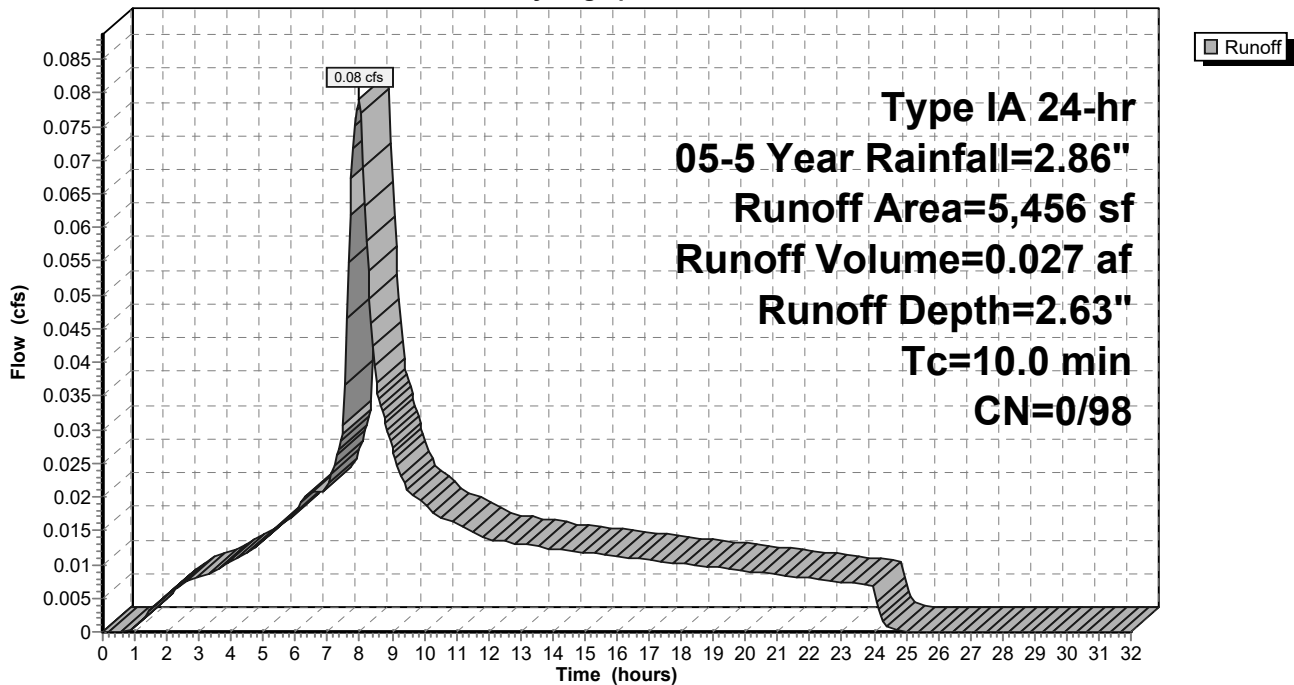
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 05-5 Year Rainfall=2.86"

Area (sf)	CN	Description
5,456	98	Paved roads w/curbs & sewers, HSG D
5,456	98	100.00% Impervious Area

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

Subcatchment 122S: Basin 23

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 05-5 Year Rainfall=2.86"

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Summary for Subcatchment 123S: Basin 24

Runoff = 0.07 cfs @ 7.98 hrs, Volume= 0.023 af, Depth= 2.63"
 Routed to Reach 162R : 1

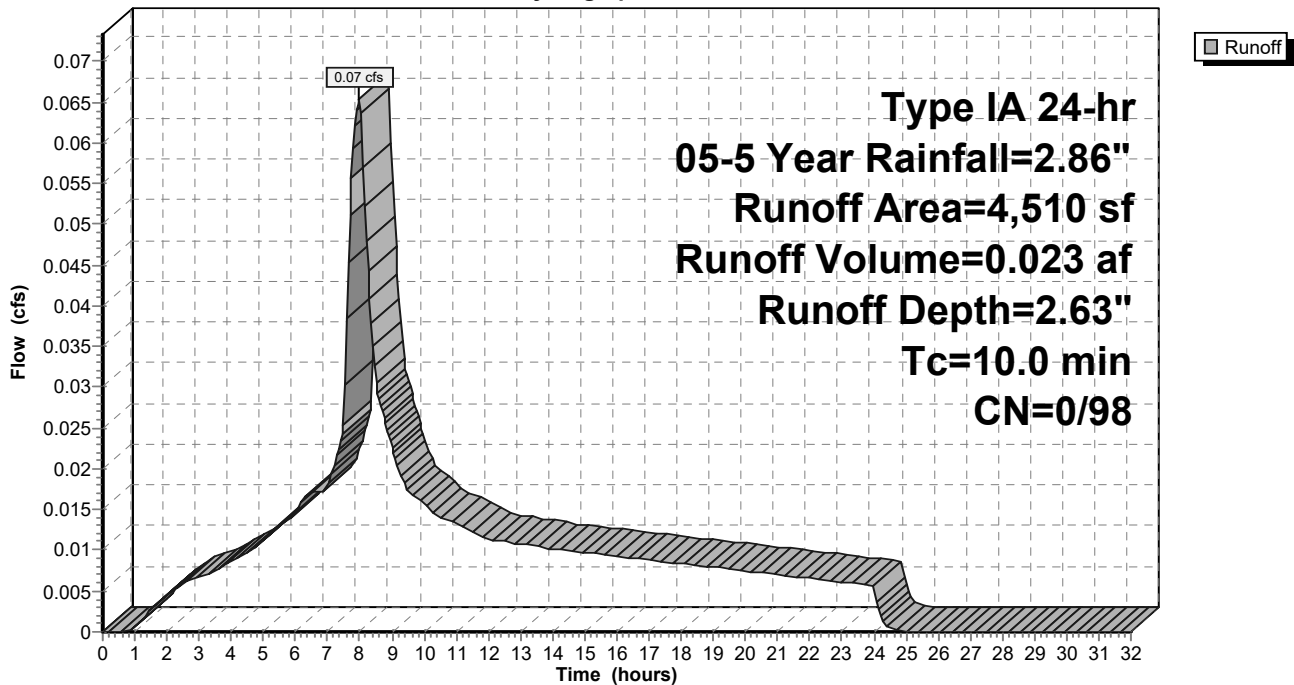
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 05-5 Year Rainfall=2.86"

Area (sf)	CN	Description
4,510	98	Paved roads w/curbs & sewers, HSG D
4,510	98	100.00% Impervious Area

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

Subcatchment 123S: Basin 24

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 05-5 Year Rainfall=2.86"

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Summary for Subcatchment 124S: Basin 25

Runoff = 0.19 cfs @ 7.98 hrs, Volume= 0.067 af, Depth= 2.63"
 Routed to Reach 163R : 1

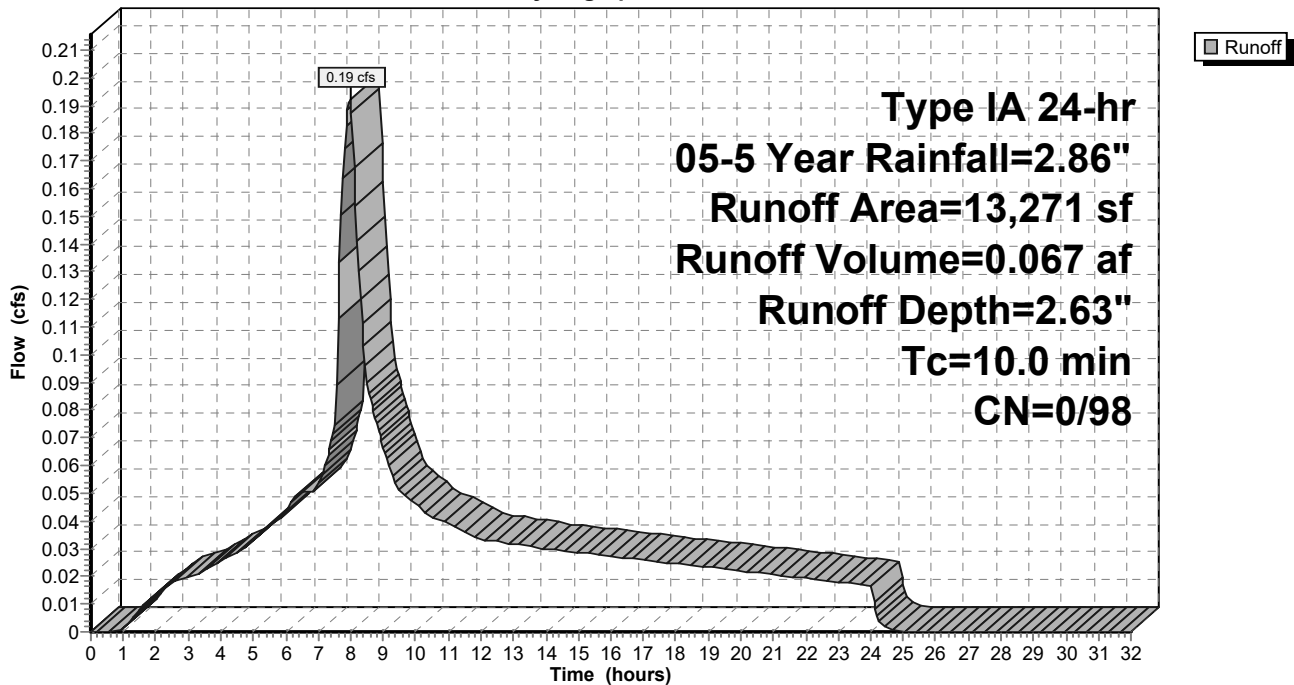
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 05-5 Year Rainfall=2.86"

Area (sf)	CN	Description
13,271	98	Paved roads w/curbs & sewers, HSG D
13,271	98	100.00% Impervious Area

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

Subcatchment 124S: Basin 25

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 05-5 Year Rainfall=2.86"

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Summary for Subcatchment 125S: Basin 26

Runoff = 0.27 cfs @ 7.98 hrs, Volume= 0.093 af, Depth= 2.63"
 Routed to Reach 165R : 1

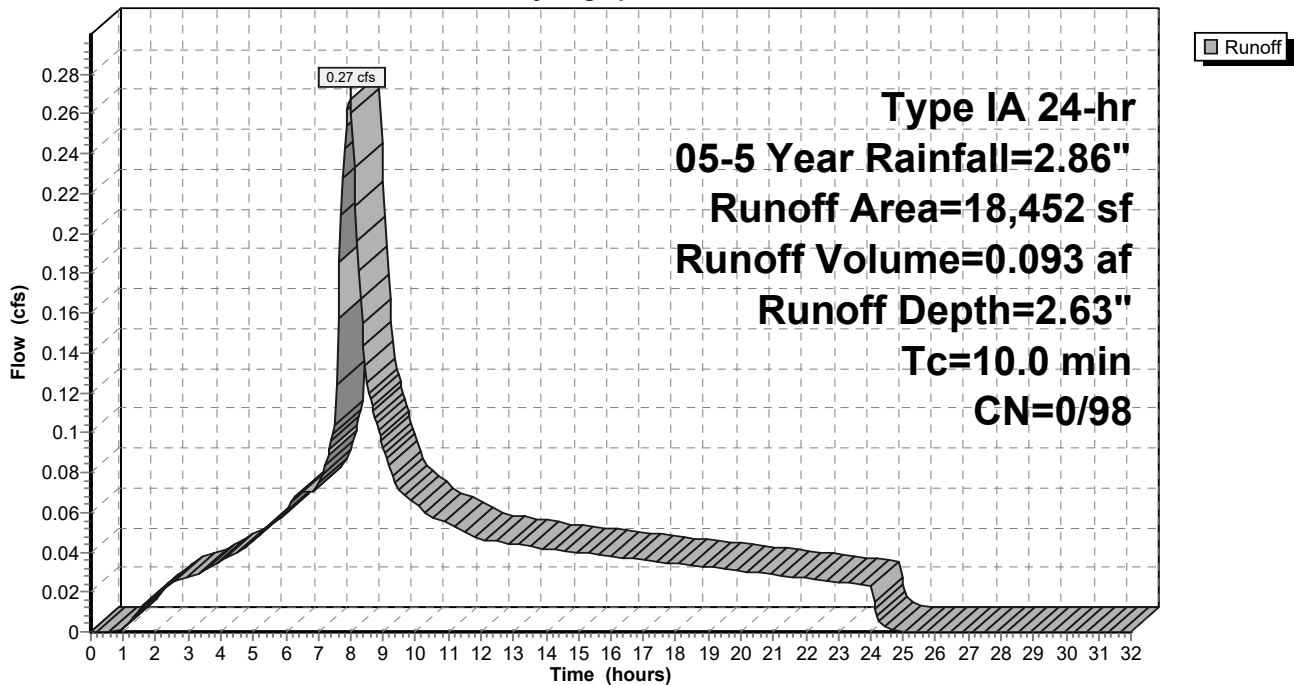
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 05-5 Year Rainfall=2.86"

Area (sf)	CN	Description
18,452	98	Paved roads w/curbs & sewers, HSG D
18,452	98	100.00% Impervious Area

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

Subcatchment 125S: Basin 26

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 05-5 Year Rainfall=2.86"

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Summary for Subcatchment 126S: Alley Basin 1

Runoff = 0.14 cfs @ 7.98 hrs, Volume= 0.050 af, Depth= 2.63"
 Routed to Reach 140R : 1

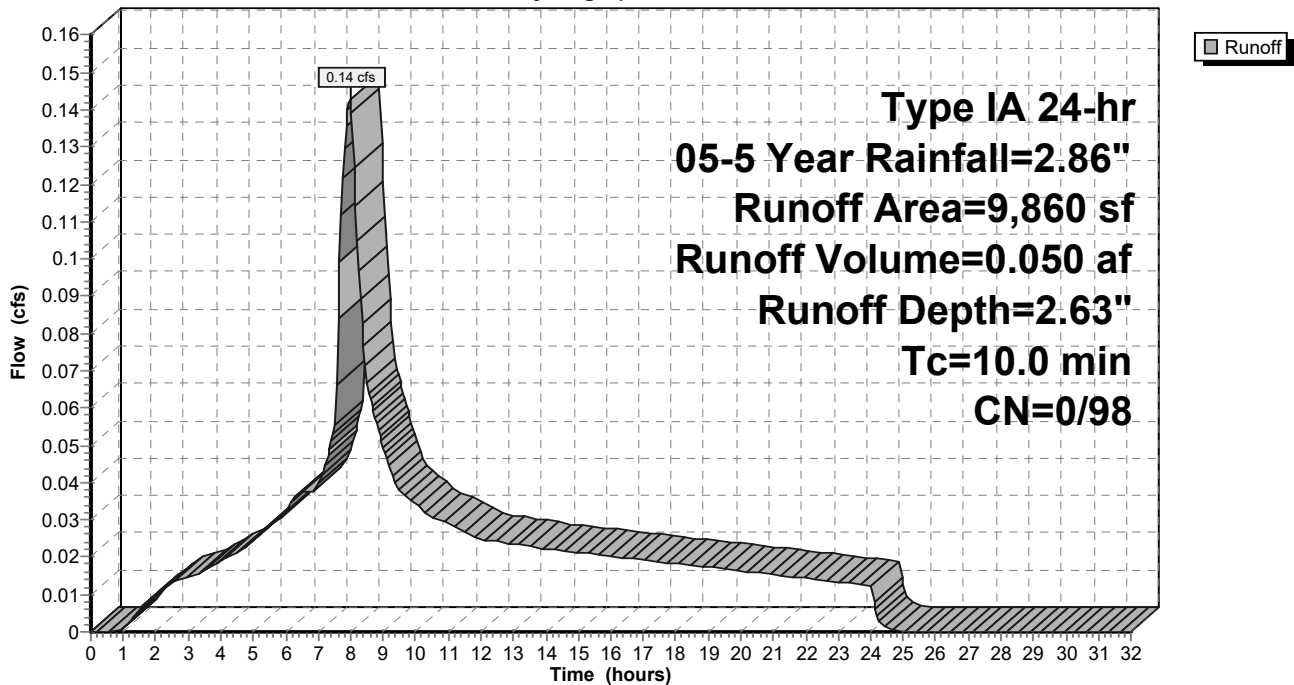
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 05-5 Year Rainfall=2.86"

Area (sf)	CN	Description
9,860	98	Paved roads w/curbs & sewers, HSG D
9,860	98	100.00% Impervious Area

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

Subcatchment 126S: Alley Basin 1

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 05-5 Year Rainfall=2.86"

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Summary for Subcatchment 127S: Alley Basin 2

Runoff = 0.11 cfs @ 7.98 hrs, Volume= 0.038 af, Depth= 2.63"
 Routed to Reach 141R : 1

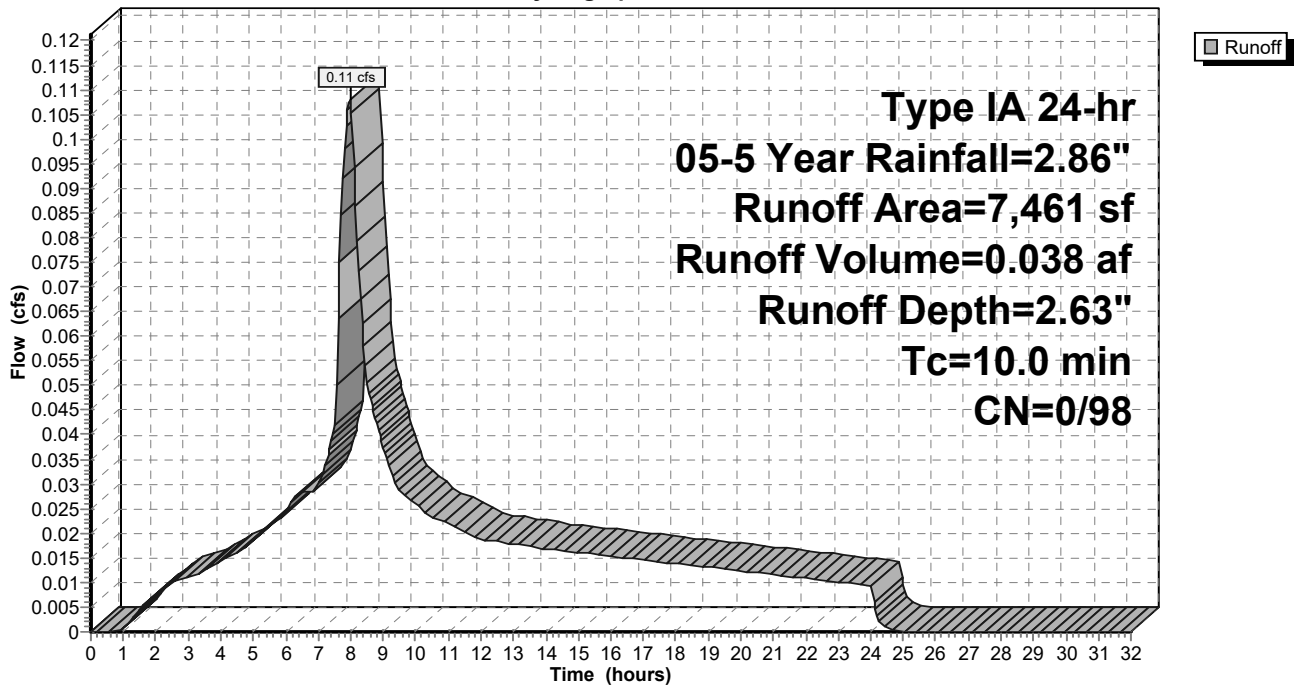
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 05-5 Year Rainfall=2.86"

Area (sf)	CN	Description
7,461	98	Paved roads w/curbs & sewers, HSG D
7,461	98	100.00% Impervious Area

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

Subcatchment 127S: Alley Basin 2

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 05-5 Year Rainfall=2.86"

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Summary for Subcatchment 128S: Alley Basin 3

Runoff = 0.10 cfs @ 7.98 hrs, Volume= 0.034 af, Depth= 2.63"
 Routed to Reach 147R : 1

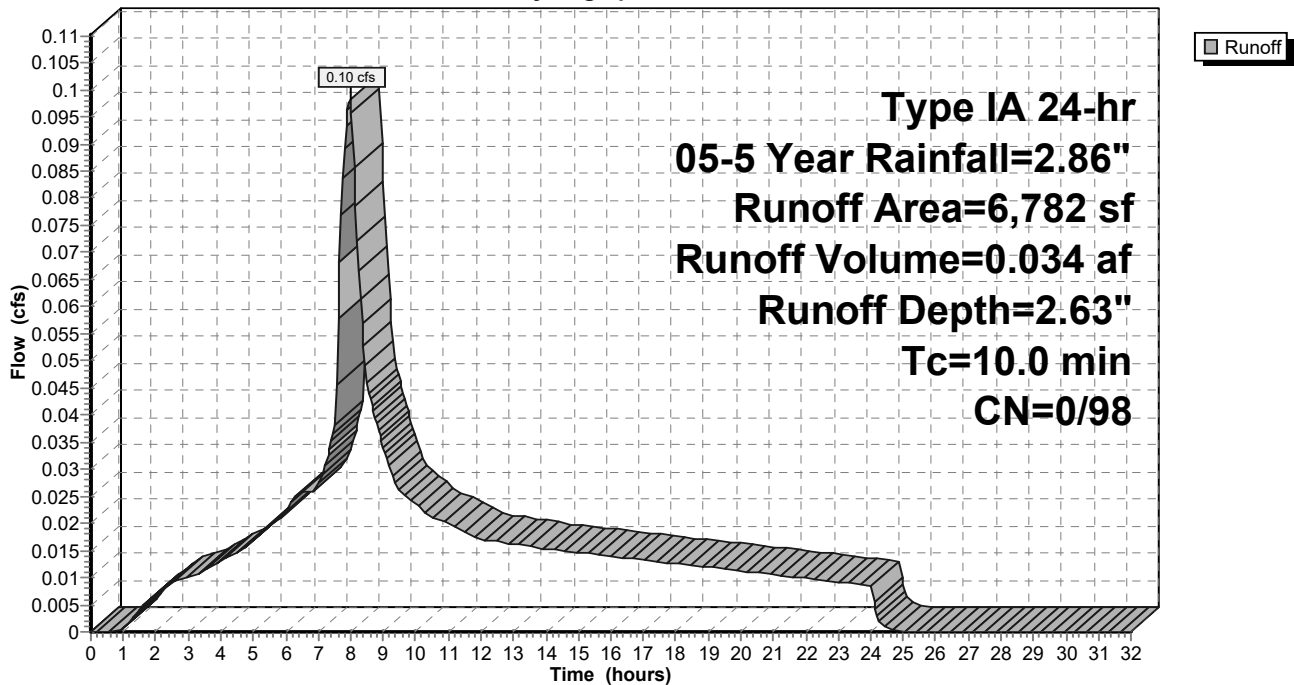
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 05-5 Year Rainfall=2.86"

Area (sf)	CN	Description
6,782	98	Paved roads w/curbs & sewers, HSG D
6,782	98	100.00% Impervious Area

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

Subcatchment 128S: Alley Basin 3

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 05-5 Year Rainfall=2.86"

Prepared by A&O Engineering LLC

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Summary for Subcatchment 129S: Alley Basin 4

Runoff = 0.10 cfs @ 7.98 hrs, Volume= 0.035 af, Depth= 2.63"
 Routed to Reach 153R : 1

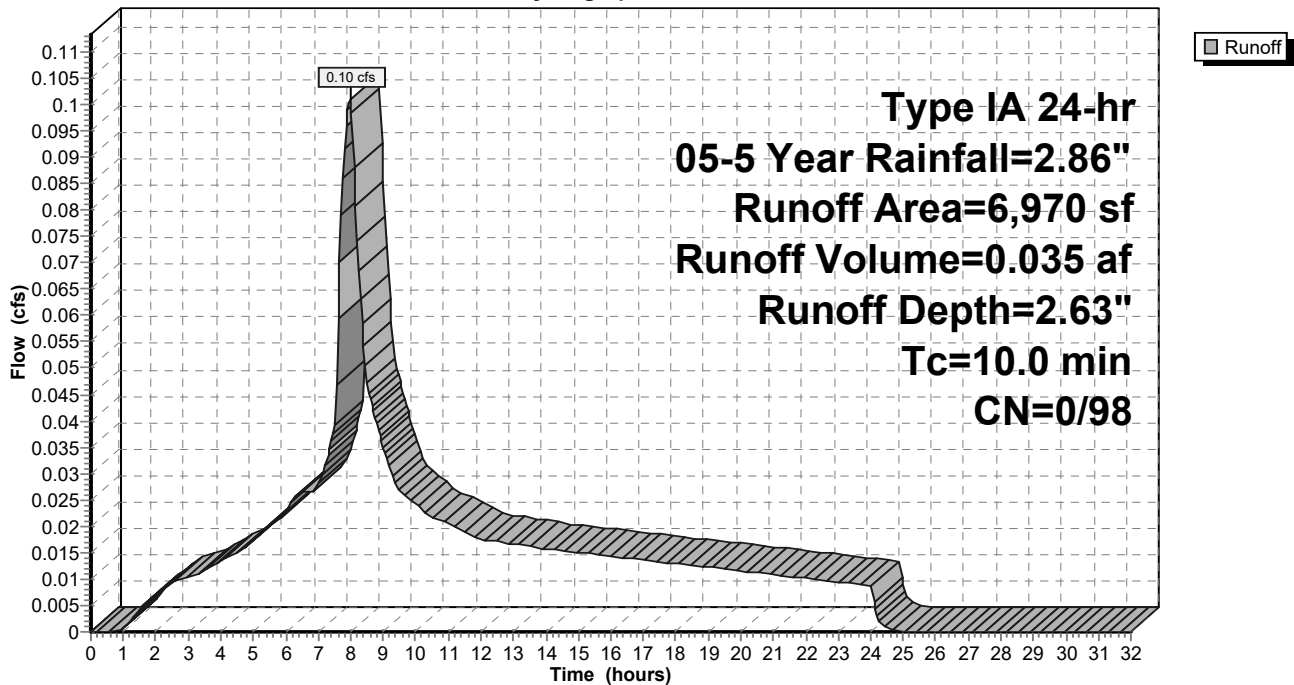
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 05-5 Year Rainfall=2.86"

Area (sf)	CN	Description
6,970	98	Paved roads w/curbs & sewers, HSG D
6,970	98	100.00% Impervious Area

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

Subcatchment 129S: Alley Basin 4

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 05-5 Year Rainfall=2.86"

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Summary for Subcatchment 168S: Future Lots

Runoff = 0.83 cfs @ 7.98 hrs, Volume= 0.284 af, Depth= 2.31"
 Routed to Reach 166R : Basin Future

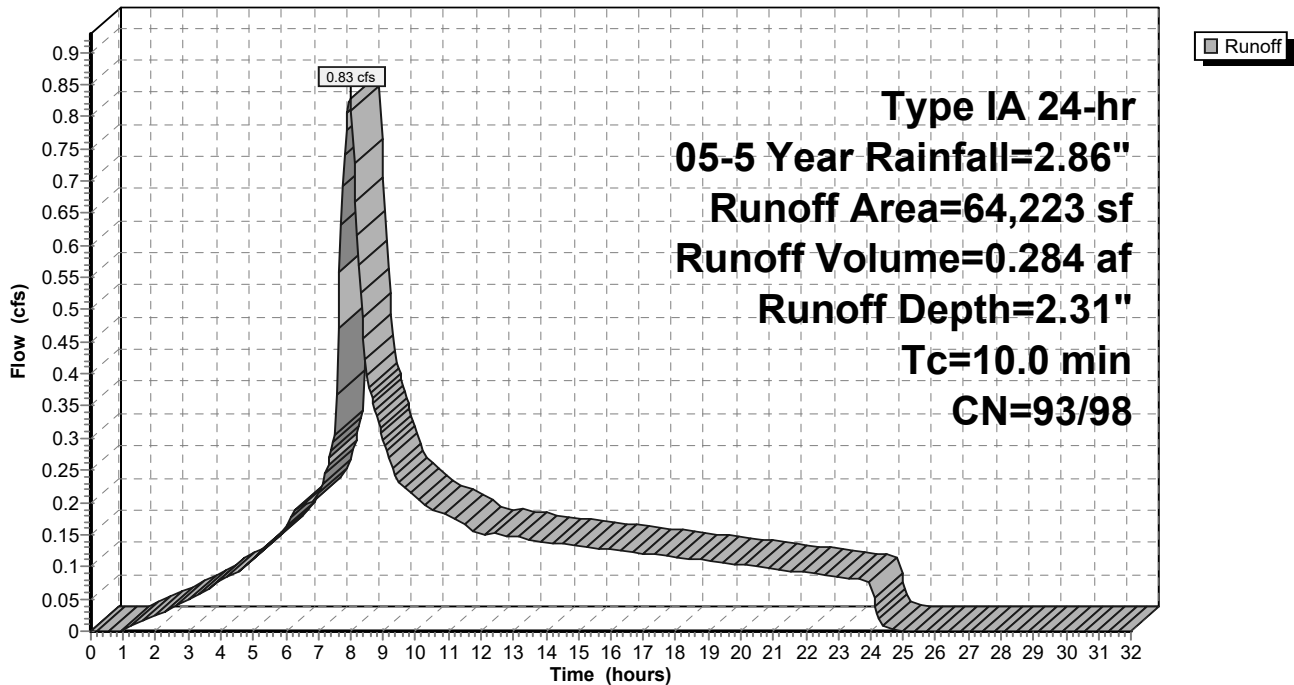
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 05-5 Year Rainfall=2.86"

	Area (sf)	CN	Description
*	39,915	93	70% Lot Coverage Weighted
	24,308	98	Paved roads w/curbs & sewers, HSG D
	64,223	95	Weighted Average
	39,915	93	62.15% Pervious Area
	24,308	98	37.85% Impervious Area

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

Subcatchment 168S: Future Lots

Hydrograph



9-6-23 HydroCAD DOM

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Type IA 24-hr 05-5 Year Rainfall=2.86"

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Summary for Subcatchment 169S: Swale 2

[46] Hint: Tc=0 (Instant runoff peak depends on dt)

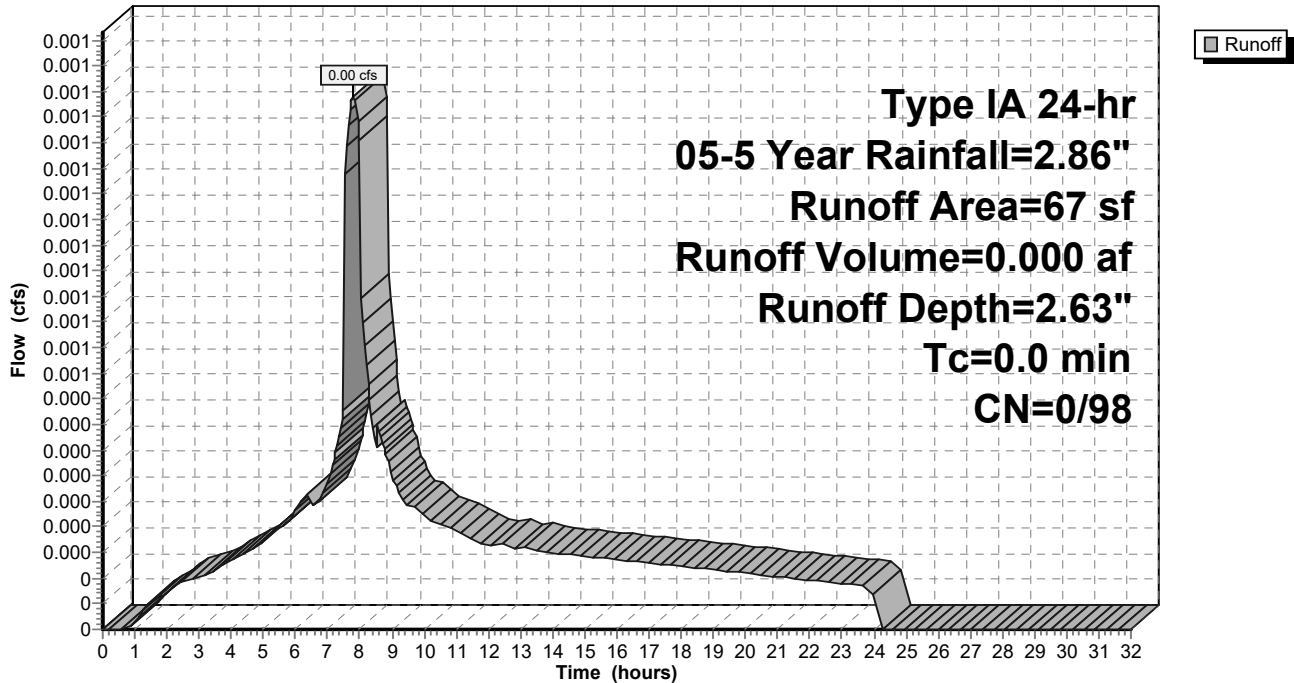
Runoff = 0.00 cfs @ 7.81 hrs, Volume= 0.000 af, Depth= 2.63"
 Routed to Pond 54P : Stormwater Swale 2

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 05-5 Year Rainfall=2.86"

Area (sf)	CN	Description
67	98	Water Surface, HSG D
67	98	100.00% Impervious Area

Subcatchment 169S: Swale 2

Hydrograph



9-6-23 HydroCAD DOM

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Type IA 24-hr 05-5 Year Rainfall=2.86"

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Summary for Subcatchment 170S: Swale 1

[46] Hint: Tc=0 (Instant runoff peak depends on dt)

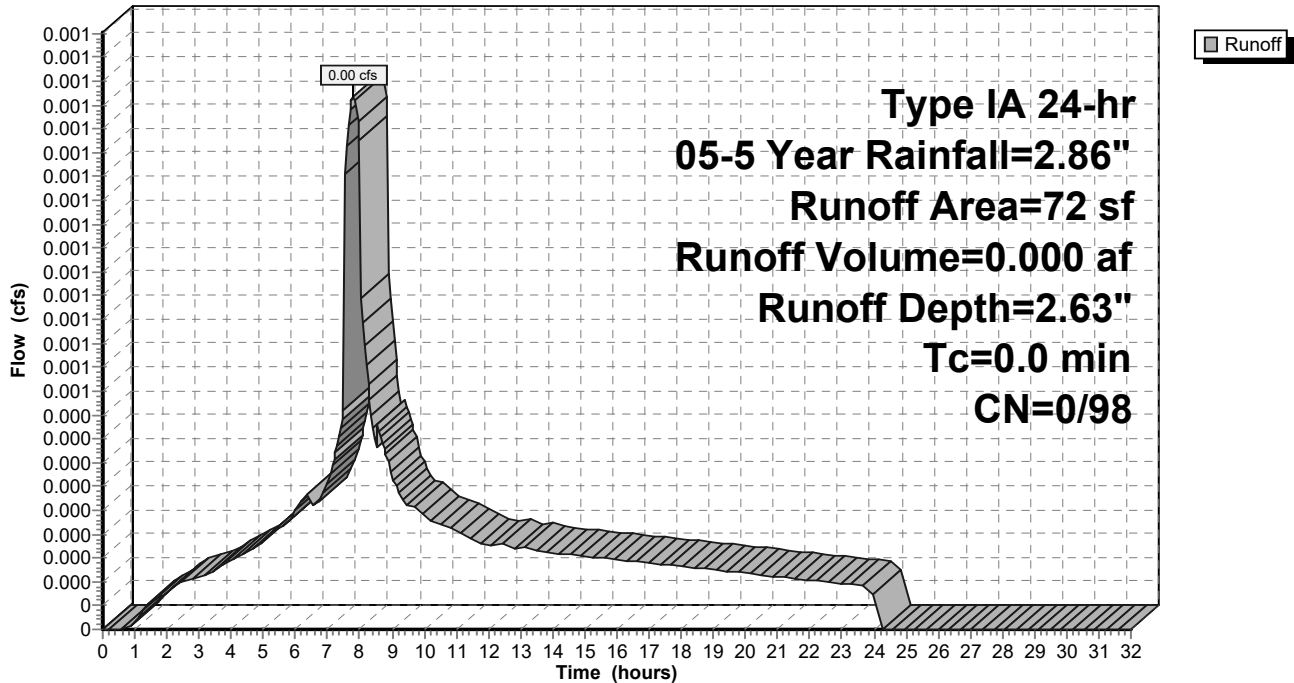
Runoff = 0.00 cfs @ 7.81 hrs, Volume= 0.000 af, Depth= 2.63"
 Routed to Pond 60P : Stormwater Swale 1

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 05-5 Year Rainfall=2.86"

Area (sf)	CN	Description
72	98	Water Surface, HSG D
72	98	100.00% Impervious Area

Subcatchment 170S: Swale 1

Hydrograph



9-6-23 HydroCAD DOM

Prepared by A&O Engineering LLC

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Type IA 24-hr 05-5 Year Rainfall=2.86"

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Summary for Reach 39R: Post-Construction Peak Flow

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

Inflow Area = 23.206 ac, 36.84% Impervious, Inflow Depth > 2.31" for 05-5 Year event

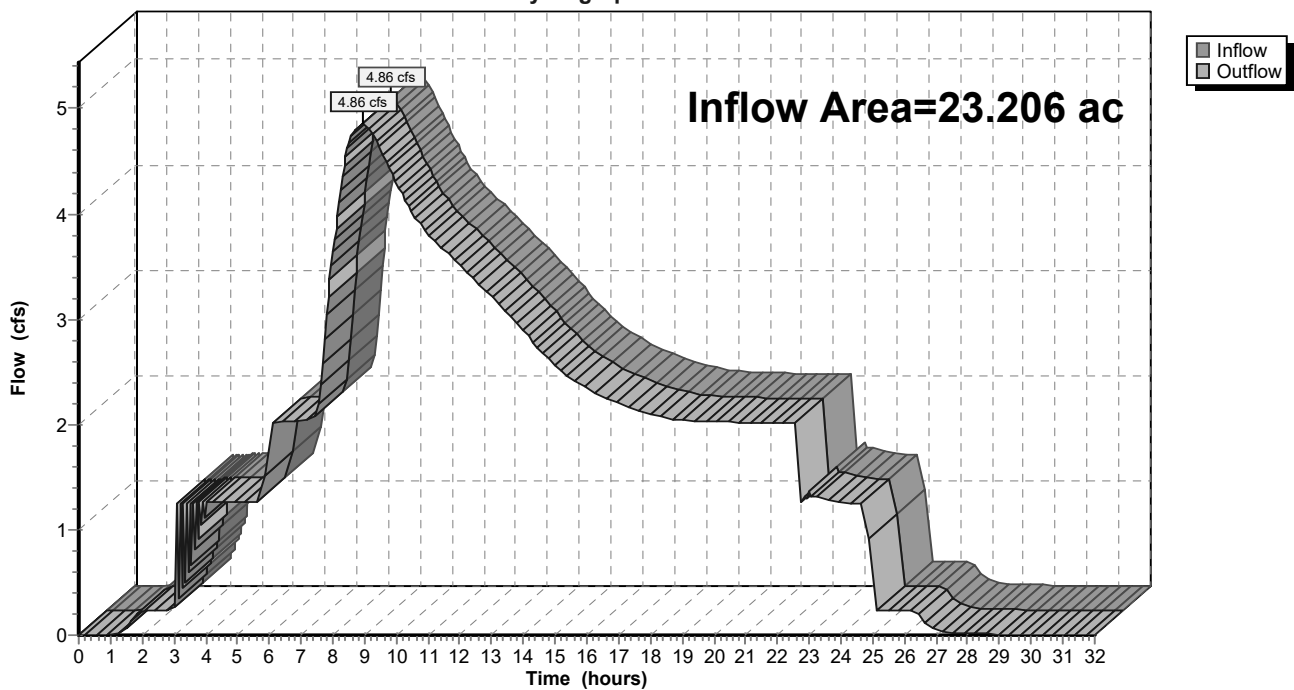
Inflow = 4.86 cfs @ 8.92 hrs, Volume= 4.462 af

Outflow = 4.86 cfs @ 8.92 hrs, Volume= 4.462 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 39R: Post-Construction Peak Flow

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 05-5 Year Rainfall=2.86"

Prepared by A&O Engineering LLC

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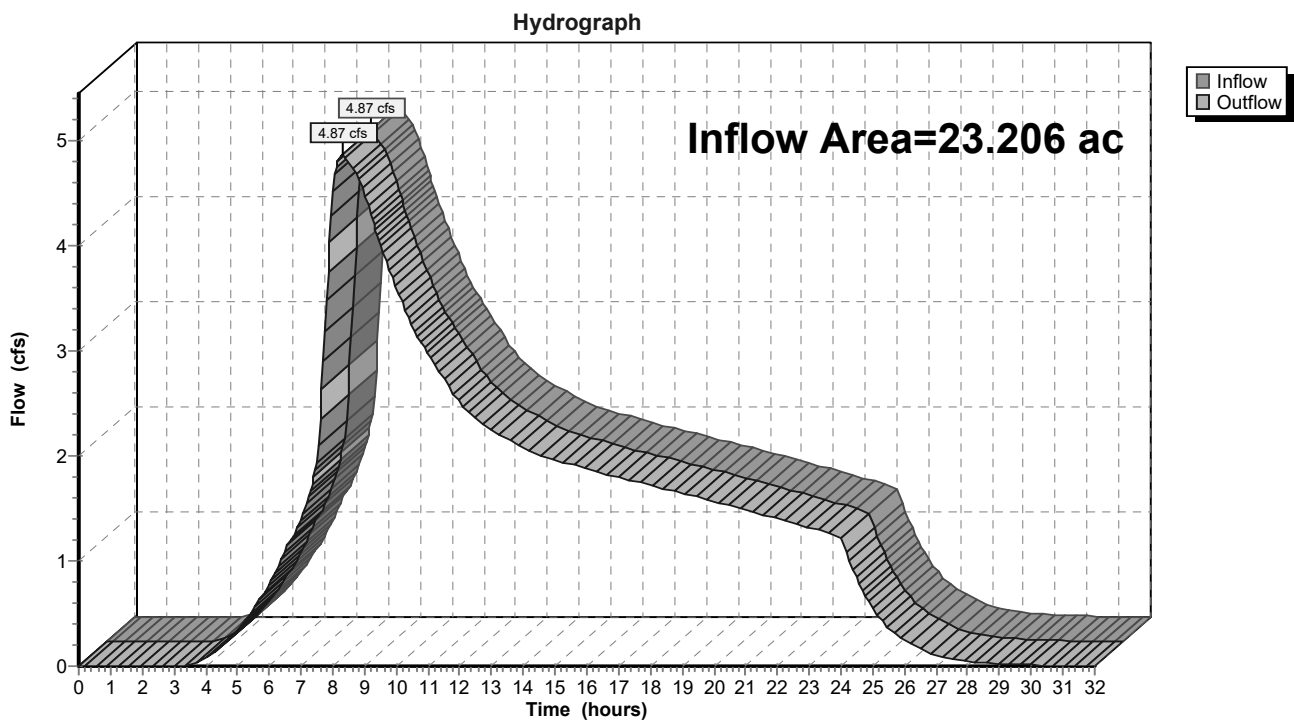
Summary for Reach 42R: Pre-Construction Peak Flow

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

Inflow Area = 23.206 ac, 0.00% Impervious, Inflow Depth > 1.77" for 05-5 Year event
 Inflow = 4.87 cfs @ 8.29 hrs, Volume= 3.430 af
 Outflow = 4.87 cfs @ 8.29 hrs, Volume= 3.430 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 42R: Pre-Construction Peak Flow



9-6-23 HydroCAD DOM

Type IA 24-hr 05-5 Year Rainfall=2.86"

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Summary for Reach 58R: 1

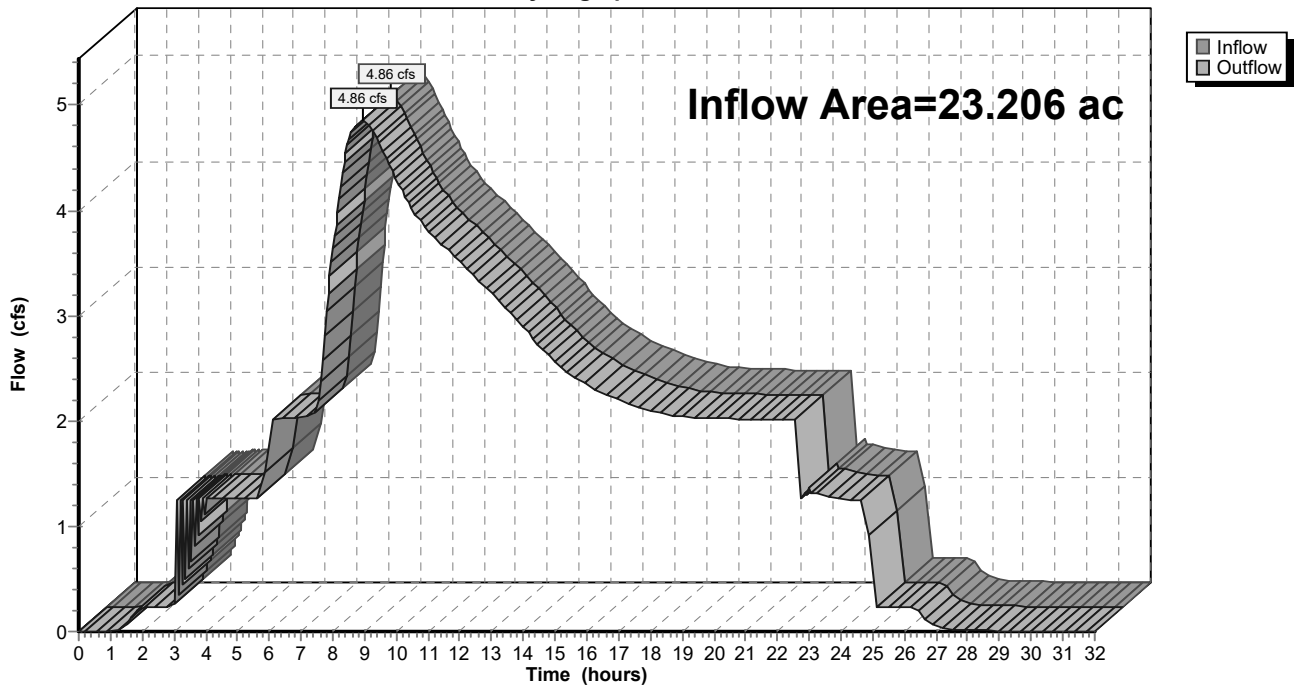
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 23.206 ac, 36.84% Impervious, Inflow Depth > 2.31" for 05-5 Year event
 Inflow = 4.86 cfs @ 8.92 hrs, Volume= 4.462 af
 Outflow = 4.86 cfs @ 8.92 hrs, Volume= 4.462 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 39R : Post-Construction Peak Flow

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 58R: 1

Hydrograph



9-6-23 HydroCAD DOM

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Type IA 24-hr 05-5 Year Rainfall=2.86"

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Summary for Reach 85R: 1

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

Inflow Area = 23.038 ac, 36.38% Impervious, Inflow Depth > 2.30" for 05-5 Year event

Inflow = 4.82 cfs @ 8.93 hrs, Volume= 4.425 af

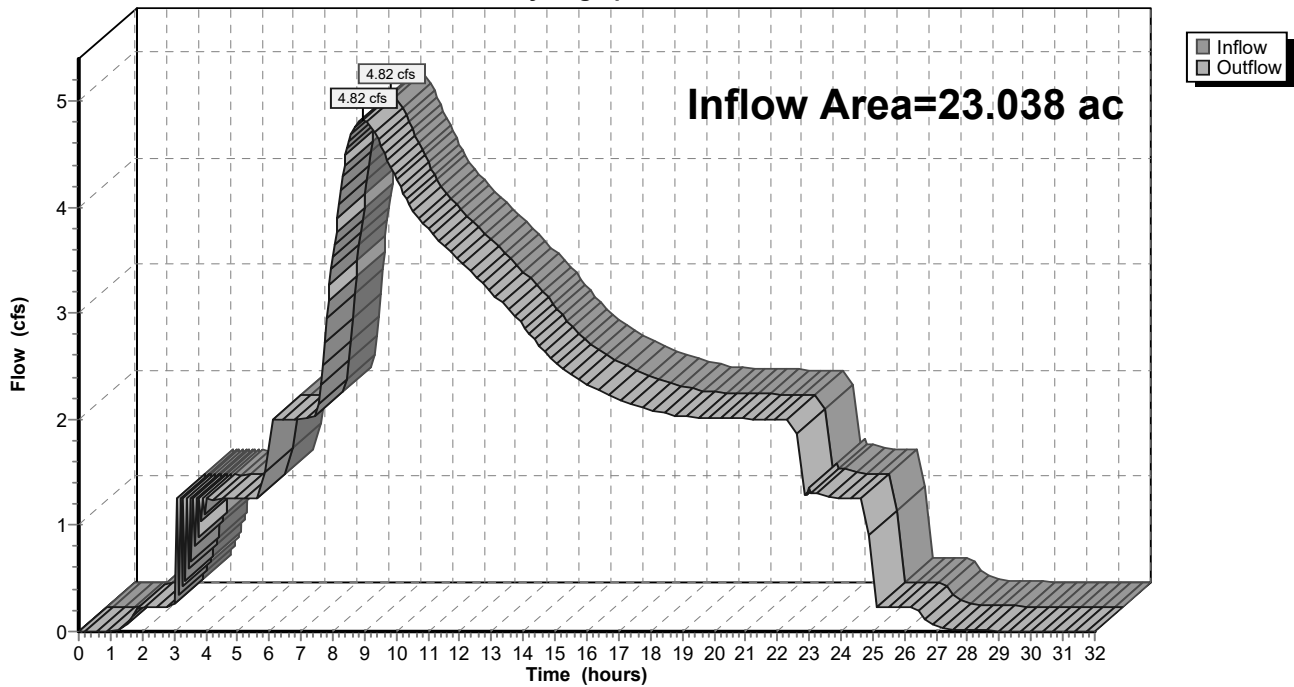
Outflow = 4.82 cfs @ 8.93 hrs, Volume= 4.425 af, Atten= 0%, Lag= 0.0 min

Routed to Reach 58R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 85R: 1

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 05-5 Year Rainfall=2.86"

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Summary for Reach 130R: 1

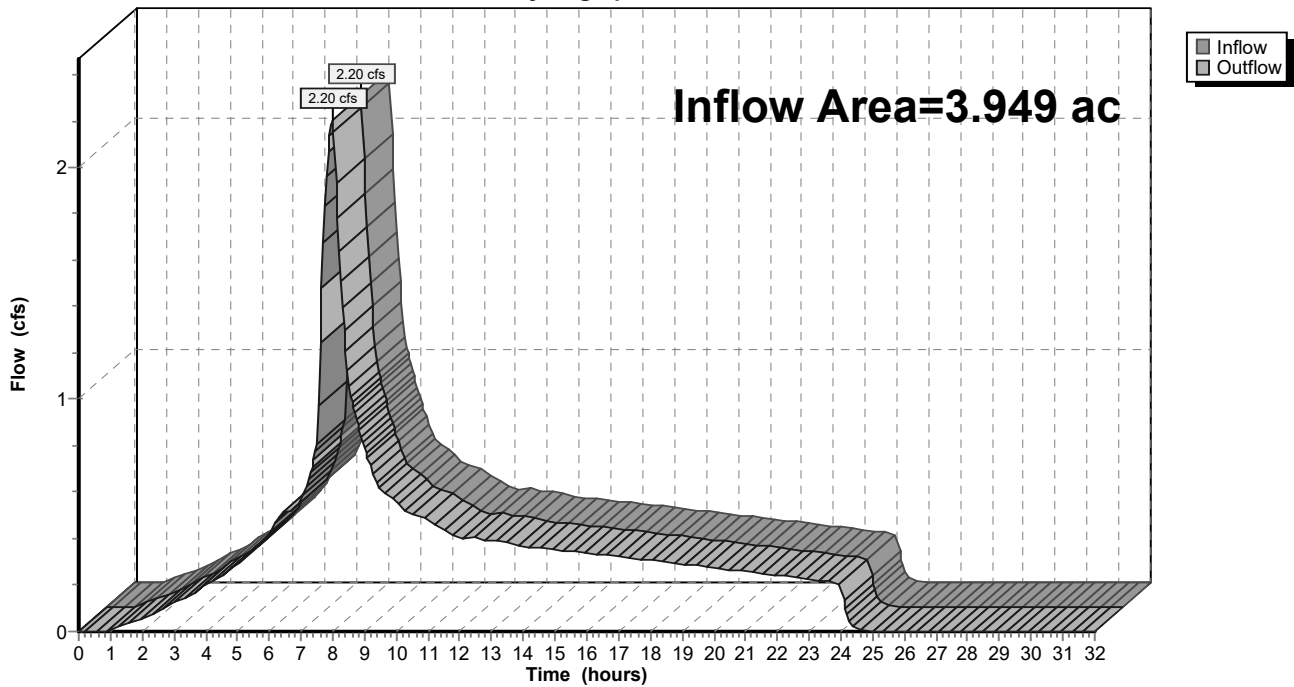
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.949 ac, 33.88% Impervious, Inflow Depth = 2.29" for 05-5 Year event
 Inflow = 2.20 cfs @ 7.98 hrs, Volume= 0.754 af
 Outflow = 2.20 cfs @ 7.98 hrs, Volume= 0.754 af, Atten= 0%, Lag= 0.0 min
 Routed to Pond 63P : Detention Pond

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 130R: 1

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 05-5 Year Rainfall=2.86"

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Summary for Reach 131R: 1

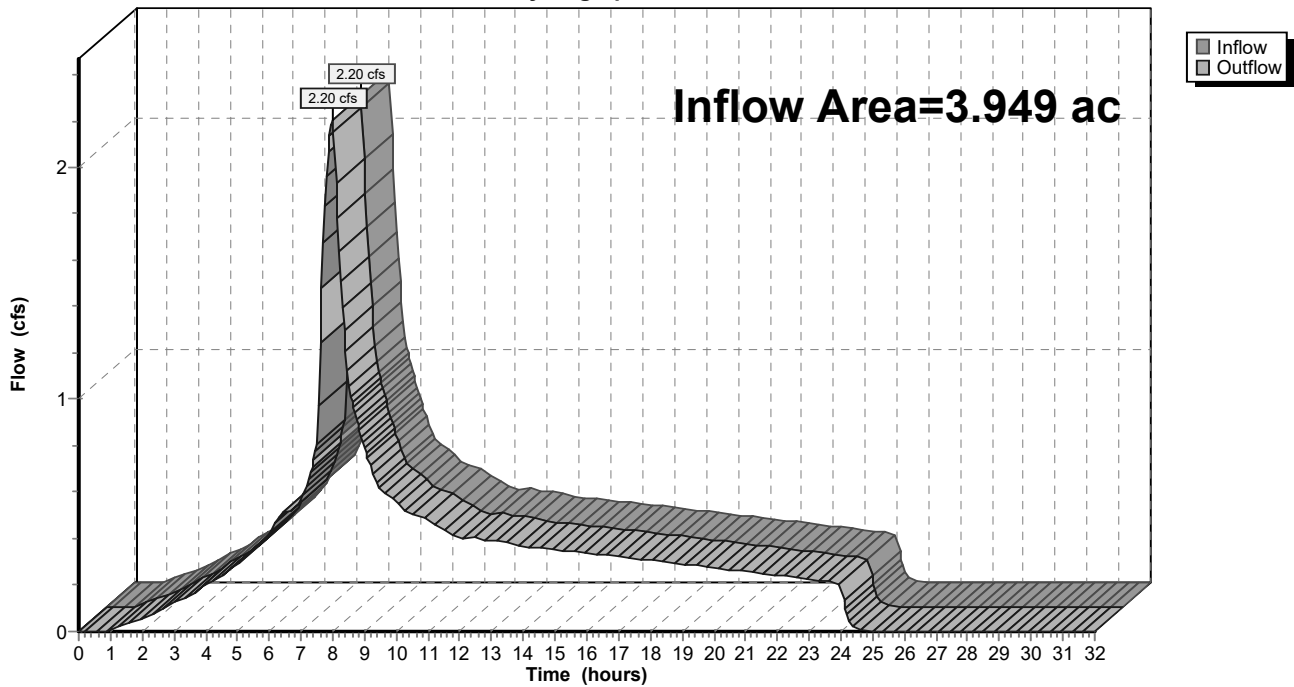
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.949 ac, 33.88% Impervious, Inflow Depth = 2.29" for 05-5 Year event
 Inflow = 2.20 cfs @ 7.98 hrs, Volume= 0.754 af
 Outflow = 2.20 cfs @ 7.98 hrs, Volume= 0.754 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 130R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 131R: 1

Hydrograph



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Type IA 24-hr 05-5 Year Rainfall=2.86"

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Summary for Reach 132R: 1

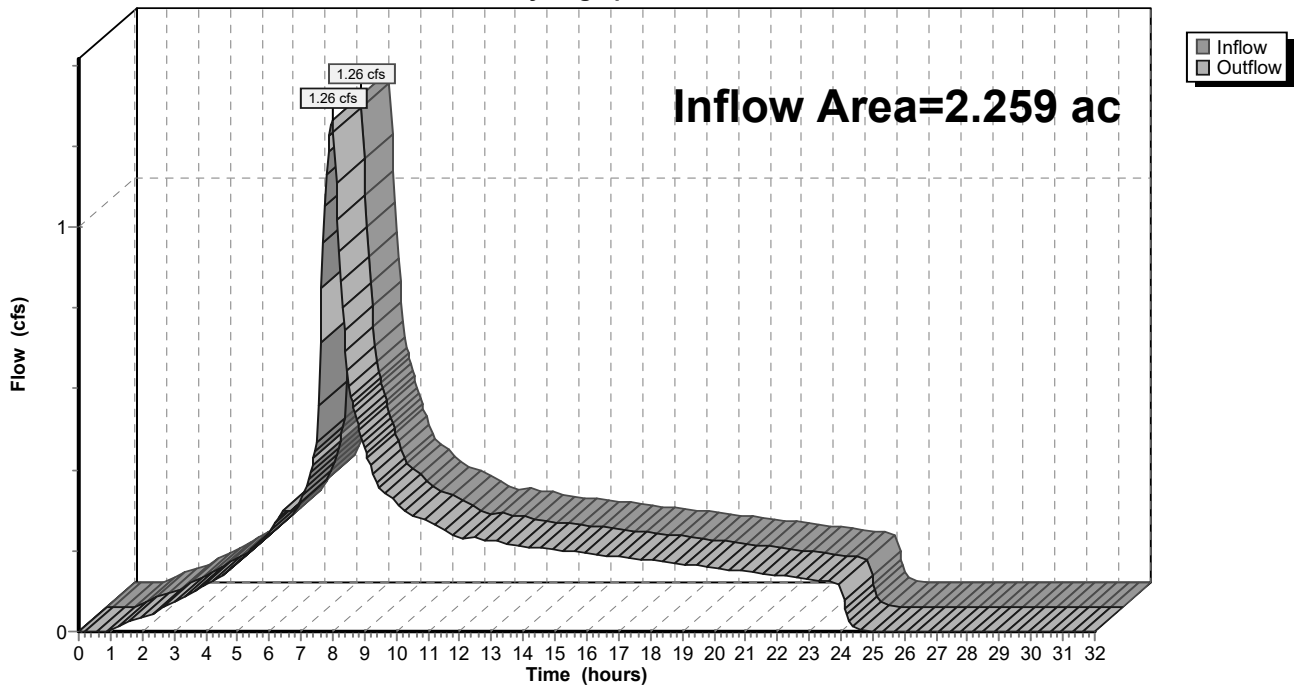
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 2.259 ac, 35.43% Impervious, Inflow Depth = 2.30" for 05-5 Year event
 Inflow = 1.26 cfs @ 7.98 hrs, Volume= 0.433 af
 Outflow = 1.26 cfs @ 7.98 hrs, Volume= 0.433 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 131R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 132R: 1

Hydrograph



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Summary for Reach 133R: 1

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

Inflow Area = 0.345 ac, 100.00% Impervious, Inflow Depth = 2.63" for 05-5 Year event

Inflow = 0.22 cfs @ 7.98 hrs, Volume= 0.076 af

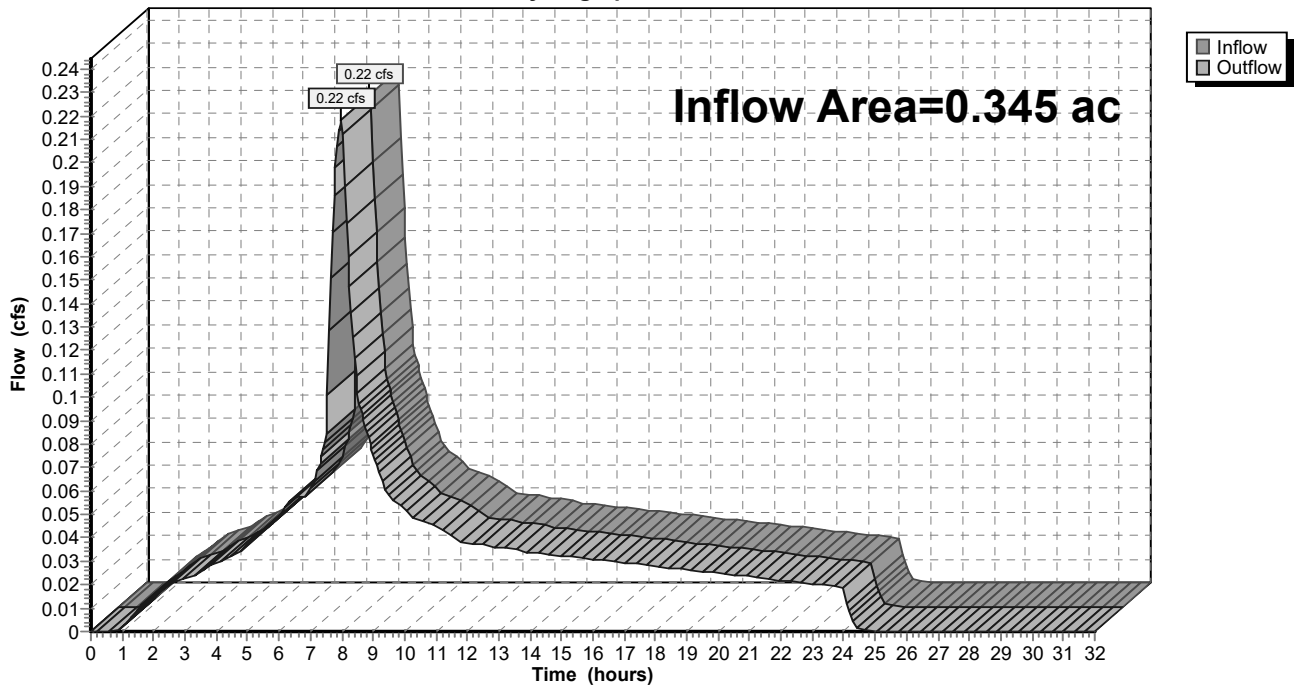
Outflow = 0.22 cfs @ 7.98 hrs, Volume= 0.076 af, Atten= 0%, Lag= 0.0 min

Routed to Reach 132R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 133R: 1

Hydrograph



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Type IA 24-hr 05-5 Year Rainfall=2.86"

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Summary for Reach 134R: 1

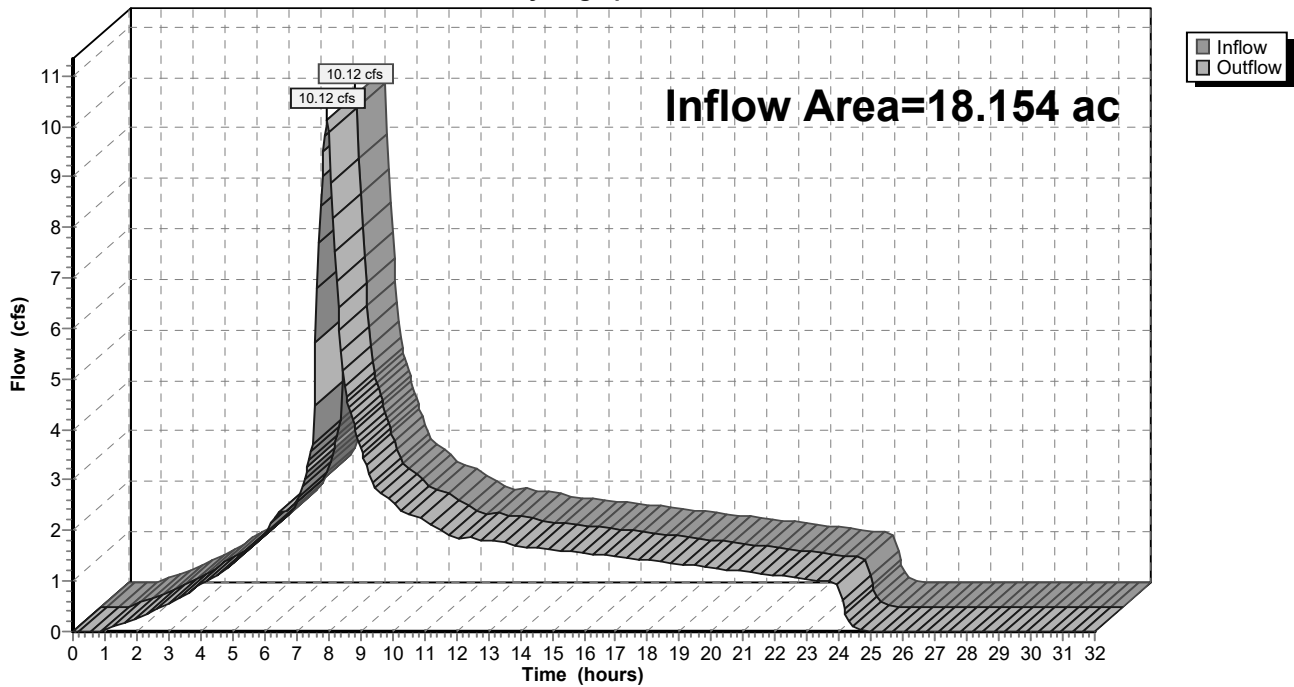
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 18.154 ac, 33.65% Impervious, Inflow Depth = 2.29" for 05-5 Year event
 Inflow = 10.12 cfs @ 7.98 hrs, Volume= 3.467 af
 Outflow = 10.12 cfs @ 7.98 hrs, Volume= 3.467 af, Atten= 0%, Lag= 0.0 min
 Routed to Pond 63P : Detention Pond

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 134R: 1

Hydrograph



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Type IA 24-hr 05-5 Year Rainfall=2.86"

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Summary for Reach 135R: 1

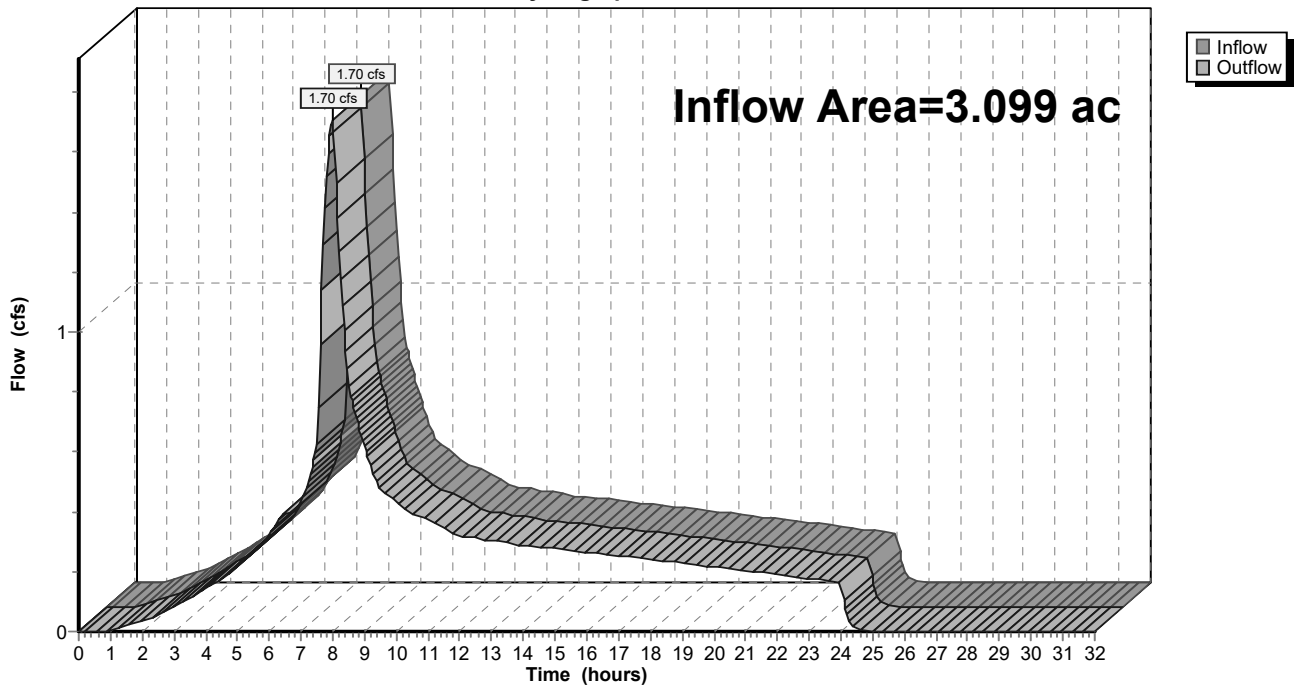
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.099 ac, 26.69% Impervious, Inflow Depth = 2.26" for 05-5 Year event
 Inflow = 1.70 cfs @ 7.98 hrs, Volume= 0.583 af
 Outflow = 1.70 cfs @ 7.98 hrs, Volume= 0.583 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 134R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 135R: 1

Hydrograph



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Summary for Reach 136R: 1

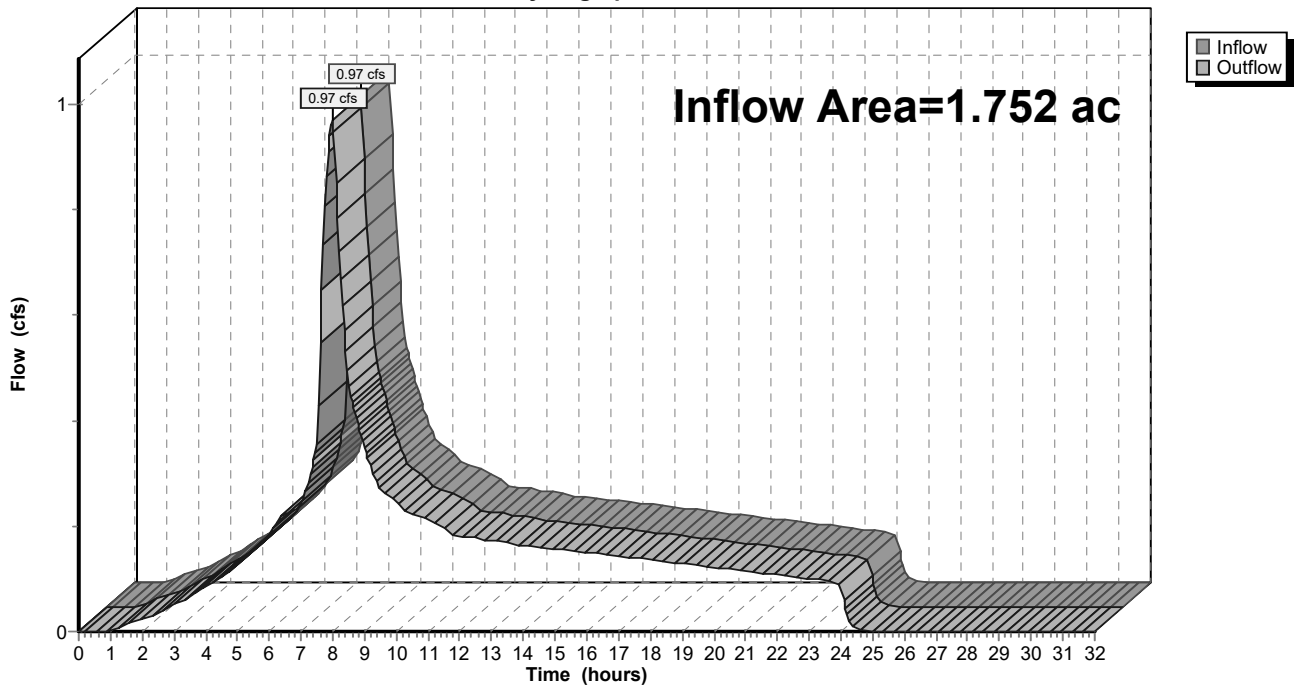
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.752 ac, 30.00% Impervious, Inflow Depth = 2.27" for 05-5 Year event
 Inflow = 0.97 cfs @ 7.98 hrs, Volume= 0.332 af
 Outflow = 0.97 cfs @ 7.98 hrs, Volume= 0.332 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 135R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 136R: 1

Hydrograph



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Summary for Reach 137R: 1

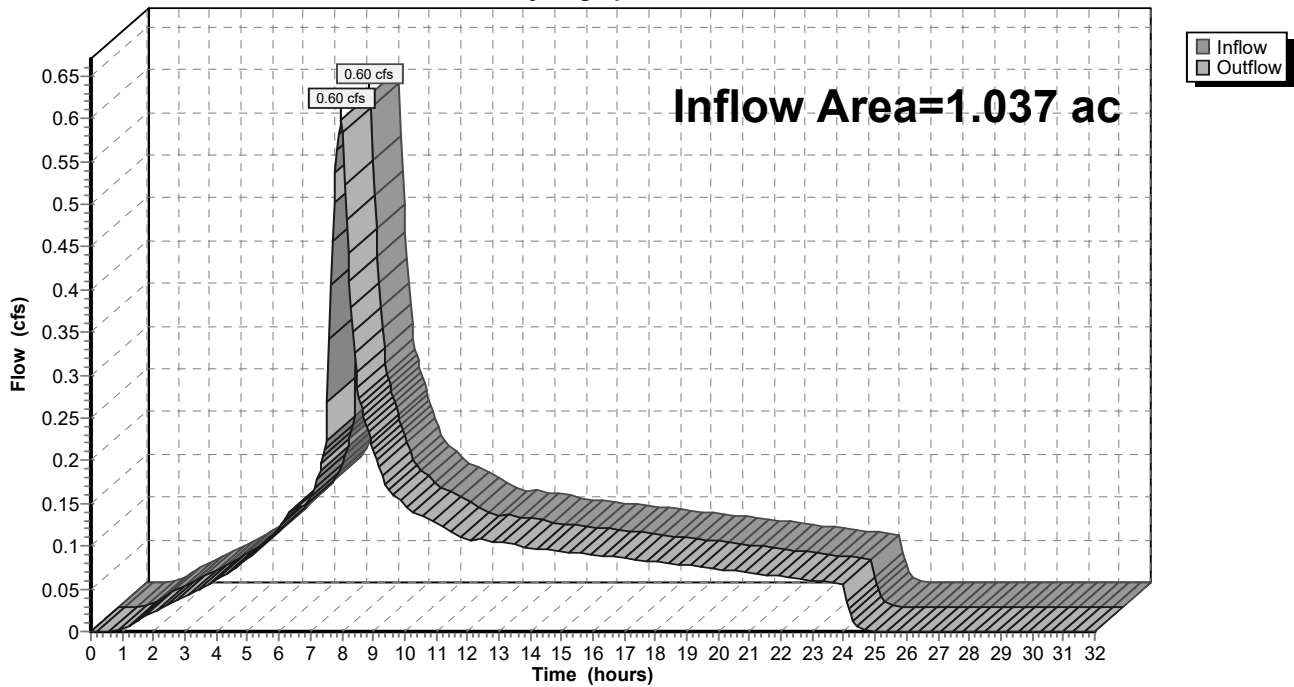
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.037 ac, 50.68% Impervious, Inflow Depth = 2.38" for 05-5 Year event
 Inflow = 0.60 cfs @ 7.98 hrs, Volume= 0.206 af
 Outflow = 0.60 cfs @ 7.98 hrs, Volume= 0.206 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 136R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 137R: 1

Hydrograph



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Summary for Reach 138R: 1

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

Inflow Area = 0.432 ac, 100.00% Impervious, Inflow Depth = 2.63" for 05-5 Year event

Inflow = 0.27 cfs @ 7.98 hrs, Volume= 0.095 af

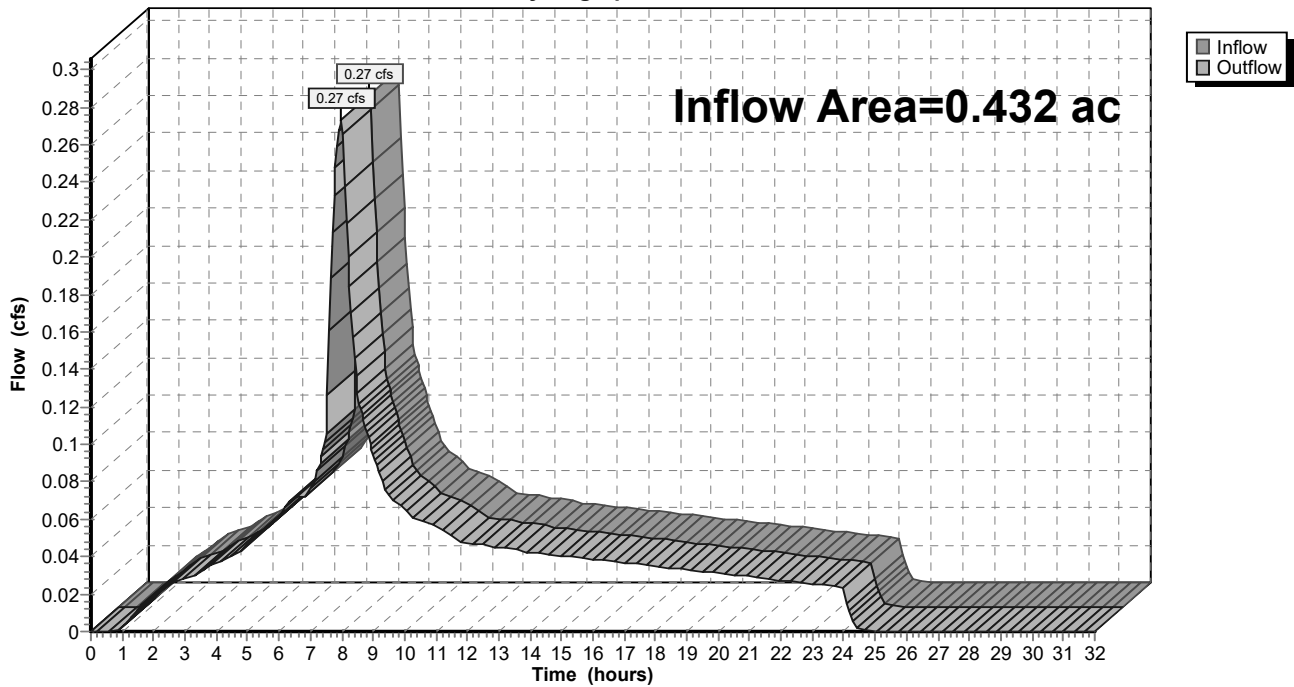
Outflow = 0.27 cfs @ 7.98 hrs, Volume= 0.095 af, Atten= 0%, Lag= 0.0 min

Routed to Pond 63P : Detention Pond

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 138R: 1

Hydrograph



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Summary for Reach 139R: 1

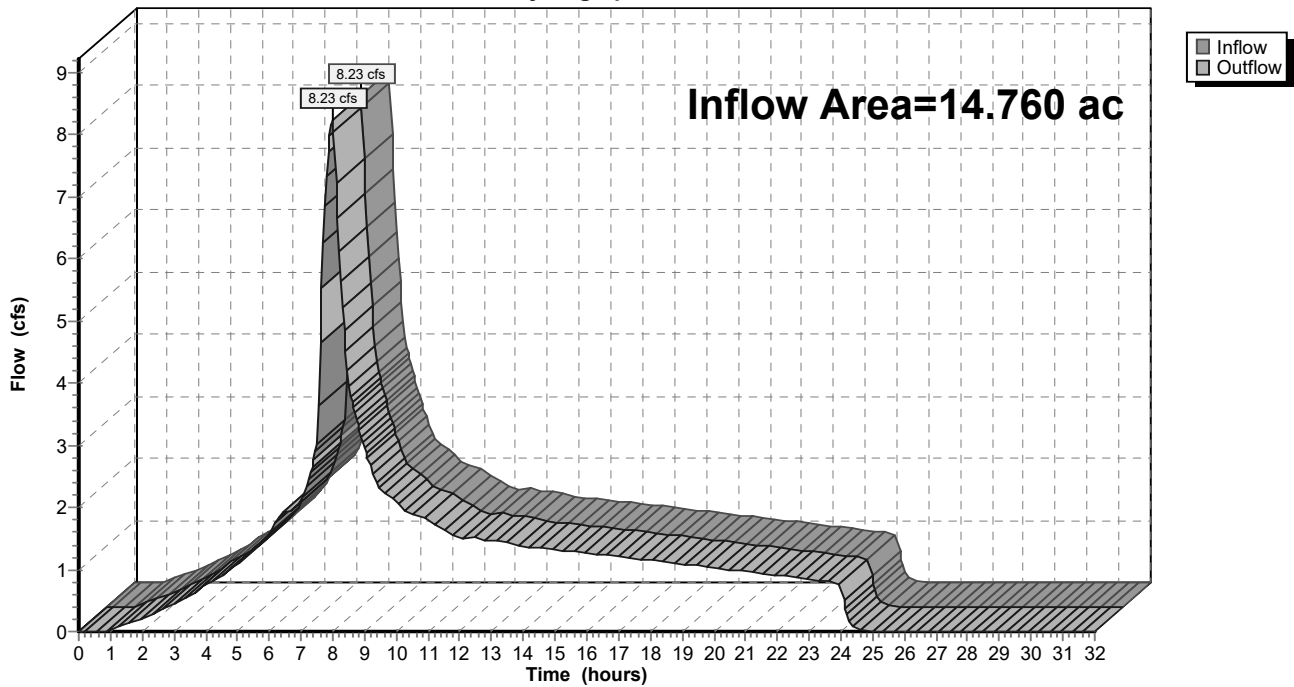
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 14.760 ac, 33.78% Impervious, Inflow Depth = 2.29" for 05-5 Year event
 Inflow = 8.23 cfs @ 7.98 hrs, Volume= 2.819 af
 Outflow = 8.23 cfs @ 7.98 hrs, Volume= 2.819 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 158R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 139R: 1

Hydrograph



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Type IA 24-hr 05-5 Year Rainfall=2.86"

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Summary for Reach 140R: 1

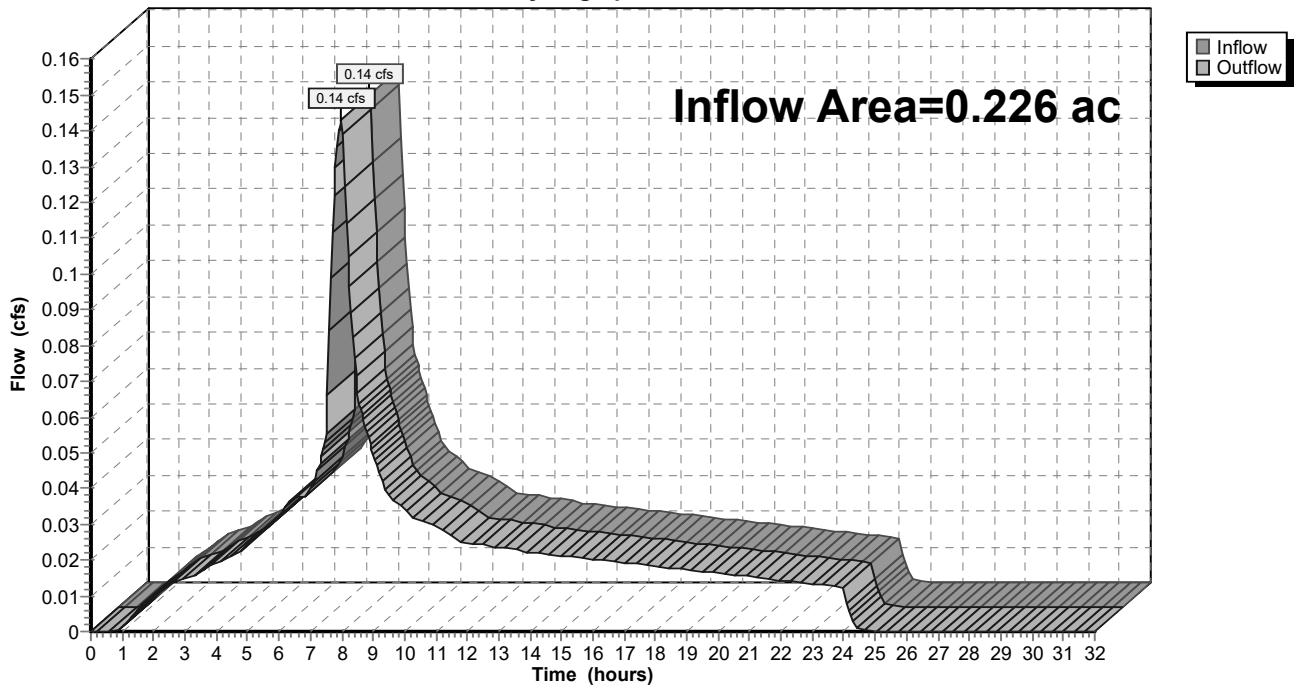
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.226 ac, 100.00% Impervious, Inflow Depth = 2.63" for 05-5 Year event
 Inflow = 0.14 cfs @ 7.98 hrs, Volume= 0.050 af
 Outflow = 0.14 cfs @ 7.98 hrs, Volume= 0.050 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 138R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 140R: 1

Hydrograph



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Summary for Reach 141R: 1

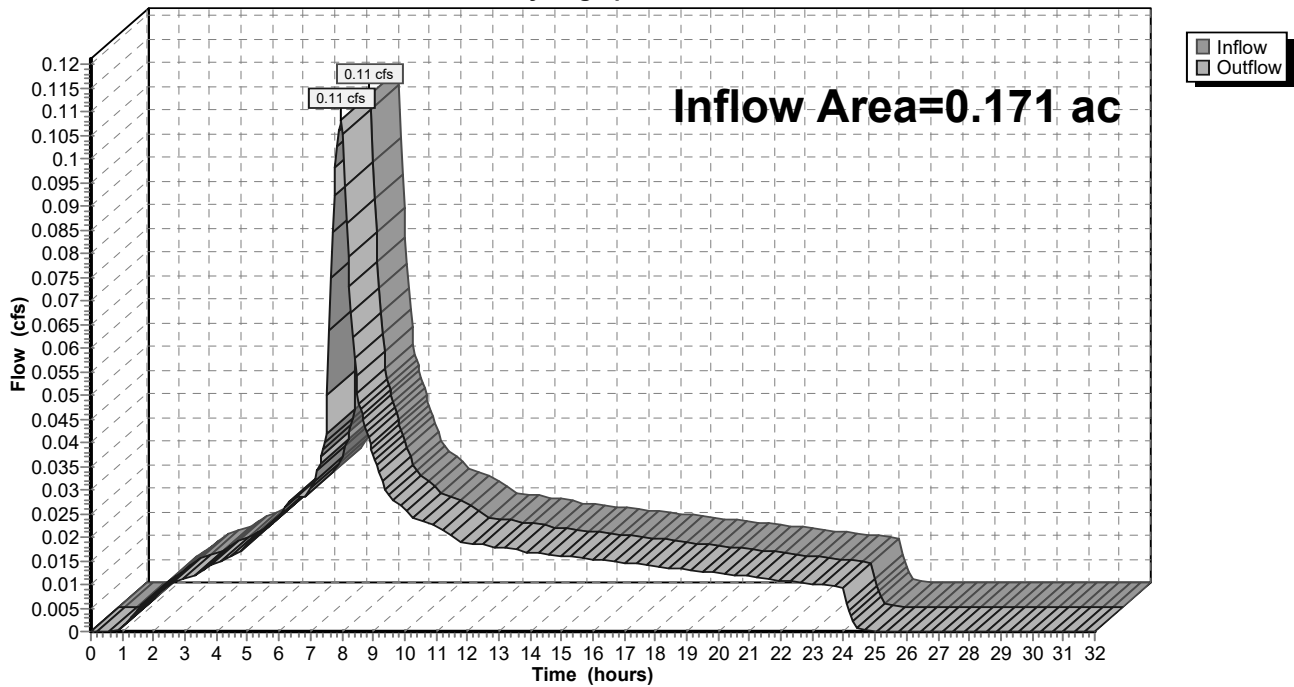
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.171 ac, 100.00% Impervious, Inflow Depth = 2.63" for 05-5 Year event
 Inflow = 0.11 cfs @ 7.98 hrs, Volume= 0.038 af
 Outflow = 0.11 cfs @ 7.98 hrs, Volume= 0.038 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 139R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 141R: 1

Hydrograph



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Summary for Reach 142R: 1

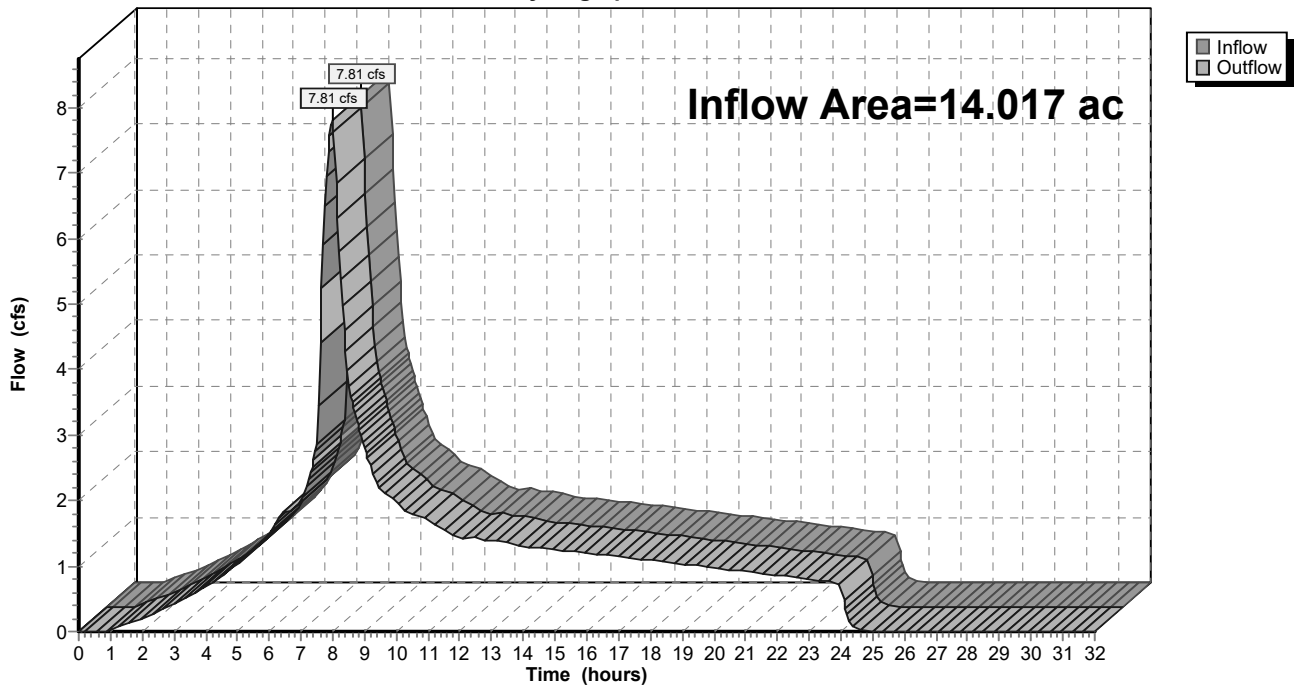
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 14.017 ac, 33.09% Impervious, Inflow Depth = 2.29" for 05-5 Year event
 Inflow = 7.81 cfs @ 7.98 hrs, Volume= 2.673 af
 Outflow = 7.81 cfs @ 7.98 hrs, Volume= 2.673 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 159R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 142R: 1

Hydrograph



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Type IA 24-hr 05-5 Year Rainfall=2.86"

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Summary for Reach 143R: 1

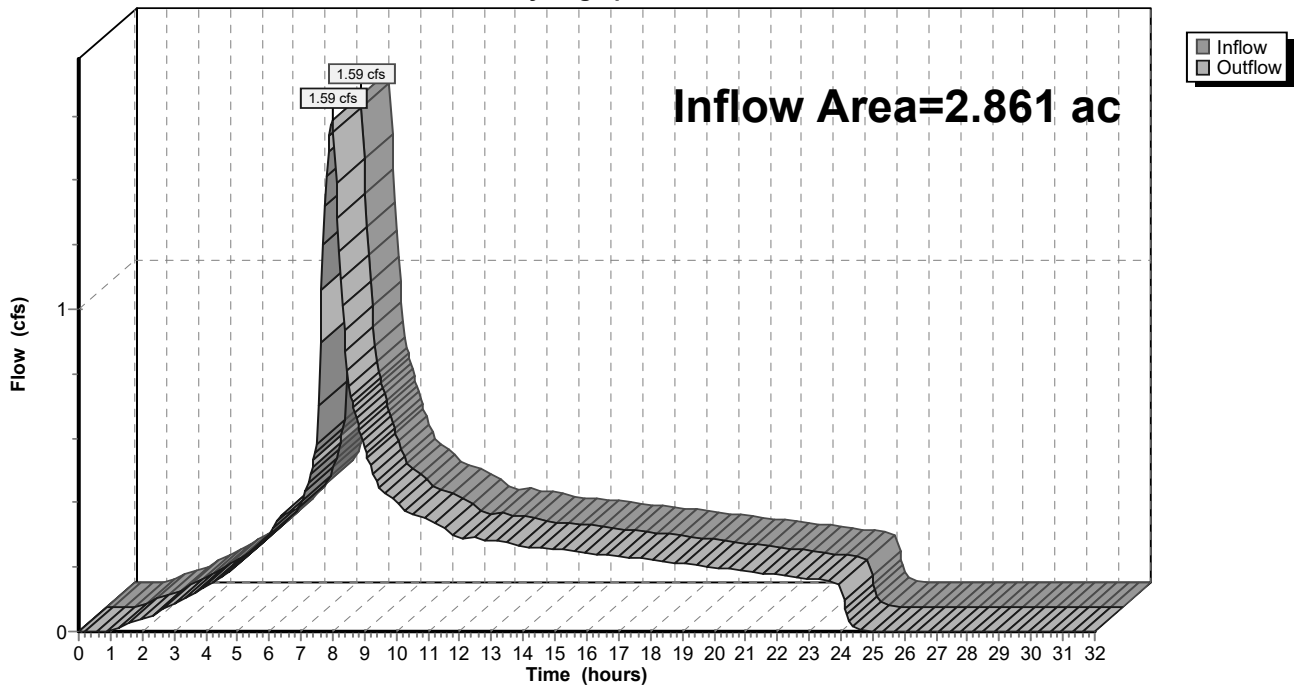
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 2.861 ac, 30.95% Impervious, Inflow Depth = 2.28" for 05-5 Year event
 Inflow = 1.59 cfs @ 7.98 hrs, Volume= 0.543 af
 Outflow = 1.59 cfs @ 7.98 hrs, Volume= 0.543 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 142R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 143R: 1

Hydrograph



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Type IA 24-hr 05-5 Year Rainfall=2.86"

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Summary for Reach 144R: 1

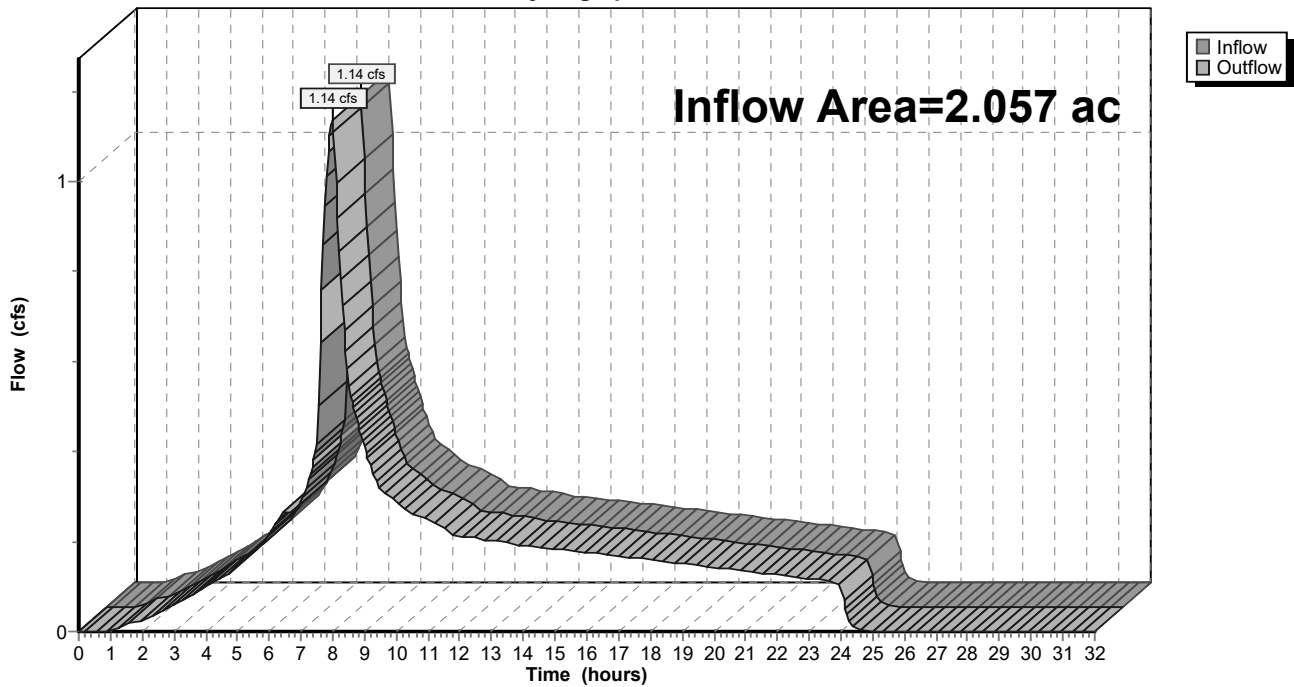
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 2.057 ac, 28.74% Impervious, Inflow Depth = 2.27" for 05-5 Year event
 Inflow = 1.14 cfs @ 7.98 hrs, Volume= 0.388 af
 Outflow = 1.14 cfs @ 7.98 hrs, Volume= 0.388 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 143R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 144R: 1

Hydrograph



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Type IA 24-hr 05-5 Year Rainfall=2.86"

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Summary for Reach 145R: 1

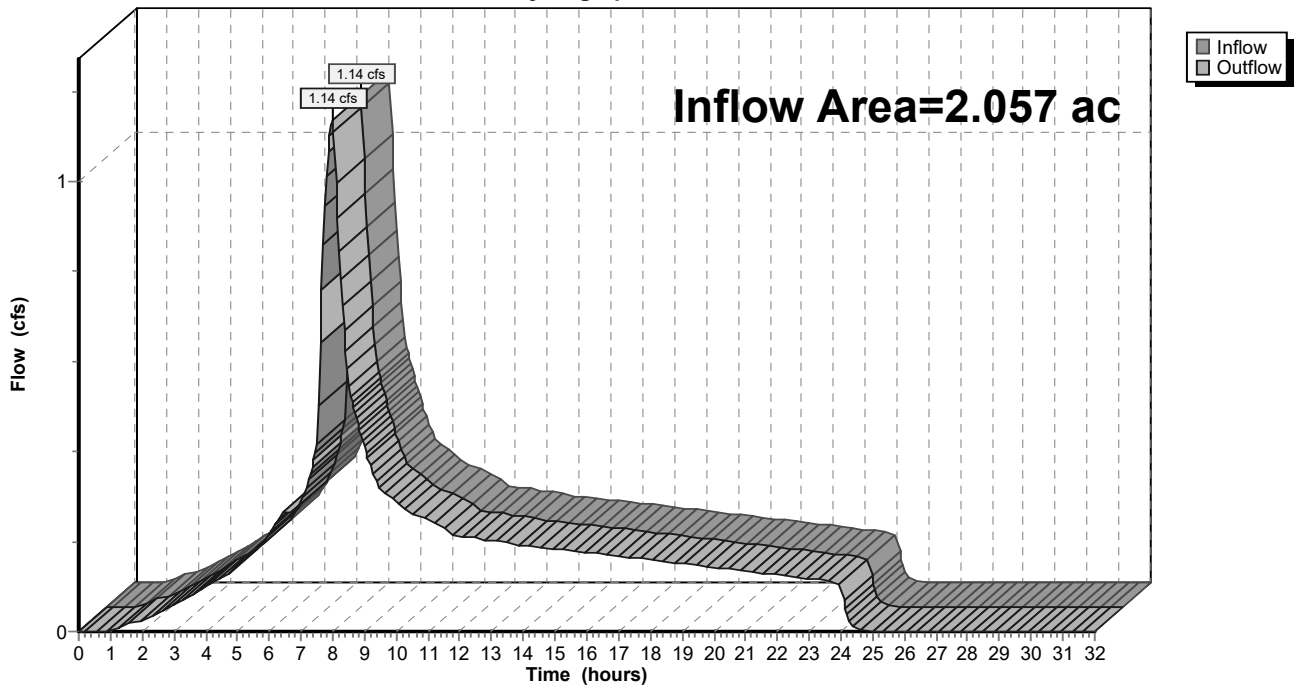
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 2.057 ac, 28.74% Impervious, Inflow Depth = 2.27" for 05-5 Year event
 Inflow = 1.14 cfs @ 7.98 hrs, Volume= 0.388 af
 Outflow = 1.14 cfs @ 7.98 hrs, Volume= 0.388 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 144R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 145R: 1

Hydrograph



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Type IA 24-hr 05-5 Year Rainfall=2.86"

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Summary for Reach 146R: 1

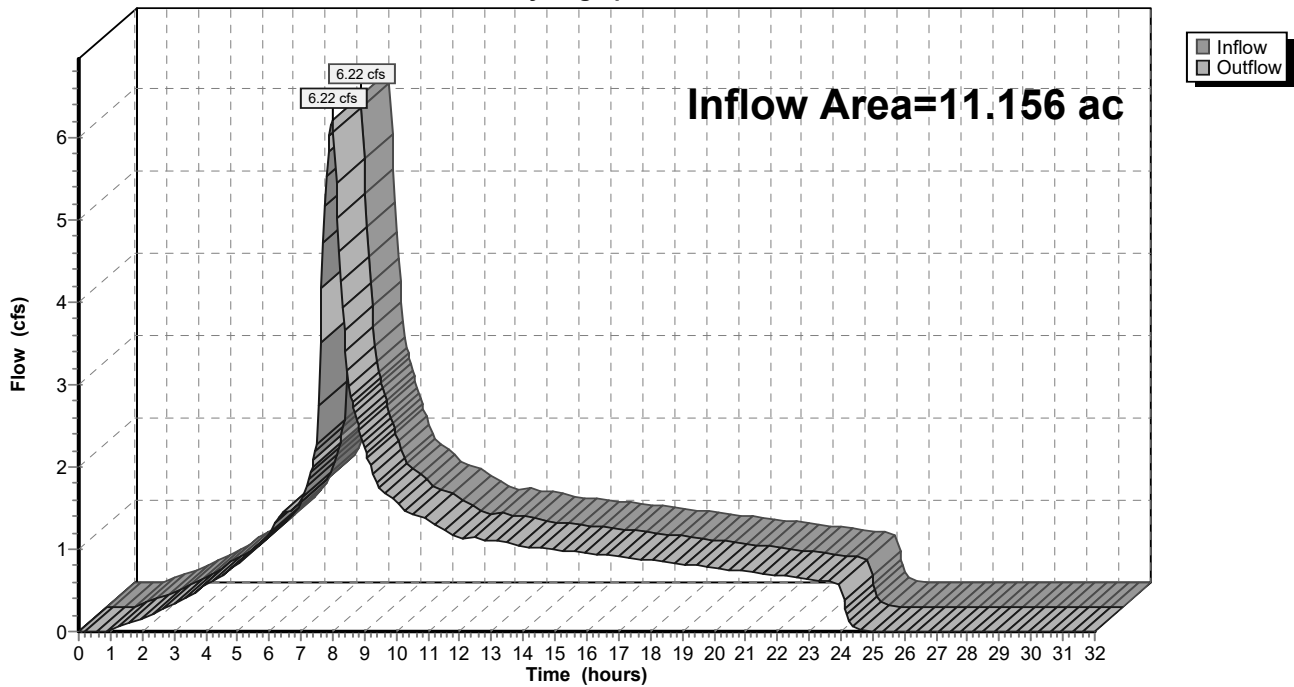
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 11.156 ac, 33.63% Impervious, Inflow Depth = 2.29" for 05-5 Year event
 Inflow = 6.22 cfs @ 7.98 hrs, Volume= 2.130 af
 Outflow = 6.22 cfs @ 7.98 hrs, Volume= 2.130 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 142R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 146R: 1

Hydrograph



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Summary for Reach 147R: 1

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

Inflow Area = 0.156 ac, 100.00% Impervious, Inflow Depth = 2.63" for 05-5 Year event

Inflow = 0.10 cfs @ 7.98 hrs, Volume= 0.034 af

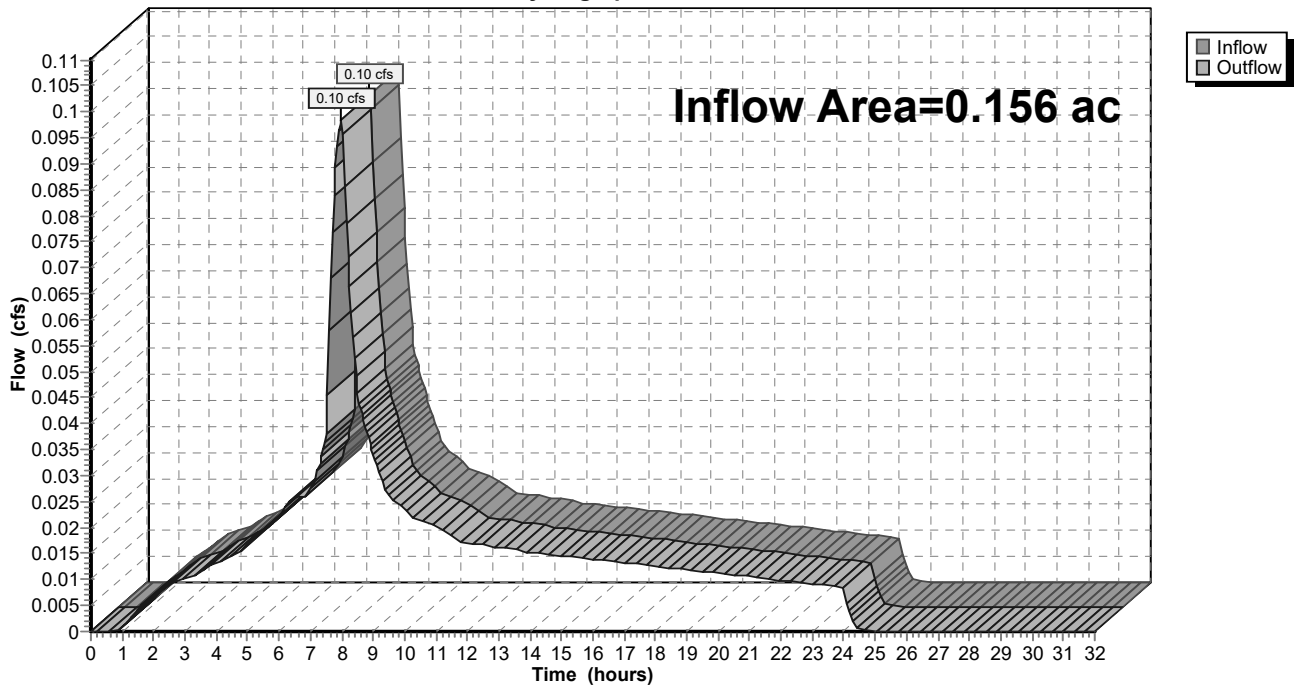
Outflow = 0.10 cfs @ 7.98 hrs, Volume= 0.034 af, Atten= 0%, Lag= 0.0 min

Routed to Reach 146R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 147R: 1

Hydrograph



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Summary for Reach 148R: 1

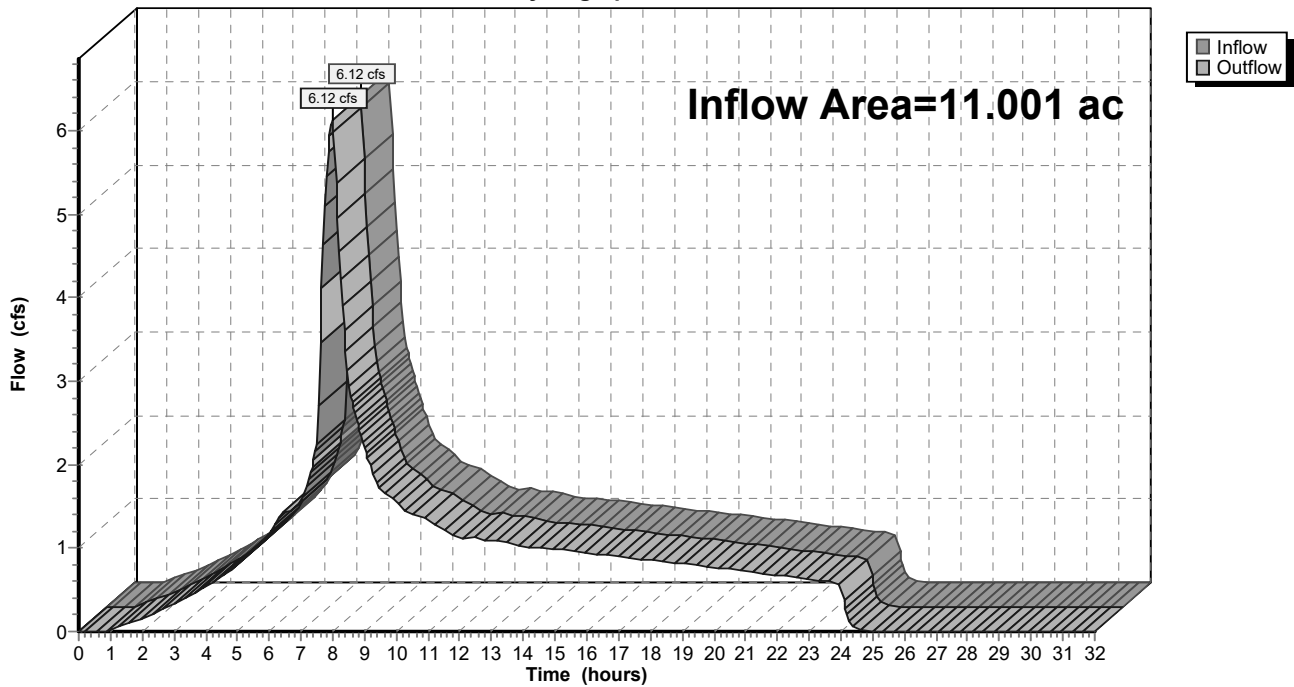
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 11.001 ac, 32.69% Impervious, Inflow Depth = 2.29" for 05-5 Year event
 Inflow = 6.12 cfs @ 7.98 hrs, Volume= 2.096 af
 Outflow = 6.12 cfs @ 7.98 hrs, Volume= 2.096 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 146R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 148R: 1

Hydrograph



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Summary for Reach 149R: 1

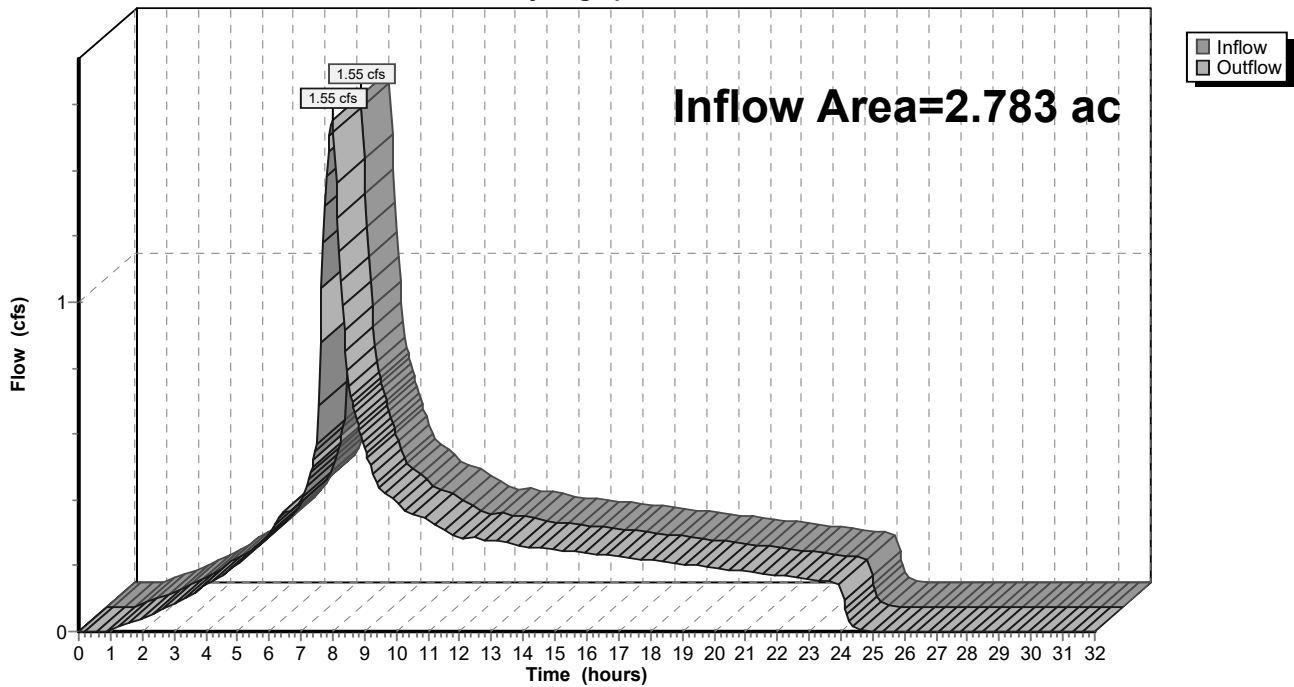
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 2.783 ac, 33.49% Impervious, Inflow Depth = 2.29" for 05-5 Year event
 Inflow = 1.55 cfs @ 7.98 hrs, Volume= 0.531 af
 Outflow = 1.55 cfs @ 7.98 hrs, Volume= 0.531 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 148R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 149R: 1

Hydrograph



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Type IA 24-hr 05-5 Year Rainfall=2.86"

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Summary for Reach 150R: 1

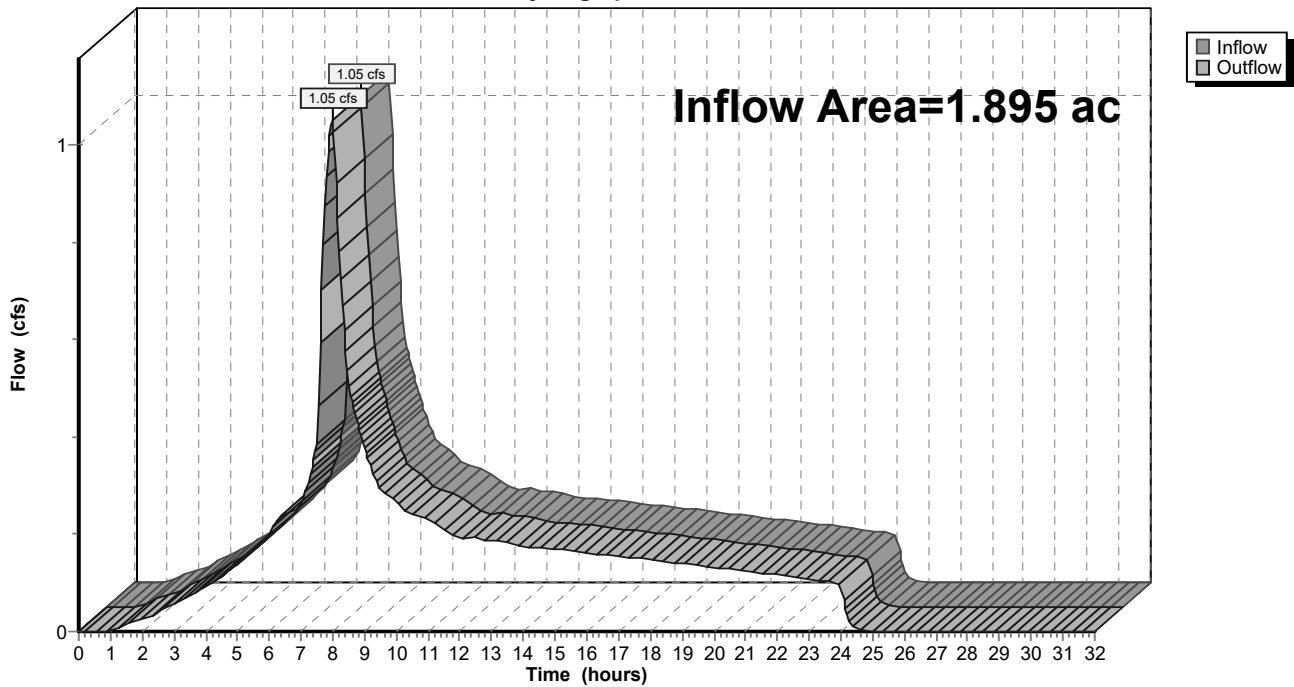
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.895 ac, 31.51% Impervious, Inflow Depth = 2.28" for 05-5 Year event
 Inflow = 1.05 cfs @ 7.98 hrs, Volume= 0.360 af
 Outflow = 1.05 cfs @ 7.98 hrs, Volume= 0.360 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 149R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 150R: 1

Hydrograph



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Type IA 24-hr 05-5 Year Rainfall=2.86"

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Summary for Reach 151R: 1

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

Inflow Area = 1.428 ac, 41.79% Impervious, Inflow Depth = 2.33" for 05-5 Year event

Inflow = 0.81 cfs @ 7.98 hrs, Volume= 0.278 af

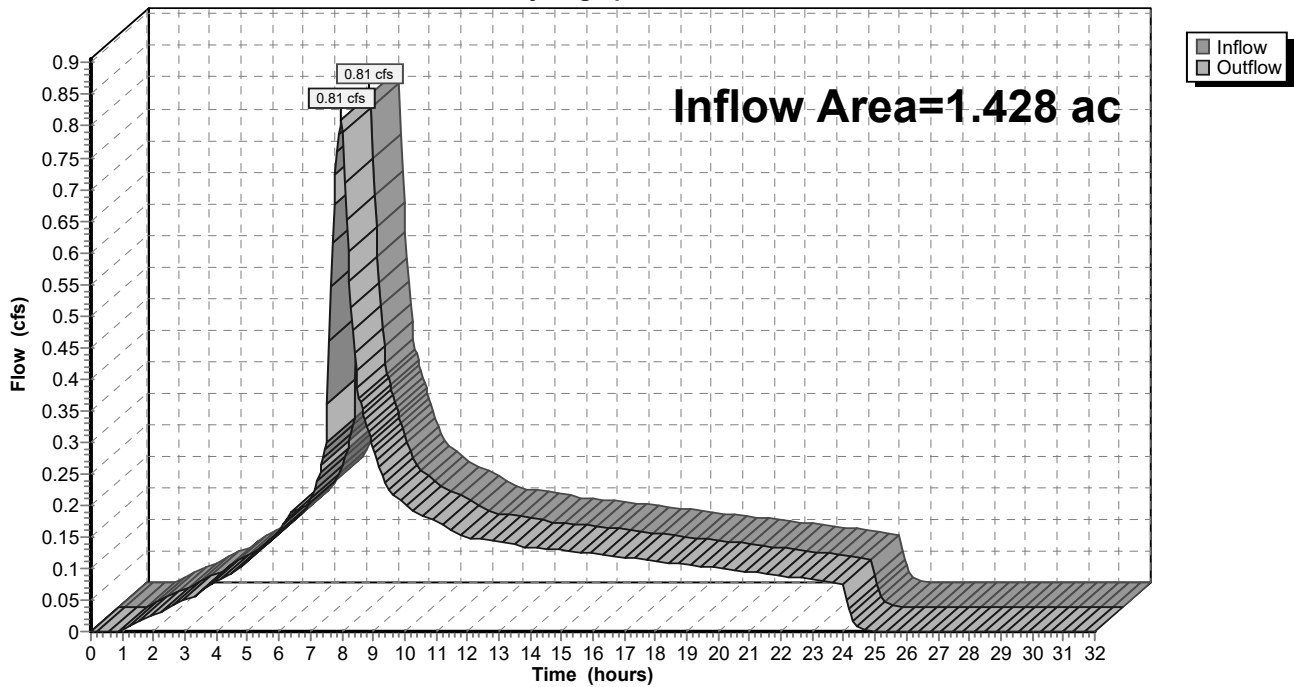
Outflow = 0.81 cfs @ 7.98 hrs, Volume= 0.278 af, Atten= 0%, Lag= 0.0 min

Routed to Reach 150R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 151R: 1

Hydrograph



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Summary for Reach 152R: 1

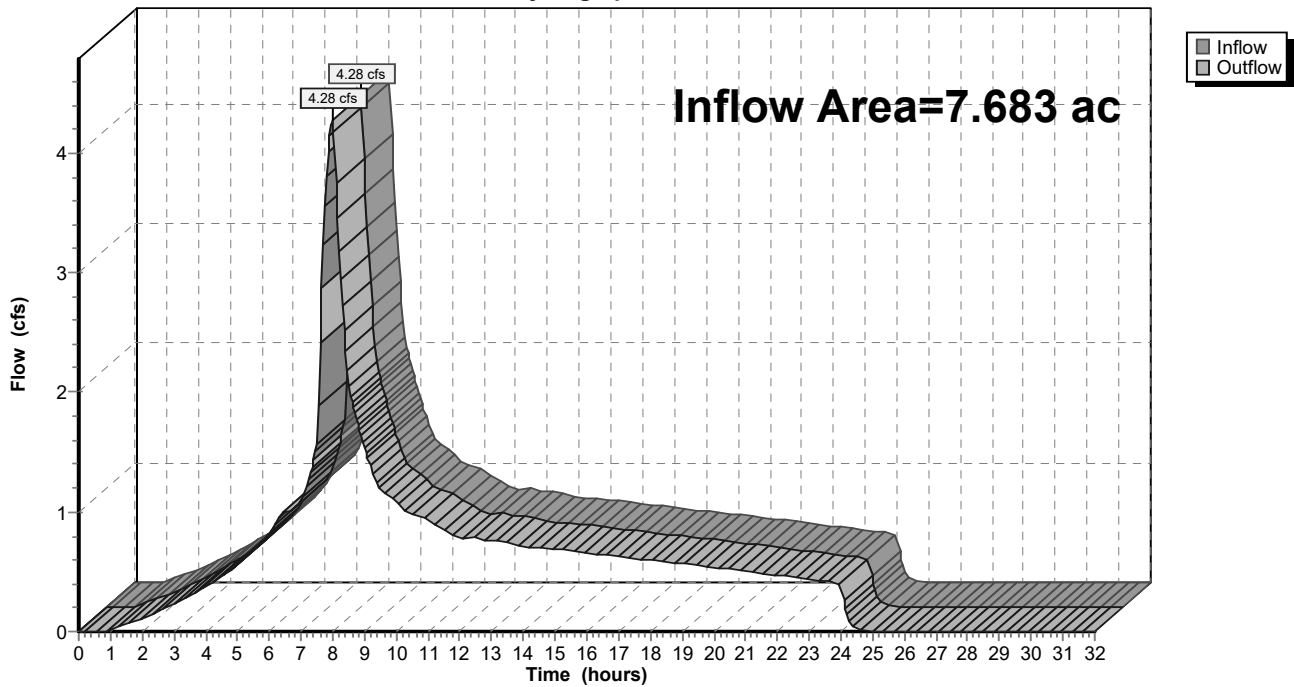
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 7.683 ac, 32.64% Impervious, Inflow Depth = 2.29" for 05-5 Year event
 Inflow = 4.28 cfs @ 7.98 hrs, Volume= 1.464 af
 Outflow = 4.28 cfs @ 7.98 hrs, Volume= 1.464 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 148R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 152R: 1

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 05-5 Year Rainfall=2.86"

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Summary for Reach 153R: 1

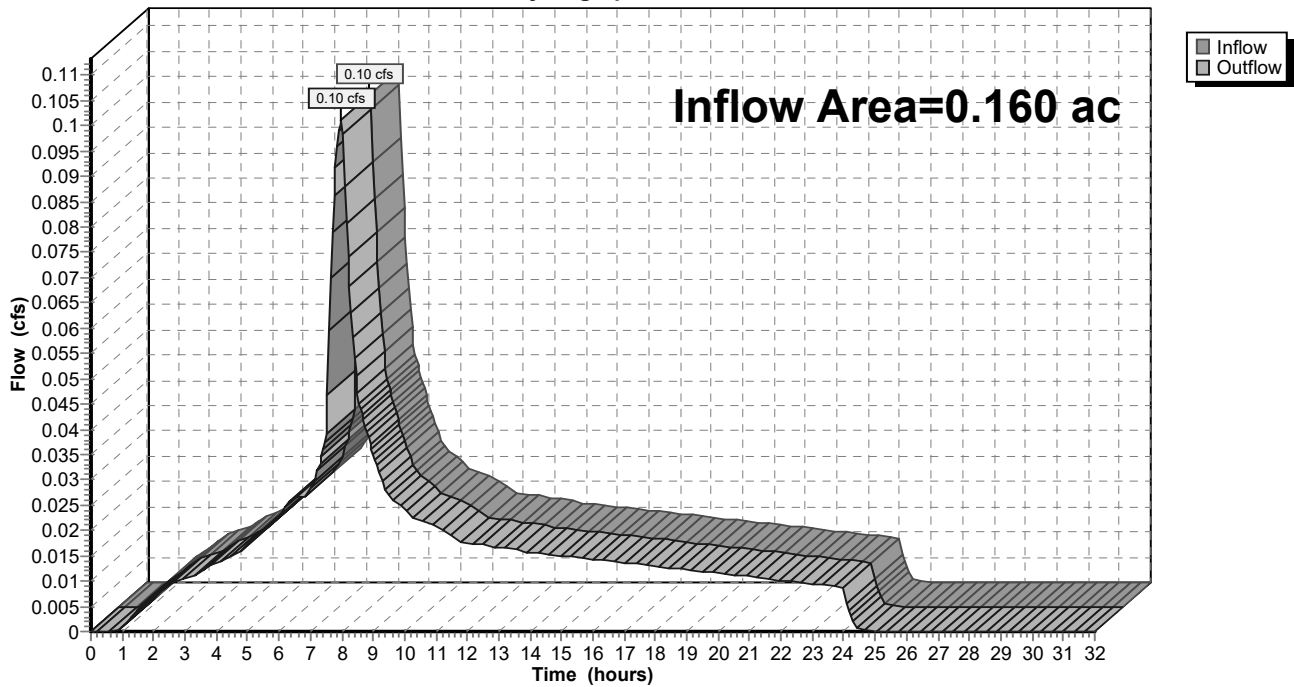
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.160 ac, 100.00% Impervious, Inflow Depth = 2.63" for 05-5 Year event
 Inflow = 0.10 cfs @ 7.98 hrs, Volume= 0.035 af
 Outflow = 0.10 cfs @ 7.98 hrs, Volume= 0.035 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 152R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 153R: 1

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 05-5 Year Rainfall=2.86"

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Summary for Reach 154R: 1

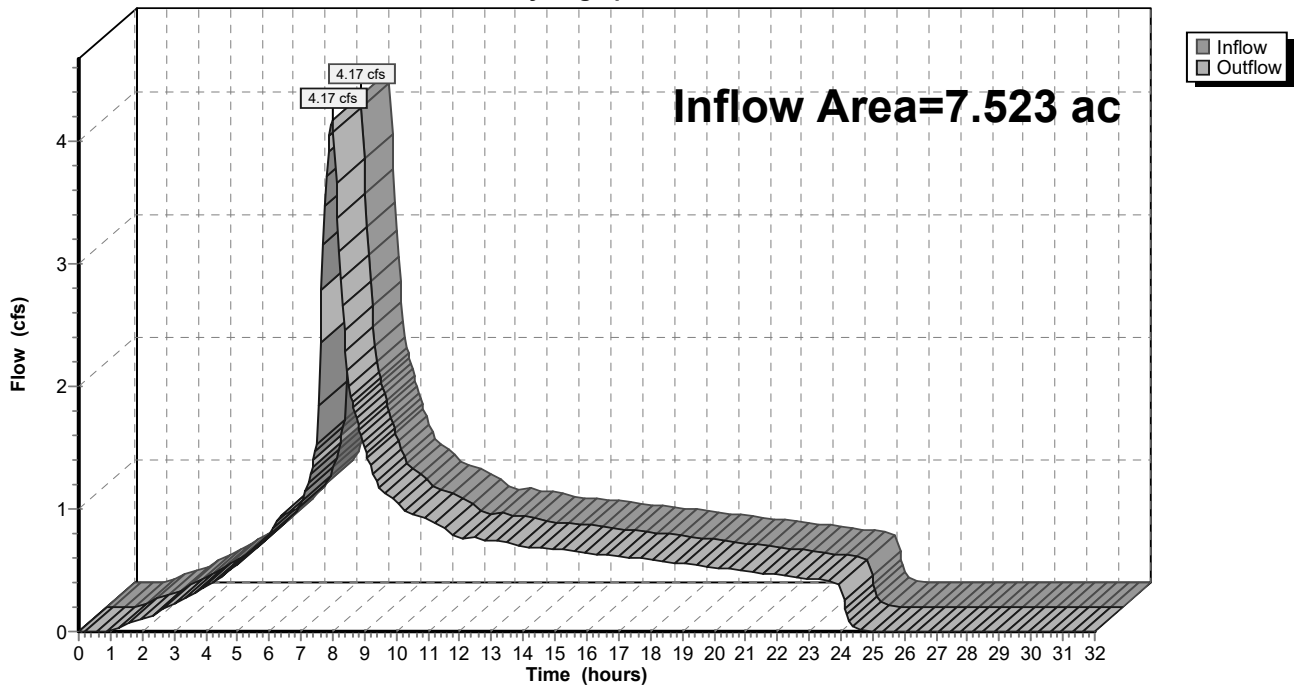
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 7.523 ac, 31.20% Impervious, Inflow Depth = 2.28" for 05-5 Year event
 Inflow = 4.17 cfs @ 7.98 hrs, Volume= 1.429 af
 Outflow = 4.17 cfs @ 7.98 hrs, Volume= 1.429 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 152R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 154R: 1

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 05-5 Year Rainfall=2.86"

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Summary for Reach 155R: 1

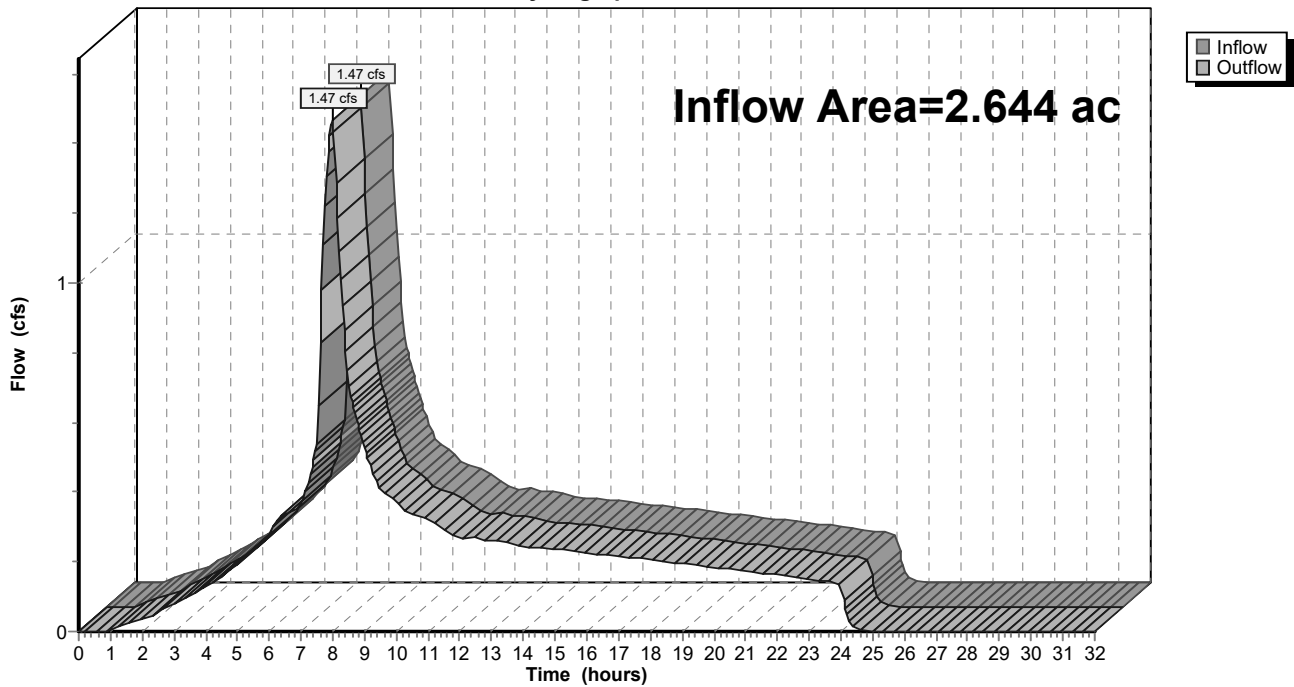
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 2.644 ac, 31.72% Impervious, Inflow Depth = 2.28" for 05-5 Year event
 Inflow = 1.47 cfs @ 7.98 hrs, Volume= 0.503 af
 Outflow = 1.47 cfs @ 7.98 hrs, Volume= 0.503 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 154R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 155R: 1

Hydrograph



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Type IA 24-hr 05-5 Year Rainfall=2.86"

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Summary for Reach 158R: 1

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

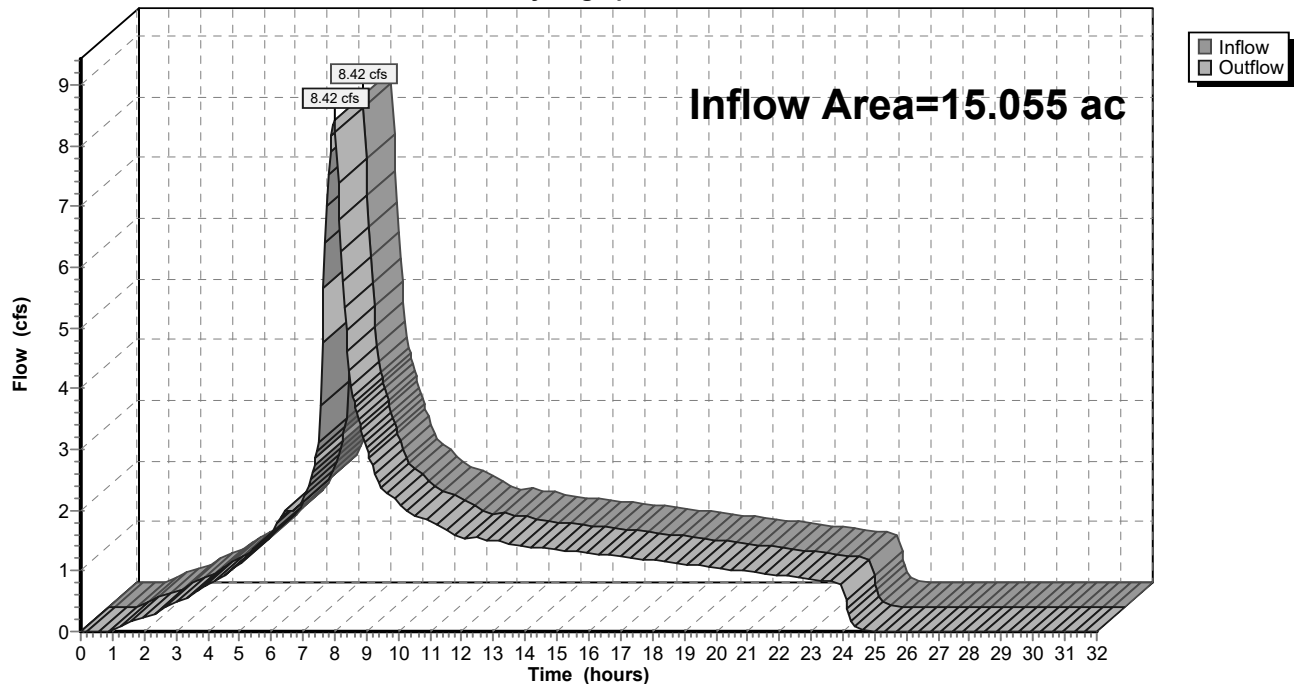
Inflow Area = 15.055 ac, 35.08% Impervious, Inflow Depth = 2.30" for 05-5 Year event

Inflow = 8.42 cfs @ 7.98 hrs, Volume= 2.884 af

Outflow = 8.42 cfs @ 7.98 hrs, Volume= 2.884 af, Atten= 0%, Lag= 0.0 min

Routed to Reach 134R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 158R: 1**Hydrograph**

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Type IA 24-hr 05-5 Year Rainfall=2.86"

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Summary for Reach 159R: 1

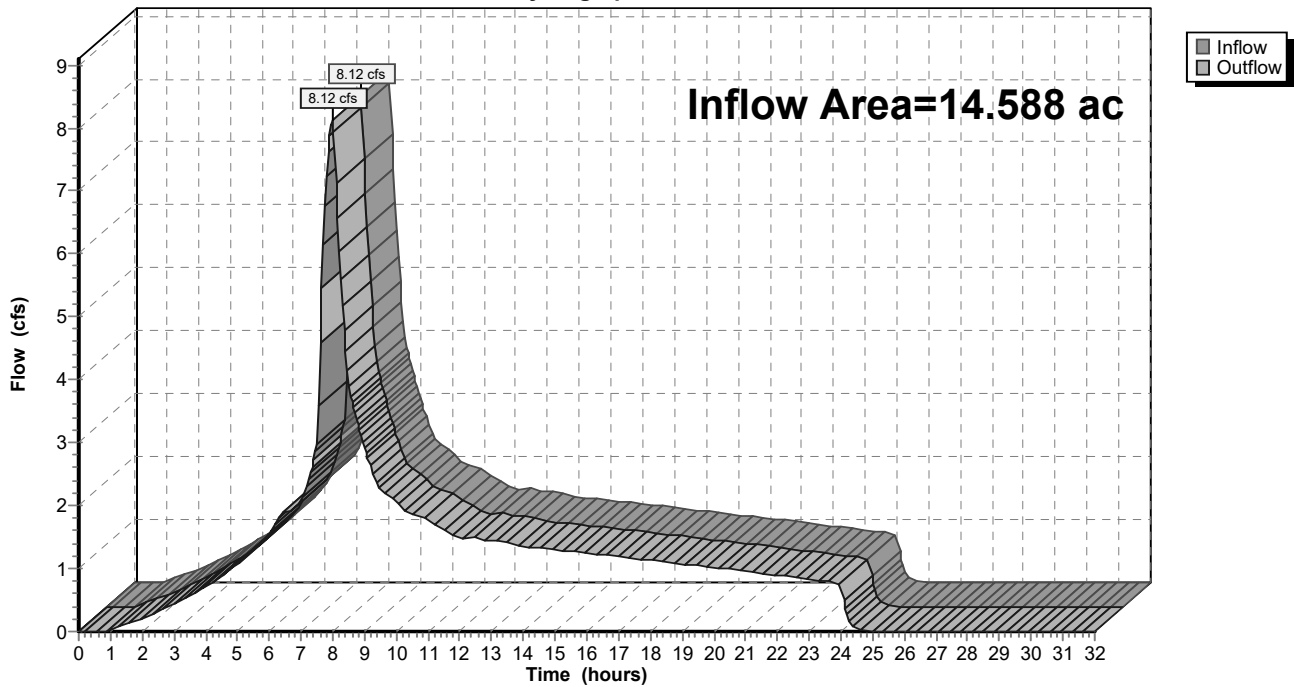
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 14.588 ac, 33.00% Impervious, Inflow Depth = 2.29" for 05-5 Year event
 Inflow = 8.12 cfs @ 7.98 hrs, Volume= 2.782 af
 Outflow = 8.12 cfs @ 7.98 hrs, Volume= 2.782 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 139R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 159R: 1

Hydrograph



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Type IA 24-hr 05-5 Year Rainfall=2.86"

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Summary for Reach 160R: 1

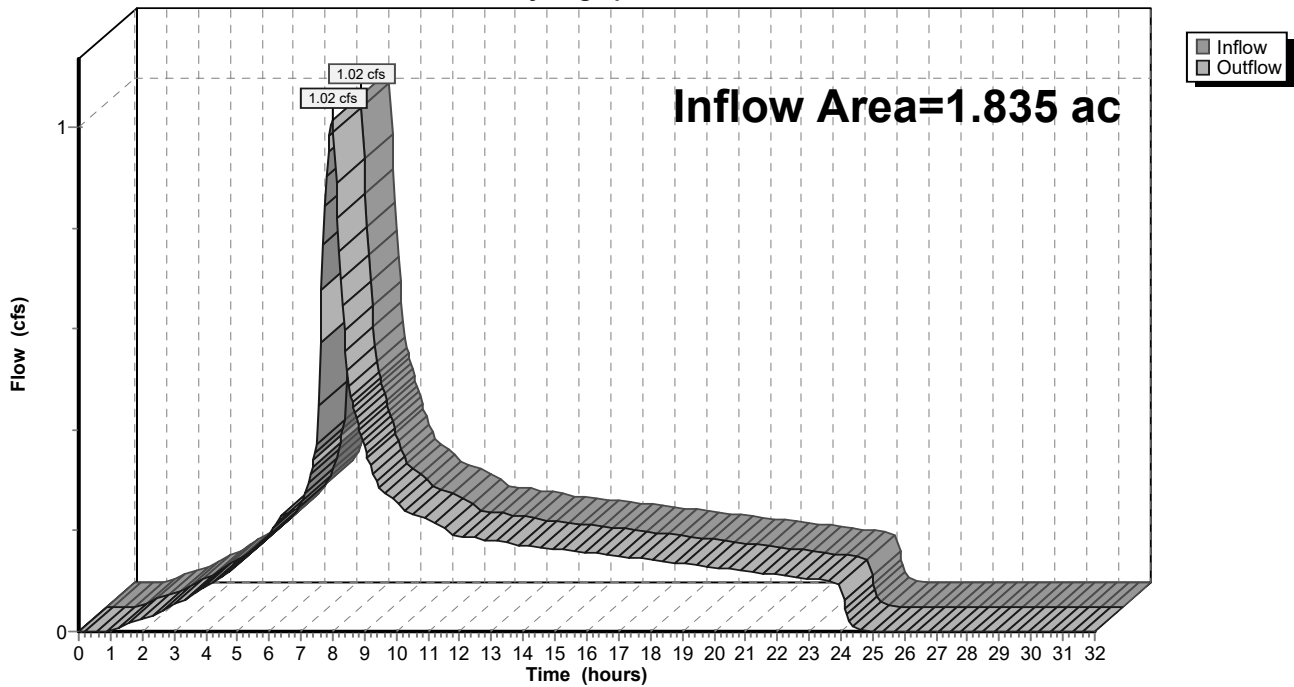
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.835 ac, 29.73% Impervious, Inflow Depth = 2.27" for 05-5 Year event
 Inflow = 1.02 cfs @ 7.98 hrs, Volume= 0.347 af
 Outflow = 1.02 cfs @ 7.98 hrs, Volume= 0.347 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 155R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 160R: 1

Hydrograph



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Type IA 24-hr 05-5 Year Rainfall=2.86"

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Summary for Reach 162R: 1

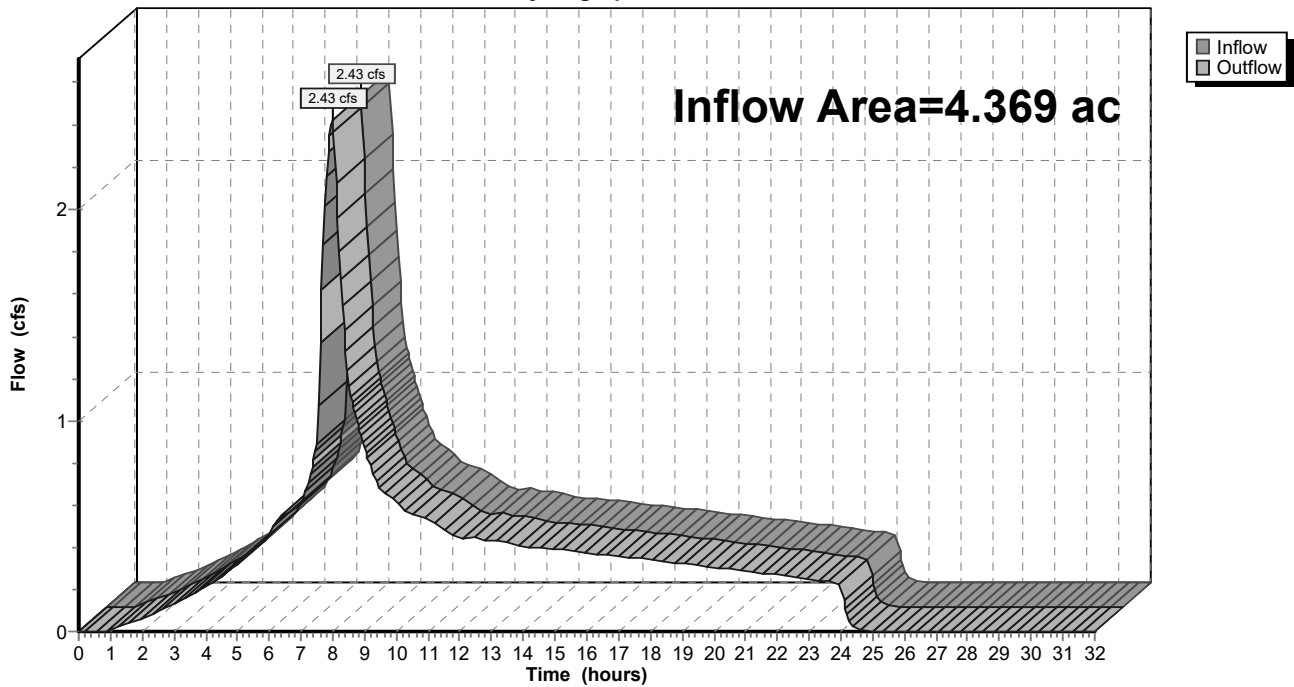
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 4.369 ac, 31.81% Impervious, Inflow Depth = 2.28" for 05-5 Year event
 Inflow = 2.43 cfs @ 7.98 hrs, Volume= 0.831 af
 Outflow = 2.43 cfs @ 7.98 hrs, Volume= 0.831 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 154R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 162R: 1

Hydrograph



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Type IA 24-hr 05-5 Year Rainfall=2.86"

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Summary for Reach 163R: 1

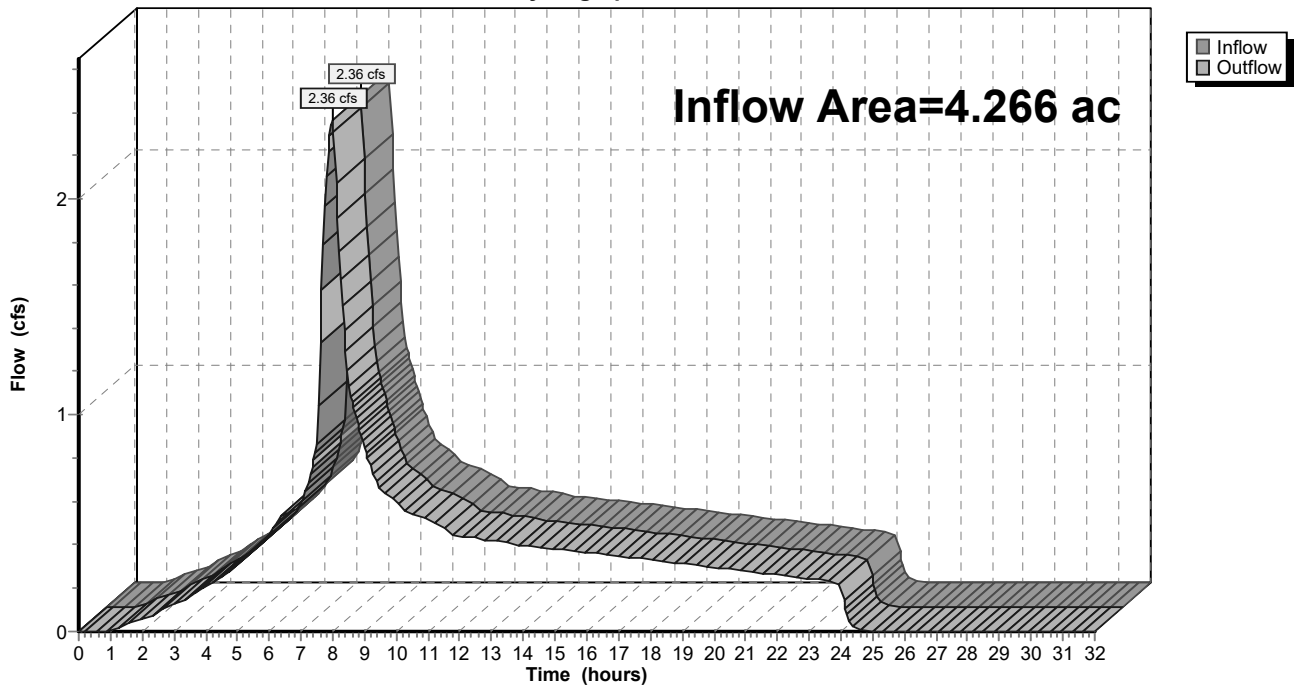
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 4.266 ac, 30.15% Impervious, Inflow Depth = 2.27" for 05-5 Year event
 Inflow = 2.36 cfs @ 7.98 hrs, Volume= 0.808 af
 Outflow = 2.36 cfs @ 7.98 hrs, Volume= 0.808 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 162R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 163R: 1

Hydrograph



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Type IA 24-hr 05-5 Year Rainfall=2.86"

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Summary for Reach 165R: 1

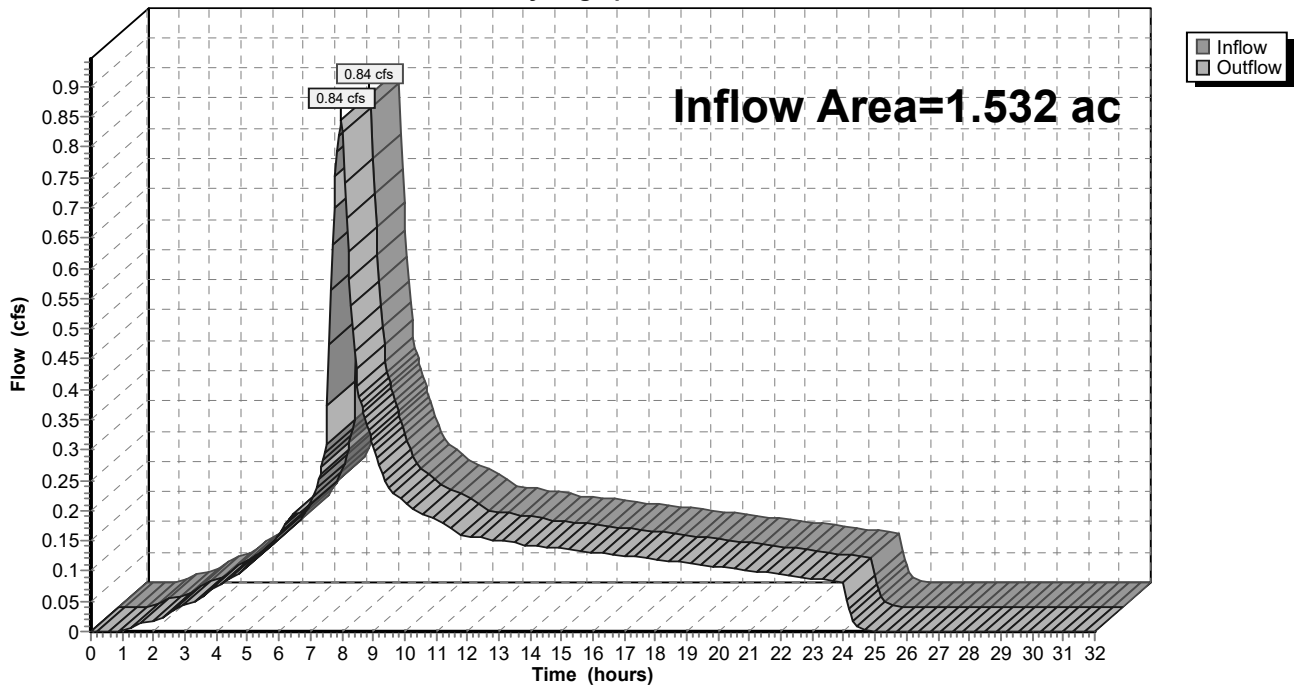
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.532 ac, 27.64% Impervious, Inflow Depth = 2.26" for 05-5 Year event
 Inflow = 0.84 cfs @ 7.98 hrs, Volume= 0.289 af
 Outflow = 0.84 cfs @ 7.98 hrs, Volume= 0.289 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 163R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 165R: 1

Hydrograph



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Type IA 24-hr 05-5 Year Rainfall=2.86"

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Summary for Reach 166R: Basin Future

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

Inflow Area = 1.474 ac, 37.85% Impervious, Inflow Depth = 2.31" for 05-5 Year event

Inflow = 0.83 cfs @ 7.98 hrs, Volume= 0.284 af

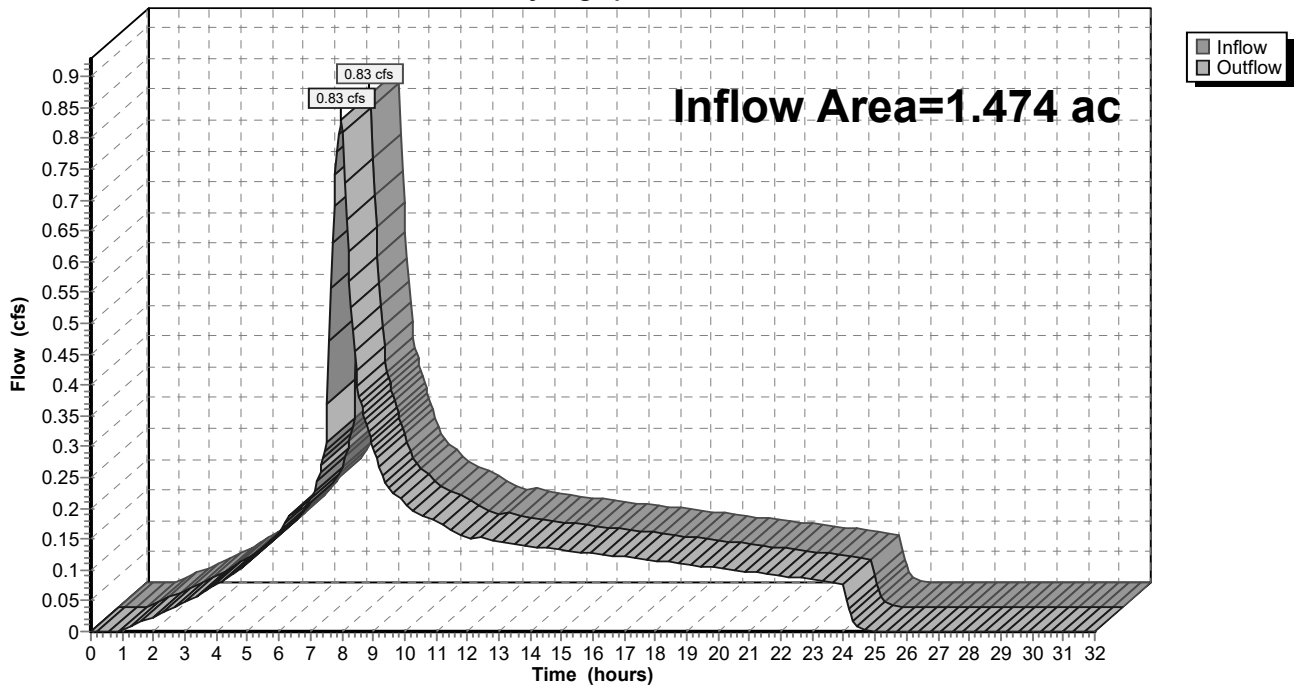
Outflow = 0.83 cfs @ 7.98 hrs, Volume= 0.284 af, Atten= 0%, Lag= 0.0 min

Routed to Reach 163R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 166R: Basin Future

Hydrograph



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Type IA 24-hr 05-5 Year Rainfall=2.86"

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Summary for Pond 54P: Stormwater Swale 2

[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=56)

Inflow Area = 0.082 ac, 100.00% Impervious, Inflow Depth = 2.63" for 05-5 Year event
 Inflow = 0.05 cfs @ 7.98 hrs, Volume= 0.018 af
 Outflow = 0.05 cfs @ 7.98 hrs, Volume= 0.018 af, Atten= 0%, Lag= 0.5 min
 Primary = 0.05 cfs @ 7.98 hrs, Volume= 0.018 af
 Routed to Reach 58R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Peak Elev= 222.40' @ 7.98 hrs Surf.Area= 185 sf Storage= 31 cf
 Flood Elev= 223.30' Surf.Area= 192 sf Storage= 88 cf

Plug-Flow detention time= 41.1 min calculated for 0.018 af (100% of inflow)
 Center-of-Mass det. time= 41.3 min (715.8 - 674.4)

Volume	Invert	Avail.Storage	Storage Description
#1	222.30'	63 cf	Open Storage (Irregular) Listed below (Recalc)
#2	220.80'	10 cf	Imported Soil (Irregular) Listed below (Recalc) 101 cf Overall x 10.0% Voids
#3	220.05'	15 cf	Rock Chamber (Irregular) Listed below (Recalc) 44 cf Overall x 35.0% Voids
		88 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
222.30	59	33.0	0	0	59
223.30	67	34.0	63	63	93

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
220.80	67	34.0	0	0	67
222.30	67	34.0	101	101	118

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
220.05	58	33.0	0	0	58
220.80	58	33.0	44	44	83

Device	Routing	Invert	Outlet Devices
#1	Primary	220.05'	2.000 in/hr Perf Pipes over Surface area
#2	Primary	223.05'	4.0" Horiz. 4" Overflow Pipe C= 0.600 Limited to weir flow at low heads
#3	Primary	222.30'	10.0" Vert. 10" Outflow Pipe C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.05 cfs @ 7.98 hrs HW=222.40' TW=0.00' (Dynamic Tailwater)

- 1=Perf Pipes (Exfiltration Controls 0.01 cfs)
- 2=4" Overflow Pipe (Controls 0.00 cfs)
- 3=10" Outflow Pipe (Orifice Controls 0.04 cfs @ 1.10 fps)

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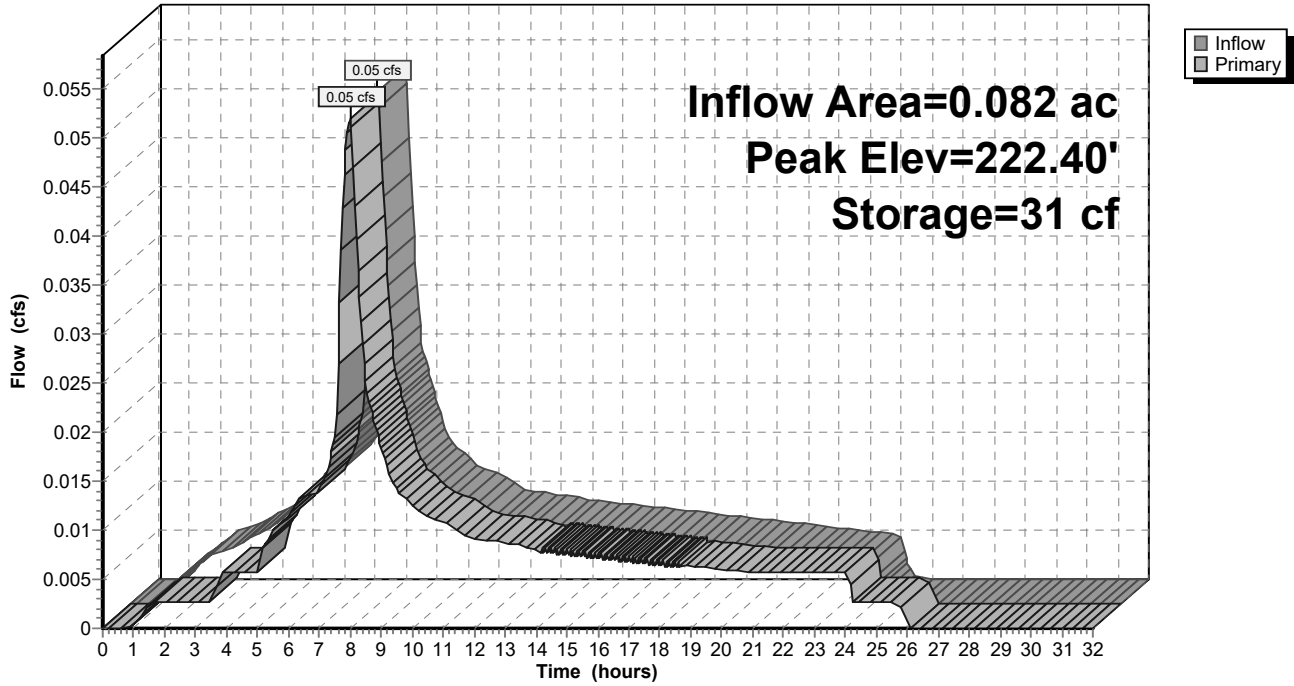
Type IA 24-hr 05-5 Year Rainfall=2.86"

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Pond 54P: Stormwater Swale 2

Hydrograph



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Type IA 24-hr 05-5 Year Rainfall=2.86"

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Summary for Pond 60P: Stormwater Swale 1

[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=44)

Inflow Area = 0.085 ac, 100.00% Impervious, Inflow Depth = 2.63" for 05-5 Year event
 Inflow = 0.05 cfs @ 7.98 hrs, Volume= 0.019 af
 Outflow = 0.05 cfs @ 7.99 hrs, Volume= 0.019 af, Atten= 0%, Lag= 0.5 min
 Primary = 0.05 cfs @ 7.99 hrs, Volume= 0.019 af
 Routed to Reach 58R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Peak Elev= 222.06' @ 7.99 hrs Surf.Area= 195 sf Storage= 33 cf
 Flood Elev= 222.95' Surf.Area= 204 sf Storage= 93 cf

Plug-Flow detention time= 41.3 min calculated for 0.019 af (100% of inflow)
 Center-of-Mass det. time= 41.4 min (715.8 - 674.4)

Volume	Invert	Avail.Storage	Storage Description
#1	221.95'	67 cf	Open Storage (Irregular) Listed below (Recalc)
#2	220.45'	11 cf	Imported Soil (Irregular) Listed below (Recalc) 108 cf Overall x 10.0% Voids
#3	219.70'	16 cf	Rock Chamber (Irregular) Listed below (Recalc) 45 cf Overall x 35.0% Voids
		93 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
221.95	62	34.0	0	0	62
222.95	72	36.0	67	67	99

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
220.45	72	36.0	0	0	72
221.95	72	36.0	108	108	126

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
219.70	60	34.0	0	0	60
220.45	60	34.0	45	45	86

Device	Routing	Invert	Outlet Devices
#1	Primary	219.70'	2.000 in/hr Perf Pipes over Surface area
#2	Primary	222.70'	4.0" Horiz. 4" Overflow Pipe C= 0.600 Limited to weir flow at low heads
#3	Primary	221.95'	10.0" Vert. 10" Outflow Pipe C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.05 cfs @ 7.99 hrs HW=222.06' TW=0.00' (Dynamic Tailwater)

- 1=Perf Pipes (Exfiltration Controls 0.01 cfs)
- 2=4" Overflow Pipe (Controls 0.00 cfs)
- 3=10" Outflow Pipe (Orifice Controls 0.04 cfs @ 1.11 fps)

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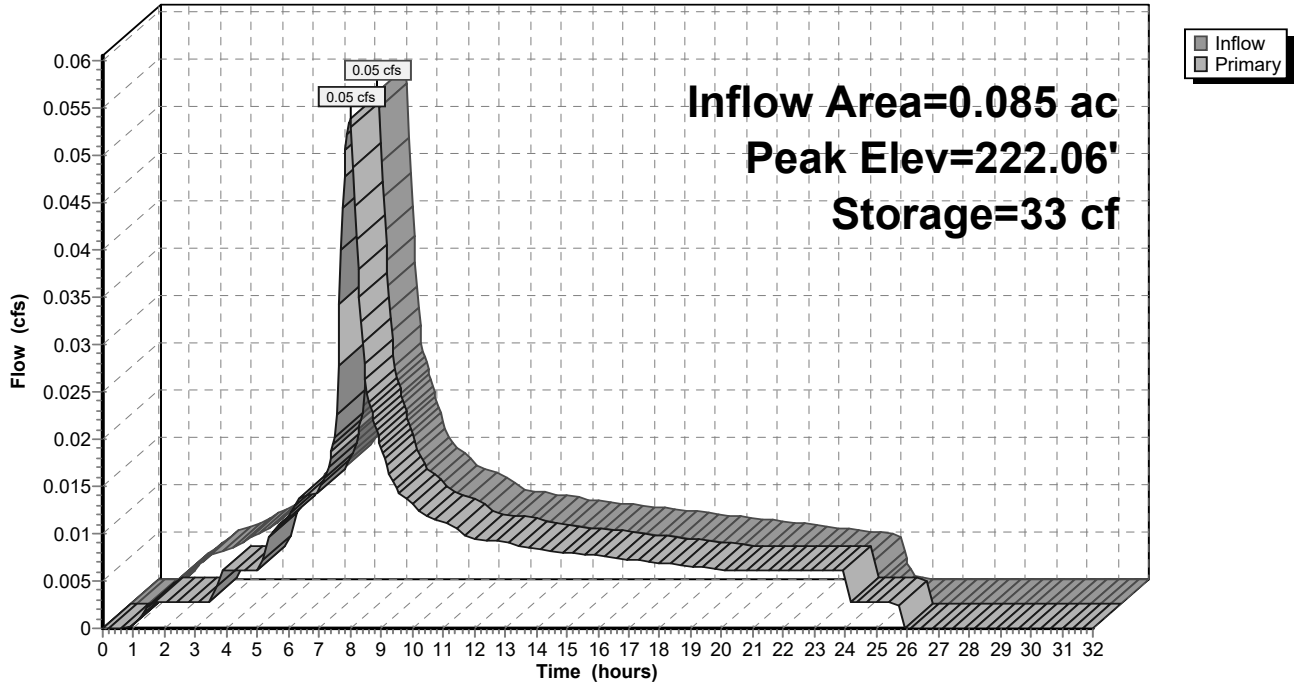
Type IA 24-hr 05-5 Year Rainfall=2.86"

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Pond 60P: Stormwater Swale 1

Hydrograph



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Type IA 24-hr 05-5 Year Rainfall=2.86"

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Summary for Pond 63P: Detention Pond

[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=10)

Inflow Area = 23.038 ac, 36.38% Impervious, Inflow Depth = 2.31" for 05-5 Year event
 Inflow = 12.93 cfs @ 7.98 hrs, Volume= 4.426 af
 Outflow = 4.82 cfs @ 8.93 hrs, Volume= 4.425 af, Atten= 63%, Lag= 57.3 min
 Primary = 4.82 cfs @ 8.93 hrs, Volume= 4.425 af
 Routed to Reach 85R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Peak Elev= 223.25' @ 8.93 hrs Surf.Area= 45,502 sf Storage= 35,410 cf
 Flood Elev= 225.50' Surf.Area= 48,838 sf Storage= 80,897 cf

Plug-Flow detention time= 96.9 min calculated for 4.418 af (100% of inflow)
 Center-of-Mass det. time= 96.9 min (806.1 - 709.2)

Volume	Invert	Avail.Storage	Storage Description
#1	221.50'	75,859 cf	Open Storage (Irregular) Listed below (Recalc)
#2	220.00'	3,288 cf	Growing Medium (Irregular) Listed below (Recalc) 32,879 cf Overall x 10.0% Voids
#3	219.00'	1,750 cf	Rock Chamber (Prismatic) Listed below (Recalc) 5,000 cf Overall x 35.0% Voids
		80,897 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
221.50	16,108	696.8	0	0	16,108
222.50	17,511	717.0	16,805	16,805	18,488
223.50	18,943	738.5	18,222	35,027	21,082
224.50	20,410	754.7	19,672	54,699	23,147
225.50	21,919	770.9	21,160	75,859	25,257

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
220.00	21,919	770.9	0	0	21,919
221.50	21,919	770.9	32,879	32,879	23,075

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
219.00	5,000	0	0
220.00	5,000	5,000	5,000

9-6-23 HydroCAD DOM

Type IA 24-hr 05-5 Year Rainfall=2.86"

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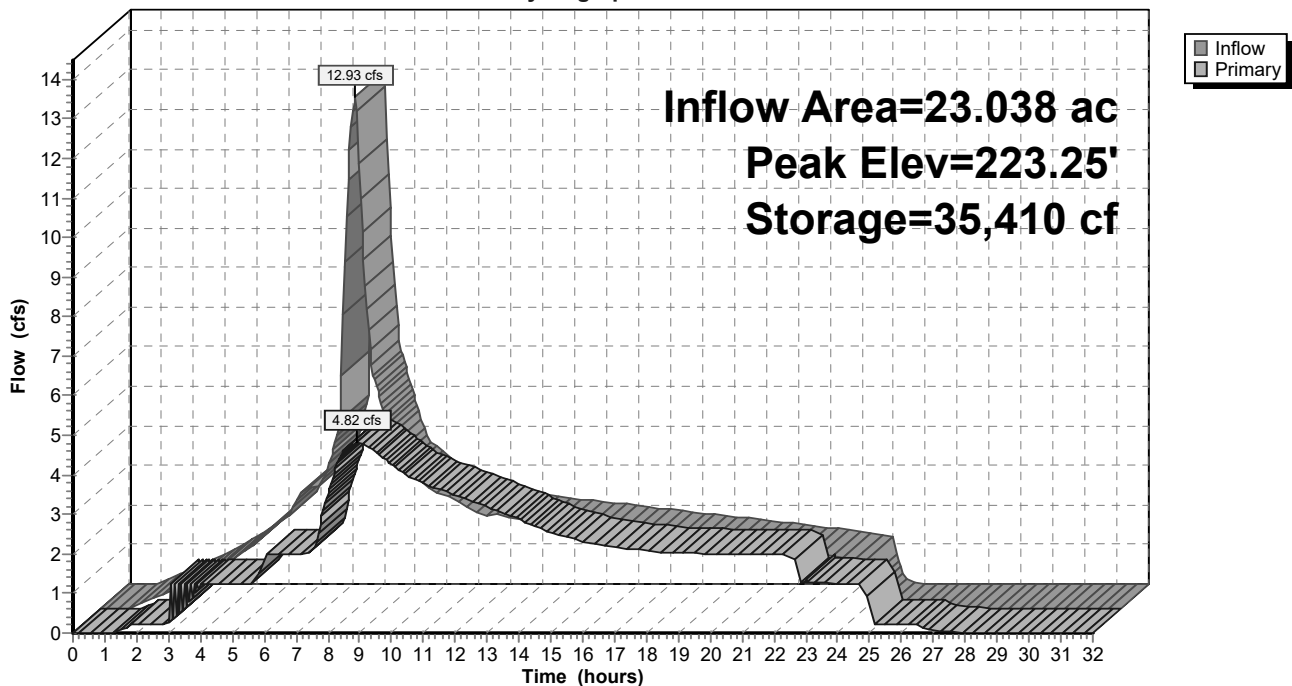
Device	Routing	Invert	Outlet Devices
#1	Primary	219.00'	24.0" Round 24" Pipe L= 100.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 219.00' / 218.80' S= 0.0020 '/ Cc= 0.900 n= 0.010, Flow Area= 3.14 sf
#2	Device 1	219.00'	2.000 in/hr 4" Perf Pipes over Surface area
#3	Device 1	221.85'	6.0" Vert. 2x6" Orifice X 2.00 C= 0.600 Limited to weir flow at low heads
#4	Device 1	222.78'	6.0" Vert. 6" Orifice C= 0.600 Limited to weir flow at low heads
#5	Device 1	222.95'	6.0" Vert. 6" Orifice C= 0.600 Limited to weir flow at low heads
#6	Device 1	223.25'	4.0" Vert. 4" Orifice C= 0.600 Limited to weir flow at low heads
#7	Device 1	223.55'	4.0" Vert. 4" Orifice C= 0.600 Limited to weir flow at low heads
#8	Device 1	223.77'	4.0" Vert. 2x4" Orifice X 2.00 C= 0.600 Limited to weir flow at low heads
#9	Device 1	224.35'	48.0" x 48.0" Horiz. 48" Overflow C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=4.82 cfs @ 8.93 hrs HW=223.25' TW=0.00' (Dynamic Tailwater)

- 1=24" Pipe (Passes 4.82 cfs of 24.07 cfs potential flow)
- 2=4" Perf Pipes (Exfiltration Controls 2.11 cfs)
- 3=2x6" Orifice (Orifice Controls 2.03 cfs @ 5.17 fps)
- 4=6" Orifice (Orifice Controls 0.45 cfs @ 2.34 fps)
- 5=6" Orifice (Orifice Controls 0.23 cfs @ 1.87 fps)
- 6=4" Orifice (Orifice Controls 0.00 cfs @ 0.14 fps)
- 7=4" Orifice (Controls 0.00 cfs)
- 8=2x4" Orifice (Controls 0.00 cfs)
- 9=48" Overflow (Controls 0.00 cfs)

Pond 63P: Detention Pond

Hydrograph



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Type IA 24-hr 10-10 Year Rainfall=3.37"

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Time span=0.00-32.00 hrs, dt=0.05 hrs, 641 points
 Runoff by SBUH method, Split Pervious/Imperv.
 Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment64S: Home Basin 20	Runoff Area=9,940 sf 0.00% Impervious Runoff Depth=2.61" Tc=10.0 min CN=93/0 Runoff=0.15 cfs 0.050 af
Subcatchment65S: Single Pond Existing	Runoff Area=23.038 ac 0.00% Impervious Runoff Depth>2.24" Flow Length=1,526' Slope=0.0076 '/' Tc=73.0 min CN=89/0 Runoff=6.26 cfs 4.295 af
Subcatchment67S: Home Basin 19	Runoff Area=17,197 sf 0.00% Impervious Runoff Depth=2.61" Tc=10.0 min CN=93/0 Runoff=0.25 cfs 0.086 af
Subcatchment68S: Home Basin 12	Runoff Area=18,133 sf 0.00% Impervious Runoff Depth=2.61" Tc=10.0 min CN=93/0 Runoff=0.27 cfs 0.091 af
Subcatchment69S: Home Basin 17	Runoff Area=16,661 sf 0.00% Impervious Runoff Depth=2.61" Tc=10.0 min CN=93/0 Runoff=0.25 cfs 0.083 af
Subcatchment70S: Home Basin 18	Runoff Area=11,596 sf 0.00% Impervious Runoff Depth=2.61" Tc=10.0 min CN=93/0 Runoff=0.17 cfs 0.058 af
Subcatchment71S: Home Basin 14	Runoff Area=16,444 sf 0.00% Impervious Runoff Depth=2.61" Tc=10.0 min CN=93/0 Runoff=0.24 cfs 0.082 af
Subcatchment72S: Home Basin 16	Runoff Area=20,310 sf 0.00% Impervious Runoff Depth=2.61" Tc=10.0 min CN=93/0 Runoff=0.30 cfs 0.101 af
Subcatchment73S: Home Basin 13	Runoff Area=10,807 sf 0.00% Impervious Runoff Depth=2.61" Tc=10.0 min CN=93/0 Runoff=0.16 cfs 0.054 af
Subcatchment74S: Swale Existing	Runoff Area=0.168 ac 0.00% Impervious Runoff Depth=2.24" Flow Length=105' Slope=0.0565 '/' Tc=10.0 min CN=89/0 Runoff=0.09 cfs 0.031 af
Subcatchment75S: Home Basin 11	Runoff Area=18,483 sf 0.00% Impervious Runoff Depth=2.61" Tc=10.0 min CN=93/0 Runoff=0.27 cfs 0.092 af
Subcatchment77S: Home Basin 15	Runoff Area=12,503 sf 0.00% Impervious Runoff Depth=2.61" Tc=10.0 min CN=93/0 Runoff=0.18 cfs 0.062 af
Subcatchment78S: Single Pond	Runoff Area=21,919 sf 100.00% Impervious Runoff Depth=3.14" Tc=0.0 min CN=0/98 Runoff=0.40 cfs 0.132 af
Subcatchment79S: Home Basin 30	Runoff Area=38,416 sf 0.00% Impervious Runoff Depth=2.61" Tc=10.0 min CN=93/0 Runoff=0.57 cfs 0.192 af
Subcatchment80S: Home Basin 10	Runoff Area=14,789 sf 0.00% Impervious Runoff Depth=2.61" Tc=10.0 min CN=93/0 Runoff=0.22 cfs 0.074 af
Subcatchment81S: Home Basin 9	Runoff Area=15,575 sf 0.00% Impervious Runoff Depth=2.61" Tc=10.0 min CN=93/0 Runoff=0.23 cfs 0.078 af

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Subcatchment82S: Home Basin 2	Runoff Area=20,667 sf 0.00% Impervious Runoff Depth=2.61" Tc=10.0 min CN=93/0 Runoff=0.30 cfs 0.103 af
Subcatchment83S: Home Basin 7	Runoff Area=17,032 sf 0.00% Impervious Runoff Depth=2.61" Tc=10.0 min CN=93/0 Runoff=0.25 cfs 0.085 af
Subcatchment84S: Home Basin 8	Runoff Area=11,668 sf 0.00% Impervious Runoff Depth=2.61" Tc=10.0 min CN=93/0 Runoff=0.17 cfs 0.058 af
Subcatchment85S: Home Basin 29	Runoff Area=25,118 sf 0.00% Impervious Runoff Depth=2.61" Tc=10.0 min CN=93/0 Runoff=0.37 cfs 0.125 af
Subcatchment86S: Home Basin 22	Runoff Area=16,159 sf 0.00% Impervious Runoff Depth=2.61" Tc=10.0 min CN=93/0 Runoff=0.24 cfs 0.081 af
Subcatchment87S: Home Basin 27	Runoff Area=24,839 sf 0.00% Impervious Runoff Depth=2.61" Tc=10.0 min CN=93/0 Runoff=0.37 cfs 0.124 af
Subcatchment88S: Home Basin 28	Runoff Area=25,318 sf 0.00% Impervious Runoff Depth=2.61" Tc=10.0 min CN=93/0 Runoff=0.37 cfs 0.126 af
Subcatchment89S: Home Basin 24	Runoff Area=20,676 sf 0.00% Impervious Runoff Depth=2.61" Tc=10.0 min CN=93/0 Runoff=0.30 cfs 0.103 af
Subcatchment90S: Home Basin 26	Runoff Area=14,135 sf 0.00% Impervious Runoff Depth=2.61" Tc=10.0 min CN=93/0 Runoff=0.21 cfs 0.071 af
Subcatchment91S: Home Basin 23	Runoff Area=12,271 sf 0.00% Impervious Runoff Depth=2.61" Tc=10.0 min CN=93/0 Runoff=0.18 cfs 0.061 af
Subcatchment92S: Home Basin 21	Runoff Area=27,019 sf 0.00% Impervious Runoff Depth=2.61" Tc=10.0 min CN=93/0 Runoff=0.40 cfs 0.135 af
Subcatchment93S: Home Basin 25	Runoff Area=17,012 sf 0.00% Impervious Runoff Depth=2.61" Tc=10.0 min CN=93/0 Runoff=0.25 cfs 0.085 af
Subcatchment94S: Home Basin 4	Runoff Area=19,535 sf 0.00% Impervious Runoff Depth=2.61" Tc=10.0 min CN=93/0 Runoff=0.29 cfs 0.098 af
Subcatchment95S: Home Basin 31	Runoff Area=24,883 sf 0.00% Impervious Runoff Depth=2.61" Tc=10.0 min CN=93/0 Runoff=0.37 cfs 0.124 af
Subcatchment96S: Basin 1	Runoff Area=15,045 sf 100.00% Impervious Runoff Depth=3.14" Tc=10.0 min CN=0/98 Runoff=0.26 cfs 0.090 af
Subcatchment97S: Basin 2	Runoff Area=19,824 sf 100.00% Impervious Runoff Depth=3.14" Tc=10.0 min CN=0/98 Runoff=0.34 cfs 0.119 af
Subcatchment98S: Basin 3	Runoff Area=23,416 sf 100.00% Impervious Runoff Depth=3.14" Tc=10.0 min CN=0/98 Runoff=0.40 cfs 0.141 af

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Subcatchment99S: Home Basin 6	Runoff Area=25,997 sf 0.00% Impervious Runoff Depth=2.61" Tc=10.0 min CN=93/0 Runoff=0.38 cfs 0.130 af
Subcatchment100S: Basin 4	Runoff Area=3,650 sf 100.00% Impervious Runoff Depth=3.14" Tc=10.0 min CN=0/98 Runoff=0.06 cfs 0.022 af
Subcatchment101S: Basin 5	Runoff Area=3,523 sf 100.00% Impervious Runoff Depth=3.14" Tc=10.0 min CN=0/98 Runoff=0.06 cfs 0.021 af
Subcatchment102S: Home Basin 3	Runoff Area=19,559 sf 0.00% Impervious Runoff Depth=2.61" Tc=10.0 min CN=93/0 Runoff=0.29 cfs 0.098 af
Subcatchment103S: Home Basin 1	Runoff Area=22,288 sf 0.00% Impervious Runoff Depth=2.61" Tc=10.0 min CN=93/0 Runoff=0.33 cfs 0.111 af
Subcatchment104S: Home Basin 5	Runoff Area=33,512 sf 0.00% Impervious Runoff Depth=2.61" Tc=10.0 min CN=93/0 Runoff=0.49 cfs 0.167 af
Subcatchment105S: Basin 6	Runoff Area=8,965 sf 100.00% Impervious Runoff Depth=3.14" Tc=10.0 min CN=0/98 Runoff=0.15 cfs 0.054 af
Subcatchment107S: Basin 8	Runoff Area=8,177 sf 100.00% Impervious Runoff Depth=3.14" Tc=10.0 min CN=0/98 Runoff=0.14 cfs 0.049 af
Subcatchment108S: Basin 9	Runoff Area=13,130 sf 100.00% Impervious Runoff Depth=3.14" Tc=10.0 min CN=0/98 Runoff=0.23 cfs 0.079 af
Subcatchment109S: Basin 10	Runoff Area=22,902 sf 100.00% Impervious Runoff Depth=3.14" Tc=10.0 min CN=0/98 Runoff=0.39 cfs 0.137 af
Subcatchment110S: Basin 11	Runoff Area=25,748 sf 100.00% Impervious Runoff Depth=3.14" Tc=10.0 min CN=0/98 Runoff=0.44 cfs 0.155 af
Subcatchment111S: Basin 12	Runoff Area=5,562 sf 100.00% Impervious Runoff Depth=3.14" Tc=10.0 min CN=0/98 Runoff=0.10 cfs 0.033 af
Subcatchment112S: Basin 13	Runoff Area=4,702 sf 100.00% Impervious Runoff Depth=3.14" Tc=10.0 min CN=0/98 Runoff=0.08 cfs 0.028 af
Subcatchment113S: Basin 14	Runoff Area=7,669 sf 100.00% Impervious Runoff Depth=3.14" Tc=10.0 min CN=0/98 Runoff=0.13 cfs 0.046 af
Subcatchment114S: Basin 15	Runoff Area=7,261 sf 100.00% Impervious Runoff Depth=3.14" Tc=10.0 min CN=0/98 Runoff=0.12 cfs 0.044 af
Subcatchment115S: Basin 16	Runoff Area=7,066 sf 100.00% Impervious Runoff Depth=3.14" Tc=10.0 min CN=0/98 Runoff=0.12 cfs 0.042 af
Subcatchment116S: Basin 17	Runoff Area=26,003 sf 100.00% Impervious Runoff Depth=3.14" Tc=10.0 min CN=0/98 Runoff=0.45 cfs 0.156 af

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Subcatchment117S: Basin 18	Runoff Area=23,761 sf 100.00% Impervious Runoff Depth=3.14" Tc=10.0 min CN=0/98 Runoff=0.41 cfs 0.143 af
Subcatchment118S: Basin 19	Runoff Area=7,309 sf 100.00% Impervious Runoff Depth=3.14" Tc=10.0 min CN=0/98 Runoff=0.13 cfs 0.044 af
Subcatchment119S: Basin 20	Runoff Area=7,535 sf 100.00% Impervious Runoff Depth=3.14" Tc=10.0 min CN=0/98 Runoff=0.13 cfs 0.045 af
Subcatchment120S: Basin 21	Runoff Area=6,846 sf 100.00% Impervious Runoff Depth=3.14" Tc=10.0 min CN=0/98 Runoff=0.12 cfs 0.041 af
Subcatchment121S: Basin 22	Runoff Area=5,182 sf 100.00% Impervious Runoff Depth=3.14" Tc=10.0 min CN=0/98 Runoff=0.09 cfs 0.031 af
Subcatchment122S: Basin 23	Runoff Area=5,456 sf 100.00% Impervious Runoff Depth=3.14" Tc=10.0 min CN=0/98 Runoff=0.09 cfs 0.033 af
Subcatchment123S: Basin 24	Runoff Area=4,510 sf 100.00% Impervious Runoff Depth=3.14" Tc=10.0 min CN=0/98 Runoff=0.08 cfs 0.027 af
Subcatchment124S: Basin 25	Runoff Area=13,271 sf 100.00% Impervious Runoff Depth=3.14" Tc=10.0 min CN=0/98 Runoff=0.23 cfs 0.080 af
Subcatchment125S: Basin 26	Runoff Area=18,452 sf 100.00% Impervious Runoff Depth=3.14" Tc=10.0 min CN=0/98 Runoff=0.32 cfs 0.111 af
Subcatchment126S: Alley Basin 1	Runoff Area=9,860 sf 100.00% Impervious Runoff Depth=3.14" Tc=10.0 min CN=0/98 Runoff=0.17 cfs 0.059 af
Subcatchment127S: Alley Basin 2	Runoff Area=7,461 sf 100.00% Impervious Runoff Depth=3.14" Tc=10.0 min CN=0/98 Runoff=0.13 cfs 0.045 af
Subcatchment128S: Alley Basin 3	Runoff Area=6,782 sf 100.00% Impervious Runoff Depth=3.14" Tc=10.0 min CN=0/98 Runoff=0.12 cfs 0.041 af
Subcatchment129S: Alley Basin 4	Runoff Area=6,970 sf 100.00% Impervious Runoff Depth=3.14" Tc=10.0 min CN=0/98 Runoff=0.12 cfs 0.042 af
Subcatchment168S: Future Lots	Runoff Area=64,223 sf 37.85% Impervious Runoff Depth=2.81" Tc=10.0 min CN=93/98 Runoff=1.01 cfs 0.345 af
Subcatchment169S: Swale 2	Runoff Area=67 sf 100.00% Impervious Runoff Depth=3.14" Tc=0.0 min CN=0/98 Runoff=0.00 cfs 0.000 af
Subcatchment170S: Swale 1	Runoff Area=72 sf 100.00% Impervious Runoff Depth=3.14" Tc=0.0 min CN=0/98 Runoff=0.00 cfs 0.000 af
Reach 39R: Post-ConstructionPeak Flow	Inflow=6.31 cfs 5.421 af Outflow=6.31 cfs 5.421 af

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Reach 42R: Pre-Construction Peak FlowInflow=6.32 cfs 4.326 af
Outflow=6.32 cfs 4.326 af**Reach 58R: 1**Inflow=6.31 cfs 5.421 af
Outflow=6.31 cfs 5.421 af**Reach 85R: 1**Inflow=6.26 cfs 5.377 af
Outflow=6.26 cfs 5.377 af**Reach 130R: 1**Inflow=2.68 cfs 0.918 af
Outflow=2.68 cfs 0.918 af**Reach 131R: 1**Inflow=2.68 cfs 0.918 af
Outflow=2.68 cfs 0.918 af**Reach 132R: 1**Inflow=1.54 cfs 0.526 af
Outflow=1.54 cfs 0.526 af**Reach 133R: 1**Inflow=0.26 cfs 0.090 af
Outflow=0.26 cfs 0.090 af**Reach 134R: 1**Inflow=12.32 cfs 4.216 af
Outflow=12.32 cfs 4.216 af**Reach 135R: 1**Inflow=2.08 cfs 0.710 af
Outflow=2.08 cfs 0.710 af**Reach 136R: 1**Inflow=1.18 cfs 0.404 af
Outflow=1.18 cfs 0.404 af**Reach 137R: 1**Inflow=0.72 cfs 0.249 af
Outflow=0.72 cfs 0.249 af**Reach 138R: 1**Inflow=0.32 cfs 0.113 af
Outflow=0.32 cfs 0.113 af**Reach 139R: 1**Inflow=10.02 cfs 3.429 af
Outflow=10.02 cfs 3.429 af**Reach 140R: 1**Inflow=0.17 cfs 0.059 af
Outflow=0.17 cfs 0.059 af**Reach 141R: 1**Inflow=0.13 cfs 0.045 af
Outflow=0.13 cfs 0.045 af**Reach 142R: 1**Inflow=9.50 cfs 3.252 af
Outflow=9.50 cfs 3.252 af**Reach 143R: 1**Inflow=1.93 cfs 0.661 af
Outflow=1.93 cfs 0.661 af

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Reach 144R: 1	Inflow=1.38 cfs 0.473 af Outflow=1.38 cfs 0.473 af
Reach 145R: 1	Inflow=1.38 cfs 0.473 af Outflow=1.38 cfs 0.473 af
Reach 146R: 1	Inflow=7.57 cfs 2.591 af Outflow=7.57 cfs 2.591 af
Reach 147R: 1	Inflow=0.12 cfs 0.041 af Outflow=0.12 cfs 0.041 af
Reach 148R: 1	Inflow=7.45 cfs 2.550 af Outflow=7.45 cfs 2.550 af
Reach 149R: 1	Inflow=1.89 cfs 0.646 af Outflow=1.89 cfs 0.646 af
Reach 150R: 1	Inflow=1.28 cfs 0.438 af Outflow=1.28 cfs 0.438 af
Reach 151R: 1	Inflow=0.98 cfs 0.337 af Outflow=0.98 cfs 0.337 af
Reach 152R: 1	Inflow=5.20 cfs 1.781 af Outflow=5.20 cfs 1.781 af
Reach 153R: 1	Inflow=0.12 cfs 0.042 af Outflow=0.12 cfs 0.042 af
Reach 154R: 1	Inflow=5.08 cfs 1.739 af Outflow=5.08 cfs 1.739 af
Reach 155R: 1	Inflow=1.79 cfs 0.612 af Outflow=1.79 cfs 0.612 af
Reach 158R: 1	Inflow=10.24 cfs 3.506 af Outflow=10.24 cfs 3.506 af
Reach 159R: 1	Inflow=9.89 cfs 3.384 af Outflow=9.89 cfs 3.384 af
Reach 160R: 1	Inflow=1.24 cfs 0.423 af Outflow=1.24 cfs 0.423 af
Reach 162R: 1	Inflow=2.96 cfs 1.011 af Outflow=2.96 cfs 1.011 af
Reach 163R: 1	Inflow=2.88 cfs 0.984 af Outflow=2.88 cfs 0.984 af

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Reach 165R: 1Inflow=1.03 cfs 0.352 af
Outflow=1.03 cfs 0.352 af**Reach 166R: Basin Future**Inflow=1.01 cfs 0.345 af
Outflow=1.01 cfs 0.345 af**Pond 54P: Stormwater Swale 2**Peak Elev=222.42' Storage=32 cf Inflow=0.06 cfs 0.022 af
Outflow=0.06 cfs 0.022 af**Pond 60P: Stormwater Swale 1**Peak Elev=222.07' Storage=34 cf Inflow=0.06 cfs 0.022 af
Outflow=0.06 cfs 0.022 af**Pond 63P: Detention Pond**Peak Elev=223.70' Storage=43,960 cf Inflow=15.71 cfs 5.378 af
Outflow=6.26 cfs 5.377 af

Total Runoff Area = 46.412 ac Runoff Volume = 9.748 af Average Runoff Depth = 2.52"
81.58% Pervious = 37.863 ac 18.42% Impervious = 8.549 ac

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Summary for Subcatchment 64S: Home Basin 20

Runoff = 0.15 cfs @ 7.98 hrs, Volume= 0.050 af, Depth= 2.61"
 Routed to Reach 143R : 1

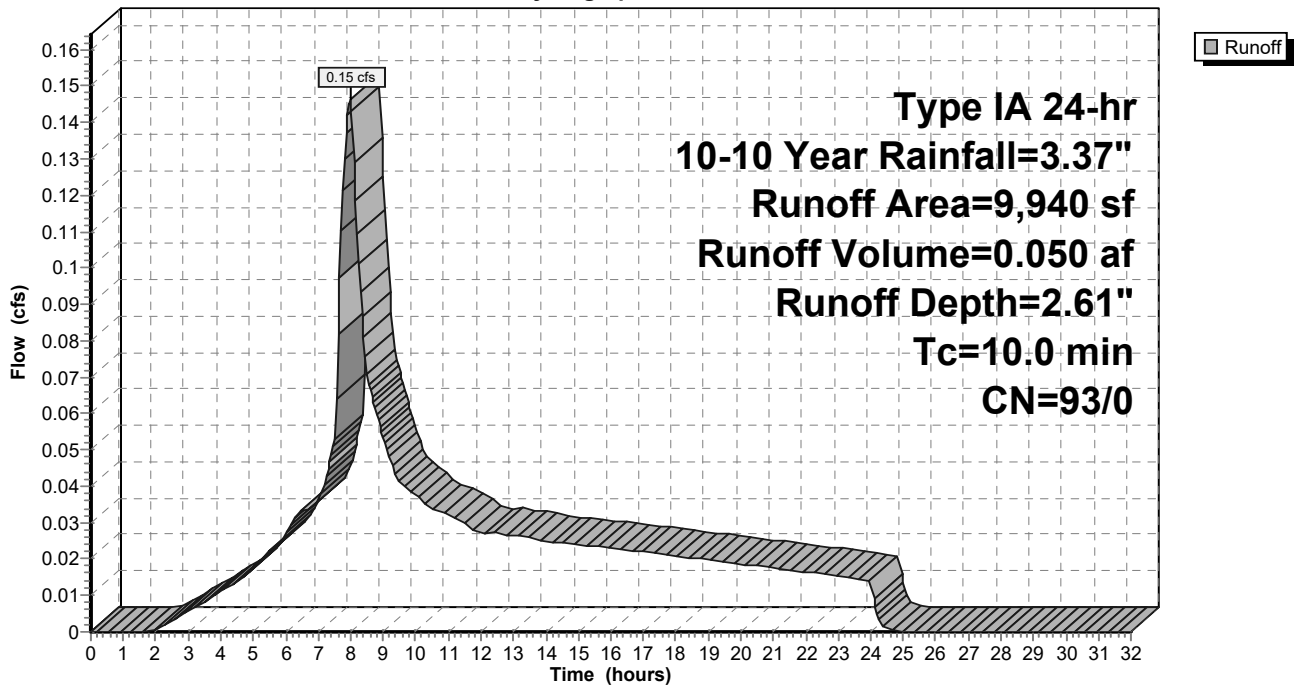
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 10-10 Year Rainfall=3.37"

Area (sf)	CN	Description
* 9,940	93	70% Lot Coverage Weighted
9,940	93	100.00% Pervious Area

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

Subcatchment 64S: Home Basin 20

Hydrograph



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Summary for Subcatchment 65S: Single Pond Existing Conditions

Runoff = 6.26 cfs @ 8.29 hrs, Volume= 4.295 af, Depth> 2.24"
 Routed to Reach 42R : Pre-Construction Peak Flow

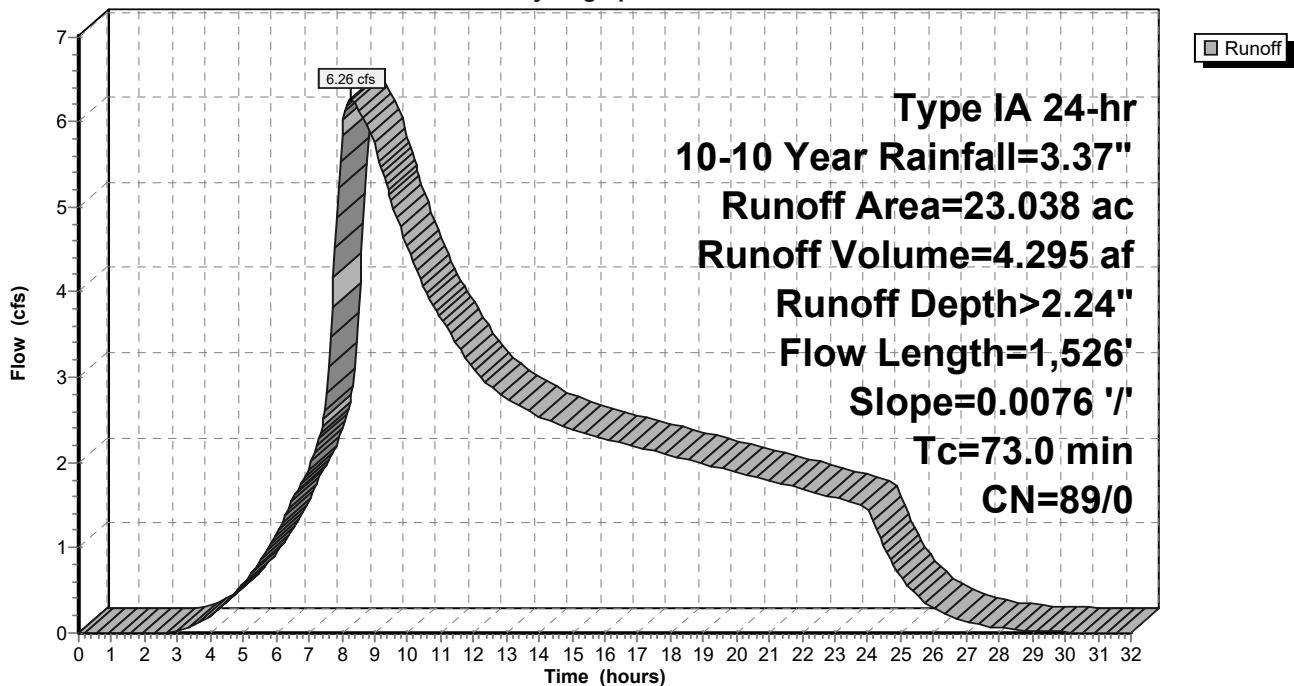
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 10-10 Year Rainfall=3.37"

Area (ac)	CN	Description
23.038	89	Pasture/grassland/range, Poor, HSG D
23.038	89	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
39.5	300	0.0076	0.13		Sheet Flow, Grass: Short n= 0.150 P2= 2.47"
33.5	1,226	0.0076	0.61		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
73.0	1,526	Total			

Subcatchment 65S: Single Pond Existing Conditions

Hydrograph



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Summary for Subcatchment 67S: Home Basin 19

Runoff = 0.25 cfs @ 7.98 hrs, Volume= 0.086 af, Depth= 2.61"
 Routed to Reach 159R : 1

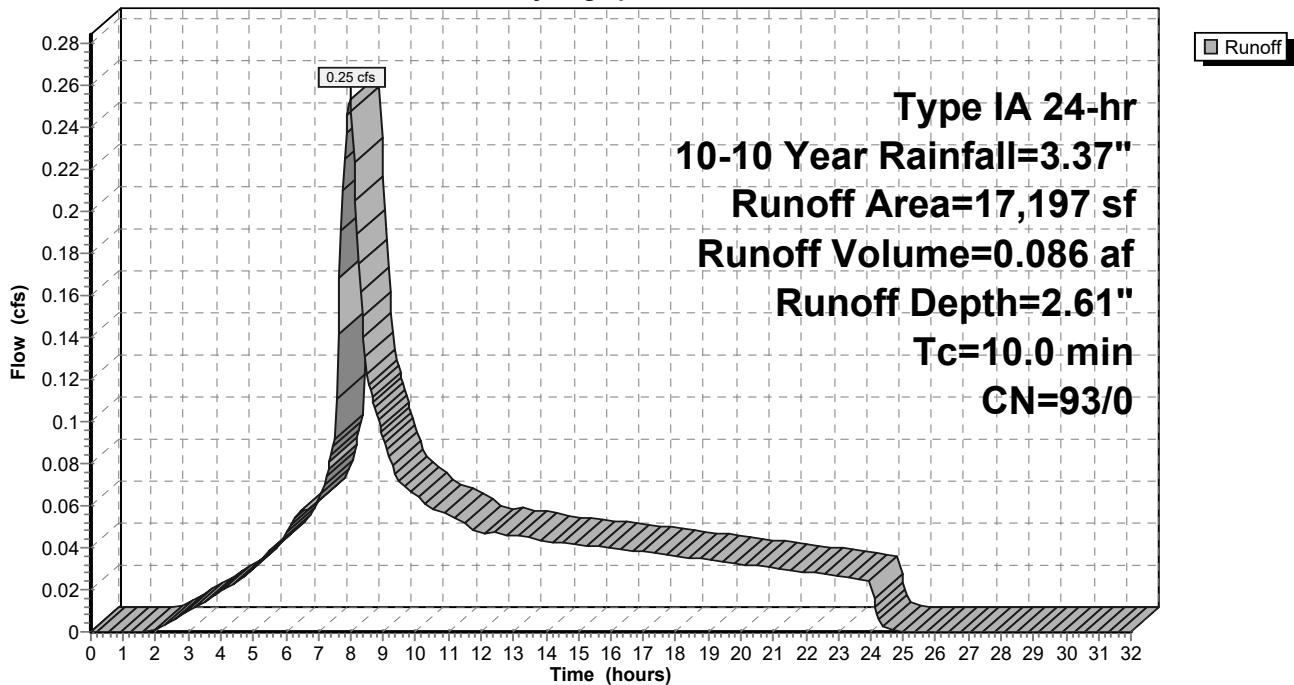
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 10-10 Year Rainfall=3.37"

Area (sf)	CN	Description
* 17,197	93	70% Lot Coverage Weighted
17,197	93	100.00% Pervious Area

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

Subcatchment 67S: Home Basin 19

Hydrograph



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Summary for Subcatchment 68S: Home Basin 12

Runoff = 0.27 cfs @ 7.98 hrs, Volume= 0.091 af, Depth= 2.61"
 Routed to Reach 160R : 1

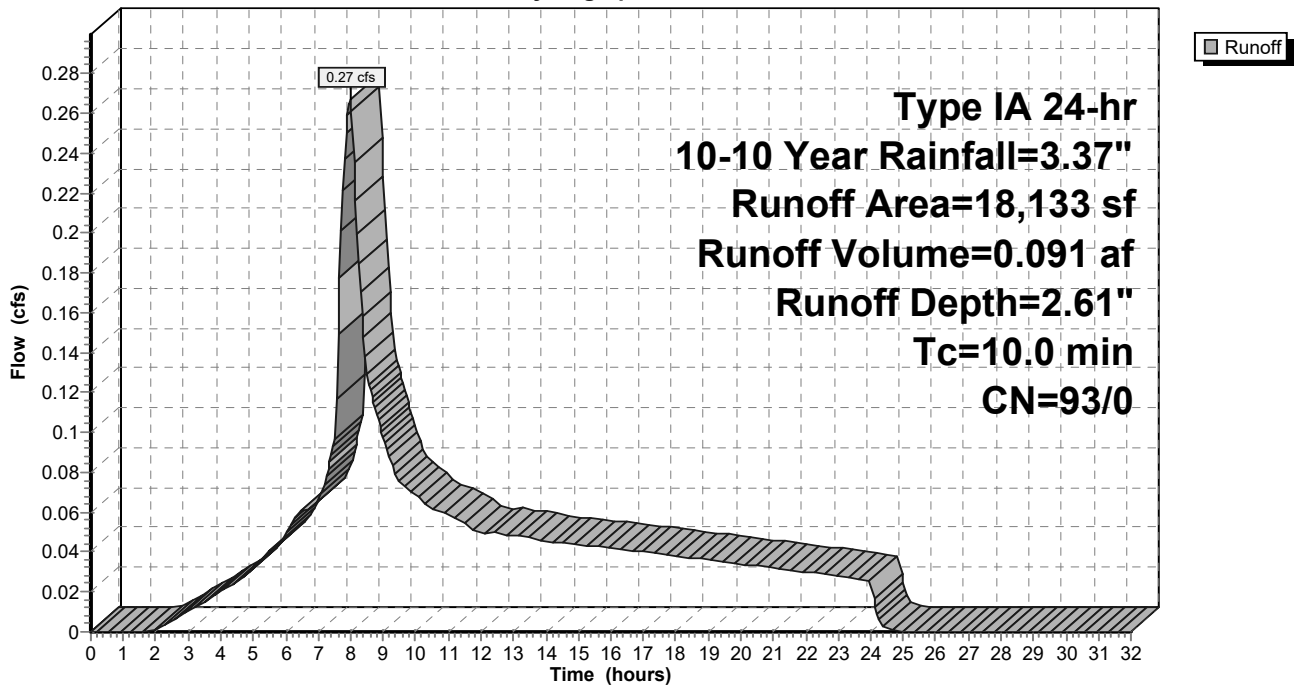
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 10-10 Year Rainfall=3.37"

Area (sf)	CN	Description
* 18,133	93	70% Lot Coverage Weighted
18,133	93	100.00% Pervious Area

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

Subcatchment 68S: Home Basin 12

Hydrograph



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Summary for Subcatchment 69S: Home Basin 17

Runoff = 0.25 cfs @ 7.98 hrs, Volume= 0.083 af, Depth= 2.61"
 Routed to Reach 151R : 1

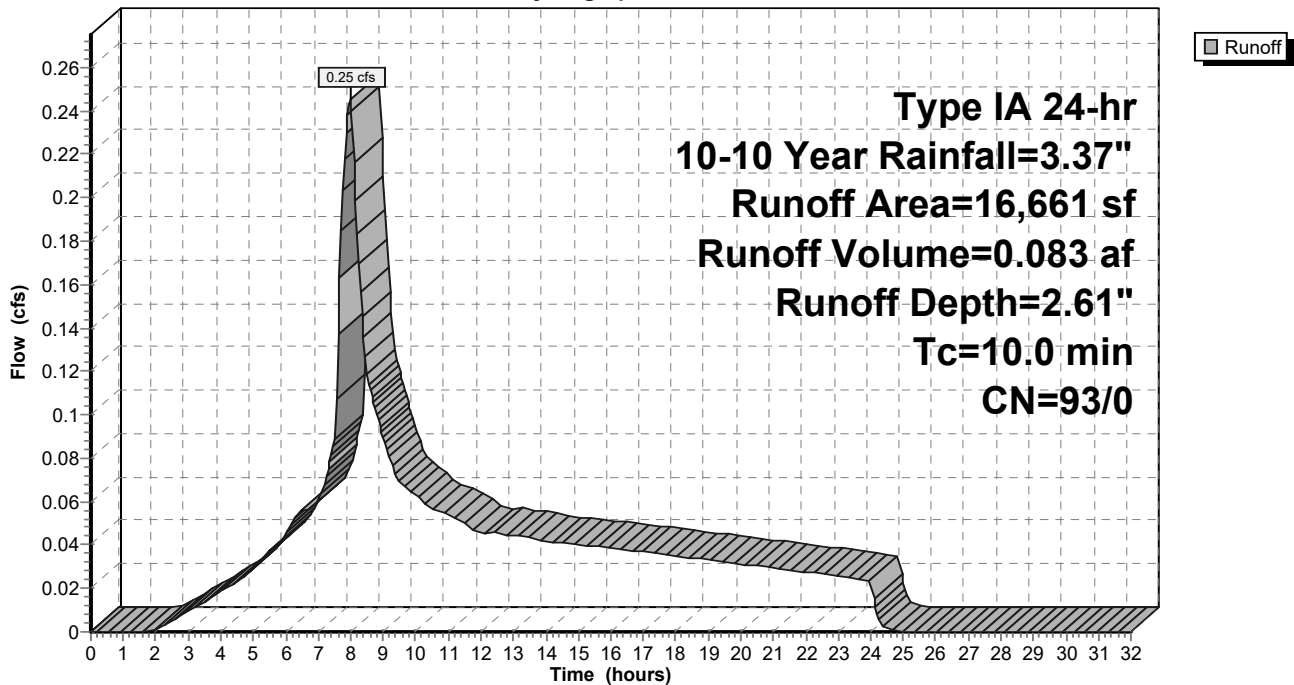
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 10-10 Year Rainfall=3.37"

Area (sf)	CN	Description
* 16,661	93	70% Lot Coverage Weighted
16,661	93	100.00% Pervious Area

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

Subcatchment 69S: Home Basin 17

Hydrograph



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Summary for Subcatchment 70S: Home Basin 18

Runoff = 0.17 cfs @ 7.98 hrs, Volume= 0.058 af, Depth= 2.61"
 Routed to Reach 149R : 1

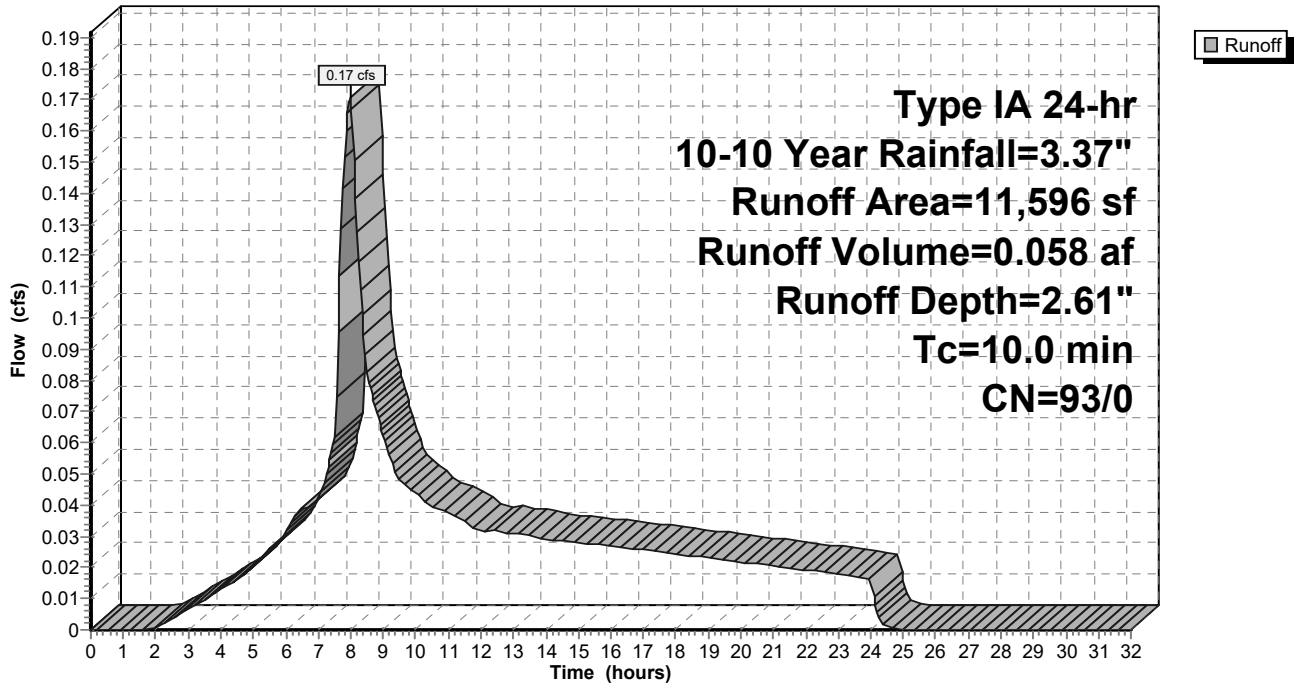
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 10-10 Year Rainfall=3.37"

Area (sf)	CN	Description
* 11,596	93	70% Lot Coverage Weighted
11,596	93	100.00% Pervious Area

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

Subcatchment 70S: Home Basin 18

Hydrograph



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Summary for Subcatchment 71S: Home Basin 14

Runoff = 0.24 cfs @ 7.98 hrs, Volume= 0.082 af, Depth= 2.61"
 Routed to Reach 148R : 1

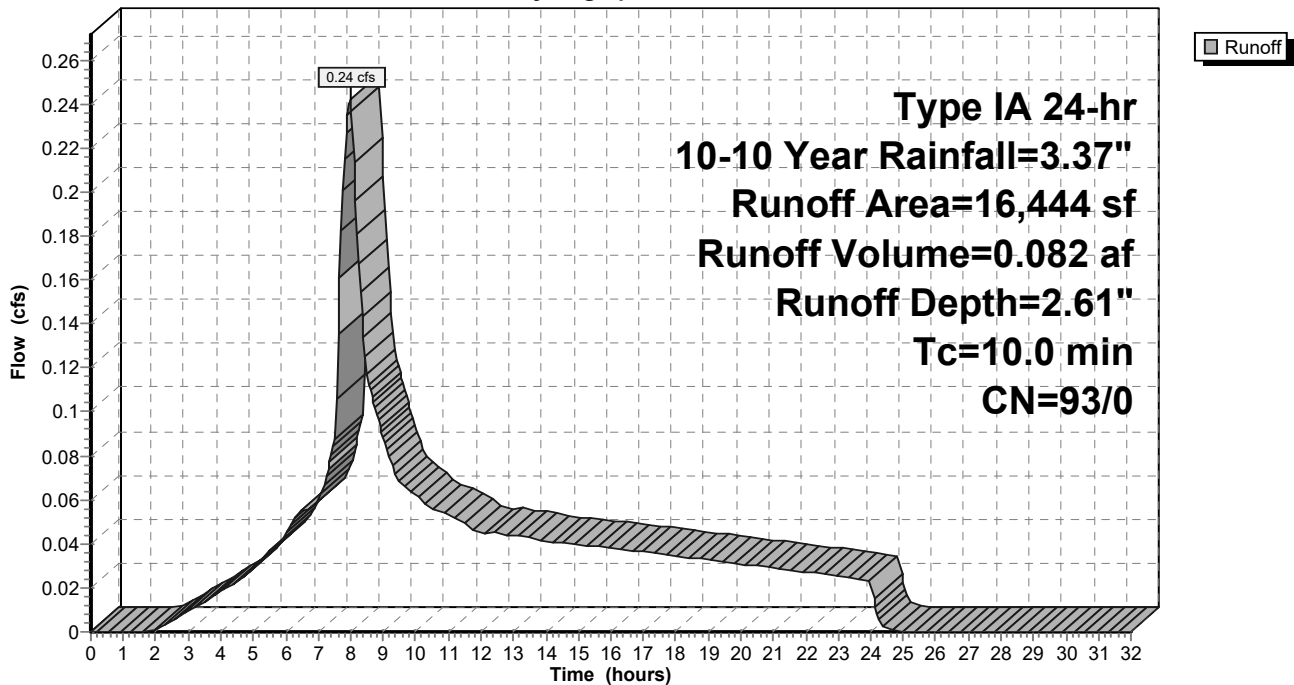
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 10-10 Year Rainfall=3.37"

Area (sf)	CN	Description
* 16,444	93	70% Lot Coverage Weighted
16,444	93	100.00% Pervious Area

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

Subcatchment 71S: Home Basin 14

Hydrograph



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Summary for Subcatchment 72S: Home Basin 16

Runoff = 0.30 cfs @ 7.98 hrs, Volume= 0.101 af, Depth= 2.61"
 Routed to Reach 150R : 1

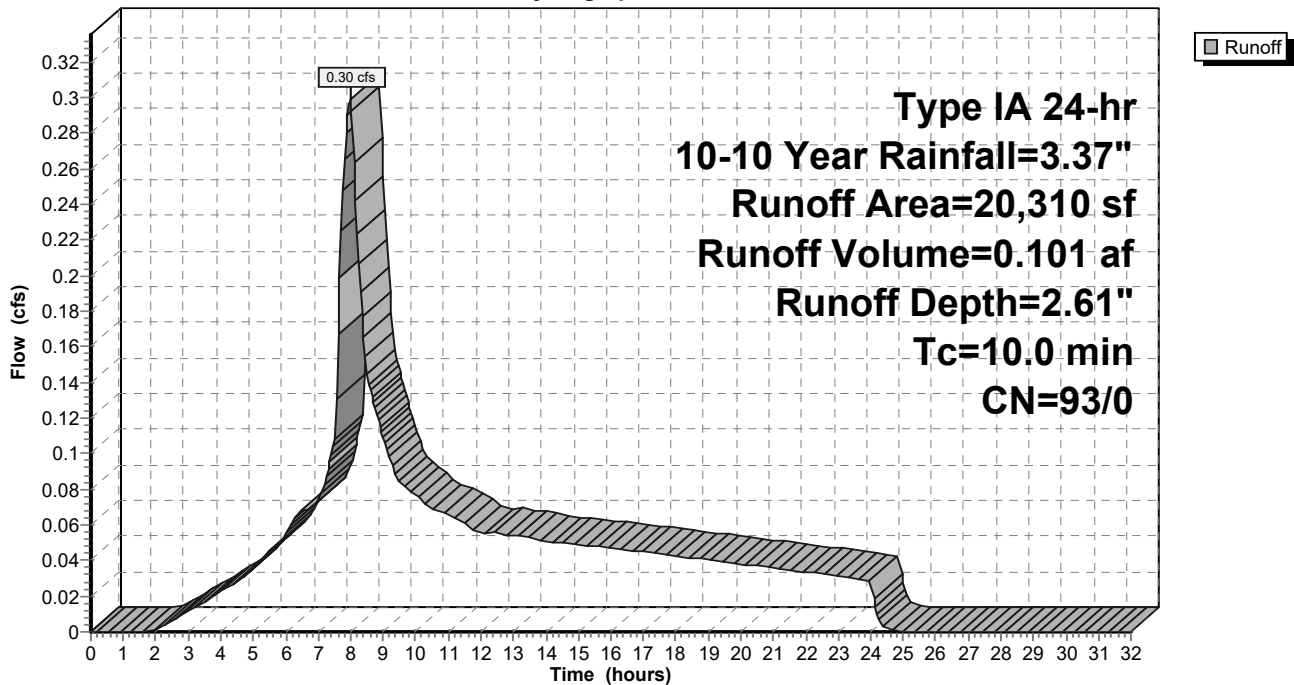
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 10-10 Year Rainfall=3.37"

Area (sf)	CN	Description
* 20,310	93	70% Lot Coverage Weighted
20,310	93	100.00% Pervious Area

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

Subcatchment 72S: Home Basin 16

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 10-10 Year Rainfall=3.37"

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Summary for Subcatchment 73S: Home Basin 13

Runoff = 0.16 cfs @ 7.98 hrs, Volume= 0.054 af, Depth= 2.61"
 Routed to Reach 155R : 1

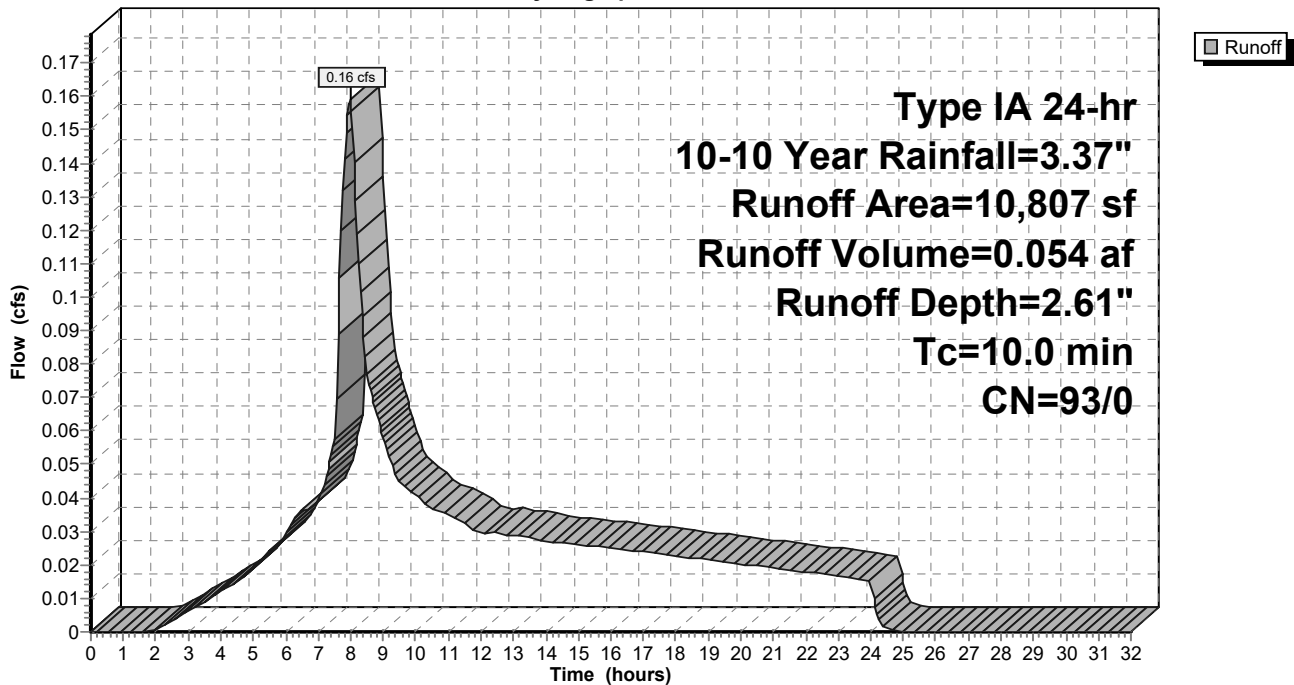
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 10-10 Year Rainfall=3.37"

Area (sf)	CN	Description
* 10,807	93	70% Lot Coverage Weighted
10,807	93	100.00% Pervious Area

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

Subcatchment 73S: Home Basin 13

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 10-10 Year Rainfall=3.37"

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Summary for Subcatchment 74S: Swale Existing Conditions

Runoff = 0.09 cfs @ 7.99 hrs, Volume= 0.031 af, Depth= 2.24"
 Routed to Reach 42R : Pre-Construction Peak Flow

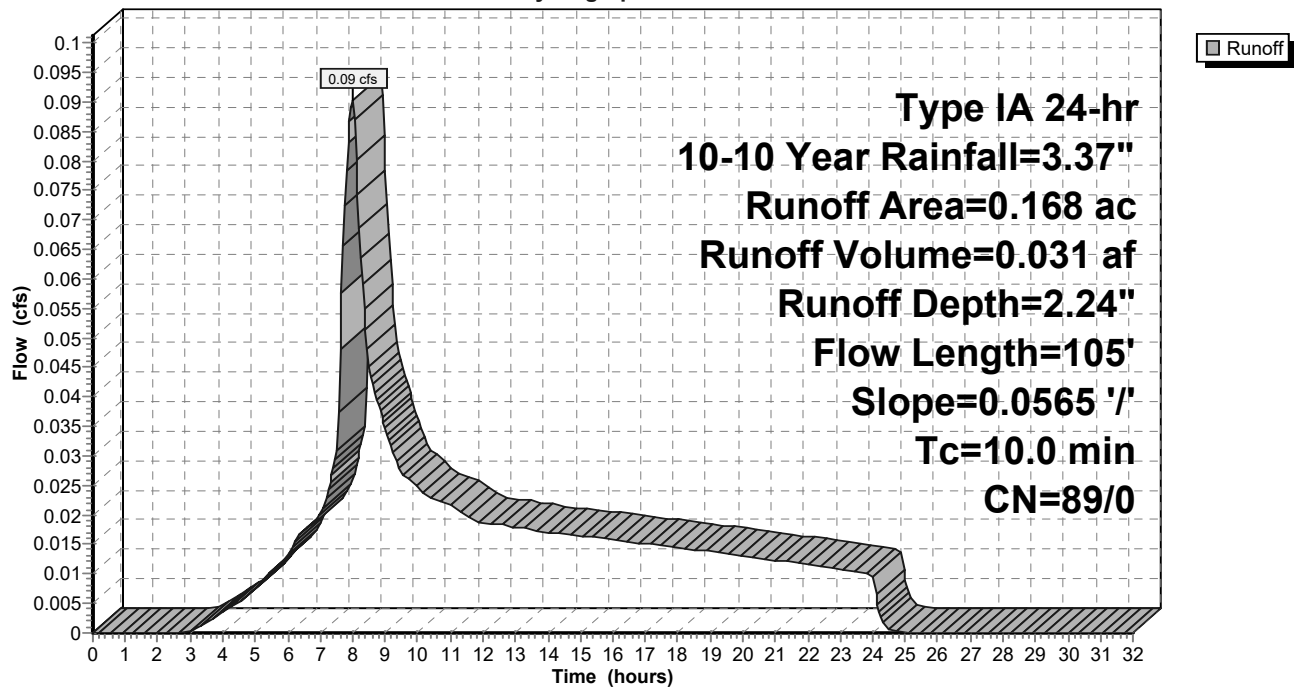
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 10-10 Year Rainfall=3.37"

Area (ac)	CN	Description
0.168	89	Pasture/grassland/range, Poor, HSG D
0.168	89	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.7	105	0.0565	0.23		Sheet Flow, Grass: Short n= 0.150 P2= 2.47"
7.7	105	Total, Increased to minimum Tc = 10.0 min			

Subcatchment 74S: Swale Existing Conditions

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 10-10 Year Rainfall=3.37"

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Summary for Subcatchment 75S: Home Basin 11

Runoff = 0.27 cfs @ 7.98 hrs, Volume= 0.092 af, Depth= 2.61"
 Routed to Reach 160R : 1

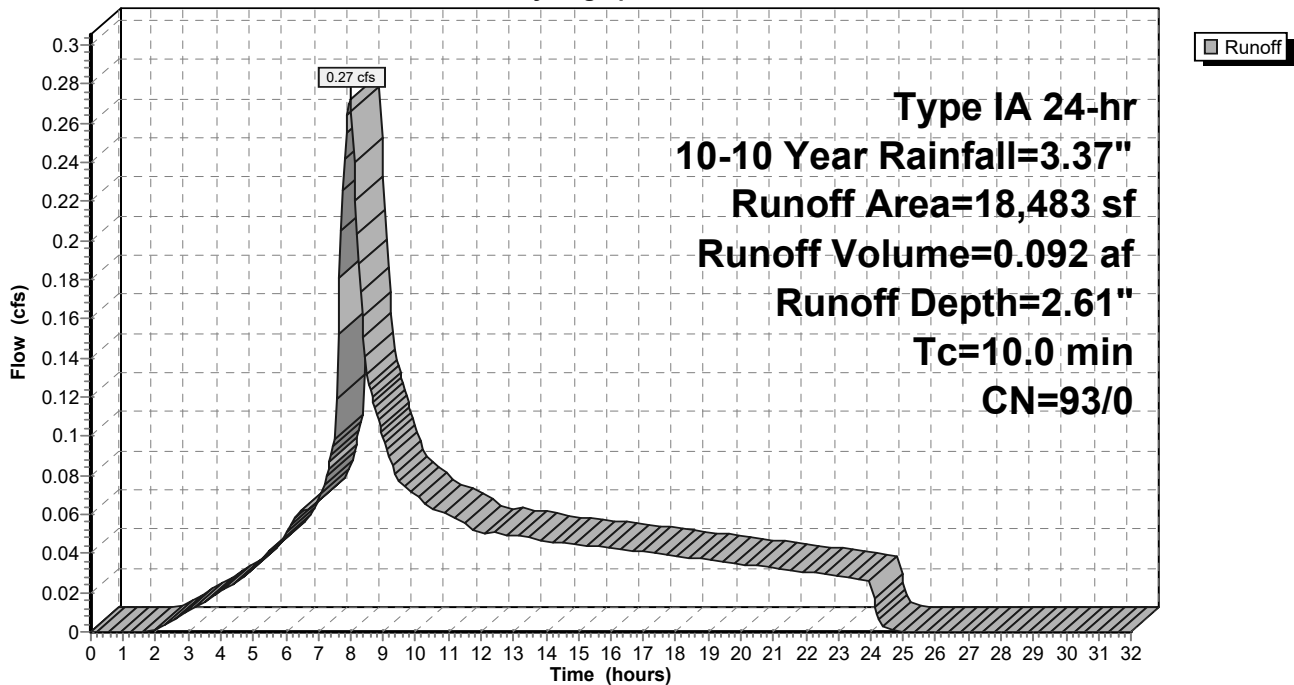
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 10-10 Year Rainfall=3.37"

Area (sf)	CN	Description
* 18,483	93	70% Lot Coverage Weighted
18,483	93	100.00% Pervious Area

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

Subcatchment 75S: Home Basin 11

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 10-10 Year Rainfall=3.37"

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Summary for Subcatchment 77S: Home Basin 15

Runoff = 0.18 cfs @ 7.98 hrs, Volume= 0.062 af, Depth= 2.61"
 Routed to Reach 149R : 1

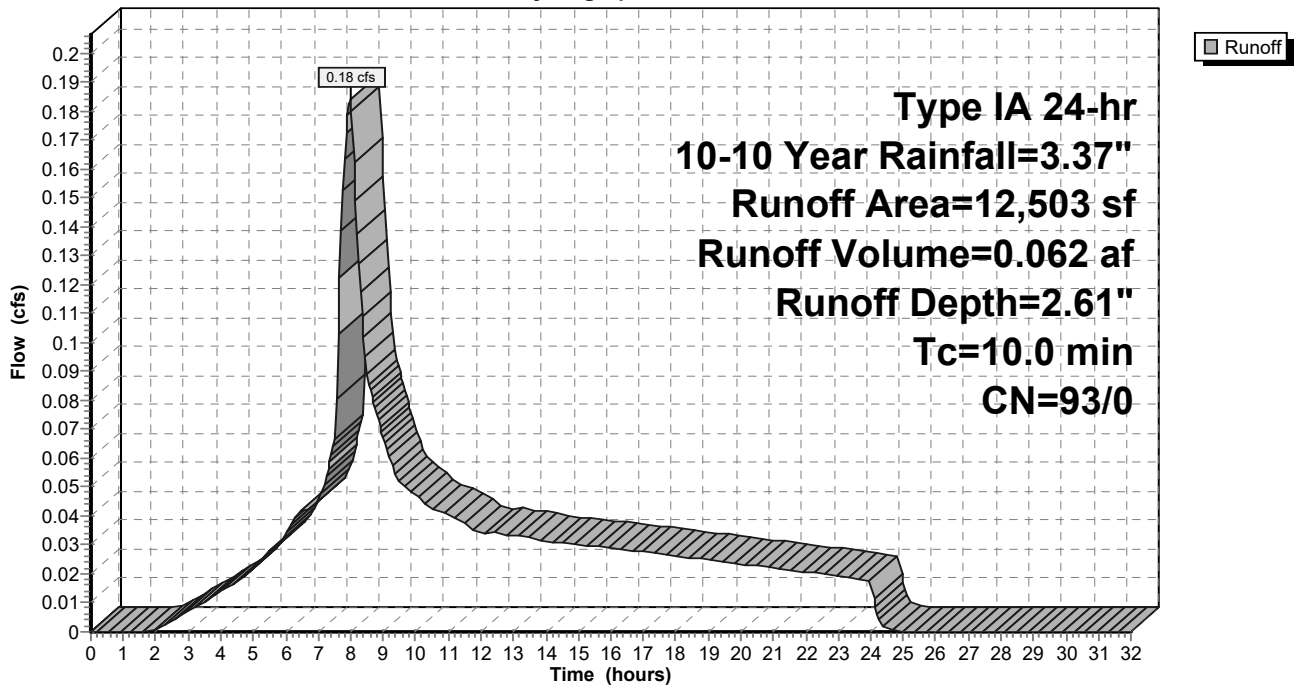
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 10-10 Year Rainfall=3.37"

Area (sf)	CN	Description
* 12,503	93	70% Lot Coverage Weighted
12,503	93	100.00% Pervious Area

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

Subcatchment 77S: Home Basin 15

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 10-10 Year Rainfall=3.37"

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Summary for Subcatchment 78S: Single Pond

[46] Hint: Tc=0 (Instant runoff peak depends on dt)

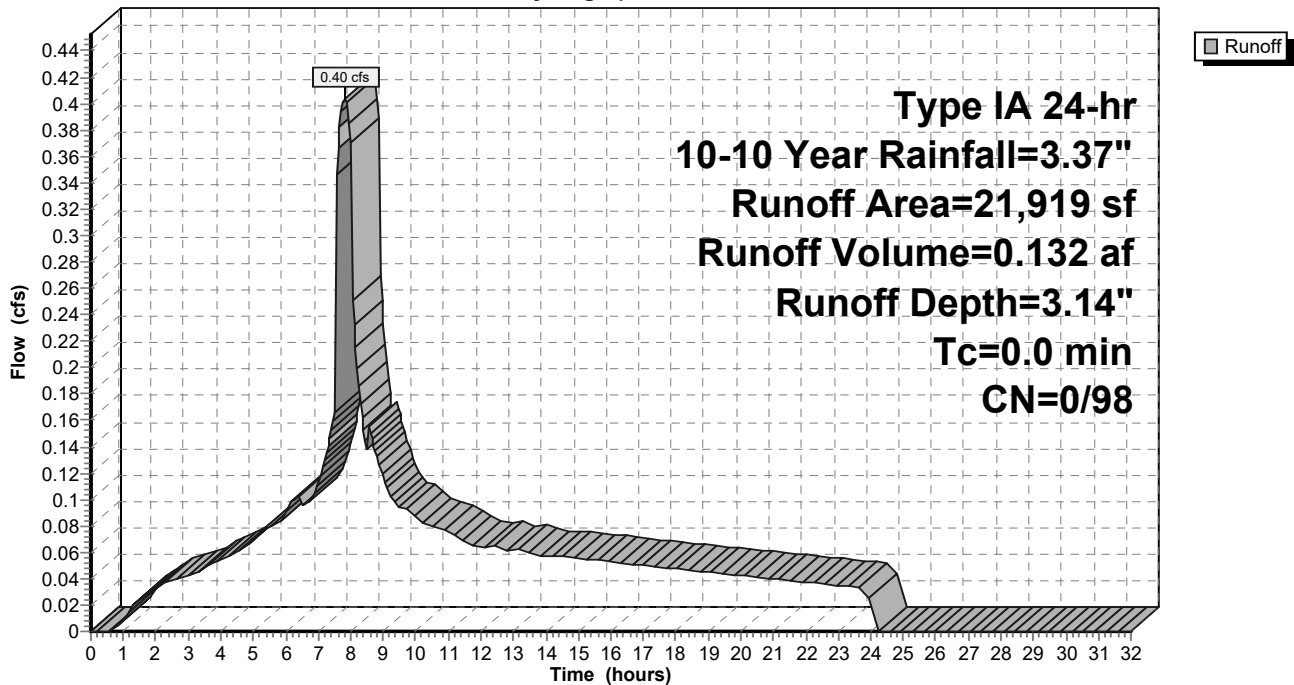
Runoff = 0.40 cfs @ 7.80 hrs, Volume= 0.132 af, Depth= 3.14"
 Routed to Pond 63P : Detention Pond

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 10-10 Year Rainfall=3.37"

Area (sf)	CN	Description
21,919	98	Water Surface, HSG D
21,919	98	100.00% Impervious Area

Subcatchment 78S: Single Pond

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 10-10 Year Rainfall=3.37"

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Summary for Subcatchment 79S: Home Basin 30

Runoff = 0.57 cfs @ 7.98 hrs, Volume= 0.192 af, Depth= 2.61"
 Routed to Reach 132R : 1

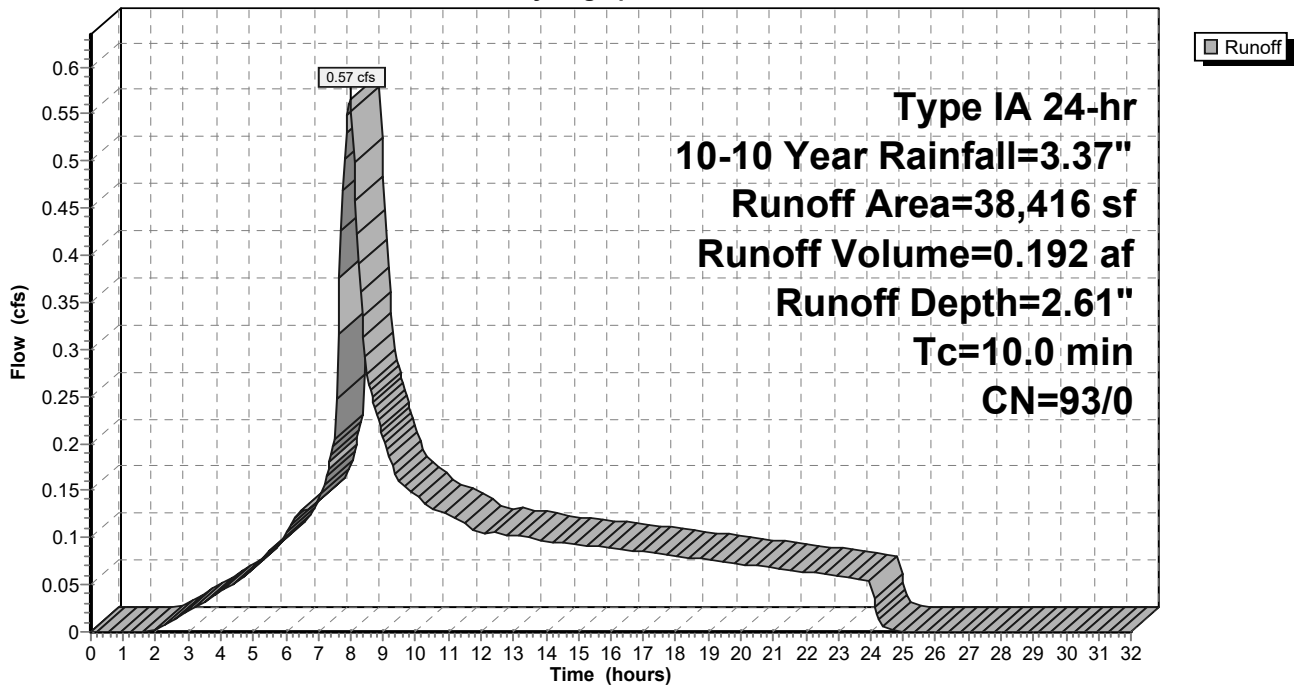
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 10-10 Year Rainfall=3.37"

Area (sf)	CN	Description
* 38,416	93	70% Lot Coverage Weighted
38,416	93	100.00% Pervious Area

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

Subcatchment 79S: Home Basin 30

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 10-10 Year Rainfall=3.37"

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Summary for Subcatchment 80S: Home Basin 10

Runoff = 0.22 cfs @ 7.98 hrs, Volume= 0.074 af, Depth= 2.61"
 Routed to Reach 165R : 1

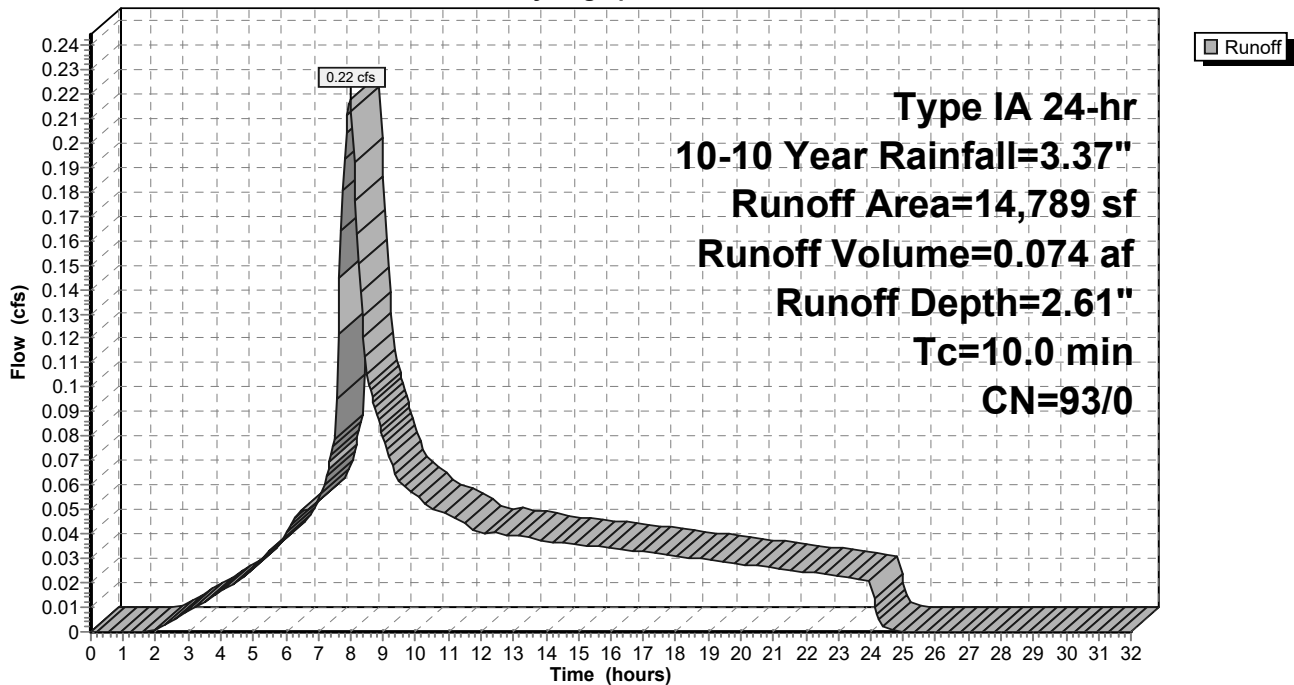
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 10-10 Year Rainfall=3.37"

	Area (sf)	CN	Description
*	14,789	93	70% Lot Coverage Weighted
	14,789	93	100.00% Pervious Area

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

Subcatchment 80S: Home Basin 10

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 10-10 Year Rainfall=3.37"

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Summary for Subcatchment 81S: Home Basin 9

Runoff = 0.23 cfs @ 7.98 hrs, Volume= 0.078 af, Depth= 2.61"
 Routed to Reach 163R : 1

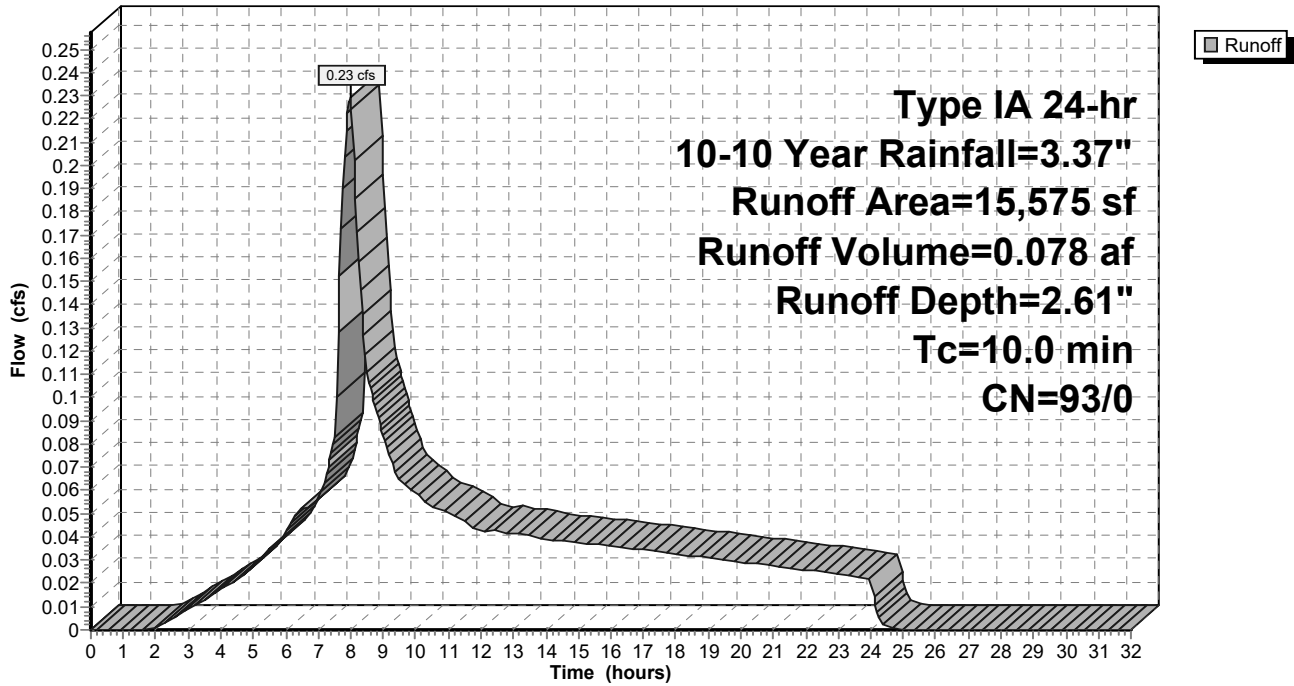
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 10-10 Year Rainfall=3.37"

Area (sf)	CN	Description
* 15,575	93	70% Lot Coverage Weighted
15,575	93	100.00% Pervious Area

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

Subcatchment 81S: Home Basin 9

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 10-10 Year Rainfall=3.37"

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Summary for Subcatchment 82S: Home Basin 2

Runoff = 0.30 cfs @ 7.98 hrs, Volume= 0.103 af, Depth= 2.61"
 Routed to Reach 145R : 1

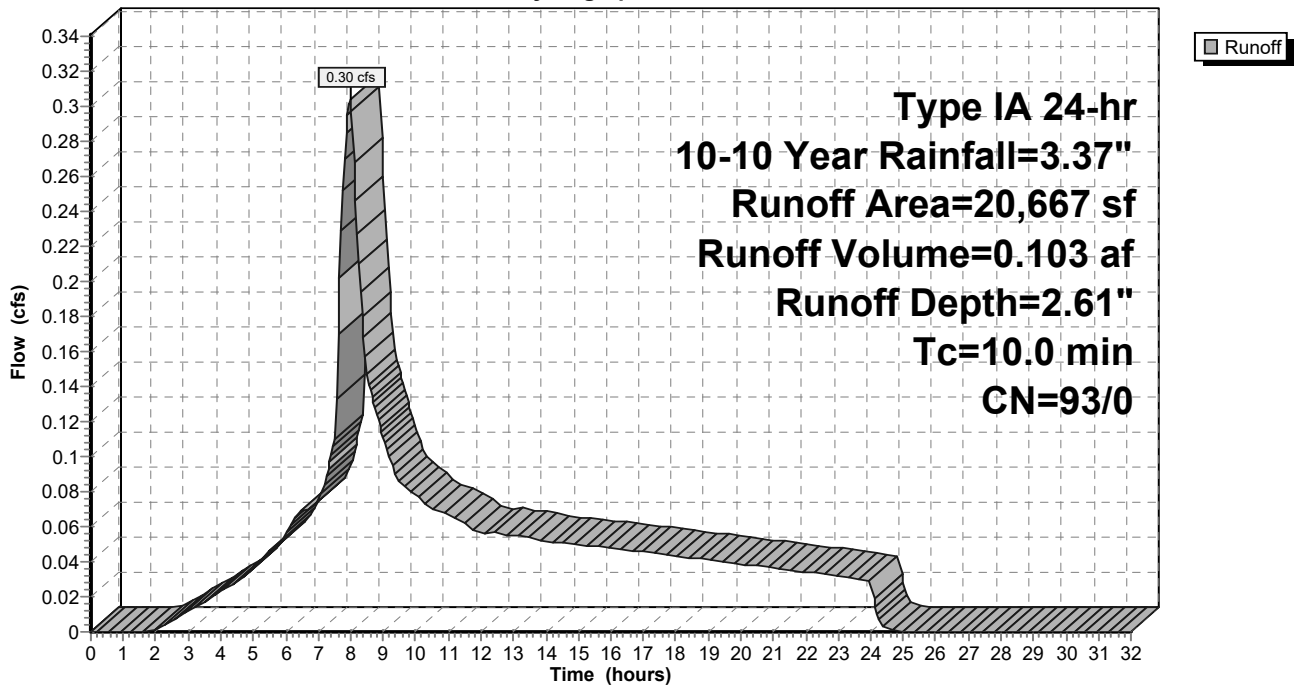
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 10-10 Year Rainfall=3.37"

Area (sf)	CN	Description
* 20,667	93	70% Lot Coverage Weighted
20,667	93	100.00% Pervious Area

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

Subcatchment 82S: Home Basin 2

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 10-10 Year Rainfall=3.37"

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Summary for Subcatchment 83S: Home Basin 7

Runoff = 0.25 cfs @ 7.98 hrs, Volume= 0.085 af, Depth= 2.61"
 Routed to Reach 154R : 1

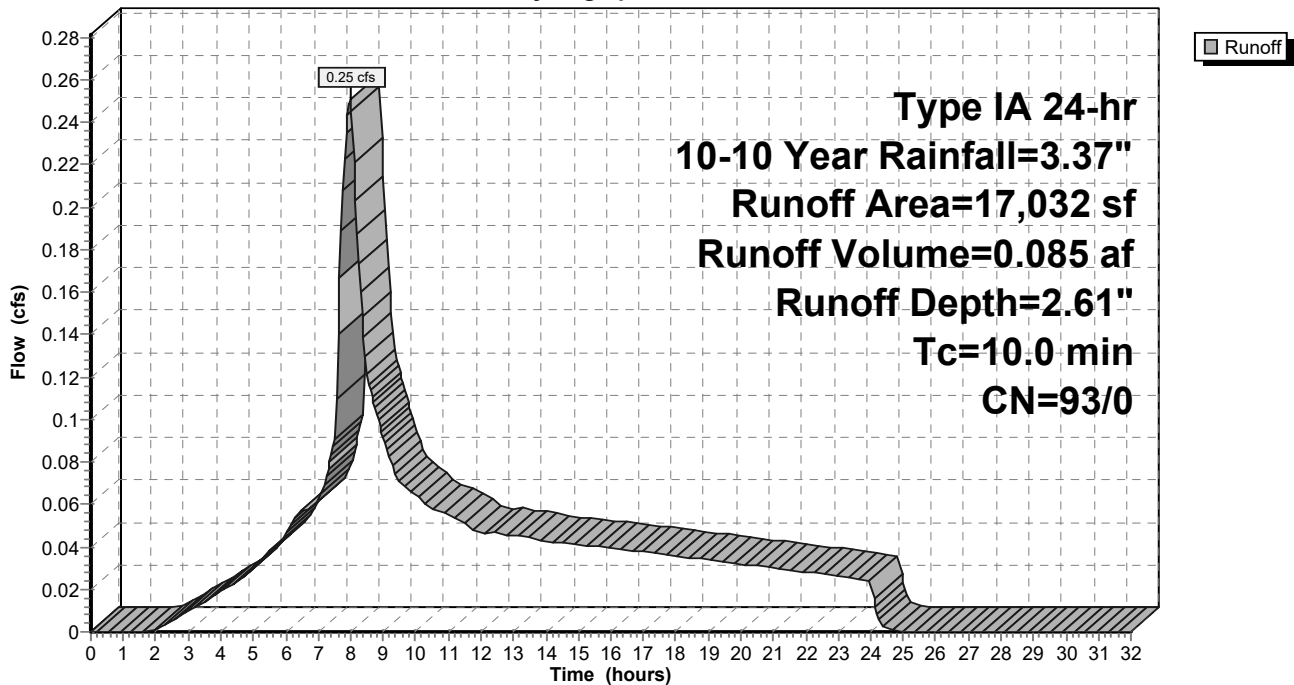
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 10-10 Year Rainfall=3.37"

Area (sf)	CN	Description
* 17,032	93	70% Lot Coverage Weighted
17,032	93	100.00% Pervious Area

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

Subcatchment 83S: Home Basin 7

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 10-10 Year Rainfall=3.37"

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Summary for Subcatchment 84S: Home Basin 8

Runoff = 0.17 cfs @ 7.98 hrs, Volume= 0.058 af, Depth= 2.61"
 Routed to Reach 155R : 1

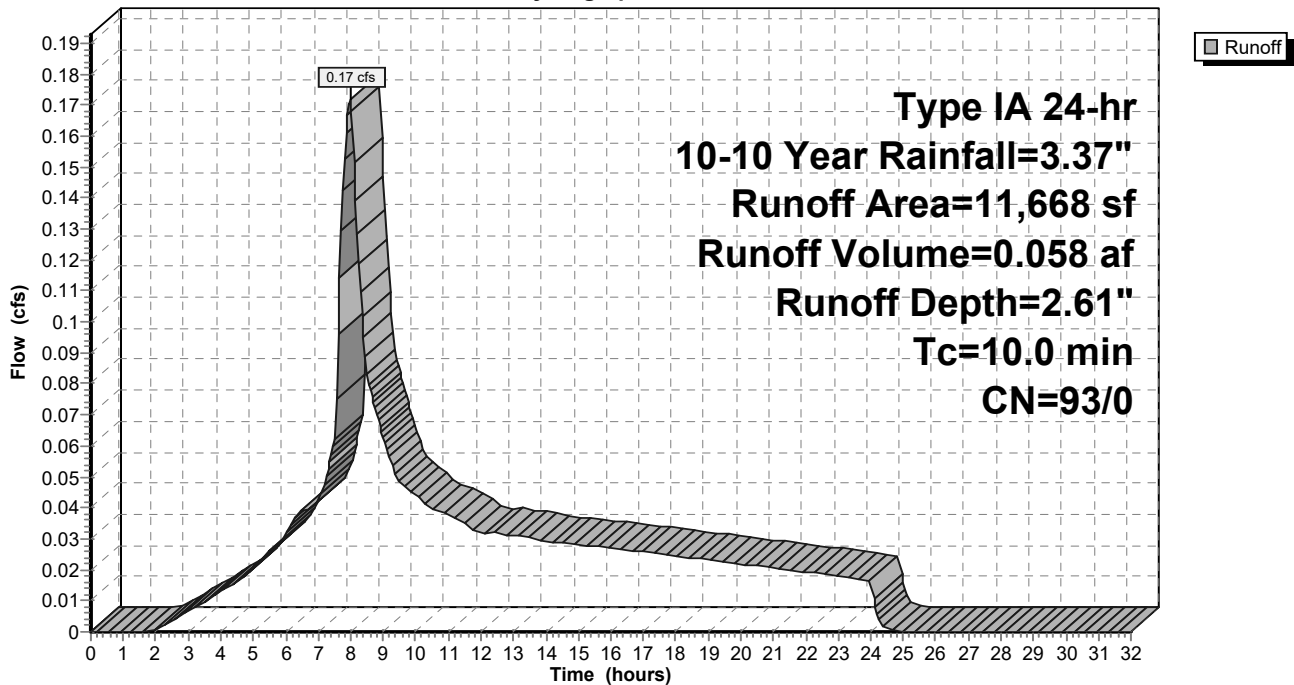
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 10-10 Year Rainfall=3.37"

Area (sf)	CN	Description
* 11,668	93	70% Lot Coverage Weighted
11,668	93	100.00% Pervious Area

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

Subcatchment 84S: Home Basin 8

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 10-10 Year Rainfall=3.37"

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Summary for Subcatchment 85S: Home Basin 29

Runoff = 0.37 cfs @ 7.98 hrs, Volume= 0.125 af, Depth= 2.61"
 Routed to Reach 132R : 1

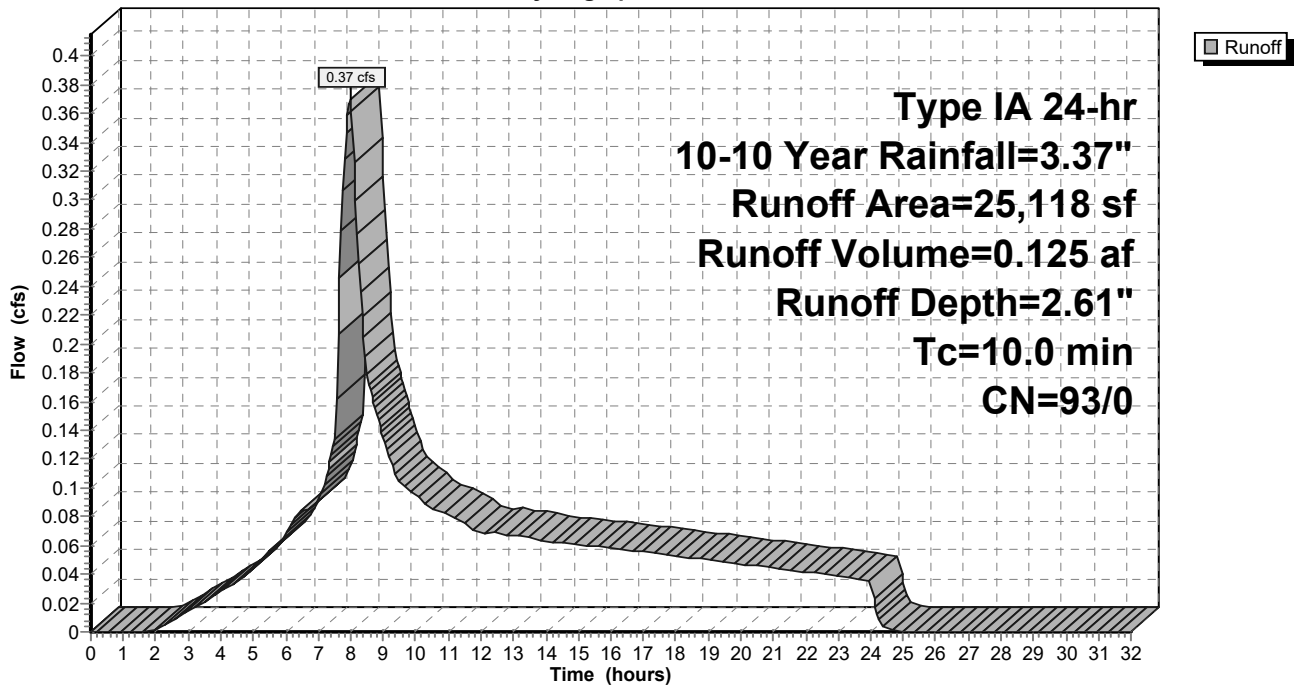
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 10-10 Year Rainfall=3.37"

Area (sf)	CN	Description
* 25,118	93	70% Lot Coverage Weighted
25,118	93	100.00% Pervious Area

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

Subcatchment 85S: Home Basin 29

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 10-10 Year Rainfall=3.37"

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Summary for Subcatchment 86S: Home Basin 22

Runoff = 0.24 cfs @ 7.98 hrs, Volume= 0.081 af, Depth= 2.61"
 Routed to Reach 145R : 1

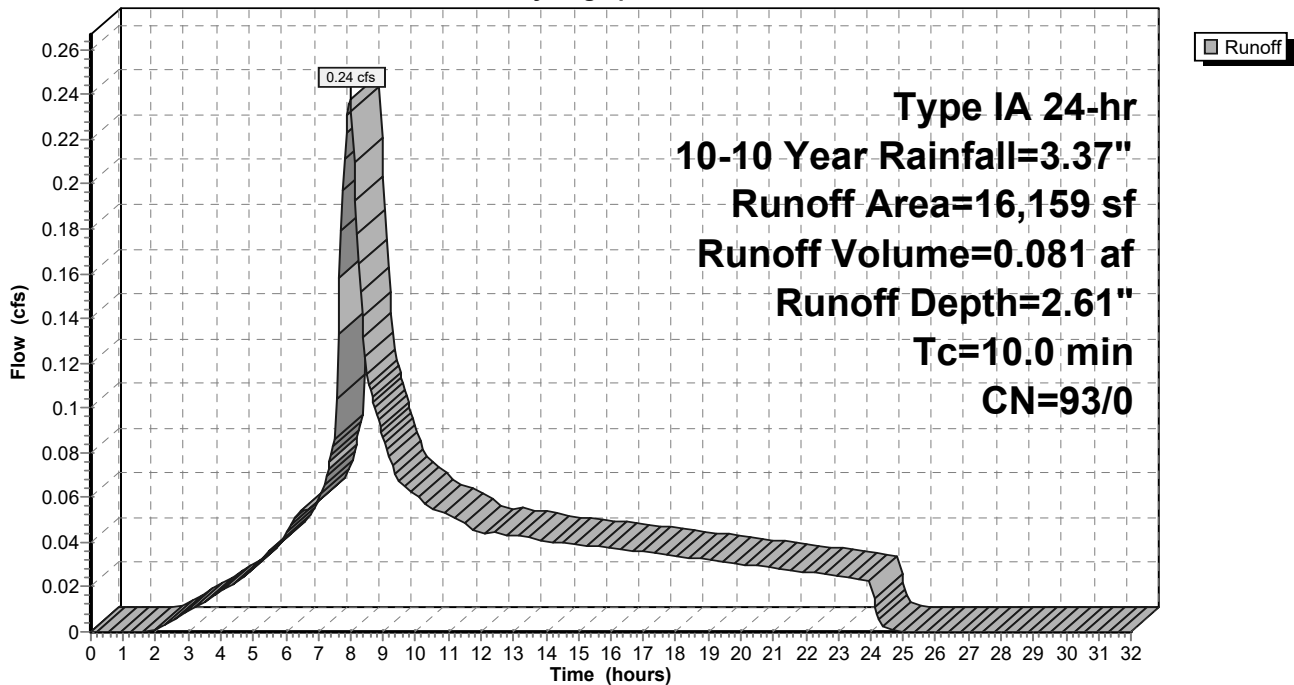
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 10-10 Year Rainfall=3.37"

Area (sf)	CN	Description
* 16,159	93	70% Lot Coverage Weighted
16,159	93	100.00% Pervious Area

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

Subcatchment 86S: Home Basin 22

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 10-10 Year Rainfall=3.37"

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Summary for Subcatchment 87S: Home Basin 27

Runoff = 0.37 cfs @ 7.98 hrs, Volume= 0.124 af, Depth= 2.61"
 Routed to Reach 135R : 1

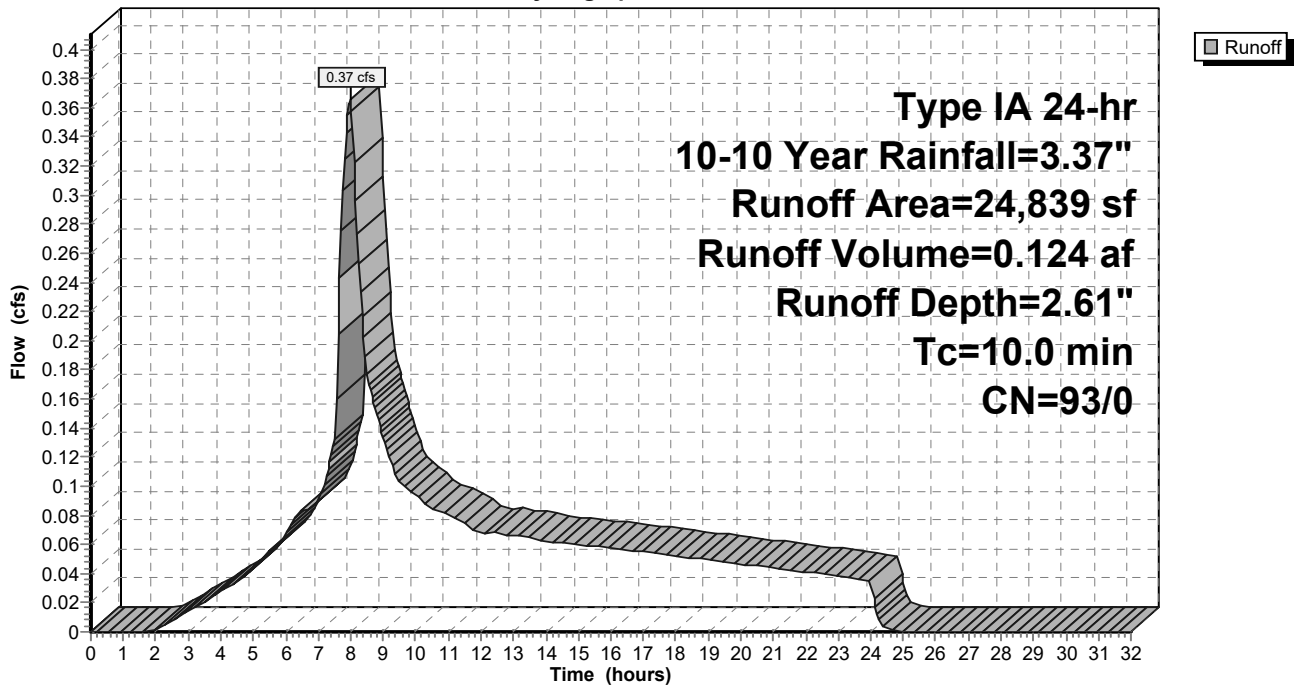
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 10-10 Year Rainfall=3.37"

Area (sf)	CN	Description
* 24,839	93	70% Lot Coverage Weighted
24,839	93	100.00% Pervious Area

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

Subcatchment 87S: Home Basin 27

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 10-10 Year Rainfall=3.37"

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Summary for Subcatchment 88S: Home Basin 28

Runoff = 0.37 cfs @ 7.98 hrs, Volume= 0.126 af, Depth= 2.61"
 Routed to Reach 131R : 1

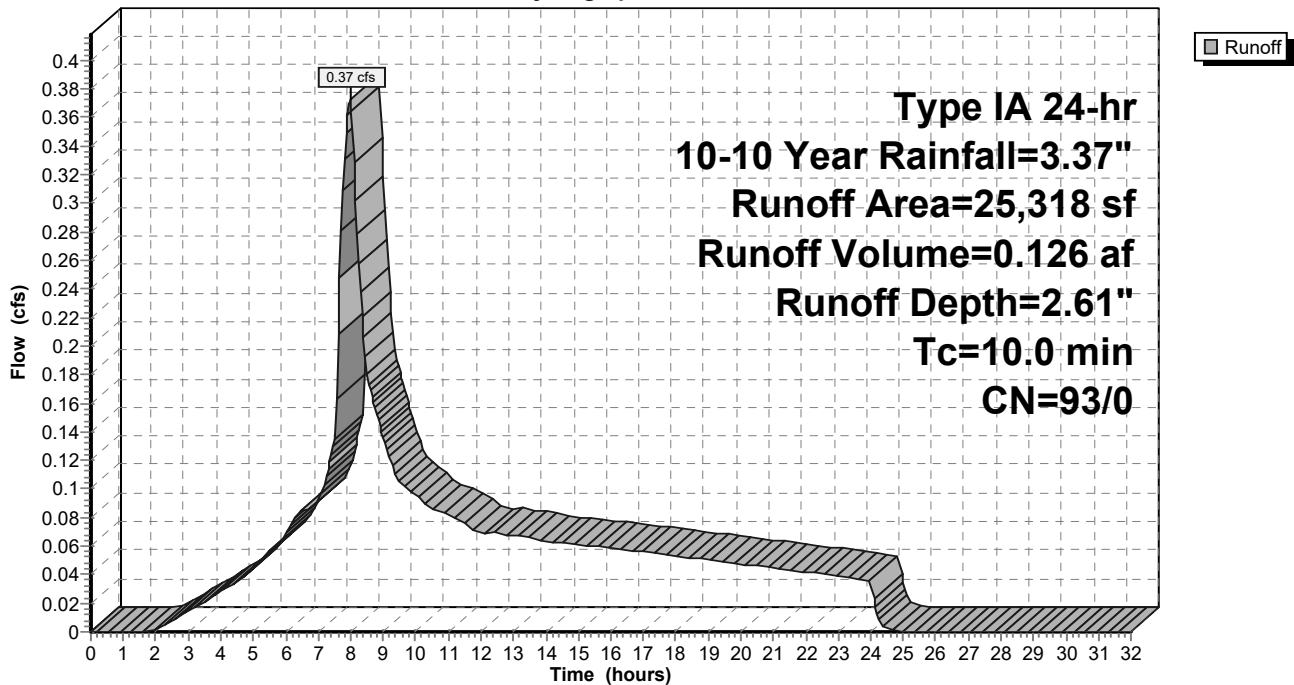
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 10-10 Year Rainfall=3.37"

Area (sf)	CN	Description
* 25,318	93	70% Lot Coverage Weighted
25,318	93	100.00% Pervious Area

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

Subcatchment 88S: Home Basin 28

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 10-10 Year Rainfall=3.37"

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Summary for Subcatchment 89S: Home Basin 24

Runoff = 0.30 cfs @ 7.98 hrs, Volume= 0.103 af, Depth= 2.61"
 Routed to Reach 135R : 1

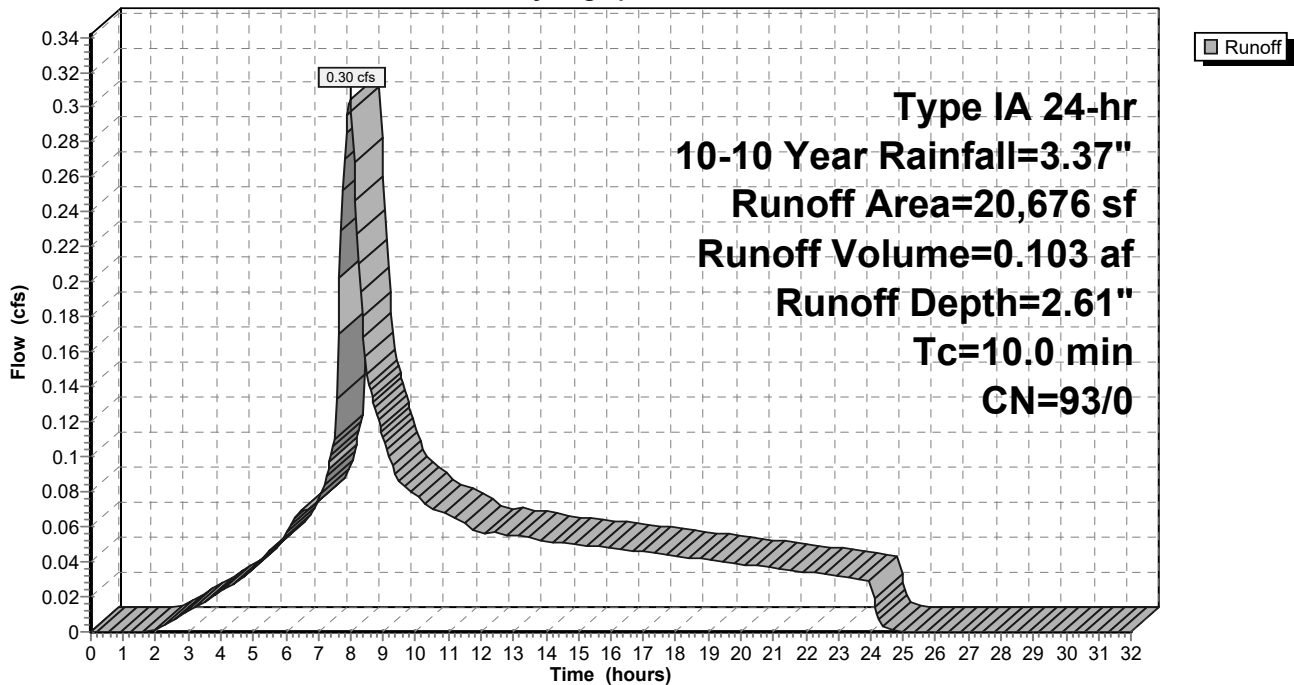
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 10-10 Year Rainfall=3.37"

Area (sf)	CN	Description
* 20,676	93	70% Lot Coverage Weighted
20,676	93	100.00% Pervious Area

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

Subcatchment 89S: Home Basin 24

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 10-10 Year Rainfall=3.37"

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Summary for Subcatchment 90S: Home Basin 26

Runoff = 0.21 cfs @ 7.98 hrs, Volume= 0.071 af, Depth= 2.61"
 Routed to Reach 136R : 1

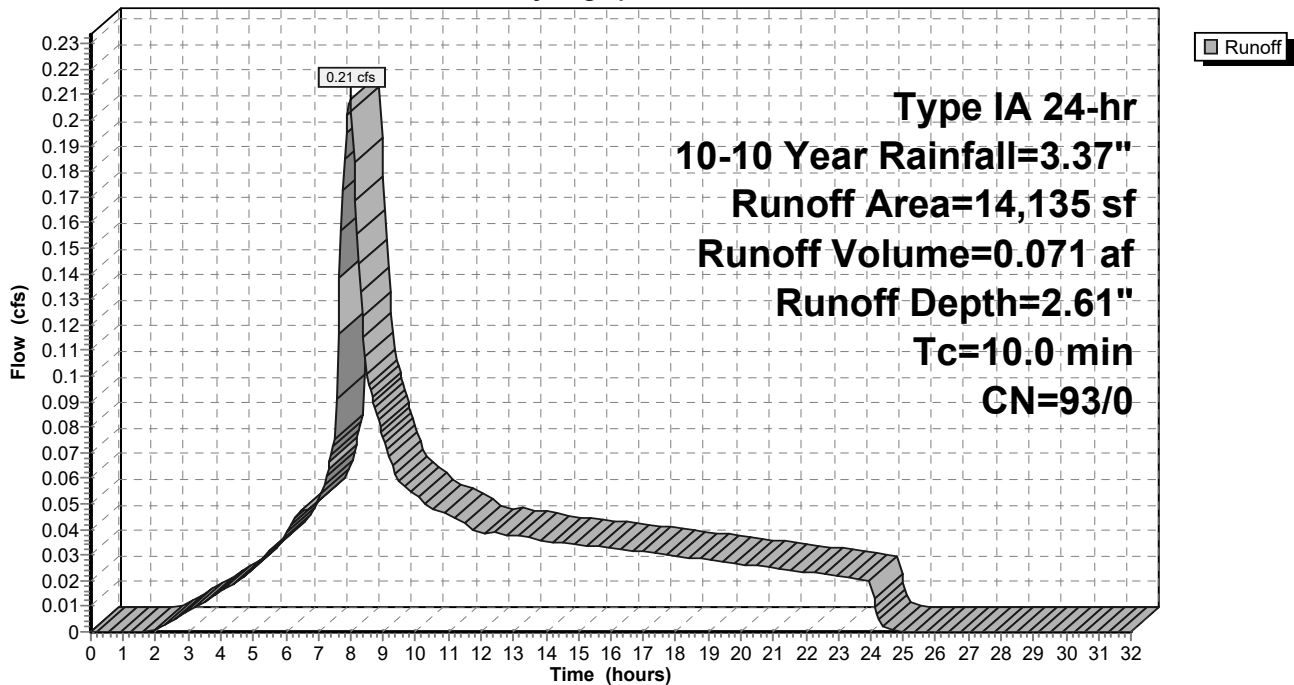
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 10-10 Year Rainfall=3.37"

Area (sf)	CN	Description
* 14,135	93	70% Lot Coverage Weighted
14,135	93	100.00% Pervious Area

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

Subcatchment 90S: Home Basin 26

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 10-10 Year Rainfall=3.37"

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Summary for Subcatchment 91S: Home Basin 23

Runoff = 0.18 cfs @ 7.98 hrs, Volume= 0.061 af, Depth= 2.61"
 Routed to Reach 143R : 1

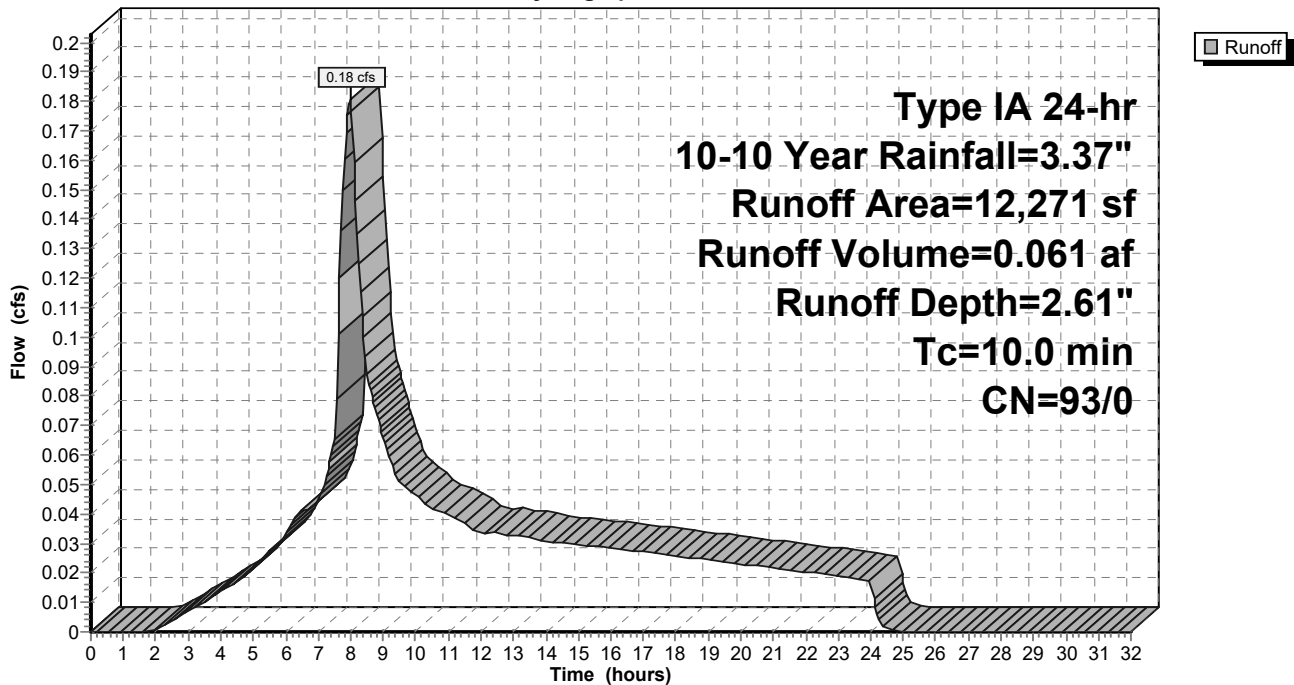
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 10-10 Year Rainfall=3.37"

Area (sf)	CN	Description
* 12,271	93	70% Lot Coverage Weighted
12,271	93	100.00% Pervious Area

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

Subcatchment 91S: Home Basin 23

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 10-10 Year Rainfall=3.37"

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Summary for Subcatchment 92S: Home Basin 21

Runoff = 0.40 cfs @ 7.98 hrs, Volume= 0.135 af, Depth= 2.61"
 Routed to Reach 145R : 1

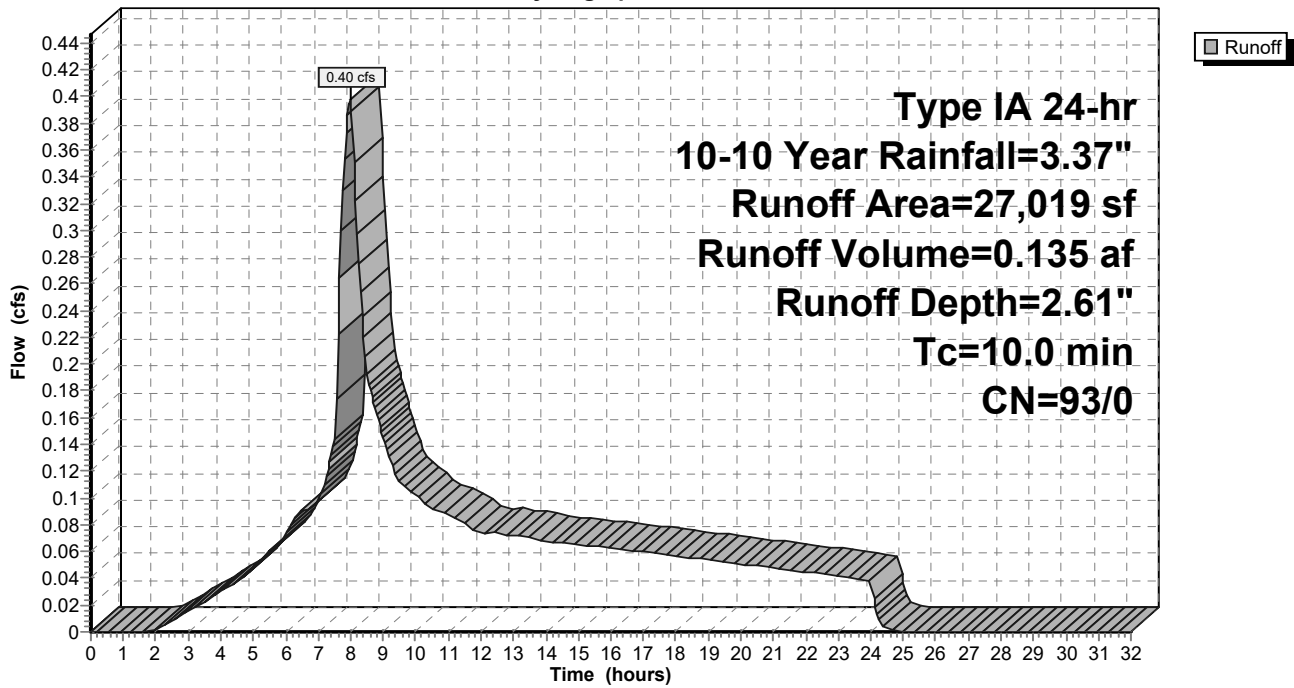
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 10-10 Year Rainfall=3.37"

Area (sf)	CN	Description
* 27,019	93	70% Lot Coverage Weighted
27,019	93	100.00% Pervious Area

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

Subcatchment 92S: Home Basin 21

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 10-10 Year Rainfall=3.37"

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Summary for Subcatchment 93S: Home Basin 25

Runoff = 0.25 cfs @ 7.98 hrs, Volume= 0.085 af, Depth= 2.61"
 Routed to Reach 136R : 1

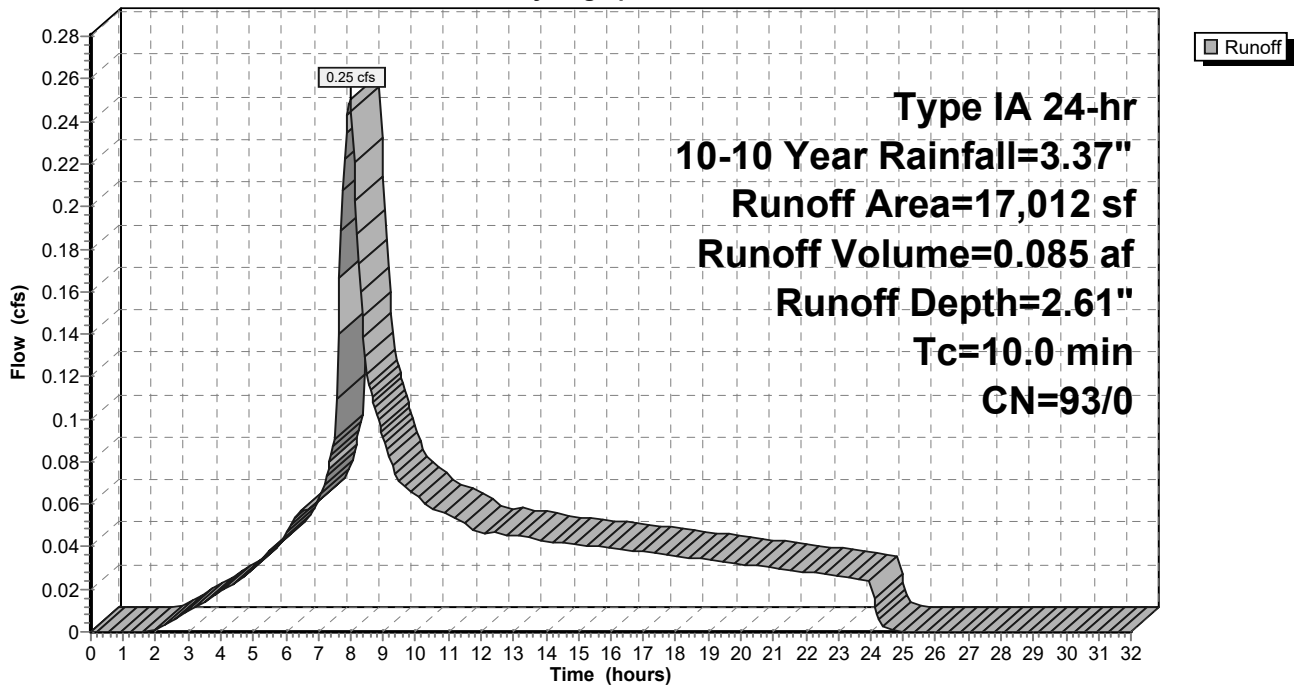
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 10-10 Year Rainfall=3.37"

Area (sf)	CN	Description
* 17,012	93	70% Lot Coverage Weighted
17,012	93	100.00% Pervious Area

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

Subcatchment 93S: Home Basin 25

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 10-10 Year Rainfall=3.37"

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Summary for Subcatchment 94S: Home Basin 4

Runoff = 0.29 cfs @ 7.98 hrs, Volume= 0.098 af, Depth= 2.61"
 Routed to Reach 160R : 1

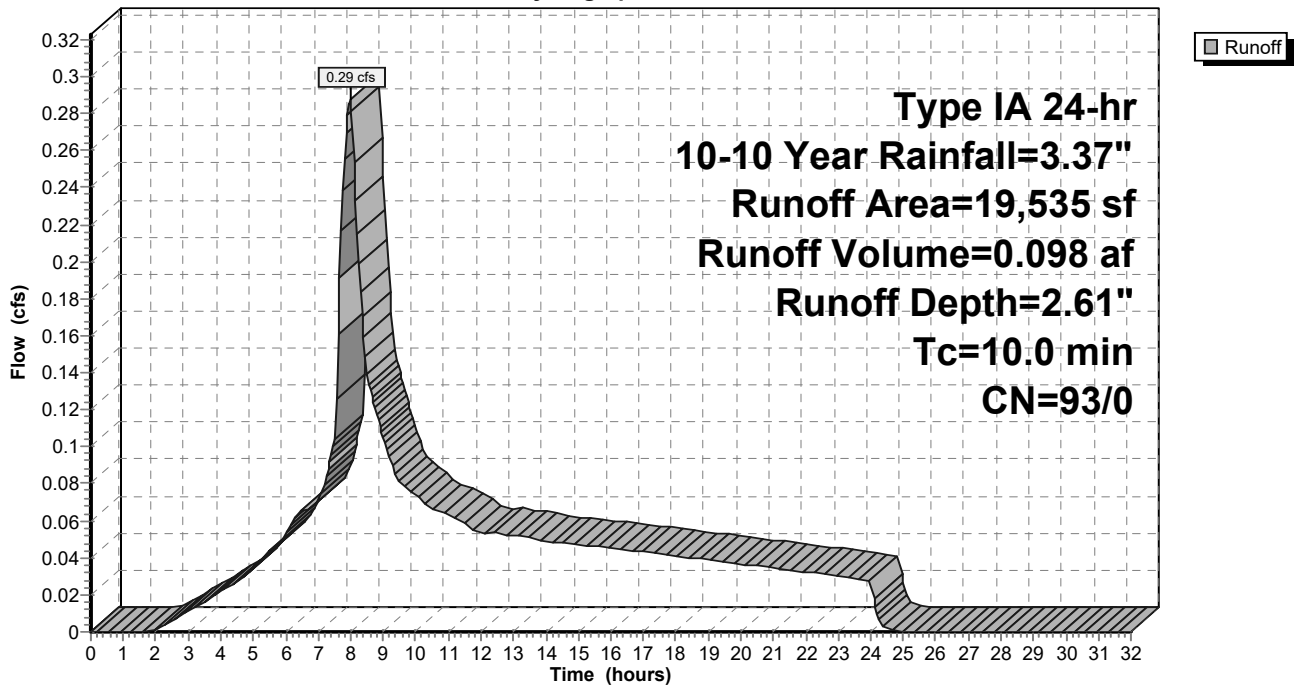
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 10-10 Year Rainfall=3.37"

Area (sf)	CN	Description
* 19,535	93	70% Lot Coverage Weighted
19,535	93	100.00% Pervious Area

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

Subcatchment 94S: Home Basin 4

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 10-10 Year Rainfall=3.37"

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Summary for Subcatchment 95S: Home Basin 31

Runoff = 0.37 cfs @ 7.98 hrs, Volume= 0.124 af, Depth= 2.61"
 Routed to Reach 131R : 1

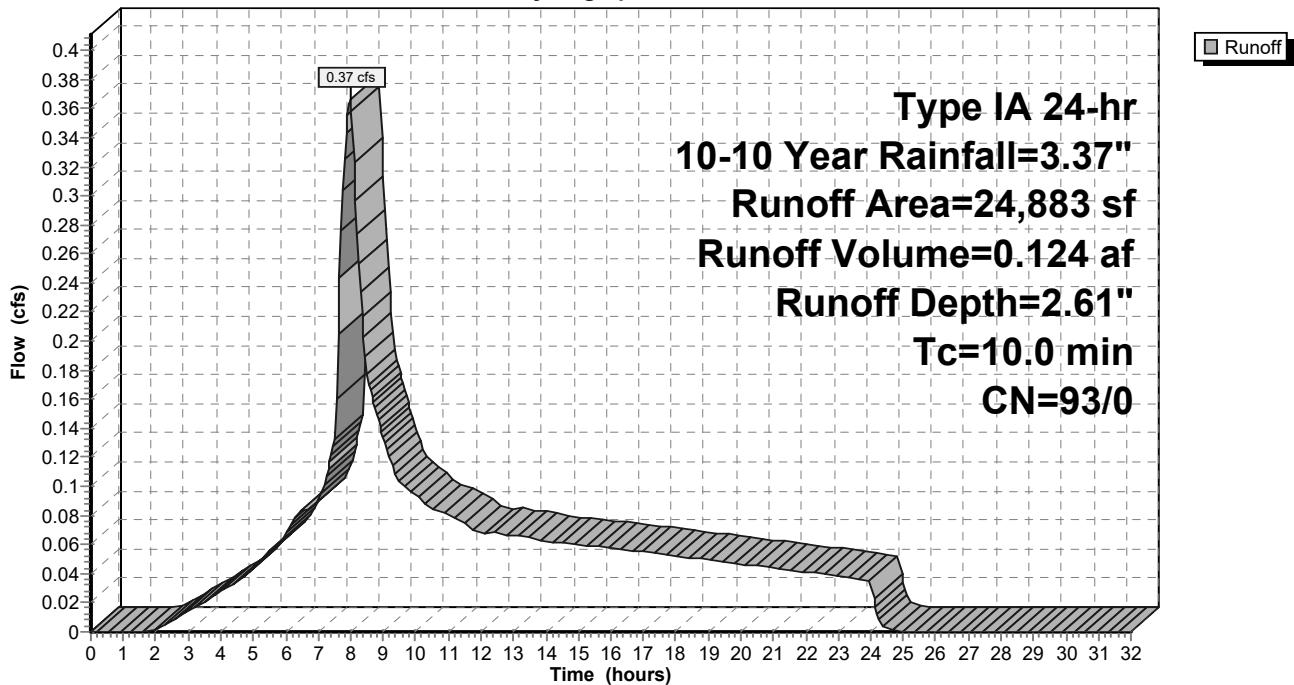
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 10-10 Year Rainfall=3.37"

Area (sf)	CN	Description
* 24,883	93	70% Lot Coverage Weighted
24,883	93	100.00% Pervious Area

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

Subcatchment 95S: Home Basin 31

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 10-10 Year Rainfall=3.37"

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Summary for Subcatchment 96S: Basin 1

Runoff = 0.26 cfs @ 7.98 hrs, Volume= 0.090 af, Depth= 3.14"
 Routed to Reach 133R : 1

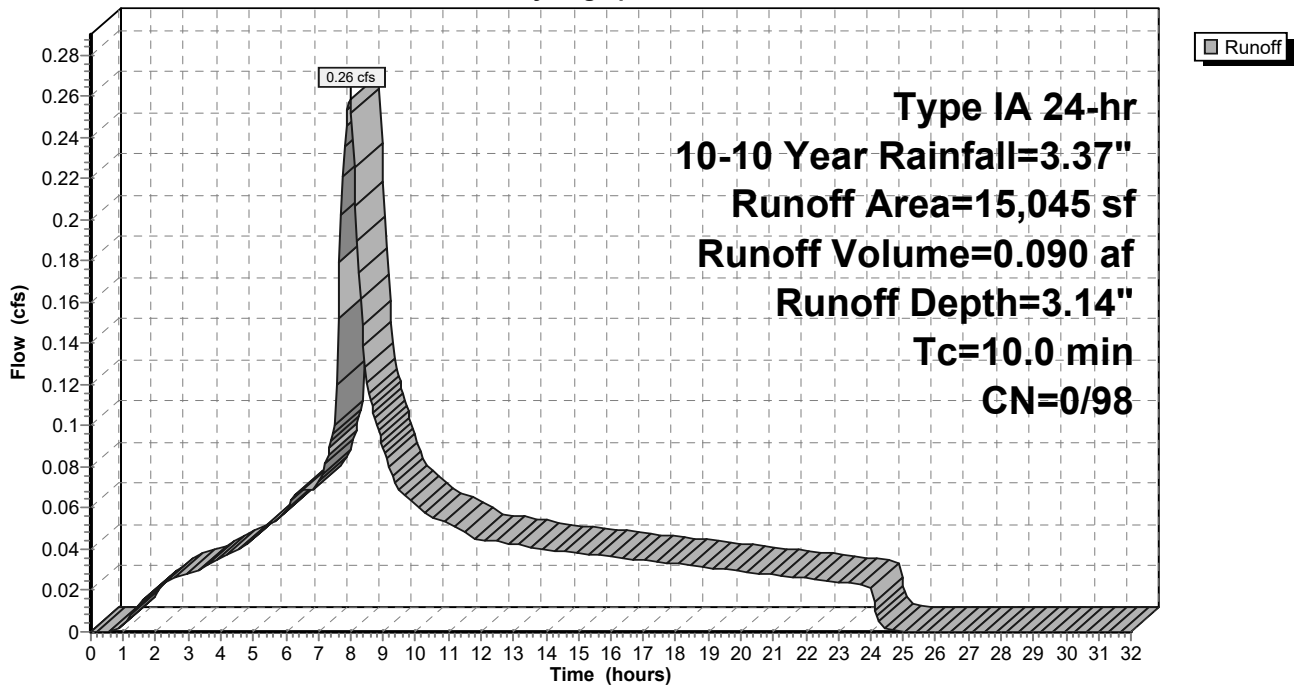
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 10-10 Year Rainfall=3.37"

Area (sf)	CN	Description
15,045	98	Paved roads w/curbs & sewers, HSG D
15,045	98	100.00% Impervious Area

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

Subcatchment 96S: Basin 1

Hydrograph



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Type IA 24-hr 10-10 Year Rainfall=3.37"

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Summary for Subcatchment 97S: Basin 2

Runoff = 0.34 cfs @ 7.98 hrs, Volume= 0.119 af, Depth= 3.14"
 Routed to Reach 132R : 1

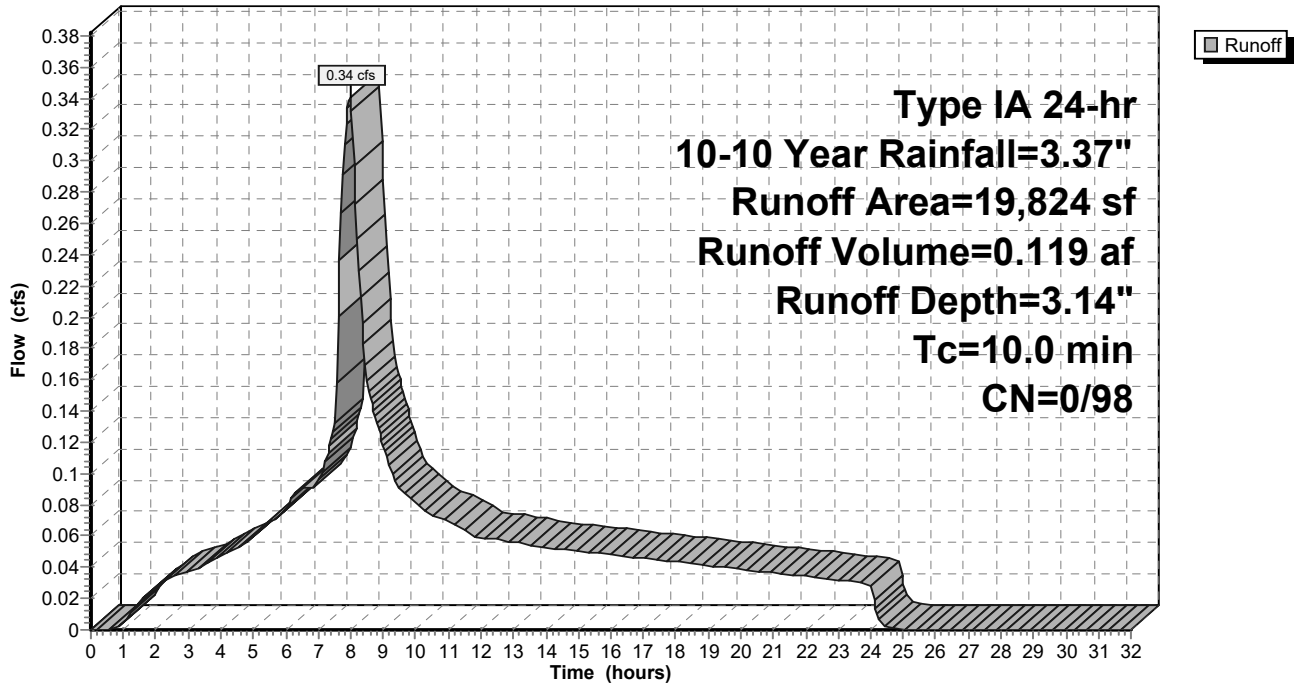
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 10-10 Year Rainfall=3.37"

Area (sf)	CN	Description
19,824	98	Paved roads w/curbs & sewers, HSG D
19,824	98	100.00% Impervious Area

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

Subcatchment 97S: Basin 2

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 10-10 Year Rainfall=3.37"

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Summary for Subcatchment 98S: Basin 3

Runoff = 0.40 cfs @ 7.98 hrs, Volume= 0.141 af, Depth= 3.14"
 Routed to Reach 131R : 1

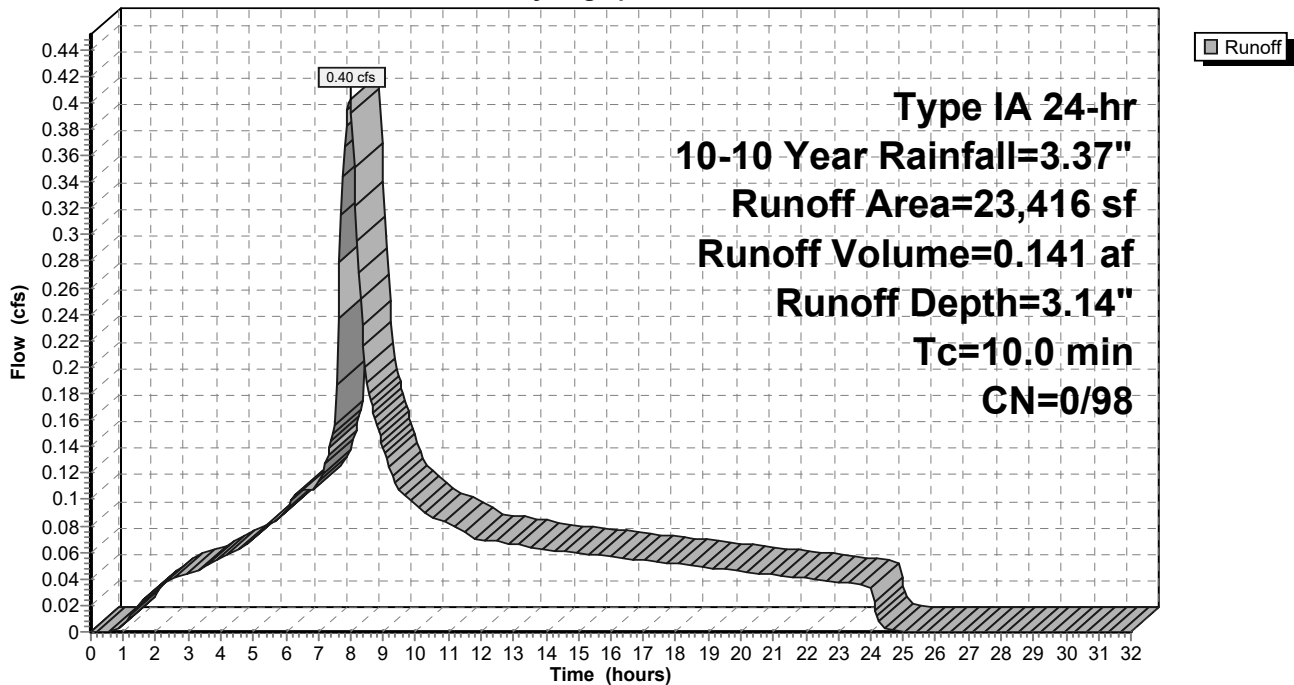
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 10-10 Year Rainfall=3.37"

Area (sf)	CN	Description
23,416	98	Paved roads w/curbs & sewers, HSG D
23,416	98	100.00% Impervious Area

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

Subcatchment 98S: Basin 3

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 10-10 Year Rainfall=3.37"

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Summary for Subcatchment 99S: Home Basin 6

Runoff = 0.38 cfs @ 7.98 hrs, Volume= 0.130 af, Depth= 2.61"
 Routed to Reach 163R : 1

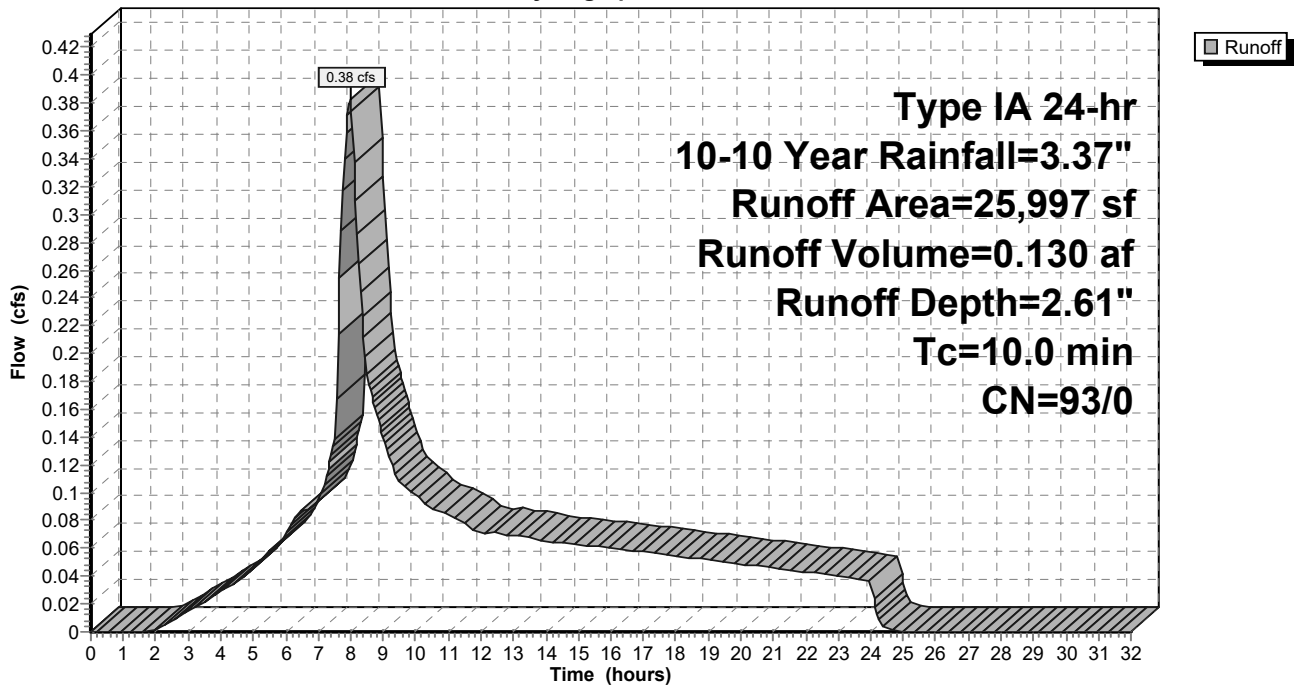
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 10-10 Year Rainfall=3.37"

Area (sf)	CN	Description
* 25,997	93	70% Lot Coverage Weighted
25,997	93	100.00% Pervious Area

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

Subcatchment 99S: Home Basin 6

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 10-10 Year Rainfall=3.37"

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Summary for Subcatchment 100S: Basin 4

Runoff = 0.06 cfs @ 7.98 hrs, Volume= 0.022 af, Depth= 3.14"
 Routed to Pond 60P : Stormwater Swale 1

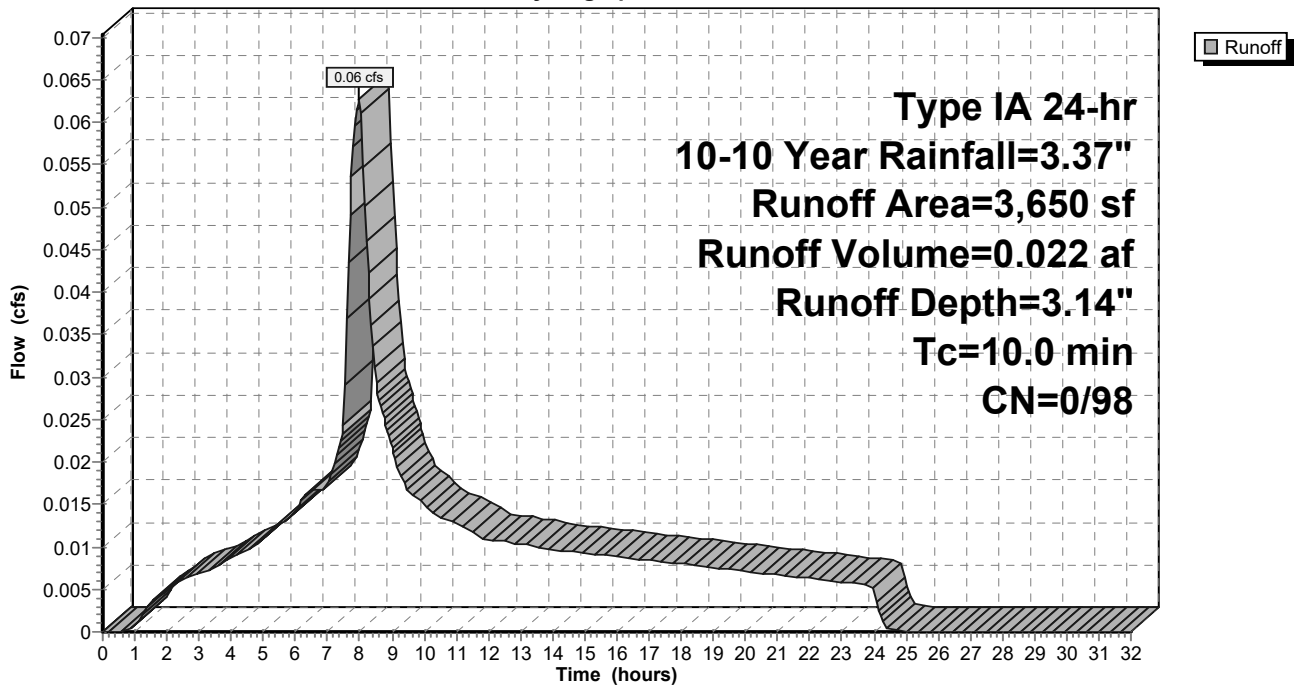
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 10-10 Year Rainfall=3.37"

Area (sf)	CN	Description
3,650	98	Paved roads w/curbs & sewers, HSG D
3,650	98	100.00% Impervious Area

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

Subcatchment 100S: Basin 4

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 10-10 Year Rainfall=3.37"

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Summary for Subcatchment 101S: Basin 5

Runoff = 0.06 cfs @ 7.98 hrs, Volume= 0.021 af, Depth= 3.14"
 Routed to Pond 54P : Stormwater Swale 2

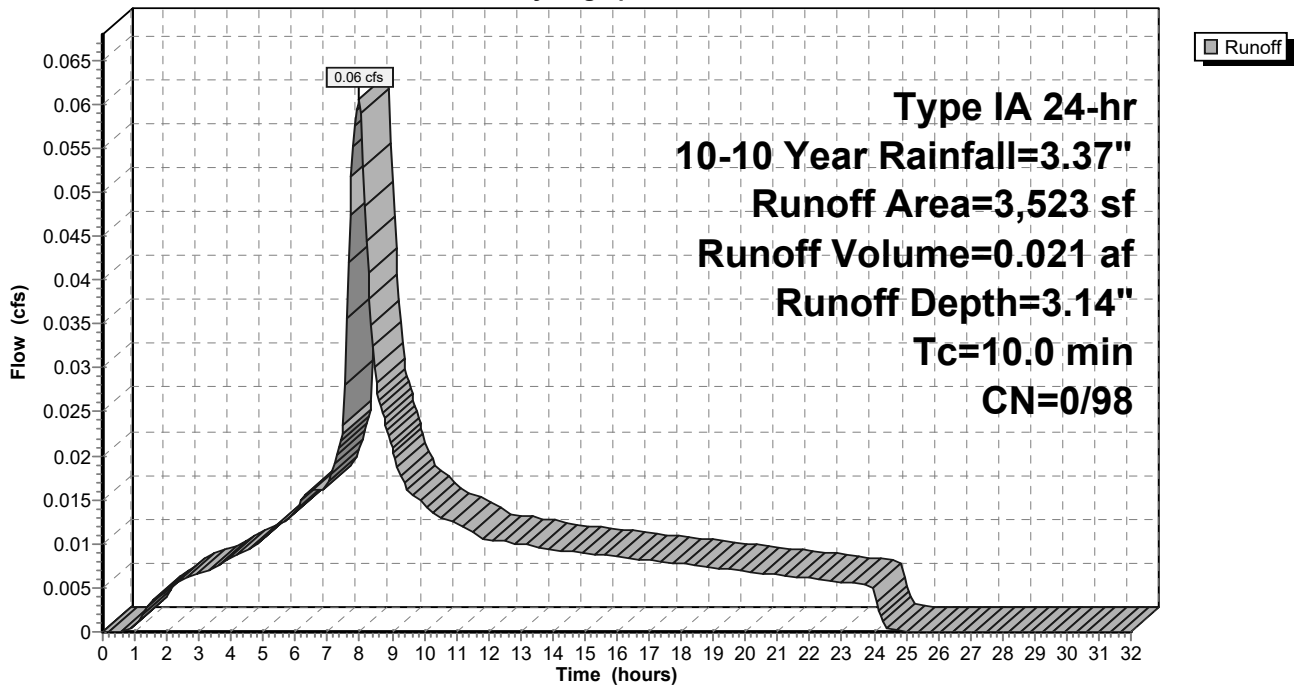
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 10-10 Year Rainfall=3.37"

Area (sf)	CN	Description
3,523	98	Paved roads w/curbs & sewers, HSG D
3,523	98	100.00% Impervious Area

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

Subcatchment 101S: Basin 5

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 10-10 Year Rainfall=3.37"

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Summary for Subcatchment 102S: Home Basin 3

Runoff = 0.29 cfs @ 7.98 hrs, Volume= 0.098 af, Depth= 2.61"
 Routed to Reach 151R : 1

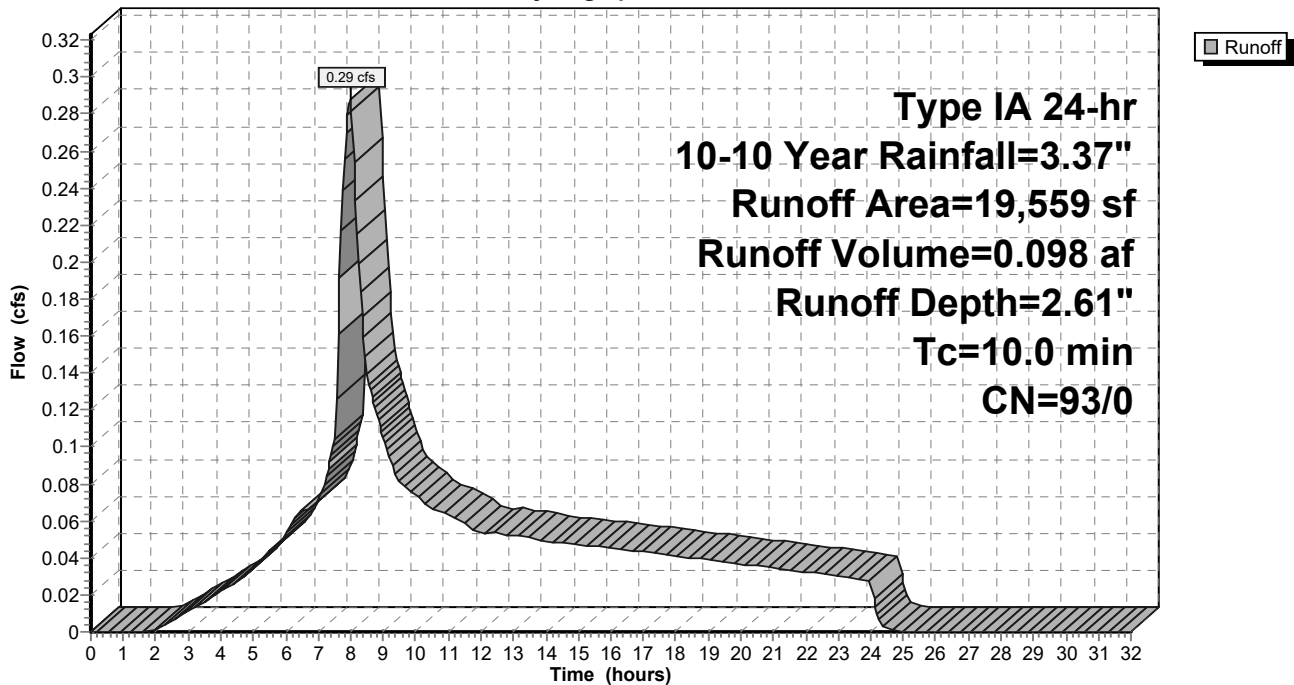
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 10-10 Year Rainfall=3.37"

Area (sf)	CN	Description
* 19,559	93	70% Lot Coverage Weighted
19,559	93	100.00% Pervious Area

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

Subcatchment 102S: Home Basin 3

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 10-10 Year Rainfall=3.37"

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Summary for Subcatchment 103S: Home Basin 1

Runoff = 0.33 cfs @ 7.98 hrs, Volume= 0.111 af, Depth= 2.61"
 Routed to Reach 137R : 1

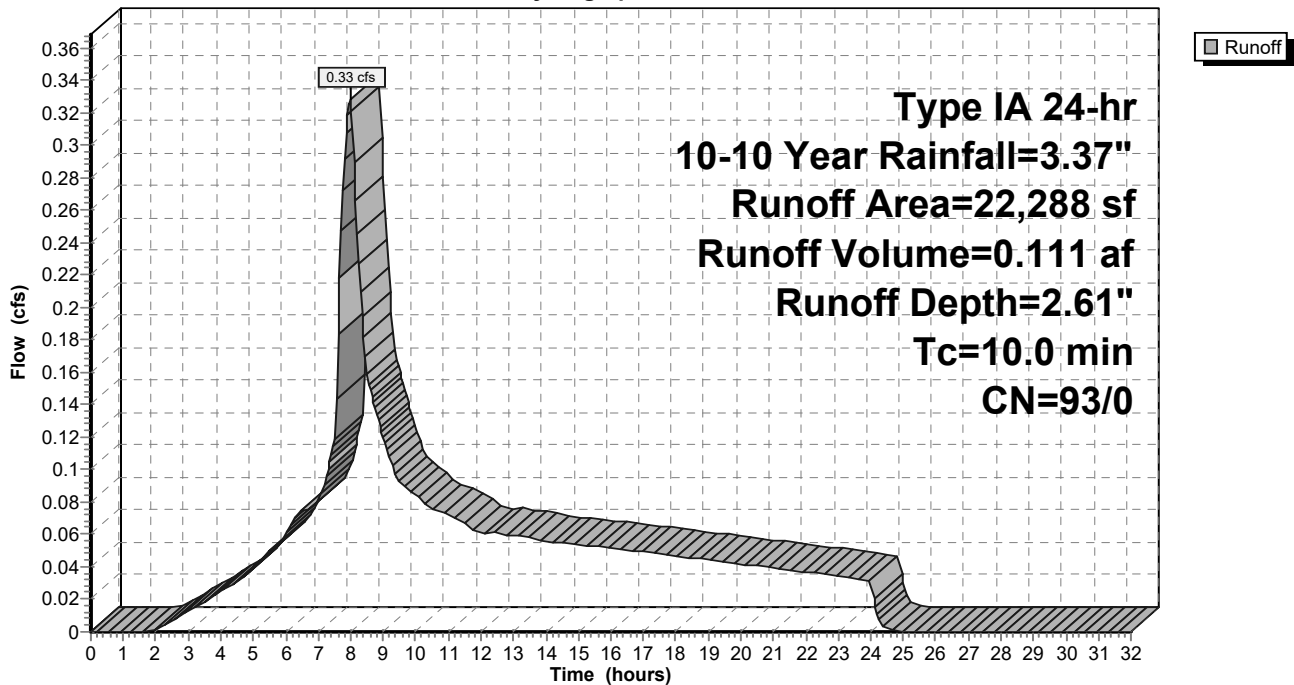
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 10-10 Year Rainfall=3.37"

Area (sf)	CN	Description
* 22,288	93	70% Lot Coverage Weighted
22,288	93	100.00% Pervious Area

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

Subcatchment 103S: Home Basin 1

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 10-10 Year Rainfall=3.37"

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Summary for Subcatchment 104S: Home Basin 5

Runoff = 0.49 cfs @ 7.98 hrs, Volume= 0.167 af, Depth= 2.61"
 Routed to Reach 165R : 1

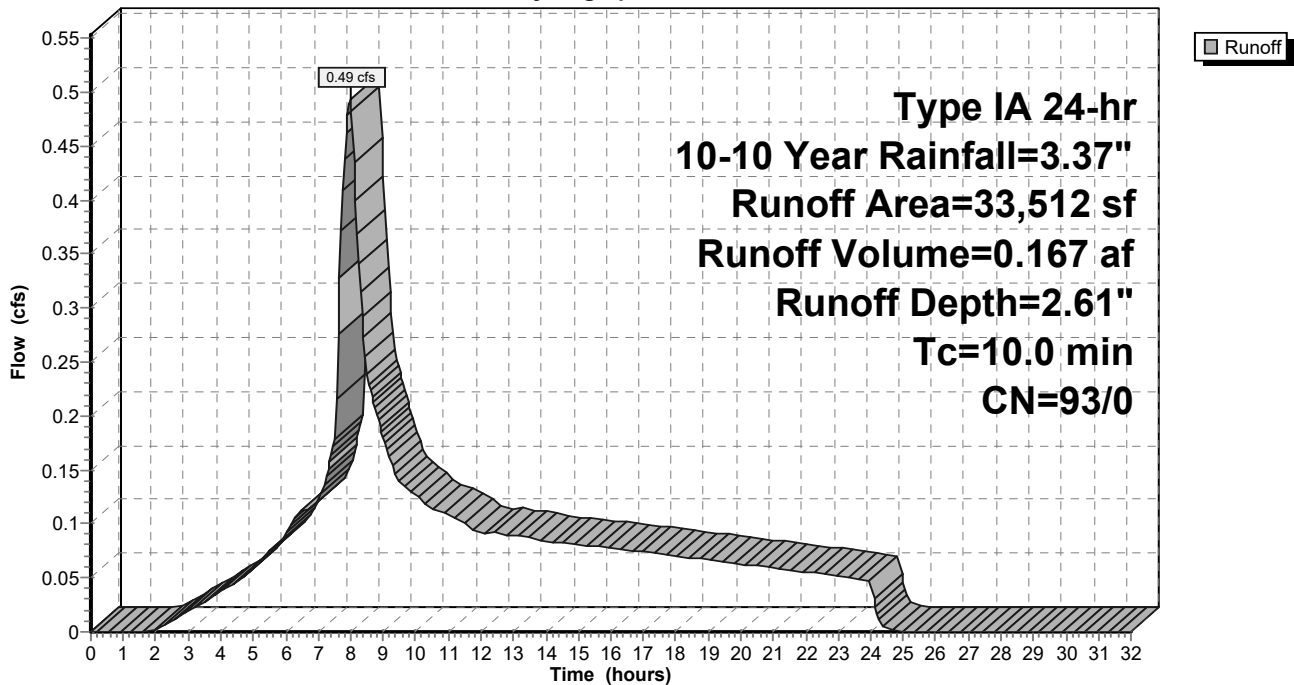
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 10-10 Year Rainfall=3.37"

Area (sf)	CN	Description
* 33,512	93	70% Lot Coverage Weighted
33,512	93	100.00% Pervious Area

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

Subcatchment 104S: Home Basin 5

Hydrograph



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Type IA 24-hr 10-10 Year Rainfall=3.37"

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Summary for Subcatchment 105S: Basin 6

Runoff = 0.15 cfs @ 7.98 hrs, Volume= 0.054 af, Depth= 3.14"
 Routed to Reach 138R : 1

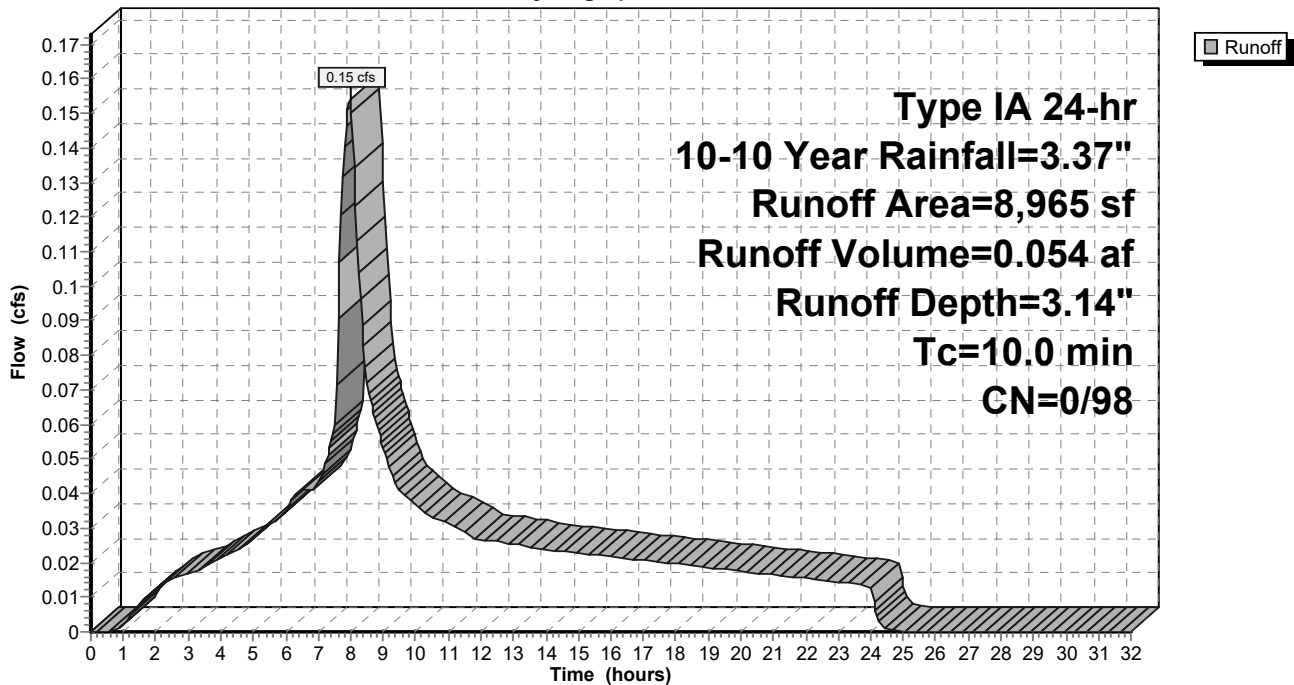
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 10-10 Year Rainfall=3.37"

Area (sf)	CN	Description
8,965	98	Paved roads w/curbs & sewers, HSG D
8,965	98	100.00% Impervious Area

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

Subcatchment 105S: Basin 6

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 10-10 Year Rainfall=3.37"

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Summary for Subcatchment 107S: Basin 8

Runoff = 0.14 cfs @ 7.98 hrs, Volume= 0.049 af, Depth= 3.14"
 Routed to Reach 158R : 1

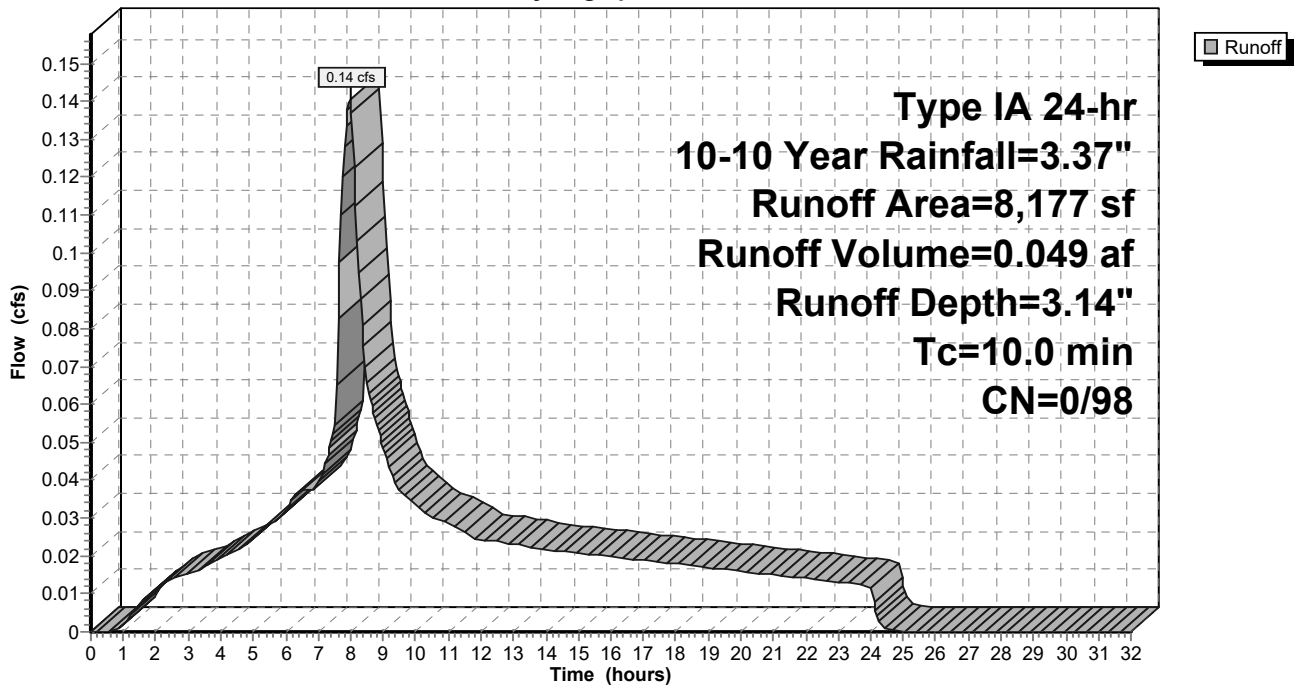
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 10-10 Year Rainfall=3.37"

Area (sf)	CN	Description
8,177	98	Paved roads w/curbs & sewers, HSG D
8,177	98	100.00% Impervious Area

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

Subcatchment 107S: Basin 8

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 10-10 Year Rainfall=3.37"

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Summary for Subcatchment 108S: Basin 9

Runoff = 0.23 cfs @ 7.98 hrs, Volume= 0.079 af, Depth= 3.14"
 Routed to Reach 135R : 1

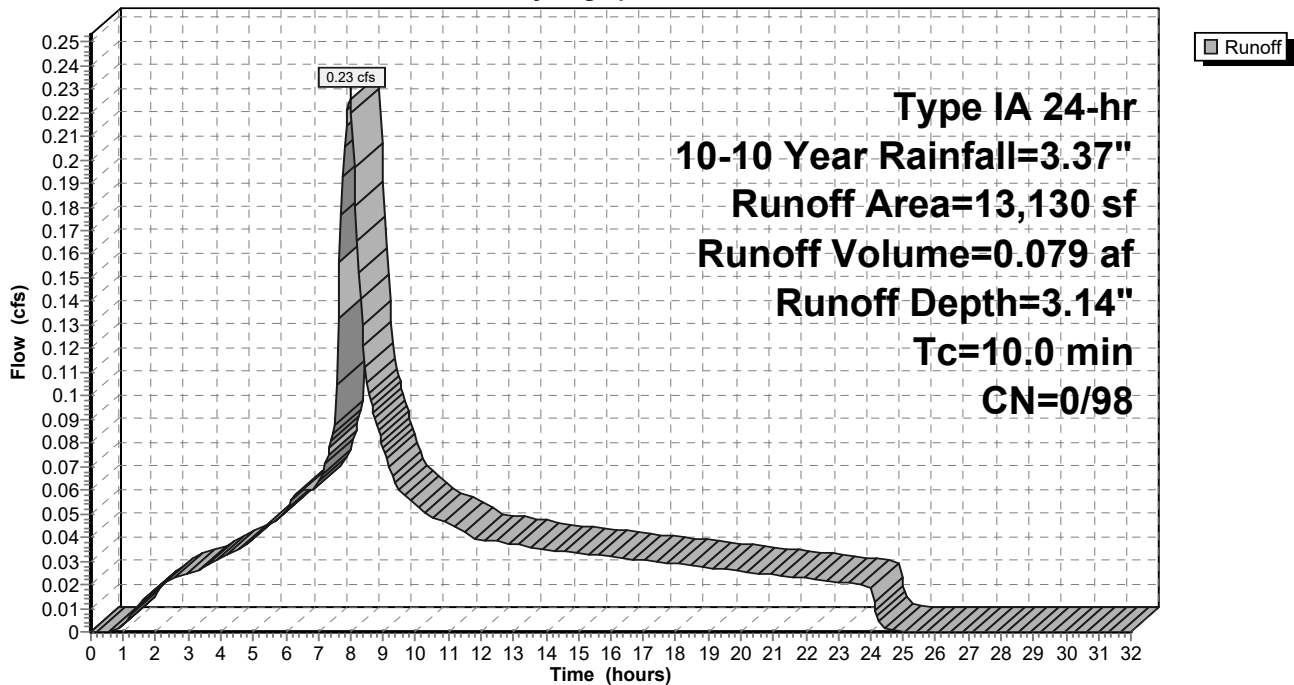
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 10-10 Year Rainfall=3.37"

Area (sf)	CN	Description
13,130	98	Paved roads w/curbs & sewers, HSG D
13,130	98	100.00% Impervious Area

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

Subcatchment 108S: Basin 9

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 10-10 Year Rainfall=3.37"

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Summary for Subcatchment 109S: Basin 10

Runoff = 0.39 cfs @ 7.98 hrs, Volume= 0.137 af, Depth= 3.14"
 Routed to Reach 137R : 1

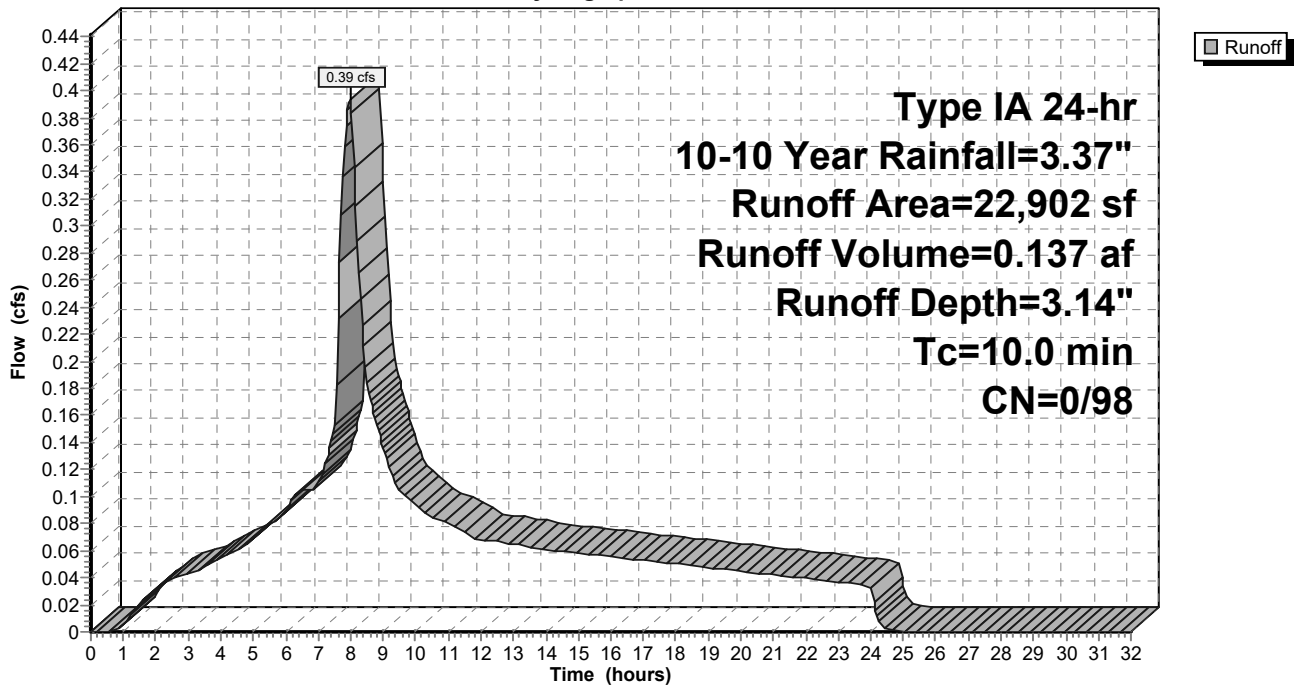
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 10-10 Year Rainfall=3.37"

Area (sf)	CN	Description
22,902	98	Paved roads w/curbs & sewers, HSG D
22,902	98	100.00% Impervious Area

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

Subcatchment 109S: Basin 10

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 10-10 Year Rainfall=3.37"

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Summary for Subcatchment 110S: Basin 11

Runoff = 0.44 cfs @ 7.98 hrs, Volume= 0.155 af, Depth= 3.14"
 Routed to Reach 145R : 1

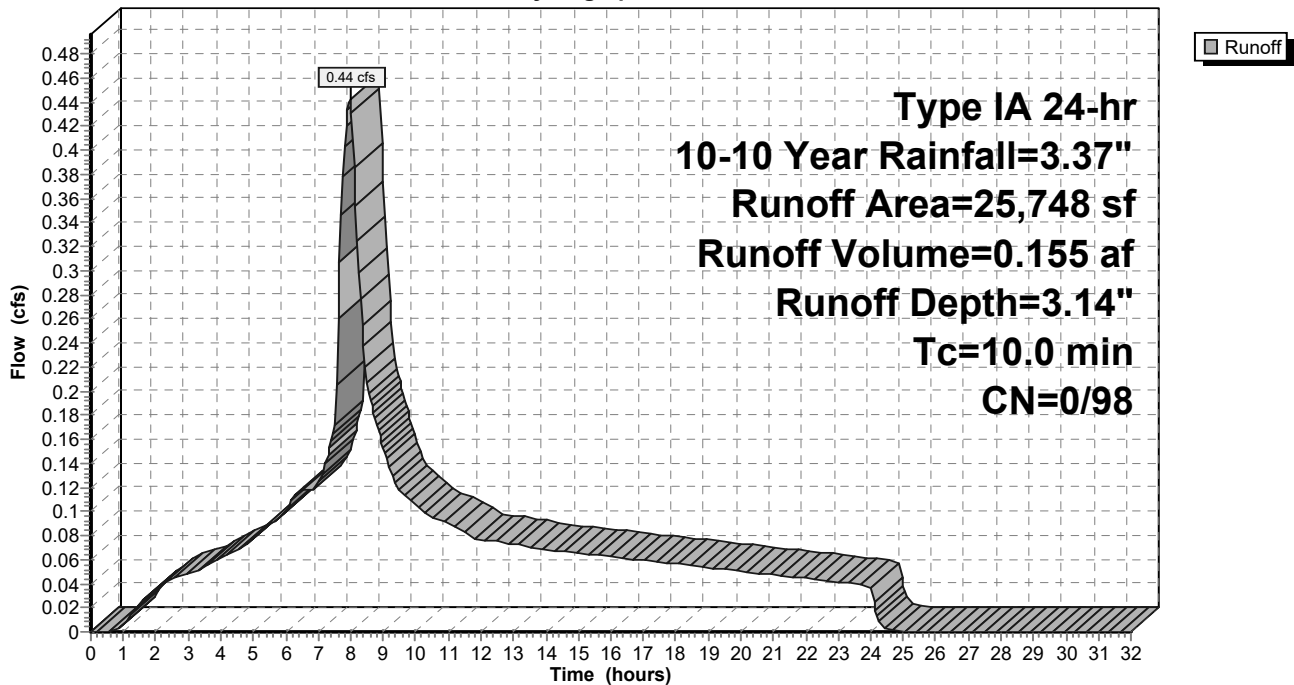
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 10-10 Year Rainfall=3.37"

Area (sf)	CN	Description
25,748	98	Paved roads w/curbs & sewers, HSG D
25,748	98	100.00% Impervious Area

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

Subcatchment 110S: Basin 11

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 10-10 Year Rainfall=3.37"

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Summary for Subcatchment 111S: Basin 12

Runoff = 0.10 cfs @ 7.98 hrs, Volume= 0.033 af, Depth= 3.14"
 Routed to Reach 143R : 1

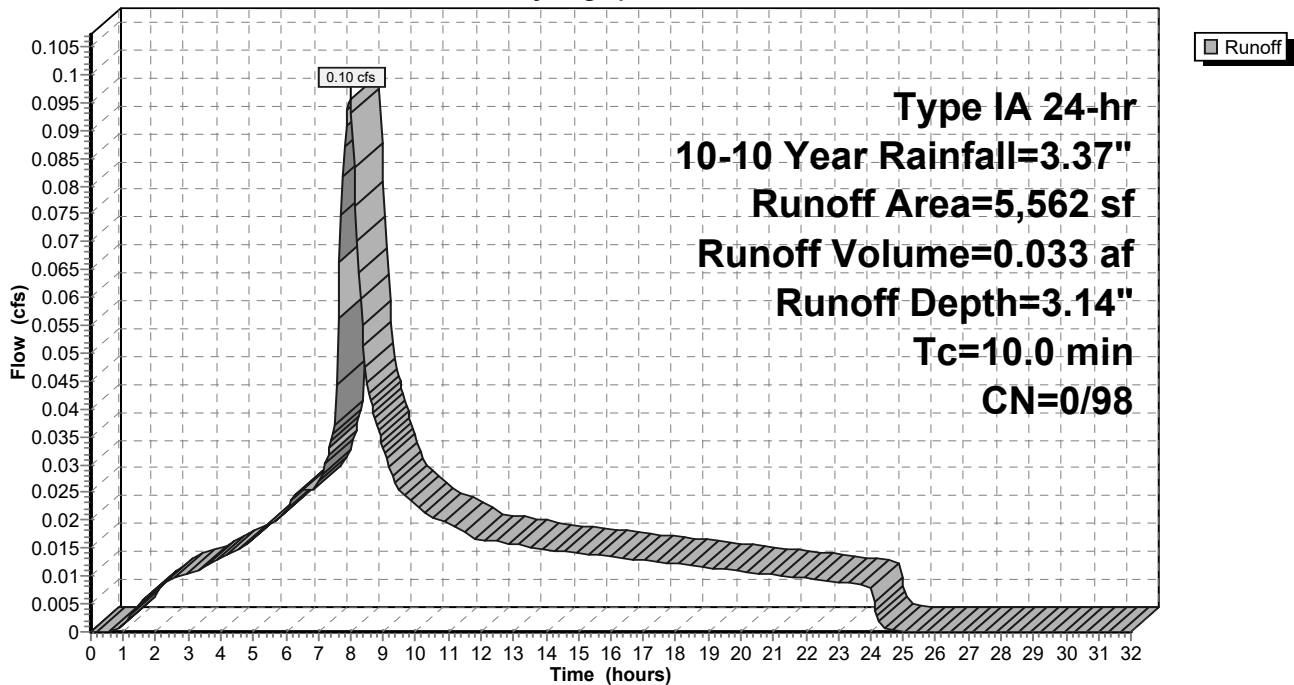
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 10-10 Year Rainfall=3.37"

Area (sf)	CN	Description
5,562	98	Paved roads w/curbs & sewers, HSG D
5,562	98	100.00% Impervious Area

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

Subcatchment 111S: Basin 12

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 10-10 Year Rainfall=3.37"

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Summary for Subcatchment 112S: Basin 13

Runoff = 0.08 cfs @ 7.98 hrs, Volume= 0.028 af, Depth= 3.14"
 Routed to Reach 158R : 1

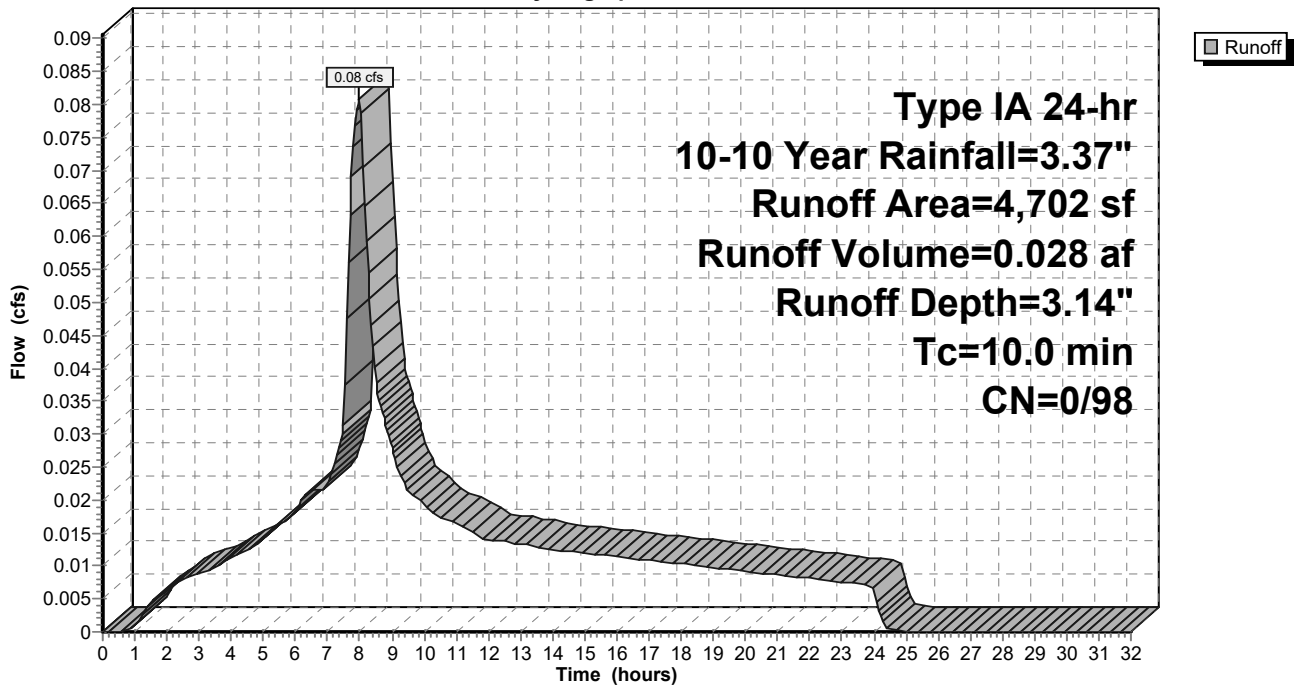
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 10-10 Year Rainfall=3.37"

Area (sf)	CN	Description
4,702	98	Paved roads w/curbs & sewers, HSG D
4,702	98	100.00% Impervious Area

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

Subcatchment 112S: Basin 13

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 10-10 Year Rainfall=3.37"

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Summary for Subcatchment 113S: Basin 14

Runoff = 0.13 cfs @ 7.98 hrs, Volume= 0.046 af, Depth= 3.14"
 Routed to Reach 159R : 1

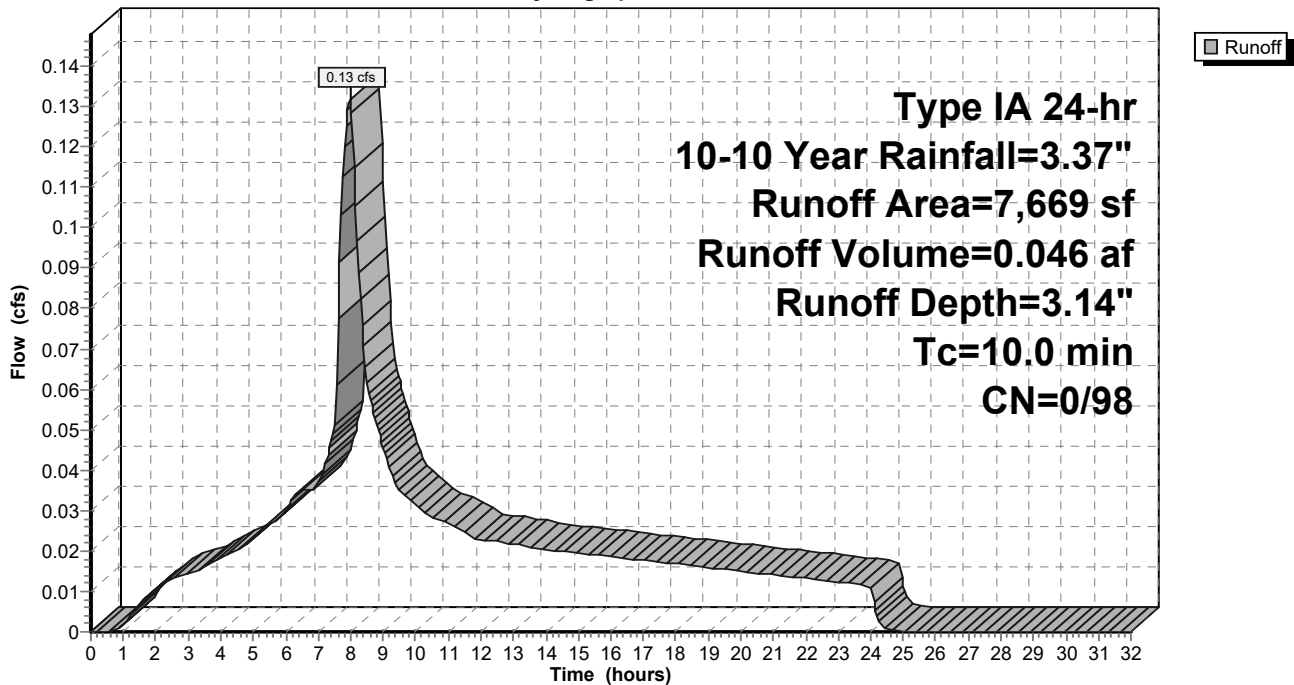
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 10-10 Year Rainfall=3.37"

Area (sf)	CN	Description
7,669	98	Paved roads w/curbs & sewers, HSG D
7,669	98	100.00% Impervious Area

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

Subcatchment 113S: Basin 14

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 10-10 Year Rainfall=3.37"

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Summary for Subcatchment 114S: Basin 15

Runoff = 0.12 cfs @ 7.98 hrs, Volume= 0.044 af, Depth= 3.14"
 Routed to Reach 143R : 1

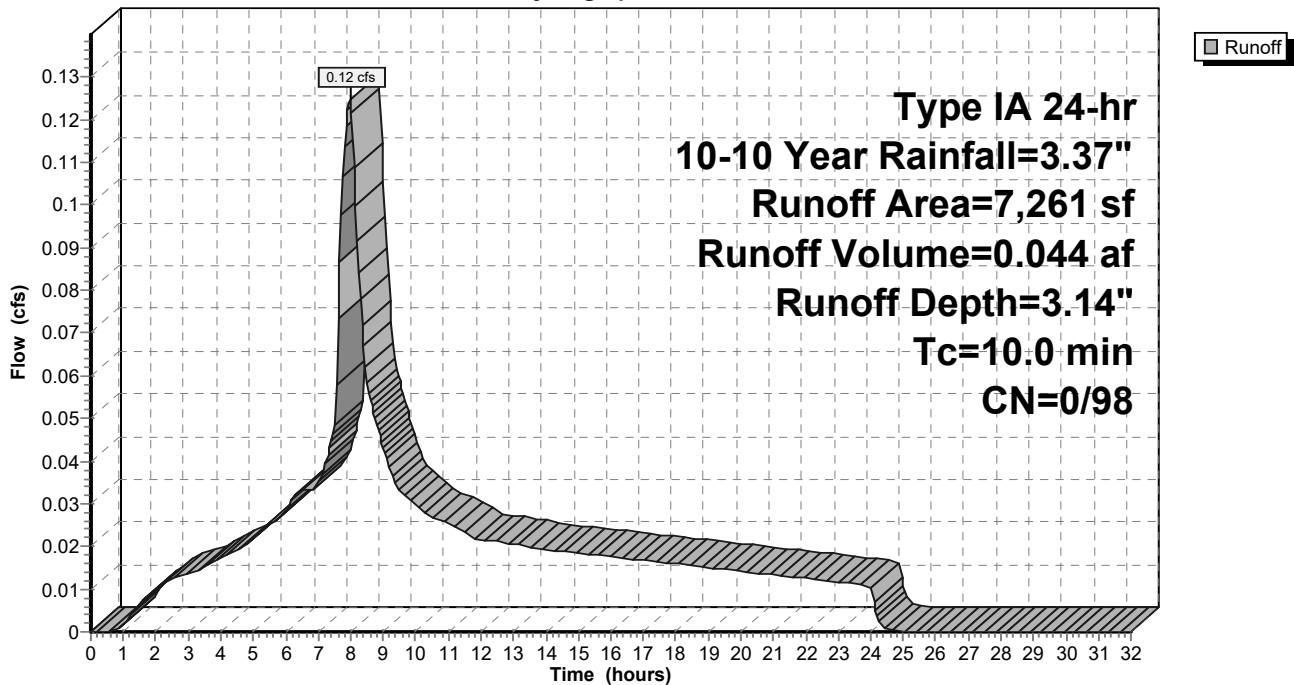
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 10-10 Year Rainfall=3.37"

Area (sf)	CN	Description
7,261	98	Paved roads w/curbs & sewers, HSG D
7,261	98	100.00% Impervious Area

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

Subcatchment 114S: Basin 15

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 10-10 Year Rainfall=3.37"

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Summary for Subcatchment 115S: Basin 16

Runoff = 0.12 cfs @ 7.98 hrs, Volume= 0.042 af, Depth= 3.14"
 Routed to Reach 149R : 1

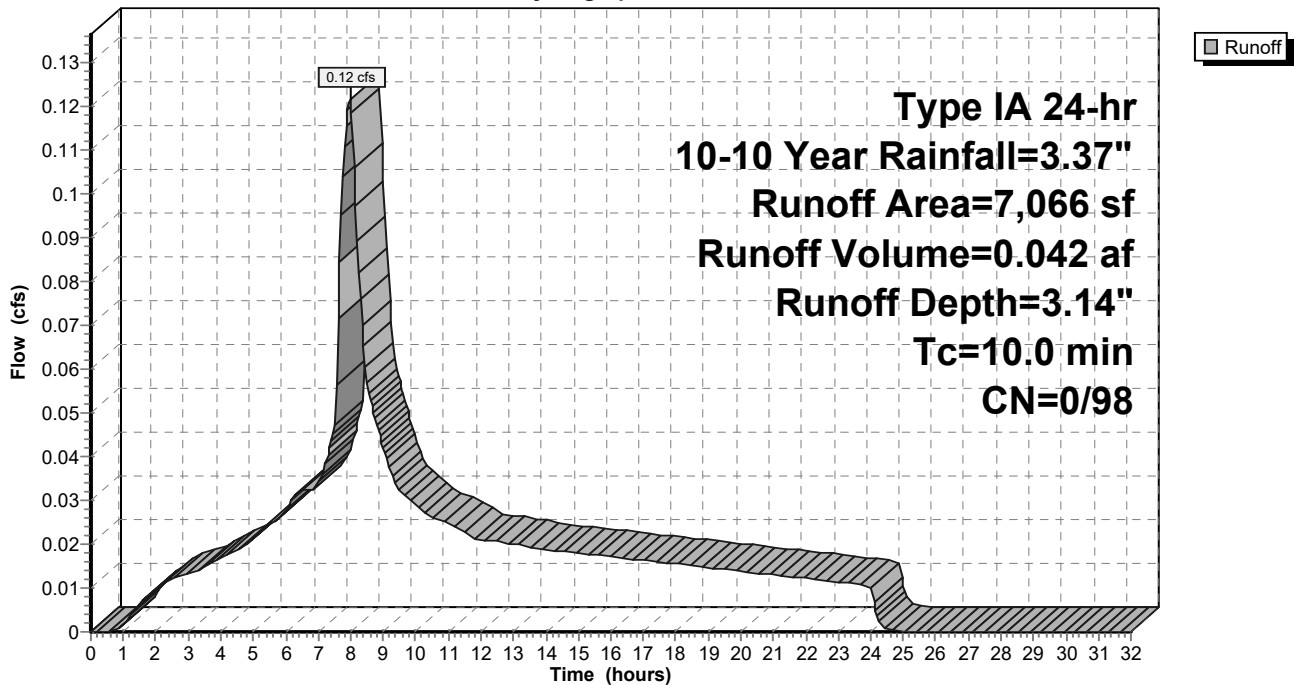
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 10-10 Year Rainfall=3.37"

Area (sf)	CN	Description
7,066	98	Paved roads w/curbs & sewers, HSG D
7,066	98	100.00% Impervious Area

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

Subcatchment 115S: Basin 16

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 10-10 Year Rainfall=3.37"

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Summary for Subcatchment 116S: Basin 17

Runoff = 0.45 cfs @ 7.98 hrs, Volume= 0.156 af, Depth= 3.14"
 Routed to Reach 151R : 1

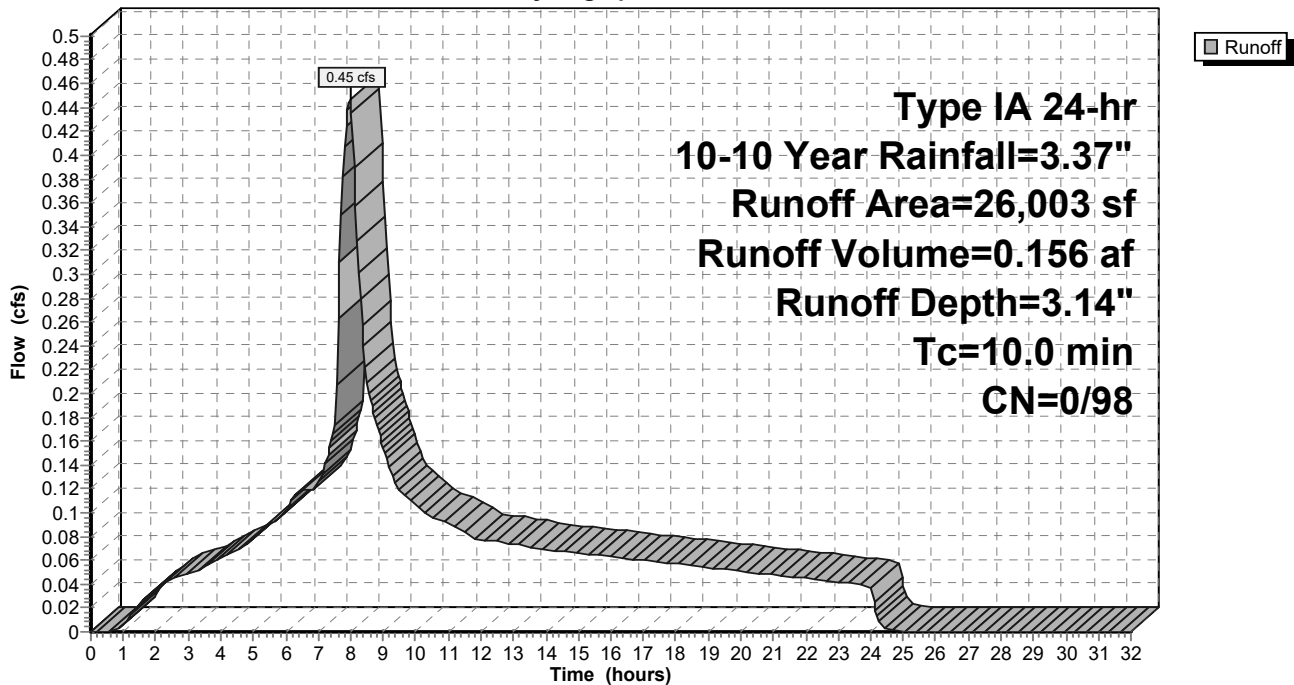
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 10-10 Year Rainfall=3.37"

Area (sf)	CN	Description
26,003	98	Paved roads w/curbs & sewers, HSG D
26,003	98	100.00% Impervious Area

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

Subcatchment 116S: Basin 17

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 10-10 Year Rainfall=3.37"

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Summary for Subcatchment 117S: Basin 18

Runoff = 0.41 cfs @ 7.98 hrs, Volume= 0.143 af, Depth= 3.14"
 Routed to Reach 160R : 1

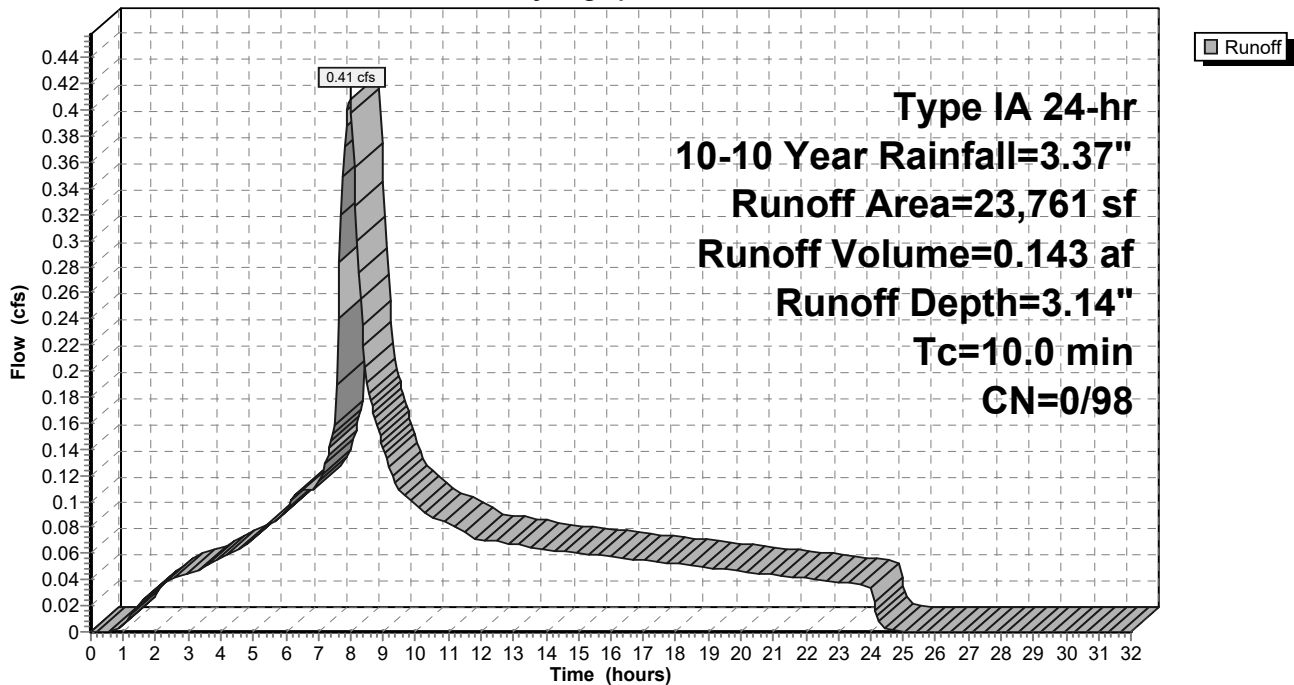
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 10-10 Year Rainfall=3.37"

Area (sf)	CN	Description
23,761	98	Paved roads w/curbs & sewers, HSG D
23,761	98	100.00% Impervious Area

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

Subcatchment 117S: Basin 18

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 10-10 Year Rainfall=3.37"

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Summary for Subcatchment 118S: Basin 19

Runoff = 0.13 cfs @ 7.98 hrs, Volume= 0.044 af, Depth= 3.14"
 Routed to Reach 155R : 1

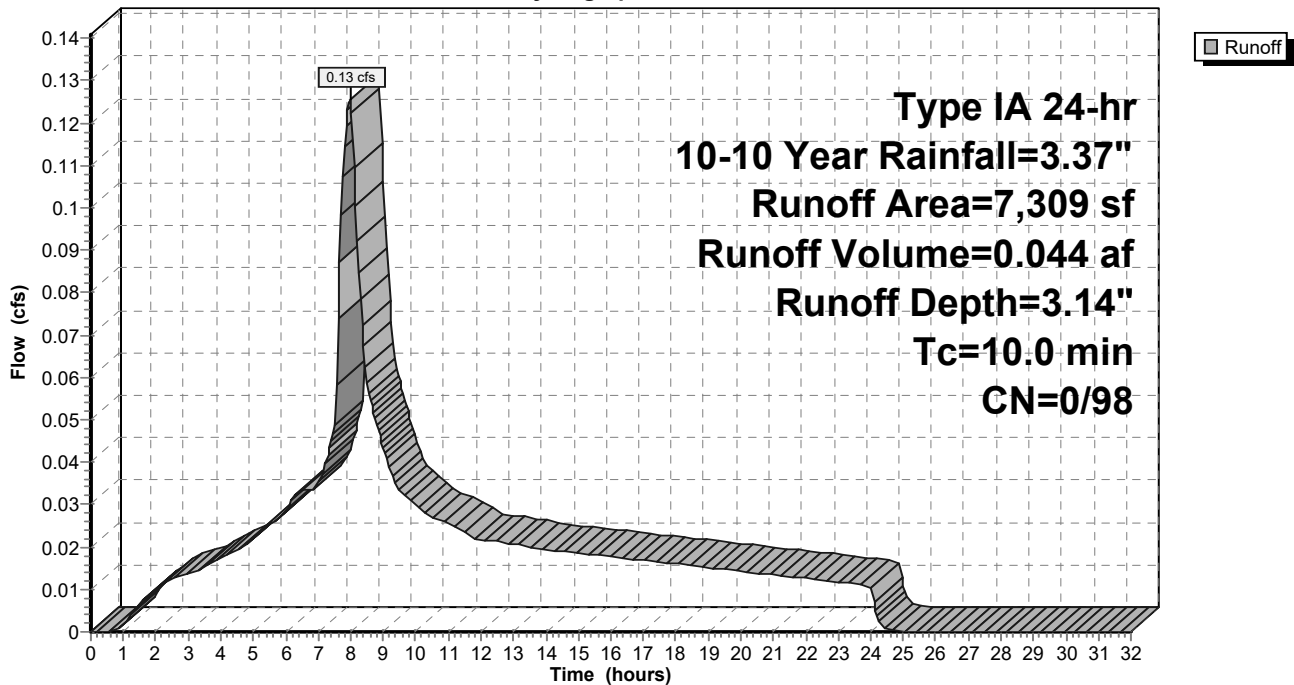
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 10-10 Year Rainfall=3.37"

Area (sf)	CN	Description
7,309	98	Paved roads w/curbs & sewers, HSG D
7,309	98	100.00% Impervious Area

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

Subcatchment 118S: Basin 19

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 10-10 Year Rainfall=3.37"

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Summary for Subcatchment 119S: Basin 20

Runoff = 0.13 cfs @ 7.98 hrs, Volume= 0.045 af, Depth= 3.14"
 Routed to Reach 149R : 1

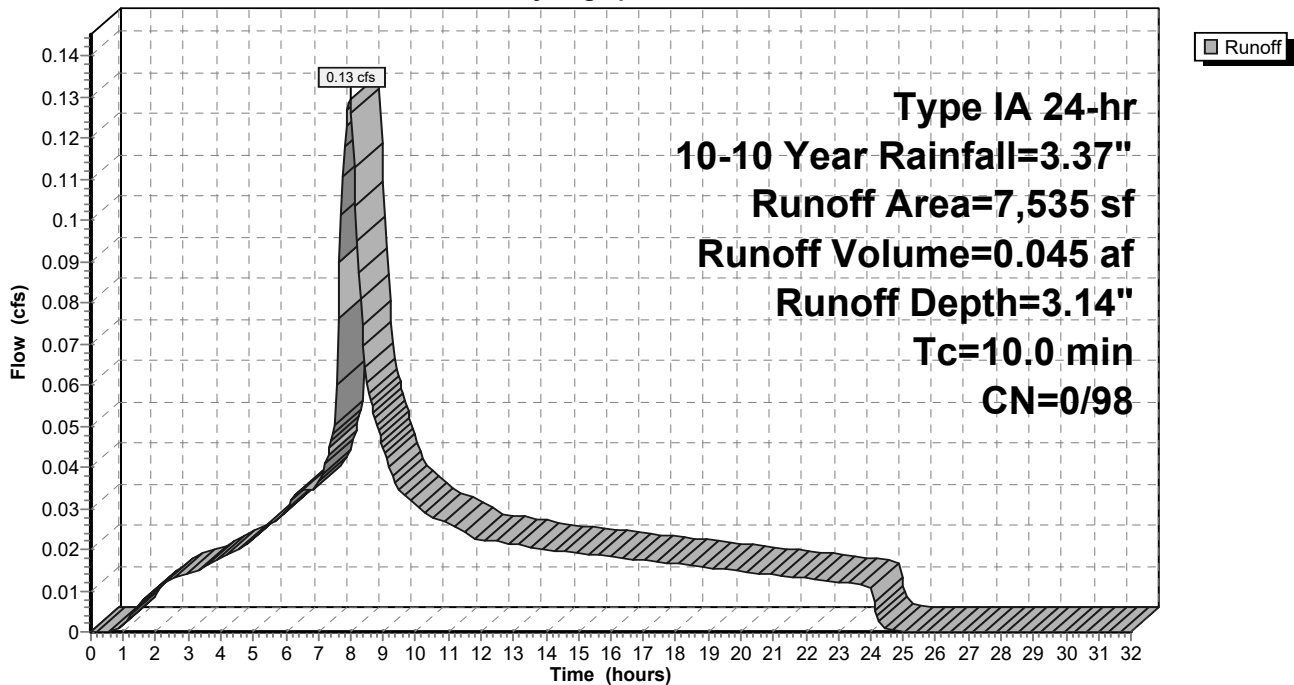
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 10-10 Year Rainfall=3.37"

Area (sf)	CN	Description
7,535	98	Paved roads w/curbs & sewers, HSG D
7,535	98	100.00% Impervious Area

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

Subcatchment 119S: Basin 20

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 10-10 Year Rainfall=3.37"

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Summary for Subcatchment 120S: Basin 21

Runoff = 0.12 cfs @ 7.98 hrs, Volume= 0.041 af, Depth= 3.14"
 Routed to Reach 148R : 1

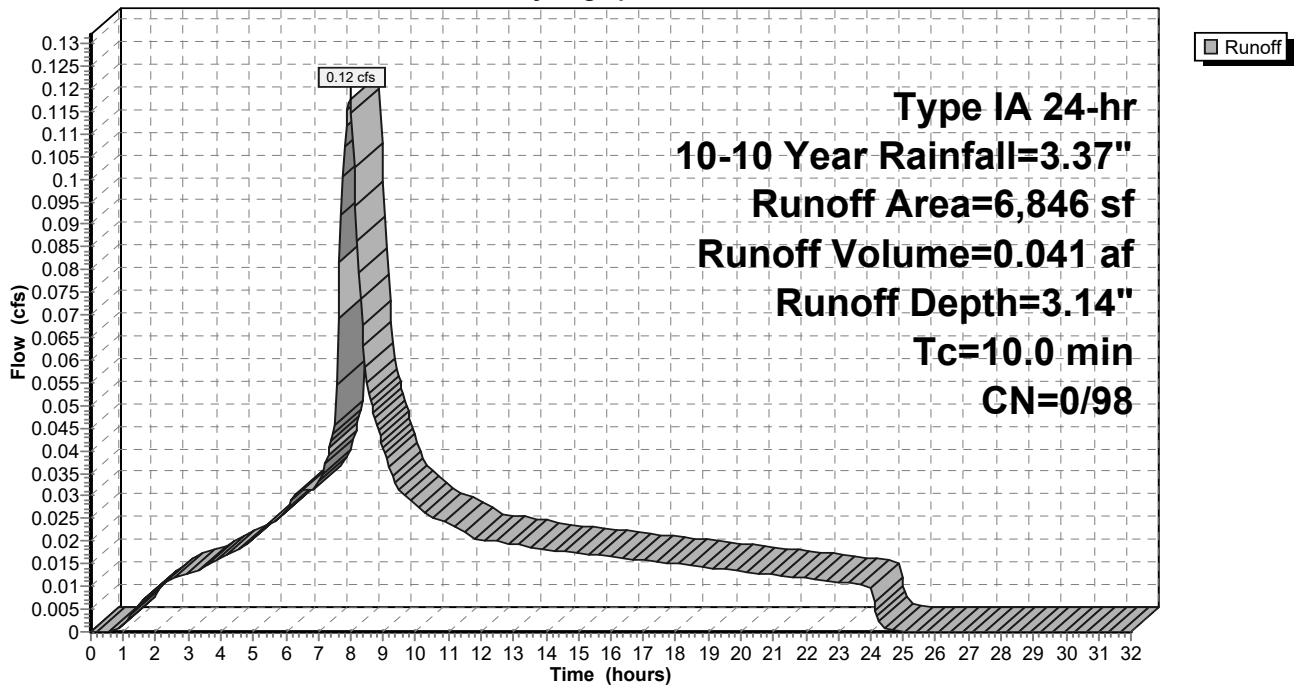
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 10-10 Year Rainfall=3.37"

Area (sf)	CN	Description
6,846	98	Paved roads w/curbs & sewers, HSG D
6,846	98	100.00% Impervious Area

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

Subcatchment 120S: Basin 21

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 10-10 Year Rainfall=3.37"

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Summary for Subcatchment 121S: Basin 22

Runoff = 0.09 cfs @ 7.98 hrs, Volume= 0.031 af, Depth= 3.14"
 Routed to Reach 154R : 1

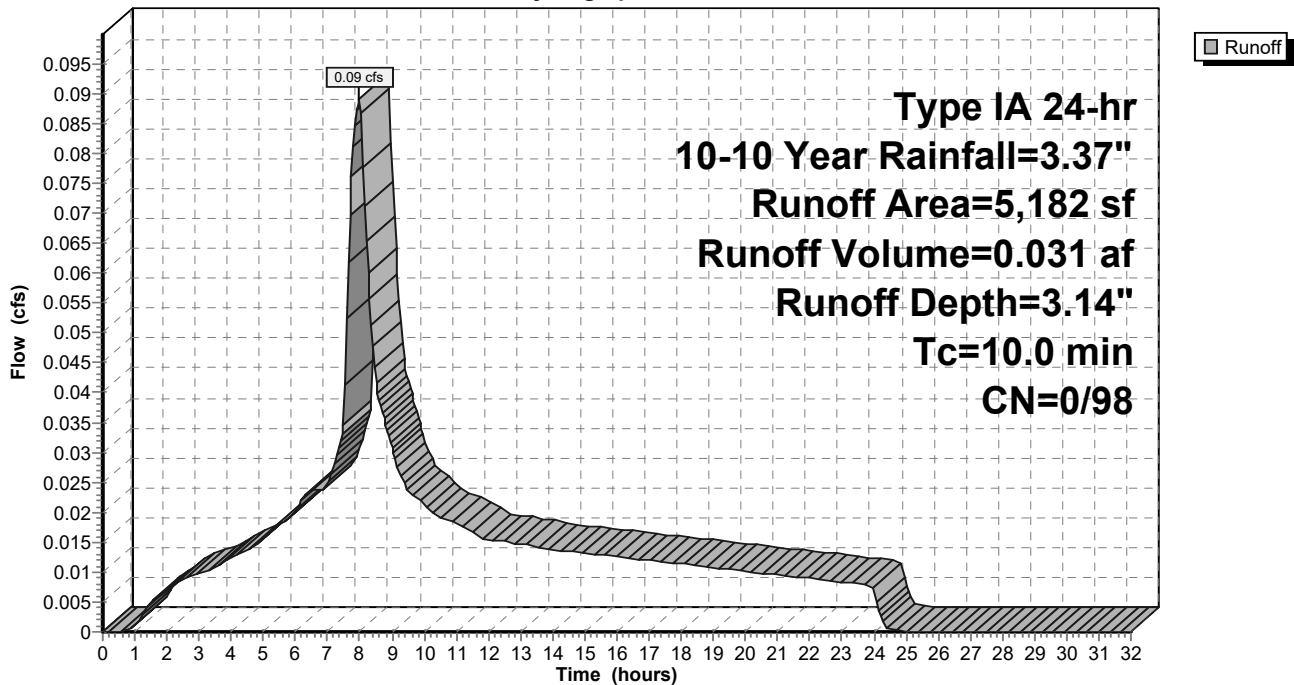
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 10-10 Year Rainfall=3.37"

Area (sf)	CN	Description
5,182	98	Paved roads w/curbs & sewers, HSG D
5,182	98	100.00% Impervious Area

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

Subcatchment 121S: Basin 22

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 10-10 Year Rainfall=3.37"

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Summary for Subcatchment 122S: Basin 23

Runoff = 0.09 cfs @ 7.98 hrs, Volume= 0.033 af, Depth= 3.14"
 Routed to Reach 155R : 1

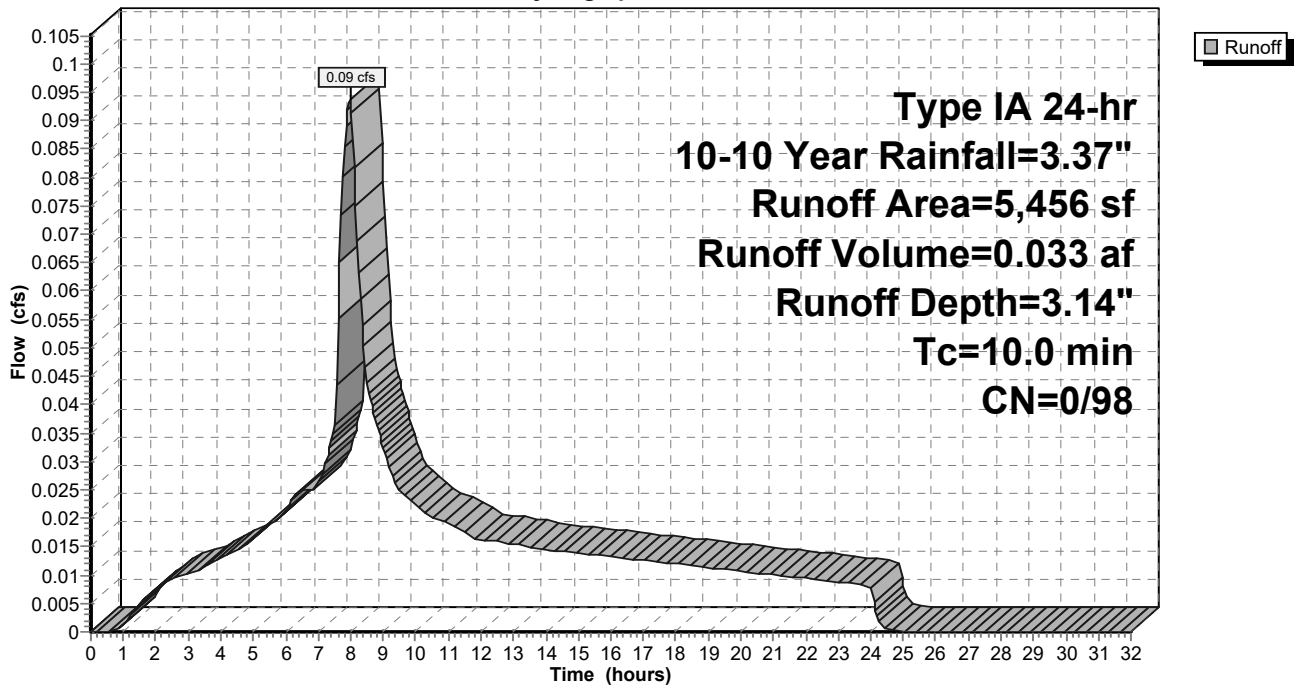
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 10-10 Year Rainfall=3.37"

Area (sf)	CN	Description
5,456	98	Paved roads w/curbs & sewers, HSG D
5,456	98	100.00% Impervious Area

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

Subcatchment 122S: Basin 23

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 10-10 Year Rainfall=3.37"

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Summary for Subcatchment 123S: Basin 24

Runoff = 0.08 cfs @ 7.98 hrs, Volume= 0.027 af, Depth= 3.14"
 Routed to Reach 162R : 1

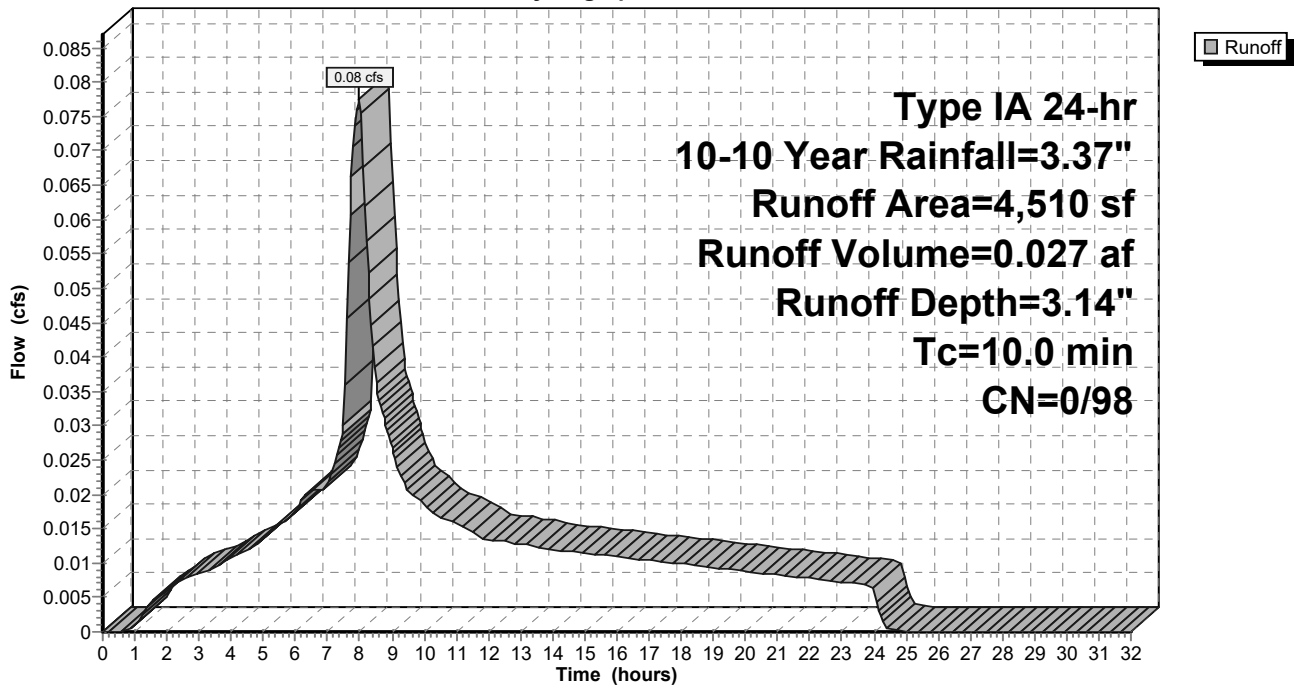
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 10-10 Year Rainfall=3.37"

Area (sf)	CN	Description
4,510	98	Paved roads w/curbs & sewers, HSG D
4,510	98	100.00% Impervious Area

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

Subcatchment 123S: Basin 24

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 10-10 Year Rainfall=3.37"

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Summary for Subcatchment 124S: Basin 25

Runoff = 0.23 cfs @ 7.98 hrs, Volume= 0.080 af, Depth= 3.14"
 Routed to Reach 163R : 1

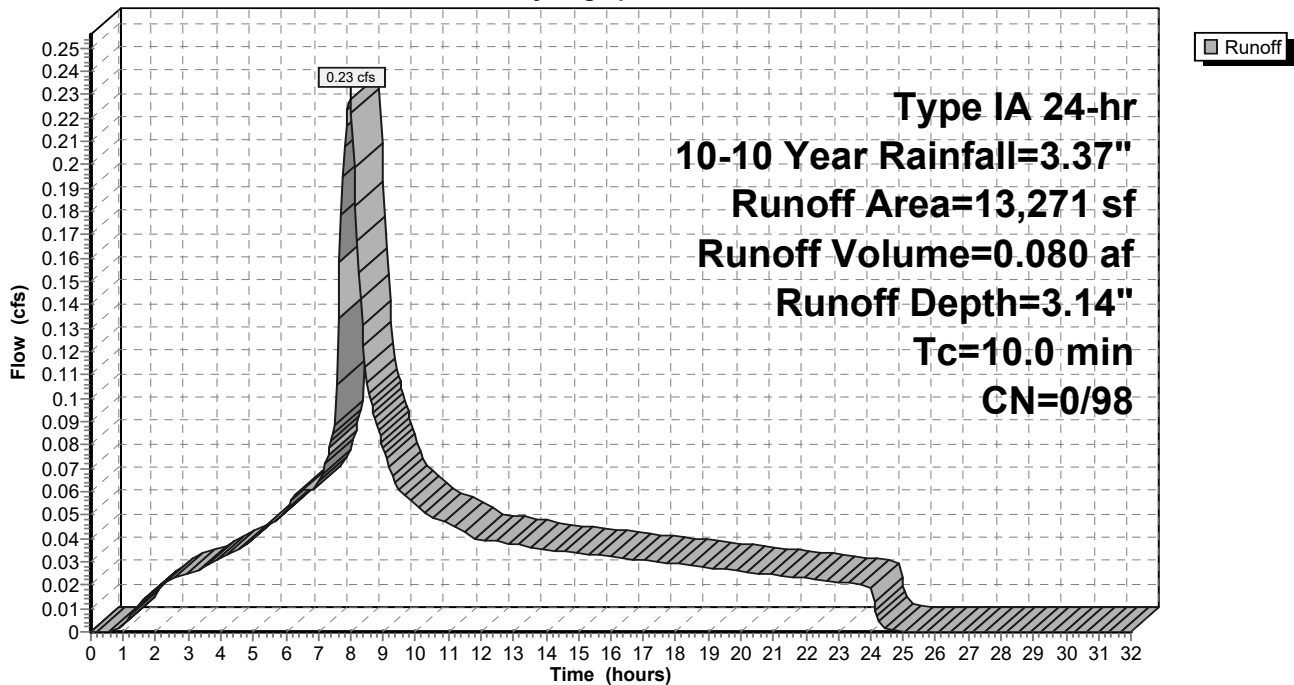
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 10-10 Year Rainfall=3.37"

Area (sf)	CN	Description
13,271	98	Paved roads w/curbs & sewers, HSG D
13,271	98	100.00% Impervious Area

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

Subcatchment 124S: Basin 25

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 10-10 Year Rainfall=3.37"

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Summary for Subcatchment 125S: Basin 26

Runoff = 0.32 cfs @ 7.98 hrs, Volume= 0.111 af, Depth= 3.14"
 Routed to Reach 165R : 1

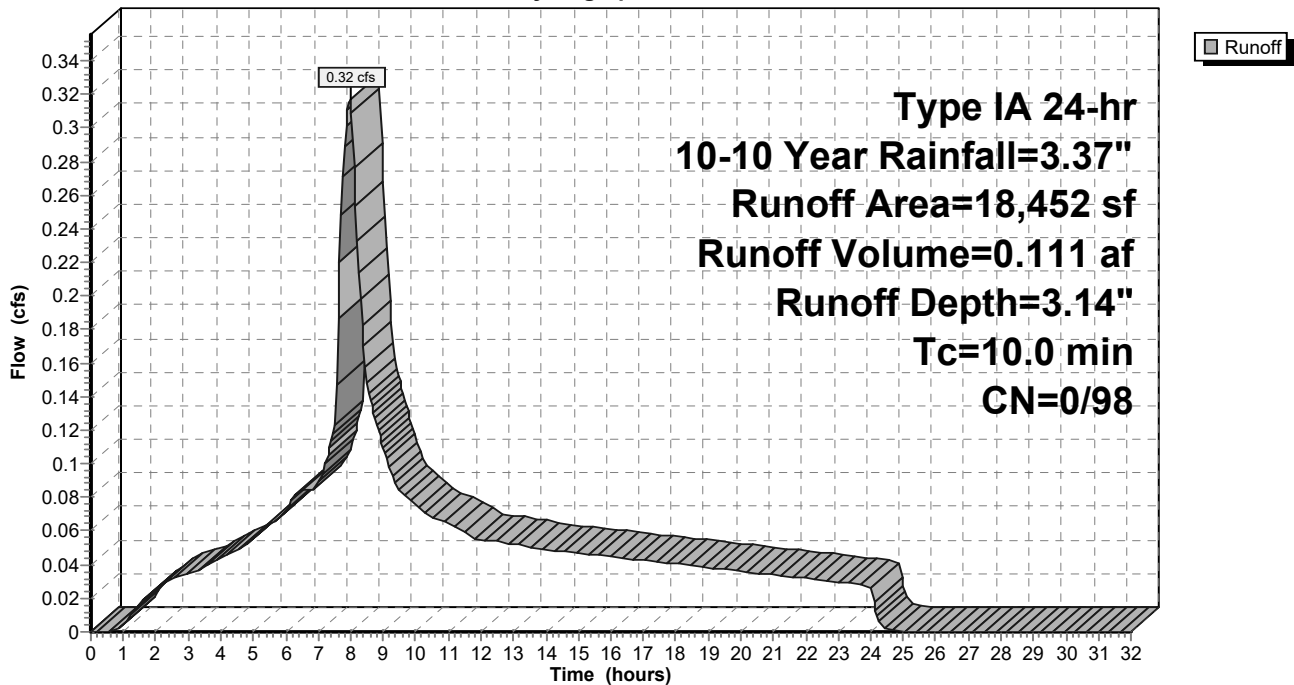
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 10-10 Year Rainfall=3.37"

Area (sf)	CN	Description
18,452	98	Paved roads w/curbs & sewers, HSG D
18,452	98	100.00% Impervious Area

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

Subcatchment 125S: Basin 26

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 10-10 Year Rainfall=3.37"

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Summary for Subcatchment 126S: Alley Basin 1

Runoff = 0.17 cfs @ 7.98 hrs, Volume= 0.059 af, Depth= 3.14"
 Routed to Reach 140R : 1

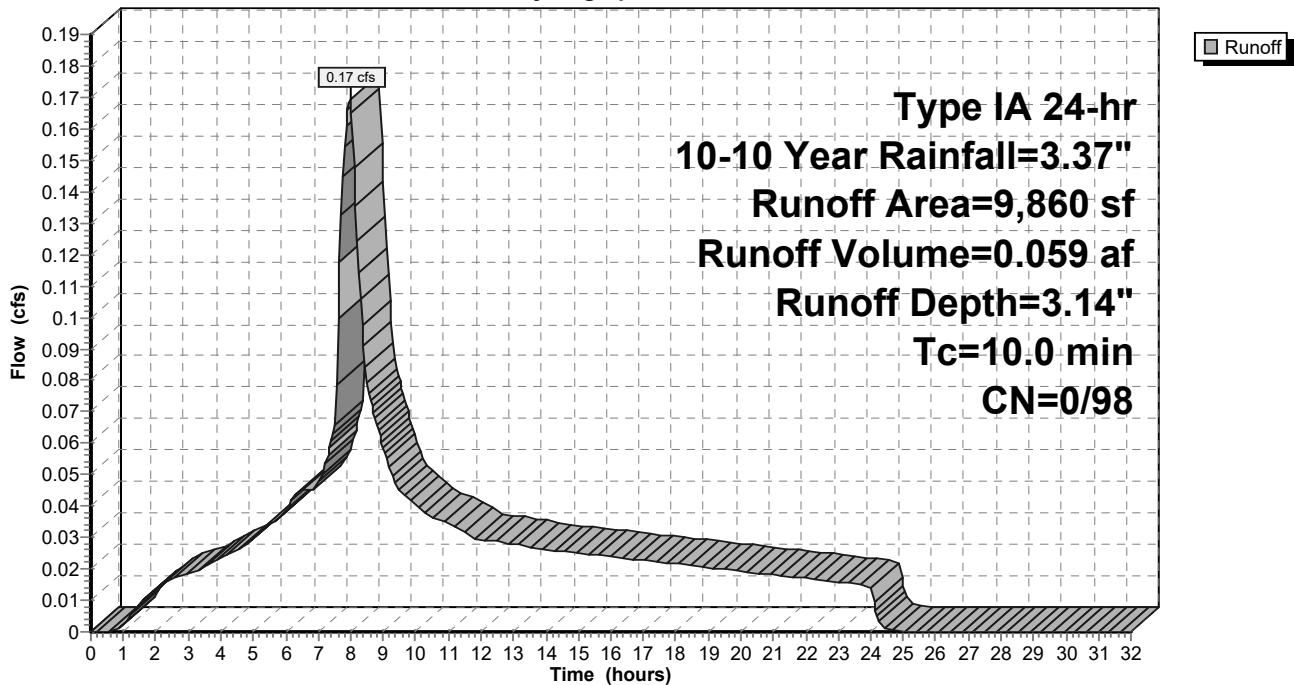
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 10-10 Year Rainfall=3.37"

Area (sf)	CN	Description
9,860	98	Paved roads w/curbs & sewers, HSG D
9,860	98	100.00% Impervious Area

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

Subcatchment 126S: Alley Basin 1

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 10-10 Year Rainfall=3.37"

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Summary for Subcatchment 127S: Alley Basin 2

Runoff = 0.13 cfs @ 7.98 hrs, Volume= 0.045 af, Depth= 3.14"
 Routed to Reach 141R : 1

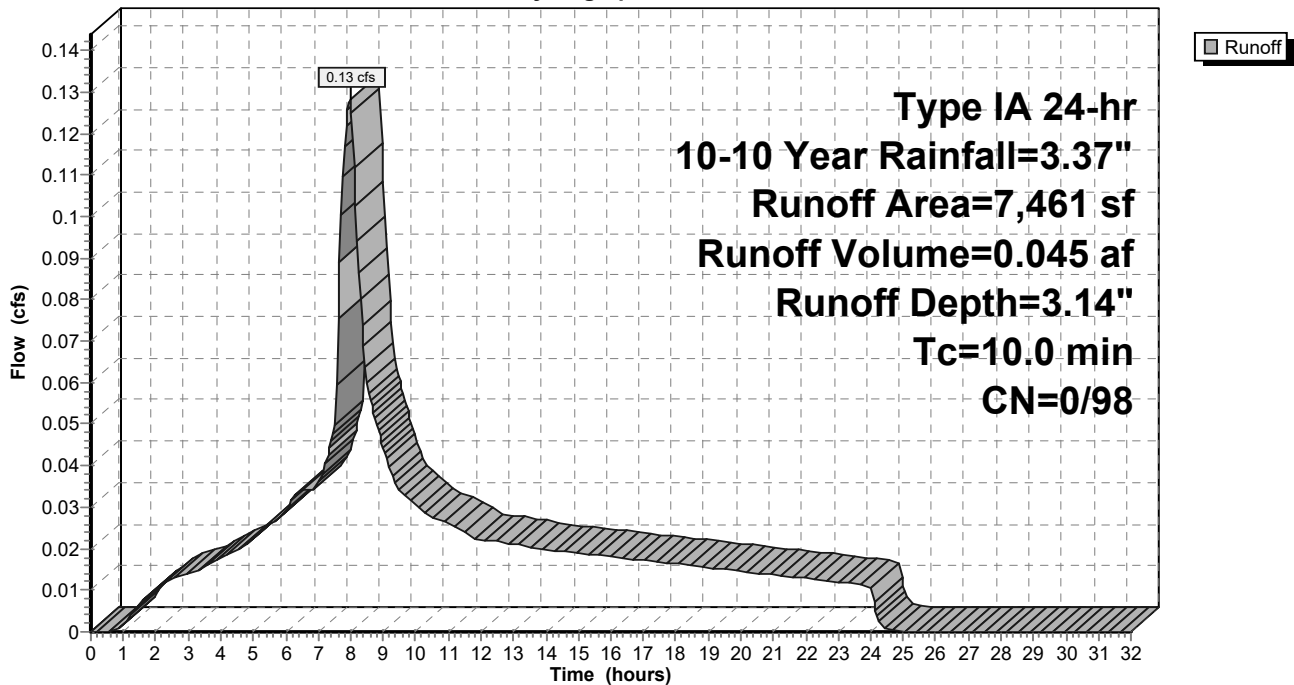
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 10-10 Year Rainfall=3.37"

Area (sf)	CN	Description
7,461	98	Paved roads w/curbs & sewers, HSG D
7,461	98	100.00% Impervious Area

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

Subcatchment 127S: Alley Basin 2

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 10-10 Year Rainfall=3.37"

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Summary for Subcatchment 128S: Alley Basin 3

Runoff = 0.12 cfs @ 7.98 hrs, Volume= 0.041 af, Depth= 3.14"
 Routed to Reach 147R : 1

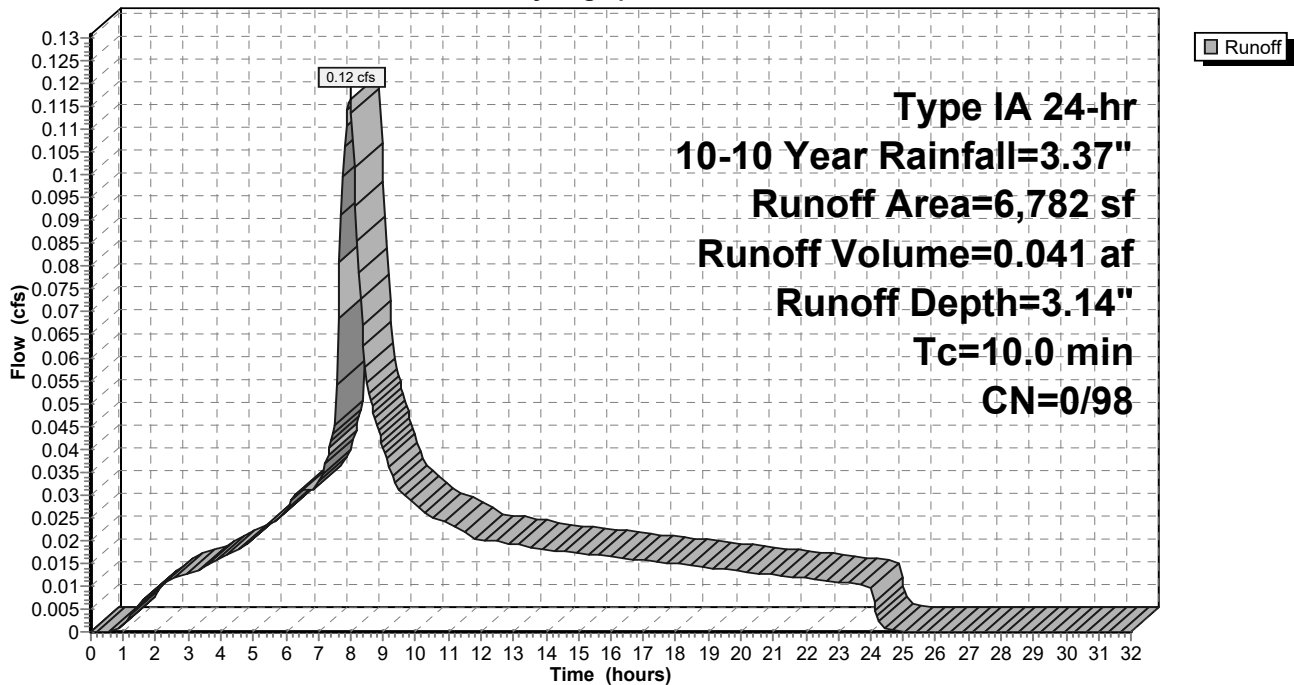
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 10-10 Year Rainfall=3.37"

Area (sf)	CN	Description
6,782	98	Paved roads w/curbs & sewers, HSG D
6,782	98	100.00% Impervious Area

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

Subcatchment 128S: Alley Basin 3

Hydrograph



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Type IA 24-hr 10-10 Year Rainfall=3.37"

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Summary for Subcatchment 129S: Alley Basin 4

Runoff = 0.12 cfs @ 7.98 hrs, Volume= 0.042 af, Depth= 3.14"
 Routed to Reach 153R : 1

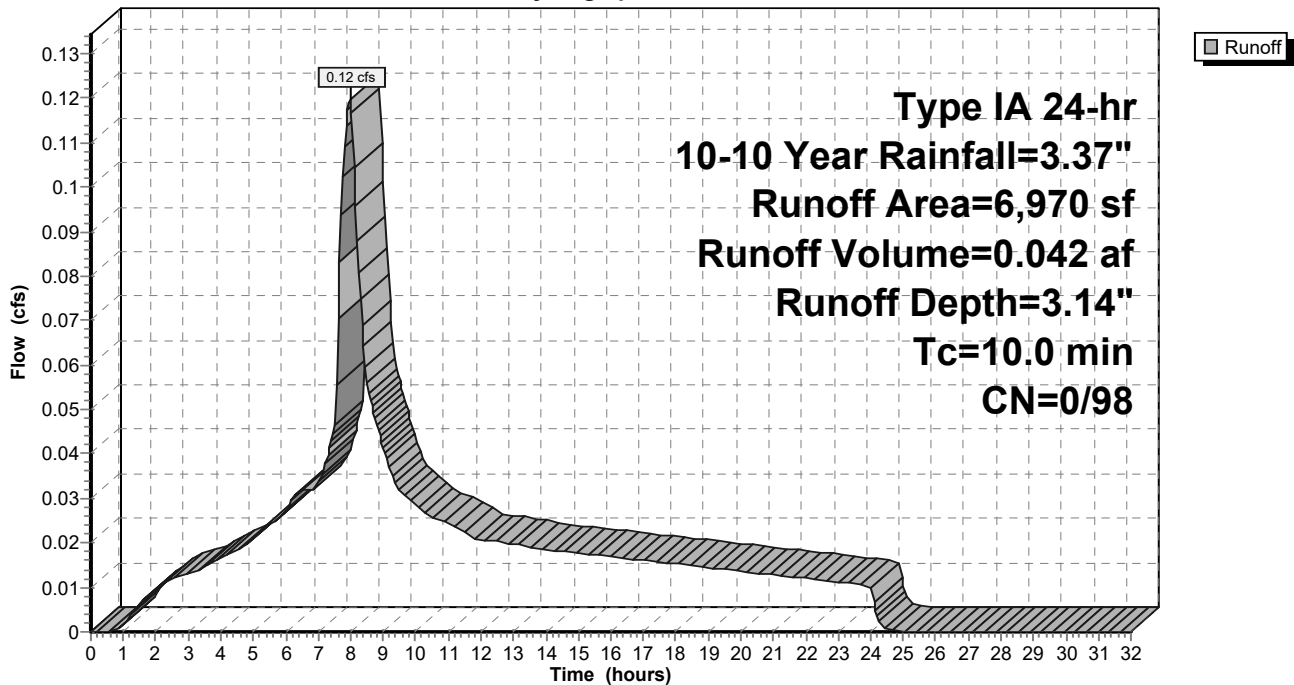
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 10-10 Year Rainfall=3.37"

Area (sf)	CN	Description
6,970	98	Paved roads w/curbs & sewers, HSG D
6,970	98	100.00% Impervious Area

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

Subcatchment 129S: Alley Basin 4

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 10-10 Year Rainfall=3.37"

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Summary for Subcatchment 168S: Future Lots

Runoff = 1.01 cfs @ 7.98 hrs, Volume= 0.345 af, Depth= 2.81"
 Routed to Reach 166R : Basin Future

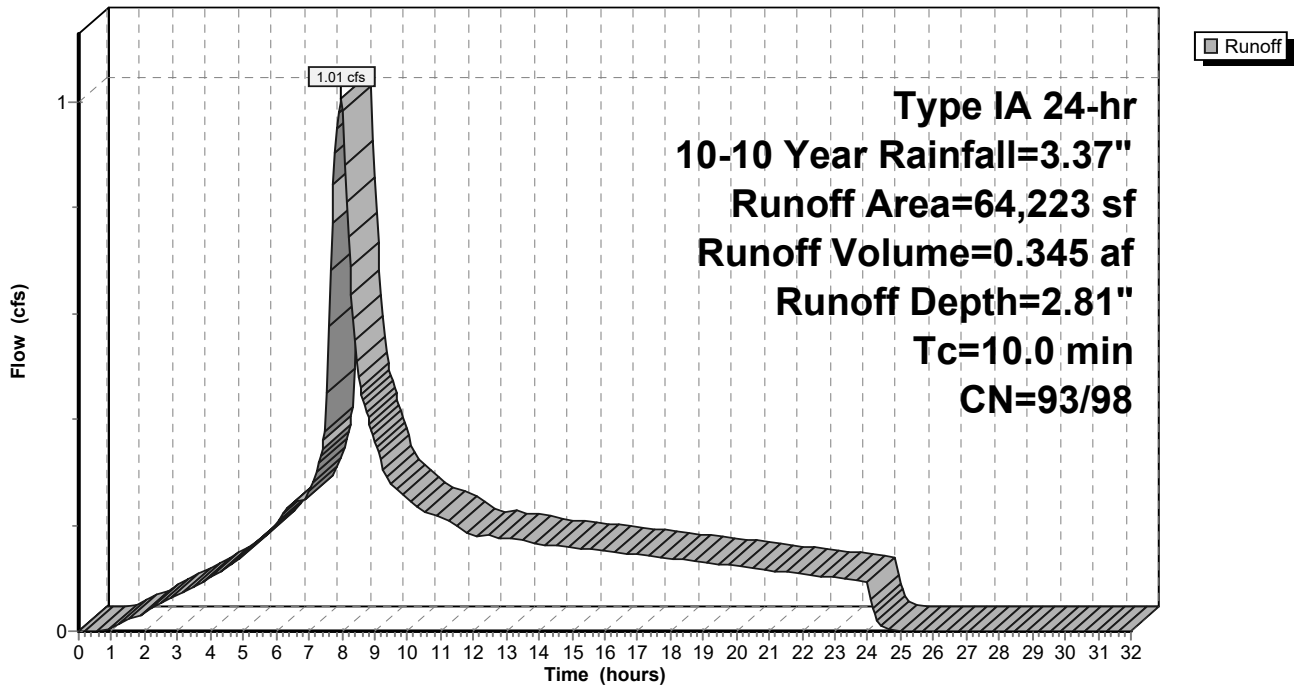
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 10-10 Year Rainfall=3.37"

	Area (sf)	CN	Description
*	39,915	93	70% Lot Coverage Weighted
	24,308	98	Paved roads w/curbs & sewers, HSG D
	64,223	95	Weighted Average
	39,915	93	62.15% Pervious Area
	24,308	98	37.85% Impervious Area

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

Subcatchment 168S: Future Lots

Hydrograph



9-6-23 HydroCAD DOM

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Type IA 24-hr 10-10 Year Rainfall=3.37"

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Summary for Subcatchment 169S: Swale 2

[46] Hint: Tc=0 (Instant runoff peak depends on dt)

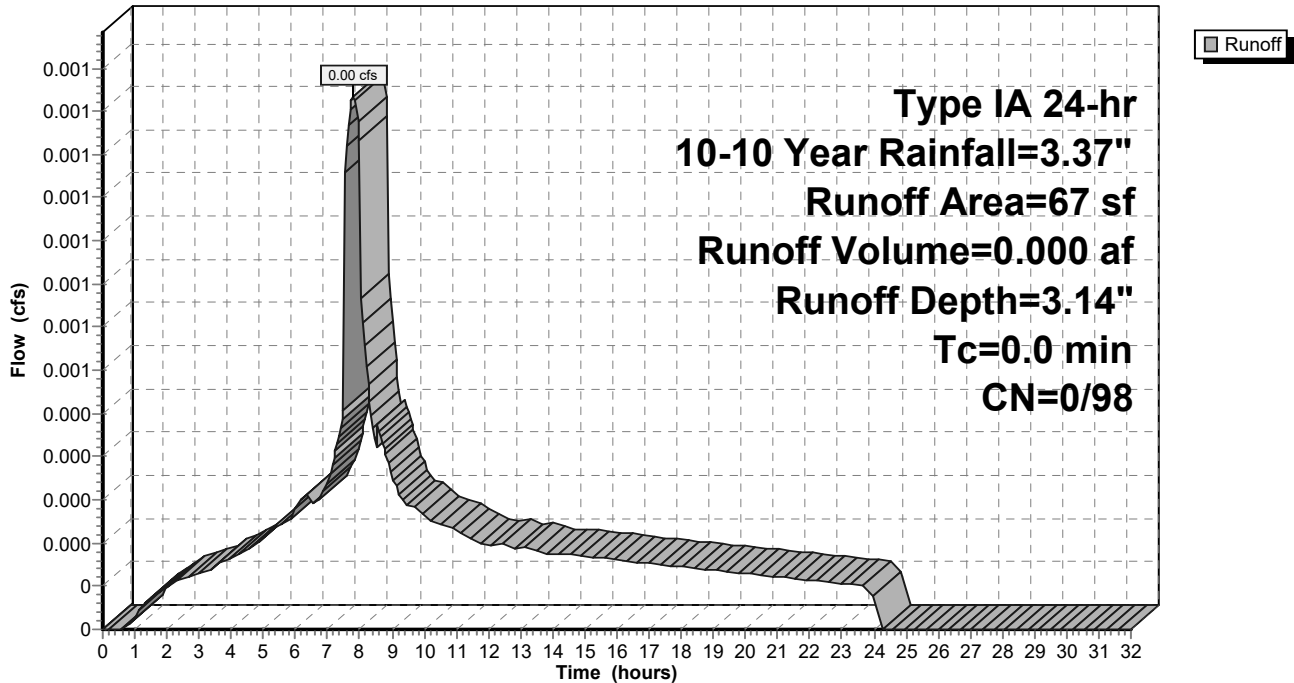
Runoff = 0.00 cfs @ 7.80 hrs, Volume= 0.000 af, Depth= 3.14"
 Routed to Pond 54P : Stormwater Swale 2

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 10-10 Year Rainfall=3.37"

Area (sf)	CN	Description
67	98	Water Surface, HSG D
67	98	100.00% Impervious Area

Subcatchment 169S: Swale 2

Hydrograph



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Type IA 24-hr 10-10 Year Rainfall=3.37"

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Summary for Subcatchment 170S: Swale 1

[46] Hint: Tc=0 (Instant runoff peak depends on dt)

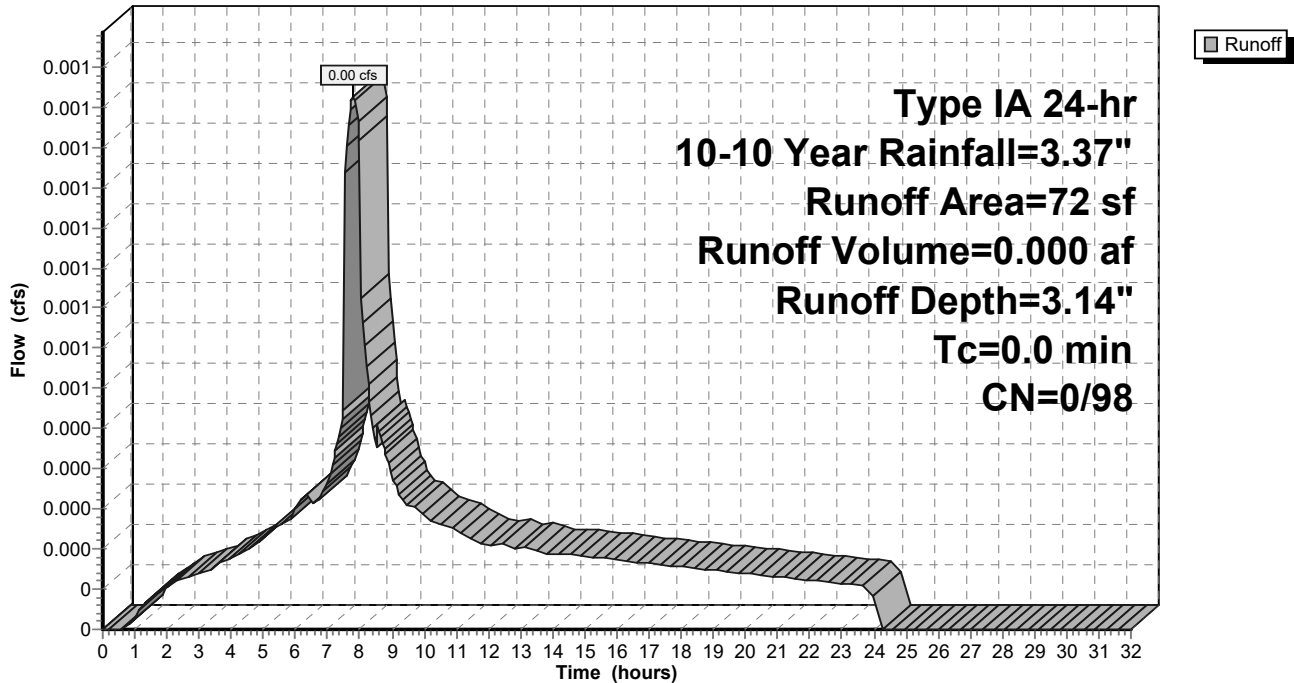
Runoff = 0.00 cfs @ 7.80 hrs, Volume= 0.000 af, Depth= 3.14"
 Routed to Pond 60P : Stormwater Swale 1

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 10-10 Year Rainfall=3.37"

Area (sf)	CN	Description
72	98	Water Surface, HSG D
72	98	100.00% Impervious Area

Subcatchment 170S: Swale 1

Hydrograph



9-6-23 HydroCAD DOM

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Type IA 24-hr 10-10 Year Rainfall=3.37"

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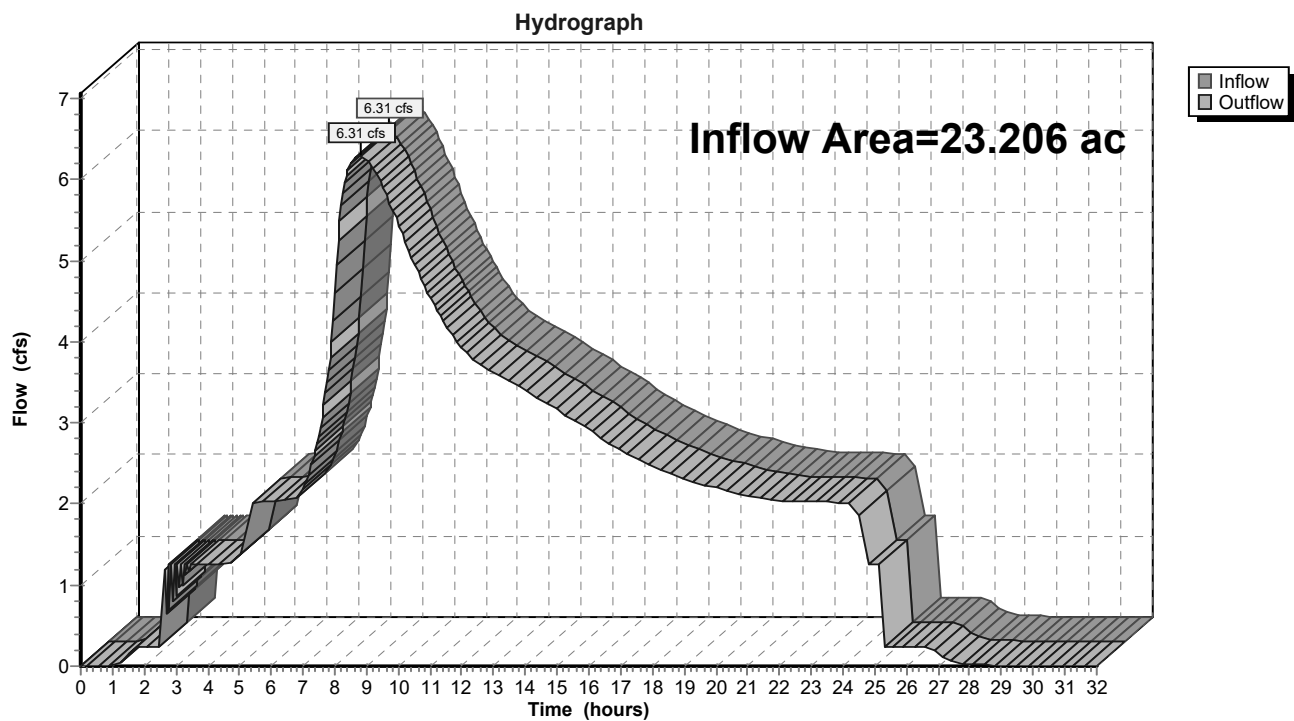
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Summary for Reach 39R: Post-Construction Peak Flow

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

Inflow Area = 23.206 ac, 36.84% Impervious, Inflow Depth > 2.80" for 10-10 Year event
 Inflow = 6.31 cfs @ 8.79 hrs, Volume= 5.421 af
 Outflow = 6.31 cfs @ 8.79 hrs, Volume= 5.421 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 39R: Post-Construction Peak Flow

9-6-23 HydroCAD DOM

Type IA 24-hr 10-10 Year Rainfall=3.37"

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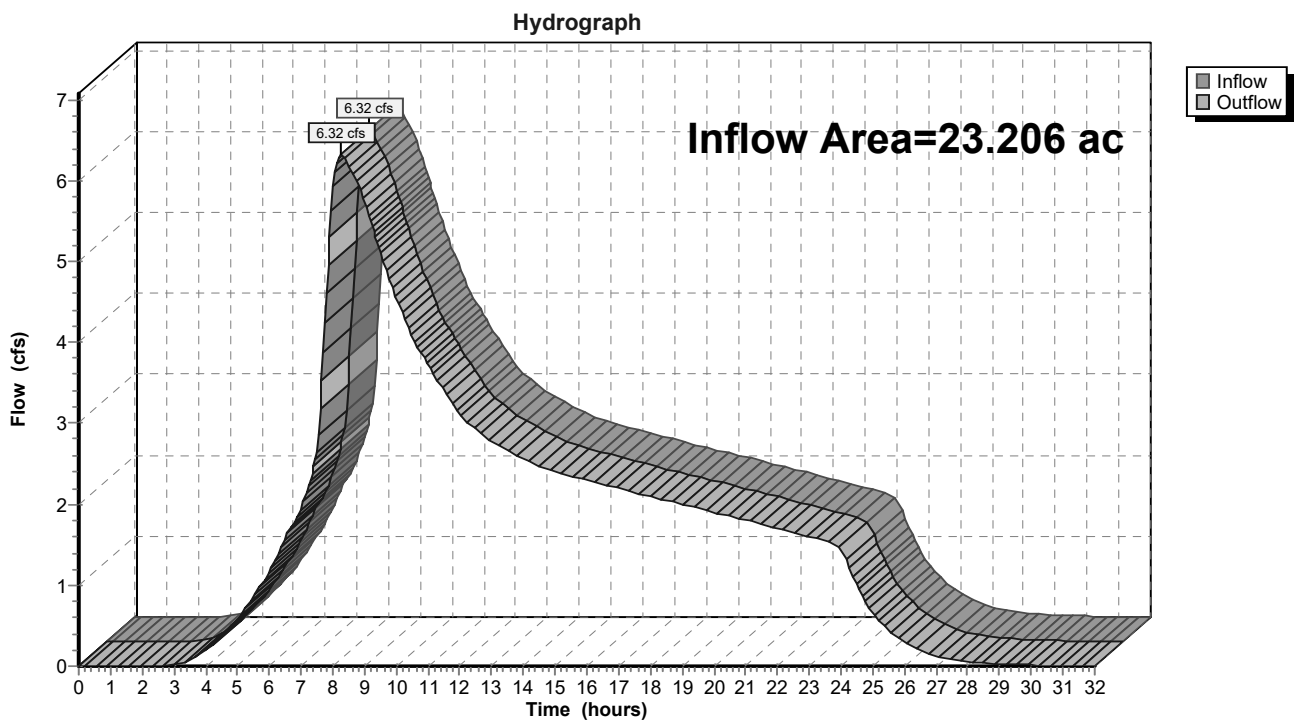
Summary for Reach 42R: Pre-Construction Peak Flow

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

Inflow Area = 23.206 ac, 0.00% Impervious, Inflow Depth > 2.24" for 10-10 Year event
 Inflow = 6.32 cfs @ 8.27 hrs, Volume= 4.326 af
 Outflow = 6.32 cfs @ 8.27 hrs, Volume= 4.326 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 42R: Pre-Construction Peak Flow



9-6-23 HydroCAD DOM

Type IA 24-hr 10-10 Year Rainfall=3.37"

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Summary for Reach 58R: 1

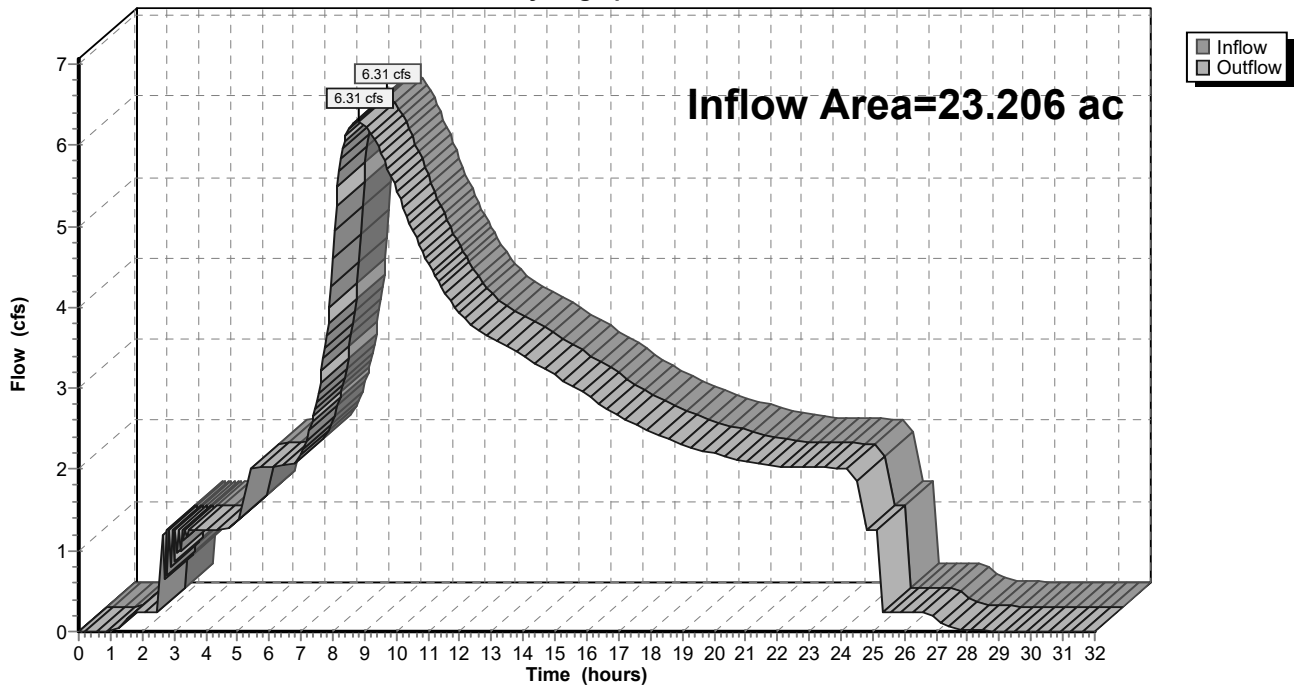
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 23.206 ac, 36.84% Impervious, Inflow Depth > 2.80" for 10-10 Year event
 Inflow = 6.31 cfs @ 8.79 hrs, Volume= 5.421 af
 Outflow = 6.31 cfs @ 8.79 hrs, Volume= 5.421 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 39R : Post-Construction Peak Flow

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 58R: 1

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 10-10 Year Rainfall=3.37"

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Summary for Reach 85R: 1

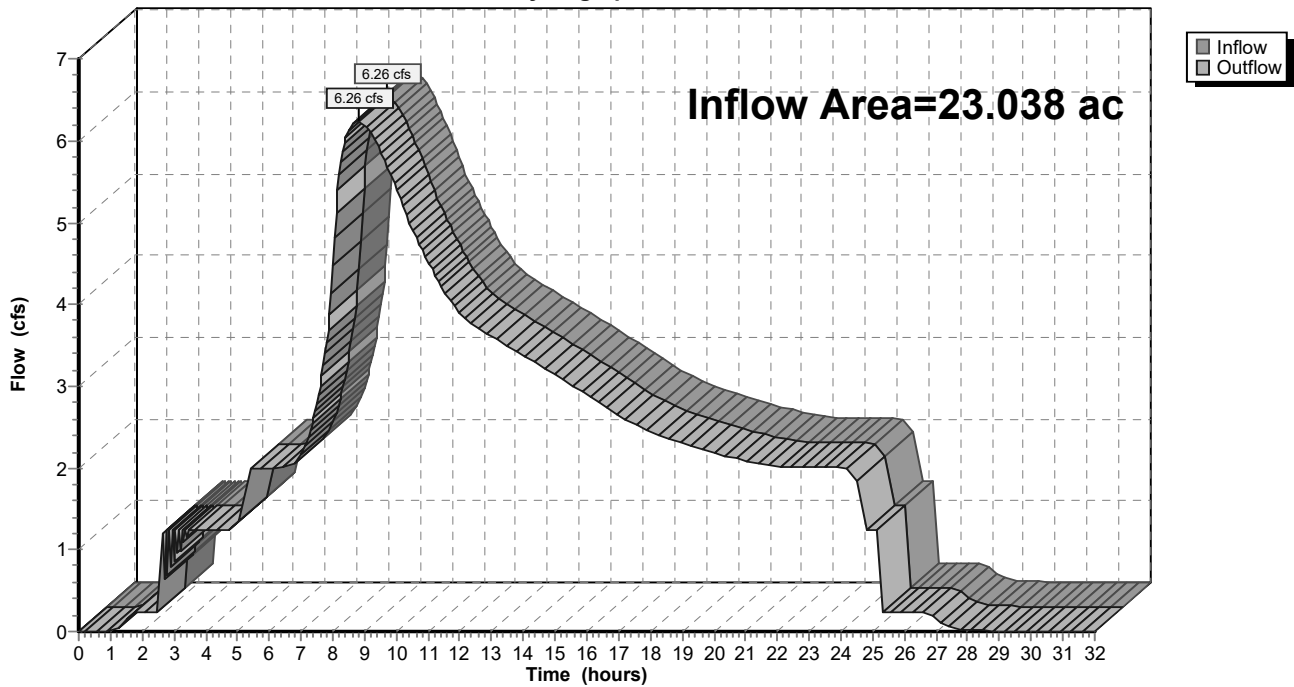
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 23.038 ac, 36.38% Impervious, Inflow Depth > 2.80" for 10-10 Year event
 Inflow = 6.26 cfs @ 8.80 hrs, Volume= 5.377 af
 Outflow = 6.26 cfs @ 8.80 hrs, Volume= 5.377 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 58R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 85R: 1

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 10-10 Year Rainfall=3.37"

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Summary for Reach 130R: 1

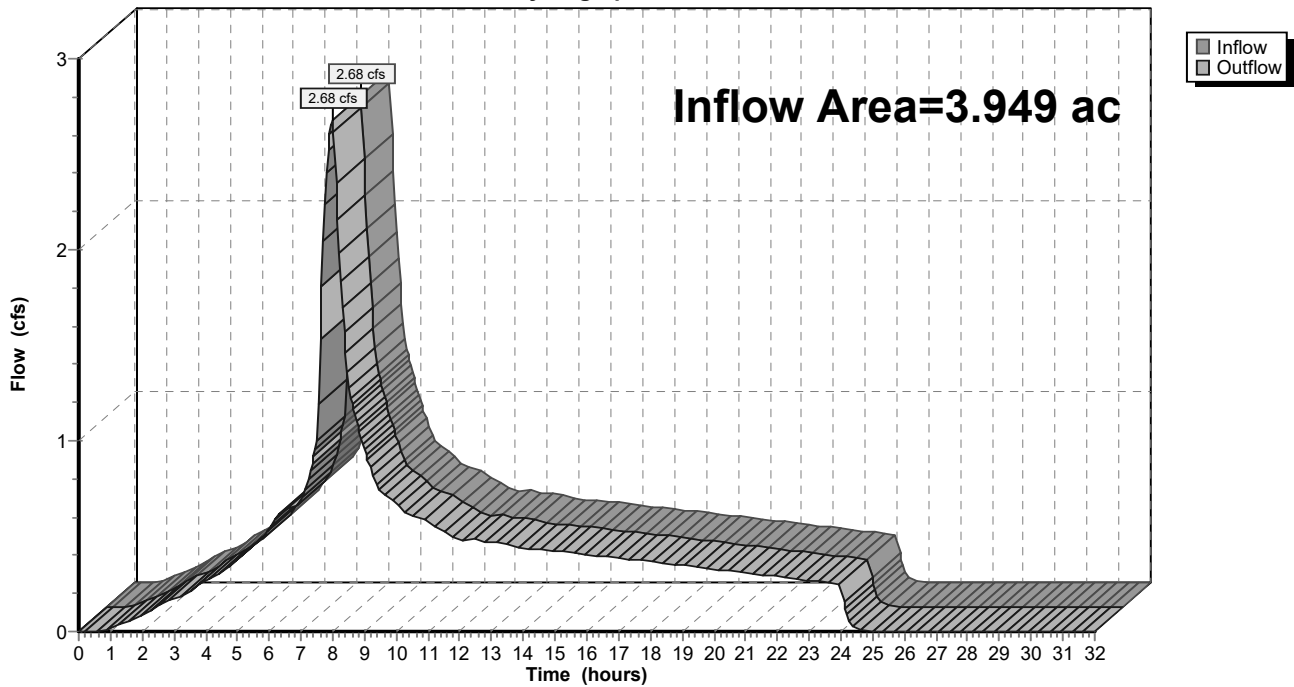
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.949 ac, 33.88% Impervious, Inflow Depth = 2.79" for 10-10 Year event
 Inflow = 2.68 cfs @ 7.98 hrs, Volume= 0.918 af
 Outflow = 2.68 cfs @ 7.98 hrs, Volume= 0.918 af, Atten= 0%, Lag= 0.0 min
 Routed to Pond 63P : Detention Pond

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 130R: 1

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 10-10 Year Rainfall=3.37"

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Summary for Reach 131R: 1

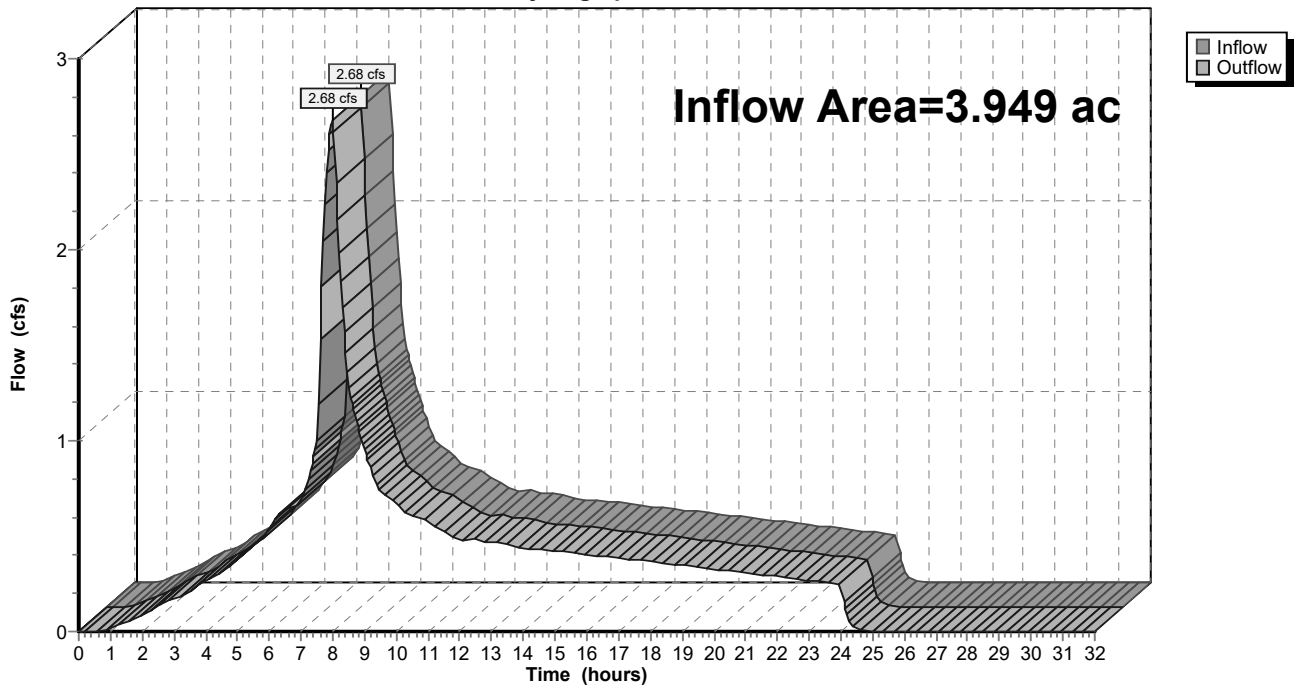
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.949 ac, 33.88% Impervious, Inflow Depth = 2.79" for 10-10 Year event
 Inflow = 2.68 cfs @ 7.98 hrs, Volume= 0.918 af
 Outflow = 2.68 cfs @ 7.98 hrs, Volume= 0.918 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 130R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 131R: 1

Hydrograph



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Type IA 24-hr 10-10 Year Rainfall=3.37"

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Summary for Reach 132R: 1

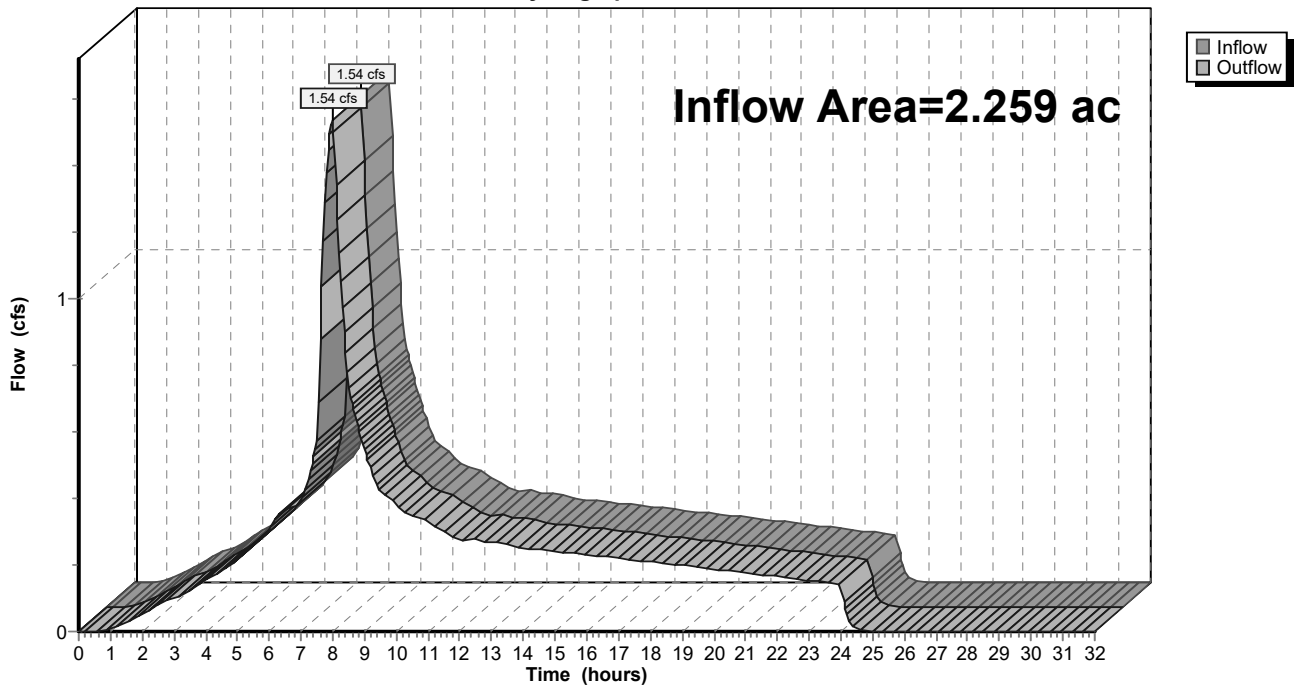
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 2.259 ac, 35.43% Impervious, Inflow Depth = 2.80" for 10-10 Year event
 Inflow = 1.54 cfs @ 7.98 hrs, Volume= 0.526 af
 Outflow = 1.54 cfs @ 7.98 hrs, Volume= 0.526 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 131R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 132R: 1

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 10-10 Year Rainfall=3.37"

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Summary for Reach 133R: 1

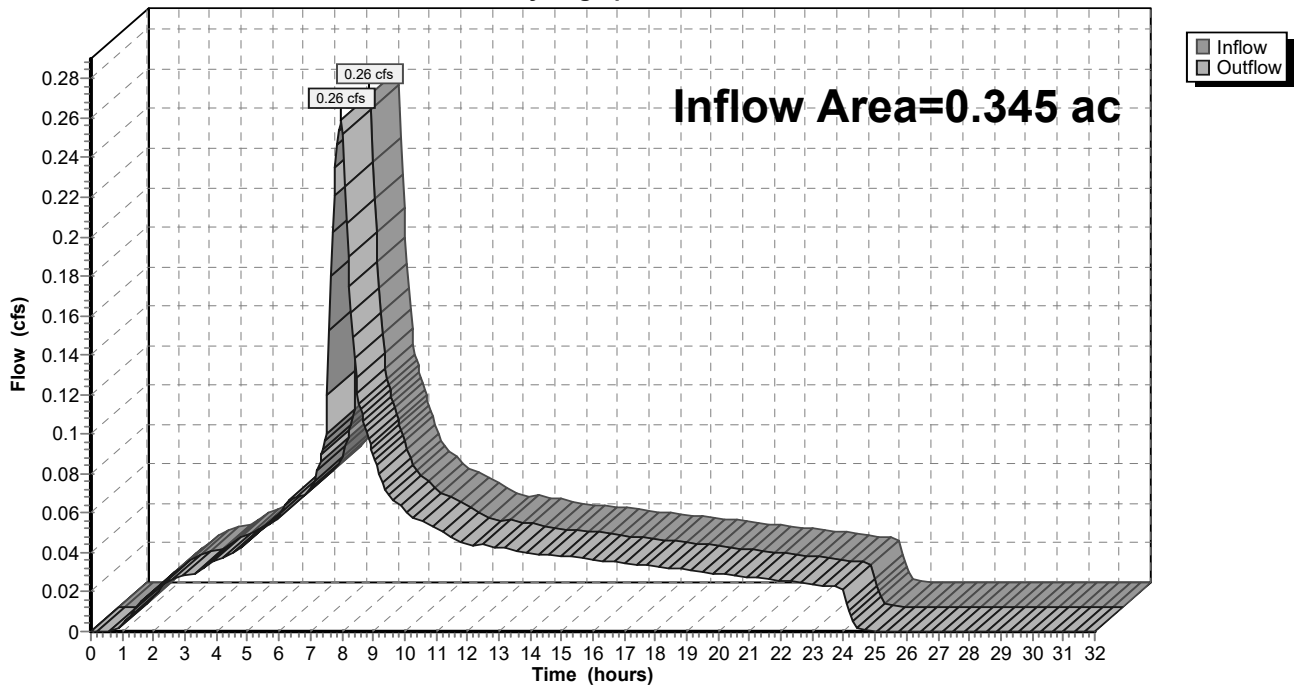
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.345 ac, 100.00% Impervious, Inflow Depth = 3.14" for 10-10 Year event
 Inflow = 0.26 cfs @ 7.98 hrs, Volume= 0.090 af
 Outflow = 0.26 cfs @ 7.98 hrs, Volume= 0.090 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 132R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 133R: 1

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 10-10 Year Rainfall=3.37"

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Summary for Reach 134R: 1

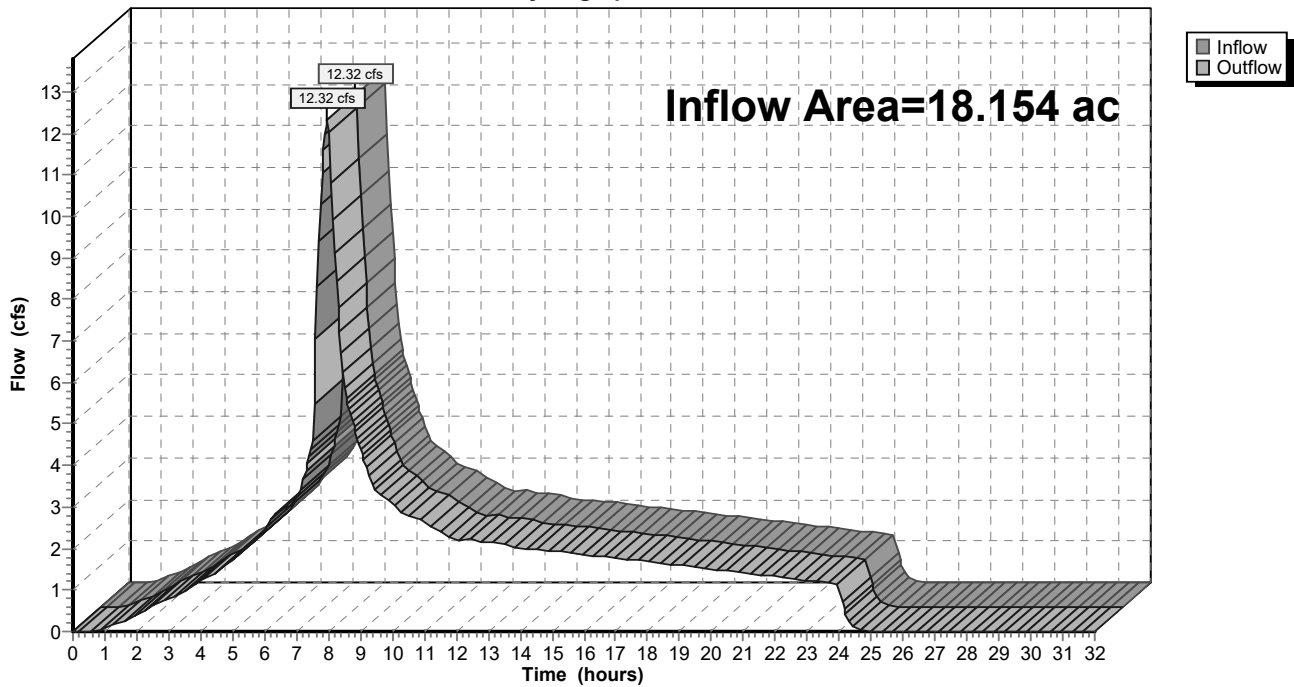
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 18.154 ac, 33.65% Impervious, Inflow Depth = 2.79" for 10-10 Year event
 Inflow = 12.32 cfs @ 7.98 hrs, Volume= 4.216 af
 Outflow = 12.32 cfs @ 7.98 hrs, Volume= 4.216 af, Atten= 0%, Lag= 0.0 min
 Routed to Pond 63P : Detention Pond

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 134R: 1

Hydrograph



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Type IA 24-hr 10-10 Year Rainfall=3.37"

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Summary for Reach 135R: 1

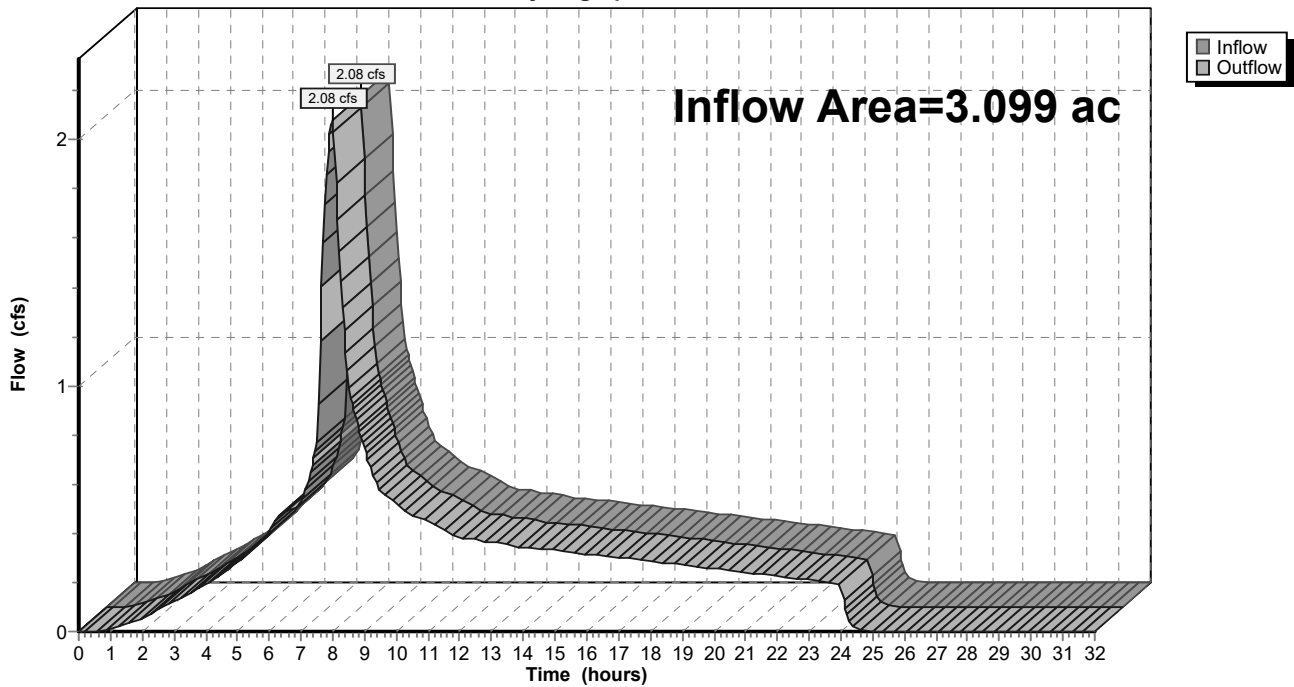
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.099 ac, 26.69% Impervious, Inflow Depth = 2.75" for 10-10 Year event
 Inflow = 2.08 cfs @ 7.98 hrs, Volume= 0.710 af
 Outflow = 2.08 cfs @ 7.98 hrs, Volume= 0.710 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 134R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 135R: 1

Hydrograph



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Summary for Reach 136R: 1

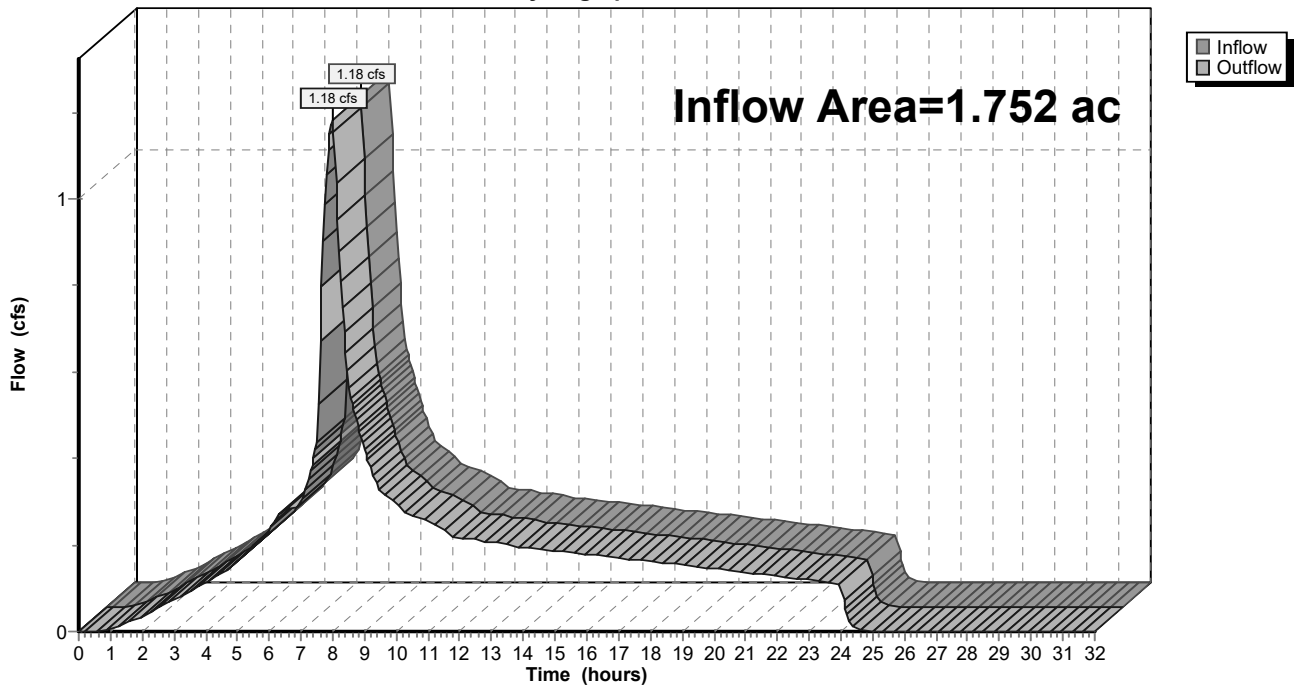
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.752 ac, 30.00% Impervious, Inflow Depth = 2.77" for 10-10 Year event
 Inflow = 1.18 cfs @ 7.98 hrs, Volume= 0.404 af
 Outflow = 1.18 cfs @ 7.98 hrs, Volume= 0.404 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 135R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 136R: 1

Hydrograph



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Type IA 24-hr 10-10 Year Rainfall=3.37"

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Summary for Reach 137R: 1

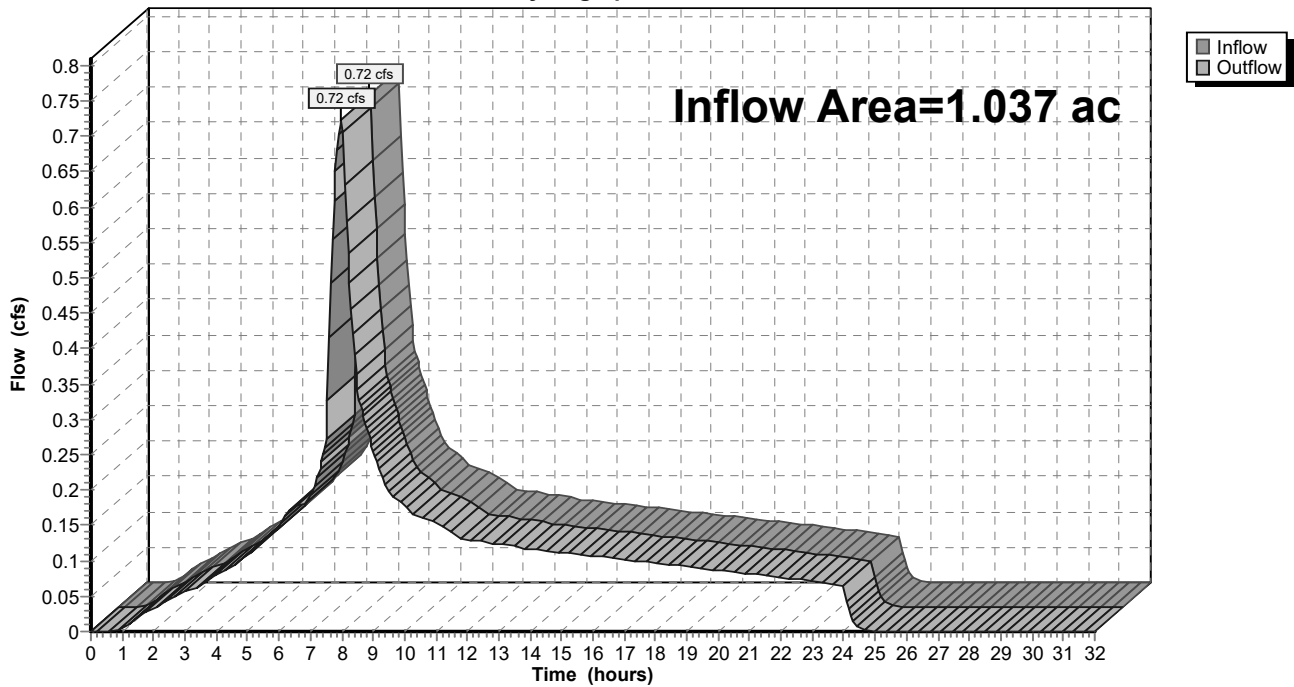
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.037 ac, 50.68% Impervious, Inflow Depth = 2.88" for 10-10 Year event
 Inflow = 0.72 cfs @ 7.98 hrs, Volume= 0.249 af
 Outflow = 0.72 cfs @ 7.98 hrs, Volume= 0.249 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 136R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 137R: 1

Hydrograph



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Summary for Reach 138R: 1

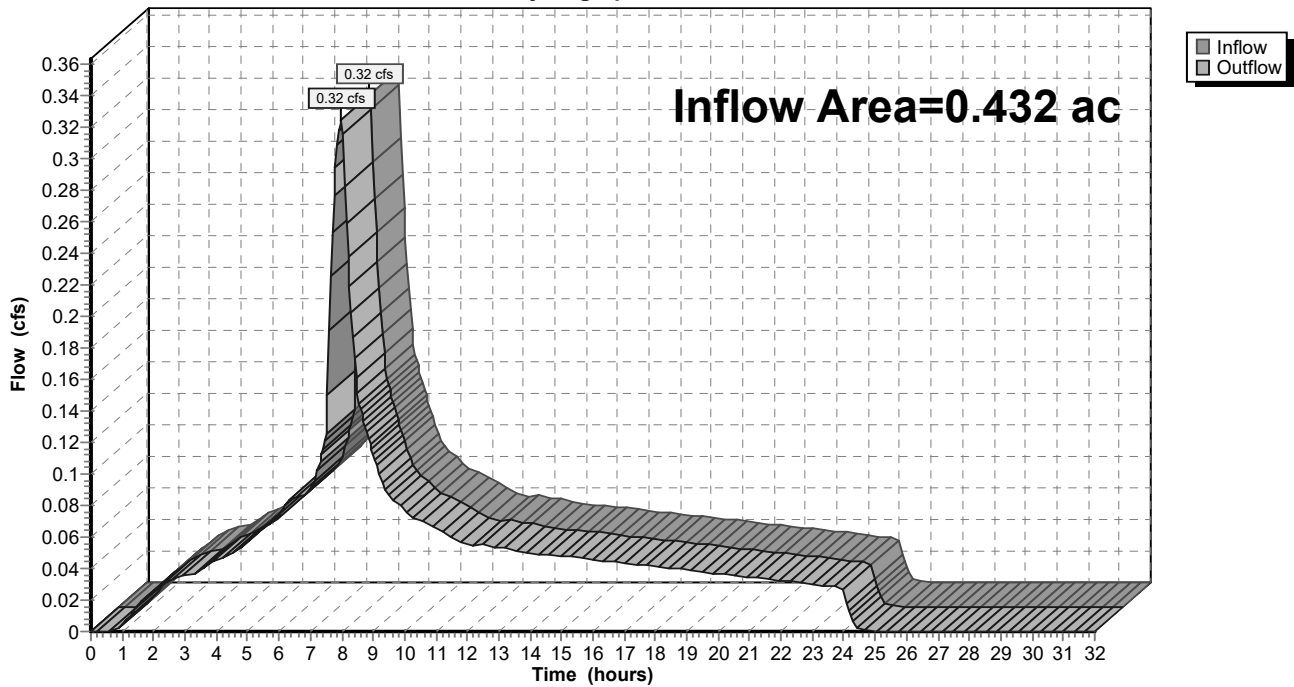
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.432 ac, 100.00% Impervious, Inflow Depth = 3.14" for 10-10 Year event
 Inflow = 0.32 cfs @ 7.98 hrs, Volume= 0.113 af
 Outflow = 0.32 cfs @ 7.98 hrs, Volume= 0.113 af, Atten= 0%, Lag= 0.0 min
 Routed to Pond 63P : Detention Pond

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 138R: 1

Hydrograph



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Summary for Reach 139R: 1

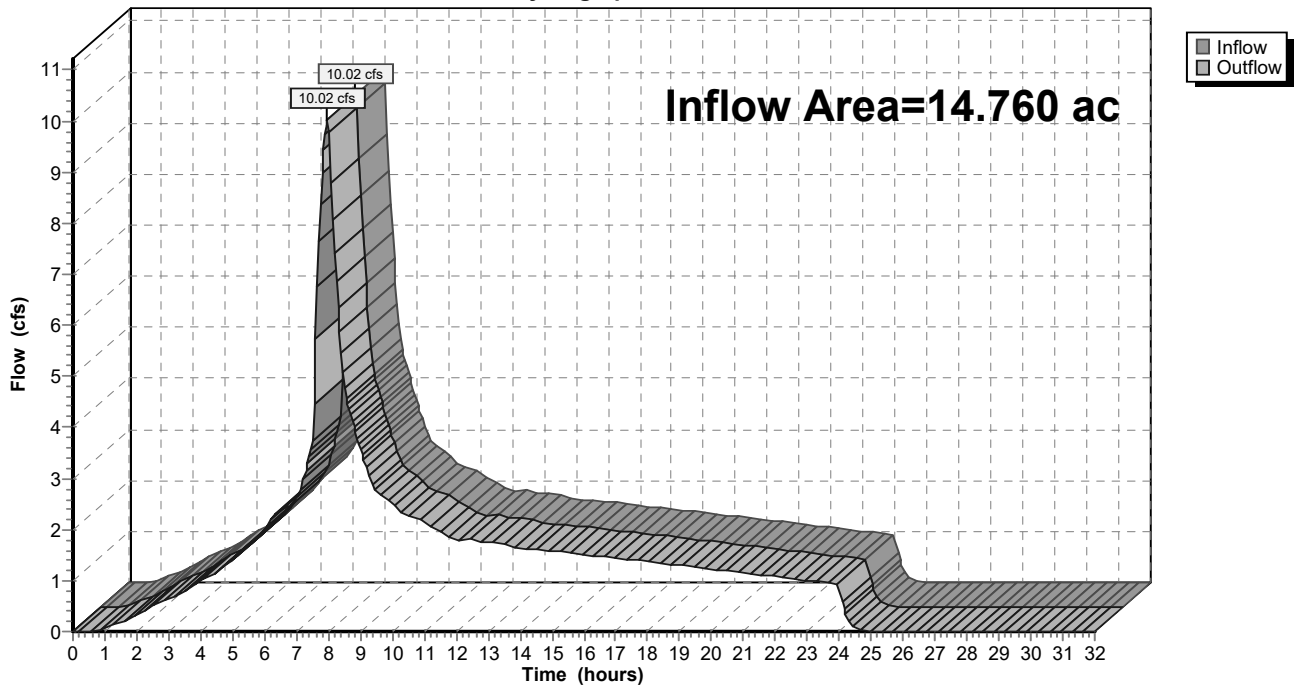
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 14.760 ac, 33.78% Impervious, Inflow Depth = 2.79" for 10-10 Year event
 Inflow = 10.02 cfs @ 7.98 hrs, Volume= 3.429 af
 Outflow = 10.02 cfs @ 7.98 hrs, Volume= 3.429 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 158R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 139R: 1

Hydrograph



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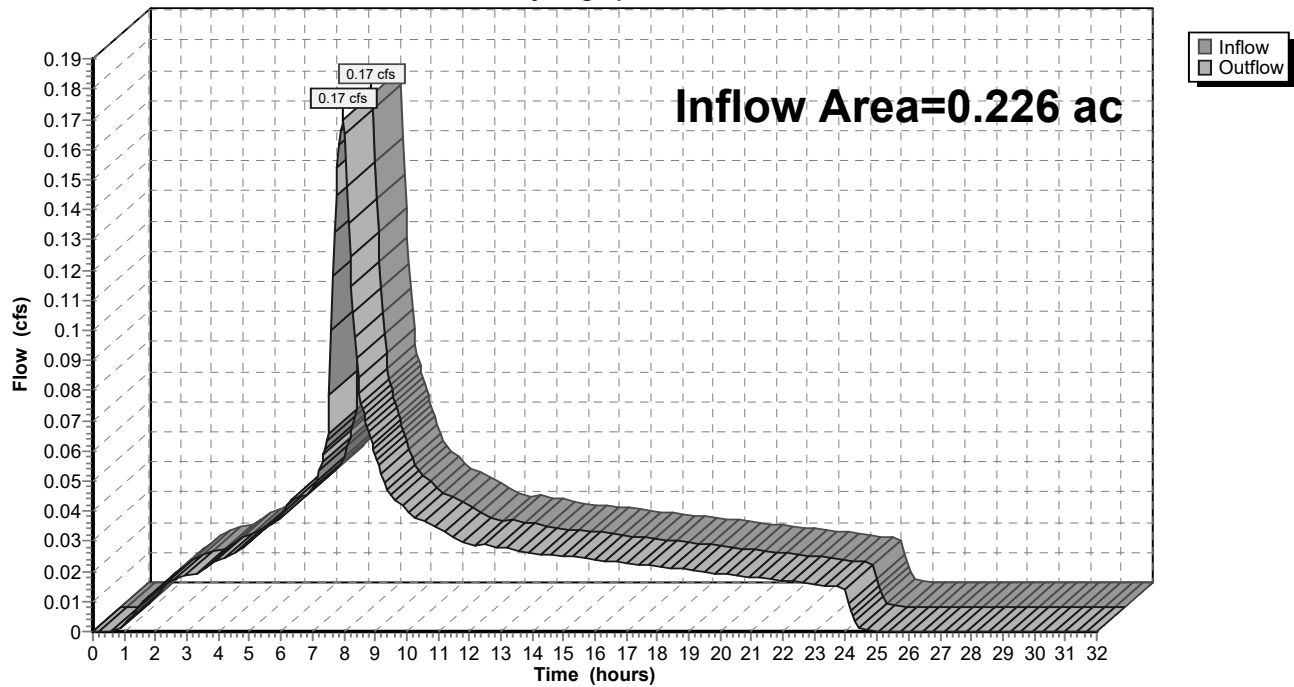
Page 445

Summary for Reach 140R: 1

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

Inflow Area = 0.226 ac, 100.00% Impervious, Inflow Depth = 3.14" for 10-10 Year event
 Inflow = 0.17 cfs @ 7.98 hrs, Volume= 0.059 af
 Outflow = 0.17 cfs @ 7.98 hrs, Volume= 0.059 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 138R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 140R: 1**Hydrograph**

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Summary for Reach 141R: 1

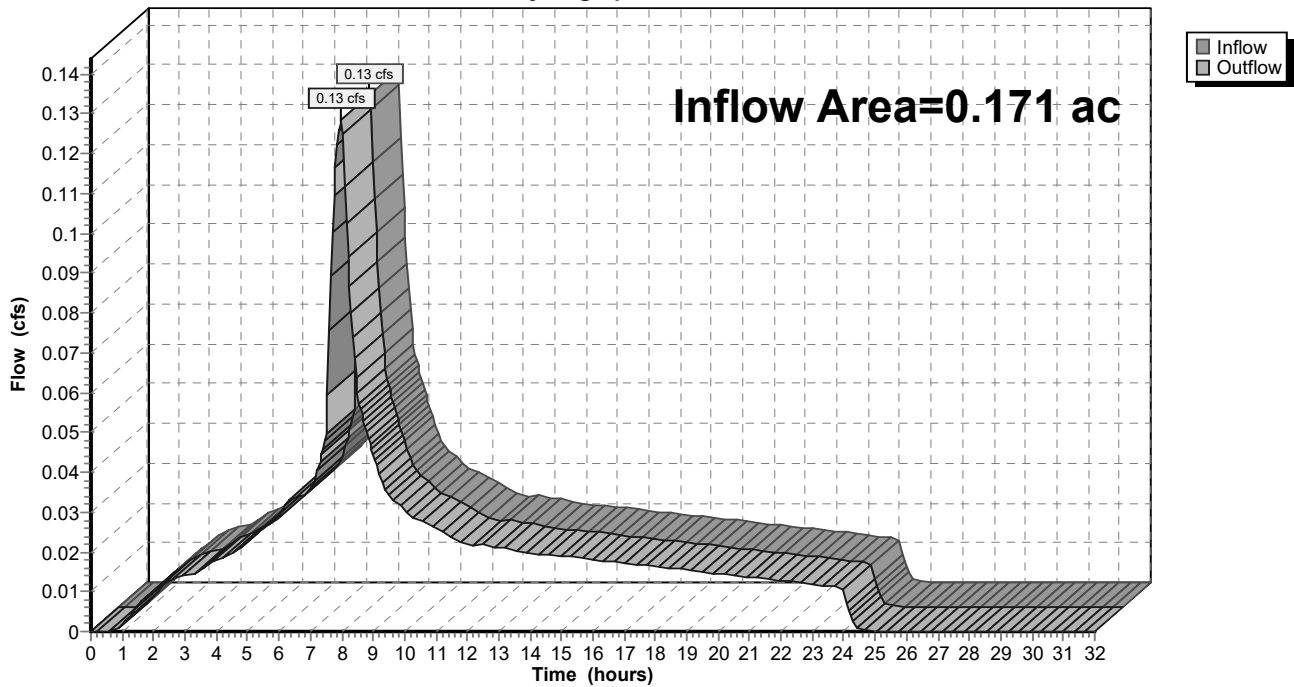
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.171 ac, 100.00% Impervious, Inflow Depth = 3.14" for 10-10 Year event
 Inflow = 0.13 cfs @ 7.98 hrs, Volume= 0.045 af
 Outflow = 0.13 cfs @ 7.98 hrs, Volume= 0.045 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 139R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 141R: 1

Hydrograph



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Summary for Reach 142R: 1

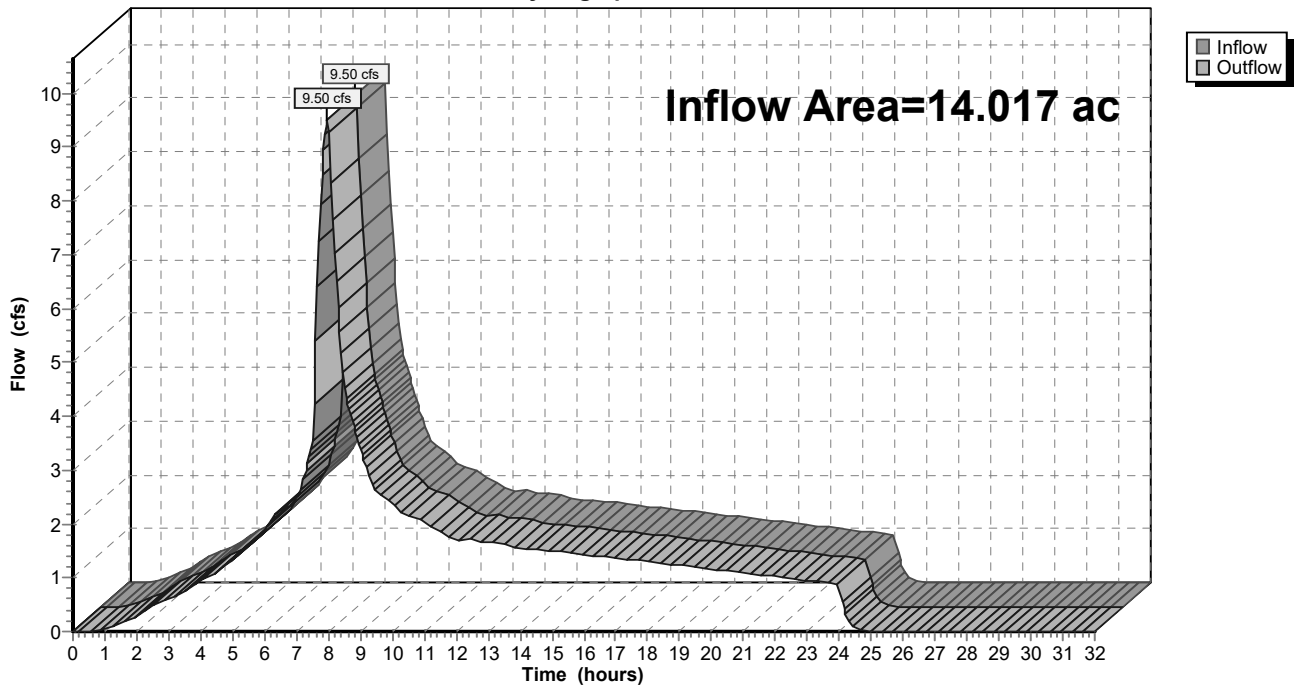
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 14.017 ac, 33.09% Impervious, Inflow Depth = 2.78" for 10-10 Year event
 Inflow = 9.50 cfs @ 7.98 hrs, Volume= 3.252 af
 Outflow = 9.50 cfs @ 7.98 hrs, Volume= 3.252 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 159R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 142R: 1

Hydrograph



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Summary for Reach 143R: 1

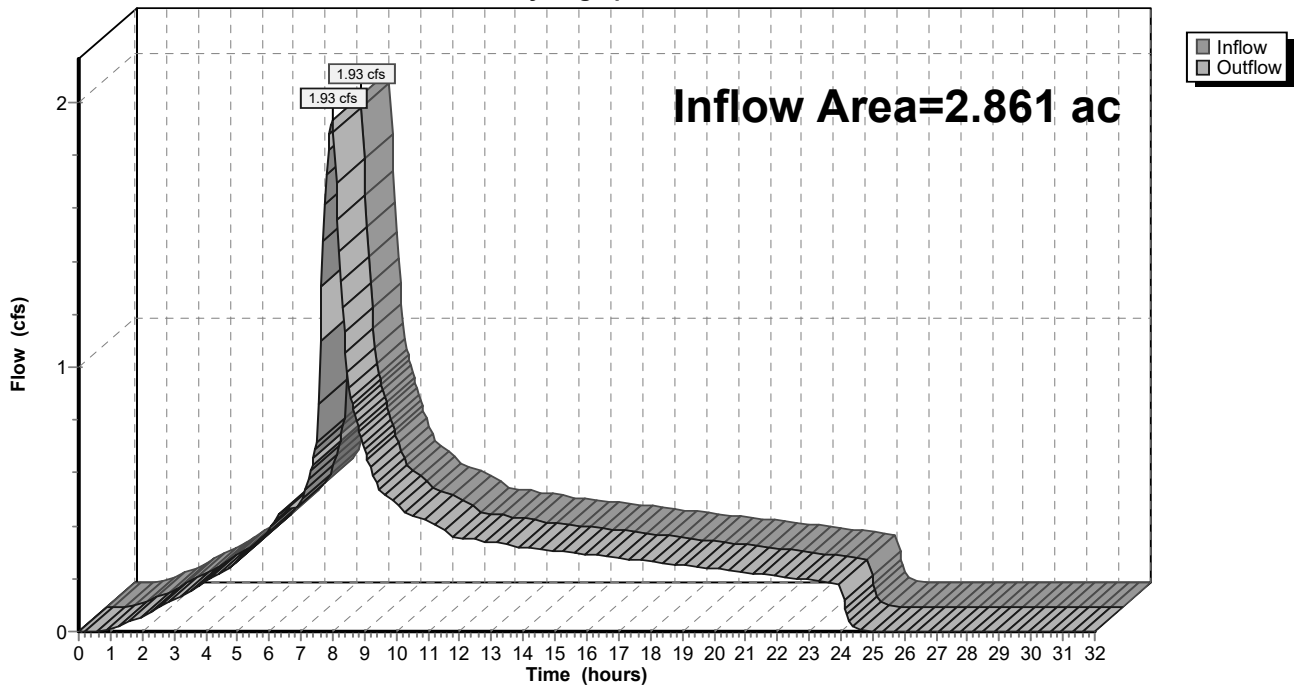
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 2.861 ac, 30.95% Impervious, Inflow Depth = 2.77" for 10-10 Year event
 Inflow = 1.93 cfs @ 7.98 hrs, Volume= 0.661 af
 Outflow = 1.93 cfs @ 7.98 hrs, Volume= 0.661 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 142R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 143R: 1

Hydrograph



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Summary for Reach 144R: 1

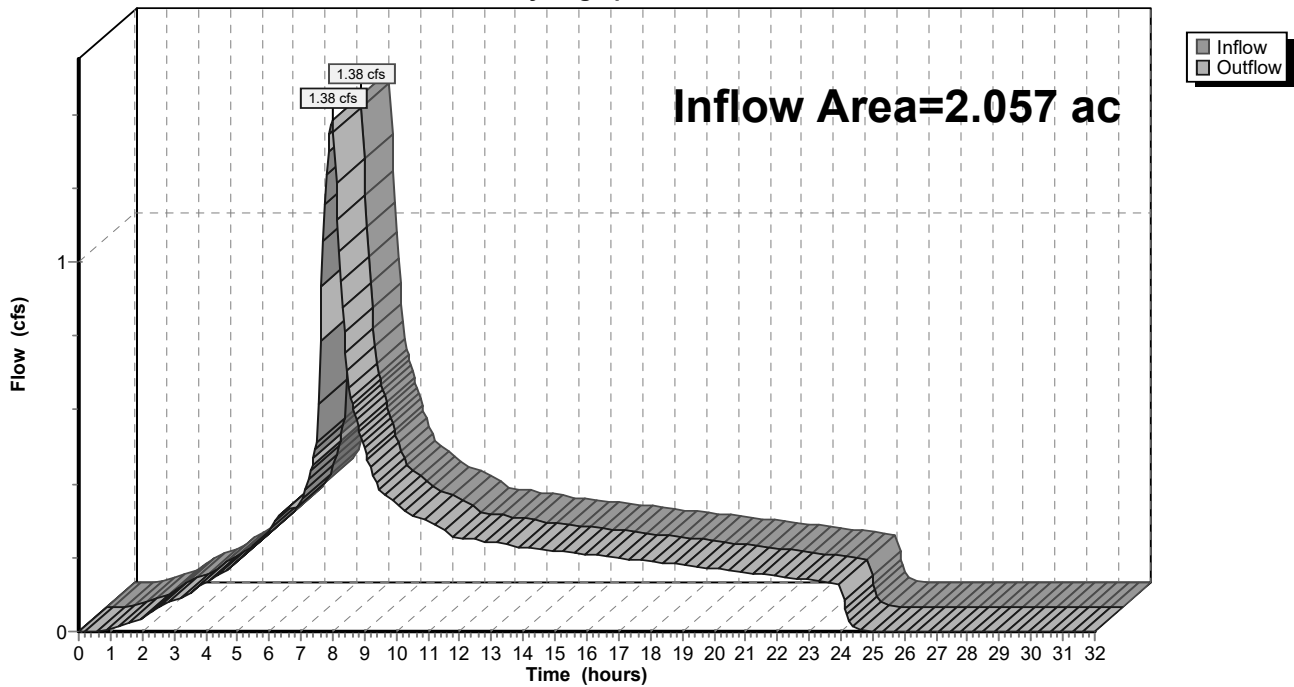
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 2.057 ac, 28.74% Impervious, Inflow Depth = 2.76" for 10-10 Year event
 Inflow = 1.38 cfs @ 7.98 hrs, Volume= 0.473 af
 Outflow = 1.38 cfs @ 7.98 hrs, Volume= 0.473 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 143R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 144R: 1

Hydrograph



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Summary for Reach 145R: 1

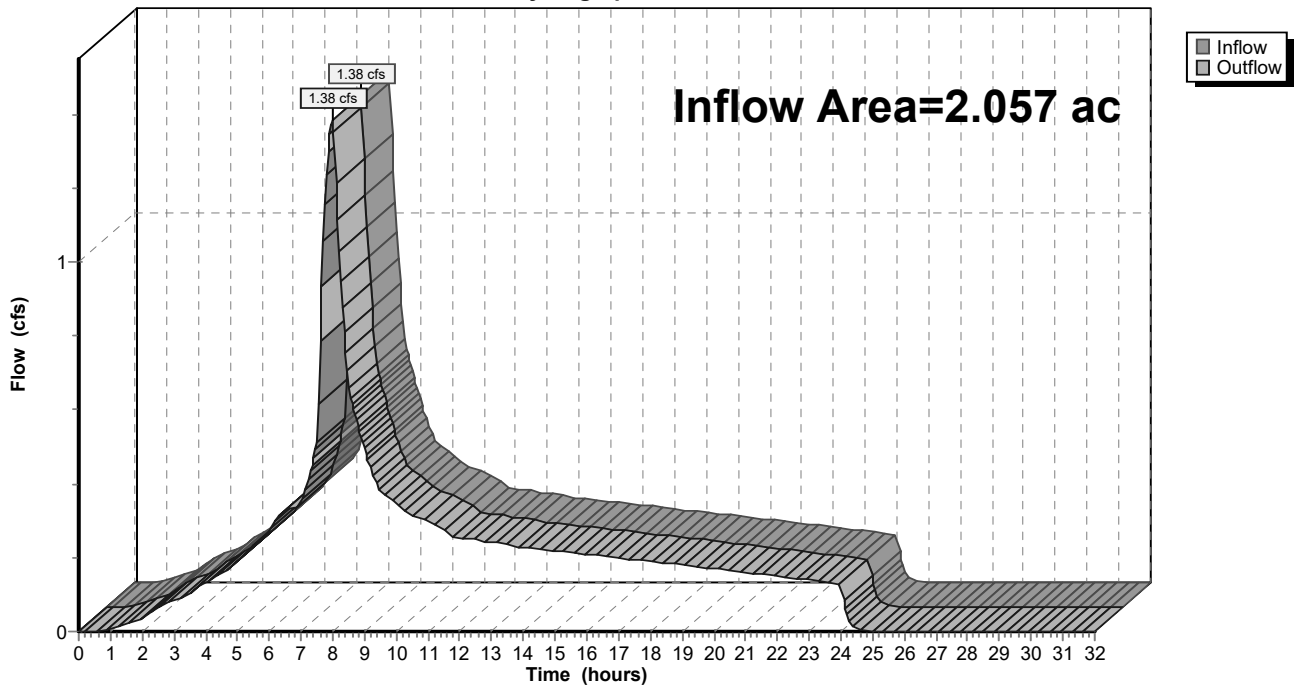
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 2.057 ac, 28.74% Impervious, Inflow Depth = 2.76" for 10-10 Year event
 Inflow = 1.38 cfs @ 7.98 hrs, Volume= 0.473 af
 Outflow = 1.38 cfs @ 7.98 hrs, Volume= 0.473 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 144R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 145R: 1

Hydrograph



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Summary for Reach 146R: 1

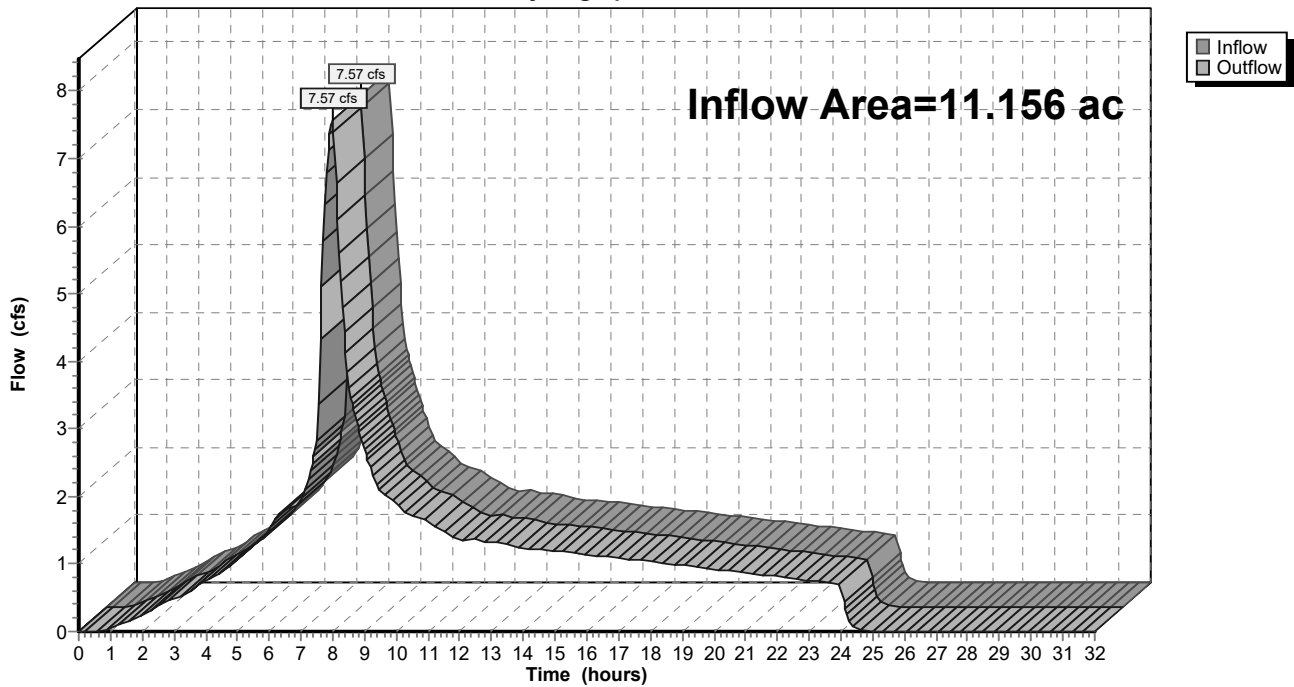
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 11.156 ac, 33.63% Impervious, Inflow Depth = 2.79" for 10-10 Year event
 Inflow = 7.57 cfs @ 7.98 hrs, Volume= 2.591 af
 Outflow = 7.57 cfs @ 7.98 hrs, Volume= 2.591 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 142R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 146R: 1

Hydrograph



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Summary for Reach 147R: 1

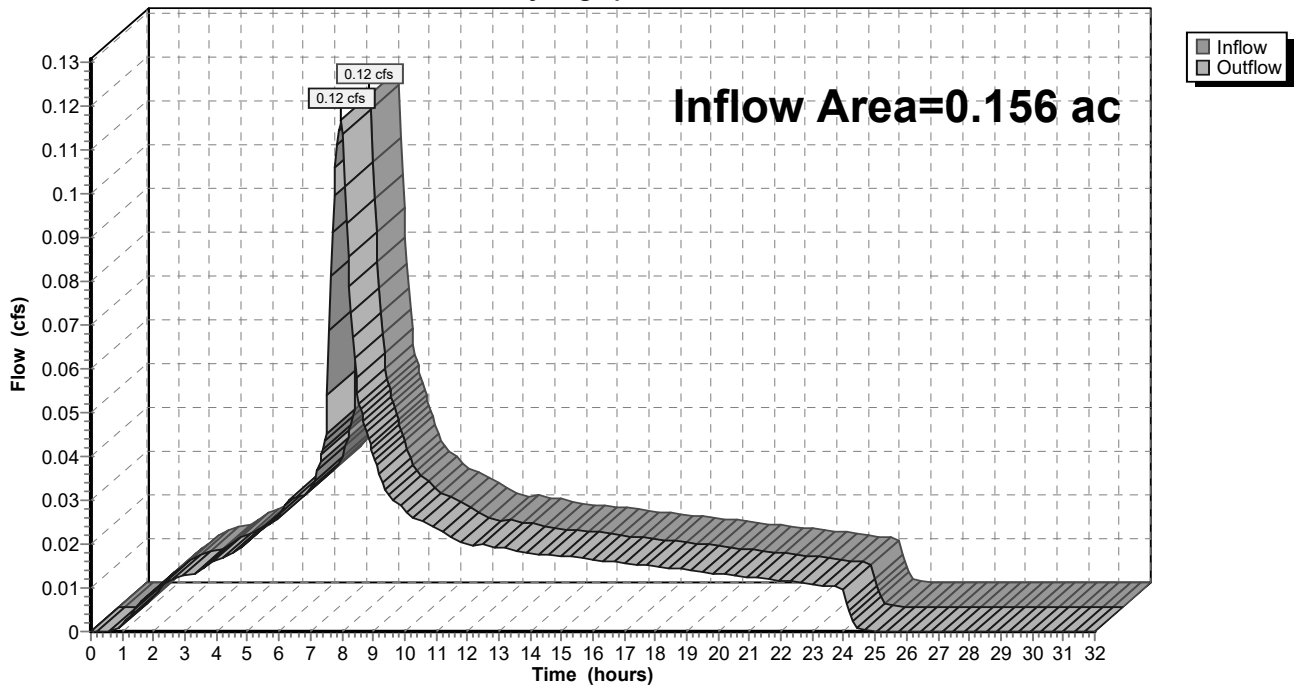
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.156 ac, 100.00% Impervious, Inflow Depth = 3.14" for 10-10 Year event
 Inflow = 0.12 cfs @ 7.98 hrs, Volume= 0.041 af
 Outflow = 0.12 cfs @ 7.98 hrs, Volume= 0.041 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 146R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 147R: 1

Hydrograph



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Summary for Reach 148R: 1

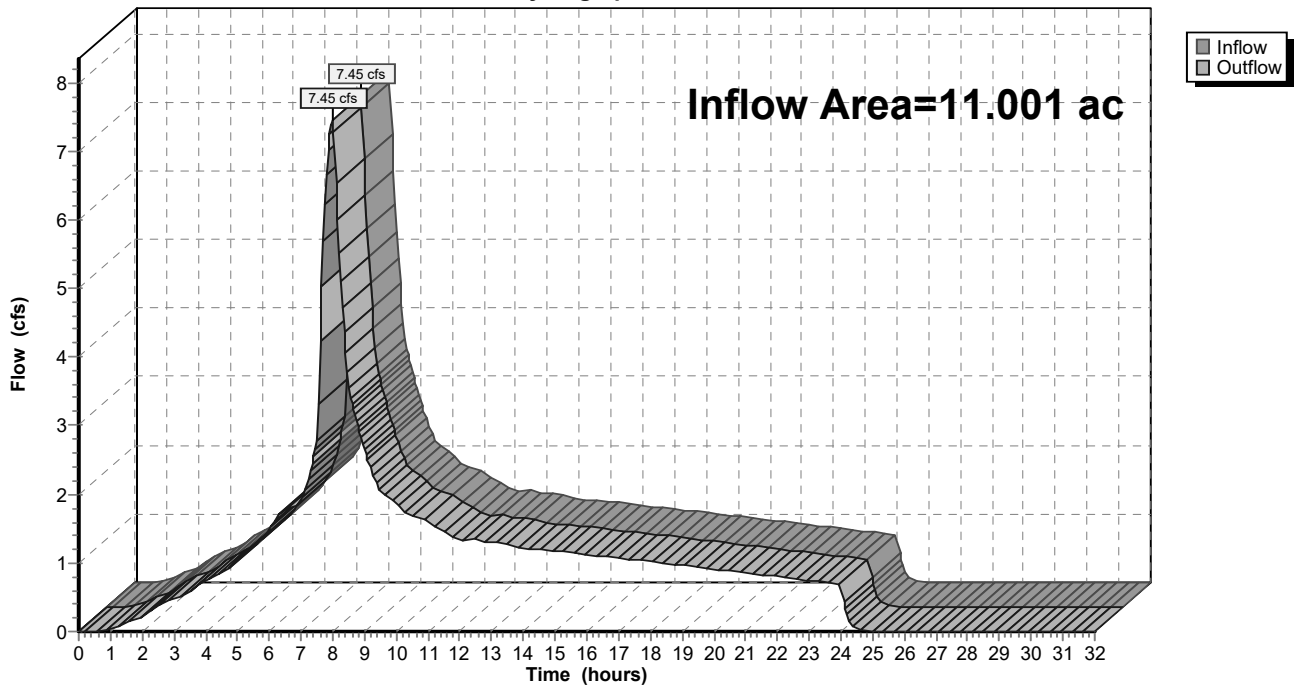
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 11.001 ac, 32.69% Impervious, Inflow Depth = 2.78" for 10-10 Year event
 Inflow = 7.45 cfs @ 7.98 hrs, Volume= 2.550 af
 Outflow = 7.45 cfs @ 7.98 hrs, Volume= 2.550 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 146R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 148R: 1

Hydrograph



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Summary for Reach 149R: 1

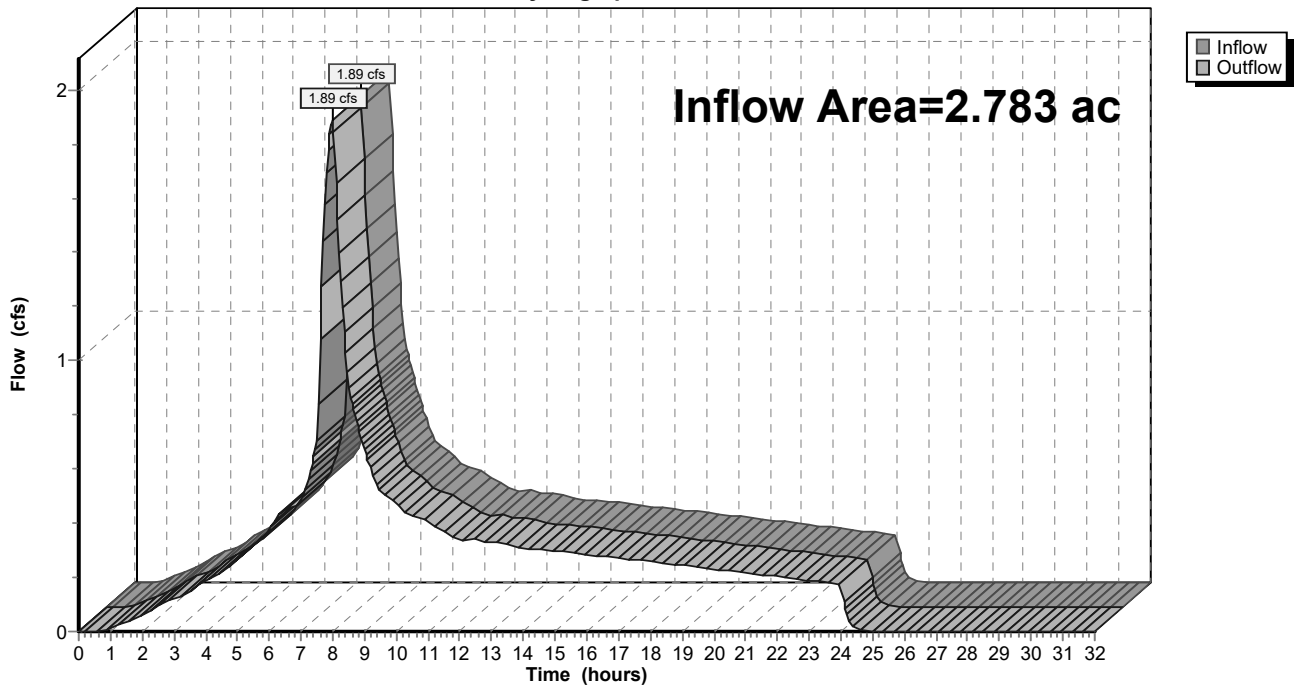
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 2.783 ac, 33.49% Impervious, Inflow Depth = 2.79" for 10-10 Year event
 Inflow = 1.89 cfs @ 7.98 hrs, Volume= 0.646 af
 Outflow = 1.89 cfs @ 7.98 hrs, Volume= 0.646 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 148R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 149R: 1

Hydrograph



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Summary for Reach 150R: 1

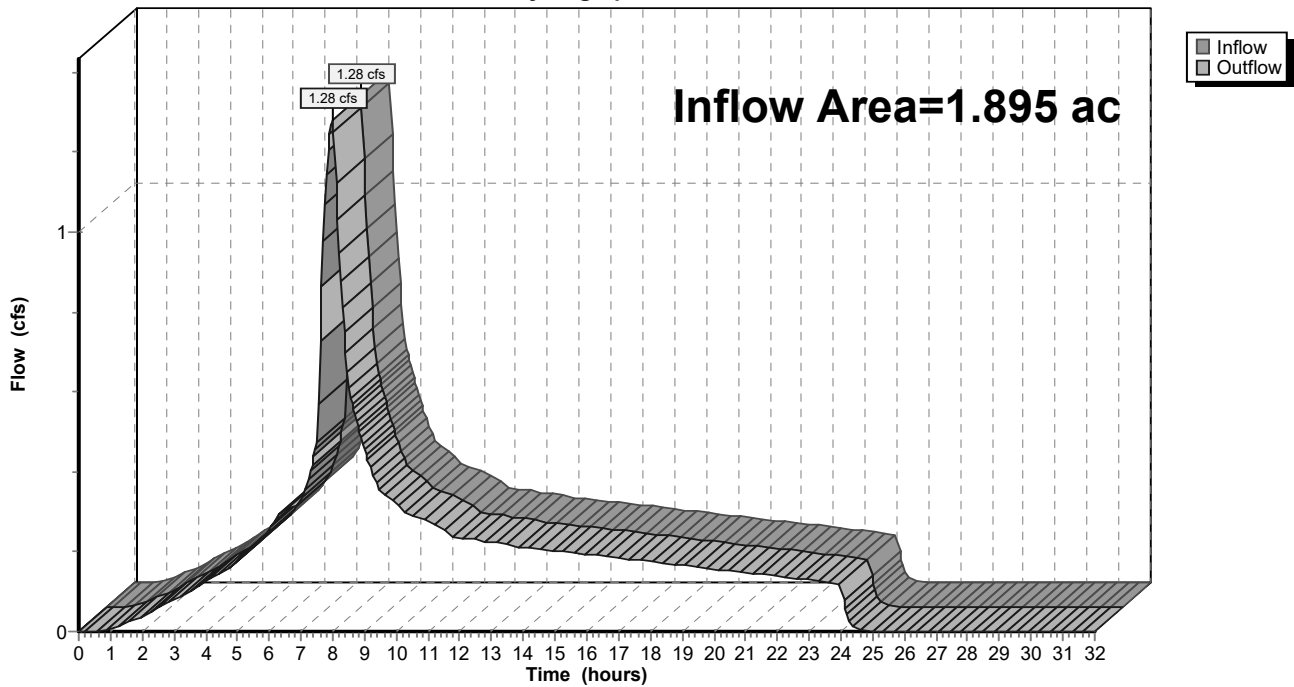
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.895 ac, 31.51% Impervious, Inflow Depth = 2.78" for 10-10 Year event
 Inflow = 1.28 cfs @ 7.98 hrs, Volume= 0.438 af
 Outflow = 1.28 cfs @ 7.98 hrs, Volume= 0.438 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 149R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 150R: 1

Hydrograph



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Type IA 24-hr 10-10 Year Rainfall=3.37"

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Summary for Reach 151R: 1

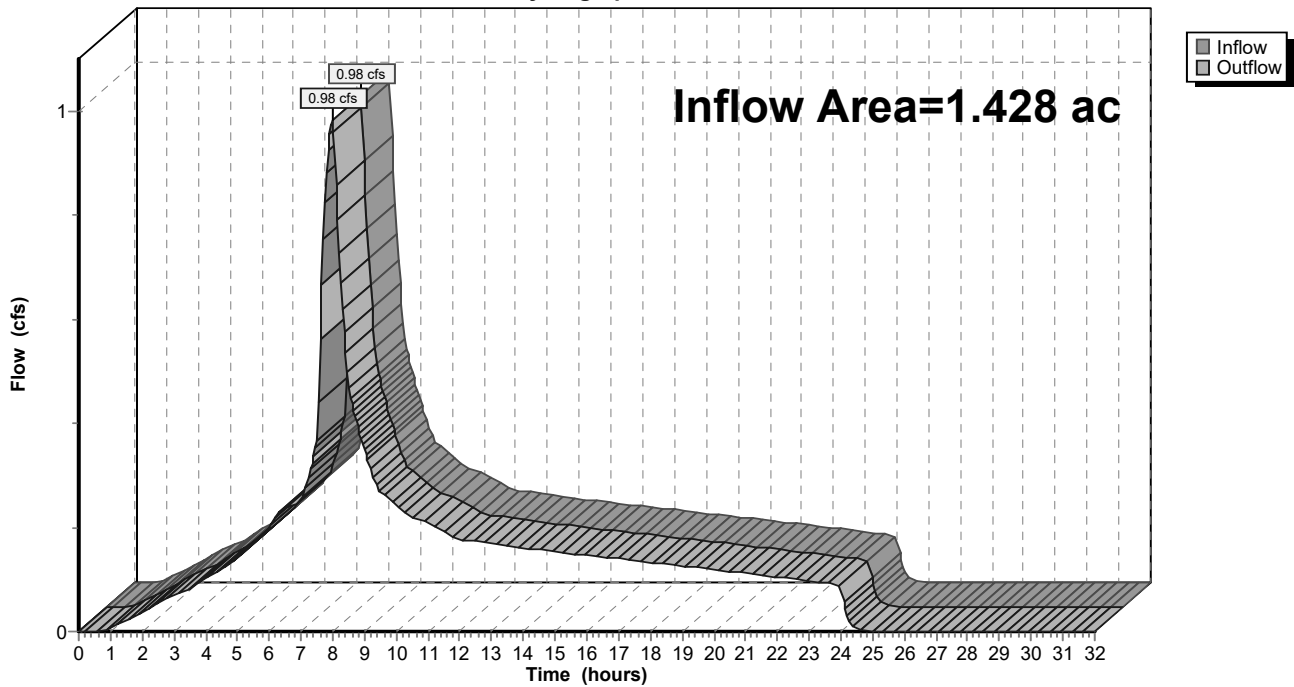
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.428 ac, 41.79% Impervious, Inflow Depth = 2.83" for 10-10 Year event
 Inflow = 0.98 cfs @ 7.98 hrs, Volume= 0.337 af
 Outflow = 0.98 cfs @ 7.98 hrs, Volume= 0.337 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 150R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 151R: 1

Hydrograph



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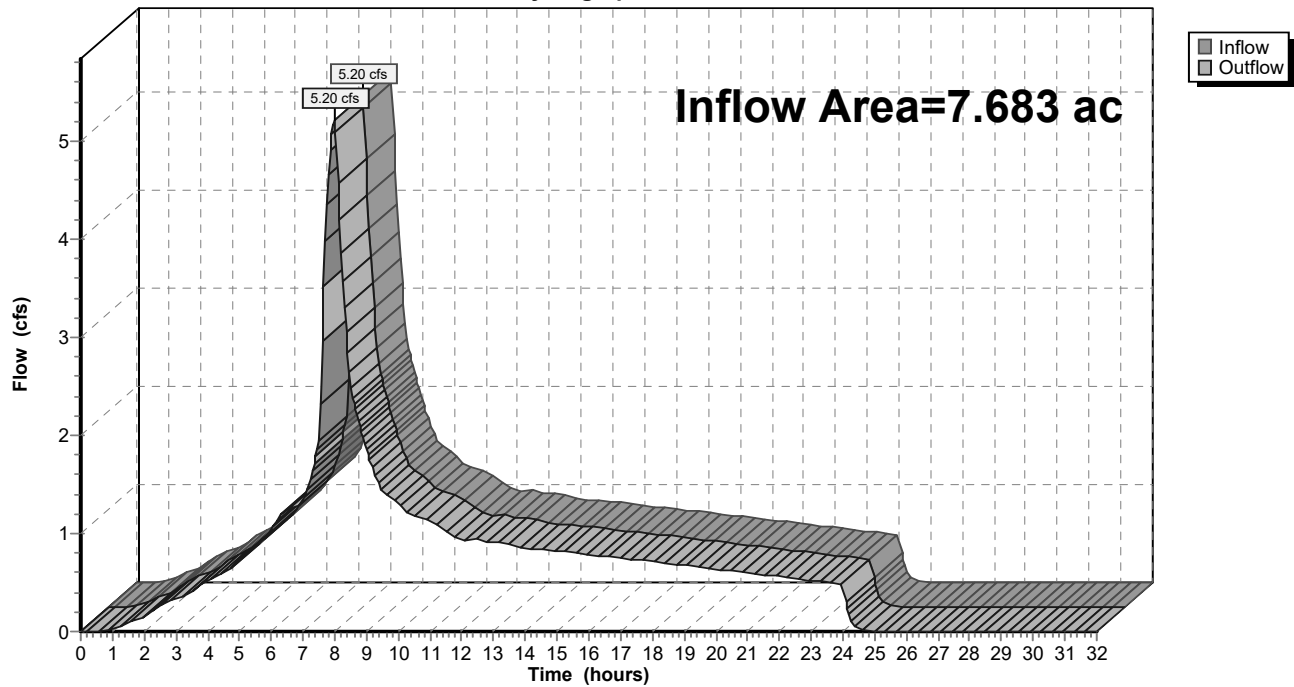
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Summary for Reach 152R: 1

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

Inflow Area = 7.683 ac, 32.64% Impervious, Inflow Depth = 2.78" for 10-10 Year event
 Inflow = 5.20 cfs @ 7.98 hrs, Volume= 1.781 af
 Outflow = 5.20 cfs @ 7.98 hrs, Volume= 1.781 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 148R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 152R: 1**Hydrograph**

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Summary for Reach 153R: 1

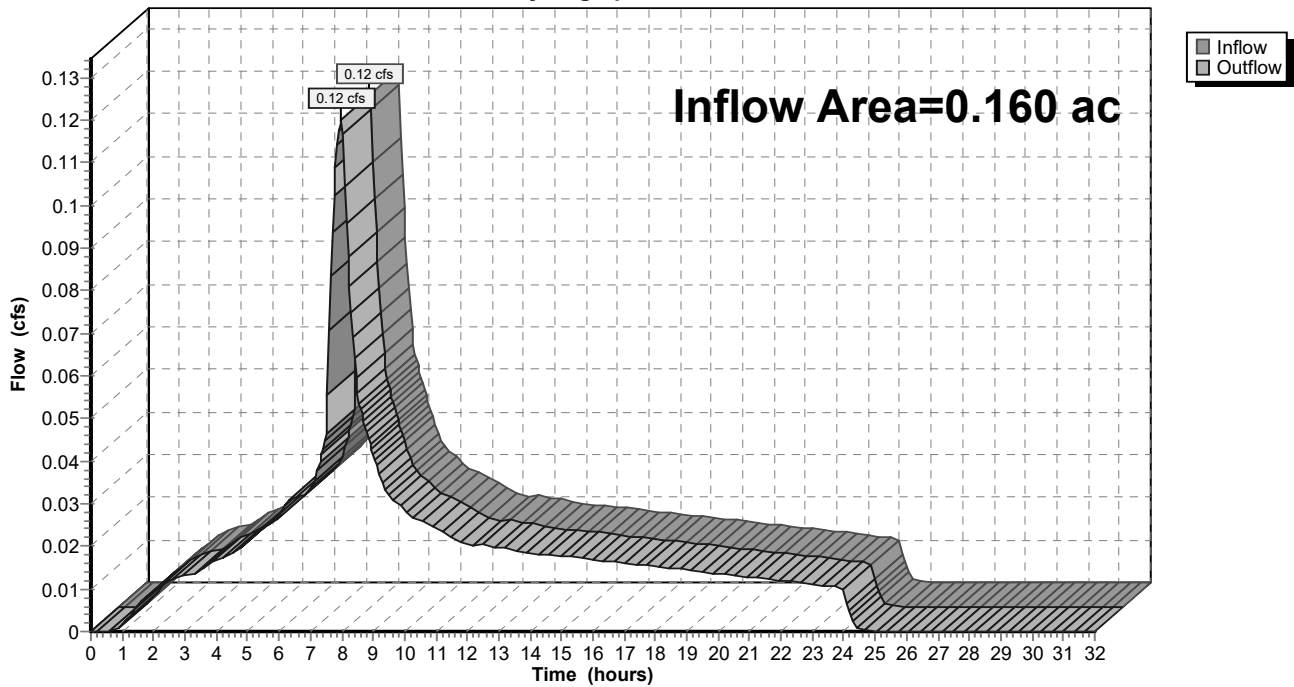
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.160 ac, 100.00% Impervious, Inflow Depth = 3.14" for 10-10 Year event
 Inflow = 0.12 cfs @ 7.98 hrs, Volume= 0.042 af
 Outflow = 0.12 cfs @ 7.98 hrs, Volume= 0.042 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 152R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 153R: 1

Hydrograph



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Type IA 24-hr 10-10 Year Rainfall=3.37"

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Summary for Reach 154R: 1

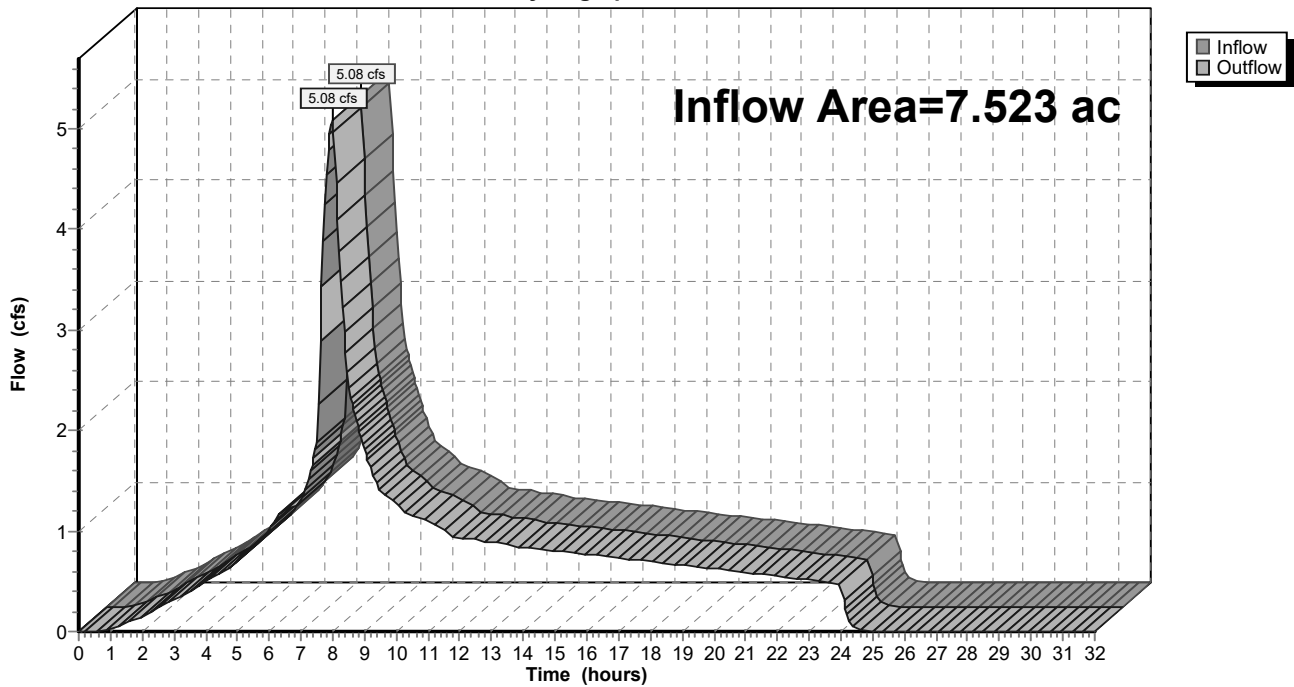
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 7.523 ac, 31.20% Impervious, Inflow Depth = 2.77" for 10-10 Year event
 Inflow = 5.08 cfs @ 7.98 hrs, Volume= 1.739 af
 Outflow = 5.08 cfs @ 7.98 hrs, Volume= 1.739 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 152R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 154R: 1

Hydrograph



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Summary for Reach 155R: 1

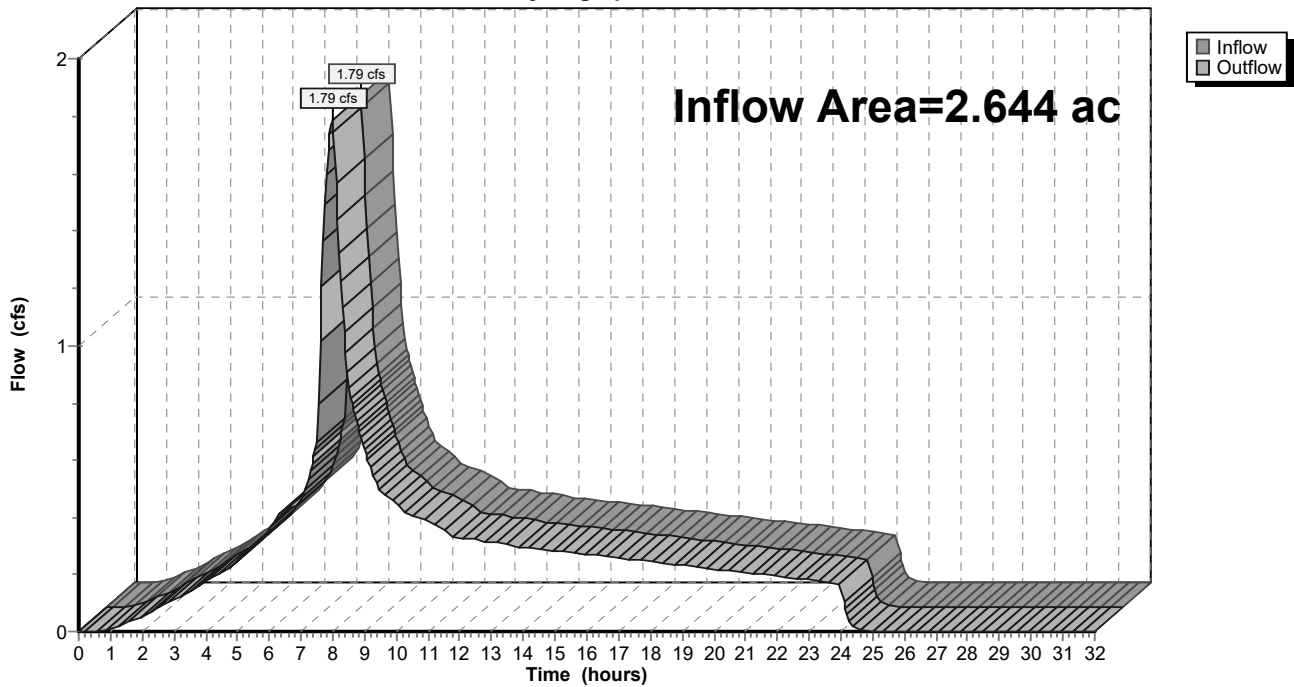
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 2.644 ac, 31.72% Impervious, Inflow Depth = 2.78" for 10-10 Year event
 Inflow = 1.79 cfs @ 7.98 hrs, Volume= 0.612 af
 Outflow = 1.79 cfs @ 7.98 hrs, Volume= 0.612 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 154R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 155R: 1

Hydrograph



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Summary for Reach 158R: 1

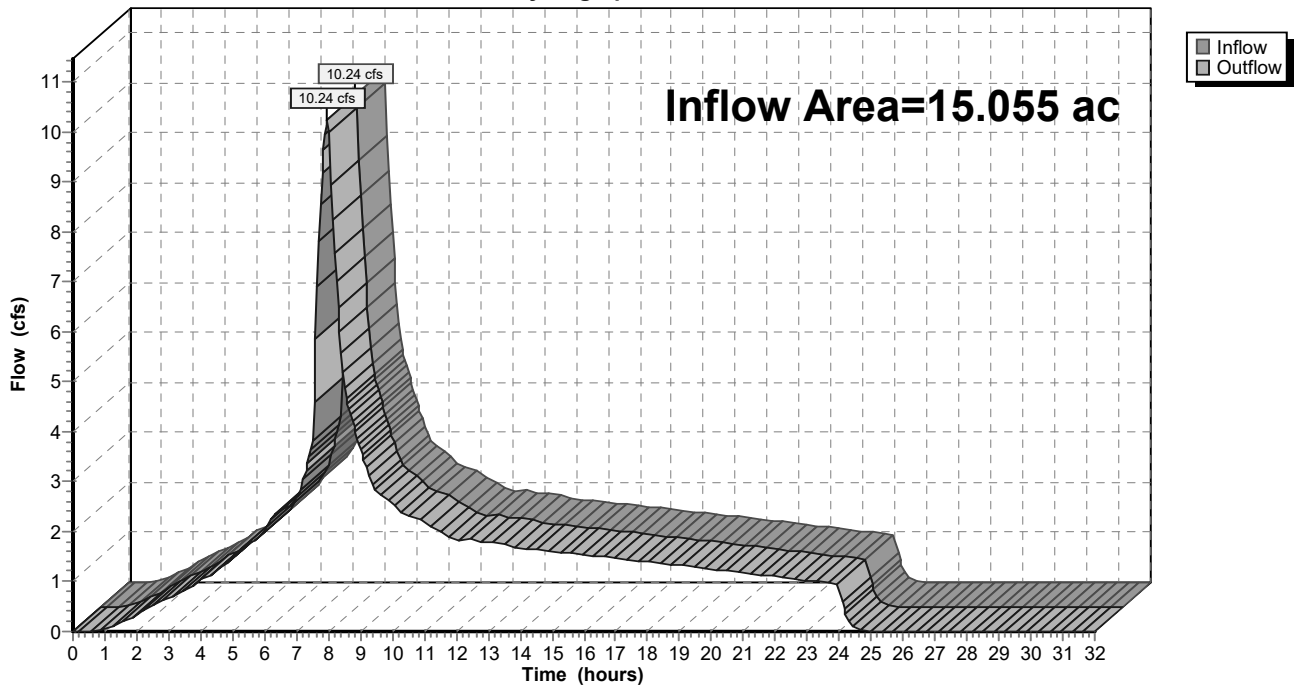
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 15.055 ac, 35.08% Impervious, Inflow Depth = 2.79" for 10-10 Year event
 Inflow = 10.24 cfs @ 7.98 hrs, Volume= 3.506 af
 Outflow = 10.24 cfs @ 7.98 hrs, Volume= 3.506 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 134R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 158R: 1

Hydrograph



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Summary for Reach 159R: 1

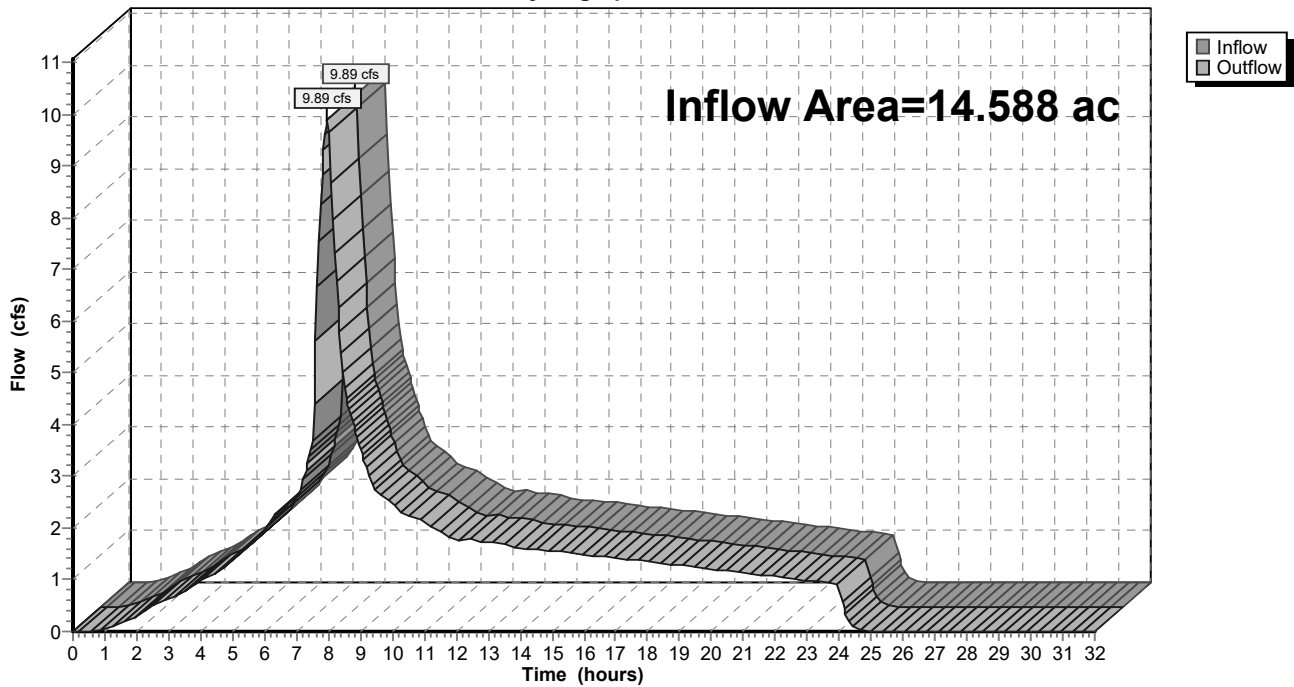
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 14.588 ac, 33.00% Impervious, Inflow Depth = 2.78" for 10-10 Year event
 Inflow = 9.89 cfs @ 7.98 hrs, Volume= 3.384 af
 Outflow = 9.89 cfs @ 7.98 hrs, Volume= 3.384 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 139R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 159R: 1

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 10-10 Year Rainfall=3.37"

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Summary for Reach 160R: 1

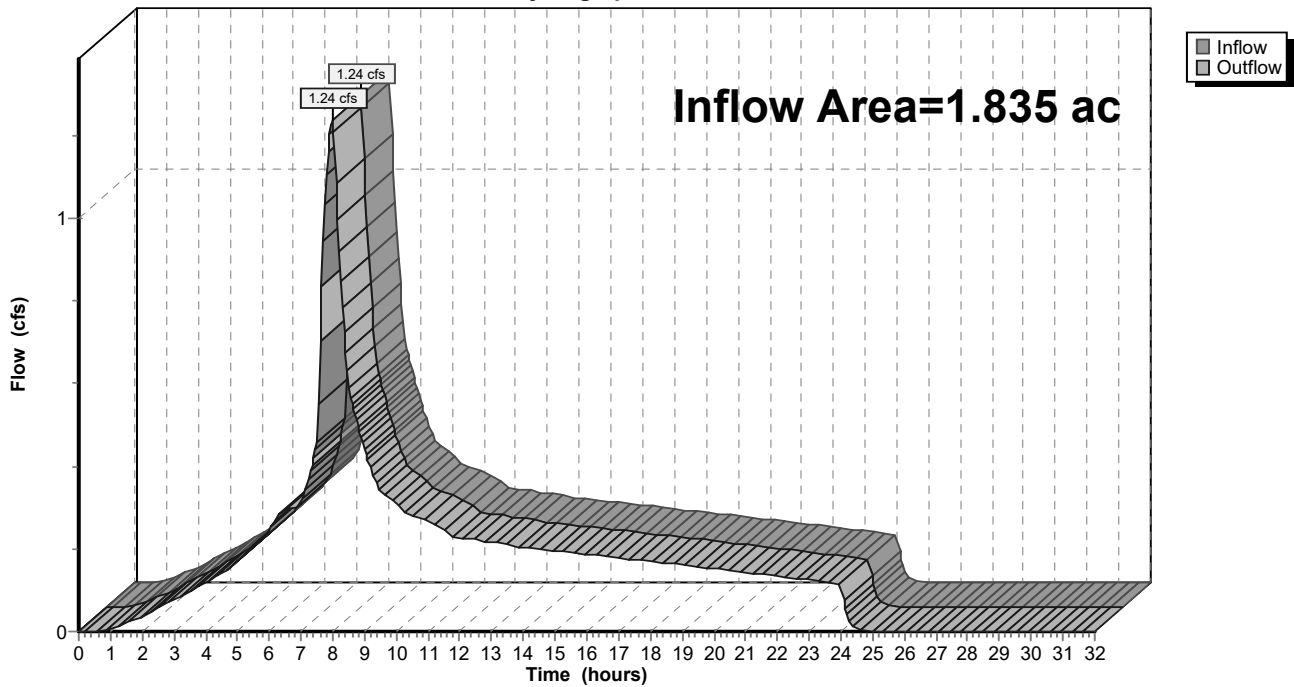
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.835 ac, 29.73% Impervious, Inflow Depth = 2.77" for 10-10 Year event
 Inflow = 1.24 cfs @ 7.98 hrs, Volume= 0.423 af
 Outflow = 1.24 cfs @ 7.98 hrs, Volume= 0.423 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 155R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 160R: 1

Hydrograph



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Summary for Reach 162R: 1

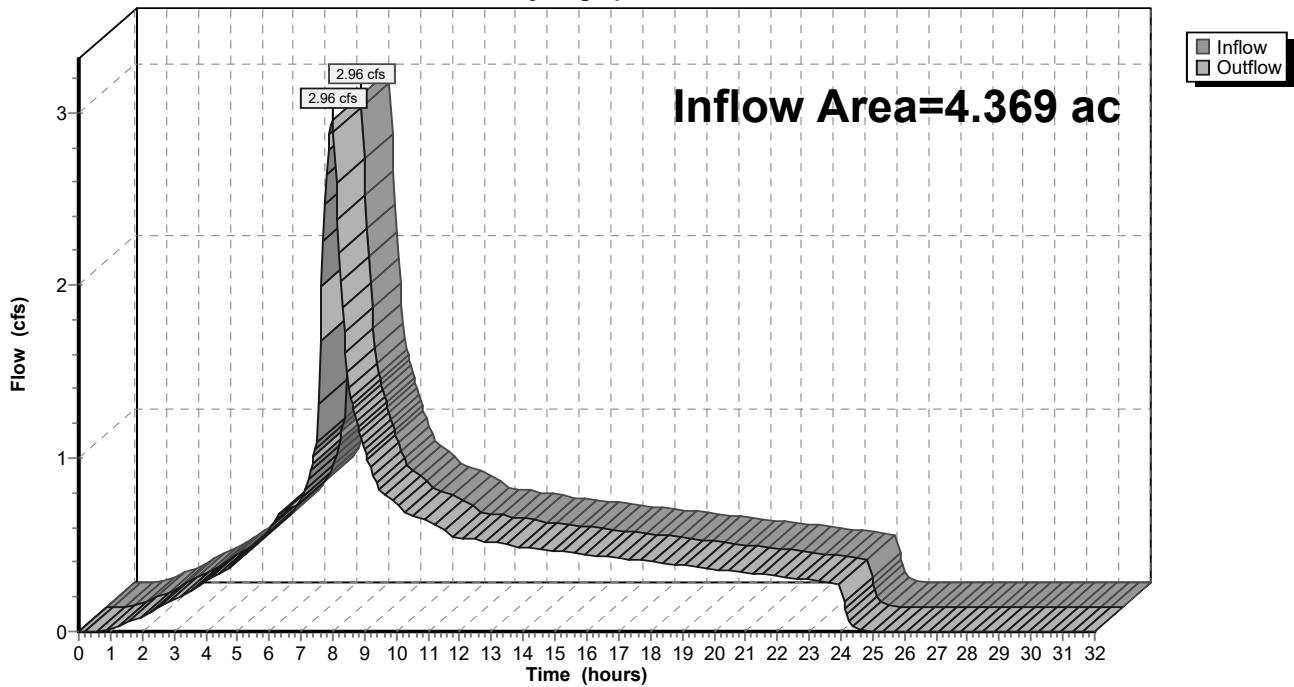
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 4.369 ac, 31.81% Impervious, Inflow Depth = 2.78" for 10-10 Year event
 Inflow = 2.96 cfs @ 7.98 hrs, Volume= 1.011 af
 Outflow = 2.96 cfs @ 7.98 hrs, Volume= 1.011 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 154R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 162R: 1

Hydrograph



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Summary for Reach 163R: 1

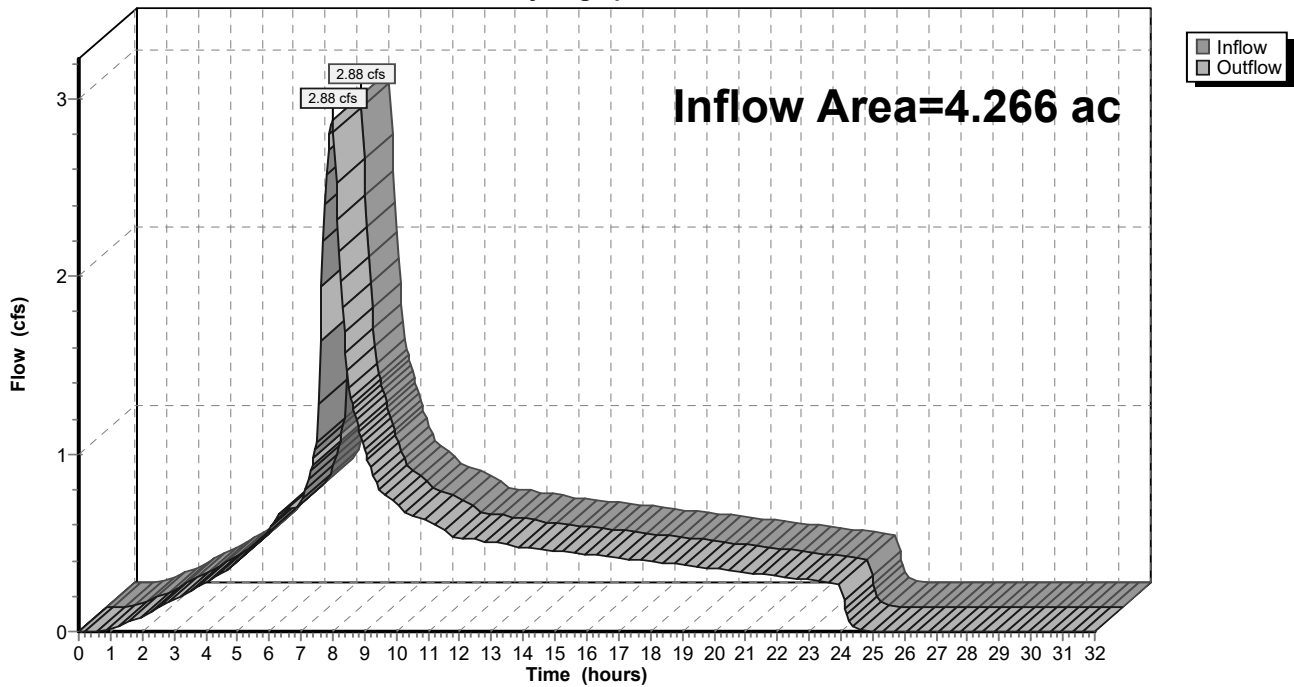
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 4.266 ac, 30.15% Impervious, Inflow Depth = 2.77" for 10-10 Year event
 Inflow = 2.88 cfs @ 7.98 hrs, Volume= 0.984 af
 Outflow = 2.88 cfs @ 7.98 hrs, Volume= 0.984 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 162R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 163R: 1

Hydrograph



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Summary for Reach 165R: 1

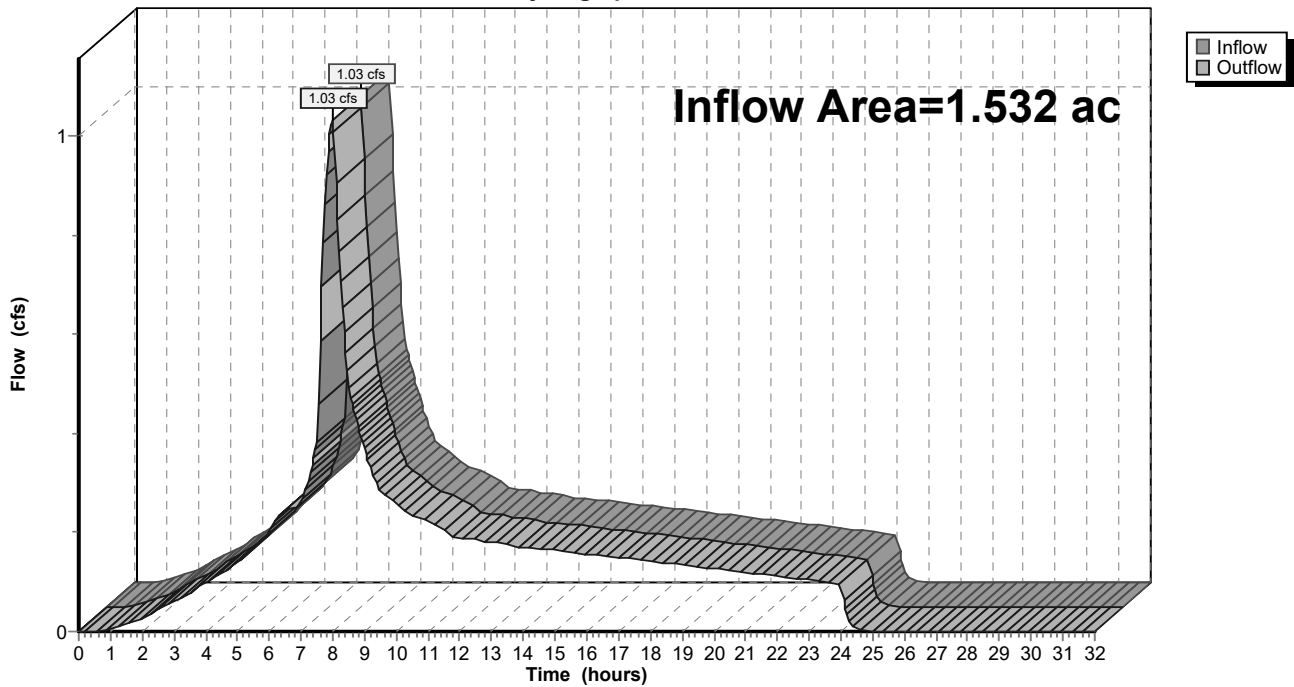
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.532 ac, 27.64% Impervious, Inflow Depth = 2.76" for 10-10 Year event
 Inflow = 1.03 cfs @ 7.98 hrs, Volume= 0.352 af
 Outflow = 1.03 cfs @ 7.98 hrs, Volume= 0.352 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 163R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 165R: 1

Hydrograph



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Summary for Reach 166R: Basin Future

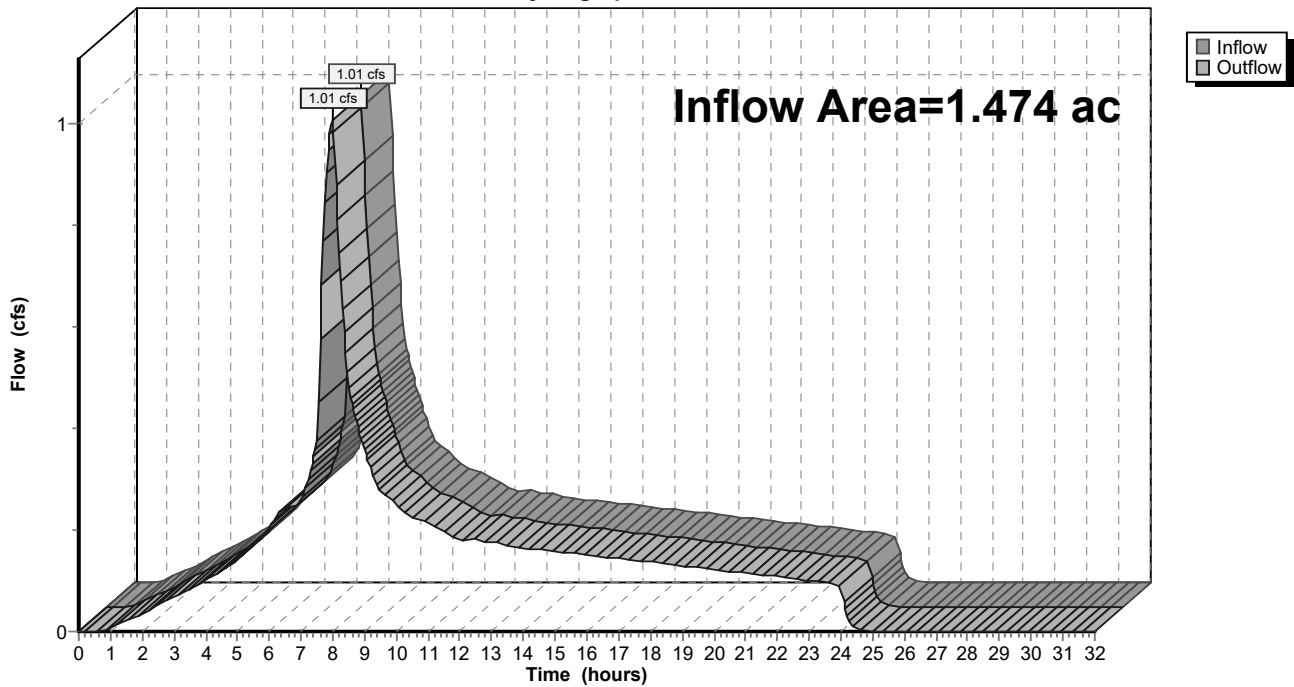
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.474 ac, 37.85% Impervious, Inflow Depth = 2.81" for 10-10 Year event
 Inflow = 1.01 cfs @ 7.98 hrs, Volume= 0.345 af
 Outflow = 1.01 cfs @ 7.98 hrs, Volume= 0.345 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 163R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 166R: Basin Future

Hydrograph



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Summary for Pond 54P: Stormwater Swale 2

Inflow Area = 0.082 ac, 100.00% Impervious, Inflow Depth = 3.14" for 10-10 Year event
 Inflow = 0.06 cfs @ 7.98 hrs, Volume= 0.022 af
 Outflow = 0.06 cfs @ 7.98 hrs, Volume= 0.022 af, Atten= 0%, Lag= 0.4 min
 Primary = 0.06 cfs @ 7.98 hrs, Volume= 0.022 af
 Routed to Reach 58R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Peak Elev= 222.42' @ 7.98 hrs Surf.Area= 185 sf Storage= 32 cf
 Flood Elev= 223.30' Surf.Area= 192 sf Storage= 88 cf

Plug-Flow detention time= 37.0 min calculated for 0.022 af (100% of inflow)
 Center-of-Mass det. time= 37.1 min (706.9 - 669.8)

Volume	Invert	Avail.Storage	Storage Description
#1	222.30'	63 cf	Open Storage (Irregular) Listed below (Recalc)
#2	220.80'	10 cf	Imported Soil (Irregular) Listed below (Recalc) 101 cf Overall x 10.0% Voids
#3	220.05'	15 cf	Rock Chamber (Irregular) Listed below (Recalc) 44 cf Overall x 35.0% Voids
		88 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
222.30	59	33.0	0	0	59
223.30	67	34.0	63	63	93

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
220.80	67	34.0	0	0	67
222.30	67	34.0	101	101	118

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
220.05	58	33.0	0	0	58
220.80	58	33.0	44	44	83

Device	Routing	Invert	Outlet Devices
#1	Primary	220.05'	2.000 in/hr Perf Pipes over Surface area
#2	Primary	223.05'	4.0" Horiz. 4" Overflow Pipe C= 0.600 Limited to weir flow at low heads
#3	Primary	222.30'	10.0" Vert. 10" Outflow Pipe C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.06 cfs @ 7.98 hrs HW=222.42' TW=0.00' (Dynamic Tailwater)

- 1=Perf Pipes (Exfiltration Controls 0.01 cfs)
- 2=4" Overflow Pipe (Controls 0.00 cfs)
- 3=10" Outflow Pipe (Orifice Controls 0.05 cfs @ 1.16 fps)

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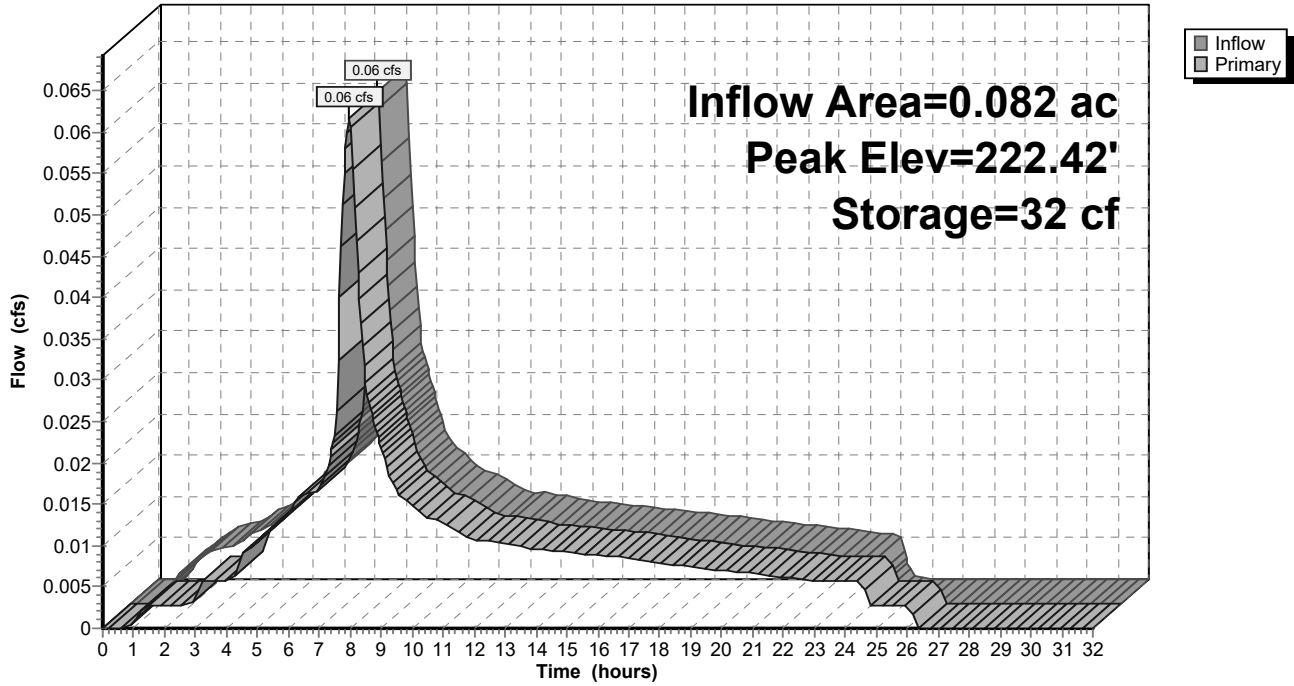
Type IA 24-hr 10-10 Year Rainfall=3.37"

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Pond 54P: Stormwater Swale 2

Hydrograph



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Summary for Pond 60P: Stormwater Swale 1

[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=46)

Inflow Area = 0.085 ac, 100.00% Impervious, Inflow Depth = 3.14" for 10-10 Year event
 Inflow = 0.06 cfs @ 7.98 hrs, Volume= 0.022 af
 Outflow = 0.06 cfs @ 7.98 hrs, Volume= 0.022 af, Atten= 0%, Lag= 0.5 min
 Primary = 0.06 cfs @ 7.98 hrs, Volume= 0.022 af
 Routed to Reach 58R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Peak Elev= 222.07' @ 7.98 hrs Surf.Area= 195 sf Storage= 34 cf
 Flood Elev= 222.95' Surf.Area= 204 sf Storage= 93 cf

Plug-Flow detention time= 37.3 min calculated for 0.022 af (100% of inflow)
 Center-of-Mass det. time= 37.4 min (707.3 - 669.8)

Volume	Invert	Avail.Storage	Storage Description
#1	221.95'	67 cf	Open Storage (Irregular) Listed below (Recalc)
#2	220.45'	11 cf	Imported Soil (Irregular) Listed below (Recalc) 108 cf Overall x 10.0% Voids
#3	219.70'	16 cf	Rock Chamber (Irregular) Listed below (Recalc) 45 cf Overall x 35.0% Voids
		93 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
221.95	62	34.0	0	0	62
222.95	72	36.0	67	67	99

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
220.45	72	36.0	0	0	72
221.95	72	36.0	108	108	126

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
219.70	60	34.0	0	0	60
220.45	60	34.0	45	45	86

Device	Routing	Invert	Outlet Devices
#1	Primary	219.70'	2.000 in/hr Perf Pipes over Surface area
#2	Primary	222.70'	4.0" Horiz. 4" Overflow Pipe C= 0.600 Limited to weir flow at low heads
#3	Primary	221.95'	10.0" Vert. 10" Outflow Pipe C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.06 cfs @ 7.98 hrs HW=222.07' TW=0.00' (Dynamic Tailwater)

- 1=Perf Pipes (Exfiltration Controls 0.01 cfs)
- 2=4" Overflow Pipe (Controls 0.00 cfs)
- 3=10" Outflow Pipe (Orifice Controls 0.05 cfs @ 1.17 fps)

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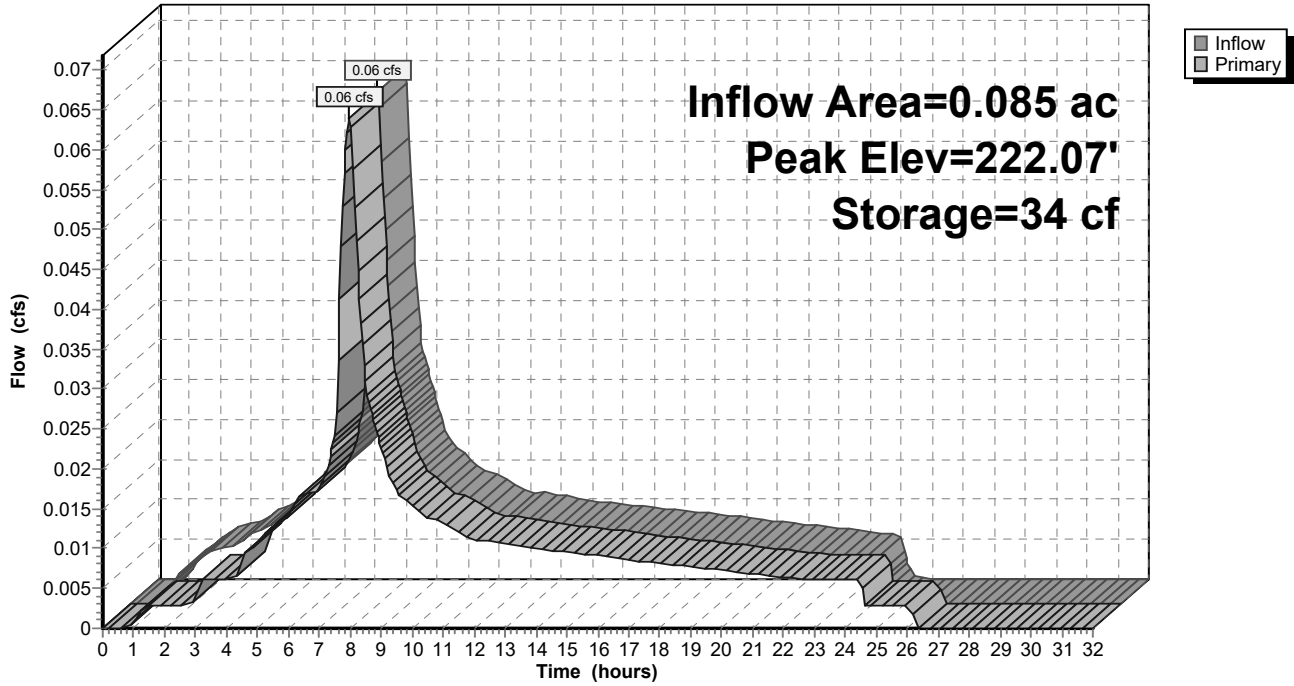
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Pond 60P: Stormwater Swale 1

Hydrograph



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Summary for Pond 63P: Detention Pond

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

Inflow Area = 23.038 ac, 36.38% Impervious, Inflow Depth = 2.80" for 10-10 Year event
 Inflow = 15.71 cfs @ 7.98 hrs, Volume= 5.378 af
 Outflow = 6.26 cfs @ 8.80 hrs, Volume= 5.377 af, Atten= 60%, Lag= 49.5 min
 Primary = 6.26 cfs @ 8.80 hrs, Volume= 5.377 af
 Routed to Reach 85R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Peak Elev= 223.70' @ 8.80 hrs Surf.Area= 46,157 sf Storage= 43,960 cf
 Flood Elev= 225.50' Surf.Area= 48,838 sf Storage= 80,897 cf

Plug-Flow detention time= 103.6 min calculated for 5.377 af (100% of inflow)
 Center-of-Mass det. time= 103.4 min (805.1 - 701.8)

Volume	Invert	Avail.Storage	Storage Description
#1	221.50'	75,859 cf	Open Storage (Irregular) Listed below (Recalc)
#2	220.00'	3,288 cf	Growing Medium (Irregular) Listed below (Recalc) 32,879 cf Overall x 10.0% Voids
#3	219.00'	1,750 cf	Rock Chamber (Prismatic) Listed below (Recalc) 5,000 cf Overall x 35.0% Voids
		80,897 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
221.50	16,108	696.8	0	0	16,108
222.50	17,511	717.0	16,805	16,805	18,488
223.50	18,943	738.5	18,222	35,027	21,082
224.50	20,410	754.7	19,672	54,699	23,147
225.50	21,919	770.9	21,160	75,859	25,257

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
220.00	21,919	770.9	0	0	21,919
221.50	21,919	770.9	32,879	32,879	23,075

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
219.00	5,000	0	0
220.00	5,000	5,000	5,000

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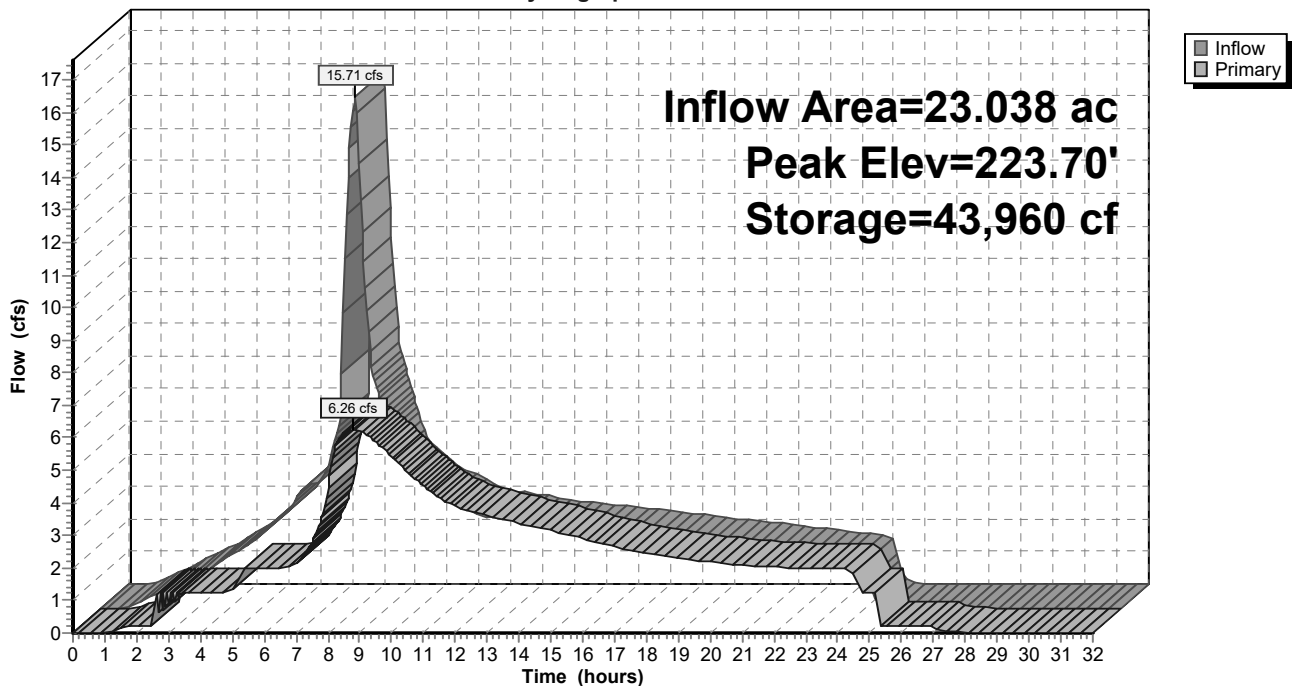
Device	Routing	Invert	Outlet Devices
#1	Primary	219.00'	24.0" Round 24" Pipe L= 100.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 219.00' / 218.80' S= 0.0020 '/ Cc= 0.900 n= 0.010, Flow Area= 3.14 sf
#2	Device 1	219.00'	2.000 in/hr 4" Perf Pipes over Surface area
#3	Device 1	221.85'	6.0" Vert. 2x6" Orifice X 2.00 C= 0.600 Limited to weir flow at low heads
#4	Device 1	222.78'	6.0" Vert. 6" Orifice C= 0.600 Limited to weir flow at low heads
#5	Device 1	222.95'	6.0" Vert. 6" Orifice C= 0.600 Limited to weir flow at low heads
#6	Device 1	223.25'	4.0" Vert. 4" Orifice C= 0.600 Limited to weir flow at low heads
#7	Device 1	223.55'	4.0" Vert. 4" Orifice C= 0.600 Limited to weir flow at low heads
#8	Device 1	223.77'	4.0" Vert. 2x4" Orifice X 2.00 C= 0.600 Limited to weir flow at low heads
#9	Device 1	224.35'	48.0" x 48.0" Horiz. 48" Overflow C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=6.26 cfs @ 8.80 hrs HW=223.70' TW=0.00' (Dynamic Tailwater)

- 1=24" Pipe (Passes 6.26 cfs of 25.69 cfs potential flow)
- 2=4" Perf Pipes (Exfiltration Controls 2.14 cfs)
- 3=2x6" Orifice (Orifice Controls 2.39 cfs @ 6.10 fps)
- 4=6" Orifice (Orifice Controls 0.78 cfs @ 3.95 fps)
- 5=6" Orifice (Orifice Controls 0.67 cfs @ 3.42 fps)
- 6=4" Orifice (Orifice Controls 0.23 cfs @ 2.58 fps)
- 7=4" Orifice (Orifice Controls 0.05 cfs @ 1.34 fps)
- 8=2x4" Orifice (Controls 0.00 cfs)
- 9=48" Overflow (Controls 0.00 cfs)

Pond 63P: Detention Pond

Hydrograph



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Time span=0.00-32.00 hrs, dt=0.05 hrs, 641 points
 Runoff by SBUH method, Split Pervious/Imperv.
 Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment64S: Home Basin 20	Runoff Area=9,940 sf 0.00% Impervious Runoff Depth=3.16" Tc=10.0 min CN=93/0 Runoff=0.18 cfs 0.060 af
Subcatchment65S: Single Pond Existing	Runoff Area=23.038 ac 0.00% Impervious Runoff Depth>2.77" Flow Length=1,526' Slope=0.0076 1' Tc=73.0 min CN=89/0 Runoff=7.91 cfs 5.312 af
Subcatchment67S: Home Basin 19	Runoff Area=17,197 sf 0.00% Impervious Runoff Depth=3.16" Tc=10.0 min CN=93/0 Runoff=0.31 cfs 0.104 af
Subcatchment68S: Home Basin 12	Runoff Area=18,133 sf 0.00% Impervious Runoff Depth=3.16" Tc=10.0 min CN=93/0 Runoff=0.32 cfs 0.110 af
Subcatchment69S: Home Basin 17	Runoff Area=16,661 sf 0.00% Impervious Runoff Depth=3.16" Tc=10.0 min CN=93/0 Runoff=0.30 cfs 0.101 af
Subcatchment70S: Home Basin 18	Runoff Area=11,596 sf 0.00% Impervious Runoff Depth=3.16" Tc=10.0 min CN=93/0 Runoff=0.21 cfs 0.070 af
Subcatchment71S: Home Basin 14	Runoff Area=16,444 sf 0.00% Impervious Runoff Depth=3.16" Tc=10.0 min CN=93/0 Runoff=0.29 cfs 0.099 af
Subcatchment72S: Home Basin 16	Runoff Area=20,310 sf 0.00% Impervious Runoff Depth=3.16" Tc=10.0 min CN=93/0 Runoff=0.36 cfs 0.123 af
Subcatchment73S: Home Basin 13	Runoff Area=10,807 sf 0.00% Impervious Runoff Depth=3.16" Tc=10.0 min CN=93/0 Runoff=0.19 cfs 0.065 af
Subcatchment74S: Swale Existing	Runoff Area=0.168 ac 0.00% Impervious Runoff Depth=2.77" Flow Length=105' Slope=0.0565 1' Tc=10.0 min CN=89/0 Runoff=0.11 cfs 0.039 af
Subcatchment75S: Home Basin 11	Runoff Area=18,483 sf 0.00% Impervious Runoff Depth=3.16" Tc=10.0 min CN=93/0 Runoff=0.33 cfs 0.112 af
Subcatchment77S: Home Basin 15	Runoff Area=12,503 sf 0.00% Impervious Runoff Depth=3.16" Tc=10.0 min CN=93/0 Runoff=0.22 cfs 0.076 af
Subcatchment78S: Single Pond	Runoff Area=21,919 sf 100.00% Impervious Runoff Depth=3.71" Tc=0.0 min CN=0/98 Runoff=0.47 cfs 0.155 af
Subcatchment79S: Home Basin 30	Runoff Area=38,416 sf 0.00% Impervious Runoff Depth=3.16" Tc=10.0 min CN=93/0 Runoff=0.69 cfs 0.232 af
Subcatchment80S: Home Basin 10	Runoff Area=14,789 sf 0.00% Impervious Runoff Depth=3.16" Tc=10.0 min CN=93/0 Runoff=0.26 cfs 0.089 af
Subcatchment81S: Home Basin 9	Runoff Area=15,575 sf 0.00% Impervious Runoff Depth=3.16" Tc=10.0 min CN=93/0 Runoff=0.28 cfs 0.094 af

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Subcatchment82S: Home Basin 2	Runoff Area=20,667 sf 0.00% Impervious Runoff Depth=3.16" Tc=10.0 min CN=93/0 Runoff=0.37 cfs 0.125 af
Subcatchment83S: Home Basin 7	Runoff Area=17,032 sf 0.00% Impervious Runoff Depth=3.16" Tc=10.0 min CN=93/0 Runoff=0.30 cfs 0.103 af
Subcatchment84S: Home Basin 8	Runoff Area=11,668 sf 0.00% Impervious Runoff Depth=3.16" Tc=10.0 min CN=93/0 Runoff=0.21 cfs 0.071 af
Subcatchment85S: Home Basin 29	Runoff Area=25,118 sf 0.00% Impervious Runoff Depth=3.16" Tc=10.0 min CN=93/0 Runoff=0.45 cfs 0.152 af
Subcatchment86S: Home Basin 22	Runoff Area=16,159 sf 0.00% Impervious Runoff Depth=3.16" Tc=10.0 min CN=93/0 Runoff=0.29 cfs 0.098 af
Subcatchment87S: Home Basin 27	Runoff Area=24,839 sf 0.00% Impervious Runoff Depth=3.16" Tc=10.0 min CN=93/0 Runoff=0.44 cfs 0.150 af
Subcatchment88S: Home Basin 28	Runoff Area=25,318 sf 0.00% Impervious Runoff Depth=3.16" Tc=10.0 min CN=93/0 Runoff=0.45 cfs 0.153 af
Subcatchment89S: Home Basin 24	Runoff Area=20,676 sf 0.00% Impervious Runoff Depth=3.16" Tc=10.0 min CN=93/0 Runoff=0.37 cfs 0.125 af
Subcatchment90S: Home Basin 26	Runoff Area=14,135 sf 0.00% Impervious Runoff Depth=3.16" Tc=10.0 min CN=93/0 Runoff=0.25 cfs 0.085 af
Subcatchment91S: Home Basin 23	Runoff Area=12,271 sf 0.00% Impervious Runoff Depth=3.16" Tc=10.0 min CN=93/0 Runoff=0.22 cfs 0.074 af
Subcatchment92S: Home Basin 21	Runoff Area=27,019 sf 0.00% Impervious Runoff Depth=3.16" Tc=10.0 min CN=93/0 Runoff=0.48 cfs 0.163 af
Subcatchment93S: Home Basin 25	Runoff Area=17,012 sf 0.00% Impervious Runoff Depth=3.16" Tc=10.0 min CN=93/0 Runoff=0.30 cfs 0.103 af
Subcatchment94S: Home Basin 4	Runoff Area=19,535 sf 0.00% Impervious Runoff Depth=3.16" Tc=10.0 min CN=93/0 Runoff=0.35 cfs 0.118 af
Subcatchment95S: Home Basin 31	Runoff Area=24,883 sf 0.00% Impervious Runoff Depth=3.16" Tc=10.0 min CN=93/0 Runoff=0.45 cfs 0.150 af
Subcatchment96S: Basin 1	Runoff Area=15,045 sf 100.00% Impervious Runoff Depth=3.71" Tc=10.0 min CN=0/98 Runoff=0.30 cfs 0.107 af
Subcatchment97S: Basin 2	Runoff Area=19,824 sf 100.00% Impervious Runoff Depth=3.71" Tc=10.0 min CN=0/98 Runoff=0.40 cfs 0.141 af
Subcatchment98S: Basin 3	Runoff Area=23,416 sf 100.00% Impervious Runoff Depth=3.71" Tc=10.0 min CN=0/98 Runoff=0.47 cfs 0.166 af

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Subcatchment99S: Home Basin 6	Runoff Area=25,997 sf 0.00% Impervious Runoff Depth=3.16" Tc=10.0 min CN=93/0 Runoff=0.46 cfs 0.157 af
Subcatchment100S: Basin 4	Runoff Area=3,650 sf 100.00% Impervious Runoff Depth=3.71" Tc=10.0 min CN=0/98 Runoff=0.07 cfs 0.026 af
Subcatchment101S: Basin 5	Runoff Area=3,523 sf 100.00% Impervious Runoff Depth=3.71" Tc=10.0 min CN=0/98 Runoff=0.07 cfs 0.025 af
Subcatchment102S: Home Basin 3	Runoff Area=19,559 sf 0.00% Impervious Runoff Depth=3.16" Tc=10.0 min CN=93/0 Runoff=0.35 cfs 0.118 af
Subcatchment103S: Home Basin 1	Runoff Area=22,288 sf 0.00% Impervious Runoff Depth=3.16" Tc=10.0 min CN=93/0 Runoff=0.40 cfs 0.135 af
Subcatchment104S: Home Basin 5	Runoff Area=33,512 sf 0.00% Impervious Runoff Depth=3.16" Tc=10.0 min CN=93/0 Runoff=0.60 cfs 0.203 af
Subcatchment105S: Basin 6	Runoff Area=8,965 sf 100.00% Impervious Runoff Depth=3.71" Tc=10.0 min CN=0/98 Runoff=0.18 cfs 0.064 af
Subcatchment107S: Basin 8	Runoff Area=8,177 sf 100.00% Impervious Runoff Depth=3.71" Tc=10.0 min CN=0/98 Runoff=0.17 cfs 0.058 af
Subcatchment108S: Basin 9	Runoff Area=13,130 sf 100.00% Impervious Runoff Depth=3.71" Tc=10.0 min CN=0/98 Runoff=0.27 cfs 0.093 af
Subcatchment109S: Basin 10	Runoff Area=22,902 sf 100.00% Impervious Runoff Depth=3.71" Tc=10.0 min CN=0/98 Runoff=0.46 cfs 0.162 af
Subcatchment110S: Basin 11	Runoff Area=25,748 sf 100.00% Impervious Runoff Depth=3.71" Tc=10.0 min CN=0/98 Runoff=0.52 cfs 0.183 af
Subcatchment111S: Basin 12	Runoff Area=5,562 sf 100.00% Impervious Runoff Depth=3.71" Tc=10.0 min CN=0/98 Runoff=0.11 cfs 0.039 af
Subcatchment112S: Basin 13	Runoff Area=4,702 sf 100.00% Impervious Runoff Depth=3.71" Tc=10.0 min CN=0/98 Runoff=0.10 cfs 0.033 af
Subcatchment113S: Basin 14	Runoff Area=7,669 sf 100.00% Impervious Runoff Depth=3.71" Tc=10.0 min CN=0/98 Runoff=0.16 cfs 0.054 af
Subcatchment114S: Basin 15	Runoff Area=7,261 sf 100.00% Impervious Runoff Depth=3.71" Tc=10.0 min CN=0/98 Runoff=0.15 cfs 0.051 af
Subcatchment115S: Basin 16	Runoff Area=7,066 sf 100.00% Impervious Runoff Depth=3.71" Tc=10.0 min CN=0/98 Runoff=0.14 cfs 0.050 af
Subcatchment116S: Basin 17	Runoff Area=26,003 sf 100.00% Impervious Runoff Depth=3.71" Tc=10.0 min CN=0/98 Runoff=0.53 cfs 0.184 af

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Subcatchment117S: Basin 18	Runoff Area=23,761 sf 100.00% Impervious Runoff Depth=3.71" Tc=10.0 min CN=0/98 Runoff=0.48 cfs 0.168 af
Subcatchment118S: Basin 19	Runoff Area=7,309 sf 100.00% Impervious Runoff Depth=3.71" Tc=10.0 min CN=0/98 Runoff=0.15 cfs 0.052 af
Subcatchment119S: Basin 20	Runoff Area=7,535 sf 100.00% Impervious Runoff Depth=3.71" Tc=10.0 min CN=0/98 Runoff=0.15 cfs 0.053 af
Subcatchment120S: Basin 21	Runoff Area=6,846 sf 100.00% Impervious Runoff Depth=3.71" Tc=10.0 min CN=0/98 Runoff=0.14 cfs 0.049 af
Subcatchment121S: Basin 22	Runoff Area=5,182 sf 100.00% Impervious Runoff Depth=3.71" Tc=10.0 min CN=0/98 Runoff=0.10 cfs 0.037 af
Subcatchment122S: Basin 23	Runoff Area=5,456 sf 100.00% Impervious Runoff Depth=3.71" Tc=10.0 min CN=0/98 Runoff=0.11 cfs 0.039 af
Subcatchment123S: Basin 24	Runoff Area=4,510 sf 100.00% Impervious Runoff Depth=3.71" Tc=10.0 min CN=0/98 Runoff=0.09 cfs 0.032 af
Subcatchment124S: Basin 25	Runoff Area=13,271 sf 100.00% Impervious Runoff Depth=3.71" Tc=10.0 min CN=0/98 Runoff=0.27 cfs 0.094 af
Subcatchment125S: Basin 26	Runoff Area=18,452 sf 100.00% Impervious Runoff Depth=3.71" Tc=10.0 min CN=0/98 Runoff=0.37 cfs 0.131 af
Subcatchment126S: Alley Basin 1	Runoff Area=9,860 sf 100.00% Impervious Runoff Depth=3.71" Tc=10.0 min CN=0/98 Runoff=0.20 cfs 0.070 af
Subcatchment127S: Alley Basin 2	Runoff Area=7,461 sf 100.00% Impervious Runoff Depth=3.71" Tc=10.0 min CN=0/98 Runoff=0.15 cfs 0.053 af
Subcatchment128S: Alley Basin 3	Runoff Area=6,782 sf 100.00% Impervious Runoff Depth=3.71" Tc=10.0 min CN=0/98 Runoff=0.14 cfs 0.048 af
Subcatchment129S: Alley Basin 4	Runoff Area=6,970 sf 100.00% Impervious Runoff Depth=3.71" Tc=10.0 min CN=0/98 Runoff=0.14 cfs 0.049 af
Subcatchment168S: Future Lots	Runoff Area=64,223 sf 37.85% Impervious Runoff Depth=3.37" Tc=10.0 min CN=93/98 Runoff=1.21 cfs 0.414 af
Subcatchment169S: Swale 2	Runoff Area=67 sf 100.00% Impervious Runoff Depth=3.71" Tc=0.0 min CN=0/98 Runoff=0.00 cfs 0.000 af
Subcatchment170S: Swale 1	Runoff Area=72 sf 100.00% Impervious Runoff Depth=3.71" Tc=0.0 min CN=0/98 Runoff=0.00 cfs 0.001 af
Reach 39R: Post-Construction Peak Flow	Inflow=7.97 cfs 6.500 af Outflow=7.97 cfs 6.500 af

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Reach 42R: Pre-Construction Peak FlowInflow=7.98 cfs 5.350 af
Outflow=7.98 cfs 5.350 af**Reach 58R: 1**Inflow=7.97 cfs 6.500 af
Outflow=7.97 cfs 6.500 af**Reach 85R: 1**Inflow=7.91 cfs 6.448 af
Outflow=7.91 cfs 6.448 af**Reach 130R: 1**Inflow=3.21 cfs 1.101 af
Outflow=3.21 cfs 1.101 af**Reach 131R: 1**Inflow=3.21 cfs 1.101 af
Outflow=3.21 cfs 1.101 af**Reach 132R: 1**Inflow=1.84 cfs 0.631 af
Outflow=1.84 cfs 0.631 af**Reach 133R: 1**Inflow=0.30 cfs 0.107 af
Outflow=0.30 cfs 0.107 af**Reach 134R: 1**Inflow=14.77 cfs 5.060 af
Outflow=14.77 cfs 5.060 af**Reach 135R: 1**Inflow=2.50 cfs 0.854 af
Outflow=2.50 cfs 0.854 af**Reach 136R: 1**Inflow=1.42 cfs 0.486 af
Outflow=1.42 cfs 0.486 af**Reach 137R: 1**Inflow=0.86 cfs 0.297 af
Outflow=0.86 cfs 0.297 af**Reach 138R: 1**Inflow=0.38 cfs 0.133 af
Outflow=0.38 cfs 0.133 af**Reach 139R: 1**Inflow=12.01 cfs 4.114 af
Outflow=12.01 cfs 4.114 af**Reach 140R: 1**Inflow=0.20 cfs 0.070 af
Outflow=0.20 cfs 0.070 af**Reach 141R: 1**Inflow=0.15 cfs 0.053 af
Outflow=0.15 cfs 0.053 af**Reach 142R: 1**Inflow=11.39 cfs 3.903 af
Outflow=11.39 cfs 3.903 af**Reach 143R: 1**Inflow=2.32 cfs 0.794 af
Outflow=2.32 cfs 0.794 af

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Reach 144R: 1	Inflow=1.66 cfs 0.569 af Outflow=1.66 cfs 0.569 af
Reach 145R: 1	Inflow=1.66 cfs 0.569 af Outflow=1.66 cfs 0.569 af
Reach 146R: 1	Inflow=9.07 cfs 3.109 af Outflow=9.07 cfs 3.109 af
Reach 147R: 1	Inflow=0.14 cfs 0.048 af Outflow=0.14 cfs 0.048 af
Reach 148R: 1	Inflow=8.94 cfs 3.061 af Outflow=8.94 cfs 3.061 af
Reach 149R: 1	Inflow=2.26 cfs 0.775 af Outflow=2.26 cfs 0.775 af
Reach 150R: 1	Inflow=1.54 cfs 0.526 af Outflow=1.54 cfs 0.526 af
Reach 151R: 1	Inflow=1.17 cfs 0.403 af Outflow=1.17 cfs 0.403 af
Reach 152R: 1	Inflow=6.24 cfs 2.138 af Outflow=6.24 cfs 2.138 af
Reach 153R: 1	Inflow=0.14 cfs 0.049 af Outflow=0.14 cfs 0.049 af
Reach 154R: 1	Inflow=6.10 cfs 2.088 af Outflow=6.10 cfs 2.088 af
Reach 155R: 1	Inflow=2.14 cfs 0.734 af Outflow=2.14 cfs 0.734 af
Reach 158R: 1	Inflow=12.27 cfs 4.206 af Outflow=12.27 cfs 4.206 af
Reach 159R: 1	Inflow=11.86 cfs 4.062 af Outflow=11.86 cfs 4.062 af
Reach 160R: 1	Inflow=1.48 cfs 0.508 af Outflow=1.48 cfs 0.508 af
Reach 162R: 1	Inflow=3.55 cfs 1.214 af Outflow=3.55 cfs 1.214 af
Reach 163R: 1	Inflow=3.45 cfs 1.182 af Outflow=3.45 cfs 1.182 af

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Reach 165R: 1Inflow=1.24 cfs 0.423 af
Outflow=1.24 cfs 0.423 af**Reach 166R: Basin Future**Inflow=1.21 cfs 0.414 af
Outflow=1.21 cfs 0.414 af**Pond 54P: Stormwater Swale 2**Peak Elev=222.43' Storage=33 cf Inflow=0.07 cfs 0.025 af
Outflow=0.07 cfs 0.025 af**Pond 60P: Stormwater Swale 1**Peak Elev=222.08' Storage=35 cf Inflow=0.08 cfs 0.026 af
Outflow=0.08 cfs 0.026 af**Pond 63P: Detention Pond**Peak Elev=224.18' Storage=53,277 cf Inflow=18.82 cfs 6.449 af
Outflow=7.91 cfs 6.448 af

Total Runoff Area = 46.412 ac Runoff Volume = 11.852 af Average Runoff Depth = 3.06"
81.58% Pervious = 37.863 ac 18.42% Impervious = 8.549 ac

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Summary for Subcatchment 64S: Home Basin 20

Runoff = 0.18 cfs @ 7.98 hrs, Volume= 0.060 af, Depth= 3.16"
 Routed to Reach 143R : 1

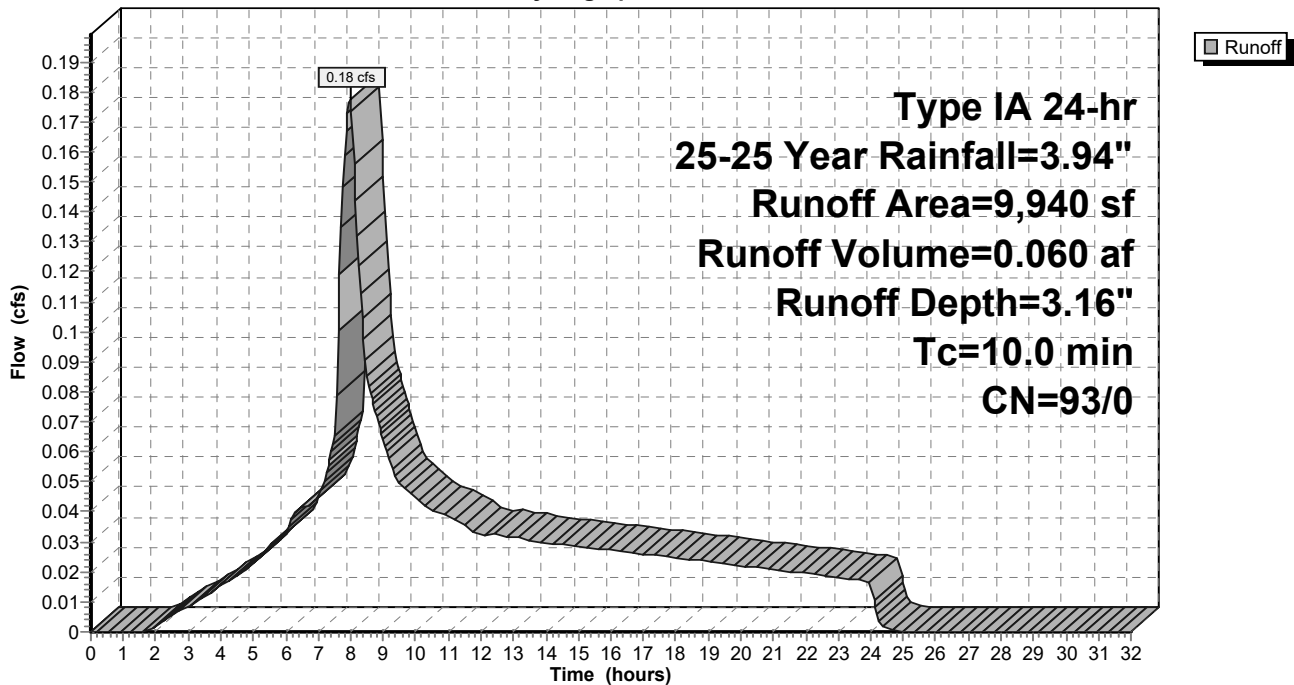
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 25-25 Year Rainfall=3.94"

Area (sf)	CN	Description
* 9,940	93	70% Lot Coverage Weighted
9,940	93	100.00% Pervious Area

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

Subcatchment 64S: Home Basin 20

Hydrograph



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Summary for Subcatchment 65S: Single Pond Existing Conditions

Runoff = 7.91 cfs @ 8.27 hrs, Volume= 5.312 af, Depth> 2.77"
 Routed to Reach 42R : Pre-Construction Peak Flow

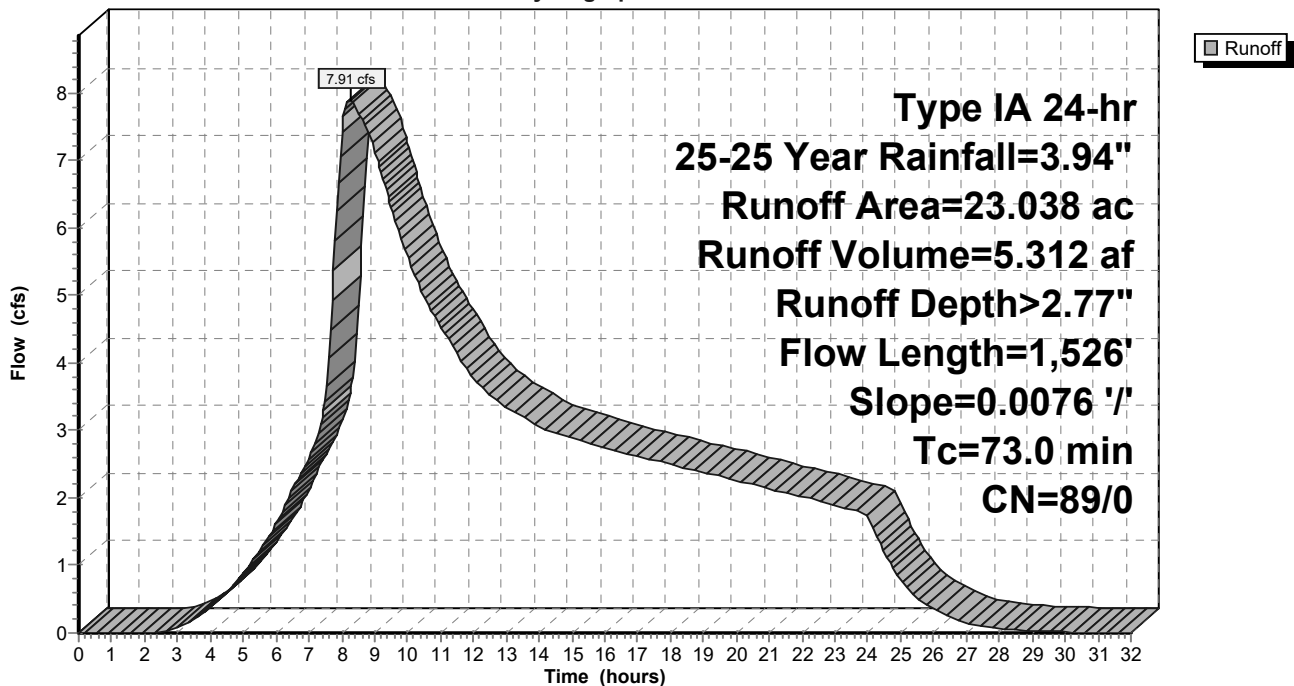
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 25-25 Year Rainfall=3.94"

Area (ac)	CN	Description
23.038	89	Pasture/grassland/range, Poor, HSG D
23.038	89	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
39.5	300	0.0076	0.13		Sheet Flow, Grass: Short n= 0.150 P2= 2.47"
33.5	1,226	0.0076	0.61		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
73.0	1,526	Total			

Subcatchment 65S: Single Pond Existing Conditions

Hydrograph



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Summary for Subcatchment 67S: Home Basin 19

Runoff = 0.31 cfs @ 7.98 hrs, Volume= 0.104 af, Depth= 3.16"
 Routed to Reach 159R : 1

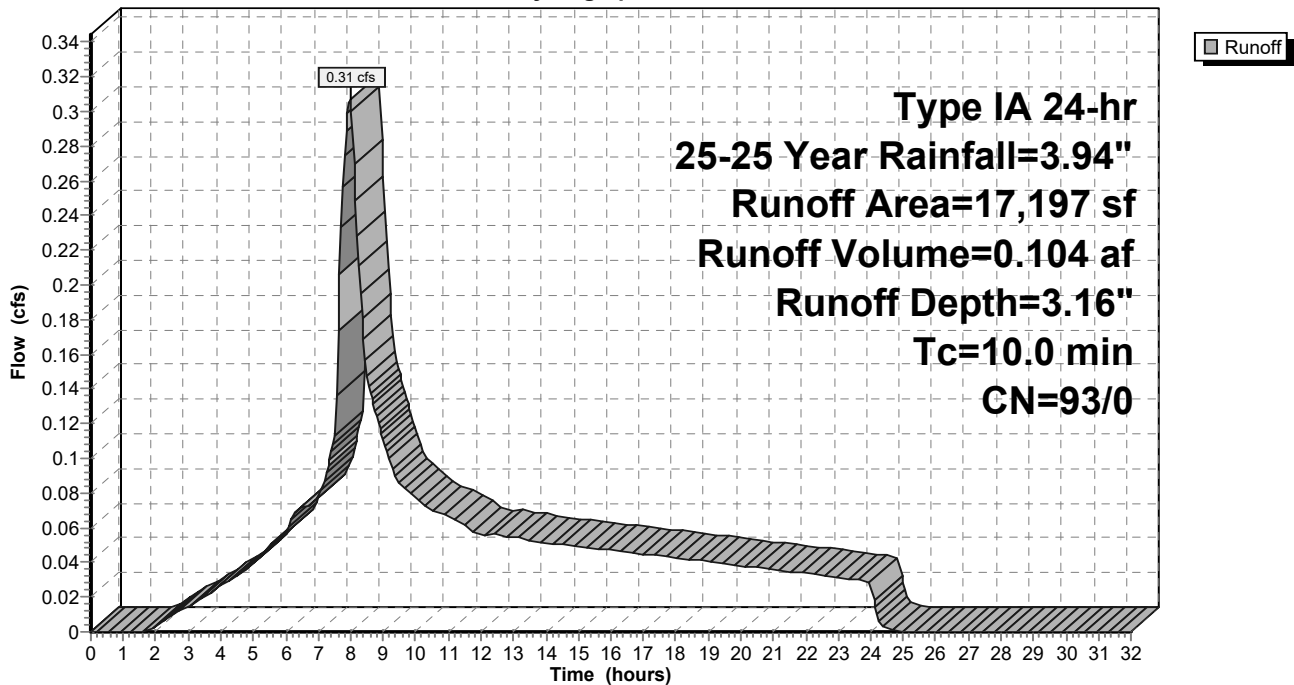
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 25-25 Year Rainfall=3.94"

Area (sf)	CN	Description
* 17,197	93	70% Lot Coverage Weighted
17,197	93	100.00% Pervious Area

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

Subcatchment 67S: Home Basin 19

Hydrograph



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Summary for Subcatchment 68S: Home Basin 12

Runoff = 0.32 cfs @ 7.98 hrs, Volume= 0.110 af, Depth= 3.16"
 Routed to Reach 160R : 1

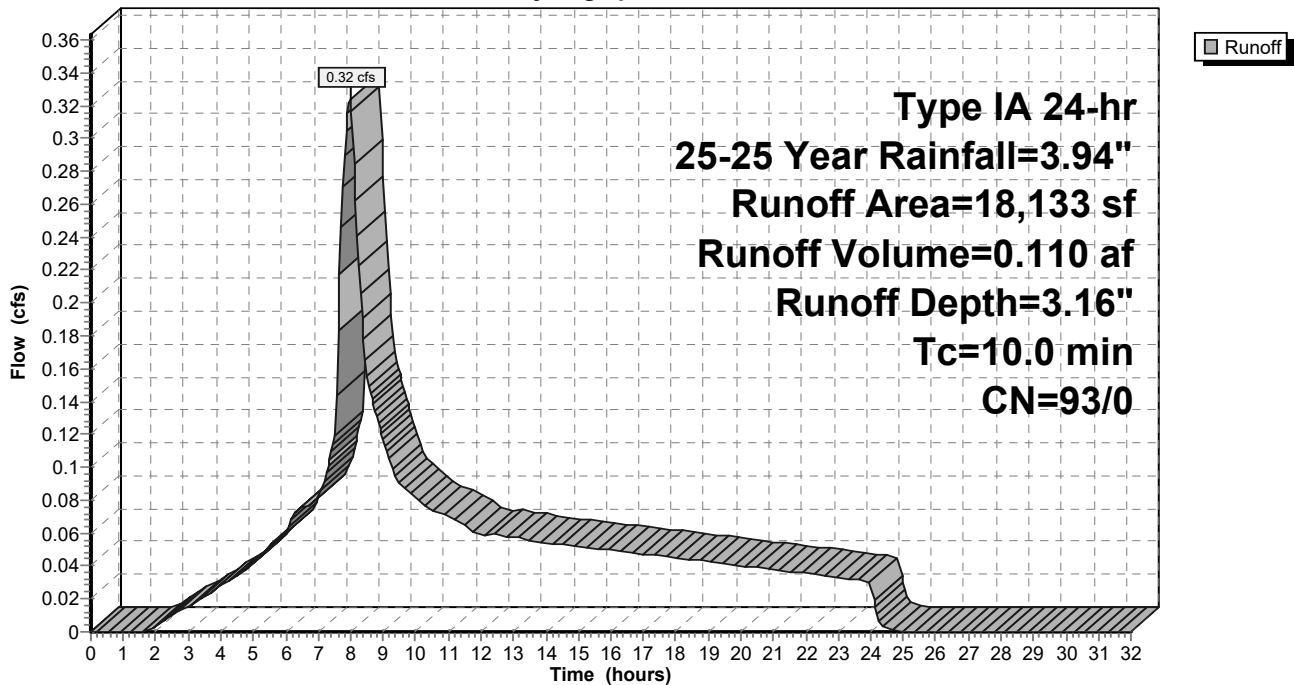
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 25-25 Year Rainfall=3.94"

Area (sf)	CN	Description
* 18,133	93	70% Lot Coverage Weighted
18,133	93	100.00% Pervious Area

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

Subcatchment 68S: Home Basin 12

Hydrograph



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Summary for Subcatchment 69S: Home Basin 17

Runoff = 0.30 cfs @ 7.98 hrs, Volume= 0.101 af, Depth= 3.16"
 Routed to Reach 151R : 1

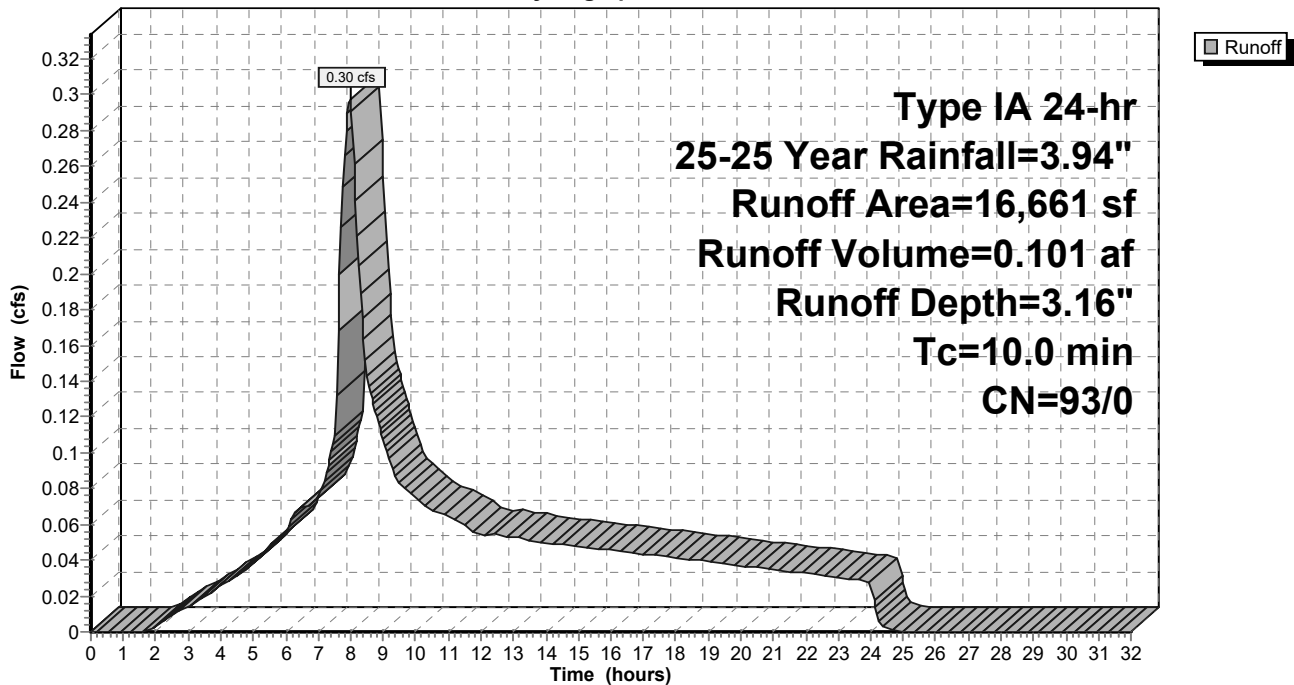
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 25-25 Year Rainfall=3.94"

Area (sf)	CN	Description
* 16,661	93	70% Lot Coverage Weighted
16,661	93	100.00% Pervious Area

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

Subcatchment 69S: Home Basin 17

Hydrograph



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Summary for Subcatchment 70S: Home Basin 18

Runoff = 0.21 cfs @ 7.98 hrs, Volume= 0.070 af, Depth= 3.16"
 Routed to Reach 149R : 1

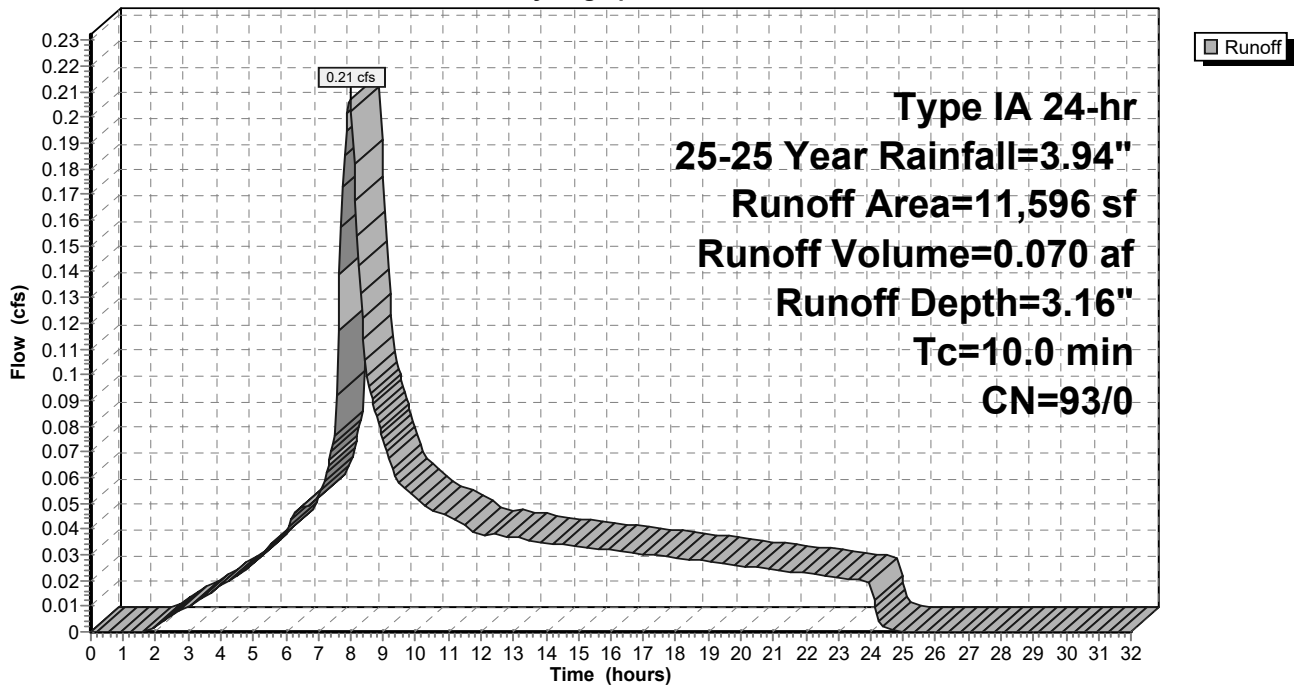
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 25-25 Year Rainfall=3.94"

Area (sf)	CN	Description
* 11,596	93	70% Lot Coverage Weighted
11,596	93	100.00% Pervious Area

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

Subcatchment 70S: Home Basin 18

Hydrograph



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Summary for Subcatchment 71S: Home Basin 14

Runoff = 0.29 cfs @ 7.98 hrs, Volume= 0.099 af, Depth= 3.16"
 Routed to Reach 148R : 1

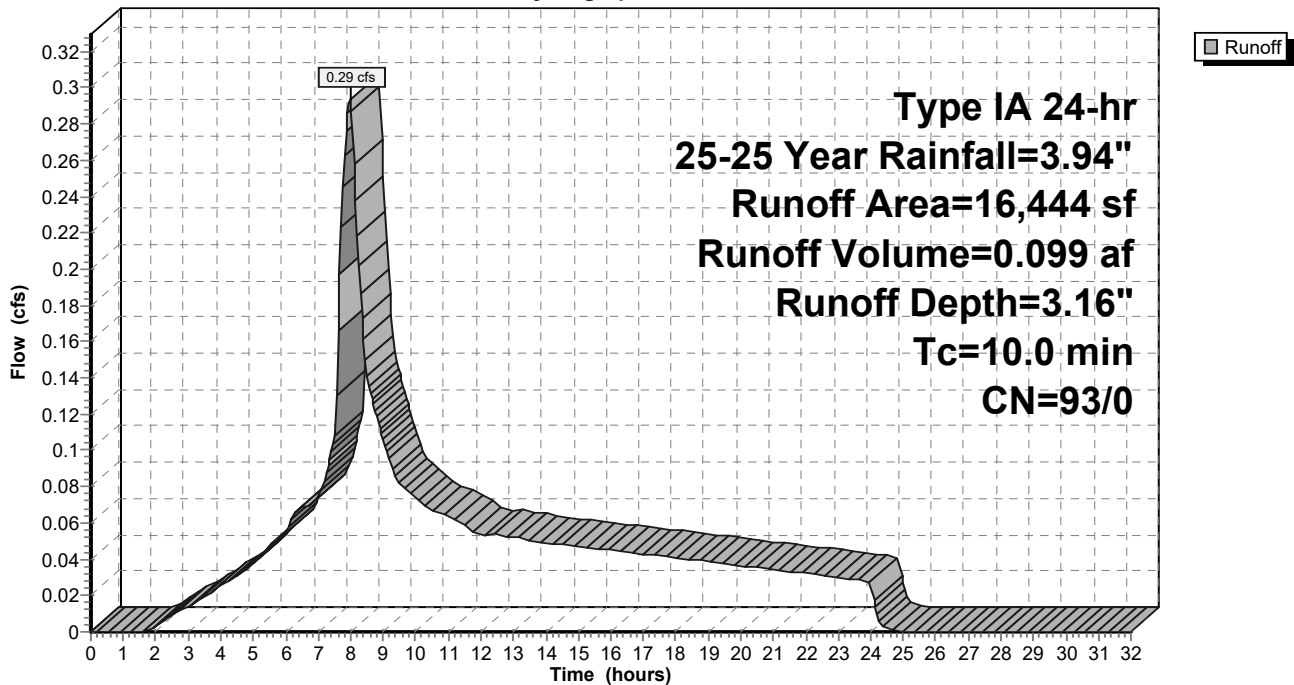
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 25-25 Year Rainfall=3.94"

Area (sf)	CN	Description
* 16,444	93	70% Lot Coverage Weighted
16,444	93	100.00% Pervious Area

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

Subcatchment 71S: Home Basin 14

Hydrograph



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Summary for Subcatchment 72S: Home Basin 16

Runoff = 0.36 cfs @ 7.98 hrs, Volume= 0.123 af, Depth= 3.16"
 Routed to Reach 150R : 1

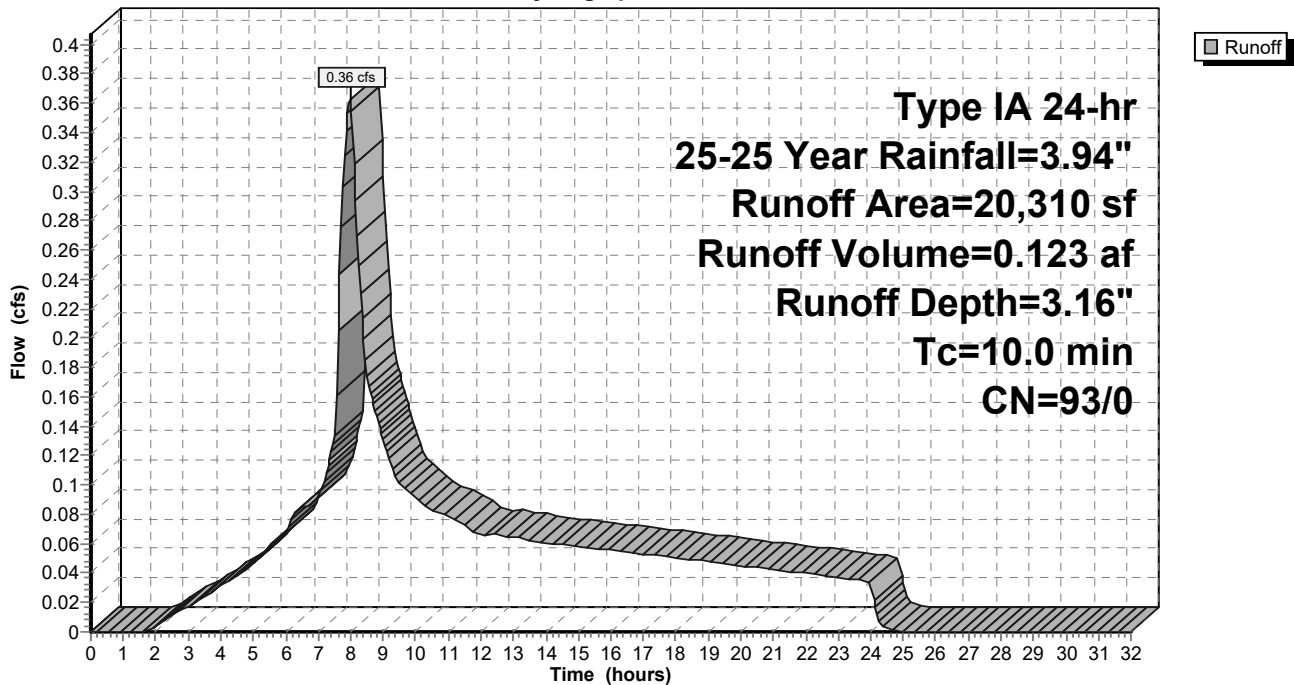
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 25-25 Year Rainfall=3.94"

Area (sf)	CN	Description
* 20,310	93	70% Lot Coverage Weighted
20,310	93	100.00% Pervious Area

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

Subcatchment 72S: Home Basin 16

Hydrograph



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Summary for Subcatchment 73S: Home Basin 13

Runoff = 0.19 cfs @ 7.98 hrs, Volume= 0.065 af, Depth= 3.16"
 Routed to Reach 155R : 1

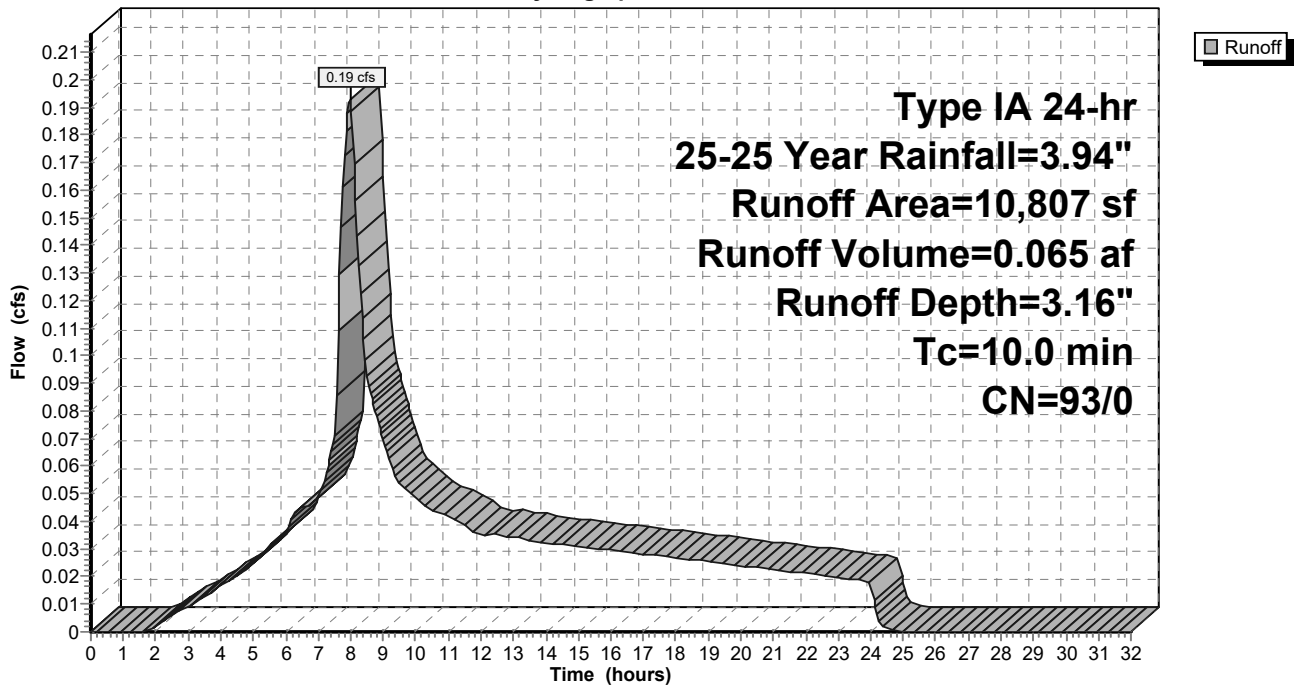
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 25-25 Year Rainfall=3.94"

Area (sf)	CN	Description
* 10,807	93	70% Lot Coverage Weighted
10,807	93	100.00% Pervious Area

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

Subcatchment 73S: Home Basin 13

Hydrograph



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Summary for Subcatchment 74S: Swale Existing Conditions

Runoff = 0.11 cfs @ 7.99 hrs, Volume= 0.039 af, Depth= 2.77"
 Routed to Reach 42R : Pre-Construction Peak Flow

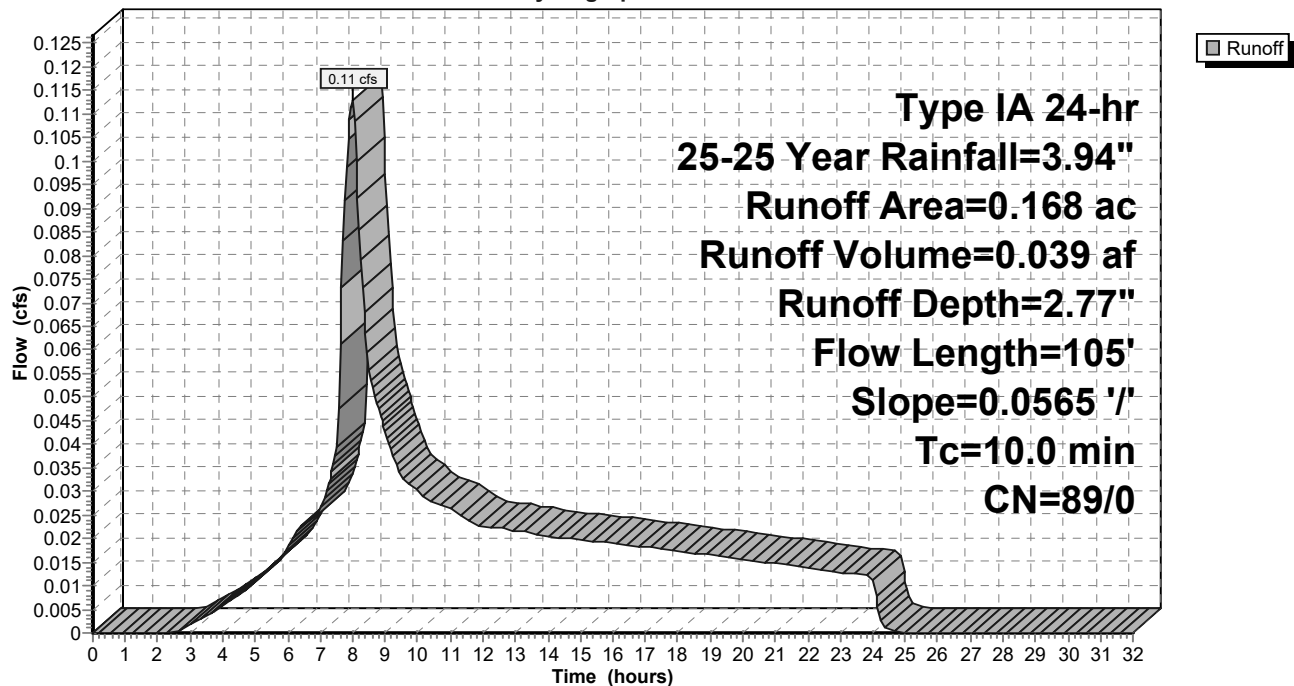
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 25-25 Year Rainfall=3.94"

Area (ac)	CN	Description
0.168	89	Pasture/grassland/range, Poor, HSG D
0.168	89	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.7	105	0.0565	0.23		Sheet Flow, Grass: Short n= 0.150 P2= 2.47"
7.7	105	Total, Increased to minimum Tc = 10.0 min			

Subcatchment 74S: Swale Existing Conditions

Hydrograph



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Summary for Subcatchment 75S: Home Basin 11

Runoff = 0.33 cfs @ 7.98 hrs, Volume= 0.112 af, Depth= 3.16"
 Routed to Reach 160R : 1

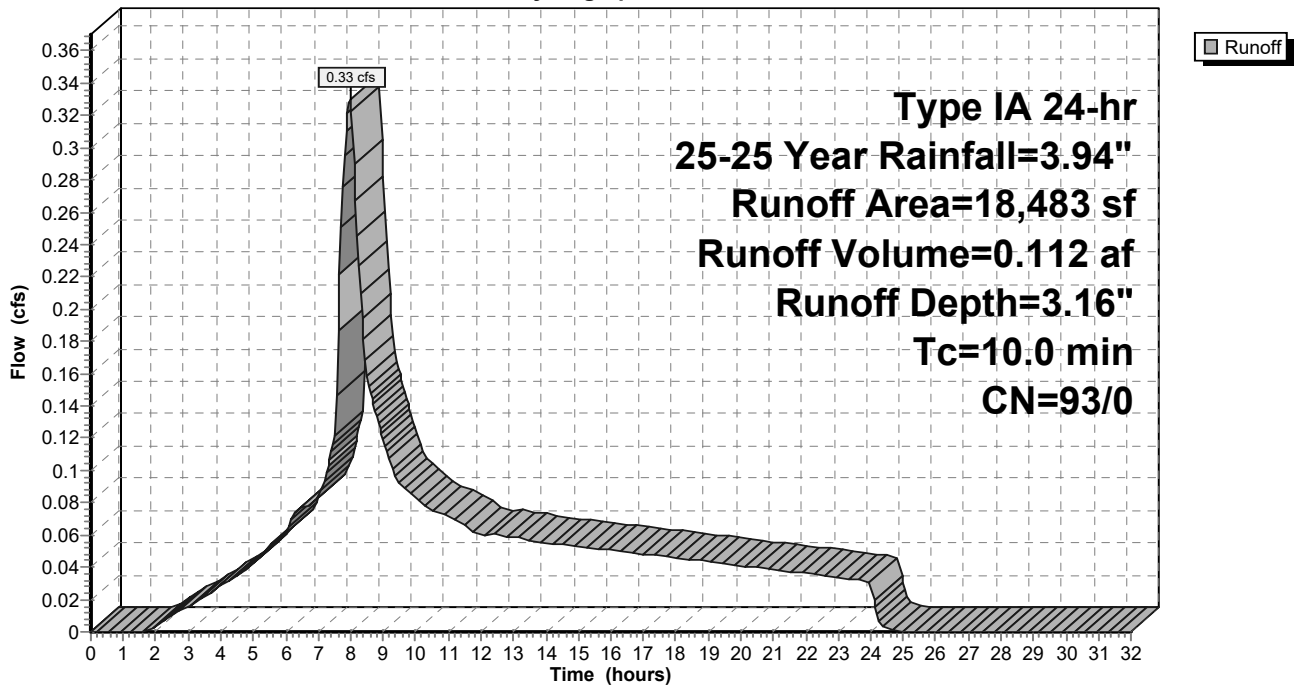
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 25-25 Year Rainfall=3.94"

Area (sf)	CN	Description
* 18,483	93	70% Lot Coverage Weighted
18,483	93	100.00% Pervious Area

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

Subcatchment 75S: Home Basin 11

Hydrograph



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Summary for Subcatchment 77S: Home Basin 15

Runoff = 0.22 cfs @ 7.98 hrs, Volume= 0.076 af, Depth= 3.16"
 Routed to Reach 149R : 1

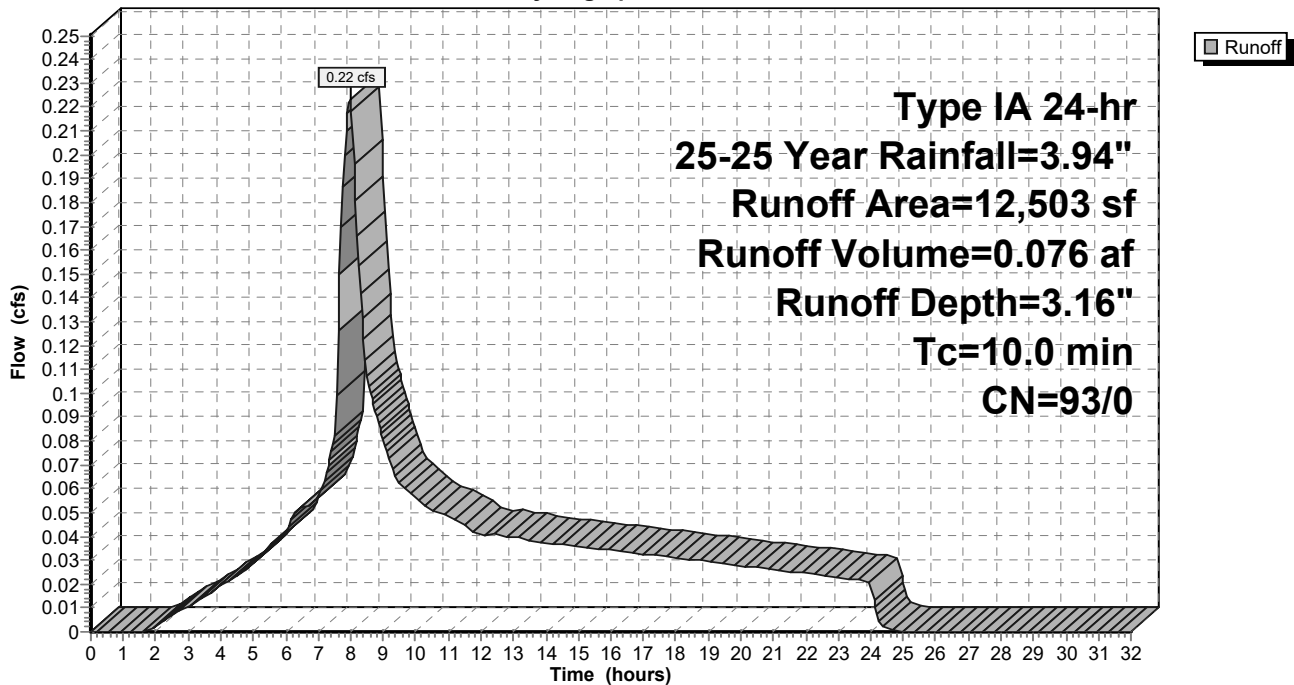
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 25-25 Year Rainfall=3.94"

Area (sf)	CN	Description
* 12,503	93	70% Lot Coverage Weighted
12,503	93	100.00% Pervious Area

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

Subcatchment 77S: Home Basin 15

Hydrograph



9-6-23 HydroCAD DOM

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Type IA 24-hr 25-25 Year Rainfall=3.94"

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Summary for Subcatchment 78S: Single Pond

[46] Hint: Tc=0 (Instant runoff peak depends on dt)

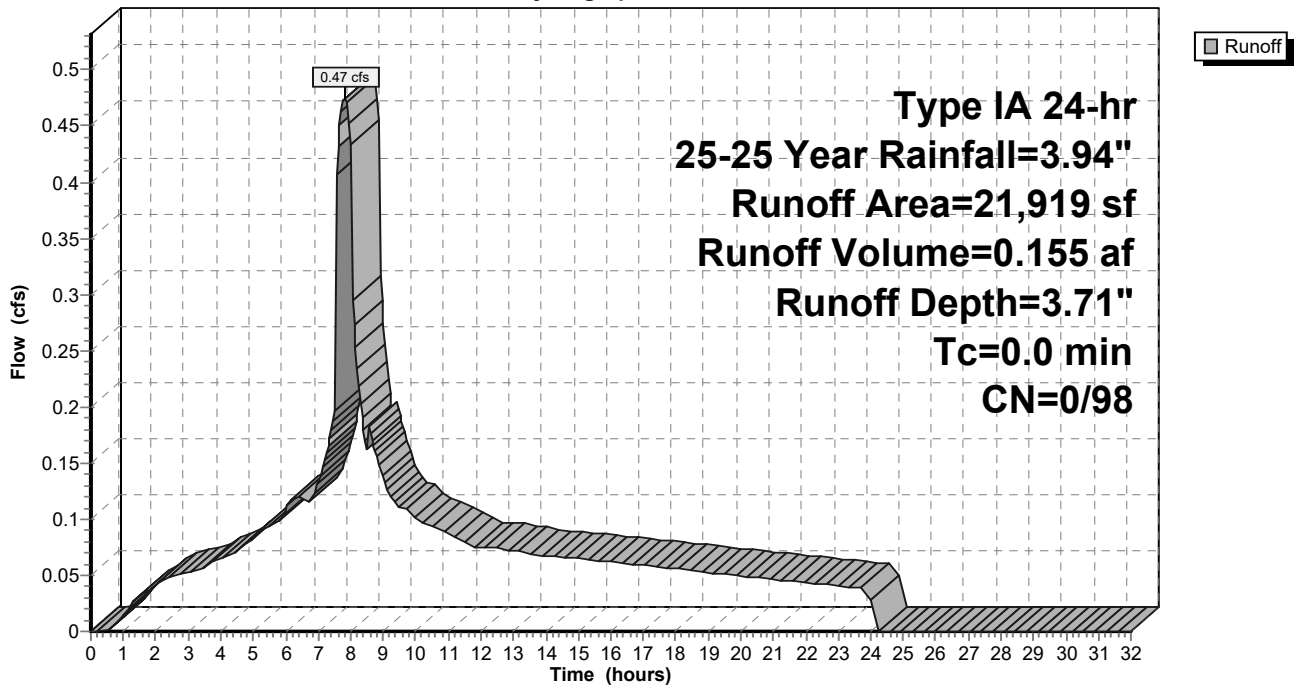
Runoff = 0.47 cfs @ 7.80 hrs, Volume= 0.155 af, Depth= 3.71"
 Routed to Pond 63P : Detention Pond

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 25-25 Year Rainfall=3.94"

Area (sf)	CN	Description
21,919	98	Water Surface, HSG D
21,919	98	100.00% Impervious Area

Subcatchment 78S: Single Pond

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 25-25 Year Rainfall=3.94"

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Summary for Subcatchment 79S: Home Basin 30

Runoff = 0.69 cfs @ 7.98 hrs, Volume= 0.232 af, Depth= 3.16"
 Routed to Reach 132R : 1

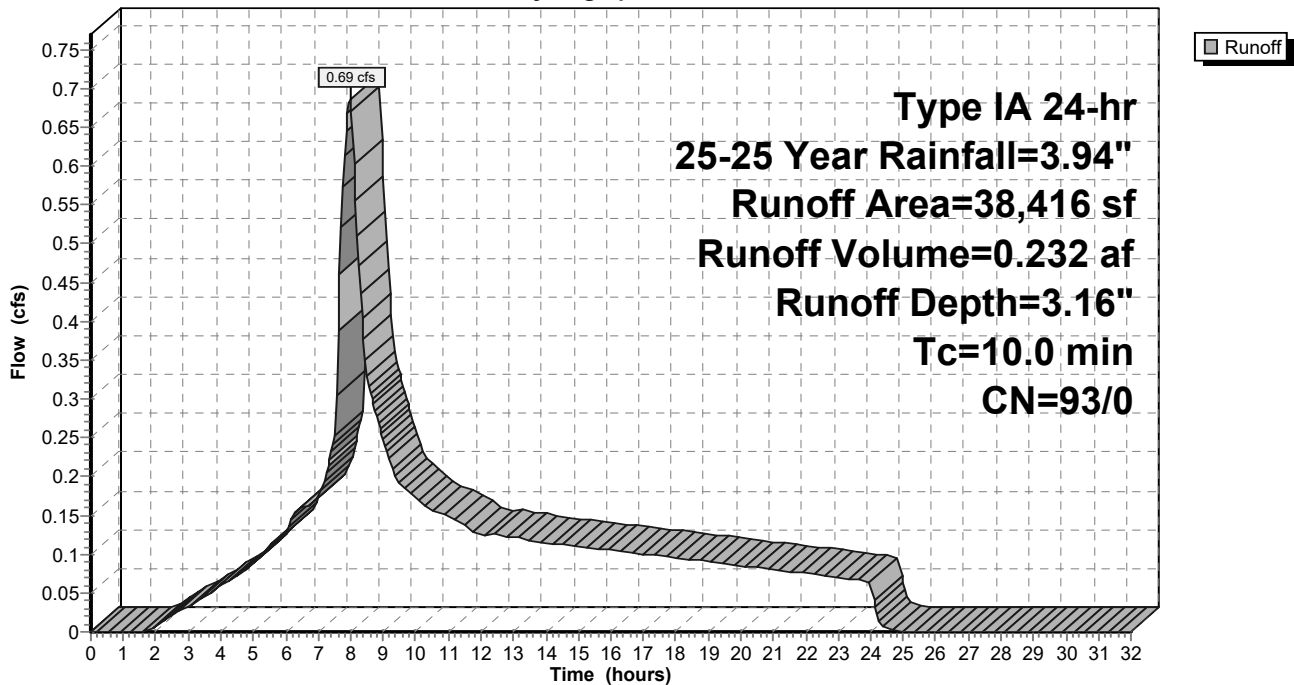
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 25-25 Year Rainfall=3.94"

Area (sf)	CN	Description
* 38,416	93	70% Lot Coverage Weighted
38,416	93	100.00% Pervious Area

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

Subcatchment 79S: Home Basin 30

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 25-25 Year Rainfall=3.94"

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Summary for Subcatchment 80S: Home Basin 10

Runoff = 0.26 cfs @ 7.98 hrs, Volume= 0.089 af, Depth= 3.16"
 Routed to Reach 165R : 1

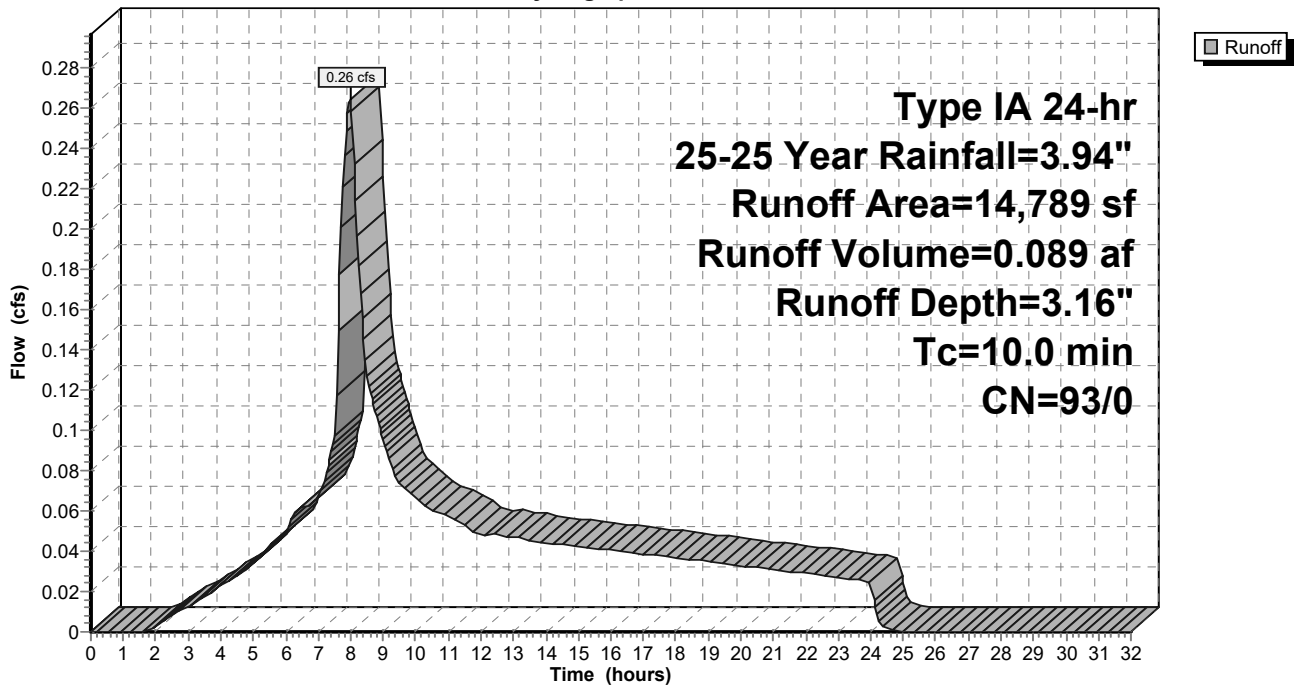
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 25-25 Year Rainfall=3.94"

Area (sf)	CN	Description
* 14,789	93	70% Lot Coverage Weighted
14,789	93	100.00% Pervious Area

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

Subcatchment 80S: Home Basin 10

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 25-25 Year Rainfall=3.94"

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Summary for Subcatchment 81S: Home Basin 9

Runoff = 0.28 cfs @ 7.98 hrs, Volume= 0.094 af, Depth= 3.16"
 Routed to Reach 163R : 1

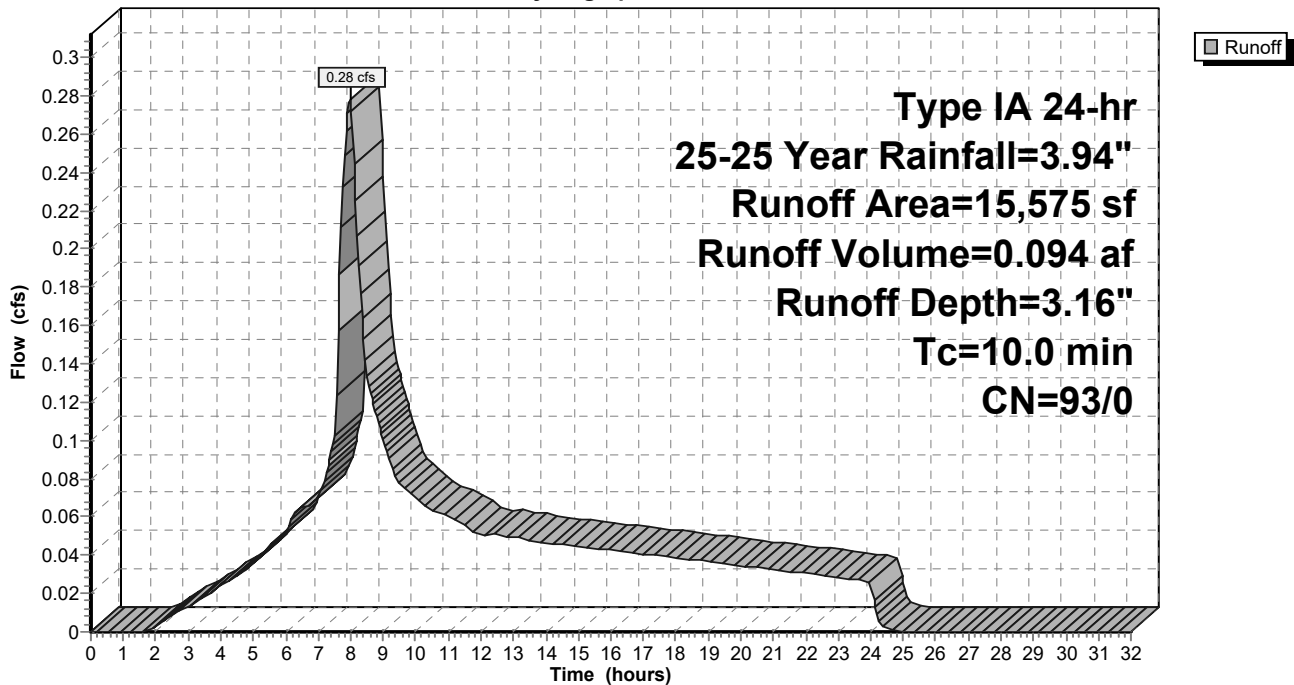
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 25-25 Year Rainfall=3.94"

Area (sf)	CN	Description
* 15,575	93	70% Lot Coverage Weighted
15,575	93	100.00% Pervious Area

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

Subcatchment 81S: Home Basin 9

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 25-25 Year Rainfall=3.94"

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Summary for Subcatchment 82S: Home Basin 2

Runoff = 0.37 cfs @ 7.98 hrs, Volume= 0.125 af, Depth= 3.16"
 Routed to Reach 145R : 1

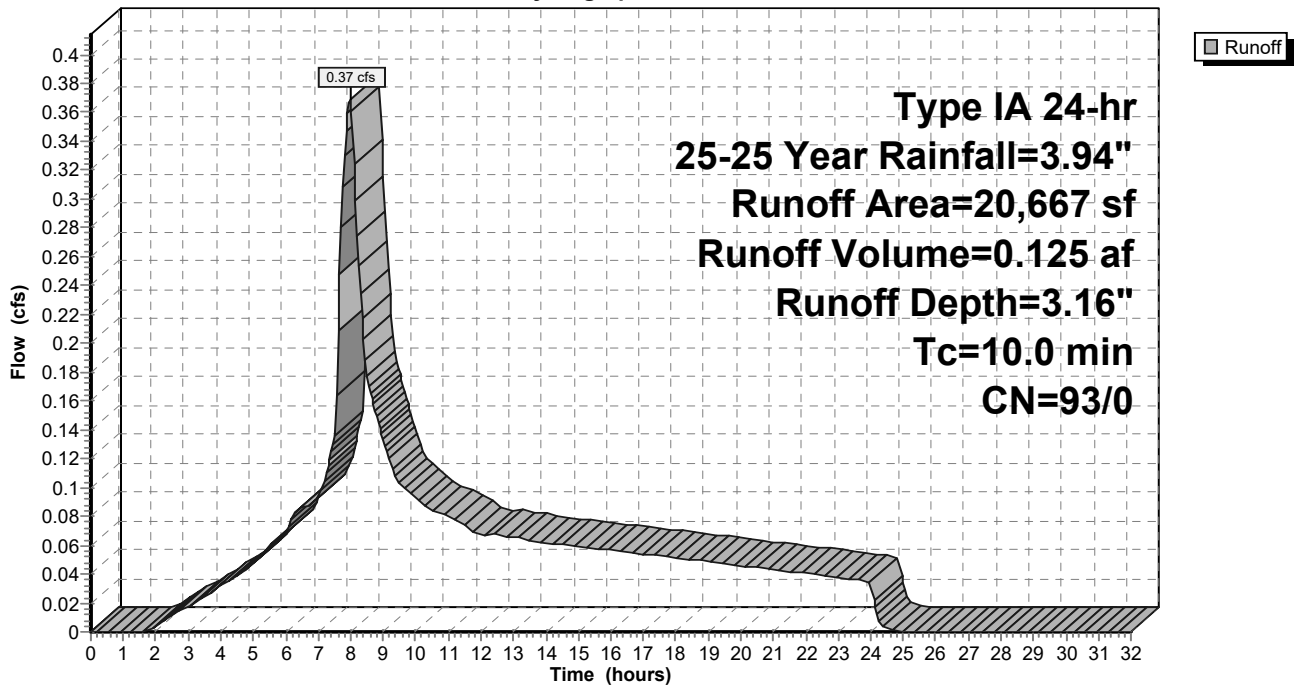
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 25-25 Year Rainfall=3.94"

Area (sf)	CN	Description
* 20,667	93	70% Lot Coverage Weighted
20,667	93	100.00% Pervious Area

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

Subcatchment 82S: Home Basin 2

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 25-25 Year Rainfall=3.94"

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Summary for Subcatchment 83S: Home Basin 7

Runoff = 0.30 cfs @ 7.98 hrs, Volume= 0.103 af, Depth= 3.16"
 Routed to Reach 154R : 1

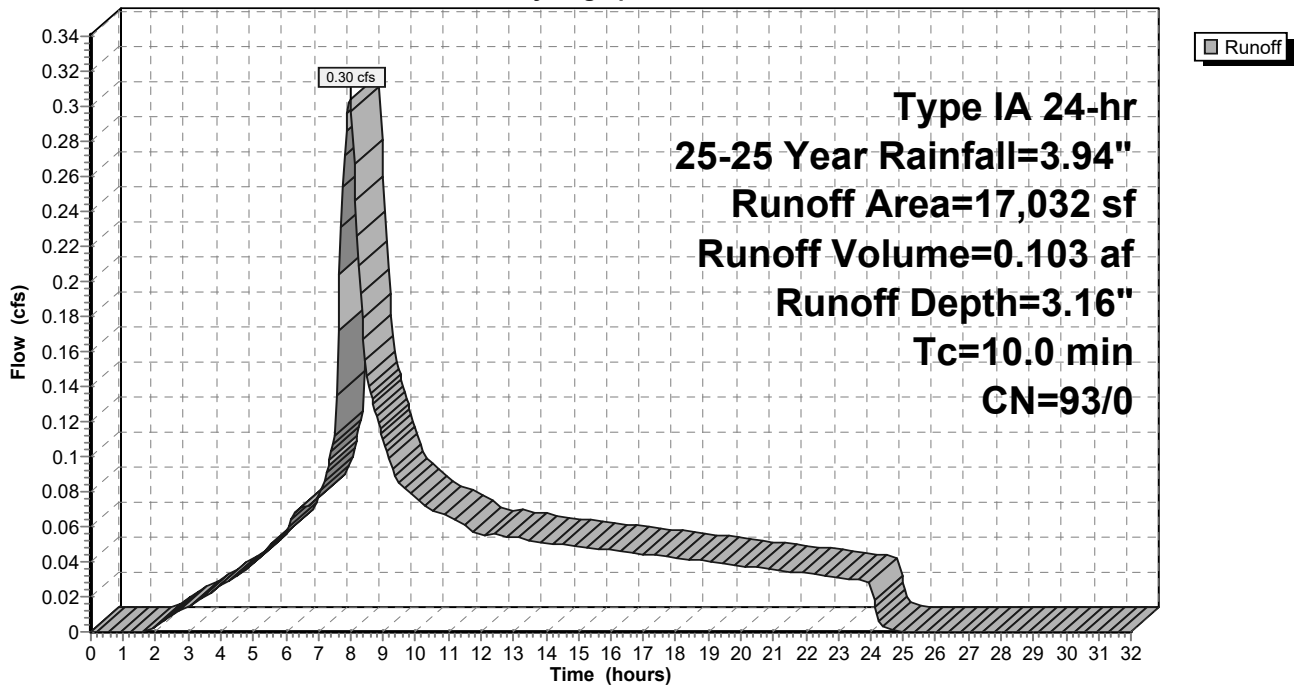
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 25-25 Year Rainfall=3.94"

Area (sf)	CN	Description
* 17,032	93	70% Lot Coverage Weighted
17,032	93	100.00% Pervious Area

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

Subcatchment 83S: Home Basin 7

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 25-25 Year Rainfall=3.94"

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Summary for Subcatchment 84S: Home Basin 8

Runoff = 0.21 cfs @ 7.98 hrs, Volume= 0.071 af, Depth= 3.16"
 Routed to Reach 155R : 1

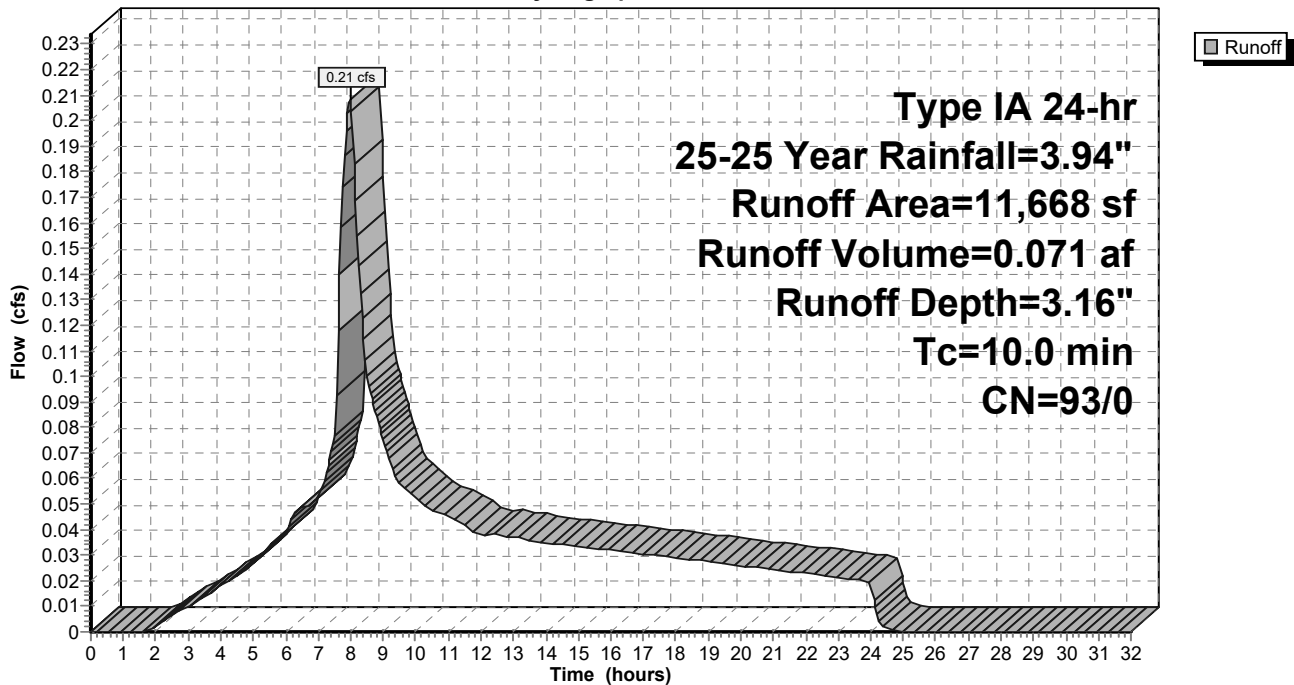
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 25-25 Year Rainfall=3.94"

Area (sf)	CN	Description
* 11,668	93	70% Lot Coverage Weighted
11,668	93	100.00% Pervious Area

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

Subcatchment 84S: Home Basin 8

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 25-25 Year Rainfall=3.94"

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Summary for Subcatchment 85S: Home Basin 29

Runoff = 0.45 cfs @ 7.98 hrs, Volume= 0.152 af, Depth= 3.16"
 Routed to Reach 132R : 1

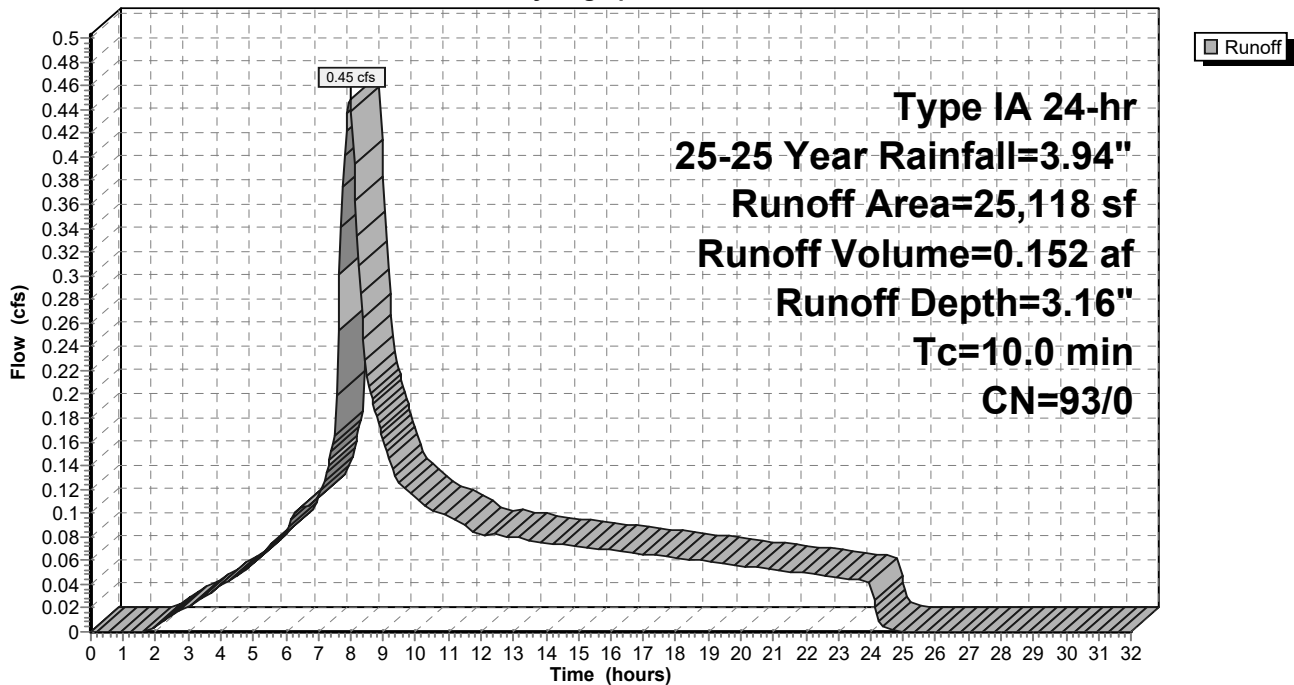
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 25-25 Year Rainfall=3.94"

Area (sf)	CN	Description
* 25,118	93	70% Lot Coverage Weighted
25,118	93	100.00% Pervious Area

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

Subcatchment 85S: Home Basin 29

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 25-25 Year Rainfall=3.94"

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Summary for Subcatchment 86S: Home Basin 22

Runoff = 0.29 cfs @ 7.98 hrs, Volume= 0.098 af, Depth= 3.16"
 Routed to Reach 145R : 1

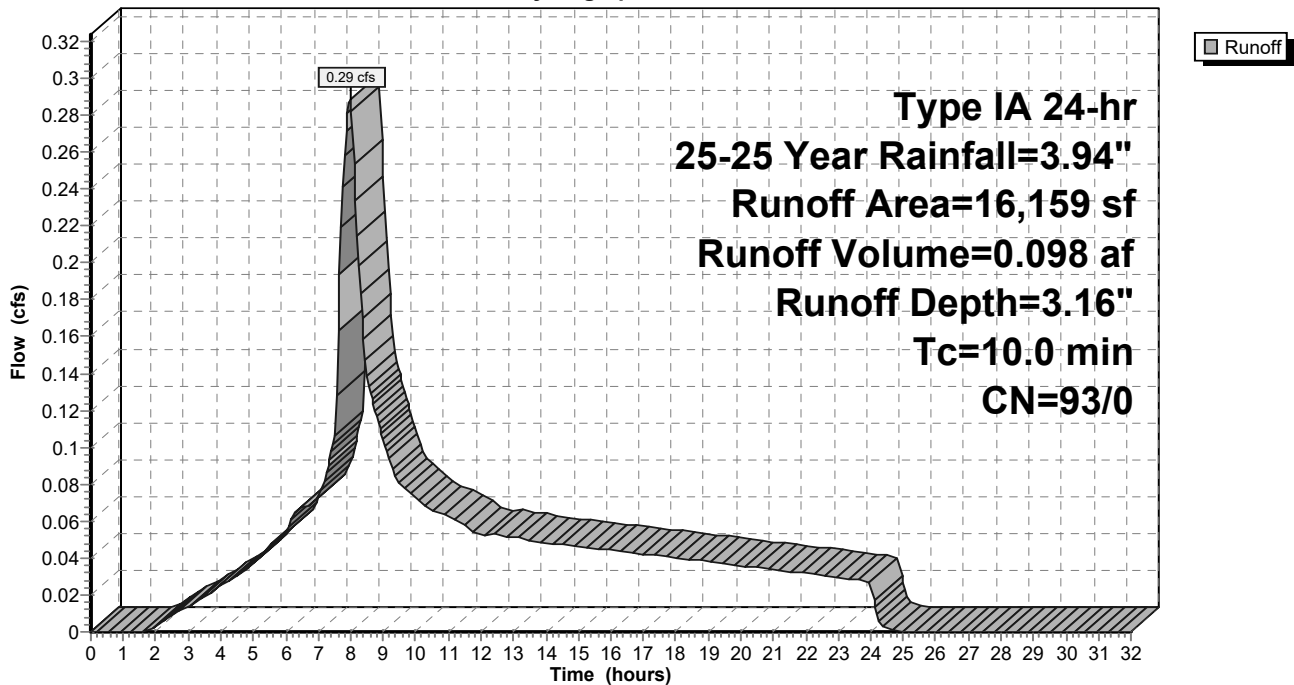
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 25-25 Year Rainfall=3.94"

Area (sf)	CN	Description
* 16,159	93	70% Lot Coverage Weighted
16,159	93	100.00% Pervious Area

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

Subcatchment 86S: Home Basin 22

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 25-25 Year Rainfall=3.94"

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Summary for Subcatchment 87S: Home Basin 27

Runoff = 0.44 cfs @ 7.98 hrs, Volume= 0.150 af, Depth= 3.16"
 Routed to Reach 135R : 1

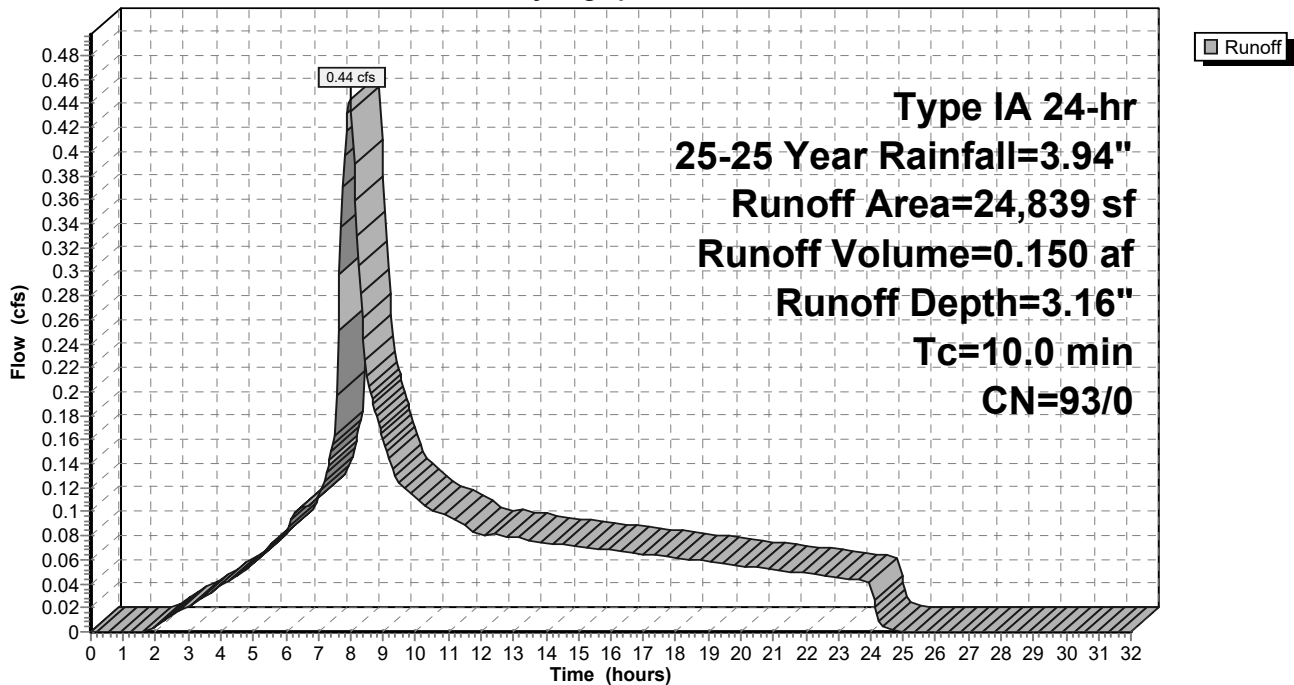
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 25-25 Year Rainfall=3.94"

Area (sf)	CN	Description
* 24,839	93	70% Lot Coverage Weighted
24,839	93	100.00% Pervious Area

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

Subcatchment 87S: Home Basin 27

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 25-25 Year Rainfall=3.94"

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Summary for Subcatchment 88S: Home Basin 28

Runoff = 0.45 cfs @ 7.98 hrs, Volume= 0.153 af, Depth= 3.16"
 Routed to Reach 131R : 1

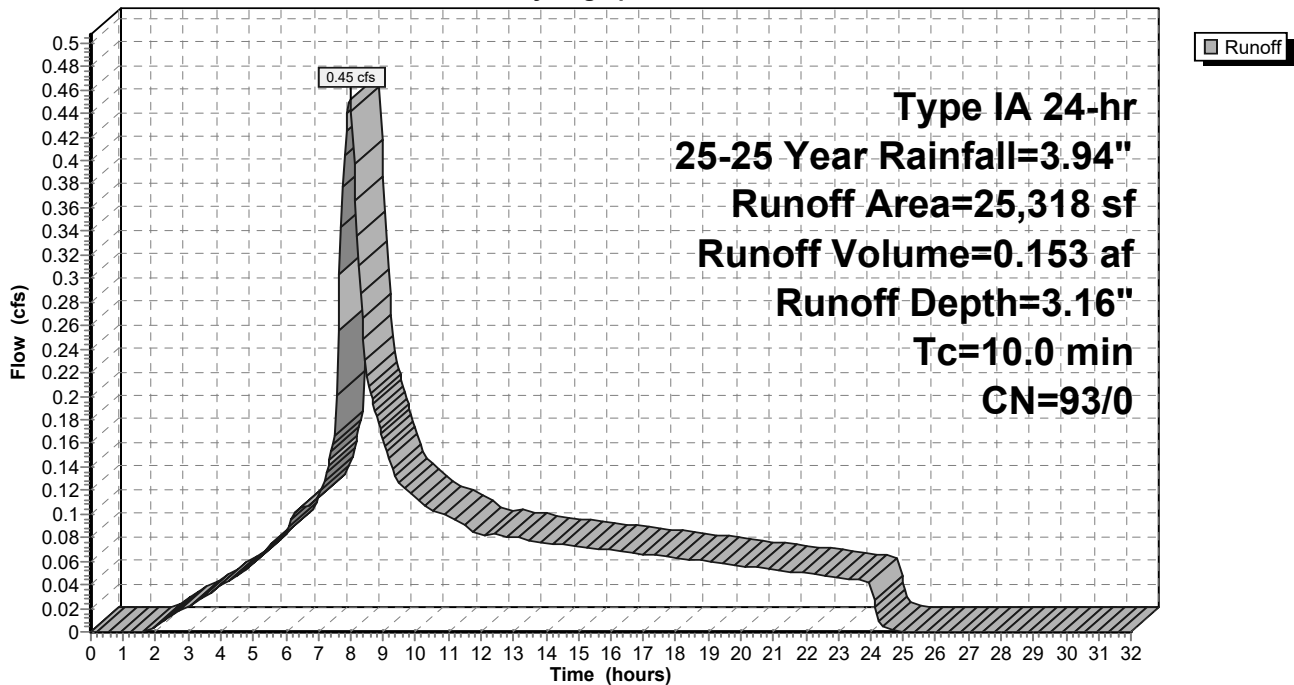
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 25-25 Year Rainfall=3.94"

Area (sf)	CN	Description
* 25,318	93	70% Lot Coverage Weighted
25,318	93	100.00% Pervious Area

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

Subcatchment 88S: Home Basin 28

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 25-25 Year Rainfall=3.94"

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Summary for Subcatchment 89S: Home Basin 24

Runoff = 0.37 cfs @ 7.98 hrs, Volume= 0.125 af, Depth= 3.16"
 Routed to Reach 135R : 1

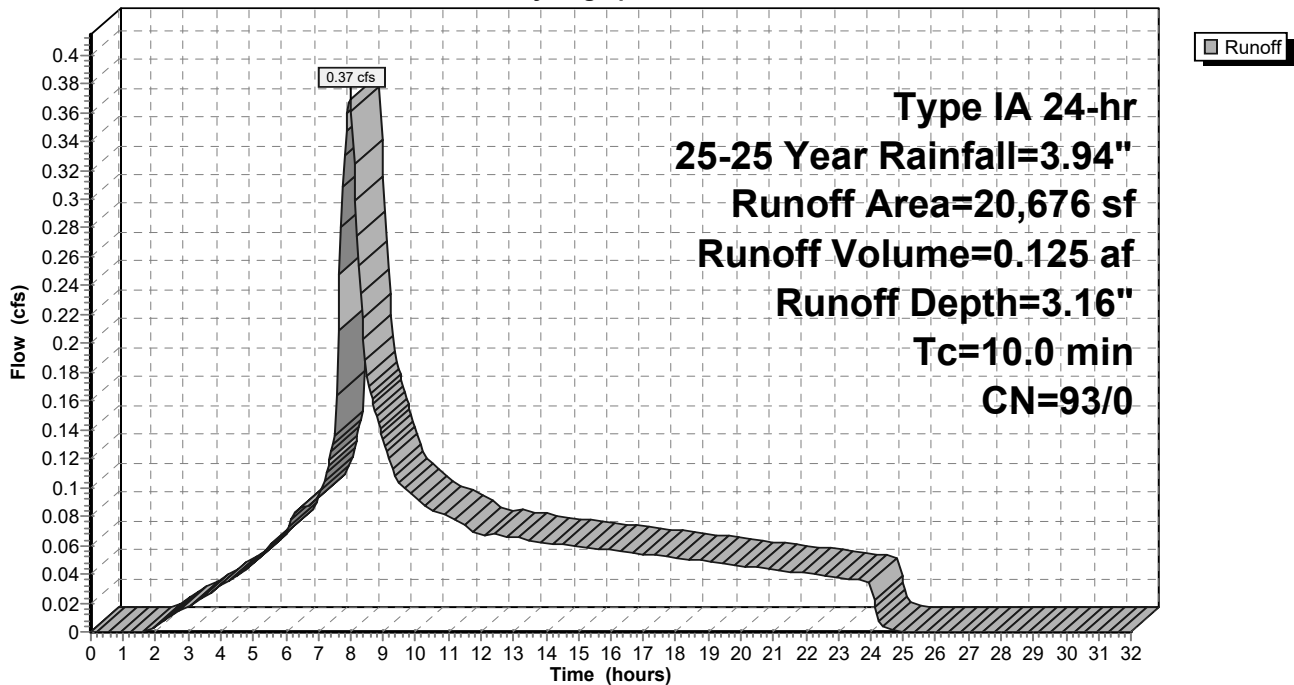
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 25-25 Year Rainfall=3.94"

Area (sf)	CN	Description
* 20,676	93	70% Lot Coverage Weighted
20,676	93	100.00% Pervious Area

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

Subcatchment 89S: Home Basin 24

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 25-25 Year Rainfall=3.94"

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Summary for Subcatchment 90S: Home Basin 26

Runoff = 0.25 cfs @ 7.98 hrs, Volume= 0.085 af, Depth= 3.16"
 Routed to Reach 136R : 1

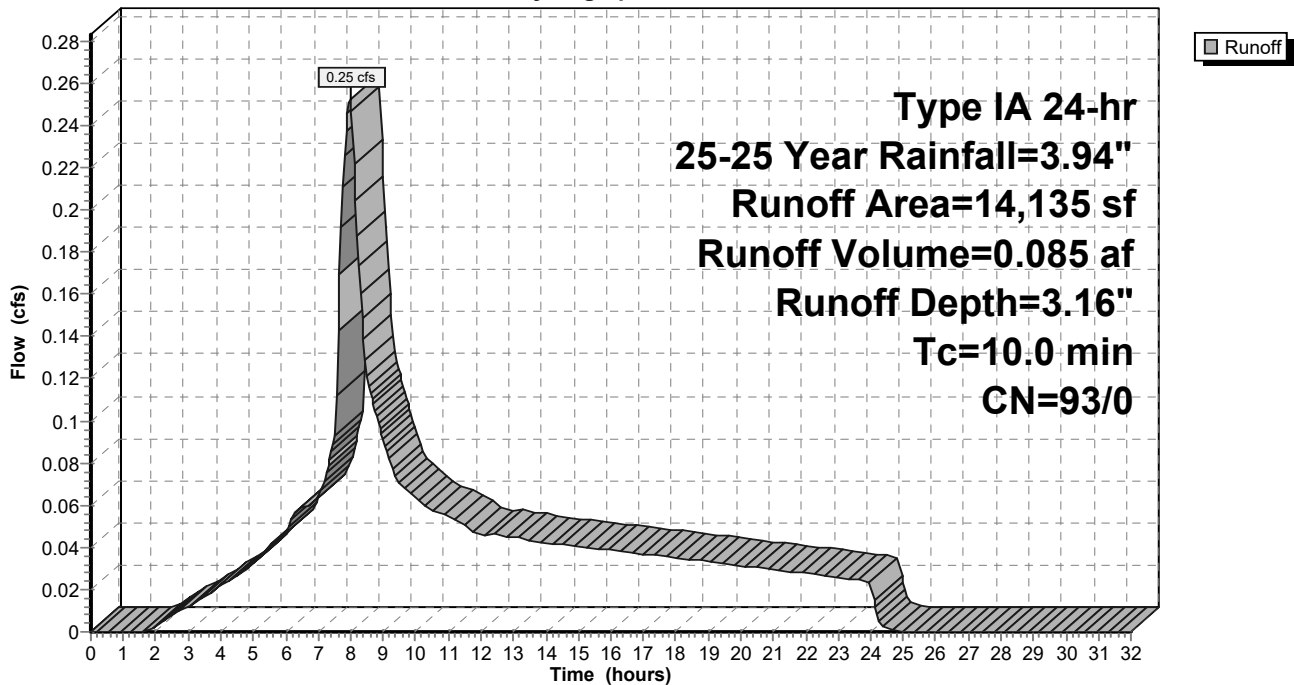
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 25-25 Year Rainfall=3.94"

Area (sf)	CN	Description
* 14,135	93	70% Lot Coverage Weighted
14,135	93	100.00% Pervious Area

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

Subcatchment 90S: Home Basin 26

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 25-25 Year Rainfall=3.94"

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Summary for Subcatchment 91S: Home Basin 23

Runoff = 0.22 cfs @ 7.98 hrs, Volume= 0.074 af, Depth= 3.16"
 Routed to Reach 143R : 1

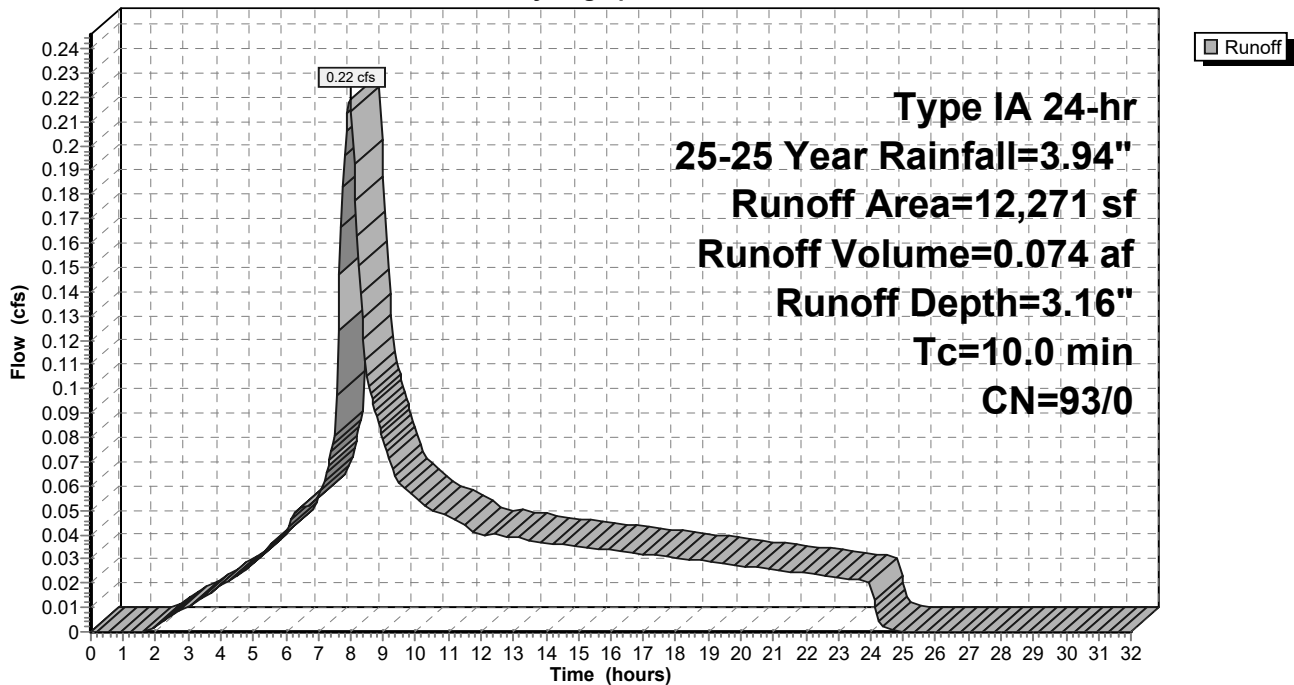
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 25-25 Year Rainfall=3.94"

Area (sf)	CN	Description
* 12,271	93	70% Lot Coverage Weighted
12,271	93	100.00% Pervious Area

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

Subcatchment 91S: Home Basin 23

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 25-25 Year Rainfall=3.94"

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Summary for Subcatchment 92S: Home Basin 21

Runoff = 0.48 cfs @ 7.98 hrs, Volume= 0.163 af, Depth= 3.16"
 Routed to Reach 145R : 1

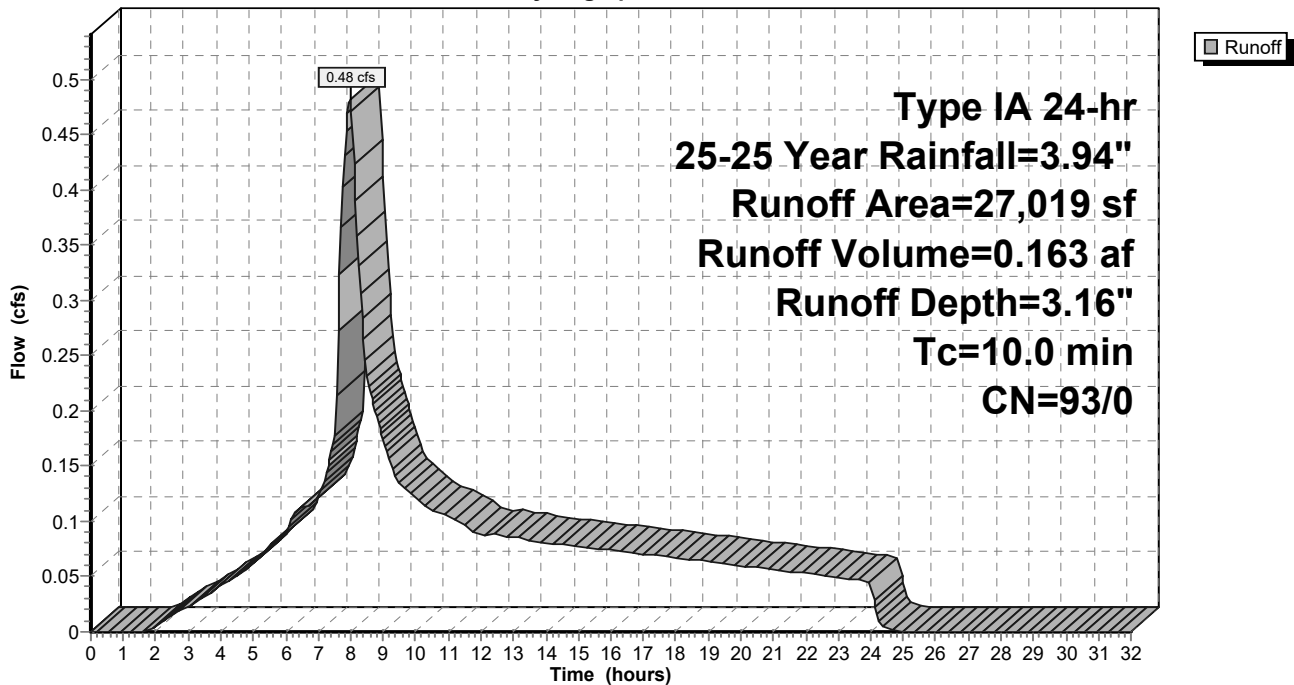
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 25-25 Year Rainfall=3.94"

Area (sf)	CN	Description
* 27,019	93	70% Lot Coverage Weighted
27,019	93	100.00% Pervious Area

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

Subcatchment 92S: Home Basin 21

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 25-25 Year Rainfall=3.94"

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Summary for Subcatchment 93S: Home Basin 25

Runoff = 0.30 cfs @ 7.98 hrs, Volume= 0.103 af, Depth= 3.16"
 Routed to Reach 136R : 1

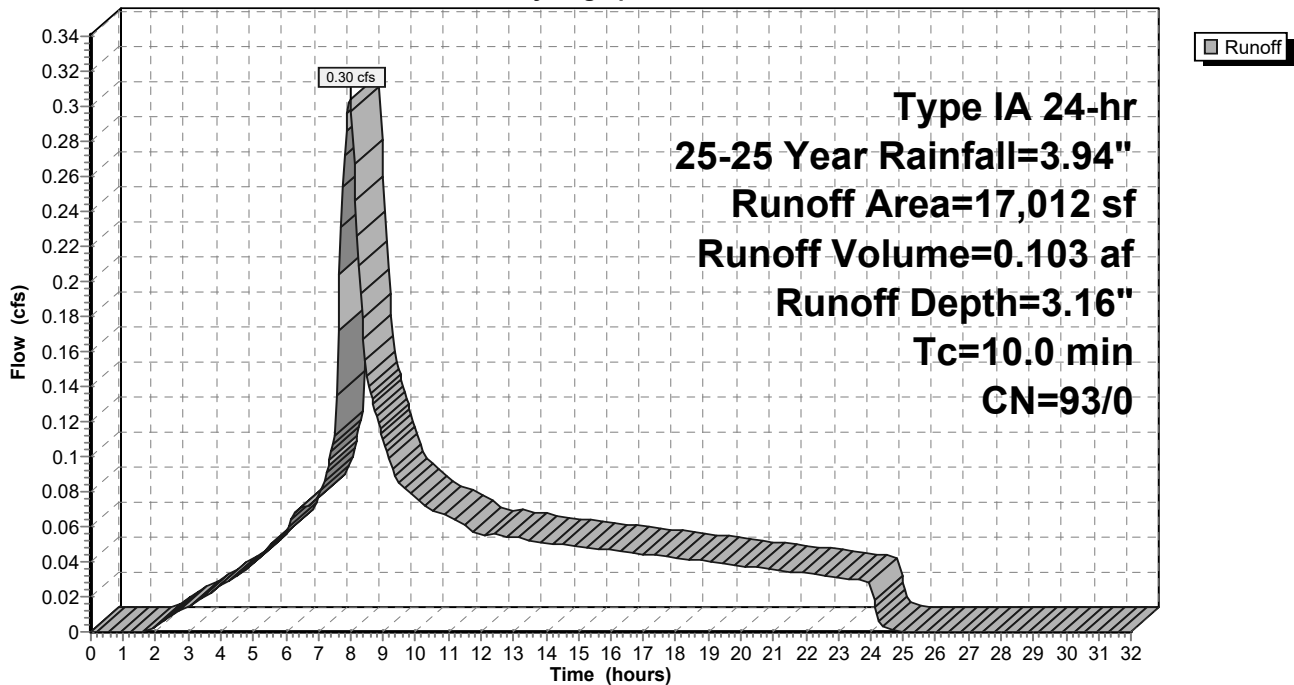
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 25-25 Year Rainfall=3.94"

Area (sf)	CN	Description
* 17,012	93	70% Lot Coverage Weighted
17,012	93	100.00% Pervious Area

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

Subcatchment 93S: Home Basin 25

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 25-25 Year Rainfall=3.94"

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Summary for Subcatchment 94S: Home Basin 4

Runoff = 0.35 cfs @ 7.98 hrs, Volume= 0.118 af, Depth= 3.16"
 Routed to Reach 160R : 1

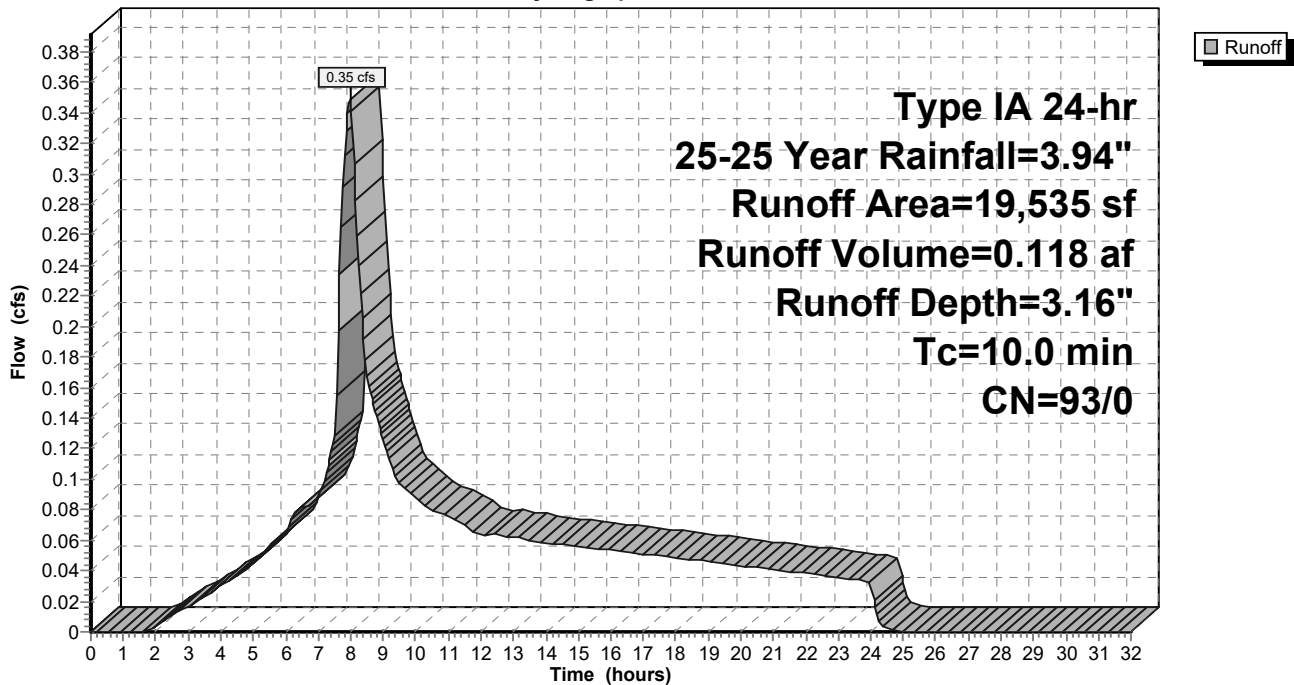
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 25-25 Year Rainfall=3.94"

Area (sf)	CN	Description
* 19,535	93	70% Lot Coverage Weighted
19,535	93	100.00% Pervious Area

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

Subcatchment 94S: Home Basin 4

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 25-25 Year Rainfall=3.94"

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Summary for Subcatchment 95S: Home Basin 31

Runoff = 0.45 cfs @ 7.98 hrs, Volume= 0.150 af, Depth= 3.16"
 Routed to Reach 131R : 1

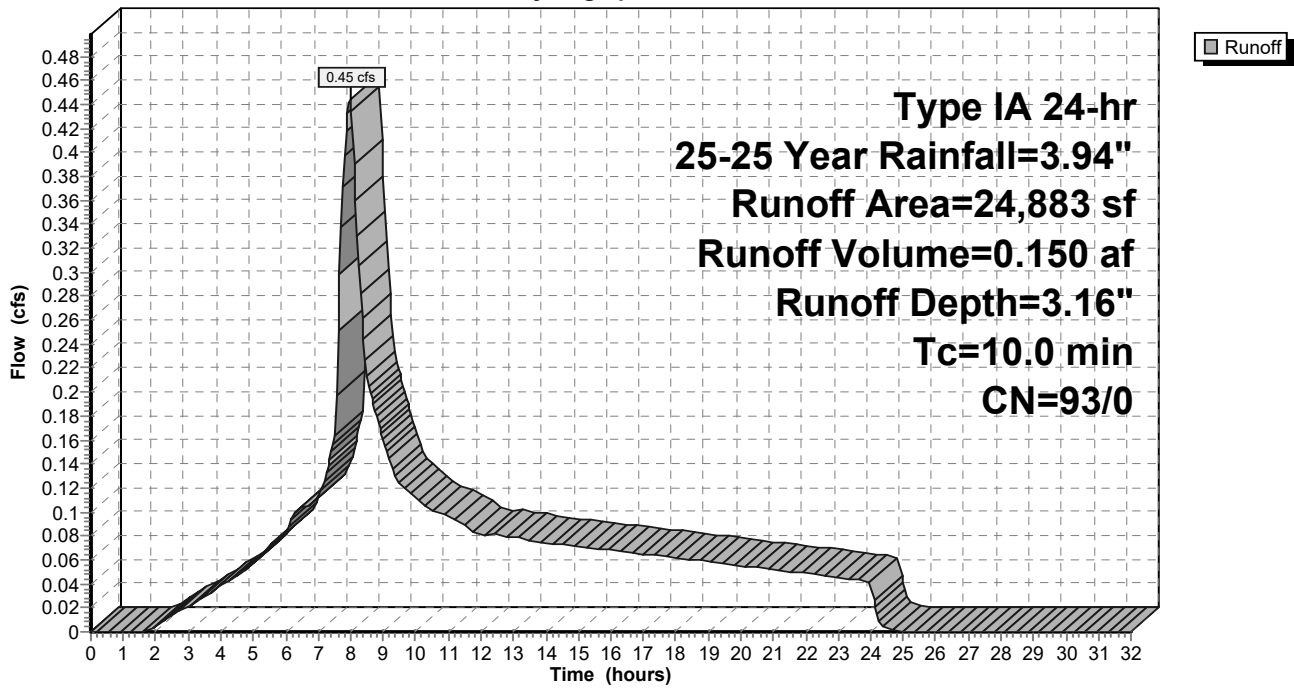
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 25-25 Year Rainfall=3.94"

Area (sf)	CN	Description
* 24,883	93	70% Lot Coverage Weighted
24,883	93	100.00% Pervious Area

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

Subcatchment 95S: Home Basin 31

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 25-25 Year Rainfall=3.94"

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Summary for Subcatchment 96S: Basin 1

Runoff = 0.30 cfs @ 7.98 hrs, Volume= 0.107 af, Depth= 3.71"
 Routed to Reach 133R : 1

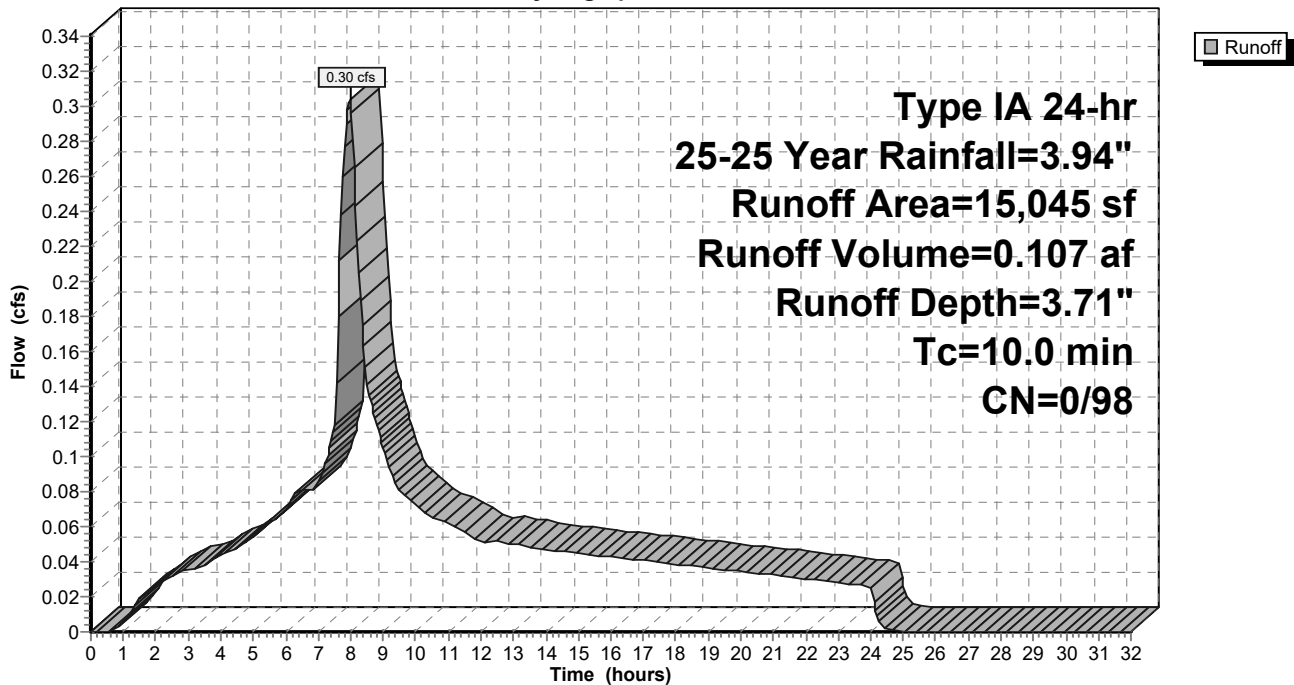
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 25-25 Year Rainfall=3.94"

Area (sf)	CN	Description
15,045	98	Paved roads w/curbs & sewers, HSG D
15,045	98	100.00% Impervious Area

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

Subcatchment 96S: Basin 1

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 25-25 Year Rainfall=3.94"

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Summary for Subcatchment 97S: Basin 2

Runoff = 0.40 cfs @ 7.98 hrs, Volume= 0.141 af, Depth= 3.71"
 Routed to Reach 132R : 1

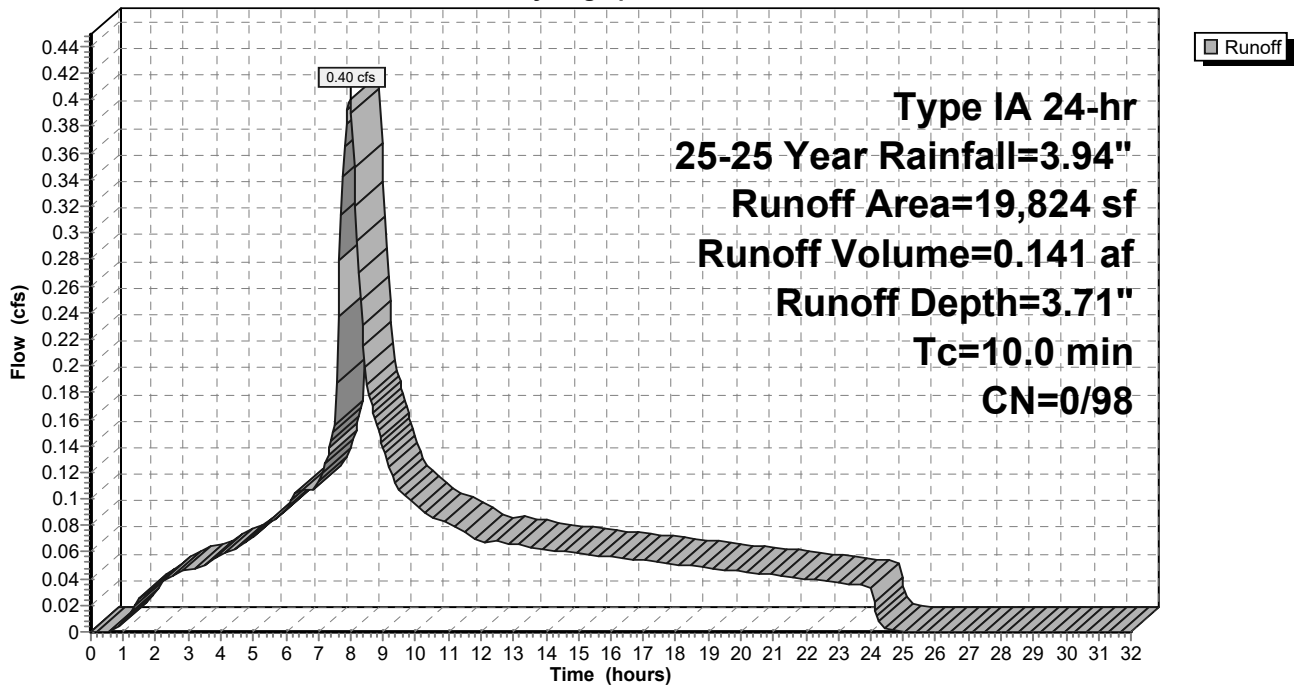
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 25-25 Year Rainfall=3.94"

Area (sf)	CN	Description
19,824	98	Paved roads w/curbs & sewers, HSG D
19,824	98	100.00% Impervious Area

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

Subcatchment 97S: Basin 2

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 25-25 Year Rainfall=3.94"

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Summary for Subcatchment 98S: Basin 3

Runoff = 0.47 cfs @ 7.98 hrs, Volume= 0.166 af, Depth= 3.71"
 Routed to Reach 131R : 1

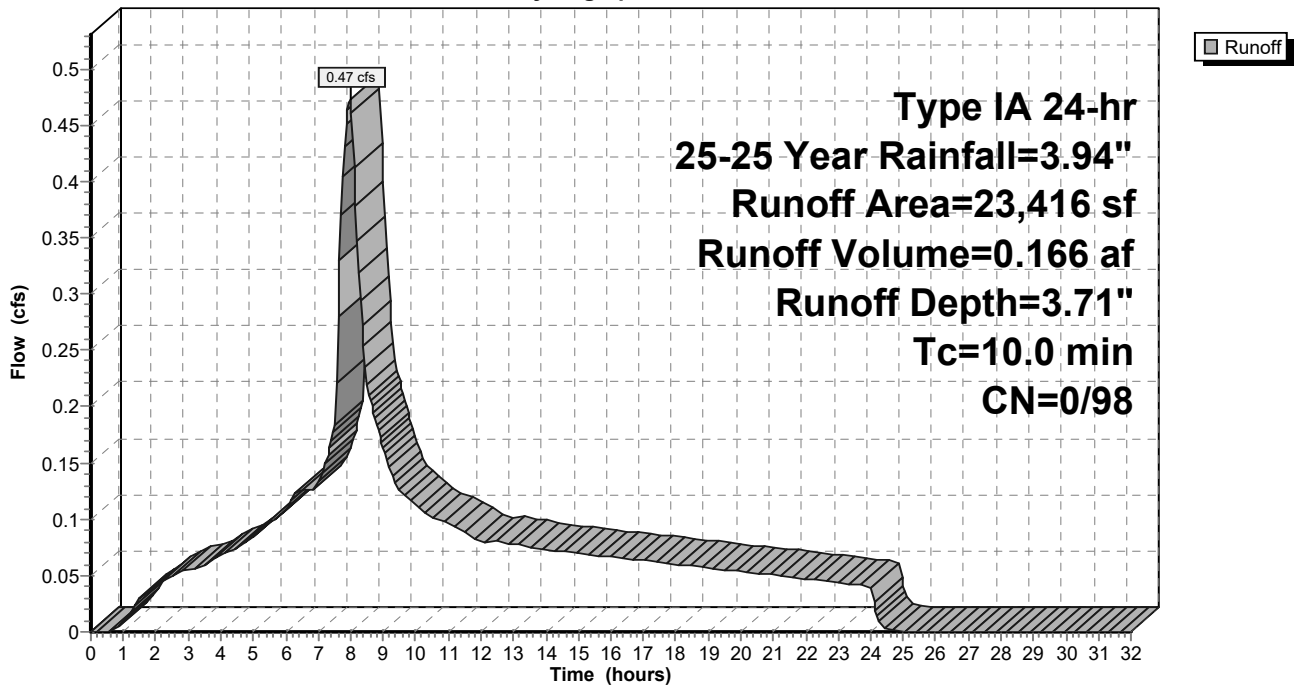
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 25-25 Year Rainfall=3.94"

Area (sf)	CN	Description
23,416	98	Paved roads w/curbs & sewers, HSG D
23,416	98	100.00% Impervious Area

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

Subcatchment 98S: Basin 3

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 25-25 Year Rainfall=3.94"

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Summary for Subcatchment 99S: Home Basin 6

Runoff = 0.46 cfs @ 7.98 hrs, Volume= 0.157 af, Depth= 3.16"
 Routed to Reach 163R : 1

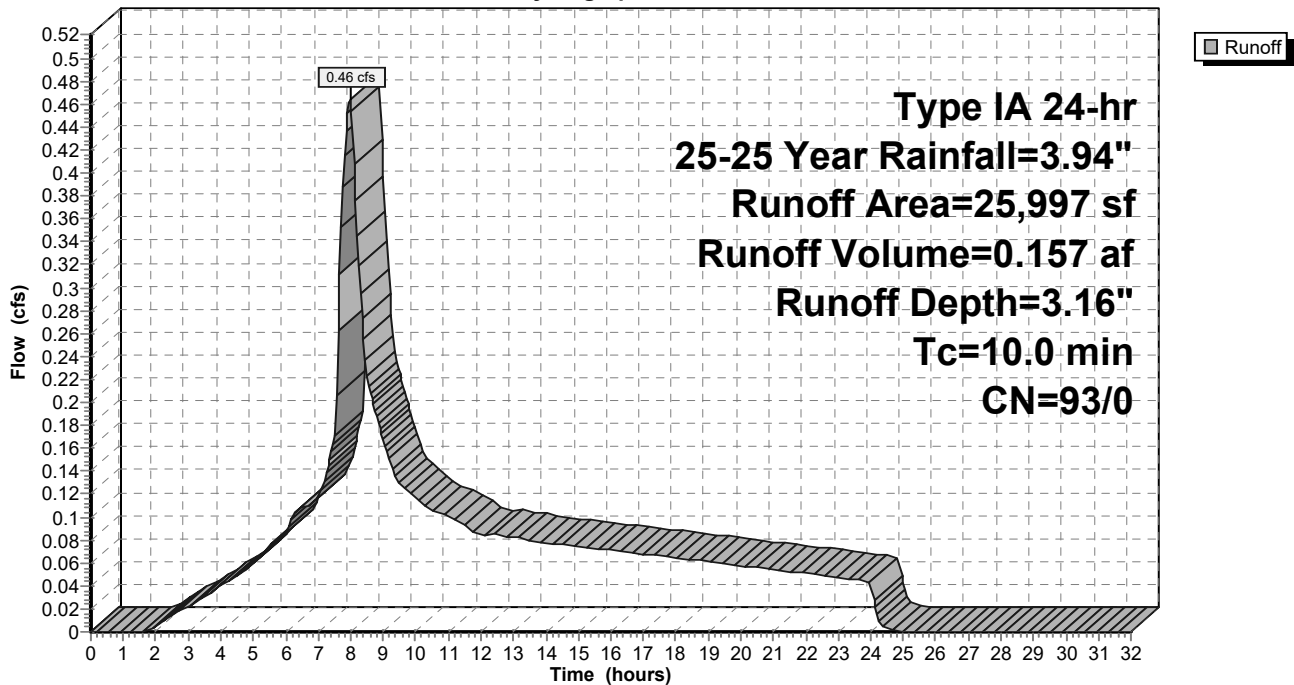
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 25-25 Year Rainfall=3.94"

Area (sf)	CN	Description
* 25,997	93	70% Lot Coverage Weighted
25,997	93	100.00% Pervious Area

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

Subcatchment 99S: Home Basin 6

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 25-25 Year Rainfall=3.94"

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Summary for Subcatchment 100S: Basin 4

Runoff = 0.07 cfs @ 7.98 hrs, Volume= 0.026 af, Depth= 3.71"
 Routed to Pond 60P : Stormwater Swale 1

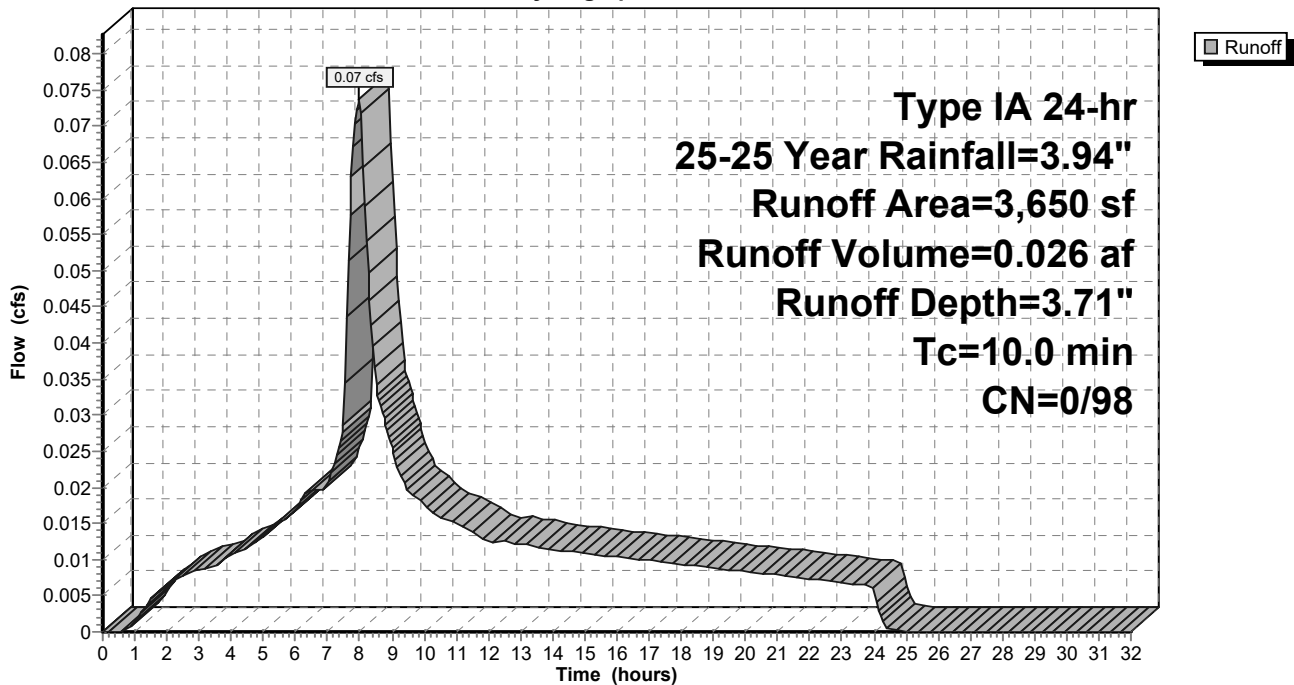
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 25-25 Year Rainfall=3.94"

Area (sf)	CN	Description
3,650	98	Paved roads w/curbs & sewers, HSG D
3,650	98	100.00% Impervious Area

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

Subcatchment 100S: Basin 4

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 25-25 Year Rainfall=3.94"

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Summary for Subcatchment 101S: Basin 5

Runoff = 0.07 cfs @ 7.98 hrs, Volume= 0.025 af, Depth= 3.71"
 Routed to Pond 54P : Stormwater Swale 2

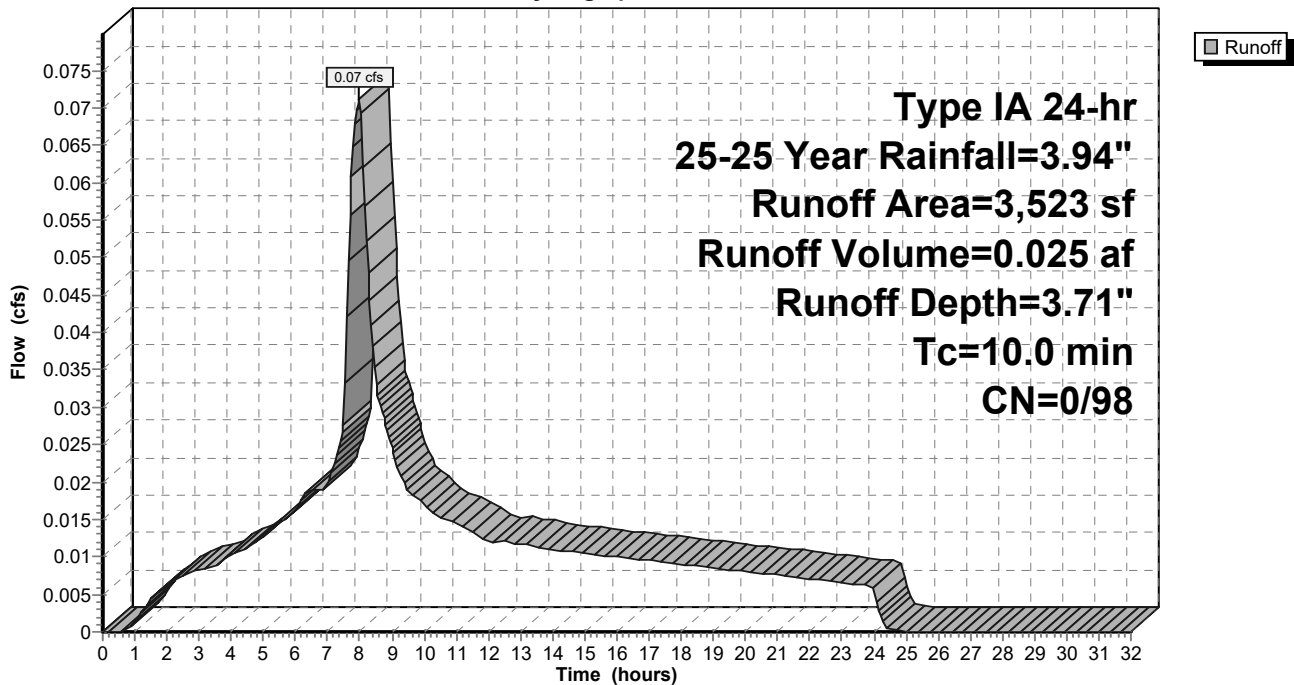
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 25-25 Year Rainfall=3.94"

Area (sf)	CN	Description
3,523	98	Paved roads w/curbs & sewers, HSG D
3,523	98	100.00% Impervious Area

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

Subcatchment 101S: Basin 5

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 25-25 Year Rainfall=3.94"

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Summary for Subcatchment 102S: Home Basin 3

Runoff = 0.35 cfs @ 7.98 hrs, Volume= 0.118 af, Depth= 3.16"
 Routed to Reach 151R : 1

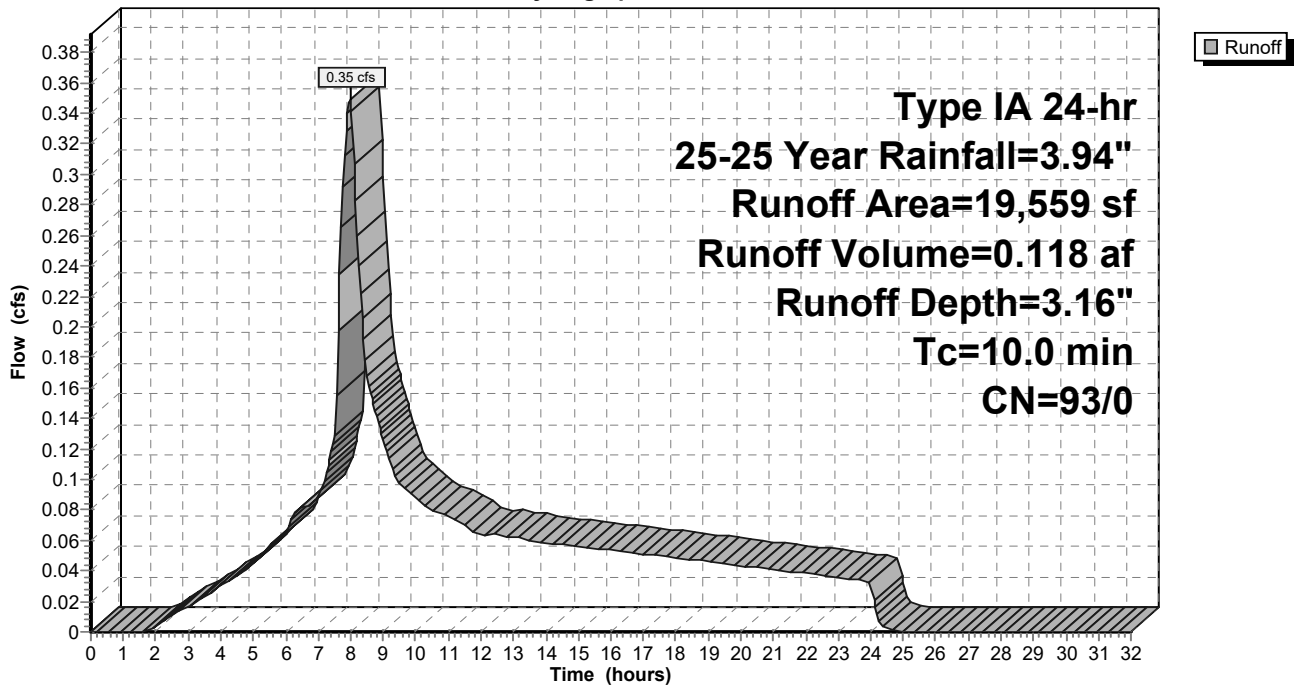
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 25-25 Year Rainfall=3.94"

Area (sf)	CN	Description
* 19,559	93	70% Lot Coverage Weighted
19,559	93	100.00% Pervious Area

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

Subcatchment 102S: Home Basin 3

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 25-25 Year Rainfall=3.94"

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Summary for Subcatchment 103S: Home Basin 1

Runoff = 0.40 cfs @ 7.98 hrs, Volume= 0.135 af, Depth= 3.16"
 Routed to Reach 137R : 1

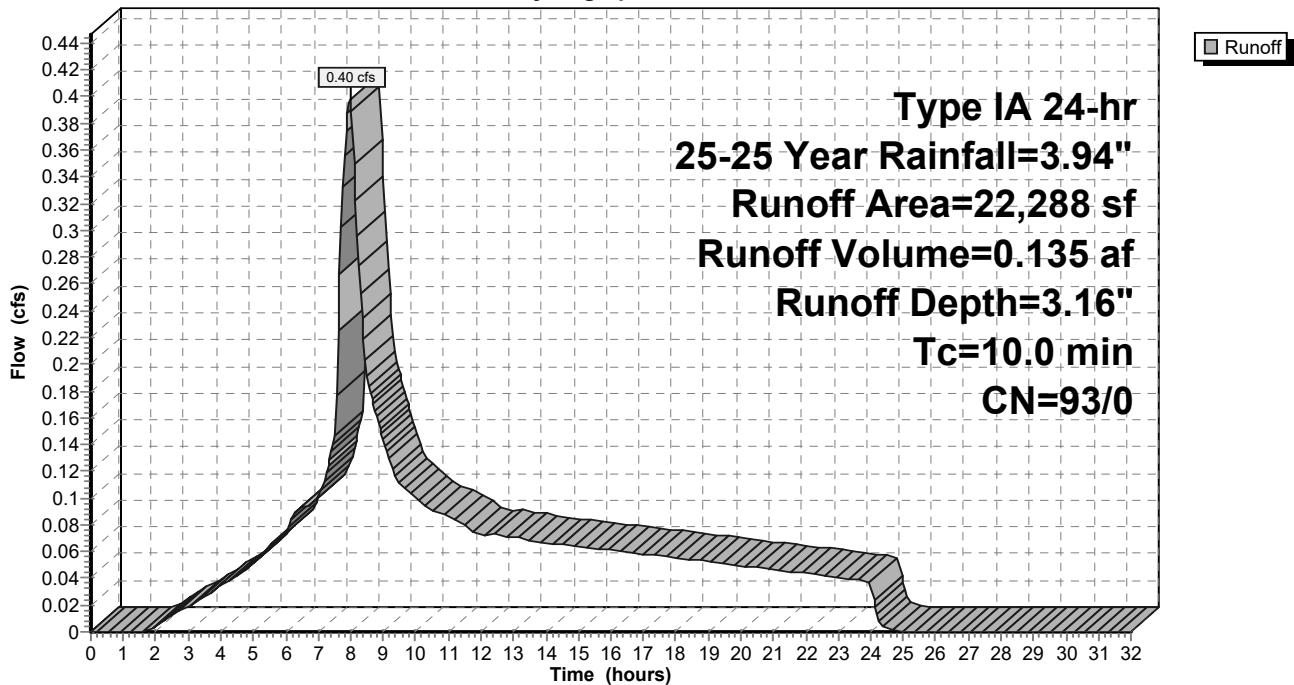
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 25-25 Year Rainfall=3.94"

Area (sf)	CN	Description
* 22,288	93	70% Lot Coverage Weighted
22,288	93	100.00% Pervious Area

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

Subcatchment 103S: Home Basin 1

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 25-25 Year Rainfall=3.94"

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Summary for Subcatchment 104S: Home Basin 5

Runoff = 0.60 cfs @ 7.98 hrs, Volume= 0.203 af, Depth= 3.16"
 Routed to Reach 165R : 1

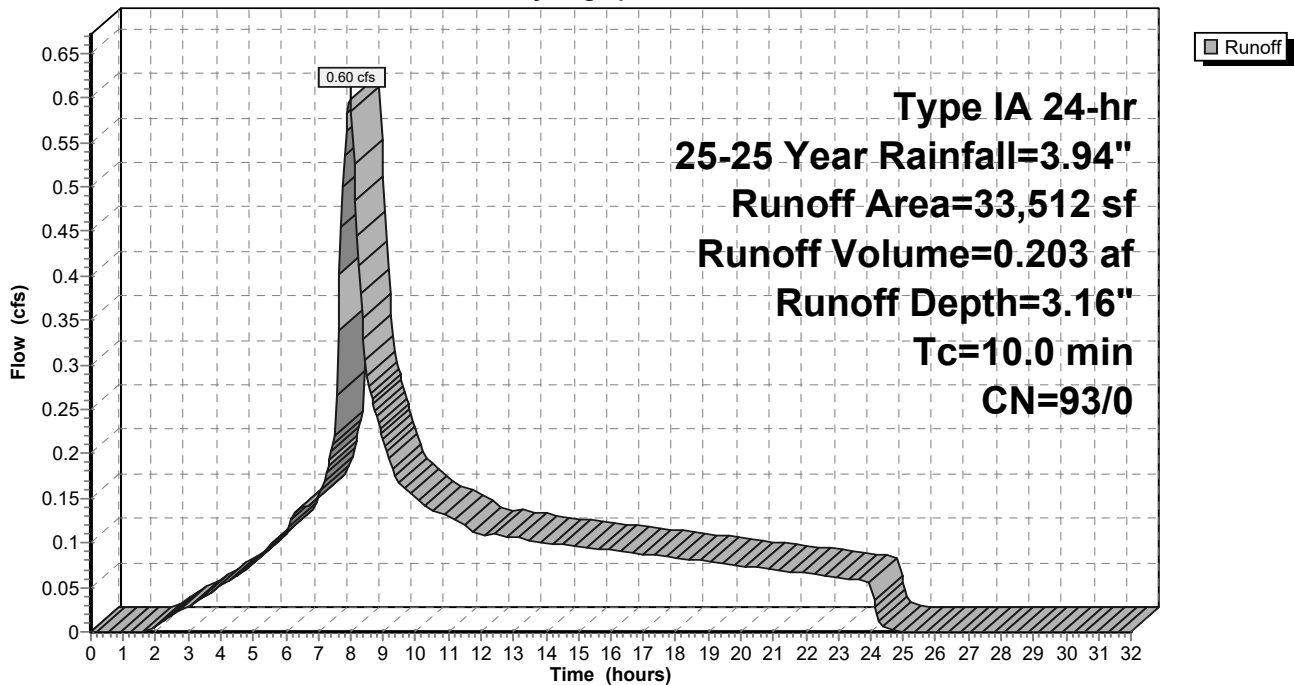
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 25-25 Year Rainfall=3.94"

Area (sf)	CN	Description
* 33,512	93	70% Lot Coverage Weighted
33,512	93	100.00% Pervious Area

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

Subcatchment 104S: Home Basin 5

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 25-25 Year Rainfall=3.94"

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Summary for Subcatchment 105S: Basin 6

Runoff = 0.18 cfs @ 7.98 hrs, Volume= 0.064 af, Depth= 3.71"
 Routed to Reach 138R : 1

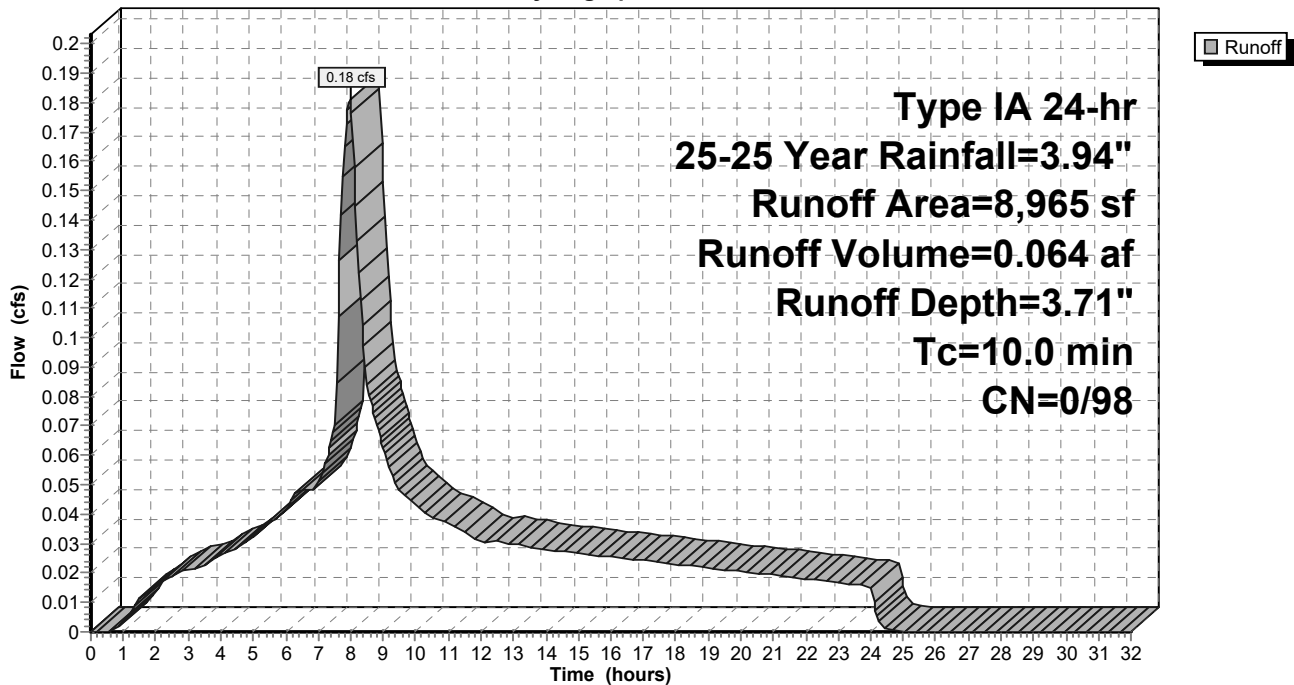
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 25-25 Year Rainfall=3.94"

Area (sf)	CN	Description
8,965	98	Paved roads w/curbs & sewers, HSG D
8,965	98	100.00% Impervious Area

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

Subcatchment 105S: Basin 6

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 25-25 Year Rainfall=3.94"

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Summary for Subcatchment 107S: Basin 8

Runoff = 0.17 cfs @ 7.98 hrs, Volume= 0.058 af, Depth= 3.71"
 Routed to Reach 158R : 1

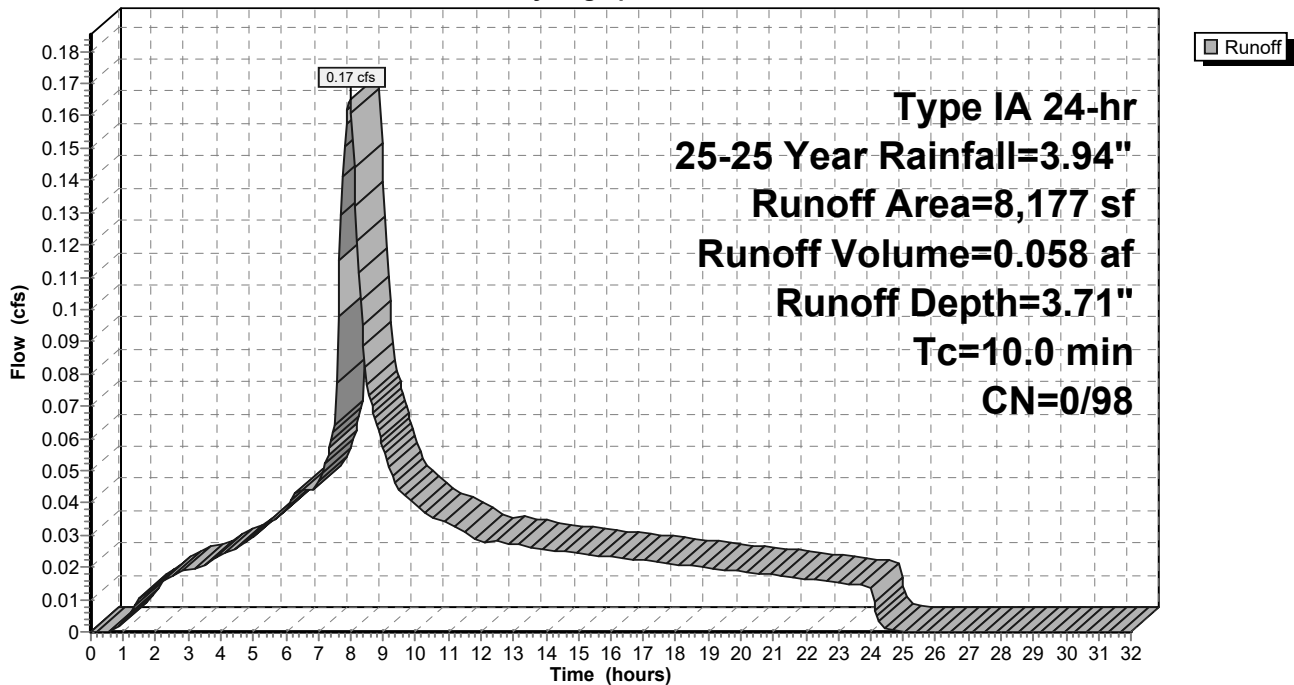
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 25-25 Year Rainfall=3.94"

Area (sf)	CN	Description
8,177	98	Paved roads w/curbs & sewers, HSG D
8,177	98	100.00% Impervious Area

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

Subcatchment 107S: Basin 8

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 25-25 Year Rainfall=3.94"

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Summary for Subcatchment 108S: Basin 9

Runoff = 0.27 cfs @ 7.98 hrs, Volume= 0.093 af, Depth= 3.71"
 Routed to Reach 135R : 1

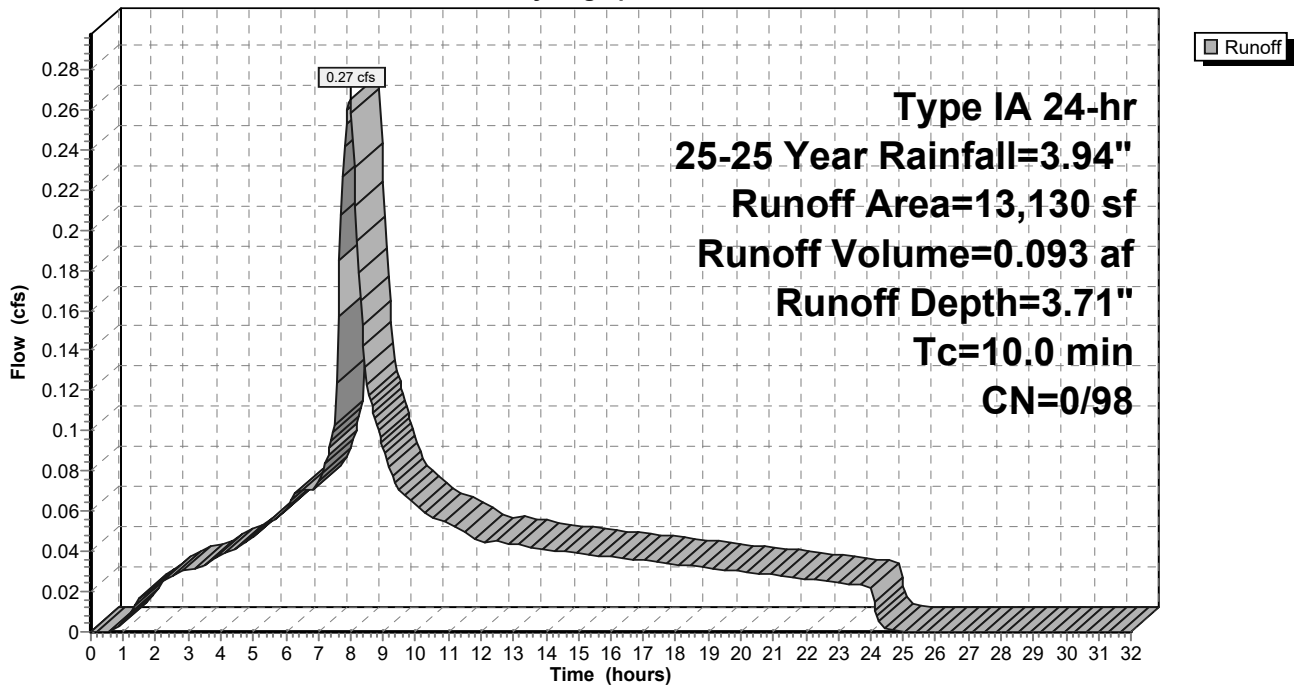
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 25-25 Year Rainfall=3.94"

Area (sf)	CN	Description
13,130	98	Paved roads w/curbs & sewers, HSG D
13,130	98	100.00% Impervious Area

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

Subcatchment 108S: Basin 9

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 25-25 Year Rainfall=3.94"

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Summary for Subcatchment 109S: Basin 10

Runoff = 0.46 cfs @ 7.98 hrs, Volume= 0.162 af, Depth= 3.71"
 Routed to Reach 137R : 1

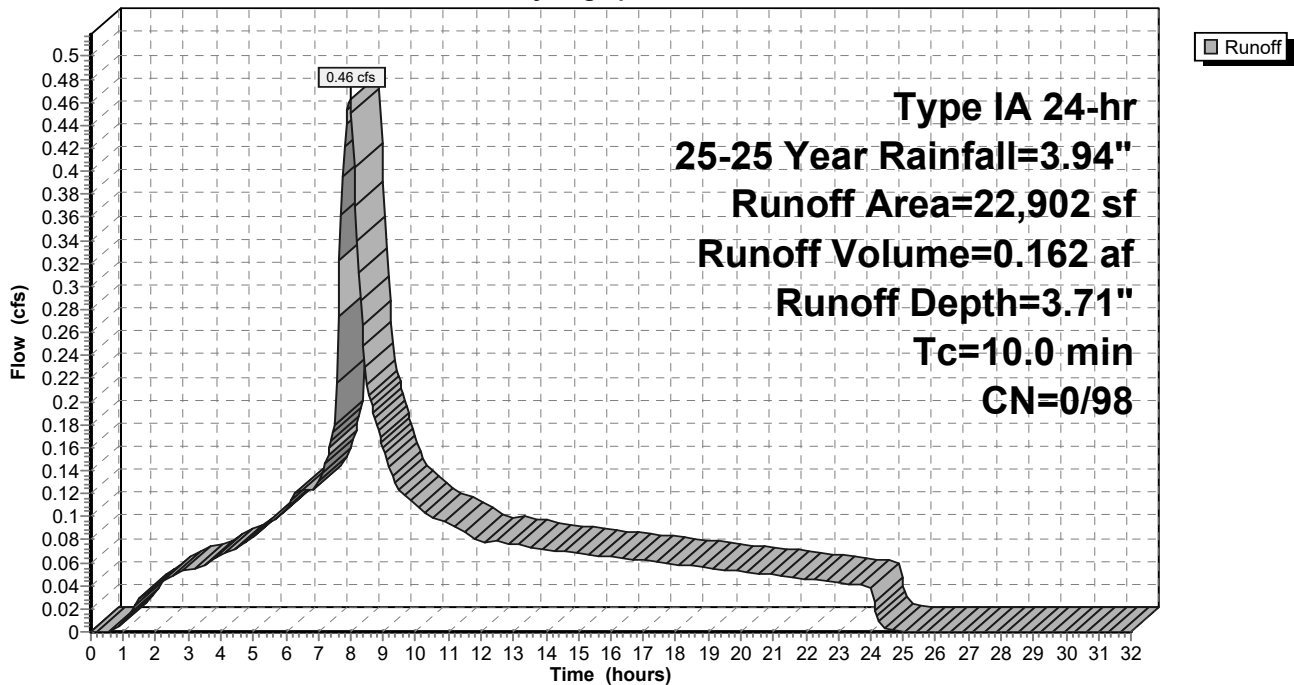
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 25-25 Year Rainfall=3.94"

Area (sf)	CN	Description
22,902	98	Paved roads w/curbs & sewers, HSG D
22,902	98	100.00% Impervious Area

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

Subcatchment 109S: Basin 10

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 25-25 Year Rainfall=3.94"

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Summary for Subcatchment 110S: Basin 11

Runoff = 0.52 cfs @ 7.98 hrs, Volume= 0.183 af, Depth= 3.71"
 Routed to Reach 145R : 1

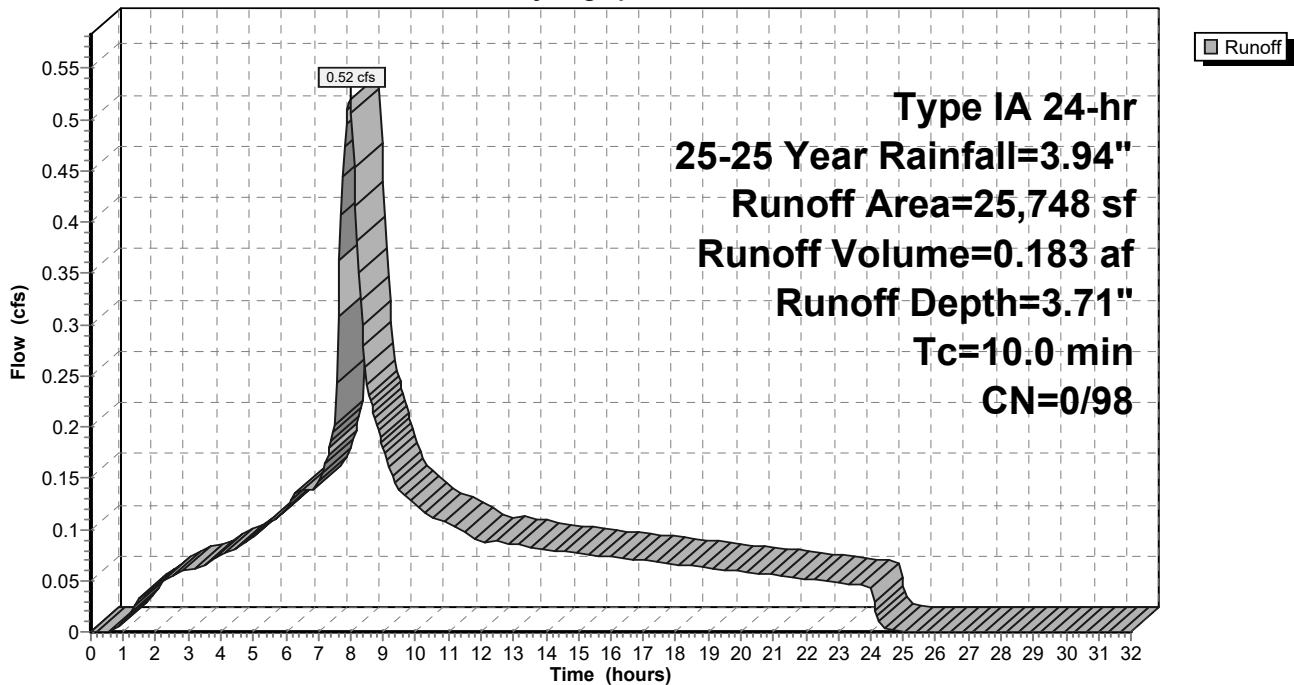
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 25-25 Year Rainfall=3.94"

Area (sf)	CN	Description
25,748	98	Paved roads w/curbs & sewers, HSG D
25,748	98	100.00% Impervious Area

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

Subcatchment 110S: Basin 11

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 25-25 Year Rainfall=3.94"

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Summary for Subcatchment 111S: Basin 12

Runoff = 0.11 cfs @ 7.98 hrs, Volume= 0.039 af, Depth= 3.71"
 Routed to Reach 143R : 1

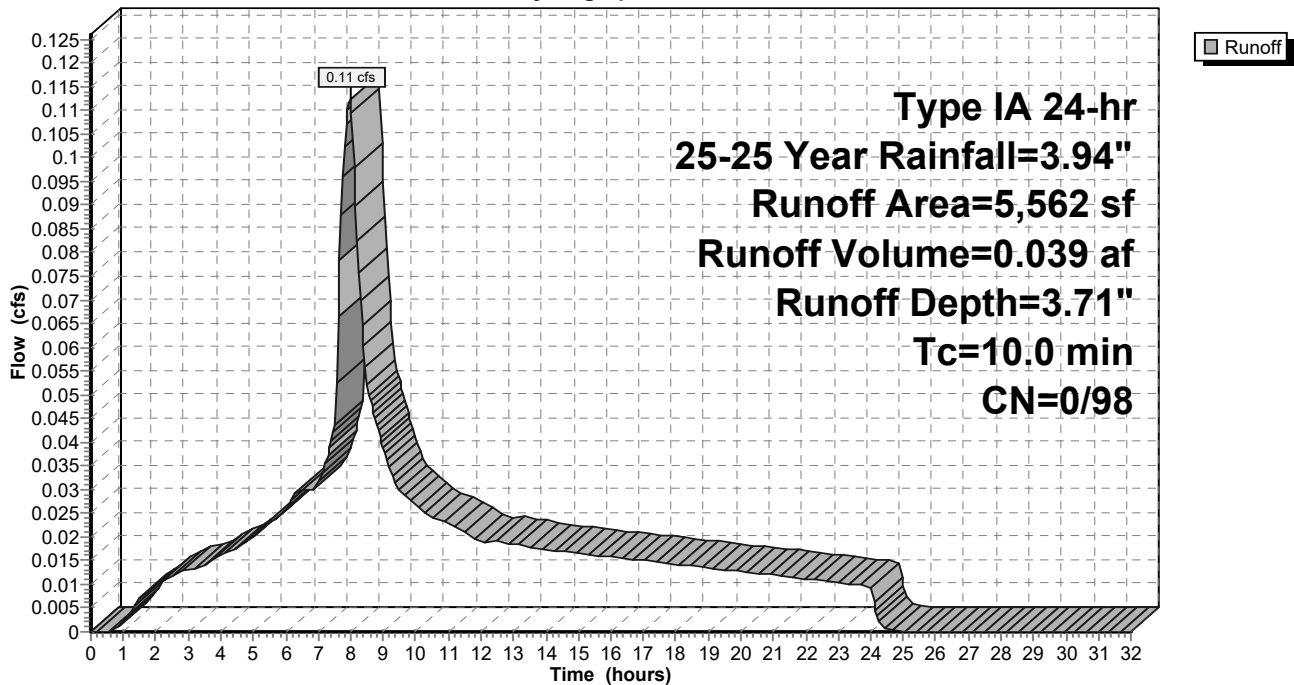
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 25-25 Year Rainfall=3.94"

Area (sf)	CN	Description
5,562	98	Paved roads w/curbs & sewers, HSG D
5,562	98	100.00% Impervious Area

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

Subcatchment 111S: Basin 12

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 25-25 Year Rainfall=3.94"

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Summary for Subcatchment 112S: Basin 13

Runoff = 0.10 cfs @ 7.98 hrs, Volume= 0.033 af, Depth= 3.71"
 Routed to Reach 158R : 1

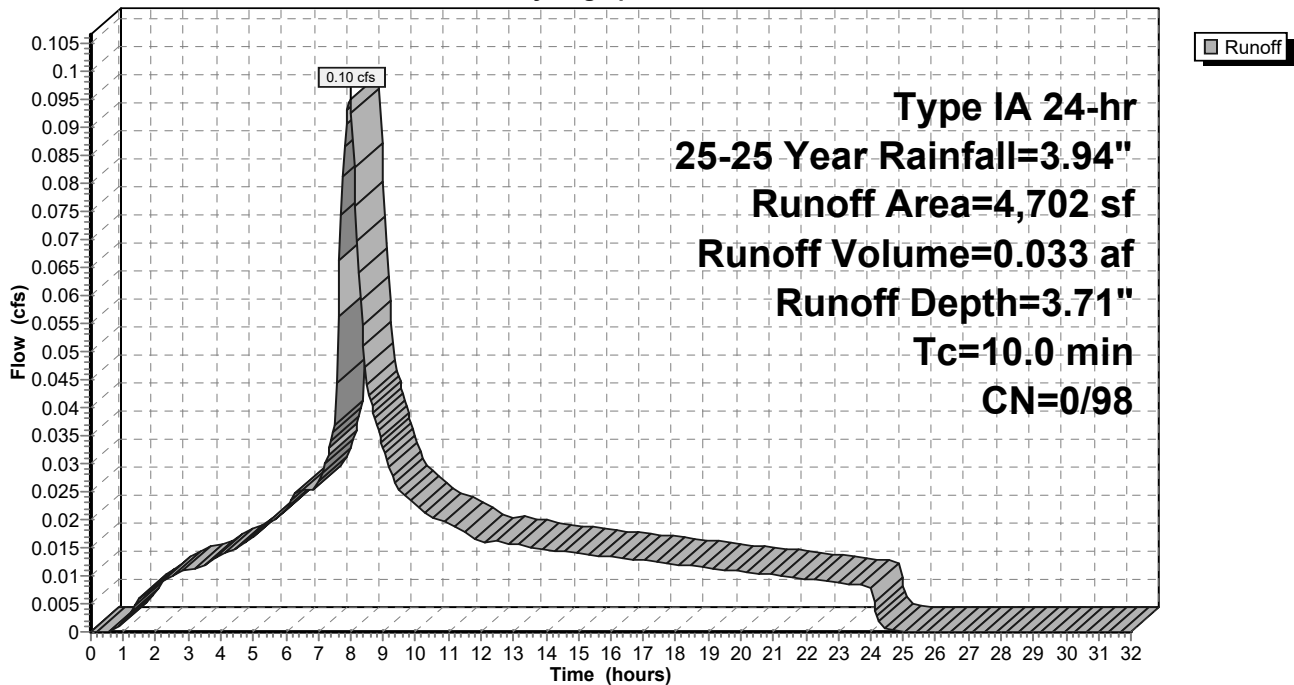
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 25-25 Year Rainfall=3.94"

Area (sf)	CN	Description
4,702	98	Paved roads w/curbs & sewers, HSG D
4,702	98	100.00% Impervious Area

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

Subcatchment 112S: Basin 13

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 25-25 Year Rainfall=3.94"

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Summary for Subcatchment 113S: Basin 14

Runoff = 0.16 cfs @ 7.98 hrs, Volume= 0.054 af, Depth= 3.71"
 Routed to Reach 159R : 1

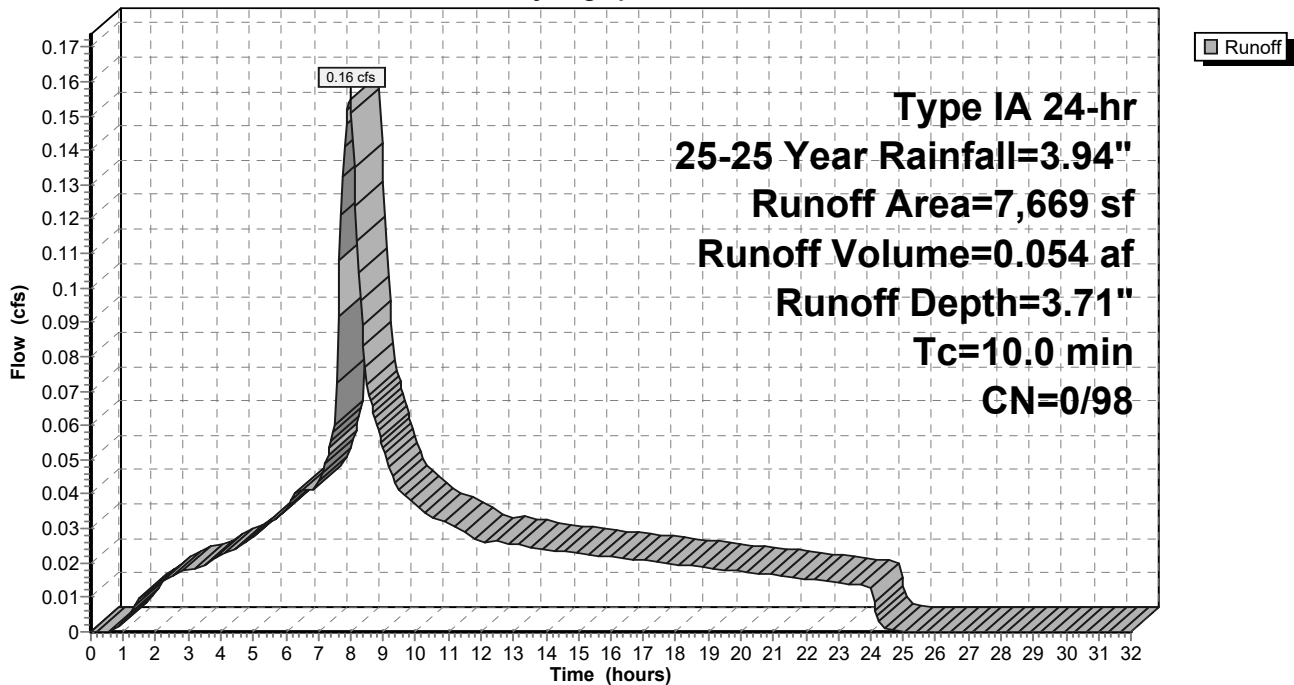
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 25-25 Year Rainfall=3.94"

Area (sf)	CN	Description
7,669	98	Paved roads w/curbs & sewers, HSG D
7,669	98	100.00% Impervious Area

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

Subcatchment 113S: Basin 14

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 25-25 Year Rainfall=3.94"

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Summary for Subcatchment 114S: Basin 15

Runoff = 0.15 cfs @ 7.98 hrs, Volume= 0.051 af, Depth= 3.71"
 Routed to Reach 143R : 1

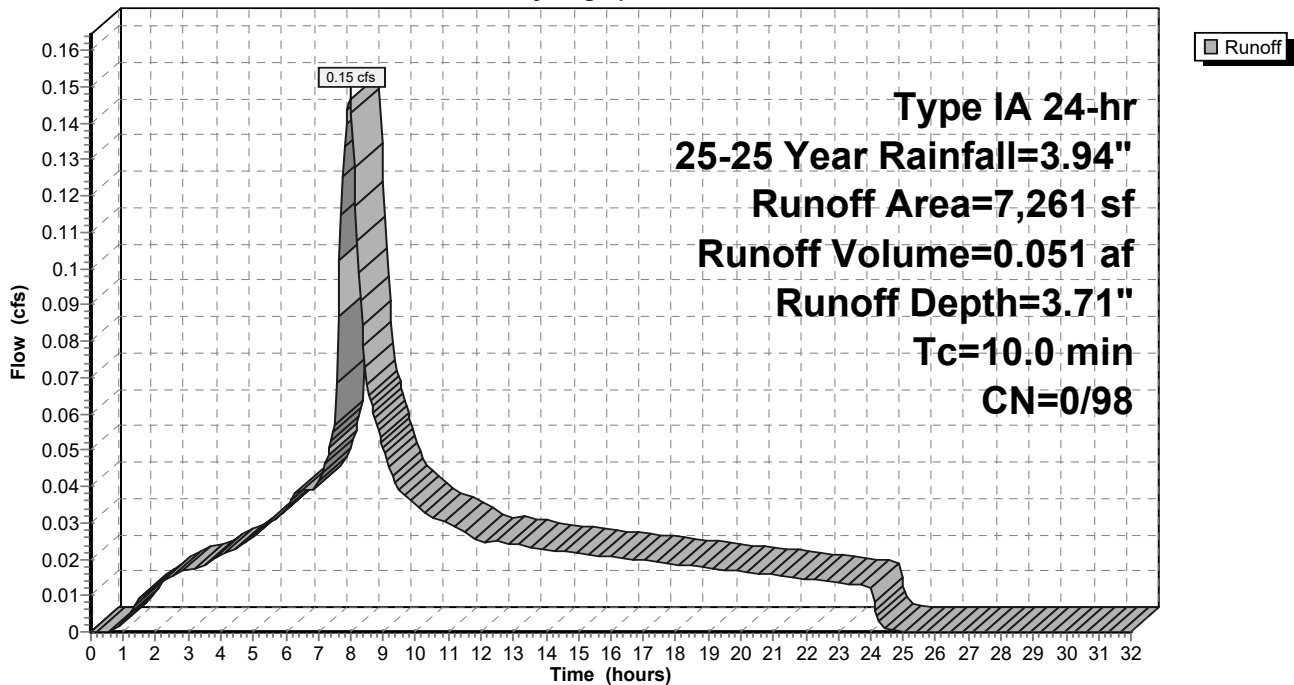
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 25-25 Year Rainfall=3.94"

Area (sf)	CN	Description
7,261	98	Paved roads w/curbs & sewers, HSG D
7,261	98	100.00% Impervious Area

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

Subcatchment 114S: Basin 15

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 25-25 Year Rainfall=3.94"

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Summary for Subcatchment 115S: Basin 16

Runoff = 0.14 cfs @ 7.98 hrs, Volume= 0.050 af, Depth= 3.71"
 Routed to Reach 149R : 1

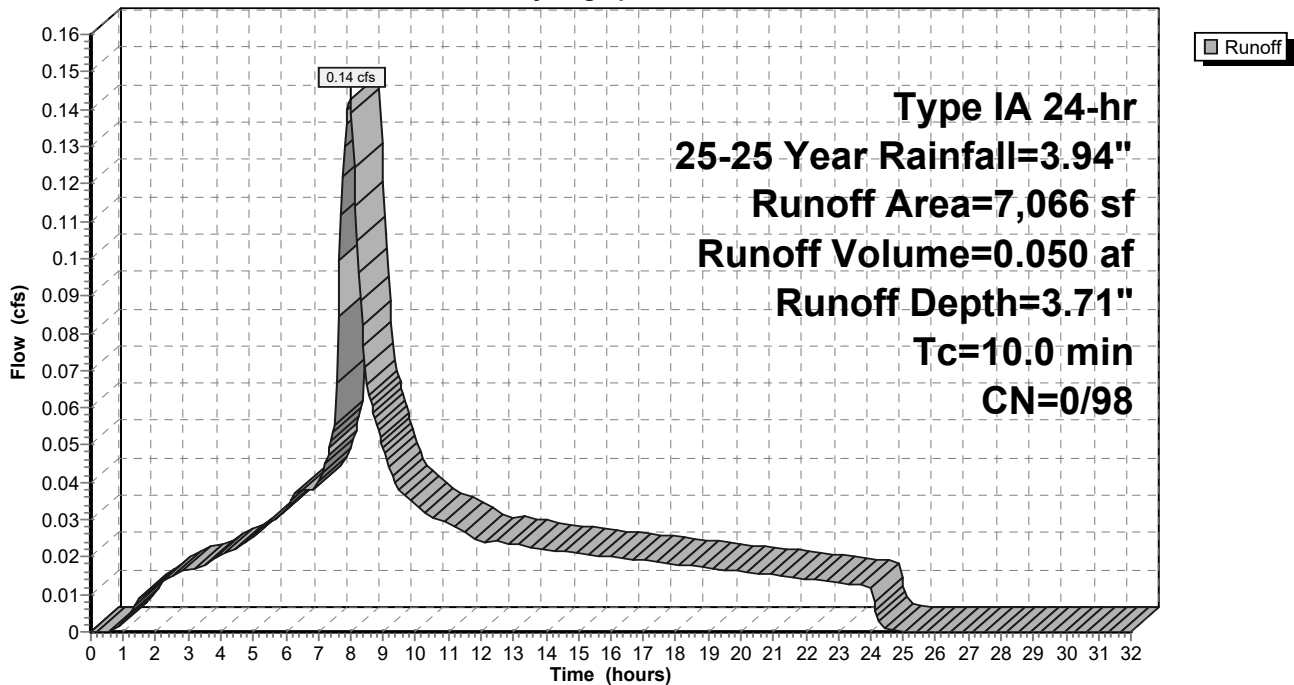
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 25-25 Year Rainfall=3.94"

Area (sf)	CN	Description
7,066	98	Paved roads w/curbs & sewers, HSG D
7,066	98	100.00% Impervious Area

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

Subcatchment 115S: Basin 16

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 25-25 Year Rainfall=3.94"

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Summary for Subcatchment 116S: Basin 17

Runoff = 0.53 cfs @ 7.98 hrs, Volume= 0.184 af, Depth= 3.71"
 Routed to Reach 151R : 1

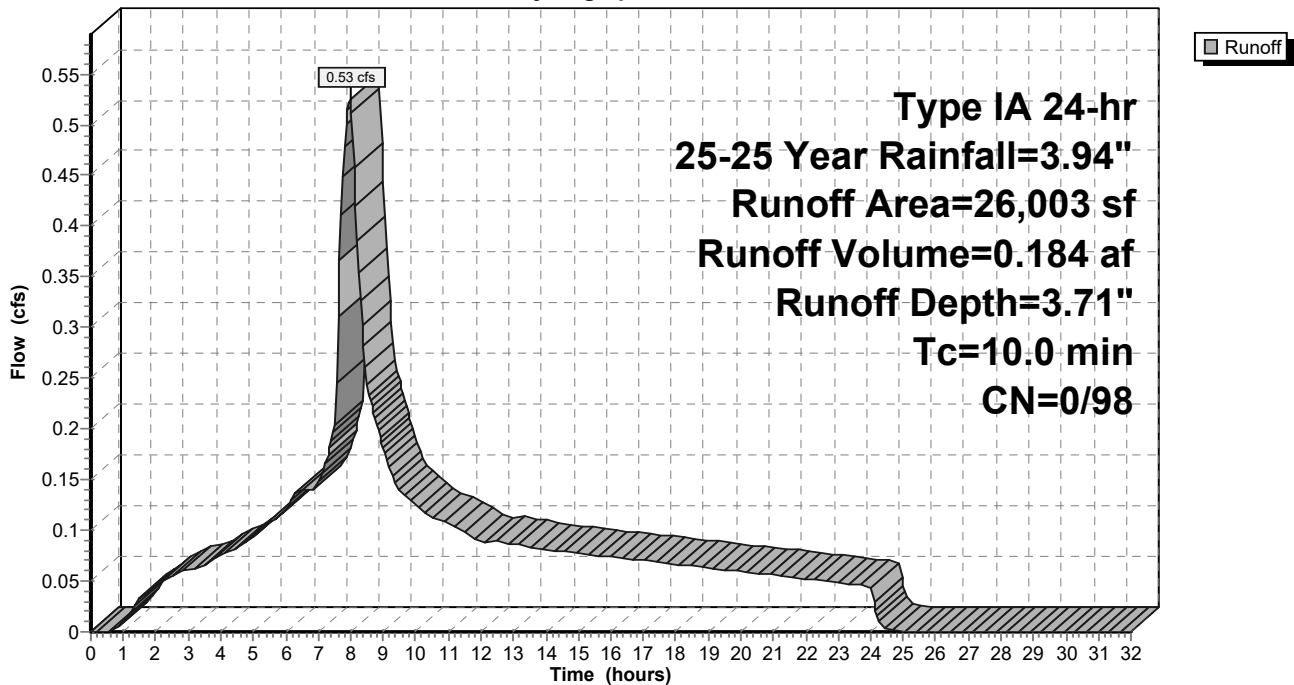
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 25-25 Year Rainfall=3.94"

Area (sf)	CN	Description
26,003	98	Paved roads w/curbs & sewers, HSG D
26,003	98	100.00% Impervious Area

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

Subcatchment 116S: Basin 17

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 25-25 Year Rainfall=3.94"

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Summary for Subcatchment 117S: Basin 18

Runoff = 0.48 cfs @ 7.98 hrs, Volume= 0.168 af, Depth= 3.71"
 Routed to Reach 160R : 1

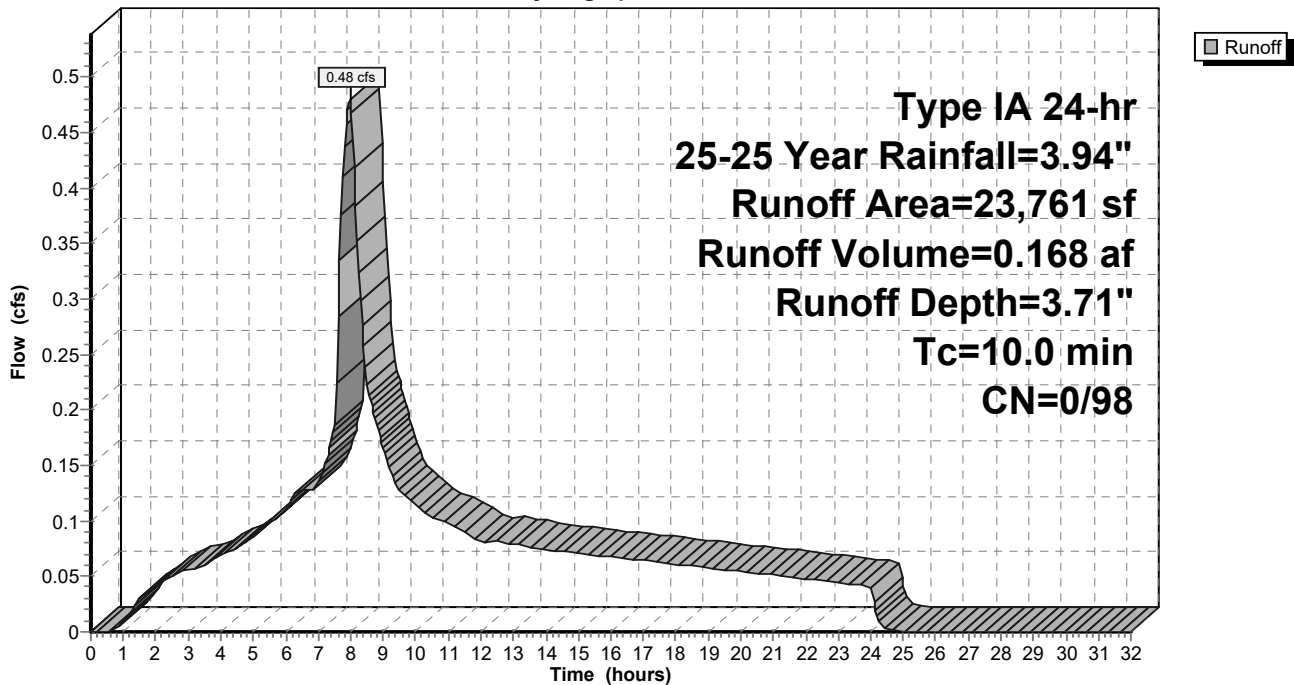
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 25-25 Year Rainfall=3.94"

Area (sf)	CN	Description
23,761	98	Paved roads w/curbs & sewers, HSG D
23,761	98	100.00% Impervious Area

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

Subcatchment 117S: Basin 18

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 25-25 Year Rainfall=3.94"

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Summary for Subcatchment 118S: Basin 19

Runoff = 0.15 cfs @ 7.98 hrs, Volume= 0.052 af, Depth= 3.71"
 Routed to Reach 155R : 1

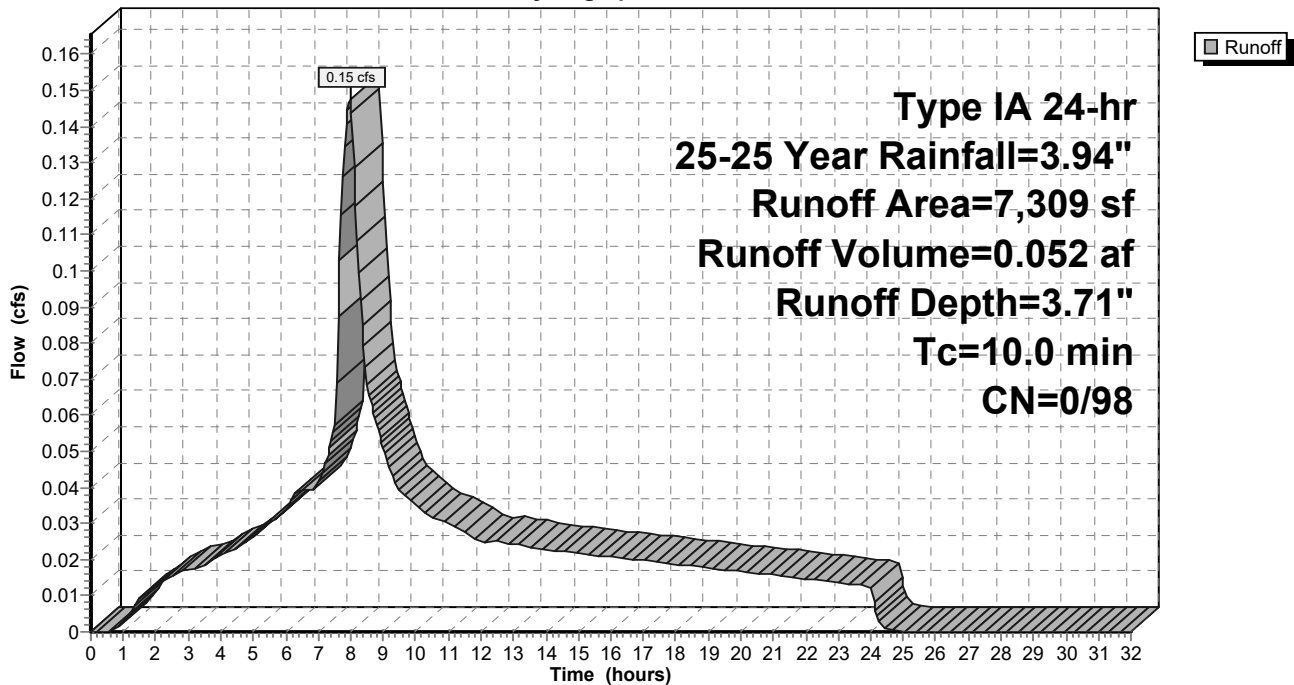
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 25-25 Year Rainfall=3.94"

Area (sf)	CN	Description
7,309	98	Paved roads w/curbs & sewers, HSG D
7,309	98	100.00% Impervious Area

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

Subcatchment 118S: Basin 19

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 25-25 Year Rainfall=3.94"

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Summary for Subcatchment 119S: Basin 20

Runoff = 0.15 cfs @ 7.98 hrs, Volume= 0.053 af, Depth= 3.71"
 Routed to Reach 149R : 1

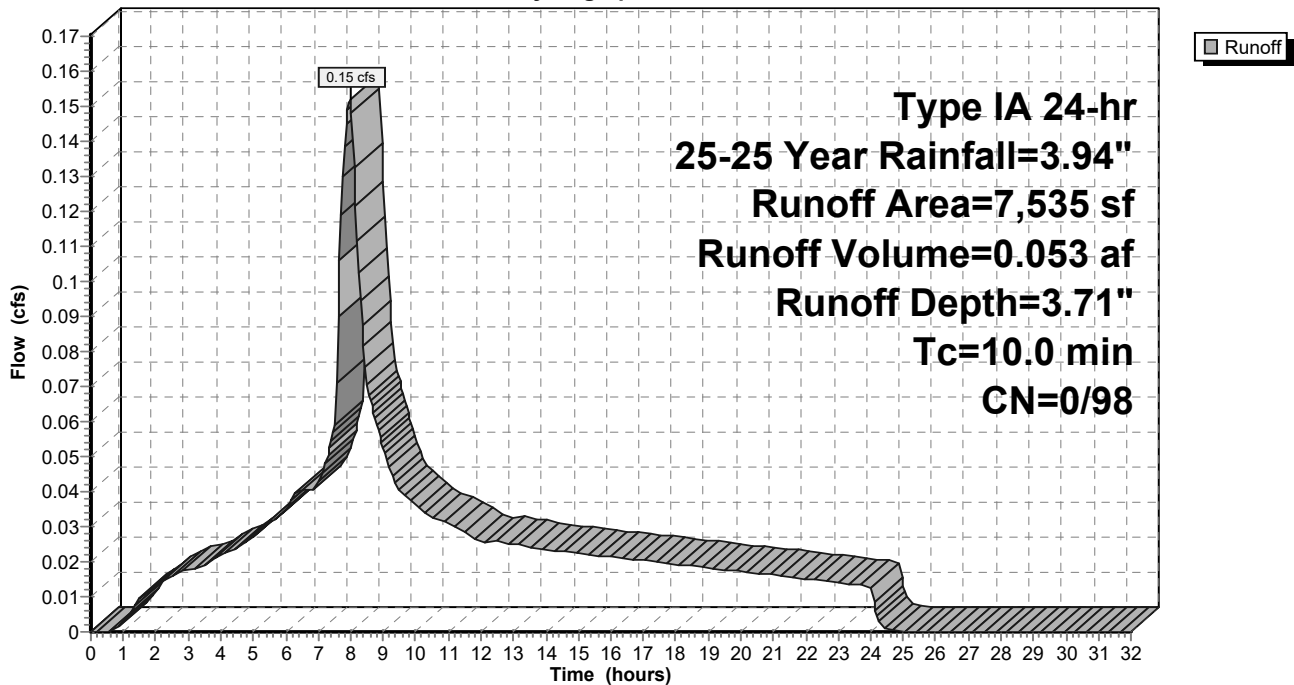
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 25-25 Year Rainfall=3.94"

Area (sf)	CN	Description
7,535	98	Paved roads w/curbs & sewers, HSG D
7,535	98	100.00% Impervious Area

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

Subcatchment 119S: Basin 20

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 25-25 Year Rainfall=3.94"

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Summary for Subcatchment 120S: Basin 21

Runoff = 0.14 cfs @ 7.98 hrs, Volume= 0.049 af, Depth= 3.71"
 Routed to Reach 148R : 1

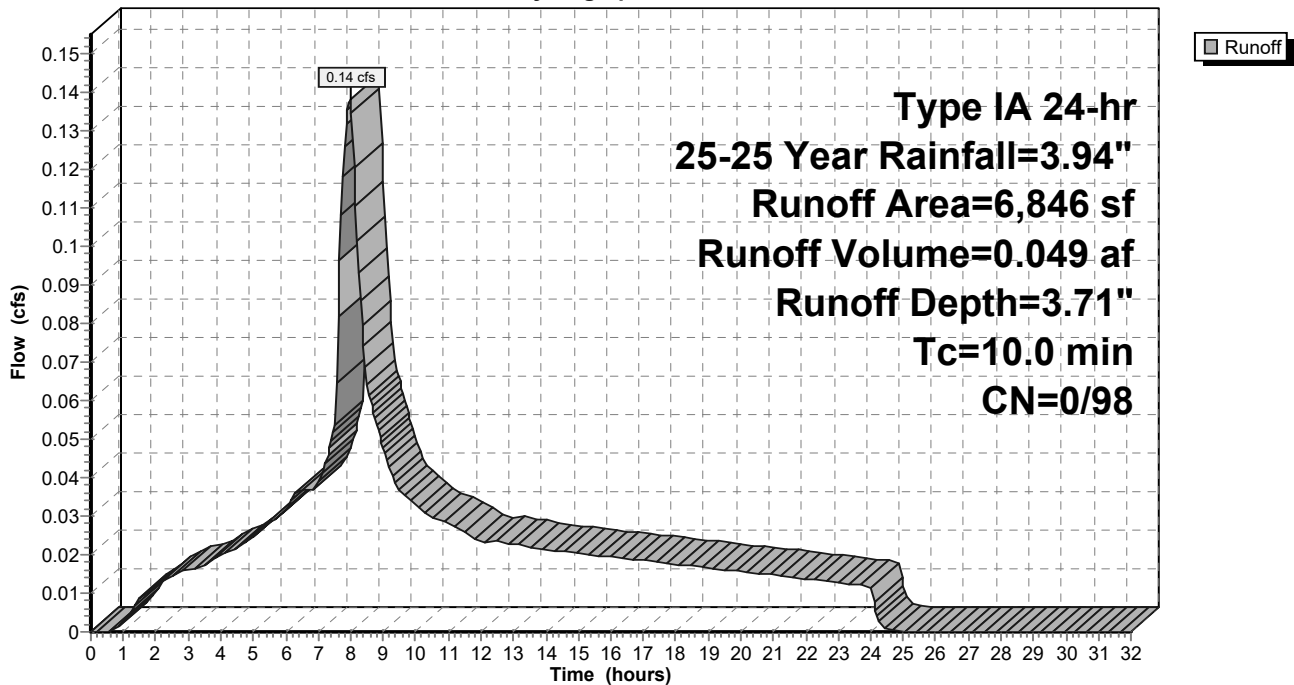
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 25-25 Year Rainfall=3.94"

Area (sf)	CN	Description
6,846	98	Paved roads w/curbs & sewers, HSG D
6,846	98	100.00% Impervious Area

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

Subcatchment 120S: Basin 21

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 25-25 Year Rainfall=3.94"

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Summary for Subcatchment 121S: Basin 22

Runoff = 0.10 cfs @ 7.98 hrs, Volume= 0.037 af, Depth= 3.71"
 Routed to Reach 154R : 1

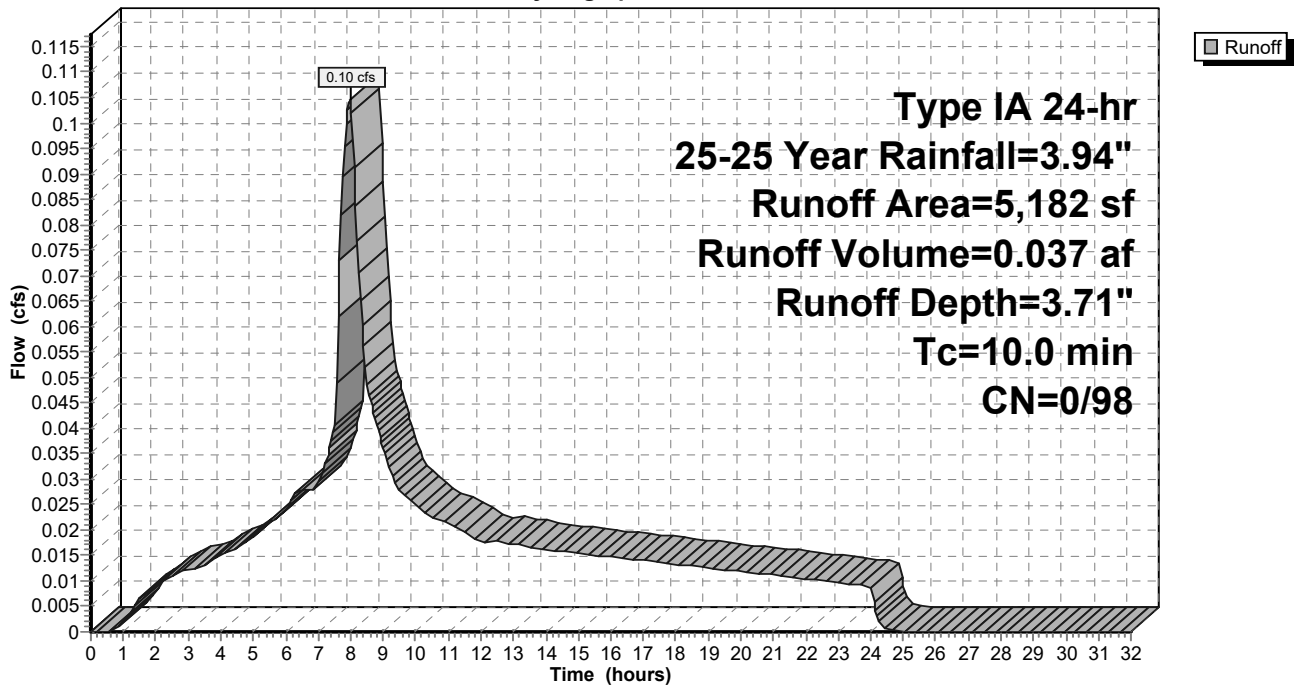
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 25-25 Year Rainfall=3.94"

Area (sf)	CN	Description
5,182	98	Paved roads w/curbs & sewers, HSG D
5,182	98	100.00% Impervious Area

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

Subcatchment 121S: Basin 22

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 25-25 Year Rainfall=3.94"

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Summary for Subcatchment 122S: Basin 23

Runoff = 0.11 cfs @ 7.98 hrs, Volume= 0.039 af, Depth= 3.71"
 Routed to Reach 155R : 1

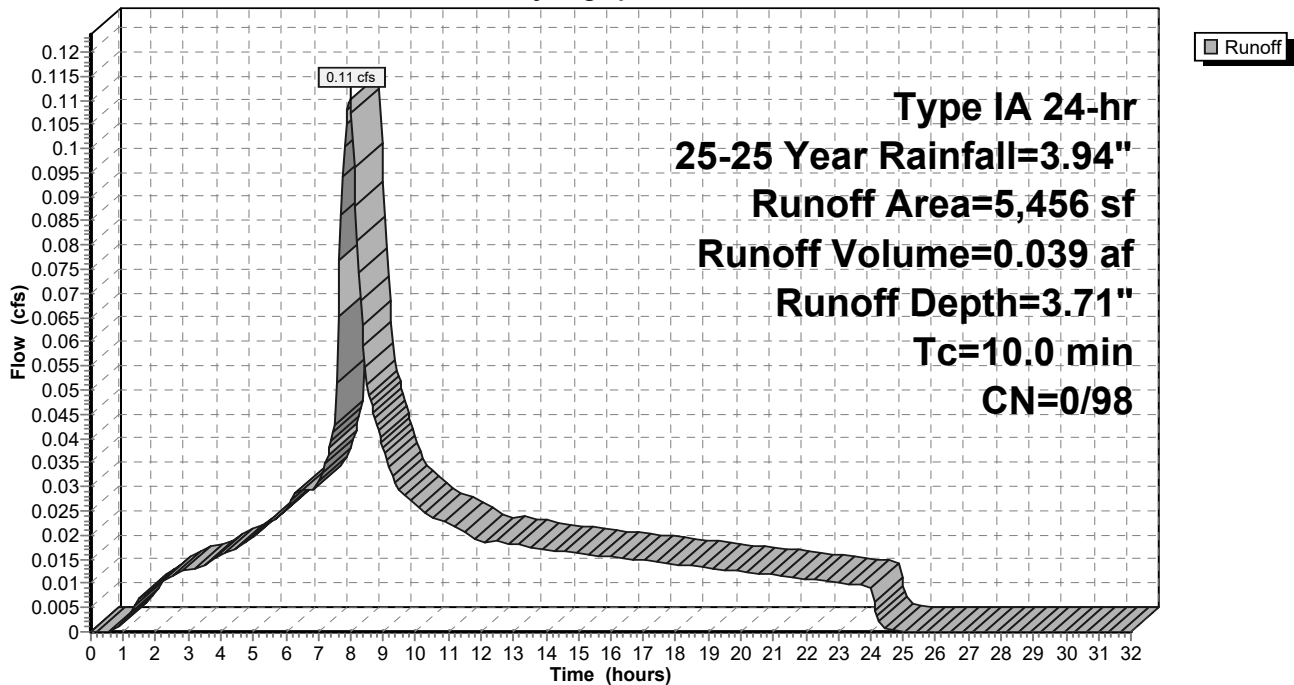
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 25-25 Year Rainfall=3.94"

Area (sf)	CN	Description
5,456	98	Paved roads w/curbs & sewers, HSG D
5,456	98	100.00% Impervious Area

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

Subcatchment 122S: Basin 23

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 25-25 Year Rainfall=3.94"

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Summary for Subcatchment 123S: Basin 24

Runoff = 0.09 cfs @ 7.98 hrs, Volume= 0.032 af, Depth= 3.71"
 Routed to Reach 162R : 1

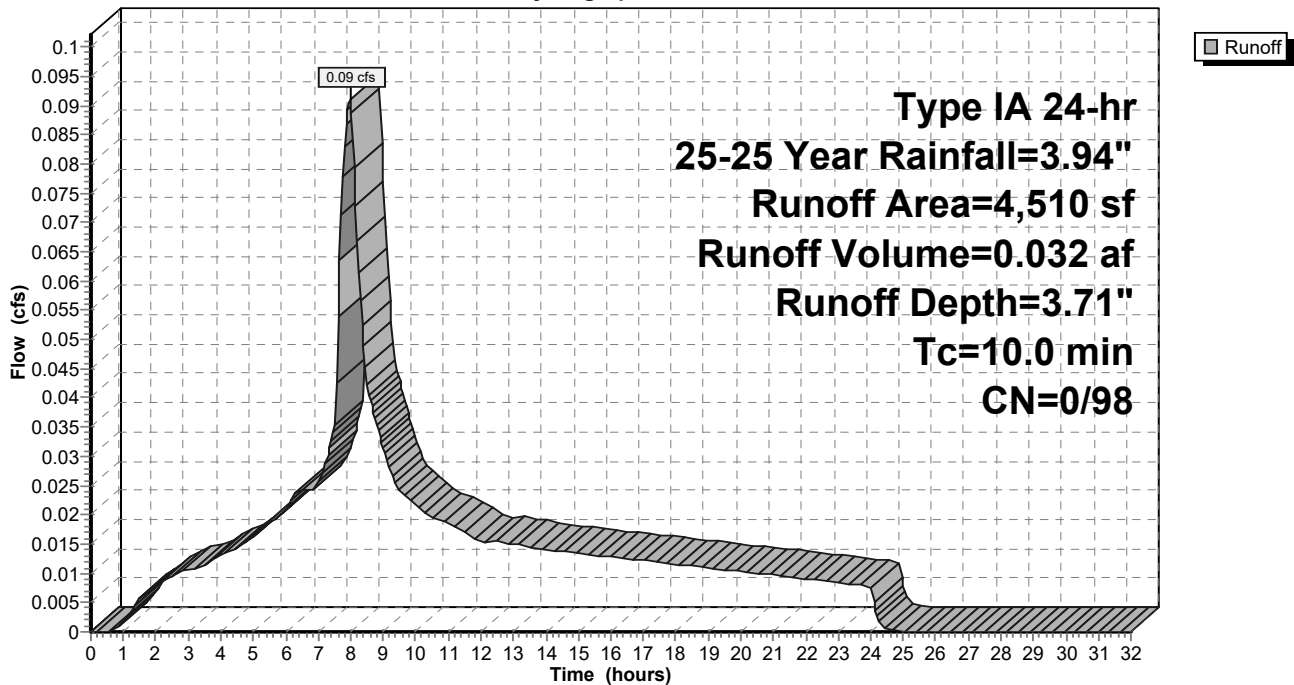
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 25-25 Year Rainfall=3.94"

Area (sf)	CN	Description
4,510	98	Paved roads w/curbs & sewers, HSG D
4,510	98	100.00% Impervious Area

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

Subcatchment 123S: Basin 24

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 25-25 Year Rainfall=3.94"

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Summary for Subcatchment 124S: Basin 25

Runoff = 0.27 cfs @ 7.98 hrs, Volume= 0.094 af, Depth= 3.71"
 Routed to Reach 163R : 1

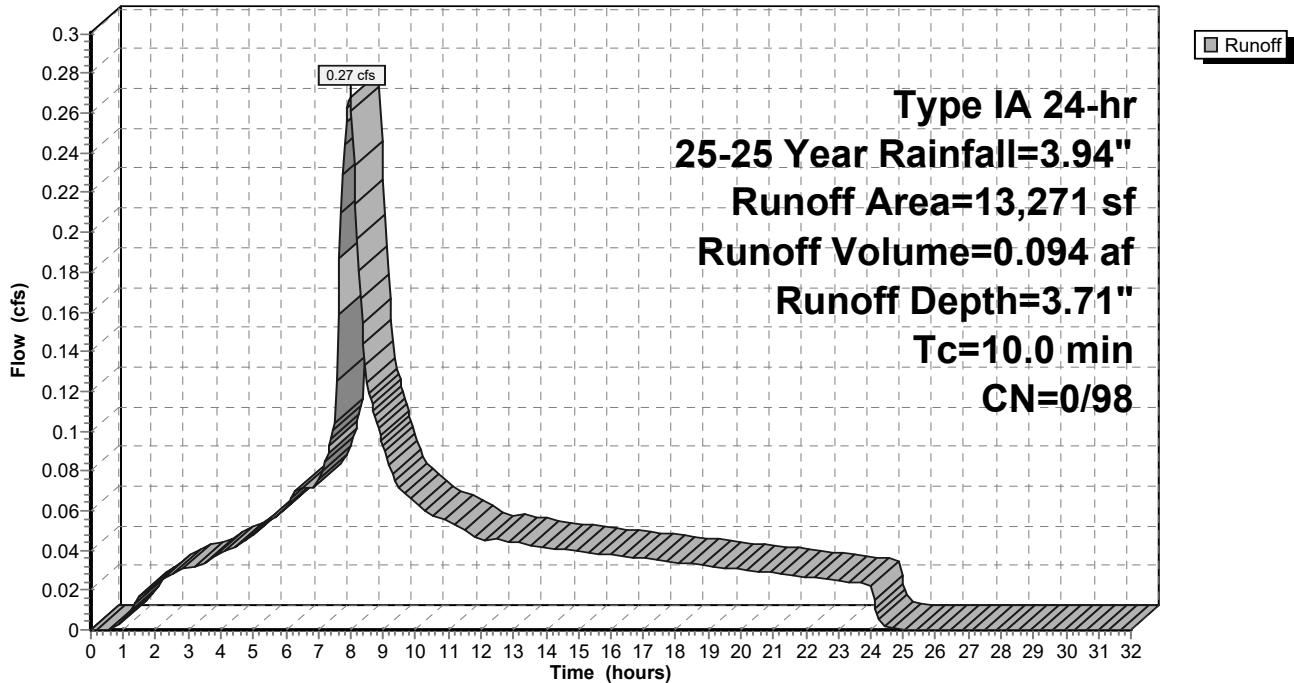
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 25-25 Year Rainfall=3.94"

Area (sf)	CN	Description
13,271	98	Paved roads w/curbs & sewers, HSG D
13,271	98	100.00% Impervious Area

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

Subcatchment 124S: Basin 25

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 25-25 Year Rainfall=3.94"

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Summary for Subcatchment 125S: Basin 26

Runoff = 0.37 cfs @ 7.98 hrs, Volume= 0.131 af, Depth= 3.71"
 Routed to Reach 165R : 1

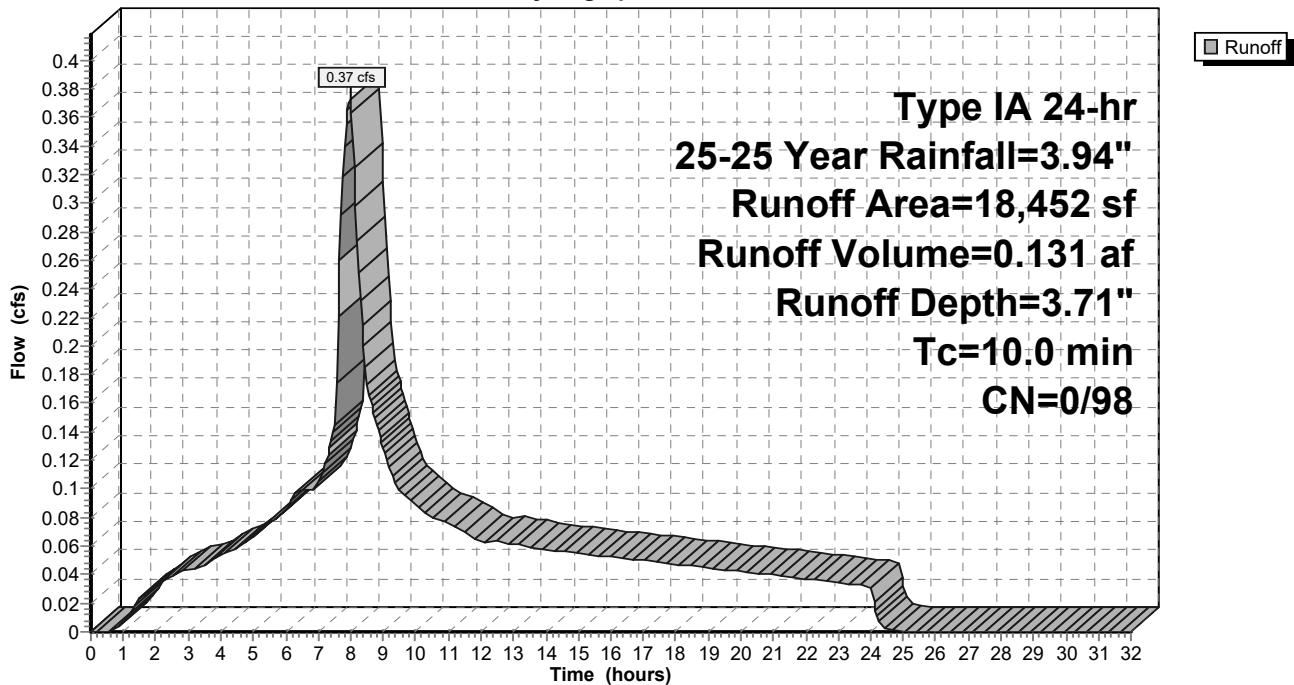
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 25-25 Year Rainfall=3.94"

Area (sf)	CN	Description
18,452	98	Paved roads w/curbs & sewers, HSG D
18,452	98	100.00% Impervious Area

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

Subcatchment 125S: Basin 26

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 25-25 Year Rainfall=3.94"

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Summary for Subcatchment 126S: Alley Basin 1

Runoff = 0.20 cfs @ 7.98 hrs, Volume= 0.070 af, Depth= 3.71"
 Routed to Reach 140R : 1

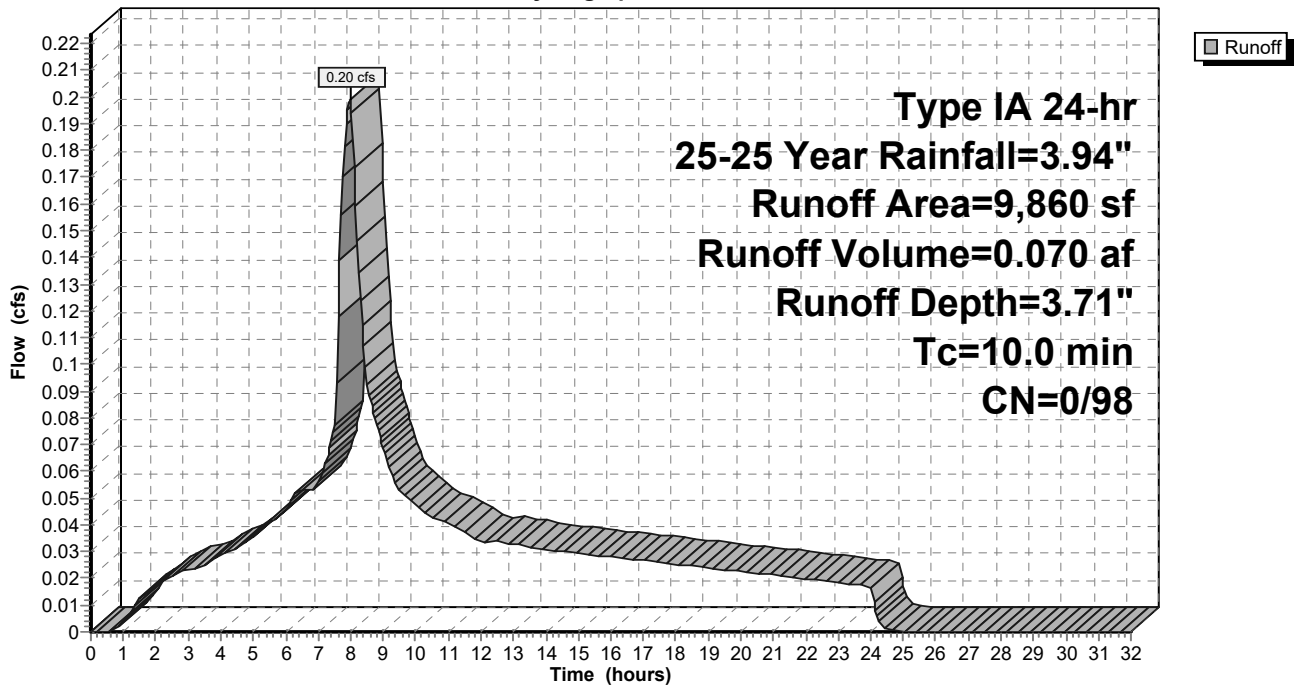
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 25-25 Year Rainfall=3.94"

Area (sf)	CN	Description
9,860	98	Paved roads w/curbs & sewers, HSG D
9,860	98	100.00% Impervious Area

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

Subcatchment 126S: Alley Basin 1

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 25-25 Year Rainfall=3.94"

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Summary for Subcatchment 127S: Alley Basin 2

Runoff = 0.15 cfs @ 7.98 hrs, Volume= 0.053 af, Depth= 3.71"
 Routed to Reach 141R : 1

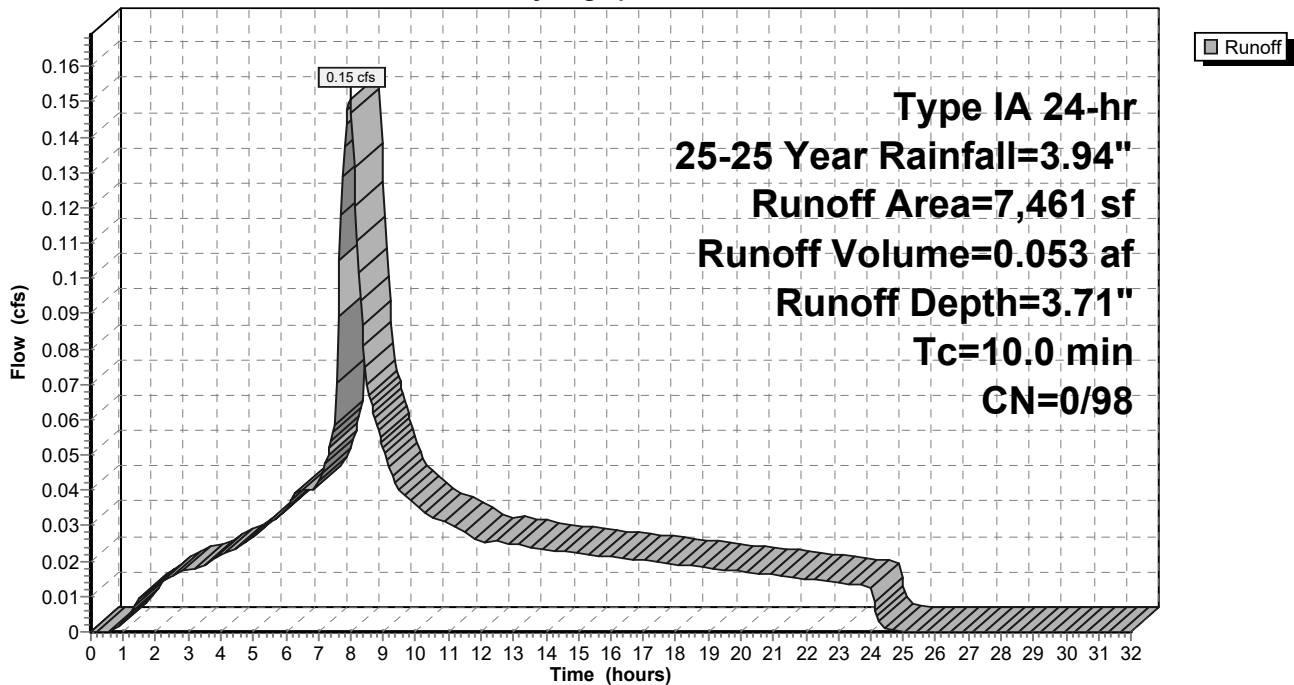
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 25-25 Year Rainfall=3.94"

Area (sf)	CN	Description
7,461	98	Paved roads w/curbs & sewers, HSG D
7,461	98	100.00% Impervious Area

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

Subcatchment 127S: Alley Basin 2

Hydrograph



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Type IA 24-hr 25-25 Year Rainfall=3.94"

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Summary for Subcatchment 128S: Alley Basin 3

Runoff = 0.14 cfs @ 7.98 hrs, Volume= 0.048 af, Depth= 3.71"
 Routed to Reach 147R : 1

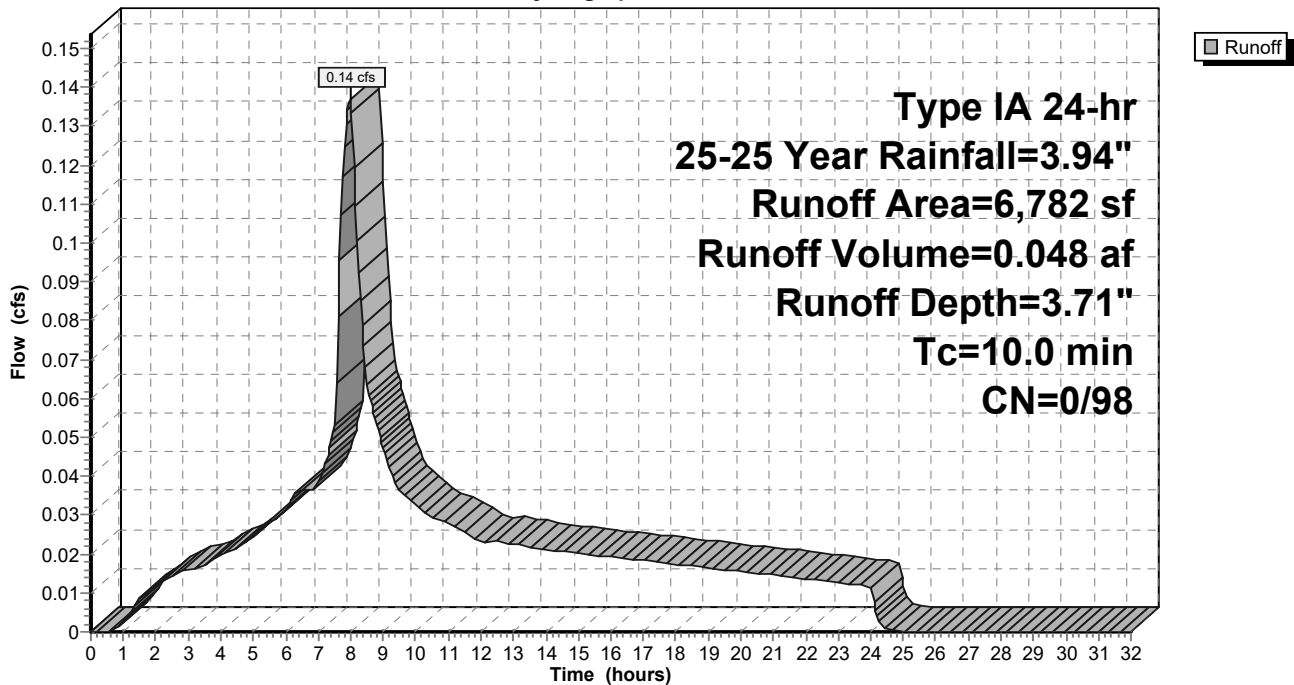
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 25-25 Year Rainfall=3.94"

Area (sf)	CN	Description
6,782	98	Paved roads w/curbs & sewers, HSG D
6,782	98	100.00% Impervious Area

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

Subcatchment 128S: Alley Basin 3

Hydrograph



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Type IA 24-hr 25-25 Year Rainfall=3.94"

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Summary for Subcatchment 129S: Alley Basin 4

Runoff = 0.14 cfs @ 7.98 hrs, Volume= 0.049 af, Depth= 3.71"
 Routed to Reach 153R : 1

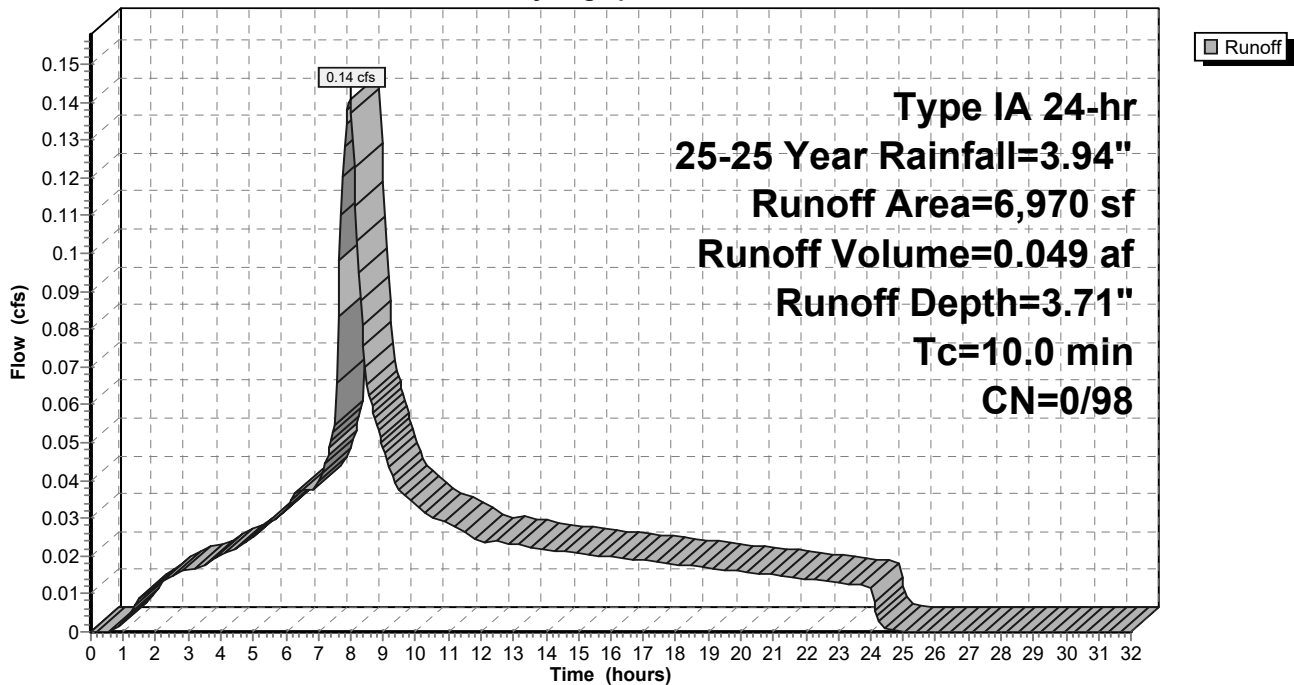
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 25-25 Year Rainfall=3.94"

Area (sf)	CN	Description
6,970	98	Paved roads w/curbs & sewers, HSG D
6,970	98	100.00% Impervious Area

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

Subcatchment 129S: Alley Basin 4

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 25-25 Year Rainfall=3.94"

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Summary for Subcatchment 168S: Future Lots

Runoff = 1.21 cfs @ 7.98 hrs, Volume= 0.414 af, Depth= 3.37"
 Routed to Reach 166R : Basin Future

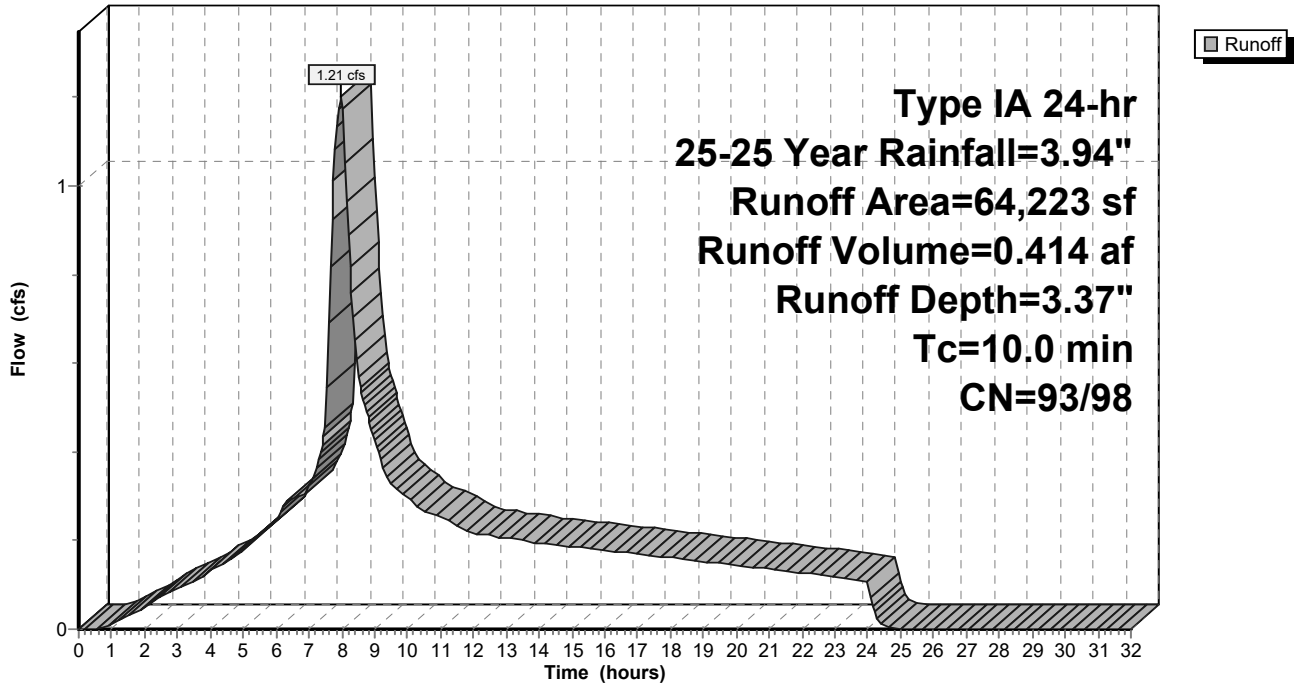
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 25-25 Year Rainfall=3.94"

	Area (sf)	CN	Description
*	39,915	93	70% Lot Coverage Weighted
	24,308	98	Paved roads w/curbs & sewers, HSG D
	64,223	95	Weighted Average
	39,915	93	62.15% Pervious Area
	24,308	98	37.85% Impervious Area

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

Subcatchment 168S: Future Lots

Hydrograph



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Summary for Subcatchment 169S: Swale 2

[46] Hint: Tc=0 (Instant runoff peak depends on dt)

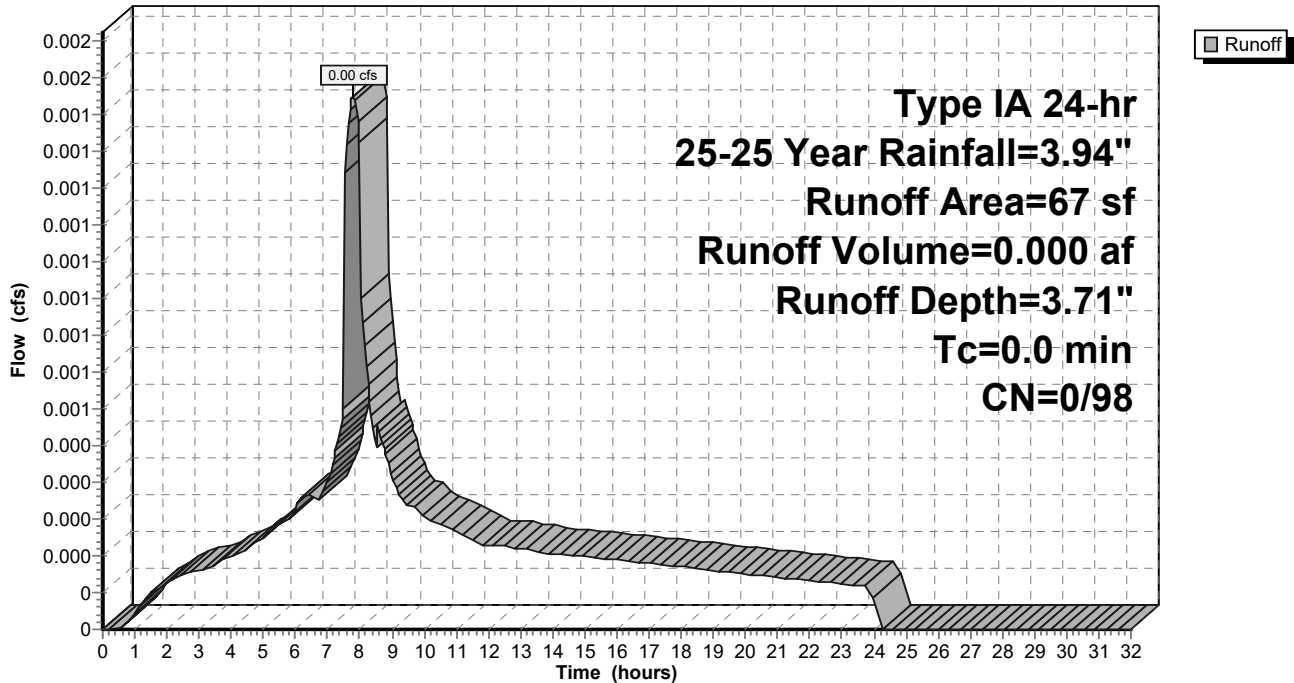
Runoff = 0.00 cfs @ 7.80 hrs, Volume= 0.000 af, Depth= 3.71"
 Routed to Pond 54P : Stormwater Swale 2

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 25-25 Year Rainfall=3.94"

Area (sf)	CN	Description
67	98	Water Surface, HSG D
67	98	100.00% Impervious Area

Subcatchment 169S: Swale 2

Hydrograph



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Type IA 24-hr 25-25 Year Rainfall=3.94"

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Summary for Subcatchment 170S: Swale 1

[46] Hint: Tc=0 (Instant runoff peak depends on dt)

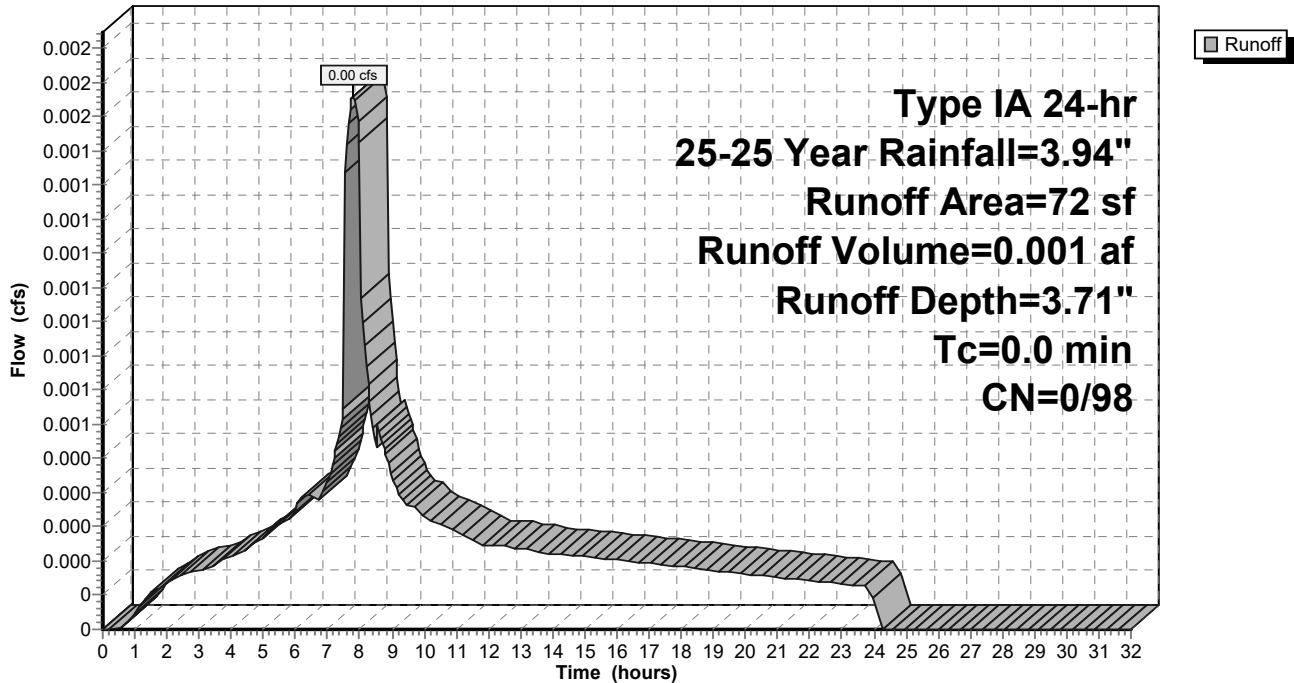
Runoff = 0.00 cfs @ 7.80 hrs, Volume= 0.001 af, Depth= 3.71"
 Routed to Pond 60P : Stormwater Swale 1

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 25-25 Year Rainfall=3.94"

Area (sf)	CN	Description
72	98	Water Surface, HSG D
72	98	100.00% Impervious Area

Subcatchment 170S: Swale 1

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 25-25 Year Rainfall=3.94"

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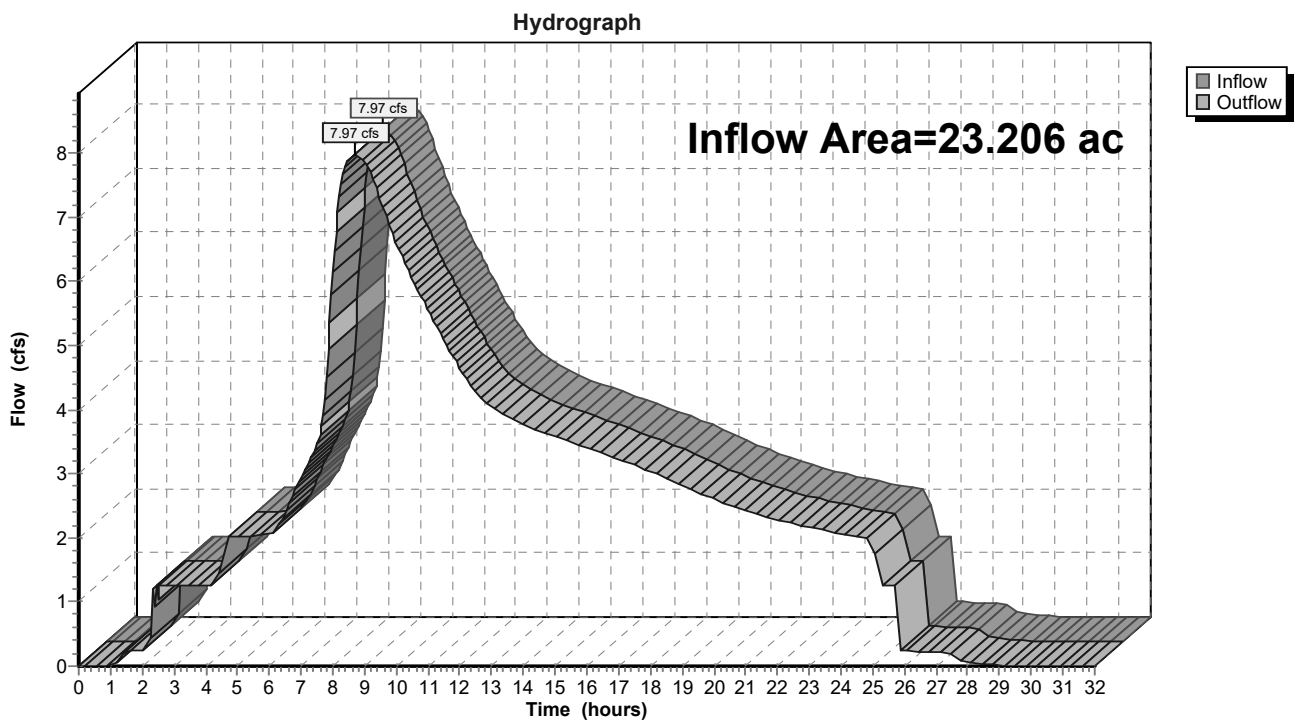
Summary for Reach 39R: Post-Construction Peak Flow

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

Inflow Area = 23.206 ac, 36.84% Impervious, Inflow Depth > 3.36" for 25-25 Year event
 Inflow = 7.97 cfs @ 8.68 hrs, Volume= 6.500 af
 Outflow = 7.97 cfs @ 8.68 hrs, Volume= 6.500 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 39R: Post-Construction Peak Flow



9-6-23 HydroCAD DOM

Type IA 24-hr 25-25 Year Rainfall=3.94"

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Summary for Reach 42R: Pre-Construction Peak Flow

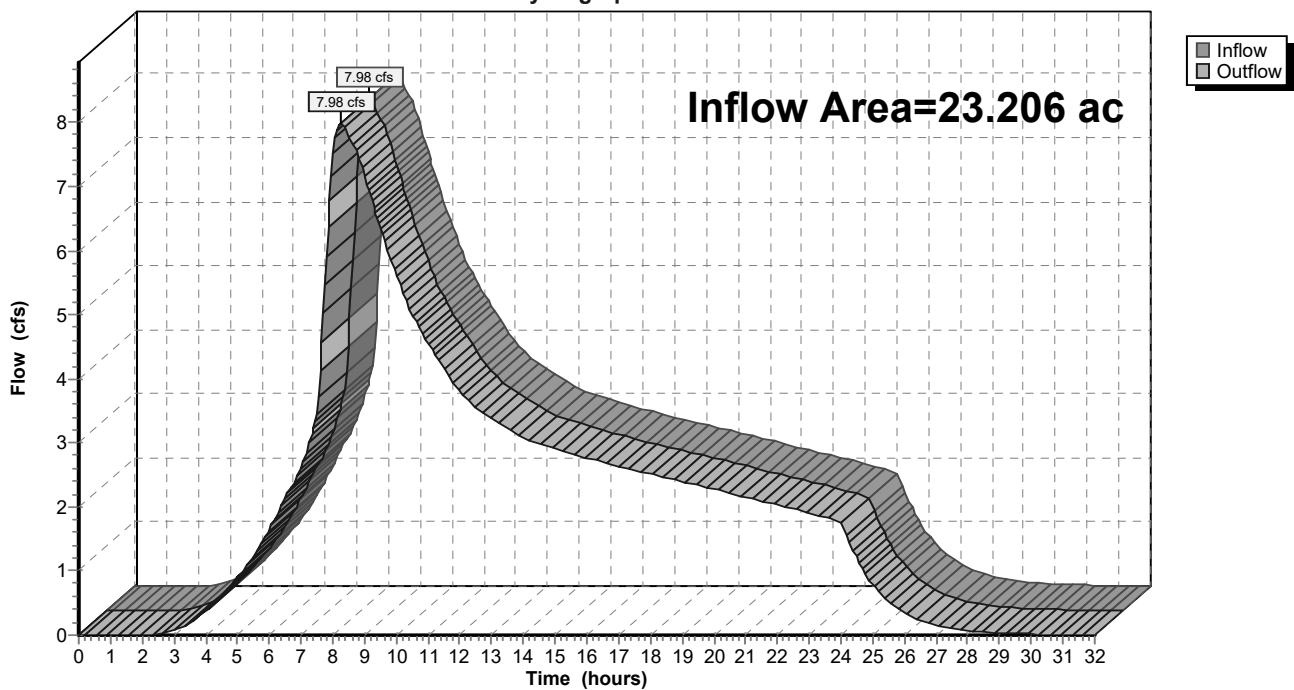
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 23.206 ac, 0.00% Impervious, Inflow Depth > 2.77" for 25-25 Year event
 Inflow = 7.98 cfs @ 8.26 hrs, Volume= 5.350 af
 Outflow = 7.98 cfs @ 8.26 hrs, Volume= 5.350 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 42R: Pre-Construction Peak Flow

Hydrograph



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Type IA 24-hr 25-25 Year Rainfall=3.94"

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Summary for Reach 58R: 1

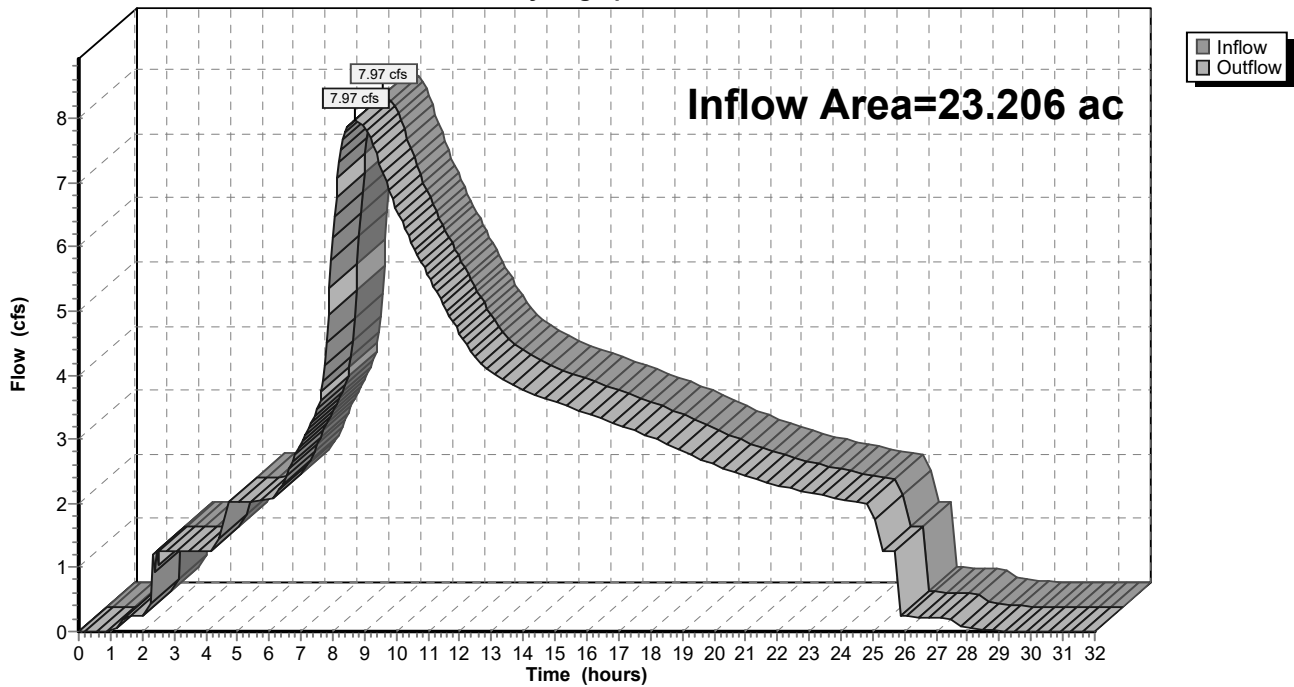
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 23.206 ac, 36.84% Impervious, Inflow Depth > 3.36" for 25-25 Year event
 Inflow = 7.97 cfs @ 8.68 hrs, Volume= 6.500 af
 Outflow = 7.97 cfs @ 8.68 hrs, Volume= 6.500 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 39R : Post-Construction Peak Flow

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 58R: 1

Hydrograph



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Type IA 24-hr 25-25 Year Rainfall=3.94"

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Summary for Reach 85R: 1

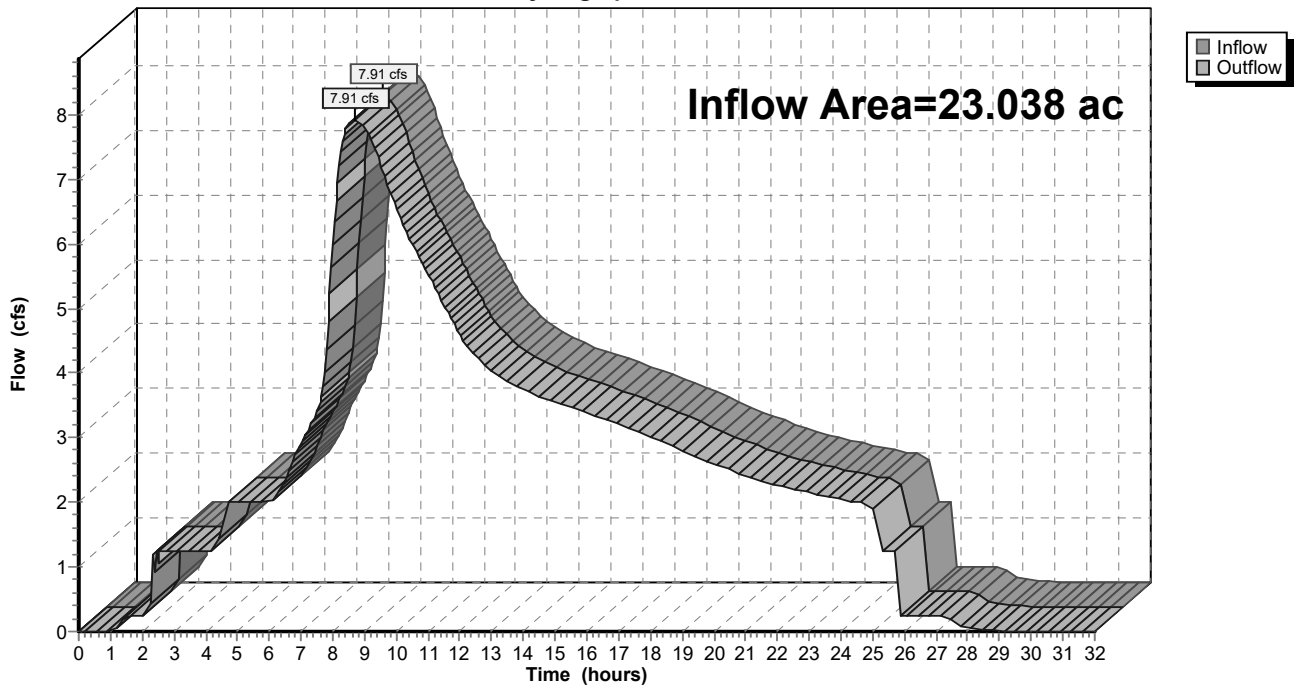
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 23.038 ac, 36.38% Impervious, Inflow Depth > 3.36" for 25-25 Year event
 Inflow = 7.91 cfs @ 8.69 hrs, Volume= 6.448 af
 Outflow = 7.91 cfs @ 8.69 hrs, Volume= 6.448 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 58R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 85R: 1

Hydrograph



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Type IA 24-hr 25-25 Year Rainfall=3.94"

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Summary for Reach 130R: 1

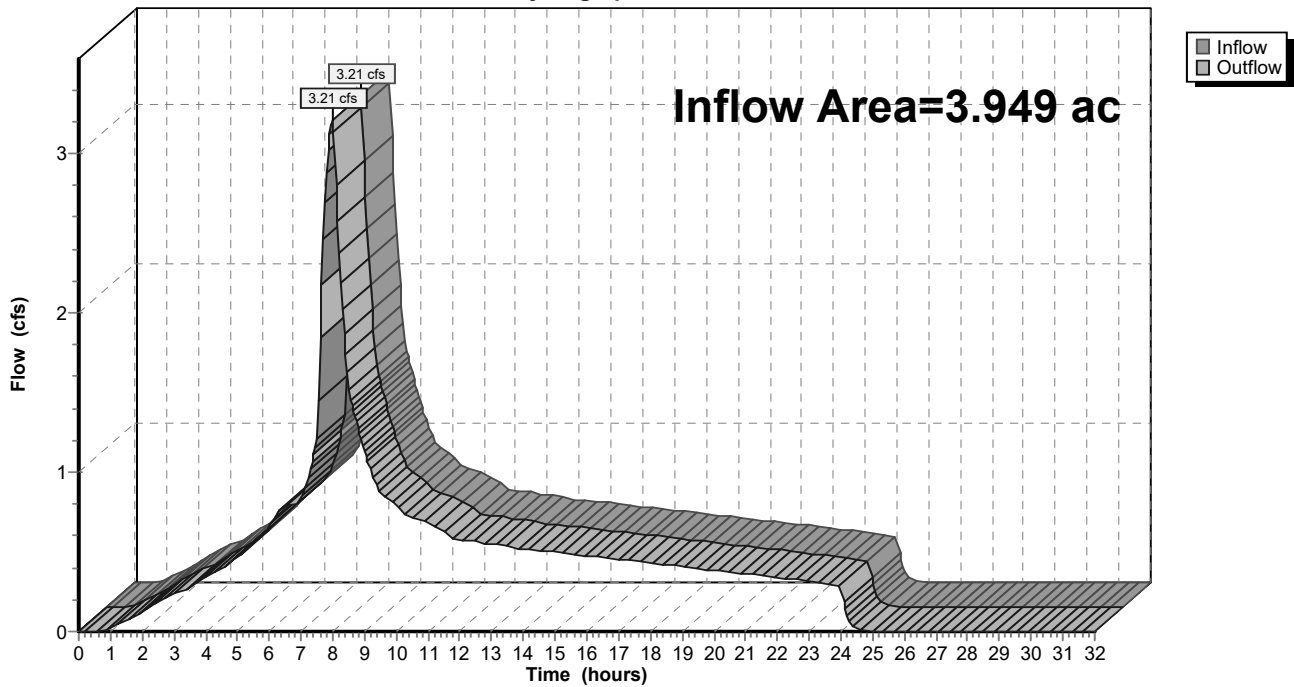
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.949 ac, 33.88% Impervious, Inflow Depth = 3.35" for 25-25 Year event
 Inflow = 3.21 cfs @ 7.98 hrs, Volume= 1.101 af
 Outflow = 3.21 cfs @ 7.98 hrs, Volume= 1.101 af, Atten= 0%, Lag= 0.0 min
 Routed to Pond 63P : Detention Pond

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 130R: 1

Hydrograph



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Type IA 24-hr 25-25 Year Rainfall=3.94"

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Summary for Reach 131R: 1

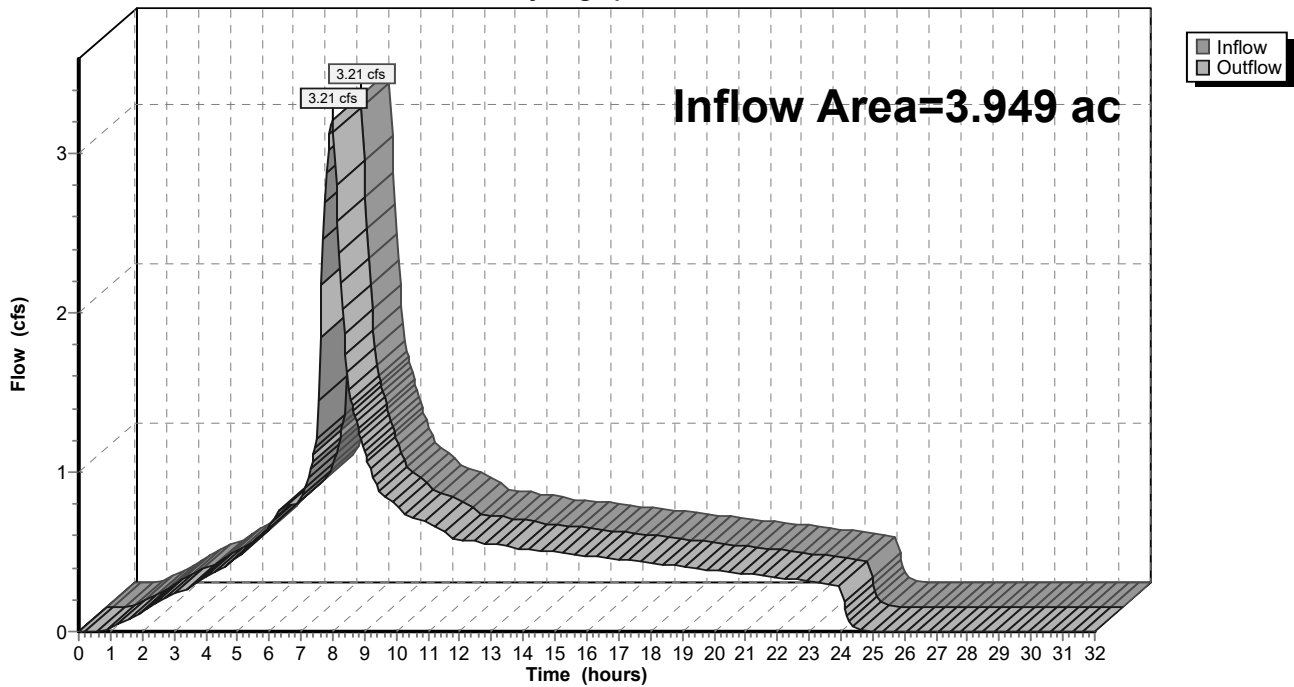
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.949 ac, 33.88% Impervious, Inflow Depth = 3.35" for 25-25 Year event
 Inflow = 3.21 cfs @ 7.98 hrs, Volume= 1.101 af
 Outflow = 3.21 cfs @ 7.98 hrs, Volume= 1.101 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 130R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 131R: 1

Hydrograph



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Summary for Reach 132R: 1

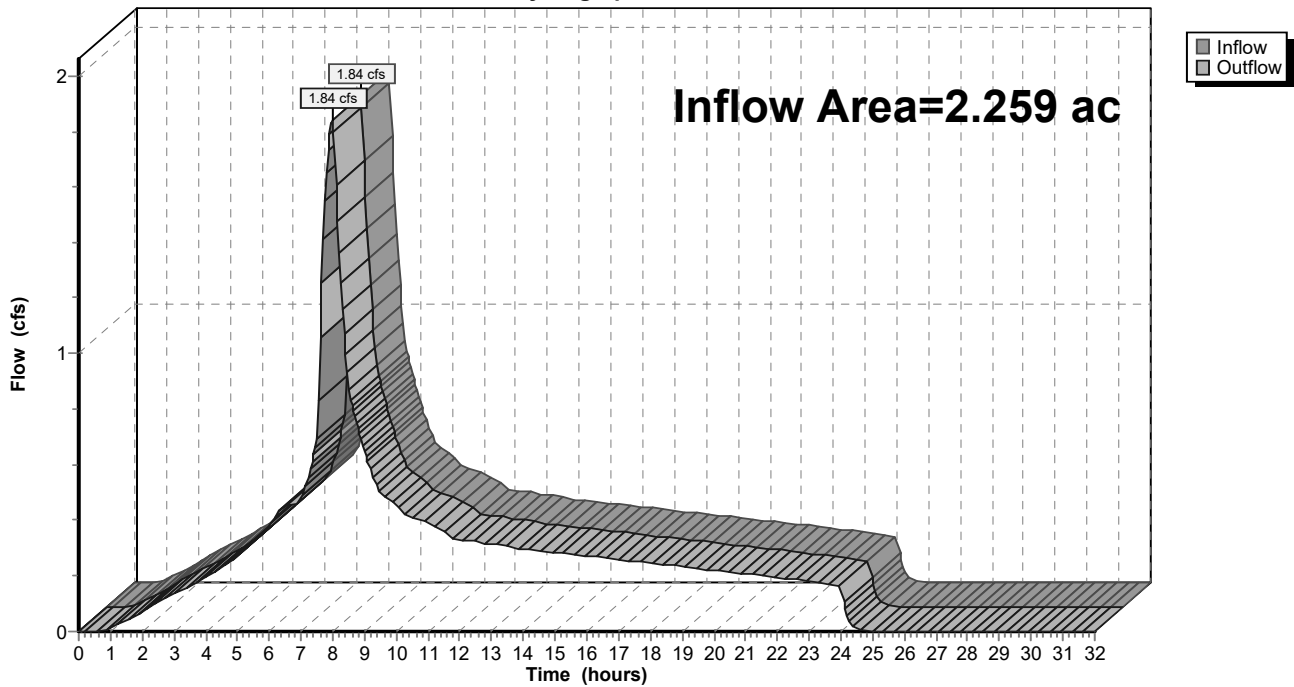
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 2.259 ac, 35.43% Impervious, Inflow Depth = 3.35" for 25-25 Year event
 Inflow = 1.84 cfs @ 7.98 hrs, Volume= 0.631 af
 Outflow = 1.84 cfs @ 7.98 hrs, Volume= 0.631 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 131R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 132R: 1

Hydrograph



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Summary for Reach 133R: 1

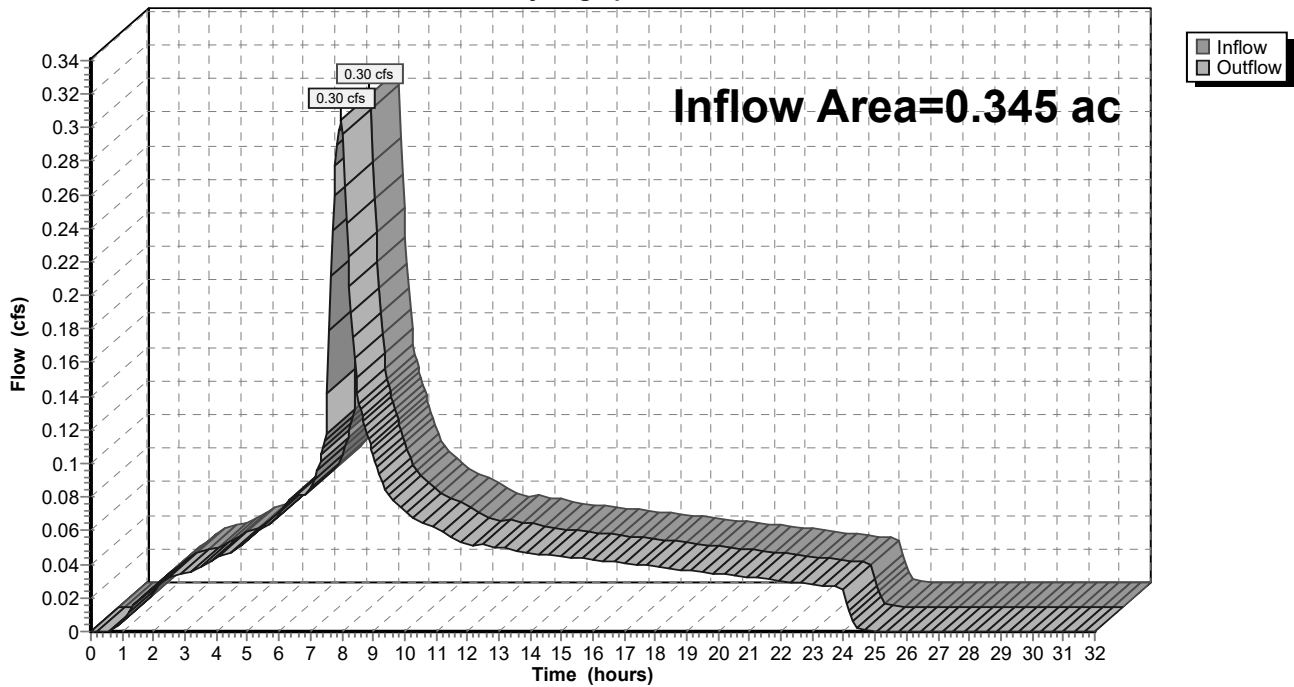
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.345 ac, 100.00% Impervious, Inflow Depth = 3.71" for 25-25 Year event
 Inflow = 0.30 cfs @ 7.98 hrs, Volume= 0.107 af
 Outflow = 0.30 cfs @ 7.98 hrs, Volume= 0.107 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 132R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 133R: 1

Hydrograph



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Summary for Reach 134R: 1

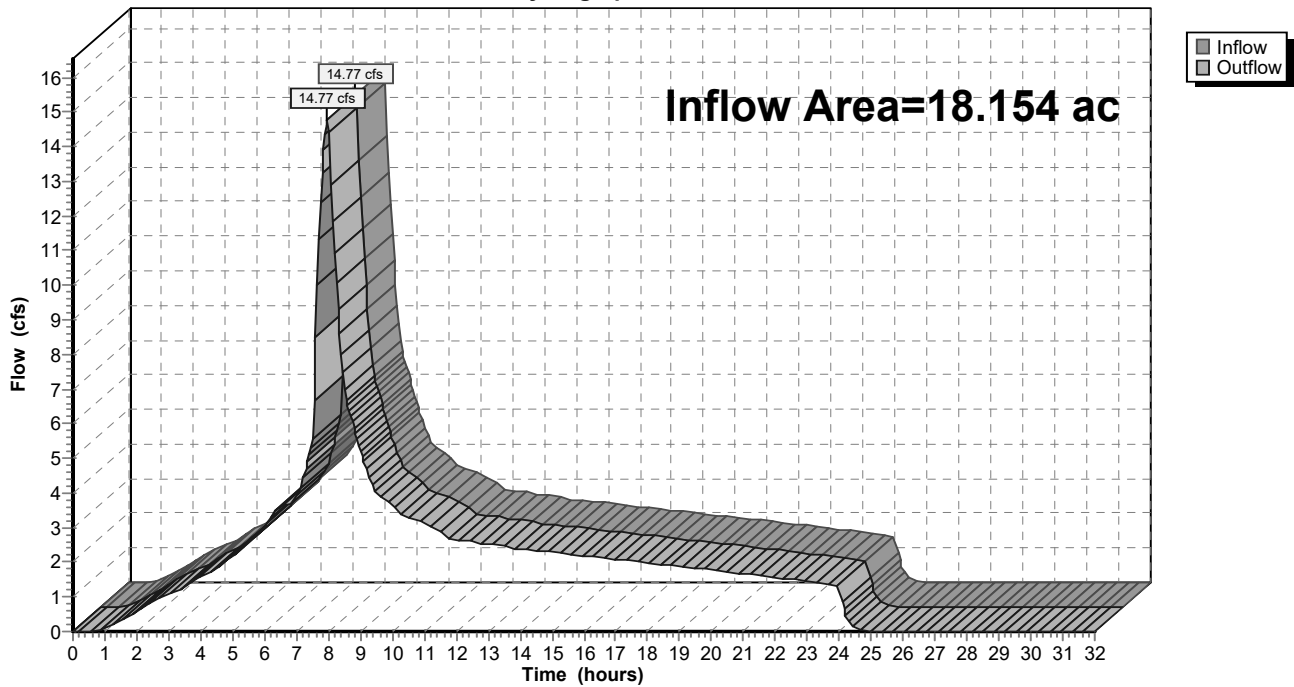
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 18.154 ac, 33.65% Impervious, Inflow Depth = 3.34" for 25-25 Year event
 Inflow = 14.77 cfs @ 7.98 hrs, Volume= 5.060 af
 Outflow = 14.77 cfs @ 7.98 hrs, Volume= 5.060 af, Atten= 0%, Lag= 0.0 min
 Routed to Pond 63P : Detention Pond

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 134R: 1

Hydrograph



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Type IA 24-hr 25-25 Year Rainfall=3.94"

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Summary for Reach 135R: 1

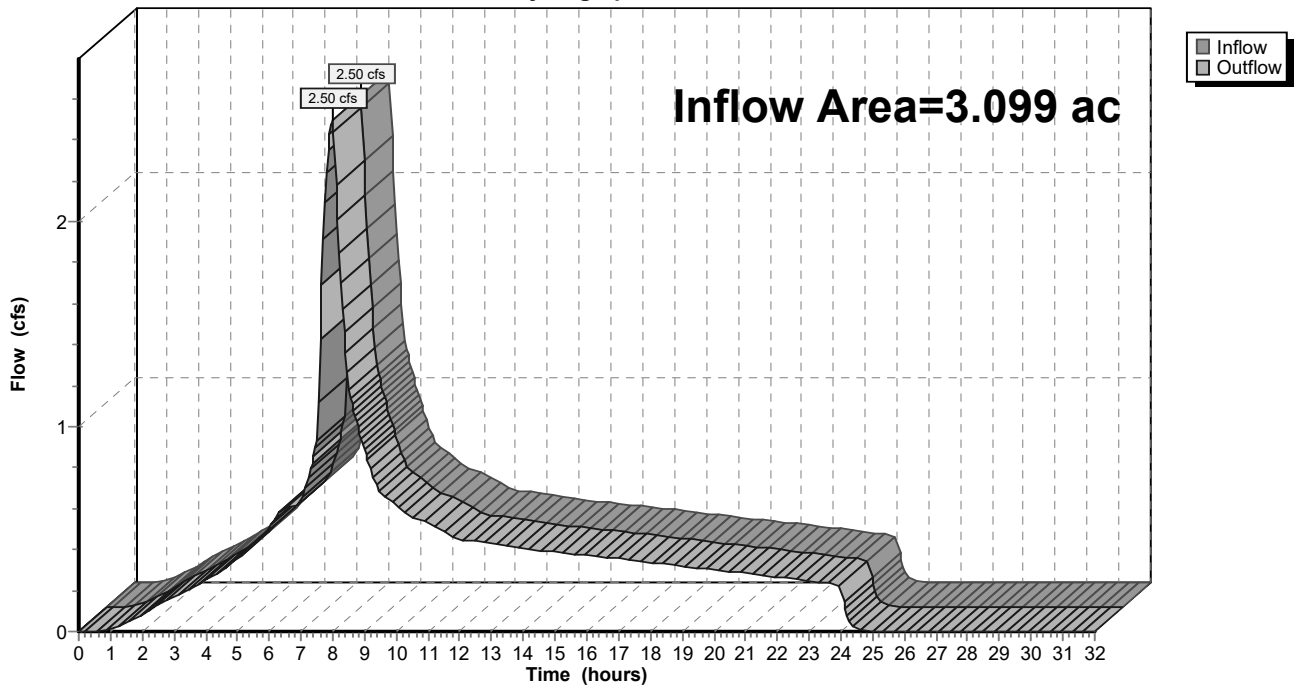
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.099 ac, 26.69% Impervious, Inflow Depth = 3.31" for 25-25 Year event
 Inflow = 2.50 cfs @ 7.98 hrs, Volume= 0.854 af
 Outflow = 2.50 cfs @ 7.98 hrs, Volume= 0.854 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 134R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 135R: 1

Hydrograph



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Type IA 24-hr 25-25 Year Rainfall=3.94"

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Summary for Reach 136R: 1

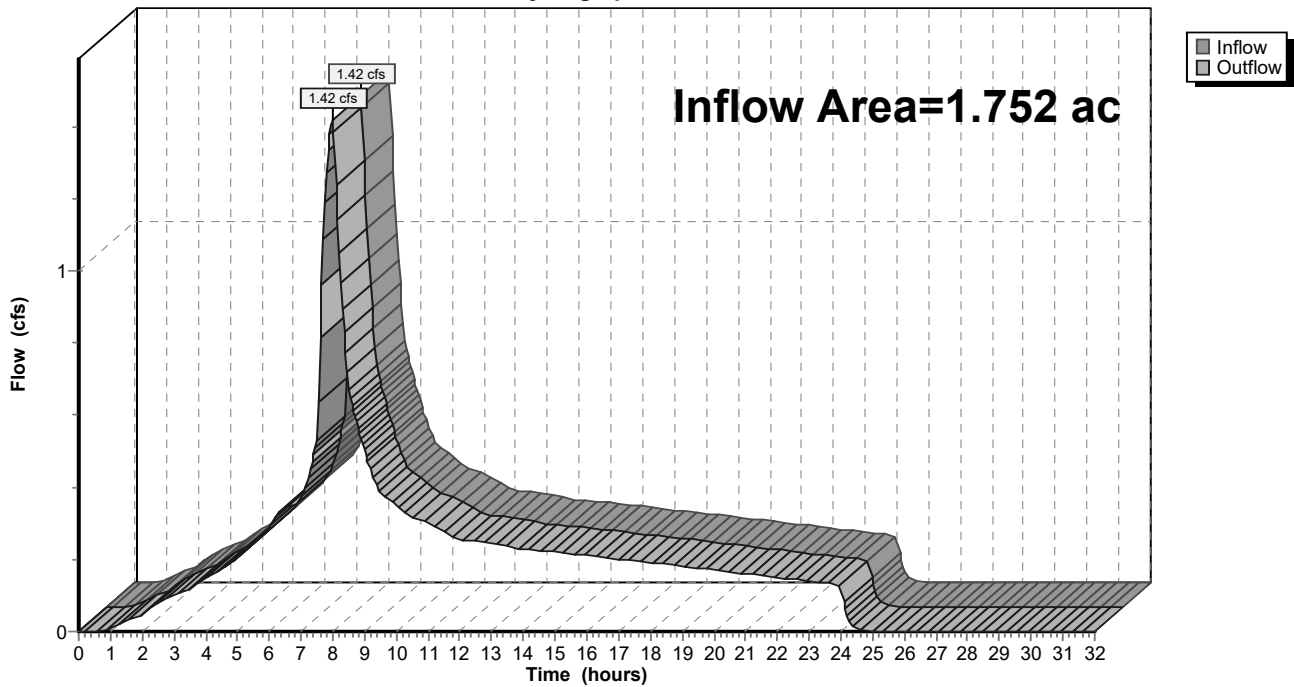
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.752 ac, 30.00% Impervious, Inflow Depth = 3.32" for 25-25 Year event
 Inflow = 1.42 cfs @ 7.98 hrs, Volume= 0.486 af
 Outflow = 1.42 cfs @ 7.98 hrs, Volume= 0.486 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 135R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 136R: 1

Hydrograph



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Summary for Reach 137R: 1

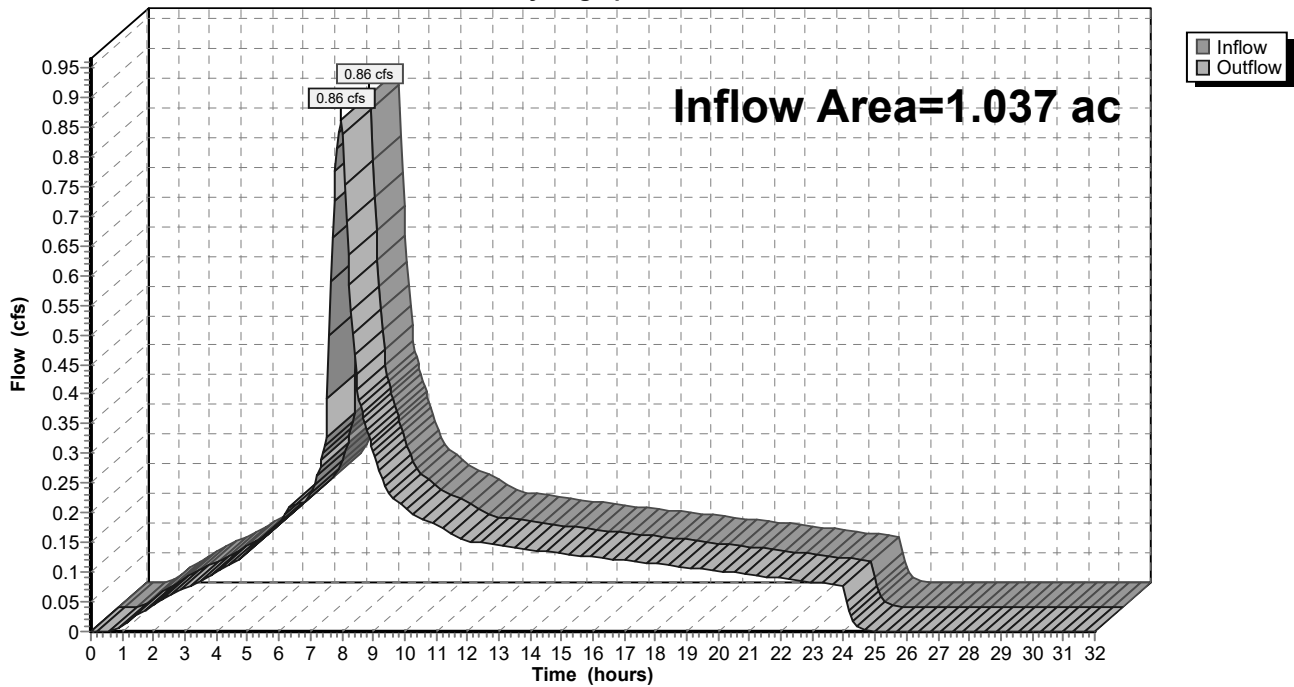
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.037 ac, 50.68% Impervious, Inflow Depth = 3.44" for 25-25 Year event
 Inflow = 0.86 cfs @ 7.98 hrs, Volume= 0.297 af
 Outflow = 0.86 cfs @ 7.98 hrs, Volume= 0.297 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 136R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 137R: 1

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 25-25 Year Rainfall=3.94"

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Summary for Reach 138R: 1

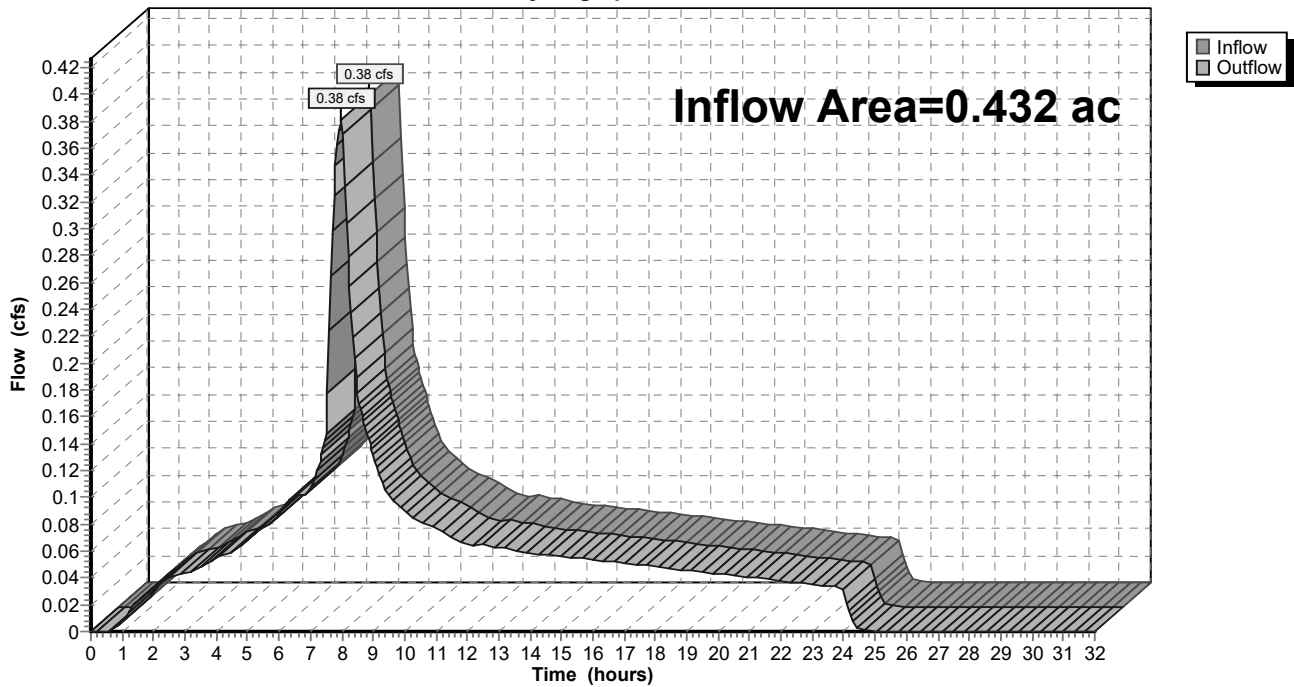
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.432 ac, 100.00% Impervious, Inflow Depth = 3.71" for 25-25 Year event
 Inflow = 0.38 cfs @ 7.98 hrs, Volume= 0.133 af
 Outflow = 0.38 cfs @ 7.98 hrs, Volume= 0.133 af, Atten= 0%, Lag= 0.0 min
 Routed to Pond 63P : Detention Pond

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 138R: 1

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 25-25 Year Rainfall=3.94"

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Summary for Reach 139R: 1

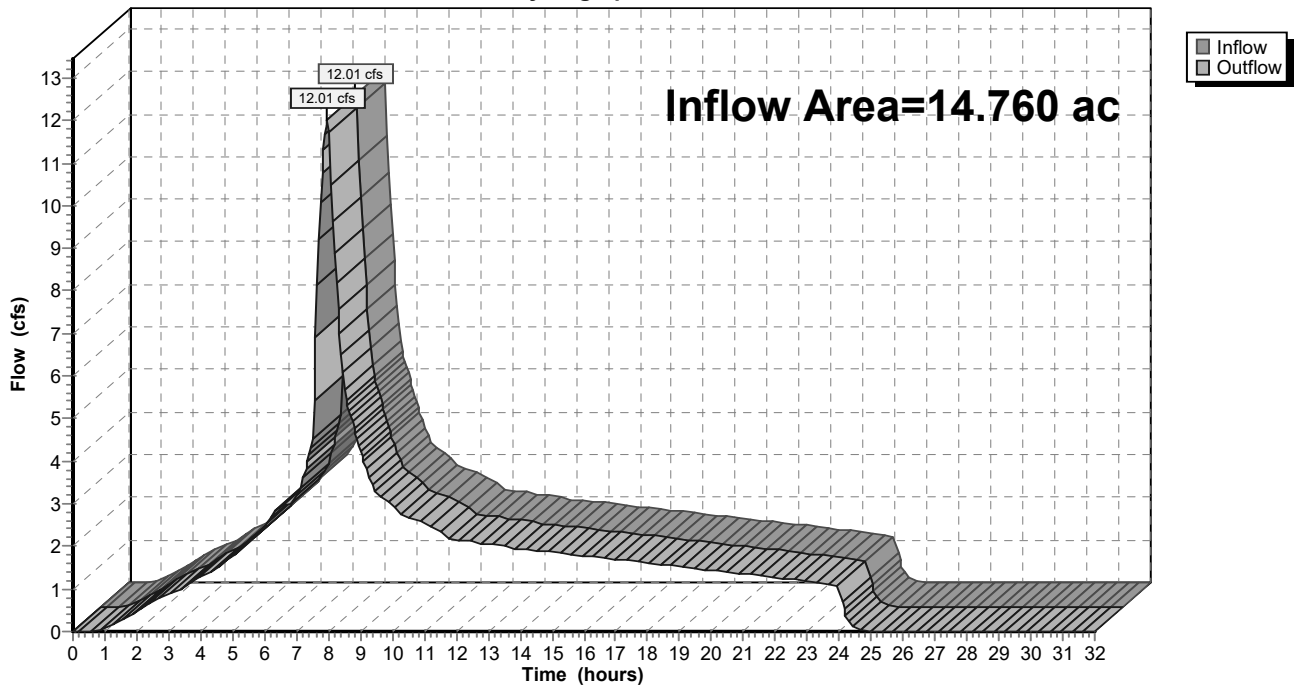
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 14.760 ac, 33.78% Impervious, Inflow Depth = 3.35" for 25-25 Year event
 Inflow = 12.01 cfs @ 7.98 hrs, Volume= 4.114 af
 Outflow = 12.01 cfs @ 7.98 hrs, Volume= 4.114 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 158R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 139R: 1

Hydrograph



9-6-23 HydroCAD DOM

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Type IA 24-hr 25-25 Year Rainfall=3.94"

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Summary for Reach 140R: 1

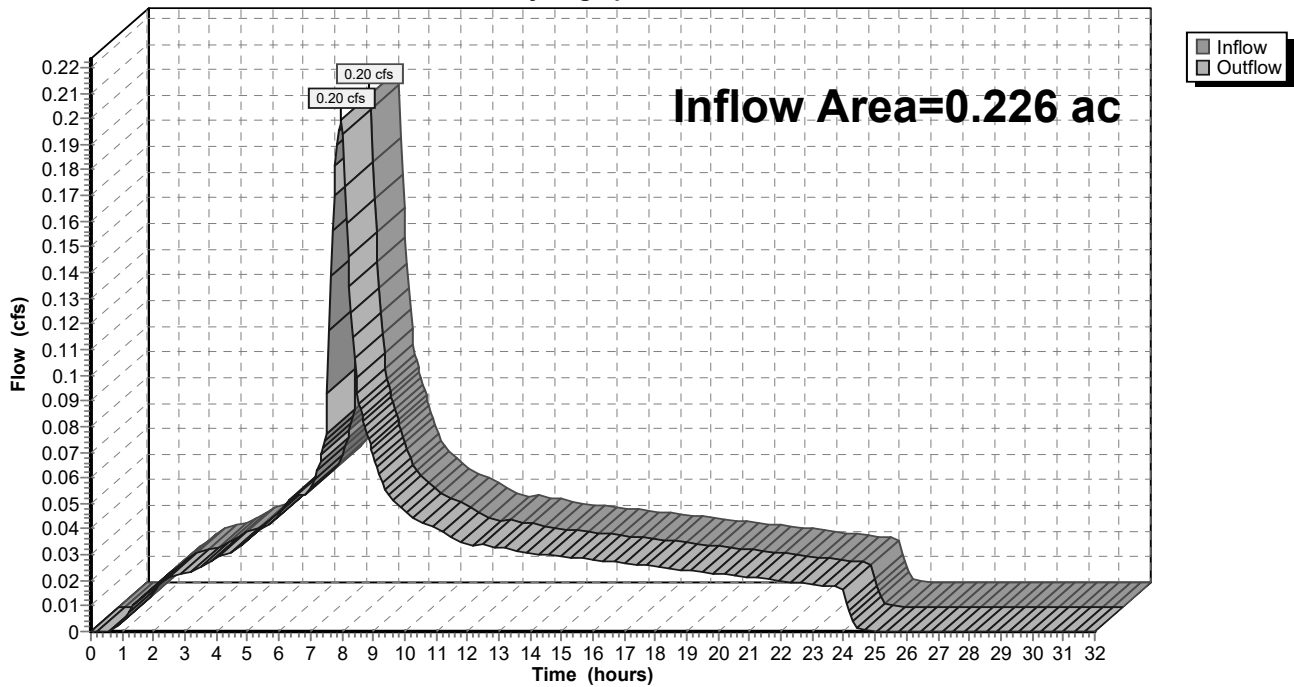
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.226 ac, 100.00% Impervious, Inflow Depth = 3.71" for 25-25 Year event
 Inflow = 0.20 cfs @ 7.98 hrs, Volume= 0.070 af
 Outflow = 0.20 cfs @ 7.98 hrs, Volume= 0.070 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 138R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 140R: 1

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 25-25 Year Rainfall=3.94"

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Summary for Reach 141R: 1

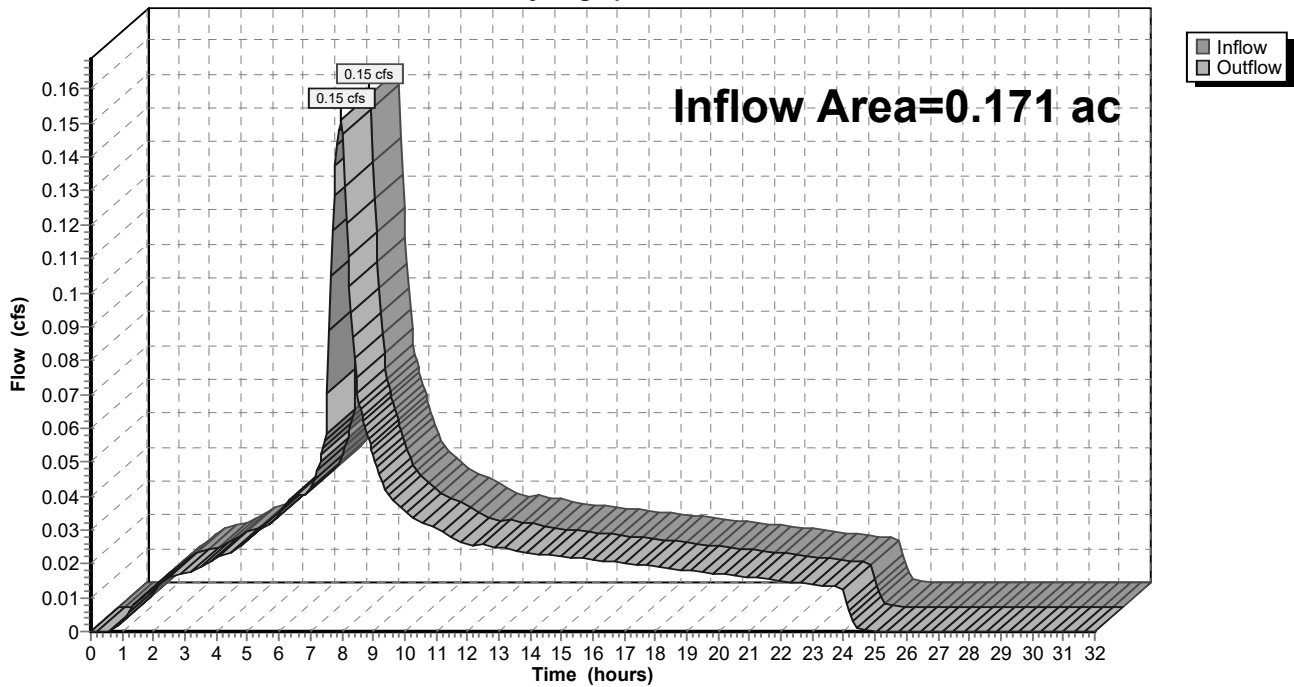
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.171 ac, 100.00% Impervious, Inflow Depth = 3.71" for 25-25 Year event
 Inflow = 0.15 cfs @ 7.98 hrs, Volume= 0.053 af
 Outflow = 0.15 cfs @ 7.98 hrs, Volume= 0.053 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 139R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 141R: 1

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 25-25 Year Rainfall=3.94"

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Summary for Reach 142R: 1

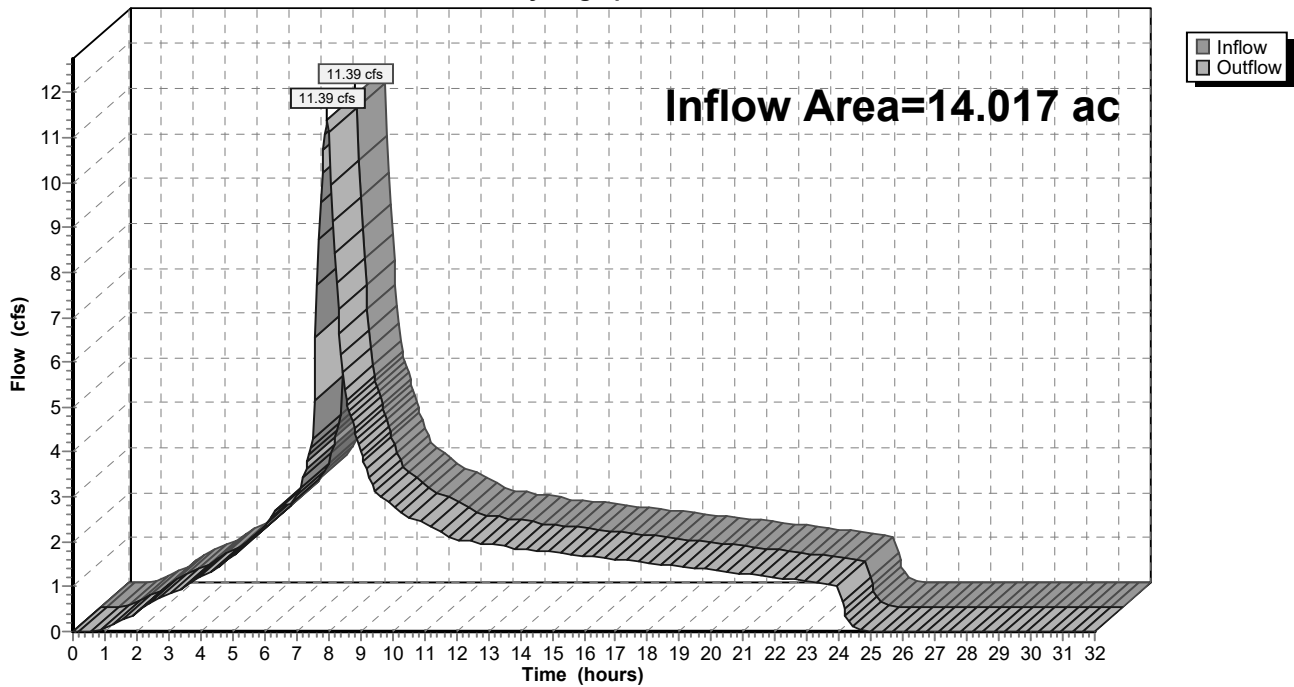
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 14.017 ac, 33.09% Impervious, Inflow Depth = 3.34" for 25-25 Year event
 Inflow = 11.39 cfs @ 7.98 hrs, Volume= 3.903 af
 Outflow = 11.39 cfs @ 7.98 hrs, Volume= 3.903 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 159R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 142R: 1

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 25-25 Year Rainfall=3.94"

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Summary for Reach 143R: 1

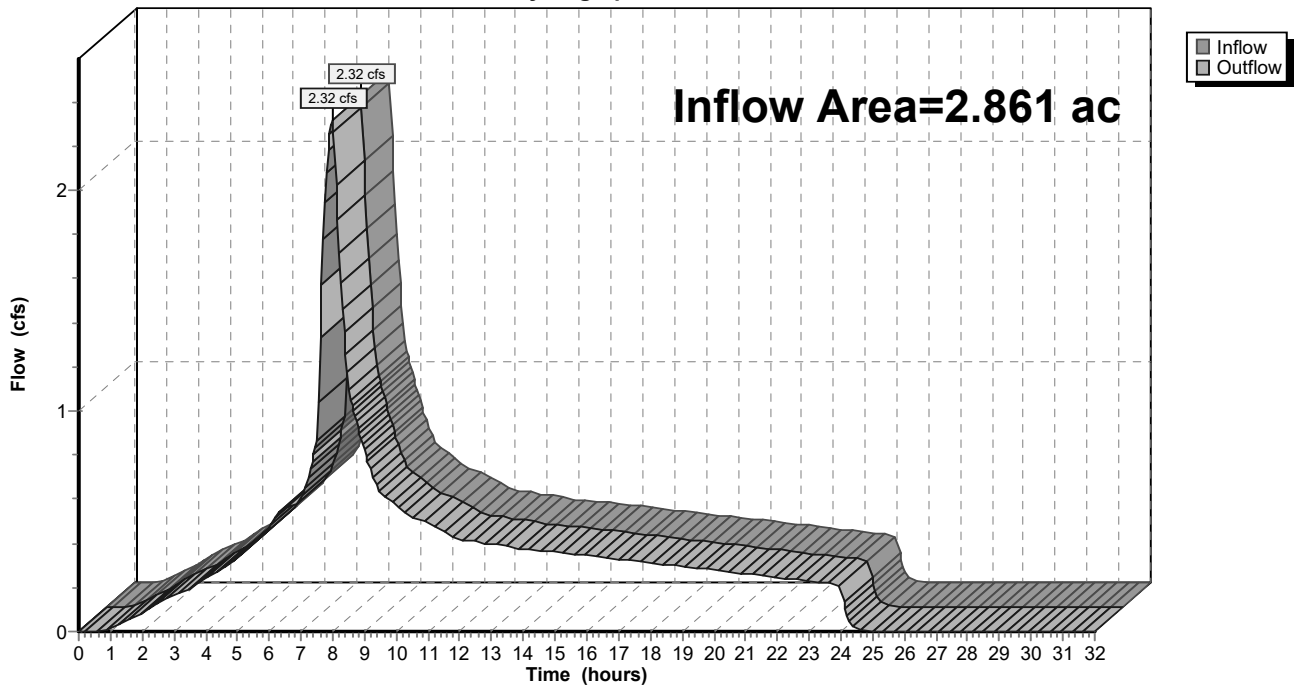
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 2.861 ac, 30.95% Impervious, Inflow Depth = 3.33" for 25-25 Year event
 Inflow = 2.32 cfs @ 7.98 hrs, Volume= 0.794 af
 Outflow = 2.32 cfs @ 7.98 hrs, Volume= 0.794 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 142R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 143R: 1

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 25-25 Year Rainfall=3.94"

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Summary for Reach 144R: 1

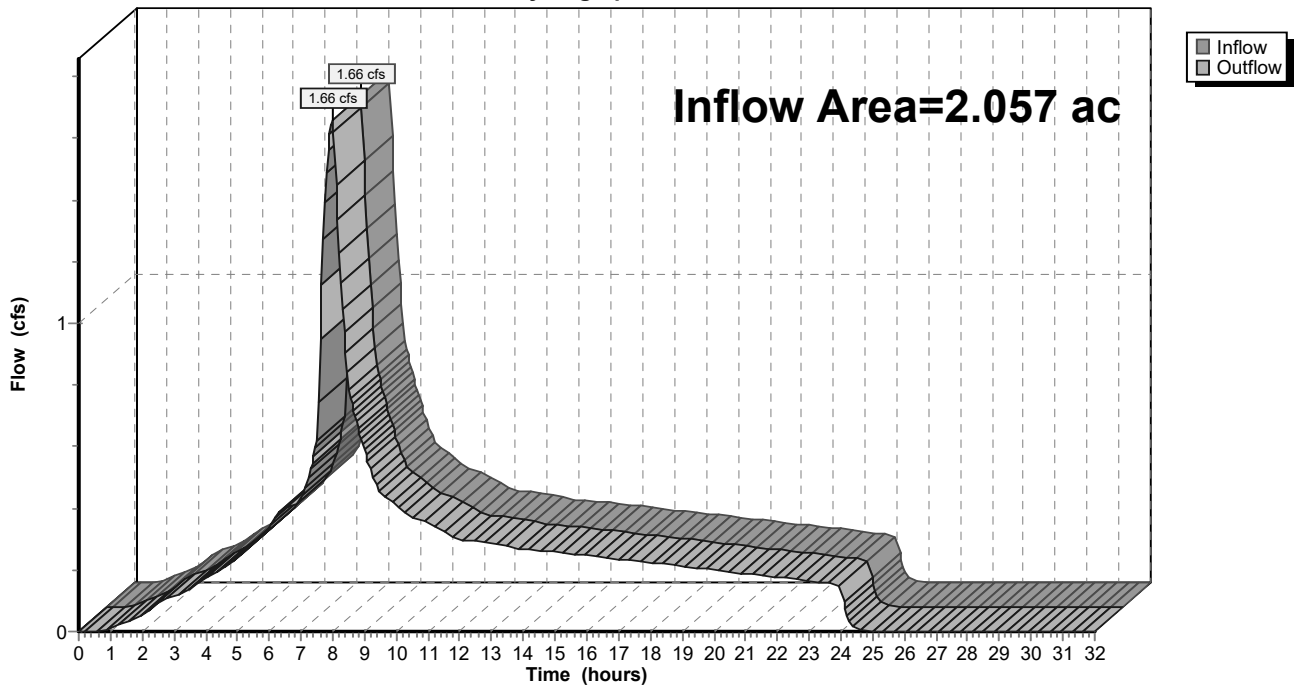
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 2.057 ac, 28.74% Impervious, Inflow Depth = 3.32" for 25-25 Year event
 Inflow = 1.66 cfs @ 7.98 hrs, Volume= 0.569 af
 Outflow = 1.66 cfs @ 7.98 hrs, Volume= 0.569 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 143R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 144R: 1

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 25-25 Year Rainfall=3.94"

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Summary for Reach 145R: 1

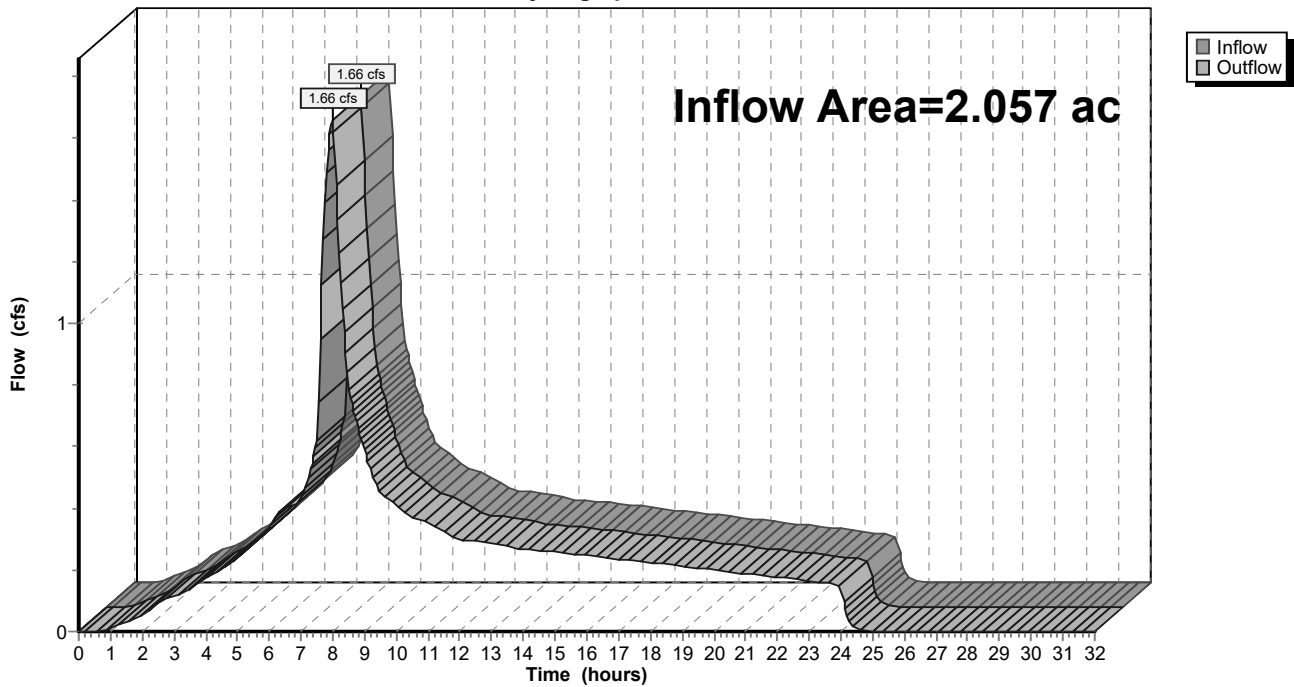
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 2.057 ac, 28.74% Impervious, Inflow Depth = 3.32" for 25-25 Year event
 Inflow = 1.66 cfs @ 7.98 hrs, Volume= 0.569 af
 Outflow = 1.66 cfs @ 7.98 hrs, Volume= 0.569 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 144R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 145R: 1

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 25-25 Year Rainfall=3.94"

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Summary for Reach 146R: 1

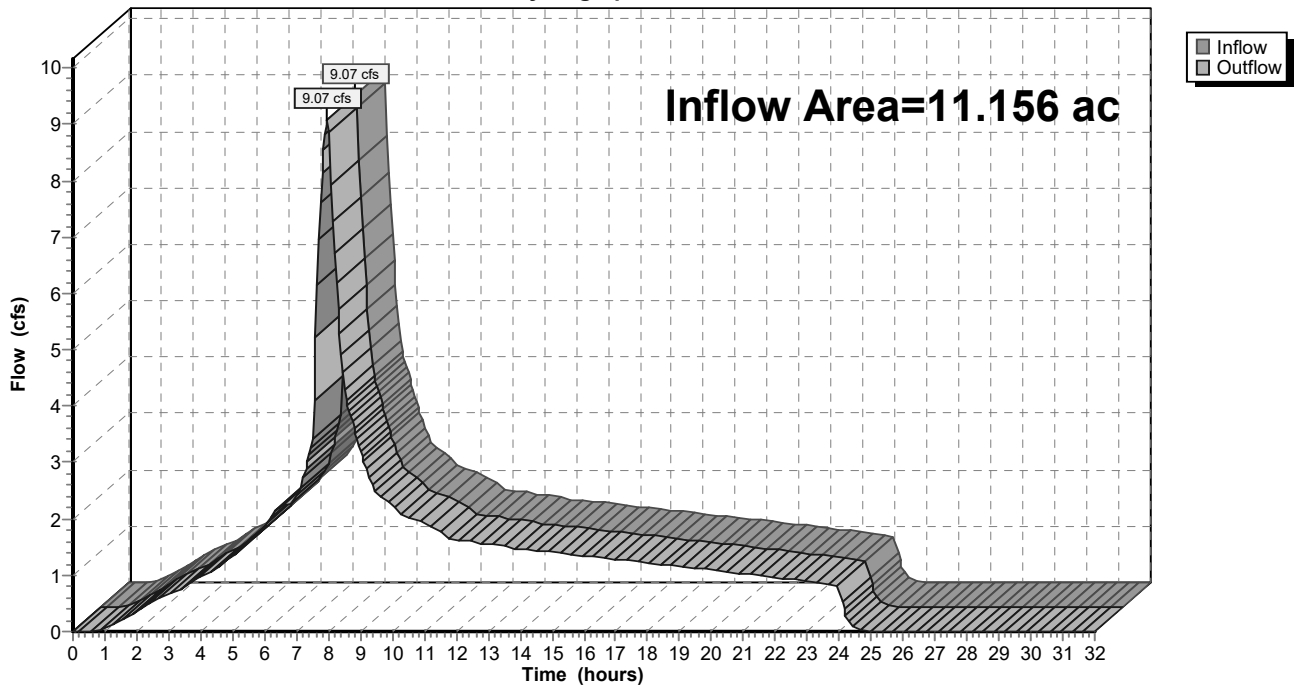
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 11.156 ac, 33.63% Impervious, Inflow Depth = 3.34" for 25-25 Year event
 Inflow = 9.07 cfs @ 7.98 hrs, Volume= 3.109 af
 Outflow = 9.07 cfs @ 7.98 hrs, Volume= 3.109 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 142R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 146R: 1

Hydrograph



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Type IA 24-hr 25-25 Year Rainfall=3.94"

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Summary for Reach 147R: 1

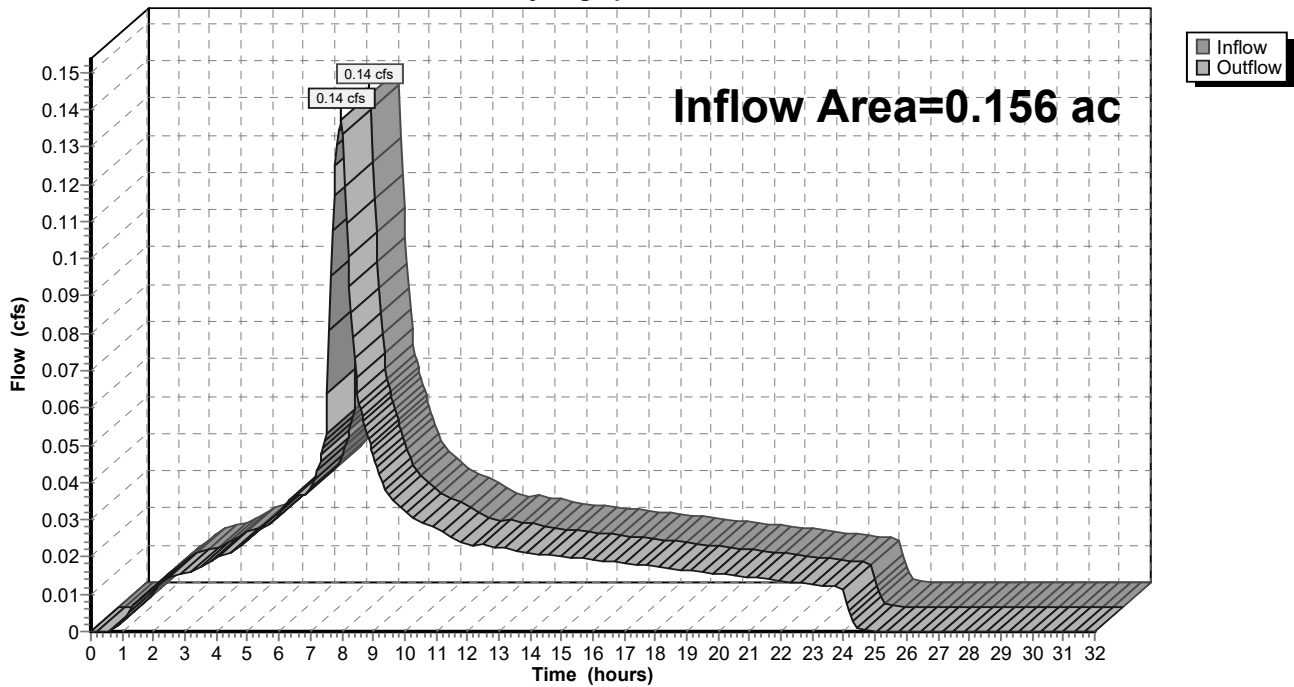
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.156 ac, 100.00% Impervious, Inflow Depth = 3.71" for 25-25 Year event
 Inflow = 0.14 cfs @ 7.98 hrs, Volume= 0.048 af
 Outflow = 0.14 cfs @ 7.98 hrs, Volume= 0.048 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 146R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 147R: 1

Hydrograph



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Type IA 24-hr 25-25 Year Rainfall=3.94"

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Summary for Reach 148R: 1

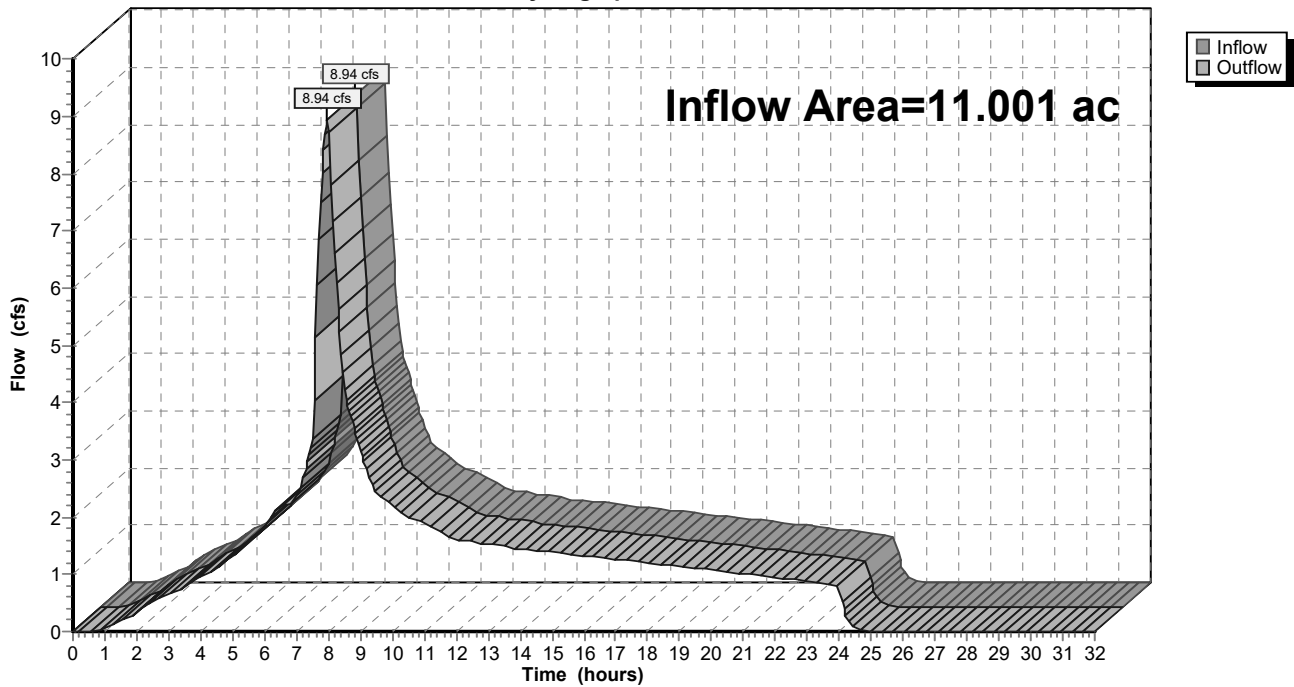
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 11.001 ac, 32.69% Impervious, Inflow Depth = 3.34" for 25-25 Year event
 Inflow = 8.94 cfs @ 7.98 hrs, Volume= 3.061 af
 Outflow = 8.94 cfs @ 7.98 hrs, Volume= 3.061 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 146R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 148R: 1

Hydrograph



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Type IA 24-hr 25-25 Year Rainfall=3.94"

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Summary for Reach 149R: 1

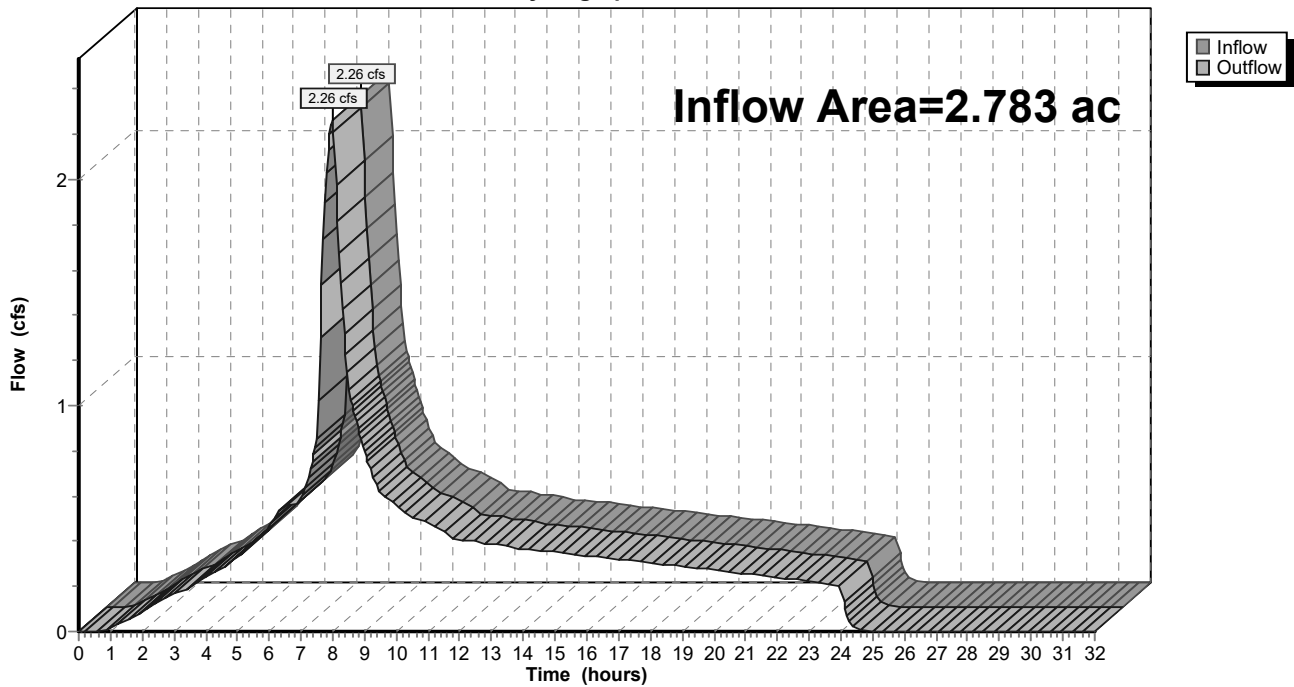
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 2.783 ac, 33.49% Impervious, Inflow Depth = 3.34" for 25-25 Year event
 Inflow = 2.26 cfs @ 7.98 hrs, Volume= 0.775 af
 Outflow = 2.26 cfs @ 7.98 hrs, Volume= 0.775 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 148R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 149R: 1

Hydrograph



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Type IA 24-hr 25-25 Year Rainfall=3.94"

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Summary for Reach 150R: 1

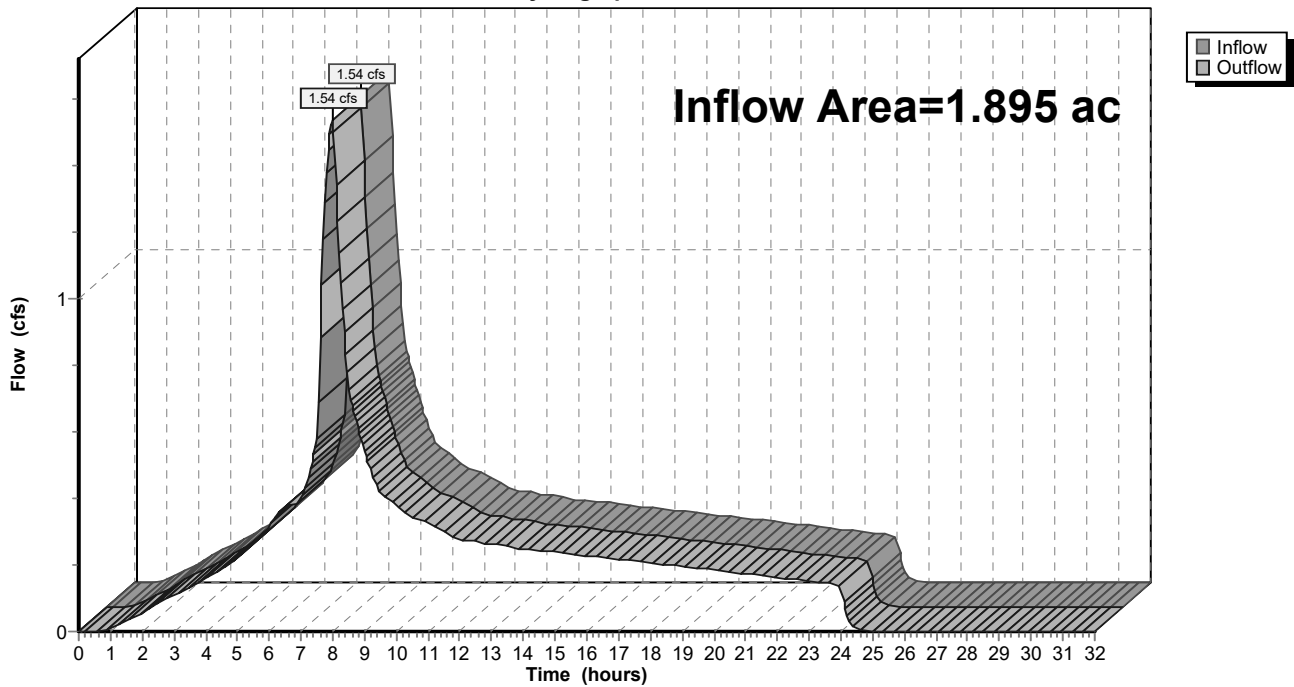
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.895 ac, 31.51% Impervious, Inflow Depth = 3.33" for 25-25 Year event
 Inflow = 1.54 cfs @ 7.98 hrs, Volume= 0.526 af
 Outflow = 1.54 cfs @ 7.98 hrs, Volume= 0.526 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 149R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 150R: 1

Hydrograph



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Type IA 24-hr 25-25 Year Rainfall=3.94"

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Summary for Reach 151R: 1

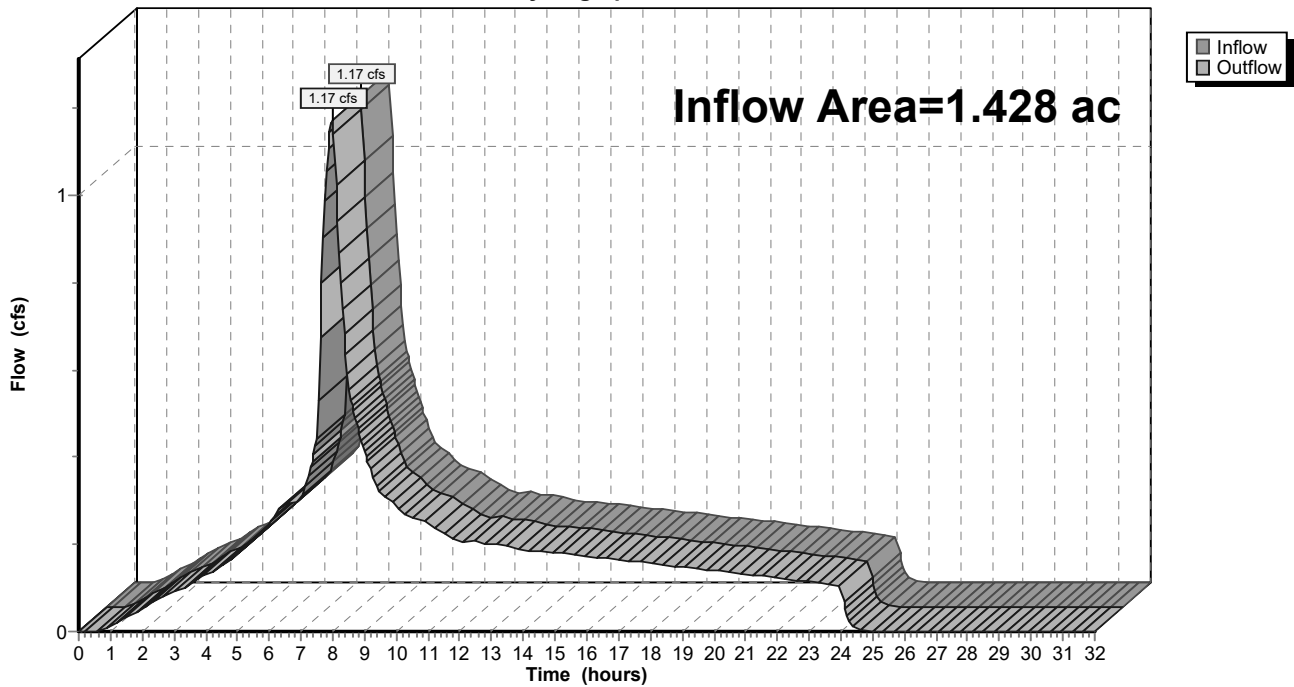
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.428 ac, 41.79% Impervious, Inflow Depth = 3.39" for 25-25 Year event
 Inflow = 1.17 cfs @ 7.98 hrs, Volume= 0.403 af
 Outflow = 1.17 cfs @ 7.98 hrs, Volume= 0.403 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 150R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 151R: 1

Hydrograph



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Type IA 24-hr 25-25 Year Rainfall=3.94"

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Summary for Reach 152R: 1

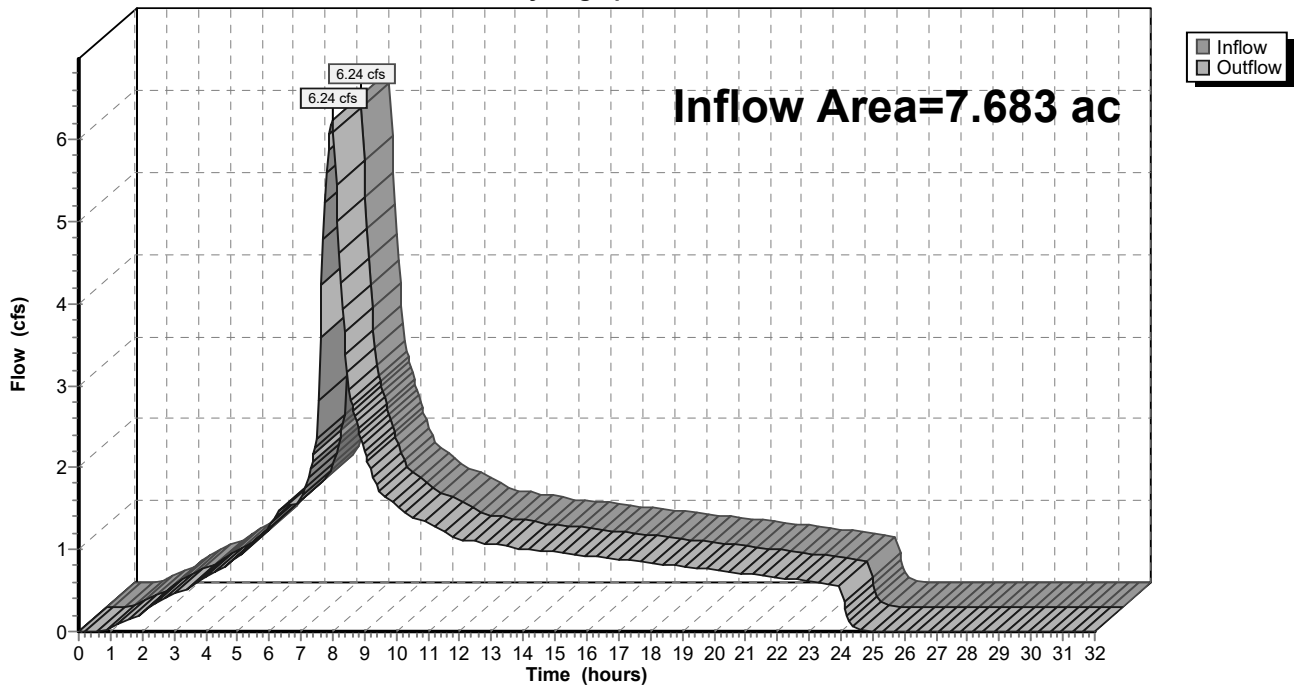
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 7.683 ac, 32.64% Impervious, Inflow Depth = 3.34" for 25-25 Year event
 Inflow = 6.24 cfs @ 7.98 hrs, Volume= 2.138 af
 Outflow = 6.24 cfs @ 7.98 hrs, Volume= 2.138 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 148R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 152R: 1

Hydrograph



9-6-23 HydroCAD DOM

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Type IA 24-hr 25-25 Year Rainfall=3.94"

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Summary for Reach 153R: 1

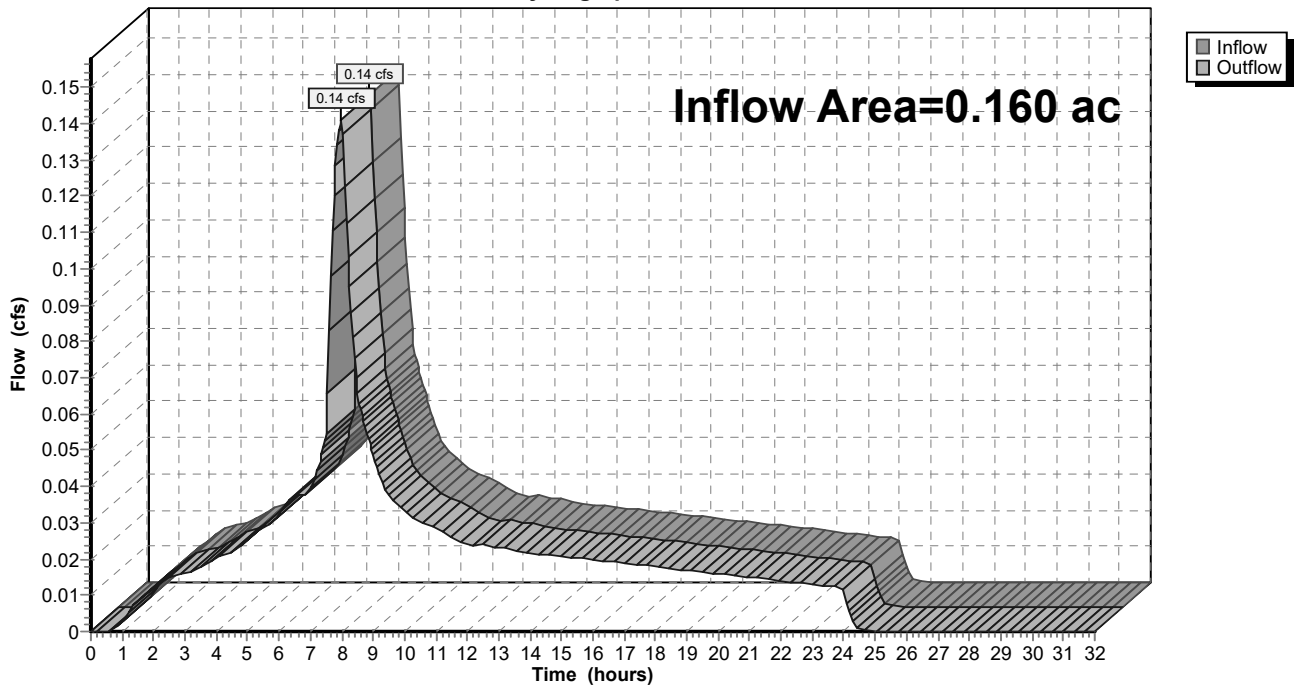
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.160 ac, 100.00% Impervious, Inflow Depth = 3.71" for 25-25 Year event
 Inflow = 0.14 cfs @ 7.98 hrs, Volume= 0.049 af
 Outflow = 0.14 cfs @ 7.98 hrs, Volume= 0.049 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 152R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 153R: 1

Hydrograph



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Type IA 24-hr 25-25 Year Rainfall=3.94"

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Summary for Reach 154R: 1

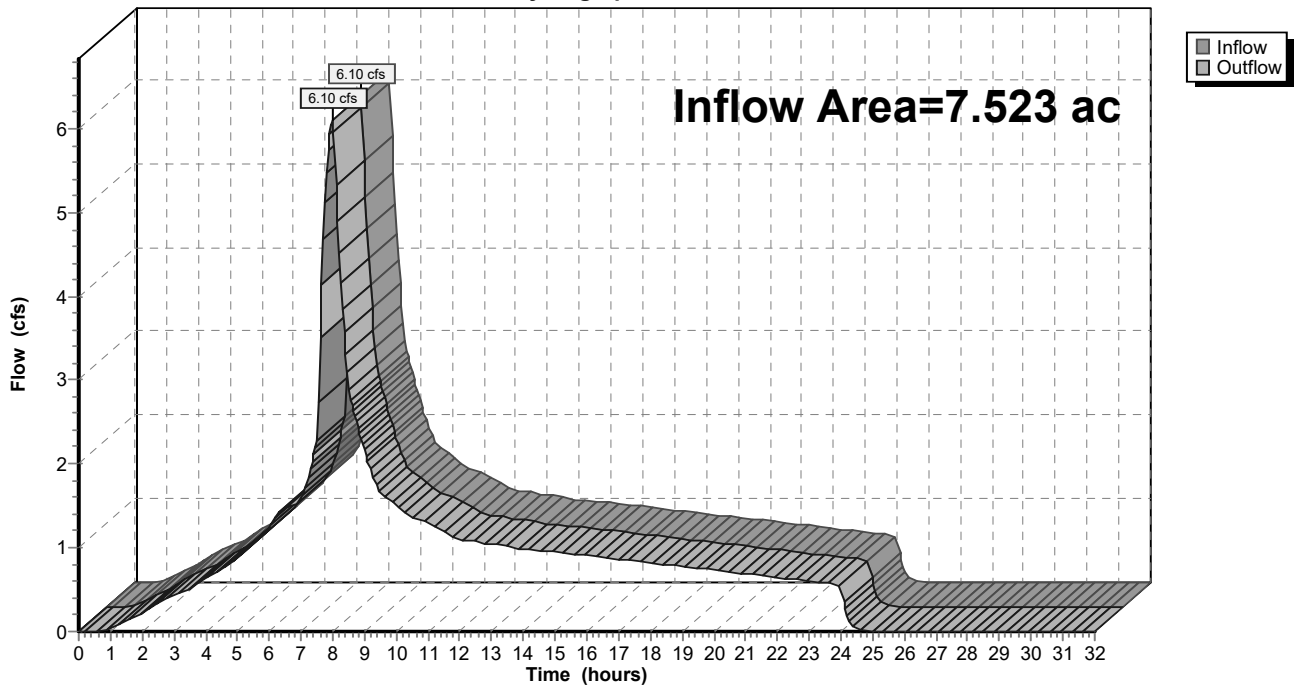
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 7.523 ac, 31.20% Impervious, Inflow Depth = 3.33" for 25-25 Year event
 Inflow = 6.10 cfs @ 7.98 hrs, Volume= 2.088 af
 Outflow = 6.10 cfs @ 7.98 hrs, Volume= 2.088 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 152R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 154R: 1

Hydrograph



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Type IA 24-hr 25-25 Year Rainfall=3.94"

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Summary for Reach 155R: 1

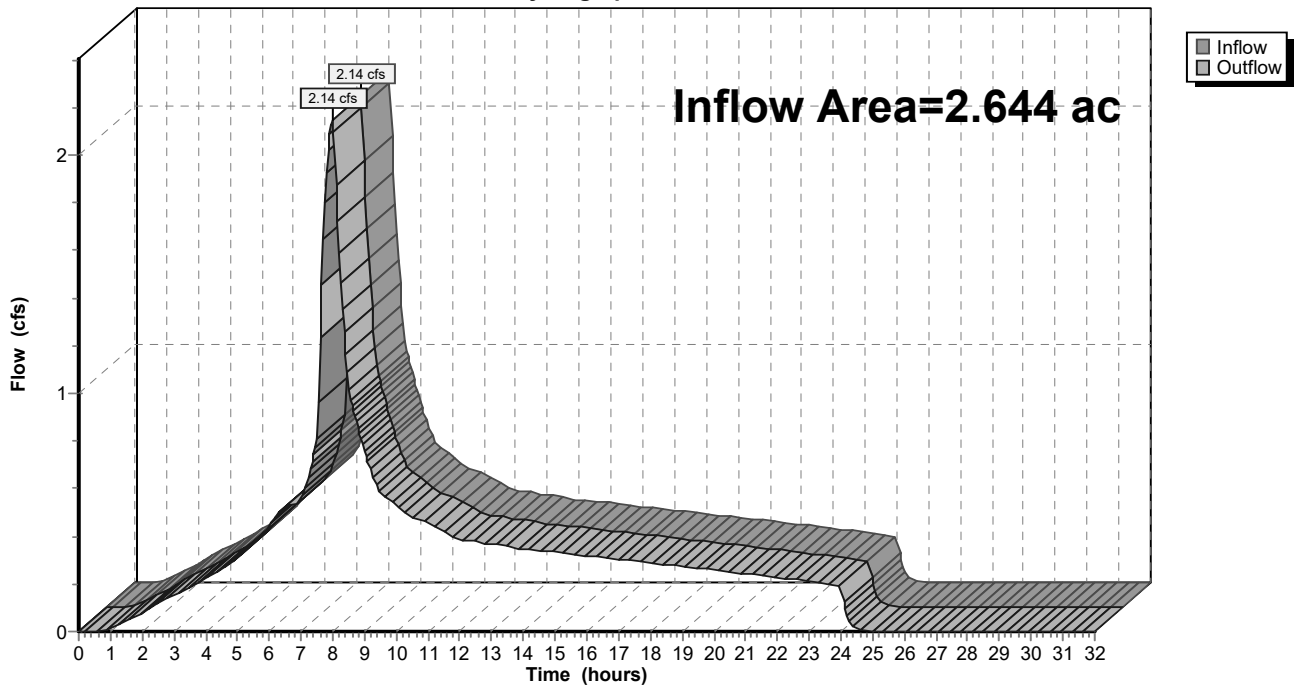
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 2.644 ac, 31.72% Impervious, Inflow Depth = 3.33" for 25-25 Year event
 Inflow = 2.14 cfs @ 7.98 hrs, Volume= 0.734 af
 Outflow = 2.14 cfs @ 7.98 hrs, Volume= 0.734 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 154R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 155R: 1

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 25-25 Year Rainfall=3.94"

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Summary for Reach 158R: 1

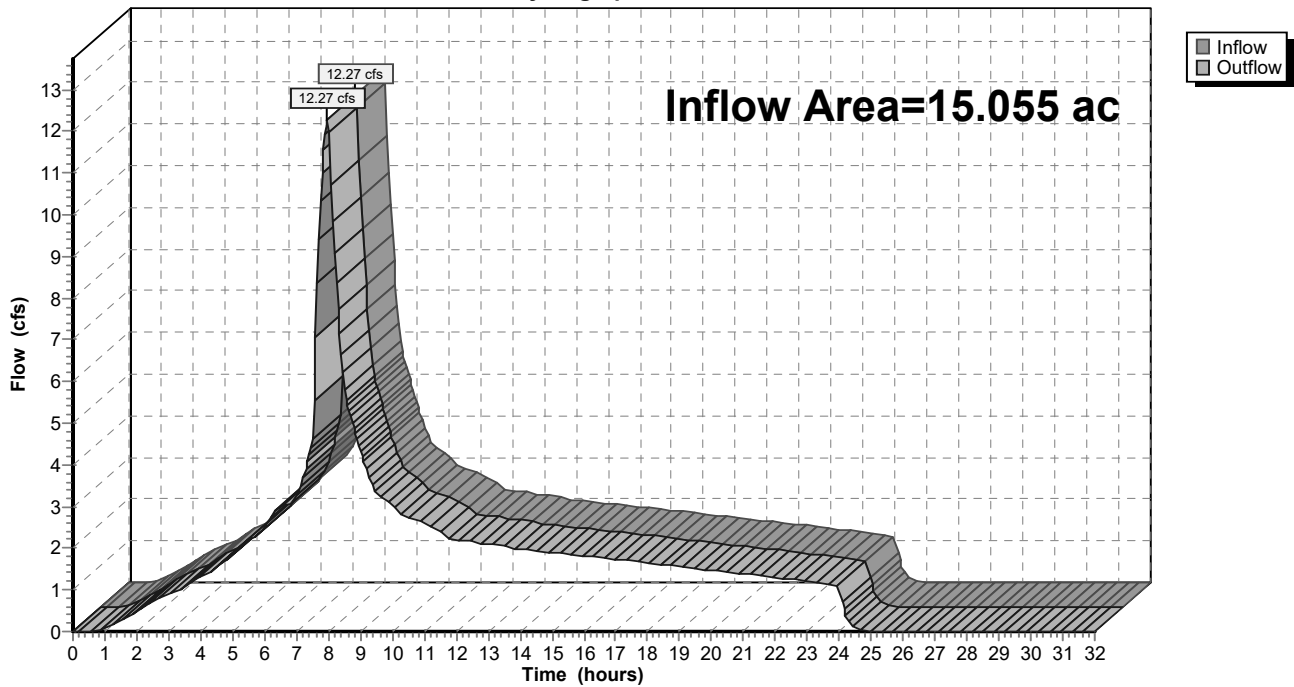
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 15.055 ac, 35.08% Impervious, Inflow Depth = 3.35" for 25-25 Year event
 Inflow = 12.27 cfs @ 7.98 hrs, Volume= 4.206 af
 Outflow = 12.27 cfs @ 7.98 hrs, Volume= 4.206 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 134R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 158R: 1

Hydrograph



9-6-23 HydroCAD DOM

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Type IA 24-hr 25-25 Year Rainfall=3.94"

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Summary for Reach 159R: 1

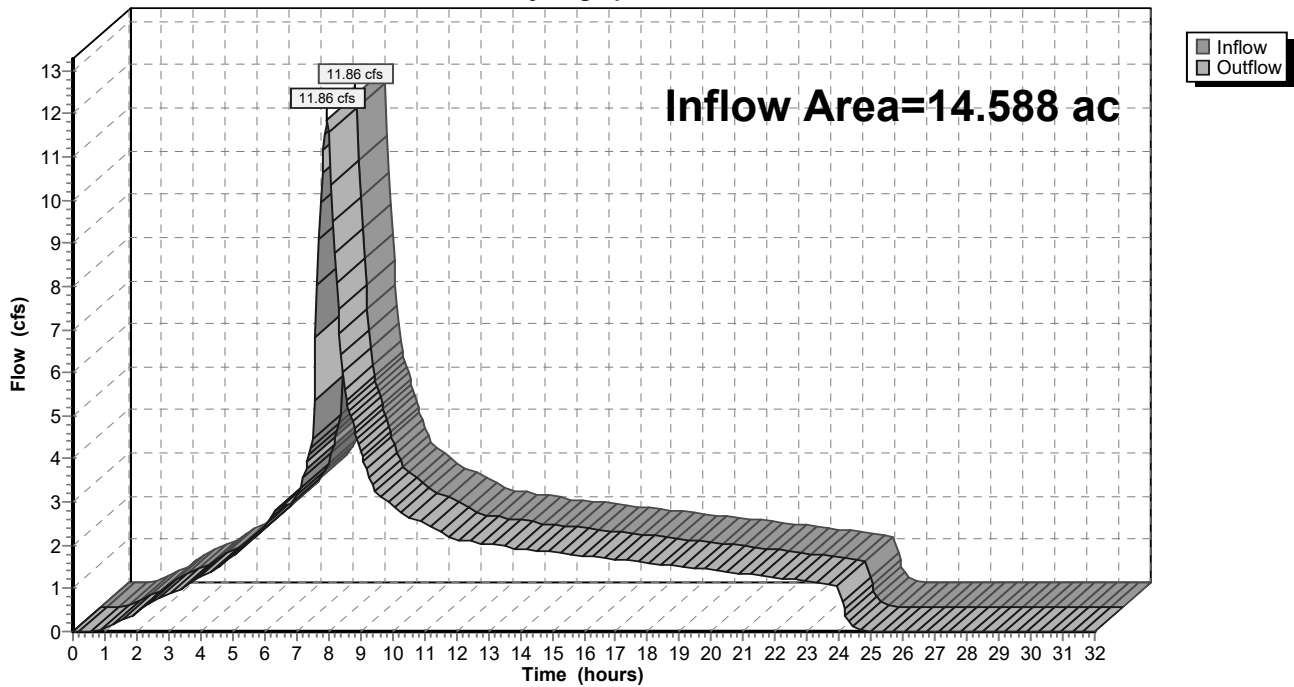
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 14.588 ac, 33.00% Impervious, Inflow Depth = 3.34" for 25-25 Year event
 Inflow = 11.86 cfs @ 7.98 hrs, Volume= 4.062 af
 Outflow = 11.86 cfs @ 7.98 hrs, Volume= 4.062 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 139R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 159R: 1

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 25-25 Year Rainfall=3.94"

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Summary for Reach 160R: 1

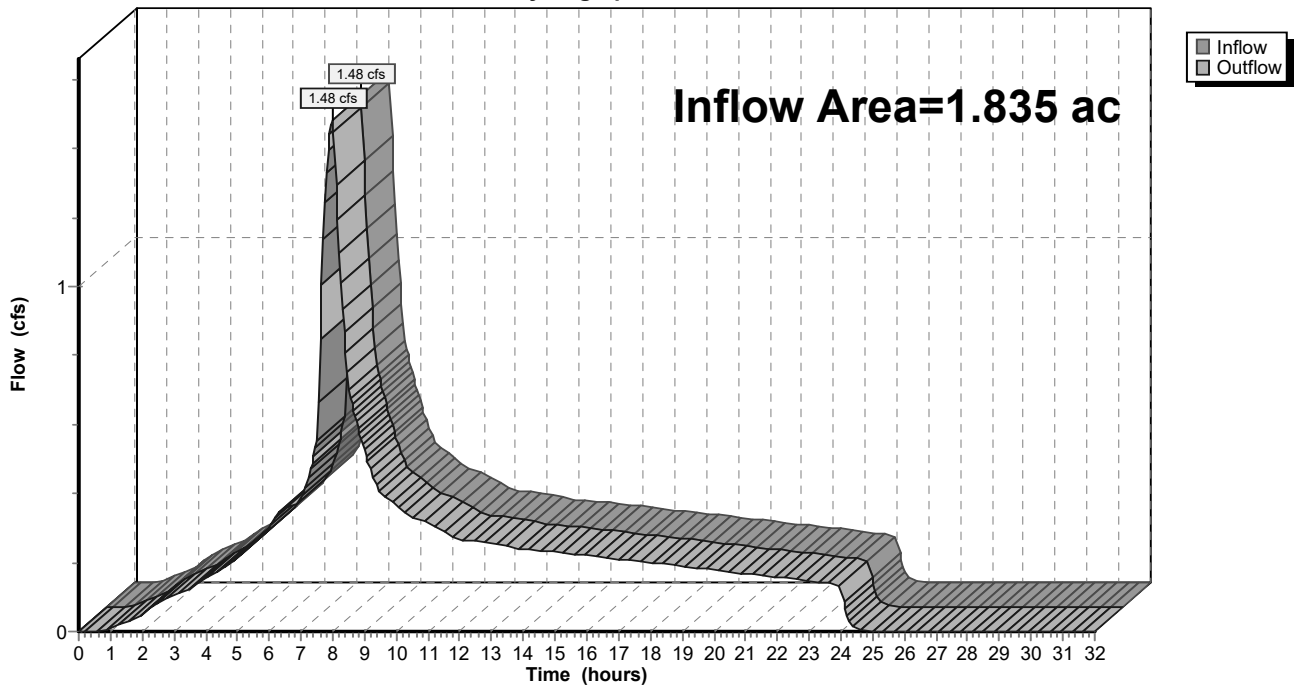
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.835 ac, 29.73% Impervious, Inflow Depth = 3.32" for 25-25 Year event
 Inflow = 1.48 cfs @ 7.98 hrs, Volume= 0.508 af
 Outflow = 1.48 cfs @ 7.98 hrs, Volume= 0.508 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 155R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 160R: 1

Hydrograph



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Type IA 24-hr 25-25 Year Rainfall=3.94"

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Summary for Reach 162R: 1

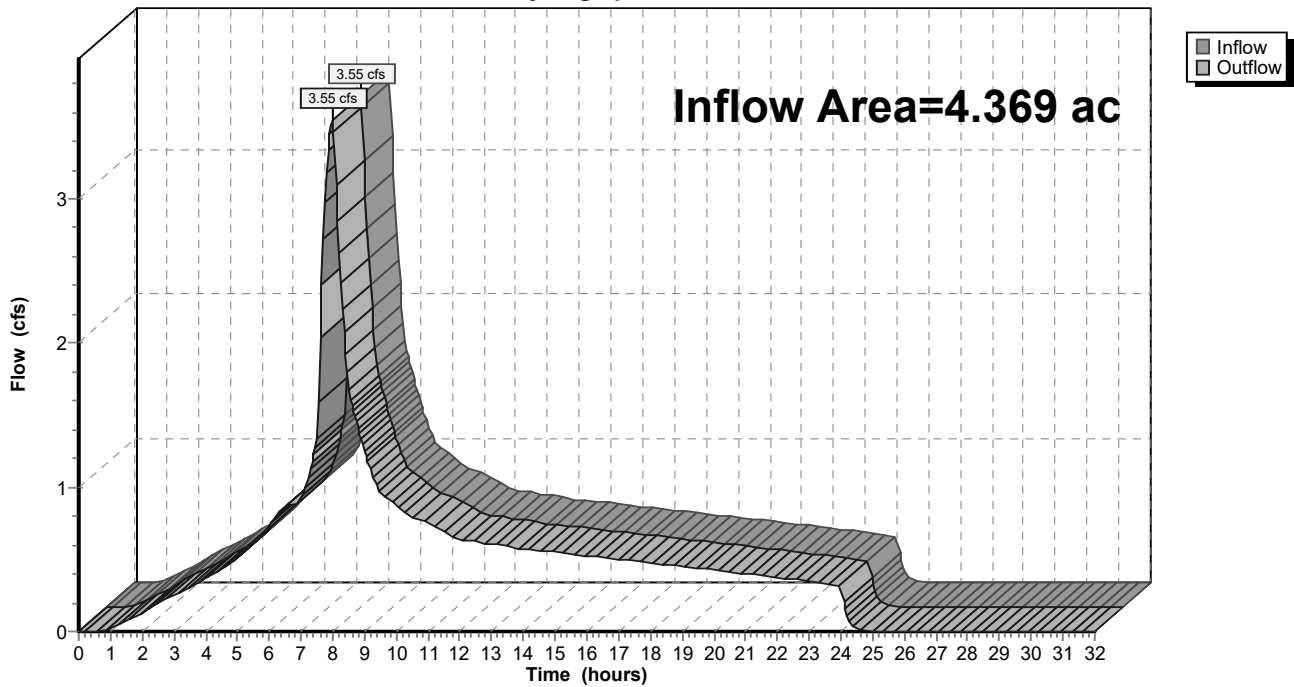
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 4.369 ac, 31.81% Impervious, Inflow Depth = 3.33" for 25-25 Year event
 Inflow = 3.55 cfs @ 7.98 hrs, Volume= 1.214 af
 Outflow = 3.55 cfs @ 7.98 hrs, Volume= 1.214 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 154R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 162R: 1

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 25-25 Year Rainfall=3.94"

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Summary for Reach 163R: 1

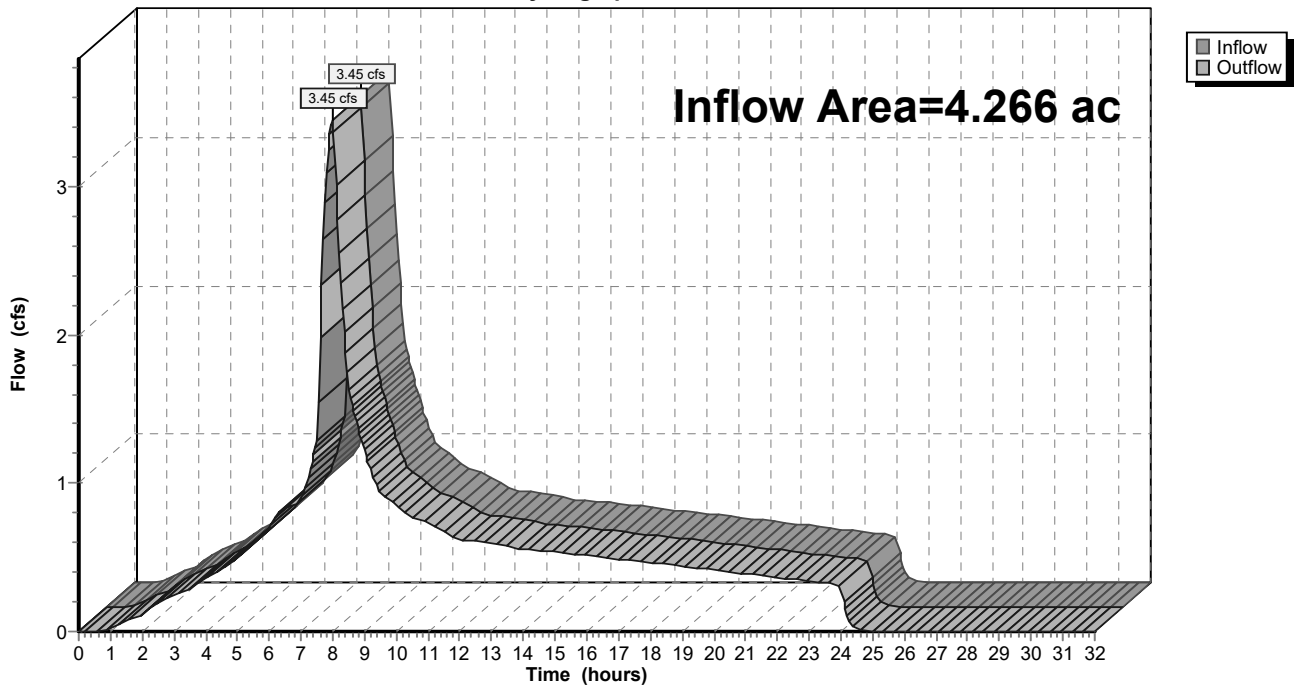
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 4.266 ac, 30.15% Impervious, Inflow Depth = 3.33" for 25-25 Year event
 Inflow = 3.45 cfs @ 7.98 hrs, Volume= 1.182 af
 Outflow = 3.45 cfs @ 7.98 hrs, Volume= 1.182 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 162R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 163R: 1

Hydrograph



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Summary for Reach 165R: 1

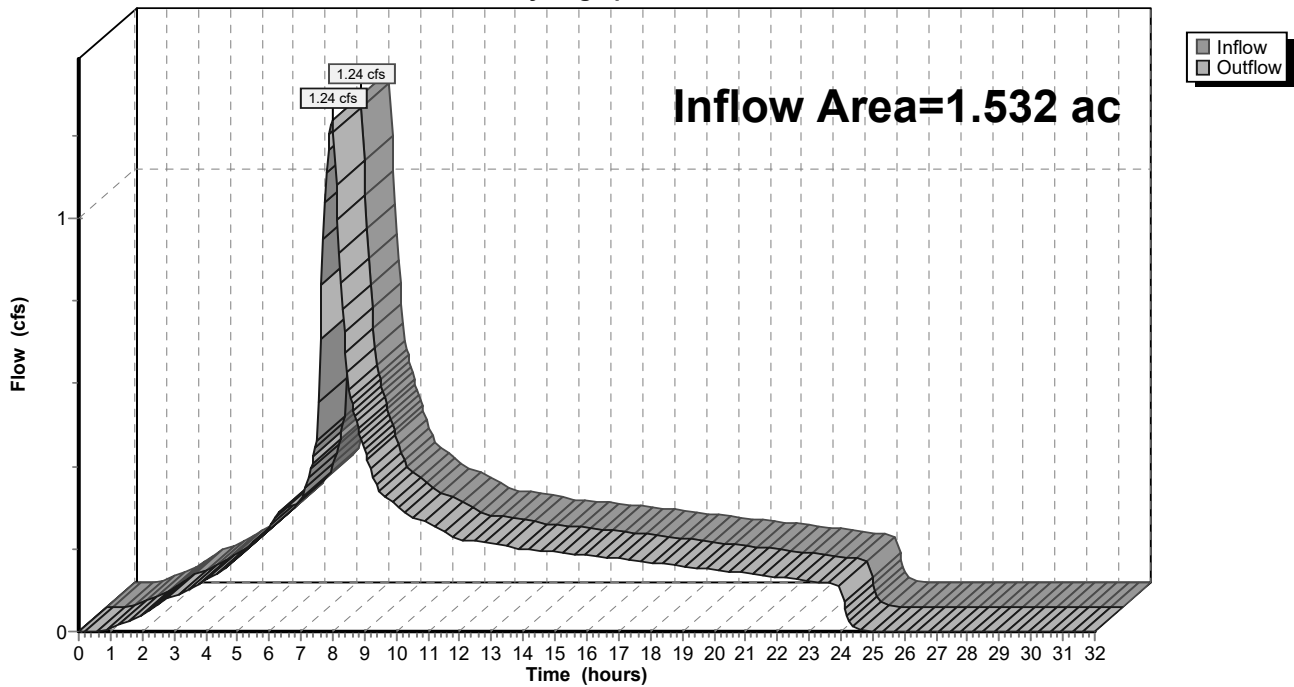
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.532 ac, 27.64% Impervious, Inflow Depth = 3.31" for 25-25 Year event
 Inflow = 1.24 cfs @ 7.98 hrs, Volume= 0.423 af
 Outflow = 1.24 cfs @ 7.98 hrs, Volume= 0.423 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 163R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 165R: 1

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 25-25 Year Rainfall=3.94"

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Summary for Reach 166R: Basin Future

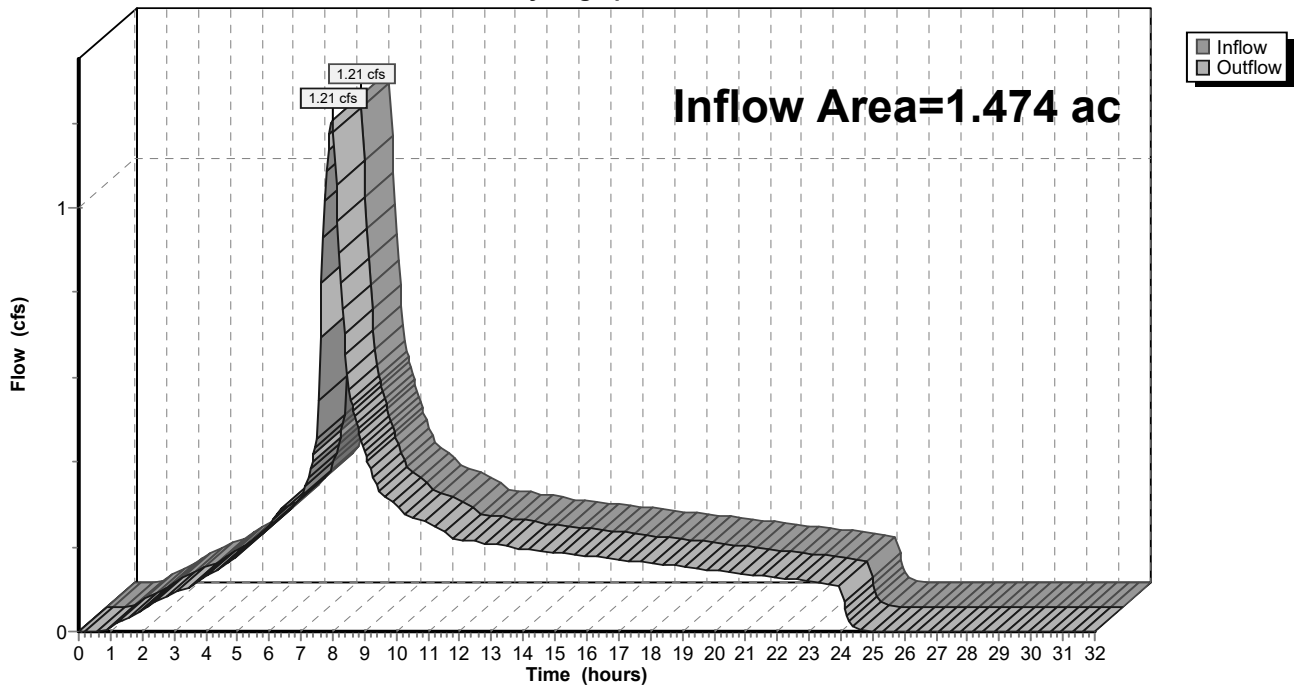
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.474 ac, 37.85% Impervious, Inflow Depth = 3.37" for 25-25 Year event
 Inflow = 1.21 cfs @ 7.98 hrs, Volume= 0.414 af
 Outflow = 1.21 cfs @ 7.98 hrs, Volume= 0.414 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 163R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 166R: Basin Future

Hydrograph



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Summary for Pond 54P: Stormwater Swale 2

[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=39)

Inflow Area = 0.082 ac, 100.00% Impervious, Inflow Depth = 3.71" for 25-25 Year event
 Inflow = 0.07 cfs @ 7.98 hrs, Volume= 0.025 af
 Outflow = 0.07 cfs @ 7.98 hrs, Volume= 0.025 af, Atten= 0%, Lag= 0.4 min
 Primary = 0.07 cfs @ 7.98 hrs, Volume= 0.025 af
 Routed to Reach 58R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Peak Elev= 222.43' @ 7.98 hrs Surf.Area= 185 sf Storage= 33 cf
 Flood Elev= 223.30' Surf.Area= 192 sf Storage= 88 cf

Plug-Flow detention time= 32.6 min calculated for 0.025 af (100% of inflow)
 Center-of-Mass det. time= 32.8 min (698.7 - 665.9)

Volume	Invert	Avail.Storage	Storage Description
#1	222.30'	63 cf	Open Storage (Irregular) Listed below (Recalc)
#2	220.80'	10 cf	Imported Soil (Irregular) Listed below (Recalc) 101 cf Overall x 10.0% Voids
#3	220.05'	15 cf	Rock Chamber (Irregular) Listed below (Recalc) 44 cf Overall x 35.0% Voids
		88 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
222.30	59	33.0	0	0	59
223.30	67	34.0	63	63	93

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
220.80	67	34.0	0	0	67
222.30	67	34.0	101	101	118

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
220.05	58	33.0	0	0	58
220.80	58	33.0	44	44	83

Device	Routing	Invert	Outlet Devices
#1	Primary	220.05'	2.000 in/hr Perf Pipes over Surface area
#2	Primary	223.05'	4.0" Horiz. 4" Overflow Pipe C= 0.600 Limited to weir flow at low heads
#3	Primary	222.30'	10.0" Vert. 10" Outflow Pipe C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.07 cfs @ 7.98 hrs HW=222.43' TW=0.00' (Dynamic Tailwater)

- 1=Perf Pipes (Exfiltration Controls 0.01 cfs)
- 2=4" Overflow Pipe (Controls 0.00 cfs)
- 3=10" Outflow Pipe (Orifice Controls 0.06 cfs @ 1.21 fps)

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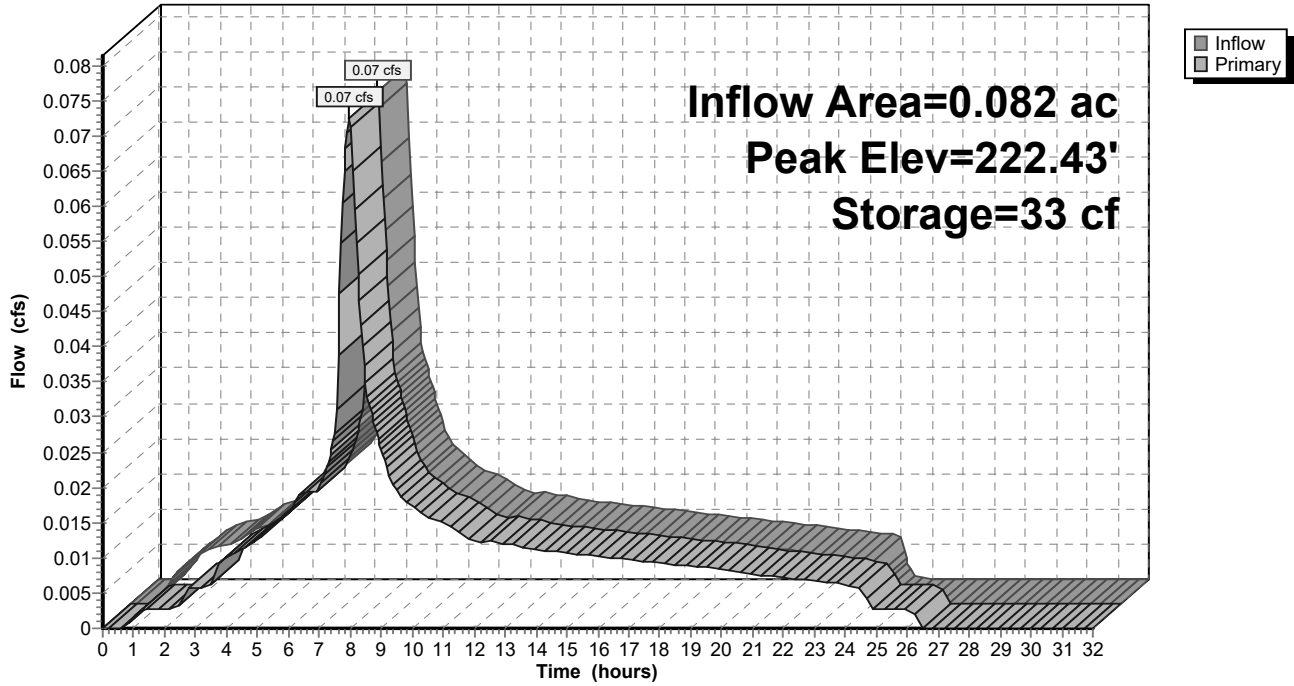
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Pond 54P: Stormwater Swale 2

Hydrograph



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Summary for Pond 60P: Stormwater Swale 1

Inflow Area = 0.085 ac, 100.00% Impervious, Inflow Depth = 3.71" for 25-25 Year event
 Inflow = 0.08 cfs @ 7.98 hrs, Volume= 0.026 af
 Outflow = 0.08 cfs @ 7.98 hrs, Volume= 0.026 af, Atten= 0%, Lag= 0.4 min
 Primary = 0.08 cfs @ 7.98 hrs, Volume= 0.026 af
 Routed to Reach 58R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Peak Elev= 222.08' @ 7.98 hrs Surf.Area= 195 sf Storage= 35 cf
 Flood Elev= 222.95' Surf.Area= 204 sf Storage= 93 cf

Plug-Flow detention time= 33.0 min calculated for 0.026 af (100% of inflow)
 Center-of-Mass det. time= 33.1 min (699.0 - 665.9)

Volume	Invert	Avail.Storage	Storage Description
#1	221.95'	67 cf	Open Storage (Irregular) Listed below (Recalc)
#2	220.45'	11 cf	Imported Soil (Irregular) Listed below (Recalc) 108 cf Overall x 10.0% Voids
#3	219.70'	16 cf	Rock Chamber (Irregular) Listed below (Recalc) 45 cf Overall x 35.0% Voids
		93 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
221.95	62	34.0	0	0	62
222.95	72	36.0	67	67	99

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
220.45	72	36.0	0	0	72
221.95	72	36.0	108	108	126

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
219.70	60	34.0	0	0	60
220.45	60	34.0	45	45	86

Device	Routing	Invert	Outlet Devices
#1	Primary	219.70'	2.000 in/hr Perf Pipes over Surface area
#2	Primary	222.70'	4.0" Horiz. 4" Overflow Pipe C= 0.600 Limited to weir flow at low heads
#3	Primary	221.95'	10.0" Vert. 10" Outflow Pipe C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.07 cfs @ 7.98 hrs HW=222.08' TW=0.00' (Dynamic Tailwater)

- 1=Perf Pipes (Exfiltration Controls 0.01 cfs)
- 2=4" Overflow Pipe (Controls 0.00 cfs)
- 3=10" Outflow Pipe (Orifice Controls 0.07 cfs @ 1.22 fps)

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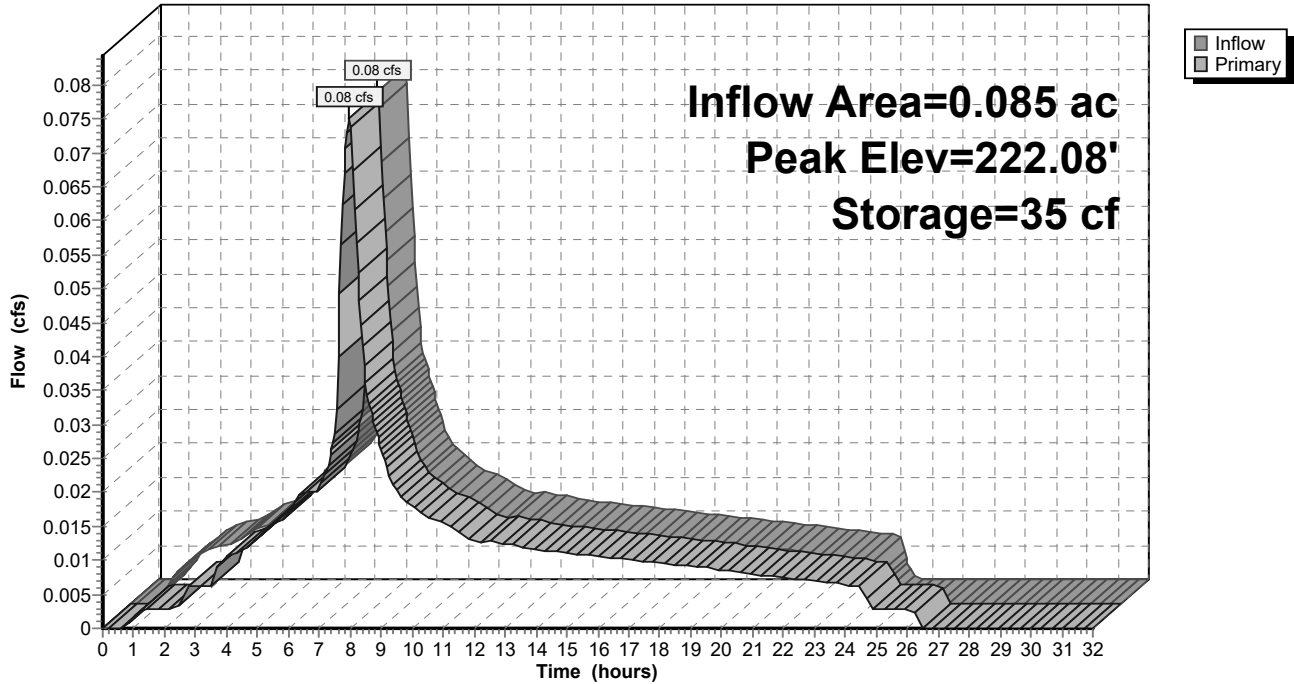
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Pond 60P: Stormwater Swale 1

Hydrograph



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Summary for Pond 63P: Detention Pond

Inflow Area = 23.038 ac, 36.38% Impervious, Inflow Depth = 3.36" for 25-25 Year event
 Inflow = 18.82 cfs @ 7.98 hrs, Volume= 6.449 af
 Outflow = 7.91 cfs @ 8.69 hrs, Volume= 6.448 af, Atten= 58%, Lag= 42.9 min
 Primary = 7.91 cfs @ 8.69 hrs, Volume= 6.448 af
 Routed to Reach 85R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Peak Elev= 224.18' @ 8.69 hrs Surf.Area= 46,853 sf Storage= 53,277 cf
 Flood Elev= 225.50' Surf.Area= 48,838 sf Storage= 80,897 cf

Plug-Flow detention time= 106.9 min calculated for 6.438 af (100% of inflow)
 Center-of-Mass det. time= 107.0 min (802.2 - 695.3)

Volume	Invert	Avail.Storage	Storage Description
#1	221.50'	75,859 cf	Open Storage (Irregular) Listed below (Recalc)
#2	220.00'	3,288 cf	Growing Medium (Irregular) Listed below (Recalc) 32,879 cf Overall x 10.0% Voids
#3	219.00'	1,750 cf	Rock Chamber (Prismatic) Listed below (Recalc) 5,000 cf Overall x 35.0% Voids
		80,897 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
221.50	16,108	696.8	0	0	16,108
222.50	17,511	717.0	16,805	16,805	18,488
223.50	18,943	738.5	18,222	35,027	21,082
224.50	20,410	754.7	19,672	54,699	23,147
225.50	21,919	770.9	21,160	75,859	25,257

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
220.00	21,919	770.9	0	0	21,919
221.50	21,919	770.9	32,879	32,879	23,075

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
219.00	5,000	0	0
220.00	5,000	5,000	5,000

Device	Routing	Invert	Outlet Devices
#1	Primary	219.00'	24.0" Round 24" Pipe L= 100.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 219.00' / 218.80' S= 0.0020 '/' Cc= 0.900 n= 0.010, Flow Area= 3.14 sf
#2	Device 1	219.00'	2.000 in/hr 4" Perf Pipes over Surface area
#3	Device 1	221.85'	6.0" Vert. 2x6" Orifice X 2.00 C= 0.600 Limited to weir flow at low heads
#4	Device 1	222.78'	6.0" Vert. 6" Orifice C= 0.600 Limited to weir flow at low heads
#5	Device 1	222.95'	6.0" Vert. 6" Orifice C= 0.600 Limited to weir flow at low heads

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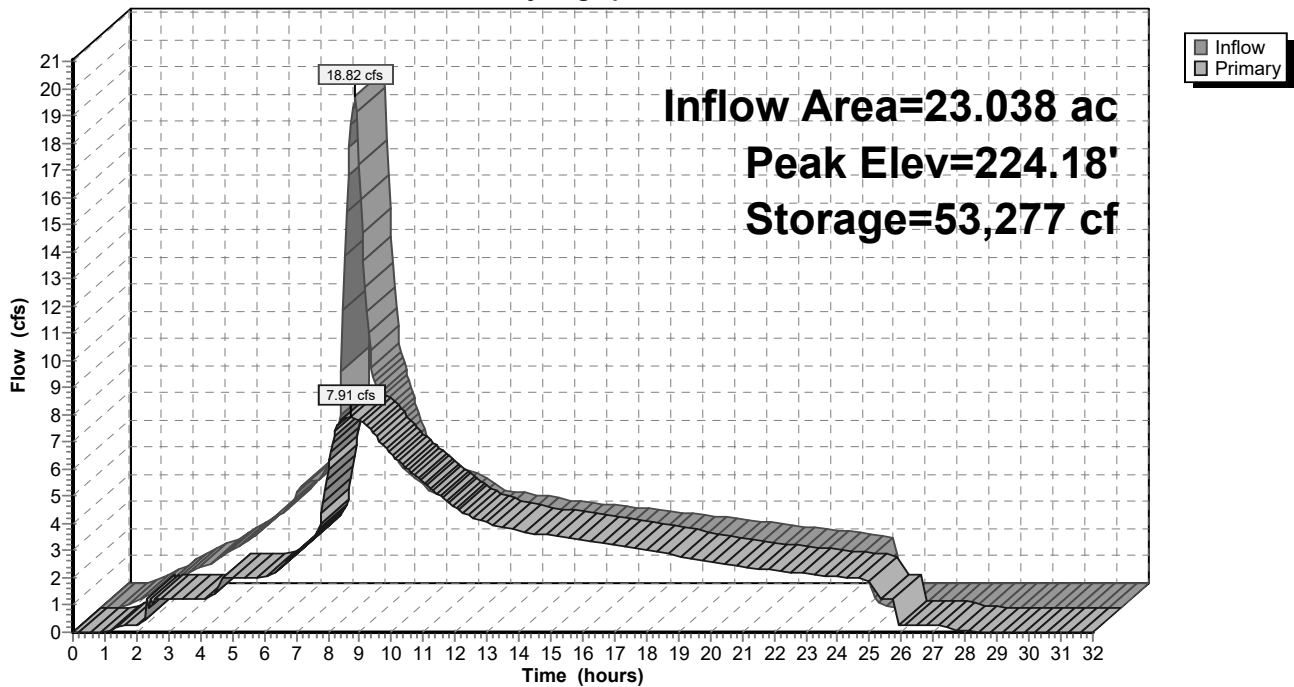
#6	Device 1	223.25'	4.0" Vert. 4" Orifice	C= 0.600	Limited to weir flow at low heads
#7	Device 1	223.55'	4.0" Vert. 4" Orifice	C= 0.600	Limited to weir flow at low heads
#8	Device 1	223.77'	4.0" Vert. 2x4" Orifice X 2.00	C= 0.600	Limited to weir flow at low heads
#9	Device 1	224.35'	48.0" x 48.0" Horiz. 48" Overflow	C= 0.600	Limited to weir flow at low heads

Primary OutFlow Max=7.91 cfs @ 8.69 hrs HW=224.18' TW=0.00' (Dynamic Tailwater)

- 1=24" Pipe (Passes 7.91 cfs of 27.29 cfs potential flow)
- 2=4" Perf Pipes (Exfiltration Controls 2.17 cfs)
- 3=2x6" Orifice (Orifice Controls 2.73 cfs @ 6.94 fps)
- 4=6" Orifice (Orifice Controls 1.01 cfs @ 5.16 fps)
- 5=6" Orifice (Orifice Controls 0.94 cfs @ 4.77 fps)
- 6=4" Orifice (Orifice Controls 0.37 cfs @ 4.21 fps)
- 7=4" Orifice (Orifice Controls 0.29 cfs @ 3.28 fps)
- 8=2x4" Orifice (Orifice Controls 0.41 cfs @ 2.37 fps)
- 9=48" Overflow (Controls 0.00 cfs)

Pond 63P: Detention Pond

Hydrograph



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Time span=0.00-32.00 hrs, dt=0.05 hrs, 641 points
 Runoff by SBUH method, Split Pervious/Imperv.
 Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment64S: Home Basin 20	Runoff Area=9,940 sf 0.00% Impervious Runoff Depth=3.59" Tc=10.0 min CN=93/0 Runoff=0.20 cfs 0.068 af
Subcatchment65S: Single Pond Existing	Runoff Area=23.038 ac 0.00% Impervious Runoff Depth>3.18" Flow Length=1,526' Slope=0.0076 1' Tc=73.0 min CN=89/0 Runoff=9.19 cfs 6.107 af
Subcatchment67S: Home Basin 19	Runoff Area=17,197 sf 0.00% Impervious Runoff Depth=3.59" Tc=10.0 min CN=93/0 Runoff=0.35 cfs 0.118 af
Subcatchment68S: Home Basin 12	Runoff Area=18,133 sf 0.00% Impervious Runoff Depth=3.59" Tc=10.0 min CN=93/0 Runoff=0.37 cfs 0.125 af
Subcatchment69S: Home Basin 17	Runoff Area=16,661 sf 0.00% Impervious Runoff Depth=3.59" Tc=10.0 min CN=93/0 Runoff=0.34 cfs 0.114 af
Subcatchment70S: Home Basin 18	Runoff Area=11,596 sf 0.00% Impervious Runoff Depth=3.59" Tc=10.0 min CN=93/0 Runoff=0.24 cfs 0.080 af
Subcatchment71S: Home Basin 14	Runoff Area=16,444 sf 0.00% Impervious Runoff Depth=3.59" Tc=10.0 min CN=93/0 Runoff=0.33 cfs 0.113 af
Subcatchment72S: Home Basin 16	Runoff Area=20,310 sf 0.00% Impervious Runoff Depth=3.59" Tc=10.0 min CN=93/0 Runoff=0.41 cfs 0.140 af
Subcatchment73S: Home Basin 13	Runoff Area=10,807 sf 0.00% Impervious Runoff Depth=3.59" Tc=10.0 min CN=93/0 Runoff=0.22 cfs 0.074 af
Subcatchment74S: Swale Existing	Runoff Area=0.168 ac 0.00% Impervious Runoff Depth=3.18" Flow Length=105' Slope=0.0565 1' Tc=10.0 min CN=89/0 Runoff=0.13 cfs 0.045 af
Subcatchment75S: Home Basin 11	Runoff Area=18,483 sf 0.00% Impervious Runoff Depth=3.59" Tc=10.0 min CN=93/0 Runoff=0.38 cfs 0.127 af
Subcatchment77S: Home Basin 15	Runoff Area=12,503 sf 0.00% Impervious Runoff Depth=3.59" Tc=10.0 min CN=93/0 Runoff=0.25 cfs 0.086 af
Subcatchment78S: Single Pond	Runoff Area=21,919 sf 100.00% Impervious Runoff Depth=4.14" Tc=0.0 min CN=0/98 Runoff=0.53 cfs 0.174 af
Subcatchment79S: Home Basin 30	Runoff Area=38,416 sf 0.00% Impervious Runoff Depth=3.59" Tc=10.0 min CN=93/0 Runoff=0.78 cfs 0.264 af
Subcatchment80S: Home Basin 10	Runoff Area=14,789 sf 0.00% Impervious Runoff Depth=3.59" Tc=10.0 min CN=93/0 Runoff=0.30 cfs 0.102 af
Subcatchment81S: Home Basin 9	Runoff Area=15,575 sf 0.00% Impervious Runoff Depth=3.59" Tc=10.0 min CN=93/0 Runoff=0.32 cfs 0.107 af

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Subcatchment82S: Home Basin 2	Runoff Area=20,667 sf 0.00% Impervious Runoff Depth=3.59" Tc=10.0 min CN=93/0 Runoff=0.42 cfs 0.142 af
Subcatchment83S: Home Basin 7	Runoff Area=17,032 sf 0.00% Impervious Runoff Depth=3.59" Tc=10.0 min CN=93/0 Runoff=0.35 cfs 0.117 af
Subcatchment84S: Home Basin 8	Runoff Area=11,668 sf 0.00% Impervious Runoff Depth=3.59" Tc=10.0 min CN=93/0 Runoff=0.24 cfs 0.080 af
Subcatchment85S: Home Basin 29	Runoff Area=25,118 sf 0.00% Impervious Runoff Depth=3.59" Tc=10.0 min CN=93/0 Runoff=0.51 cfs 0.173 af
Subcatchment86S: Home Basin 22	Runoff Area=16,159 sf 0.00% Impervious Runoff Depth=3.59" Tc=10.0 min CN=93/0 Runoff=0.33 cfs 0.111 af
Subcatchment87S: Home Basin 27	Runoff Area=24,839 sf 0.00% Impervious Runoff Depth=3.59" Tc=10.0 min CN=93/0 Runoff=0.50 cfs 0.171 af
Subcatchment88S: Home Basin 28	Runoff Area=25,318 sf 0.00% Impervious Runoff Depth=3.59" Tc=10.0 min CN=93/0 Runoff=0.51 cfs 0.174 af
Subcatchment89S: Home Basin 24	Runoff Area=20,676 sf 0.00% Impervious Runoff Depth=3.59" Tc=10.0 min CN=93/0 Runoff=0.42 cfs 0.142 af
Subcatchment90S: Home Basin 26	Runoff Area=14,135 sf 0.00% Impervious Runoff Depth=3.59" Tc=10.0 min CN=93/0 Runoff=0.29 cfs 0.097 af
Subcatchment91S: Home Basin 23	Runoff Area=12,271 sf 0.00% Impervious Runoff Depth=3.59" Tc=10.0 min CN=93/0 Runoff=0.25 cfs 0.084 af
Subcatchment92S: Home Basin 21	Runoff Area=27,019 sf 0.00% Impervious Runoff Depth=3.59" Tc=10.0 min CN=93/0 Runoff=0.55 cfs 0.186 af
Subcatchment93S: Home Basin 25	Runoff Area=17,012 sf 0.00% Impervious Runoff Depth=3.59" Tc=10.0 min CN=93/0 Runoff=0.35 cfs 0.117 af
Subcatchment94S: Home Basin 4	Runoff Area=19,535 sf 0.00% Impervious Runoff Depth=3.59" Tc=10.0 min CN=93/0 Runoff=0.40 cfs 0.134 af
Subcatchment95S: Home Basin 31	Runoff Area=24,883 sf 0.00% Impervious Runoff Depth=3.59" Tc=10.0 min CN=93/0 Runoff=0.51 cfs 0.171 af
Subcatchment96S: Basin 1	Runoff Area=15,045 sf 100.00% Impervious Runoff Depth=4.14" Tc=10.0 min CN=0/98 Runoff=0.34 cfs 0.119 af
Subcatchment97S: Basin 2	Runoff Area=19,824 sf 100.00% Impervious Runoff Depth=4.14" Tc=10.0 min CN=0/98 Runoff=0.45 cfs 0.157 af
Subcatchment98S: Basin 3	Runoff Area=23,416 sf 100.00% Impervious Runoff Depth=4.14" Tc=10.0 min CN=0/98 Runoff=0.53 cfs 0.186 af

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Subcatchment99S: Home Basin 6	Runoff Area=25,997 sf 0.00% Impervious Runoff Depth=3.59" Tc=10.0 min CN=93/0 Runoff=0.53 cfs 0.179 af
Subcatchment100S: Basin 4	Runoff Area=3,650 sf 100.00% Impervious Runoff Depth=4.14" Tc=10.0 min CN=0/98 Runoff=0.08 cfs 0.029 af
Subcatchment101S: Basin 5	Runoff Area=3,523 sf 100.00% Impervious Runoff Depth=4.14" Tc=10.0 min CN=0/98 Runoff=0.08 cfs 0.028 af
Subcatchment102S: Home Basin 3	Runoff Area=19,559 sf 0.00% Impervious Runoff Depth=3.59" Tc=10.0 min CN=93/0 Runoff=0.40 cfs 0.134 af
Subcatchment103S: Home Basin 1	Runoff Area=22,288 sf 0.00% Impervious Runoff Depth=3.59" Tc=10.0 min CN=93/0 Runoff=0.45 cfs 0.153 af
Subcatchment104S: Home Basin 5	Runoff Area=33,512 sf 0.00% Impervious Runoff Depth=3.59" Tc=10.0 min CN=93/0 Runoff=0.68 cfs 0.230 af
Subcatchment105S: Basin 6	Runoff Area=8,965 sf 100.00% Impervious Runoff Depth=4.14" Tc=10.0 min CN=0/98 Runoff=0.20 cfs 0.071 af
Subcatchment107S: Basin 8	Runoff Area=8,177 sf 100.00% Impervious Runoff Depth=4.14" Tc=10.0 min CN=0/98 Runoff=0.18 cfs 0.065 af
Subcatchment108S: Basin 9	Runoff Area=13,130 sf 100.00% Impervious Runoff Depth=4.14" Tc=10.0 min CN=0/98 Runoff=0.30 cfs 0.104 af
Subcatchment109S: Basin 10	Runoff Area=22,902 sf 100.00% Impervious Runoff Depth=4.14" Tc=10.0 min CN=0/98 Runoff=0.52 cfs 0.182 af
Subcatchment110S: Basin 11	Runoff Area=25,748 sf 100.00% Impervious Runoff Depth=4.14" Tc=10.0 min CN=0/98 Runoff=0.58 cfs 0.204 af
Subcatchment111S: Basin 12	Runoff Area=5,562 sf 100.00% Impervious Runoff Depth=4.14" Tc=10.0 min CN=0/98 Runoff=0.13 cfs 0.044 af
Subcatchment112S: Basin 13	Runoff Area=4,702 sf 100.00% Impervious Runoff Depth=4.14" Tc=10.0 min CN=0/98 Runoff=0.11 cfs 0.037 af
Subcatchment113S: Basin 14	Runoff Area=7,669 sf 100.00% Impervious Runoff Depth=4.14" Tc=10.0 min CN=0/98 Runoff=0.17 cfs 0.061 af
Subcatchment114S: Basin 15	Runoff Area=7,261 sf 100.00% Impervious Runoff Depth=4.14" Tc=10.0 min CN=0/98 Runoff=0.16 cfs 0.058 af
Subcatchment115S: Basin 16	Runoff Area=7,066 sf 100.00% Impervious Runoff Depth=4.14" Tc=10.0 min CN=0/98 Runoff=0.16 cfs 0.056 af
Subcatchment116S: Basin 17	Runoff Area=26,003 sf 100.00% Impervious Runoff Depth=4.14" Tc=10.0 min CN=0/98 Runoff=0.59 cfs 0.206 af

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Subcatchment117S: Basin 18	Runoff Area=23,761 sf 100.00% Impervious Runoff Depth=4.14" Tc=10.0 min CN=0/98 Runoff=0.54 cfs 0.188 af
Subcatchment118S: Basin 19	Runoff Area=7,309 sf 100.00% Impervious Runoff Depth=4.14" Tc=10.0 min CN=0/98 Runoff=0.16 cfs 0.058 af
Subcatchment119S: Basin 20	Runoff Area=7,535 sf 100.00% Impervious Runoff Depth=4.14" Tc=10.0 min CN=0/98 Runoff=0.17 cfs 0.060 af
Subcatchment120S: Basin 21	Runoff Area=6,846 sf 100.00% Impervious Runoff Depth=4.14" Tc=10.0 min CN=0/98 Runoff=0.15 cfs 0.054 af
Subcatchment121S: Basin 22	Runoff Area=5,182 sf 100.00% Impervious Runoff Depth=4.14" Tc=10.0 min CN=0/98 Runoff=0.12 cfs 0.041 af
Subcatchment122S: Basin 23	Runoff Area=5,456 sf 100.00% Impervious Runoff Depth=4.14" Tc=10.0 min CN=0/98 Runoff=0.12 cfs 0.043 af
Subcatchment123S: Basin 24	Runoff Area=4,510 sf 100.00% Impervious Runoff Depth=4.14" Tc=10.0 min CN=0/98 Runoff=0.10 cfs 0.036 af
Subcatchment124S: Basin 25	Runoff Area=13,271 sf 100.00% Impervious Runoff Depth=4.14" Tc=10.0 min CN=0/98 Runoff=0.30 cfs 0.105 af
Subcatchment125S: Basin 26	Runoff Area=18,452 sf 100.00% Impervious Runoff Depth=4.14" Tc=10.0 min CN=0/98 Runoff=0.42 cfs 0.146 af
Subcatchment126S: Alley Basin 1	Runoff Area=9,860 sf 100.00% Impervious Runoff Depth=4.14" Tc=10.0 min CN=0/98 Runoff=0.22 cfs 0.078 af
Subcatchment127S: Alley Basin 2	Runoff Area=7,461 sf 100.00% Impervious Runoff Depth=4.14" Tc=10.0 min CN=0/98 Runoff=0.17 cfs 0.059 af
Subcatchment128S: Alley Basin 3	Runoff Area=6,782 sf 100.00% Impervious Runoff Depth=4.14" Tc=10.0 min CN=0/98 Runoff=0.15 cfs 0.054 af
Subcatchment129S: Alley Basin 4	Runoff Area=6,970 sf 100.00% Impervious Runoff Depth=4.14" Tc=10.0 min CN=0/98 Runoff=0.16 cfs 0.055 af
Subcatchment168S: Future Lots	Runoff Area=64,223 sf 37.85% Impervious Runoff Depth=3.80" Tc=10.0 min CN=93/98 Runoff=1.36 cfs 0.467 af
Subcatchment169S: Swale 2	Runoff Area=67 sf 100.00% Impervious Runoff Depth=4.14" Tc=0.0 min CN=0/98 Runoff=0.00 cfs 0.001 af
Subcatchment170S: Swale 1	Runoff Area=72 sf 100.00% Impervious Runoff Depth=4.14" Tc=0.0 min CN=0/98 Runoff=0.00 cfs 0.001 af
Reach 39R: Post-Construction Peak Flow	Inflow=11.00 cfs 7.337 af Outflow=11.00 cfs 7.337 af

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Reach 42R: Pre-Construction Peak Flow	Inflow=9.29 cfs 6.152 af Outflow=9.29 cfs 6.152 af
Reach 58R: 1	Inflow=11.00 cfs 7.337 af Outflow=11.00 cfs 7.337 af
Reach 85R: 1	Inflow=10.92 cfs 7.279 af Outflow=10.92 cfs 7.279 af
Reach 130R: 1	Inflow=3.62 cfs 1.243 af Outflow=3.62 cfs 1.243 af
Reach 131R: 1	Inflow=3.62 cfs 1.243 af Outflow=3.62 cfs 1.243 af
Reach 132R: 1	Inflow=2.08 cfs 0.713 af Outflow=2.08 cfs 0.713 af
Reach 133R: 1	Inflow=0.34 cfs 0.119 af Outflow=0.34 cfs 0.119 af
Reach 134R: 1	Inflow=16.65 cfs 5.714 af Outflow=16.65 cfs 5.714 af
Reach 135R: 1	Inflow=2.82 cfs 0.965 af Outflow=2.82 cfs 0.965 af
Reach 136R: 1	Inflow=1.60 cfs 0.549 af Outflow=1.60 cfs 0.549 af
Reach 137R: 1	Inflow=0.97 cfs 0.335 af Outflow=0.97 cfs 0.335 af
Reach 138R: 1	Inflow=0.42 cfs 0.149 af Outflow=0.42 cfs 0.149 af
Reach 139R: 1	Inflow=13.54 cfs 4.646 af Outflow=13.54 cfs 4.646 af
Reach 140R: 1	Inflow=0.22 cfs 0.078 af Outflow=0.22 cfs 0.078 af
Reach 141R: 1	Inflow=0.17 cfs 0.059 af Outflow=0.17 cfs 0.059 af
Reach 142R: 1	Inflow=12.85 cfs 4.408 af Outflow=12.85 cfs 4.408 af
Reach 143R: 1	Inflow=2.62 cfs 0.897 af Outflow=2.62 cfs 0.897 af

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Reach 144R: 1	Inflow=1.88 cfs 0.643 af Outflow=1.88 cfs 0.643 af
Reach 145R: 1	Inflow=1.88 cfs 0.643 af Outflow=1.88 cfs 0.643 af
Reach 146R: 1	Inflow=10.23 cfs 3.511 af Outflow=10.23 cfs 3.511 af
Reach 147R: 1	Inflow=0.15 cfs 0.054 af Outflow=0.15 cfs 0.054 af
Reach 148R: 1	Inflow=10.08 cfs 3.457 af Outflow=10.08 cfs 3.457 af
Reach 149R: 1	Inflow=2.55 cfs 0.876 af Outflow=2.55 cfs 0.876 af
Reach 150R: 1	Inflow=1.73 cfs 0.594 af Outflow=1.73 cfs 0.594 af
Reach 151R: 1	Inflow=1.32 cfs 0.455 af Outflow=1.32 cfs 0.455 af
Reach 152R: 1	Inflow=7.04 cfs 2.414 af Outflow=7.04 cfs 2.414 af
Reach 153R: 1	Inflow=0.16 cfs 0.055 af Outflow=0.16 cfs 0.055 af
Reach 154R: 1	Inflow=6.88 cfs 2.359 af Outflow=6.88 cfs 2.359 af
Reach 155R: 1	Inflow=2.42 cfs 0.830 af Outflow=2.42 cfs 0.830 af
Reach 158R: 1	Inflow=13.83 cfs 4.748 af Outflow=13.83 cfs 4.748 af
Reach 159R: 1	Inflow=13.37 cfs 4.587 af Outflow=13.37 cfs 4.587 af
Reach 160R: 1	Inflow=1.68 cfs 0.574 af Outflow=1.68 cfs 0.574 af
Reach 162R: 1	Inflow=4.00 cfs 1.371 af Outflow=4.00 cfs 1.371 af
Reach 163R: 1	Inflow=3.90 cfs 1.336 af Outflow=3.90 cfs 1.336 af

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Reach 165R: 1Inflow=1.40 cfs 0.478 af
Outflow=1.40 cfs 0.478 af**Reach 166R: Basin Future**Inflow=1.36 cfs 0.467 af
Outflow=1.36 cfs 0.467 af**Pond 54P: Stormwater Swale 2**Peak Elev=222.44' Storage=33 cf Inflow=0.08 cfs 0.028 af
Outflow=0.08 cfs 0.028 af**Pond 60P: Stormwater Swale 1**Peak Elev=222.09' Storage=35 cf Inflow=0.08 cfs 0.030 af
Outflow=0.08 cfs 0.030 af**Pond 63P: Detention Pond**Peak Elev=224.47' Storage=59,147 cf Inflow=21.21 cfs 7.280 af
Outflow=10.92 cfs 7.279 af

Total Runoff Area = 46.412 ac Runoff Volume = 13.490 af Average Runoff Depth = 3.49"
81.58% Pervious = 37.863 ac 18.42% Impervious = 8.549 ac

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Summary for Subcatchment 64S: Home Basin 20

Runoff = 0.20 cfs @ 7.98 hrs, Volume= 0.068 af, Depth= 3.59"
 Routed to Reach 143R : 1

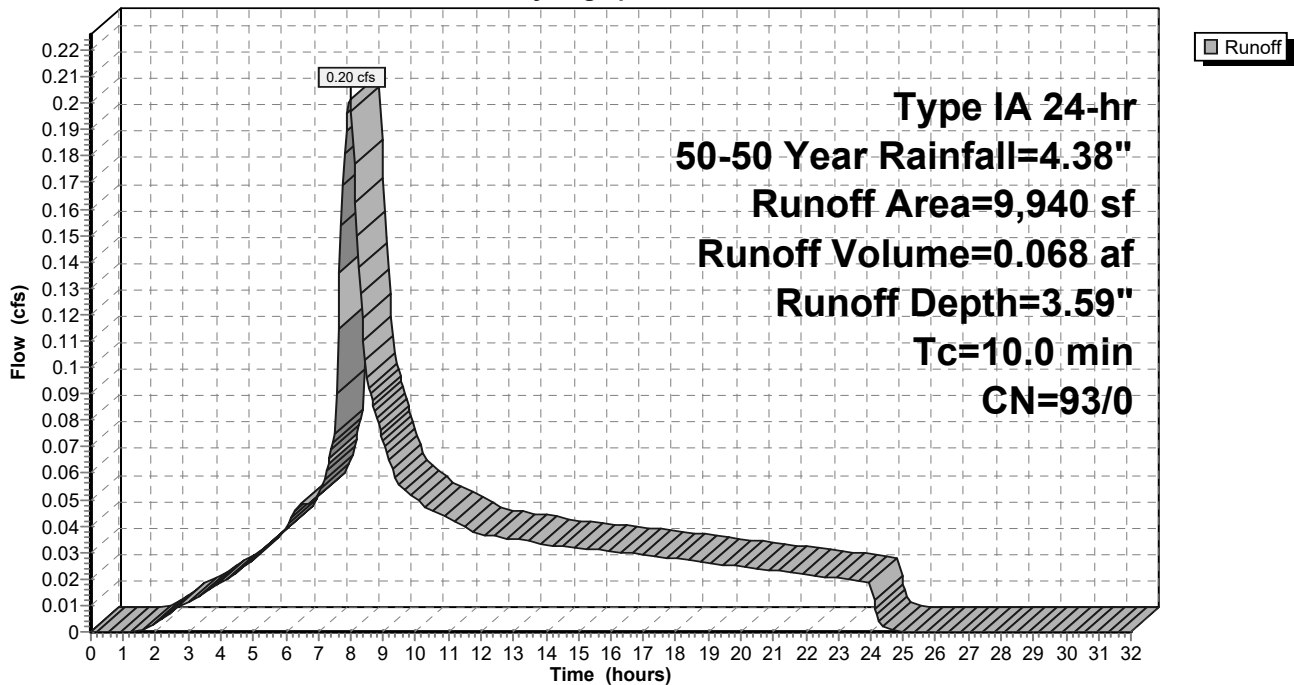
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 50-50 Year Rainfall=4.38"

Area (sf)	CN	Description
* 9,940	93	70% Lot Coverage Weighted
9,940	93	100.00% Pervious Area

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

Subcatchment 64S: Home Basin 20

Hydrograph



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Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Subcatchment 65S: Single Pond Existing Conditions

Runoff = 9.19 cfs @ 8.26 hrs, Volume= 6.107 af, Depth> 3.18"
 Routed to Reach 42R : Pre-Construction Peak Flow

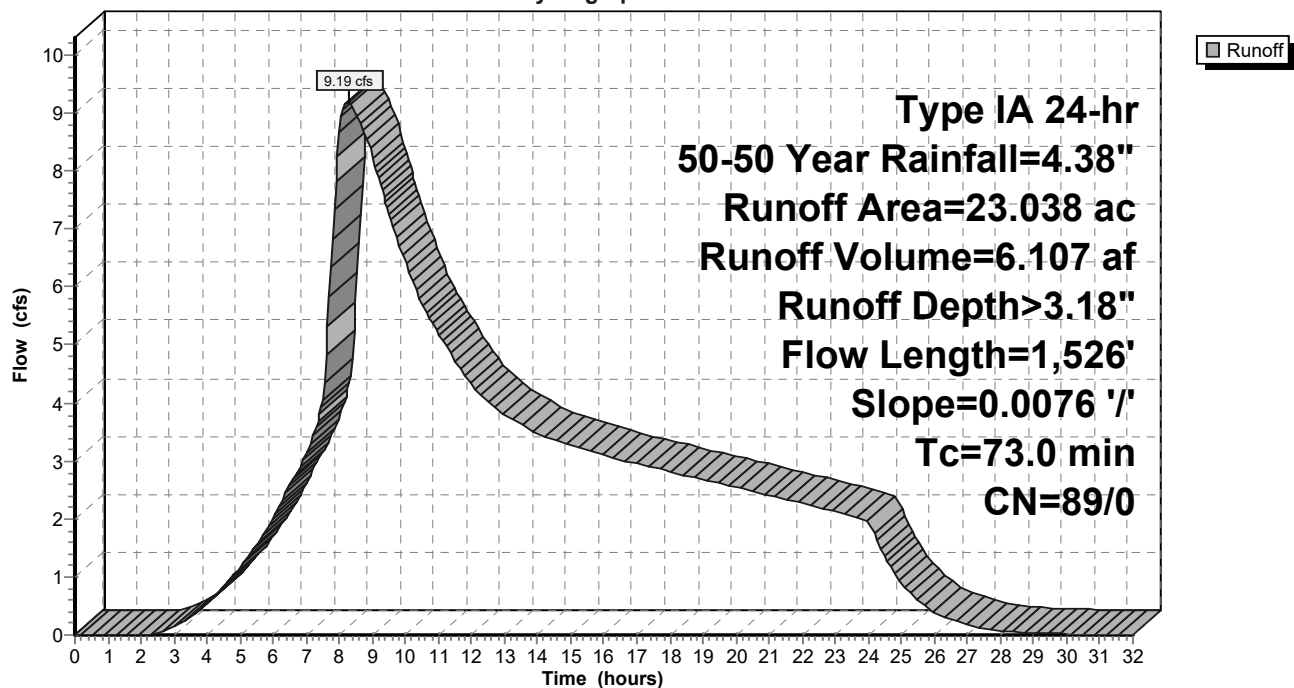
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 50-50 Year Rainfall=4.38"

Area (ac)	CN	Description
23.038	89	Pasture/grassland/range, Poor, HSG D
23.038	89	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
39.5	300	0.0076	0.13		Sheet Flow, Grass: Short n= 0.150 P2= 2.47"
33.5	1,226	0.0076	0.61		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
73.0	1,526	Total			

Subcatchment 65S: Single Pond Existing Conditions

Hydrograph



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Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Subcatchment 67S: Home Basin 19

Runoff = 0.35 cfs @ 7.98 hrs, Volume= 0.118 af, Depth= 3.59"
 Routed to Reach 159R : 1

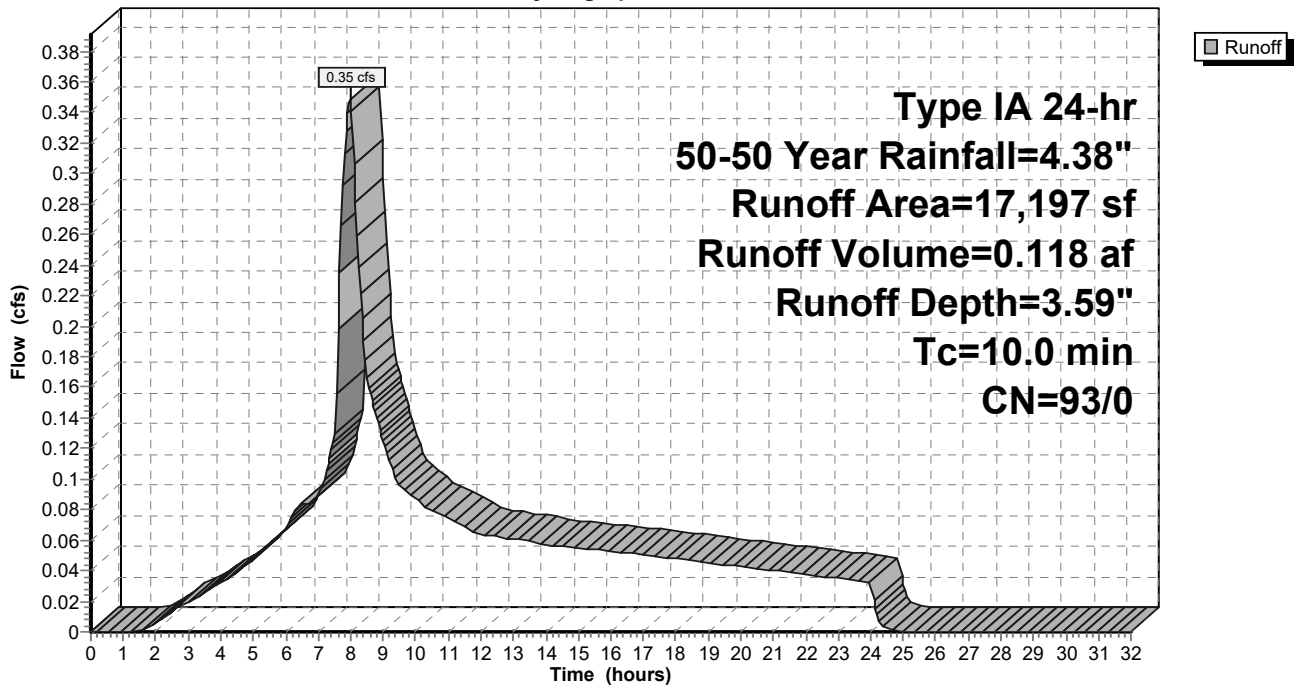
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 50-50 Year Rainfall=4.38"

Area (sf)	CN	Description
* 17,197	93	70% Lot Coverage Weighted
17,197	93	100.00% Pervious Area

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

Subcatchment 67S: Home Basin 19

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Subcatchment 68S: Home Basin 12

Runoff = 0.37 cfs @ 7.98 hrs, Volume= 0.125 af, Depth= 3.59"
 Routed to Reach 160R : 1

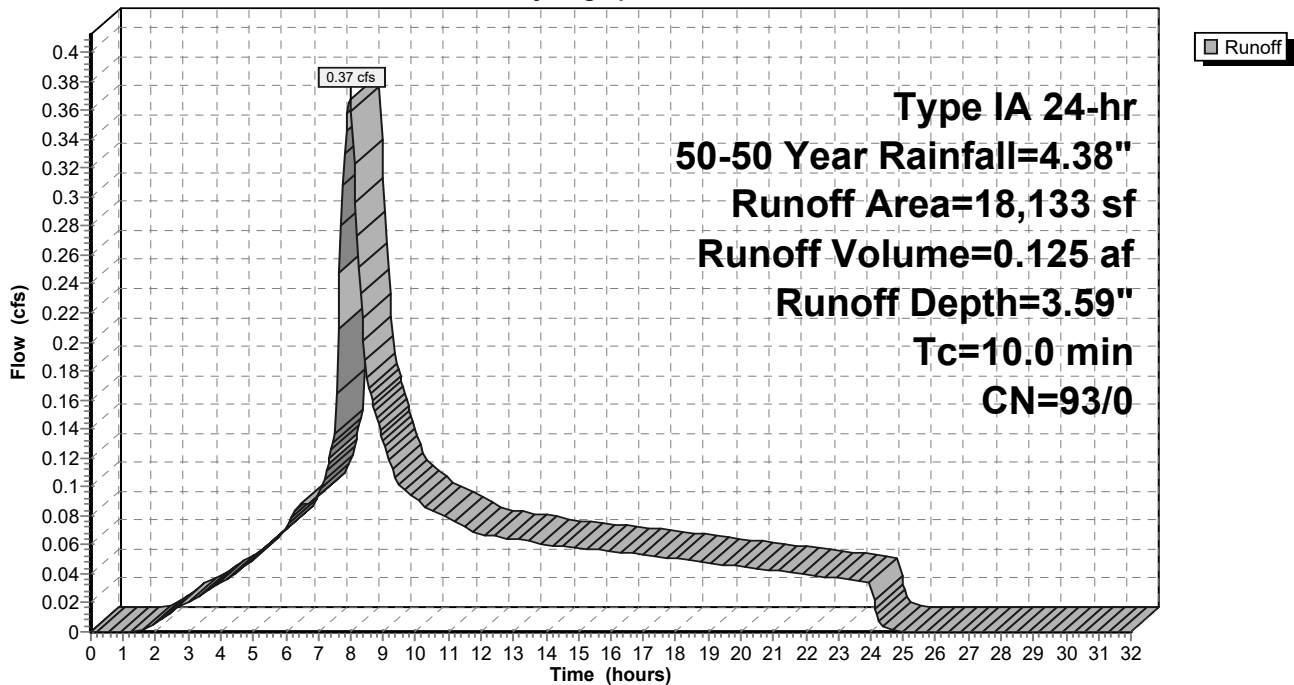
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 50-50 Year Rainfall=4.38"

Area (sf)	CN	Description
* 18,133	93	70% Lot Coverage Weighted
18,133	93	100.00% Pervious Area

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

Subcatchment 68S: Home Basin 12

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Subcatchment 69S: Home Basin 17

Runoff = 0.34 cfs @ 7.98 hrs, Volume= 0.114 af, Depth= 3.59"
 Routed to Reach 151R : 1

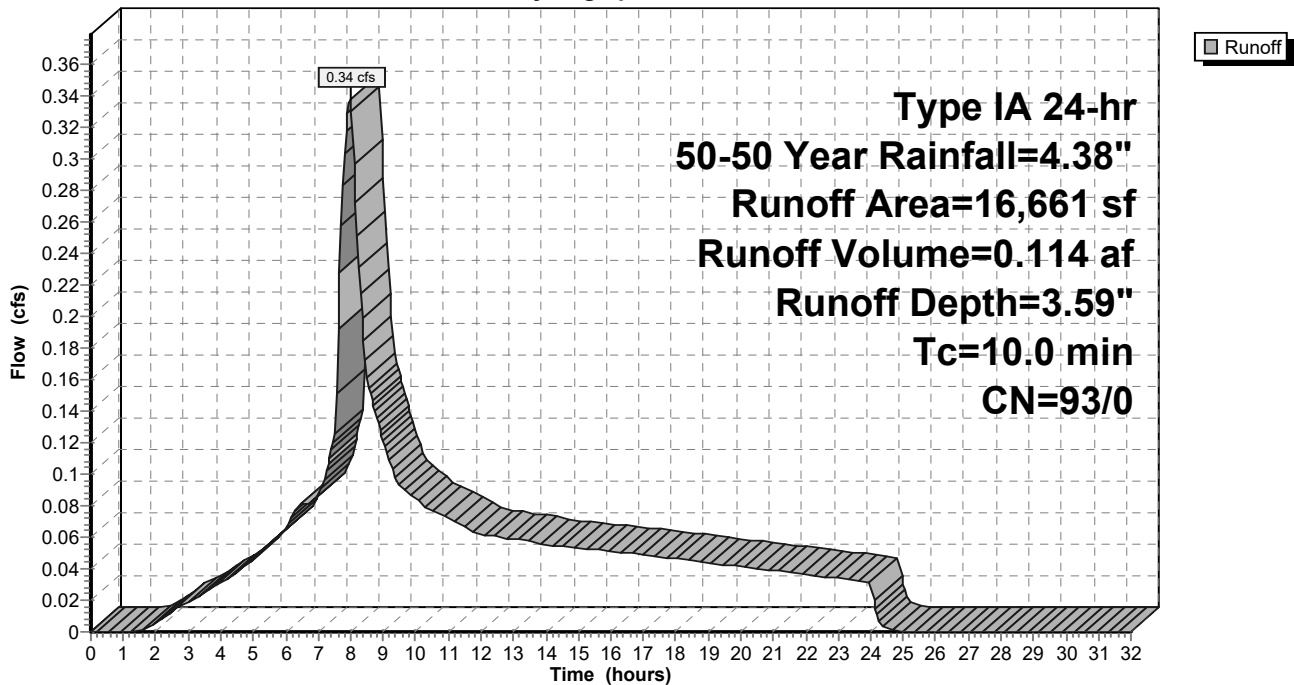
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 50-50 Year Rainfall=4.38"

Area (sf)	CN	Description
* 16,661	93	70% Lot Coverage Weighted
16,661	93	100.00% Pervious Area

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

Subcatchment 69S: Home Basin 17

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Subcatchment 70S: Home Basin 18

Runoff = 0.24 cfs @ 7.98 hrs, Volume= 0.080 af, Depth= 3.59"
 Routed to Reach 149R : 1

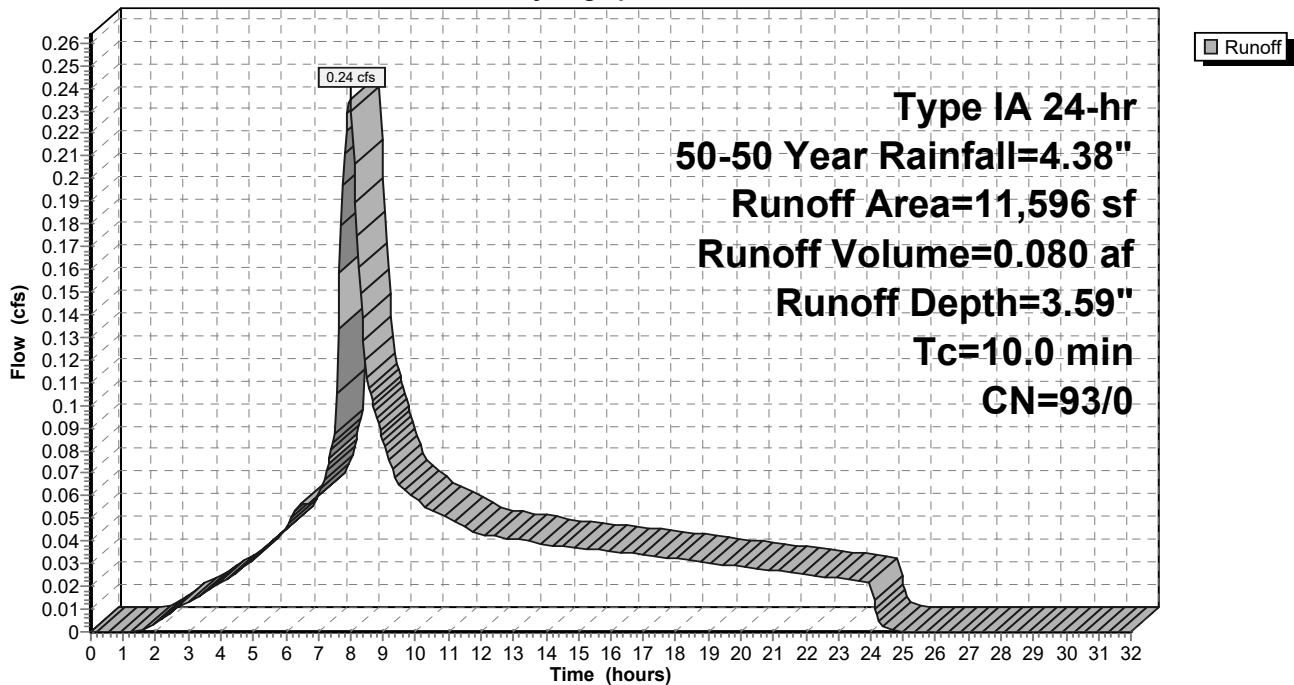
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 50-50 Year Rainfall=4.38"

Area (sf)	CN	Description
* 11,596	93	70% Lot Coverage Weighted
11,596	93	100.00% Pervious Area

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

Subcatchment 70S: Home Basin 18

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Subcatchment 71S: Home Basin 14

Runoff = 0.33 cfs @ 7.98 hrs, Volume= 0.113 af, Depth= 3.59"
 Routed to Reach 148R : 1

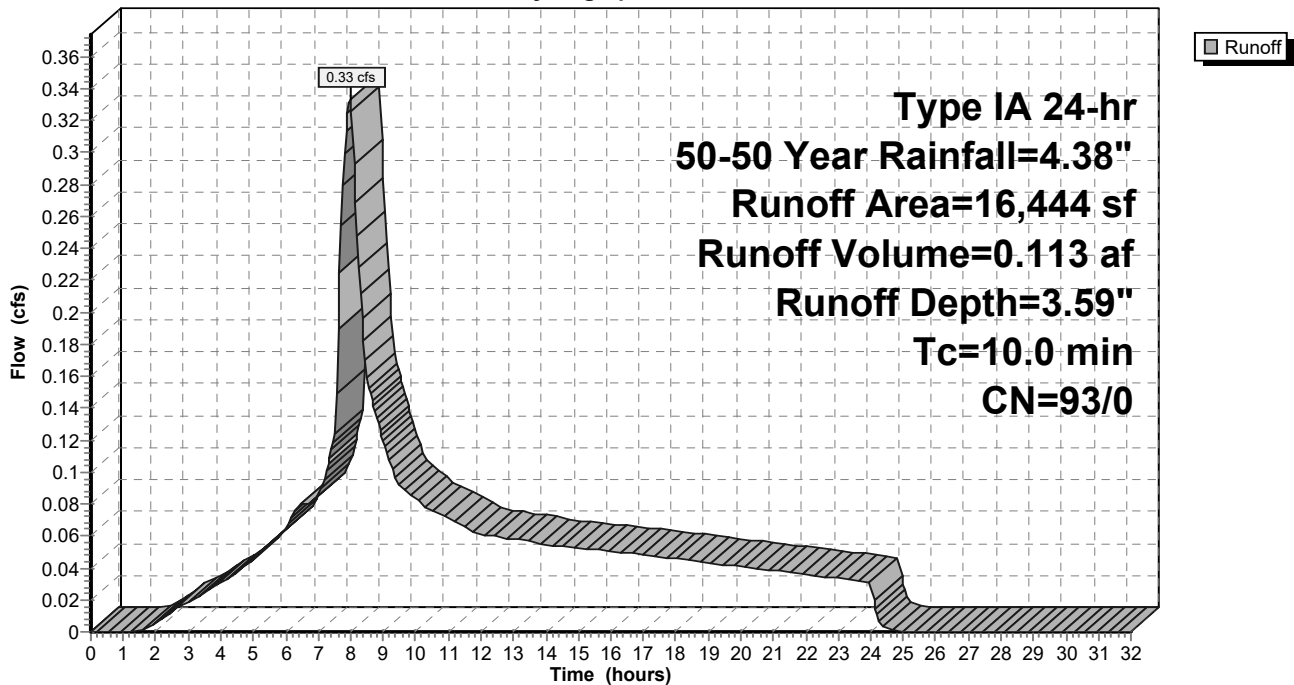
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 50-50 Year Rainfall=4.38"

Area (sf)	CN	Description
* 16,444	93	70% Lot Coverage Weighted
16,444	93	100.00% Pervious Area

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

Subcatchment 71S: Home Basin 14

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Subcatchment 72S: Home Basin 16

Runoff = 0.41 cfs @ 7.98 hrs, Volume= 0.140 af, Depth= 3.59"
 Routed to Reach 150R : 1

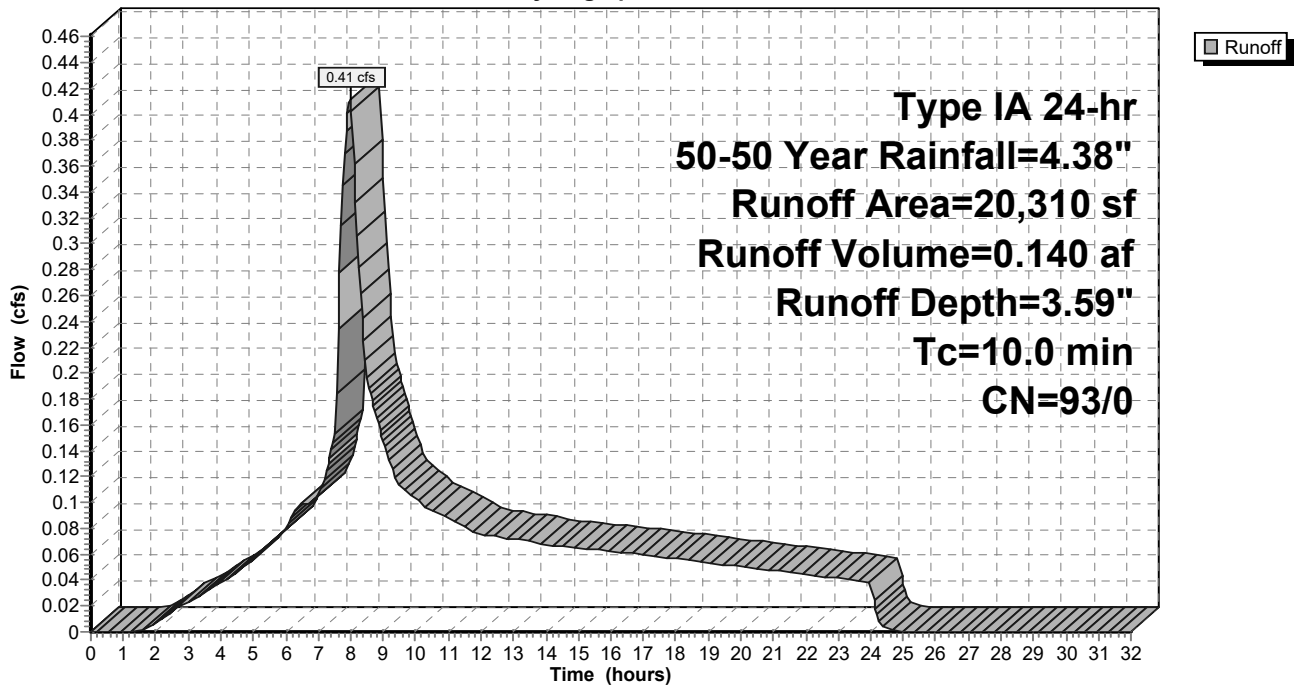
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 50-50 Year Rainfall=4.38"

Area (sf)	CN	Description
* 20,310	93	70% Lot Coverage Weighted
20,310	93	100.00% Pervious Area

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

Subcatchment 72S: Home Basin 16

Hydrograph



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Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Subcatchment 73S: Home Basin 13

Runoff = 0.22 cfs @ 7.98 hrs, Volume= 0.074 af, Depth= 3.59"
 Routed to Reach 155R : 1

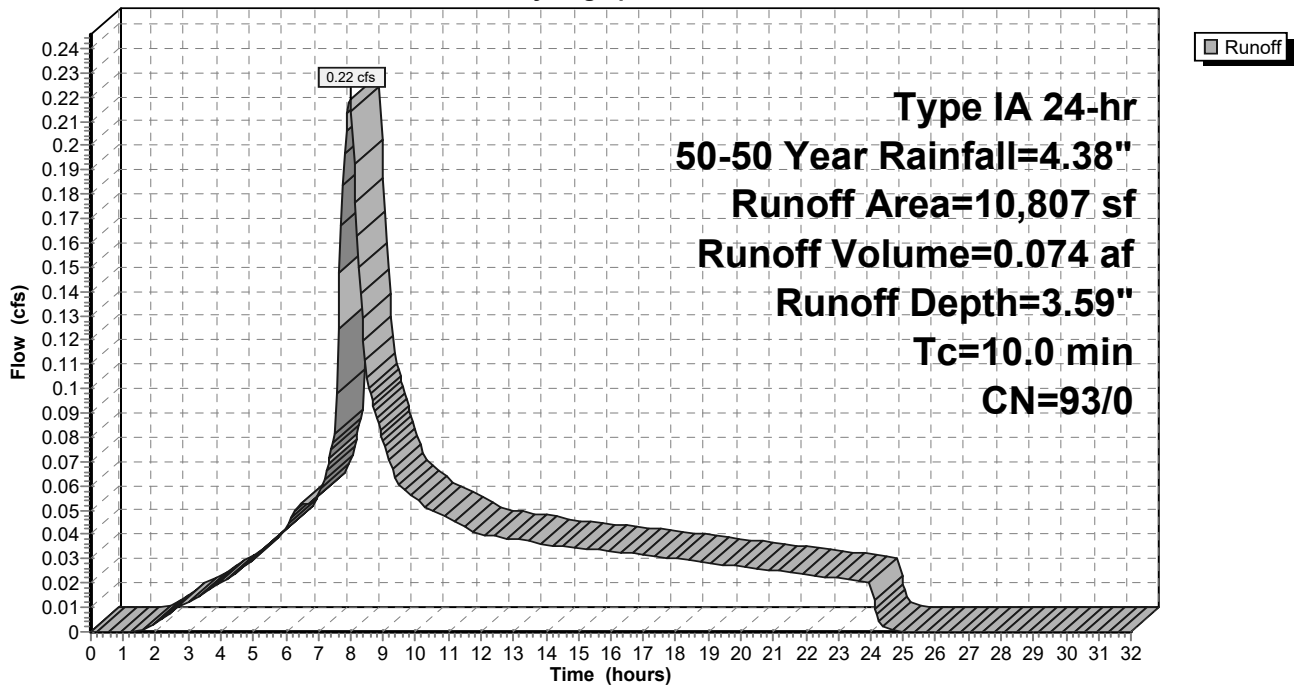
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 50-50 Year Rainfall=4.38"

Area (sf)	CN	Description
* 10,807	93	70% Lot Coverage Weighted
10,807	93	100.00% Pervious Area

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

Subcatchment 73S: Home Basin 13

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Subcatchment 74S: Swale Existing Conditions

Runoff = 0.13 cfs @ 7.99 hrs, Volume= 0.045 af, Depth= 3.18"
 Routed to Reach 42R : Pre-Construction Peak Flow

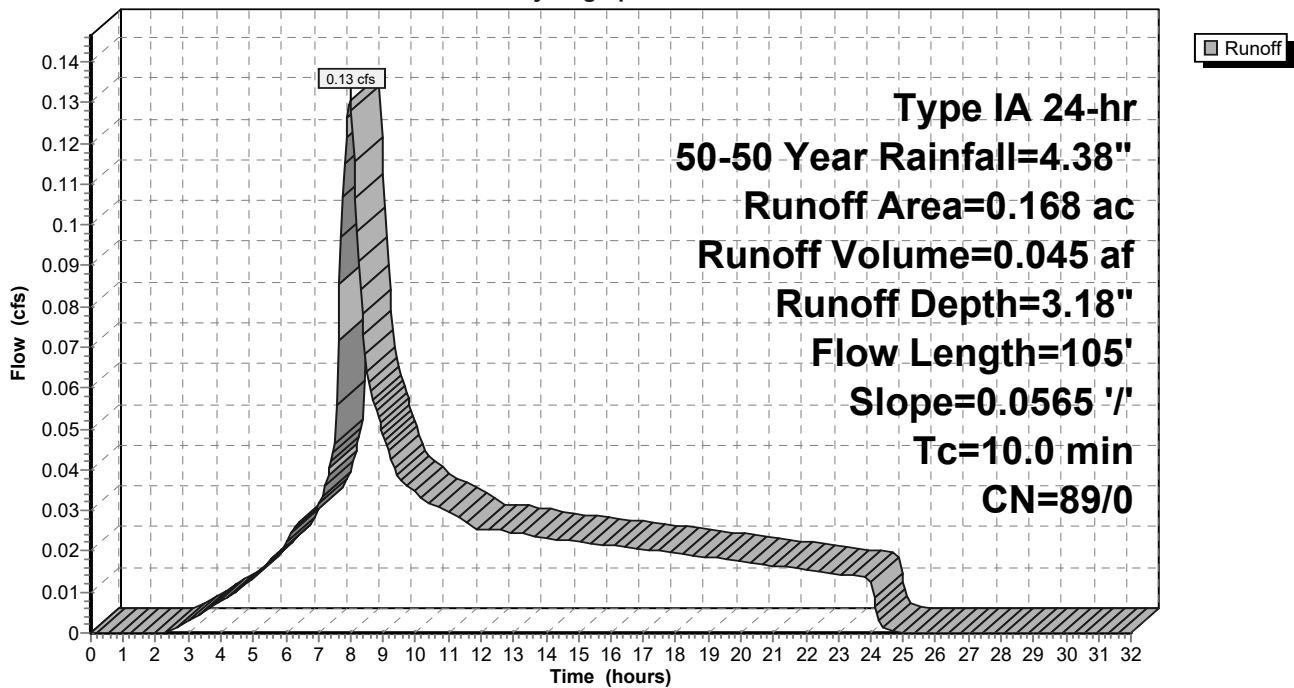
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 50-50 Year Rainfall=4.38"

Area (ac)	CN	Description
0.168	89	Pasture/grassland/range, Poor, HSG D
0.168	89	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.7	105	0.0565	0.23		Sheet Flow, Grass: Short n= 0.150 P2= 2.47"
7.7	105	Total, Increased to minimum Tc = 10.0 min			

Subcatchment 74S: Swale Existing Conditions

Hydrograph



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Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Subcatchment 75S: Home Basin 11

Runoff = 0.38 cfs @ 7.98 hrs, Volume= 0.127 af, Depth= 3.59"
 Routed to Reach 160R : 1

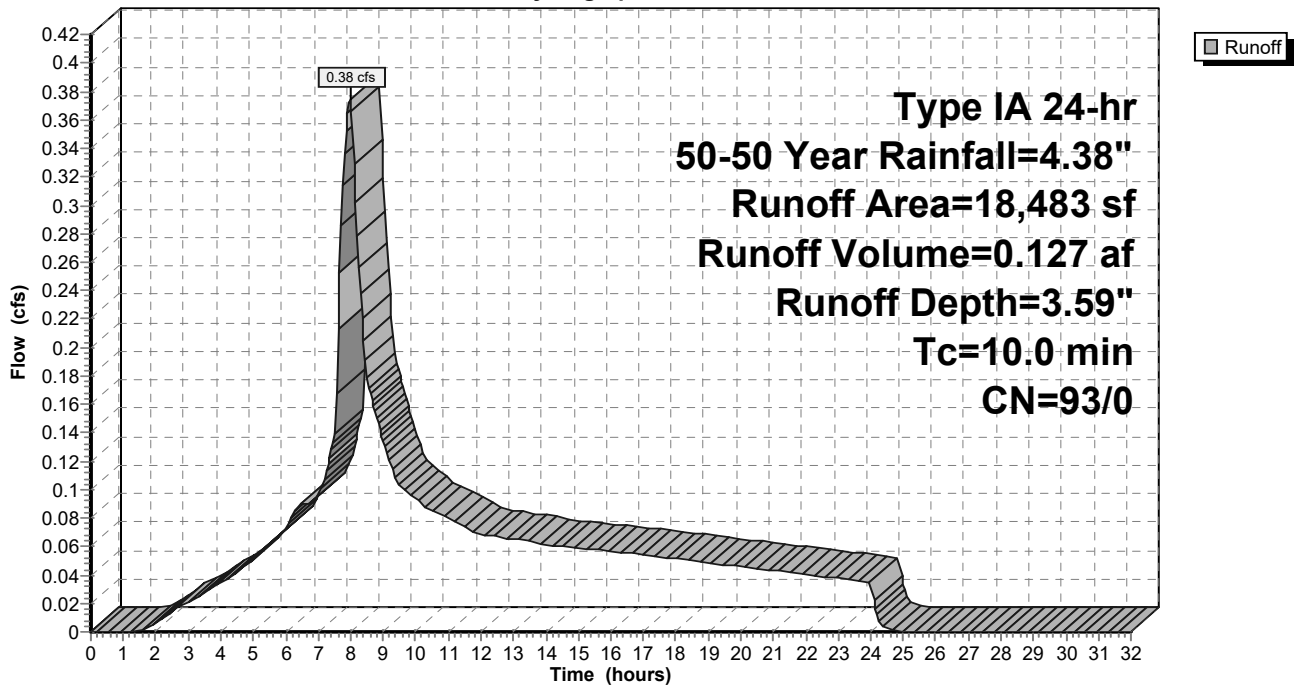
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 50-50 Year Rainfall=4.38"

Area (sf)	CN	Description
* 18,483	93	70% Lot Coverage Weighted
18,483	93	100.00% Pervious Area

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

Subcatchment 75S: Home Basin 11

Hydrograph



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Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Subcatchment 77S: Home Basin 15

Runoff = 0.25 cfs @ 7.98 hrs, Volume= 0.086 af, Depth= 3.59"
 Routed to Reach 149R : 1

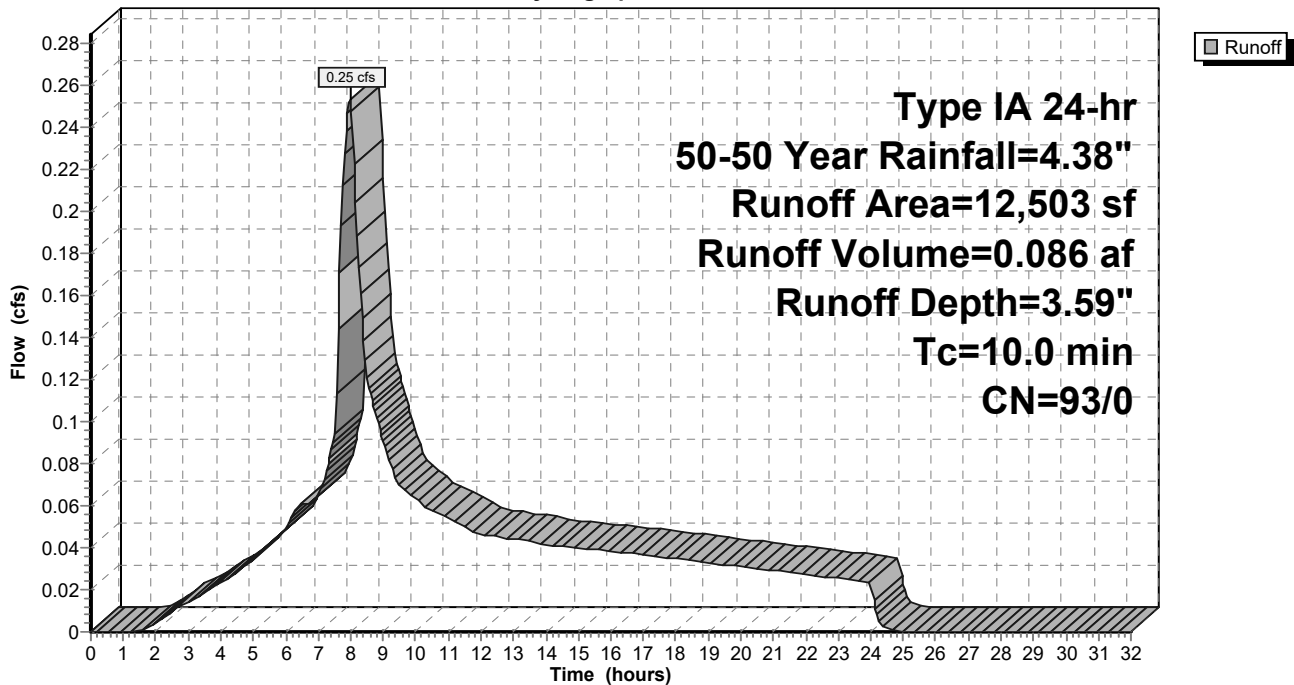
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 50-50 Year Rainfall=4.38"

Area (sf)	CN	Description
* 12,503	93	70% Lot Coverage Weighted
12,503	93	100.00% Pervious Area

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

Subcatchment 77S: Home Basin 15

Hydrograph



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Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Subcatchment 78S: Single Pond

[46] Hint: Tc=0 (Instant runoff peak depends on dt)

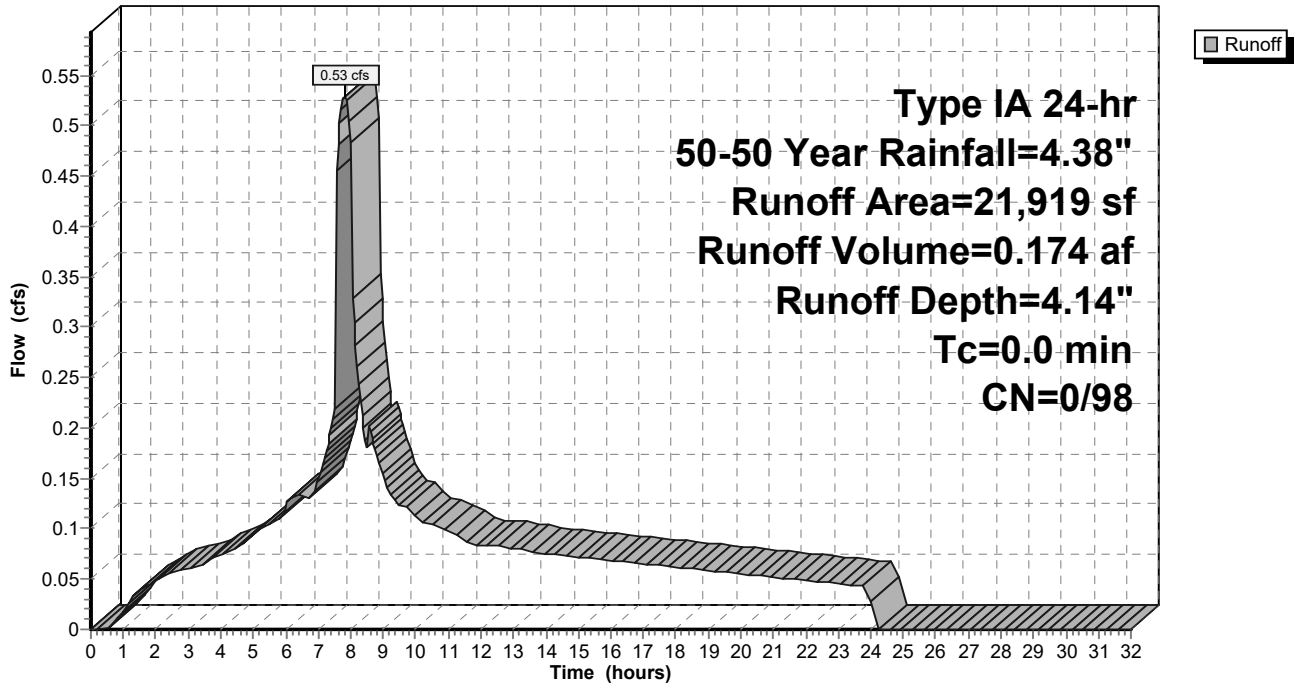
Runoff = 0.53 cfs @ 7.80 hrs, Volume= 0.174 af, Depth= 4.14"
 Routed to Pond 63P : Detention Pond

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 50-50 Year Rainfall=4.38"

Area (sf)	CN	Description
21,919	98	Water Surface, HSG D
21,919	98	100.00% Impervious Area

Subcatchment 78S: Single Pond

Hydrograph



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Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Subcatchment 79S: Home Basin 30

Runoff = 0.78 cfs @ 7.98 hrs, Volume= 0.264 af, Depth= 3.59"
 Routed to Reach 132R : 1

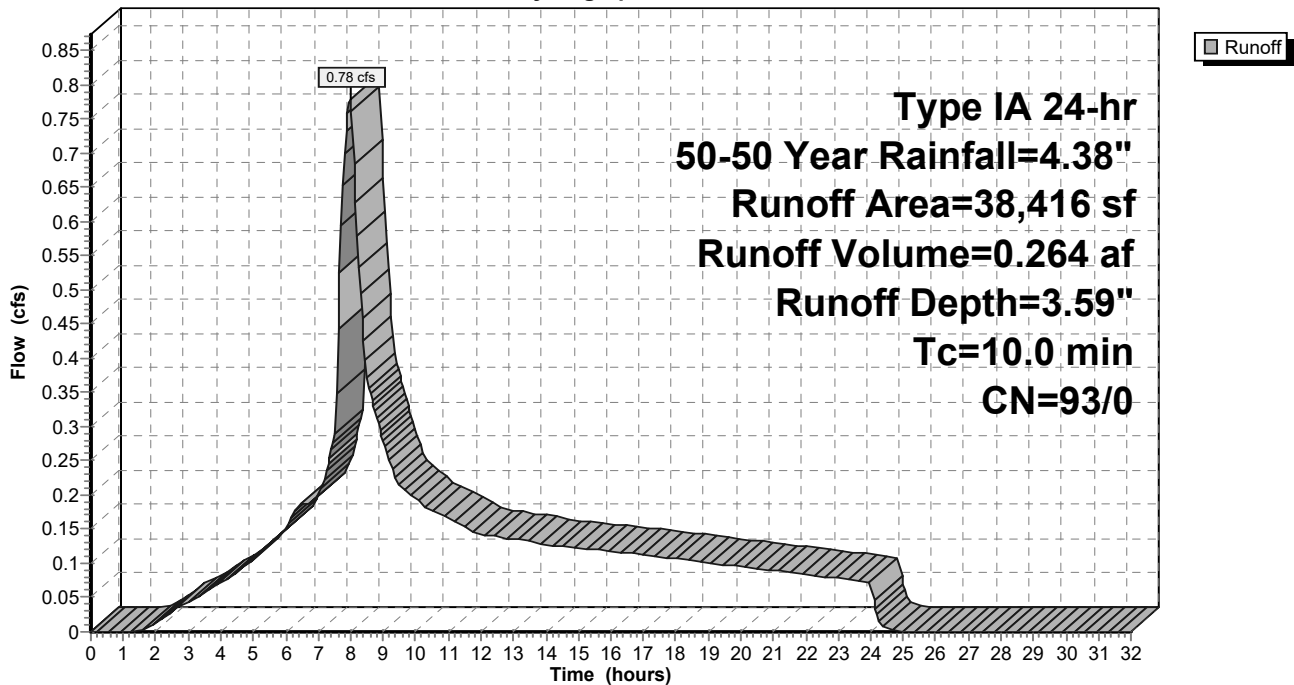
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 50-50 Year Rainfall=4.38"

Area (sf)	CN	Description
* 38,416	93	70% Lot Coverage Weighted
38,416	93	100.00% Pervious Area

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

Subcatchment 79S: Home Basin 30

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Subcatchment 80S: Home Basin 10

Runoff = 0.30 cfs @ 7.98 hrs, Volume= 0.102 af, Depth= 3.59"
 Routed to Reach 165R : 1

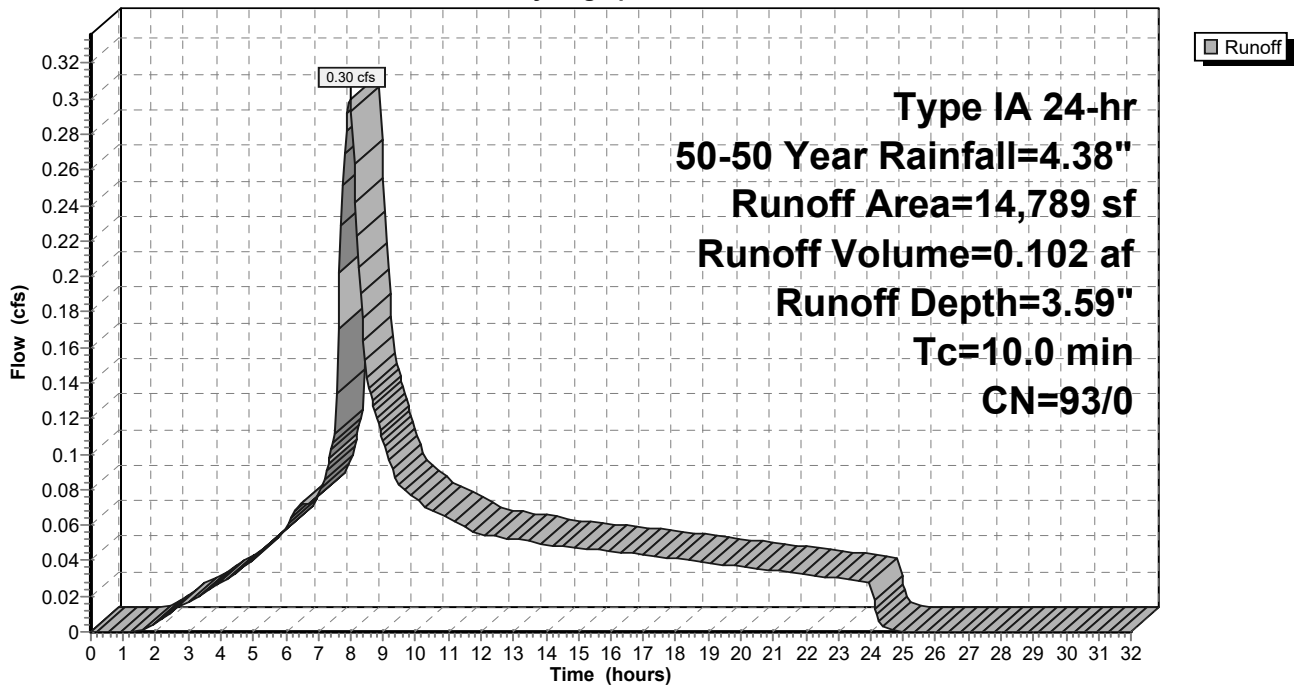
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 50-50 Year Rainfall=4.38"

Area (sf)	CN	Description
* 14,789	93	70% Lot Coverage Weighted
14,789	93	100.00% Pervious Area

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

Subcatchment 80S: Home Basin 10

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Subcatchment 81S: Home Basin 9

Runoff = 0.32 cfs @ 7.98 hrs, Volume= 0.107 af, Depth= 3.59"
 Routed to Reach 163R : 1

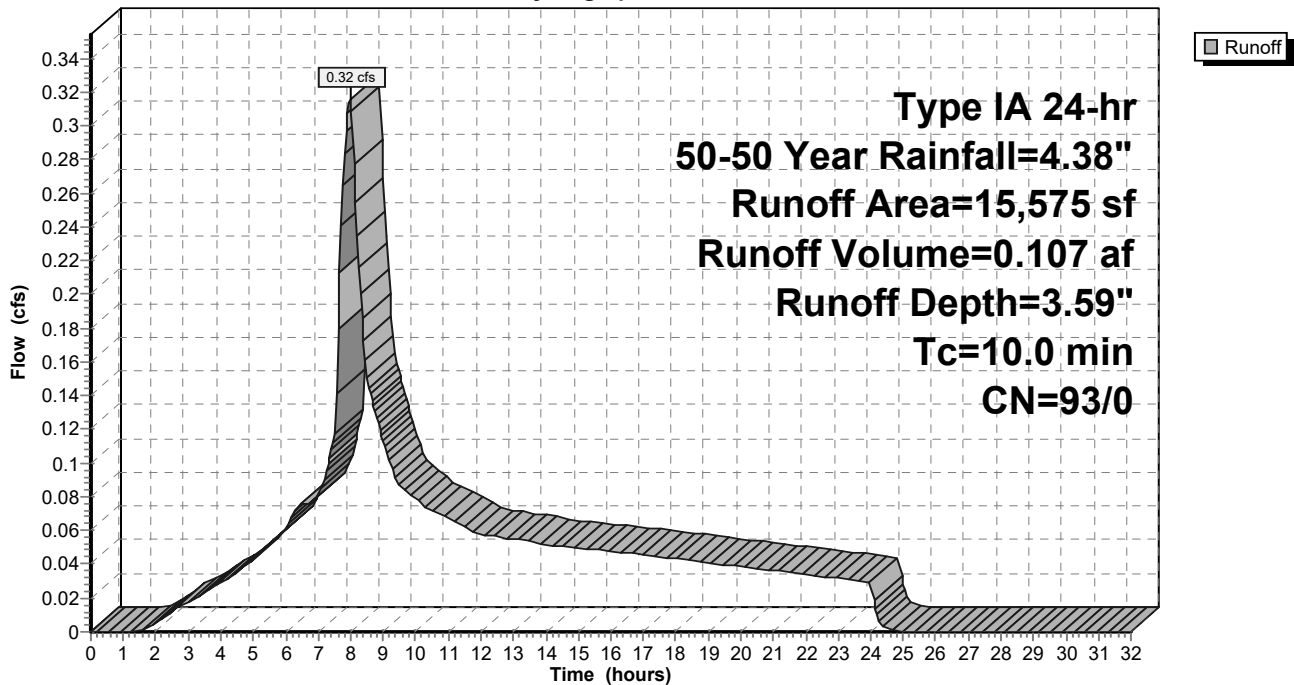
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 50-50 Year Rainfall=4.38"

Area (sf)	CN	Description
* 15,575	93	70% Lot Coverage Weighted
15,575	93	100.00% Pervious Area

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

Subcatchment 81S: Home Basin 9

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Subcatchment 82S: Home Basin 2

Runoff = 0.42 cfs @ 7.98 hrs, Volume= 0.142 af, Depth= 3.59"
 Routed to Reach 145R : 1

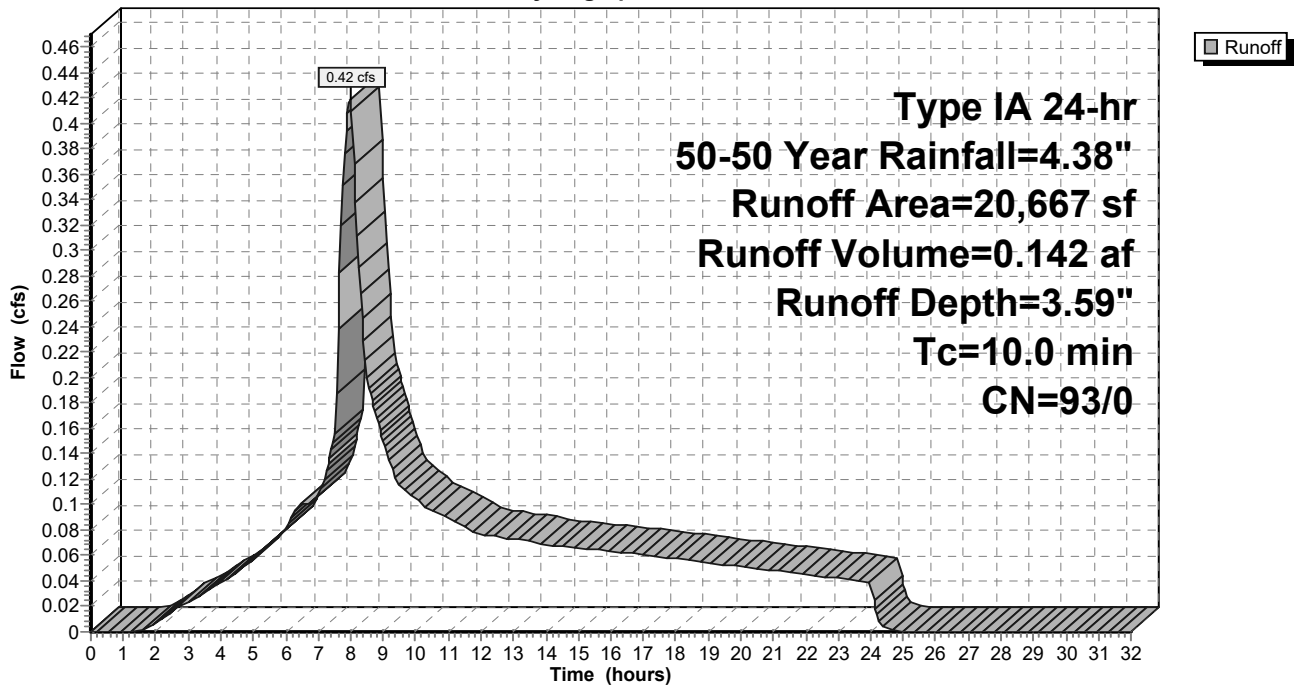
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 50-50 Year Rainfall=4.38"

Area (sf)	CN	Description
* 20,667	93	70% Lot Coverage Weighted
20,667	93	100.00% Pervious Area

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

Subcatchment 82S: Home Basin 2

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Subcatchment 83S: Home Basin 7

Runoff = 0.35 cfs @ 7.98 hrs, Volume= 0.117 af, Depth= 3.59"
 Routed to Reach 154R : 1

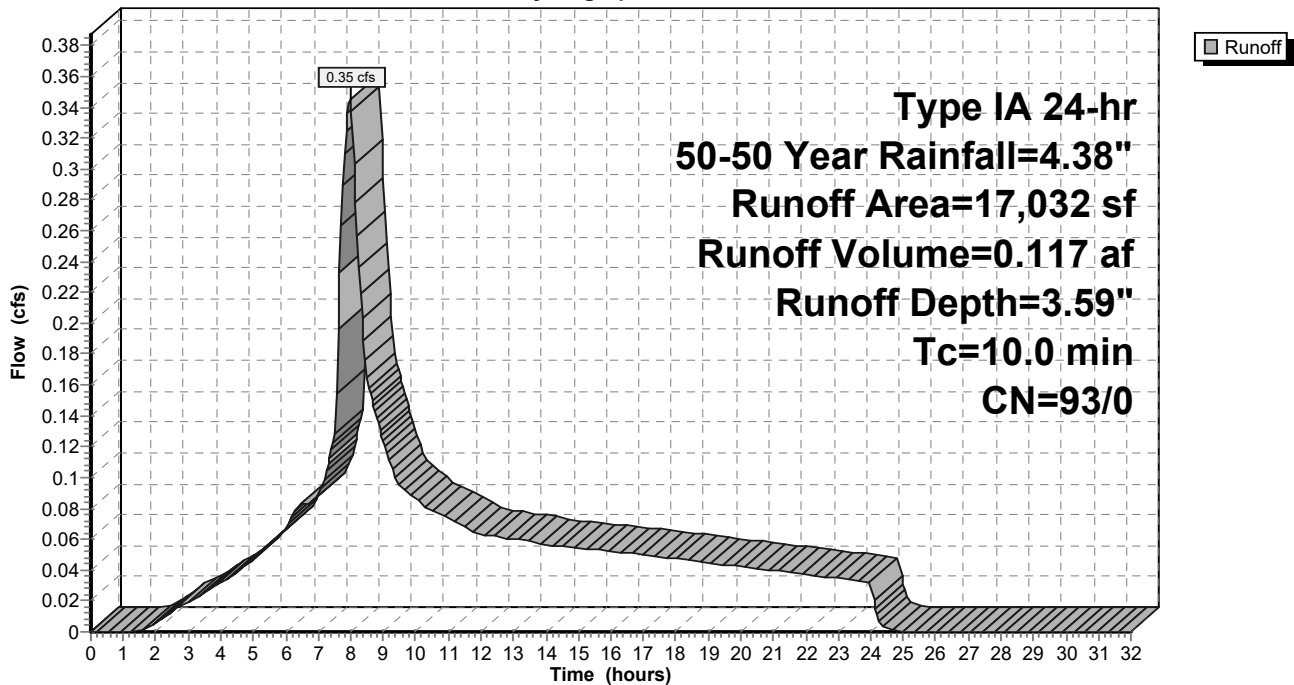
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 50-50 Year Rainfall=4.38"

Area (sf)	CN	Description
* 17,032	93	70% Lot Coverage Weighted
17,032	93	100.00% Pervious Area

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

Subcatchment 83S: Home Basin 7

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Subcatchment 84S: Home Basin 8

Runoff = 0.24 cfs @ 7.98 hrs, Volume= 0.080 af, Depth= 3.59"
 Routed to Reach 155R : 1

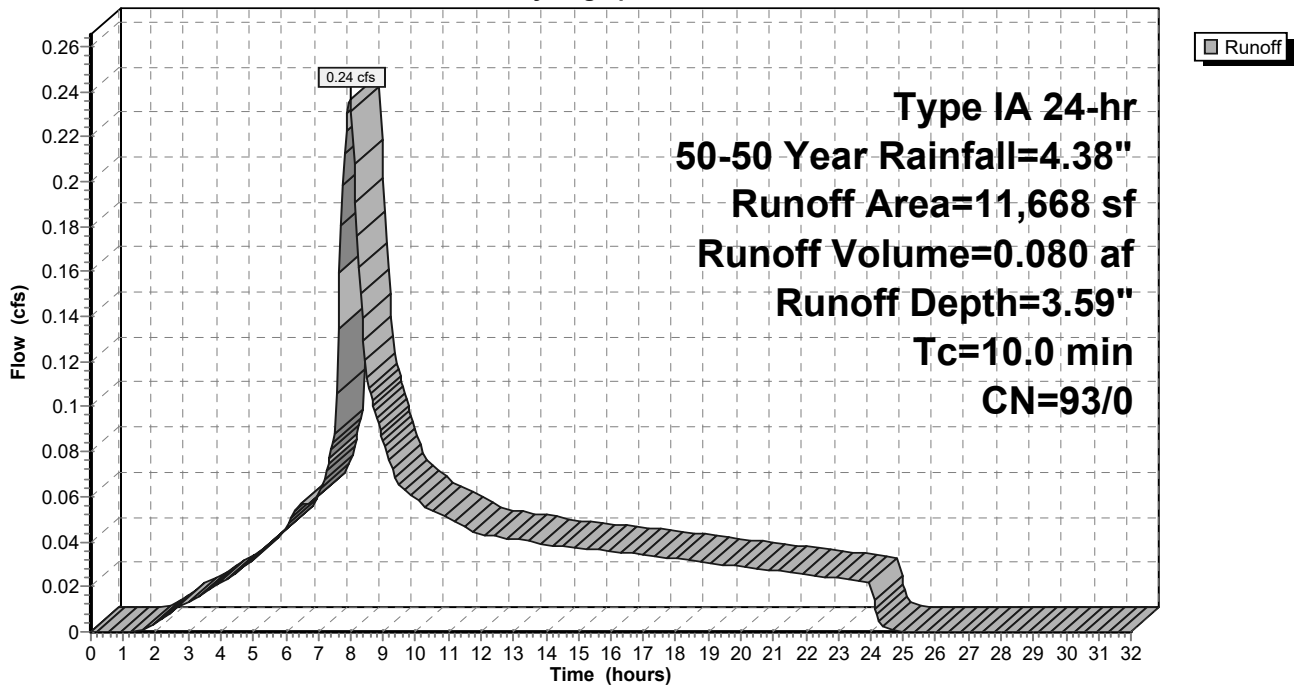
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 50-50 Year Rainfall=4.38"

Area (sf)	CN	Description
* 11,668	93	70% Lot Coverage Weighted
11,668	93	100.00% Pervious Area

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

Subcatchment 84S: Home Basin 8

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Subcatchment 85S: Home Basin 29

Runoff = 0.51 cfs @ 7.98 hrs, Volume= 0.173 af, Depth= 3.59"
 Routed to Reach 132R : 1

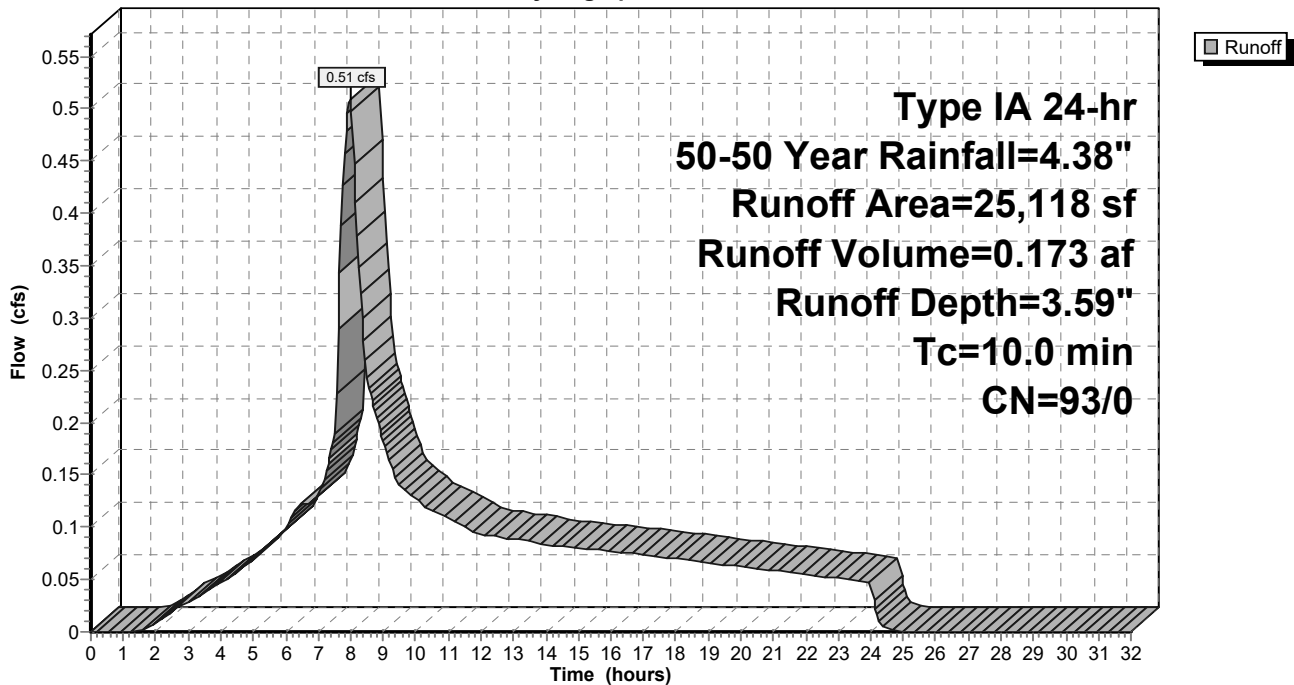
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 50-50 Year Rainfall=4.38"

Area (sf)	CN	Description
* 25,118	93	70% Lot Coverage Weighted
25,118	93	100.00% Pervious Area

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

Subcatchment 85S: Home Basin 29

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Subcatchment 86S: Home Basin 22

Runoff = 0.33 cfs @ 7.98 hrs, Volume= 0.111 af, Depth= 3.59"
 Routed to Reach 145R : 1

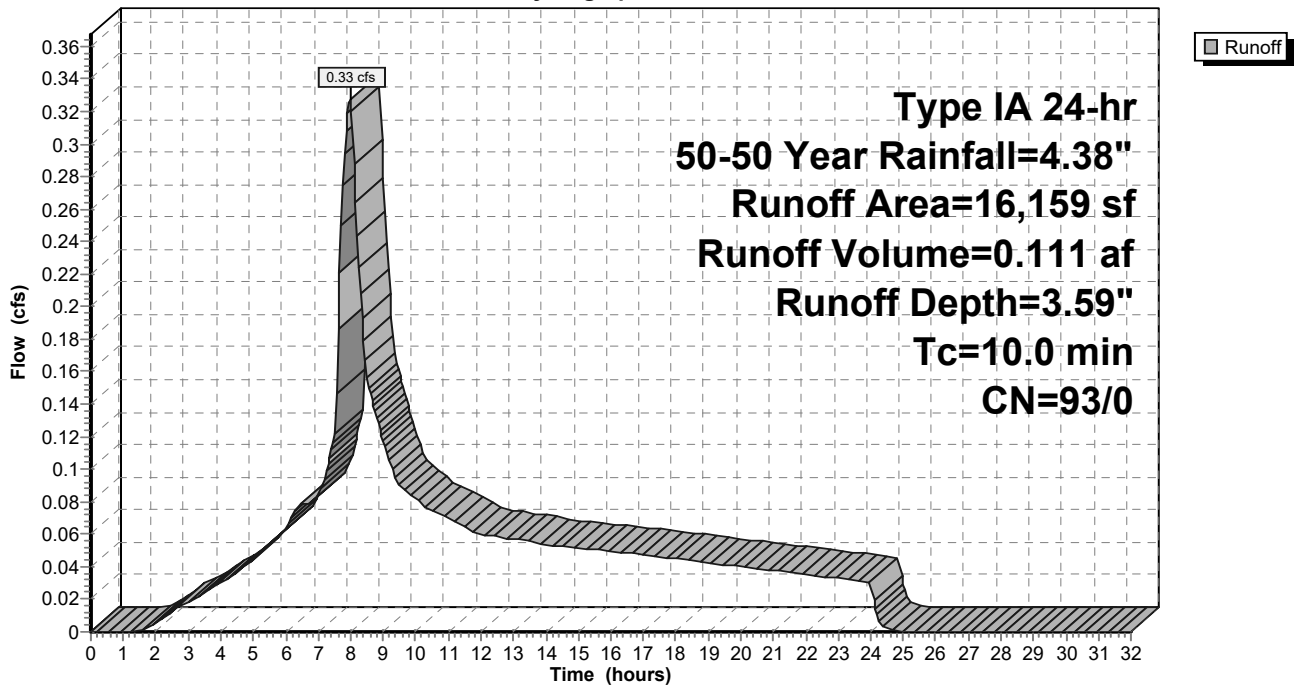
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 50-50 Year Rainfall=4.38"

Area (sf)	CN	Description
* 16,159	93	70% Lot Coverage Weighted
16,159	93	100.00% Pervious Area

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

Subcatchment 86S: Home Basin 22

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Subcatchment 87S: Home Basin 27

Runoff = 0.50 cfs @ 7.98 hrs, Volume= 0.171 af, Depth= 3.59"
 Routed to Reach 135R : 1

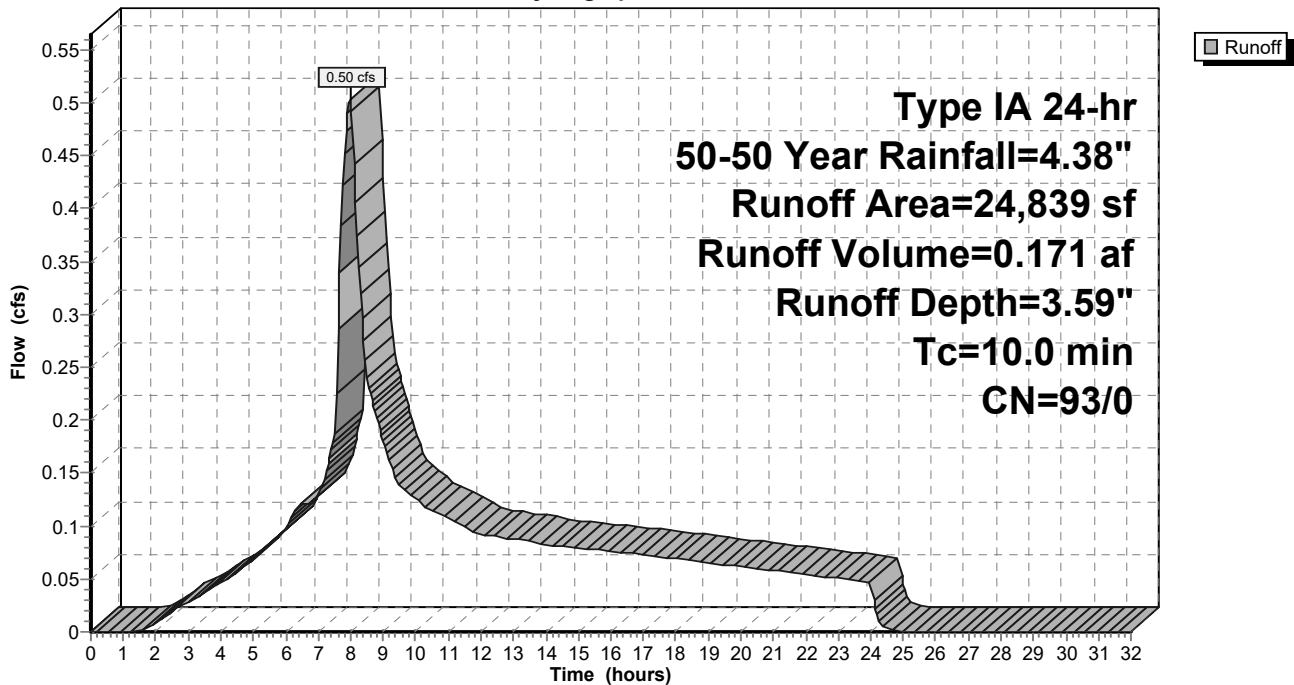
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 50-50 Year Rainfall=4.38"

Area (sf)	CN	Description
* 24,839	93	70% Lot Coverage Weighted
24,839	93	100.00% Pervious Area

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

Subcatchment 87S: Home Basin 27

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Subcatchment 88S: Home Basin 28

Runoff = 0.51 cfs @ 7.98 hrs, Volume= 0.174 af, Depth= 3.59"
 Routed to Reach 131R : 1

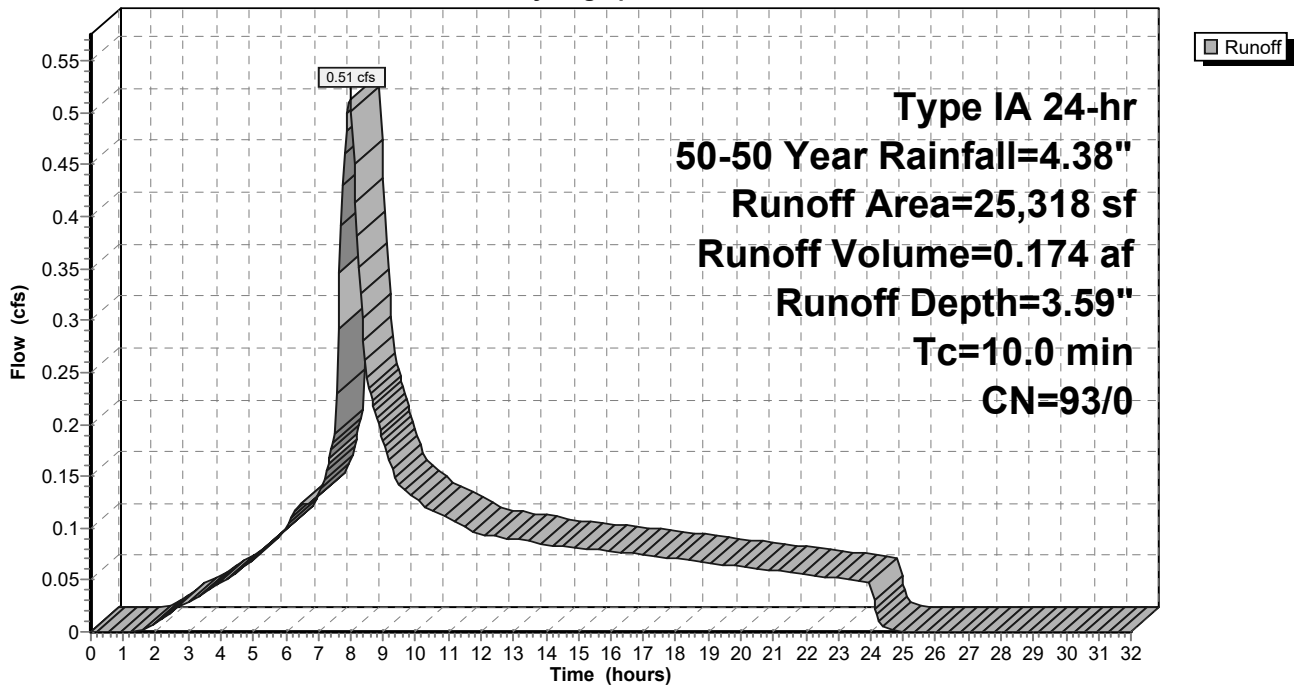
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 50-50 Year Rainfall=4.38"

Area (sf)	CN	Description
* 25,318	93	70% Lot Coverage Weighted
25,318	93	100.00% Pervious Area

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

Subcatchment 88S: Home Basin 28

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Subcatchment 89S: Home Basin 24

Runoff = 0.42 cfs @ 7.98 hrs, Volume= 0.142 af, Depth= 3.59"
 Routed to Reach 135R : 1

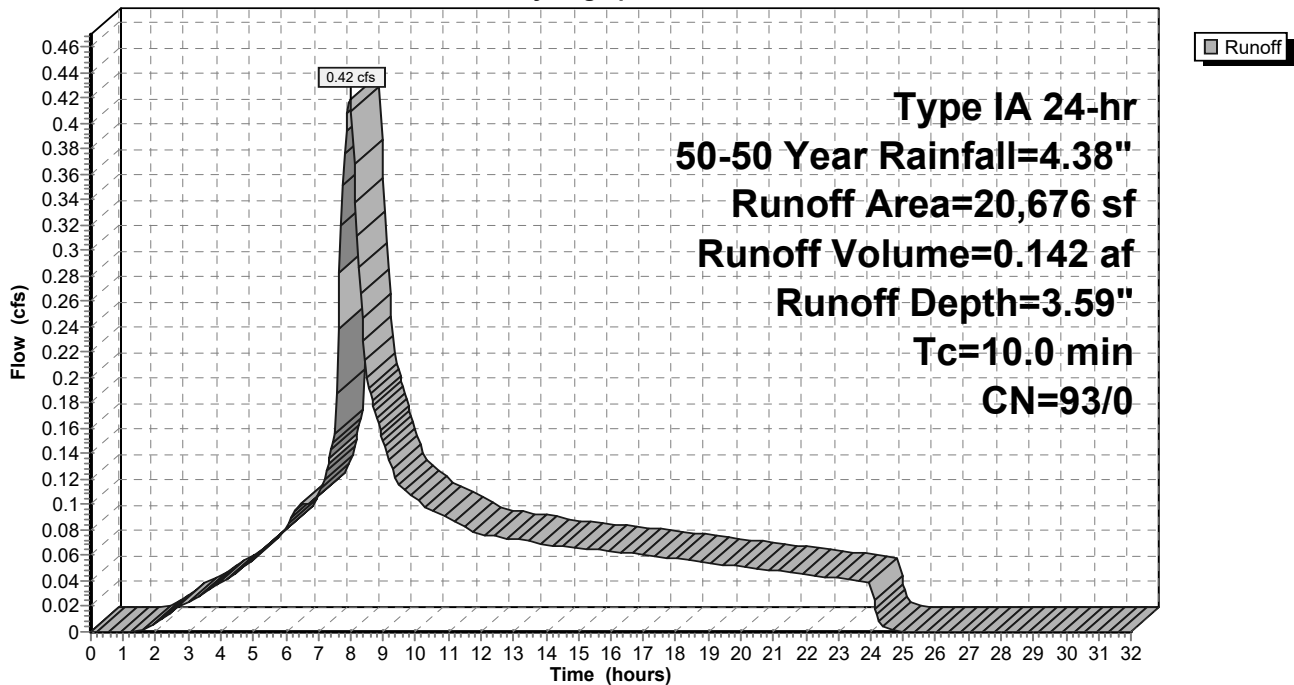
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 50-50 Year Rainfall=4.38"

Area (sf)	CN	Description
* 20,676	93	70% Lot Coverage Weighted
20,676	93	100.00% Pervious Area

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

Subcatchment 89S: Home Basin 24

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Subcatchment 90S: Home Basin 26

Runoff = 0.29 cfs @ 7.98 hrs, Volume= 0.097 af, Depth= 3.59"
 Routed to Reach 136R : 1

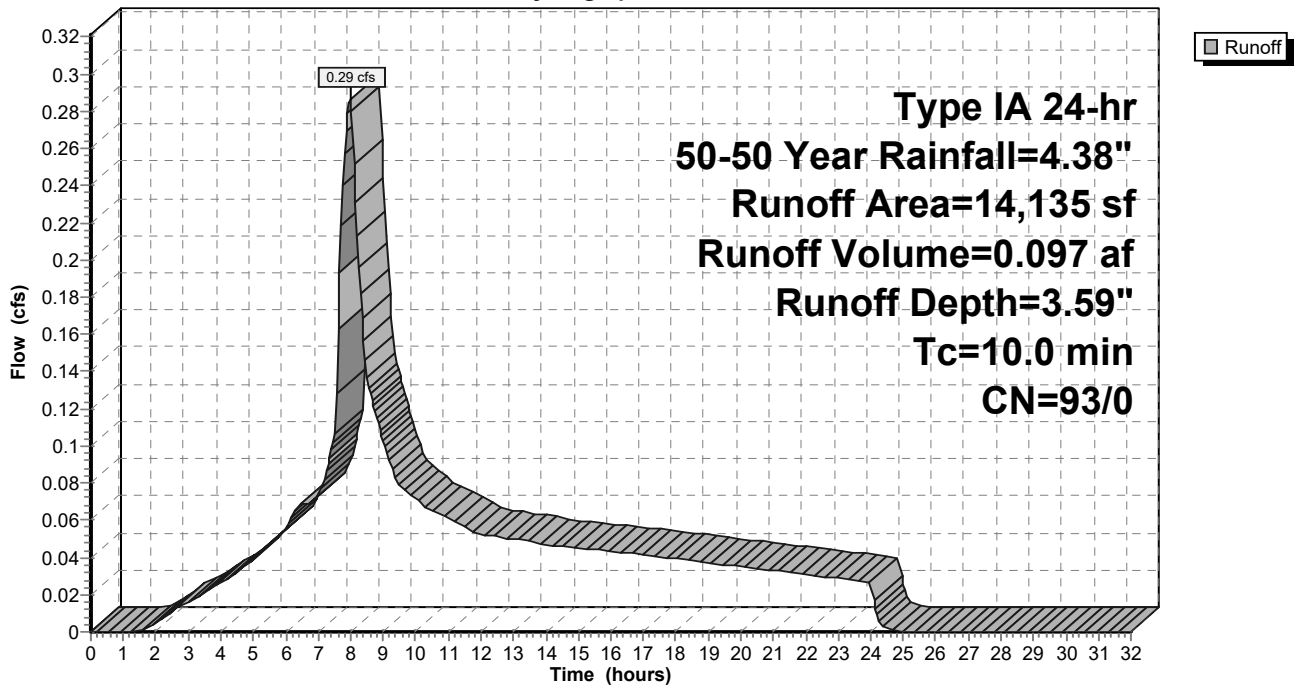
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 50-50 Year Rainfall=4.38"

Area (sf)	CN	Description
* 14,135	93	70% Lot Coverage Weighted
14,135	93	100.00% Pervious Area

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

Subcatchment 90S: Home Basin 26

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Subcatchment 91S: Home Basin 23

Runoff = 0.25 cfs @ 7.98 hrs, Volume= 0.084 af, Depth= 3.59"
 Routed to Reach 143R : 1

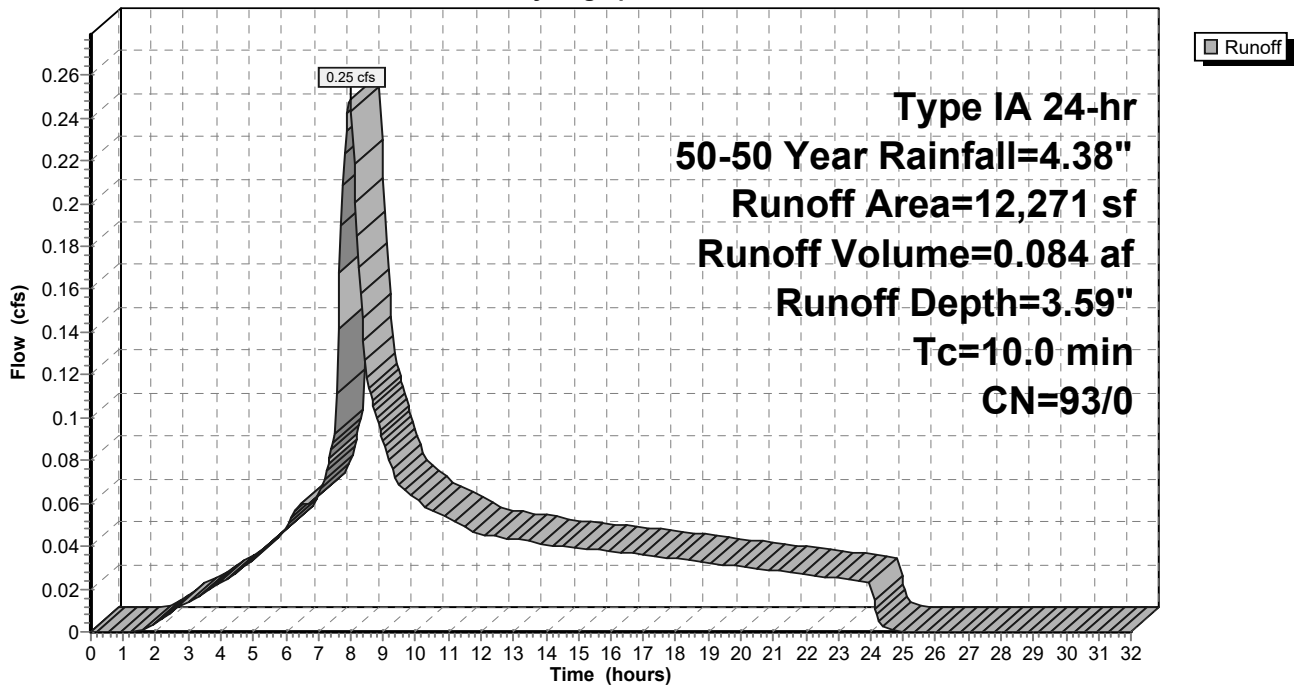
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 50-50 Year Rainfall=4.38"

Area (sf)	CN	Description
* 12,271	93	70% Lot Coverage Weighted
12,271	93	100.00% Pervious Area

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

Subcatchment 91S: Home Basin 23

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Subcatchment 92S: Home Basin 21

Runoff = 0.55 cfs @ 7.98 hrs, Volume= 0.186 af, Depth= 3.59"
 Routed to Reach 145R : 1

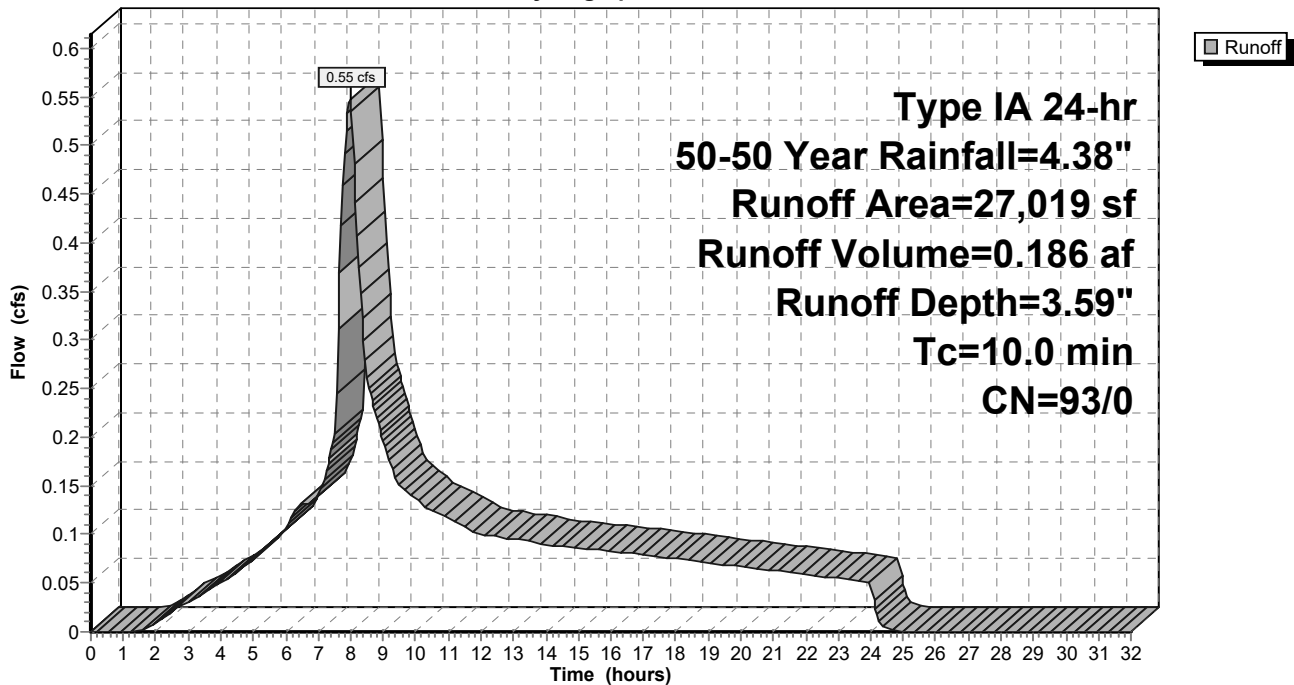
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 50-50 Year Rainfall=4.38"

Area (sf)	CN	Description
* 27,019	93	70% Lot Coverage Weighted
27,019	93	100.00% Pervious Area

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

Subcatchment 92S: Home Basin 21

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Subcatchment 93S: Home Basin 25

Runoff = 0.35 cfs @ 7.98 hrs, Volume= 0.117 af, Depth= 3.59"
 Routed to Reach 136R : 1

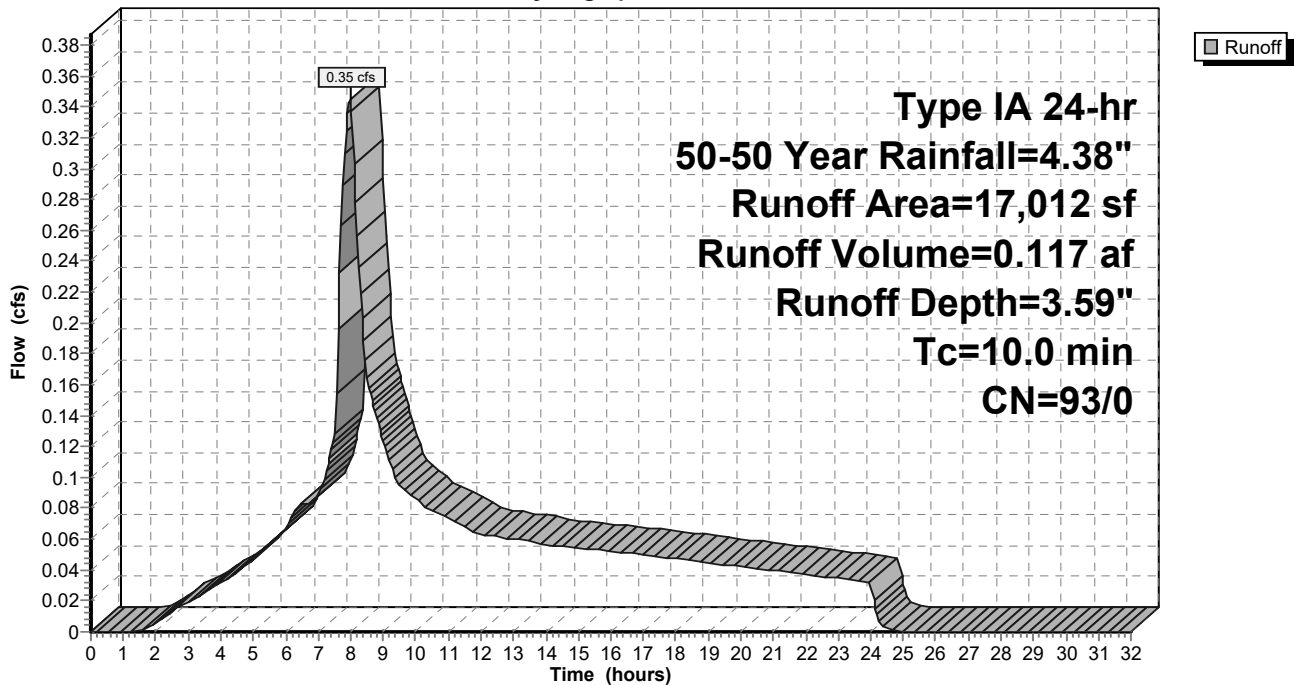
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 50-50 Year Rainfall=4.38"

Area (sf)	CN	Description
* 17,012	93	70% Lot Coverage Weighted
17,012	93	100.00% Pervious Area

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

Subcatchment 93S: Home Basin 25

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 50-50 Year Rainfall=4.38"

Prepared by A&O Engineering LLC

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Summary for Subcatchment 94S: Home Basin 4

Runoff = 0.40 cfs @ 7.98 hrs, Volume= 0.134 af, Depth= 3.59"
 Routed to Reach 160R : 1

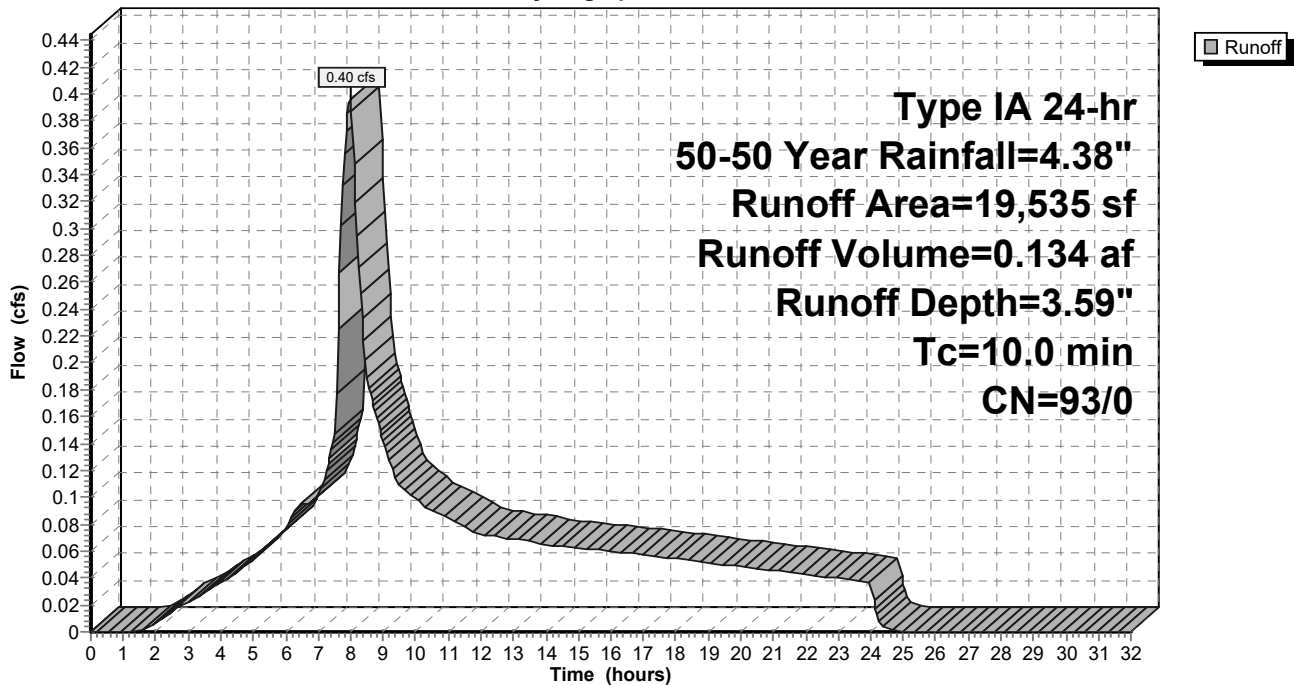
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 50-50 Year Rainfall=4.38"

Area (sf)	CN	Description
* 19,535	93	70% Lot Coverage Weighted
19,535	93	100.00% Pervious Area

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

Subcatchment 94S: Home Basin 4

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 50-50 Year Rainfall=4.38"

Prepared by A&O Engineering LLC

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Summary for Subcatchment 95S: Home Basin 31

Runoff = 0.51 cfs @ 7.98 hrs, Volume= 0.171 af, Depth= 3.59"
 Routed to Reach 131R : 1

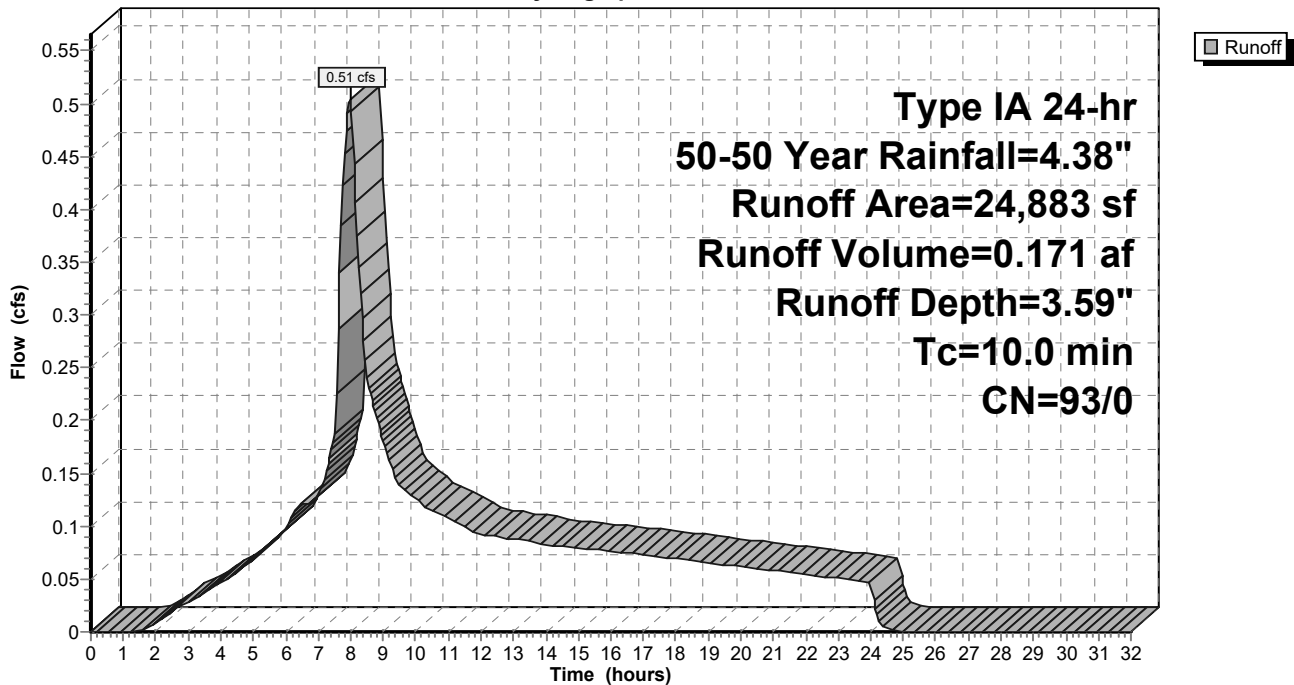
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 50-50 Year Rainfall=4.38"

Area (sf)	CN	Description
* 24,883	93	70% Lot Coverage Weighted
24,883	93	100.00% Pervious Area

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

Subcatchment 95S: Home Basin 31

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 50-50 Year Rainfall=4.38"

Prepared by A&O Engineering LLC

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Summary for Subcatchment 96S: Basin 1

Runoff = 0.34 cfs @ 7.98 hrs, Volume= 0.119 af, Depth= 4.14"
 Routed to Reach 133R : 1

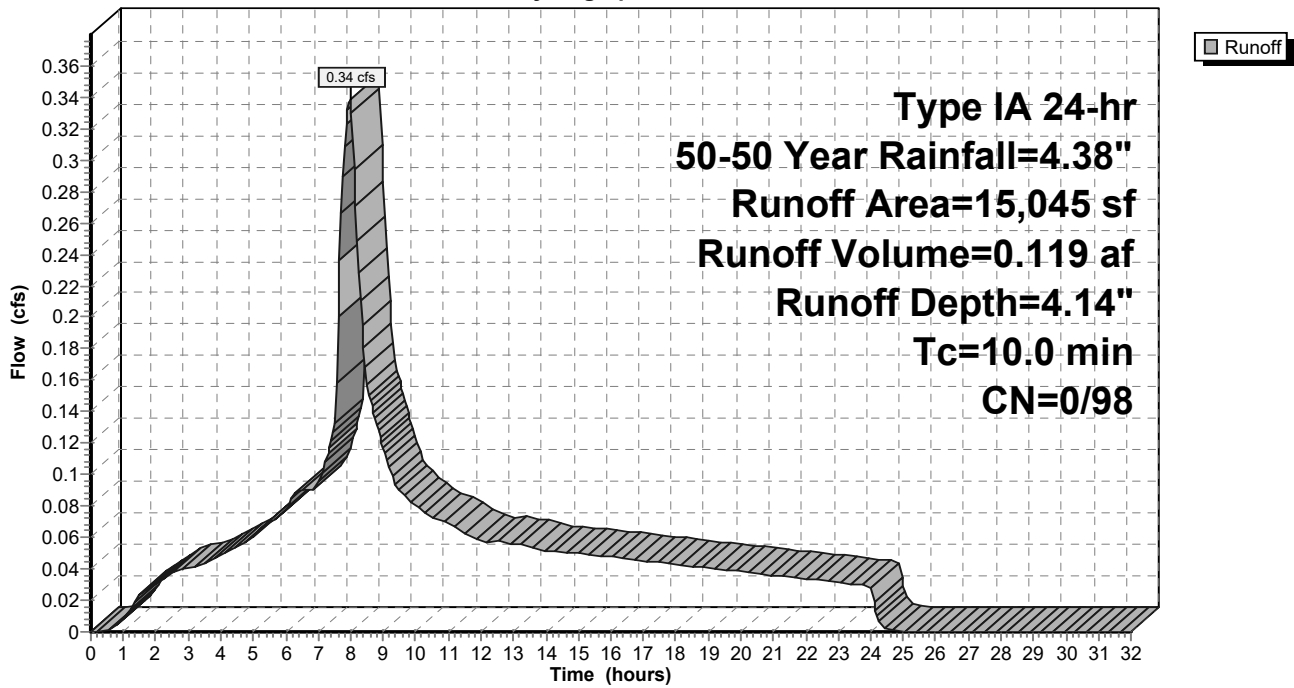
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 50-50 Year Rainfall=4.38"

Area (sf)	CN	Description
15,045	98	Paved roads w/curbs & sewers, HSG D
15,045	98	100.00% Impervious Area

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

Subcatchment 96S: Basin 1

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Subcatchment 97S: Basin 2

Runoff = 0.45 cfs @ 7.98 hrs, Volume= 0.157 af, Depth= 4.14"
 Routed to Reach 132R : 1

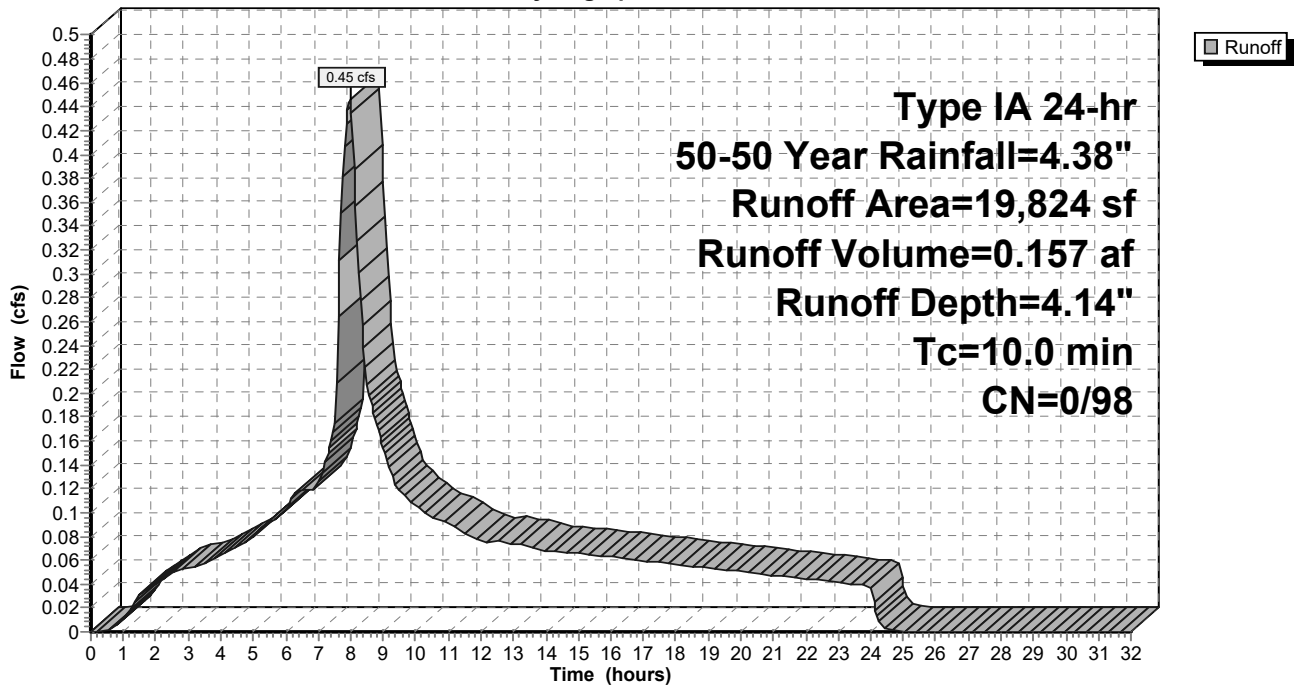
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 50-50 Year Rainfall=4.38"

Area (sf)	CN	Description
19,824	98	Paved roads w/curbs & sewers, HSG D
19,824	98	100.00% Impervious Area

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

Subcatchment 97S: Basin 2

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Subcatchment 98S: Basin 3

Runoff = 0.53 cfs @ 7.98 hrs, Volume= 0.186 af, Depth= 4.14"
 Routed to Reach 131R : 1

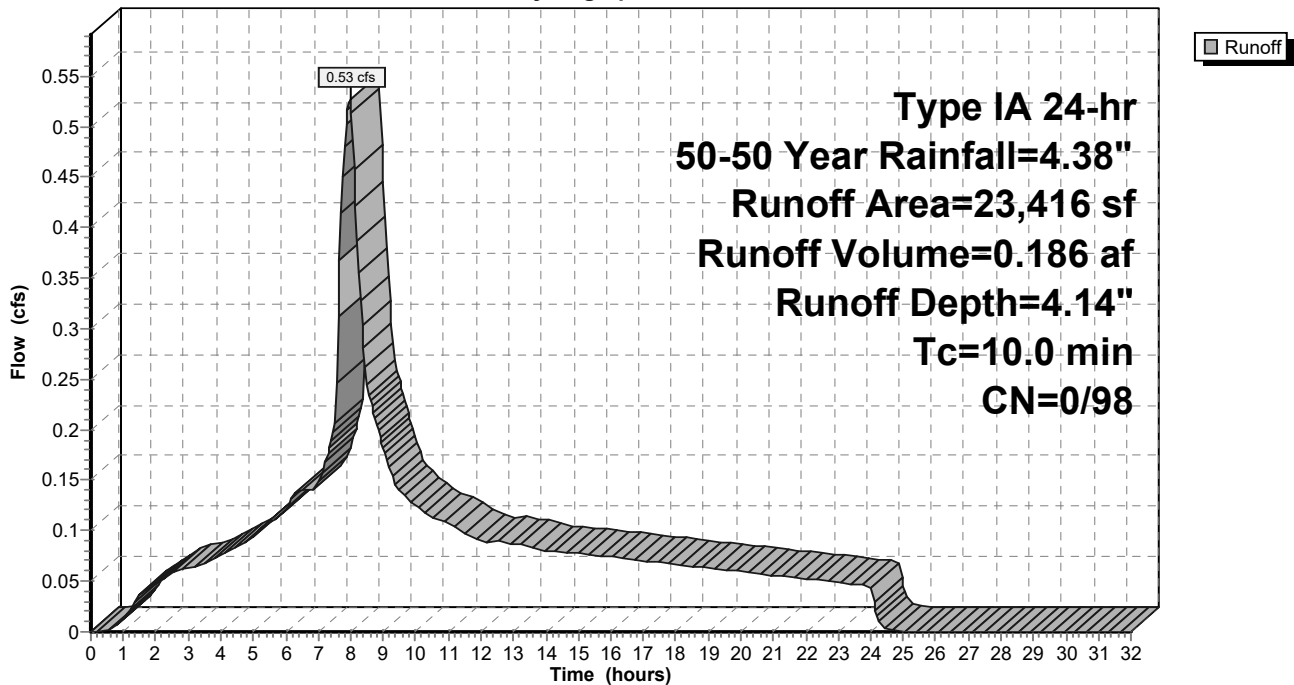
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 50-50 Year Rainfall=4.38"

Area (sf)	CN	Description
23,416	98	Paved roads w/curbs & sewers, HSG D
23,416	98	100.00% Impervious Area

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

Subcatchment 98S: Basin 3

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Subcatchment 99S: Home Basin 6

Runoff = 0.53 cfs @ 7.98 hrs, Volume= 0.179 af, Depth= 3.59"
 Routed to Reach 163R : 1

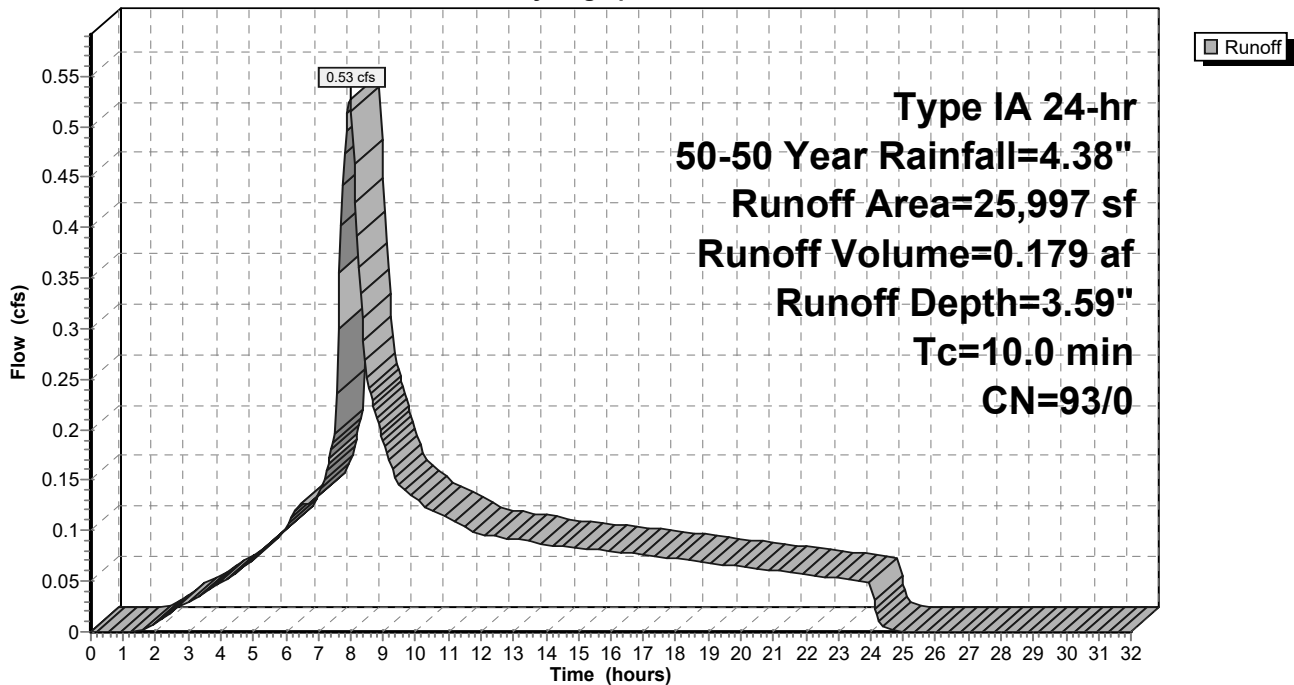
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 50-50 Year Rainfall=4.38"

Area (sf)	CN	Description
* 25,997	93	70% Lot Coverage Weighted
25,997	93	100.00% Pervious Area

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

Subcatchment 99S: Home Basin 6

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Subcatchment 100S: Basin 4

Runoff = 0.08 cfs @ 7.98 hrs, Volume= 0.029 af, Depth= 4.14"
 Routed to Pond 60P : Stormwater Swale 1

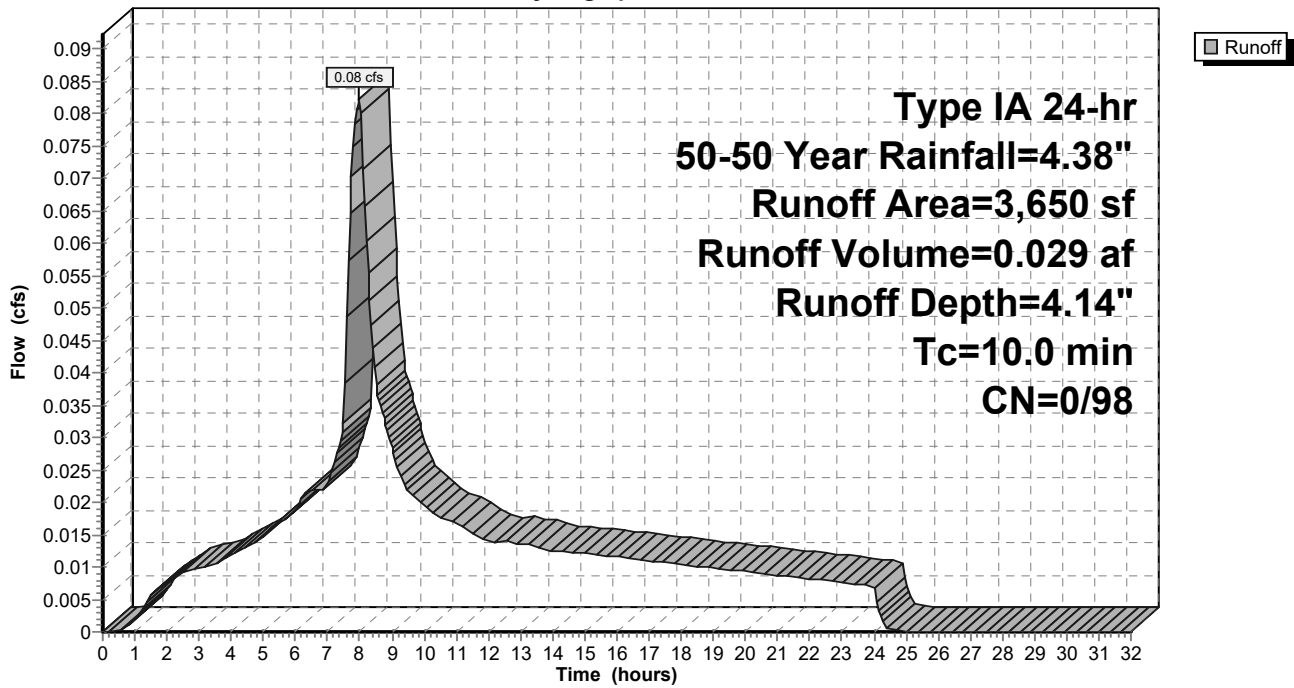
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 50-50 Year Rainfall=4.38"

Area (sf)	CN	Description
3,650	98	Paved roads w/curbs & sewers, HSG D
3,650	98	100.00% Impervious Area

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

Subcatchment 100S: Basin 4

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Subcatchment 101S: Basin 5

Runoff = 0.08 cfs @ 7.98 hrs, Volume= 0.028 af, Depth= 4.14"
 Routed to Pond 54P : Stormwater Swale 2

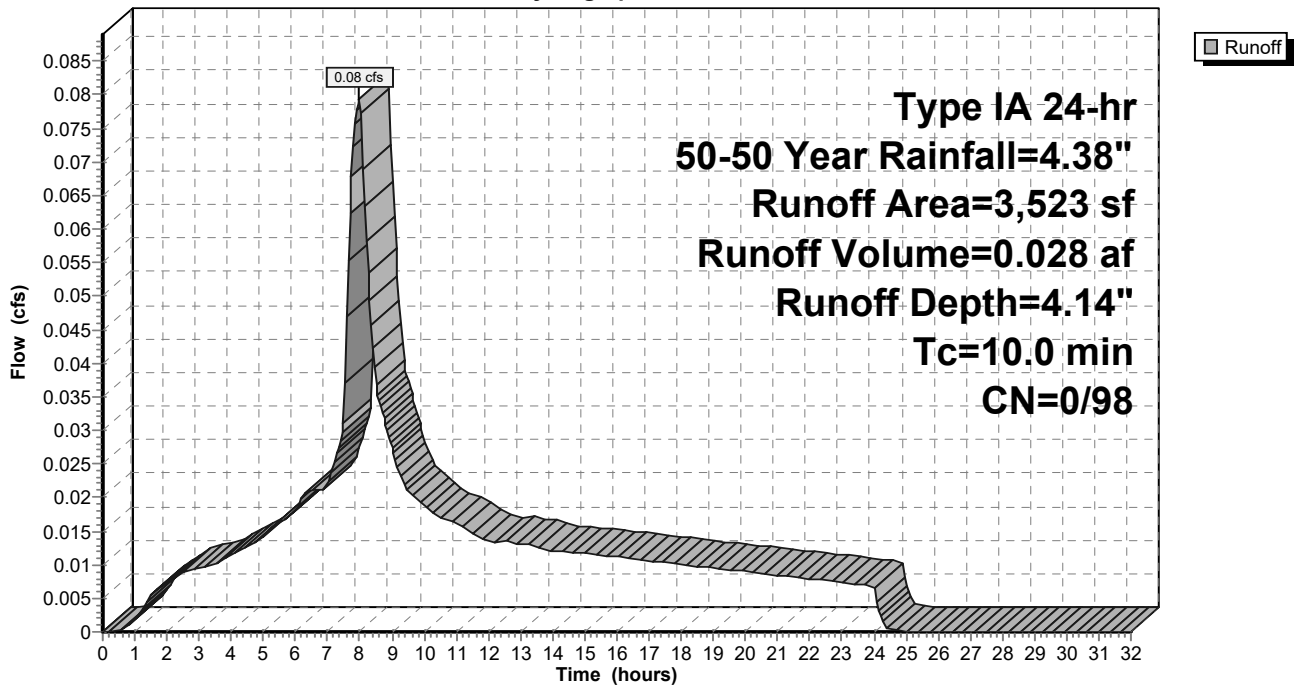
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 50-50 Year Rainfall=4.38"

Area (sf)	CN	Description
3,523	98	Paved roads w/curbs & sewers, HSG D
3,523	98	100.00% Impervious Area

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

Subcatchment 101S: Basin 5

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Subcatchment 102S: Home Basin 3

Runoff = 0.40 cfs @ 7.98 hrs, Volume= 0.134 af, Depth= 3.59"
 Routed to Reach 151R : 1

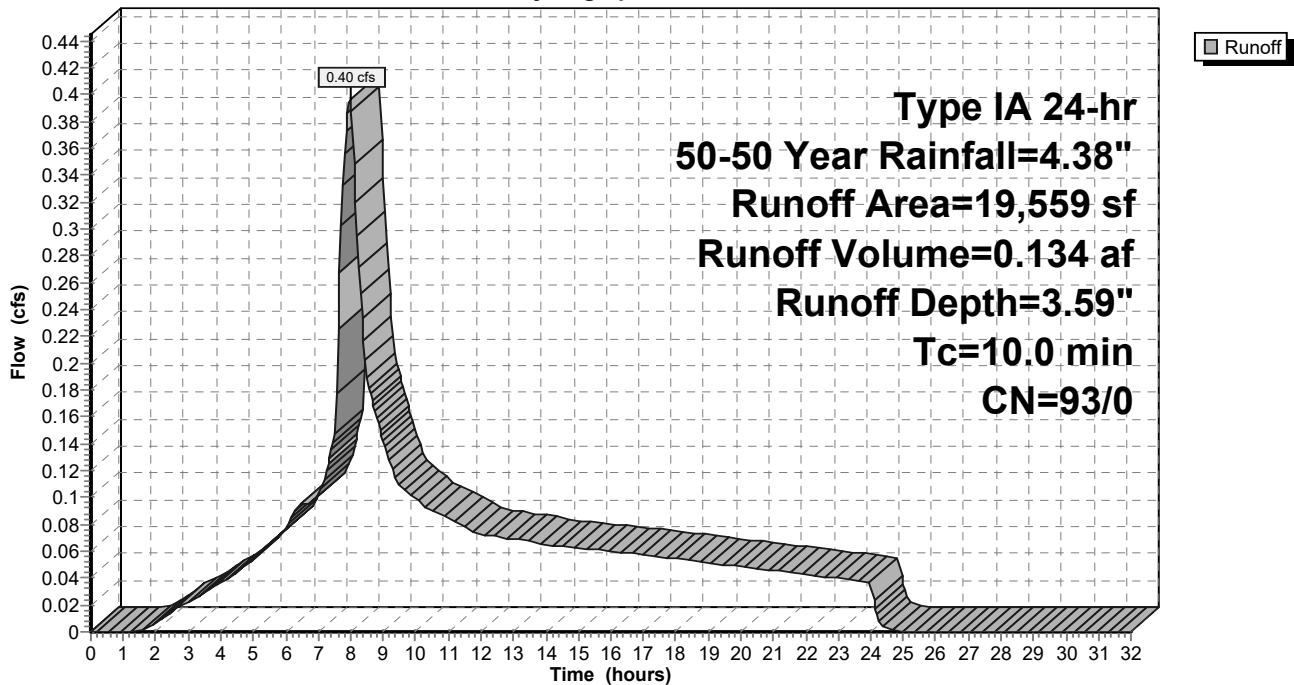
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 50-50 Year Rainfall=4.38"

Area (sf)	CN	Description
* 19,559	93	70% Lot Coverage Weighted
19,559	93	100.00% Pervious Area

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

Subcatchment 102S: Home Basin 3

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Subcatchment 103S: Home Basin 1

Runoff = 0.45 cfs @ 7.98 hrs, Volume= 0.153 af, Depth= 3.59"
 Routed to Reach 137R : 1

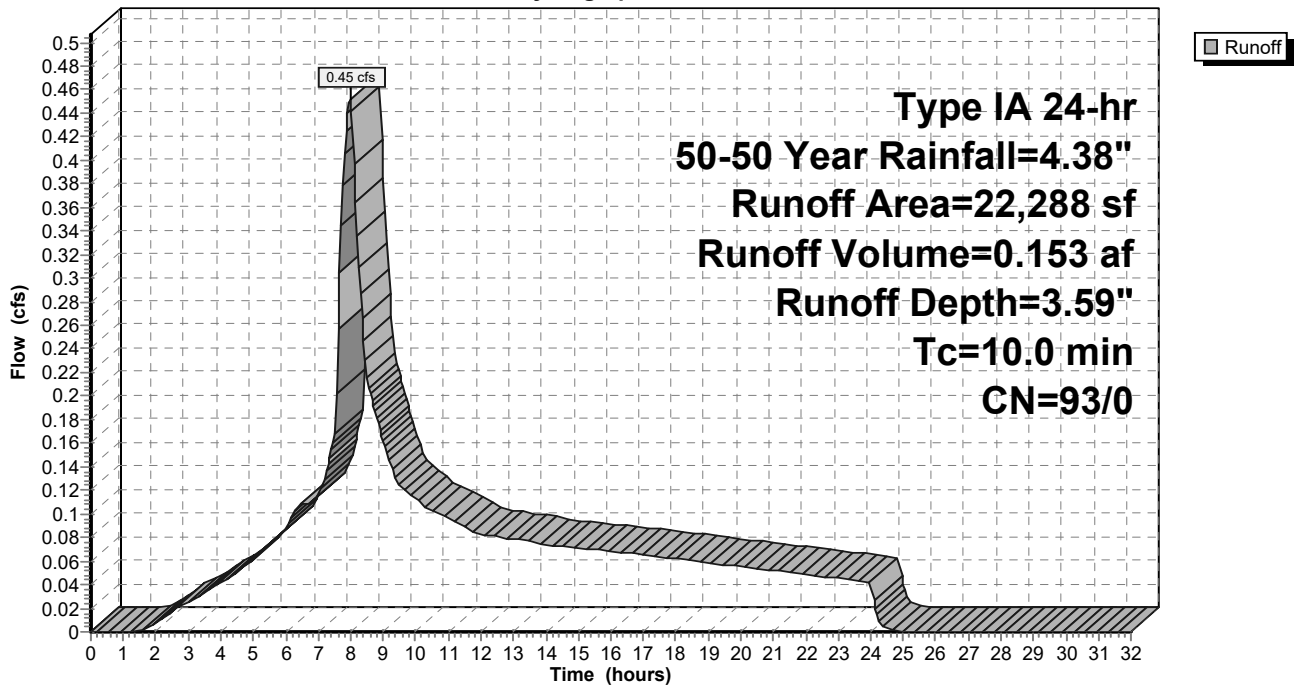
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 50-50 Year Rainfall=4.38"

Area (sf)	CN	Description
* 22,288	93	70% Lot Coverage Weighted
22,288	93	100.00% Pervious Area

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

Subcatchment 103S: Home Basin 1

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Subcatchment 104S: Home Basin 5

Runoff = 0.68 cfs @ 7.98 hrs, Volume= 0.230 af, Depth= 3.59"
 Routed to Reach 165R : 1

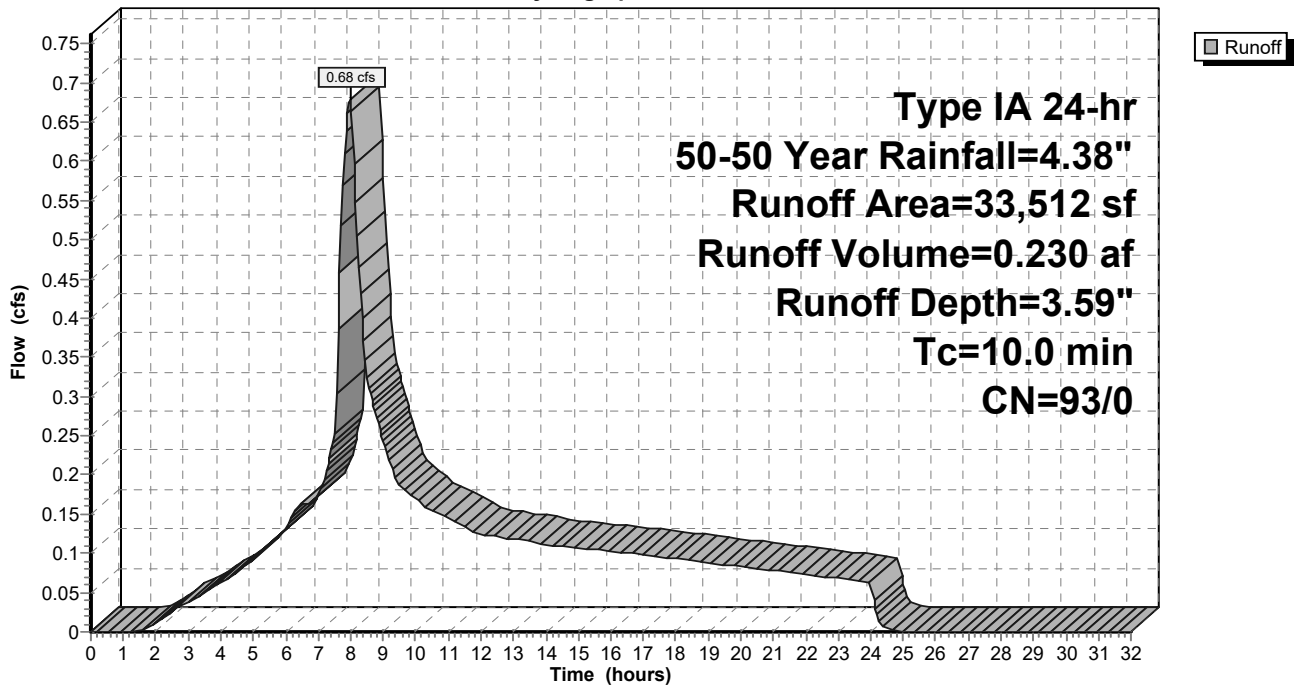
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 50-50 Year Rainfall=4.38"

Area (sf)	CN	Description
* 33,512	93	70% Lot Coverage Weighted
33,512	93	100.00% Pervious Area

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

Subcatchment 104S: Home Basin 5

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Subcatchment 105S: Basin 6

Runoff = 0.20 cfs @ 7.98 hrs, Volume= 0.071 af, Depth= 4.14"
 Routed to Reach 138R : 1

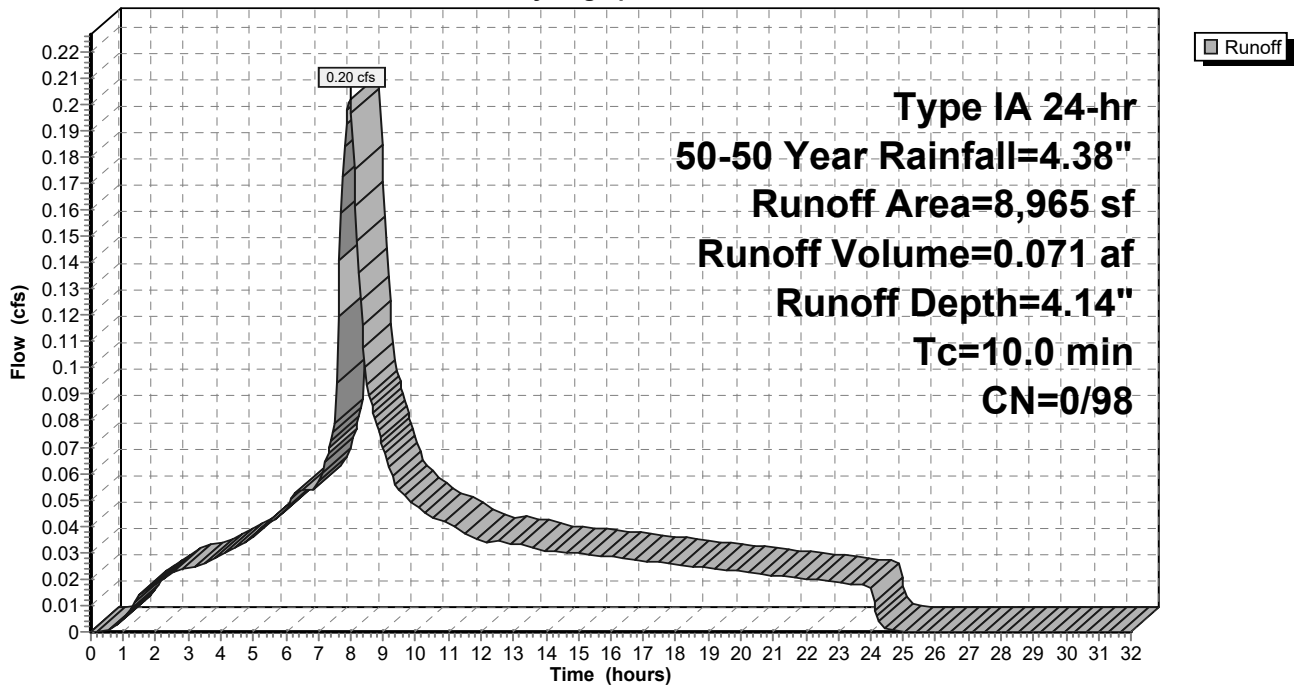
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 50-50 Year Rainfall=4.38"

Area (sf)	CN	Description
8,965	98	Paved roads w/curbs & sewers, HSG D
8,965	98	100.00% Impervious Area

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

Subcatchment 105S: Basin 6

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Subcatchment 107S: Basin 8

Runoff = 0.18 cfs @ 7.98 hrs, Volume= 0.065 af, Depth= 4.14"
 Routed to Reach 158R : 1

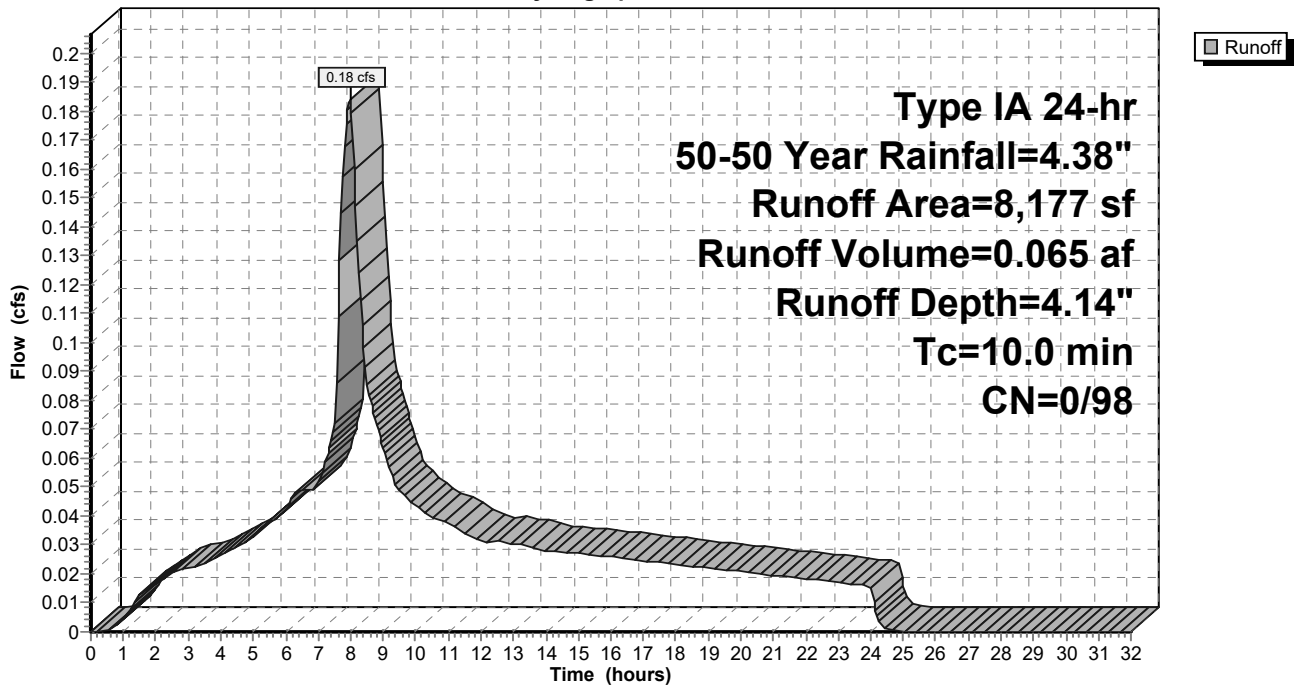
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 50-50 Year Rainfall=4.38"

Area (sf)	CN	Description
8,177	98	Paved roads w/curbs & sewers, HSG D
8,177	98	100.00% Impervious Area

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

Subcatchment 107S: Basin 8

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Subcatchment 108S: Basin 9

Runoff = 0.30 cfs @ 7.98 hrs, Volume= 0.104 af, Depth= 4.14"
 Routed to Reach 135R : 1

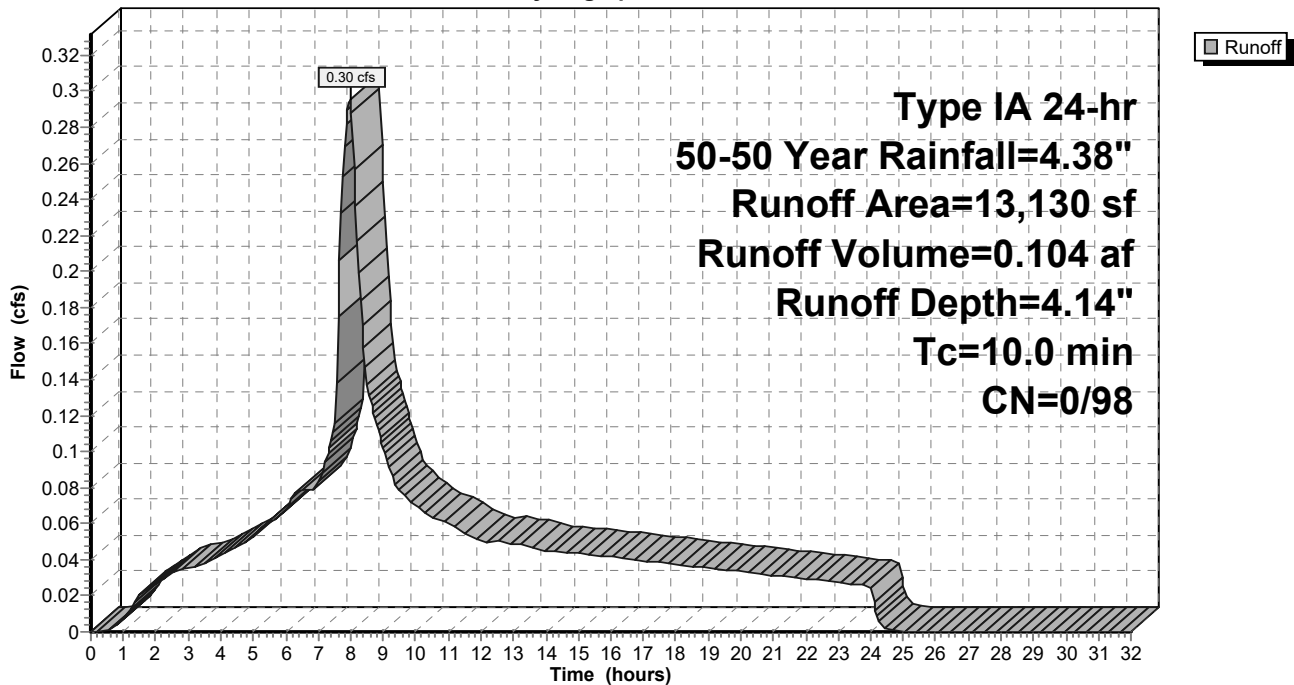
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 50-50 Year Rainfall=4.38"

Area (sf)	CN	Description
13,130	98	Paved roads w/curbs & sewers, HSG D
13,130	98	100.00% Impervious Area

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

Subcatchment 108S: Basin 9

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Subcatchment 109S: Basin 10

Runoff = 0.52 cfs @ 7.98 hrs, Volume= 0.182 af, Depth= 4.14"
 Routed to Reach 137R : 1

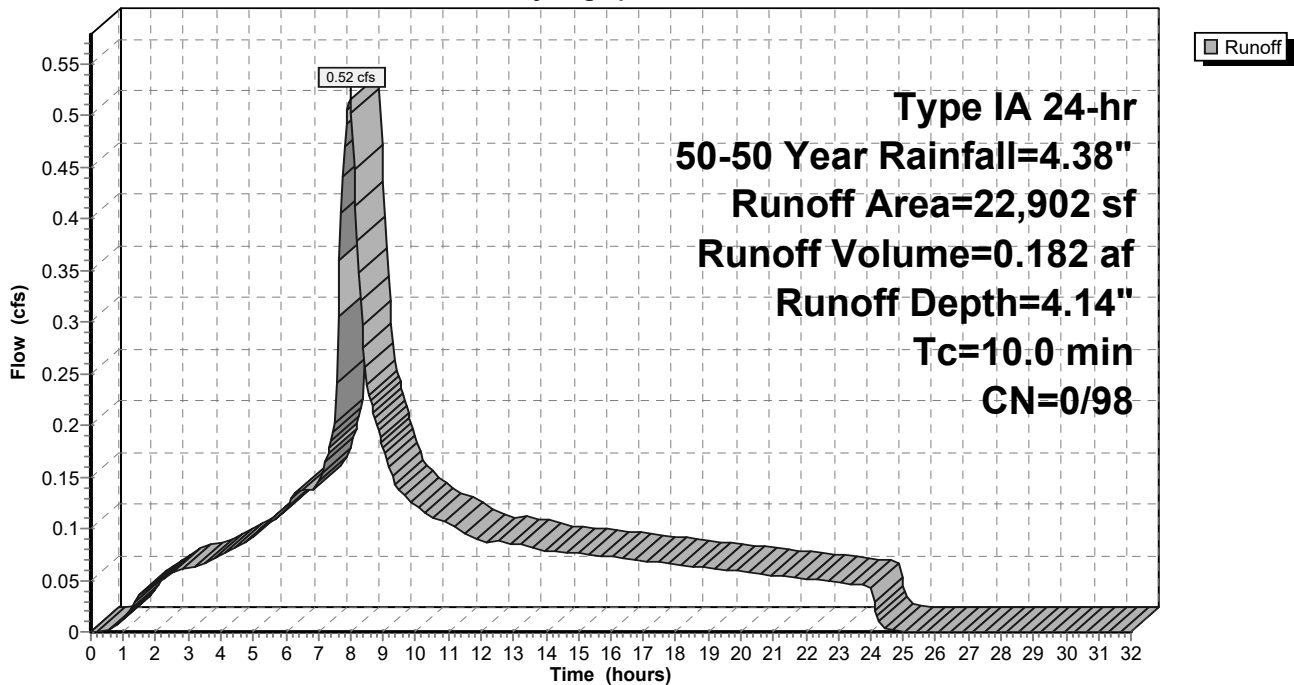
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 50-50 Year Rainfall=4.38"

Area (sf)	CN	Description
22,902	98	Paved roads w/curbs & sewers, HSG D
22,902	98	100.00% Impervious Area

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

Subcatchment 109S: Basin 10

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Subcatchment 110S: Basin 11

Runoff = 0.58 cfs @ 7.98 hrs, Volume= 0.204 af, Depth= 4.14"
 Routed to Reach 145R : 1

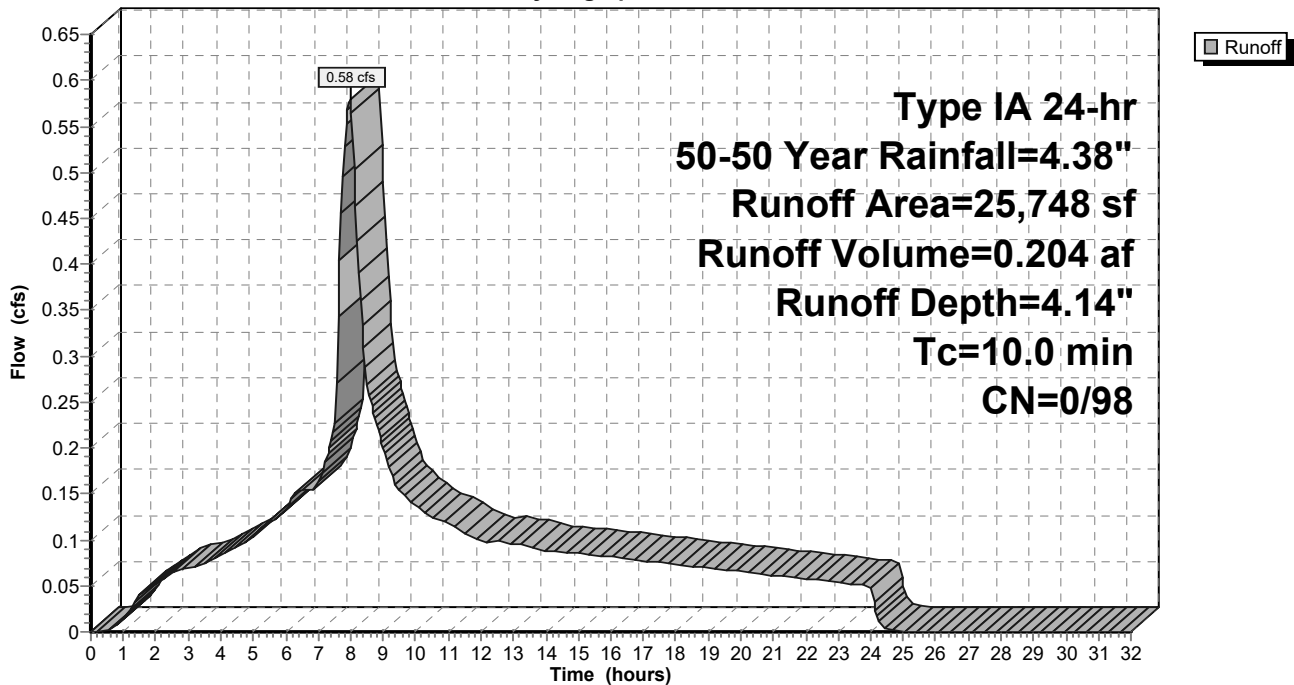
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 50-50 Year Rainfall=4.38"

Area (sf)	CN	Description
25,748	98	Paved roads w/curbs & sewers, HSG D
25,748	98	100.00% Impervious Area

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

Subcatchment 110S: Basin 11

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Subcatchment 111S: Basin 12

Runoff = 0.13 cfs @ 7.98 hrs, Volume= 0.044 af, Depth= 4.14"
 Routed to Reach 143R : 1

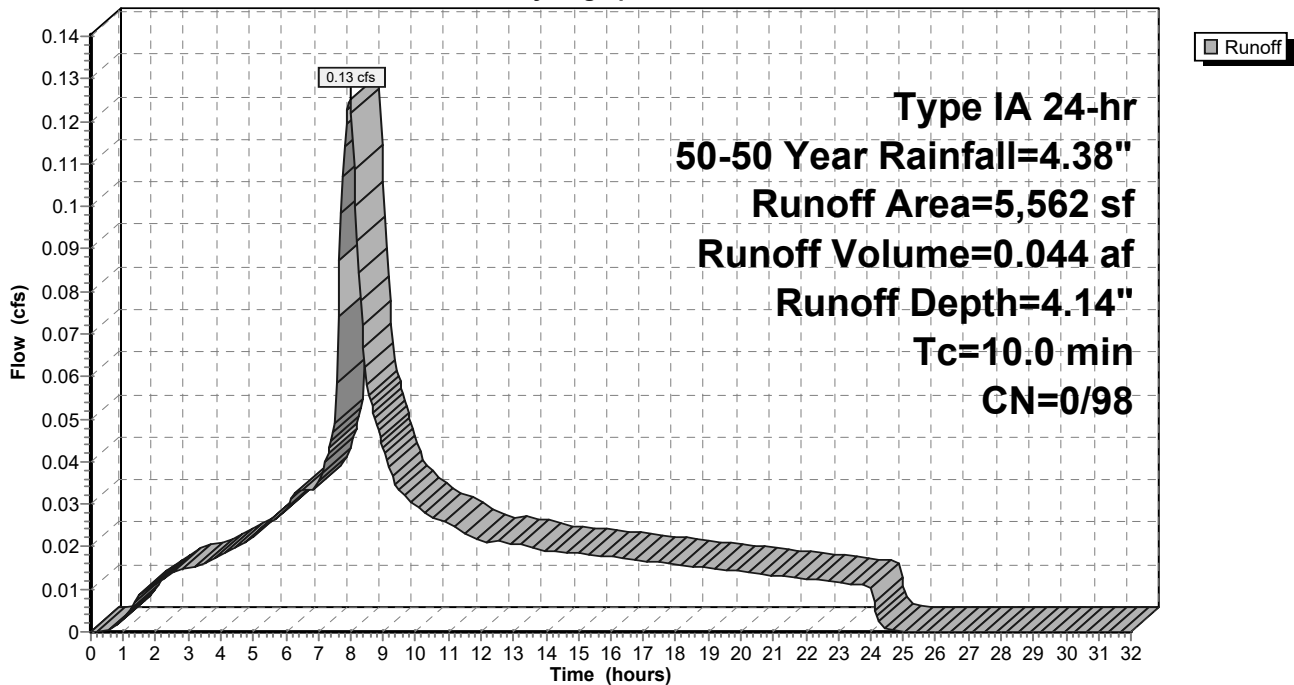
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 50-50 Year Rainfall=4.38"

Area (sf)	CN	Description
5,562	98	Paved roads w/curbs & sewers, HSG D
5,562	98	100.00% Impervious Area

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

Subcatchment 111S: Basin 12

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Subcatchment 112S: Basin 13

Runoff = 0.11 cfs @ 7.98 hrs, Volume= 0.037 af, Depth= 4.14"
 Routed to Reach 158R : 1

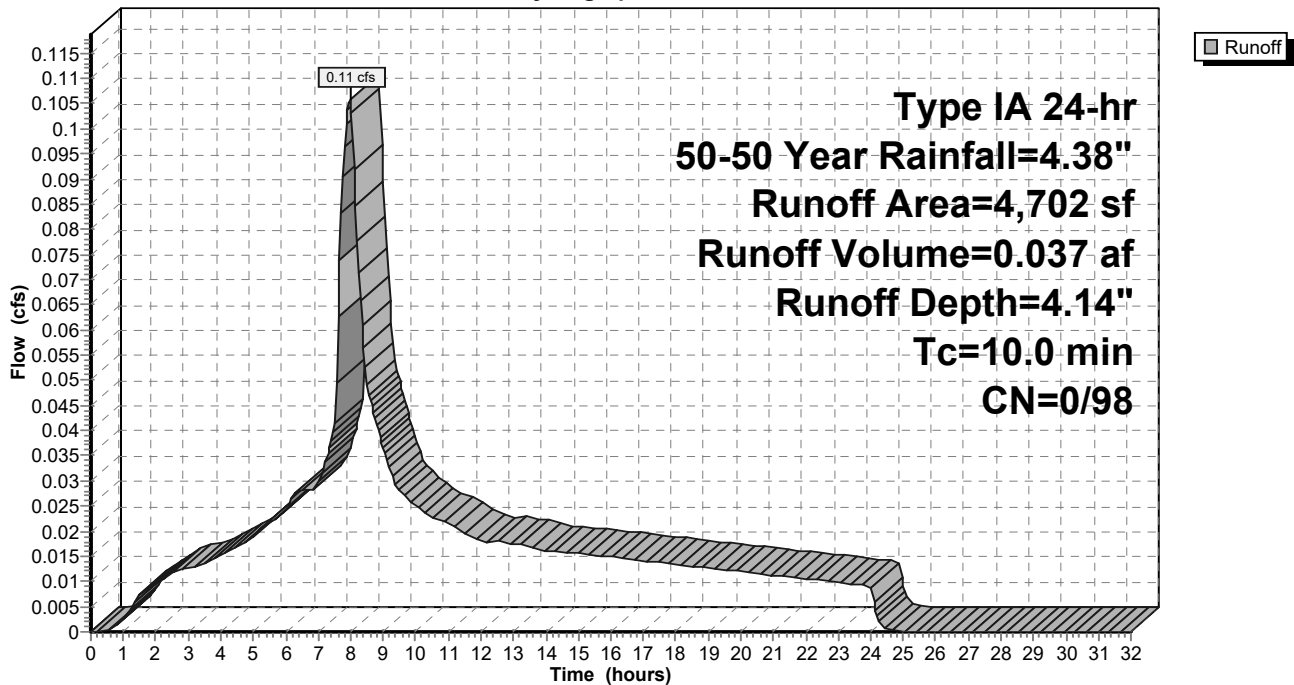
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 50-50 Year Rainfall=4.38"

Area (sf)	CN	Description
4,702	98	Paved roads w/curbs & sewers, HSG D
4,702	98	100.00% Impervious Area

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

Subcatchment 112S: Basin 13

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Subcatchment 113S: Basin 14

Runoff = 0.17 cfs @ 7.98 hrs, Volume= 0.061 af, Depth= 4.14"
 Routed to Reach 159R : 1

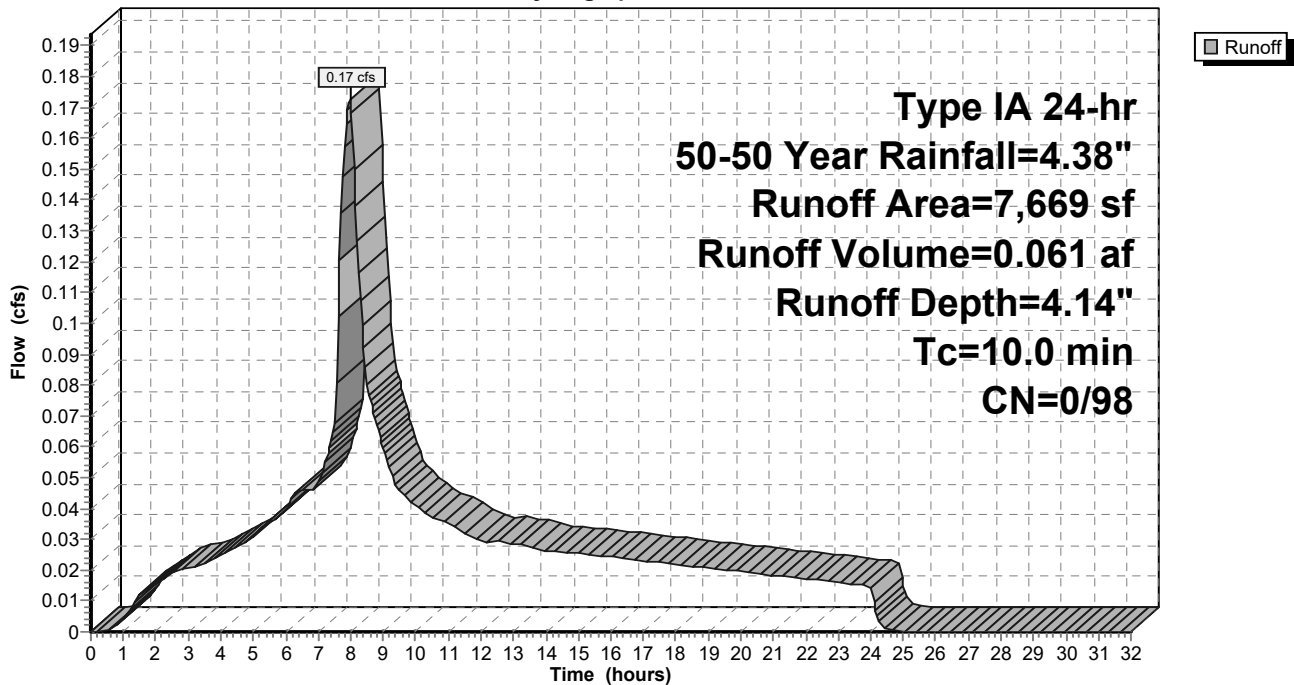
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 50-50 Year Rainfall=4.38"

Area (sf)	CN	Description
7,669	98	Paved roads w/curbs & sewers, HSG D
7,669	98	100.00% Impervious Area

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

Subcatchment 113S: Basin 14

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Subcatchment 114S: Basin 15

Runoff = 0.16 cfs @ 7.98 hrs, Volume= 0.058 af, Depth= 4.14"
 Routed to Reach 143R : 1

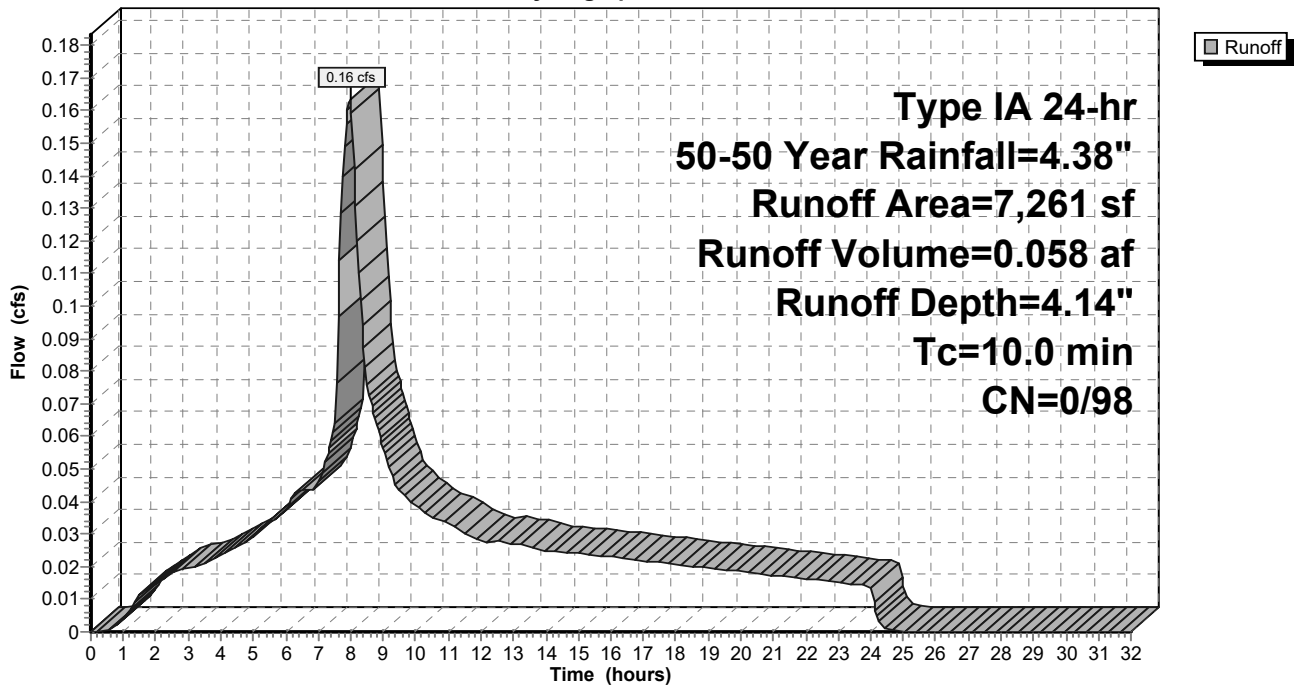
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 50-50 Year Rainfall=4.38"

Area (sf)	CN	Description
7,261	98	Paved roads w/curbs & sewers, HSG D
7,261	98	100.00% Impervious Area

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

Subcatchment 114S: Basin 15

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Subcatchment 115S: Basin 16

Runoff = 0.16 cfs @ 7.98 hrs, Volume= 0.056 af, Depth= 4.14"
 Routed to Reach 149R : 1

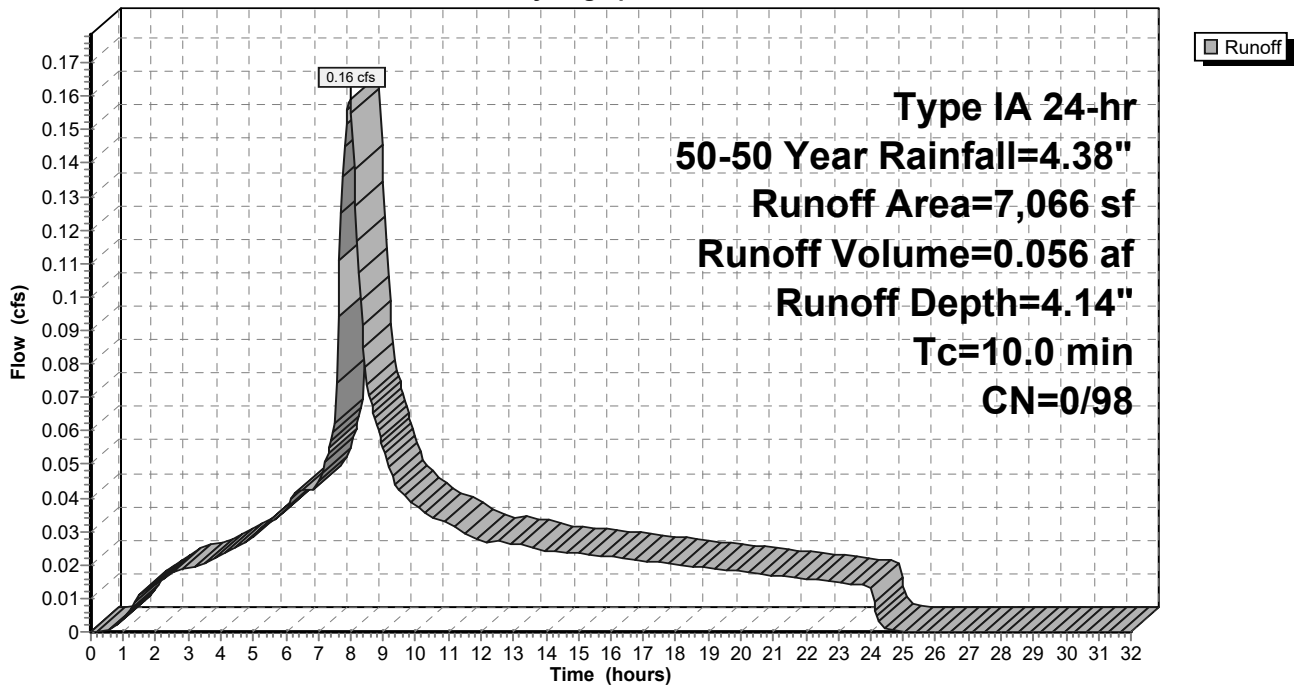
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 50-50 Year Rainfall=4.38"

Area (sf)	CN	Description
7,066	98	Paved roads w/curbs & sewers, HSG D
7,066	98	100.00% Impervious Area

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

Subcatchment 115S: Basin 16

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Subcatchment 116S: Basin 17

Runoff = 0.59 cfs @ 7.98 hrs, Volume= 0.206 af, Depth= 4.14"
 Routed to Reach 151R : 1

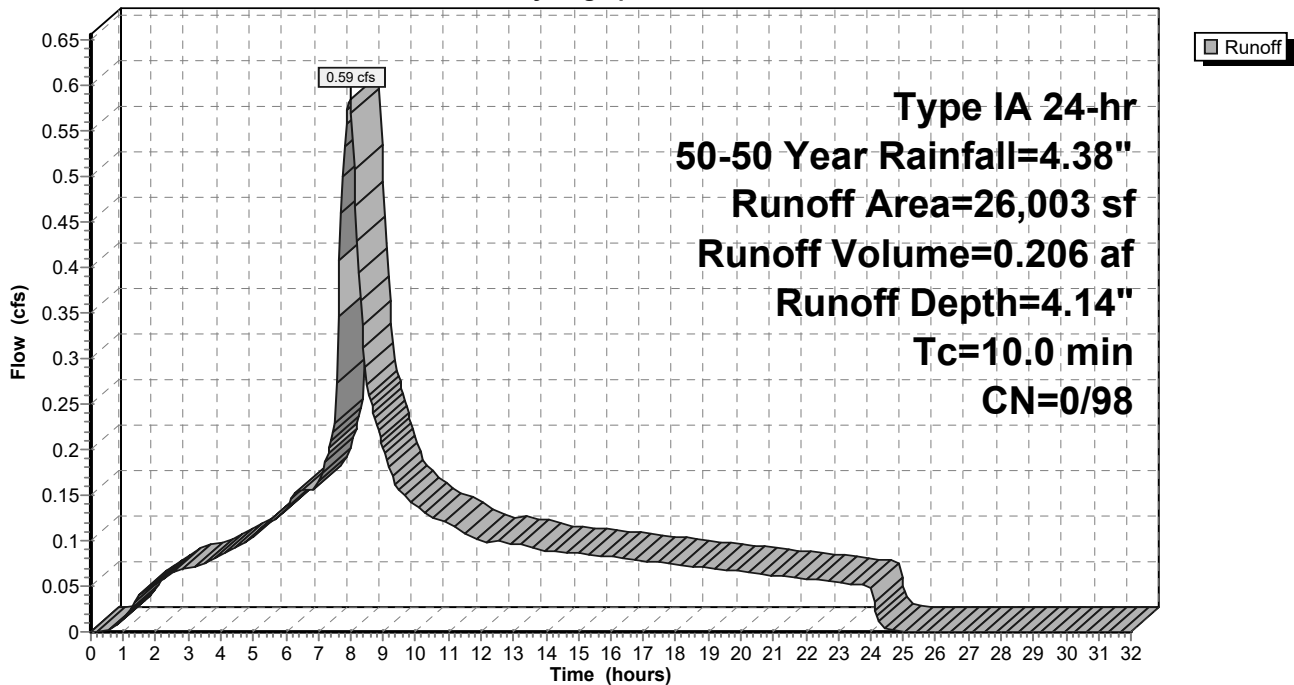
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 50-50 Year Rainfall=4.38"

Area (sf)	CN	Description
26,003	98	Paved roads w/curbs & sewers, HSG D
26,003	98	100.00% Impervious Area

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

Subcatchment 116S: Basin 17

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Subcatchment 117S: Basin 18

Runoff = 0.54 cfs @ 7.98 hrs, Volume= 0.188 af, Depth= 4.14"
 Routed to Reach 160R : 1

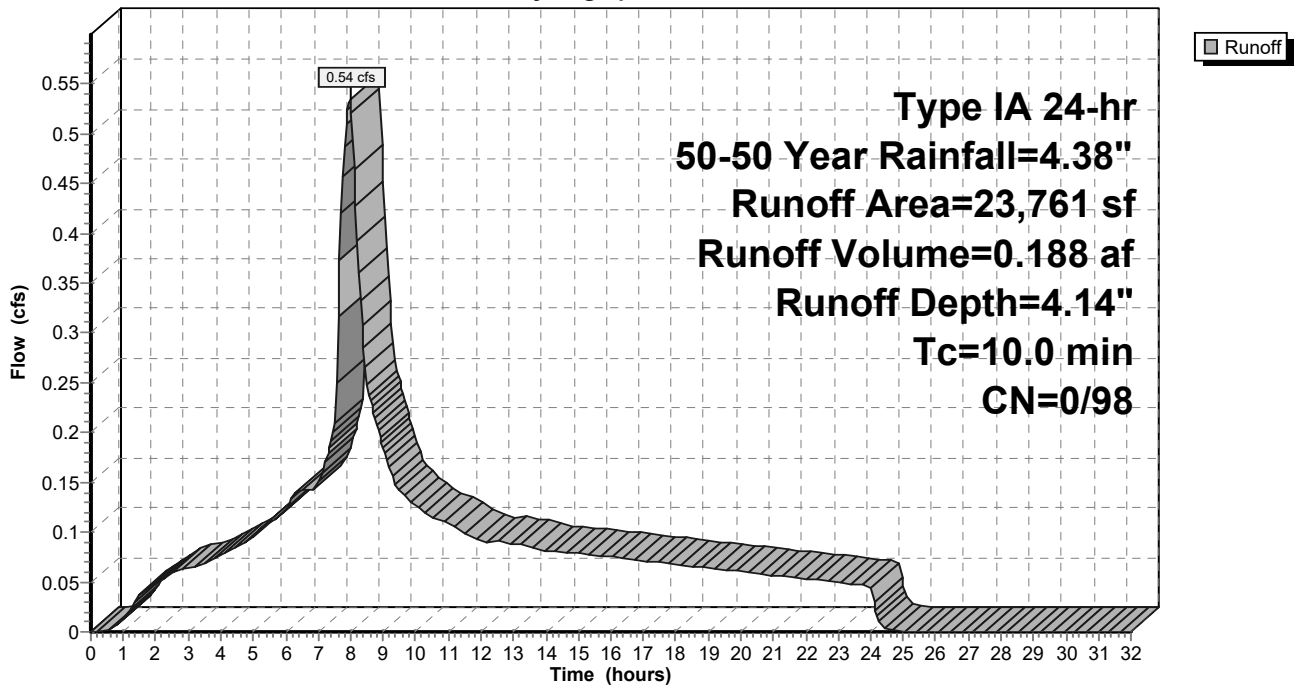
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 50-50 Year Rainfall=4.38"

Area (sf)	CN	Description
23,761	98	Paved roads w/curbs & sewers, HSG D
23,761	98	100.00% Impervious Area

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

Subcatchment 117S: Basin 18

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Subcatchment 118S: Basin 19

Runoff = 0.16 cfs @ 7.98 hrs, Volume= 0.058 af, Depth= 4.14"
 Routed to Reach 155R : 1

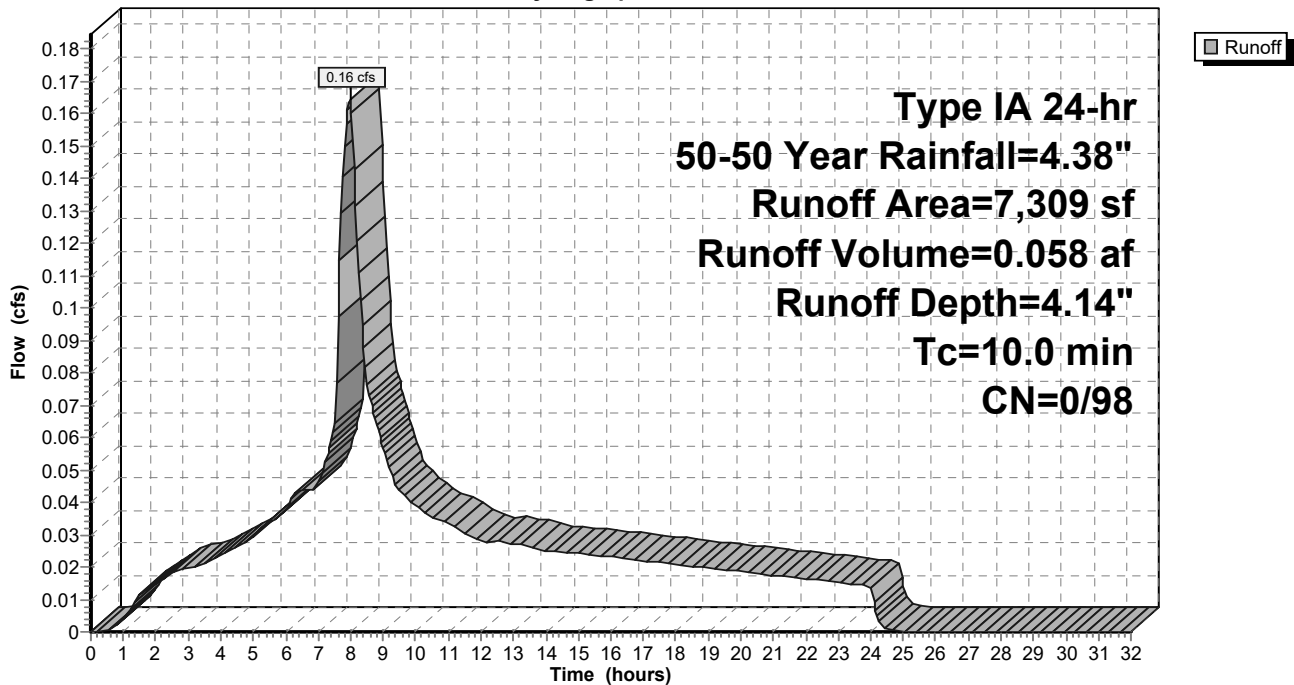
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 50-50 Year Rainfall=4.38"

Area (sf)	CN	Description
7,309	98	Paved roads w/curbs & sewers, HSG D
7,309	98	100.00% Impervious Area

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

Subcatchment 118S: Basin 19

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Subcatchment 119S: Basin 20

Runoff = 0.17 cfs @ 7.98 hrs, Volume= 0.060 af, Depth= 4.14"
 Routed to Reach 149R : 1

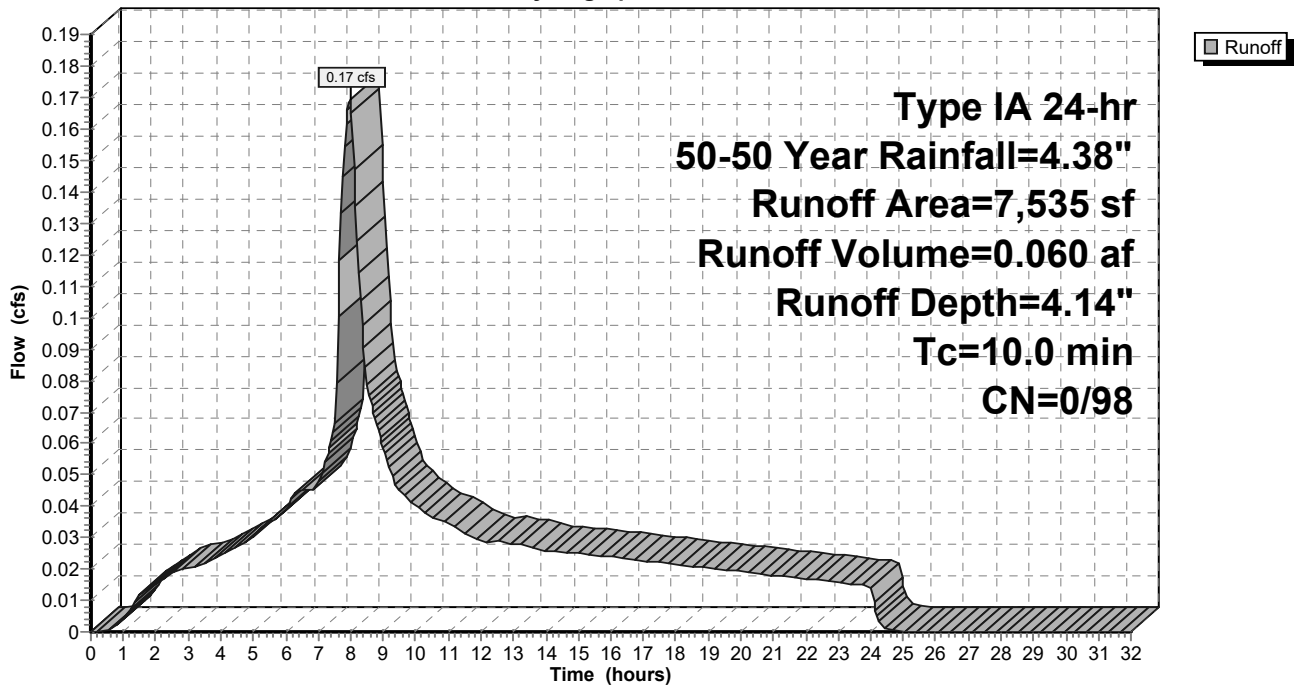
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 50-50 Year Rainfall=4.38"

Area (sf)	CN	Description
7,535	98	Paved roads w/curbs & sewers, HSG D
7,535	98	100.00% Impervious Area

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

Subcatchment 119S: Basin 20

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Subcatchment 120S: Basin 21

Runoff = 0.15 cfs @ 7.98 hrs, Volume= 0.054 af, Depth= 4.14"
 Routed to Reach 148R : 1

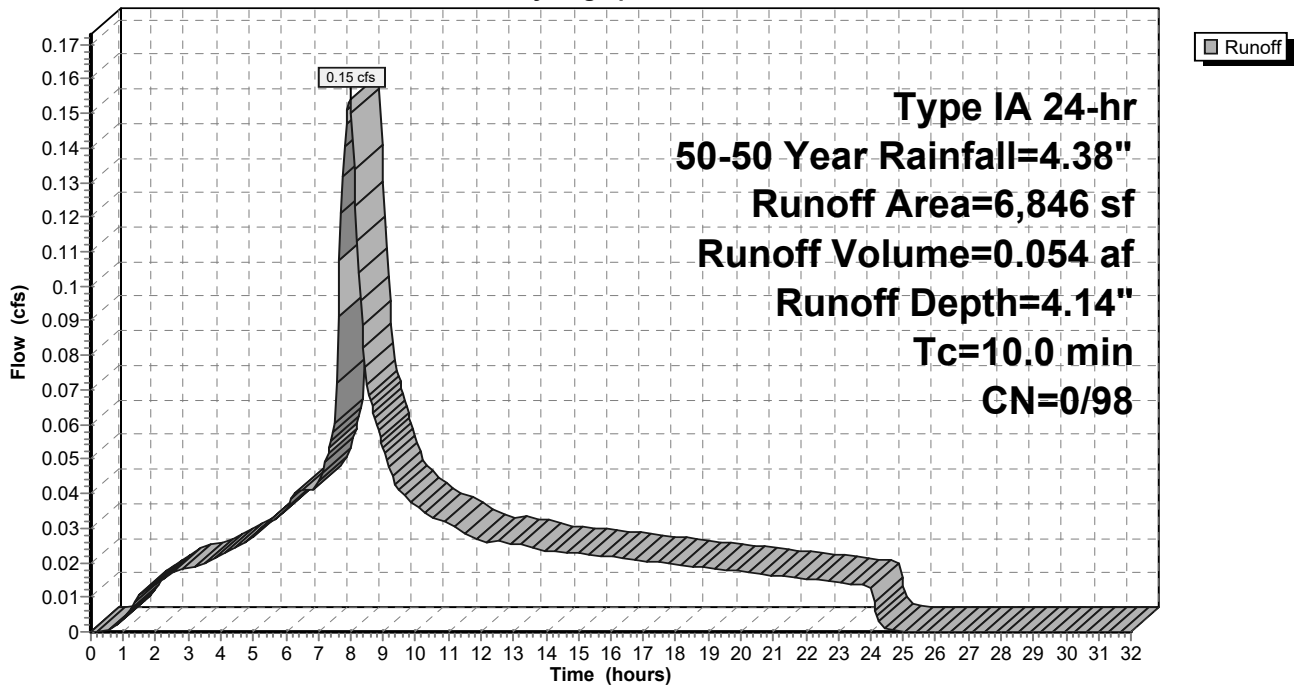
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 50-50 Year Rainfall=4.38"

Area (sf)	CN	Description
6,846	98	Paved roads w/curbs & sewers, HSG D
6,846	98	100.00% Impervious Area

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

Subcatchment 120S: Basin 21

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Subcatchment 121S: Basin 22

Runoff = 0.12 cfs @ 7.98 hrs, Volume= 0.041 af, Depth= 4.14"
 Routed to Reach 154R : 1

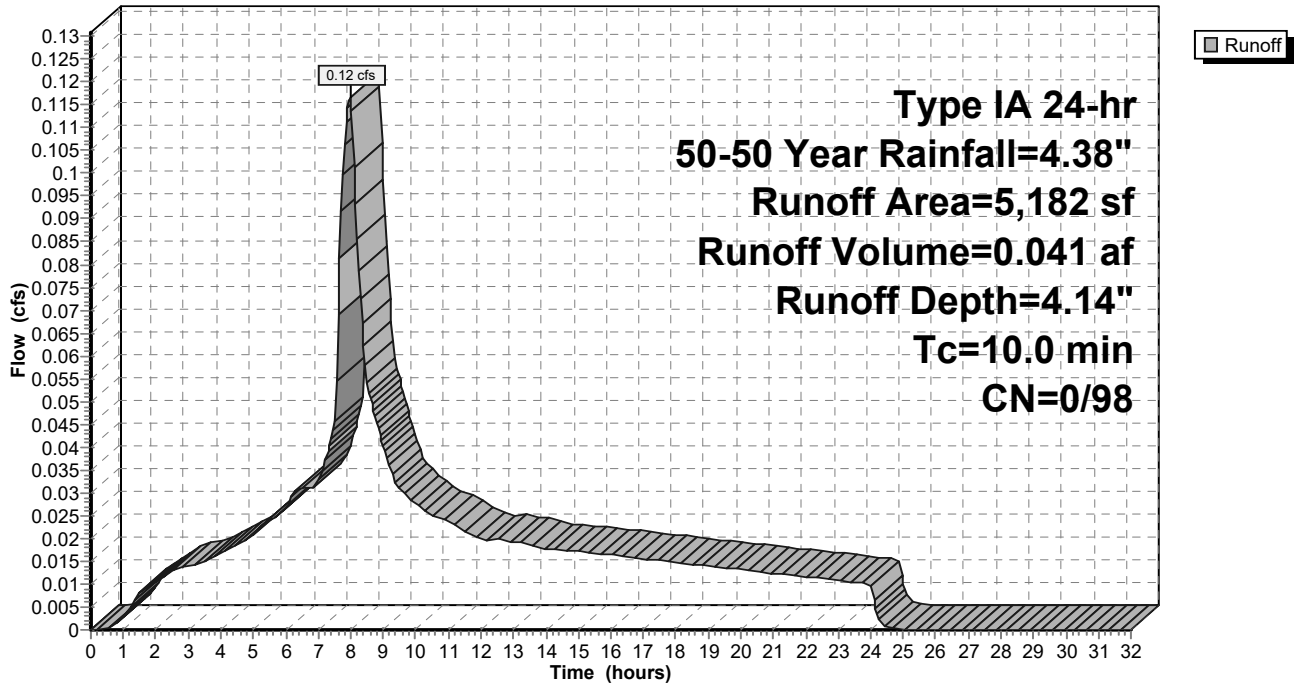
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 50-50 Year Rainfall=4.38"

Area (sf)	CN	Description
5,182	98	Paved roads w/curbs & sewers, HSG D
5,182	98	100.00% Impervious Area

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

Subcatchment 121S: Basin 22

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Subcatchment 122S: Basin 23

Runoff = 0.12 cfs @ 7.98 hrs, Volume= 0.043 af, Depth= 4.14"
 Routed to Reach 155R : 1

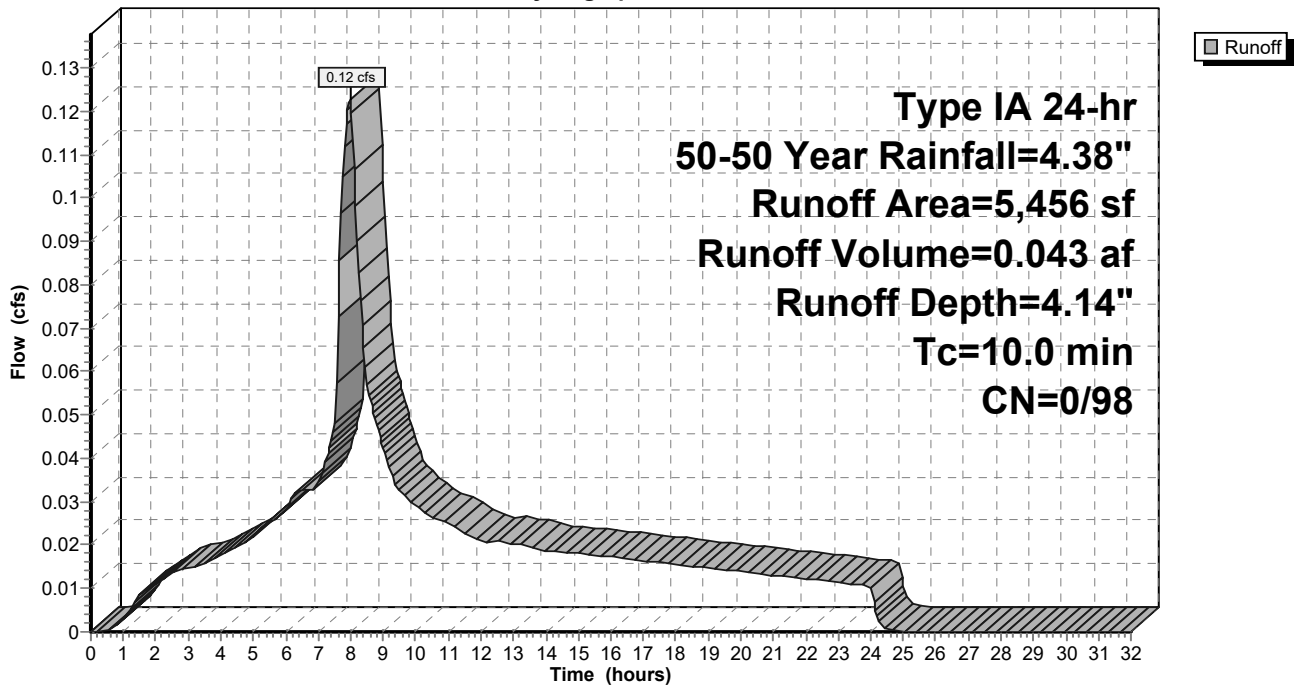
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 50-50 Year Rainfall=4.38"

Area (sf)	CN	Description
5,456	98	Paved roads w/curbs & sewers, HSG D
5,456	98	100.00% Impervious Area

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

Subcatchment 122S: Basin 23

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Subcatchment 123S: Basin 24

Runoff = 0.10 cfs @ 7.98 hrs, Volume= 0.036 af, Depth= 4.14"
 Routed to Reach 162R : 1

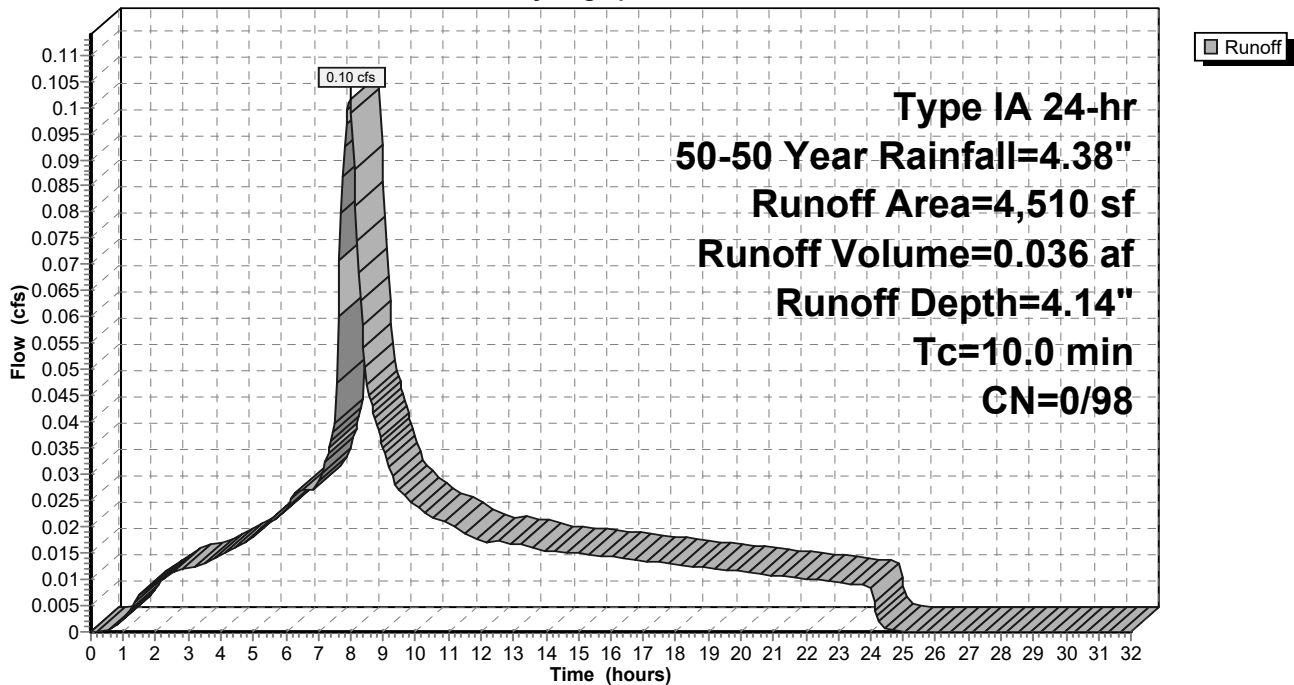
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 50-50 Year Rainfall=4.38"

Area (sf)	CN	Description
4,510	98	Paved roads w/curbs & sewers, HSG D
4,510	98	100.00% Impervious Area

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

Subcatchment 123S: Basin 24

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Subcatchment 124S: Basin 25

Runoff = 0.30 cfs @ 7.98 hrs, Volume= 0.105 af, Depth= 4.14"
 Routed to Reach 163R : 1

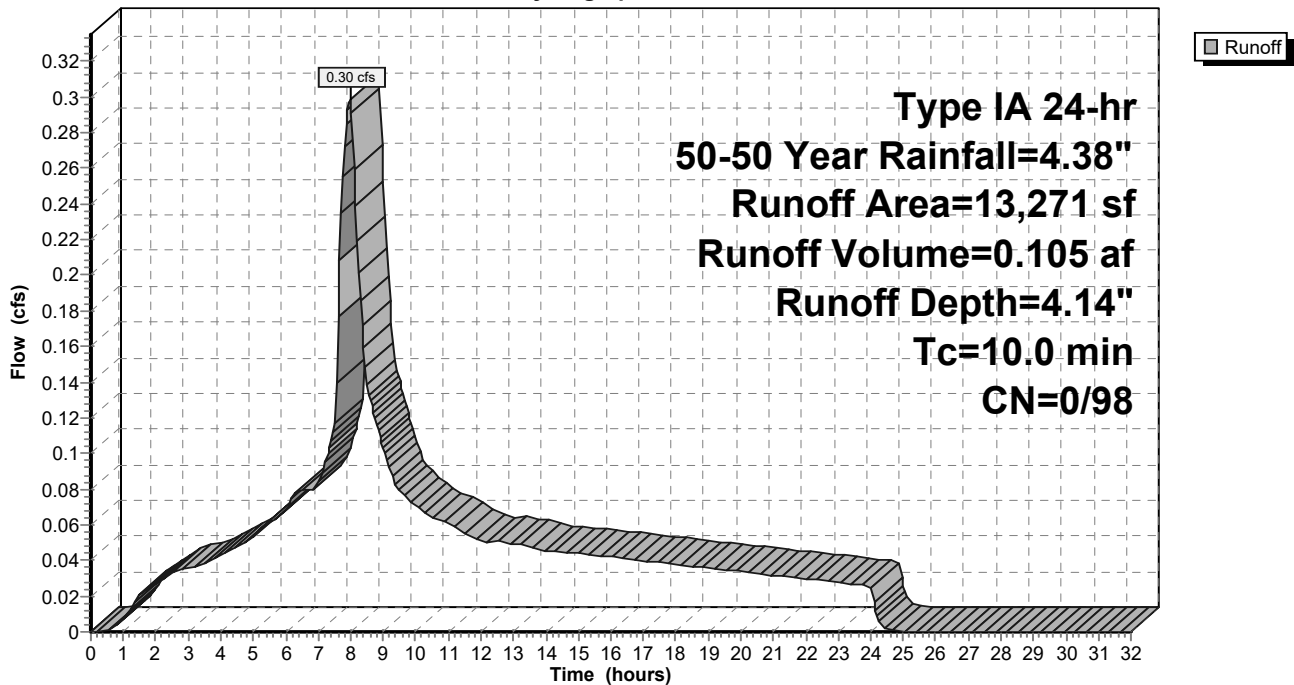
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 50-50 Year Rainfall=4.38"

Area (sf)	CN	Description
13,271	98	Paved roads w/curbs & sewers, HSG D
13,271	98	100.00% Impervious Area

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

Subcatchment 124S: Basin 25

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Subcatchment 125S: Basin 26

Runoff = 0.42 cfs @ 7.98 hrs, Volume= 0.146 af, Depth= 4.14"
 Routed to Reach 165R : 1

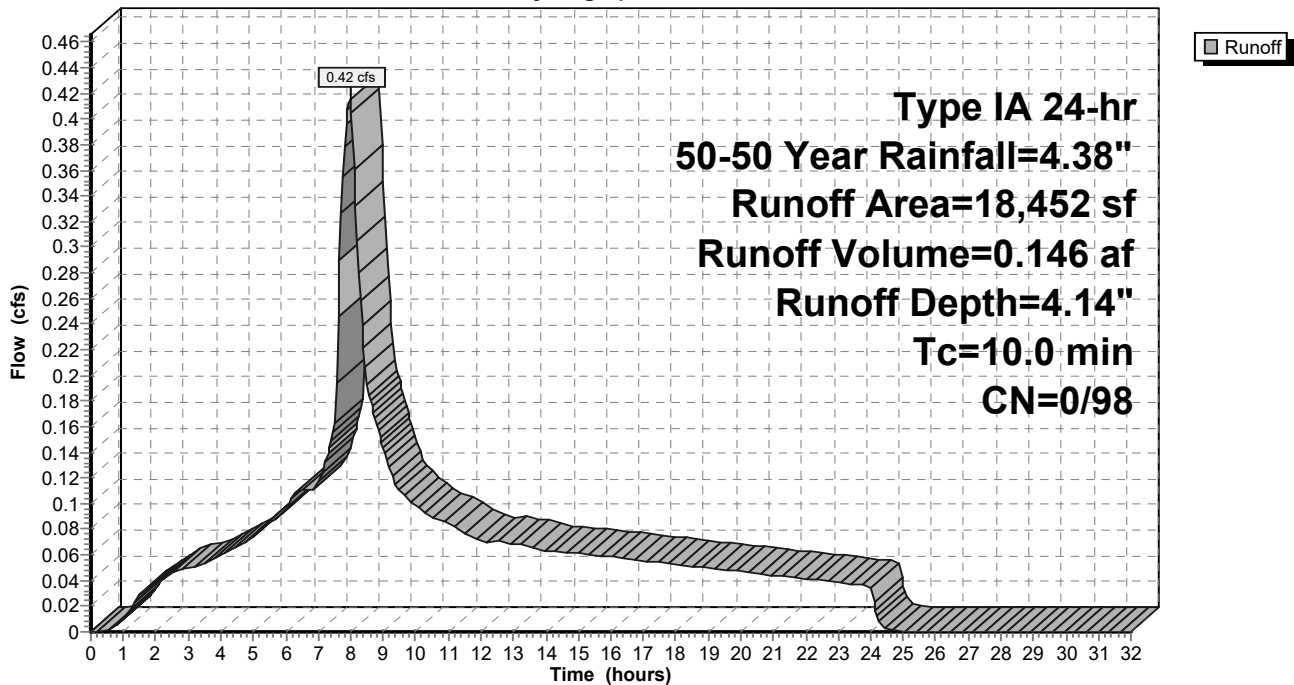
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 50-50 Year Rainfall=4.38"

Area (sf)	CN	Description
18,452	98	Paved roads w/curbs & sewers, HSG D
18,452	98	100.00% Impervious Area

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

Subcatchment 125S: Basin 26

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Subcatchment 126S: Alley Basin 1

Runoff = 0.22 cfs @ 7.98 hrs, Volume= 0.078 af, Depth= 4.14"
 Routed to Reach 140R : 1

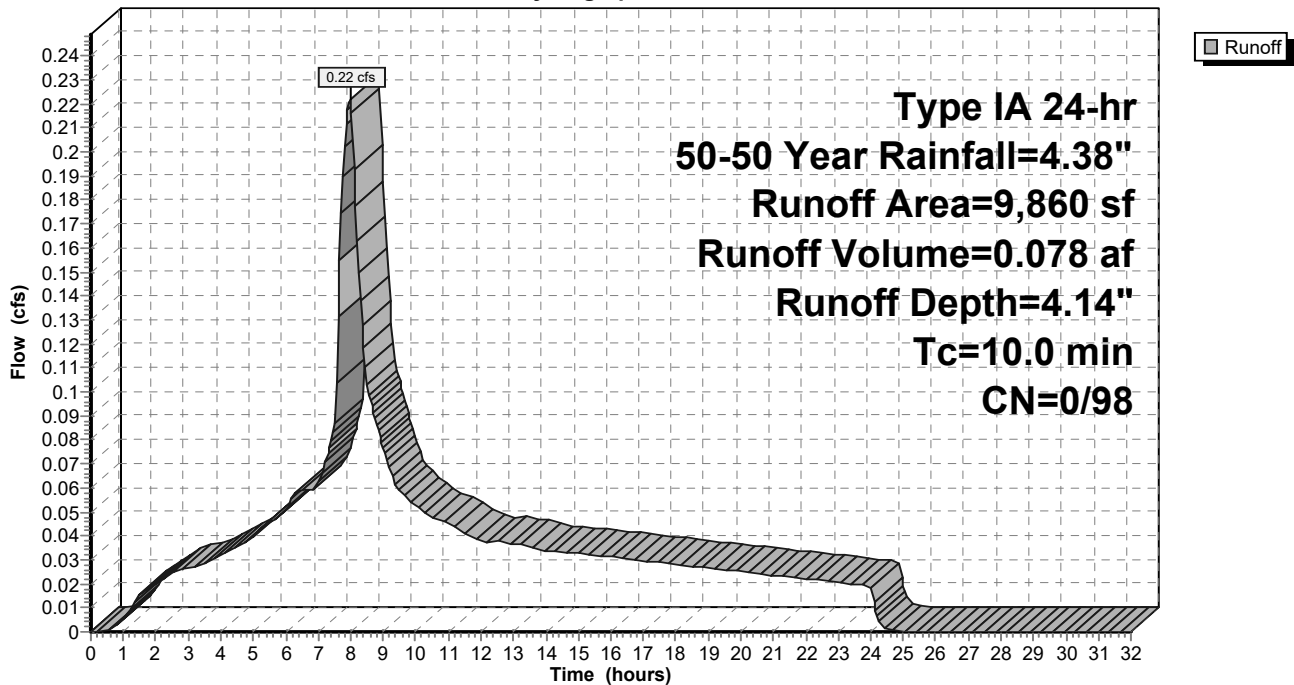
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 50-50 Year Rainfall=4.38"

Area (sf)	CN	Description
9,860	98	Paved roads w/curbs & sewers, HSG D
9,860	98	100.00% Impervious Area

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

Subcatchment 126S: Alley Basin 1

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Subcatchment 127S: Alley Basin 2

Runoff = 0.17 cfs @ 7.98 hrs, Volume= 0.059 af, Depth= 4.14"
 Routed to Reach 141R : 1

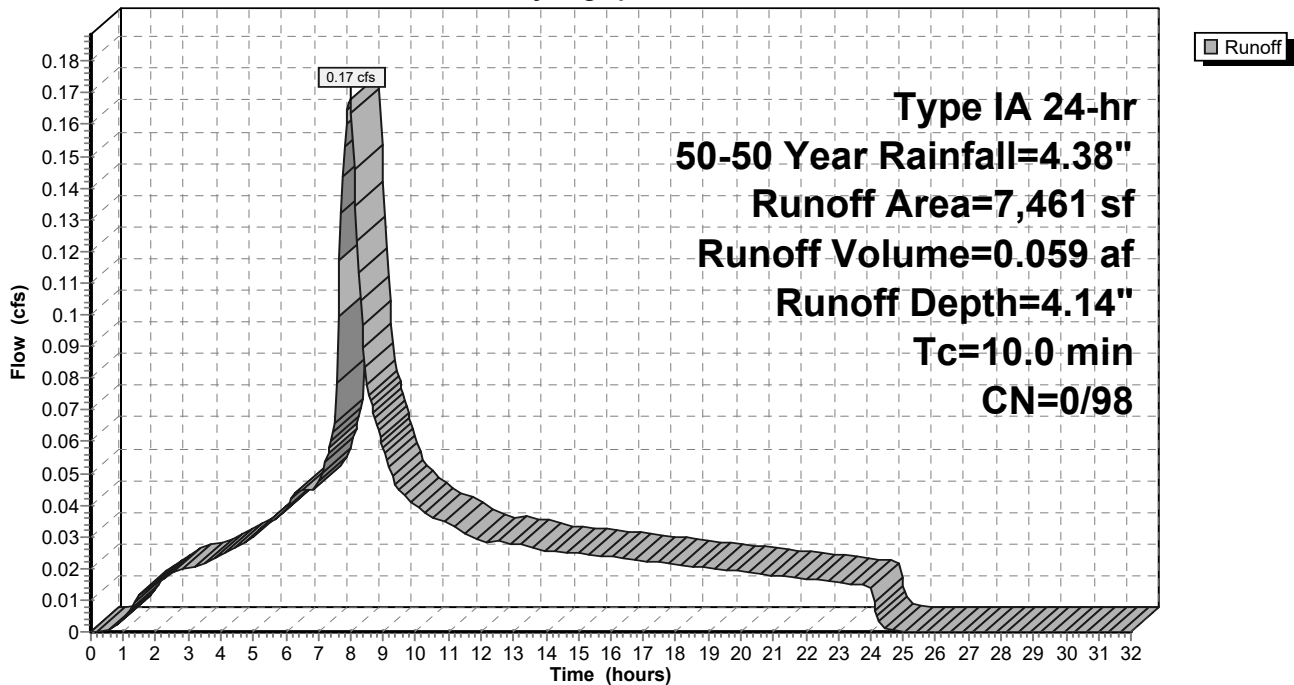
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 50-50 Year Rainfall=4.38"

Area (sf)	CN	Description
7,461	98	Paved roads w/curbs & sewers, HSG D
7,461	98	100.00% Impervious Area

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

Subcatchment 127S: Alley Basin 2

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Subcatchment 128S: Alley Basin 3

Runoff = 0.15 cfs @ 7.98 hrs, Volume= 0.054 af, Depth= 4.14"
 Routed to Reach 147R : 1

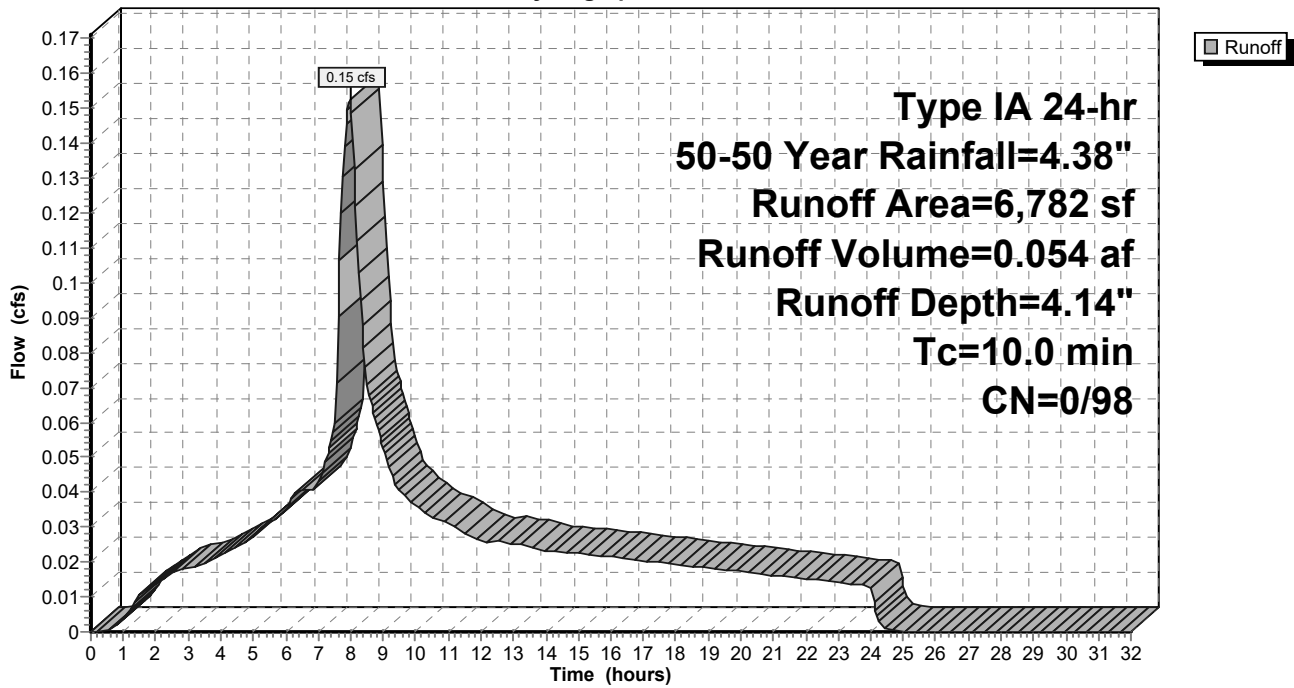
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 50-50 Year Rainfall=4.38"

Area (sf)	CN	Description
6,782	98	Paved roads w/curbs & sewers, HSG D
6,782	98	100.00% Impervious Area

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

Subcatchment 128S: Alley Basin 3

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Subcatchment 129S: Alley Basin 4

Runoff = 0.16 cfs @ 7.98 hrs, Volume= 0.055 af, Depth= 4.14"
 Routed to Reach 153R : 1

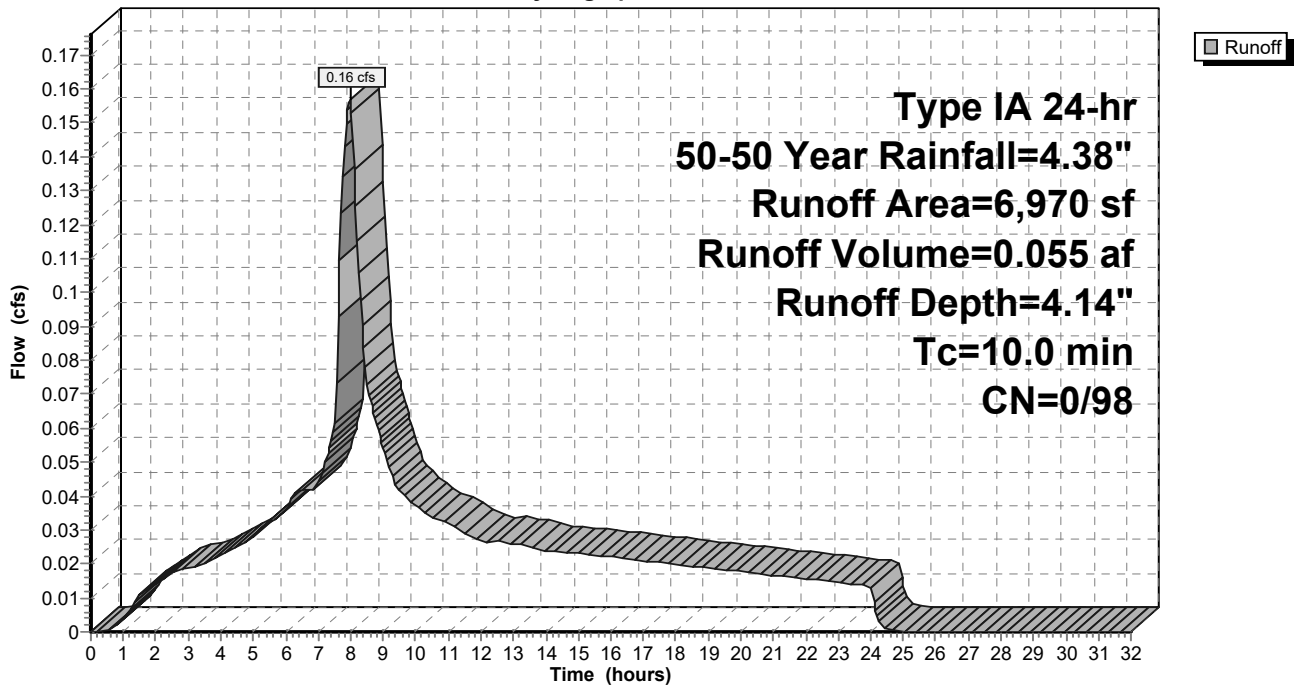
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 50-50 Year Rainfall=4.38"

Area (sf)	CN	Description
6,970	98	Paved roads w/curbs & sewers, HSG D
6,970	98	100.00% Impervious Area

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

Subcatchment 129S: Alley Basin 4

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Subcatchment 168S: Future Lots

Runoff = 1.36 cfs @ 7.98 hrs, Volume= 0.467 af, Depth= 3.80"
 Routed to Reach 166R : Basin Future

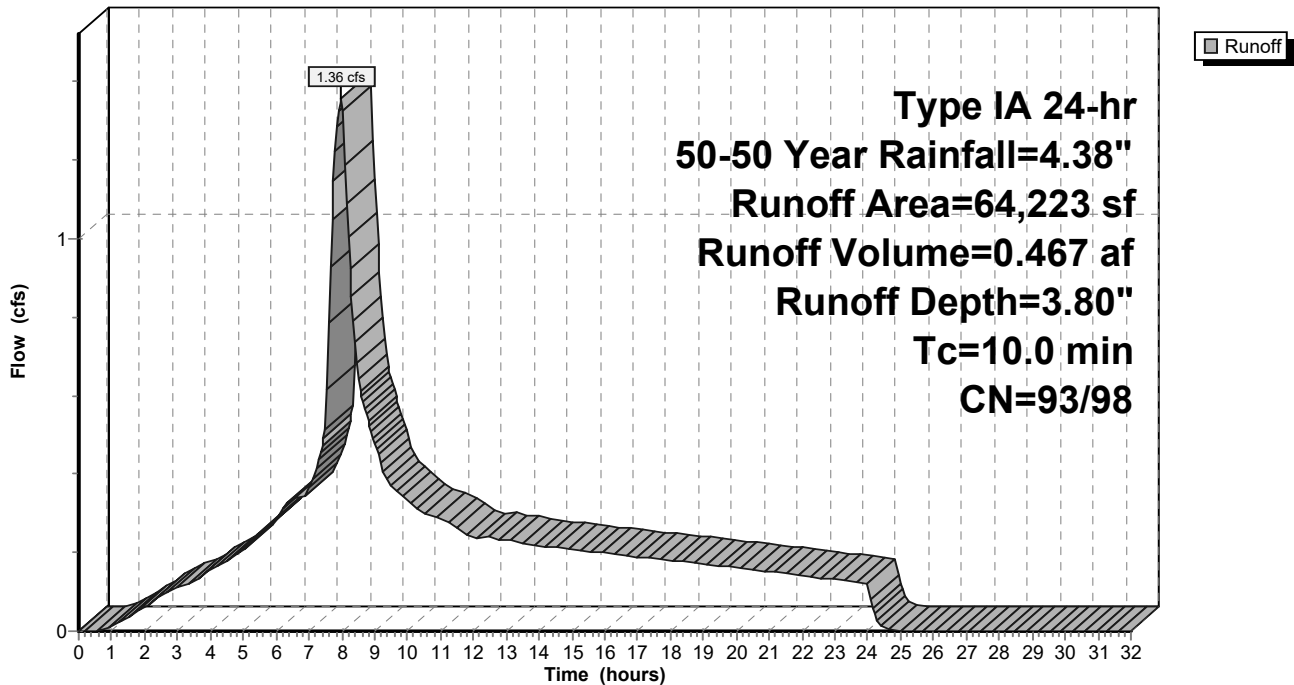
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 50-50 Year Rainfall=4.38"

	Area (sf)	CN	Description
*	39,915	93	70% Lot Coverage Weighted
	24,308	98	Paved roads w/curbs & sewers, HSG D
	64,223	95	Weighted Average
	39,915	93	62.15% Pervious Area
	24,308	98	37.85% Impervious Area

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

Subcatchment 168S: Future Lots

Hydrograph



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Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Subcatchment 169S: Swale 2

[46] Hint: Tc=0 (Instant runoff peak depends on dt)

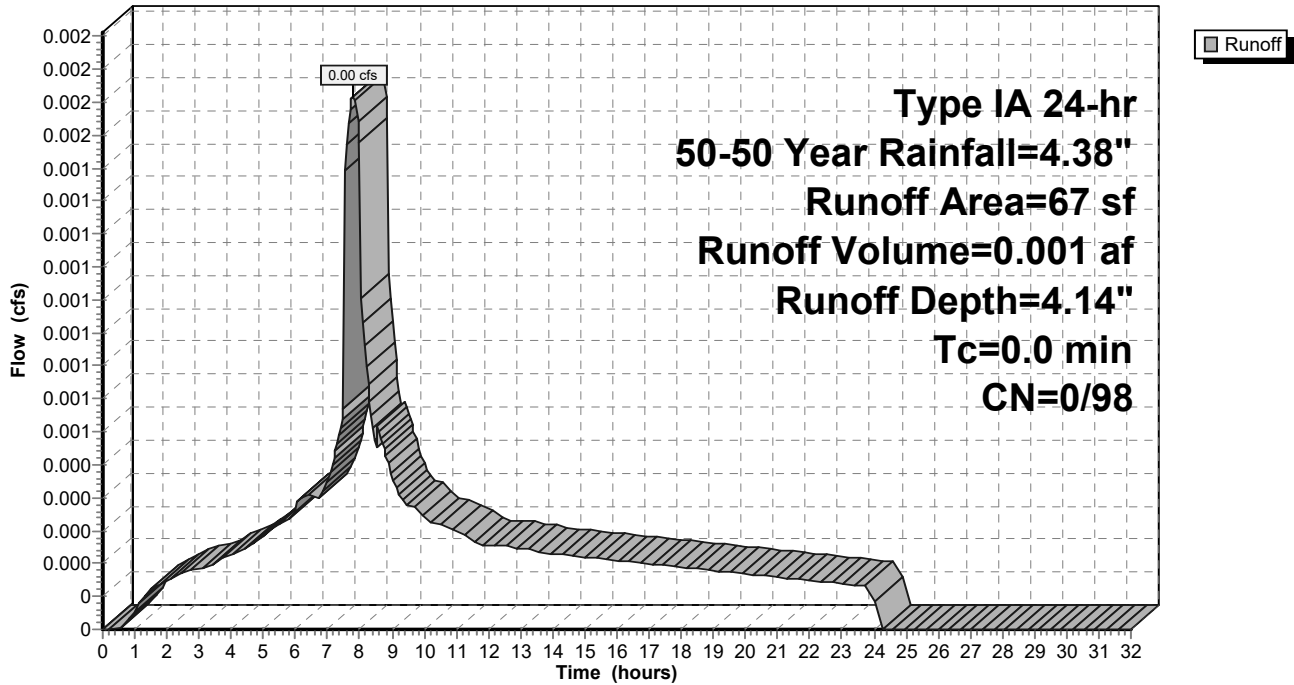
Runoff = 0.00 cfs @ 7.80 hrs, Volume= 0.001 af, Depth= 4.14"
 Routed to Pond 54P : Stormwater Swale 2

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 50-50 Year Rainfall=4.38"

Area (sf)	CN	Description
67	98	Water Surface, HSG D
67	98	100.00% Impervious Area

Subcatchment 169S: Swale 2

Hydrograph



9-6-23 HydroCAD DOM

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Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Subcatchment 170S: Swale 1

[46] Hint: Tc=0 (Instant runoff peak depends on dt)

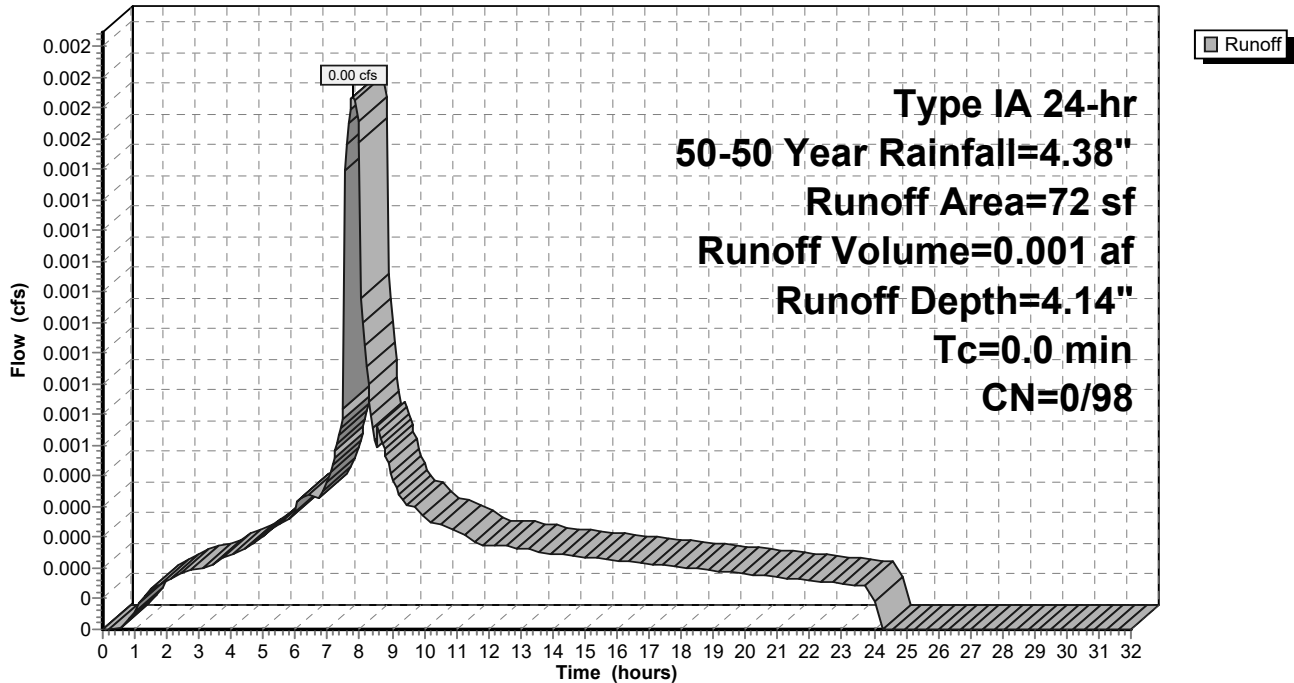
Runoff = 0.00 cfs @ 7.80 hrs, Volume= 0.001 af, Depth= 4.14"
 Routed to Pond 60P : Stormwater Swale 1

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 50-50 Year Rainfall=4.38"

Area (sf)	CN	Description
72	98	Water Surface, HSG D
72	98	100.00% Impervious Area

Subcatchment 170S: Swale 1

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Reach 39R: Post-Construction Peak Flow

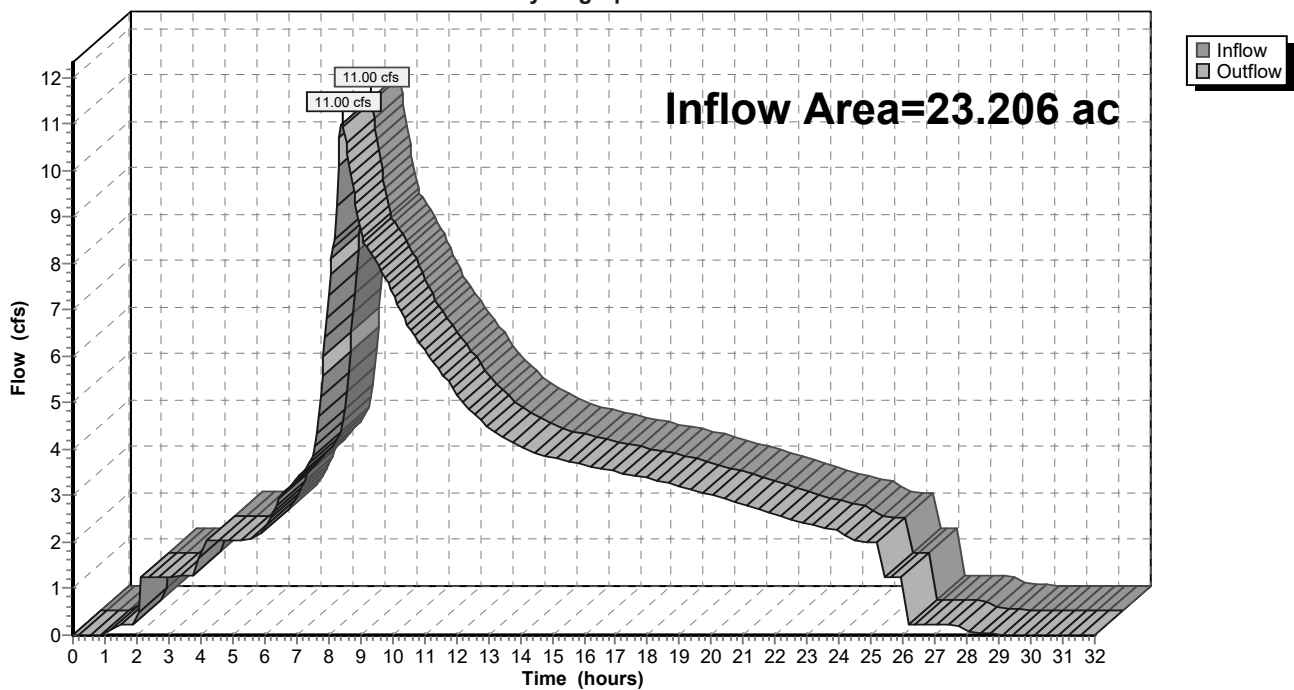
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 23.206 ac, 36.84% Impervious, Inflow Depth > 3.79" for 50-50 Year event
 Inflow = 11.00 cfs @ 8.43 hrs, Volume= 7.337 af
 Outflow = 11.00 cfs @ 8.43 hrs, Volume= 7.337 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 39R: Post-Construction Peak Flow

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Reach 42R: Pre-Construction Peak Flow

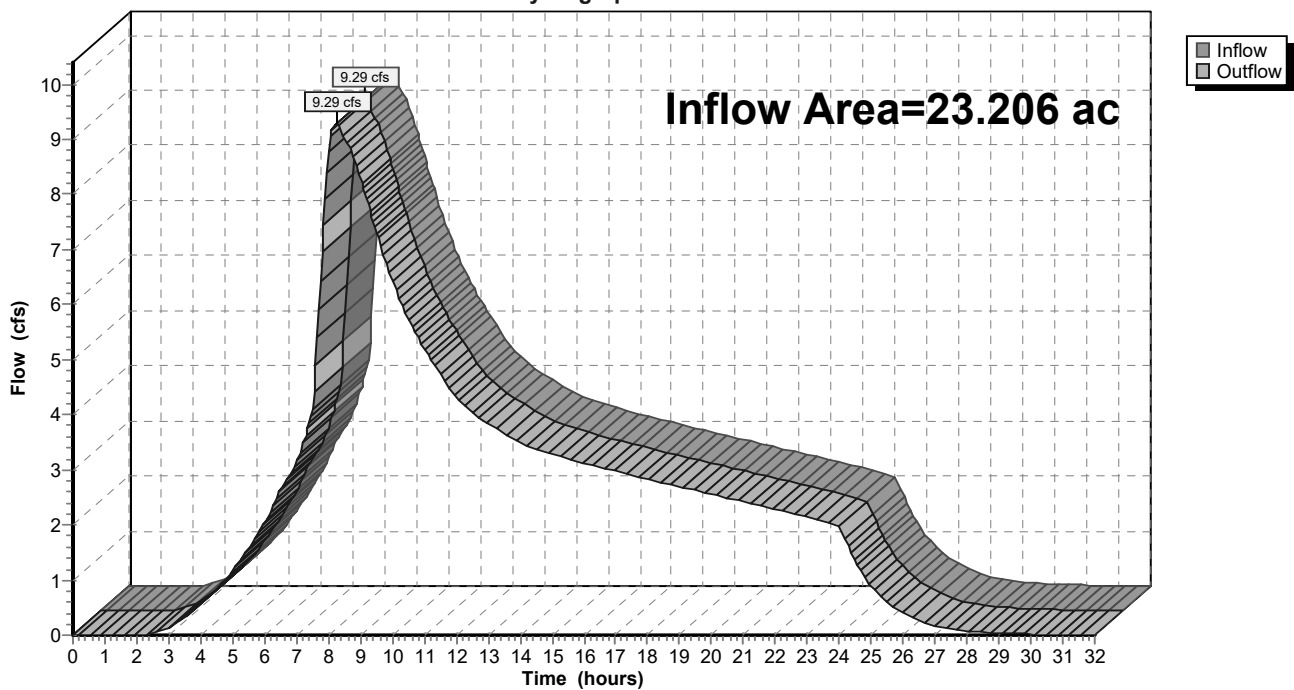
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 23.206 ac, 0.00% Impervious, Inflow Depth > 3.18" for 50-50 Year event
 Inflow = 9.29 cfs @ 8.24 hrs, Volume= 6.152 af
 Outflow = 9.29 cfs @ 8.24 hrs, Volume= 6.152 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 42R: Pre-Construction Peak Flow

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Reach 58R: 1

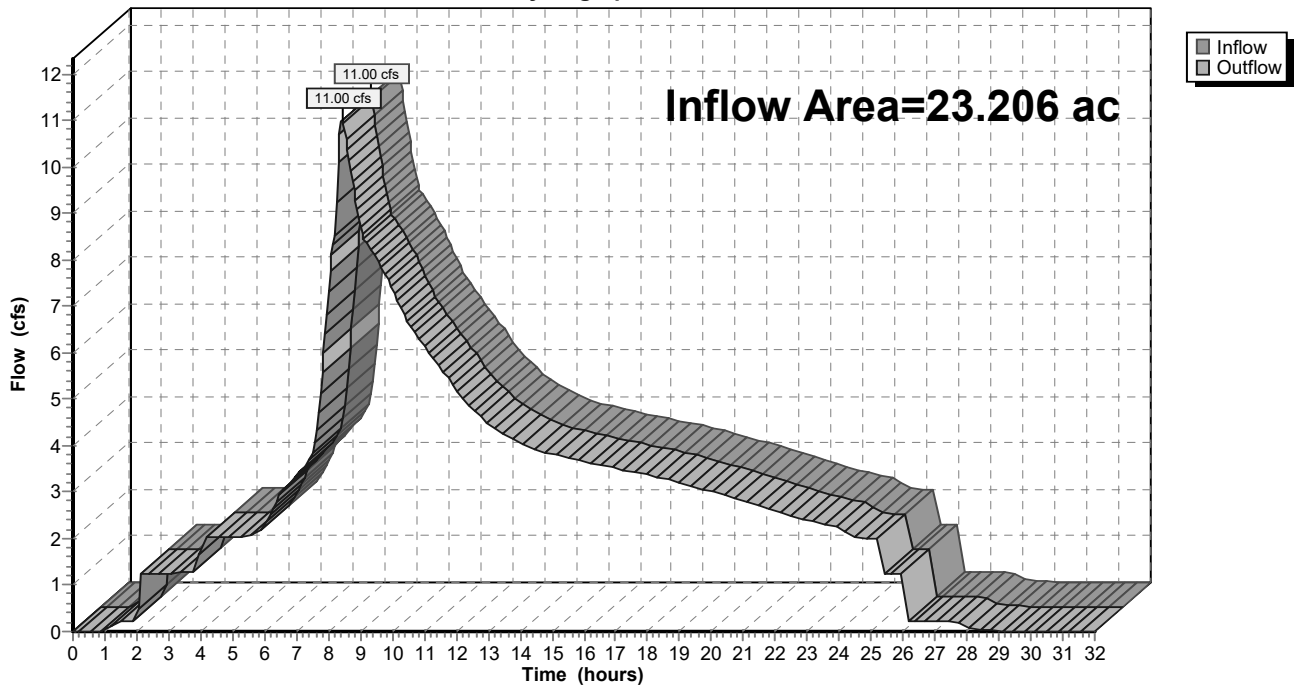
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 23.206 ac, 36.84% Impervious, Inflow Depth > 3.79" for 50-50 Year event
 Inflow = 11.00 cfs @ 8.43 hrs, Volume= 7.337 af
 Outflow = 11.00 cfs @ 8.43 hrs, Volume= 7.337 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 39R : Post-Construction Peak Flow

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 58R: 1

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Reach 85R: 1

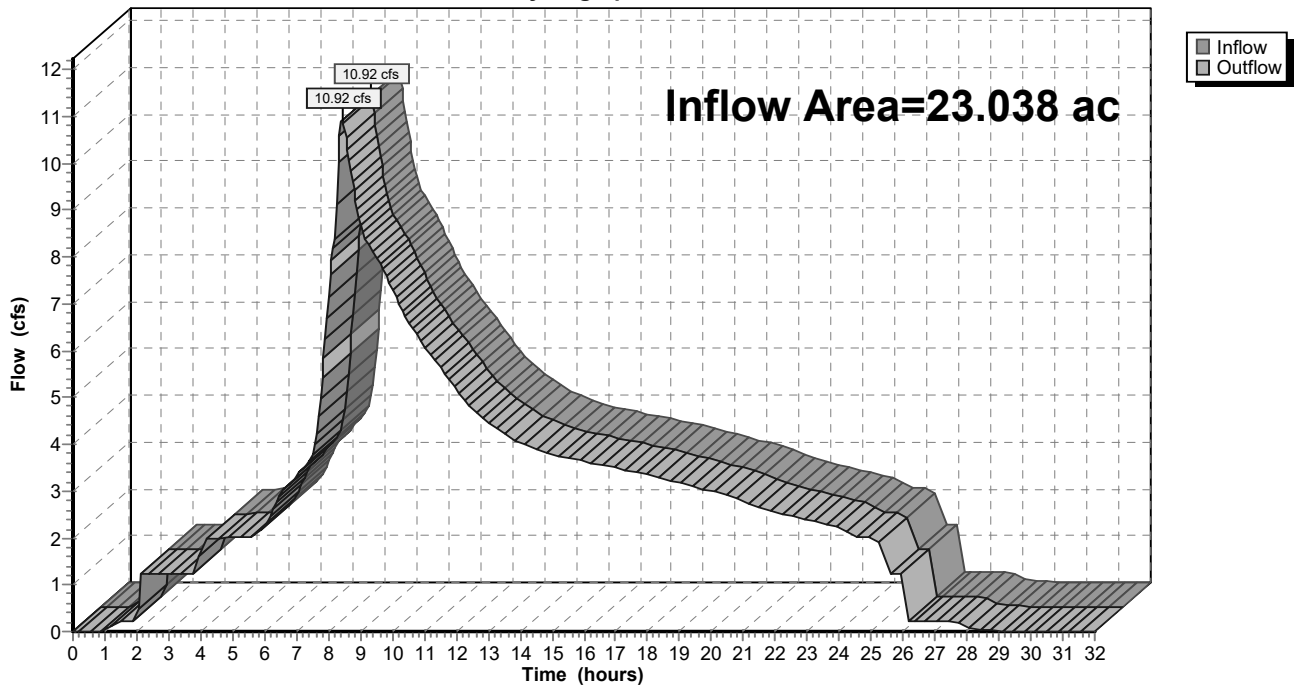
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 23.038 ac, 36.38% Impervious, Inflow Depth > 3.79" for 50-50 Year event
 Inflow = 10.92 cfs @ 8.43 hrs, Volume= 7.279 af
 Outflow = 10.92 cfs @ 8.43 hrs, Volume= 7.279 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 58R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 85R: 1

Hydrograph



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Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Reach 130R: 1

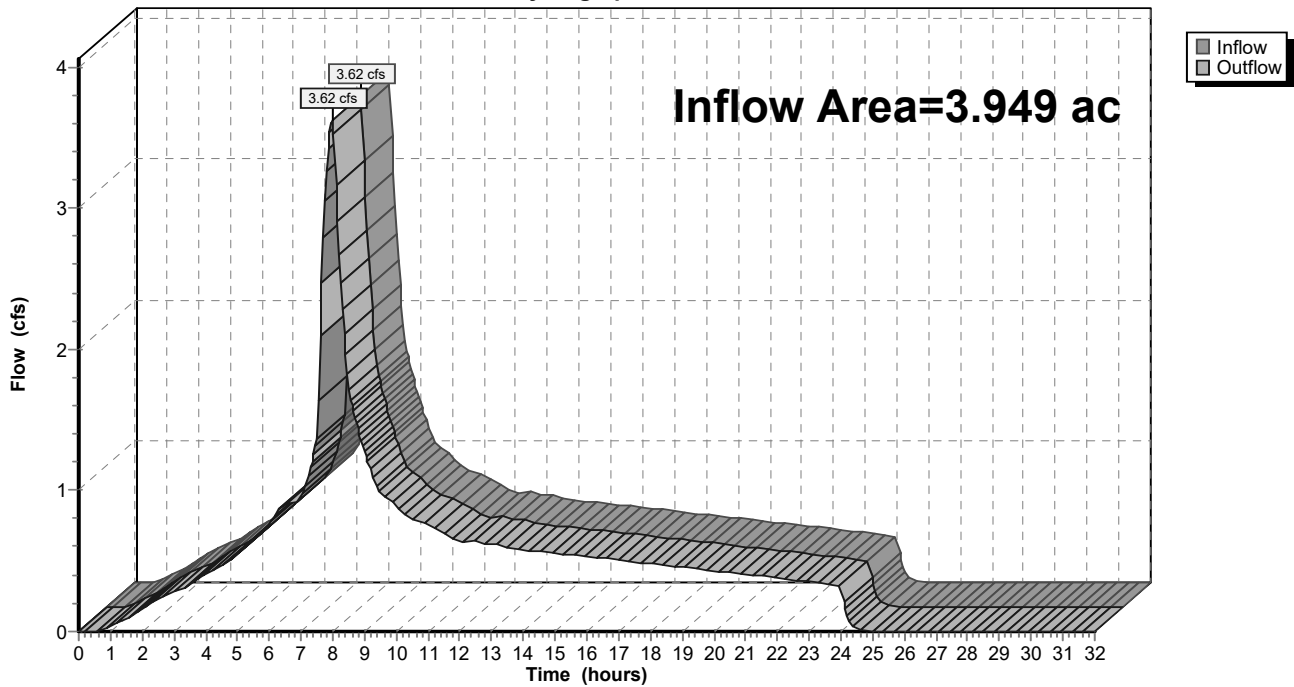
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.949 ac, 33.88% Impervious, Inflow Depth = 3.78" for 50-50 Year event
 Inflow = 3.62 cfs @ 7.98 hrs, Volume= 1.243 af
 Outflow = 3.62 cfs @ 7.98 hrs, Volume= 1.243 af, Atten= 0%, Lag= 0.0 min
 Routed to Pond 63P : Detention Pond

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 130R: 1

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Reach 131R: 1

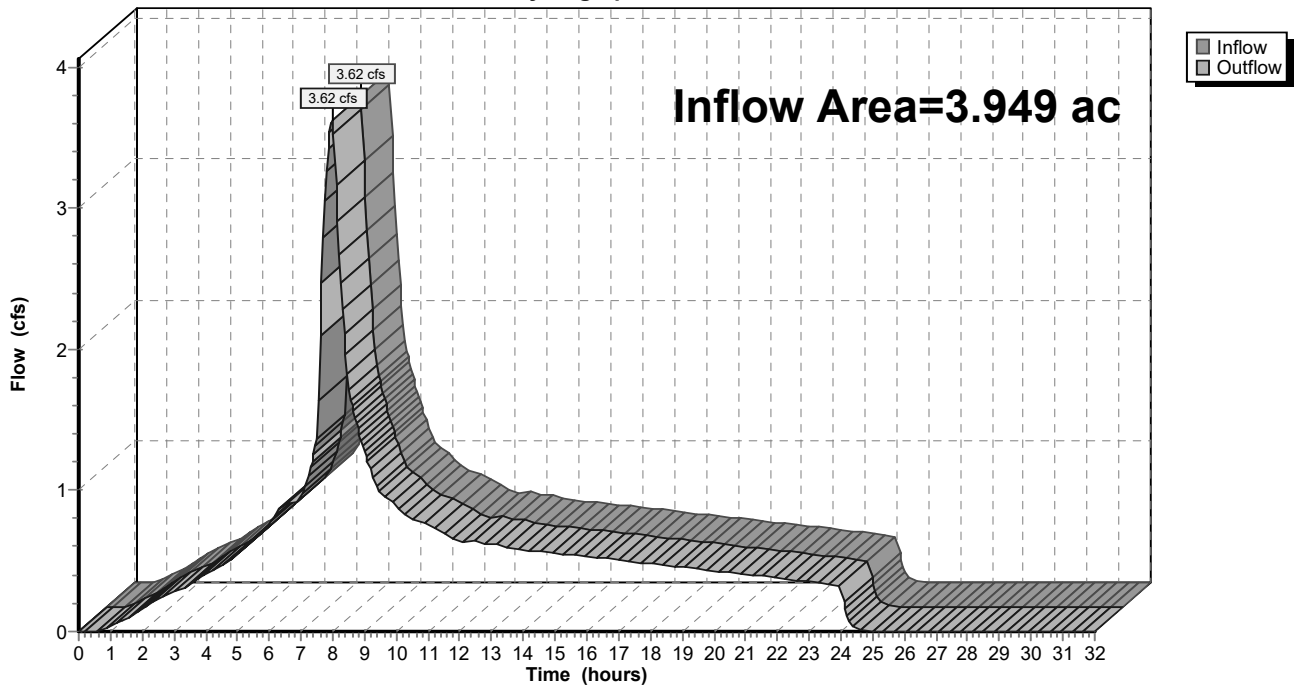
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.949 ac, 33.88% Impervious, Inflow Depth = 3.78" for 50-50 Year event
 Inflow = 3.62 cfs @ 7.98 hrs, Volume= 1.243 af
 Outflow = 3.62 cfs @ 7.98 hrs, Volume= 1.243 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 130R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 131R: 1

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Reach 132R: 1

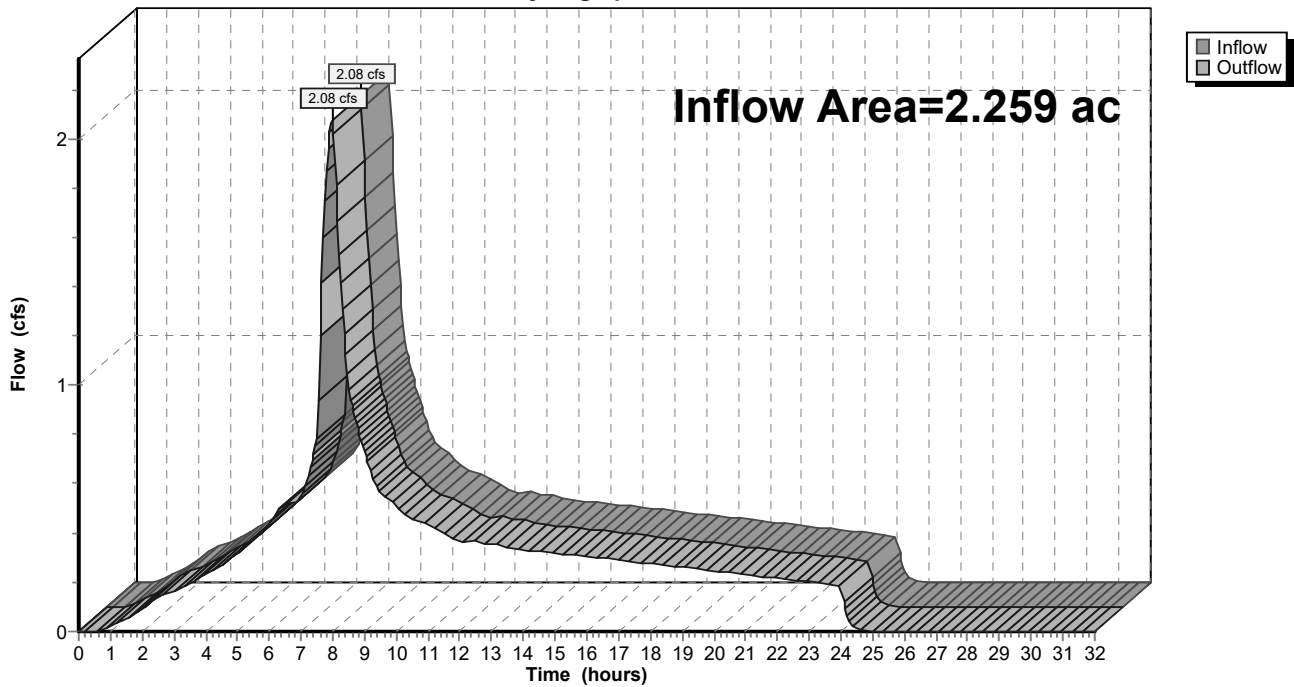
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 2.259 ac, 35.43% Impervious, Inflow Depth = 3.79" for 50-50 Year event
 Inflow = 2.08 cfs @ 7.98 hrs, Volume= 0.713 af
 Outflow = 2.08 cfs @ 7.98 hrs, Volume= 0.713 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 131R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 132R: 1

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Reach 133R: 1

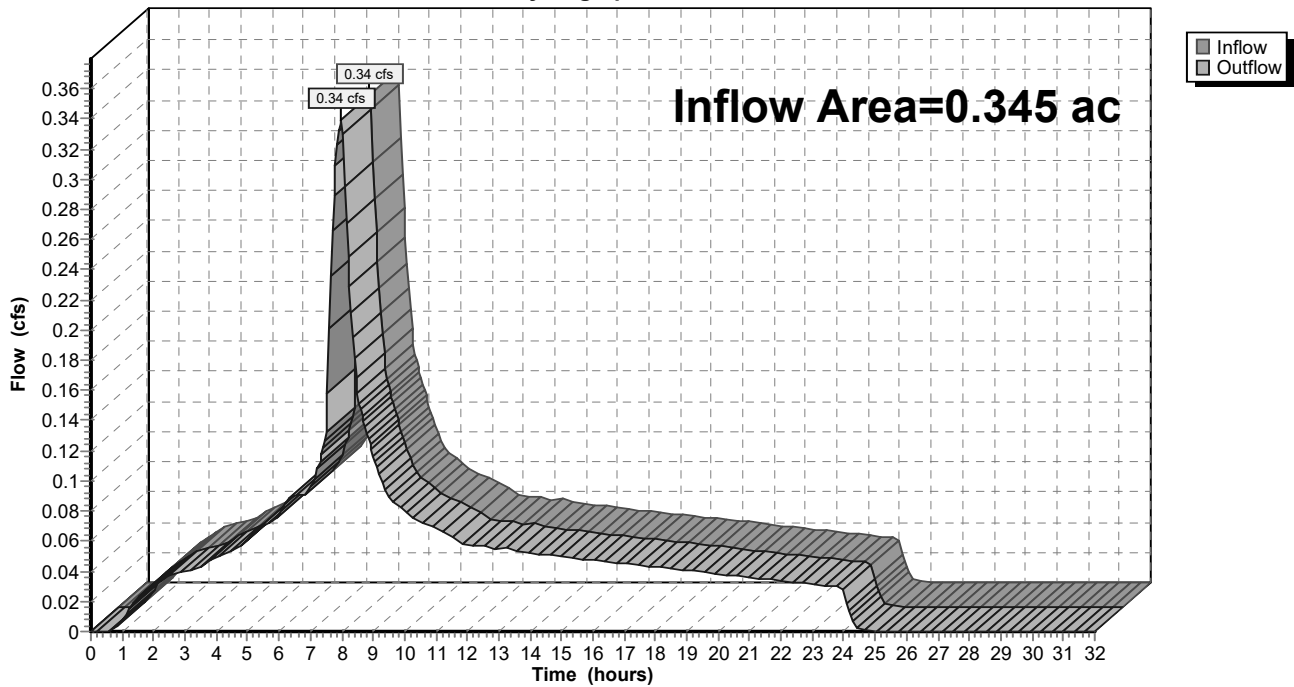
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.345 ac, 100.00% Impervious, Inflow Depth = 4.14" for 50-50 Year event
 Inflow = 0.34 cfs @ 7.98 hrs, Volume= 0.119 af
 Outflow = 0.34 cfs @ 7.98 hrs, Volume= 0.119 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 132R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 133R: 1

Hydrograph



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Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Reach 134R: 1

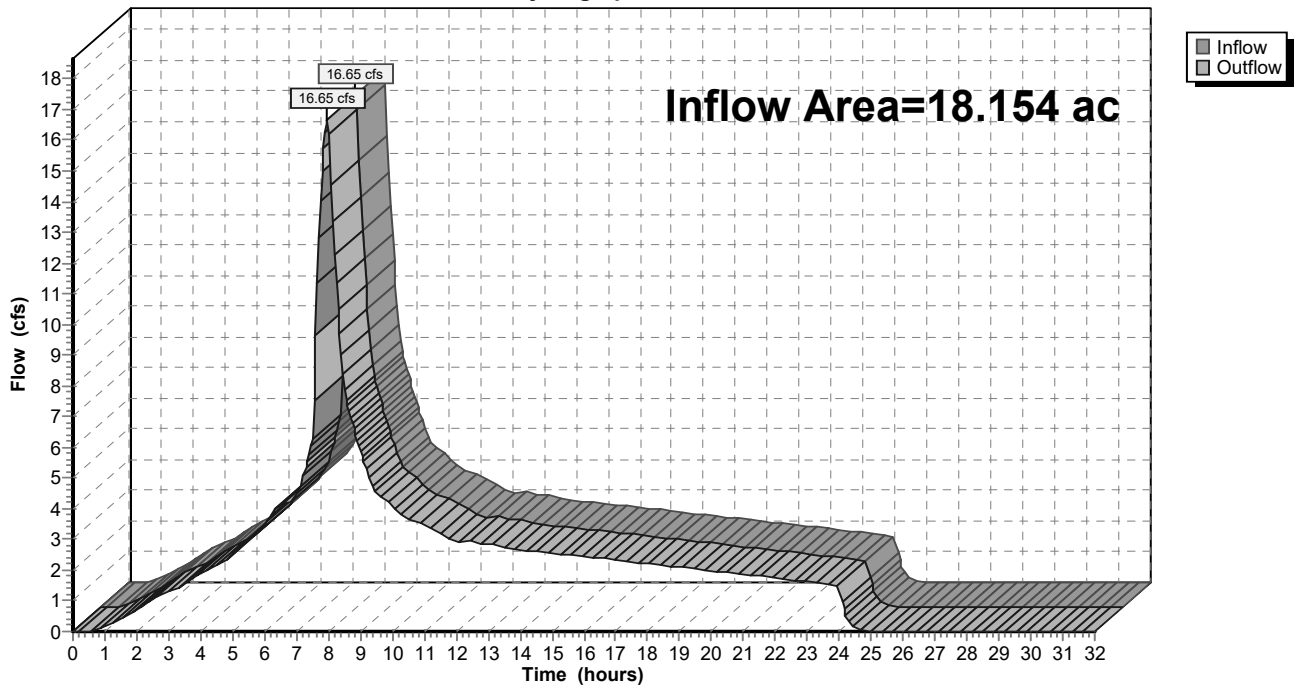
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 18.154 ac, 33.65% Impervious, Inflow Depth = 3.78" for 50-50 Year event
 Inflow = 16.65 cfs @ 7.98 hrs, Volume= 5.714 af
 Outflow = 16.65 cfs @ 7.98 hrs, Volume= 5.714 af, Atten= 0%, Lag= 0.0 min
 Routed to Pond 63P : Detention Pond

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 134R: 1

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Reach 135R: 1

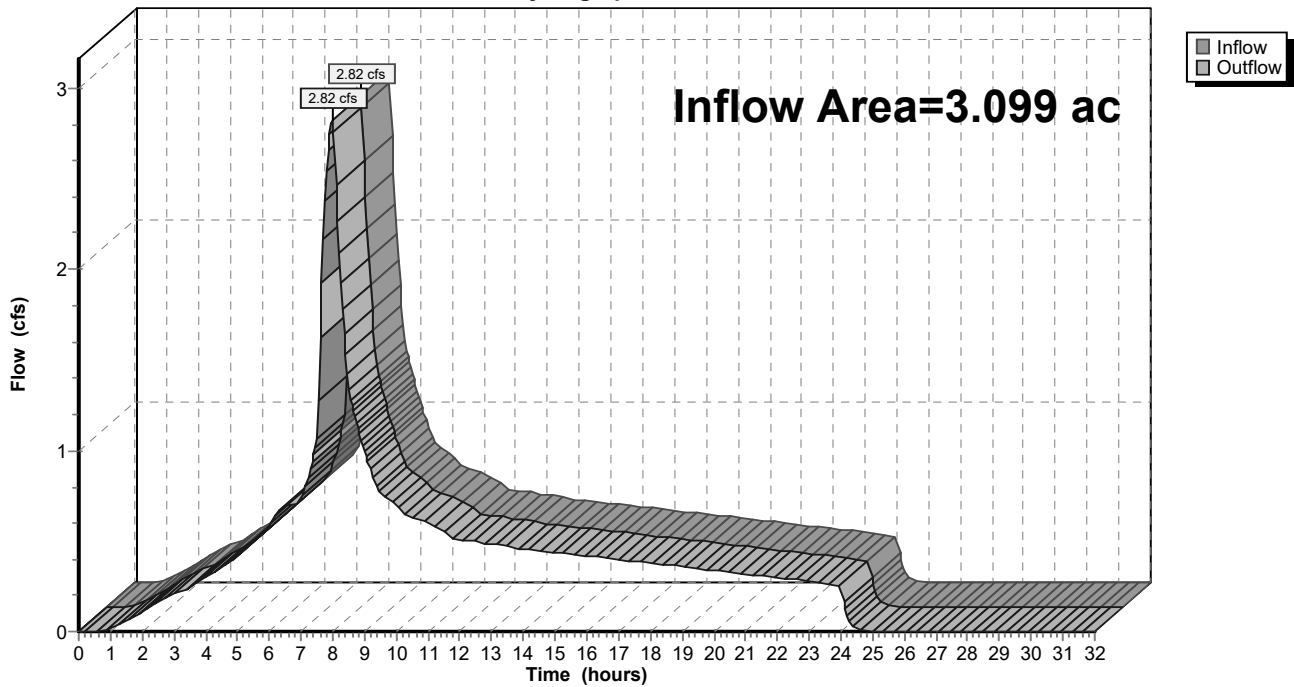
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.099 ac, 26.69% Impervious, Inflow Depth = 3.74" for 50-50 Year event
 Inflow = 2.82 cfs @ 7.98 hrs, Volume= 0.965 af
 Outflow = 2.82 cfs @ 7.98 hrs, Volume= 0.965 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 134R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 135R: 1

Hydrograph



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Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Reach 136R: 1

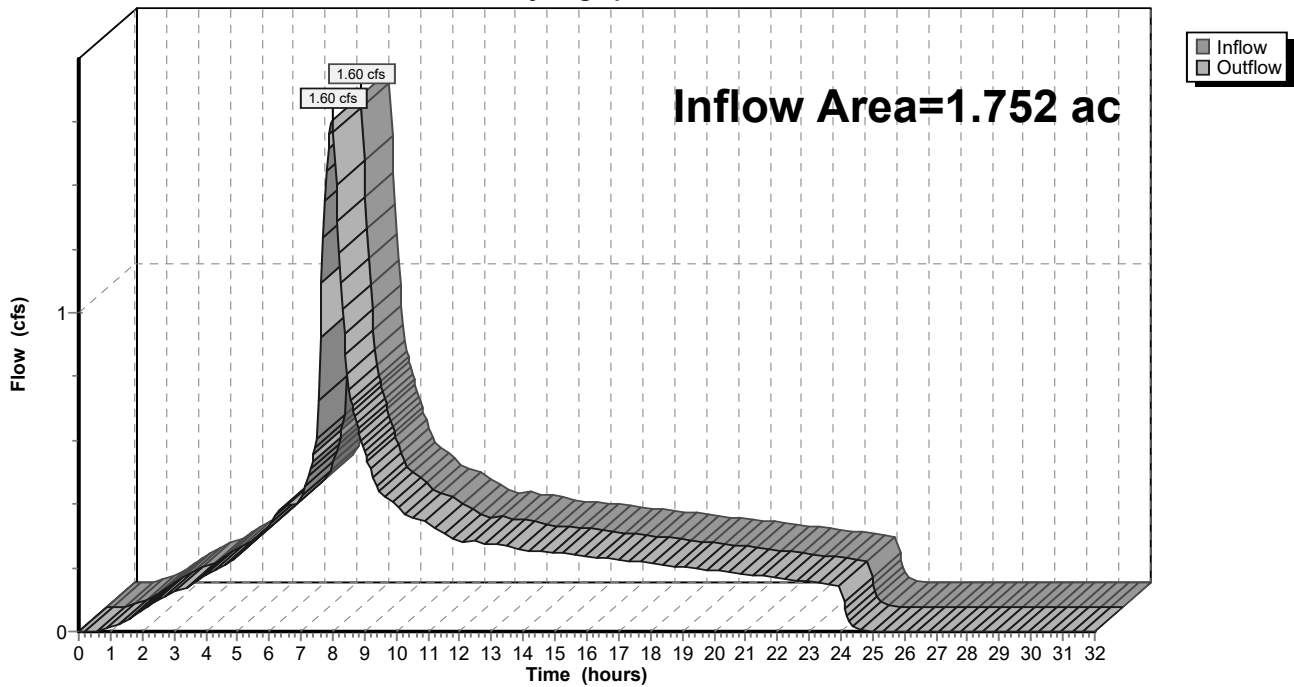
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.752 ac, 30.00% Impervious, Inflow Depth = 3.76" for 50-50 Year event
 Inflow = 1.60 cfs @ 7.98 hrs, Volume= 0.549 af
 Outflow = 1.60 cfs @ 7.98 hrs, Volume= 0.549 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 135R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 136R: 1

Hydrograph



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Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Reach 137R: 1

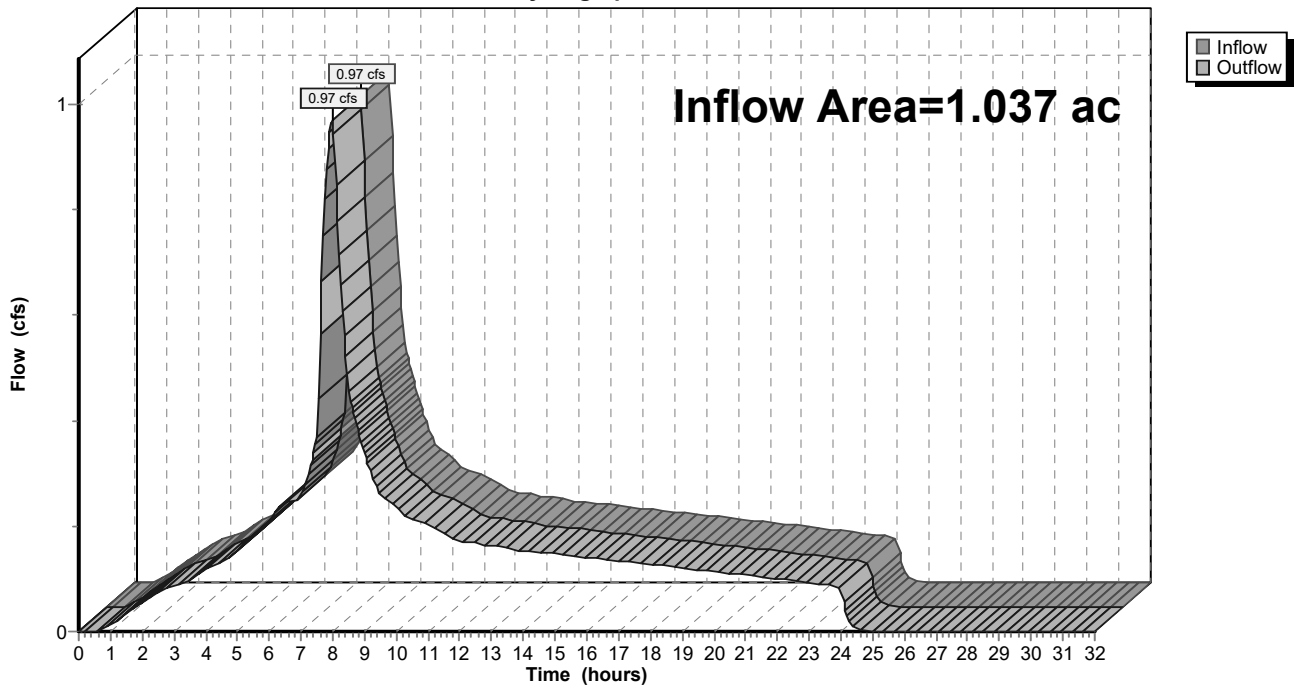
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.037 ac, 50.68% Impervious, Inflow Depth = 3.87" for 50-50 Year event
 Inflow = 0.97 cfs @ 7.98 hrs, Volume= 0.335 af
 Outflow = 0.97 cfs @ 7.98 hrs, Volume= 0.335 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 136R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 137R: 1

Hydrograph



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Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Reach 138R: 1

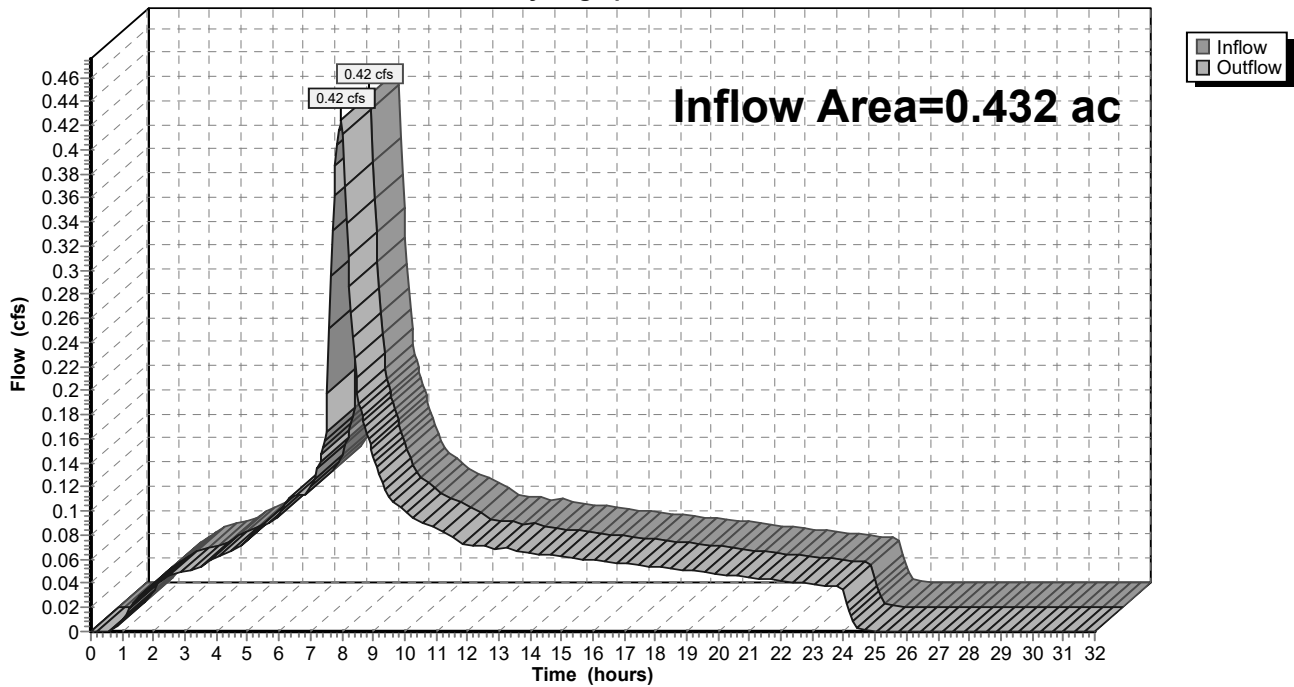
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.432 ac, 100.00% Impervious, Inflow Depth = 4.14" for 50-50 Year event
 Inflow = 0.42 cfs @ 7.98 hrs, Volume= 0.149 af
 Outflow = 0.42 cfs @ 7.98 hrs, Volume= 0.149 af, Atten= 0%, Lag= 0.0 min
 Routed to Pond 63P : Detention Pond

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 138R: 1

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Reach 139R: 1

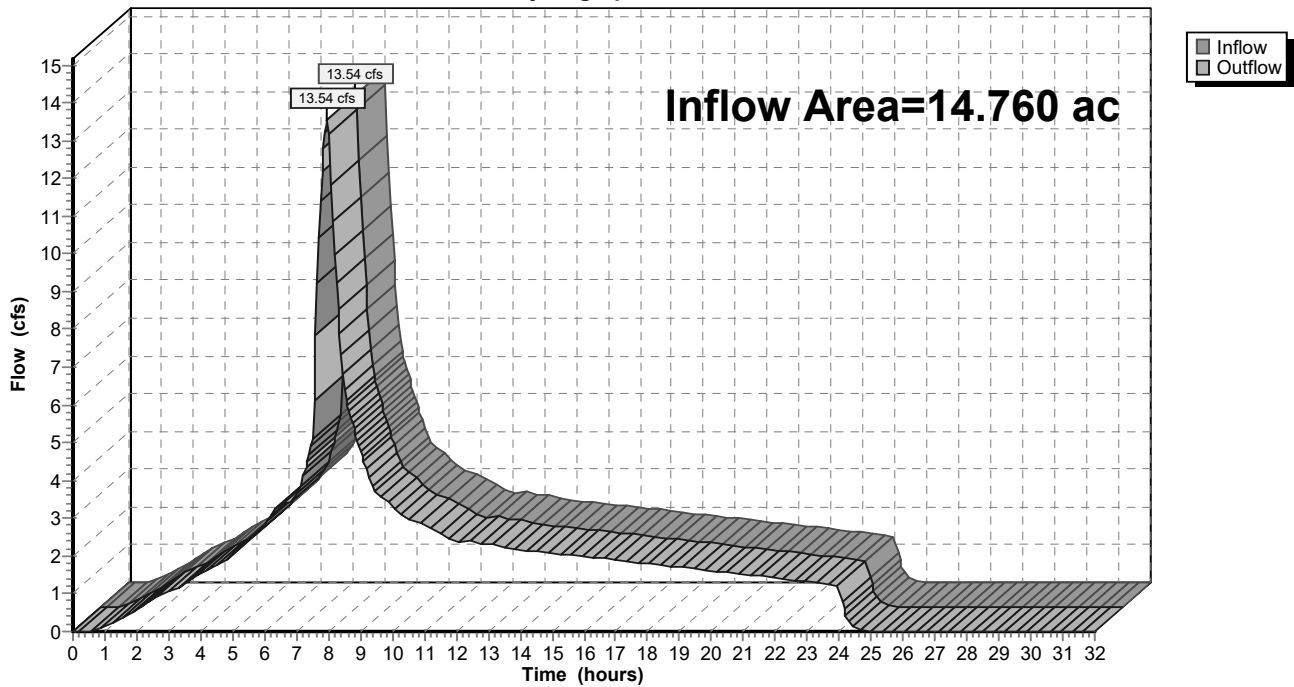
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 14.760 ac, 33.78% Impervious, Inflow Depth = 3.78" for 50-50 Year event
 Inflow = 13.54 cfs @ 7.98 hrs, Volume= 4.646 af
 Outflow = 13.54 cfs @ 7.98 hrs, Volume= 4.646 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 158R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 139R: 1

Hydrograph



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Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Reach 140R: 1

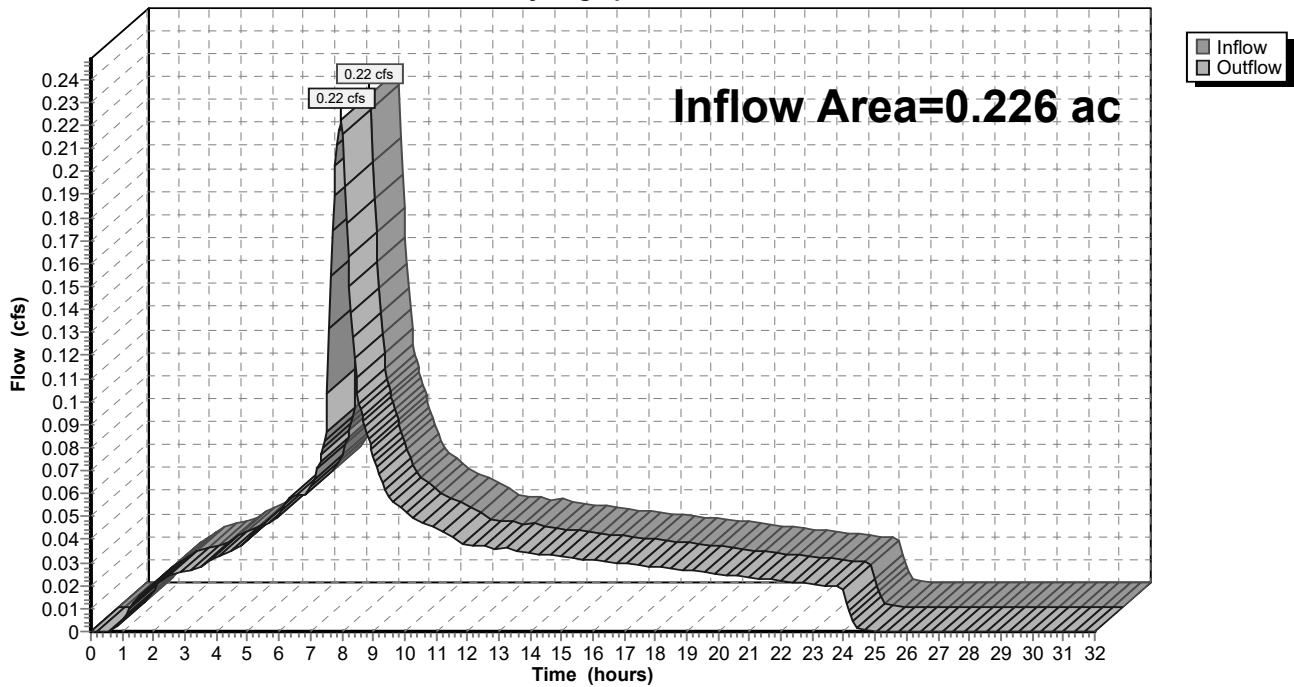
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.226 ac, 100.00% Impervious, Inflow Depth = 4.14" for 50-50 Year event
 Inflow = 0.22 cfs @ 7.98 hrs, Volume= 0.078 af
 Outflow = 0.22 cfs @ 7.98 hrs, Volume= 0.078 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 138R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 140R: 1

Hydrograph



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Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Reach 141R: 1

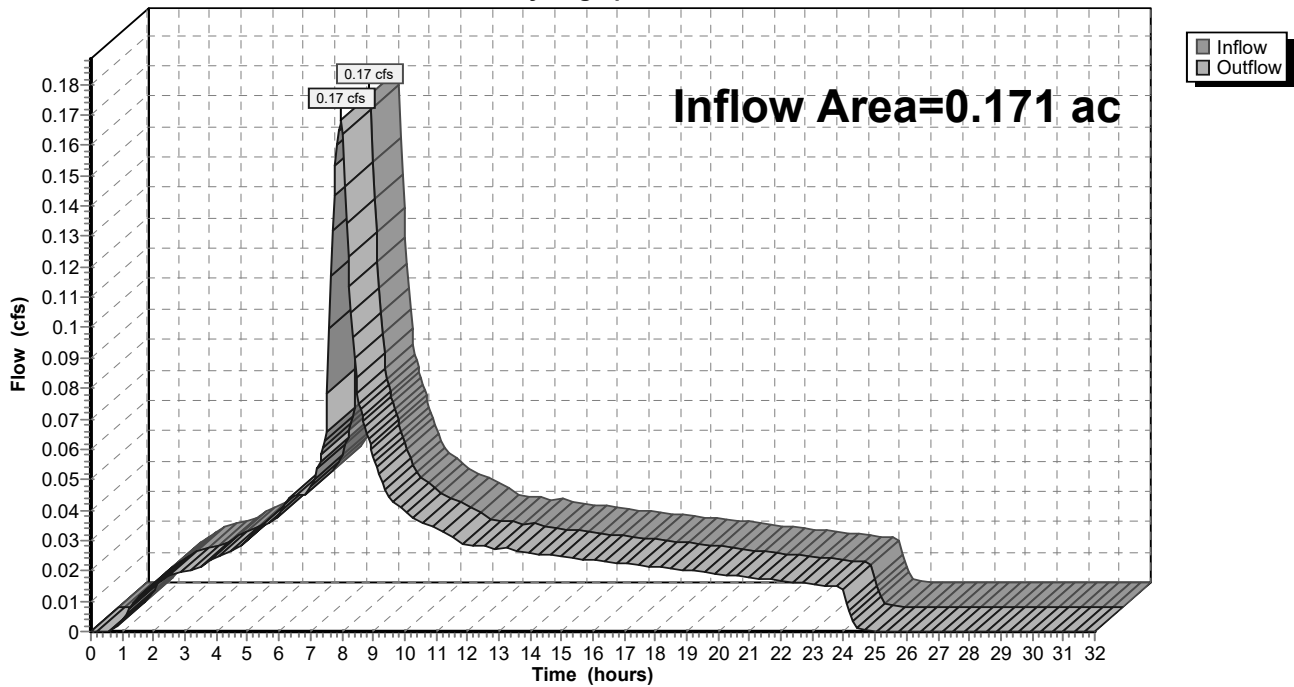
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.171 ac, 100.00% Impervious, Inflow Depth = 4.14" for 50-50 Year event
 Inflow = 0.17 cfs @ 7.98 hrs, Volume= 0.059 af
 Outflow = 0.17 cfs @ 7.98 hrs, Volume= 0.059 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 139R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 141R: 1

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Reach 142R: 1

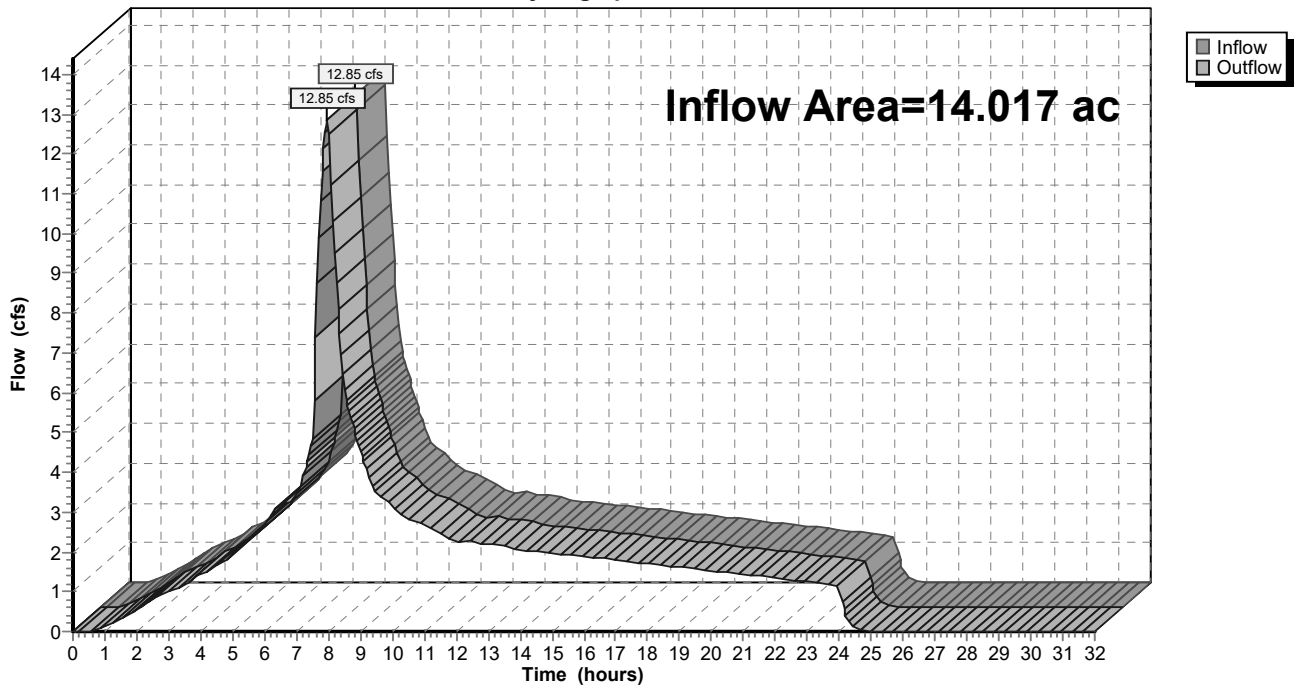
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 14.017 ac, 33.09% Impervious, Inflow Depth = 3.77" for 50-50 Year event
 Inflow = 12.85 cfs @ 7.98 hrs, Volume= 4.408 af
 Outflow = 12.85 cfs @ 7.98 hrs, Volume= 4.408 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 159R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 142R: 1

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Reach 143R: 1

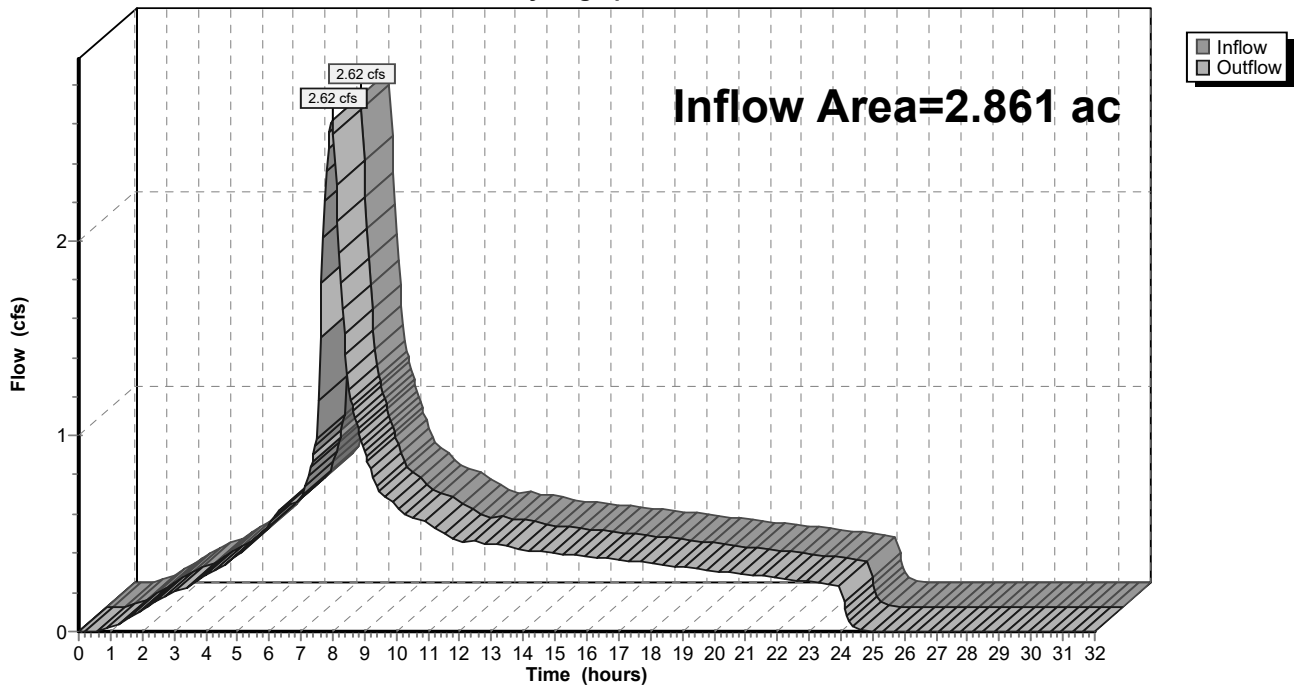
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 2.861 ac, 30.95% Impervious, Inflow Depth = 3.76" for 50-50 Year event
 Inflow = 2.62 cfs @ 7.98 hrs, Volume= 0.897 af
 Outflow = 2.62 cfs @ 7.98 hrs, Volume= 0.897 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 142R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 143R: 1

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Reach 144R: 1

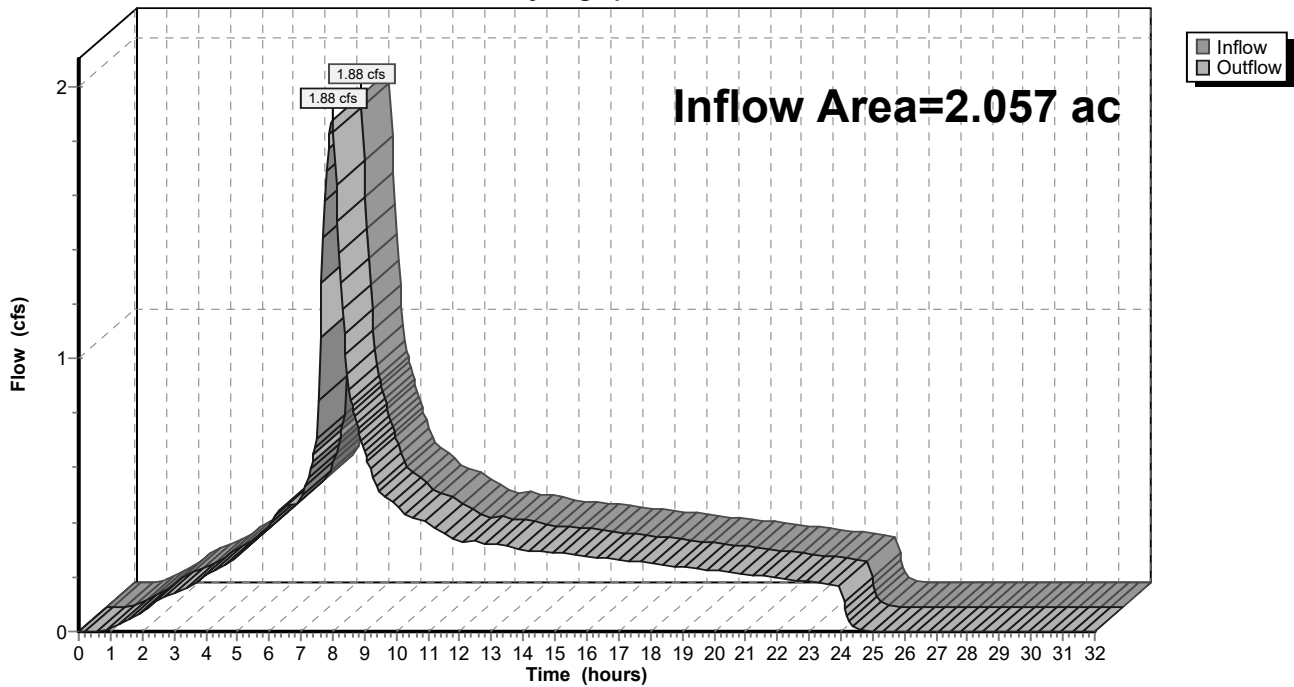
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 2.057 ac, 28.74% Impervious, Inflow Depth = 3.75" for 50-50 Year event
 Inflow = 1.88 cfs @ 7.98 hrs, Volume= 0.643 af
 Outflow = 1.88 cfs @ 7.98 hrs, Volume= 0.643 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 143R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 144R: 1

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Reach 145R: 1

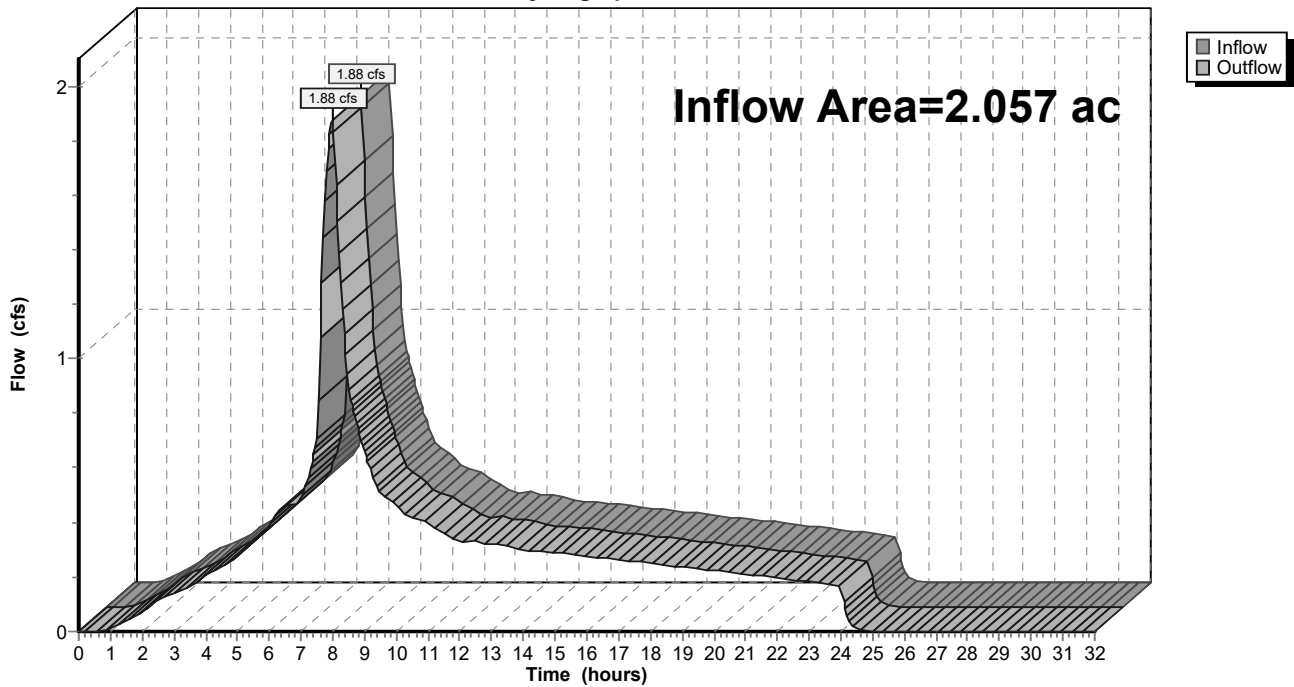
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 2.057 ac, 28.74% Impervious, Inflow Depth = 3.75" for 50-50 Year event
 Inflow = 1.88 cfs @ 7.98 hrs, Volume= 0.643 af
 Outflow = 1.88 cfs @ 7.98 hrs, Volume= 0.643 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 144R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 145R: 1

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Reach 146R: 1

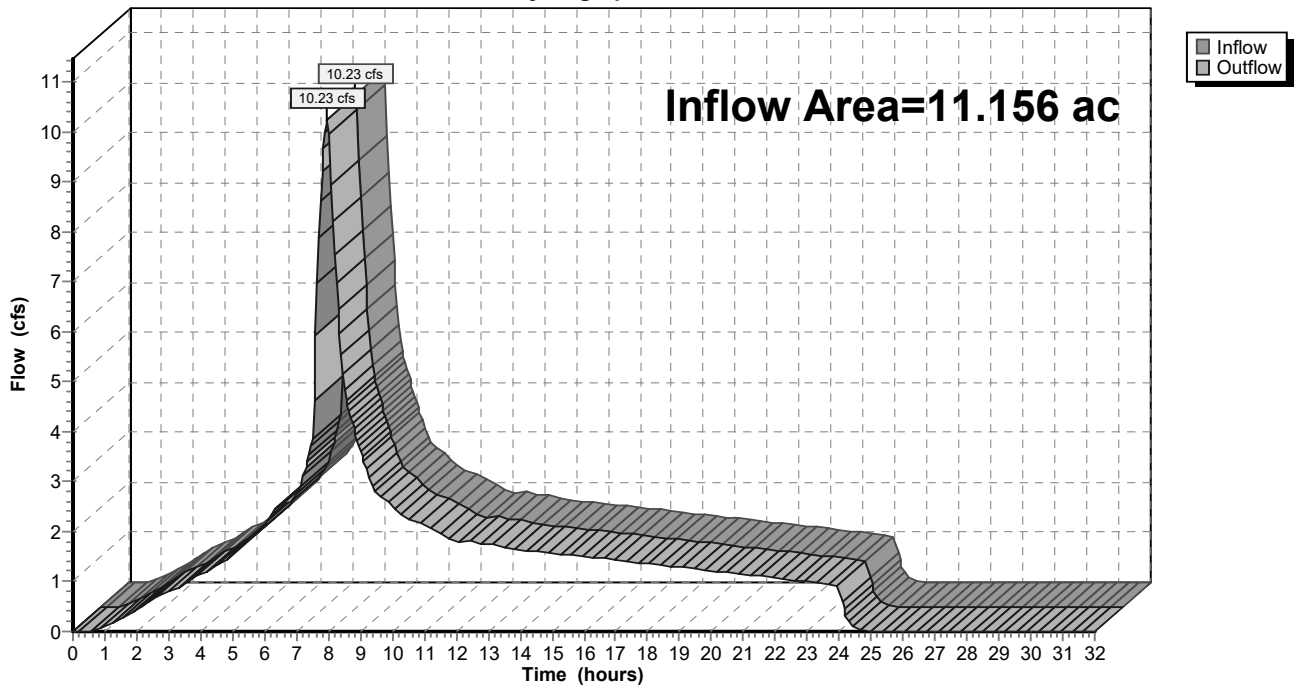
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 11.156 ac, 33.63% Impervious, Inflow Depth = 3.78" for 50-50 Year event
 Inflow = 10.23 cfs @ 7.98 hrs, Volume= 3.511 af
 Outflow = 10.23 cfs @ 7.98 hrs, Volume= 3.511 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 142R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 146R: 1

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Reach 147R: 1

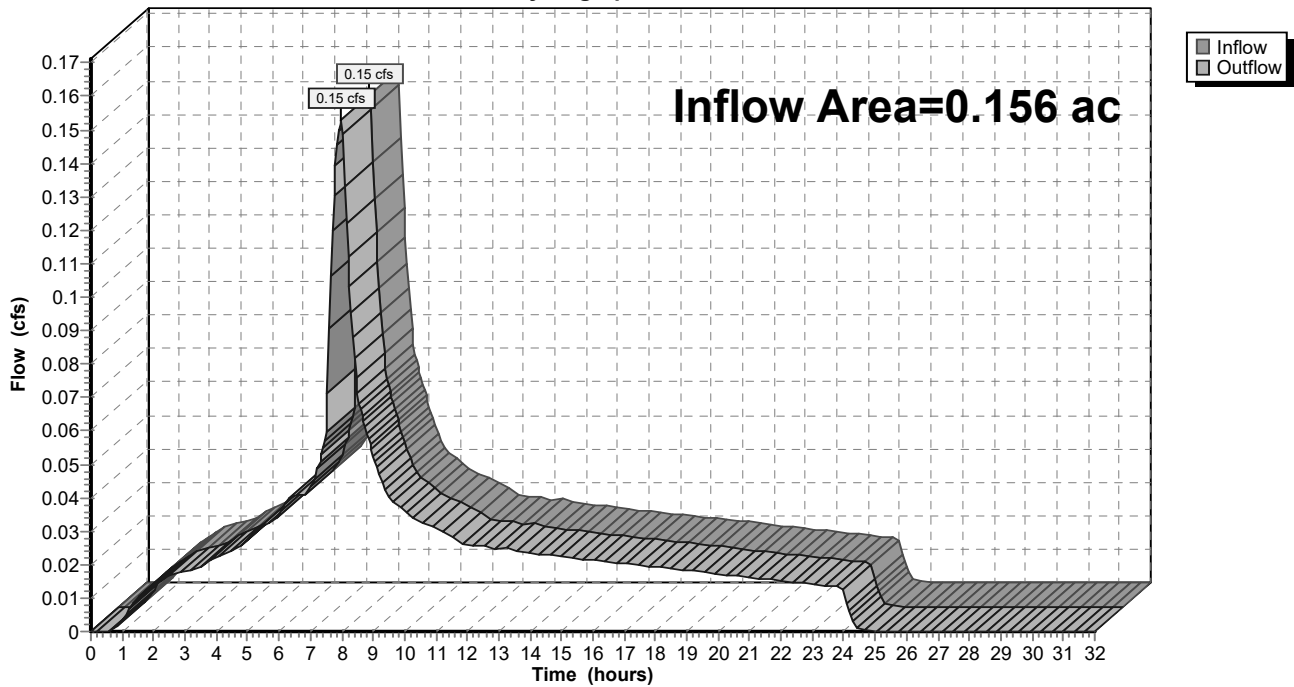
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.156 ac, 100.00% Impervious, Inflow Depth = 4.14" for 50-50 Year event
 Inflow = 0.15 cfs @ 7.98 hrs, Volume= 0.054 af
 Outflow = 0.15 cfs @ 7.98 hrs, Volume= 0.054 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 146R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 147R: 1

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Reach 148R: 1

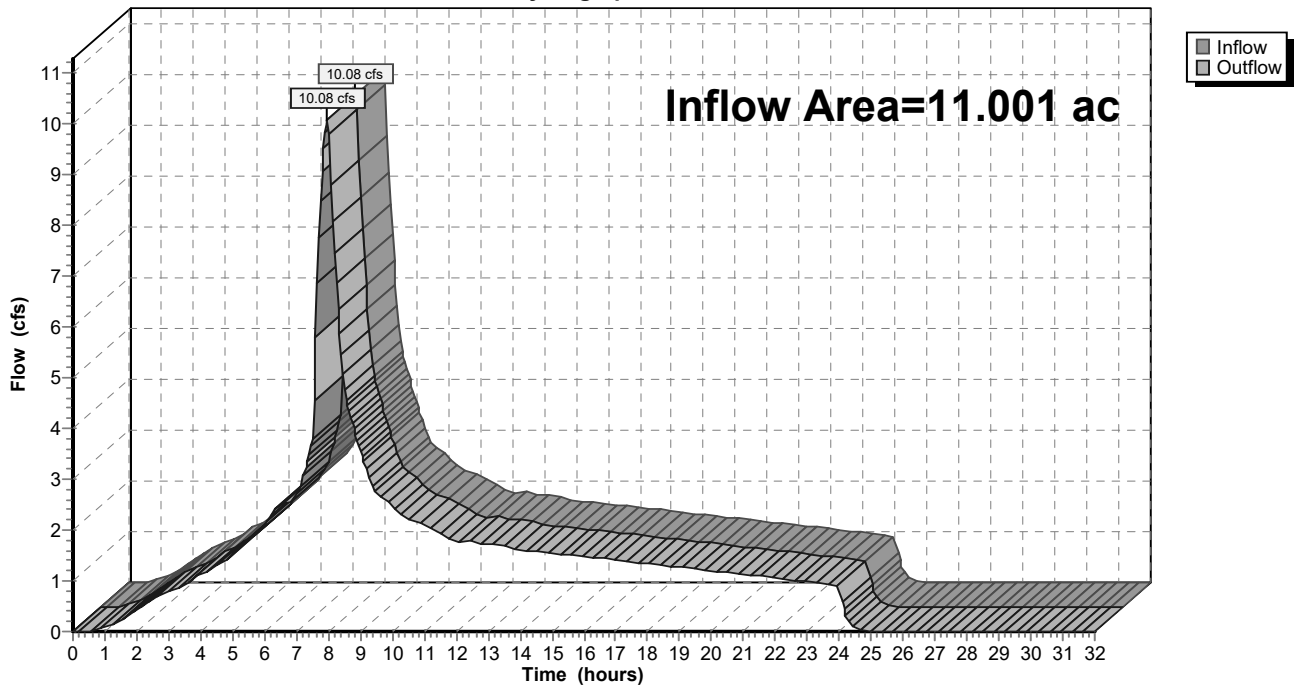
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 11.001 ac, 32.69% Impervious, Inflow Depth = 3.77" for 50-50 Year event
 Inflow = 10.08 cfs @ 7.98 hrs, Volume= 3.457 af
 Outflow = 10.08 cfs @ 7.98 hrs, Volume= 3.457 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 146R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 148R: 1

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Reach 149R: 1

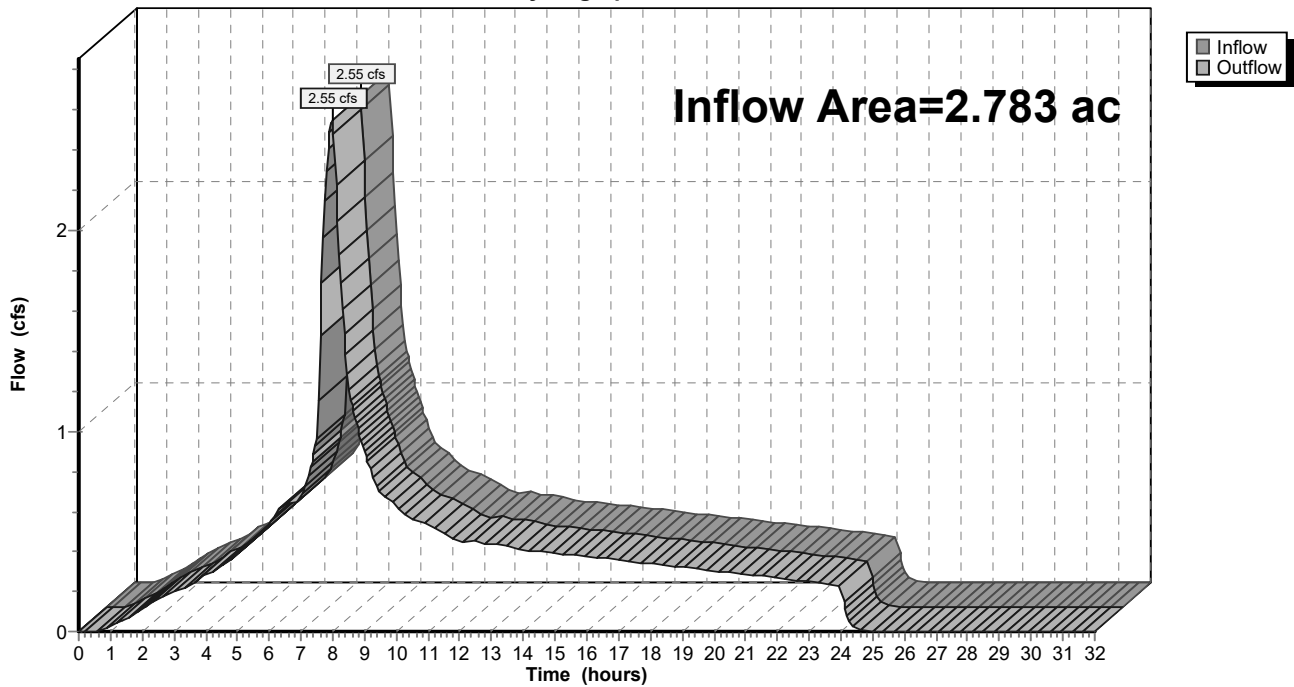
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 2.783 ac, 33.49% Impervious, Inflow Depth = 3.78" for 50-50 Year event
 Inflow = 2.55 cfs @ 7.98 hrs, Volume= 0.876 af
 Outflow = 2.55 cfs @ 7.98 hrs, Volume= 0.876 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 148R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 149R: 1

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Reach 150R: 1

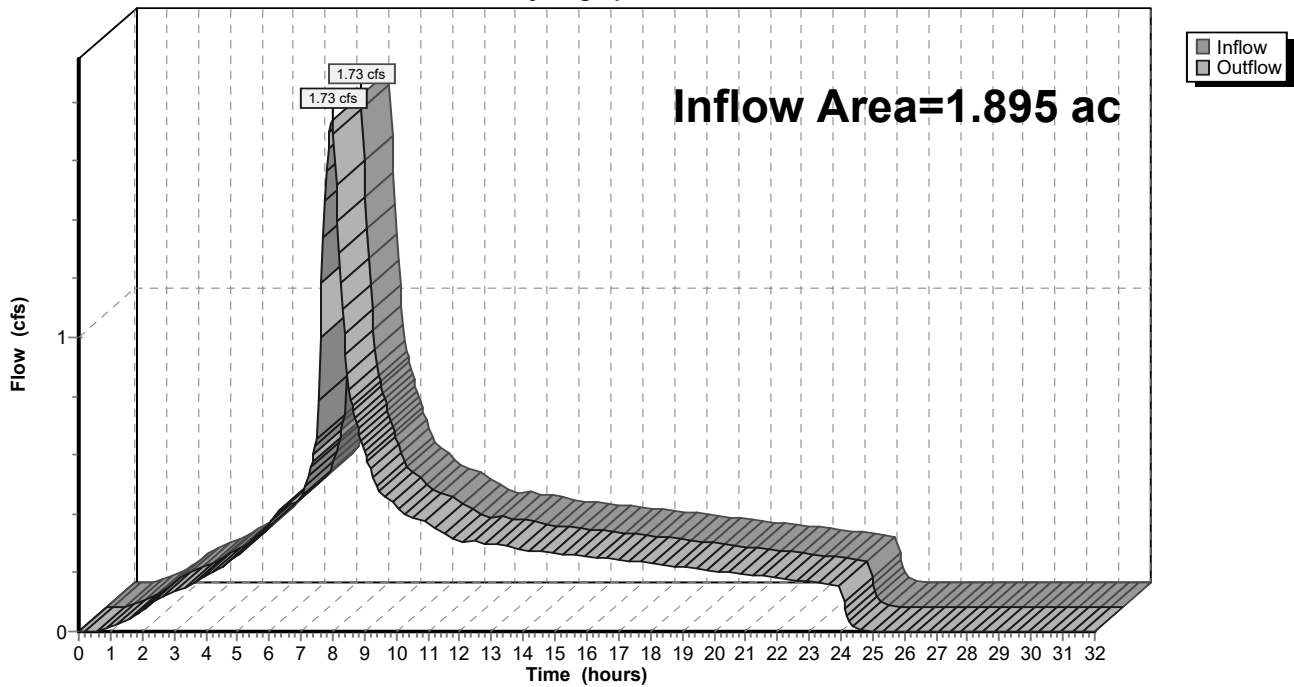
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.895 ac, 31.51% Impervious, Inflow Depth = 3.76" for 50-50 Year event
 Inflow = 1.73 cfs @ 7.98 hrs, Volume= 0.594 af
 Outflow = 1.73 cfs @ 7.98 hrs, Volume= 0.594 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 149R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 150R: 1

Hydrograph



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Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Reach 151R: 1

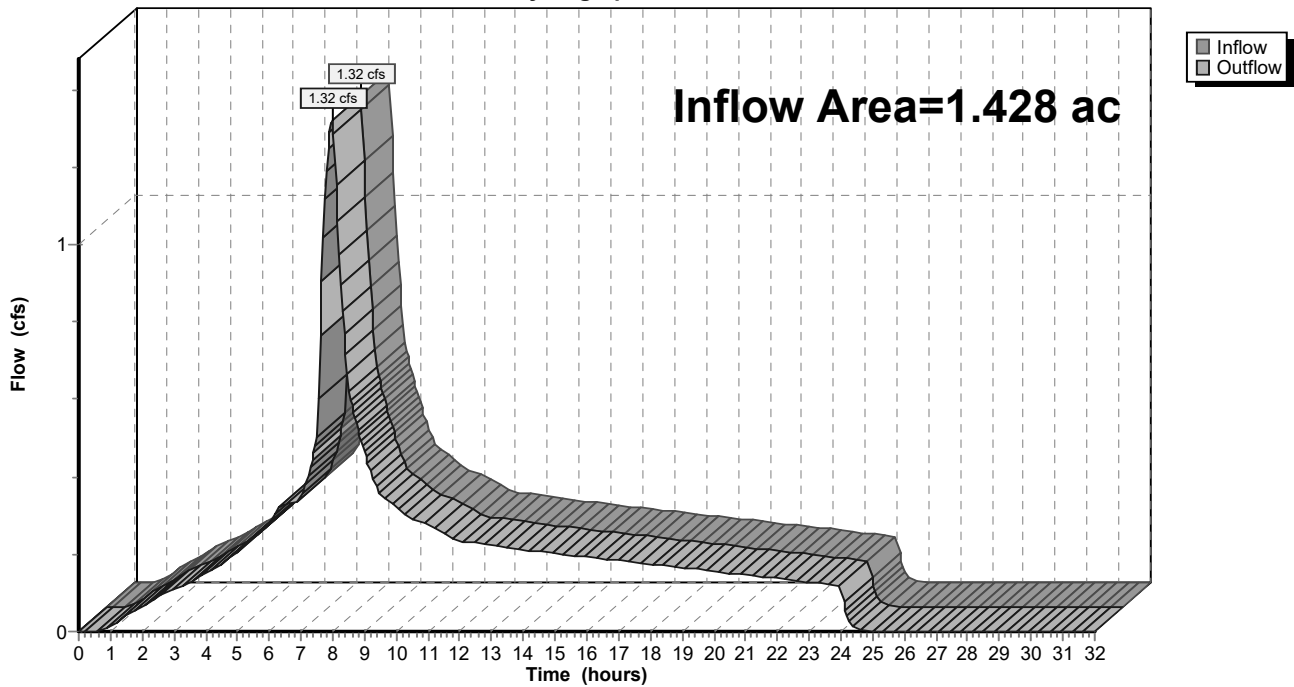
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.428 ac, 41.79% Impervious, Inflow Depth = 3.82" for 50-50 Year event
 Inflow = 1.32 cfs @ 7.98 hrs, Volume= 0.455 af
 Outflow = 1.32 cfs @ 7.98 hrs, Volume= 0.455 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 150R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 151R: 1

Hydrograph



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Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Reach 152R: 1

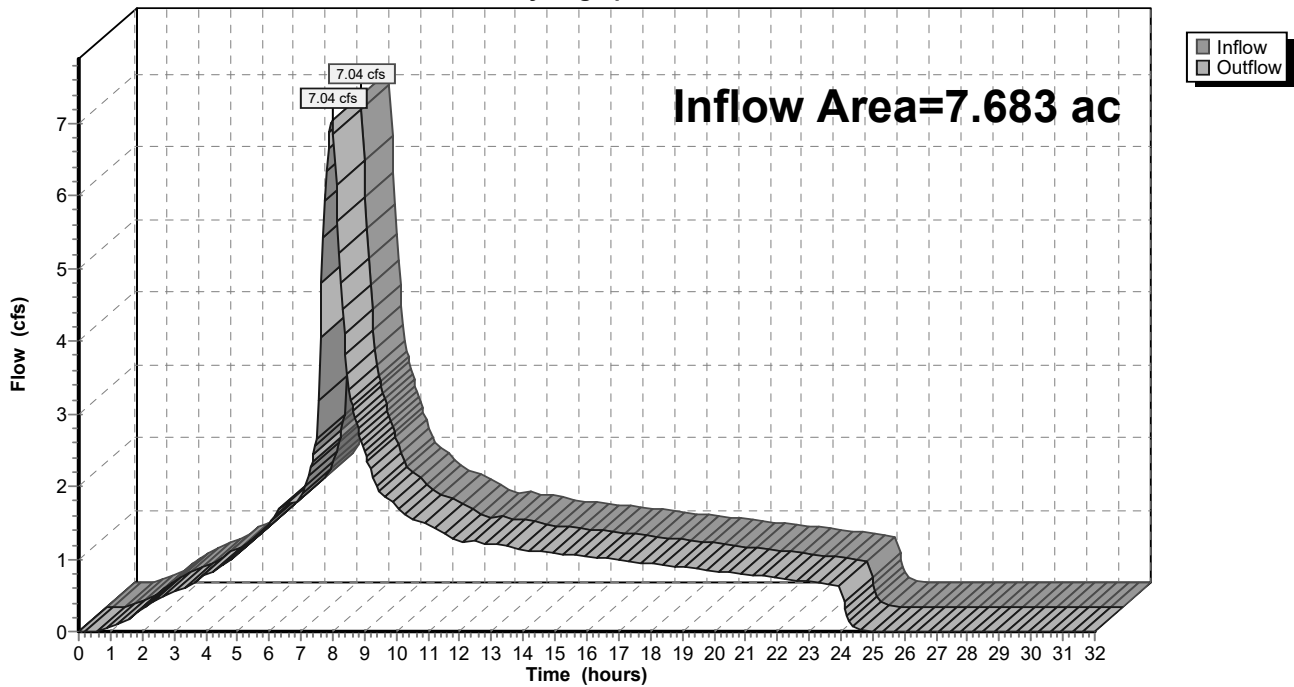
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 7.683 ac, 32.64% Impervious, Inflow Depth = 3.77" for 50-50 Year event
 Inflow = 7.04 cfs @ 7.98 hrs, Volume= 2.414 af
 Outflow = 7.04 cfs @ 7.98 hrs, Volume= 2.414 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 148R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 152R: 1

Hydrograph



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Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Reach 153R: 1

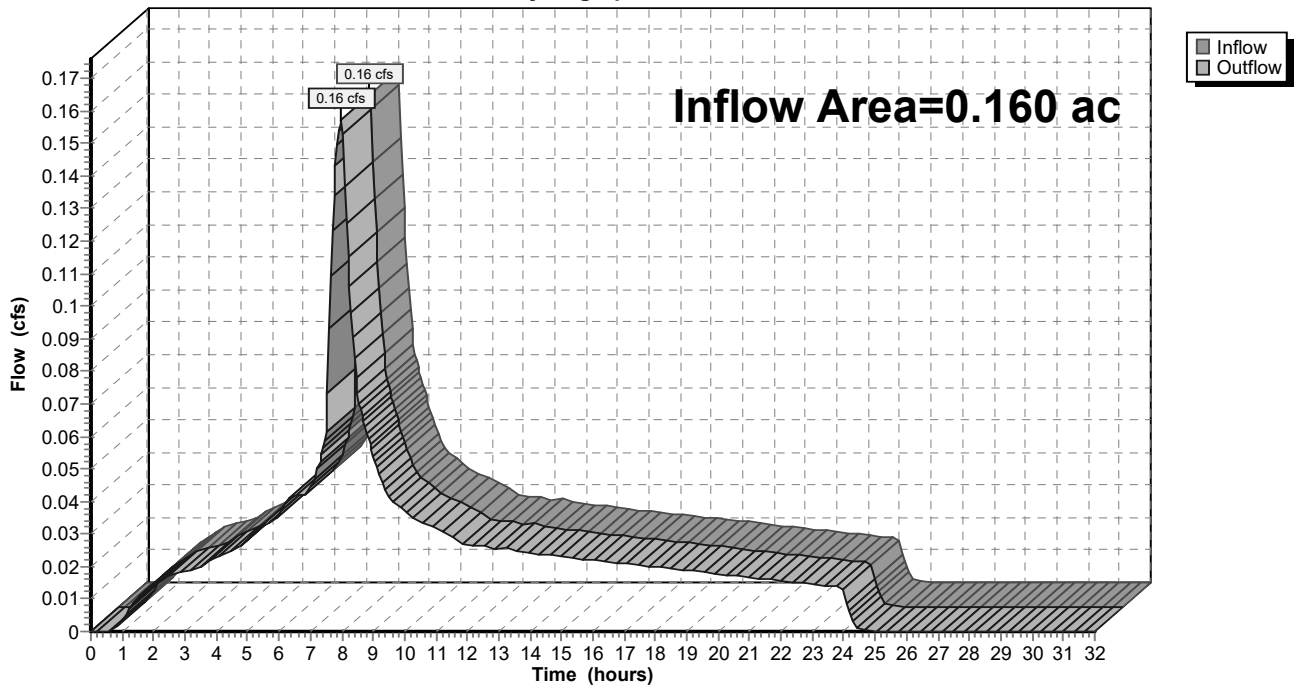
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.160 ac, 100.00% Impervious, Inflow Depth = 4.14" for 50-50 Year event
 Inflow = 0.16 cfs @ 7.98 hrs, Volume= 0.055 af
 Outflow = 0.16 cfs @ 7.98 hrs, Volume= 0.055 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 152R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 153R: 1

Hydrograph



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Summary for Reach 154R: 1

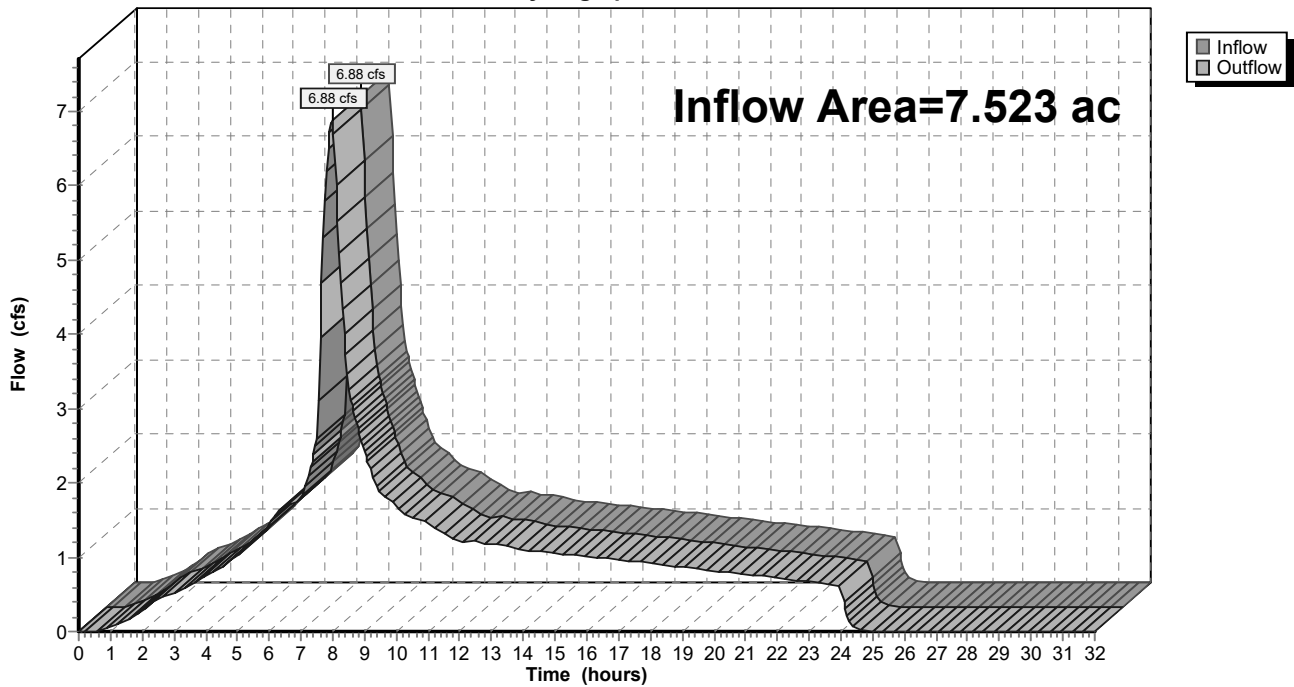
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 7.523 ac, 31.20% Impervious, Inflow Depth = 3.76" for 50-50 Year event
 Inflow = 6.88 cfs @ 7.98 hrs, Volume= 2.359 af
 Outflow = 6.88 cfs @ 7.98 hrs, Volume= 2.359 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 152R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 154R: 1

Hydrograph



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Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Reach 155R: 1

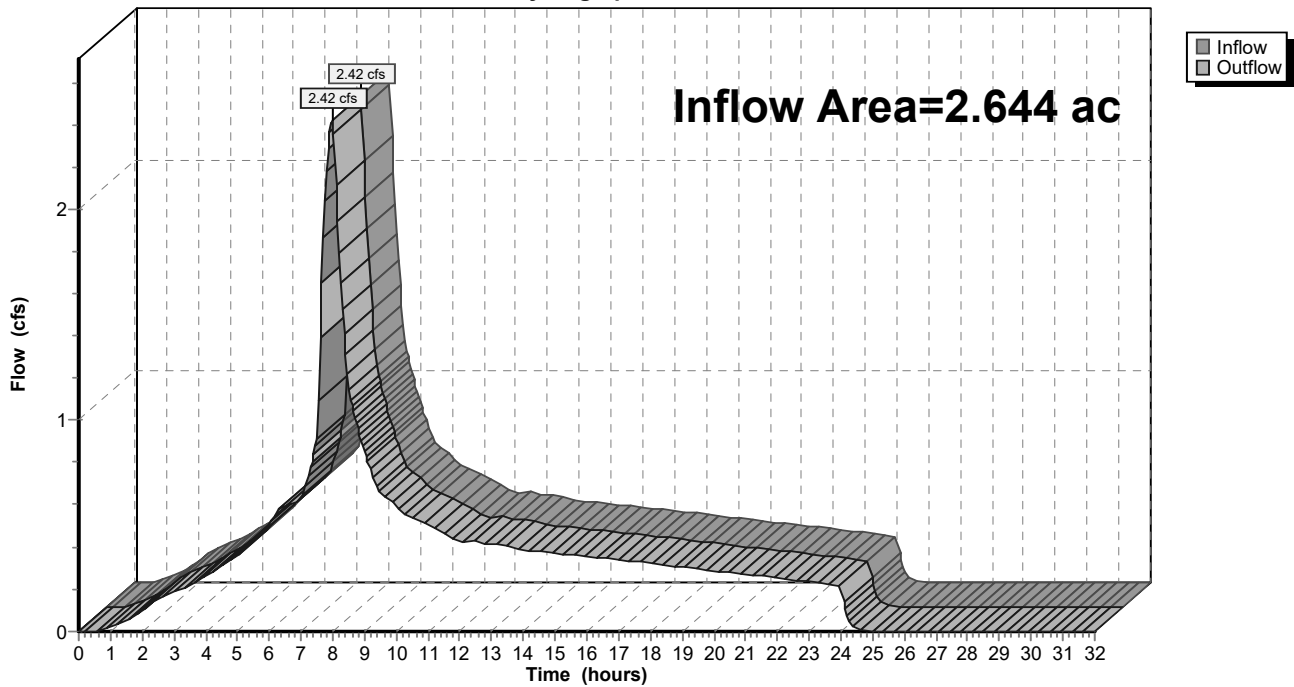
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 2.644 ac, 31.72% Impervious, Inflow Depth = 3.77" for 50-50 Year event
 Inflow = 2.42 cfs @ 7.98 hrs, Volume= 0.830 af
 Outflow = 2.42 cfs @ 7.98 hrs, Volume= 0.830 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 154R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 155R: 1

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Reach 158R: 1

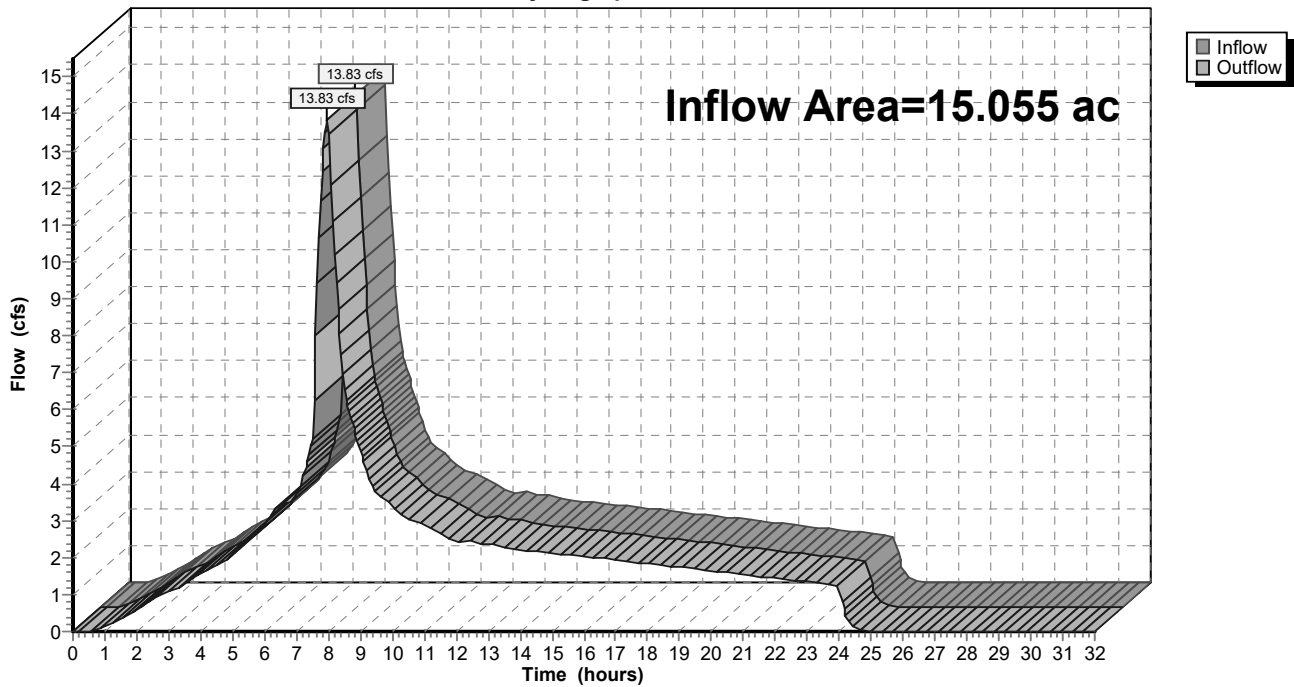
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 15.055 ac, 35.08% Impervious, Inflow Depth = 3.78" for 50-50 Year event
 Inflow = 13.83 cfs @ 7.98 hrs, Volume= 4.748 af
 Outflow = 13.83 cfs @ 7.98 hrs, Volume= 4.748 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 134R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 158R: 1

Hydrograph



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Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Reach 159R: 1

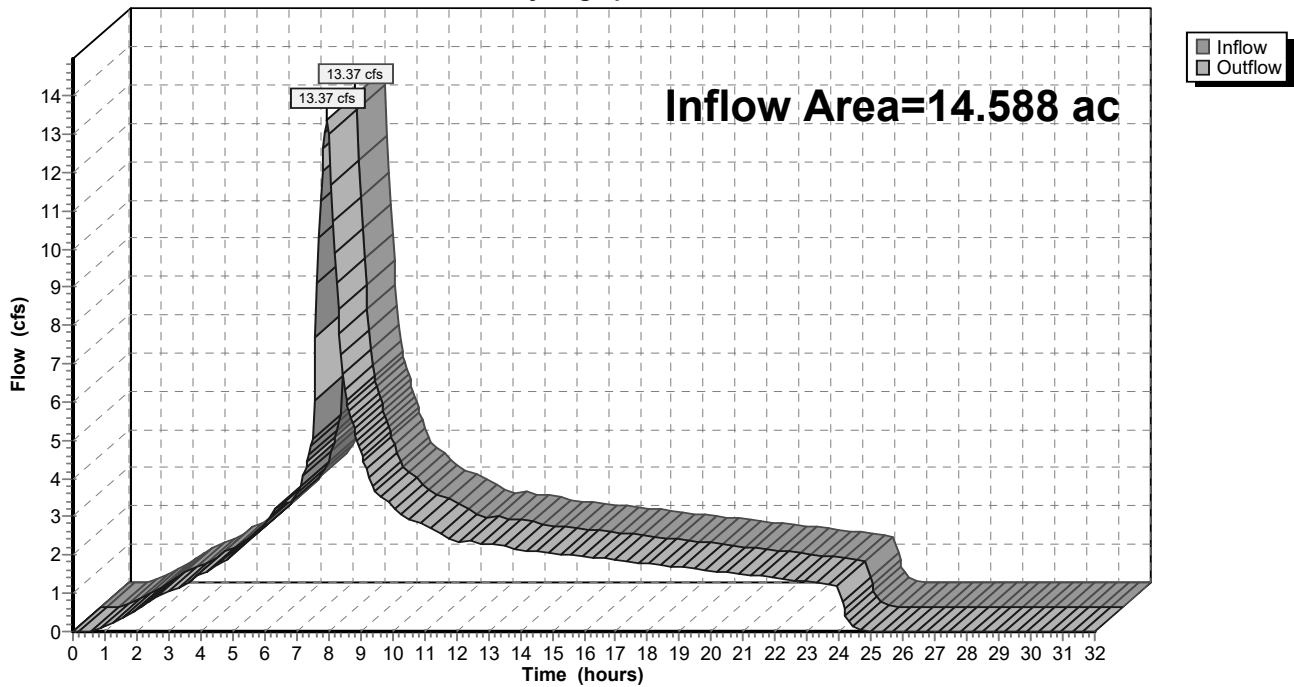
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 14.588 ac, 33.00% Impervious, Inflow Depth = 3.77" for 50-50 Year event
 Inflow = 13.37 cfs @ 7.98 hrs, Volume= 4.587 af
 Outflow = 13.37 cfs @ 7.98 hrs, Volume= 4.587 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 139R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 159R: 1

Hydrograph



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Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Reach 160R: 1

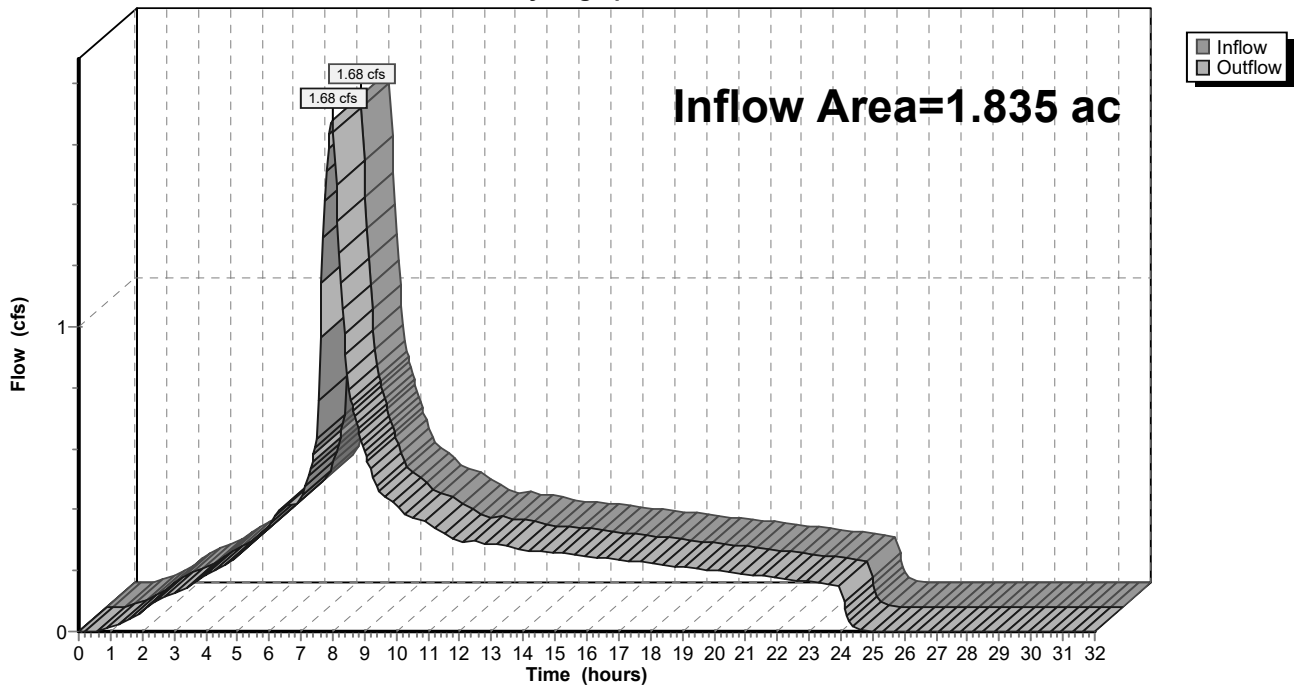
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.835 ac, 29.73% Impervious, Inflow Depth = 3.76" for 50-50 Year event
 Inflow = 1.68 cfs @ 7.98 hrs, Volume= 0.574 af
 Outflow = 1.68 cfs @ 7.98 hrs, Volume= 0.574 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 155R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 160R: 1

Hydrograph



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Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Reach 162R: 1

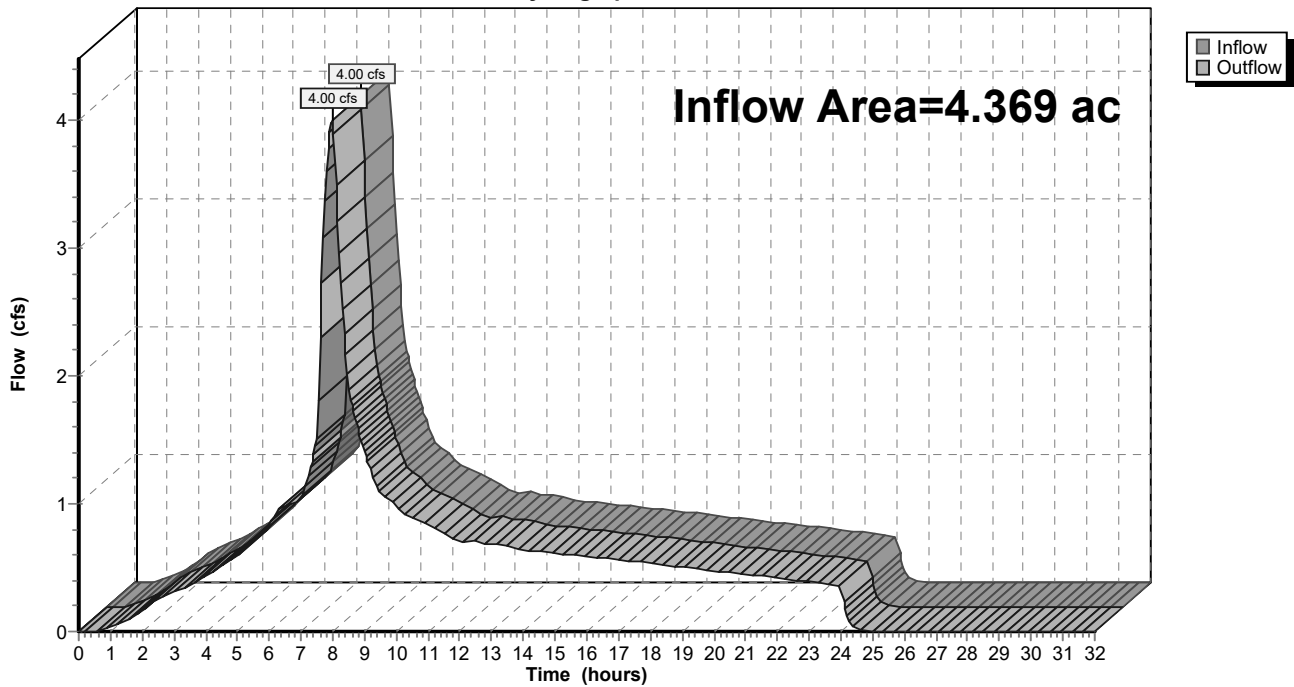
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 4.369 ac, 31.81% Impervious, Inflow Depth = 3.77" for 50-50 Year event
 Inflow = 4.00 cfs @ 7.98 hrs, Volume= 1.371 af
 Outflow = 4.00 cfs @ 7.98 hrs, Volume= 1.371 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 154R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 162R: 1

Hydrograph



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Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Reach 163R: 1

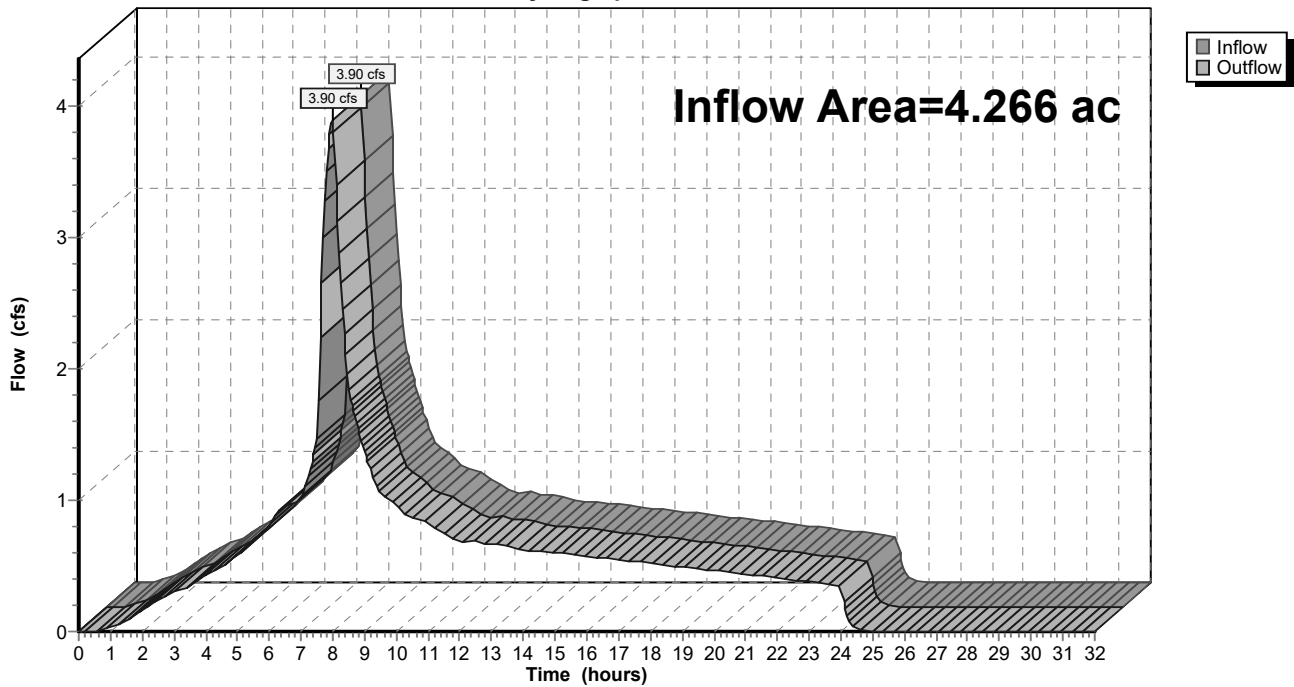
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 4.266 ac, 30.15% Impervious, Inflow Depth = 3.76" for 50-50 Year event
 Inflow = 3.90 cfs @ 7.98 hrs, Volume= 1.336 af
 Outflow = 3.90 cfs @ 7.98 hrs, Volume= 1.336 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 162R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 163R: 1

Hydrograph



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Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Reach 165R: 1

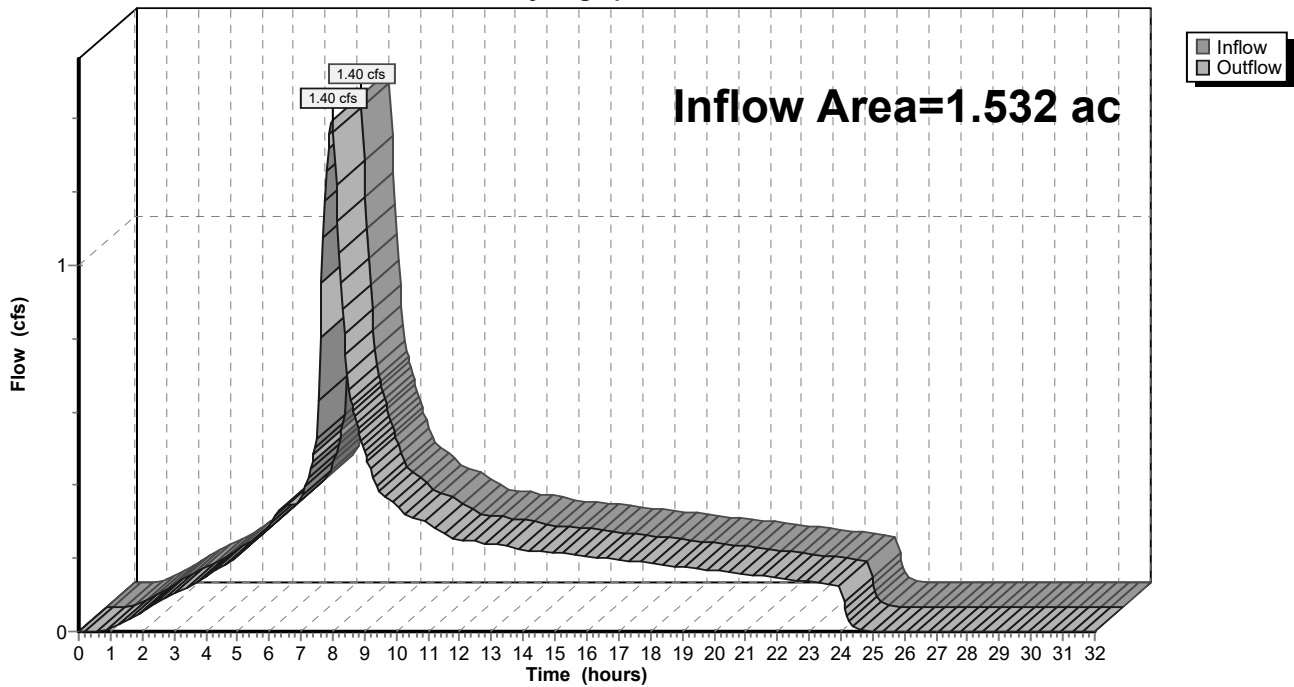
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.532 ac, 27.64% Impervious, Inflow Depth = 3.74" for 50-50 Year event
 Inflow = 1.40 cfs @ 7.98 hrs, Volume= 0.478 af
 Outflow = 1.40 cfs @ 7.98 hrs, Volume= 0.478 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 163R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 165R: 1

Hydrograph



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Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Reach 166R: Basin Future

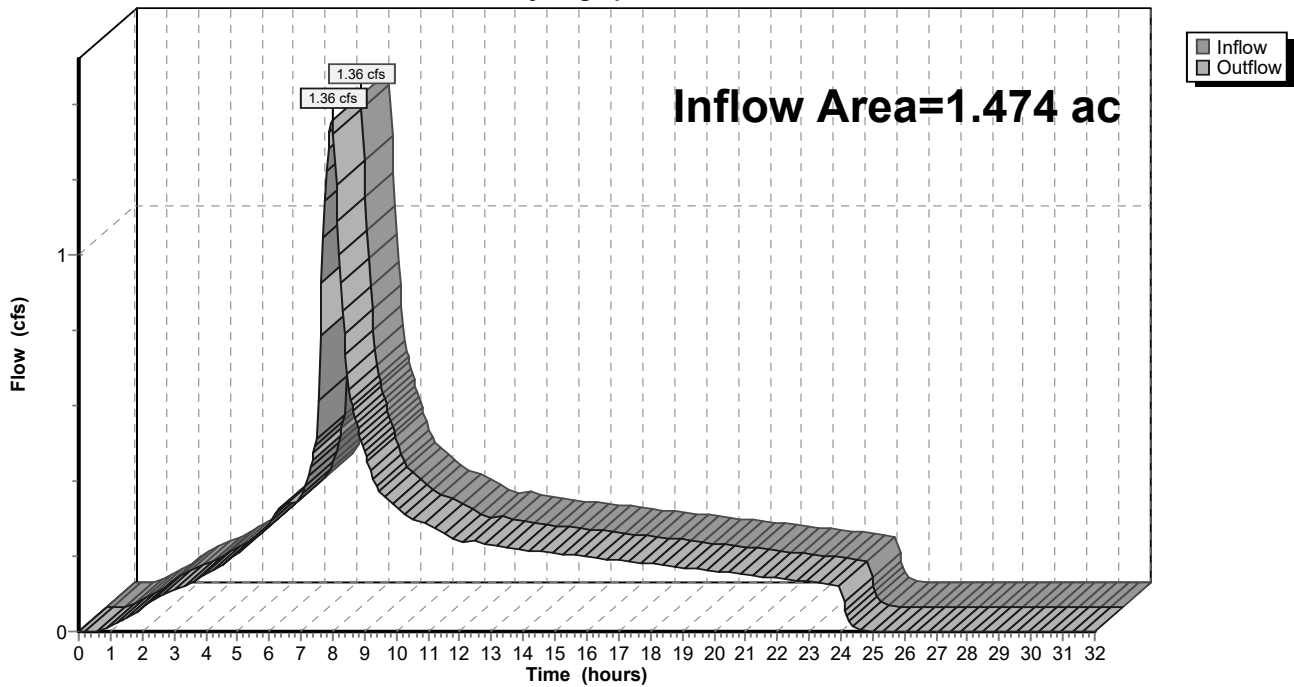
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.474 ac, 37.85% Impervious, Inflow Depth = 3.80" for 50-50 Year event
 Inflow = 1.36 cfs @ 7.98 hrs, Volume= 0.467 af
 Outflow = 1.36 cfs @ 7.98 hrs, Volume= 0.467 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 163R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 166R: Basin Future

Hydrograph



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Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Pond 54P: Stormwater Swale 2

Inflow Area = 0.082 ac, 100.00% Impervious, Inflow Depth = 4.14" for 50-50 Year event
 Inflow = 0.08 cfs @ 7.98 hrs, Volume= 0.028 af
 Outflow = 0.08 cfs @ 7.98 hrs, Volume= 0.028 af, Atten= 0%, Lag= 0.4 min
 Primary = 0.08 cfs @ 7.98 hrs, Volume= 0.028 af
 Routed to Reach 58R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Peak Elev= 222.44' @ 7.98 hrs Surf.Area= 185 sf Storage= 33 cf
 Flood Elev= 223.30' Surf.Area= 192 sf Storage= 88 cf

Plug-Flow detention time= 29.8 min calculated for 0.028 af (100% of inflow)
 Center-of-Mass det. time= 30.1 min (693.5 - 663.5)

Volume	Invert	Avail.Storage	Storage Description
#1	222.30'	63 cf	Open Storage (Irregular) Listed below (Recalc)
#2	220.80'	10 cf	Imported Soil (Irregular) Listed below (Recalc) 101 cf Overall x 10.0% Voids
#3	220.05'	15 cf	Rock Chamber (Irregular) Listed below (Recalc) 44 cf Overall x 35.0% Voids
		88 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
222.30	59	33.0	0	0	59
223.30	67	34.0	63	63	93

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
220.80	67	34.0	0	0	67
222.30	67	34.0	101	101	118

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
220.05	58	33.0	0	0	58
220.80	58	33.0	44	44	83

Device	Routing	Invert	Outlet Devices
#1	Primary	220.05'	2.000 in/hr Perf Pipes over Surface area
#2	Primary	223.05'	4.0" Horiz. 4" Overflow Pipe C= 0.600 Limited to weir flow at low heads
#3	Primary	222.30'	10.0" Vert. 10" Outflow Pipe C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.08 cfs @ 7.98 hrs HW=222.44' TW=0.00' (Dynamic Tailwater)

- 1=Perf Pipes (Exfiltration Controls 0.01 cfs)
- 2=4" Overflow Pipe (Controls 0.00 cfs)
- 3=10" Outflow Pipe (Orifice Controls 0.07 cfs @ 1.25 fps)

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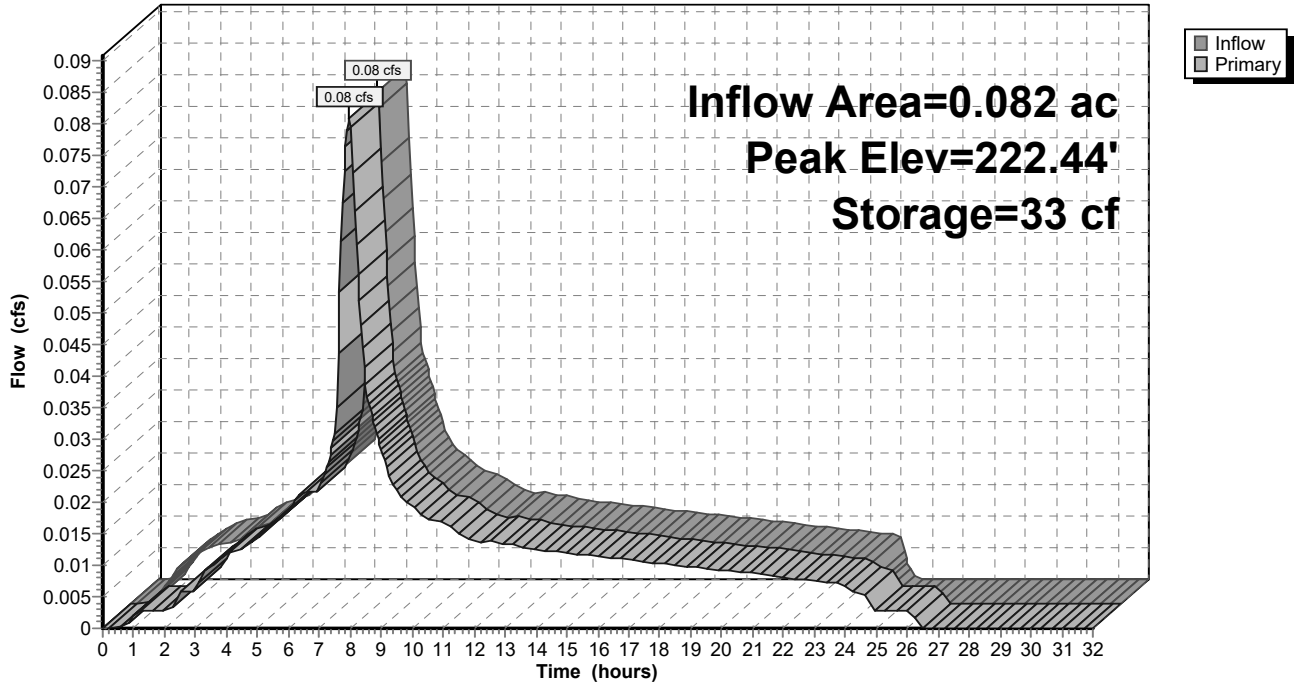
Type IA 24-hr 50-50 Year Rainfall=4.38"

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Pond 54P: Stormwater Swale 2

Hydrograph



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Type IA 24-hr 50-50 Year Rainfall=4.38"

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Summary for Pond 60P: Stormwater Swale 1

Inflow Area = 0.085 ac, 100.00% Impervious, Inflow Depth = 4.14" for 50-50 Year event
 Inflow = 0.08 cfs @ 7.98 hrs, Volume= 0.030 af
 Outflow = 0.08 cfs @ 7.98 hrs, Volume= 0.030 af, Atten= 0%, Lag= 0.4 min
 Primary = 0.08 cfs @ 7.98 hrs, Volume= 0.030 af
 Routed to Reach 58R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Peak Elev= 222.09' @ 7.98 hrs Surf.Area= 195 sf Storage= 35 cf
 Flood Elev= 222.95' Surf.Area= 204 sf Storage= 93 cf

Plug-Flow detention time= 30.2 min calculated for 0.029 af (100% of inflow)
 Center-of-Mass det. time= 30.4 min (693.9 - 663.5)

Volume	Invert	Avail.Storage	Storage Description
#1	221.95'	67 cf	Open Storage (Irregular) Listed below (Recalc)
#2	220.45'	11 cf	Imported Soil (Irregular) Listed below (Recalc) 108 cf Overall x 10.0% Voids
#3	219.70'	16 cf	Rock Chamber (Irregular) Listed below (Recalc) 45 cf Overall x 35.0% Voids
		93 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
221.95	62	34.0	0	0	62
222.95	72	36.0	67	67	99

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
220.45	72	36.0	0	0	72
221.95	72	36.0	108	108	126

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
219.70	60	34.0	0	0	60
220.45	60	34.0	45	45	86

Device	Routing	Invert	Outlet Devices
#1	Primary	219.70'	2.000 in/hr Perf Pipes over Surface area
#2	Primary	222.70'	4.0" Horiz. 4" Overflow Pipe C= 0.600 Limited to weir flow at low heads
#3	Primary	221.95'	10.0" Vert. 10" Outflow Pipe C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.08 cfs @ 7.98 hrs HW=222.09' TW=0.00' (Dynamic Tailwater)

- 1=Perf Pipes (Exfiltration Controls 0.01 cfs)
- 2=4" Overflow Pipe (Controls 0.00 cfs)
- 3=10" Outflow Pipe (Orifice Controls 0.07 cfs @ 1.26 fps)

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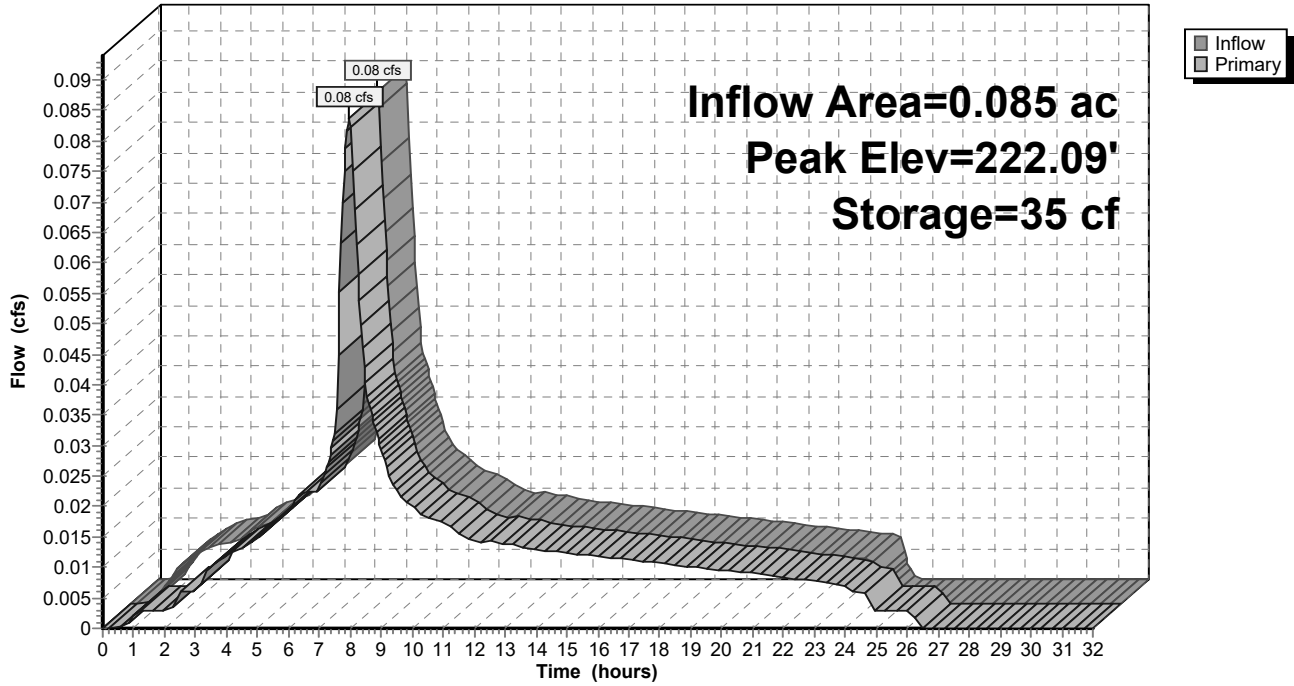
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Pond 60P: Stormwater Swale 1

Hydrograph



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Summary for Pond 63P: Detention Pond

Inflow Area = 23.038 ac, 36.38% Impervious, Inflow Depth = 3.79" for 50-50 Year event
 Inflow = 21.21 cfs @ 7.98 hrs, Volume= 7.280 af
 Outflow = 10.92 cfs @ 8.43 hrs, Volume= 7.279 af, Atten= 49%, Lag= 27.3 min
 Primary = 10.92 cfs @ 8.43 hrs, Volume= 7.279 af
 Routed to Reach 85R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Peak Elev= 224.47' @ 8.43 hrs Surf.Area= 47,286 sf Storage= 59,147 cf
 Flood Elev= 225.50' Surf.Area= 48,838 sf Storage= 80,897 cf

Plug-Flow detention time= 107.7 min calculated for 7.267 af (100% of inflow)
 Center-of-Mass det. time= 107.8 min (798.9 - 691.1)

Volume	Invert	Avail.Storage	Storage Description
#1	221.50'	75,859 cf	Open Storage (Irregular) Listed below (Recalc)
#2	220.00'	3,288 cf	Growing Medium (Irregular) Listed below (Recalc) 32,879 cf Overall x 10.0% Voids
#3	219.00'	1,750 cf	Rock Chamber (Prismatic) Listed below (Recalc) 5,000 cf Overall x 35.0% Voids
		80,897 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
221.50	16,108	696.8	0	0	16,108
222.50	17,511	717.0	16,805	16,805	18,488
223.50	18,943	738.5	18,222	35,027	21,082
224.50	20,410	754.7	19,672	54,699	23,147
225.50	21,919	770.9	21,160	75,859	25,257

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
220.00	21,919	770.9	0	0	21,919
221.50	21,919	770.9	32,879	32,879	23,075

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
219.00	5,000	0	0
220.00	5,000	5,000	5,000

Device	Routing	Invert	Outlet Devices
#1	Primary	219.00'	24.0" Round 24" Pipe L= 100.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 219.00' / 218.80' S= 0.0020 '/' Cc= 0.900 n= 0.010, Flow Area= 3.14 sf
#2	Device 1	219.00'	2.000 in/hr 4" Perf Pipes over Surface area
#3	Device 1	221.85'	6.0" Vert. 2x6" Orifice X 2.00 C= 0.600 Limited to weir flow at low heads
#4	Device 1	222.78'	6.0" Vert. 6" Orifice C= 0.600 Limited to weir flow at low heads
#5	Device 1	222.95'	6.0" Vert. 6" Orifice C= 0.600 Limited to weir flow at low heads

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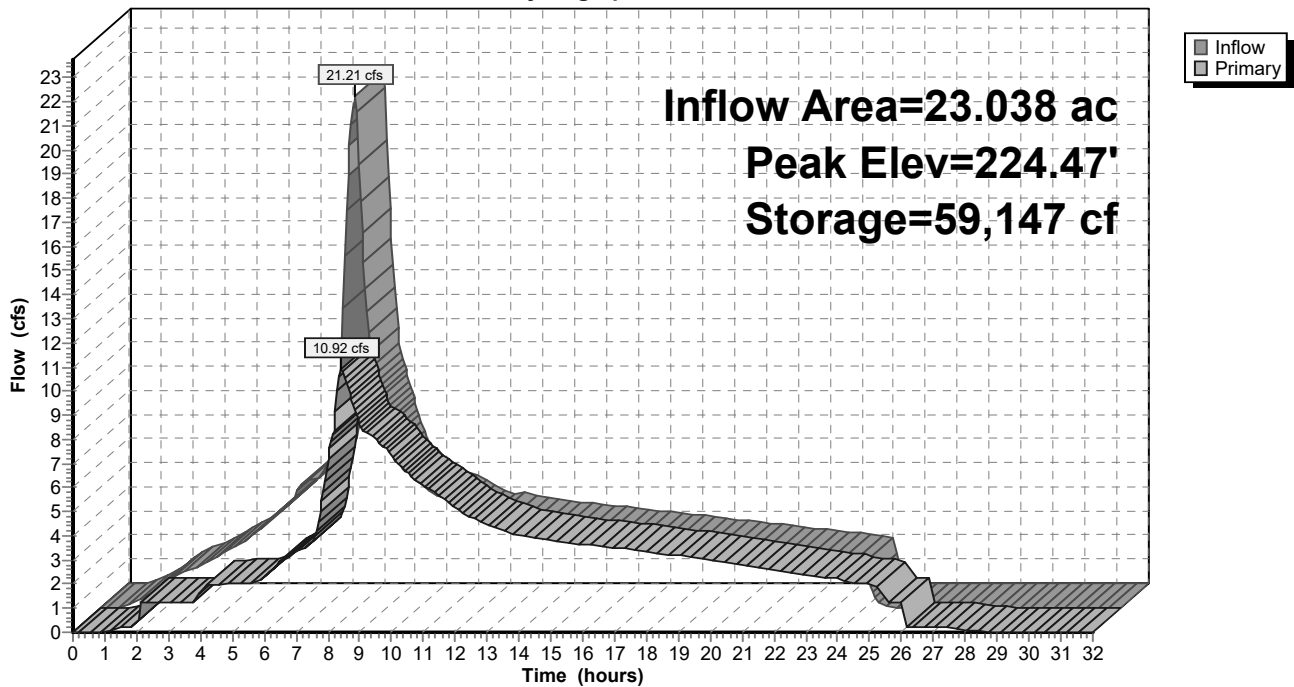
#6	Device 1	223.25'	4.0" Vert. 4" Orifice	C= 0.600	Limited to weir flow at low heads
#7	Device 1	223.55'	4.0" Vert. 4" Orifice	C= 0.600	Limited to weir flow at low heads
#8	Device 1	223.77'	4.0" Vert. 2x4" Orifice X 2.00	C= 0.600	Limited to weir flow at low heads
#9	Device 1	224.35'	48.0" x 48.0" Horiz. 48" Overflow	C= 0.600	Limited to weir flow at low heads

Primary OutFlow Max=10.90 cfs @ 8.43 hrs HW=224.47' TW=0.00' (Dynamic Tailwater)

- 1=24" Pipe (Passes 10.90 cfs of 28.22 cfs potential flow)
- 2=4" Perf Pipes (Exfiltration Controls 2.19 cfs)
- 3=2x6" Orifice (Orifice Controls 2.91 cfs @ 7.41 fps)
- 4=6" Orifice (Orifice Controls 1.13 cfs @ 5.78 fps)
- 5=6" Orifice (Orifice Controls 1.07 cfs @ 5.43 fps)
- 6=4" Orifice (Orifice Controls 0.43 cfs @ 4.94 fps)
- 7=4" Orifice (Orifice Controls 0.36 cfs @ 4.18 fps)
- 8=2x4" Orifice (Orifice Controls 0.61 cfs @ 3.52 fps)
- 9=48" Overflow (Weir Controls 2.19 cfs @ 1.13 fps)

Pond 63P: Detention Pond

Hydrograph



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Time span=0.00-32.00 hrs, dt=0.05 hrs, 641 points
 Runoff by SBUH method, Split Pervious/Imperv.
 Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment64S: Home Basin 20	Runoff Area=9,940 sf 0.00% Impervious Runoff Depth=3.71" Tc=10.0 min CN=93/0 Runoff=0.21 cfs 0.071 af
Subcatchment65S: Single Pond Existing	Runoff Area=23.038 ac 0.00% Impervious Runoff Depth>3.30" Flow Length=1,526' Slope=0.0076 '/' Tc=73.0 min CN=89/0 Runoff=9.55 cfs 6.326 af
Subcatchment67S: Home Basin 19	Runoff Area=17,197 sf 0.00% Impervious Runoff Depth=3.71" Tc=10.0 min CN=93/0 Runoff=0.36 cfs 0.122 af
Subcatchment68S: Home Basin 12	Runoff Area=18,133 sf 0.00% Impervious Runoff Depth=3.71" Tc=10.0 min CN=93/0 Runoff=0.38 cfs 0.129 af
Subcatchment69S: Home Basin 17	Runoff Area=16,661 sf 0.00% Impervious Runoff Depth=3.71" Tc=10.0 min CN=93/0 Runoff=0.35 cfs 0.118 af
Subcatchment70S: Home Basin 18	Runoff Area=11,596 sf 0.00% Impervious Runoff Depth=3.71" Tc=10.0 min CN=93/0 Runoff=0.24 cfs 0.082 af
Subcatchment71S: Home Basin 14	Runoff Area=16,444 sf 0.00% Impervious Runoff Depth=3.71" Tc=10.0 min CN=93/0 Runoff=0.34 cfs 0.117 af
Subcatchment72S: Home Basin 16	Runoff Area=20,310 sf 0.00% Impervious Runoff Depth=3.71" Tc=10.0 min CN=93/0 Runoff=0.43 cfs 0.144 af
Subcatchment73S: Home Basin 13	Runoff Area=10,807 sf 0.00% Impervious Runoff Depth=3.71" Tc=10.0 min CN=93/0 Runoff=0.23 cfs 0.077 af
Subcatchment74S: Swale Existing	Runoff Area=0.168 ac 0.00% Impervious Runoff Depth=3.30" Flow Length=105' Slope=0.0565 '/' Tc=10.0 min CN=89/0 Runoff=0.14 cfs 0.046 af
Subcatchment75S: Home Basin 11	Runoff Area=18,483 sf 0.00% Impervious Runoff Depth=3.71" Tc=10.0 min CN=93/0 Runoff=0.39 cfs 0.131 af
Subcatchment77S: Home Basin 15	Runoff Area=12,503 sf 0.00% Impervious Runoff Depth=3.71" Tc=10.0 min CN=93/0 Runoff=0.26 cfs 0.089 af
Subcatchment78S: Single Pond	Runoff Area=21,919 sf 100.00% Impervious Runoff Depth=4.26" Tc=0.0 min CN=0/98 Runoff=0.54 cfs 0.179 af
Subcatchment79S: Home Basin 30	Runoff Area=38,416 sf 0.00% Impervious Runoff Depth=3.71" Tc=10.0 min CN=93/0 Runoff=0.81 cfs 0.272 af
Subcatchment80S: Home Basin 10	Runoff Area=14,789 sf 0.00% Impervious Runoff Depth=3.71" Tc=10.0 min CN=93/0 Runoff=0.31 cfs 0.105 af
Subcatchment81S: Home Basin 9	Runoff Area=15,575 sf 0.00% Impervious Runoff Depth=3.71" Tc=10.0 min CN=93/0 Runoff=0.33 cfs 0.110 af

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Subcatchment82S: Home Basin 2	Runoff Area=20,667 sf 0.00% Impervious Runoff Depth=3.71" Tc=10.0 min CN=93/0 Runoff=0.43 cfs 0.147 af
Subcatchment83S: Home Basin 7	Runoff Area=17,032 sf 0.00% Impervious Runoff Depth=3.71" Tc=10.0 min CN=93/0 Runoff=0.36 cfs 0.121 af
Subcatchment84S: Home Basin 8	Runoff Area=11,668 sf 0.00% Impervious Runoff Depth=3.71" Tc=10.0 min CN=93/0 Runoff=0.24 cfs 0.083 af
Subcatchment85S: Home Basin 29	Runoff Area=25,118 sf 0.00% Impervious Runoff Depth=3.71" Tc=10.0 min CN=93/0 Runoff=0.53 cfs 0.178 af
Subcatchment86S: Home Basin 22	Runoff Area=16,159 sf 0.00% Impervious Runoff Depth=3.71" Tc=10.0 min CN=93/0 Runoff=0.34 cfs 0.115 af
Subcatchment87S: Home Basin 27	Runoff Area=24,839 sf 0.00% Impervious Runoff Depth=3.71" Tc=10.0 min CN=93/0 Runoff=0.52 cfs 0.176 af
Subcatchment88S: Home Basin 28	Runoff Area=25,318 sf 0.00% Impervious Runoff Depth=3.71" Tc=10.0 min CN=93/0 Runoff=0.53 cfs 0.180 af
Subcatchment89S: Home Basin 24	Runoff Area=20,676 sf 0.00% Impervious Runoff Depth=3.71" Tc=10.0 min CN=93/0 Runoff=0.43 cfs 0.147 af
Subcatchment90S: Home Basin 26	Runoff Area=14,135 sf 0.00% Impervious Runoff Depth=3.71" Tc=10.0 min CN=93/0 Runoff=0.30 cfs 0.100 af
Subcatchment91S: Home Basin 23	Runoff Area=12,271 sf 0.00% Impervious Runoff Depth=3.71" Tc=10.0 min CN=93/0 Runoff=0.26 cfs 0.087 af
Subcatchment92S: Home Basin 21	Runoff Area=27,019 sf 0.00% Impervious Runoff Depth=3.71" Tc=10.0 min CN=93/0 Runoff=0.57 cfs 0.192 af
Subcatchment93S: Home Basin 25	Runoff Area=17,012 sf 0.00% Impervious Runoff Depth=3.71" Tc=10.0 min CN=93/0 Runoff=0.36 cfs 0.121 af
Subcatchment94S: Home Basin 4	Runoff Area=19,535 sf 0.00% Impervious Runoff Depth=3.71" Tc=10.0 min CN=93/0 Runoff=0.41 cfs 0.139 af
Subcatchment95S: Home Basin 31	Runoff Area=24,883 sf 0.00% Impervious Runoff Depth=3.71" Tc=10.0 min CN=93/0 Runoff=0.52 cfs 0.177 af
Subcatchment96S: Basin 1	Runoff Area=15,045 sf 100.00% Impervious Runoff Depth=4.26" Tc=10.0 min CN=0/98 Runoff=0.35 cfs 0.123 af
Subcatchment97S: Basin 2	Runoff Area=19,824 sf 100.00% Impervious Runoff Depth=4.26" Tc=10.0 min CN=0/98 Runoff=0.46 cfs 0.162 af
Subcatchment98S: Basin 3	Runoff Area=23,416 sf 100.00% Impervious Runoff Depth=4.26" Tc=10.0 min CN=0/98 Runoff=0.54 cfs 0.191 af

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Subcatchment99S: Home Basin 6	Runoff Area=25,997 sf 0.00% Impervious Runoff Depth=3.71" Tc=10.0 min CN=93/0 Runoff=0.54 cfs 0.184 af
Subcatchment100S: Basin 4	Runoff Area=3,650 sf 100.00% Impervious Runoff Depth=4.26" Tc=10.0 min CN=0/98 Runoff=0.08 cfs 0.030 af
Subcatchment101S: Basin 5	Runoff Area=3,523 sf 100.00% Impervious Runoff Depth=4.26" Tc=10.0 min CN=0/98 Runoff=0.08 cfs 0.029 af
Subcatchment102S: Home Basin 3	Runoff Area=19,559 sf 0.00% Impervious Runoff Depth=3.71" Tc=10.0 min CN=93/0 Runoff=0.41 cfs 0.139 af
Subcatchment103S: Home Basin 1	Runoff Area=22,288 sf 0.00% Impervious Runoff Depth=3.71" Tc=10.0 min CN=93/0 Runoff=0.47 cfs 0.158 af
Subcatchment104S: Home Basin 5	Runoff Area=33,512 sf 0.00% Impervious Runoff Depth=3.71" Tc=10.0 min CN=93/0 Runoff=0.70 cfs 0.238 af
Subcatchment105S: Basin 6	Runoff Area=8,965 sf 100.00% Impervious Runoff Depth=4.26" Tc=10.0 min CN=0/98 Runoff=0.21 cfs 0.073 af
Subcatchment107S: Basin 8	Runoff Area=8,177 sf 100.00% Impervious Runoff Depth=4.26" Tc=10.0 min CN=0/98 Runoff=0.19 cfs 0.067 af
Subcatchment108S: Basin 9	Runoff Area=13,130 sf 100.00% Impervious Runoff Depth=4.26" Tc=10.0 min CN=0/98 Runoff=0.30 cfs 0.107 af
Subcatchment109S: Basin 10	Runoff Area=22,902 sf 100.00% Impervious Runoff Depth=4.26" Tc=10.0 min CN=0/98 Runoff=0.53 cfs 0.187 af
Subcatchment110S: Basin 11	Runoff Area=25,748 sf 100.00% Impervious Runoff Depth=4.26" Tc=10.0 min CN=0/98 Runoff=0.60 cfs 0.210 af
Subcatchment111S: Basin 12	Runoff Area=5,562 sf 100.00% Impervious Runoff Depth=4.26" Tc=10.0 min CN=0/98 Runoff=0.13 cfs 0.045 af
Subcatchment112S: Basin 13	Runoff Area=4,702 sf 100.00% Impervious Runoff Depth=4.26" Tc=10.0 min CN=0/98 Runoff=0.11 cfs 0.038 af
Subcatchment113S: Basin 14	Runoff Area=7,669 sf 100.00% Impervious Runoff Depth=4.26" Tc=10.0 min CN=0/98 Runoff=0.18 cfs 0.063 af
Subcatchment114S: Basin 15	Runoff Area=7,261 sf 100.00% Impervious Runoff Depth=4.26" Tc=10.0 min CN=0/98 Runoff=0.17 cfs 0.059 af
Subcatchment115S: Basin 16	Runoff Area=7,066 sf 100.00% Impervious Runoff Depth=4.26" Tc=10.0 min CN=0/98 Runoff=0.16 cfs 0.058 af
Subcatchment116S: Basin 17	Runoff Area=26,003 sf 100.00% Impervious Runoff Depth=4.26" Tc=10.0 min CN=0/98 Runoff=0.60 cfs 0.212 af

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Subcatchment117S: Basin 18	Runoff Area=23,761 sf 100.00% Impervious Runoff Depth=4.26" Tc=10.0 min CN=0/98 Runoff=0.55 cfs 0.194 af
Subcatchment118S: Basin 19	Runoff Area=7,309 sf 100.00% Impervious Runoff Depth=4.26" Tc=10.0 min CN=0/98 Runoff=0.17 cfs 0.060 af
Subcatchment119S: Basin 20	Runoff Area=7,535 sf 100.00% Impervious Runoff Depth=4.26" Tc=10.0 min CN=0/98 Runoff=0.17 cfs 0.061 af
Subcatchment120S: Basin 21	Runoff Area=6,846 sf 100.00% Impervious Runoff Depth=4.26" Tc=10.0 min CN=0/98 Runoff=0.16 cfs 0.056 af
Subcatchment121S: Basin 22	Runoff Area=5,182 sf 100.00% Impervious Runoff Depth=4.26" Tc=10.0 min CN=0/98 Runoff=0.12 cfs 0.042 af
Subcatchment122S: Basin 23	Runoff Area=5,456 sf 100.00% Impervious Runoff Depth=4.26" Tc=10.0 min CN=0/98 Runoff=0.13 cfs 0.045 af
Subcatchment123S: Basin 24	Runoff Area=4,510 sf 100.00% Impervious Runoff Depth=4.26" Tc=10.0 min CN=0/98 Runoff=0.10 cfs 0.037 af
Subcatchment124S: Basin 25	Runoff Area=13,271 sf 100.00% Impervious Runoff Depth=4.26" Tc=10.0 min CN=0/98 Runoff=0.31 cfs 0.108 af
Subcatchment125S: Basin 26	Runoff Area=18,452 sf 100.00% Impervious Runoff Depth=4.26" Tc=10.0 min CN=0/98 Runoff=0.43 cfs 0.151 af
Subcatchment126S: Alley Basin 1	Runoff Area=9,860 sf 100.00% Impervious Runoff Depth=4.26" Tc=10.0 min CN=0/98 Runoff=0.23 cfs 0.080 af
Subcatchment127S: Alley Basin 2	Runoff Area=7,461 sf 100.00% Impervious Runoff Depth=4.26" Tc=10.0 min CN=0/98 Runoff=0.17 cfs 0.061 af
Subcatchment128S: Alley Basin 3	Runoff Area=6,782 sf 100.00% Impervious Runoff Depth=4.26" Tc=10.0 min CN=0/98 Runoff=0.16 cfs 0.055 af
Subcatchment129S: Alley Basin 4	Runoff Area=6,970 sf 100.00% Impervious Runoff Depth=4.26" Tc=10.0 min CN=0/98 Runoff=0.16 cfs 0.057 af
Subcatchment168S: Future Lots	Runoff Area=64,223 sf 37.85% Impervious Runoff Depth=3.92" Tc=10.0 min CN=93/98 Runoff=1.40 cfs 0.481 af
Subcatchment169S: Swale 2	Runoff Area=67 sf 100.00% Impervious Runoff Depth=4.26" Tc=0.0 min CN=0/98 Runoff=0.00 cfs 0.001 af
Subcatchment170S: Swale 1	Runoff Area=72 sf 100.00% Impervious Runoff Depth=4.26" Tc=0.0 min CN=0/98 Runoff=0.00 cfs 0.001 af
Reach 39R: Post-ConstructionPeak Flow	Inflow=12.39 cfs 7.565 af Outflow=12.39 cfs 7.565 af

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Reach 42R: Pre-Construction Peak Flow	Inflow=9.64 cfs 6.372 af Outflow=9.64 cfs 6.372 af
Reach 58R: 1	Inflow=12.39 cfs 7.565 af Outflow=12.39 cfs 7.565 af
Reach 85R: 1	Inflow=12.30 cfs 7.506 af Outflow=12.30 cfs 7.506 af
Reach 130R: 1	Inflow=3.73 cfs 1.282 af Outflow=3.73 cfs 1.282 af
Reach 131R: 1	Inflow=3.73 cfs 1.282 af Outflow=3.73 cfs 1.282 af
Reach 132R: 1	Inflow=2.14 cfs 0.735 af Outflow=2.14 cfs 0.735 af
Reach 133R: 1	Inflow=0.35 cfs 0.123 af Outflow=0.35 cfs 0.123 af
Reach 134R: 1	Inflow=17.16 cfs 5.892 af Outflow=17.16 cfs 5.892 af
Reach 135R: 1	Inflow=2.91 cfs 0.996 af Outflow=2.91 cfs 0.996 af
Reach 136R: 1	Inflow=1.65 cfs 0.566 af Outflow=1.65 cfs 0.566 af
Reach 137R: 1	Inflow=1.00 cfs 0.345 af Outflow=1.00 cfs 0.345 af
Reach 138R: 1	Inflow=0.44 cfs 0.154 af Outflow=0.44 cfs 0.154 af
Reach 139R: 1	Inflow=13.96 cfs 4.792 af Outflow=13.96 cfs 4.792 af
Reach 140R: 1	Inflow=0.23 cfs 0.080 af Outflow=0.23 cfs 0.080 af
Reach 141R: 1	Inflow=0.17 cfs 0.061 af Outflow=0.17 cfs 0.061 af
Reach 142R: 1	Inflow=13.24 cfs 4.546 af Outflow=13.24 cfs 4.546 af
Reach 143R: 1	Inflow=2.70 cfs 0.925 af Outflow=2.70 cfs 0.925 af

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Reach 144R: 1	Inflow=1.93 cfs 0.663 af Outflow=1.93 cfs 0.663 af
Reach 145R: 1	Inflow=1.93 cfs 0.663 af Outflow=1.93 cfs 0.663 af
Reach 146R: 1	Inflow=10.55 cfs 3.621 af Outflow=10.55 cfs 3.621 af
Reach 147R: 1	Inflow=0.16 cfs 0.055 af Outflow=0.16 cfs 0.055 af
Reach 148R: 1	Inflow=10.39 cfs 3.566 af Outflow=10.39 cfs 3.566 af
Reach 149R: 1	Inflow=2.63 cfs 0.903 af Outflow=2.63 cfs 0.903 af
Reach 150R: 1	Inflow=1.79 cfs 0.613 af Outflow=1.79 cfs 0.613 af
Reach 151R: 1	Inflow=1.36 cfs 0.469 af Outflow=1.36 cfs 0.469 af
Reach 152R: 1	Inflow=7.26 cfs 2.490 af Outflow=7.26 cfs 2.490 af
Reach 153R: 1	Inflow=0.16 cfs 0.057 af Outflow=0.16 cfs 0.057 af
Reach 154R: 1	Inflow=7.09 cfs 2.433 af Outflow=7.09 cfs 2.433 af
Reach 155R: 1	Inflow=2.49 cfs 0.856 af Outflow=2.49 cfs 0.856 af
Reach 158R: 1	Inflow=14.25 cfs 4.897 af Outflow=14.25 cfs 4.897 af
Reach 159R: 1	Inflow=13.78 cfs 4.731 af Outflow=13.78 cfs 4.731 af
Reach 160R: 1	Inflow=1.73 cfs 0.592 af Outflow=1.73 cfs 0.592 af
Reach 162R: 1	Inflow=4.12 cfs 1.414 af Outflow=4.12 cfs 1.414 af
Reach 163R: 1	Inflow=4.02 cfs 1.378 af Outflow=4.02 cfs 1.378 af

9-6-23 HydroCAD DOM*Type IA 24-hr 100-Year Rainfall=4.50"*

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Reach 165R: 1Inflow=1.44 cfs 0.493 af
Outflow=1.44 cfs 0.493 af**Reach 166R: Basin Future**Inflow=1.40 cfs 0.481 af
Outflow=1.40 cfs 0.481 af**Pond 54P: Stormwater Swale 2**Peak Elev=222.44' Storage=33 cf Inflow=0.08 cfs 0.029 af
Outflow=0.08 cfs 0.029 af**Pond 60P: Stormwater Swale 1**Peak Elev=222.09' Storage=35 cf Inflow=0.09 cfs 0.030 af
Outflow=0.09 cfs 0.030 af**Pond 63P: Detention Pond**Peak Elev=224.51' Storage=60,024 cf Inflow=21.86 cfs 7.507 af
Outflow=12.30 cfs 7.506 af

Total Runoff Area = 46.412 ac Runoff Volume = 13.939 af Average Runoff Depth = 3.60"
81.58% Pervious = 37.863 ac 18.42% Impervious = 8.549 ac

9-6-23 HydroCAD DOM

Type IA 24-hr 100-Year Rainfall=4.50"

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Summary for Subcatchment 64S: Home Basin 20

Runoff = 0.21 cfs @ 7.98 hrs, Volume= 0.071 af, Depth= 3.71"
 Routed to Reach 143R : 1

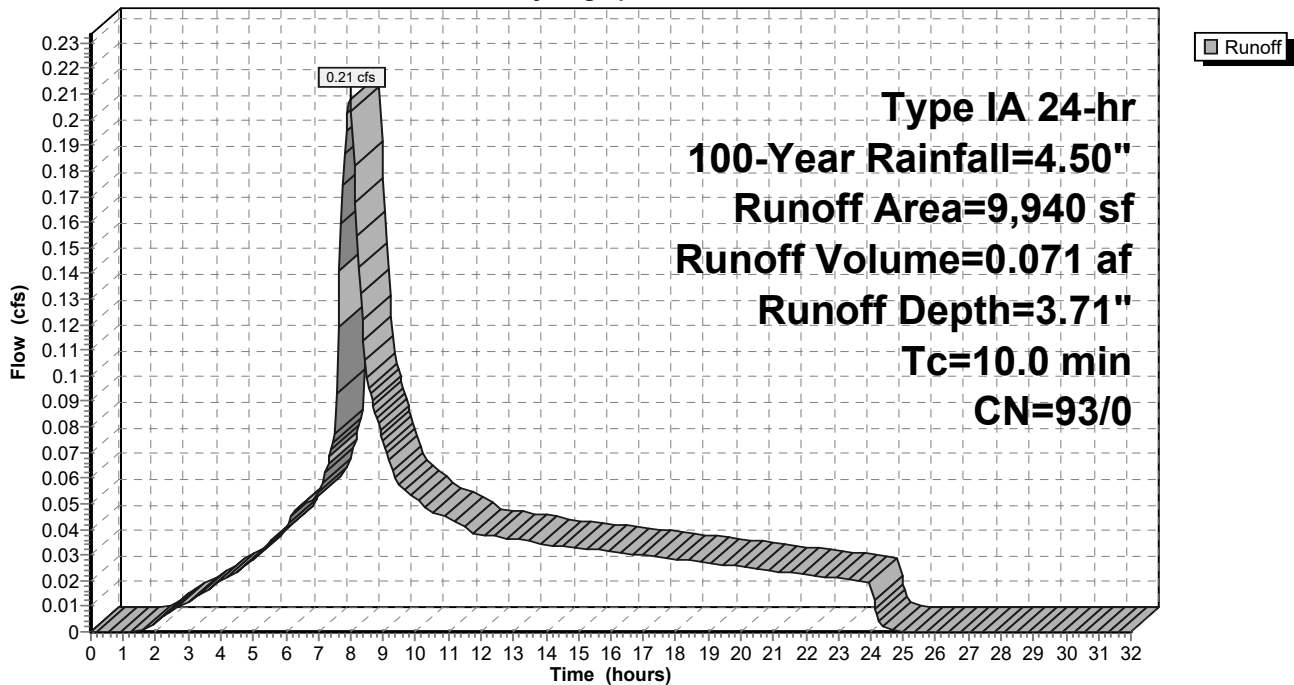
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 100-Year Rainfall=4.50"

Area (sf)	CN	Description
* 9,940	93	70% Lot Coverage Weighted
9,940	93	100.00% Pervious Area

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

Subcatchment 64S: Home Basin 20

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 100-Year Rainfall=4.50"

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Summary for Subcatchment 65S: Single Pond Existing Conditions

Runoff = 9.55 cfs @ 8.26 hrs, Volume= 6.326 af, Depth> 3.30"
 Routed to Reach 42R : Pre-Construction Peak Flow

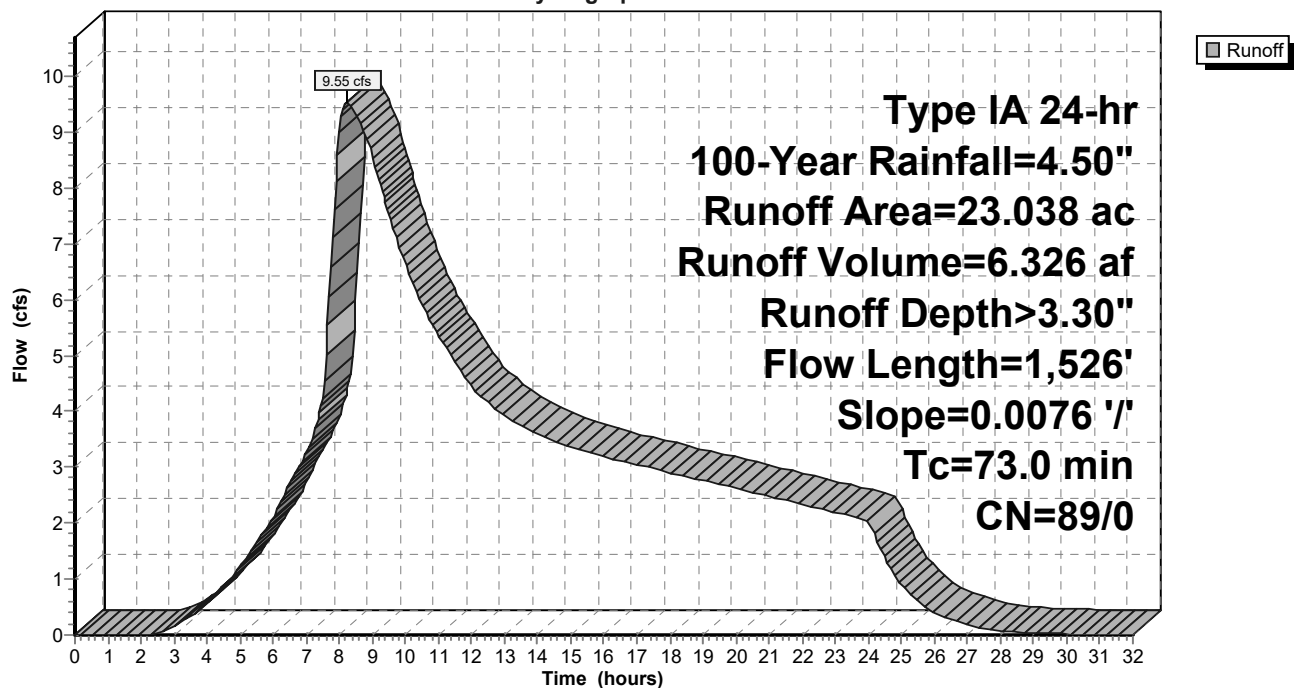
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 100-Year Rainfall=4.50"

Area (ac)	CN	Description
23.038	89	Pasture/grassland/range, Poor, HSG D
23.038	89	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
39.5	300	0.0076	0.13		Sheet Flow, Grass: Short n= 0.150 P2= 2.47"
33.5	1,226	0.0076	0.61		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
73.0	1,526	Total			

Subcatchment 65S: Single Pond Existing Conditions

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 100-Year Rainfall=4.50"

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Summary for Subcatchment 67S: Home Basin 19

Runoff = 0.36 cfs @ 7.98 hrs, Volume= 0.122 af, Depth= 3.71"
 Routed to Reach 159R : 1

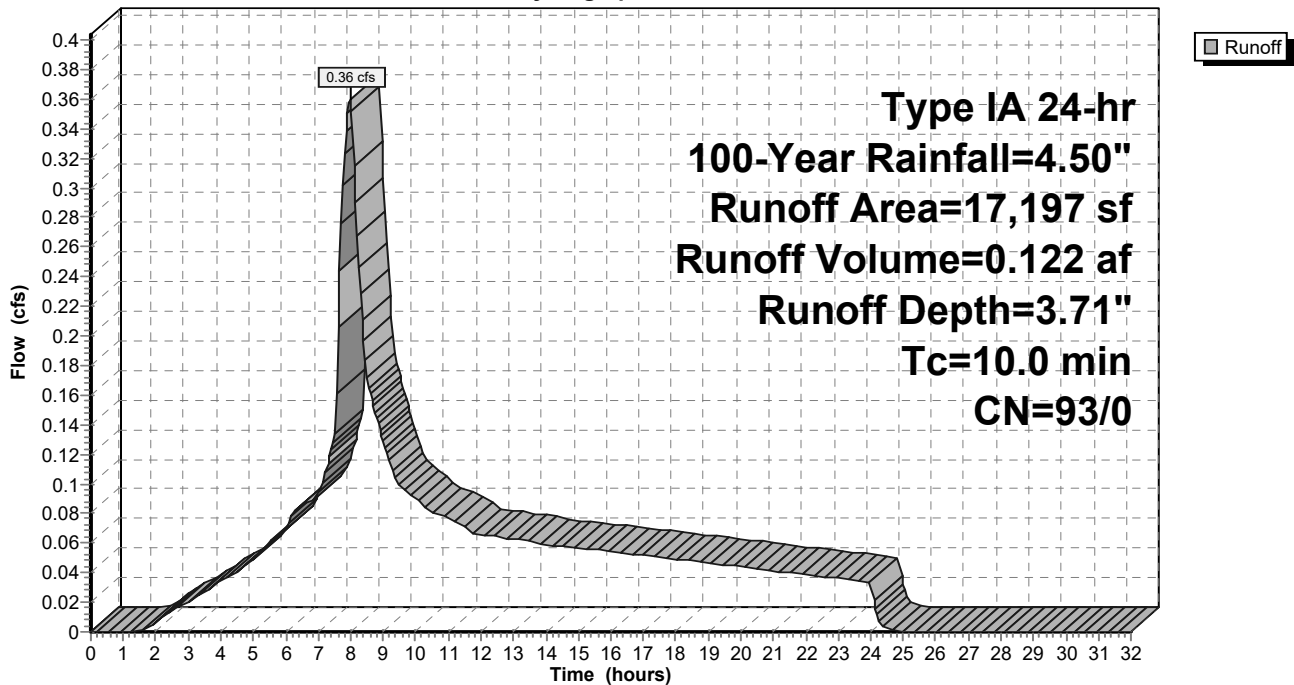
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 100-Year Rainfall=4.50"

Area (sf)	CN	Description
* 17,197	93	70% Lot Coverage Weighted
17,197	93	100.00% Pervious Area

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

Subcatchment 67S: Home Basin 19

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 100-Year Rainfall=4.50"

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Summary for Subcatchment 68S: Home Basin 12

Runoff = 0.38 cfs @ 7.98 hrs, Volume= 0.129 af, Depth= 3.71"
 Routed to Reach 160R : 1

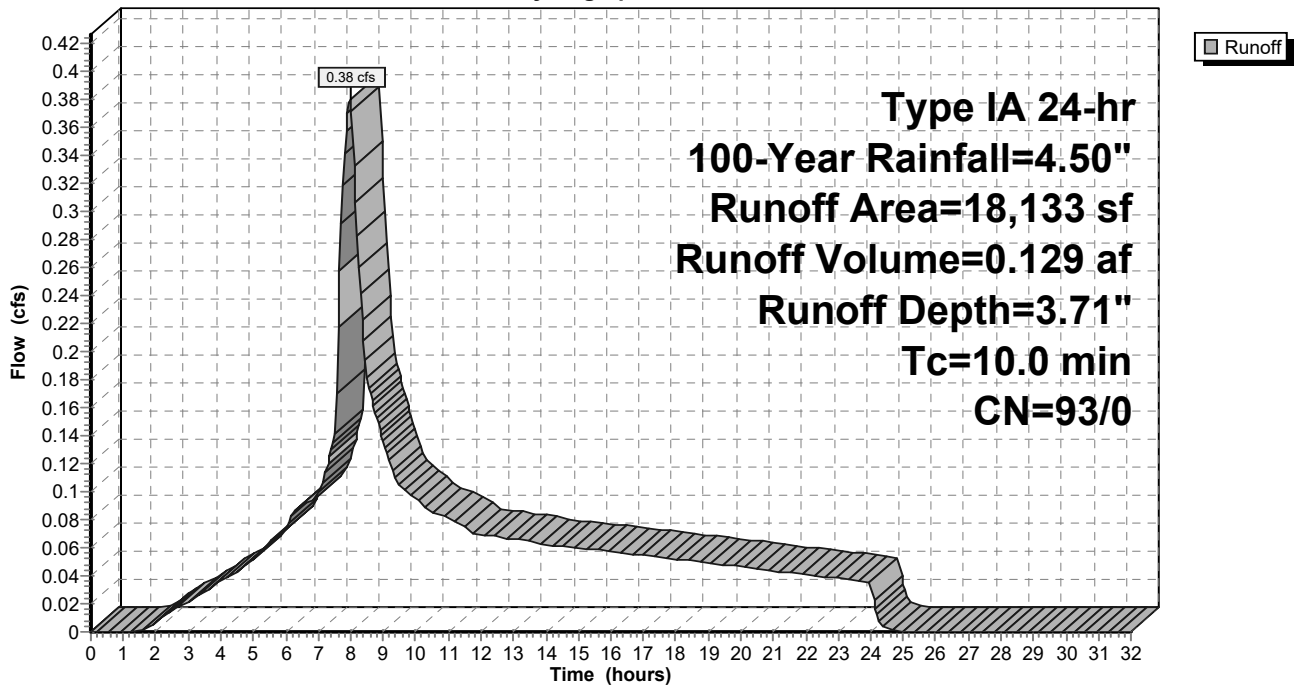
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 100-Year Rainfall=4.50"

Area (sf)	CN	Description
* 18,133	93	70% Lot Coverage Weighted
18,133	93	100.00% Pervious Area

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

Subcatchment 68S: Home Basin 12

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 100-Year Rainfall=4.50"

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Summary for Subcatchment 69S: Home Basin 17

Runoff = 0.35 cfs @ 7.98 hrs, Volume= 0.118 af, Depth= 3.71"
 Routed to Reach 151R : 1

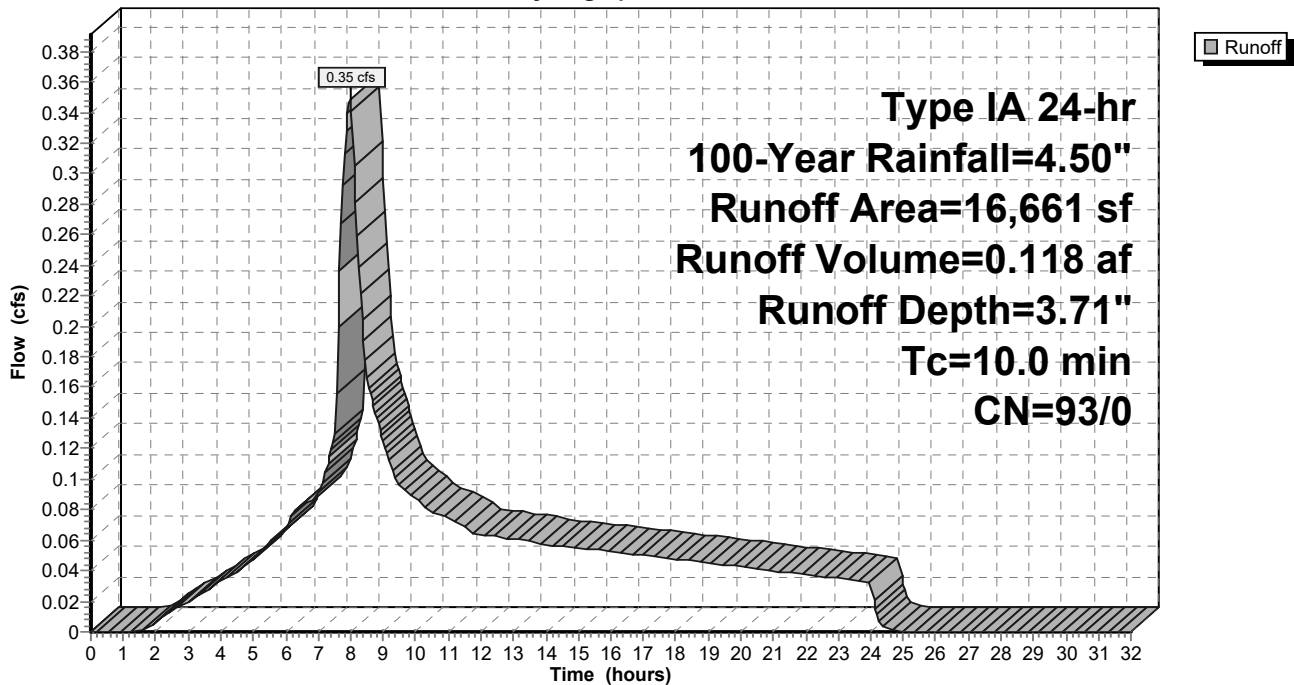
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 100-Year Rainfall=4.50"

Area (sf)	CN	Description
* 16,661	93	70% Lot Coverage Weighted
16,661	93	100.00% Pervious Area

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

Subcatchment 69S: Home Basin 17

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 100-Year Rainfall=4.50"

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Summary for Subcatchment 70S: Home Basin 18

Runoff = 0.24 cfs @ 7.98 hrs, Volume= 0.082 af, Depth= 3.71"
 Routed to Reach 149R : 1

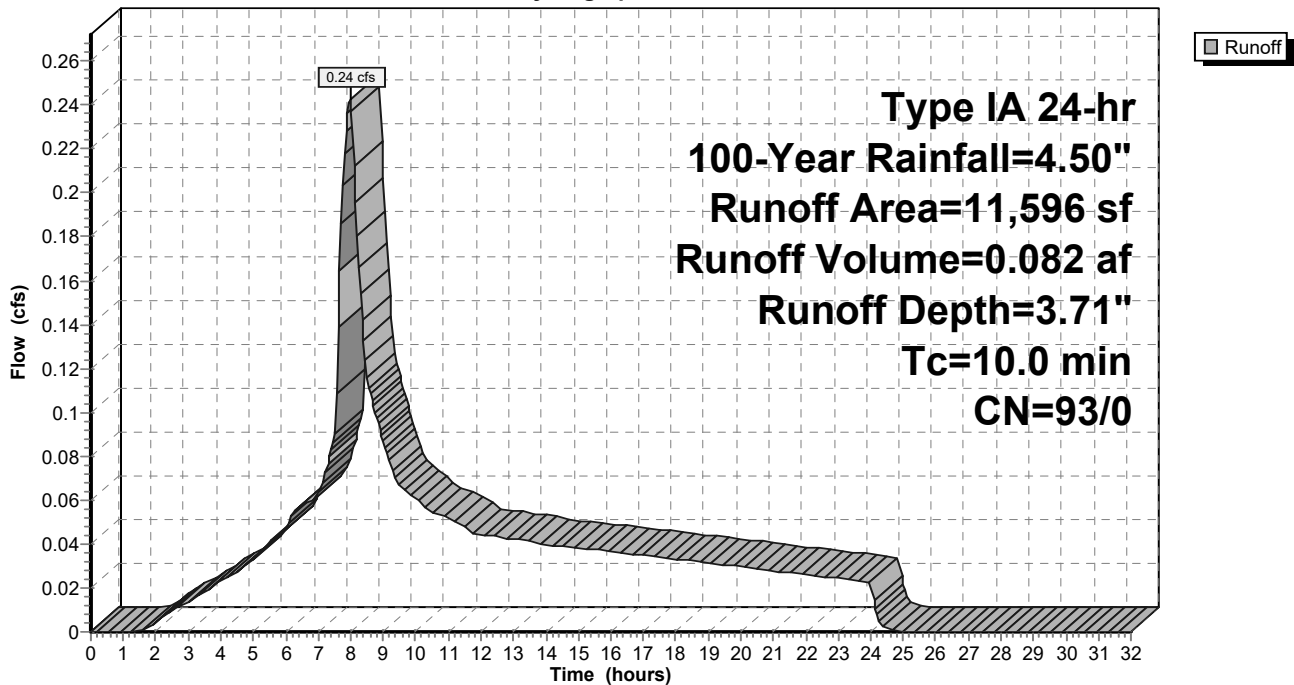
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 100-Year Rainfall=4.50"

Area (sf)	CN	Description
* 11,596	93	70% Lot Coverage Weighted
11,596	93	100.00% Pervious Area

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

Subcatchment 70S: Home Basin 18

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 100-Year Rainfall=4.50"

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Summary for Subcatchment 71S: Home Basin 14

Runoff = 0.34 cfs @ 7.98 hrs, Volume= 0.117 af, Depth= 3.71"
 Routed to Reach 148R : 1

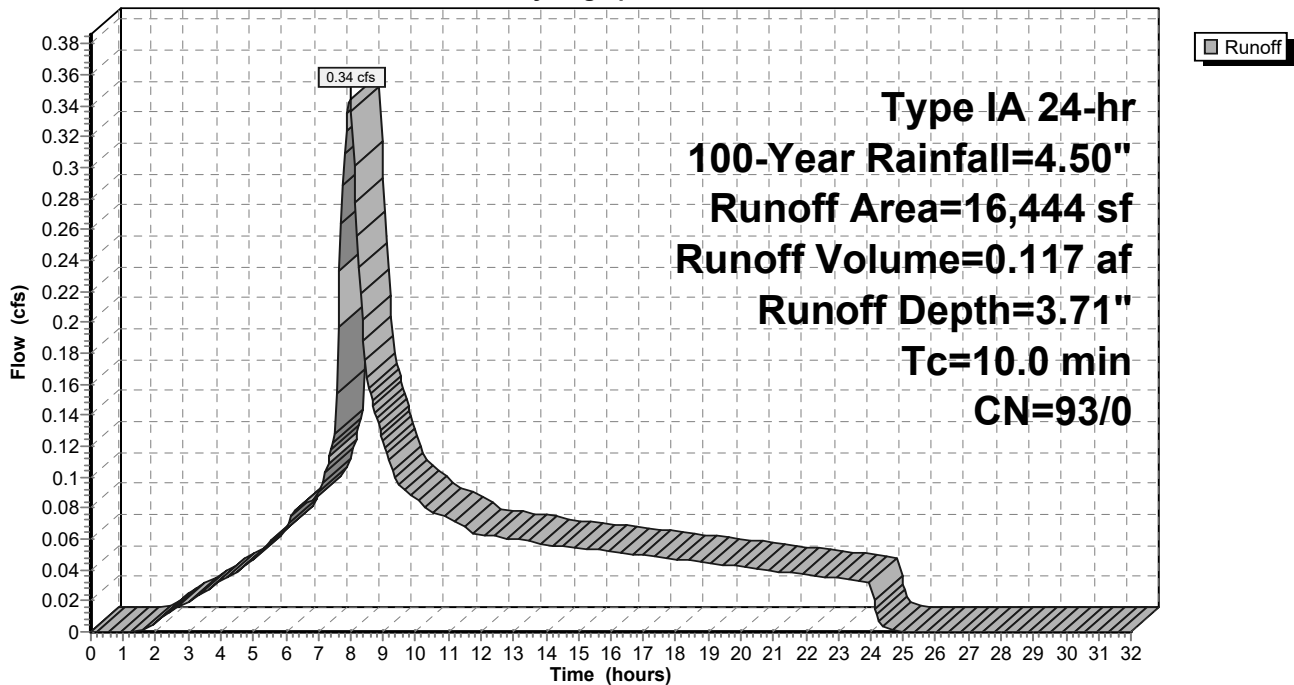
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 100-Year Rainfall=4.50"

Area (sf)	CN	Description
* 16,444	93	70% Lot Coverage Weighted
16,444	93	100.00% Pervious Area

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

Subcatchment 71S: Home Basin 14

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 100-Year Rainfall=4.50"

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Summary for Subcatchment 72S: Home Basin 16

Runoff = 0.43 cfs @ 7.98 hrs, Volume= 0.144 af, Depth= 3.71"
 Routed to Reach 150R : 1

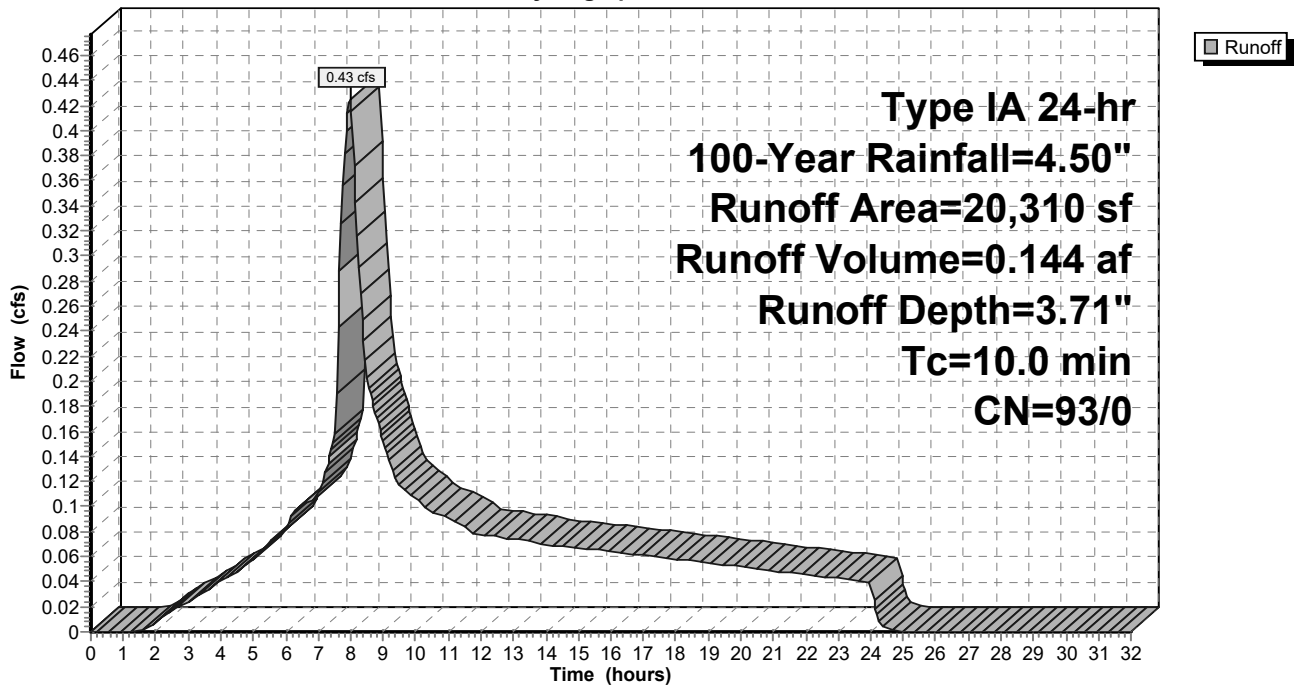
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 100-Year Rainfall=4.50"

Area (sf)	CN	Description
* 20,310	93	70% Lot Coverage Weighted
20,310	93	100.00% Pervious Area

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

Subcatchment 72S: Home Basin 16

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 100-Year Rainfall=4.50"

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Summary for Subcatchment 73S: Home Basin 13

Runoff = 0.23 cfs @ 7.98 hrs, Volume= 0.077 af, Depth= 3.71"
 Routed to Reach 155R : 1

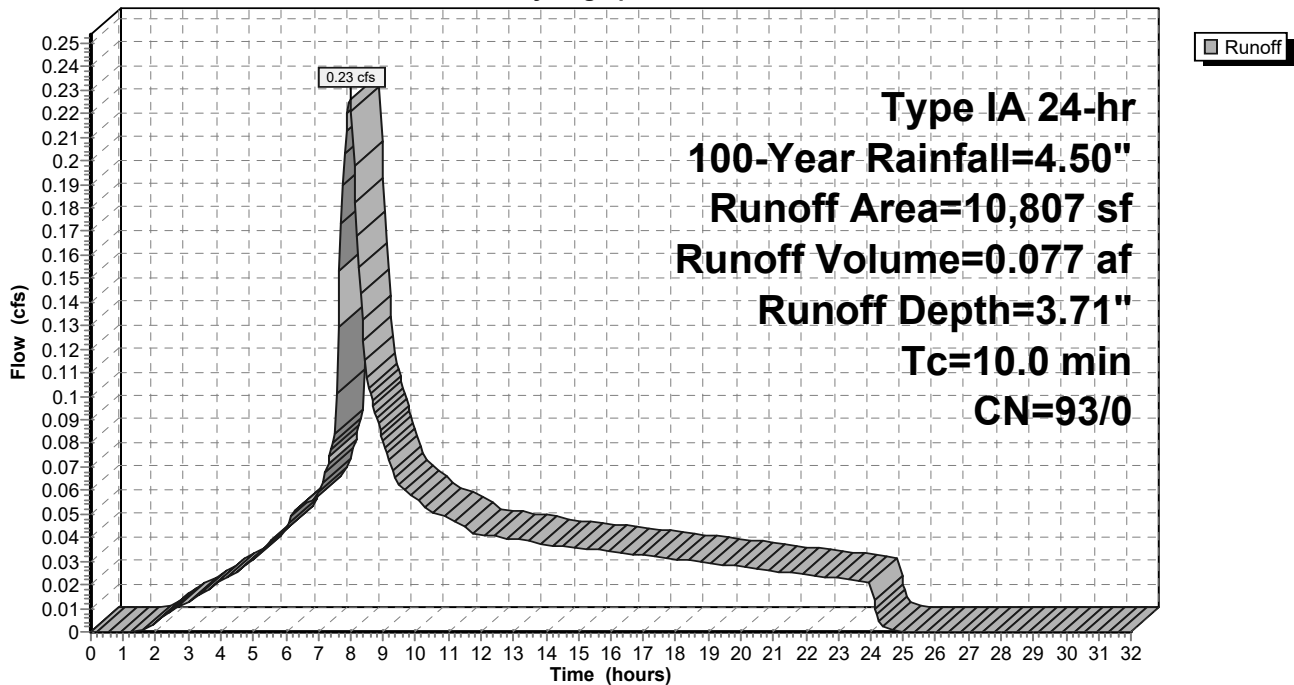
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 100-Year Rainfall=4.50"

Area (sf)	CN	Description
* 10,807	93	70% Lot Coverage Weighted
10,807	93	100.00% Pervious Area

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

Subcatchment 73S: Home Basin 13

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 100-Year Rainfall=4.50"

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Summary for Subcatchment 74S: Swale Existing Conditions

Runoff = 0.14 cfs @ 7.98 hrs, Volume= 0.046 af, Depth= 3.30"
 Routed to Reach 42R : Pre-Construction Peak Flow

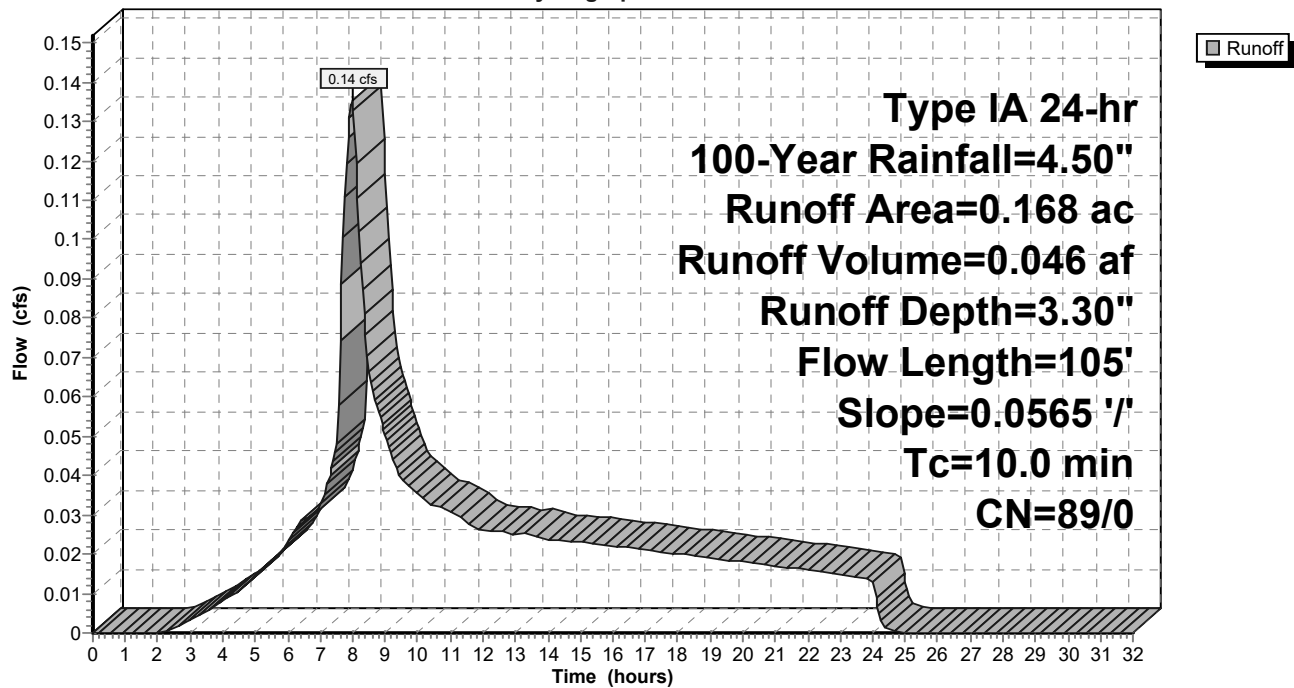
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 100-Year Rainfall=4.50"

Area (ac)	CN	Description
0.168	89	Pasture/grassland/range, Poor, HSG D
0.168	89	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.7	105	0.0565	0.23		Sheet Flow, Grass: Short n= 0.150 P2= 2.47"
7.7	105	Total, Increased to minimum Tc = 10.0 min			

Subcatchment 74S: Swale Existing Conditions

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 100-Year Rainfall=4.50"

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Summary for Subcatchment 75S: Home Basin 11

Runoff = 0.39 cfs @ 7.98 hrs, Volume= 0.131 af, Depth= 3.71"
 Routed to Reach 160R : 1

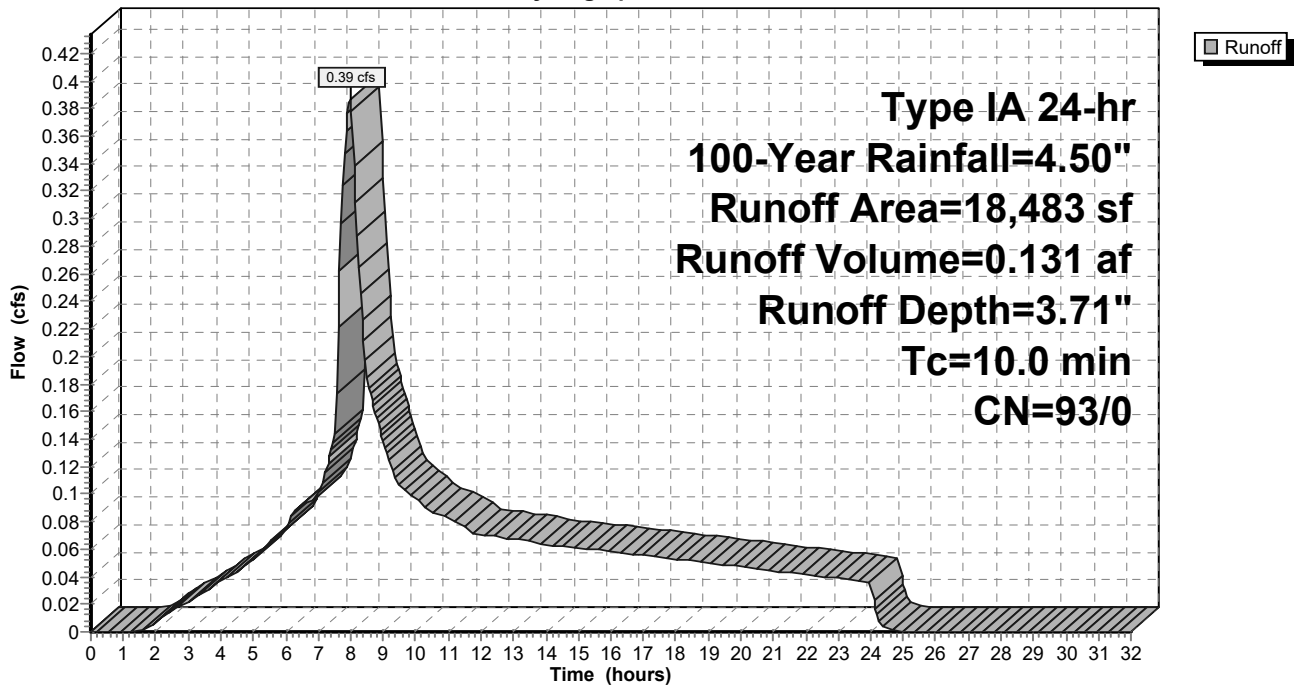
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 100-Year Rainfall=4.50"

Area (sf)	CN	Description
* 18,483	93	70% Lot Coverage Weighted
18,483	93	100.00% Pervious Area

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

Subcatchment 75S: Home Basin 11

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 100-Year Rainfall=4.50"

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Summary for Subcatchment 77S: Home Basin 15

Runoff = 0.26 cfs @ 7.98 hrs, Volume= 0.089 af, Depth= 3.71"
 Routed to Reach 149R : 1

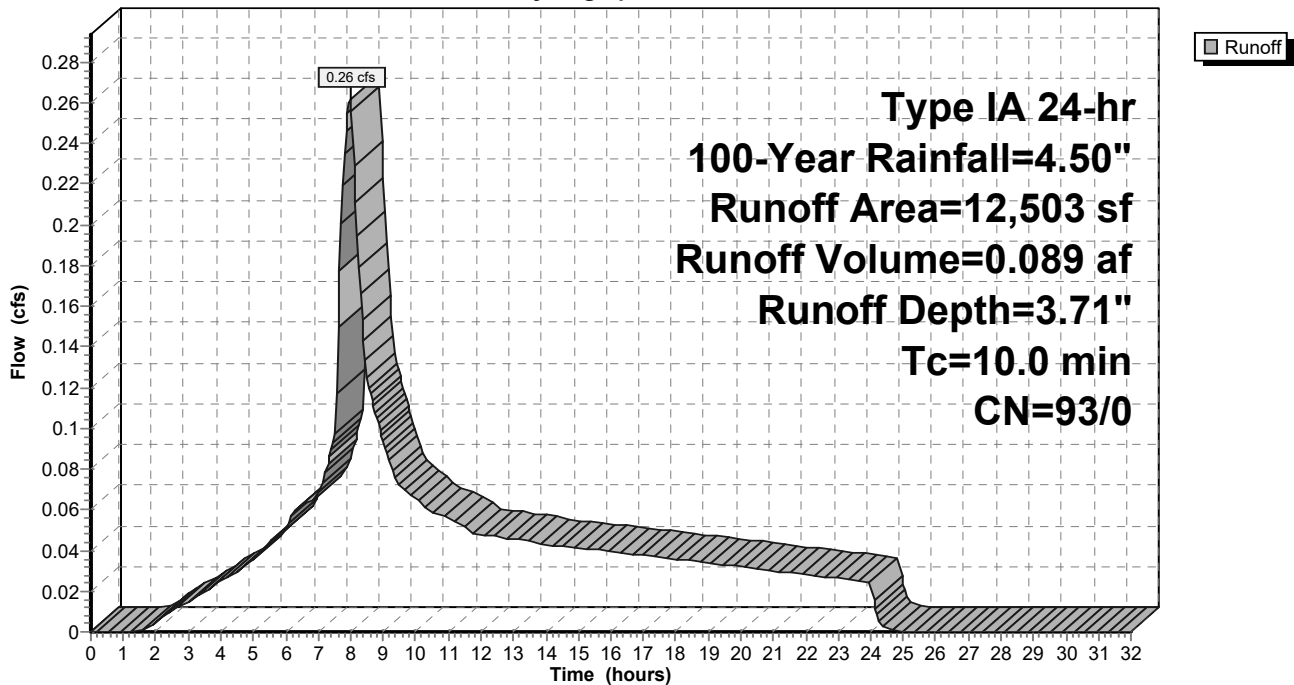
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 100-Year Rainfall=4.50"

Area (sf)	CN	Description
* 12,503	93	70% Lot Coverage Weighted
12,503	93	100.00% Pervious Area

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

Subcatchment 77S: Home Basin 15

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 100-Year Rainfall=4.50"

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Summary for Subcatchment 78S: Single Pond

[46] Hint: Tc=0 (Instant runoff peak depends on dt)

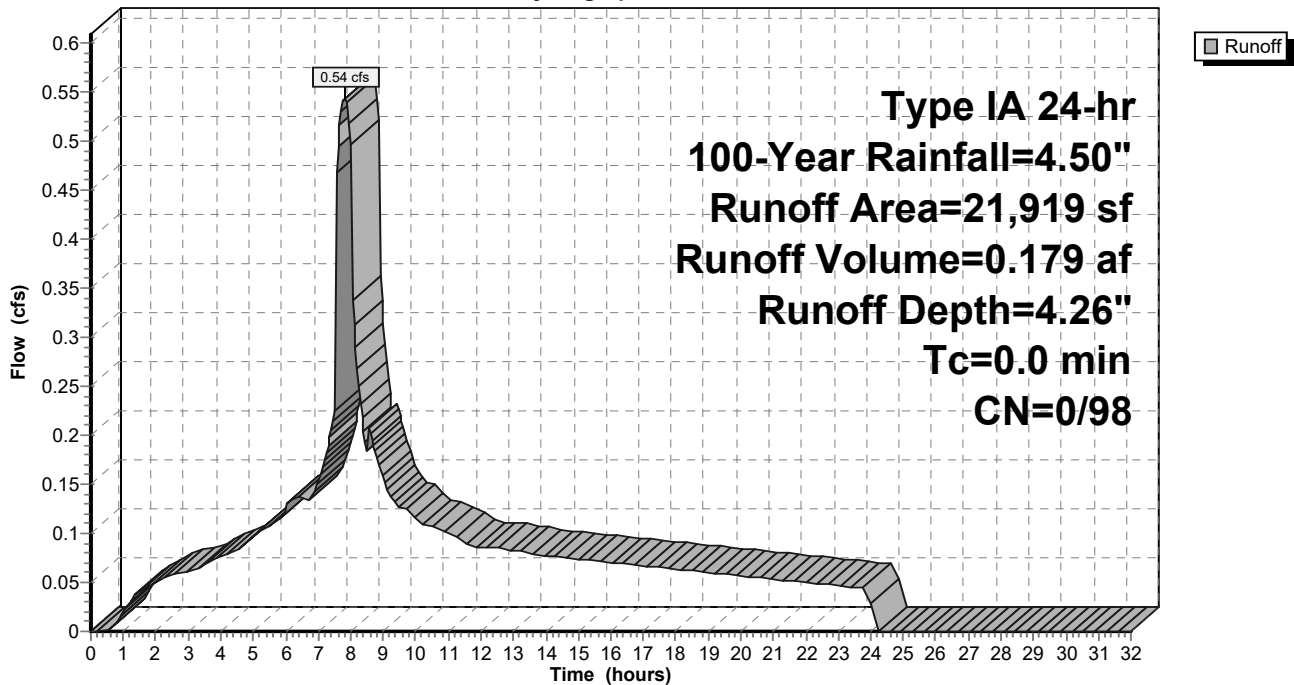
Runoff = 0.54 cfs @ 7.80 hrs, Volume= 0.179 af, Depth= 4.26"
 Routed to Pond 63P : Detention Pond

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 100-Year Rainfall=4.50"

Area (sf)	CN	Description
21,919	98	Water Surface, HSG D
21,919	98	100.00% Impervious Area

Subcatchment 78S: Single Pond

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 100-Year Rainfall=4.50"

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Summary for Subcatchment 79S: Home Basin 30

Runoff = 0.81 cfs @ 7.98 hrs, Volume= 0.272 af, Depth= 3.71"
 Routed to Reach 132R : 1

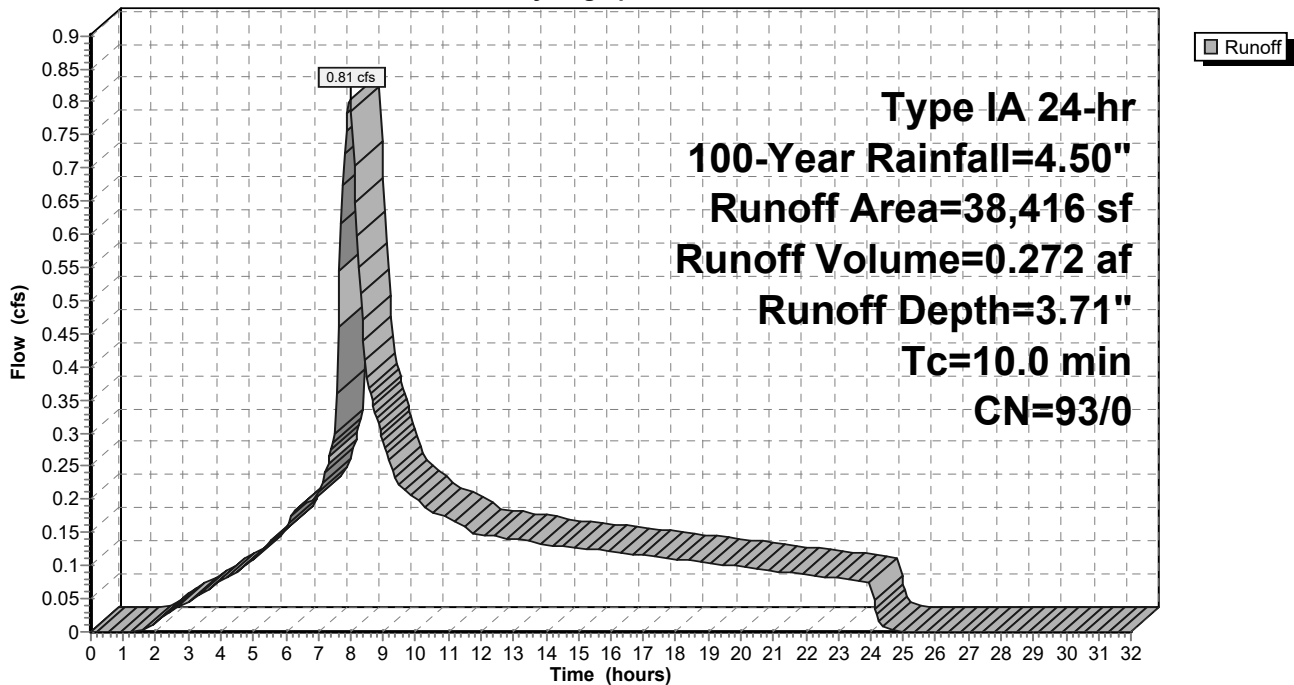
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 100-Year Rainfall=4.50"

Area (sf)	CN	Description
* 38,416	93	70% Lot Coverage Weighted
38,416	93	100.00% Pervious Area

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

Subcatchment 79S: Home Basin 30

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 100-Year Rainfall=4.50"

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Summary for Subcatchment 80S: Home Basin 10

Runoff = 0.31 cfs @ 7.98 hrs, Volume= 0.105 af, Depth= 3.71"
 Routed to Reach 165R : 1

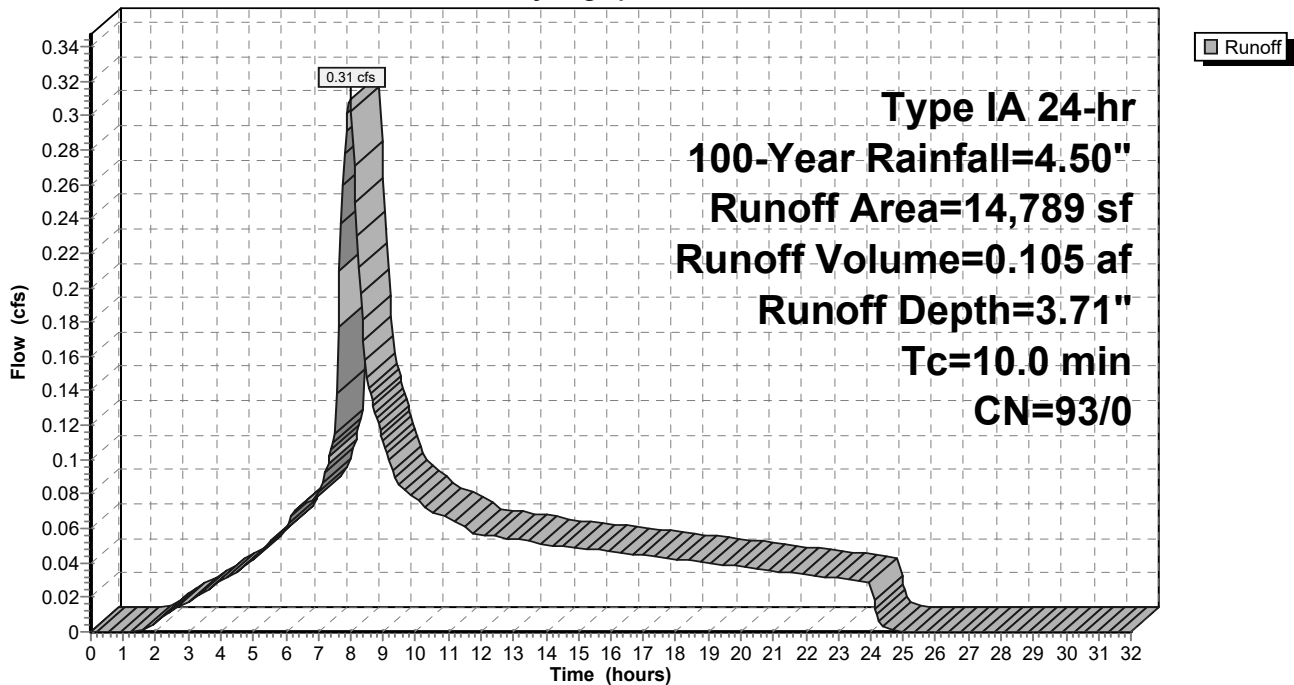
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 100-Year Rainfall=4.50"

Area (sf)	CN	Description
* 14,789	93	70% Lot Coverage Weighted
14,789	93	100.00% Pervious Area

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

Subcatchment 80S: Home Basin 10

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 100-Year Rainfall=4.50"

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Summary for Subcatchment 81S: Home Basin 9

Runoff = 0.33 cfs @ 7.98 hrs, Volume= 0.110 af, Depth= 3.71"
 Routed to Reach 163R : 1

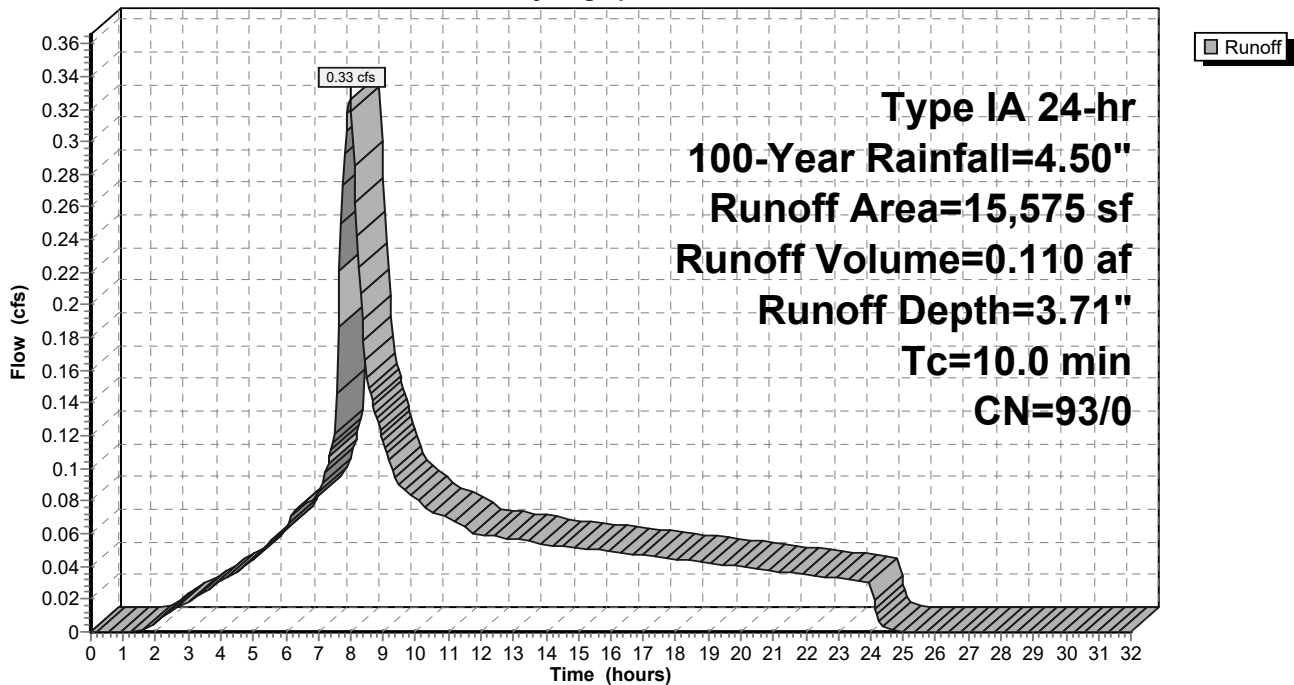
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 100-Year Rainfall=4.50"

Area (sf)	CN	Description
* 15,575	93	70% Lot Coverage Weighted
15,575	93	100.00% Pervious Area

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

Subcatchment 81S: Home Basin 9

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 100-Year Rainfall=4.50"

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Summary for Subcatchment 82S: Home Basin 2

Runoff = 0.43 cfs @ 7.98 hrs, Volume= 0.147 af, Depth= 3.71"
 Routed to Reach 145R : 1

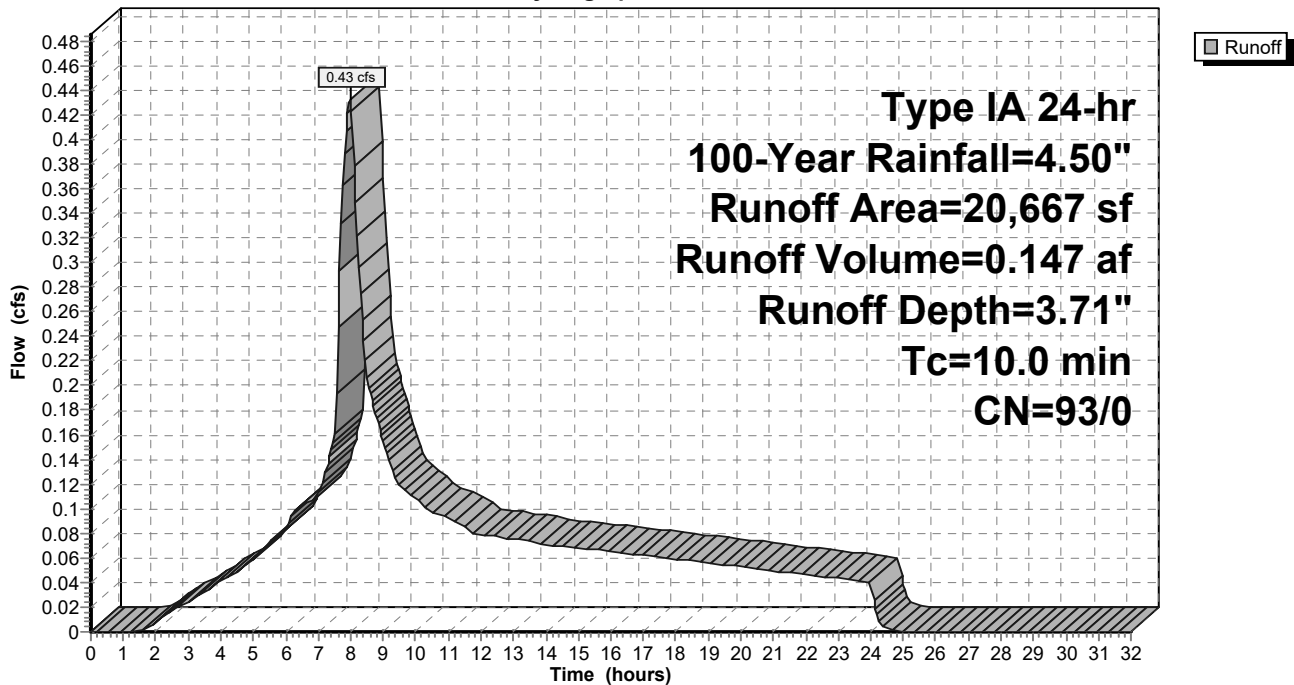
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 100-Year Rainfall=4.50"

Area (sf)	CN	Description
* 20,667	93	70% Lot Coverage Weighted
20,667	93	100.00% Pervious Area

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

Subcatchment 82S: Home Basin 2

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 100-Year Rainfall=4.50"

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Summary for Subcatchment 83S: Home Basin 7

Runoff = 0.36 cfs @ 7.98 hrs, Volume= 0.121 af, Depth= 3.71"
 Routed to Reach 154R : 1

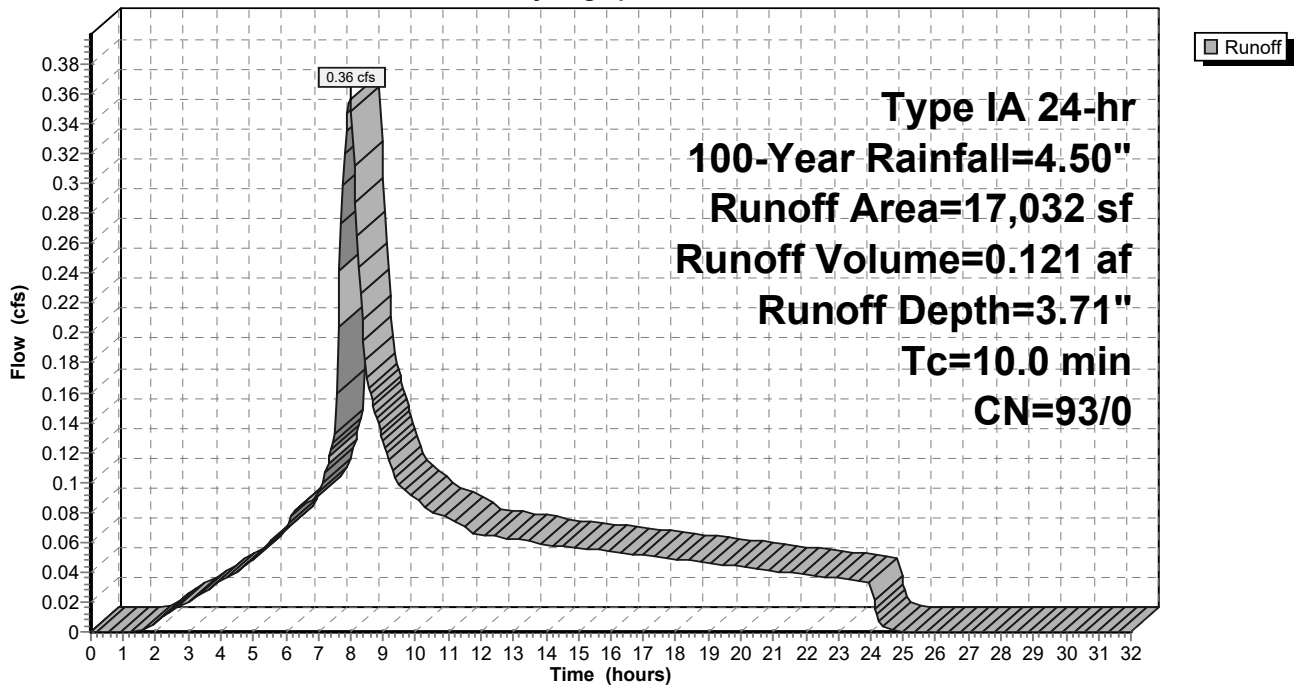
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 100-Year Rainfall=4.50"

Area (sf)	CN	Description
* 17,032	93	70% Lot Coverage Weighted
17,032	93	100.00% Pervious Area

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

Subcatchment 83S: Home Basin 7

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 100-Year Rainfall=4.50"

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Summary for Subcatchment 84S: Home Basin 8

Runoff = 0.24 cfs @ 7.98 hrs, Volume= 0.083 af, Depth= 3.71"
 Routed to Reach 155R : 1

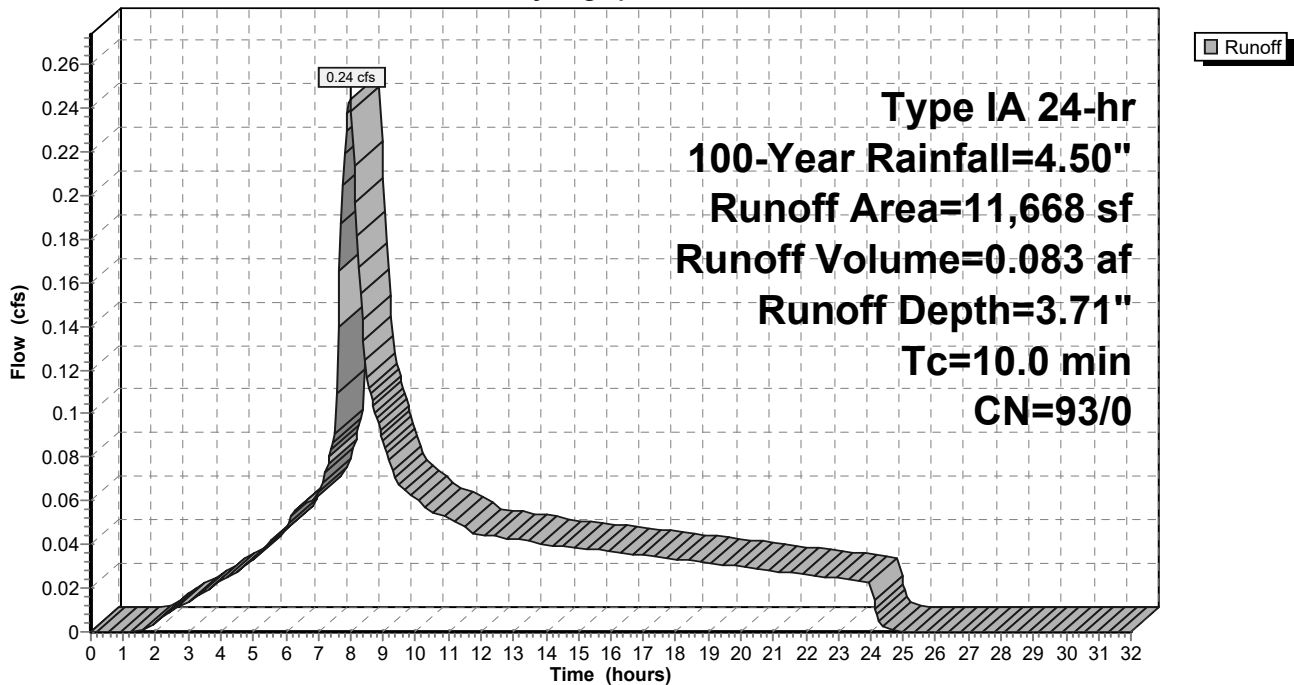
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 100-Year Rainfall=4.50"

Area (sf)	CN	Description
* 11,668	93	70% Lot Coverage Weighted
11,668	93	100.00% Pervious Area

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

Subcatchment 84S: Home Basin 8

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 100-Year Rainfall=4.50"

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Summary for Subcatchment 85S: Home Basin 29

Runoff = 0.53 cfs @ 7.98 hrs, Volume= 0.178 af, Depth= 3.71"
 Routed to Reach 132R : 1

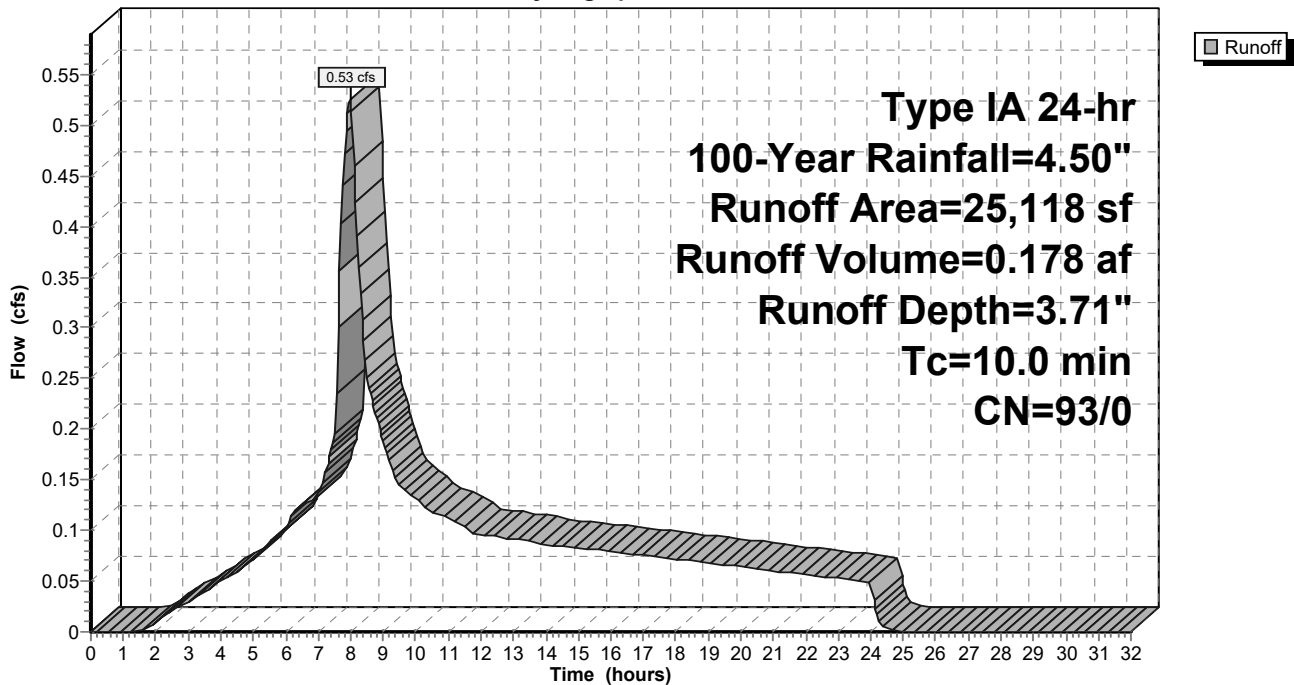
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 100-Year Rainfall=4.50"

Area (sf)	CN	Description
* 25,118	93	70% Lot Coverage Weighted
25,118	93	100.00% Pervious Area

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

Subcatchment 85S: Home Basin 29

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 100-Year Rainfall=4.50"

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Summary for Subcatchment 86S: Home Basin 22

Runoff = 0.34 cfs @ 7.98 hrs, Volume= 0.115 af, Depth= 3.71"
 Routed to Reach 145R : 1

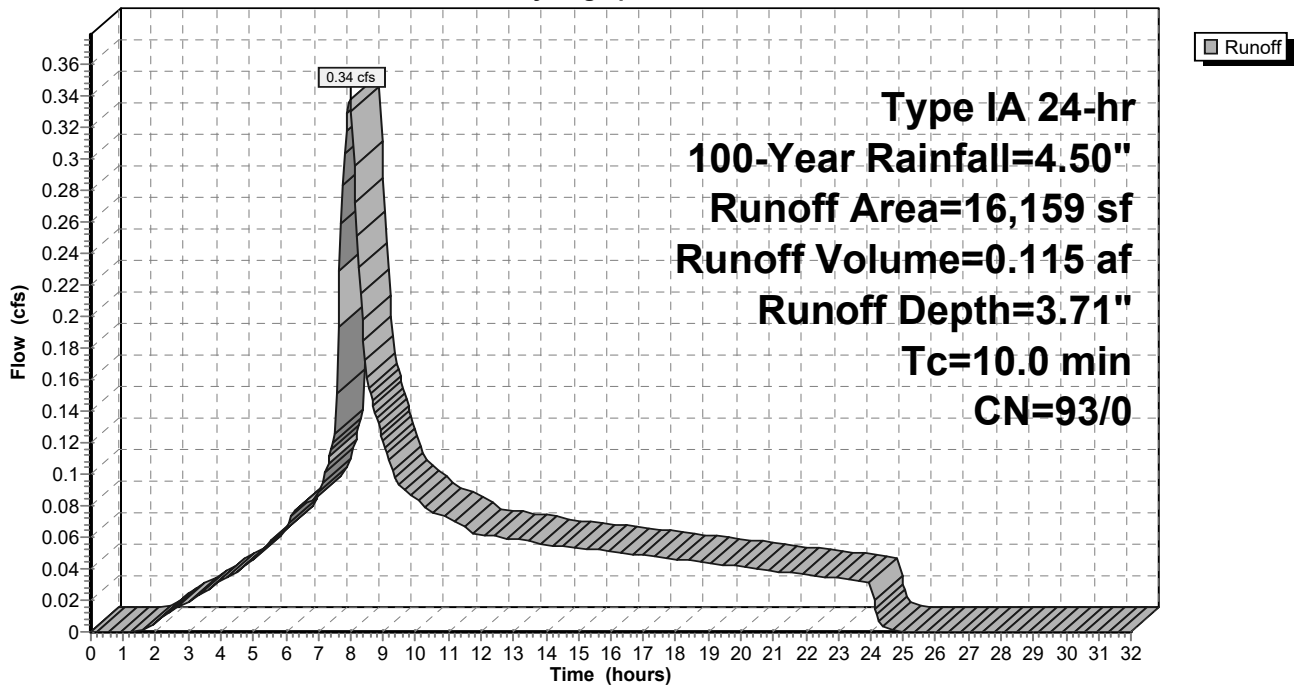
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 100-Year Rainfall=4.50"

Area (sf)	CN	Description
* 16,159	93	70% Lot Coverage Weighted
16,159	93	100.00% Pervious Area

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

Subcatchment 86S: Home Basin 22

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 100-Year Rainfall=4.50"

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Summary for Subcatchment 87S: Home Basin 27

Runoff = 0.52 cfs @ 7.98 hrs, Volume= 0.176 af, Depth= 3.71"
 Routed to Reach 135R : 1

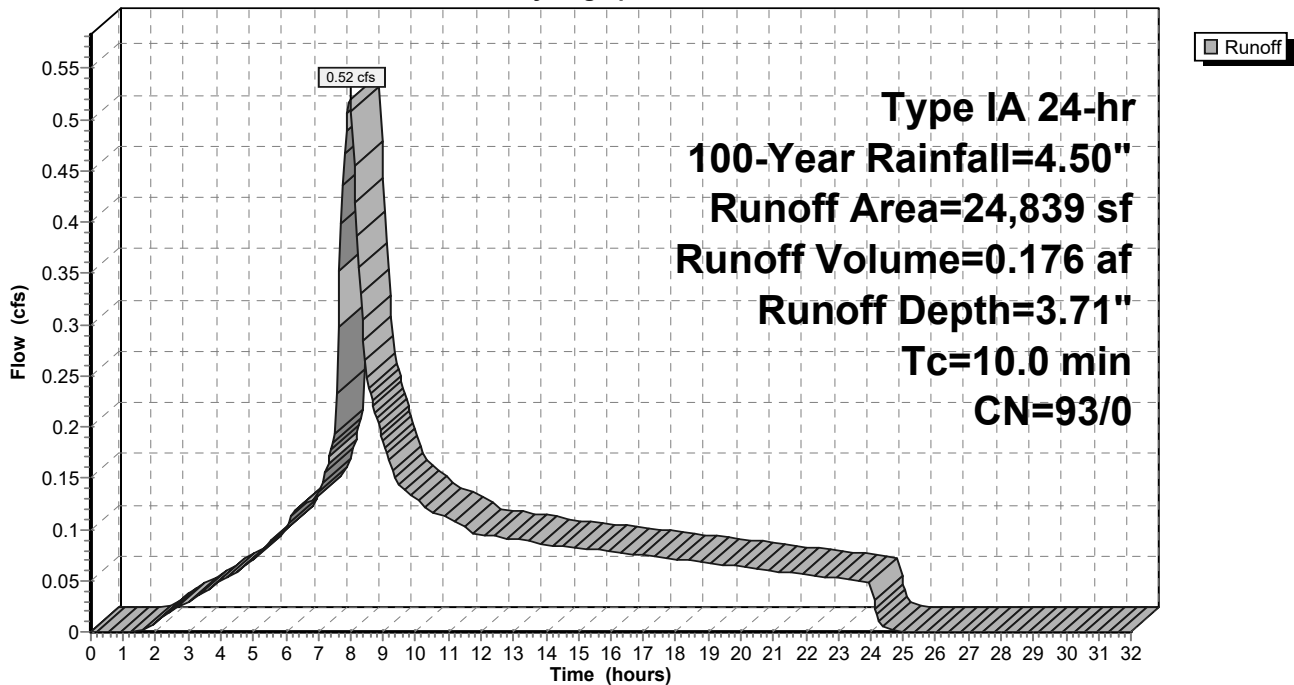
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 100-Year Rainfall=4.50"

Area (sf)	CN	Description
* 24,839	93	70% Lot Coverage Weighted
24,839	93	100.00% Pervious Area

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

Subcatchment 87S: Home Basin 27

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 100-Year Rainfall=4.50"

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Summary for Subcatchment 88S: Home Basin 28

Runoff = 0.53 cfs @ 7.98 hrs, Volume= 0.180 af, Depth= 3.71"
 Routed to Reach 131R : 1

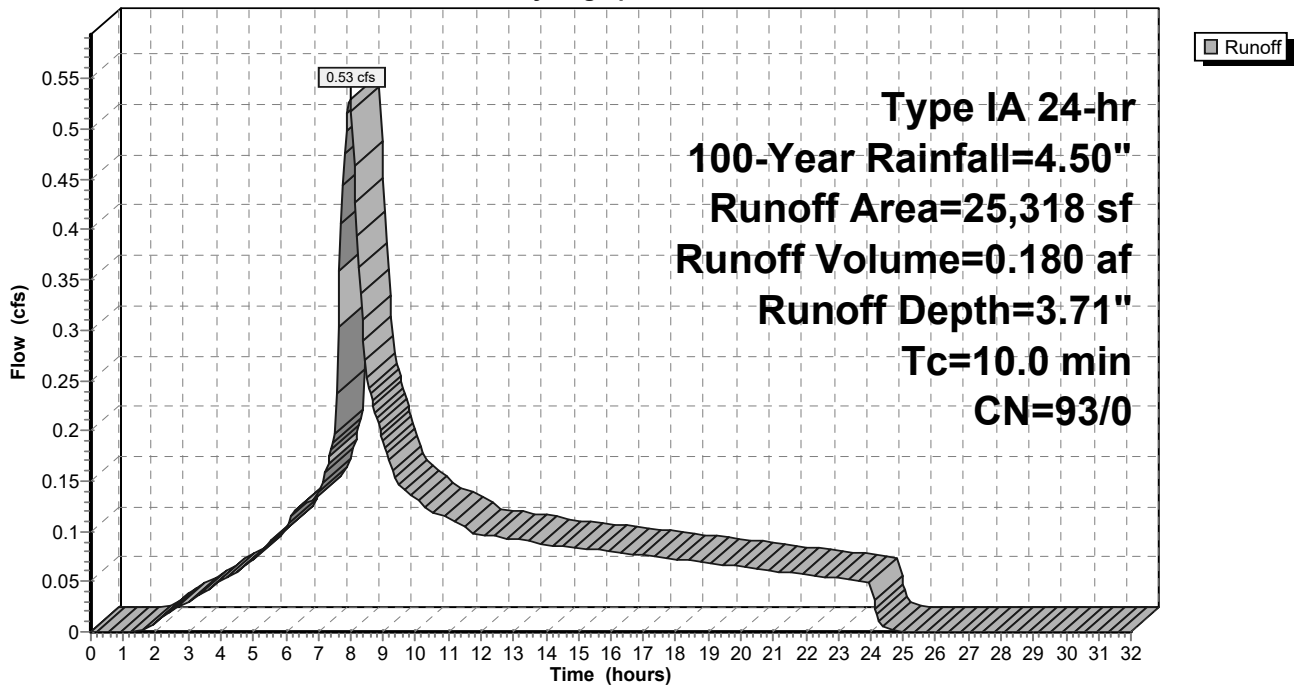
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 100-Year Rainfall=4.50"

Area (sf)	CN	Description
* 25,318	93	70% Lot Coverage Weighted
25,318	93	100.00% Pervious Area

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

Subcatchment 88S: Home Basin 28

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 100-Year Rainfall=4.50"

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Summary for Subcatchment 89S: Home Basin 24

Runoff = 0.43 cfs @ 7.98 hrs, Volume= 0.147 af, Depth= 3.71"
 Routed to Reach 135R : 1

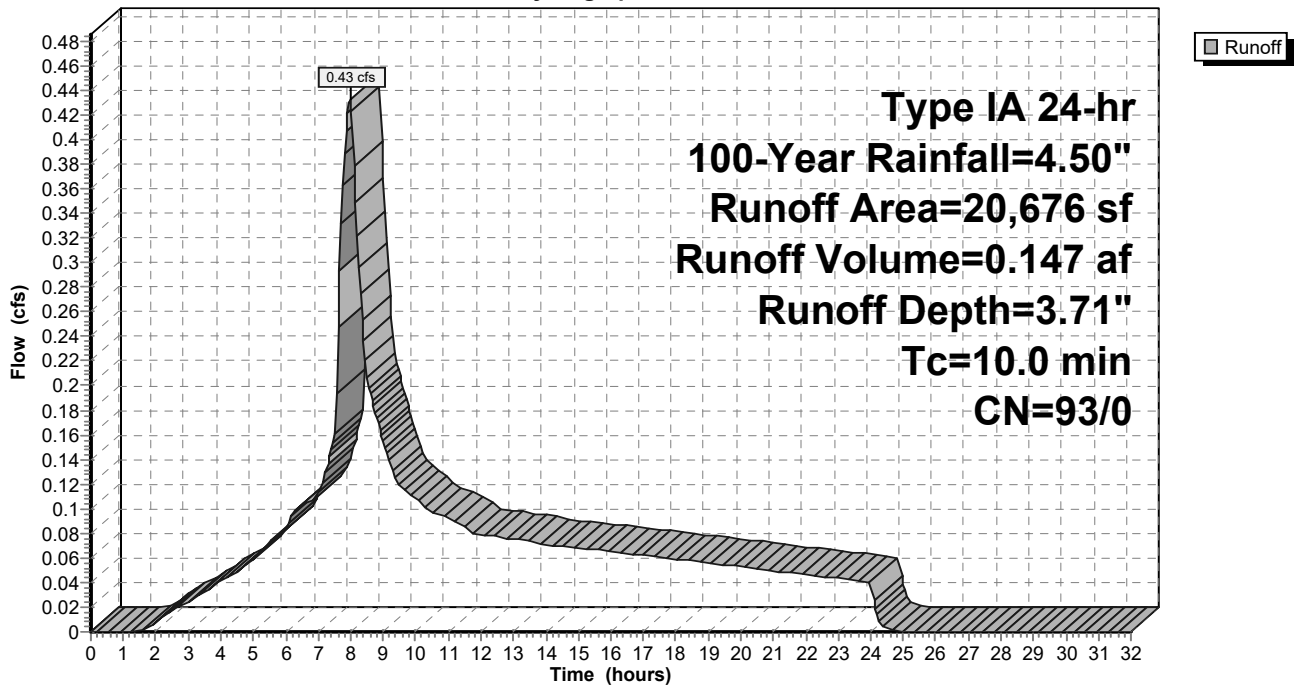
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 100-Year Rainfall=4.50"

Area (sf)	CN	Description
* 20,676	93	70% Lot Coverage Weighted
20,676	93	100.00% Pervious Area

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

Subcatchment 89S: Home Basin 24

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 100-Year Rainfall=4.50"

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Summary for Subcatchment 90S: Home Basin 26

Runoff = 0.30 cfs @ 7.98 hrs, Volume= 0.100 af, Depth= 3.71"
 Routed to Reach 136R : 1

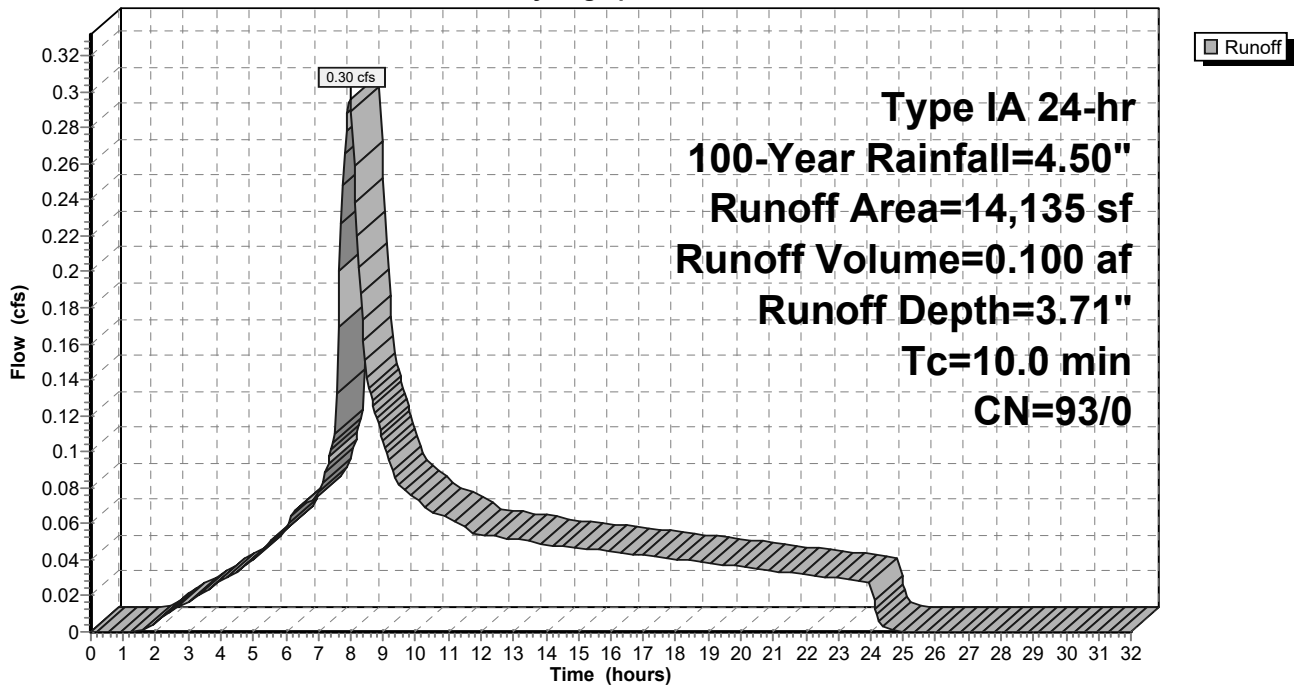
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 100-Year Rainfall=4.50"

Area (sf)	CN	Description
* 14,135	93	70% Lot Coverage Weighted
14,135	93	100.00% Pervious Area

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

Subcatchment 90S: Home Basin 26

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 100-Year Rainfall=4.50"

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Summary for Subcatchment 91S: Home Basin 23

Runoff = 0.26 cfs @ 7.98 hrs, Volume= 0.087 af, Depth= 3.71"
 Routed to Reach 143R : 1

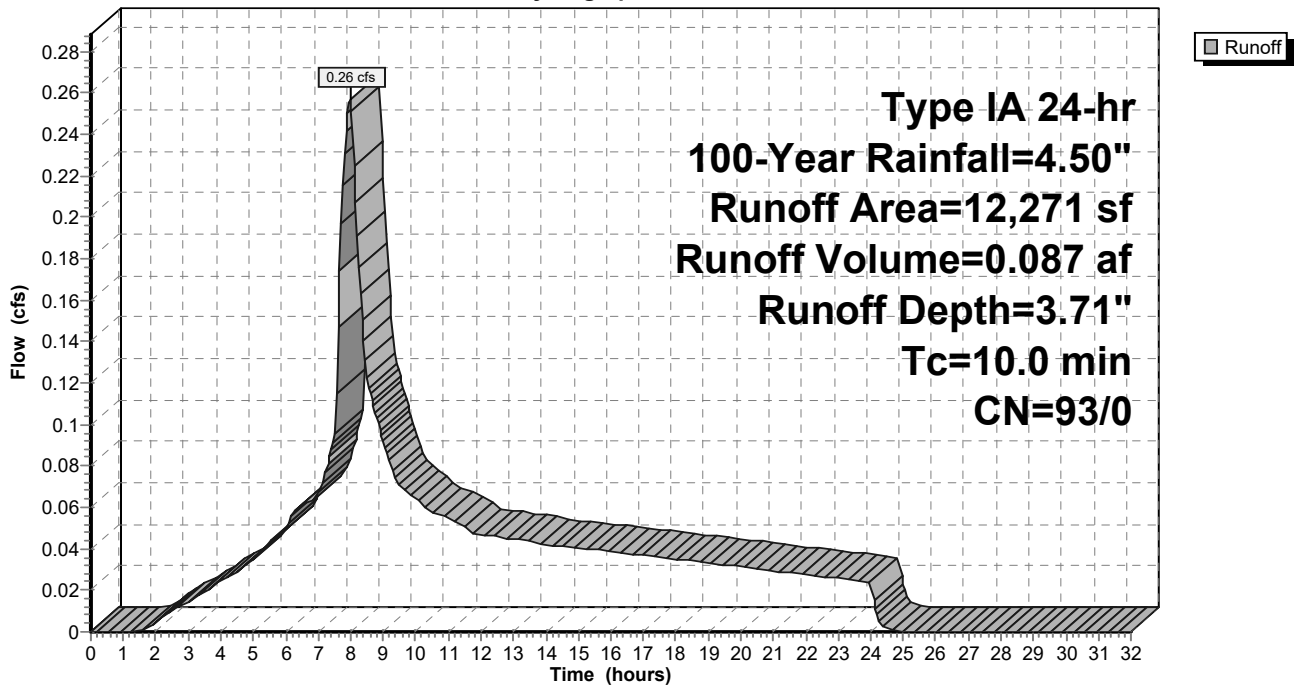
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 100-Year Rainfall=4.50"

Area (sf)	CN	Description
* 12,271	93	70% Lot Coverage Weighted
12,271	93	100.00% Pervious Area

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

Subcatchment 91S: Home Basin 23

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 100-Year Rainfall=4.50"

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Summary for Subcatchment 92S: Home Basin 21

Runoff = 0.57 cfs @ 7.98 hrs, Volume= 0.192 af, Depth= 3.71"
 Routed to Reach 145R : 1

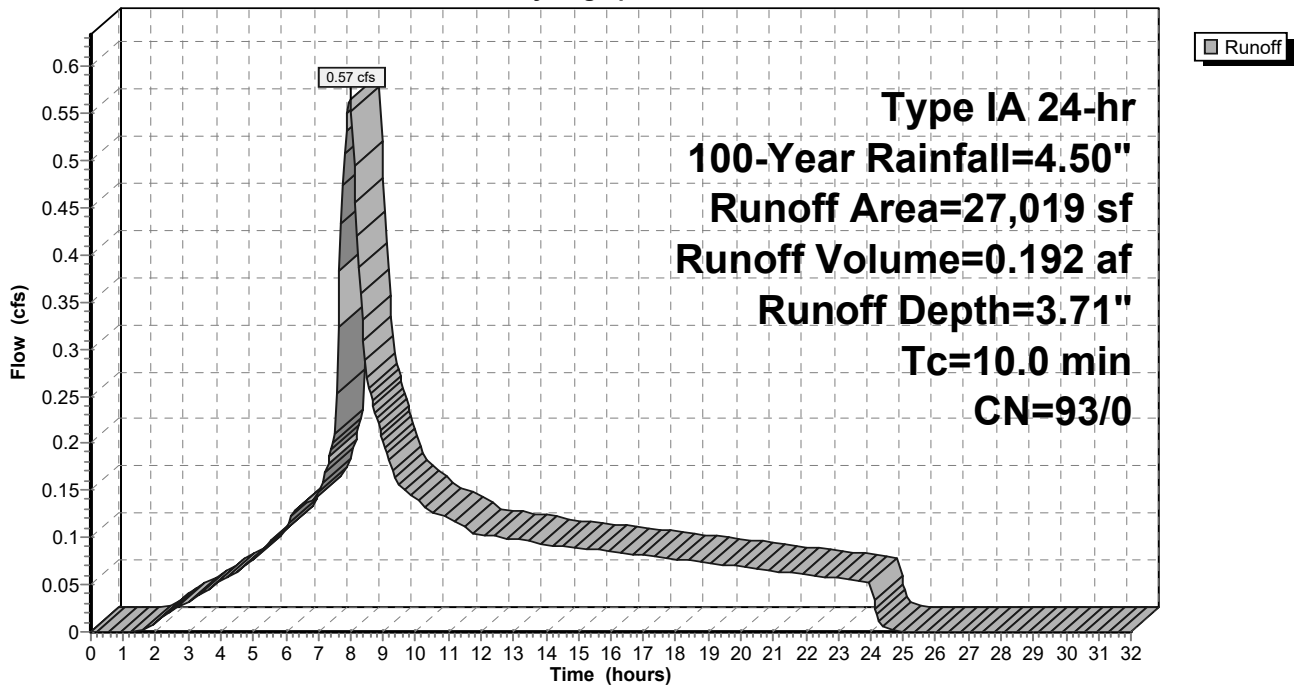
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 100-Year Rainfall=4.50"

Area (sf)	CN	Description
* 27,019	93	70% Lot Coverage Weighted
27,019	93	100.00% Pervious Area

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

Subcatchment 92S: Home Basin 21

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 100-Year Rainfall=4.50"

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Summary for Subcatchment 93S: Home Basin 25

Runoff = 0.36 cfs @ 7.98 hrs, Volume= 0.121 af, Depth= 3.71"
 Routed to Reach 136R : 1

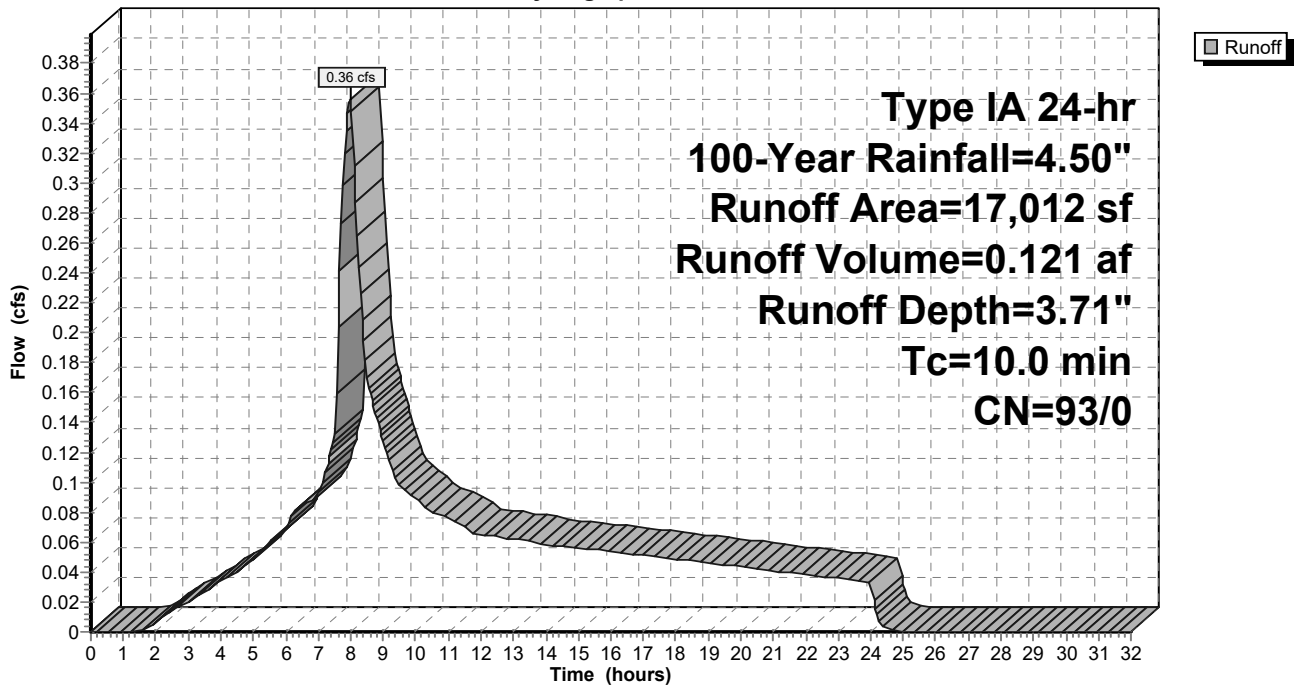
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 100-Year Rainfall=4.50"

Area (sf)	CN	Description
* 17,012	93	70% Lot Coverage Weighted
17,012	93	100.00% Pervious Area

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

Subcatchment 93S: Home Basin 25

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 100-Year Rainfall=4.50"

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Summary for Subcatchment 94S: Home Basin 4

Runoff = 0.41 cfs @ 7.98 hrs, Volume= 0.139 af, Depth= 3.71"
 Routed to Reach 160R : 1

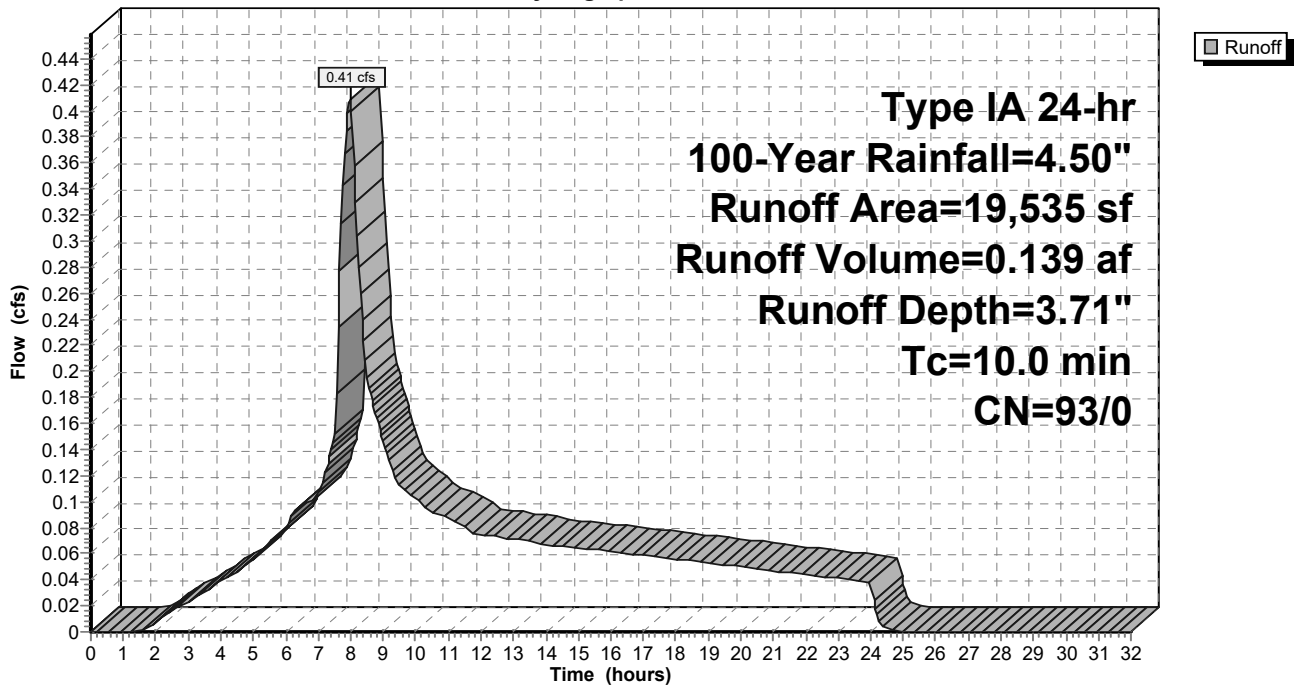
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 100-Year Rainfall=4.50"

Area (sf)	CN	Description
* 19,535	93	70% Lot Coverage Weighted
19,535	93	100.00% Pervious Area

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

Subcatchment 94S: Home Basin 4

Hydrograph



9-6-23 HydroCAD DOM

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Type IA 24-hr 100-Year Rainfall=4.50"

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Summary for Subcatchment 95S: Home Basin 31

Runoff = 0.52 cfs @ 7.98 hrs, Volume= 0.177 af, Depth= 3.71"
 Routed to Reach 131R : 1

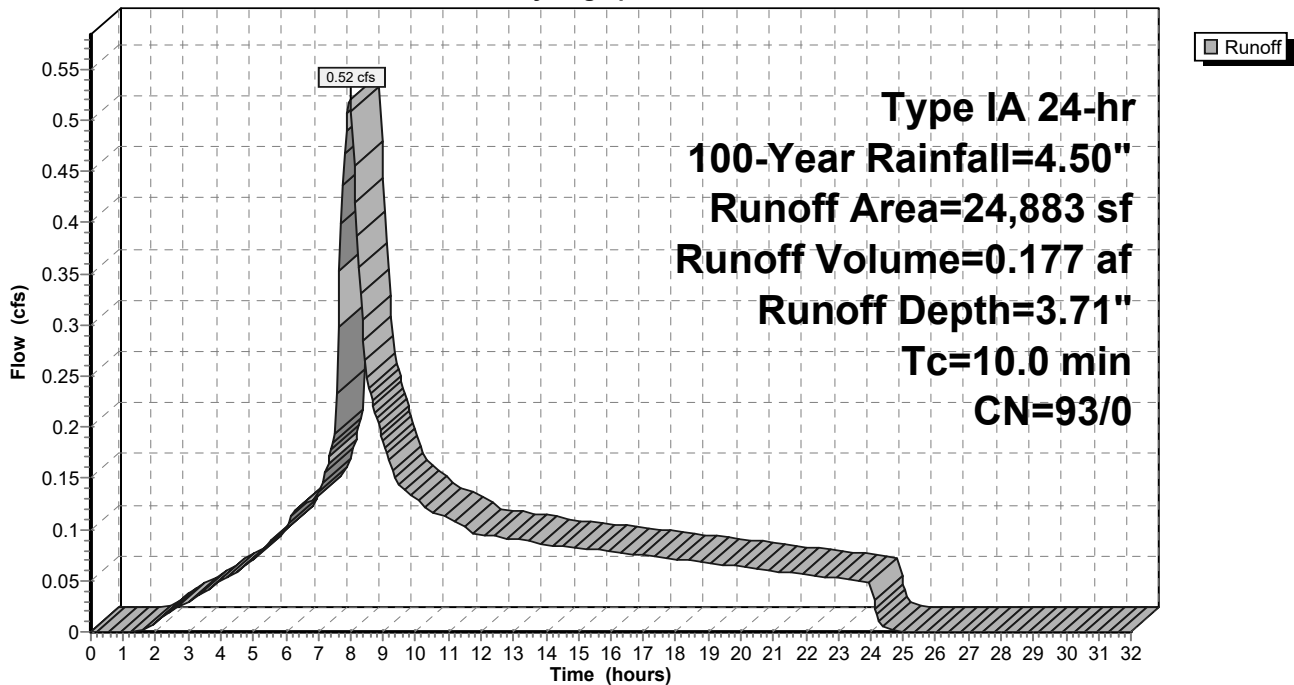
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 100-Year Rainfall=4.50"

Area (sf)	CN	Description
* 24,883	93	70% Lot Coverage Weighted
24,883	93	100.00% Pervious Area

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

Subcatchment 95S: Home Basin 31

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 100-Year Rainfall=4.50"

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Summary for Subcatchment 96S: Basin 1

Runoff = 0.35 cfs @ 7.98 hrs, Volume= 0.123 af, Depth= 4.26"
 Routed to Reach 133R : 1

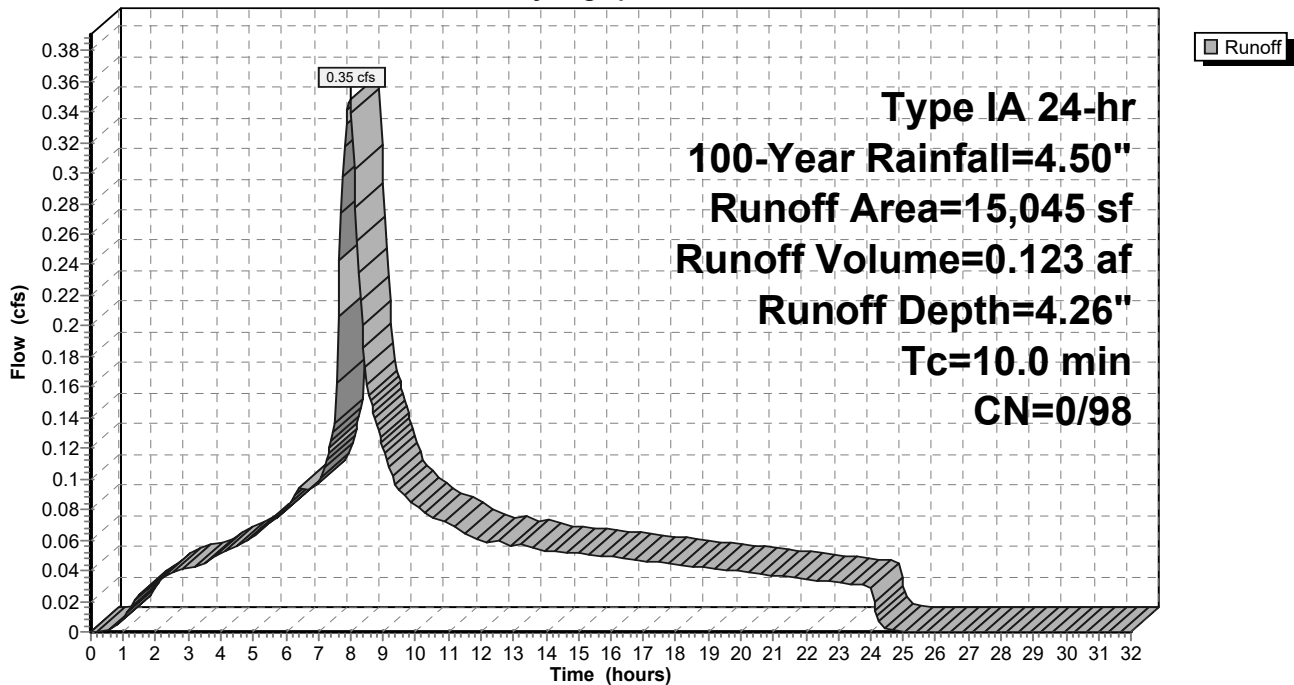
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 100-Year Rainfall=4.50"

Area (sf)	CN	Description
15,045	98	Paved roads w/curbs & sewers, HSG D
15,045	98	100.00% Impervious Area

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

Subcatchment 96S: Basin 1

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 100-Year Rainfall=4.50"

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Summary for Subcatchment 97S: Basin 2

Runoff = 0.46 cfs @ 7.98 hrs, Volume= 0.162 af, Depth= 4.26"
 Routed to Reach 132R : 1

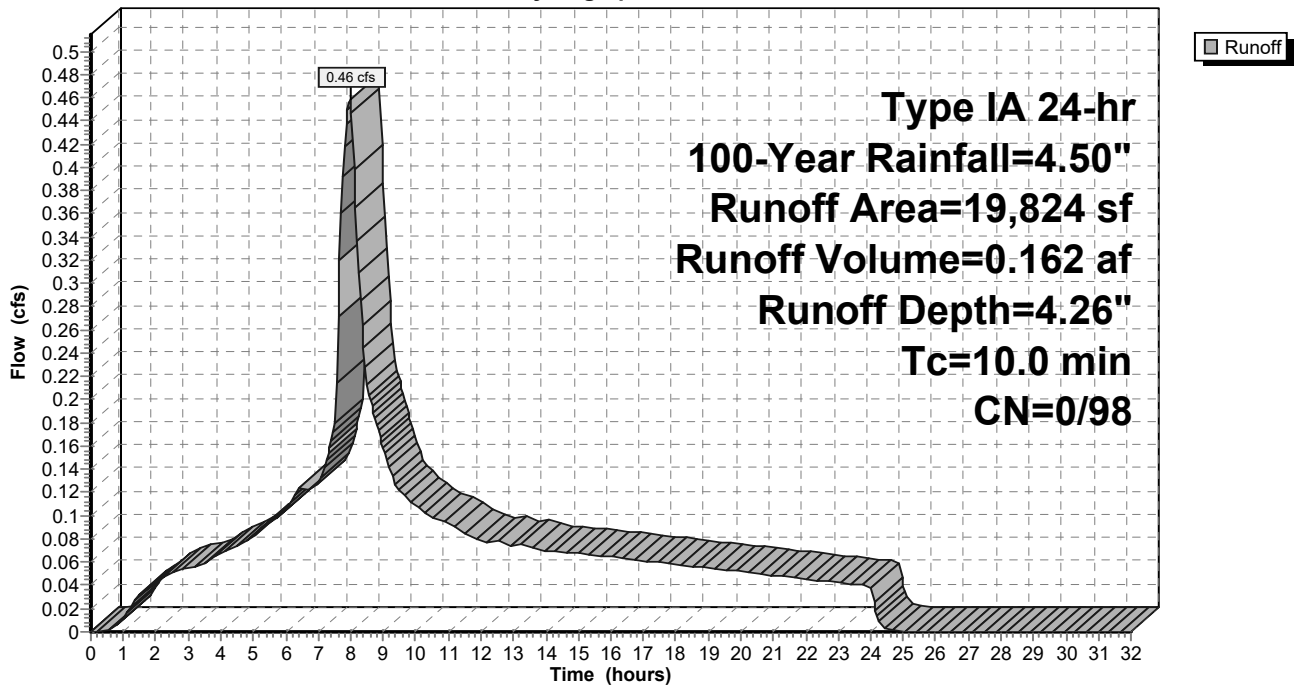
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 100-Year Rainfall=4.50"

Area (sf)	CN	Description
19,824	98	Paved roads w/curbs & sewers, HSG D
19,824	98	100.00% Impervious Area

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

Subcatchment 97S: Basin 2

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 100-Year Rainfall=4.50"

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Summary for Subcatchment 98S: Basin 3

Runoff = 0.54 cfs @ 7.98 hrs, Volume= 0.191 af, Depth= 4.26"
 Routed to Reach 131R : 1

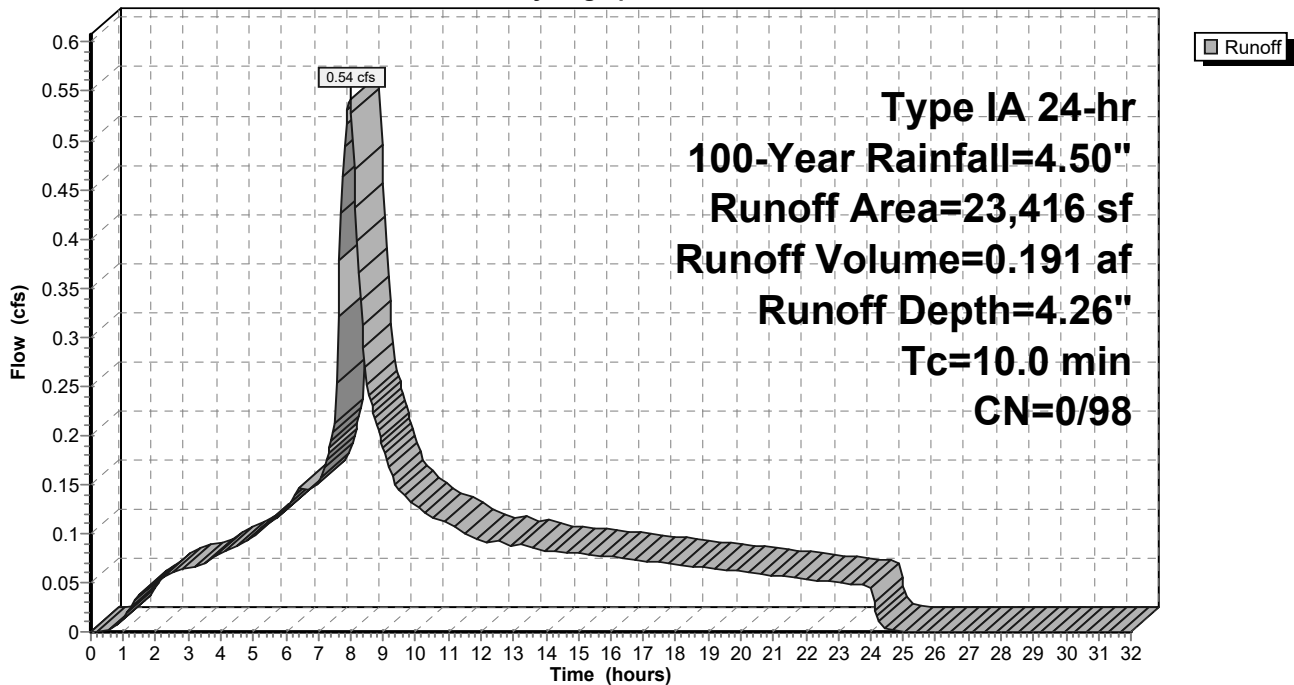
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 100-Year Rainfall=4.50"

Area (sf)	CN	Description
23,416	98	Paved roads w/curbs & sewers, HSG D
23,416	98	100.00% Impervious Area

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

Subcatchment 98S: Basin 3

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 100-Year Rainfall=4.50"

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Summary for Subcatchment 99S: Home Basin 6

Runoff = 0.54 cfs @ 7.98 hrs, Volume= 0.184 af, Depth= 3.71"
 Routed to Reach 163R : 1

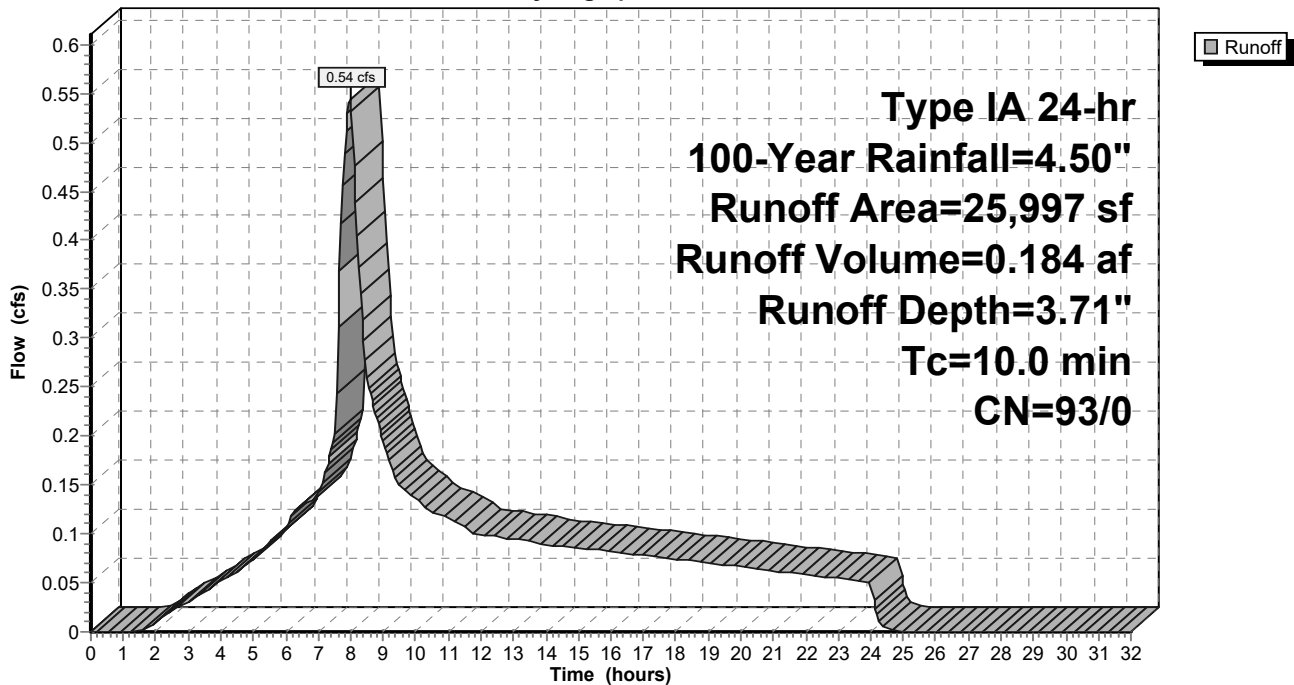
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 100-Year Rainfall=4.50"

Area (sf)	CN	Description
* 25,997	93	70% Lot Coverage Weighted
25,997	93	100.00% Pervious Area

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

Subcatchment 99S: Home Basin 6

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 100-Year Rainfall=4.50"

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Summary for Subcatchment 100S: Basin 4

Runoff = 0.08 cfs @ 7.98 hrs, Volume= 0.030 af, Depth= 4.26"
 Routed to Pond 60P : Stormwater Swale 1

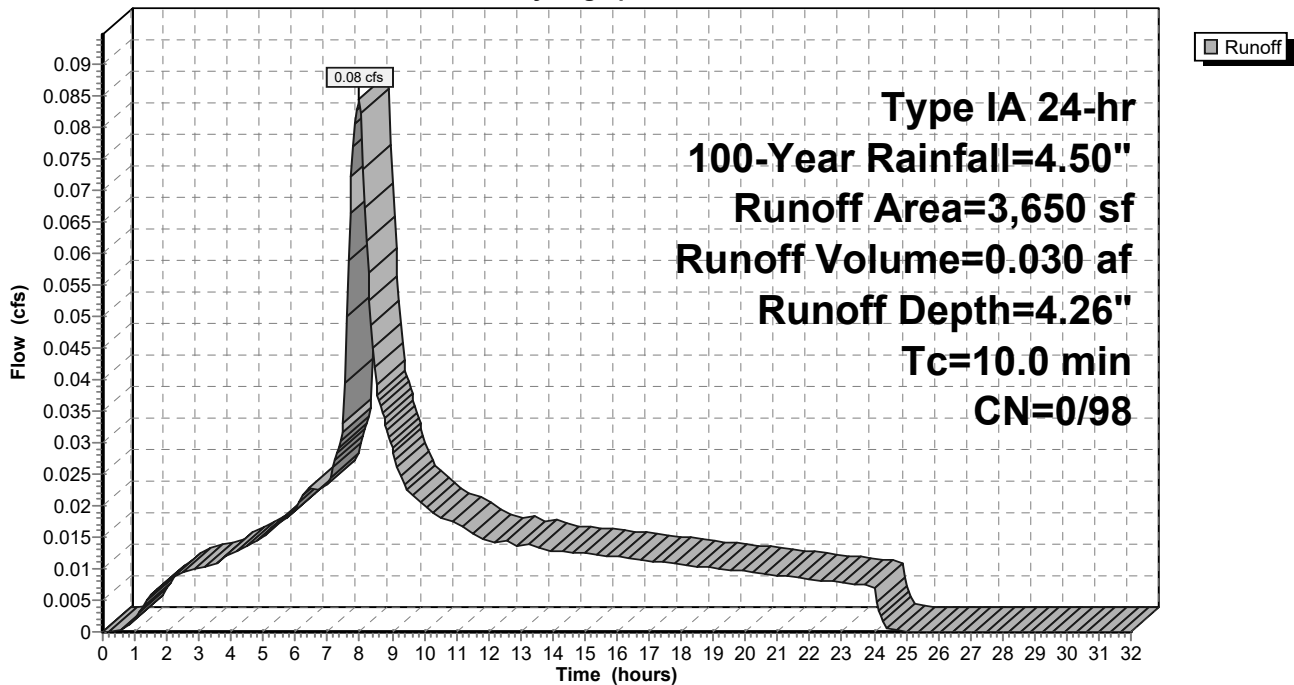
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 100-Year Rainfall=4.50"

Area (sf)	CN	Description
3,650	98	Paved roads w/curbs & sewers, HSG D
3,650	98	100.00% Impervious Area

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

Subcatchment 100S: Basin 4

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 100-Year Rainfall=4.50"

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Summary for Subcatchment 101S: Basin 5

Runoff = 0.08 cfs @ 7.98 hrs, Volume= 0.029 af, Depth= 4.26"
 Routed to Pond 54P : Stormwater Swale 2

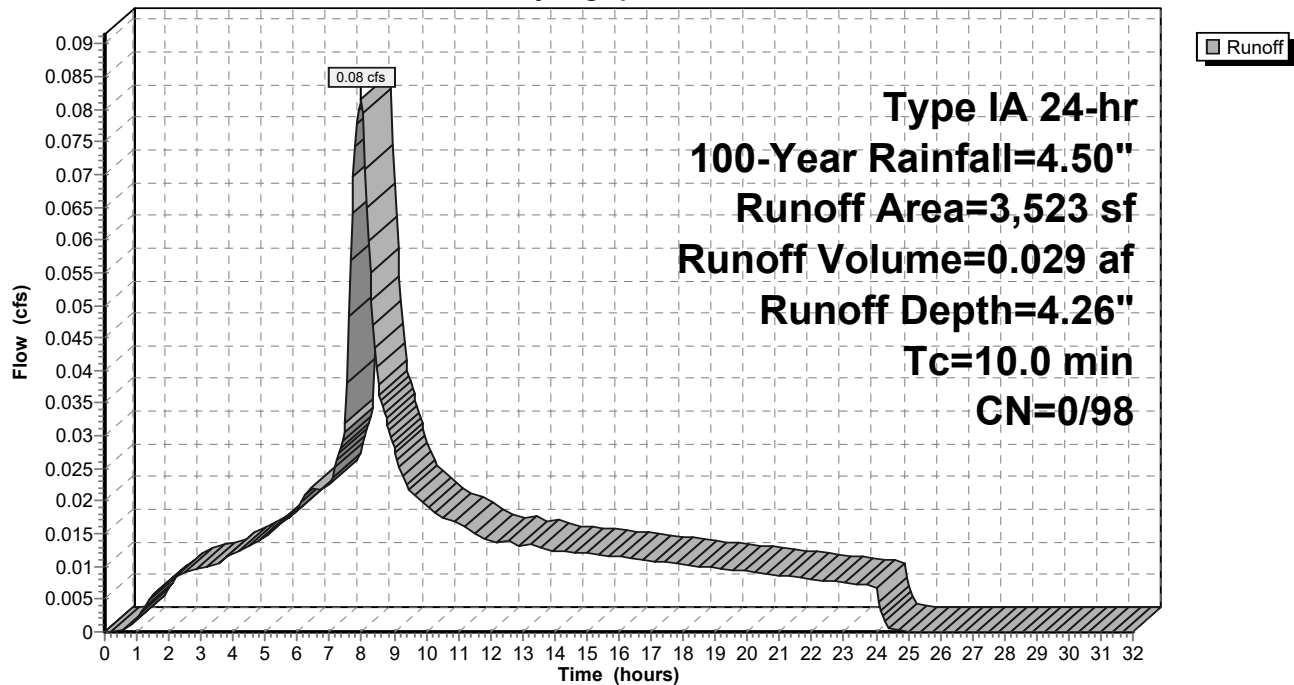
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 100-Year Rainfall=4.50"

Area (sf)	CN	Description
3,523	98	Paved roads w/curbs & sewers, HSG D
3,523	98	100.00% Impervious Area

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

Subcatchment 101S: Basin 5

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 100-Year Rainfall=4.50"

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Summary for Subcatchment 102S: Home Basin 3

Runoff = 0.41 cfs @ 7.98 hrs, Volume= 0.139 af, Depth= 3.71"
 Routed to Reach 151R : 1

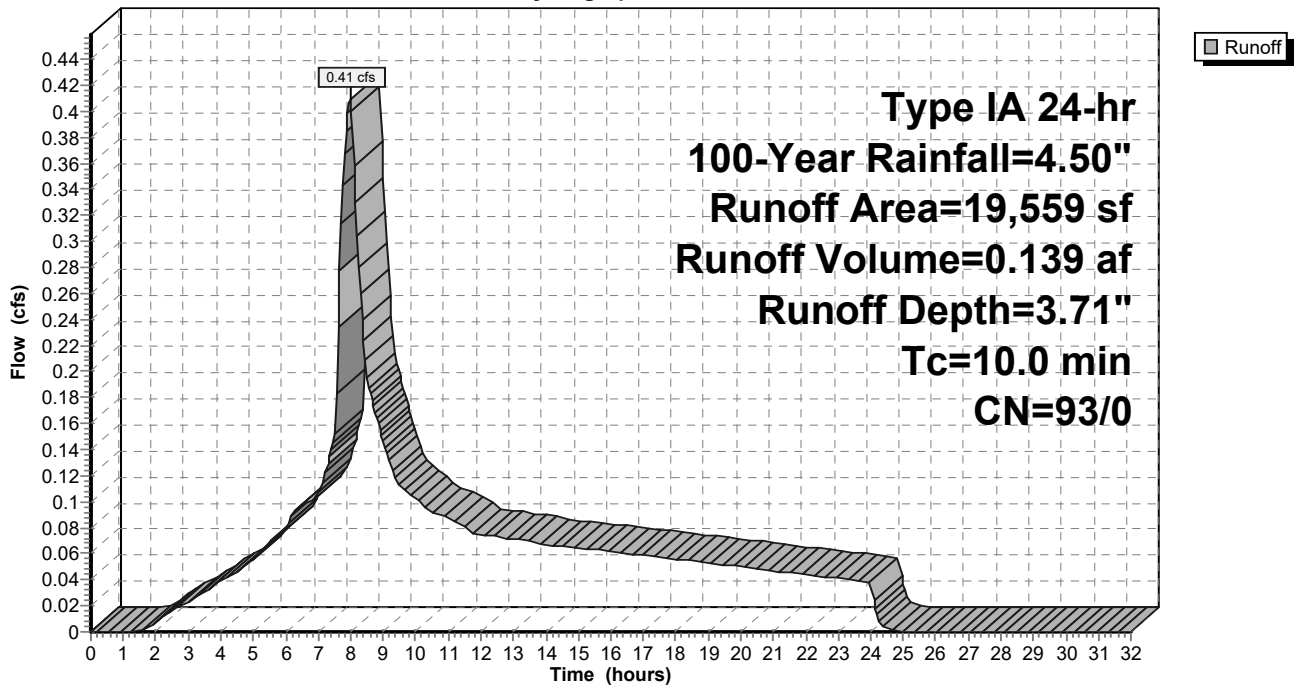
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 100-Year Rainfall=4.50"

Area (sf)	CN	Description
* 19,559	93	70% Lot Coverage Weighted
19,559	93	100.00% Pervious Area

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

Subcatchment 102S: Home Basin 3

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 100-Year Rainfall=4.50"

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Summary for Subcatchment 103S: Home Basin 1

Runoff = 0.47 cfs @ 7.98 hrs, Volume= 0.158 af, Depth= 3.71"
 Routed to Reach 137R : 1

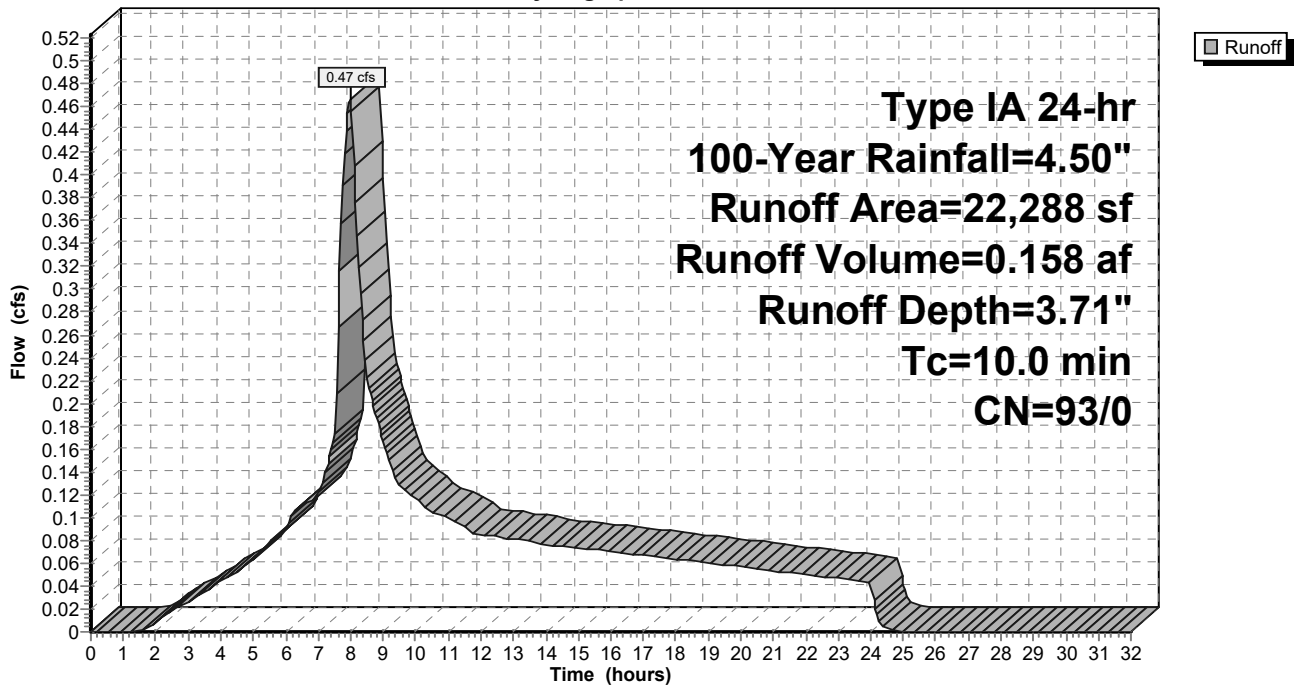
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 100-Year Rainfall=4.50"

Area (sf)	CN	Description
* 22,288	93	70% Lot Coverage Weighted
22,288	93	100.00% Pervious Area

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

Subcatchment 103S: Home Basin 1

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 100-Year Rainfall=4.50"

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Summary for Subcatchment 104S: Home Basin 5

Runoff = 0.70 cfs @ 7.98 hrs, Volume= 0.238 af, Depth= 3.71"
 Routed to Reach 165R : 1

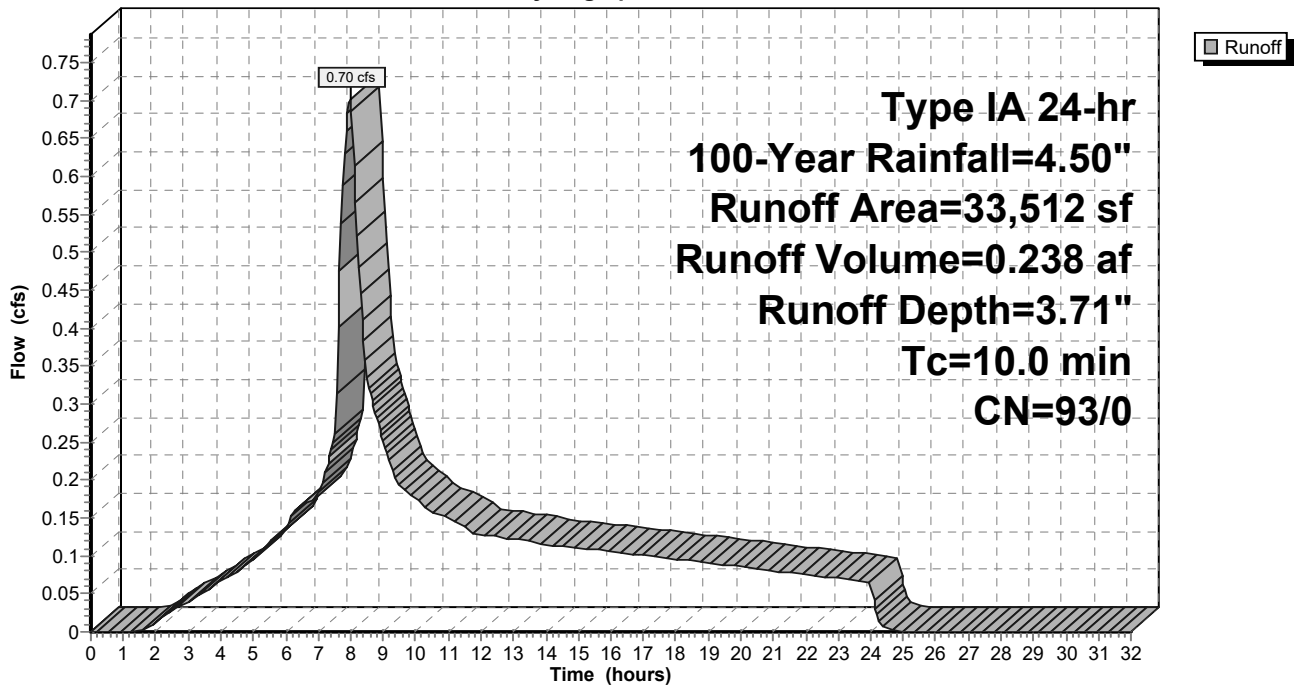
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 100-Year Rainfall=4.50"

Area (sf)	CN	Description
* 33,512	93	70% Lot Coverage Weighted
33,512	93	100.00% Pervious Area

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

Subcatchment 104S: Home Basin 5

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 100-Year Rainfall=4.50"

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Summary for Subcatchment 105S: Basin 6

Runoff = 0.21 cfs @ 7.98 hrs, Volume= 0.073 af, Depth= 4.26"
 Routed to Reach 138R : 1

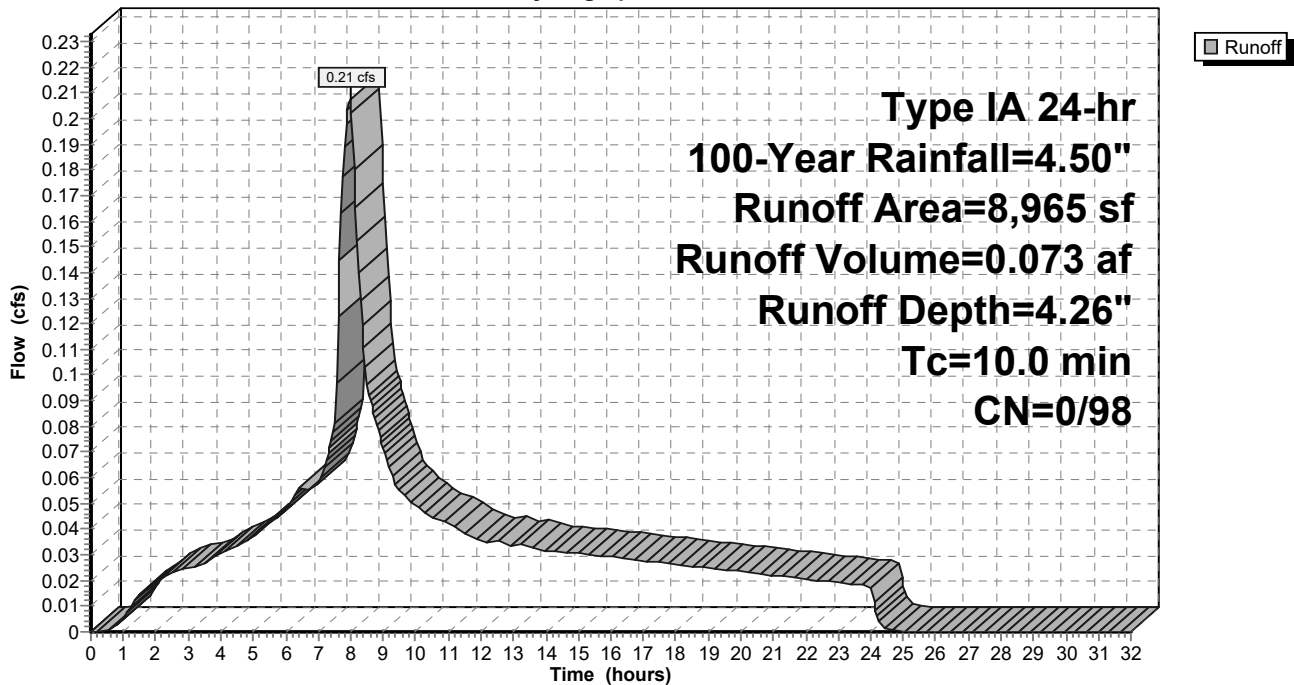
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 100-Year Rainfall=4.50"

Area (sf)	CN	Description
8,965	98	Paved roads w/curbs & sewers, HSG D
8,965	98	100.00% Impervious Area

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

Subcatchment 105S: Basin 6

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 100-Year Rainfall=4.50"

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Summary for Subcatchment 107S: Basin 8

Runoff = 0.19 cfs @ 7.98 hrs, Volume= 0.067 af, Depth= 4.26"
 Routed to Reach 158R : 1

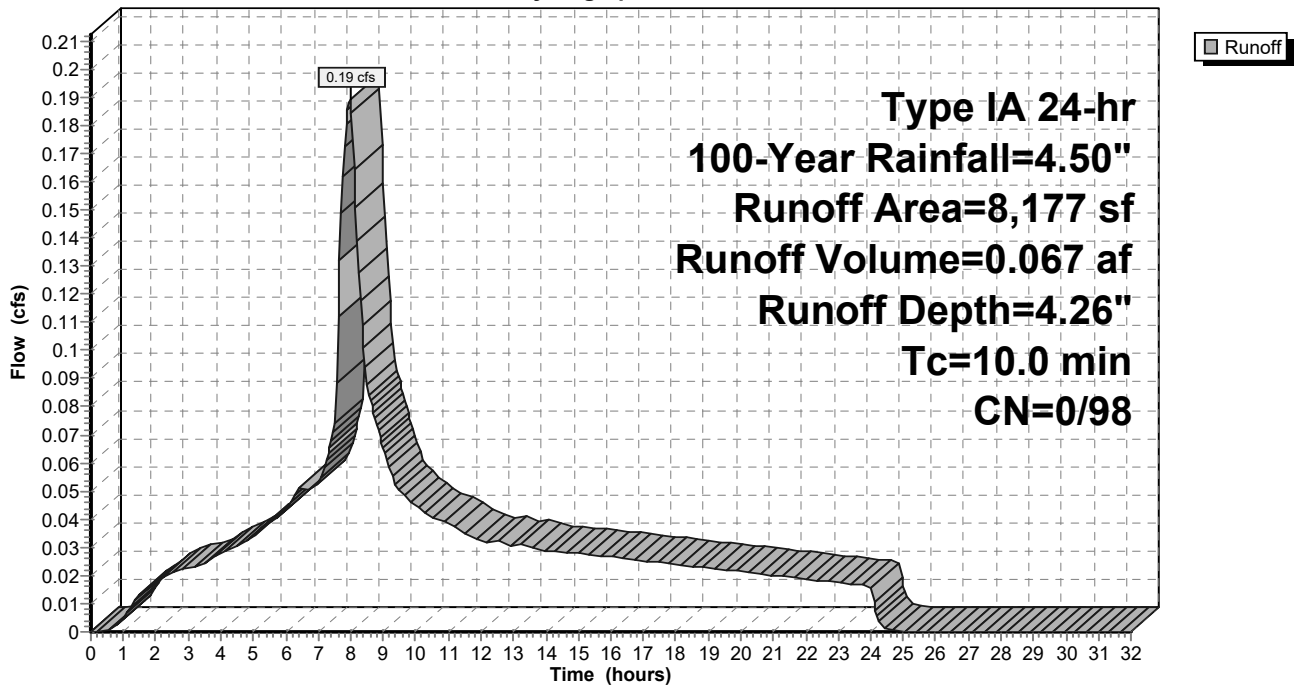
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 100-Year Rainfall=4.50"

Area (sf)	CN	Description
8,177	98	Paved roads w/curbs & sewers, HSG D
8,177	98	100.00% Impervious Area

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

Subcatchment 107S: Basin 8

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 100-Year Rainfall=4.50"

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Summary for Subcatchment 108S: Basin 9

Runoff = 0.30 cfs @ 7.98 hrs, Volume= 0.107 af, Depth= 4.26"
 Routed to Reach 135R : 1

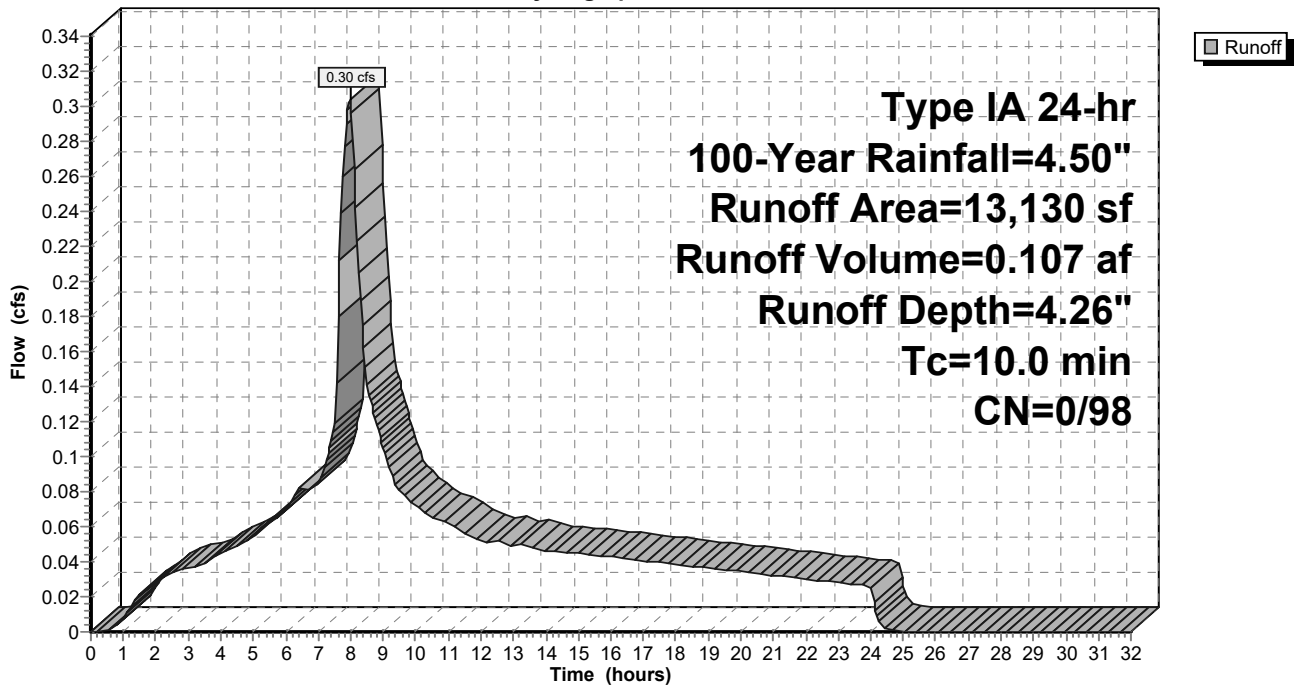
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 100-Year Rainfall=4.50"

Area (sf)	CN	Description
13,130	98	Paved roads w/curbs & sewers, HSG D
13,130	98	100.00% Impervious Area

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

Subcatchment 108S: Basin 9

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 100-Year Rainfall=4.50"

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Summary for Subcatchment 109S: Basin 10

Runoff = 0.53 cfs @ 7.98 hrs, Volume= 0.187 af, Depth= 4.26"
 Routed to Reach 137R : 1

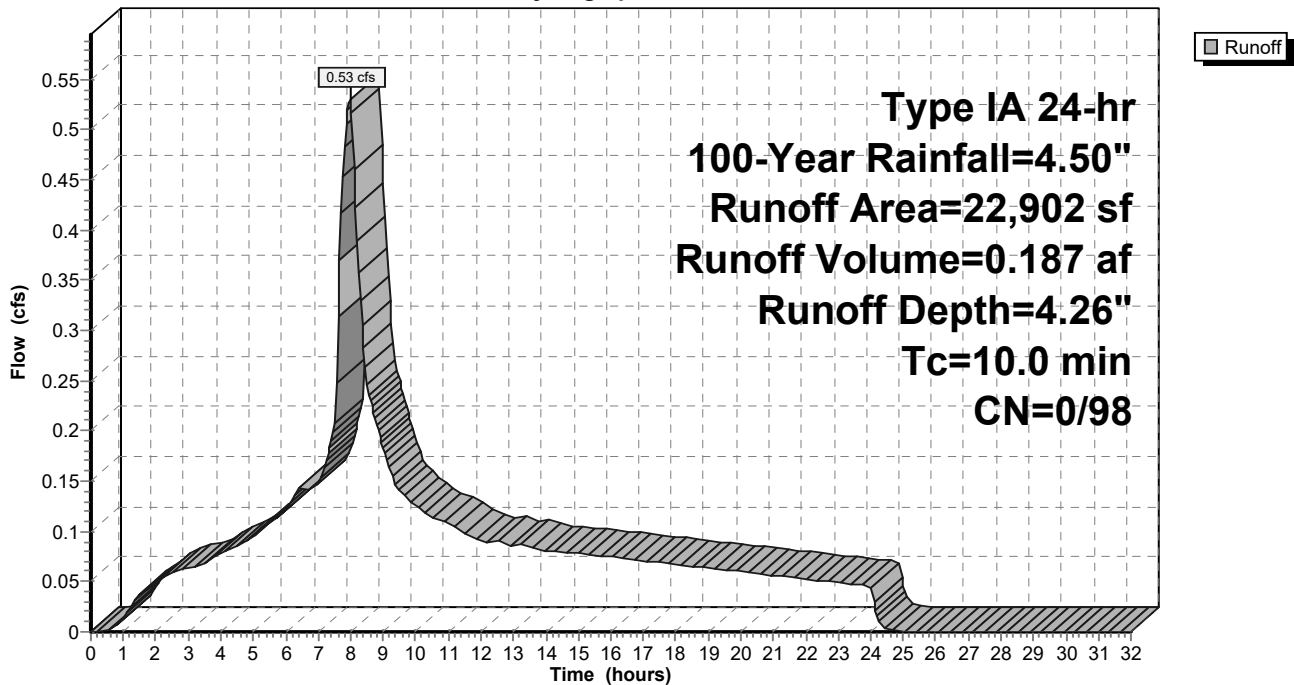
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 100-Year Rainfall=4.50"

Area (sf)	CN	Description
22,902	98	Paved roads w/curbs & sewers, HSG D
22,902	98	100.00% Impervious Area

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

Subcatchment 109S: Basin 10

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 100-Year Rainfall=4.50"

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Summary for Subcatchment 110S: Basin 11

Runoff = 0.60 cfs @ 7.98 hrs, Volume= 0.210 af, Depth= 4.26"
 Routed to Reach 145R : 1

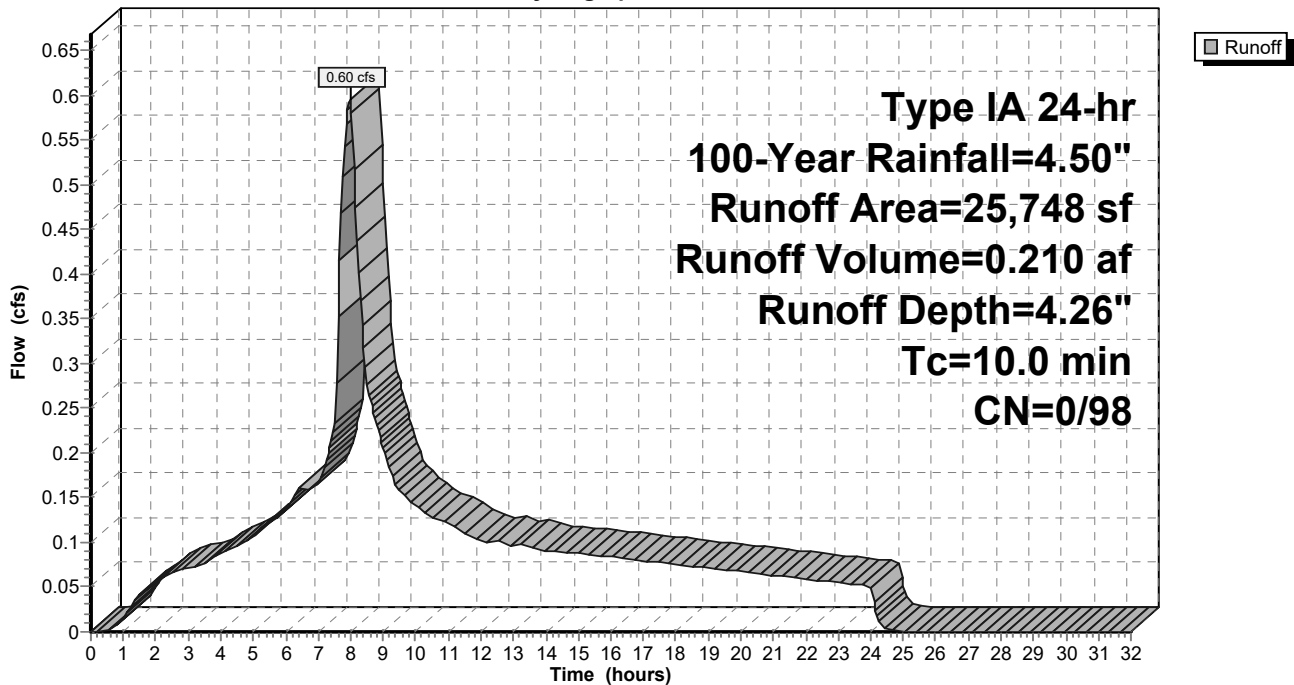
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 100-Year Rainfall=4.50"

Area (sf)	CN	Description
25,748	98	Paved roads w/curbs & sewers, HSG D
25,748	98	100.00% Impervious Area

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

Subcatchment 110S: Basin 11

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 100-Year Rainfall=4.50"

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Summary for Subcatchment 111S: Basin 12

Runoff = 0.13 cfs @ 7.98 hrs, Volume= 0.045 af, Depth= 4.26"
 Routed to Reach 143R : 1

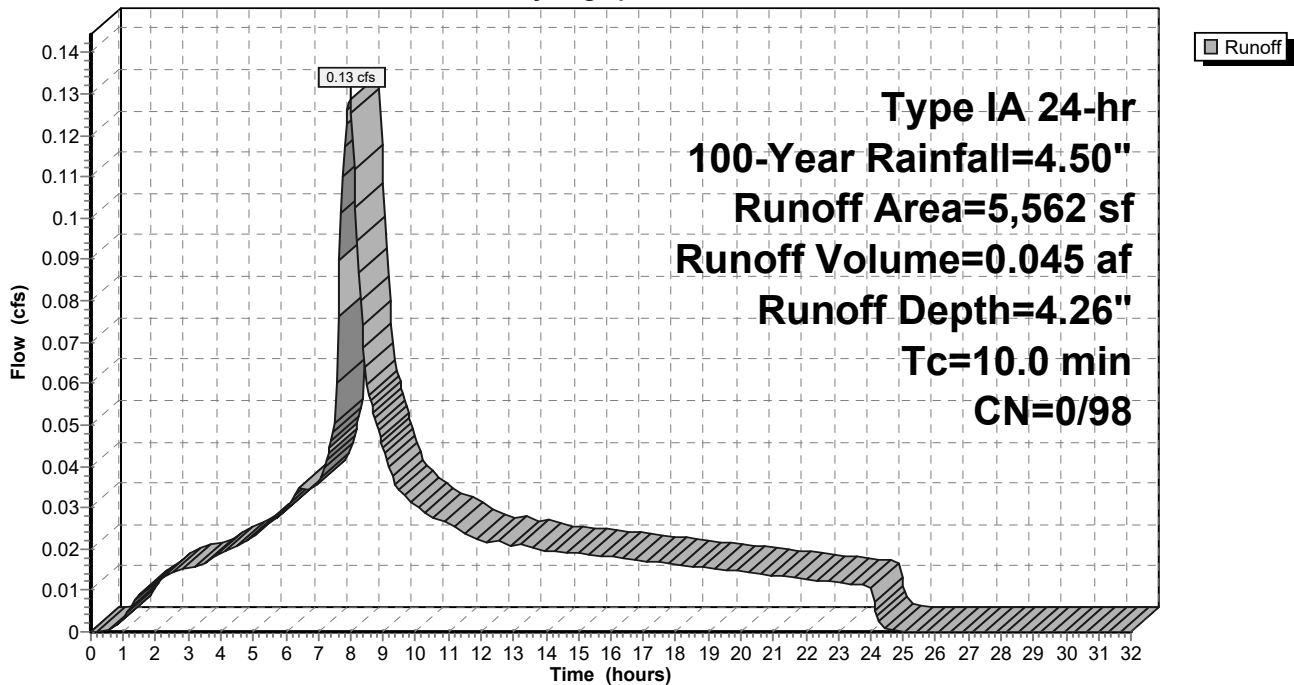
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 100-Year Rainfall=4.50"

Area (sf)	CN	Description
5,562	98	Paved roads w/curbs & sewers, HSG D
5,562	98	100.00% Impervious Area

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

Subcatchment 111S: Basin 12

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 100-Year Rainfall=4.50"

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Summary for Subcatchment 112S: Basin 13

Runoff = 0.11 cfs @ 7.98 hrs, Volume= 0.038 af, Depth= 4.26"
 Routed to Reach 158R : 1

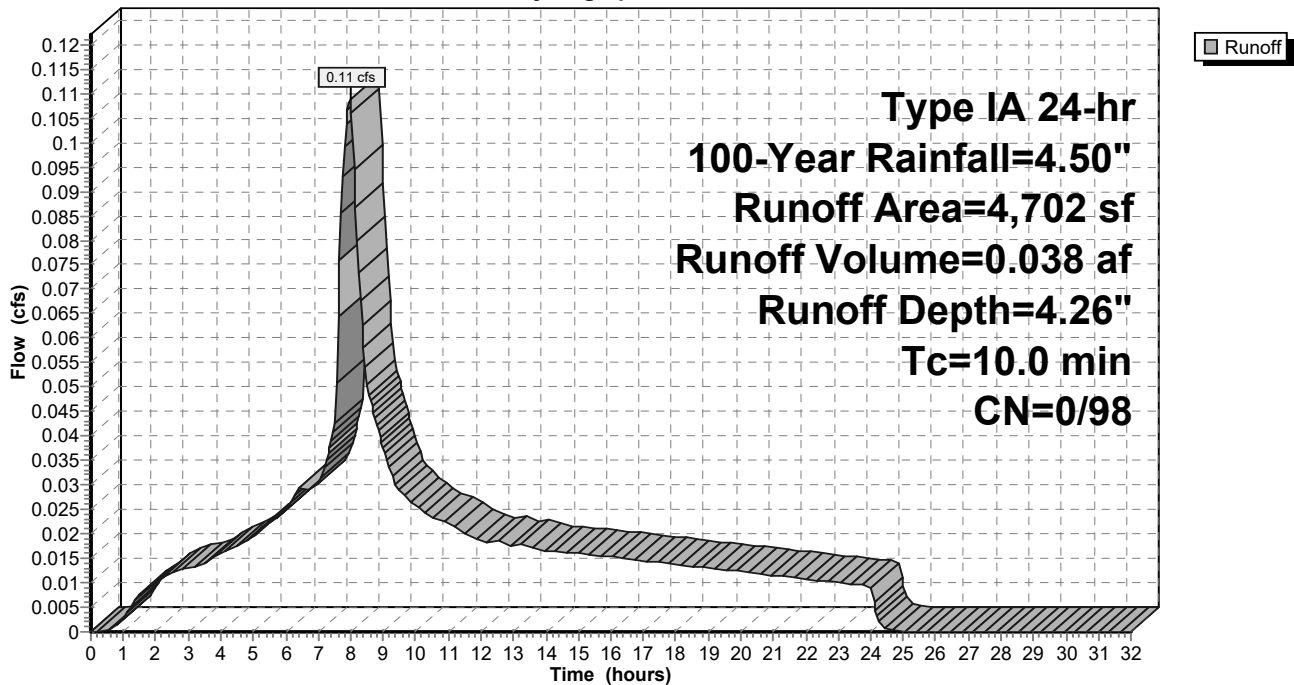
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 100-Year Rainfall=4.50"

Area (sf)	CN	Description
4,702	98	Paved roads w/curbs & sewers, HSG D
4,702	98	100.00% Impervious Area

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

Subcatchment 112S: Basin 13

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 100-Year Rainfall=4.50"

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Summary for Subcatchment 113S: Basin 14

Runoff = 0.18 cfs @ 7.98 hrs, Volume= 0.063 af, Depth= 4.26"
 Routed to Reach 159R : 1

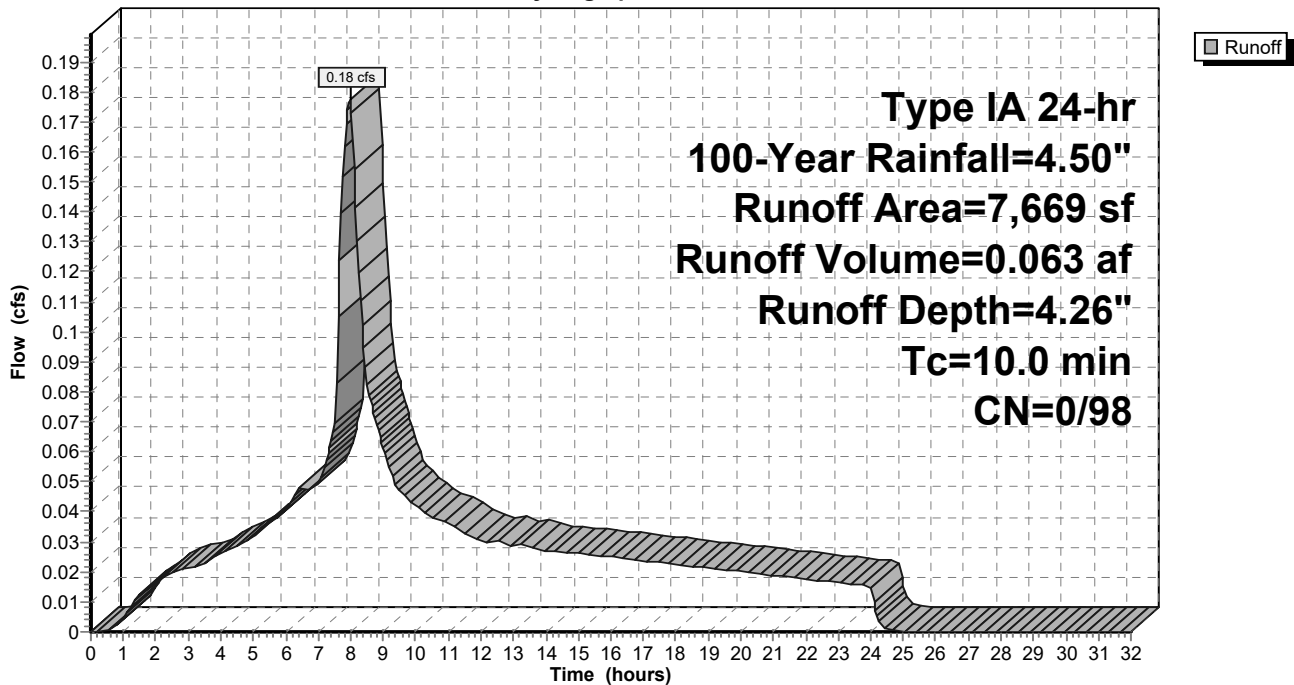
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 100-Year Rainfall=4.50"

Area (sf)	CN	Description
7,669	98	Paved roads w/curbs & sewers, HSG D
7,669	98	100.00% Impervious Area

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

Subcatchment 113S: Basin 14

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 100-Year Rainfall=4.50"

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Summary for Subcatchment 114S: Basin 15

Runoff = 0.17 cfs @ 7.98 hrs, Volume= 0.059 af, Depth= 4.26"
 Routed to Reach 143R : 1

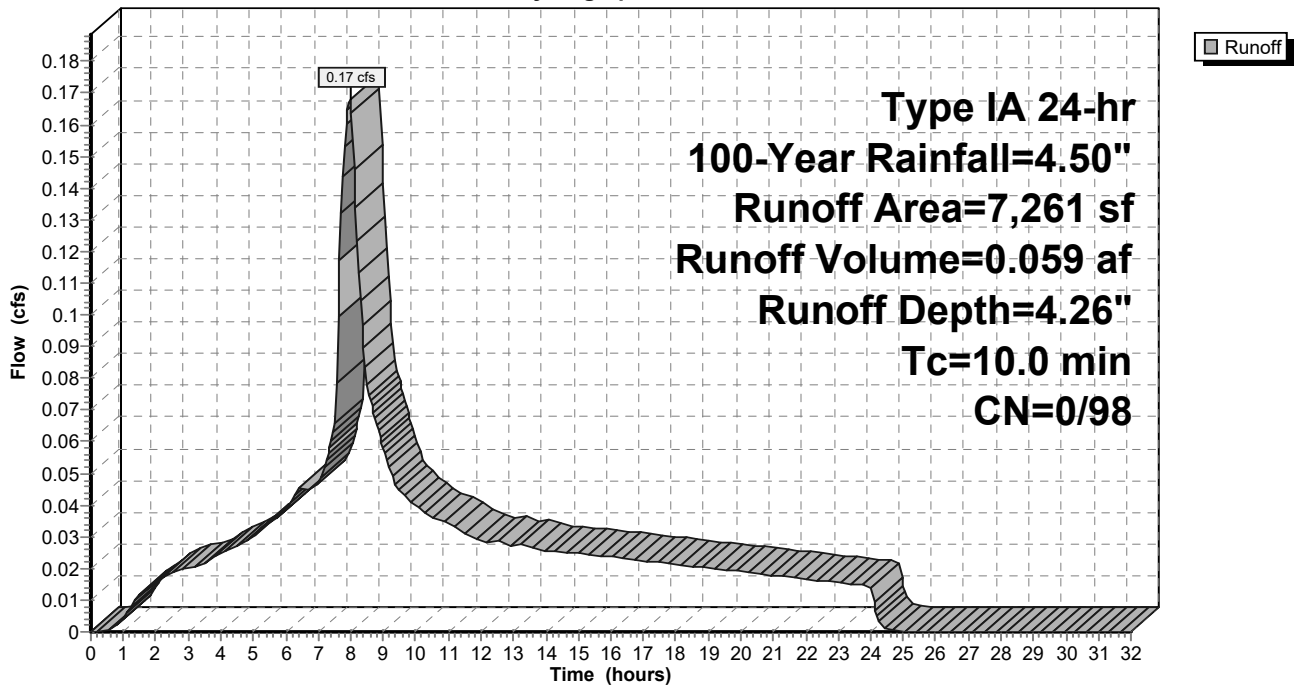
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 100-Year Rainfall=4.50"

Area (sf)	CN	Description
7,261	98	Paved roads w/curbs & sewers, HSG D
7,261	98	100.00% Impervious Area

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

Subcatchment 114S: Basin 15

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 100-Year Rainfall=4.50"

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Summary for Subcatchment 115S: Basin 16

Runoff = 0.16 cfs @ 7.98 hrs, Volume= 0.058 af, Depth= 4.26"
 Routed to Reach 149R : 1

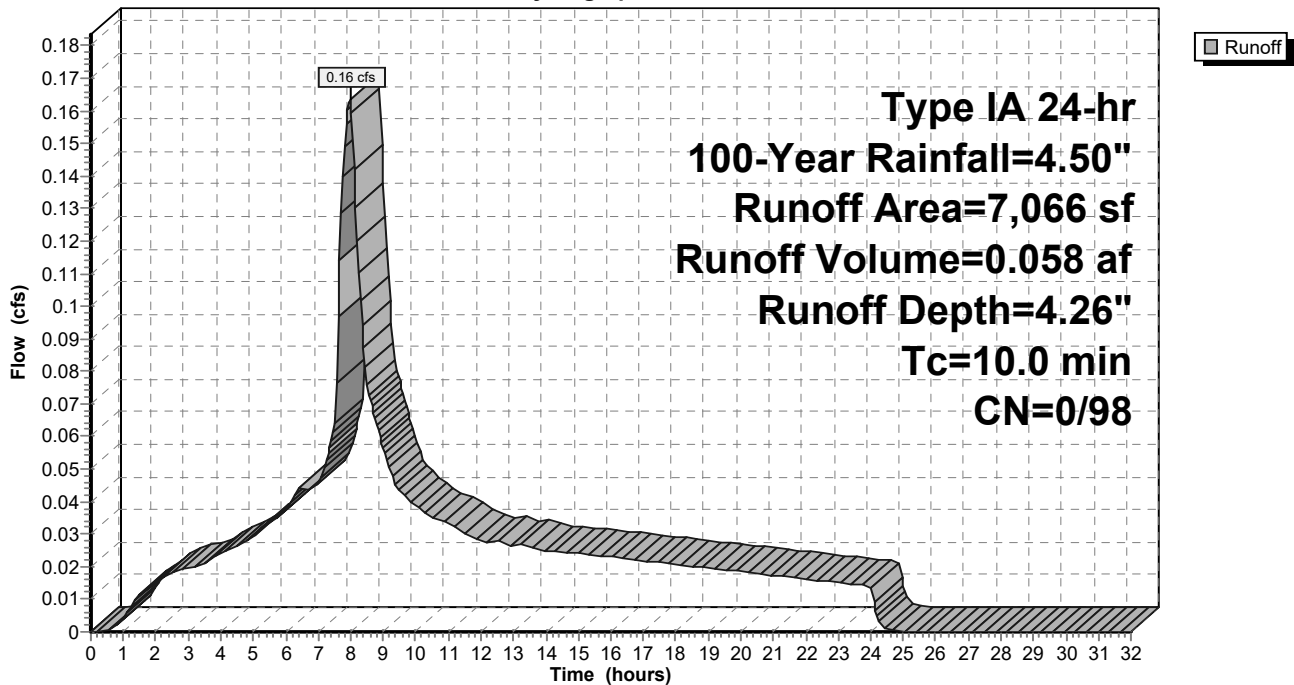
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 100-Year Rainfall=4.50"

Area (sf)	CN	Description
7,066	98	Paved roads w/curbs & sewers, HSG D
7,066	98	100.00% Impervious Area

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

Subcatchment 115S: Basin 16

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 100-Year Rainfall=4.50"

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Summary for Subcatchment 116S: Basin 17

Runoff = 0.60 cfs @ 7.98 hrs, Volume= 0.212 af, Depth= 4.26"
 Routed to Reach 151R : 1

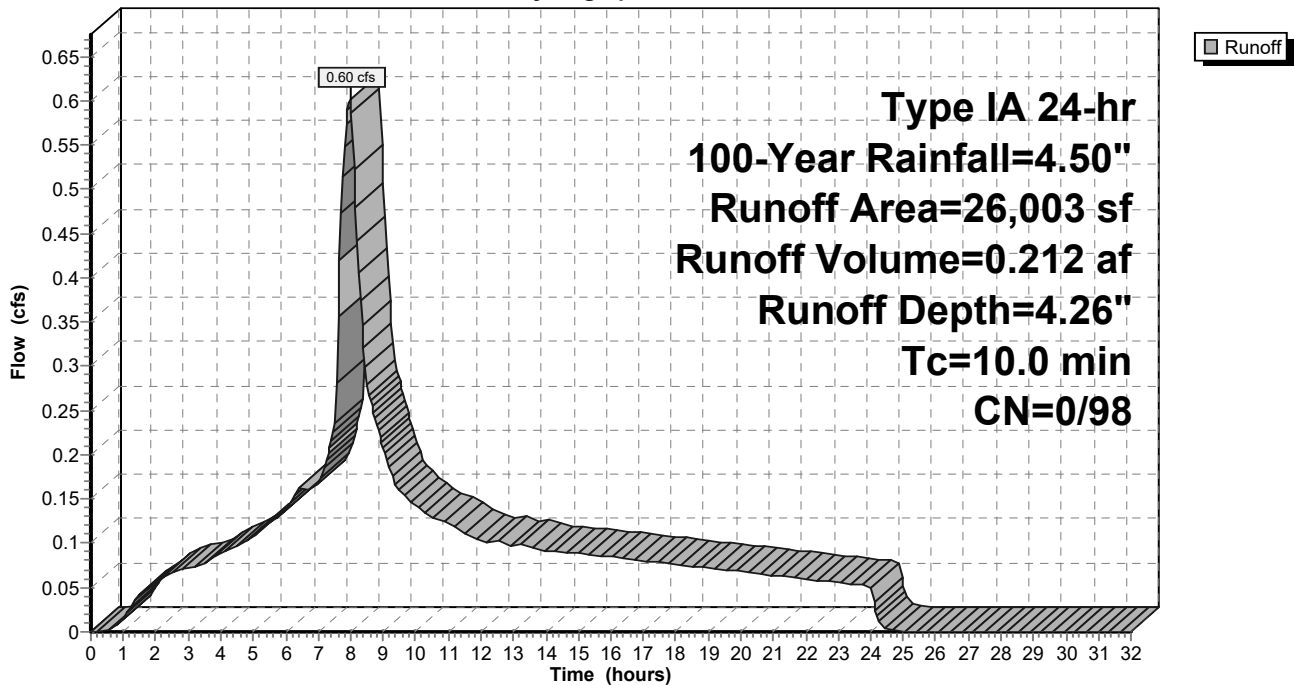
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 100-Year Rainfall=4.50"

Area (sf)	CN	Description
26,003	98	Paved roads w/curbs & sewers, HSG D
26,003	98	100.00% Impervious Area

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

Subcatchment 116S: Basin 17

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 100-Year Rainfall=4.50"

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Summary for Subcatchment 117S: Basin 18

Runoff = 0.55 cfs @ 7.98 hrs, Volume= 0.194 af, Depth= 4.26"
 Routed to Reach 160R : 1

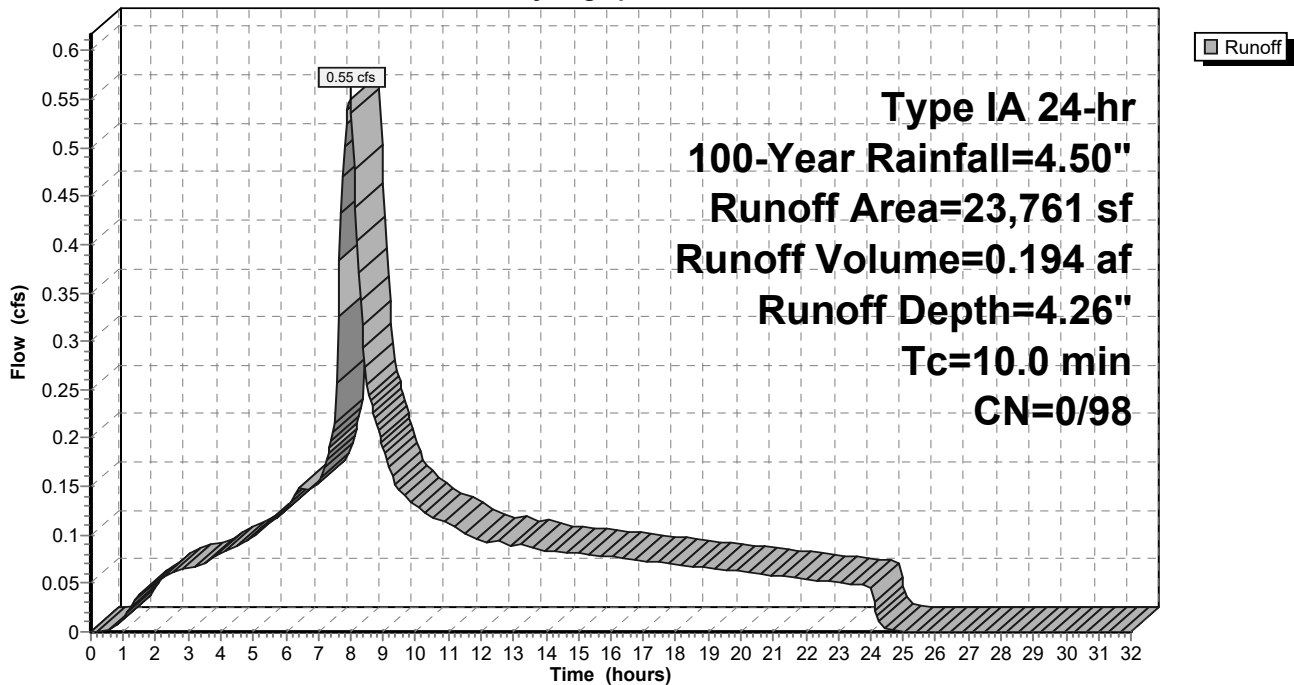
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 100-Year Rainfall=4.50"

Area (sf)	CN	Description
23,761	98	Paved roads w/curbs & sewers, HSG D
23,761	98	100.00% Impervious Area

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

Subcatchment 117S: Basin 18

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 100-Year Rainfall=4.50"

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Summary for Subcatchment 118S: Basin 19

Runoff = 0.17 cfs @ 7.98 hrs, Volume= 0.060 af, Depth= 4.26"
 Routed to Reach 155R : 1

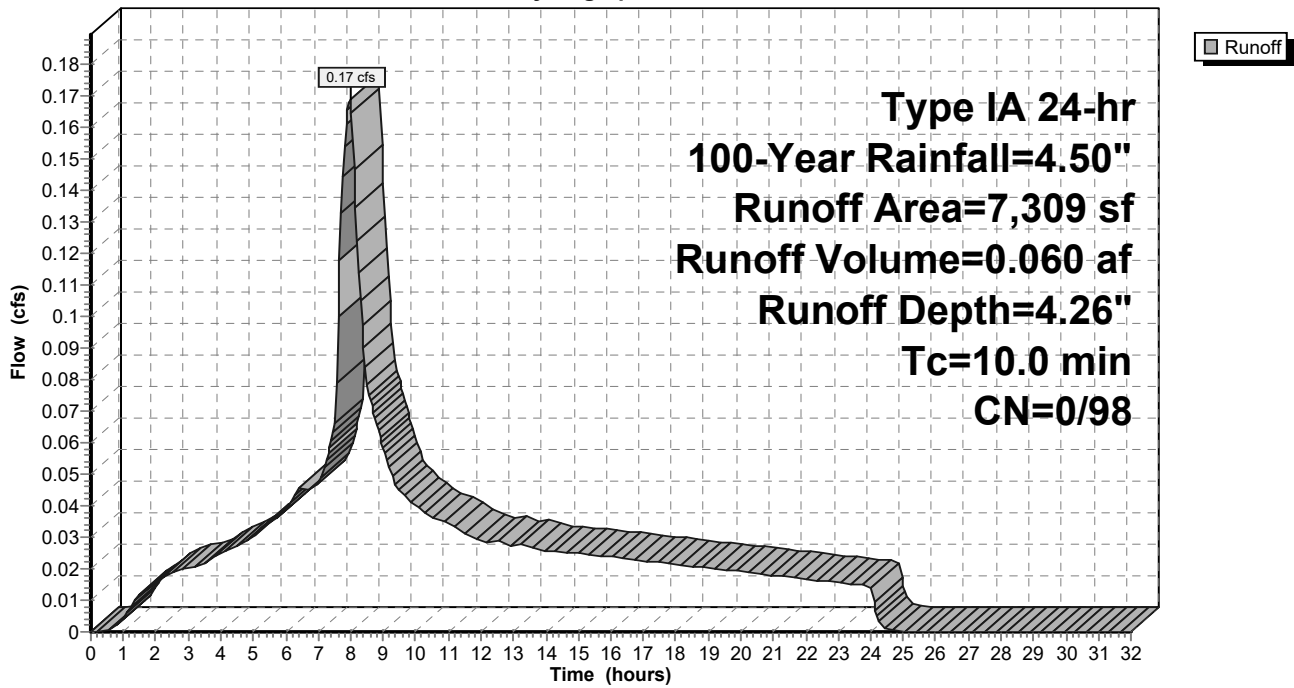
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 100-Year Rainfall=4.50"

Area (sf)	CN	Description
7,309	98	Paved roads w/curbs & sewers, HSG D
7,309	98	100.00% Impervious Area

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

Subcatchment 118S: Basin 19

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 100-Year Rainfall=4.50"

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Summary for Subcatchment 119S: Basin 20

Runoff = 0.17 cfs @ 7.98 hrs, Volume= 0.061 af, Depth= 4.26"
 Routed to Reach 149R : 1

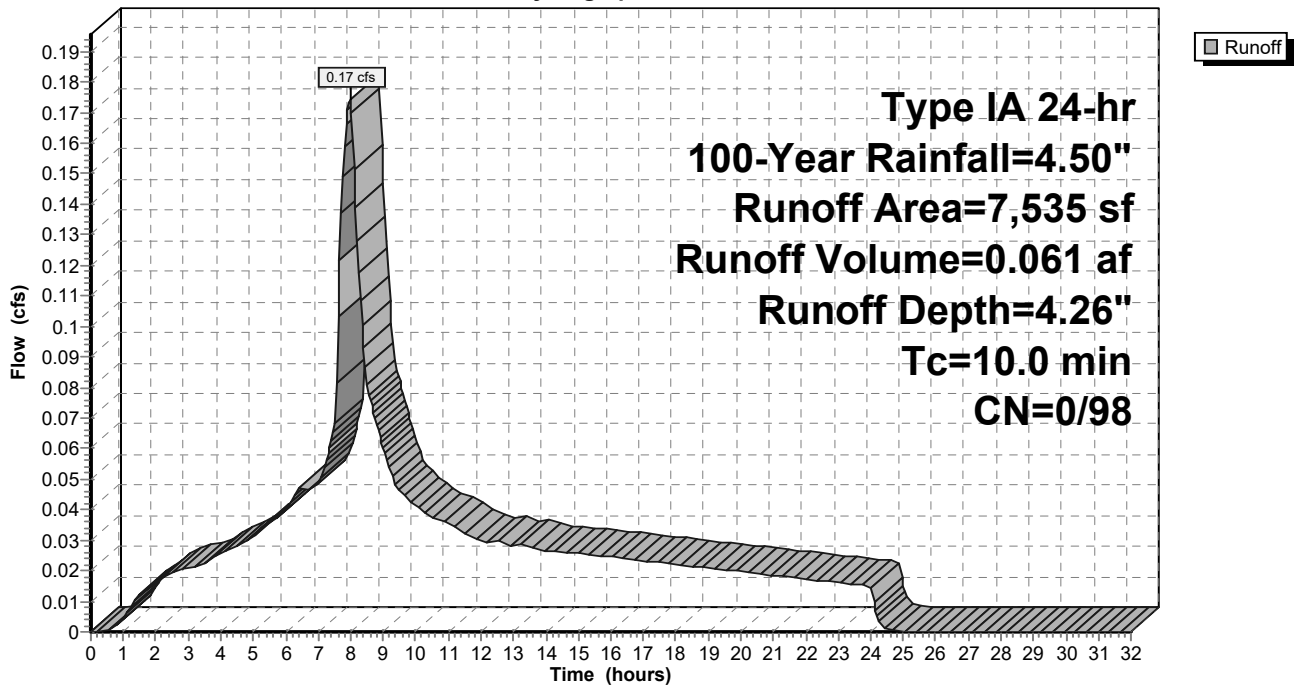
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 100-Year Rainfall=4.50"

Area (sf)	CN	Description
7,535	98	Paved roads w/curbs & sewers, HSG D
7,535	98	100.00% Impervious Area

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

Subcatchment 119S: Basin 20

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 100-Year Rainfall=4.50"

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Summary for Subcatchment 120S: Basin 21

Runoff = 0.16 cfs @ 7.98 hrs, Volume= 0.056 af, Depth= 4.26"
 Routed to Reach 148R : 1

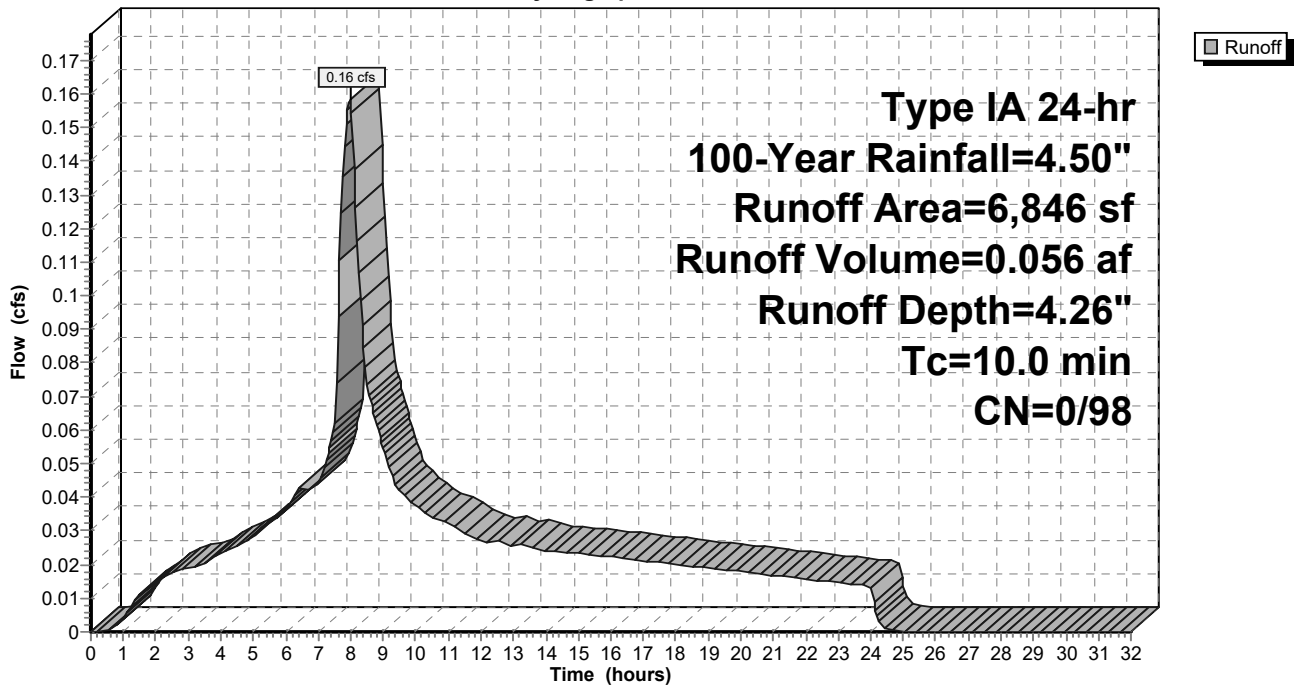
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 100-Year Rainfall=4.50"

Area (sf)	CN	Description
6,846	98	Paved roads w/curbs & sewers, HSG D
6,846	98	100.00% Impervious Area

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

Subcatchment 120S: Basin 21

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 100-Year Rainfall=4.50"

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Summary for Subcatchment 121S: Basin 22

Runoff = 0.12 cfs @ 7.98 hrs, Volume= 0.042 af, Depth= 4.26"
 Routed to Reach 154R : 1

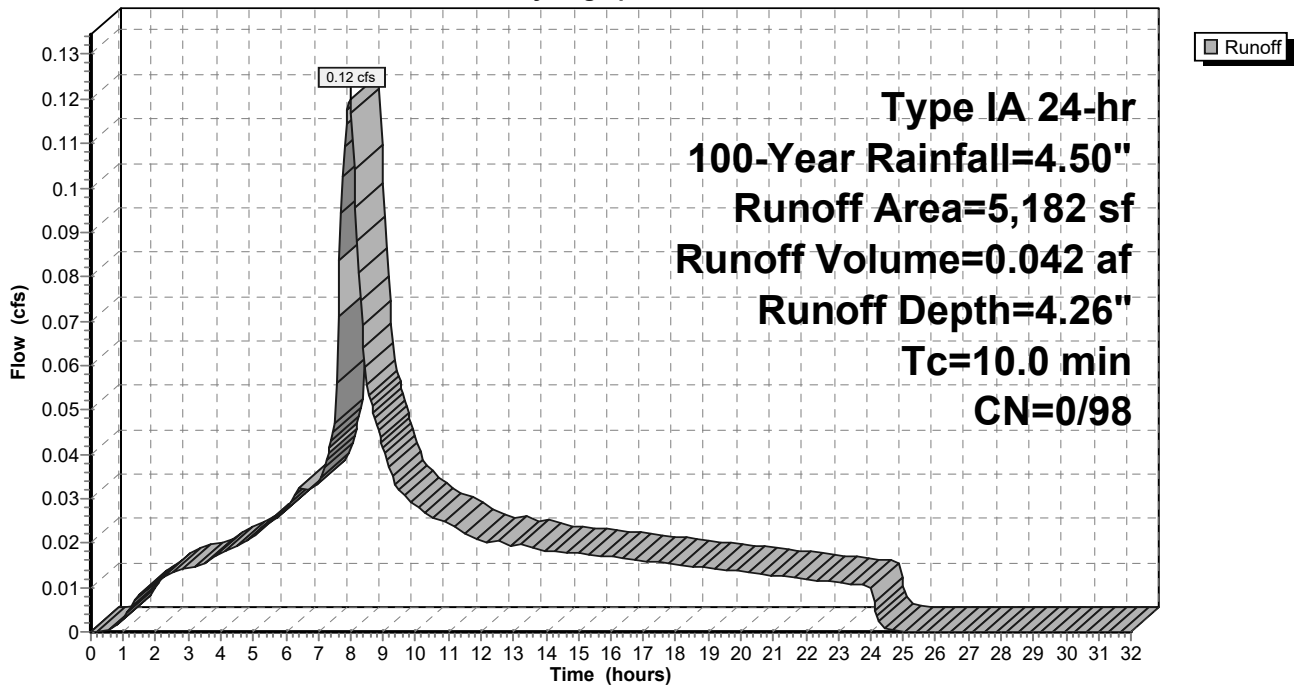
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 100-Year Rainfall=4.50"

Area (sf)	CN	Description
5,182	98	Paved roads w/curbs & sewers, HSG D
5,182	98	100.00% Impervious Area

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

Subcatchment 121S: Basin 22

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 100-Year Rainfall=4.50"

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Summary for Subcatchment 122S: Basin 23

Runoff = 0.13 cfs @ 7.98 hrs, Volume= 0.045 af, Depth= 4.26"
 Routed to Reach 155R : 1

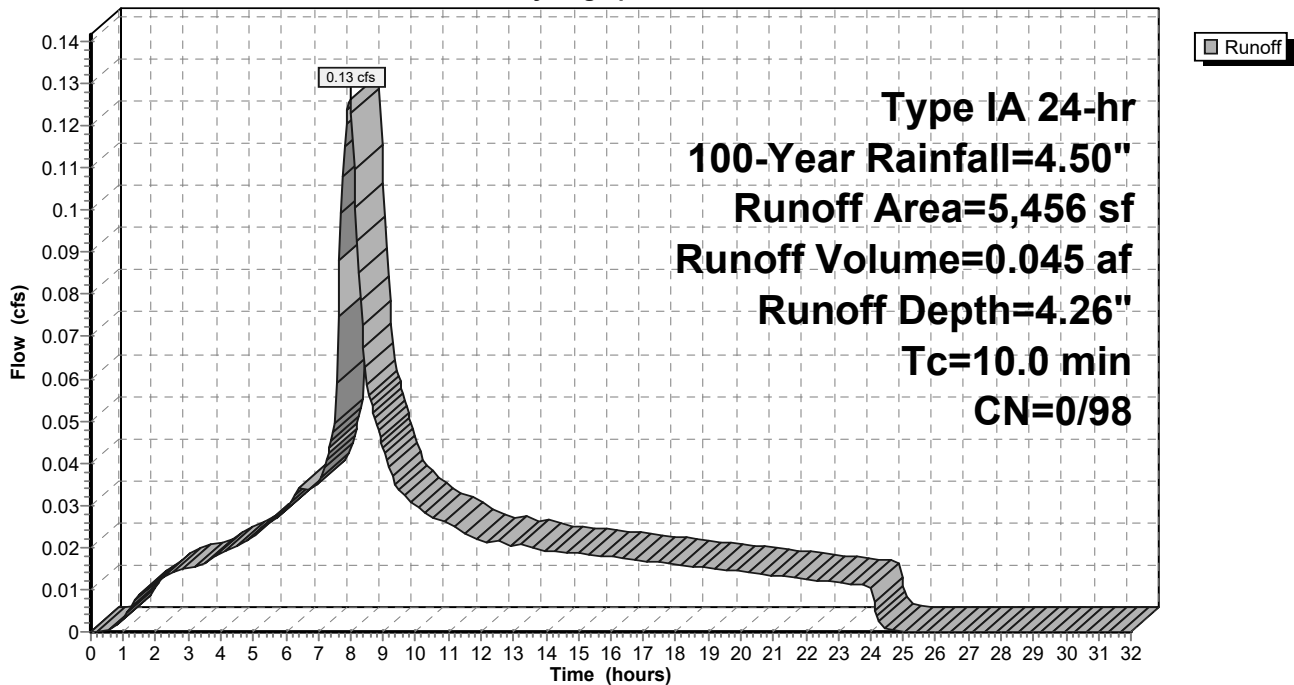
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 100-Year Rainfall=4.50"

Area (sf)	CN	Description
5,456	98	Paved roads w/curbs & sewers, HSG D
5,456	98	100.00% Impervious Area

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

Subcatchment 122S: Basin 23

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 100-Year Rainfall=4.50"

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Summary for Subcatchment 123S: Basin 24

Runoff = 0.10 cfs @ 7.98 hrs, Volume= 0.037 af, Depth= 4.26"
 Routed to Reach 162R : 1

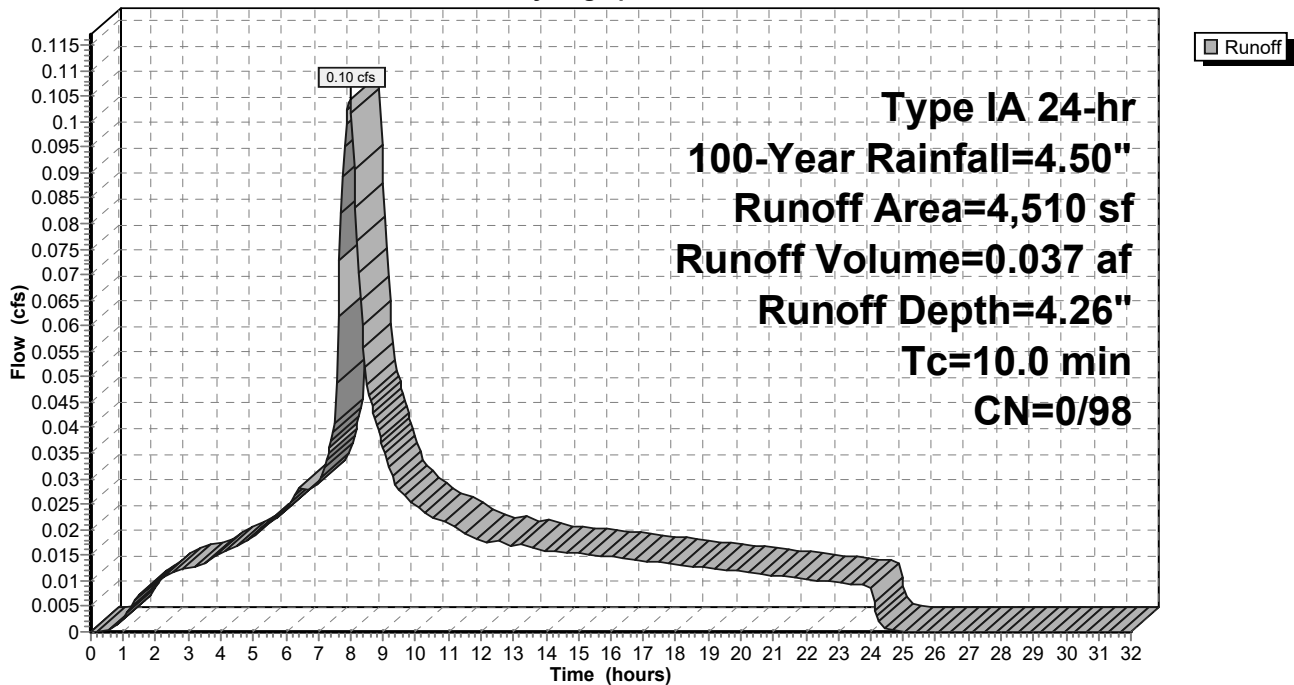
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 100-Year Rainfall=4.50"

Area (sf)	CN	Description
4,510	98	Paved roads w/curbs & sewers, HSG D
4,510	98	100.00% Impervious Area

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

Subcatchment 123S: Basin 24

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 100-Year Rainfall=4.50"

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Summary for Subcatchment 124S: Basin 25

Runoff = 0.31 cfs @ 7.98 hrs, Volume= 0.108 af, Depth= 4.26"
 Routed to Reach 163R : 1

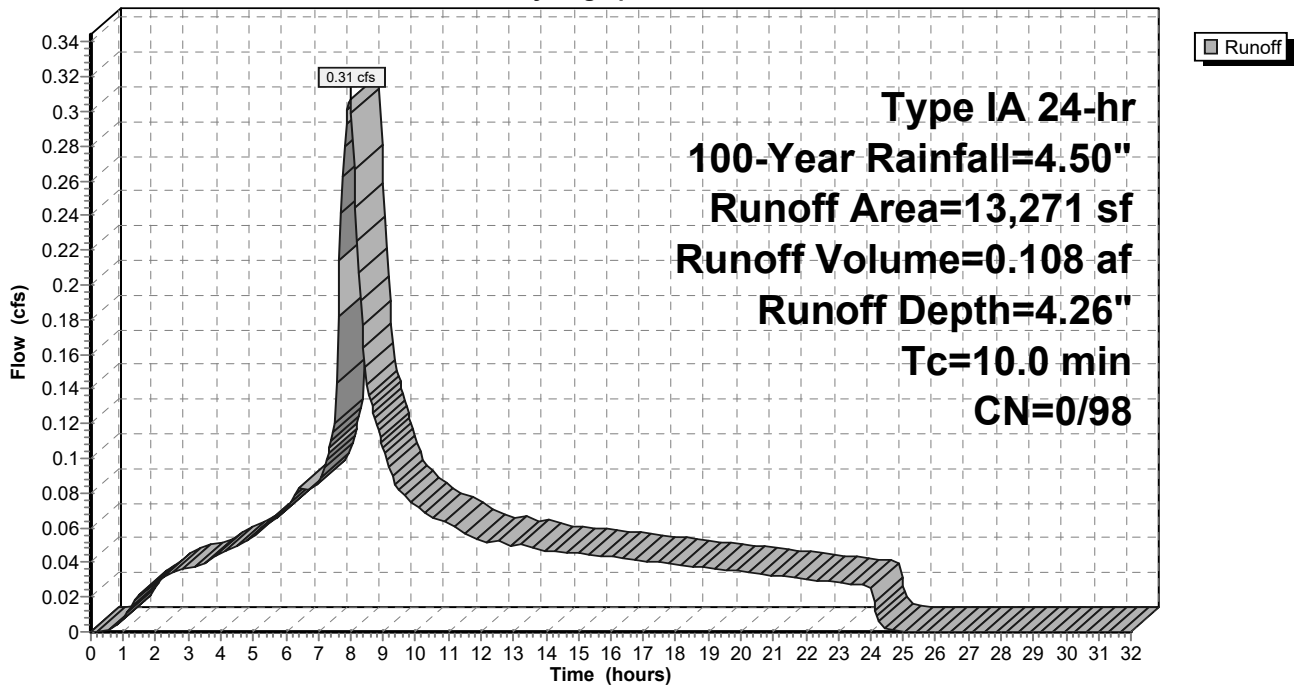
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 100-Year Rainfall=4.50"

Area (sf)	CN	Description
13,271	98	Paved roads w/curbs & sewers, HSG D
13,271	98	100.00% Impervious Area

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

Subcatchment 124S: Basin 25

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 100-Year Rainfall=4.50"

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Summary for Subcatchment 125S: Basin 26

Runoff = 0.43 cfs @ 7.98 hrs, Volume= 0.151 af, Depth= 4.26"
 Routed to Reach 165R : 1

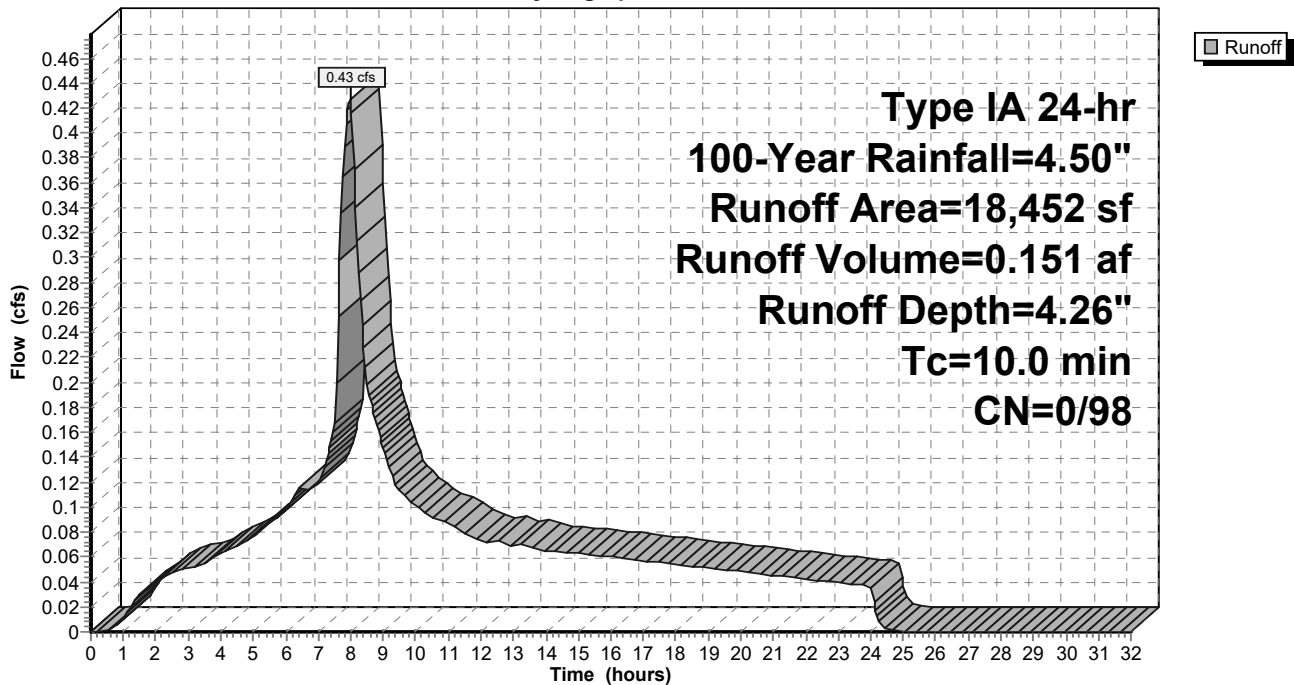
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 100-Year Rainfall=4.50"

Area (sf)	CN	Description
18,452	98	Paved roads w/curbs & sewers, HSG D
18,452	98	100.00% Impervious Area

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

Subcatchment 125S: Basin 26

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 100-Year Rainfall=4.50"

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Summary for Subcatchment 126S: Alley Basin 1

Runoff = 0.23 cfs @ 7.98 hrs, Volume= 0.080 af, Depth= 4.26"
 Routed to Reach 140R : 1

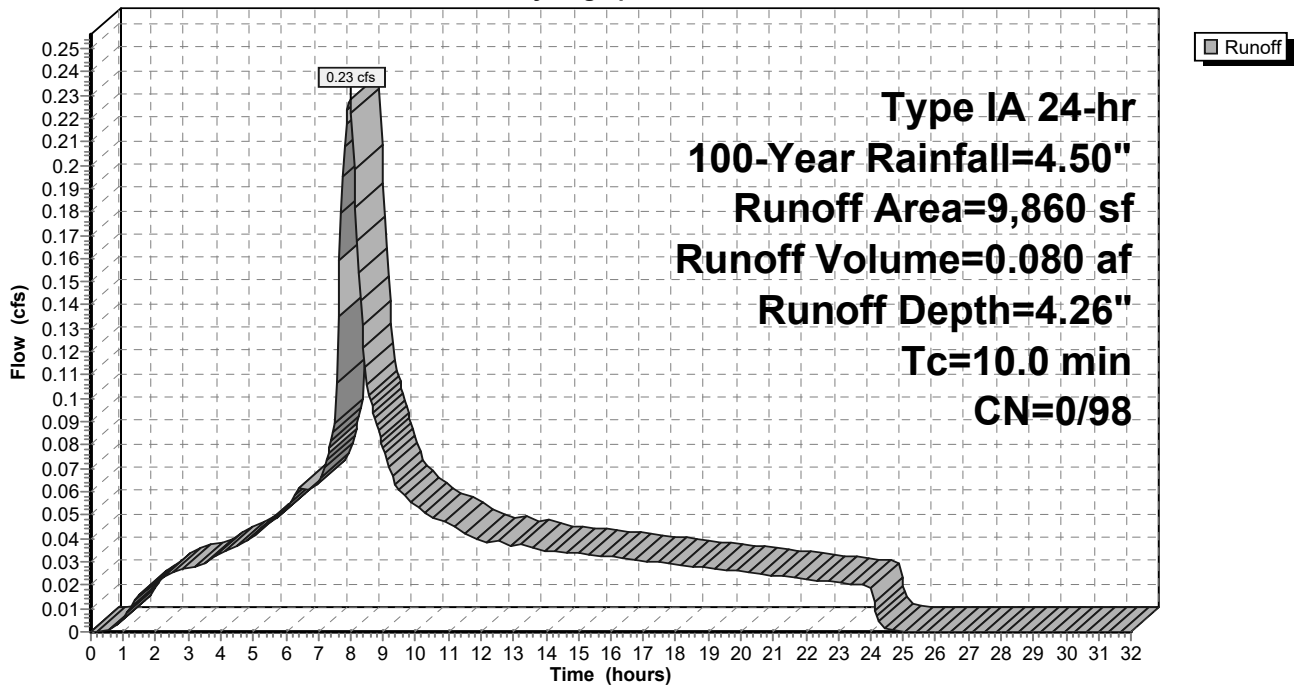
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 100-Year Rainfall=4.50"

Area (sf)	CN	Description
9,860	98	Paved roads w/curbs & sewers, HSG D
9,860	98	100.00% Impervious Area

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

Subcatchment 126S: Alley Basin 1

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 100-Year Rainfall=4.50"

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Summary for Subcatchment 127S: Alley Basin 2

Runoff = 0.17 cfs @ 7.98 hrs, Volume= 0.061 af, Depth= 4.26"
 Routed to Reach 141R : 1

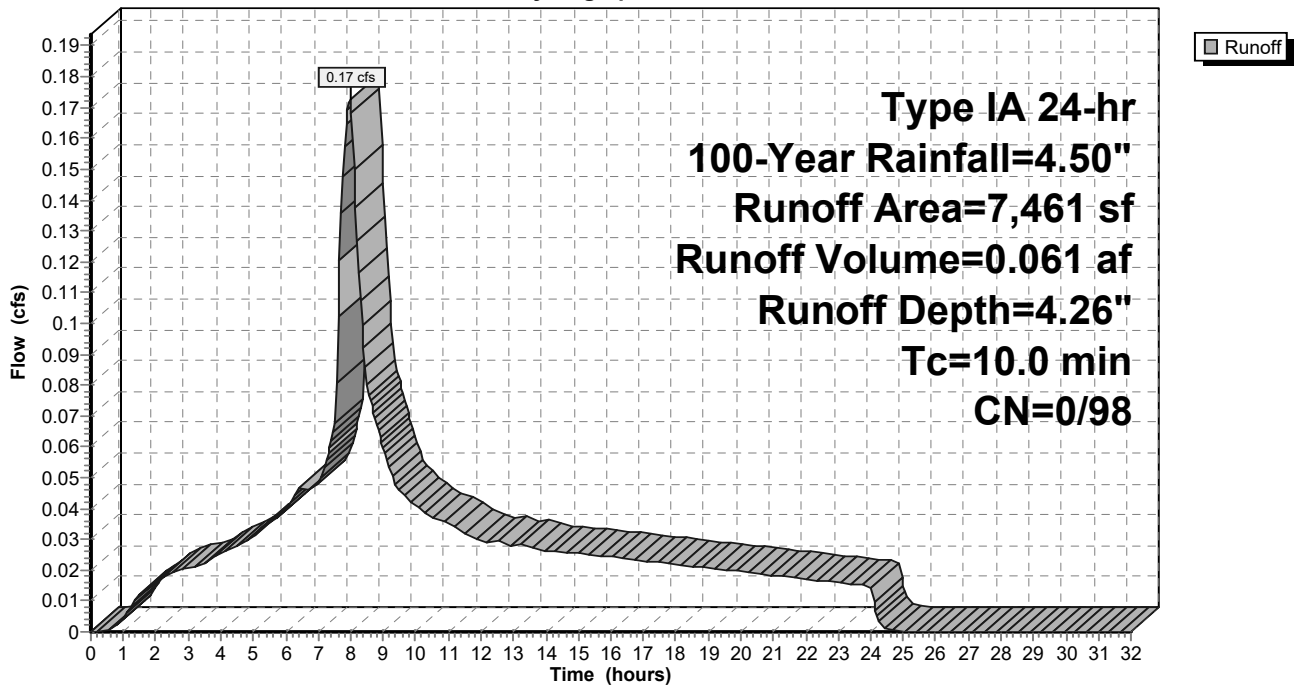
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 100-Year Rainfall=4.50"

Area (sf)	CN	Description
7,461	98	Paved roads w/curbs & sewers, HSG D
7,461	98	100.00% Impervious Area

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

Subcatchment 127S: Alley Basin 2

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 100-Year Rainfall=4.50"

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Summary for Subcatchment 128S: Alley Basin 3

Runoff = 0.16 cfs @ 7.98 hrs, Volume= 0.055 af, Depth= 4.26"
 Routed to Reach 147R : 1

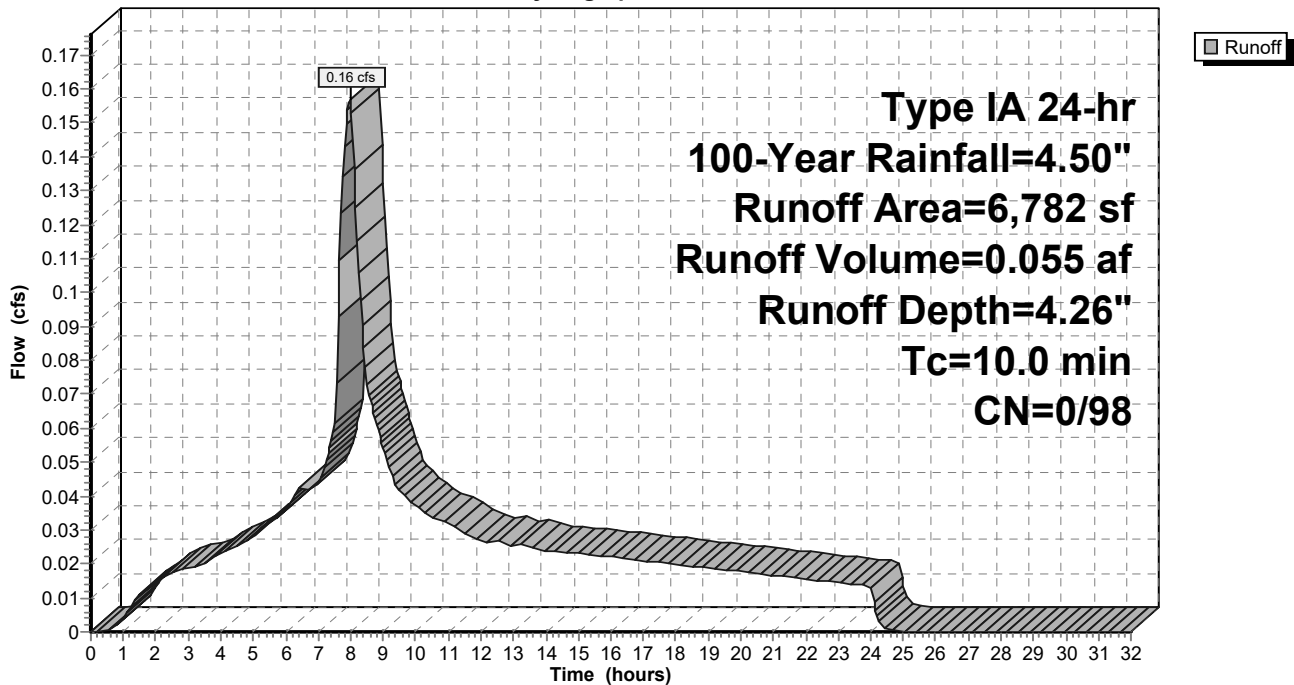
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 100-Year Rainfall=4.50"

Area (sf)	CN	Description
6,782	98	Paved roads w/curbs & sewers, HSG D
6,782	98	100.00% Impervious Area

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

Subcatchment 128S: Alley Basin 3

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 100-Year Rainfall=4.50"

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Summary for Subcatchment 129S: Alley Basin 4

Runoff = 0.16 cfs @ 7.98 hrs, Volume= 0.057 af, Depth= 4.26"
 Routed to Reach 153R : 1

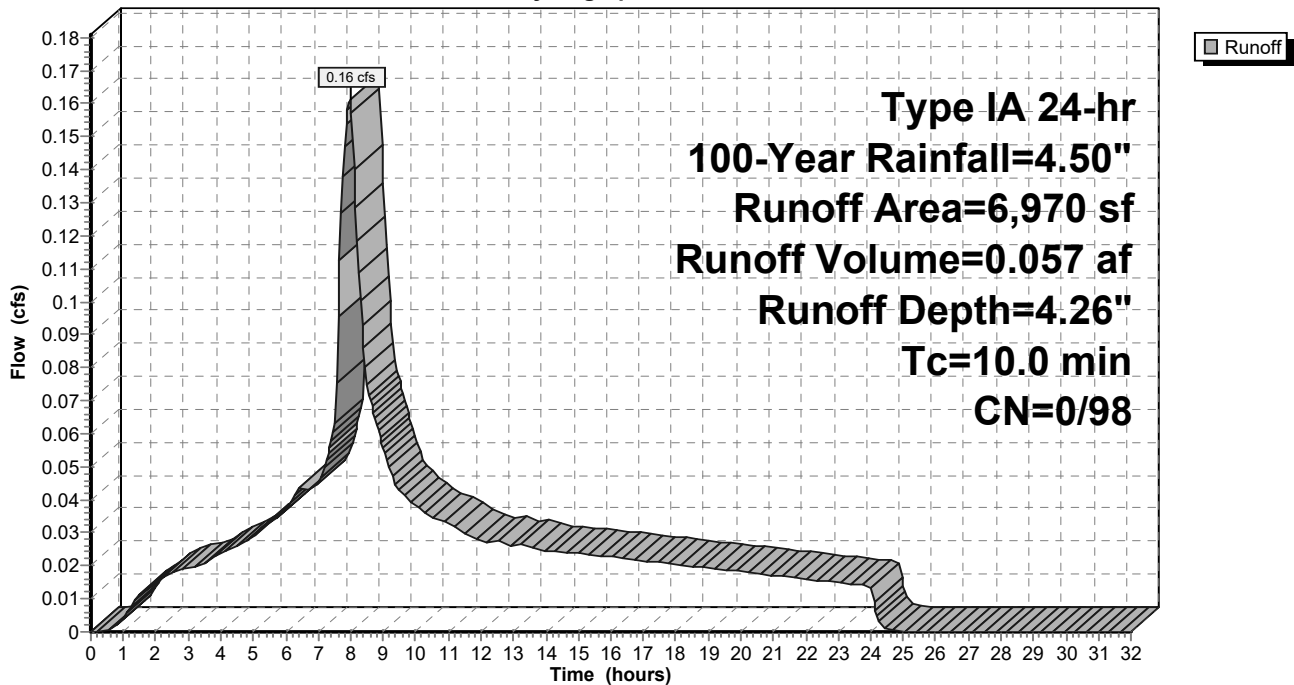
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 100-Year Rainfall=4.50"

Area (sf)	CN	Description
6,970	98	Paved roads w/curbs & sewers, HSG D
6,970	98	100.00% Impervious Area

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

Subcatchment 129S: Alley Basin 4

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 100-Year Rainfall=4.50"

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Summary for Subcatchment 168S: Future Lots

Runoff = 1.40 cfs @ 7.98 hrs, Volume= 0.481 af, Depth= 3.92"
 Routed to Reach 166R : Basin Future

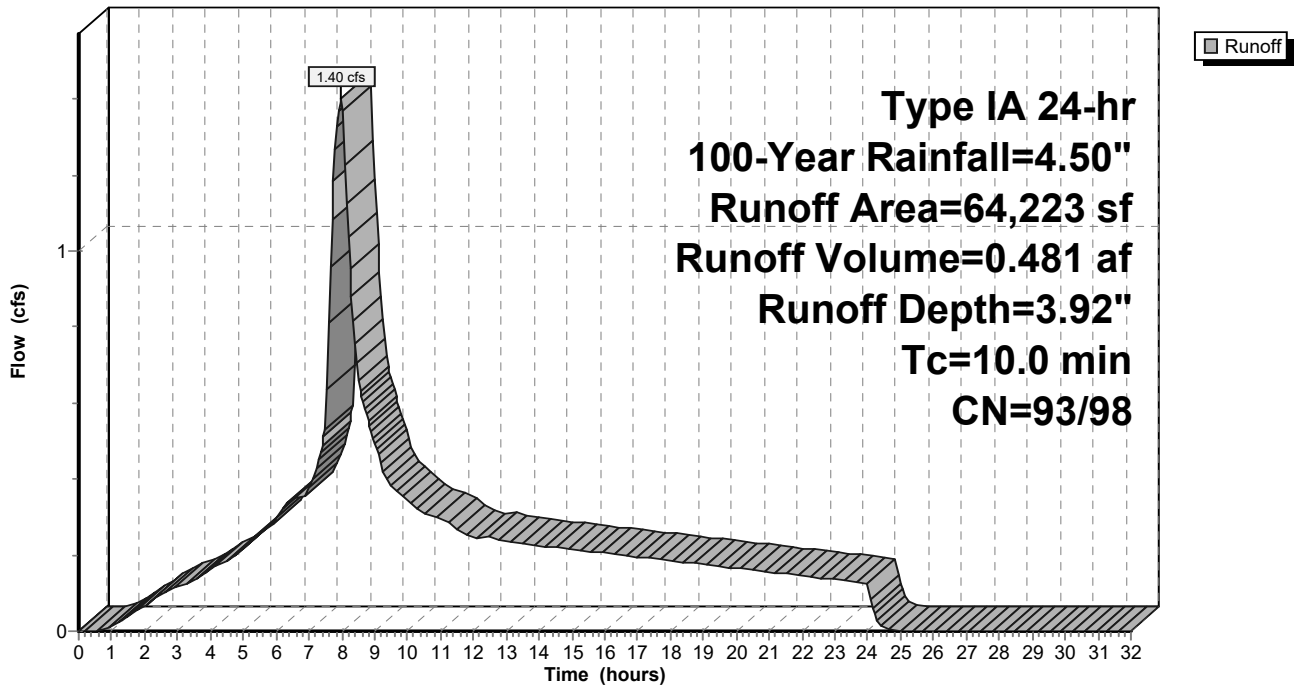
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 100-Year Rainfall=4.50"

	Area (sf)	CN	Description
*	39,915	93	70% Lot Coverage Weighted
	24,308	98	Paved roads w/curbs & sewers, HSG D
	64,223	95	Weighted Average
	39,915	93	62.15% Pervious Area
	24,308	98	37.85% Impervious Area

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

Subcatchment 168S: Future Lots

Hydrograph



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Type IA 24-hr 100-Year Rainfall=4.50"

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Summary for Subcatchment 169S: Swale 2

[46] Hint: Tc=0 (Instant runoff peak depends on dt)

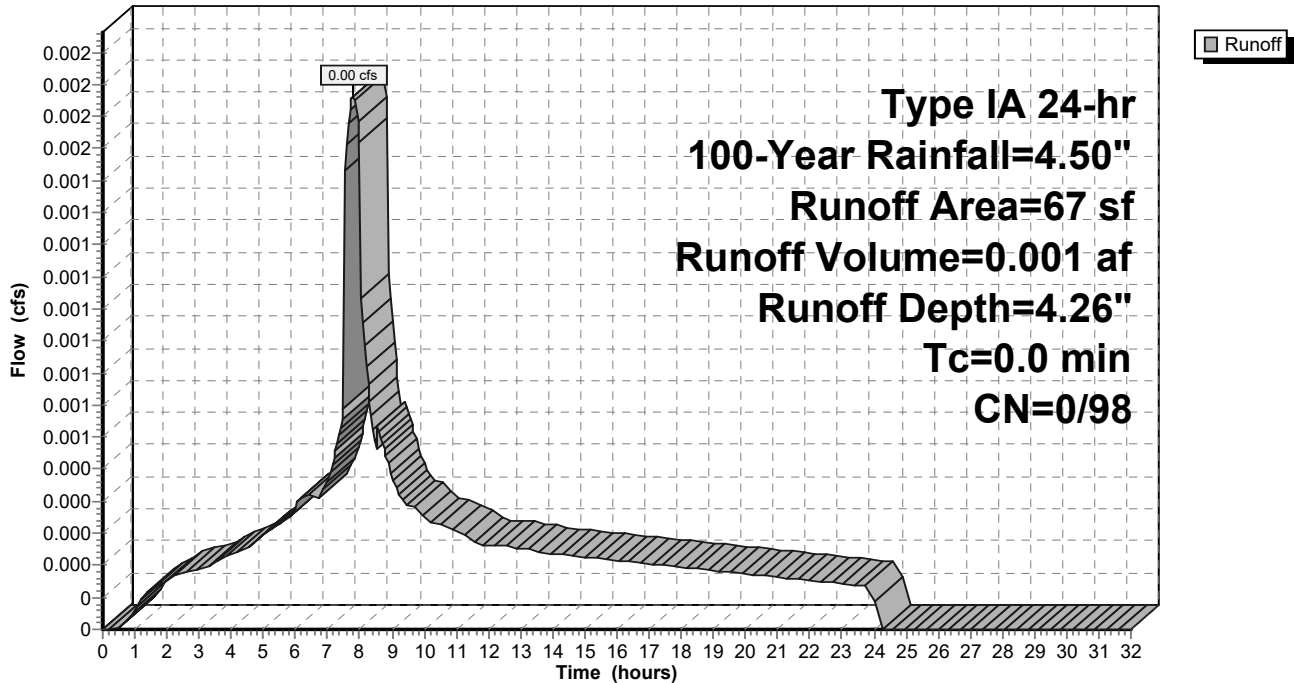
Runoff = 0.00 cfs @ 7.80 hrs, Volume= 0.001 af, Depth= 4.26"
 Routed to Pond 54P : Stormwater Swale 2

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 100-Year Rainfall=4.50"

Area (sf)	CN	Description
67	98	Water Surface, HSG D
67	98	100.00% Impervious Area

Subcatchment 169S: Swale 2

Hydrograph



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Type IA 24-hr 100-Year Rainfall=4.50"

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Summary for Subcatchment 170S: Swale 1

[46] Hint: Tc=0 (Instant runoff peak depends on dt)

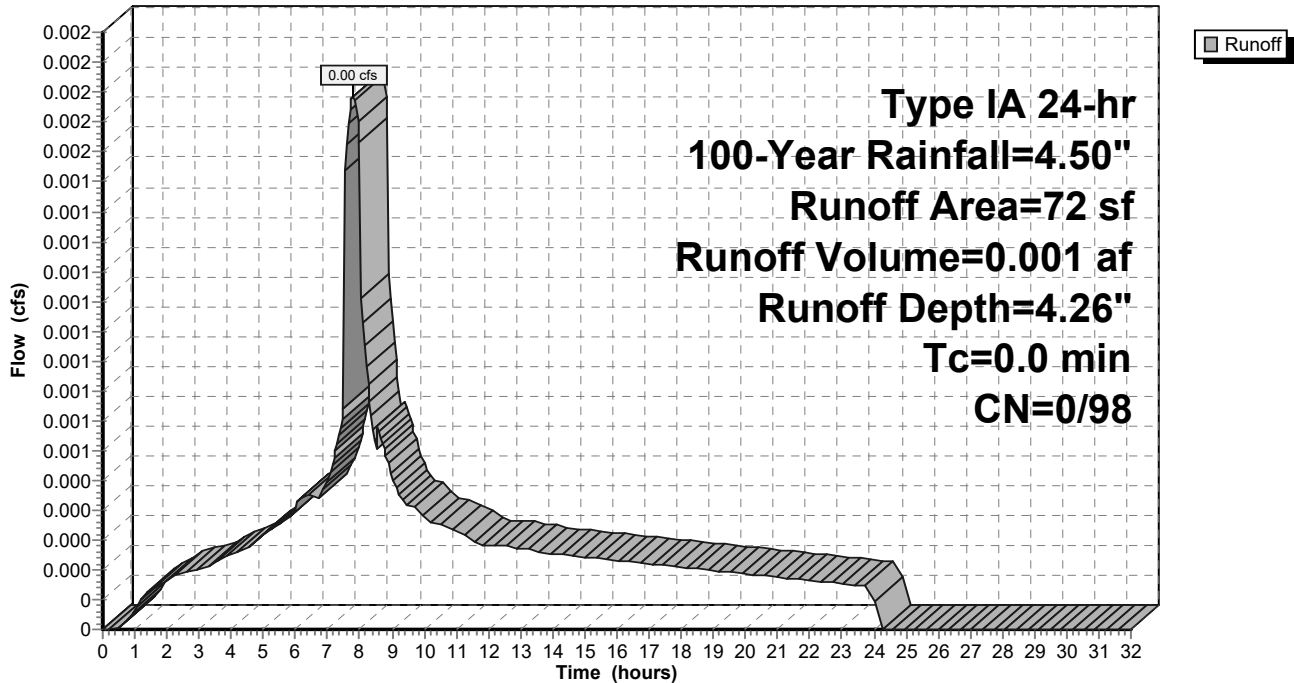
Runoff = 0.00 cfs @ 7.80 hrs, Volume= 0.001 af, Depth= 4.26"
 Routed to Pond 60P : Stormwater Swale 1

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Type IA 24-hr 100-Year Rainfall=4.50"

Area (sf)	CN	Description
72	98	Water Surface, HSG D
72	98	100.00% Impervious Area

Subcatchment 170S: Swale 1

Hydrograph



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Type IA 24-hr 100-Year Rainfall=4.50"

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Summary for Reach 39R: Post-Construction Peak Flow

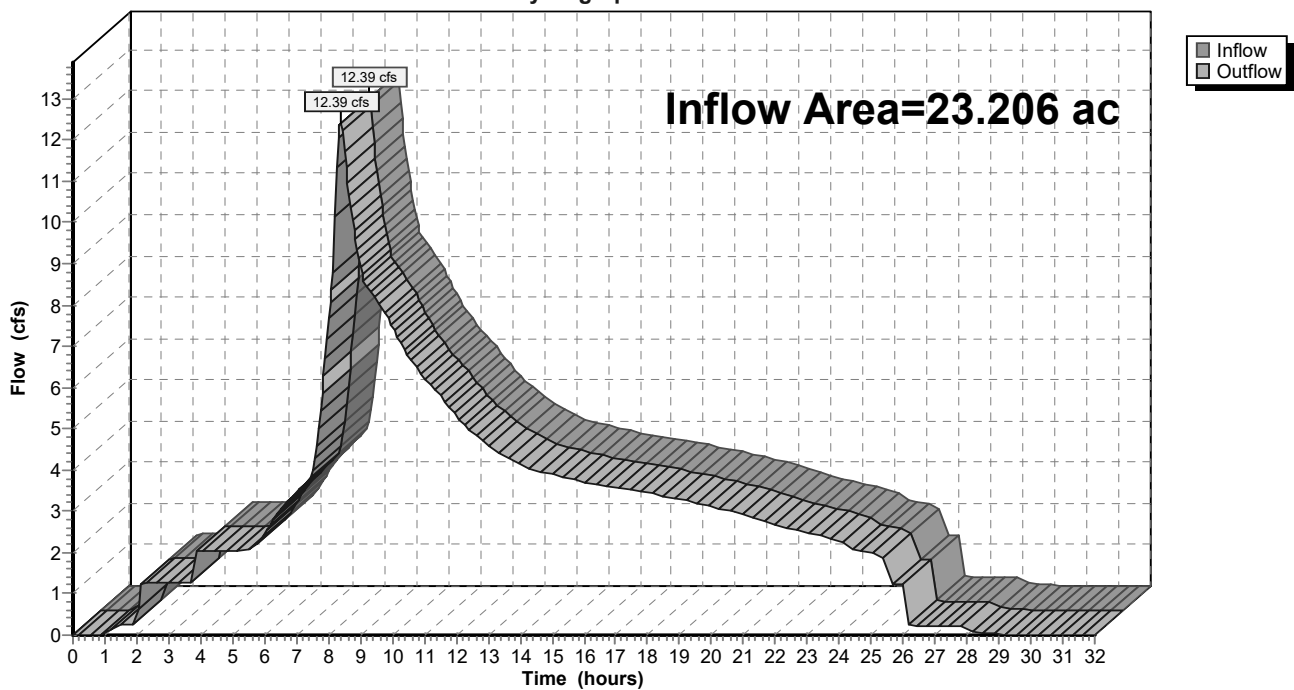
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 23.206 ac, 36.84% Impervious, Inflow Depth > 3.91" for 100-Year event
 Inflow = 12.39 cfs @ 8.37 hrs, Volume= 7.565 af
 Outflow = 12.39 cfs @ 8.37 hrs, Volume= 7.565 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 39R: Post-Construction Peak Flow

Hydrograph



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Type IA 24-hr 100-Year Rainfall=4.50"

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Summary for Reach 42R: Pre-Construction Peak Flow

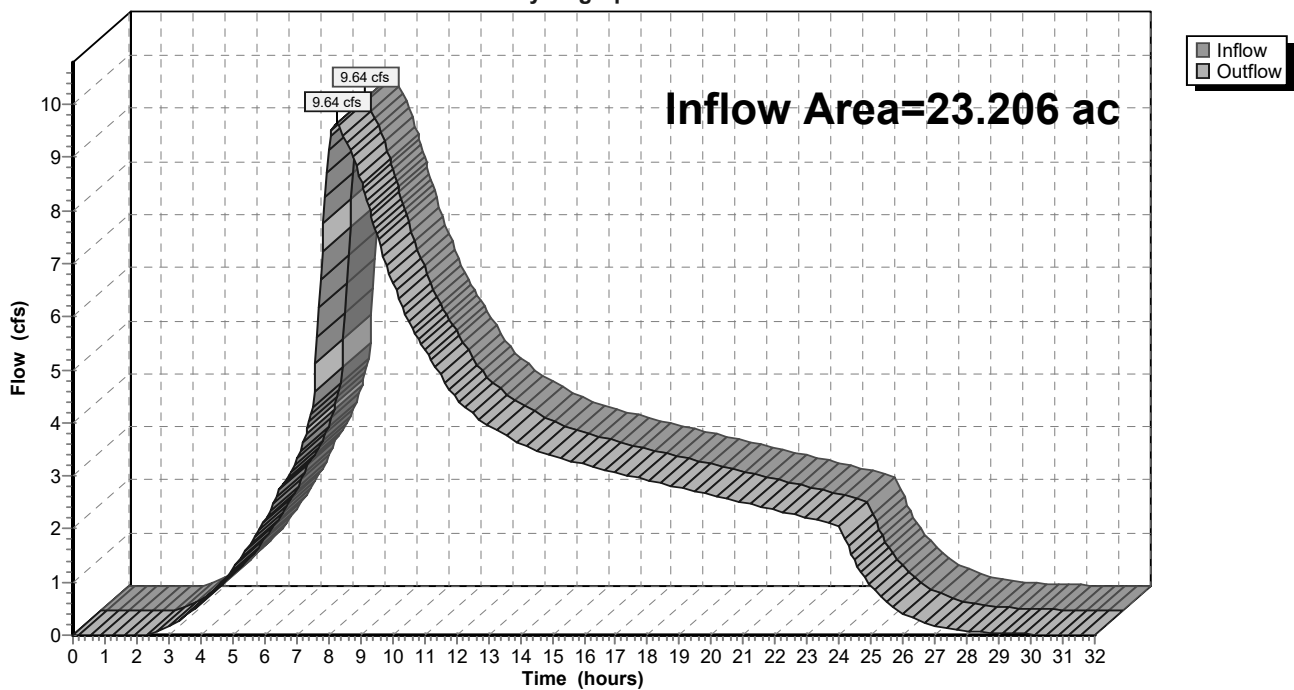
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 23.206 ac, 0.00% Impervious, Inflow Depth > 3.30" for 100-Year event
 Inflow = 9.64 cfs @ 8.24 hrs, Volume= 6.372 af
 Outflow = 9.64 cfs @ 8.24 hrs, Volume= 6.372 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 42R: Pre-Construction Peak Flow

Hydrograph



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Type IA 24-hr 100-Year Rainfall=4.50"

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Summary for Reach 58R: 1

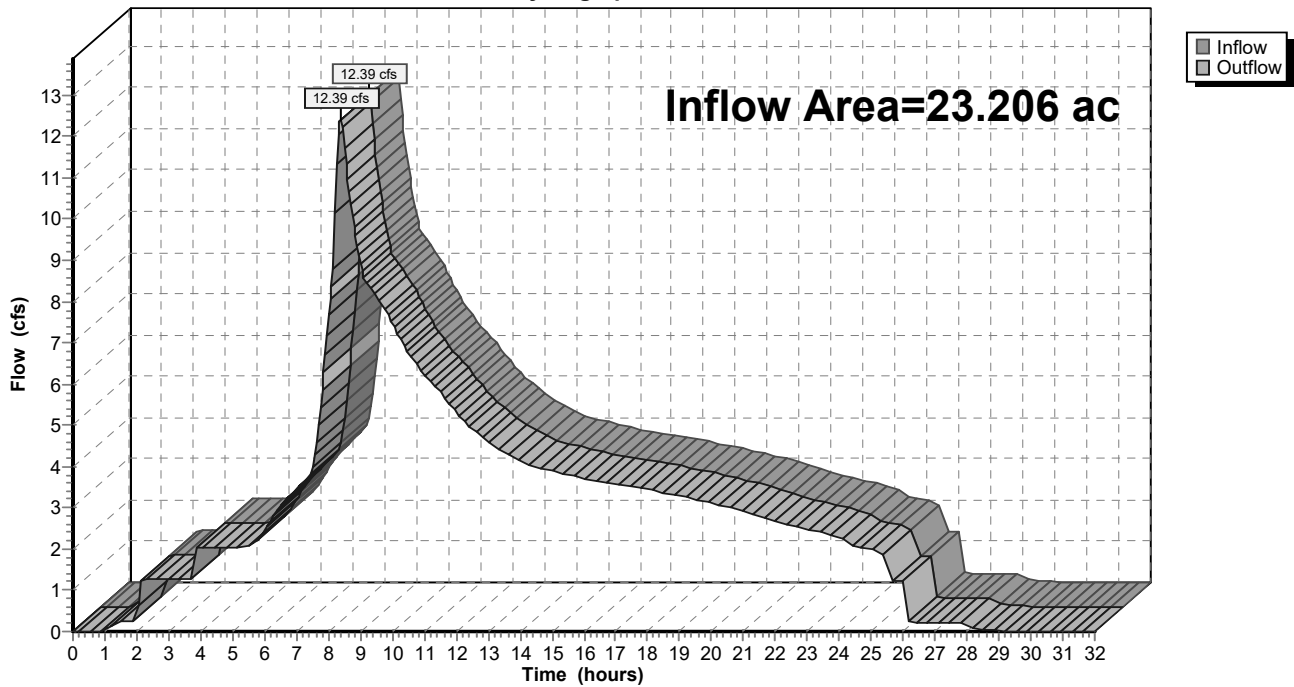
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 23.206 ac, 36.84% Impervious, Inflow Depth > 3.91" for 100-Year event
 Inflow = 12.39 cfs @ 8.37 hrs, Volume= 7.565 af
 Outflow = 12.39 cfs @ 8.37 hrs, Volume= 7.565 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 39R : Post-Construction Peak Flow

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 58R: 1

Hydrograph



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Type IA 24-hr 100-Year Rainfall=4.50"

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Summary for Reach 85R: 1

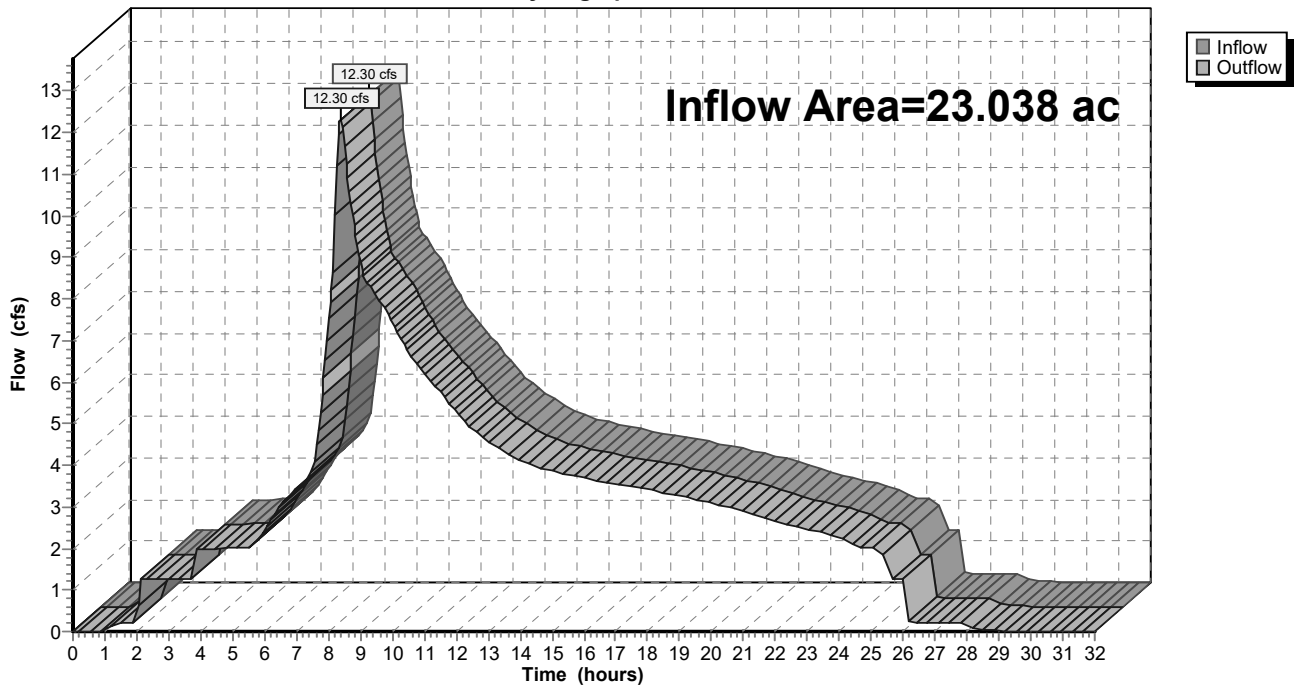
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 23.038 ac, 36.38% Impervious, Inflow Depth > 3.91" for 100-Year event
 Inflow = 12.30 cfs @ 8.37 hrs, Volume= 7.506 af
 Outflow = 12.30 cfs @ 8.37 hrs, Volume= 7.506 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 58R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 85R: 1

Hydrograph



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Type IA 24-hr 100-Year Rainfall=4.50"

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Summary for Reach 130R: 1

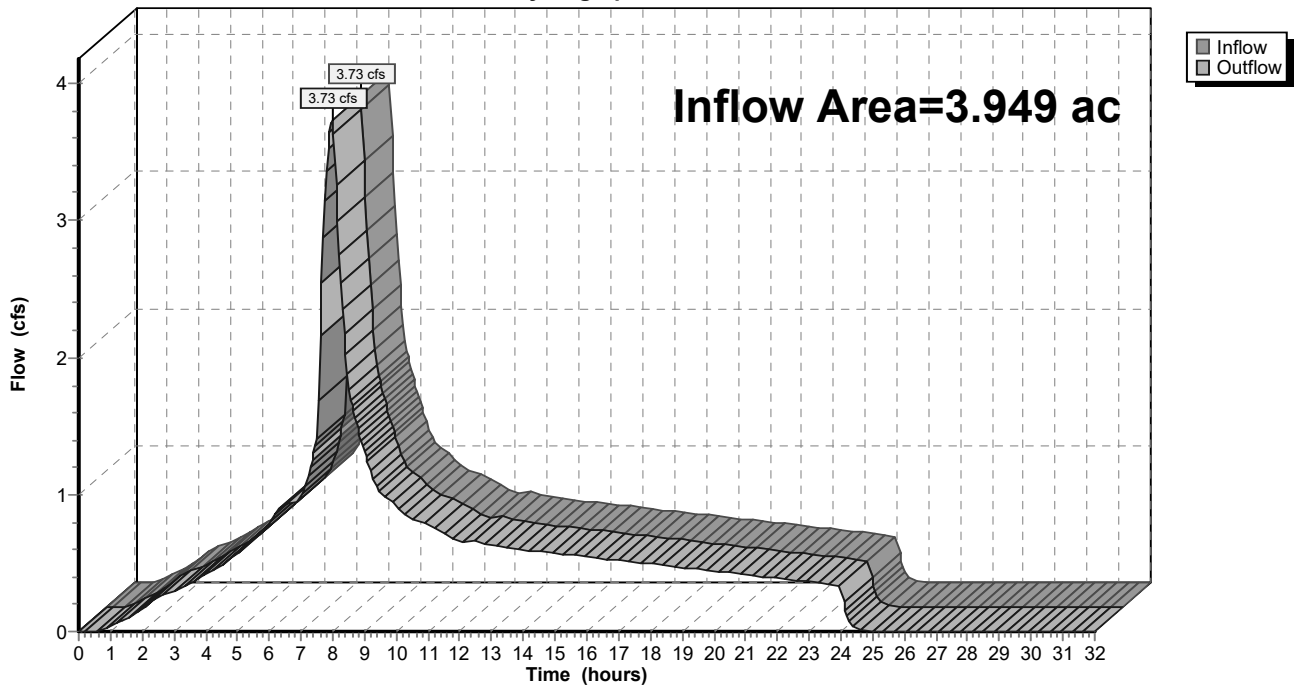
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.949 ac, 33.88% Impervious, Inflow Depth = 3.90" for 100-Year event
 Inflow = 3.73 cfs @ 7.98 hrs, Volume= 1.282 af
 Outflow = 3.73 cfs @ 7.98 hrs, Volume= 1.282 af, Atten= 0%, Lag= 0.0 min
 Routed to Pond 63P : Detention Pond

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 130R: 1

Hydrograph



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Type IA 24-hr 100-Year Rainfall=4.50"

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Summary for Reach 131R: 1

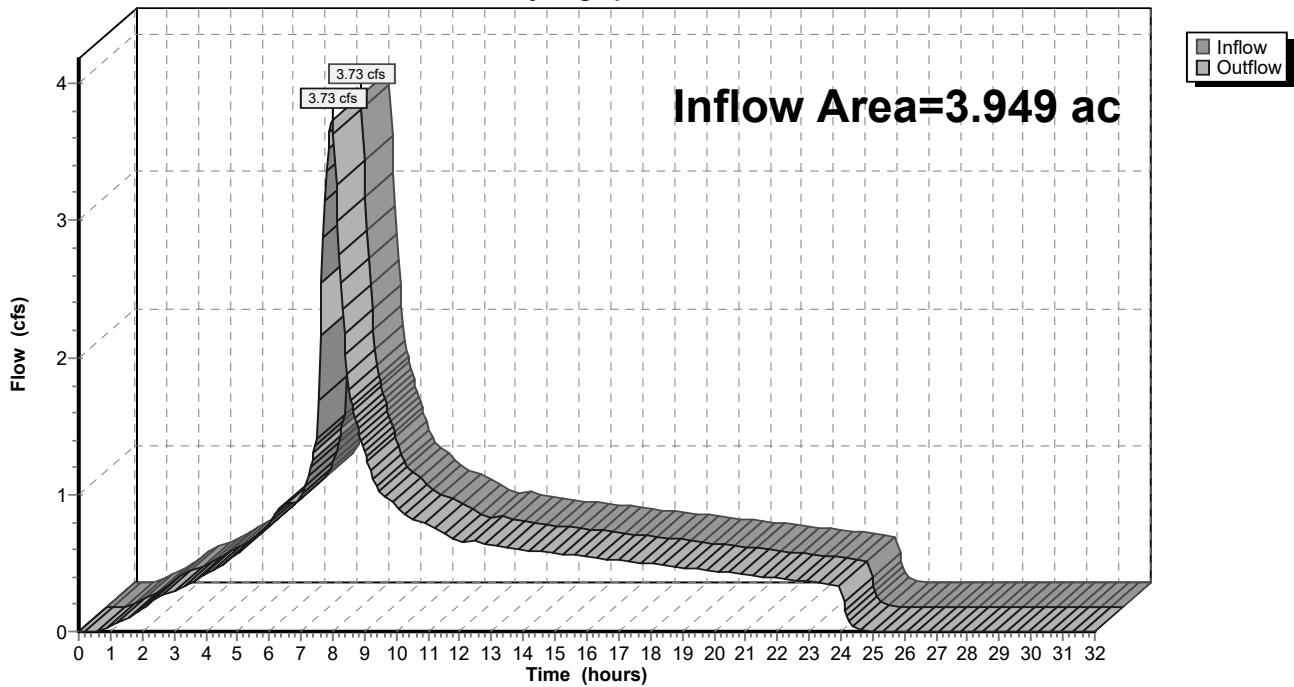
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.949 ac, 33.88% Impervious, Inflow Depth = 3.90" for 100-Year event
 Inflow = 3.73 cfs @ 7.98 hrs, Volume= 1.282 af
 Outflow = 3.73 cfs @ 7.98 hrs, Volume= 1.282 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 130R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 131R: 1

Hydrograph



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Type IA 24-hr 100-Year Rainfall=4.50"

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Summary for Reach 132R: 1

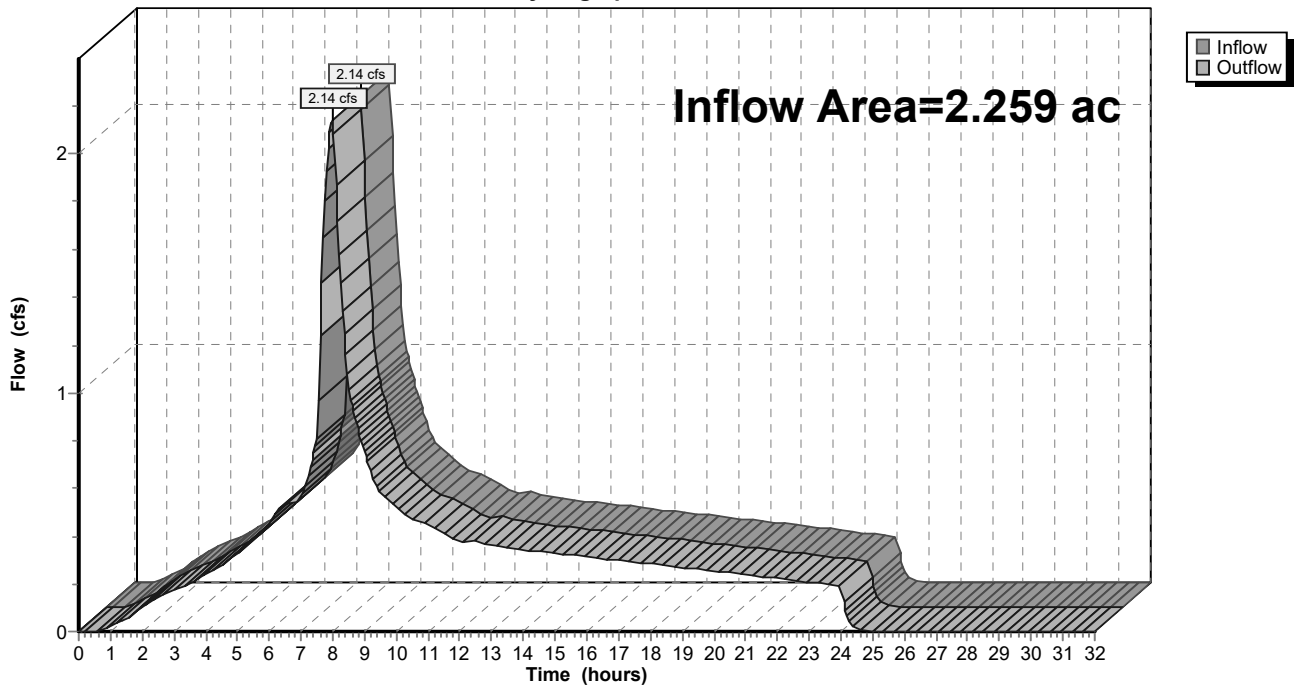
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 2.259 ac, 35.43% Impervious, Inflow Depth = 3.90" for 100-Year event
 Inflow = 2.14 cfs @ 7.98 hrs, Volume= 0.735 af
 Outflow = 2.14 cfs @ 7.98 hrs, Volume= 0.735 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 131R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 132R: 1

Hydrograph



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Type IA 24-hr 100-Year Rainfall=4.50"

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Summary for Reach 133R: 1

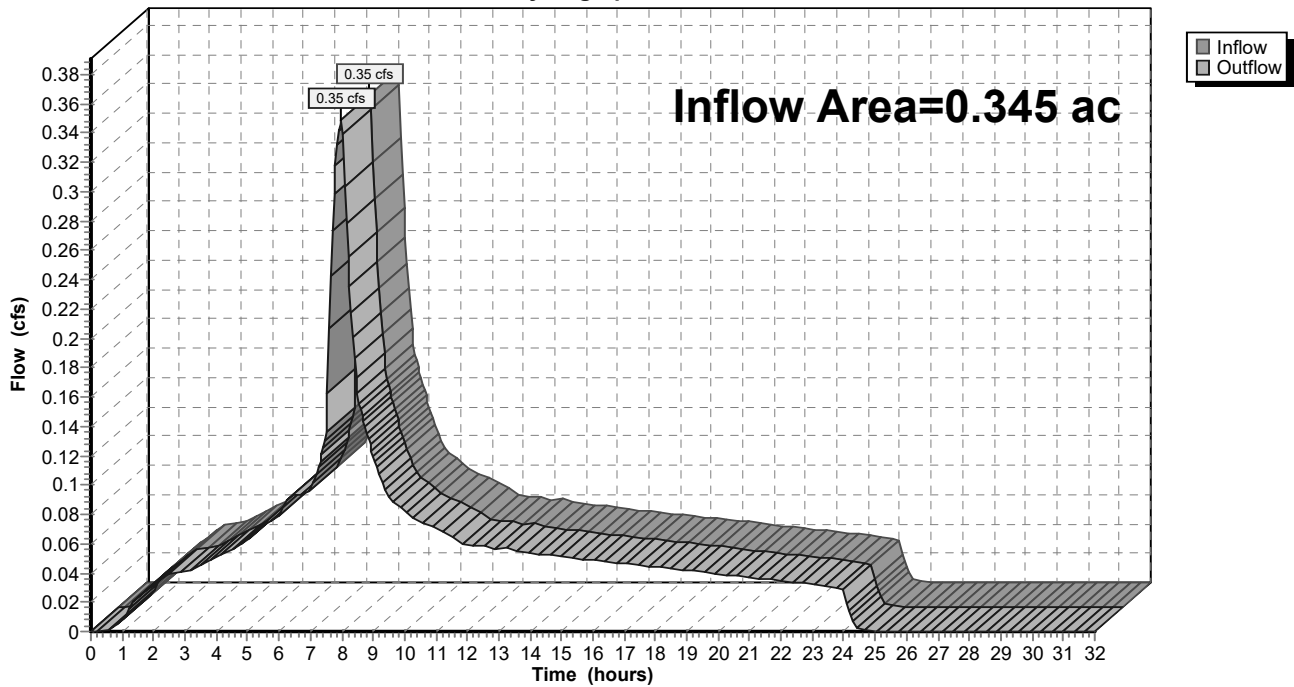
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.345 ac, 100.00% Impervious, Inflow Depth = 4.26" for 100-Year event
 Inflow = 0.35 cfs @ 7.98 hrs, Volume= 0.123 af
 Outflow = 0.35 cfs @ 7.98 hrs, Volume= 0.123 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 132R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 133R: 1

Hydrograph



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Type IA 24-hr 100-Year Rainfall=4.50"

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Summary for Reach 134R: 1

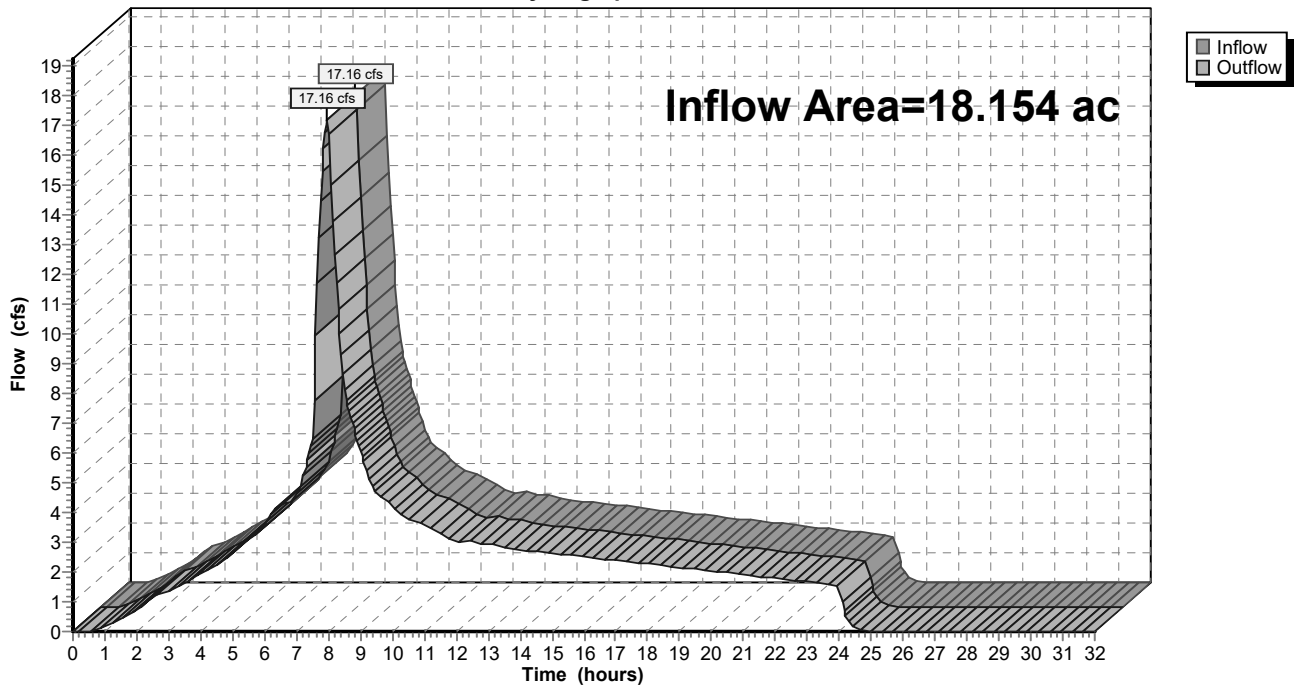
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 18.154 ac, 33.65% Impervious, Inflow Depth = 3.89" for 100-Year event
 Inflow = 17.16 cfs @ 7.98 hrs, Volume= 5.892 af
 Outflow = 17.16 cfs @ 7.98 hrs, Volume= 5.892 af, Atten= 0%, Lag= 0.0 min
 Routed to Pond 63P : Detention Pond

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 134R: 1

Hydrograph



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Type IA 24-hr 100-Year Rainfall=4.50"

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Summary for Reach 135R: 1

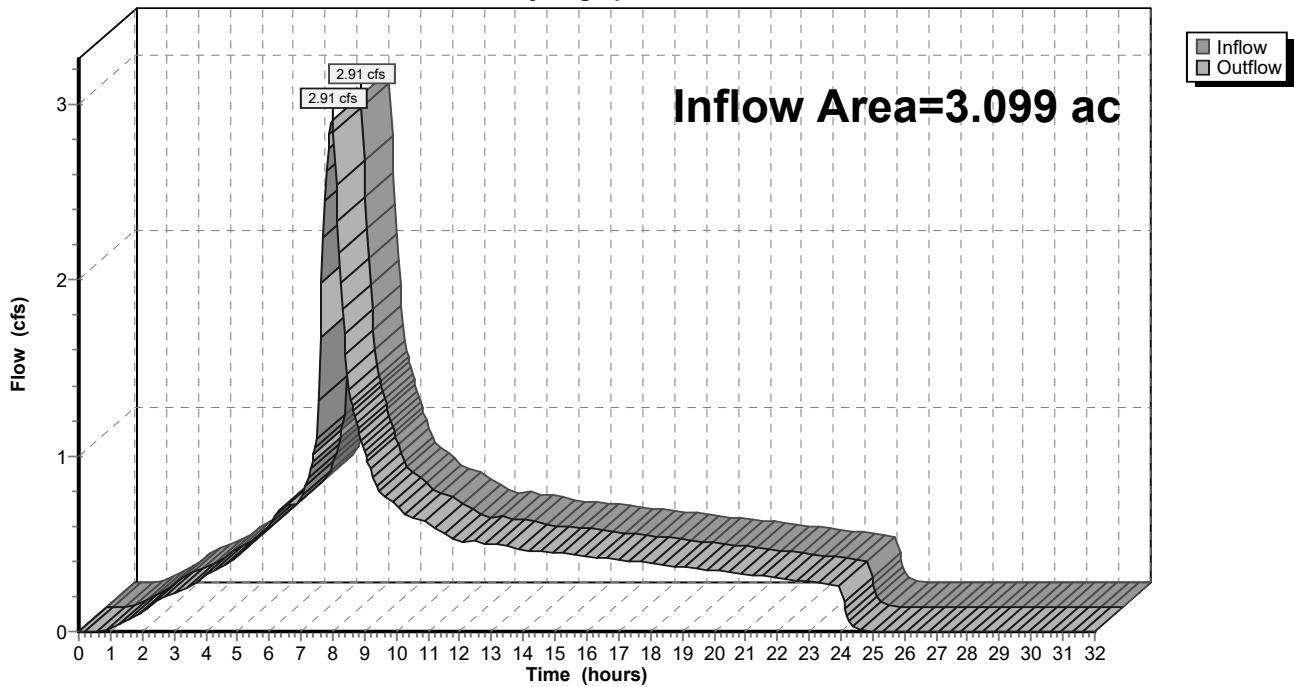
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.099 ac, 26.69% Impervious, Inflow Depth = 3.86" for 100-Year event
 Inflow = 2.91 cfs @ 7.98 hrs, Volume= 0.996 af
 Outflow = 2.91 cfs @ 7.98 hrs, Volume= 0.996 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 134R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 135R: 1

Hydrograph



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Type IA 24-hr 100-Year Rainfall=4.50"

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Summary for Reach 136R: 1

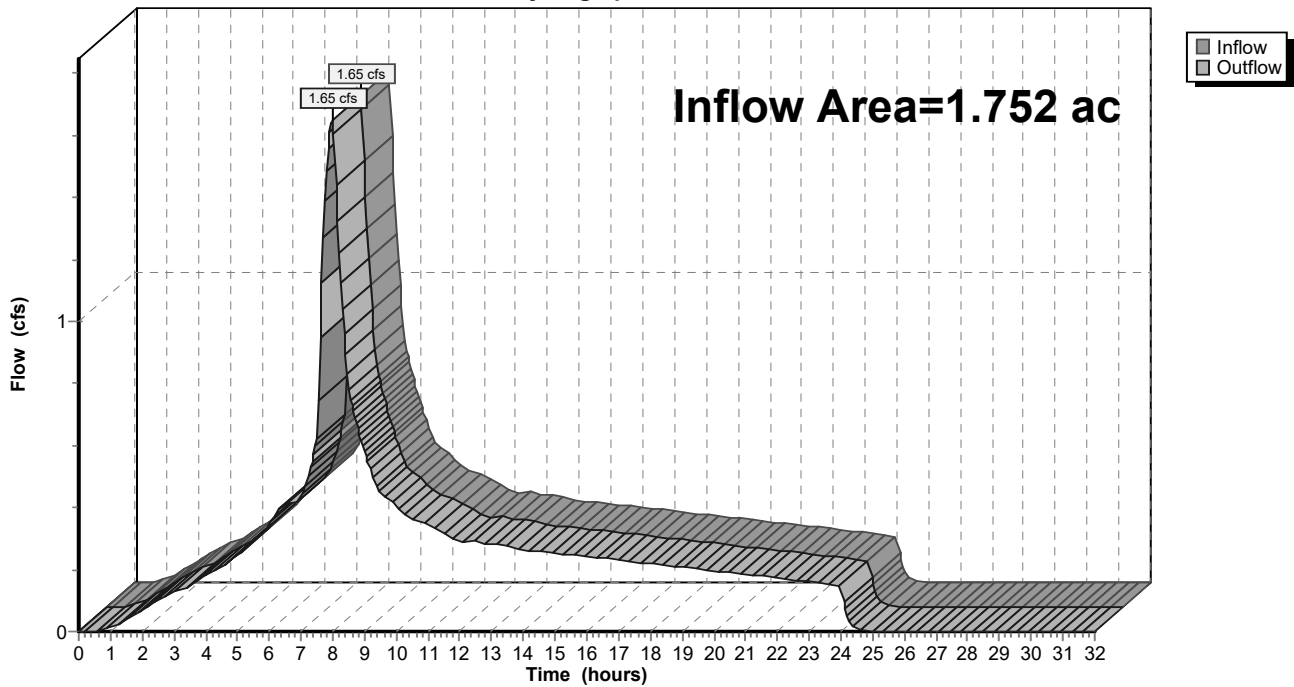
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.752 ac, 30.00% Impervious, Inflow Depth = 3.87" for 100-Year event
 Inflow = 1.65 cfs @ 7.98 hrs, Volume= 0.566 af
 Outflow = 1.65 cfs @ 7.98 hrs, Volume= 0.566 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 135R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 136R: 1

Hydrograph



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Type IA 24-hr 100-Year Rainfall=4.50"

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Summary for Reach 137R: 1

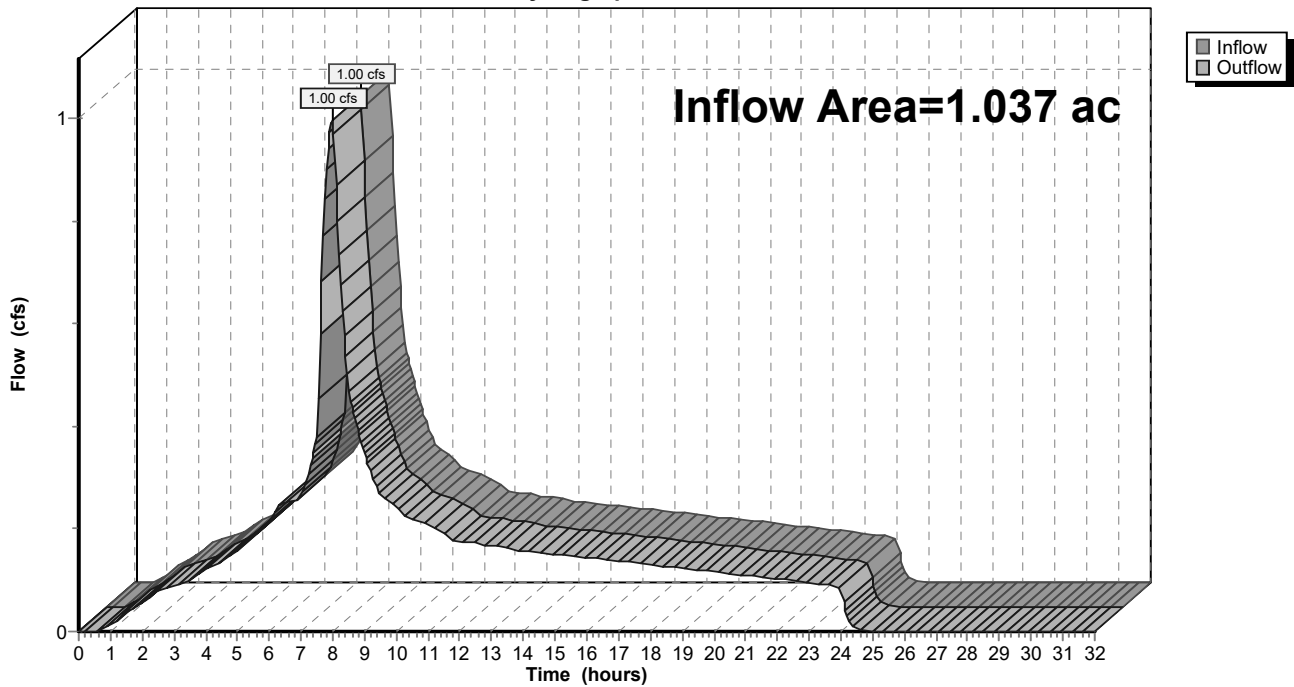
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.037 ac, 50.68% Impervious, Inflow Depth = 3.99" for 100-Year event
 Inflow = 1.00 cfs @ 7.98 hrs, Volume= 0.345 af
 Outflow = 1.00 cfs @ 7.98 hrs, Volume= 0.345 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 136R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 137R: 1

Hydrograph



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Type IA 24-hr 100-Year Rainfall=4.50"

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Summary for Reach 138R: 1

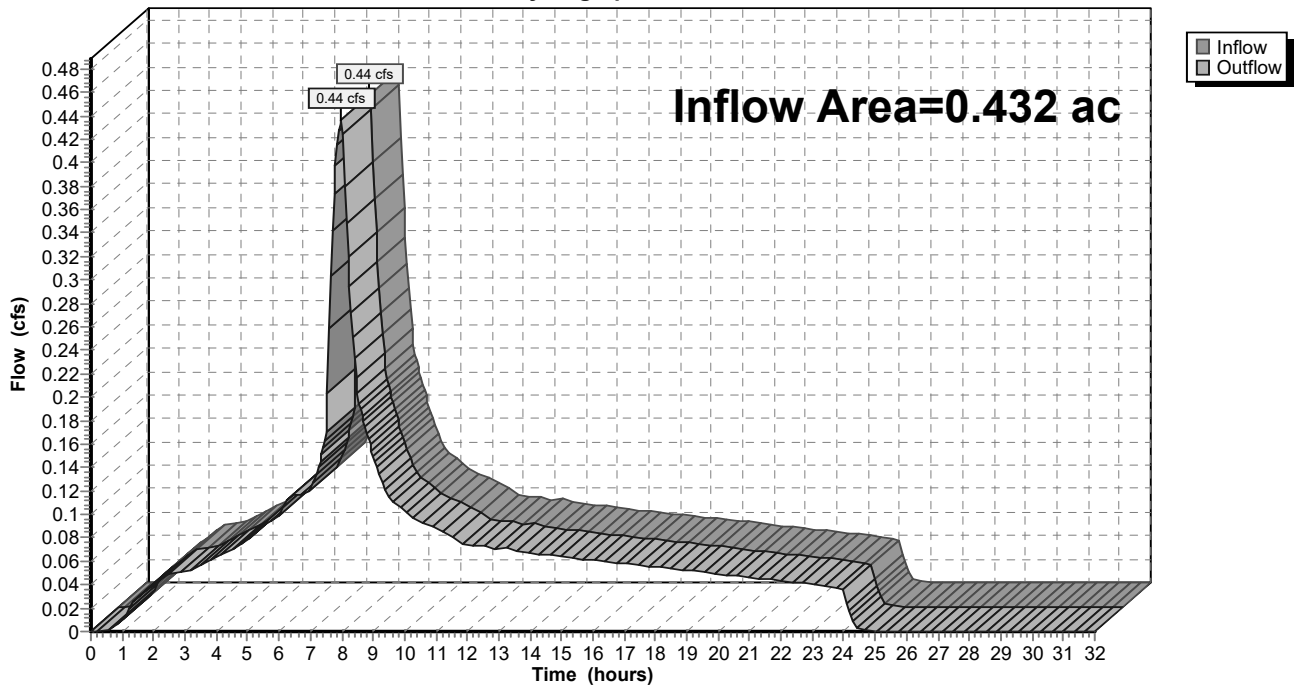
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.432 ac, 100.00% Impervious, Inflow Depth = 4.26" for 100-Year event
 Inflow = 0.44 cfs @ 7.98 hrs, Volume= 0.154 af
 Outflow = 0.44 cfs @ 7.98 hrs, Volume= 0.154 af, Atten= 0%, Lag= 0.0 min
 Routed to Pond 63P : Detention Pond

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 138R: 1

Hydrograph



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Type IA 24-hr 100-Year Rainfall=4.50"

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Summary for Reach 139R: 1

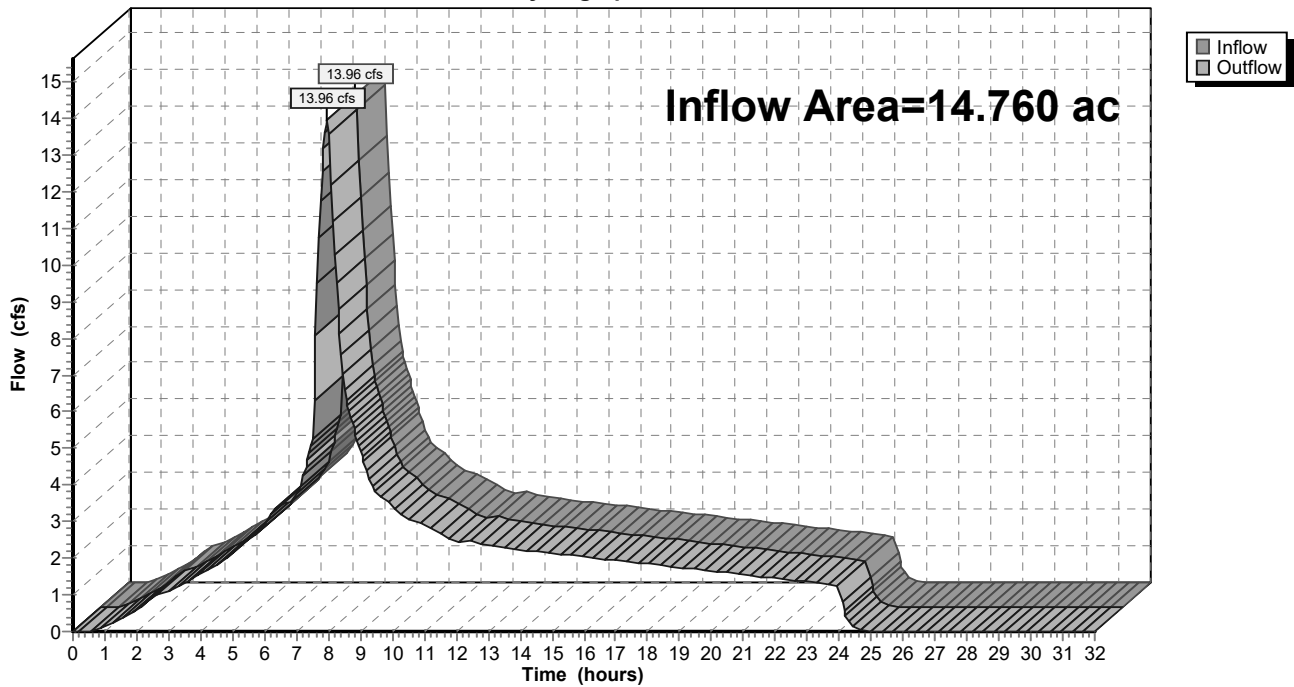
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 14.760 ac, 33.78% Impervious, Inflow Depth = 3.90" for 100-Year event
 Inflow = 13.96 cfs @ 7.98 hrs, Volume= 4.792 af
 Outflow = 13.96 cfs @ 7.98 hrs, Volume= 4.792 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 158R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 139R: 1

Hydrograph



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Type IA 24-hr 100-Year Rainfall=4.50"

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Summary for Reach 140R: 1

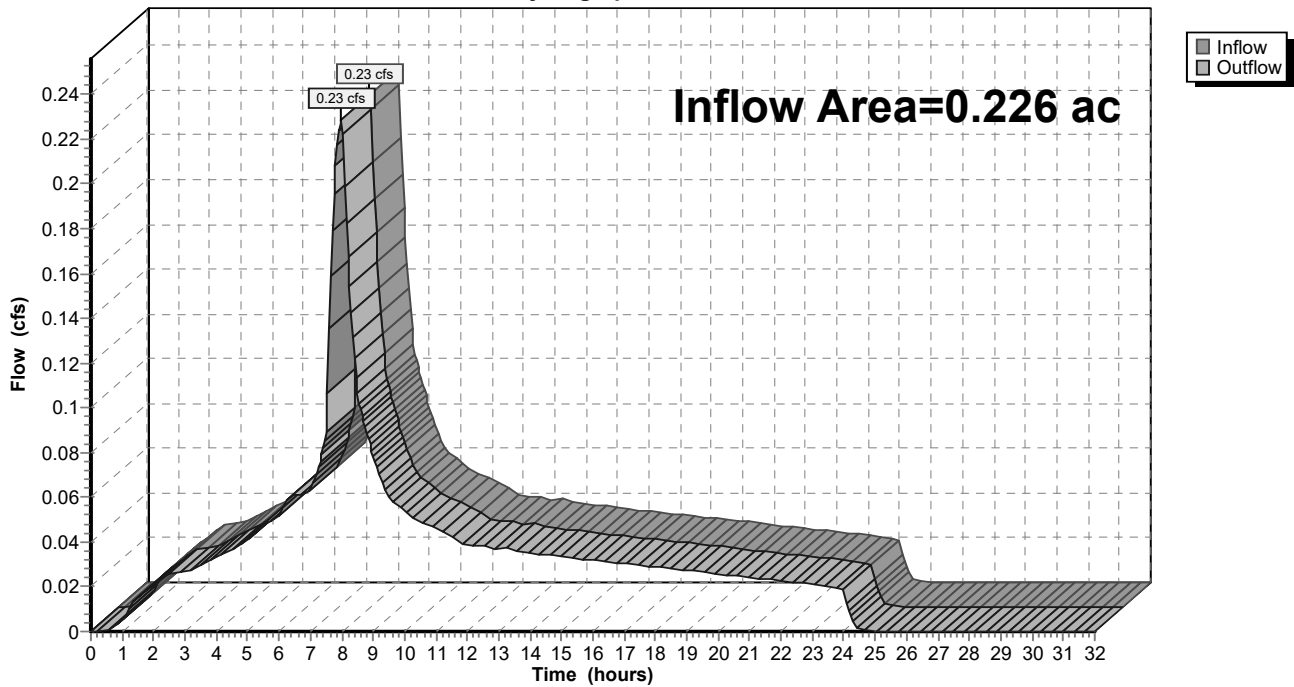
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.226 ac, 100.00% Impervious, Inflow Depth = 4.26" for 100-Year event
 Inflow = 0.23 cfs @ 7.98 hrs, Volume= 0.080 af
 Outflow = 0.23 cfs @ 7.98 hrs, Volume= 0.080 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 138R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 140R: 1

Hydrograph



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Type IA 24-hr 100-Year Rainfall=4.50"

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Summary for Reach 141R: 1

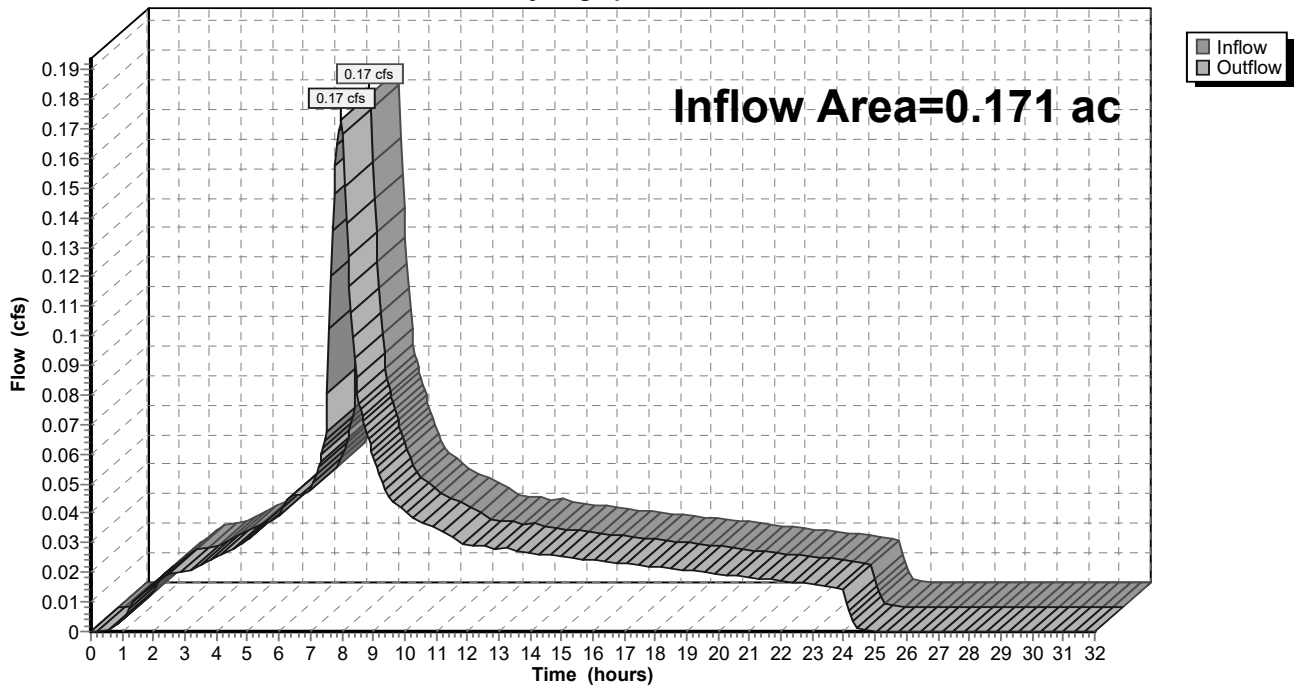
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.171 ac, 100.00% Impervious, Inflow Depth = 4.26" for 100-Year event
 Inflow = 0.17 cfs @ 7.98 hrs, Volume= 0.061 af
 Outflow = 0.17 cfs @ 7.98 hrs, Volume= 0.061 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 139R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 141R: 1

Hydrograph



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Type IA 24-hr 100-Year Rainfall=4.50"

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Summary for Reach 142R: 1

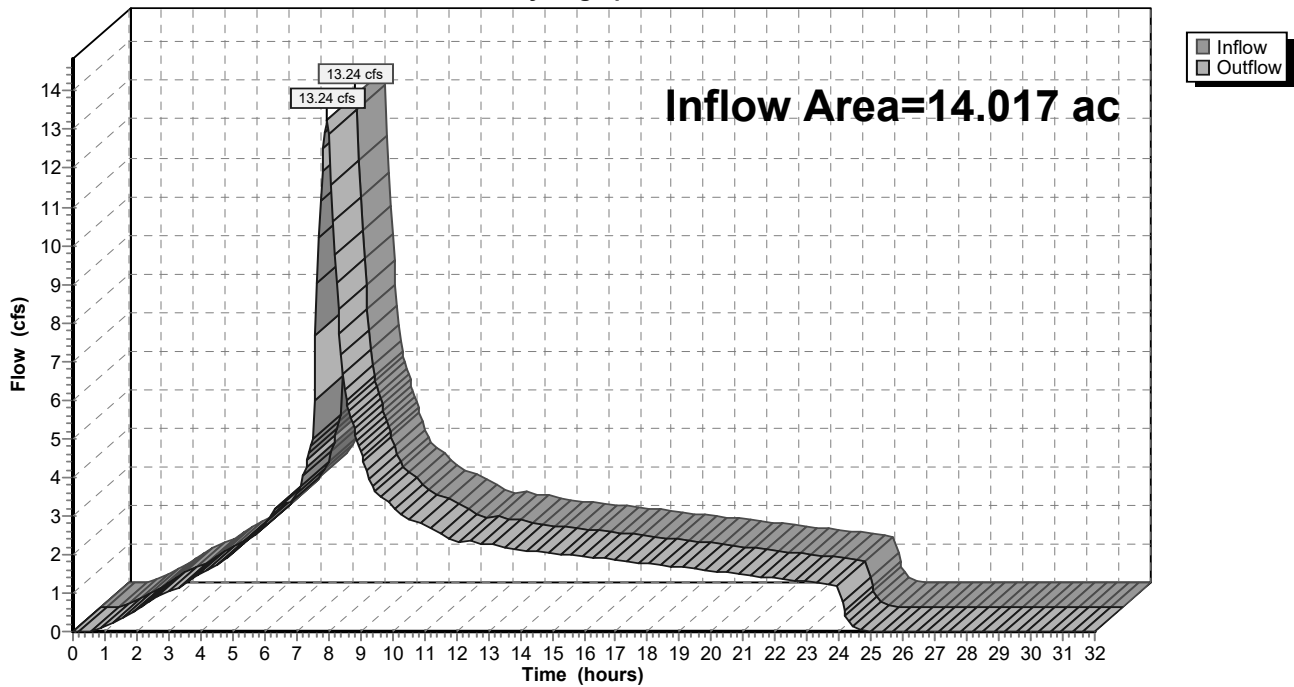
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 14.017 ac, 33.09% Impervious, Inflow Depth = 3.89" for 100-Year event
 Inflow = 13.24 cfs @ 7.98 hrs, Volume= 4.546 af
 Outflow = 13.24 cfs @ 7.98 hrs, Volume= 4.546 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 159R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 142R: 1

Hydrograph



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Type IA 24-hr 100-Year Rainfall=4.50"

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Summary for Reach 143R: 1

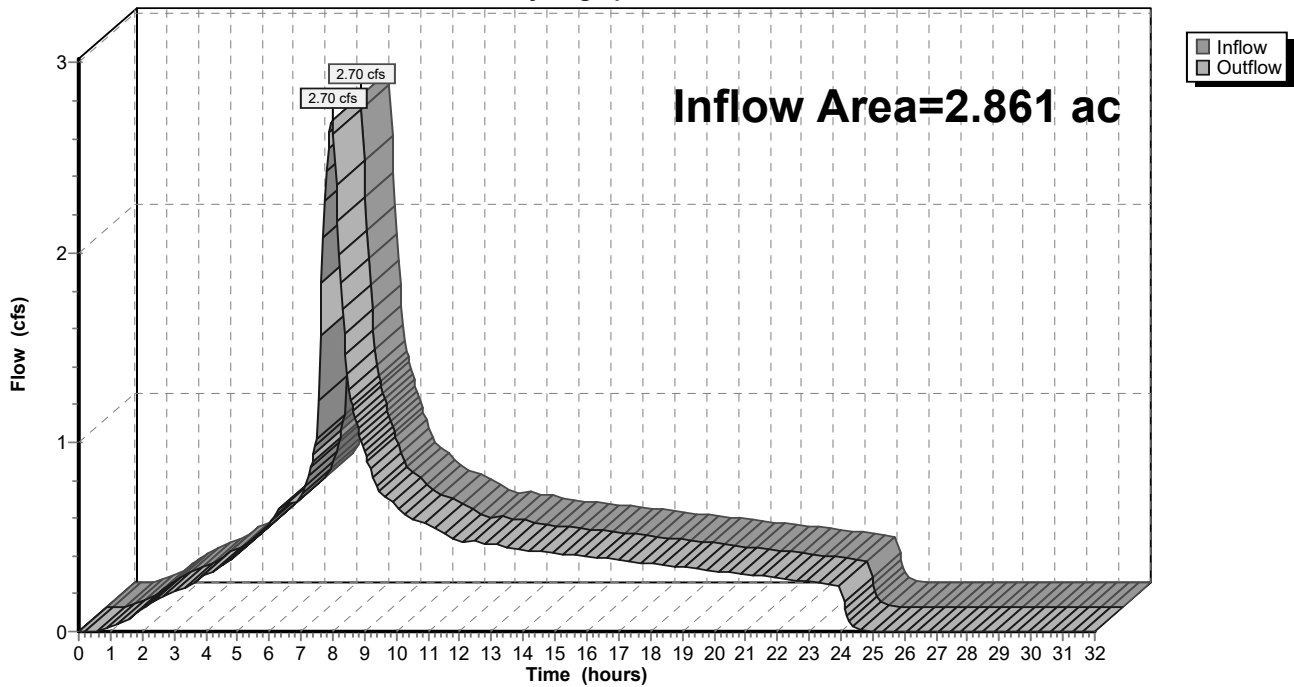
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 2.861 ac, 30.95% Impervious, Inflow Depth = 3.88" for 100-Year event
 Inflow = 2.70 cfs @ 7.98 hrs, Volume= 0.925 af
 Outflow = 2.70 cfs @ 7.98 hrs, Volume= 0.925 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 142R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 143R: 1

Hydrograph



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Type IA 24-hr 100-Year Rainfall=4.50"

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Summary for Reach 144R: 1

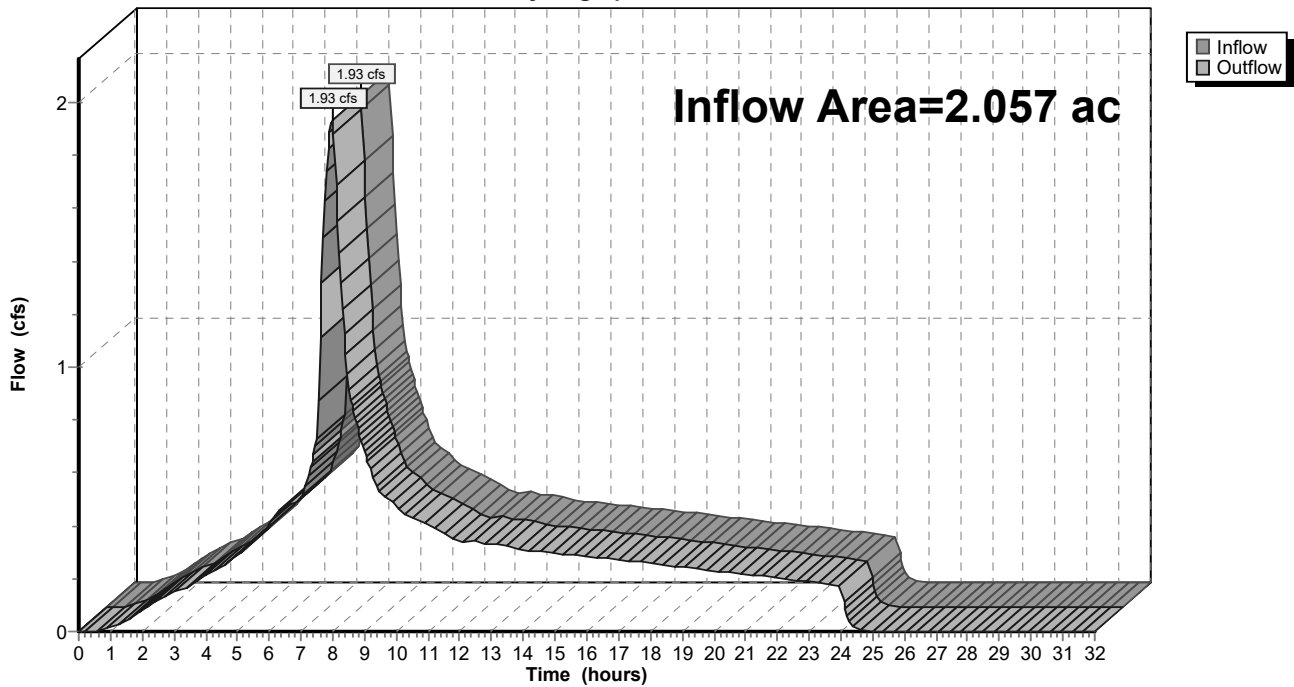
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 2.057 ac, 28.74% Impervious, Inflow Depth = 3.87" for 100-Year event
 Inflow = 1.93 cfs @ 7.98 hrs, Volume= 0.663 af
 Outflow = 1.93 cfs @ 7.98 hrs, Volume= 0.663 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 143R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 144R: 1

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 100-Year Rainfall=4.50"

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Summary for Reach 145R: 1

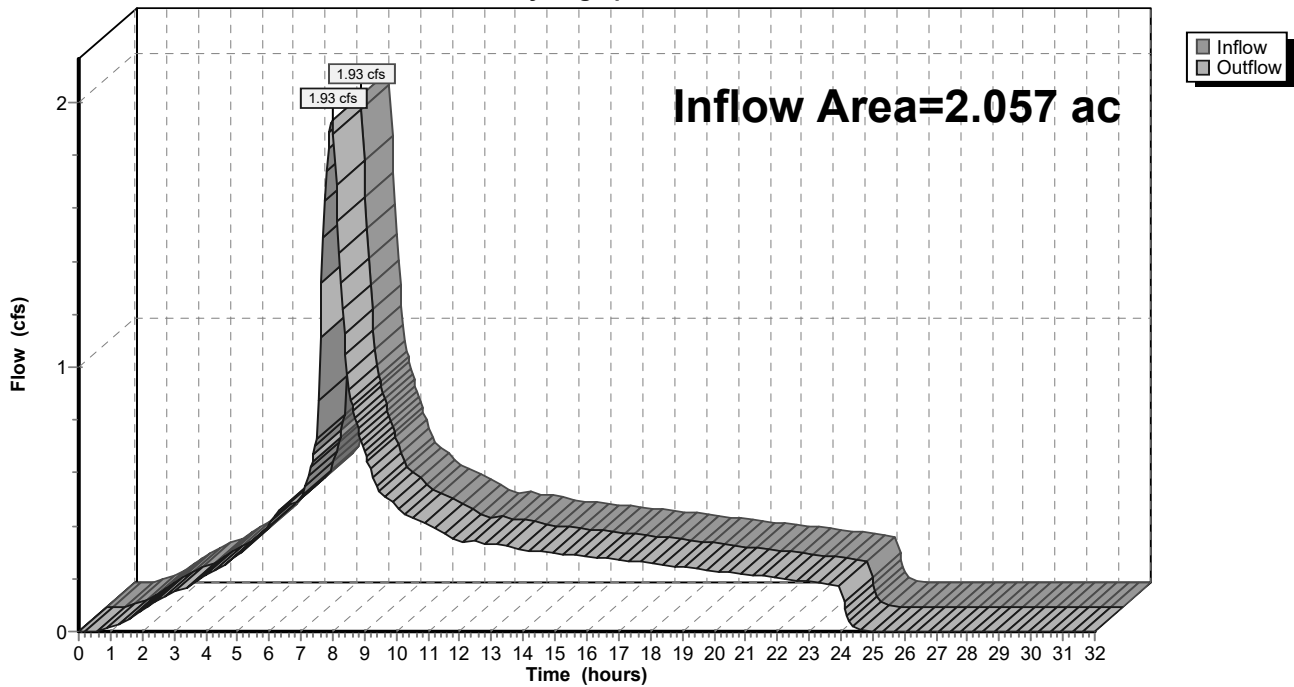
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 2.057 ac, 28.74% Impervious, Inflow Depth = 3.87" for 100-Year event
 Inflow = 1.93 cfs @ 7.98 hrs, Volume= 0.663 af
 Outflow = 1.93 cfs @ 7.98 hrs, Volume= 0.663 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 144R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 145R: 1

Hydrograph



9-6-23 HydroCAD DOM

Type IA 24-hr 100-Year Rainfall=4.50"

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Summary for Reach 146R: 1

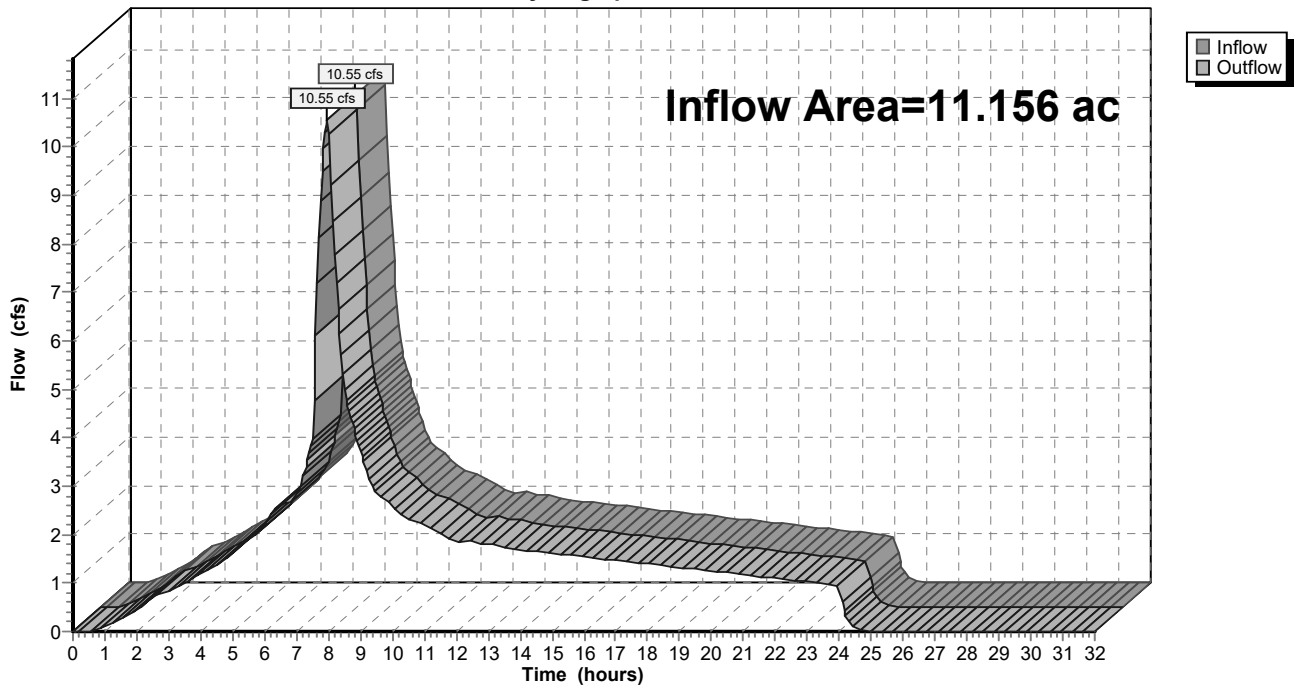
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 11.156 ac, 33.63% Impervious, Inflow Depth = 3.89" for 100-Year event
 Inflow = 10.55 cfs @ 7.98 hrs, Volume= 3.621 af
 Outflow = 10.55 cfs @ 7.98 hrs, Volume= 3.621 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 142R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 146R: 1

Hydrograph



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Type IA 24-hr 100-Year Rainfall=4.50"

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Summary for Reach 147R: 1

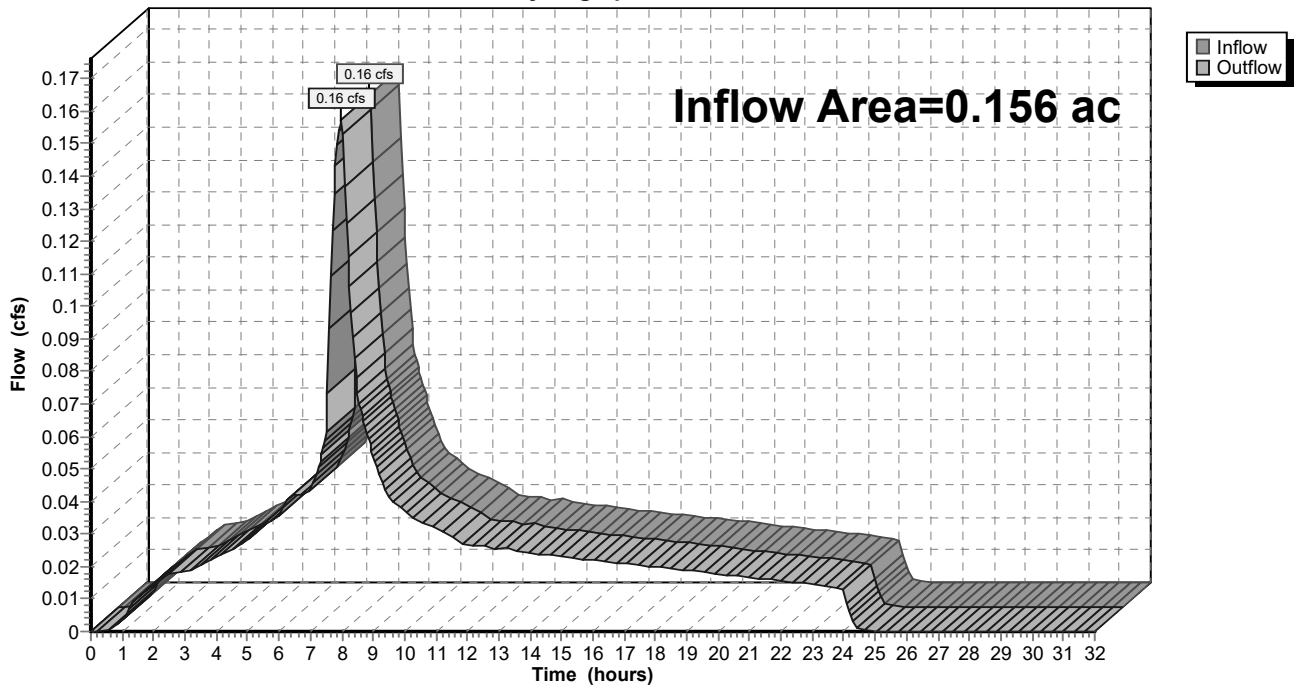
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.156 ac, 100.00% Impervious, Inflow Depth = 4.26" for 100-Year event
 Inflow = 0.16 cfs @ 7.98 hrs, Volume= 0.055 af
 Outflow = 0.16 cfs @ 7.98 hrs, Volume= 0.055 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 146R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 147R: 1

Hydrograph



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Summary for Reach 148R: 1

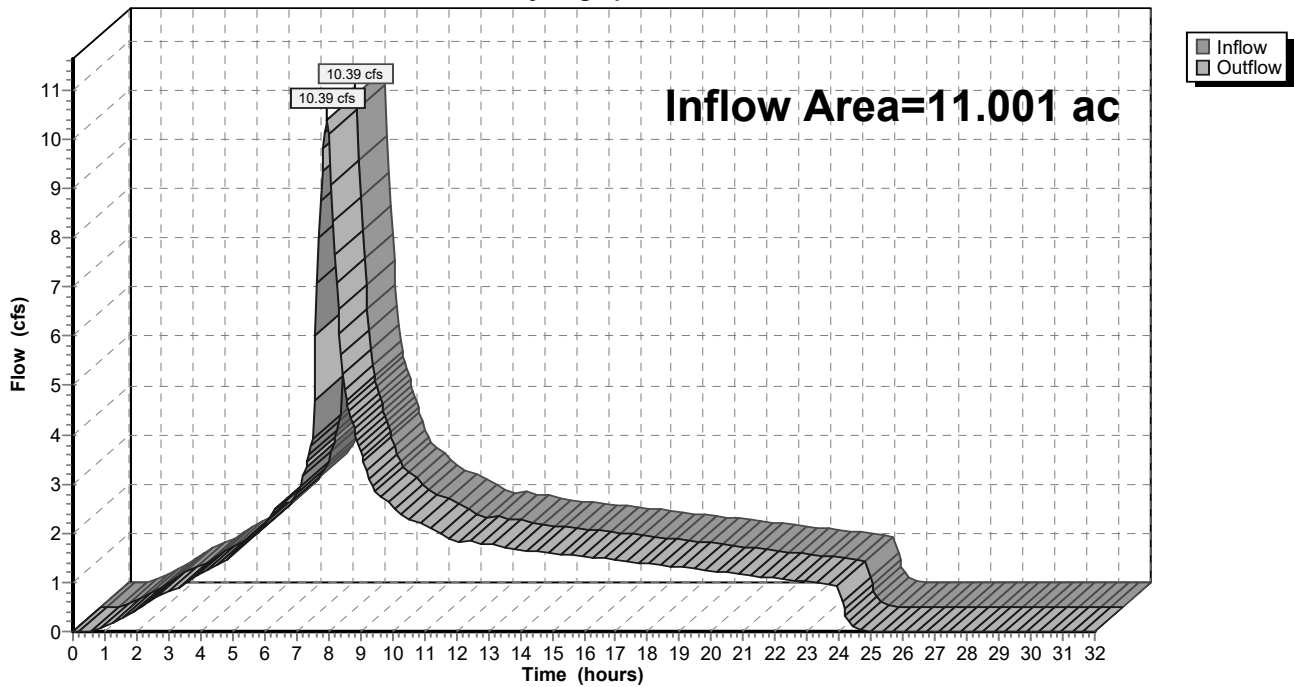
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 11.001 ac, 32.69% Impervious, Inflow Depth = 3.89" for 100-Year event
 Inflow = 10.39 cfs @ 7.98 hrs, Volume= 3.566 af
 Outflow = 10.39 cfs @ 7.98 hrs, Volume= 3.566 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 146R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 148R: 1

Hydrograph



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Type IA 24-hr 100-Year Rainfall=4.50"

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Summary for Reach 149R: 1

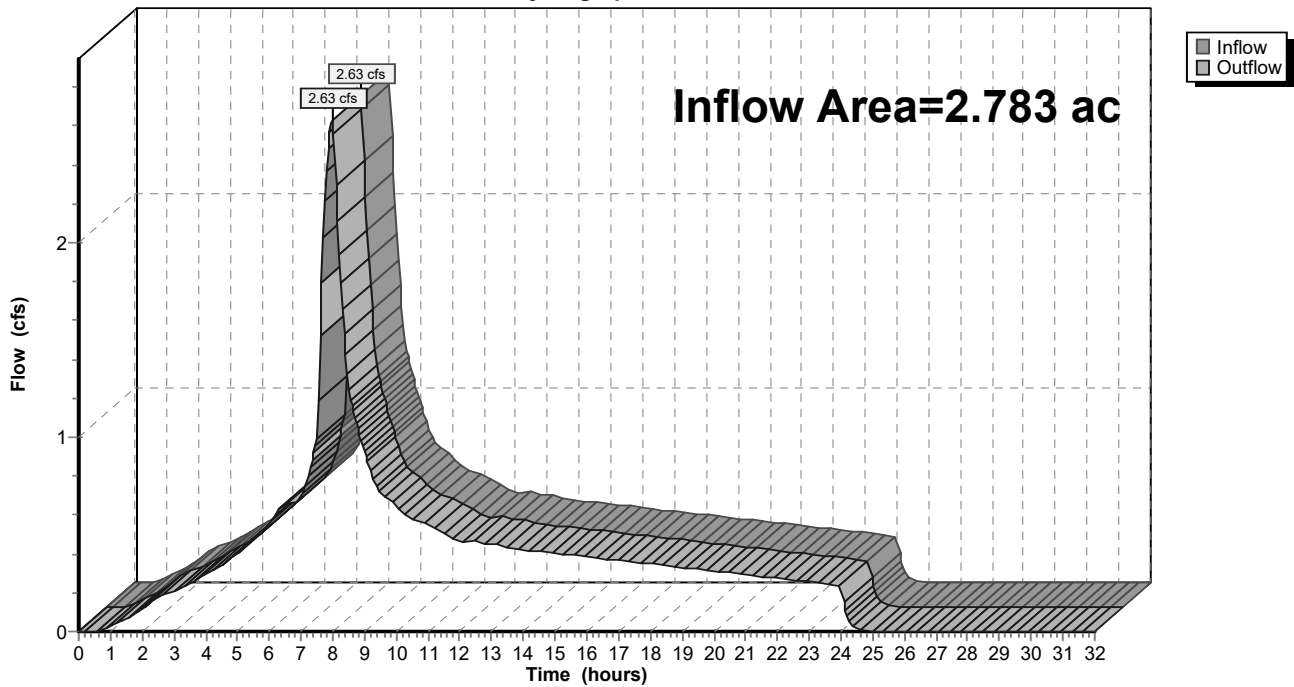
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 2.783 ac, 33.49% Impervious, Inflow Depth = 3.89" for 100-Year event
 Inflow = 2.63 cfs @ 7.98 hrs, Volume= 0.903 af
 Outflow = 2.63 cfs @ 7.98 hrs, Volume= 0.903 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 148R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 149R: 1

Hydrograph



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Summary for Reach 150R: 1

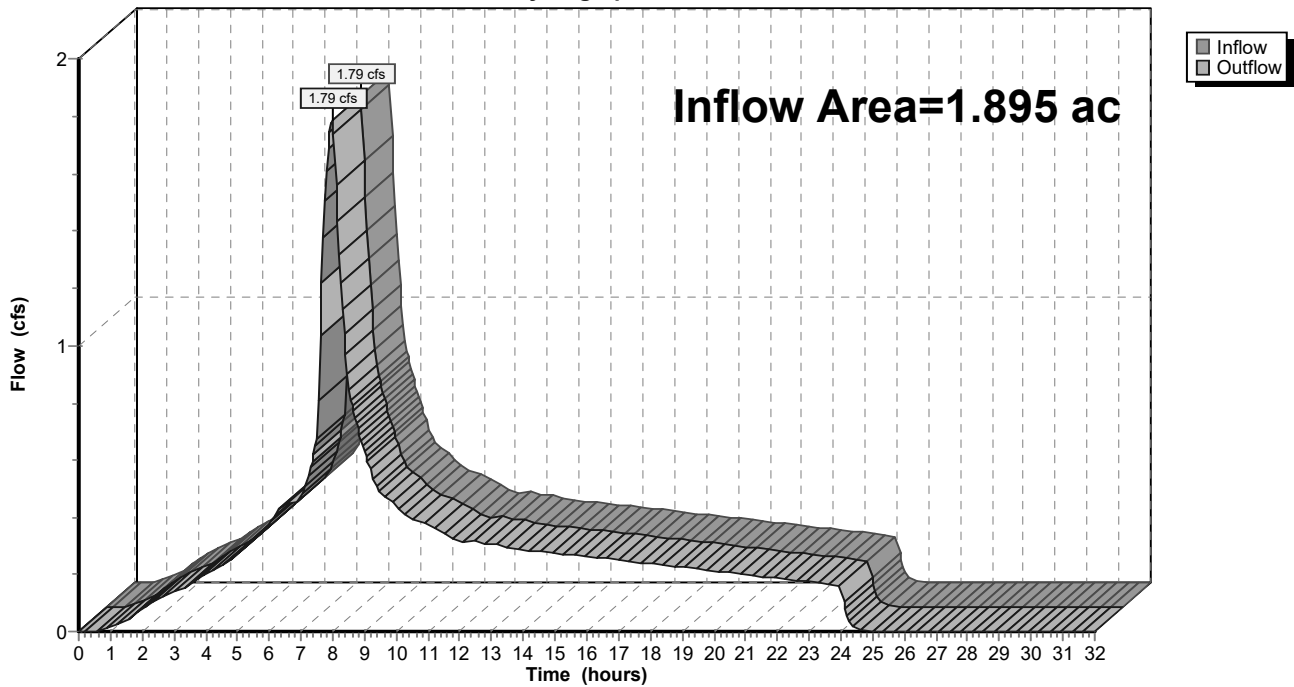
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.895 ac, 31.51% Impervious, Inflow Depth = 3.88" for 100-Year event
 Inflow = 1.79 cfs @ 7.98 hrs, Volume= 0.613 af
 Outflow = 1.79 cfs @ 7.98 hrs, Volume= 0.613 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 149R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 150R: 1

Hydrograph



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Summary for Reach 151R: 1

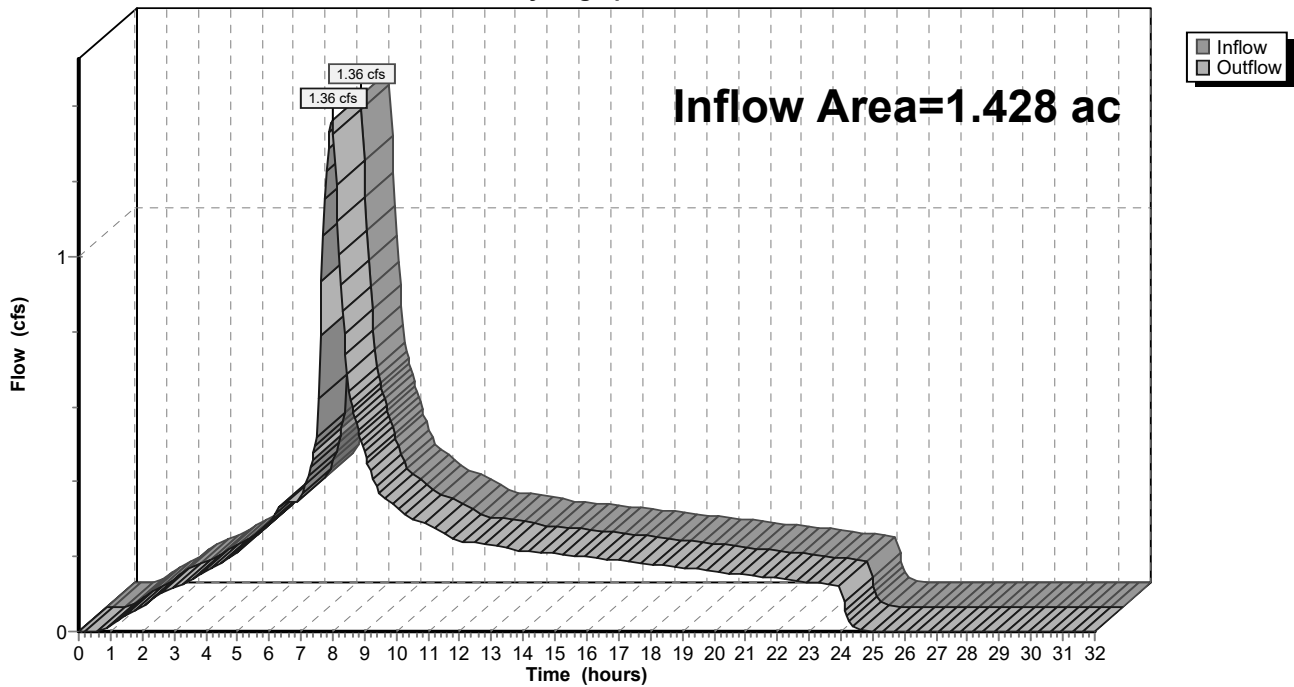
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.428 ac, 41.79% Impervious, Inflow Depth = 3.94" for 100-Year event
 Inflow = 1.36 cfs @ 7.98 hrs, Volume= 0.469 af
 Outflow = 1.36 cfs @ 7.98 hrs, Volume= 0.469 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 150R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 151R: 1

Hydrograph



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Summary for Reach 152R: 1

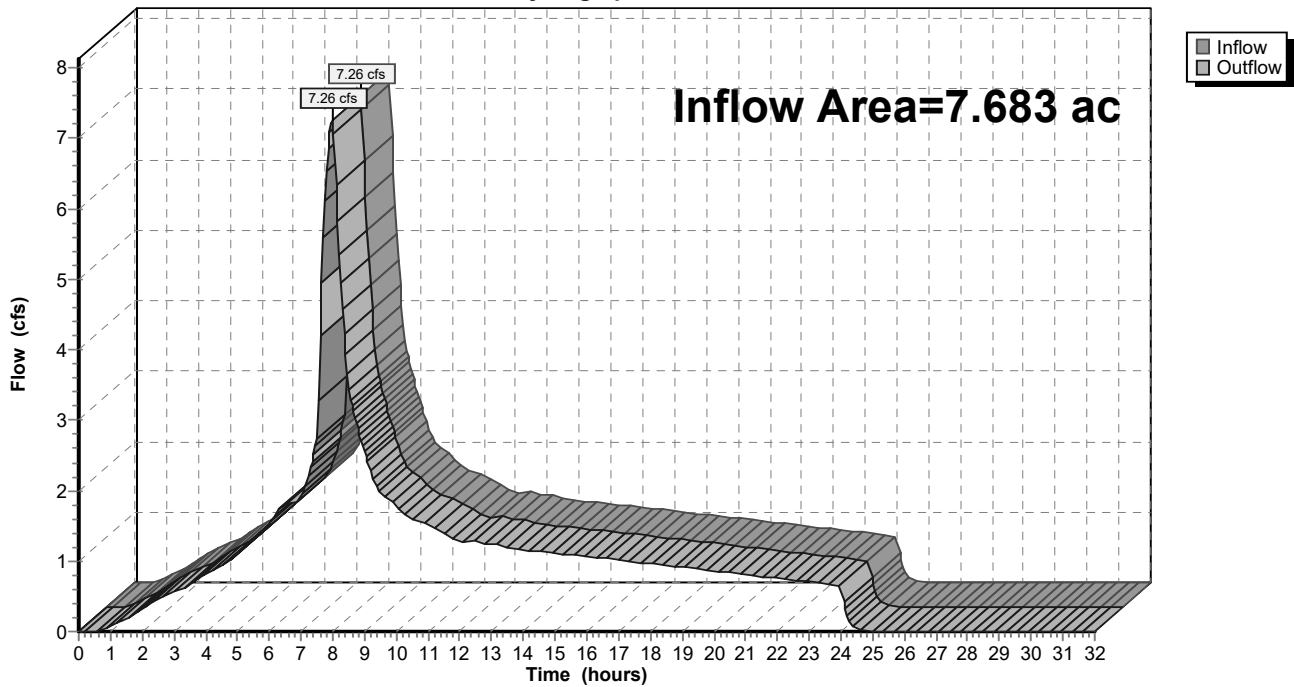
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 7.683 ac, 32.64% Impervious, Inflow Depth = 3.89" for 100-Year event
 Inflow = 7.26 cfs @ 7.98 hrs, Volume= 2.490 af
 Outflow = 7.26 cfs @ 7.98 hrs, Volume= 2.490 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 148R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 152R: 1

Hydrograph



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Summary for Reach 153R: 1

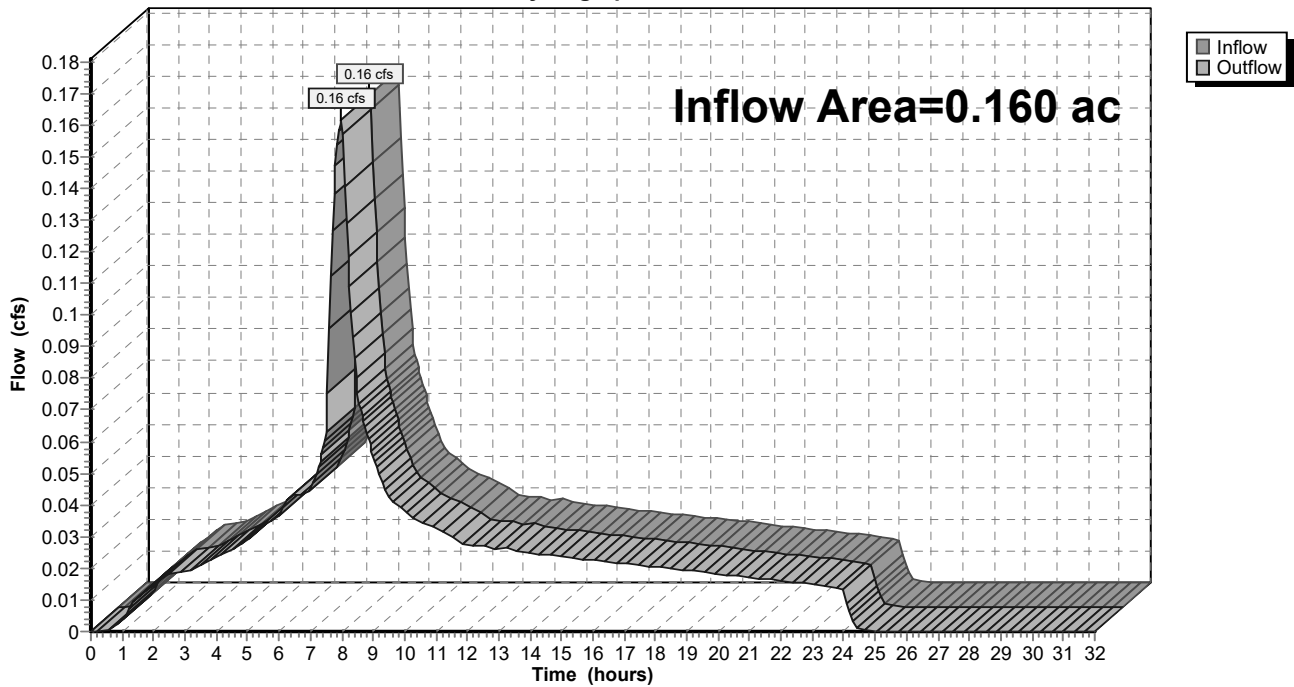
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.160 ac, 100.00% Impervious, Inflow Depth = 4.26" for 100-Year event
 Inflow = 0.16 cfs @ 7.98 hrs, Volume= 0.057 af
 Outflow = 0.16 cfs @ 7.98 hrs, Volume= 0.057 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 152R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 153R: 1

Hydrograph



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Summary for Reach 154R: 1

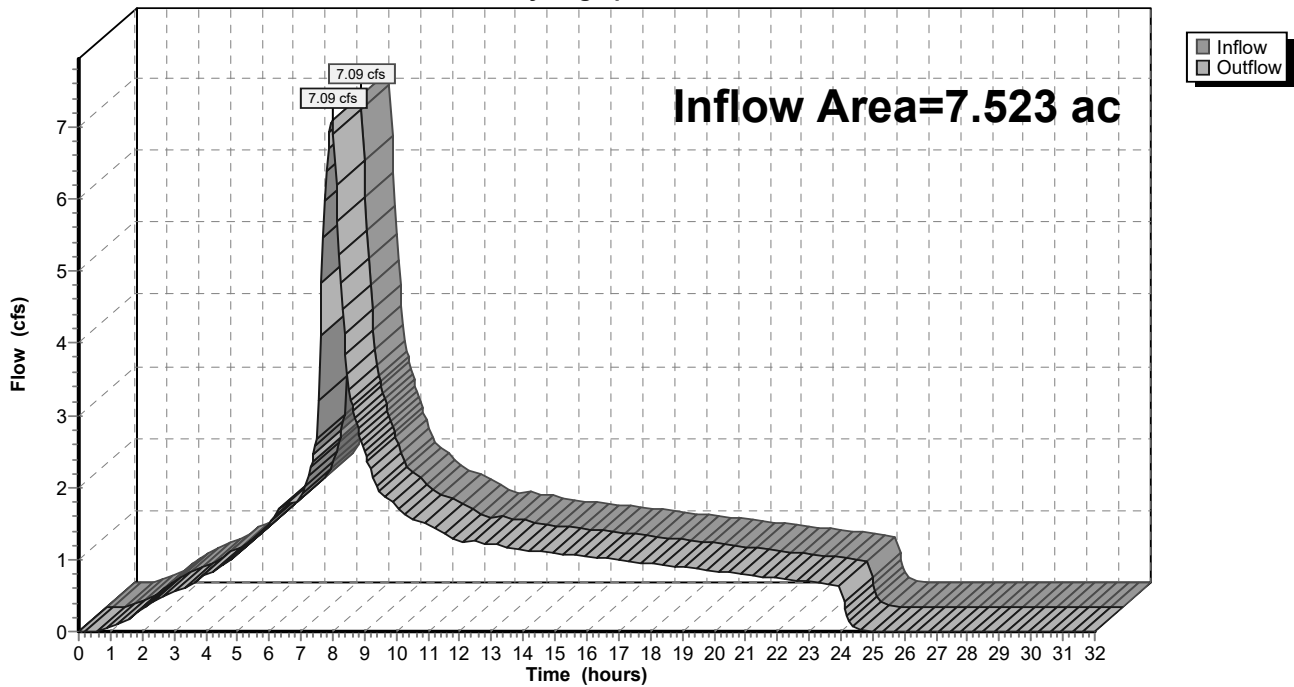
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 7.523 ac, 31.20% Impervious, Inflow Depth = 3.88" for 100-Year event
 Inflow = 7.09 cfs @ 7.98 hrs, Volume= 2.433 af
 Outflow = 7.09 cfs @ 7.98 hrs, Volume= 2.433 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 152R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 154R: 1

Hydrograph



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Summary for Reach 155R: 1

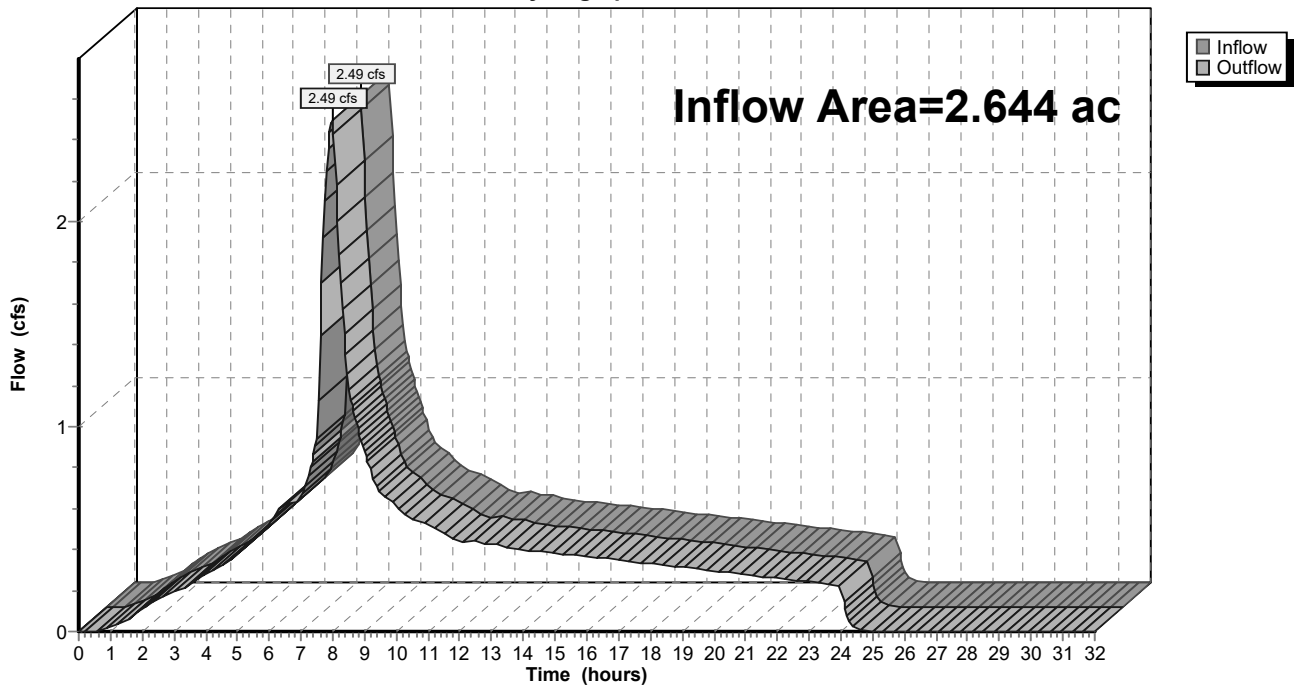
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 2.644 ac, 31.72% Impervious, Inflow Depth = 3.88" for 100-Year event
 Inflow = 2.49 cfs @ 7.98 hrs, Volume= 0.856 af
 Outflow = 2.49 cfs @ 7.98 hrs, Volume= 0.856 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 154R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 155R: 1

Hydrograph



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Summary for Reach 158R: 1

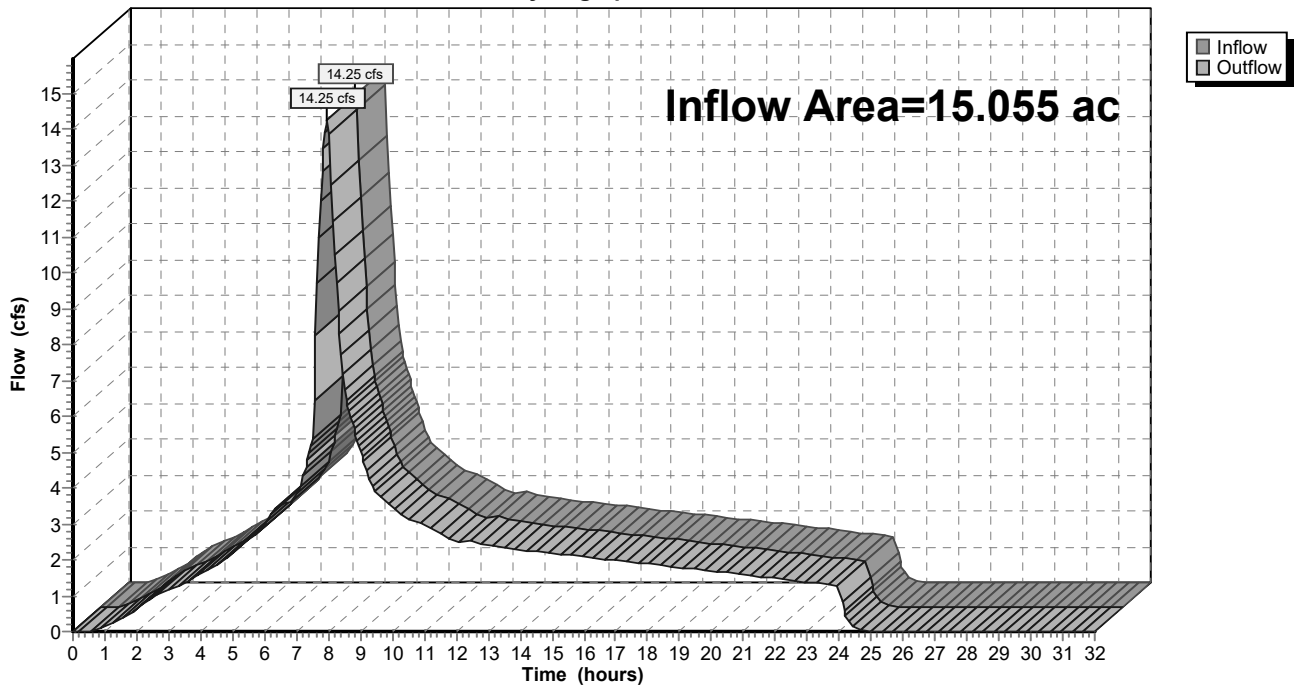
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 15.055 ac, 35.08% Impervious, Inflow Depth = 3.90" for 100-Year event
 Inflow = 14.25 cfs @ 7.98 hrs, Volume= 4.897 af
 Outflow = 14.25 cfs @ 7.98 hrs, Volume= 4.897 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 134R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 158R: 1

Hydrograph



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Summary for Reach 159R: 1

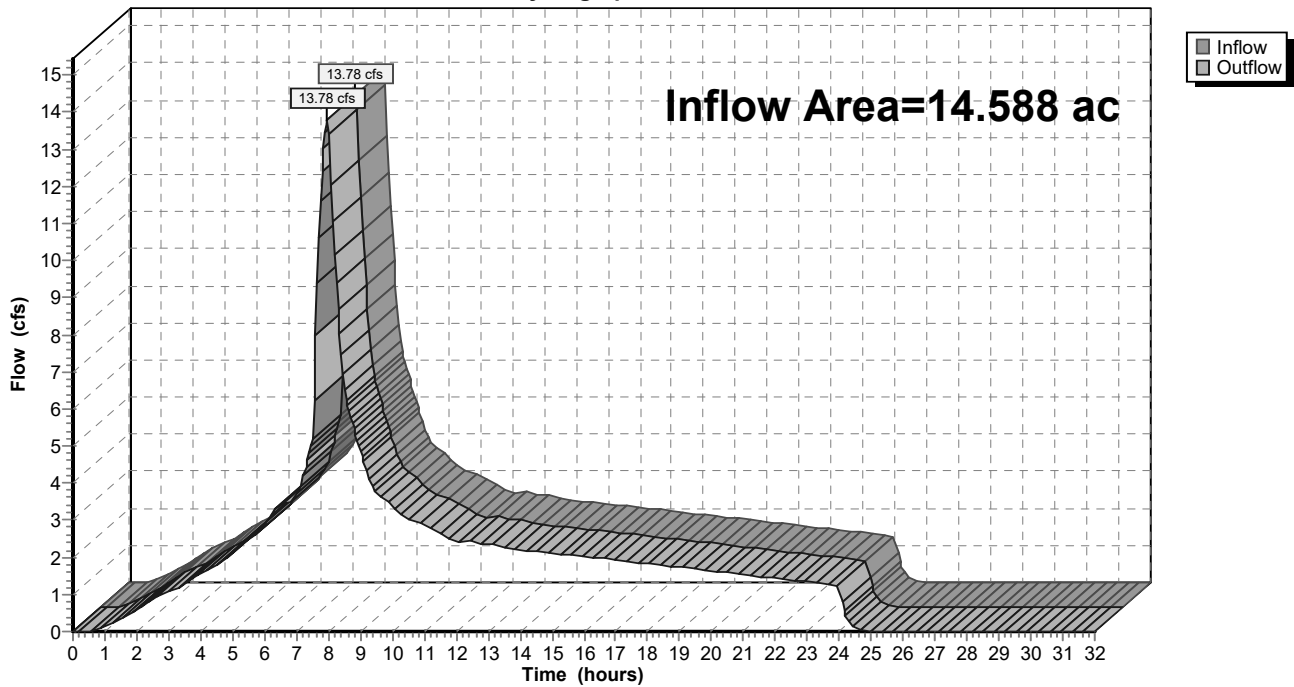
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 14.588 ac, 33.00% Impervious, Inflow Depth = 3.89" for 100-Year event
 Inflow = 13.78 cfs @ 7.98 hrs, Volume= 4.731 af
 Outflow = 13.78 cfs @ 7.98 hrs, Volume= 4.731 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 139R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 159R: 1

Hydrograph



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Summary for Reach 160R: 1

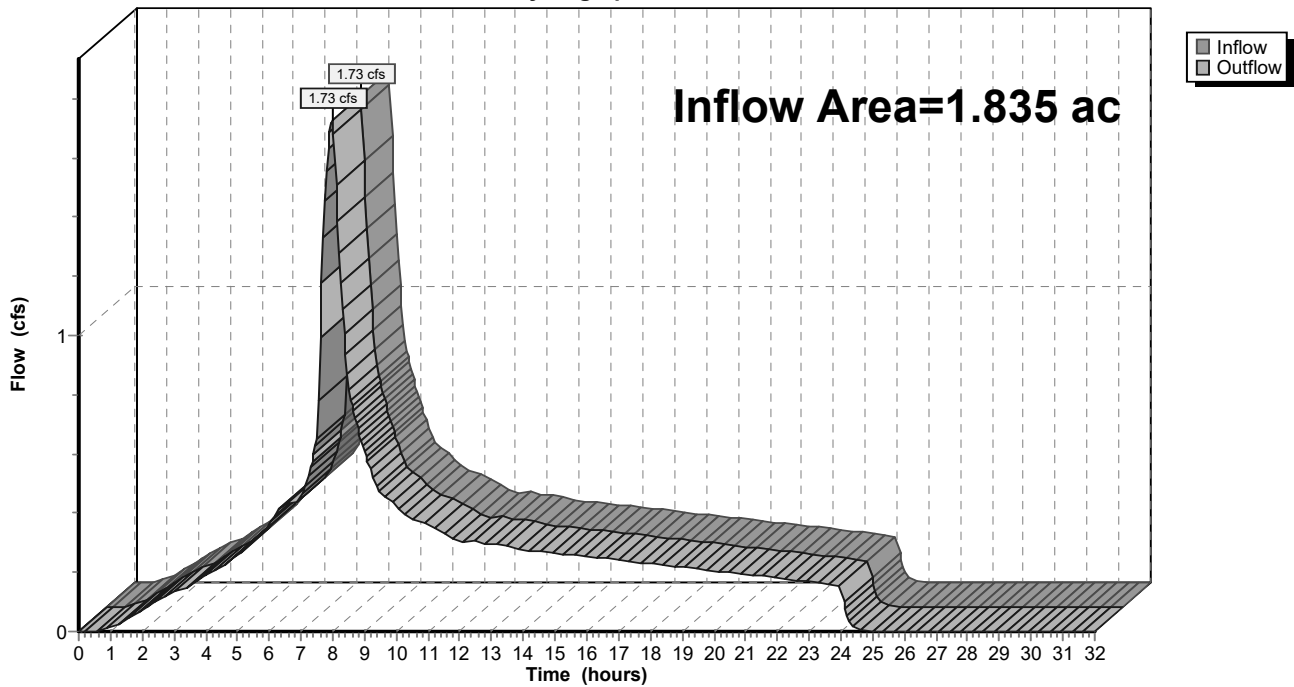
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.835 ac, 29.73% Impervious, Inflow Depth = 3.87" for 100-Year event
 Inflow = 1.73 cfs @ 7.98 hrs, Volume= 0.592 af
 Outflow = 1.73 cfs @ 7.98 hrs, Volume= 0.592 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 155R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 160R: 1

Hydrograph



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Summary for Reach 162R: 1

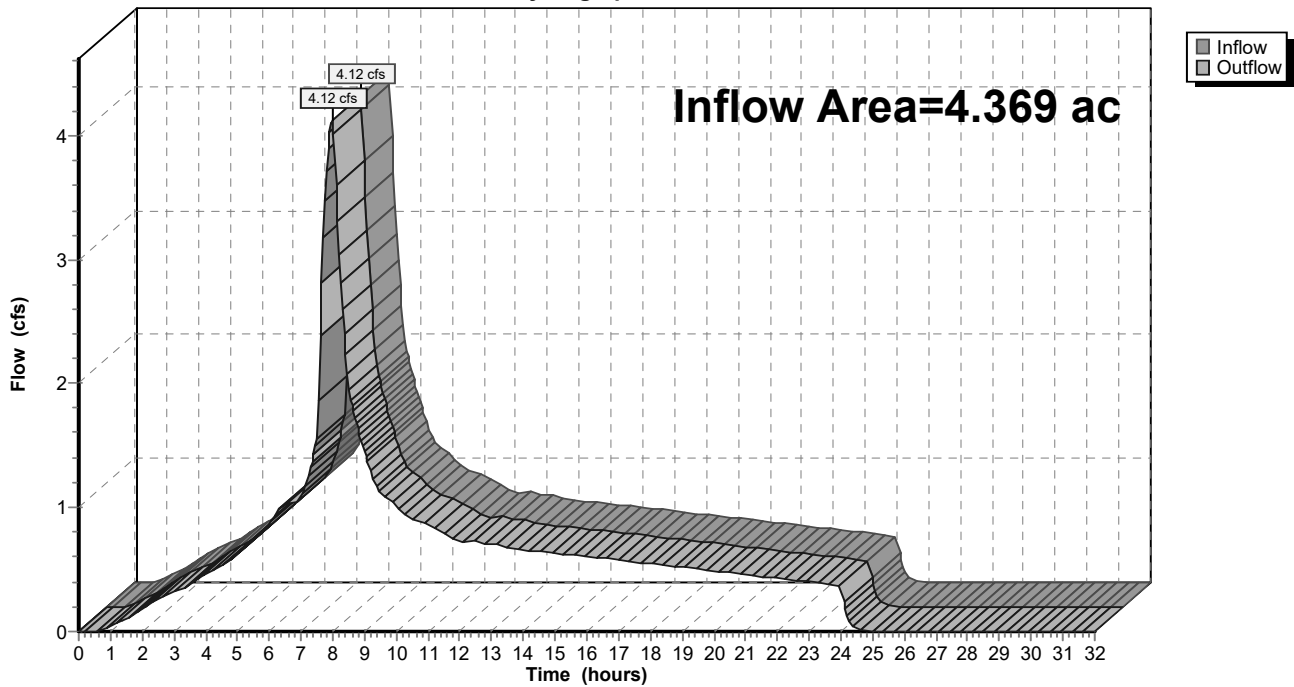
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 4.369 ac, 31.81% Impervious, Inflow Depth = 3.88" for 100-Year event
 Inflow = 4.12 cfs @ 7.98 hrs, Volume= 1.414 af
 Outflow = 4.12 cfs @ 7.98 hrs, Volume= 1.414 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 154R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 162R: 1

Hydrograph



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Summary for Reach 163R: 1

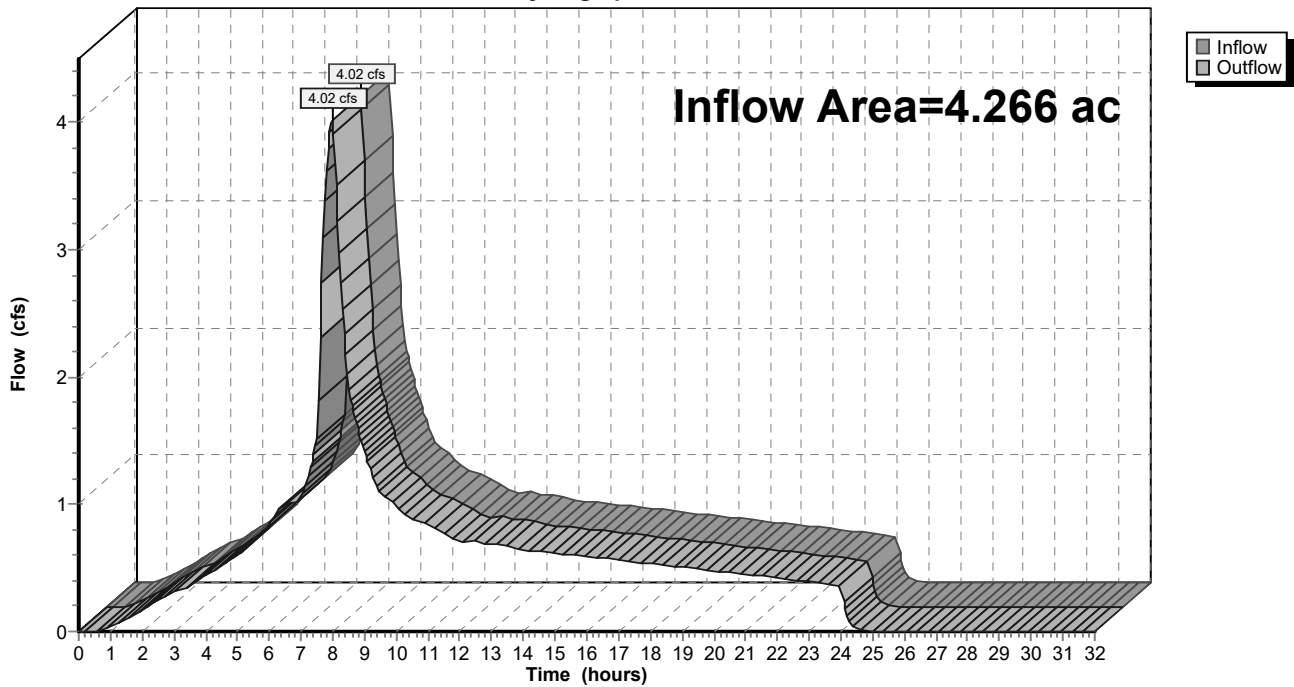
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 4.266 ac, 30.15% Impervious, Inflow Depth = 3.88" for 100-Year event
 Inflow = 4.02 cfs @ 7.98 hrs, Volume= 1.378 af
 Outflow = 4.02 cfs @ 7.98 hrs, Volume= 1.378 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 162R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 163R: 1

Hydrograph



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Summary for Reach 165R: 1

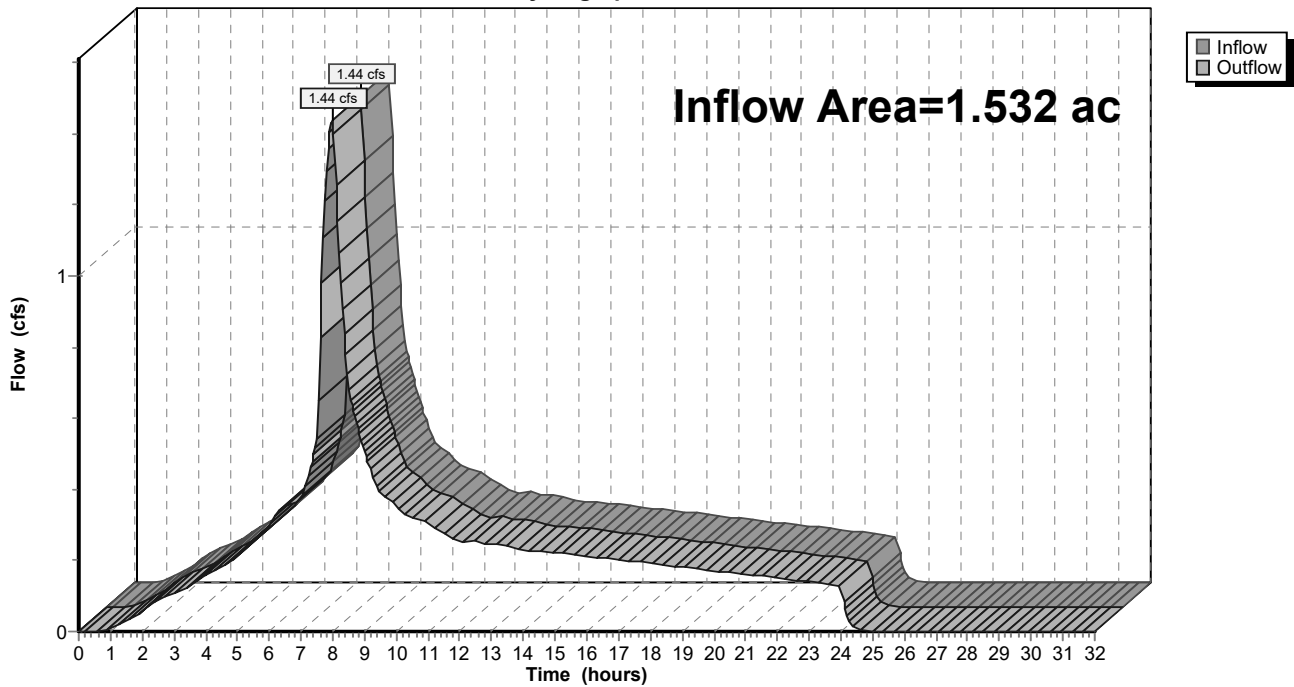
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.532 ac, 27.64% Impervious, Inflow Depth = 3.86" for 100-Year event
 Inflow = 1.44 cfs @ 7.98 hrs, Volume= 0.493 af
 Outflow = 1.44 cfs @ 7.98 hrs, Volume= 0.493 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 163R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 165R: 1

Hydrograph



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Summary for Reach 166R: Basin Future

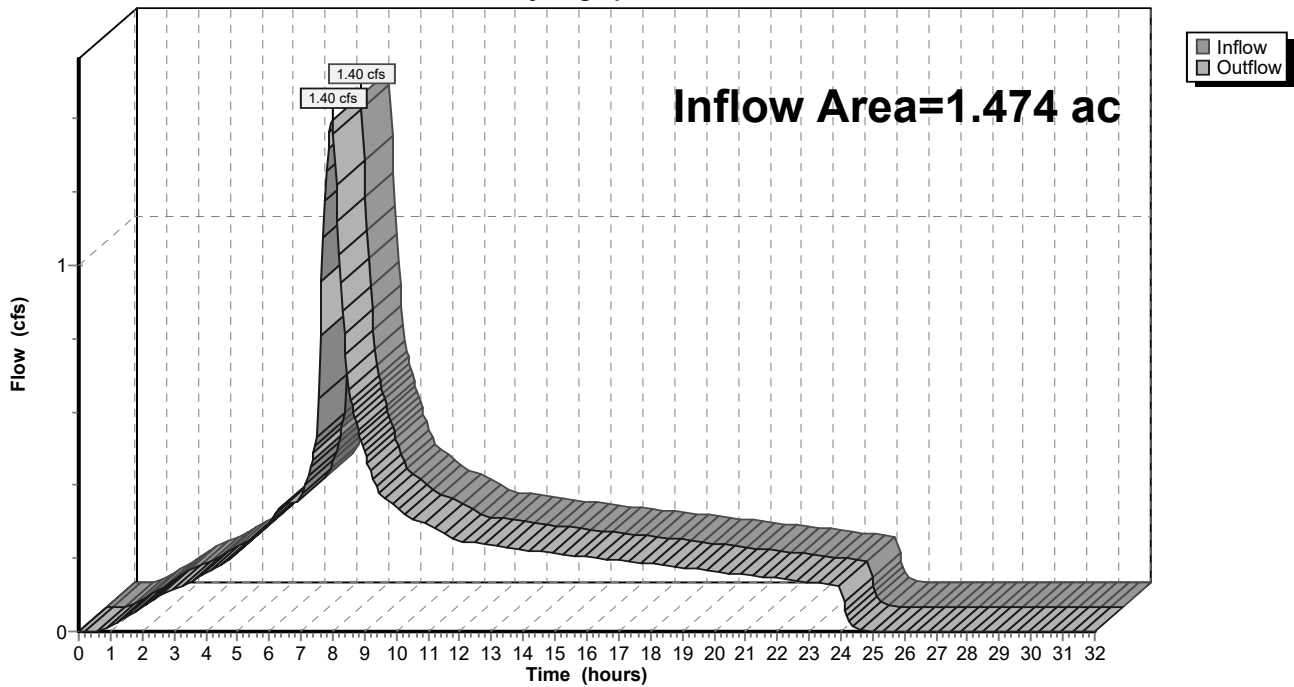
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.474 ac, 37.85% Impervious, Inflow Depth = 3.92" for 100-Year event
 Inflow = 1.40 cfs @ 7.98 hrs, Volume= 0.481 af
 Outflow = 1.40 cfs @ 7.98 hrs, Volume= 0.481 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 163R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Reach 166R: Basin Future

Hydrograph



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Summary for Pond 54P: Stormwater Swale 2

Inflow Area = 0.082 ac, 100.00% Impervious, Inflow Depth = 4.26" for 100-Year event
 Inflow = 0.08 cfs @ 7.98 hrs, Volume= 0.029 af
 Outflow = 0.08 cfs @ 7.98 hrs, Volume= 0.029 af, Atten= 0%, Lag= 0.4 min
 Primary = 0.08 cfs @ 7.98 hrs, Volume= 0.029 af
 Routed to Reach 58R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Peak Elev= 222.44' @ 7.98 hrs Surf.Area= 185 sf Storage= 33 cf
 Flood Elev= 223.30' Surf.Area= 192 sf Storage= 88 cf

Plug-Flow detention time= 29.1 min calculated for 0.029 af (100% of inflow)
 Center-of-Mass det. time= 29.4 min (692.3 - 662.9)

Volume	Invert	Avail.Storage	Storage Description
#1	222.30'	63 cf	Open Storage (Irregular) Listed below (Recalc)
#2	220.80'	10 cf	Imported Soil (Irregular) Listed below (Recalc) 101 cf Overall x 10.0% Voids
#3	220.05'	15 cf	Rock Chamber (Irregular) Listed below (Recalc) 44 cf Overall x 35.0% Voids
		88 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
222.30	59	33.0	0	0	59
223.30	67	34.0	63	63	93

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
220.80	67	34.0	0	0	67
222.30	67	34.0	101	101	118

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
220.05	58	33.0	0	0	58
220.80	58	33.0	44	44	83

Device	Routing	Invert	Outlet Devices
#1	Primary	220.05'	2.000 in/hr Perf Pipes over Surface area
#2	Primary	223.05'	4.0" Horiz. 4" Overflow Pipe C= 0.600 Limited to weir flow at low heads
#3	Primary	222.30'	10.0" Vert. 10" Outflow Pipe C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.08 cfs @ 7.98 hrs HW=222.44' TW=0.00' (Dynamic Tailwater)

- 1=Perf Pipes (Exfiltration Controls 0.01 cfs)
- 2=4" Overflow Pipe (Controls 0.00 cfs)
- 3=10" Outflow Pipe (Orifice Controls 0.07 cfs @ 1.26 fps)

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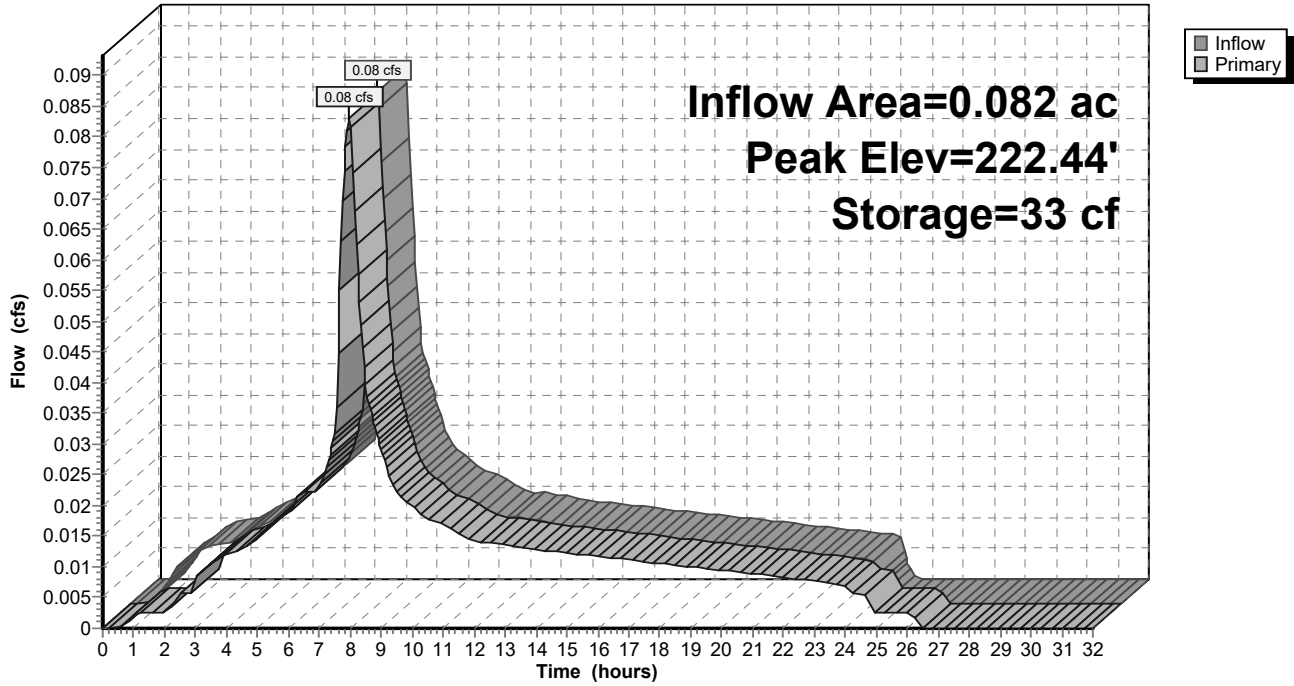
Type IA 24-hr 100-Year Rainfall=4.50"

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Pond 54P: Stormwater Swale 2

Hydrograph



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Summary for Pond 60P: Stormwater Swale 1

Inflow Area = 0.085 ac, 100.00% Impervious, Inflow Depth = 4.26" for 100-Year event
 Inflow = 0.09 cfs @ 7.98 hrs, Volume= 0.030 af
 Outflow = 0.09 cfs @ 7.98 hrs, Volume= 0.030 af, Atten= 0%, Lag= 0.4 min
 Primary = 0.09 cfs @ 7.98 hrs, Volume= 0.030 af
 Routed to Reach 58R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Peak Elev= 222.09' @ 7.98 hrs Surf.Area= 195 sf Storage= 35 cf
 Flood Elev= 222.95' Surf.Area= 204 sf Storage= 93 cf

Plug-Flow detention time= 29.5 min calculated for 0.030 af (100% of inflow)
 Center-of-Mass det. time= 29.6 min (692.6 - 662.9)

Volume	Invert	Avail.Storage	Storage Description
#1	221.95'	67 cf	Open Storage (Irregular) Listed below (Recalc)
#2	220.45'	11 cf	Imported Soil (Irregular) Listed below (Recalc) 108 cf Overall x 10.0% Voids
#3	219.70'	16 cf	Rock Chamber (Irregular) Listed below (Recalc) 45 cf Overall x 35.0% Voids
		93 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
221.95	62	34.0	0	0	62
222.95	72	36.0	67	67	99

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
220.45	72	36.0	0	0	72
221.95	72	36.0	108	108	126

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
219.70	60	34.0	0	0	60
220.45	60	34.0	45	45	86

Device	Routing	Invert	Outlet Devices
#1	Primary	219.70'	2.000 in/hr Perf Pipes over Surface area
#2	Primary	222.70'	4.0" Horiz. 4" Overflow Pipe C= 0.600 Limited to weir flow at low heads
#3	Primary	221.95'	10.0" Vert. 10" Outflow Pipe C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.09 cfs @ 7.98 hrs HW=222.09' TW=0.00' (Dynamic Tailwater)

- 1=Perf Pipes (Exfiltration Controls 0.01 cfs)
- 2=4" Overflow Pipe (Controls 0.00 cfs)
- 3=10" Outflow Pipe (Orifice Controls 0.08 cfs @ 1.27 fps)

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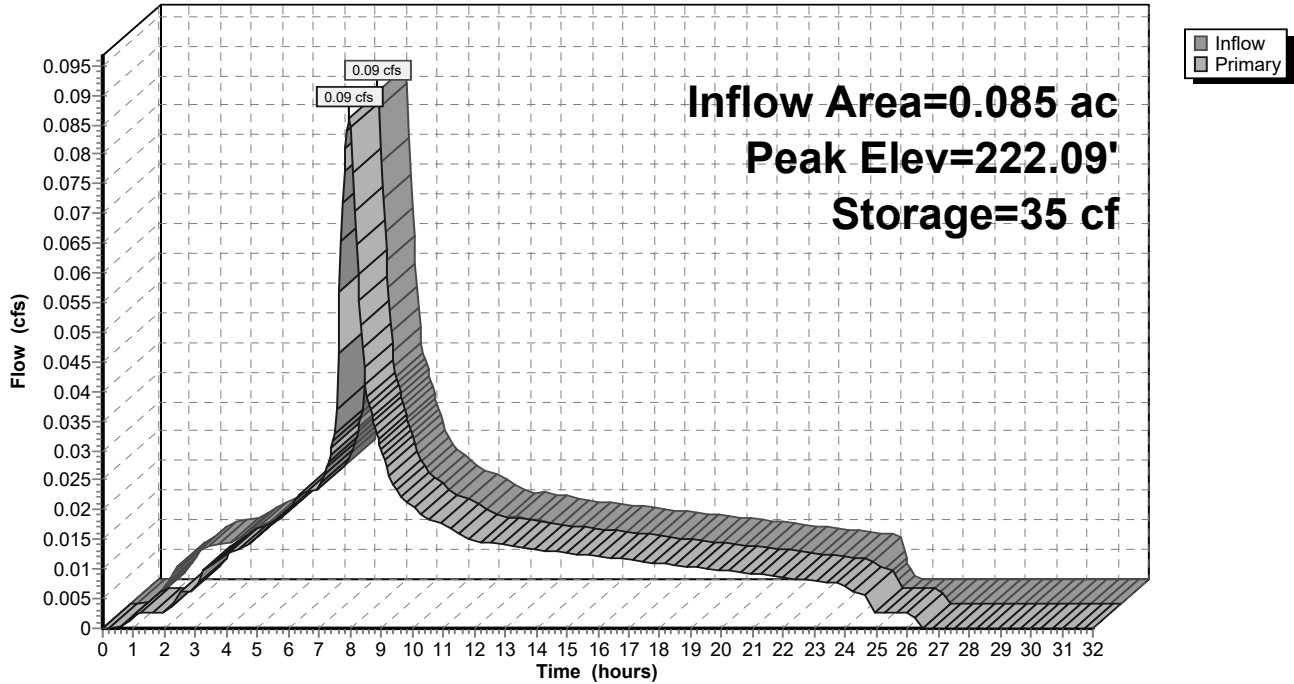
Type IA 24-hr 100-Year Rainfall=4.50"

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Pond 60P: Stormwater Swale 1

Hydrograph



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Summary for Pond 63P: Detention Pond

Inflow Area = 23.038 ac, 36.38% Impervious, Inflow Depth = 3.91" for 100-Year event
 Inflow = 21.86 cfs @ 7.98 hrs, Volume= 7.507 af
 Outflow = 12.30 cfs @ 8.37 hrs, Volume= 7.506 af, Atten= 44%, Lag= 23.6 min
 Primary = 12.30 cfs @ 8.37 hrs, Volume= 7.506 af
 Routed to Reach 85R : 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs
 Peak Elev= 224.51' @ 8.37 hrs Surf.Area= 47,350 sf Storage= 60,024 cf
 Flood Elev= 225.50' Surf.Area= 48,838 sf Storage= 80,897 cf

Plug-Flow detention time= 107.5 min calculated for 7.494 af (100% of inflow)
 Center-of-Mass det. time= 107.6 min (797.7 - 690.1)

Volume	Invert	Avail.Storage	Storage Description
#1	221.50'	75,859 cf	Open Storage (Irregular) Listed below (Recalc)
#2	220.00'	3,288 cf	Growing Medium (Irregular) Listed below (Recalc) 32,879 cf Overall x 10.0% Voids
#3	219.00'	1,750 cf	Rock Chamber (Prismatic) Listed below (Recalc) 5,000 cf Overall x 35.0% Voids
		80,897 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
221.50	16,108	696.8	0	0	16,108
222.50	17,511	717.0	16,805	16,805	18,488
223.50	18,943	738.5	18,222	35,027	21,082
224.50	20,410	754.7	19,672	54,699	23,147
225.50	21,919	770.9	21,160	75,859	25,257

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
220.00	21,919	770.9	0	0	21,919
221.50	21,919	770.9	32,879	32,879	23,075

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
219.00	5,000	0	0
220.00	5,000	5,000	5,000

Device	Routing	Invert	Outlet Devices
#1	Primary	219.00'	24.0" Round 24" Pipe L= 100.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 219.00' / 218.80' S= 0.0020 '/' Cc= 0.900 n= 0.010, Flow Area= 3.14 sf
#2	Device 1	219.00'	2.000 in/hr 4" Perf Pipes over Surface area
#3	Device 1	221.85'	6.0" Vert. 2x6" Orifice X 2.00 C= 0.600 Limited to weir flow at low heads
#4	Device 1	222.78'	6.0" Vert. 6" Orifice C= 0.600 Limited to weir flow at low heads
#5	Device 1	222.95'	6.0" Vert. 6" Orifice C= 0.600 Limited to weir flow at low heads

9-6-23 HydroCAD DOM

Type IA 24-hr 100-Year Rainfall=4.50"

Prepared by A&O Engineering LLC

Printed 9/6/2023

HydroCAD® 10.20-2g s/n 04993 © 2022 HydroCAD Software Solutions LLC

Page 821

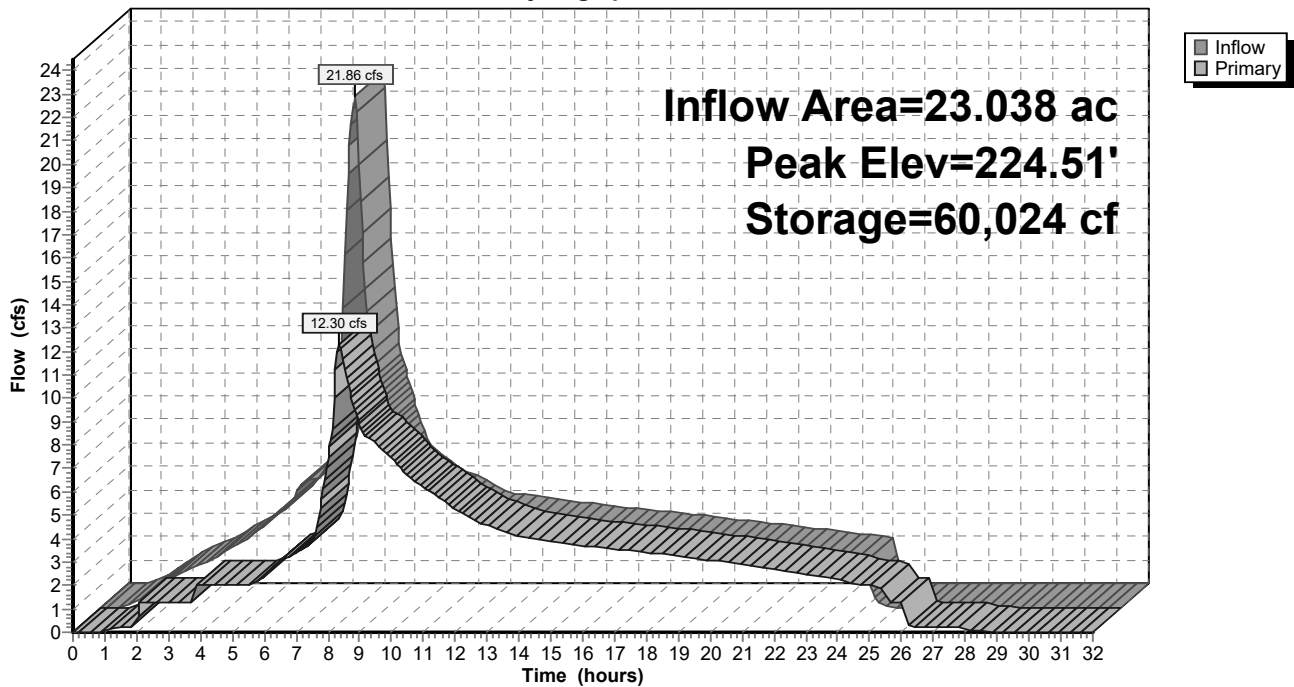
#6	Device 1	223.25'	4.0" Vert. 4" Orifice	C= 0.600	Limited to weir flow at low heads
#7	Device 1	223.55'	4.0" Vert. 4" Orifice	C= 0.600	Limited to weir flow at low heads
#8	Device 1	223.77'	4.0" Vert. 2x4" Orifice X 2.00	C= 0.600	Limited to weir flow at low heads
#9	Device 1	224.35'	48.0" x 48.0" Horiz. 48" Overflow	C= 0.600	Limited to weir flow at low heads

Primary OutFlow Max=12.26 cfs @ 8.37 hrs HW=224.51' TW=0.00' (Dynamic Tailwater)

- 1=24" Pipe (Passes 12.26 cfs of 28.35 cfs potential flow)
- 2=4" Perf Pipes (Exfiltration Controls 2.19 cfs)
- 3=2x6" Orifice (Orifice Controls 2.94 cfs @ 7.48 fps)
- 4=6" Orifice (Orifice Controls 1.15 cfs @ 5.86 fps)
- 5=6" Orifice (Orifice Controls 1.08 cfs @ 5.52 fps)
- 6=4" Orifice (Orifice Controls 0.44 cfs @ 5.04 fps)
- 7=4" Orifice (Orifice Controls 0.37 cfs @ 4.30 fps)
- 8=2x4" Orifice (Orifice Controls 0.64 cfs @ 3.65 fps)
- 9=48" Overflow (Weir Controls 3.44 cfs @ 1.32 fps)

Pond 63P: Detention Pond

Hydrograph



Geotechnical Report

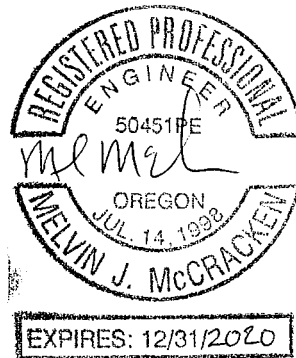
Meadowlark Subdivision
Lochner Road
Albany, Oregon

October 29, 2020

Prepared for:

A & O Engineering, LLC

Prepared by:



FEI
TESTING & INSPECTION, INC.
Geotechnical & Construction Services



Scott Morris, PE
A & O Engineering, LLC
380 Q Street, #200
Springfield, Oregon 97477

October 29, 2020

**Re: Meadowlark Subdivision
Lochner Road
Albany, Oregon**

Subject: Geotechnical Report
Project No. 2205031

Dear Mr. Morris:

FEI Testing and Inspection, Inc. has completed the requested geotechnical services for the proposed Meadowlark Subdivision on Lochner Road in Albany, Oregon. This report includes a description of our work, a discussion of site conditions and a summary of geotechnical recommendations for design and construction of the proposed improvements. The site includes alluvial soil conditions that include an upper loosely structured topsoil layer followed by silt and clay. The improvements are expected to require reprocessing and compaction of the upper soft soils throughout the improvement area. We believe the site is adequate to support the planned grading using conventional construction methods, provided the site work is completed in accordance with our recommendations. Geotechnical recommendations for design of foundations and considerations for earthwork at the site are provided herein.

We trust this information meets your current needs. It has been a pleasure assisting you with this phase of your project. Please call if you have any questions or need additional assistance.

Sincerely,

FEI Testing and Inspection, Inc.

A handwritten signature in black ink, appearing to read "Mel McCracken".

Mel McCracken, PE, GE
Geotechnical Engineer

Geotechnical Report Meadowlark Subdivision Lochner Road Albany, Oregon

PROJECT INFORMATION

A new residential subdivision development is being considered at a currently vacant portion of a parcel on the east side of Lochner Road in Albany, Oregon. The site location is shown on the Vicinity Map (Figure 1), included in Appendix A. The parcel includes an existing residential structure as well as several outbuildings that will remain outside the limits of the proposed development. The development is expected to include ± 92 residential lots. The development will also include construction of residential streets and associated utilities. Minor site grading using on-site soils is expected for construction of the infrastructure improvements over the slightly sloping terrain.

FEI Testing and Inspection is providing geotechnical engineering services at the request of A & O Engineering, LLC for the proposed improvements. Our work has included observation of subsurface exploration, laboratory testing, geotechnical analysis work and preparation of this summary report. A & O Engineering, LLC is providing civil design services for the proposed development.

FIELD EXPLORATION

The field exploration focused on characterization of the upper soils at the site that will be involved in the proposed site grading. We visited the site on October 8, 2020 to observe subsurface explorations. During our visit we conducted a brief surface reconnaissance of the proposed development area. The subsurface exploration included digging eleven test pits using a small excavator. The approximate locations of the test pits are shown on the attached Site Plan (Figure 2, Appendix A). The test pits were advanced to a maximum depth of ± 11 feet. The soil profiles in each test pit were logged and samples were collected from some locations. The test pits were backfilled with excavated material and the surface graded relatively smooth. The soil profiles are summarized on the narrative test pit logs attached in Appendix B. Our surface and subsurface observations are summarized in the following sections.

SITE CONDITIONS

Surface Conditions:

The bulk of the parcel is elevated slightly above Lochner Road. The southwest portion of the parcel is lower with Oak Creek located immediately to the south of the site. An existing power line and utility easement is located along the north portion of the parcel. We understand that portions of the parcel, including the area east of the development

limits include wetlands. The bulk of the proposed development area is covered with grass and has been used for agricultural purposes. An existing gravel drive crosses the site. The residential structure and outbuildings include some landscaping and trees along the south side of the development area.

Subsurface Conditions:

Subsurface conditions were evaluated using the test pit explorations. The approximate test pit locations are shown on the Site Plan (Figure 2, Appendix A). Ground water was not observed in any of the excavations; however, the exploration work was completed during dry weather months and we anticipate that the site includes relatively shallow ground water levels during wet portions of the year. The adjoining wetland areas suggest that surface water may perch on some of the upper silt and clay.

Individual test pit summaries for the exploration completed are included in Appendix B (TP-1 through TP-11). Subsurface conditions observed at the site as part of our field exploration typically included the following strata:

Topsoil.

The exploration across the site encountered topsoil in the upper ± 1 to 1.5 feet of the soil profile. The topsoil typically consists of soft and loosely structured silt with some clay and organics. The upper topsoil is typically brown, dry to slightly moist and has low plasticity with fine roots. The topsoil layer appears to correspond with the plow depth of the field.

Clayey Silt/Silty Clay.

The upper topsoil grades to medium stiff clayey silt to silty clay. The silt and clay include trace organics at some locations and is grey and dry to slightly moist. The clay and silt typically has medium plasticity with some variability in plasticity with location.

Clayey Silt with sand.

The upper silt and clay grades to predominately silt that includes some sand below depths of 2 to 3.4 feet. The clayey silt with sand is moist grading to very moist and is medium stiff. The sand content also typically increases with depth.

LABORATORY TESTING

Laboratory testing was completed on selected samples from the field exploration. Organic content tests were completed on samples S-1-1 and S-10-1 and suggest that these upper soils contain 6% and 4% organics, respectively. Atterberg limits testing (Figure 3, Appendix A) suggests that the silt and clay vary from low to medium plasticity. A moisture density relationship test (ASTM D 698) was completed on sample S-1-1 (Figure 4, Appendix A). The test suggests that the upper soils at the site are expected to have an optimum moisture content of $\pm 20\%$ and a maximum dry density of ± 98 pcf. We also completed an expansion index test on the sample from S-1-1 to evaluate the shrink/swell susceptibility of the upper soils across the site. The expansion index was

completed on a recompacted sample of the soil at an initial water content of 14%. An expansion index of 9 was recorded for the sample suggesting the upper soils have very low expansion potential.

INFILTRATION TESTING

The proposed site improvements will include construction of new storm water infrastructure that will infiltrate into the soils. The stormwater infiltration system may include features at various points throughout the site. Five locations were identified for testing (P-1 through P-5). The testing was typically completed at depths of ± 3.5 to 4 feet below existing grades, except at P-5, which is located in an area of lower lying terrain.

Infiltration testing was conducted at five locations across the site to estimate the hydraulic conductivity of the soil. The testing was completed based on the Falling Head Percolation Test Procedure, which is used for stormwater design by several surrounding municipalities. The approximate test locations (P-1 through P-5) are shown on Figure 2. Our excavation typically encountered a soil profile that includes an upper topsoil stratum followed by medium stiff silty clay grading to clayey silt with some sand. The soils at each of the test sites were presoaked following excavation.

The testing was completed after a 24-hour presoak period. Testing was completed under low head conditions (<6-inch water depth) and was repeated to establish the estimated steady state infiltration rate for the soils at the base of the excavation. Measured infiltration rates are summarized on Table 1. We recommend that a factor of safety of at least 2 be applied to the measured rates for use in estimating actual infiltration rates for design of the storm system.

Table 1. Infiltration Testing Summary

Test Number	Test Depth (inches)	Soil Type	Measured Infiltration Rate (in./hr.)
P-1	47	Clayey Silt with sand	2.0
P-2	42	Clayey Silt with sand	1.0
P-3	42	Silty Clay with sand	0.2
P-4	49	Clayey Silt with sand	2.0
P-5	25	Silty Clay	0.1

DISCUSSION OF GEOTECHNICAL CONSIDERATIONS

The site terrain suggest that the infrastructure development will include roadways constructed in areas of cut and fill. Finished site grades are expected to be relatively close to the existing site grades with permanent cut and fill depths expected to typically be ± 6 feet or less. Geotechnical issues including grading requirements and limitations, foundation embedment and drainage parameters will need to be addressed for the

residential development on the parcels. Based on the anticipated earthwork and soft conditions in the upper portion of the soil profile, we have assumed that all roadway and residential lot areas will be prepared by stripping of the upper organic topsoil and compaction of the site soils. A brief summary of the geotechnical evaluation conducted for the proposed improvements are provided in the following sections.

Weather Conditions:

Development of the site will require site grading using on-site materials. The use of on-site soils will only be practical during dry weather conditions when the moisture content of the silt and clay soils can be controlled by drying or wetting. The weather conditions are expected to have significant impacts on the site preparation work since the upper soils throughout the site consist of silt and clay.

Shallow ground water conditions and perched water at the surface are expected during winter and spring months. Therefore, excavation and site grading work will need to account for the required site drainage. We anticipate that the improvements will include construction of a storm water system that does not rely exclusively on infiltration into the existing soils.

General Earthwork:

Site preparation work will require removal of the upper portion of the topsoil, which contains the bulk of the organics. We anticipate that the stripping would remove the upper 4 to 6 inches of the soil and sod surface and stockpile the material outside the grading limits of the current work. In addition, we anticipate that the site preparation work will require removal of any debris or high plastic clay soils from required excavations. We anticipate that these unsuitable soils will be hauled from the site.

The site preparation in all areas that are close to required street grades or require fill should include scarification, moisture conditioning and compaction of the upper 12 to 18 inches of the soil. Embankment fills constructed over the slightly sloping terrain may require some benching of the fill into the existing slope. We anticipate that processing of the subgrade soils will include compacting the surface using a large pad foot or kneading roller with the soils near optimum moisture content. Select on-site soils may be used for embankment fill. We have assumed that high plastic clay soils, where encountered, would not be used in the required earthwork at the site and would be hauled from the development area. The select on-site soils consist of low to medium plastic clay and silt that have a plasticity index of 20 or less. These soils are moisture sensitive and will require control of the soil moisture to within $\pm 3\%$ of the optimum value. Use of selected on-site fill may be placed and compacted in lifts over the approved compacted subgrade soils for structural fill. Use of on-site soils will only be practical during dry weather months at the site. Therefore, we have assumed that the site preparation work will be scheduled to be completed during summer months.

Grading at the site should be completed using cut and fill slope configurations of 2(horizontal):1(vertical) or shallower. Grading at the toe of cut slopes may need to include an interceptor drain to collect surface runoff and direct it to the storm system.

We anticipate that the grading plan will include measures to accommodate relatively shallow perched water conditions over the compacted fine-grained soils through the wet weather months.

Final grading will also include erosion control measures. We anticipate that the silt and clay will be susceptible to surface erosion, particularly as exposed in larger cut or fill slopes. Therefore, use of mulch and surface vegetation should be planned at the site.

Drainage:

The site improvements should include drainage considerations. Roadway construction will include construction of a storm system to collect surface water. Additional drainage features may be required at the toe of cut or fill slopes to collect and direct surface water. We have assumed that the residential development will also be sloped to promote surface drainage away from the structures and accommodate storm run-off. Due to poor permeability of the compacted soils at the site, we anticipate that perimeter foundation drains and retaining wall drains will be required.

Residential Bearing Capacity:

We understand that residential foundation preparation will be completed after the initial site grading. We conducted bearing capacity analysis for continuous 15-inch wide footings underlain by compacted crushed rock followed by firm, compacted silt or clay subgrade. Our analysis considered strength parameters estimated based on estimated stiffness and the assumption that a leveling course of crushed rock would be used beneath footings. The footings constructed adjacent to moderate slopes are expected to have a minimum embedment of 1.5 feet below grade and a minimum set-back of 5 feet from slopes. Our calculations suggest that using an allowable bearing capacity of 1,500 psf for the footings should provide a factor of safety greater than 3, which is acceptable.

Soil Expansion Potential:

The site includes limited areas of clay soils that have medium plasticity. These soils are expected to have potential for minor to moderate seasonal shrink/swell with variation in moisture content. Seasonal shrink/swell of these soils can result in long-term cracking faulting and differential movement of foundations and slabs. Therefore, we believe that some additional consideration of the soils is warranted during design and construction at the site. Measures to maintain the soil moisture relatively consistent throughout the year should be used at the site. Measures will also be required during construction to maintain moisture in the silt and clay subgrade. The bulk of the soils at the site and the materials that will be used for site grading consist of low plastic silt that have very low shrink/swell potential.

Settlement:

Considering the relatively light foundation loads and stiffness of the underlying alluvial soil, we do not believe that settlement will be a significant issue if the site preparation work is completed in accordance with our recommendations. Therefore, total and differential movements of ± 0.75 inches should be assumed.

Pavements:

The pavement areas will need to support construction equipment throughout site grading and construction of utilities. Therefore, we anticipate that the pavement areas would be prepared by moisture conditioning and compacting the subgrade soils in a similar manner as the lot areas. It should be noted that the compacted subgrade at the site will be sensitive to softening during wet weather, particularly under heavy construction traffic. Therefore, if the construction schedule is unable to accommodate paving of the streets by the end of October, it may be necessary to use a thicker base section and a separation geotextile to accommodate limited construction traffic into the fall months.

CONCLUSIONS AND RECOMMENDATIONS

Based on our observations, knowledge of the site and the proposed improvements, FEI Testing and Inspection believes that it will be practical to construct the proposed infrastructure improvements and residential foundations using typical construction methods. We understand that the improvements will be scheduled for construction during summer months. We have provided the following recommendations for design and construction of the improvements.

Materials:

1. Aggregate base as defined in this report should consist of $\frac{3}{4}$ or 1-inch minus, well graded crushed rock. The rock should be relatively clean with less than 5% (by weight) passing the #200 sieve.
2. Stabilization rock, if required, should consist of clean, angular, 3-inch crushed rock. Stabilization rock should contain less than 2% (by weight) passing the #200 sieve. Use of an open-graded rock may be required for stabilization in wet, lower lying areas during late spring or early summer months.
3. Suitable on-site soils should consist of low to medium plastic silt and clay soils from required excavations that do not contain sod, significant organic materials, or debris. The suitable on-site soils are expected to include site soils below a depth of 4 to 6 inches across the site that include a plasticity index of ± 20 or less. Higher plastic clay soils are unsuitable for reuse as structural fill at the site.
4. Topsoil includes organic soils that are expected in the upper 4 to 6 inches of the soil profile across the site. The topsoil should be stripped from the development area and stockpiled outside the grading limits. The topsoil may be used for landscape fill in greenspace areas that will not include future structures.
5. Compaction of on-site soils is expected to require use of a pad foot or kneading roller. The compaction should be completed with relatively uniform soil moisture content, which is near optimum. This is expected to require scarification of the soil. Scarification and compaction are expected to require multiple passes over the fill area for proper processing of the fine-grained soil.

6. Compaction of aggregate base or stabilization rock should be completed using a vibratory smooth drum roller. Compaction of trench rock backfill should be completed using an appropriately sized vibratory compactor. The lift thickness may need to be adjusted based on the compaction equipment being used. We recommend that the backfill and compaction procedure be documented and evaluated by the engineer during the initial work to develop the required procedure.
7. Compact and document all suitable on-site soils, aggregate base and stabilization rock for structural fill at the site. Compaction of all structural fill within the City right-of-way is expected to be completed according to City specifications. Structural fill on residential lots should be completed to at least 93% relative compaction according to ASTM D 1557 (or 95% according to ASTM D 698). Placement and compaction of structural fill should be completed using loose lifts no greater than 8 inches thick, unless specified otherwise. Field density testing and observation of placement and compaction procedure should be conducted on all structural fill to document proper compaction at regular intervals throughout the work.

General Earthwork Considerations:

8. Conduct earthwork at the site during dry weather conditions. On-site soils are moisture sensitive and expected to be over optimum moisture levels into the late spring and early summer months.
9. Site preparation should include stripping the upper organics from the ground surface. We anticipate that the upper ± 4 to 6 inches of the soil will be removed from grass surfaced areas.
10. The exposed subgrade material should be scarified, moisture conditioned and compacted to the specified relative compaction prior to placement of fill. The prepared subgrade should be inspected and approved prior to fill placement.
11. All subgrade beneath foundations, pavements and proposed fill areas should be evaluated and approved by the engineer prior to placement of structural fill or aggregate base. The subgrade stability should be evaluated by proof rolling using a loaded dump truck to identify any areas of excessive deflection, rutting or pumping.
12. The suitable on-site fill material should be placed and compacted in loose lifts no greater than ± 12 inches thick. The fill material should be compacted using a pad foot roller to the required relative compaction.
13. The fill placement and compaction procedure should be documented visually periodically throughout the work. Field density testing should be conducted on individual lifts of fill material to confirm adequate compaction and moisture content throughout fill placement and compaction.

14. On-site soils contain abundant silt and clay that are moisture sensitive and will be susceptible to pumping and softening under heavy construction traffic. Therefore, subgrade soils and fill areas should be protected from damage due to construction traffic throughout the work. Fill areas that have excessive deflection or rutting and pumping should be stabilized by scarification and recompaction or use of stabilization rock prior to additional fill placement.
15. Construct permanent cut and fill slopes with slope configurations no steeper than 2(horizontal):1(vertical). Fill slopes should be overbuilt slightly to allow compaction of the outer portion of fill material. Final grading should include trimming of all loose materials from the fill slopes.
16. Provide erosion control for all final cut and fill slopes. Cut slopes may require use of erosion matting or drainage features to control surface water and allow vegetation to be established.
17. Provide shoring for all trench excavations greater than 4 feet below grade. Anticipate that minor caving of trench sidewalls may occur, even in shallow excavations.
18. Utility trench excavations may encounter some ground water infiltration. Therefore, dewatering and stabilization of the base of the trench may be required. Trench excavation may also encounter bedrock that varies from highly to slightly weathered. Therefore, rock excavation may be required at some locations.

Pavement Construction:

19. Pavement subgrade soils are moisture sensitive and will require moisture conditioning of the upper ± 12 inches of the subgrade. The subgrade should be compacted using a pad foot roller to provide a stable surface prior to construction of the street section.
20. Proof roll the compacted subgrade using a loaded 12 cubic yard dump truck. Areas of excessive deflection or rutting should be identified and either reprocessed and recompacted or excavated and replaced with aggregate base.
21. If the base is expected to support construction traffic during late fall months a thicker section should be considered. We recommend that the anticipated construction schedule and required base section be reevaluated once the construction schedule is known.
22. Proof roll the compacted aggregate base immediately prior to paving to identify any areas of soft subgrade or contaminated base aggregate. The proof rolling should be completed using a loaded 12 cubic yard dump truck and any areas of excessive deflection or pumping should be identified. Any unstable areas should be excavated and replaced with imported aggregate base.

Residential Foundation Design:

The following recommendations are intended to provide preliminary design information for the proposed residential development.

23. Design residential footings constructed on the approved lots using a maximum allowable bearing pressure of 1,500 psf and minimum footing width of 15 inches.
24. Foundation excavations should extend a minimum of ± 6 inches into the compacted fill or as necessary to bypass any upper softened materials. A minimum footing embedment of 18 inches should be provided from finished exterior grades with a minimum set-back of 5 feet from moderately sloping terrain.
25. Use a ± 6 -inch thick leveling course of crushed rock (i.e., 1-inch minus) over the firm subgrade on the lots to help maintain the moisture of the underlying clay during foundation construction and minimize disturbance during wet weather conditions.
26. Installation of vapor barrier and foundation/crawl space drainage will be required to minimize seasonal moisture fluctuations of the clay underlying the residential foundations. We recommend that perimeter foundation drains be installed around each house to assist in drainage at the site.
27. Slope the grade surrounding the house away from the foundation to promote surface drainage away from the structure. We anticipate that limited landscape lot fill may be required. Landscape lot fill should be constructed with slopes no steeper than 3(horizontal):1(vertical) with a fill depth no greater than 2 feet, unless reviewed and approved by the geotechnical engineer.

LIMITATIONS OF THIS REPORT

The analysis, conclusions and recommendations contained herein assume that the soil conditions and absence of ground water levels encountered in the test pits are representative of overall site conditions. Additional geotechnical design and construction recommendations may be required during final design of the improvements. The above recommendations assume that we will be present during construction to confirm the assumed foundation and subgrade conditions. We will assume no responsibility or liability for any engineering judgment, inspection or testing performed by others.

Our work was performed for the exclusive use by A&O Engineering, LLC and their design consultants for the proposed new Meadowlark Subdivision at Lochner Road in Albany, Oregon. FEI Testing and Inspection, Inc. performed our work in accordance with generally accepted professional geotechnical engineering practices in similar locations. Our services do not include any survey or assessment of potential contamination or contamination of the soil or ground water by hazardous or toxic substances. No other warranty, expressed or implied, is made.

Geotechnical Report

Meadowlark Subdivision
Lochner Road
Albany, Oregon

Appendix A

Figures



Figure 1. Vicinity Map

Meadowlark Subdivision
Lochner Road
Albany, Oregon

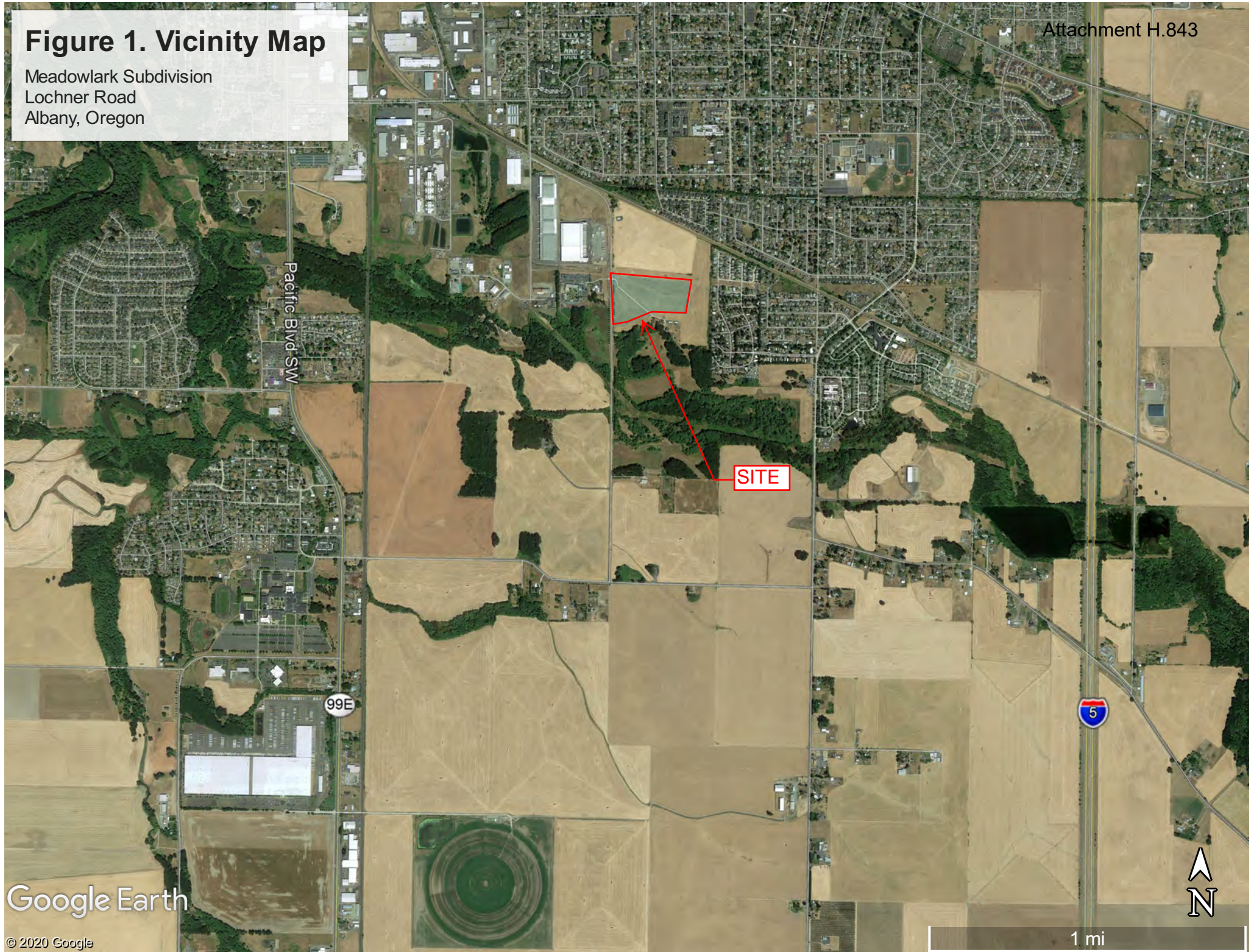


Figure 2. Site Plan

Meadowlark Subdivision
Lochner Road
Albany, Oregon

Attachment H.844
Legend

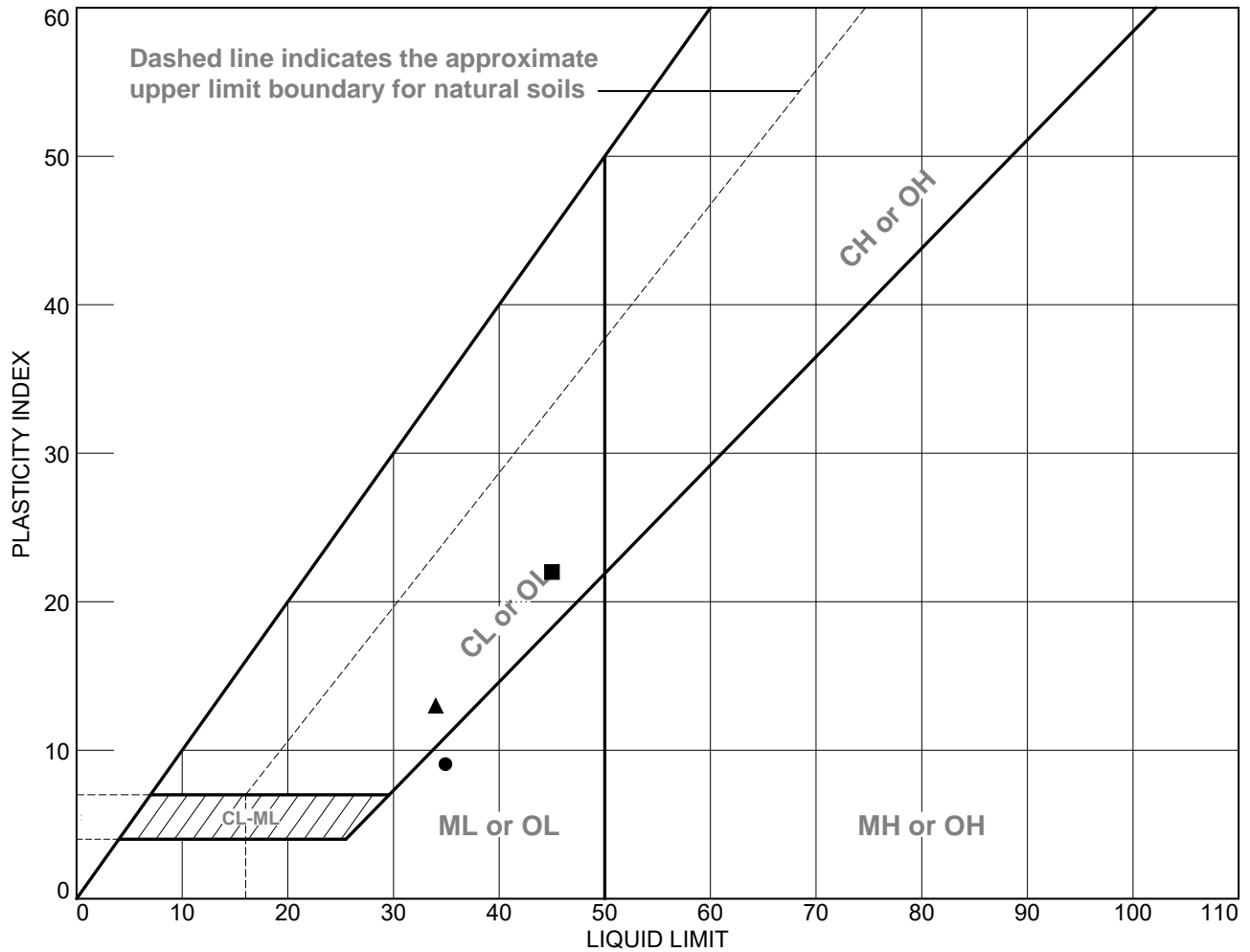
- Development Area
- Infiltration Test
- Test Pit

Approximate Test Pit location

Approximate Infiltration Test location



LIQUID AND PLASTIC LIMITS TEST REPORT



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	8018	S-1-1	0.5'-1.0'	n/a	26	35	9	ML
■	8018	S-9-1	2.0'-3.0'	n/a	23	45	22	CL
▲	8018	S-10-1	2.0'-3.0'	13.1	21	34	13	CL

FEI Testing & Inspection, Inc.

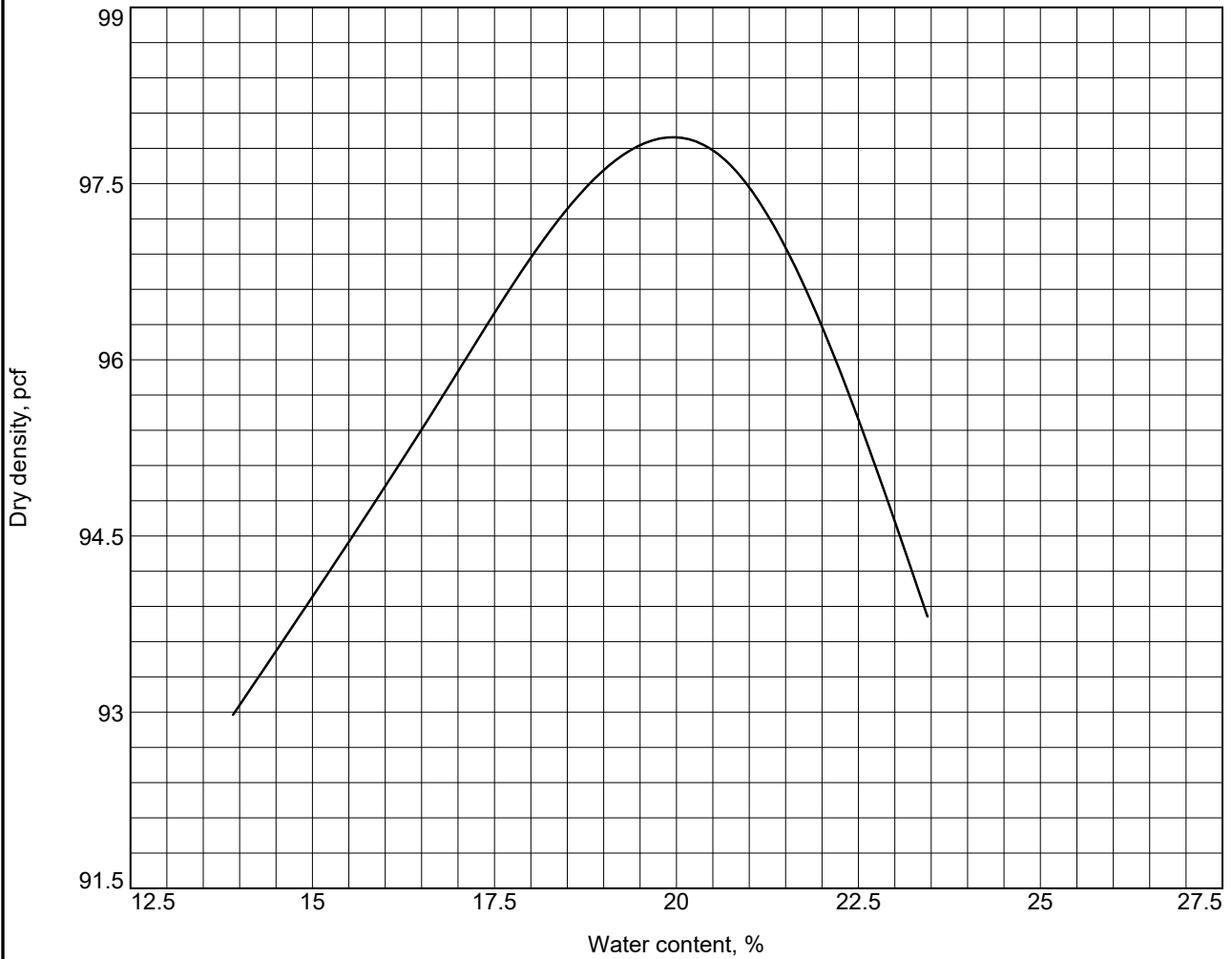
Corvallis, OR

Client: A & O Engineering, LLC
Project: Meadowlark Subdivision

Project No.: 2205031

Figure 3

MOISTURE - DENSITY RELATIONSHIP CURVE



Test specification: ASTM D 698-12 Method A Standard

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > #4	% < No.200
	USCS	AASHTO						
0.5'-1.0'	ML		n/a		35	9	0	

TEST RESULTS	MATERIAL DESCRIPTION
Maximum dry density = 97.9 pcf Optimum moisture = 20.0 %	
Project No. 2205031 Client: A & O Engineering, LLC Project: Meadowlark Subdivision <input type="radio"/> Source of Sample: 8018 Sample Number: S-1-1	Remarks: Date: 10-15-2020
FEI Testing & Inspection, Inc. Corvallis, OR	

Geotechnical Report

Meadowlark Subdivision
Lochner Road
Albany, Oregon

Appendix B

Test Pit Logs



**Geotechnical Report
Meadowlark Subdivision
Lochner Road
Albany, Oregon**

**APPENDIX B
NARRATIVE TEST PIT SUMMARIES**

Logged on October 8, 2020

Test Pit: TP-1

Depth (feet)	Material Description	Notes/Sampling
0 to 1.3	Soft SILT with some clay and organics and trace sand; brown, dry, fine organics, low to medium plasticity, (topsoil).	Grass at surface. S-1-1 @ 0.5' – 1'
1.3 to 3.0	Medium stiff clayey SILT; grey to light brown, dry to slightly moist, medium plasticity, (alluvium).	S-1-2 @ 2' – 3'
3.0 to 9.0	Medium stiff clayey SILT with some to trace sand; brown, slightly moist grading to moist below 5 feet, medium plastic clay, (alluvium).	No ground water infiltration observed.



Test Pit: TP-2

<u>Depth (feet)</u>	<u>Material Description</u>	<u>Notes/Sampling</u>
0 to 1.4	Soft SILT with some clay and organics; dark brown, dry to slightly moist, fine organics, low plasticity, (topsoil).	Grass at surface.
1.4 to 3.2	Medium stiff clayey SILT with trace sand; grey to light brown, slightly moist, medium plasticity, (alluvium).	
3.2 to 5.0	Medium stiff clayey SILT with trace sand; brown, moist, medium plastic clay, (alluvium).	No ground water infiltration observed.



Test Pit: TP-3

<u>Depth (feet)</u>	<u>Material Description</u>	<u>Notes/Sampling</u>
0 to 1.1	Soft SILT with some organics and clay; brown, dry to slightly moist, fine roots, low to medium plasticity, (topsoil).	Grass at surface.
1.1 to 2.5	Medium stiff clayey SILT; grey to light brown, slightly moist, medium plasticity, (alluvium).	
2.5 to 8.0	Medium stiff clayey SILT with trace sand; brown, moist, medium plastic clay, sand content varies and typically increases with depth, (alluvium).	S-3-1 @ 3' – 4' No ground water infiltration observed.



Test Pit: TP-4

Depth (feet)	Material Description	Notes/Sampling
0 to 1.0	Soft SILT with some clay and organics and trace sand; dark brown, dry, fine roots, medium plasticity, (topsoil).	Grass at surface.
1.0 to 2.8	Medium stiff clayey SILT; grey to light brown, dry to slightly moist, medium plasticity, (alluvium).	S-4-1 @ 1' – 2'
2.8 to 7.0	Medium stiff clayey SILT with some to trace sand; brown, moist, medium plastic clay, (alluvium).	No ground water infiltration observed.



Test Pit: TP-5

<u>Depth (feet)</u>	<u>Material Description</u>	<u>Notes/Sampling</u>
0 to 1.0	Soft SILT with some clay and organics and trace sand; brown, dry, fine organics, low to medium plasticity, (topsoil).	Grass at surface.
1.0 to 2.5	Medium stiff clayey SILT with trace organics; grey, dry to slightly moist, medium plasticity, (alluvium).	S-5-1 @ 1' – 2'
2.5 to 4.8	Medium stiff clayey SILT with some sand; brown, moist, medium plastic clay, fine sand, (alluvium).	No ground water infiltration observed.



Test Pit: TP-6

Depth (feet)	Material Description	Notes/Sampling
0 to 1.5	Soft SILT with some sand and organics; dark grey, dry, fine organics, low plasticity, (topsoil).	Grass at surface.
1.5 to 3.0	Medium stiff SILT with some sand and clay; light brown, dry to slightly moist, low to medium plasticity, (alluvium).	S-6-1 @ 2' – 3'
3.0 to 8.0	Medium stiff clayey SILT with trace sand; brown, moist, medium plastic clay, (alluvium).	No ground water infiltration observed.



Test Pit: TP-7

<u>Depth (feet)</u>	<u>Material Description</u>	<u>Notes/Sampling</u>
0 to 1.4	Soft clayey SILT with some organics; brown, dry, fine organics, low to medium plasticity, (topsoil).	Grass at surface.
1.4 to 2.8	Medium stiff clayey SILT; grey to light brown, dry to slightly moist, medium plasticity, (alluvium).	
2.8 to 4.0	Medium stiff clayey SILT with some sand; brown, slightly moist, medium plastic clay, (alluvium).	S-7-1 @ 3' – 4' No ground water infiltration observed.



Test Pit: TP-8

<u>Depth (feet)</u>	<u>Material Description</u>	<u>Notes/Sampling</u>
0 to 1.5	Soft clayey SILT with some organics; brown, dry, fine organics, medium plasticity, (topsoil).	Grass at surface.
1.5 to 3.4	Soft to medium stiff clayey SILT with trace organics; brown, dry to slightly moist, medium plasticity, (alluvium).	S-8-1 @ 2' - 3'
3.4 to 9.5	Medium stiff to stiff clayey SILT with some sand grading to sandy SILT with some clay below 5 feet; brown, moist, medium plastic clay, (alluvium).	No ground water infiltration observed.



Test Pit: TP-9

<u>Depth (feet)</u>	<u>Material Description</u>	<u>Notes/Sampling</u>
0 to 1.0	Soft SILT with some organics and clay; brown, dry, fine organics, loosely structured, (topsoil).	Recently plowed surface.
1.0 to 2.0	Medium stiff clayey SILT with trace sand; brown, dry to slightly moist, medium plasticity, (alluvium).	
2.0 to 11.0	Medium stiff clayey SILT with some sand; brown, moist grading to very moist below 9 feet, medium plastic clay, sand content increases below 6 feet, (alluvium).	S-9-1 @ 2' – 3' No ground water infiltration observed.



Test Pit: TP-10

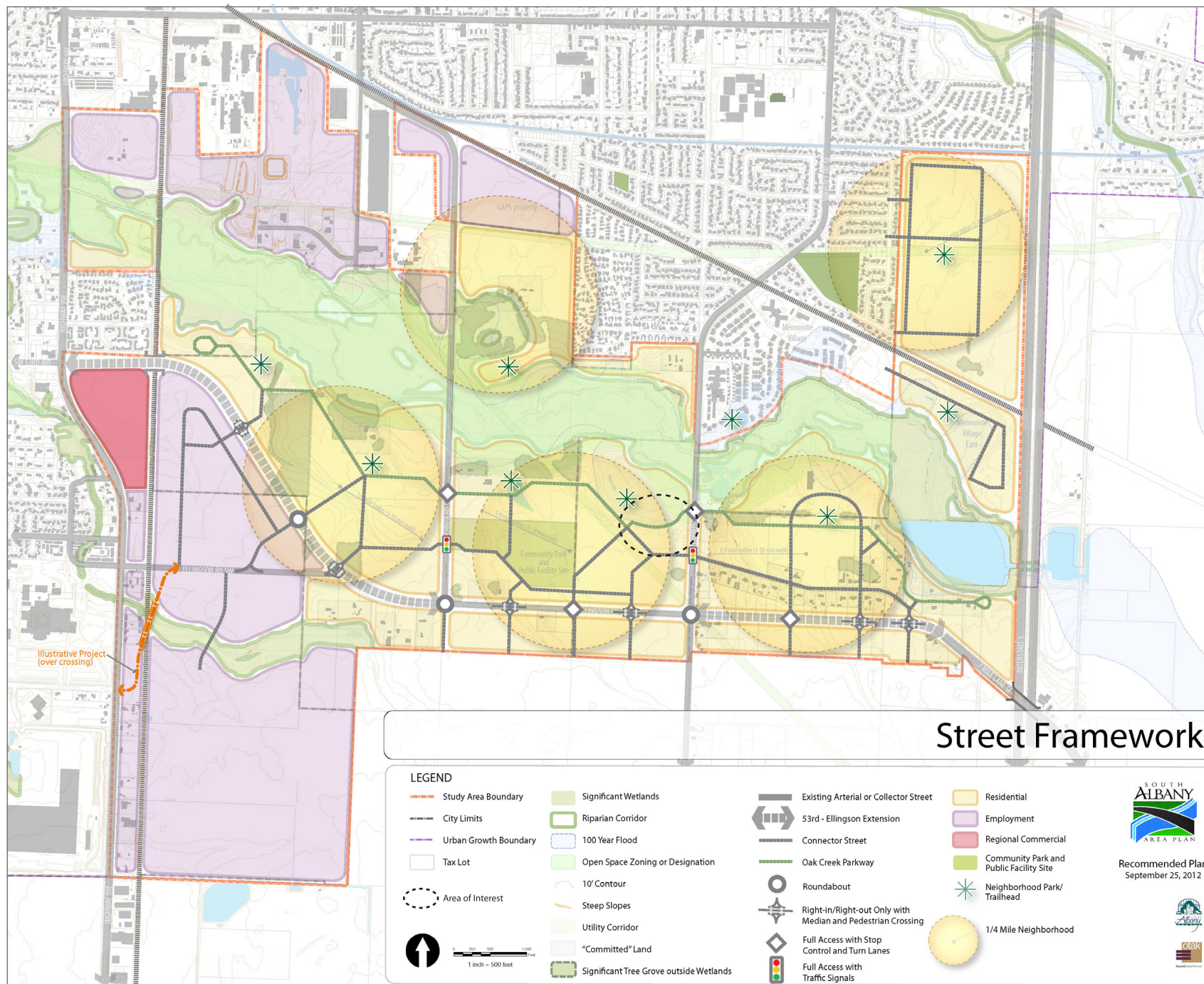
<u>Depth (feet)</u>	<u>Material Description</u>	<u>Notes/Sampling</u>
0 to 1.0	Soft SILT with some clay and organics; brown, dry, fine organics, low to medium plasticity, (topsoil).	Recently plowed surface.
1.0 to 3.0	Medium stiff silty CLAY; brown, dry, medium plasticity, loosely structured, (alluvium).	S-10-1 @ 2' – 3'
3.0 to 9.0	Medium stiff clayey SILT with some sand; brown, moist, medium plastic clay, more sand and moister below 6 feet, (alluvium).	No ground water infiltration observed.



Test Pit: TP-11

Depth (feet)	Material Description	Notes/Sampling
0 to 1.3	Soft clayey SILT with some organics; brown, dry, fine organics, medium plasticity, blocky structure, (topsoil).	Recently plowed surface.
1.3 to 3.0	Medium stiff silty CLAY with trace organics; dark grey/brown, dry, medium plasticity, (alluvium).	
3.0 to 4.5	Medium stiff clayey SILT with some sand; brown, slightly moist, medium plastic clay, (alluvium).	No ground water infiltration observed.





Street Framework

LEGEND

Study Area Boundary	Significant Wetlands	Existing Arterial or Collector Street	Residential
City Limits	Riparian Corridor	53rd - Ellingson Extension	Employment
Urban Growth Boundary	100 Year Flood	Connector Street	Regional Commercial
Tax Lot	Open Space Zoning or Designation	Oak Creek Parkway	Community Park and Public Facility Site
Area of Interest	10' Contour	Roundabout	Neighborhood Park/Trailhead
	Steep Slopes	Right-in/Right-out Only with Median and Pedestrian Crossing	1/4 Mile Neighborhood
	Utility Corridor	Full Access with Stop Control and Turn Lanes	
	"Committed" Land	Full Access with Traffic Signals	
	Significant Tree Grove outside Wetlands		

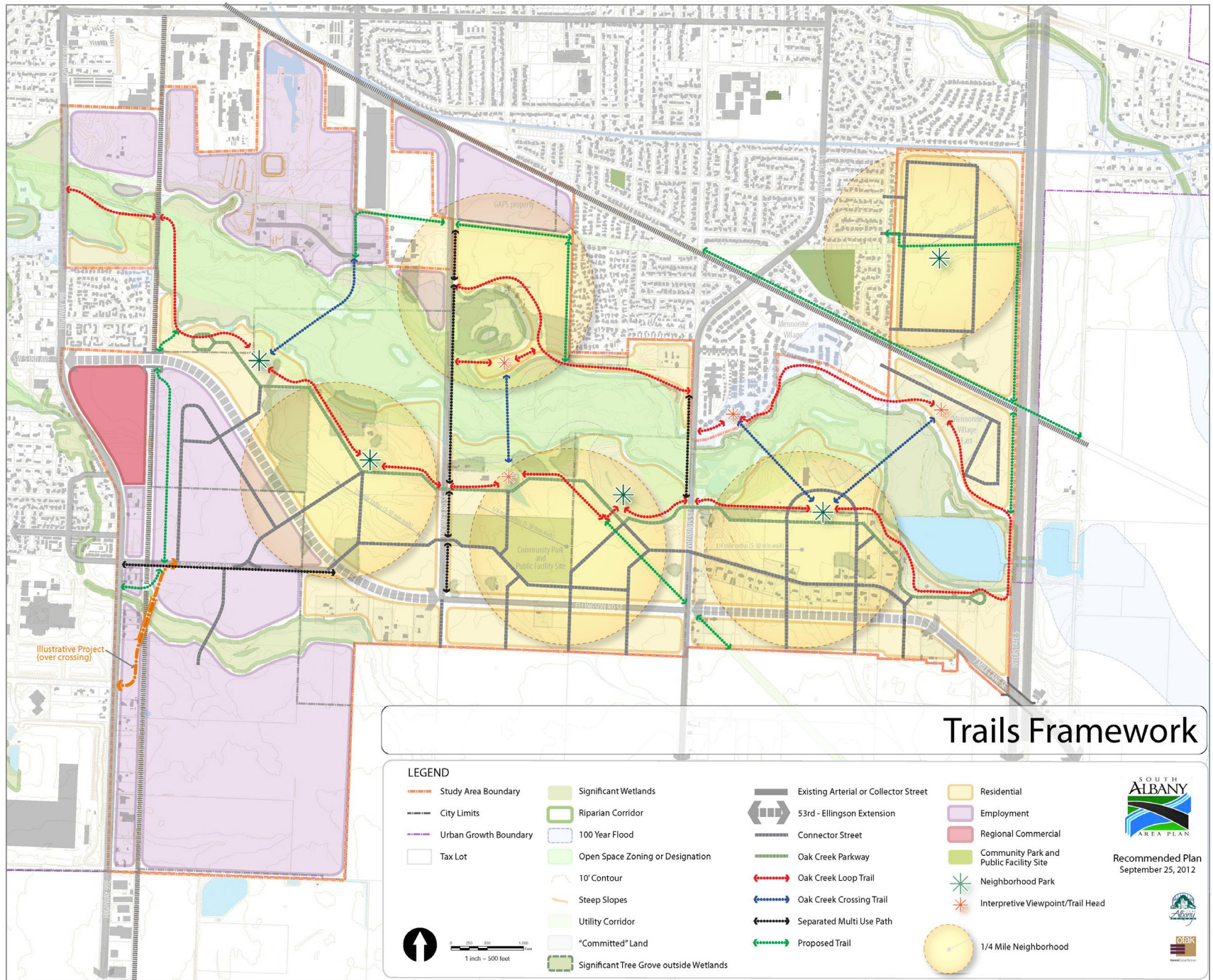
SOUTH ALBANY
AREA PLAN

Recommended Plan
September 25, 2012

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Note: The precise location and alignment of Connector Streets is intended to be flexible, and may vary in response to the location of natural features.

Disclaimer: The information shown in this map is assembled GIS data created and acquired by Oak Inc. and from government and private agencies. This data is not to survey accuracy and is meant for planning purposes only.



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Notes:
 • The precise location and alignment of trails is intended to be flexible, and may vary in response to the location of natural features.
 • The precise location and alignment of connector streets is intended to be flexible, and may vary in response to the location of natural features.

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 The information shown on this map is assembled GIS data created and acquired by Oak Inc., and from government and private agencies. This data is not to survey accuracy and is meant for planning purposes only.



TO: Jennifer Cepello, Planner

From: Lora Ratcliff, Fire Marshal

DATE: October 6, 2023

SUBJECT: SD-02-23 –3795 Lochner Rd SE– New 92-Lot Subdivision– Fire Department Comments

The fire department has reviewed the above project for conformance to the 2022 Oregon Fire Code (OFC) per your request and has the following comments.

1. Street names approved for this development:
 - Blackbird Ave
 - Finch St
 - Harrier St
 - Flicker St
 - Junco St
 - Nuthatch St
 - Blue Jay Ave
 - Nighthawk St
2. Residential developments/projects of one- or two-family dwellings where the number of dwellings exceeds 30 shall be provided with at least 2 means of fire apparatus access. These access points shall be remotely separated by at least ½ the length of the maximum overall diagonal dimension of the property or area served. (OFC Appendix D107.1)
3. Approved fire apparatus roadways must extend to within 150 feet of all exterior portions of any structure that will be built on the new created lot as measured by an approved route of travel around the exterior of the structure with dead-end lengths not exceeding 150 feet long unless an approved turnaround is provided. (OFC 503.1.1, OFC 503.2.5 and OFC, Appendix D 103.4).
4. This proposed project is located within a “Protected Area” as defined by Oregon Fire Code (OFC) Appendix B, Section B102 and this area will be required to be served by a public water system. The Fire Flow required shall be as specified in Appendix B of the fire code. (OFC 507.3)
5. INADEQUATE FIRE APPROACH & ACCESS TO WATER SUPPLY

If the Fire Official determines that there is an inadequate fire apparatus access condition or an inadequate fire water supply for one or more parcels of the proposed division, in lieu of providing adequate fire apparatus access or supply and acting in conformance to the standards set forth in **OAR 918-480-0125**, the Uniform Alternate Construction Standard for One and Two Family Dwellings, the Building Official, will select the following standard to address the inadequacies pertaining to structures built on the affected parcels:

- a. Installation of an NFPA Standard 13D fire suppression system

LAR/lar

Lora Ratcliff
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