STORMWATER MANAGEMENT, GROUNDWATER RECHARGE AND WATER QUALITY ANALYSIS

For

Surfside Crossing Proposed Multi-Family Mixed Use Building

> 1102 9th Ave Block 405, Lot 5-7 Neptune Township Monmouth County, NJ

> > Prepared by:



826 Newtown Yardley Road Suite 201 Newtown, PA 18940 (267) 685-0276

Steven R. Cattani, PE, CME, CFM NJ Professional Engineer License #40014

REV 0 – June 2022 DEC# 2241-99-002

TABLE OF CONTENTS

	Page No.
<u>I.</u>	Site Description2
II.	Design Overview2
III.	Existing Drainage Conditions
IV.	Proposed Drainage Conditions 6
<u>V.</u>	Non-Structural Stormwater Management Strategies
VI.	Design Methodology
VII.	Stormwater Management Basin Design and Runoff Quantity Standards 8
VIII.	Groundwater Recharge & Water Quality
IX.	Stability Analysis
<u>X.</u>	Conclusion 11

APPENDIX

- 1. USGS Map
- 2. NRCS Soils Map
- 3. Runoff Curve Number (CN) Calculations Existing
- 4. Runoff Curve Number (CN) Calculations Proposed
- 5. Existing Time of Concentration (Tc) Calculations
- 6. Hydrograph Summary Reports Existing & Proposed 2 yr., 10 yr., 25 yr. & 100 yr.
- 7. Hydrograph Summary Reports Existing & Proposed Water Quality Storm
- 8. Hydrograph Summary Reports Emergency Spillway
 9. Hydrograph Summary Reports Stability Analysis
- 10. Stormwater Collection Calculation (Pipe Sizing)
- 11. Infiltration Basin Drain Time
- 12. Runoff Rate Reductions
- 13. NJGRS Spreadsheets
- 14. Drainage Area Maps

I. SITE DESCRIPTION

The project site consists of Block 405, Lots 5-7, located at the intersection of 9th Ave, Memorial Drive, and 8th Ave. in Neptune Township, Monmouth County, New Jersey. Currently, the site is mostly open with wooded areas towards the central portion of the combined lots. In addition, the site currently has two single-family homes located of existing lot 7. The subject site is 79,034 square feet (1.81 acres). The site is bordered to the north by 9th Ave; to the east Memorial Drive; to the south 8th Ave, and the west by residential uses. The project consists of developing the parcel with a proposed 38,875 square foot multi-family mixed use building, which includes 78 units, 936 SF of retail, one hundred and fifty-seven (157) total passenger vehicle parking, driveways, landscaping and other related site improvements.

The existing conditions of the tract have been verified by the Alta/ NSPS Land Title Survey, prepared by Dynamic Survey, LLC, dated 3/30/2022.

II. <u>DESIGN OVERVIEW</u>

This report has been prepared to define and analyze the stormwater drainage conditions that would occur as a result of the development of Block 405, Lots 5-7 in Neptune Township, Monmouth County, New Jersey. The project includes new stormwater management facilities to address applicable aspects of Neptune Township Stormwater Management rules and NJAC 7:8.

Based upon the fact that the proposed improvements will result in more than one (1) acre of land disturbance and increase the amount or impervious coverage by more than 0.25 acres, this project is classified as a "major development"; and therefore, has been designed to meet the stormwater runoff quantity, quality and groundwater recharge standards, set forth by Neptune Township Land Use Ordinance and NJAC 7:8. Accordingly, the following items are addressed within this report:

- Erosion control, groundwater recharge and runoff quantity standards (7:8-5.4)
- Stormwater runoff quality standards (7:8-5.5)
- Calculation of stormwater runoff and groundwater recharge (7:8-5.6)
- Standards for structural stormwater management measures (7:8-5.7)

The scope of the report includes the proposed 38,875 square foot multi-family dwelling, basins, driveways, parking areas, landscaping and other related site improvements as shown on the engineering drawings. The proposed site plan has 81.3% impervious lot coverage. The storm systems on site have been designed using this coverage.

A hydrological evaluation is provided for the NJDEP Water Quality, 2, 10, 25, and 100-year storm events

utilizing the Urban Hydrology for Small Watersheds TR55 method.

NJAC 7:8-5.4(a)3 states the stormwater quantity impacts can be calculating to meet one the of the following

below:

i. Demonstrate through hydrologic and hydraulic analysis that for stormwater leaving the site, post-construction runoff

hydrographs for the 2, 10 and 100-year storm events do not exceed, at any point in time, the pre-construction runoff

hydrographs for the same storm events;

ii. Demonstrate through hydrologic and hydraulic analysis that there is no increase, as compared to the pre-construction

condition, in the peak runoff rates of stormwater leaving the site for the two, 10 and 100-year storm events and that the

increased volume or change in timing of stormwater runoff will not increase flood damage at or downstream of the site. This

analysis shall include the analysis of impacts of existing land uses and projected land uses assuming full development under

existing zoning and land use ordinances in the drainage area;

iii. Design stormwater management measures so that the post-construction peak runoff rates for the two, 10 and 100-year

storm events are 50, 75 and 80 percent, respectively, of the pre-construction peak runoff rates. The percentages apply only to

the post-construction stormwater runoff that is attributable to the portion of the site on which the proposed development or

project is to be constructed.

Per the above requirements, runoff from the site will comply with the flow reductions indicated under iii as

follows:

2-year:

50% reduction

10-year:

25% reduction

100-year:

20% reduction

This facility will comply with the Stormwater Management Best Management Practices.

It is important to note that the aforementioned flow reduction requirements are only required to be applied to

onsite drainage areas within the limit of disturbance to satisfy Neptune Township and NJDEP flow reduction

requirements. Therefore, the proposed development satisfies the flow reduction requirements by applying the

peak rate reduction requirements only to the onsite areas that are proposed to be disturbed, all remaining

undisturbed areas on site will continue to discharge under their existing condition.

Surfside Crossing DEC# 2241-99-002

June 2022

3

III. EXISTING DRAINAGE CONDITIONS

The tract has been evaluated with the following drainage sub-watershed areas as depicted on the Existing Conditions Drainage Area Map that can be found in the appendix of this report.

Existing Drainage Area 1: This study area is comprised of mostly grassed areas with portions of the existing asphalt driveways and single-family home. It is analyzed as an area to be disturbed as a result of the proposed development. The stormwater runoff currently flows from the eastern portion of the site to the western end of the property towards the existing 'B' inlet located on 8th Avenue, also known as POA 2.

Existing Drainage Area 2: This study area is comprised of mostly grassed and wooded areas with a portion of the existing asphalt driveways and single-family homes. It is analyzed as an area to be disturbed as a result of the proposed development. The stormwater runoff currently flows from the eastern portion of the site to the western end of the property towards the existing low point located offsite at the rear of the adjacent lot 4. From this low point, runoff flows toward the existing 'B' inlet located on 9th Avenue, also known as POA 1.

Existing Drainage Area 3: This study area is comprised of mostly grassed and wooded areas. It is analyzed as an area to be disturbed as a result of the proposed development. The stormwater runoff currently flows from the eastern portion of the site to the western end of the property towards the existing 'B' inlet located on 9th Avenue, also known as POA 1.

<u>Existing Bypass to Memorial Drive:</u> This study area is comprised of mostly grassed areas. It is analyzed as an area to be minimally disturbed as a result of the proposed development. The stormwater runoff currently flows from the southern portion of the site to the northeastern side of the property towards the existing 'B' inlet located on Memorial Drive, also known as POA 3.

Based on the Monmouth County soils survey information, the soil types native to the site include:

MONMOUTH COUNTY SOIL SURVEY INFORMATION											
SOIL TYPE	SOIL TYPE	HYDROLOGIC	DEFAULT SOIL	DEFAULT HYDROLOGIC							
(SYMBOL)	(SYMBOL) (NAME) SOIL GROUP TYPE (NAME) SOIL GROUP										
UR	Urban Lands	N/A	Fort Mott	A							

Per the NJ Stormwater BMP Manual Chapter 12 Soil Testing Criteria, sites that do not have a Hydrologic Soil Group can be defined as Fort Mott, HSG A, as the site is within the Coastal Plain. The soil investigation completed by Dynamic Earth, LLC, confirms the site should be examined using HSG A by completing five (5) permeability tests that show permeability rates consistent with HSG type A soils. The soil borings and soil profile pits generally encountered deep fill material and loose natural soils near the proposed building footprint. Topsoil was encountered between approximately five inches and ten inches of topsoil at the surface. Beneath the surficial cover, existing fill materials were encountered that generally consisted of sand, loamy

sand, sandy loam, and clay with variable amounts of gravel and debris. The debris encountered included brick, metal, pvc, glass, seashells, concrete, and asphalt. The existing fill materials were encountered to depths ranging between approximately 2.5 feet and 5.5 feet below the ground surface; corresponding to elevations ranging between 12.2 feet and 7.6 feet. Beneath the existing fill materials, natural soils were encountered that generally consisted of sand, sandy loam, loam sandy clay loam, silty clay loam, clay loam, silty clay, and clay with variable amounts of gravel. The natural soils were encountered to termination and refusal depths ranging between approximately 10 feet and 12.4 feet below the ground surface; corresponding to elevations ranging between 4.5 feet and 0.7 feet. The refusal encountered was due to continuous wet cave-in of coarse-grained materials.

Indicators of seasonal high groundwater (based on soil mottling and/or direct groundwater observations during the wet season) were encountered at depths ranging between approximately 2.5 feet and 4.6 feet below the ground surface; corresponding to elevations ranging between 12.2 feet and 8.8 feet. Groundwater was encountered at depths ranging between approximately five feet and seven feet below the ground surface; corresponding to elevations ranging between 10.5 feet and 7.5 feet. Groundwater levels are expected to fluctuate seasonally and following significant periods of precipitation. A summary of seasonal high groundwater levels encountered and permeability samples collected is presented in the chart below:

	Seasonal H	igh Groundwat	er and Permea	bility Test Sun	nmary			
Location	Surface Elevation	Estimated Se Ground	_	Sample	Permeability Results (inches/hour)			
Location	(ft)	Depth (ft)	Elevation (ft)	Depth (Inches)	Replicate A	Replicate B		
SPP-1	14.7	2.5	12.2	18	-			
				40	Not T	Tested		
SPP-2	13.4	4.6	8.8	78				
				24	8.9	7.5		
SPP-3	13.1	3.3	9.8	45	Not Tested			
				70	1101 1			
			10.1	24	6.5	13.8		
SPP-4	13.1	3.0		42	Not T	Γested		
				100	1101 1	Cotcu		
SPP-5	13.9	4.0	9.9	24	12.5	6.6		
SPP-6	13.2	3.8	9.4	32	>20	>20		
511-0	15.2	5.6	7.4	50	Not T	Cested		
SPP-7	14.5	4.2	10.3	30	14.4	18.7		
511-7	14.5	7,2	10.5	50				
SPP-8	13.3	3.9	9.4	36	Not T	Cested		
511-0	15.5		7.4	60	1,001	Colcu		
SPP-9	12.9	4.0	8.9	36				

Based on the laboratory testing completed and the subsurface conditions encountered at soil profile pit excavations, the soils encountered are generally consistent with a hydraulic soil group (HSG) A.

IV. PROPOSED DRAINAGE CONDITIONS

The tract has been evaluated with the following drainage sub-watershed areas as depicted on the Contributory Drainage Area Map that can be found in the appendix of this report. Each sub-watershed area has been calculated as a separate point of analysis.

<u>Proposed Drainage Area 1:</u> This portion of the site mainly consists of the building roof runoff. Stormwater runoff from this area is collected by a series of roof leaders which flows to the proposed above ground small-scale infiltration basin 1. Stormwater discharged from basin 1 flows through the outlet control structure to the existing 'B' inlet on 9th avenue also known as POA 1.

<u>Proposed Study Area 2:</u> This portion of the site mainly consists of the building roof runoff. Stormwater runoff from this area is collected by a series of roof leaders which flows to the proposed above ground small-scale infiltration basin 2. Stormwater discharged from basin 2 flows through the outlet control structure to the subsurface small-scale infiltration basin 3.

<u>Proposed Study Area 3:</u> This portion of the site consists of the majority of the impervious surfaces on the site including the porous pavement, asphalt, and portions of the landscaped areas. Runoff from this drainage area sheet flows to the proposed porous pavement and then to the subsurface small-scale infiltration basin 3. Stormwater discharged from basin 3, flows through the outlet control structure to the existing 'B' inlet on 9th Avenue, also known as POA 1.

<u>Proposed Bypass 8th Ave:</u> This portion of the site consists of a minimal portion of the asphalt driveway and adjacent grassed areas. Runoff from this area flows undetained to the existing 'B' inlet on 8th Avenue, also known as POA 2.

<u>Proposed Bypass 9th Ave:</u> This portion of the site consists of a minimal portion of the asphalt driveway and adjacent grassed areas. Runoff from this area flows undetained to the existing 'B' inlet on 9th Avenue, also known as POA 1.

<u>Proposed Bypass Memorial Drive:</u> This portion of the site consists of a minimal portion of the asphalt driveway and adjacent grassed areas. Runoff from this area flows undetained to the existing 'B' inlet on Memorial Drive also known as POA 3.

V. <u>NON-STRUCTURAL STORMWATER MANAGEMENT STRATEGIES</u>

The proposed project has been designed to the maximum extent practicable by incorporating the nonstructural stormwater management strategies set forth in NJAC 7:8-5.3 as follows:

- 1. Protect areas that provide water quality benefits or areas particularly susceptible to erosion and sediment lost: The proposed impervious surface is minimized wherever possible under the proposed condition; therefore, increasing the water quality benefits on the site. By implementation of the porous pavement and infiltration basins, the proposed development meets the water quality requirements set forth by NJAC 7:8.
- 2. <u>Minimize impervious surfaces and break up or disconnect the flow of runoff over impervious surfaces:</u> The impervious surfaces have been minimized wherever possible. Impervious surfaces have been diverted to multiple structural BMPs capable of providing water quality treatment.
- 3. <u>Maximize the protection of natural drainage features and vegetation:</u> In the proposed condition, there is a 74.6% increase in impervious coverage. A Landscaping Plan has been prepared to compensate for the loss of existing vegetation due to the development.
- 4. Minimize the decrease in the "time of concentration" from pre-construction to post-construction. "Time of concentration" is defined as the time it takes for runoff to travel from the hydraulically most distant point of the drainage area to the point of interest within a watershed: The decrease in the time of concentration has been minimized by maintaining existing overland flow slopes to the maximum extent practical.
- 5. <u>Minimize land disturbance including clearing and grading:</u> Land disturbance has been minimized where feasible. The site disturbance is limited to the development area.
- 6. **Minimize soil compaction:** Soil compaction will be minimized in the basins and proposed lawn and landscape areas.
- 7. Provide low-maintenance landscaping that encourages retention and planting of native vegetation and minimizes the use of lawns, fertilizers and pesticides: The project proposes low-maintenance trees, shrubs, and ground cover on the site. Refer to the Landscape Plan for plant information.
- 8. Provide vegetated open-channel conveyance systems discharging into and through stable vegetated areas: Due to the site constraints, it is not feasible to design a vegetated open-channel conveyance system on this project.
- 9. Provide other source controls to prevent or minimize the use or exposure of pollutants at the site in order to prevent or minimizes the release of those pollutants into stormwater runoff: The proposed small-scale infiltration basins provide 80% TSS removal. In addition, the porous pavement will provide 80% TSS removal prior to discharging to basin 3. Basin 3 will provide additional water quality measures due to infiltration.

VI. <u>DESIGN METHODOLOGY</u>

The intention of the proposed stormwater management facilities for this project is to comply with applicable required measures from Neptune Township Land Use Ordinance and NJAC 7:8. In order to prepare the stormwater calculations for the subject project, an investigation of the property and topography was

performed. An on-site review of the tract was performed by Dynamic Engineering Consultants, PC, verifying the existing site conditions and land cover characteristics. Dynamic Survey was contracted to prepare the ALTA/NSPS Land Title Survey for the existing site.

Based on our review of the existing site conditions and the Topographic Survey, the Drainage Area Maps for the existing and proposed site conditions as defined within this report were established. A grading plan was developed for the proposed site improvements with consideration to the existing drainage patterns. The plan was then designed to ensure runoff from the proposed development could be directed to stormwater management facilities to the maximum extent practicable in order to address the applicable sections of Neptune Township Stormwater Management rules and NJAC 7:8.

The two (2) above ground small-scale infiltration basins will temporarily store stormwater runoff from the site. An outlet control structure for each basin has been implemented to release stormwater runoff at a controlled rate to satisfy the stormwater quantity requirements. Overflow from the above ground basins is routed via the emergency spillways to the existing downstream stormwater management facilities. The above ground infiltration basins have been designed to meet the requirements set forth by NJAC 7:8.

The porous pavement drains to a subsurface small-scale infiltration basin that temporarily stores and attenuates stormwater runoff from the site. An outlet control structure has been implemented to release stormwater runoff at a controlled rate to satisfy the stormwater quantity requirements. The subsurface small-scale infiltration basin has been designed to meet the recharge requirements set forth by NJAC 7:8.

According to the NJAC 7:8-5.5(a), a TSS removal rate of 80% is required for stormwater runoff generated from vehicular pavement areas as a result of a major development. By the use of small-scale infiltration basins, and porous pavement, the proposed site meets the 80% TSS removal.

VII. STORMWATER MANAGEMENT BASIN DESIGN AND RUNOFF QUANTITY STANDARDS

In order to meet the stormwater runoff quantity and water quality requirements set forth in NJAC 7:8, the site design incorporates porous pavement, a subsurface small-scale infiltration basin, and two (2) above ground small-scale infiltration basins. Runoff from a portion of the roof area flows through a series of roof leaders to each of the above ground small-scale infiltration basins. Discharge from basin 2 flows through the stormwater conveyance systems to the subsurface small-scale infiltration basin 3. Additional runoff to basin 3 flows over land by sheet flow to the pervious paving areas, filters through the pervious paving and is then collected by the subsurface small-scale infiltration basin 3. Outflow from basins 1 and 3 is combined and routed to the existing 'B' inlet on 9th Avenue, also known as POA 1.

Minimal areas adjacent to each road frontage will have runoff that is undetained to each POA. It is important to note that the impervious surfaces that bypass to each POA are less in the proposed condition as compared to existing. An outline of the Drainage Areas is located in the Runoff Curve Number (CN) Calculations Existing & Proposed in the appendix of the report.

A summary of the pre and post development flows are shown in the charts below:

Pre-development and Post Development Peak Runoff Results

	P	RE VS. POS	ST SUMMARY CHA	RT (FLOW TO POA 1)		
DESIGN STORM	EXISTING DISTURBED AREA (CFS)	HYDRO- GRAPH #	RUNOFF RATE REDUCTION OF DISTURBED AREA	MAXIMUM TOTAL ALLOWABLE RUNOFF RATE (CFS)	PROPOSED RUNOFF RATE (CFS)	HYDRO- GRAPH #
2 Year	0.22	24	50%	0.11	0.13*	28
10 Year	0.34	24	25%	0.26	0.20	28
100 Year	2.19	24	20%	1.75	1.69	28

^{*}De minimis exception requested.

	PRE VS. POST SUMMARY CHART (FLOW TO POA 2)											
DESIGN STORM	EXISTING DISTURBED AREA (CFS)	HYDRO- GRAPH #	RUNOFF RATE REDUCTION OF DISTURBED AREA	MAXIMUM TOTAL ALLOWABLE RUNOFF RATE (CFS)	PROPOSED RUNOFF RATE (CFS)	HYDRO- GRAPH #						
2 Year	0.12	10	50%	0.06	0.065*	33						
10 Year	0.19	10	25%	0.14	0.10	33						
100 Year	0.38	10	20%	0.30	0.24	33						

^{*}De minimis exception requested.

	PRE VS. POST SUMMARY CHART (FLOW TO POA 3)											
DESIGN STORM	EXISTING DISTURBED AREA (CFS)	HYDRO- GRAPH #	RUNOFF RATE REDUCTION OF DISTURBED AREA	MAXIMUM TOTAL ALLOWABLE RUNOFF RATE (CFS)	PROPOSED RUNOFF RATE (CFS)	HYDRO- GRAPH #						
2 Year	0.00	29	50%	0.00	0.00	30						
10 Year	0.002	29	25%	0.00	0.005*	30						
100 Year	0.041	29	20%	0.03	0.108*	30						

^{*}De minimis exception requested.

VIII. GROUNDWATER RECHARGE & WATER QUALITY

As required by NJAC 7:8-5.5, a TSS removal rate of 80% is required for stormwater generated by the water quality design storm as a result of a major development. The design for the subject development meets the obligation for TSS removal by utilizing porous pavement, one (1) subsurface infiltration basin, and two (2) above ground infiltration basins.

Nine (9) test pits have been conducted for the four (4) BMP's on site; however, only eight (8) pits will be used in design of the BMP's. SPP-4 and -5 were used in designing Basin 1, which has a basin bottom area of 520

SF. SPP-6 and -7 were used in designing Basin 2, which has a basin bottom area of 1,201 SF. SPP-2, -3, and -9 were used in designing Basin 3 which has an area of 8,430 SF. Lastly, the pervious pavement was designed using SPP-8 and -3, which has an area of 6,450 SF. See soil pit testing results in Section III of this report for further information.

Recharge: The Post-Development Annual Recharge Deficit has been calculated using the New Jersey Groundwater Recharge Spreadsheet. Per the NJGRS Spreadsheet and soils investigation, the site development does not result in a recharge deficit. Refer to the NJ Groundwater Recharge Spreadsheet in the Appendix of this report.

Water Quality: The stormwater management design for the project satisfies the requirements set forth in NJAC 7:8-5.5(a) by utilizing pervious paving and small-scale infiltration basins. The pervious pavement will provide the minimum TSS removal rate of 80%. Per NJDEP BMP Manual Chapter 9.6, pervious pavement provides an 80% TSS removal. The project meets the contributory drainage area requirement of 3:1 (drainage area to area of pervious pavement), with a maximum slope of less than 5%. For either of the above ground small-scale infiltration basins (#1 & #2), all impervious runoff comes from the roof, and is considered clean; therefore, these basins do not need additional water quality measures. Additionally, the stormwater will be evacuated from the infiltration basins within 72 hours. As a result, the water quality requirements of the Neptune Township Land Development Ordinance and NJAC 7:8 are met.

IX. STABILITY ANALYSIS

Per the NJ Soil Erosion Standards, Section 21, "Standard for Off-Site Stability," compliance has been met for the site. The conditions of the NJ SESC Standards Section 21-1 have been satisfied using the point of discharge method with a well-defined channel.

- a. Retain pre-developed runoff characteristics. Do not increase the rate of runoff from development. Discharge rates from the proposed stormwater improvements are above the flow rates in the existing conditions; therefore method 'b' below will be used.
- b. Analyze the waterway or channel for stability under the planned rate of discharge using the Standard for Grassed Waterways or Standard for Chanel Stabilization, as appropriate. Peak flows from the 2- and 10-year storms shall be analyzed. The 2- and 10-year storms have existing peak flowrates of 0.22 cfs and 0.34 cfs, respectively. The proposed conditions, during the stability analysis, meets the requirements set forth in the Standard for Channel Stabilization by not exceeding the maximum flow rates for the existing 12" pipe at POA 1. A summary of the flow rates are shown in the chart below:

PRE VS. POST SUMMARY CHART (STUDY POINT – STABILITY)											
<u>Design</u> <u>Storm</u>	Existing Runoff Rate (CFS)	Proposed Runoff Rate (CFS)	Proposed Pipe Velocity (fps)								
2 Year	0.22	2.86	6.00								
10 Year	0.34	4.15	6.15								

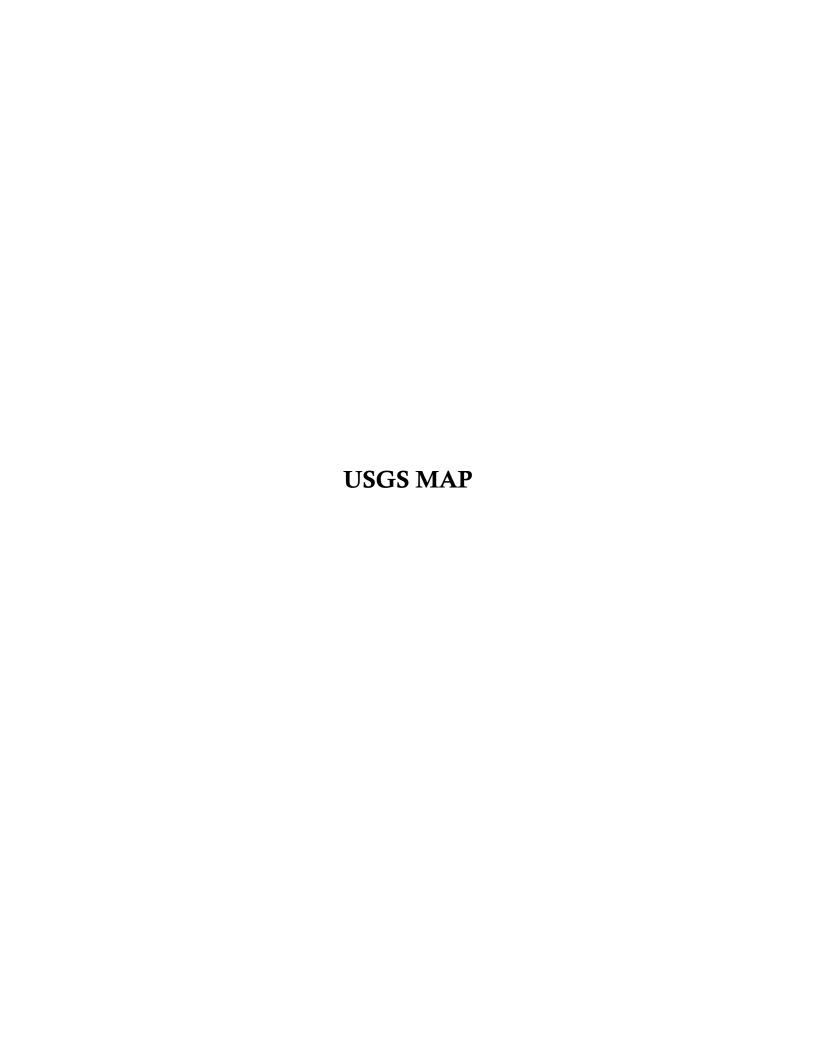
c. **Modify the waterway or channel to a stable design condition.** The combined flows to the existing stormwater facilities show that the proposed flow rates are in a stable condition as the discharge rate is lower than the maximum allowable flow rate in the existing 12" pipe.

X. CONCLUSION

The proposed overall development has been designed with provisions for the safe and efficient control of stormwater runoff in a manner that will not adversely impact the existing drainage patterns, adjacent roadways, or adjacent parcels. The 80% TSS removal obligations set forth by NJAC 7:8 have been satisfied by utilizing three (3) infiltration basins and pervious pavement. Recharge requirements are met utilizing the above ground infiltration basins and underground infiltration basin. Runoff quantity requirements have been met by reducing the outflow for the 2-, 10-, and 100-yr storms by 50%, 25%, and 20%, respectively.

With this stated, it is evident that the proposed development will not have a negative impact on the existing drainage pattern, water quality, or groundwater recharge on site or within the vicinity of the subject parcel.







UTM GRID AND 2019 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

U.S. National Grid

WK

Grid Zone Designati 18T

...NAIP, July 2015 - September 2015

U.S. Census Bureau, 2016GNIS, 1979 - 2019

entering private lands.

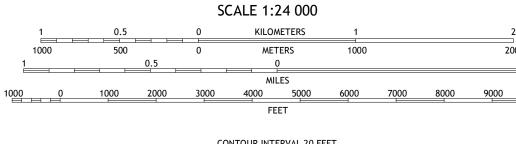
Hydrography.....

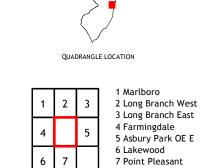
Imagery... Roads.....

Names....

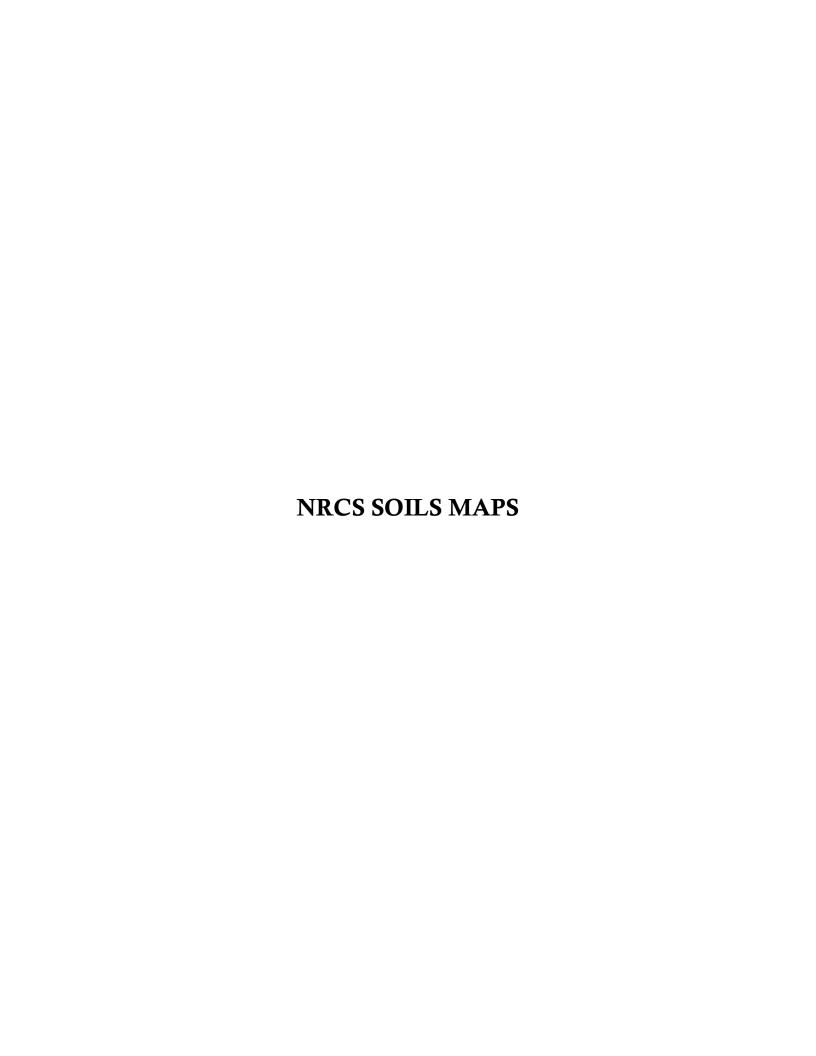
Boundaries...

Wetlands..





ADJOINING QUADRANGLES





Natural Resources Conservation

Service

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

Custom Soil Resource Report for Monmouth County, New Jersey



Preface

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

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

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2 053951).

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

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

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

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

alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

Contents

Preface	2
How Soil Surveys Are Made	
Soil Map	
Soil Map	
Legend	10
Map Unit Legend	11
Map Unit Descriptions	11
Monmouth County, New Jersey	13
UR—Urban land	13
References	14

How Soil Surveys Are Made

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

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

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

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

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

Custom Soil Resource Report

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

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

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

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

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

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

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

Custom Soil Resource Report

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

Soil Map

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



0 45 90 180 270
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Map Unit Polygons

-

Soil Map Unit Lines

Soil Map Unit Points

Special Point Features

(0)

Blowout

 \boxtimes

Borrow Pit

Ж

Clay Spot

 \Diamond

Closed Depression

Š

Gravel Pit

.

Gravelly Spot

0

Landfill Lava Flow

٨.

Marsh or swamp

2

Mine or Quarry

.X.

Miscellaneous Water

Perennial Water

0

Rock Outcrop

+

Saline Spot

0.0

Sandy Spot

Severely Eroded Spot

Λ

Sinkhole

Ø

Sodic Spot

Slide or Slip



Spoil Area Stony Spot



Very Stony Spot



Wet Spot Other



Special Line Features

Water Features

_

Streams and Canals

Transportation

ransp

Rails

~

Interstate Highways

US Routes

 \sim

Major Roads

~

Local Roads

Background

1

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24.000.

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

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

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

Source of Map: Natural Resources Conservation Service Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

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

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

Soil Survey Area: Monmouth County, New Jersey Survey Area Data: Version 15, Aug 31, 2021

Soil map units are labeled (as space allows) for map scales 1:50.000 or larger.

Date(s) aerial images were photographed: Sep 25, 2020—Oct 15, 2020

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

Map Unit Legend

Map Unit Symbol Map Unit Name		Acres in AOI	Percent of AOI		
UR	Urban land	2.5	100.0%		
Totals for Area of Interest		2.5	100.0%		

Map Unit Descriptions

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

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

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

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

Custom Soil Resource Report

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

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

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

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

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

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

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

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

Monmouth County, New Jersey

UR—Urban land

Map Unit Setting

National map unit symbol: 4j92

Elevation: 0 to 170 feet

Mean annual precipitation: 30 to 64 inches Mean annual air temperature: 46 to 79 degrees F

Frost-free period: 131 to 178 days

Farmland classification: Not prime farmland

Map Unit Composition

Urban land: 95 percent Minor components: 5 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Urban Land

Setting

Parent material: Surface covered by pavement, concrete, buildings, and other structures underlain by disturbed and natural soil material

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 8s

Hydric soil rating: Unranked

Minor Components

Udorthents

Percent of map unit: 5 percent

Landform: Low hills

Down-slope shape: Linear Across-slope shape: Linear Hydric soil rating: No

References

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

National Research Council. 1995. Wetlands: Characteristics and boundaries.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2 053577

Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2 053580

Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.

United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2 053374

United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084

Custom Soil Resource Report

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

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

RUNOFF CURVE NUMBER (CN) CALCULATIONS-EXISTING



Existing Drainage Area Summary and Average Curve Number(CN) Calculations

Project: Surfside Crossing Multi-Family Development Computed By: SMM Job #: 2241-99-002 Checked By: SRC

Location: Memorial Drive & 8th Ave, Neptune, Nj Date: 6/14/2022

ſ	Drainage Area	Impervious	Impervious	Curve	HSG A -	HSG A -	Curve	HSG A -	HSG A -	Curve	Avg.	Total	Total	TC (Min.)
ı		Area (acre)	Area (sf)	Number	Open	Open	Number	Wooded	Wooded	Number	Perv.	Pervious	Area	
ı				(CN) Used	Space Area	Space Area	(CN) Used	Area (acre)	Area (sf)	(CN) Used	Curve	Area	(acres)	
L					(acre)	(sf)					Number	(acres)		
	DA 1 - 8TH AVE		1,631	98	0.04	1,655	39	0.01	463	30	37	0.05	0.09	10
	DA 2 - LOW POINT		3,695	98	0.58	25,241	39	0.28	12,397	30	36	0.86	0.95	12
	DA 3 - 9TH AVE		-	98	0.62	26,997	39	0.13	5,783	30	37	0.75	0.75	10
I	BYPASS - MEMORIAL	0.00	_	98	0.03	1,176	39	0.00	-	30	39	0.03	0.03	10
_	Total	0.12	5326.00		1.26	55069.00	_	0.43	18643.00			1.67	1.81	

Per County Soil Survey - Soil Abbr HSG A Soil Fort mott

	Runoff Curve Number (CN)			
Description	(HSG A)	(HSG B)	(HSG C)	(HSG D)
Impervious Surface	98	98	98	98
Open Space (lawn) (good)	39	61	74	80
Woods (good)	30	55	70	77

RUNOFF CURVE NUMBER (CN) CALCULATIONS-PROPOSED



PROPOSED DRAINAGE AREA SUMMARY AND AVERAGE CURVE NUMBER(CN) CALCULATIONS

Project: Surfside Crossing Multi-Family Development

Job #: 2241-99-002

Location: Memorial Drive & 8th Ave, Neptune, NJ

Computed By: SMM Checked By: SRC

Date: 6/14/2022

Drainage Area	Impervious	Impervious	Curve	HSG A -	HSG A -	Curve	HSG A -	HSG A -	Curve	Avg.	Total	Total	TC (Min.)
	Area (acre)	Area (sf)	Number	Open	Open	Number	Wooded	Wooded	Number	Perv.	Pervious	Area	
			(CN) Used	Space Area	Space Area	(CN) Used	Area (acre)	Area (sf)	(CN) Used	Curve	Area	(acres)	
				(acre)	(sf)					Number	(acres)		
DA 1 - BASIN 1		4,453	98	0.05	2,014	39	0.00	1	30	39	0.05	0.15	6
DA 2 - BASIN 2		21,955	98	0.09	3,979	39	0.00	ı	30	39	0.09	0.60	6
DA 3 - BASIN 3		35,187	98	0.01	298	39	0.00	ı	30	39	0.01	0.81	6
BYPASS MEMORIAL		-	98	0.08	3,415	39	0.00	ı	30	39	0.08	0.08	6
BYPASS 8TH AVE	0.02	725	98	0.04	1,727	39	0.00	-	30	39	0.04	0.06	6
BYPASS 8TH AVE	0.04	1,617	98	0.08	3,684	39	0.00	-	30	39	0.08	0.12	6
Total	1 1 47	63 937		0.35	15 117 00		0.00	0.00			0.22	1.81	

Per County Soil Survey -	Soil Abbr	HSG	Α	Soil	Fort Mott
, ,					

	Runoff Curve Number (CN)			
Description	(HSG A)	(HSG B)	(HSG C)	(HSG D)
Impervious Surface	98	98	98	98
Open Space (lawn) (good)	39	61	74	80
Woods (good)	30	55	70	77

EXISTING TIME OF CONCENTRATION (Tc) CALCULATIONS



6/14/2022 Project: SURFSIDE CROSSING Project No:

2241-99-002

Calculated By: SMM Checked By: SRC

1904 Main Street, Lake Como, NJ 07719 (732) 974-0198

Worksheet 3: Time of Concentration (T_c) Calculations

Land Condition: Existing Drainage Area: DA - 1

Sheet Flow:	AB			
1. Surface Description	Range (natural)			
2. Manning's Roughness Coefficient, n	0.13			†
3. Flow Length, <i>L</i> { total <i>L</i> ≤ 100 ft }	100.0 ft			1
4. Two-Year 24-hour Rainfall, <i>p</i> ₂ for Monmouth County	3.38 in	3.38 in	3.38 in	
5. Land Slope, <i>s</i> (<i>ft/ft</i>)	0.016 ft/ft			1
6. Travel Time, $T_t = \frac{0.007 (n L)^{0.8}}{p_2^{0.5} \text{ s}^{0.4}}$	0.155 hr +	0.000 hr +	0.000 hr =	0.155 hr
				1
Shallow Concentrated Flow:	ВС	CD	DE	_
7. Surface Description	Unpaved	Paved	Unpaved	_
Flow Length, <i>L</i>	12.0 ft 0.014 ft/ft	15.6 ft 0.014 ft/ft	37.0 ft 0.014 ft/ft	4
10. Average velocity, <i>V</i> { see Figure 3.1)	1.91 ft/s	2.41 ft/s	1.91 ft/s	4
11. Travel Time, $T_t = \frac{L}{3600 \text{ V}}$	0.002 hr +	0.002 hr +	0.005 hr =	0.009 hr
Channel Flow:				1
12. Pipe Diameter, D				
13. Cross-Sectional Flow Area, A]
14. Wetted Perimeter, p_w				
15. Hydraulic Radius, $r = A / p_w$				
16. Channel Slope, s				
17. Pipe Material				
18. Manning's Roughness Coefficient, n				_
19. Velocity, $V = \frac{1.49 \ r^{2/3} \ s^{1/2}}{n}$				
ZU FIOW LENGTH /				
21. Travel Time, $T_t = \frac{L}{3600 \text{ V}}$	0.000 hr +	0.000 hr +	0.000 hr =	0.000 hr
22. Watershed or subarea Time of Concentration, T_c { add T_t in steps 6, 11 at	nd 21 }	. 		0.164 hr
				9.8 min



Date: 6/14/2022
Project: SURFSIDE CROSSING
Project No: 2241-99-002

Calculated By: SMM
Checked By: SRC

1904 Main Street, Lake Como, NJ 07719 (732) 974-0198

Worksheet 3: Time of Concentration (T_c) Calculations

Land Condition: Existing

Drainage Area: DA - 2

Sheet Flow:		AB							
1. Surface Description		Range (natu	ıral)						
2. Manning's Roughness Coefficient, <i>n</i>		0.13							
3. Flow Length, <i>L</i> { <i>total L</i> ≤ 100 ft }		100.0 f	t						
4. Two-Year 24-hour Rainfall, <i>p</i> ₂ for Monmouth County		3.38 in		3.38 in		3	.38 in		
5. Land Slope, <i>s</i> (<i>ft/ft</i>)		0.020 ft/	ft						
6. Travel Time, $T_t = \frac{0.007 (n L)^{0.8}}{p_2^{0.5} \text{ s}^{0.4}}$		0.142 hr	+	0.000 hr	+	0.000 hr	=		0.142 hr
Obstillant Occupation of Elemen				Г					
Shallow Concentrated Flow:		ВС							
7. Surface Description		Unpaved							
8. Flow Length, <i>L</i>		290.0 f							
9. Watercourse Slope, s		0.013 ft/ 1.83 ft/s							
		1.03 1/3	_						
11. Travel Time, $T_t = \frac{L}{3600 \text{ V}}$		0.044 hr	+	0.000 hr	+	0.000 hr	=		0.044 hr
<u>Channel Flow</u> :									
12. Pipe Diameter, D									
13. Cross-Sectional Flow Area, A									
14. Wetted Perimeter, p_w									
15. Hydraulic Radius, $r = A / p_w$									
16. Channel Slope, <i>s</i>									
17. Pipe Material									
18. Manning's Roughness Coefficient, <i>n</i>									
19. Velocity, $V = \frac{1.49 r^{2/3} s^{1/2}}{n}$									
20. Flow Length, <i>L</i>									
21. Travel Time, $T_t = \frac{L}{3600 \text{ V}}$		0.000 hr	+	0.000 hr	+	0.000 hr	=		0.000 hr
22. Watershed or subarea Time of Concentration, T_c { add T_t in steps 6	6, 11 an	d 21 }						ļ	0.186 hr
								İ	11.1 min



 Date:
 6/14/2022

 Project:
 SURFSIDE CROSSING

 roject No:
 2241-99-002

10.3 min

Project No: 2241-99-002

Calculated By: SMM
Checked By: SRC

1904 Main Street, Lake Como, NJ 07719 (732) 974-0198

Worksheet 3: Time of Concentration (T_c) Calculations

Land Condition: Existing

Drainage Area: DA - 3

Sheet Flow:	AB				
1. Surface Description	Range (natura	ı)			
2. Manning's Roughness Coefficient, n	0.13				1
3. Flow Length, <i>L</i> { total <i>L</i> ≤ 100 ft }	100.0 ft				
4. Two-Year 24-hour Rainfall, p ₂ for Monmouth County	3.38 in	3.38 in		3.38 in	1
5. Land Slope, <i>s</i> (<i>ft/ft</i>)	0.025 ft/ft				
6. Travel Time, $T_t = \frac{0.007 (n L)^{0.8}}{p_2^{0.5} \text{ s}^{0.4}}$	0.130 hr	+ 0.000 hr	+ 0.000	hr =	0.130 hr
					7
Shallow Concentrated Flow:	ВС				
7. Surface Description	Unpaved				
8. Flow Length, <i>L</i>	233.0 ft				
9. Watercourse Slope, <i>s</i>	0.009 ft/ft				4
10. Average velocity, <i>V</i> { see Figure 3.1)	1.56 ft/s				
11. Travel Time, $T_t = \frac{L}{3600 \text{ V}}$	0.041 hr	+ 0.000 hr	+ 0.000	hr =	0.041 hr
Channel Flow:]
12. Pipe Diameter, D					
13. Cross-Sectional Flow Area, A					1
14. Wetted Perimeter, p_w					1
15. Hydraulic Radius, $r = A / p_w$					1
16. Channel Slope, <i>s</i>					
17. Pipe Material					
18. Manning's Roughness Coefficient, n					
19. Velocity, $V = \frac{1.49 r^{2/3} s^{1/2}}{n}$					
20. Flow Length, L					
21. Travel Time, $T_t = \frac{L}{3600 \text{ V}}$	0.000 hr	+ 0.000 hr	+ 0.000	hr =	0.000 hr
22 Watershed or subarea Time of Concentration, T., { add T., in steps 6, 11 ar.	d 21 }	 .			0 171 hr

HYDROGRAPH SUMMARY REPORTS – EXISTING & PROPOSED 2 YR., 10 YR., 25 YR. & 100 YR.

Project Name: Basin Model

06-14-2022

Hydrograph 2-yr Summary

- 2	Hydrograph Type	Hydrograph Name	Peak Flow (cfs)	Time to Peak (hrs)	Hydrograph Volume (cuft)	Inflow Hyd(s)	Maximum Elevation (ft)	Maximum Storage (cuft)
	NRCS Runoff	Pre DA 1 - IMPERVIOUS	0.120	12.13	474	1		
	NRCS Runoff	Pre DA 1 - PERVIOUS	0.000	24.00	0.095	1		
е	NRCS Runoff	Post Roof Area DA3	0.801	12.17	3,546	1		
4	NRCS Runoff	Post Deck DA3	0.884	12.17	3,913	1		
2	NRCS Runoff	Post Pervious Pavement	0.414	12.17	1,834	1		
9	NRCS Runoff	Post Pervious DA 1	0.000	24.00	1.47	1		
7	NRCS Runoff	Post Roof Area DA1	0.323	12.10	1,112	1		
60	NRCS Runoff	Post Pervious DA2	0.000	24.00	2.64	1		
0	NRCS Runoff	Post Roof Area DA2	1.617	12.10	5,558	ı		
10	Junction	Pre DA1-POA2	0.120	12.13	474	1, 2		
Ξ	NRCS Runoff	Post Pervious DA3	0.000	24.00	0.323	1		
12	NRCS Runoff	Post Impervious DA3	0.138	12.17	611	1		
13	Junction	Post Underground Basin 3	2.237	12.17	9,905	3, 4, 5, 11, 12		
4	Junction	Post Rain Garden 1	0.323	12.10	1,113	6,7		
15	Junction	Post Basin 2	1.617	12.10	5,561	6,8		
16	Pond Route	Post Basin 2	0.235	12.27	445	15	13.78	1,143
17	Pond Route	Post Basin 1	0.000	13.67	0.001	14	14.45	286
18	Junction	Post COMBINED TO UG BASI	N2.432	12.17	10,350	13, 16		
19	Pond Route	Post UG Basin 3	0.000	9.93	0.000	18	12.36	1,890
20	NRCS Runoff	Pre DA 2 - IMPERVIOUS	0.221	12.17	978	1		
21	NRCS Runoff	Pre DA 2 - PERVIOUS	0.000	00:00	0.000	ı		
7	Junction	Pre DA 2	0.221	12.17	978	20, 21		
23	NRCS Runoff	Pre DA 3 - PERVIOUS	0.000	24.00	1.47	1		
24	Junction	Pre COMBINED TO POA 1	0.221	12.17	086	22, 23		
25	NRCS Runoff	Post IMP BYPASS INLET N.	0.000	24.00	2.35	1		
7	NRCS Runoff	Post IMP BYPASS INLET N.	0.129	12.10	445	1		
27	Junction	COMB. INLET N.	0.129	12.10	447	25, 26		
788	Junction	Post COMBINED TO POA 1	0.129	12.10	447	17, 19, 27		
29	NRCS Runoff	Pre Bypass Memorial	0.000	24.00	0.969	ı		
30	NRCS Runoff	Post Bypass Memorial	0000	24.00	2.59	1		
31	NRCS Runoff	Post Imp Bypass Inlet S.	0.065	12.10	222	ı		
32	NRCS Runoff	Post Perv Bypass Inlet S.	0.000	24.00	1.18	1		
33	Junction	Post Comb. Bypass POA 2	0.065	12.10	223	31, 32		

Hydrology Studio v 3.0.0.24

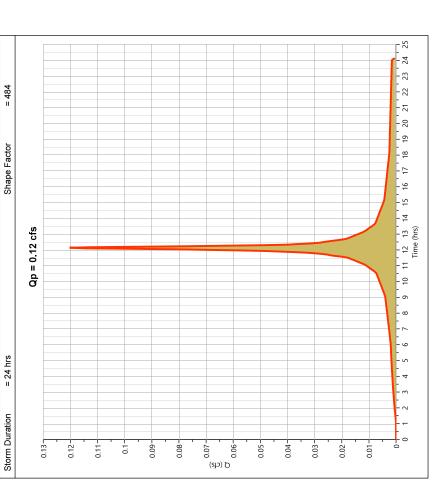
Pre DA 1 - IMPERVIOUS

Project Name:

06-14-2022

Hyd. No. 1 = 12.13 hrs= 0.120 cfs= NOAA-D = 474 cuft = 9.8 min = 98 = 484 Time of Conc. (Tc) Design Storm Runoff Volume Curve Number Shape Factor Time to Peak Peak Flow = NRCS Runoff = 0.04 ac = User = 3.50 in = 2 min = 24 hrs = 2-yr Hydrograph Type Storm Frequency Drainage Area Time Interval Total Rainfall

Tc Method



Hydrograph Report

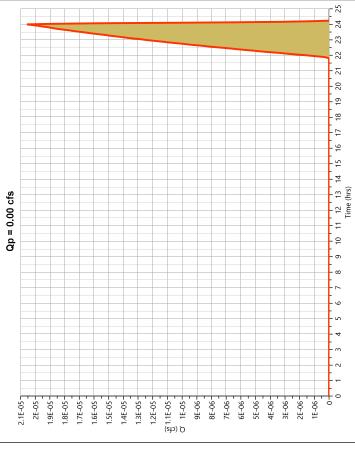
Hydrology Studio v 3.0.0.24

06-14-2022

Project Name:

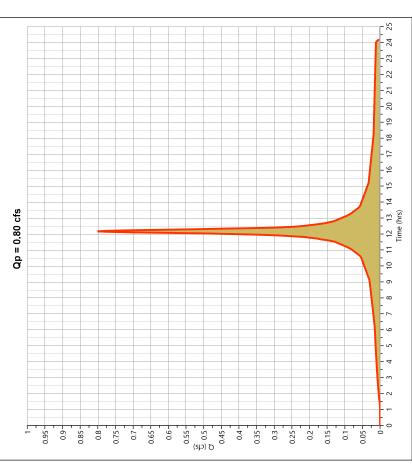
Hyd. No. 2
I - PERVIOUS
Pre DA 1 -

Storm Frequency = 2-yr Time to Peak = 22	Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.000 cfs
Part = 2 min Runoff Volume	Storm Frequency		Time to Peak	= 24.00 hrs
Integration 1984	Time Interval	= 2 min	Runoff Volume	= 0.095 cuft
Method = User Time of Conc. (Tc) al Rainfall = 3.50 in Design Storm m Duration = 24 hrs Shape Factor mposite CN Worksheat Shape Factor (sc) DN OWNSHeat Open space (sc)	Drainage Area	= 0.05 ac	Curve Number	= 37*
al Rainfall = 3.50 in Design Storm m Duration = 24 hrs Shape Factor mposite CN Worksheat (sc) CN Order Storm younglood Order Storm OQD = 0.00 cfs 2E-05 19E-05	Tc Method	= User	Time of Conc. (Tc)	= 9.8 min
Manage Pactor Shape Factor Shape Factor Manage Pactor	Total Rainfall	= 3.50 in	Design Storm	= NOAA-D
(sa) CR Worksheet (sa) CN DESCRIPTON (sa) Open capace 30 open capace 31 Weighted CN Method Employed 2E-05 2E-05	Storm Duration	= 24 hrs	Shape Factor	= 484
(ex) CN DESCRIPTION 39 Open space 37 Weighted CN Method Employed 2.1E-05 2E-05	* Composite CN Works	sheet		
30 wooded 2.1E-05 2E-05 - 1.9E-05 -	(ac) CN	SCRIPTION en space		
	37	oded sighted CN Method Employed		
2.1E-05 2E-05 1.9E-05	!	ď	= 0.00 cfs	
1.9E-05	2.1E-05			
1.9E-05	ZE-02-			
	1.9E-05			



Post Roof Area DA3

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.801 cfs
Storm Frequency	= 2-yr	Time to Peak	= 12.17 hrs
Time Interval	= 2 min	Runoff Volume	= 3,546 cuft
Drainage Area	= 0.29 ac	Curve Number	86 =
Tc Method	= User	Time of Conc. (Tc)	= 10.0 min
Total Rainfall	= 3,50 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



Hydrograph Report

06-14-2022 Project Name:

Hyd No. 3

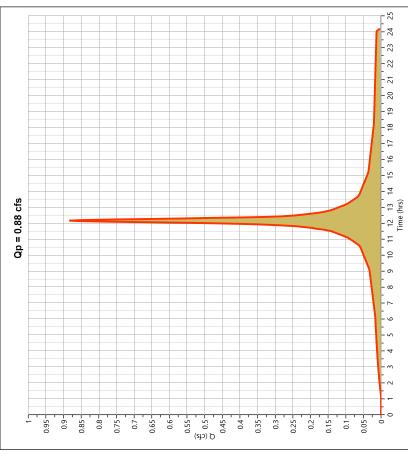
06-14-2022

Project Name:

4
0
Z
7
>
I

Post Deck DA3	Hyd.
rck DA3	
rck DA3	
ick DA3	
ck DA3	
ck DA3	
ck DA3	
ick DA3	
ck DA3	
ck DA3	
ck DA3	
ck DA3	
ck DA3	
ck DA	က
$\overline{\mathbf{z}}$	k DA
۵	Dec
Post	Post

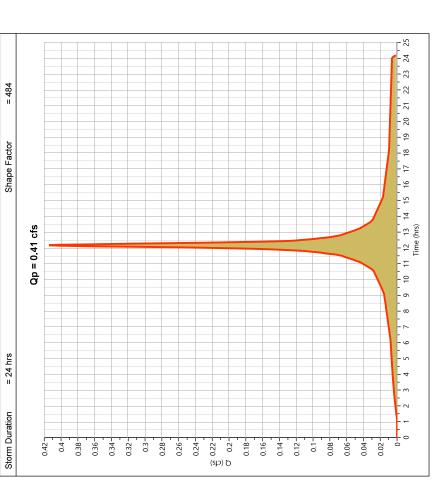
H	2000	ū	3. 100.0
Hydrograph Type	= NKCS Kuno#	Peak Flow	= 0.884 cts
Storm Frequency	= 2-yr	Time to Peak	= 12.17 hrs
Time Interval	= 2 min	Runoff Volume	= 3,913 cuft
Drainage Area	= 0.32 ac	Curve Number	86 =
Tc Method	= User	Time of Conc. (Tc)	= 12.8 min
Total Rainfall	= 3.50 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



06-14-2022

Project Name:

Post Pervious Pavement	avement		Hyd. No. 5
Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.414 cfs
Storm Frequency	= 2-yr	Time to Peak	= 12.17 hrs
Time Interval	= 2 min	Runoff Volume	= 1,834 cuft
Drainage Area	= 0.15 ac	Curve Number	= 98
Tc Method	= User	Time of Conc. (Tc)	= 12.8 min
Total Rainfall	= 3.50 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



Hydrograph Report

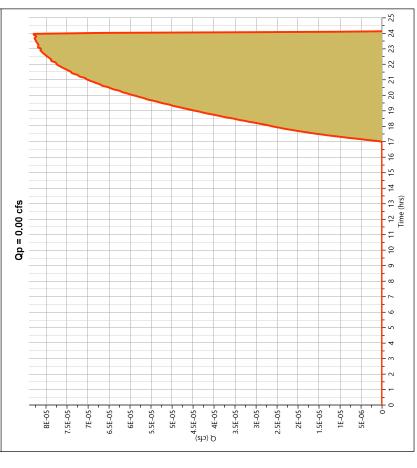
06-14-2022

Project Name:

Hyd. No. 6

_
3 DA 1
ious
Per∨
Post

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.000 cfs
Storm Frequency	= 2-yr	Time to Peak	= 24.00 hrs
Time Interval	= 2 min	Runoff Volume	= 1.47 cuft
Drainage Area	= 0.05 ac	Curve Number	= 39
Tc Method	= User	Time of Conc. (Tc)	= 6.0 min
Total Rainfall	= 3.50 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



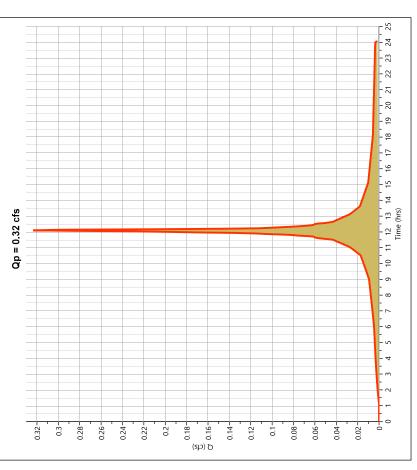
Post Roof Area DA1

06-14-2022

Project Name:

Hyd No. 7

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.323 cfs
Storm Frequency	= 2-yr	Time to Peak	= 12.10 hrs
Time Interval	= 2 min	Runoff Volume	= 1,112 cuft
Drainage Area	= 0.1 ac	Curve Number	86 =
Tc Method	= User	Time of Conc. (Tc)	= 6.0 min
Total Rainfall	= 3.50 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



Hydrograph Report

Post Pervious DA2

06-14-2022

Project Name:

Vd. No. 8	
I	

2 min			- 250	5
= 2 min		2-yr	Time to Peak	= 24.00 hrs
1 2.09 ac		2 min	Runoff Volume	= 2.64 cuft
= User = 3.50 in = 24 hrs Op = 0.00 cfs Op = 0.00 cfs		0.09 ac	Curve Number	= 39
an = 24 hrs Shape Factor Qp = 0.00 cfs		User	Time of Conc. (Tc)	= 6.0 min
Appe Factor Qp = 0.00 cfs		3.50 in	Design Storm	= NOAA-D
200015 200013 200011 200011 200011 6E-05 6E-05 6E-05 8E-05 6E-05 1E-05 1E-05		24 hrs	Shape Factor	= 484
0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 1.0000 0.0000 0.0000 1.00000 1.00000 1.00000 1.00000 1.00000 1.00000 1.00000 1.00000 1		Qp = 0.00 cfs		
0.0000 0.0000 0.0000 0.000 9E-6 6E-6 5E-7	0.00015			1
0.0000 0.0000 0.0000 9E-6 6E-6 5E-7 2E-7	0.00014			
0.0000 0.0000 9E-0 9E-0 7E-0 6E-0 5E-0 1E-0	0.00013			_
0.0000 9E-0 9E-0 6E-6 6E-1 1E-0	0.00012			
0.000 9E-0 6E-0 5E-0 1E-0	0.00011			
9E-0 8E-0 6E-0 9E-0 1E-0	0.0001			
8E-0 7E-0 6E-0 5E-0 2E-0 1E-0	9E-05			
7E-7 7E-7 7E-7 7E-7 7E-7 7E-7 7E-7 7E-7				
7E-0 6E-0 5E-0 1E-0 1E-0				
6E-05- 5E-05- 4E-05- 3E-05- 1E-05- 1E-05-				
4E-05- 3E-05- 1E-05- 1E-05-	6E-05			
4E-05- 3E-05- 1E-05-	SE-05-			
3E-05-	4E-05-			
2E-05-	3E-05-			
1E-05-	2E-05-			
	1E-05 -			

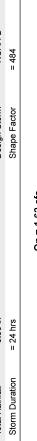
Post Roof Area DA2

06-14-2022

Hyd. No. 9

Project Name:

Hydrograph Type	= NRCS Runoff	Peak Flow	= 1.617 cfs
Storm Frequency	= 2-yr	Time to Peak	= 12.10 hrs
Time Interval	= 2 min	Runoff Volume	= 5,558 cuft
Drainage Area	= 0.5 ac	Curve Number	86 =
Tc Method	= User	Time of Conc. (Tc)	= 6.0 min
Total Rainfall	= 3.50 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



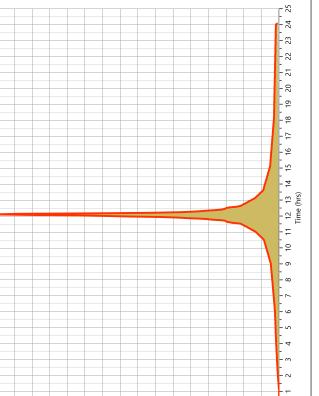
Qp = 1 62 cfs 1.9

13 1.1

Q (cfs)

0.6

0.3



Hydrograph Report

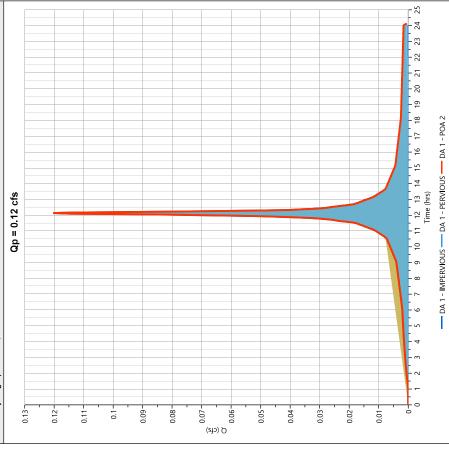
Hyd. No. 10

06-14-2022

Project Name:

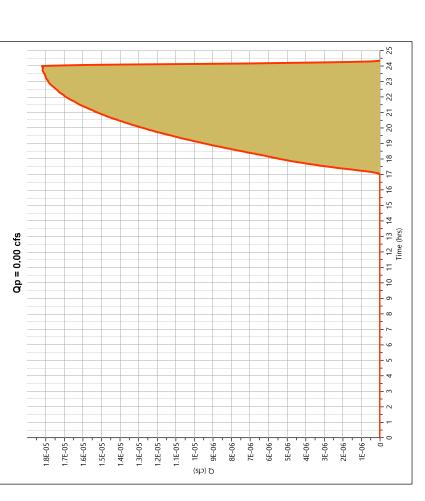
Pre DA 1 - POA 2

= 0.120 cfs	= 12.13 hrs	= 474 cuft	= 0.09 ac	
Peak Flow	Time to Peak	Hydrograph Volume = 474 cuft	Total Contrib. Area	
= Junction	= 2-yr	= 2 min	= 1, 2	
Hydrograph Type	Storm Frequency :	Time Interval	Inflow Hydrographs = 1, 2	



Post Pervious DA3

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.000 cfs
Storm Frequency	= 2-yr	Time to Peak	= 24.00 hrs
Time Interval	= 2 min	Runoff Volume	= 0.323 cuft
Drainage Area	= 0.01 ac	Curve Number	= 39
Tc Method	= User	Time of Conc. (Tc)	= 12.8 min
Total Rainfall	= 3.50 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



Hydrograph Report

06-14-2022 Project Name:

Hyd. No. 11

06-14-2022

Project Name:

Hyd. No. 12

DA3	0000
Post Impervious DA3	

Storm Frequency = 2-yr Time Interval = 2 min Drainage Area = 0.05 ac To Method = User Total Rainfall = 3.50 in Storm Duration = 24 hrs	in 5 ac on in one of the contract of the contr	Time to Peak Runoff Volume Curve Number Time of Conc. (Tc) Design Storm Shape Factor	= 12.17 hrs = 611 cuft = 98 = 12.8 min
	2 5 0	Runoff Volume Curve Number Time of Conc. (Tc) Design Storm Shape Factor	= 611 cuft = 98 = 12.8 min
	2 5 0	Curve Number Time of Conc. (Tc) Design Storm Shape Factor	= 98 = 12.8 min
	5.0	Time of Conc. (Tc) Design Storm Shape Factor	= 12.8 min
		Design Storm Shape Factor	2
		Shape Factor	1-KCN1-
0.13	Qp = 0.14 cfs		= 484
0.13			
0.12			
- 21.0			
0.11			
0.1			
60.0			
(sJ:			
φ (0.00) Φ (0.00)			
0.06			
0.05			
0.04			
0.03			
0.02			
10:0			

-	ţ		
	Ì)
	Š		1
	(1)
۵	1	ľ	
	,		
-	7	_	
-	3		
	ׅ֡֒֝֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜	Ţ	
-	֡֝֝֓֜֜֜֜֝֓֜֜֜֓֓֓֓֓֜֓֜֓֓֓֓֓֜֜֓֓֓֡֓֜֜֜֓֓֡֓֜֓֡֡֡֓֜֡֓֡֓֜֡֡֡֓֜֜֡֡֡֡֓֜֜֡֡֡֡֡֓֜֡֡֡֡֡֡	Ţ	2
-	<u>כ</u> ככ	7	
	200	7	2
-	2000		
-	2020		
-	2017017		

Hydrology Studio v 3.0.0.24

Post Underground Basin 3

06-14-2022

Project Name:

Hyd. No. 13

	H			
= 2.237 cfs = 12.17 hrs	= 9,905 cuft	= 0.82 ac		
Peak Flow Time to Peak	Hydrograph Volume	Total Contrib. Area		16 17 18 19 20 3
			Qp = 2.24 cfs	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 Time (hrs)
				- 6
= Junction = 2-yr	= 2 min	= 3, 4, 5, 11, 12		4 5 6 7 8

Hydrograph Report

06-14-2022

Project Name:

No 14

Hyd.
_
_
rden
in Ga
Post Rain Garden
Po

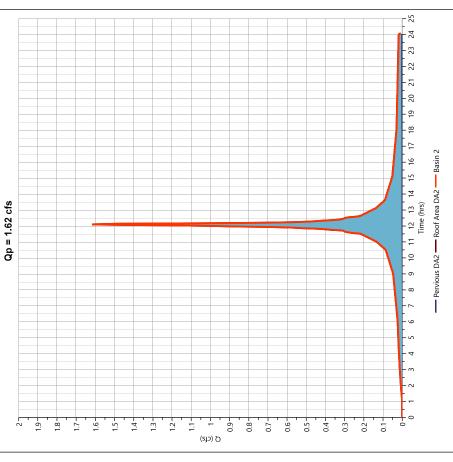
Time to Peak = 12.10 hrs Hydrograph Volume = 1,113 cuft Total Contrib. Area = 0.15 ac Total Contrib. Area = 10.15 ac Total Co	= 2-yr		= 7-vr	Time to Deal	
Hydrograph Volume = 1,113 cu	= 6, 7 Qp = 0.32 cfs Total Contrib. Area = 0.15 ac Qp = 0.32 cfs		- 2 -yı	IIMe to Peak	= 12.10 hrs
Ap = 0.32 cfs Op = 0.32 cfs Ap = 0.32 cfs	April 2 13 14 15 16 17 18 19 20 21 22 23 24 18 19 20 21 22 23 24 18 19 20 21 22 23 24 18 19 20 21 22 23 24 18 19 20 21 22 23 24 18 19 20 21 22 23 24		= 2 min	Hydrograph Volume	= 1,113 cuft
Qp = 0.32 cfs	Qp = 0.32 cfs The last is 14 15 16 17 18 19 20 21 22 23 24 Three last is 14 15 16 17 18 19 20 21 22 23 24 Three last is 15 16 17 18 19 20 21 22 23 24 Three last is 15 16 17 18 19 20 21 22 23 24 Three last is 15 16 17 18 19 20 21 22 23 24 Three last is 16 17 18 19 20 21 22 23 24 Three last is 16 17 18 19 20 21 22 23 24 Three last is 16 17 18 19 20 21 22 23 24 Three last is 16 17 18 19 20 21 22 23 24 Three last is 16 17 18 19 20 21 22 23 24 Three last is 16 17 18 19 20 21 22 23 24 Three last is 16 17 18 19 20 21 22 23 24 Three last is 16 17 18 18 19 20 21 22 23 24 Three last is 16 17 18 18 19 20 21 22 23 24 Three last is 16 17 18 18 18 20 21 22 23 24 Three last is 16 17 18 18 18 20 21 22 23 24 Three last is 16 17 18 18 18 20 21 22 23 24 Three last is 16 17 18 20 21 22 21 22 23 24 Three last is 16 17 18 20 21 22 22 22 22 22 22 22 22 22 22 22 22	0.32	= 6, 7	Total Contrib. Area	= 0.15 ac
	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 Time (hs)	0.32	Qp = 0.32 cfs		
	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 Time (hrs)				
	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 Time (hrs)				
	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 Time (frs.)	0.3			
	Time (frs.) Time (frs.) Time (frs.) Time (frs.)	0.28			
	Time (hrs) Time (hrs) Time (hrs)				
	Time (hrs) 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 Time (hrs)	0.26			
	Time (hrs) 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 Time (hrs)	0.24			
	Time (hrs) Time (hrs) Time (hrs)	0.22			
	Time (hrs) Time (hrs) Time (hrs)	, (
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	Time (hrs) Time (hrs) Time (hrs)	0.2			
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	Time (hrs) Time (hrs) Time (hrs)	(s):			
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	Time (hrs) Time (hrs) Time (hrs)	Q 0.16			
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	Time (hrs.) 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 10 11 2 13 14 15 16 17 18 19 20 21 22 23 24 24 24 24 24 24 24 24 24 24 24 24 24	0.14			
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	Time (hrs)	0.12			
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 Time (hrs)	0.1			
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	Time (hts)	0.08			
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	Time (hrs)	0.06			
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 1me (hts)	0.04			
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 Time (hrs)	- 0.00			
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 Time (hrs)				
	Time (hrs) To and Anna DA 4 — Dane DA 4	- 1 -	5 6 7 8 9 10 11	14 15 16 17 18 19 20	22 23 24

Post Basin 2

06-14-2022 Project Name:

Hyd No 15

Hydrograph Type	= Junction	Peak Flow	= 1.617 cfs
Storm Frequency	= 2-yr	Time to Peak	= 12.10 hrs
Time Interval	= 2 min	Hydrograph Volume = 5,561 cuft	= 5,561 cuft
Inflow Hydrographs = 8, 9	= 8, 9	Total Contrib. Area = 0.59 ac	= 0.59 ac



Hydrograph Report

Post Basin 2

Hyd. No. 16

06-14-2022

Project Name:

eak Flow = 0.235	
а.	
= Pond Route	
Hydrograph Type	

Storm Frequency	Indic	Qp = 0.23 cfs	Time to Peak Hydrograph Volume Max. Elevation Max. Storage	= 12.27 hrs = 445 cuft = 13.78 ft = 1,143 cu
= 2 min = 15 - Basin 2 Max. Elevation = Basin 2 Max. Storage Max	Indio	Qp = 0.23 cfs	Hydrograph Volume Max. Elevation Max. Storage	= 445 cuft = 13.78 ft = 1,143 cu
= 15 - Basin 2 Basin 2 Max. Storage Indication Method Qp = 0.23 cfs	Indic	Qp = 0.23 cfs	Max. Elevation Max. Storage	= 13.78 ft = 1,143 cu
Aav. Storage Qp = 0.23 cfs	and Name = Basin 2 and Routing by Storage Indication Method 1.9 1.9 1.6 1.6 1.1 1.6 1.1 1.1 1.1 1.3	Qp = 0.23 cfs	Max. Storage	= 1,143 cu
	1.9 1.9	Qp = 0.23 cfs		
1.1 1.2 1.1 1.1 1.1 1.1 1.1 1.1	1.9 1.7 1.6 1.5 1.4 1.3	Op = 0.23 cfs		
	1.8			
	1.8			
	1.8			
	1.5			
	1.5			
	1.5			
	15.			
	1.3			
00000000				
0 0 0 0 0 0 0 0	I mi			
00000000				
- 00000000	1.2			
0 0 0 0 0 0 0 0				
0.09 0.07 0.05 0.05 0.03 0.03				
0.7 0.6 0.6 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7	-6.0			
0.7	0.8			
0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5	0.7			
0.3	0.6			
0.3	0.5			
0.3	0.4			
0.1	0.3			
0.1	0.2			2
	0.1			

Pond Report

Basin 2

06-14-2022

Project Name:

Basin 2

Stage-Storage

	Total Storage (cuft)	0.000	678	1,508	2,500	3,659	4,991	00Z'9		7.8	0	2.6	2.4	2.2	5	6. 8.	tage		ž -	- 0.8	9.0	0.4	0.2	0009	
ge Table	Incr. Storage (cuft)	0.000	678	831	991	1,159	1,333	,1,209			\													2000	
Stage / Storage Table	Contour Area (sqft)	1.201	1,509	1,814	2,151	2,486	2,844	3,202					\											4000	75
	Elevation (ft)	13.00	13.50	14.00	14.50	15.00	15.50	590	Stage-Storage						\									je (cuft)	-Contours Top of Pond
	Stage (ft)	0.00	0.50	1.00	1.50	2.00	2.50	5.80	tage-6							1								3000 Total Stora	ontours -
S	Input	13.00	100.00	Ave End Area					S								1	\						5000	
User Defined Contours	Description	Bottom Elevation, ft	Voids (%)	Volume Calc																				1000	
Ň		ш								15.8	0 !	15.6	15.4	15.2	15-		(Ħ) v	Ele	14.2	13.8	13.6	13.4	13.2	- 0	

Pond Report

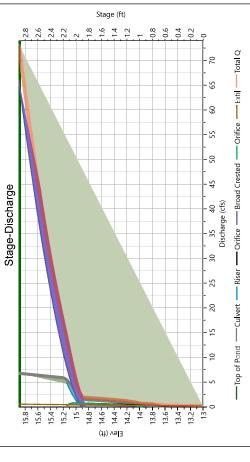
Project Name:

06-14-2022

Stage-Discharge

Outrost / Original	toring		Orifices		oriei co	
calliver () Olillices	Jan	*	2*	ო	OIIICE L'AIE	13
Rise, in	12	3.5	-		Orifice Dia, in	
Span, in	12	3.5	24		No. Orifices	
No. Barrels	-	2	-		Invert Elevation, ft	
Invert Elevation, ft	12.19	13.50	13.98		Height, ft	
Orifice Coefficient, Co	09'0	09'0	09'0		Orifice Coefficient, Co	
Length, ft	30					
Barrel Slope, %	e,					
N-Value, n	0.013					
Media	ž		Weirs			
o III	D A E	-	7	ო	Allcinaly	
Shape / Type	Вох	Broad Crested			Exfiltration, in/hr	7.20**
Crest Elevation, ft	14.9	14.9				
Crest Length, ft	12	20				
Angle, deg						
Weir Coefficient, Cw	3.3	3.3				

*Routes through Culvert. **Exfiltration extracted from outflow hydrograph. Rate applied to contours.



Pond Report

Basin 2

Stage-Storage-Discharge Summary

|--|

Total	(cfs)	0.000	0.251	0.704	5.296	37.41	73.30
User	(cfs)						
Exfi	(cts)	0.000	0.252	0.302	0.414	0.474	.534
Pf Riser	(cfs)						
	3						
Weirs, cfs	2						
,	-	0.000	0.000	0.000	2.087	30.67	099.00
Riser	(cfs)	0.000	0.000	0.000	1.252	0.000	0000 o
•	3						
Orifices, cfs	2	0.000	0.000	0.019	0.794	0.000	0000:0
0	-	0.000	0.000	0.383	0.749	0.000	0000
Culvert		0.000	0.000 oc	0.402 oc	2.795 00	6.264 oc	0 766 00
Storage	(cnft)	0.000	678	1,508	3,659	4,991	6,200
Elev.	(¥)	13.00	13.50	14.00	15.00	15.50	6 9
Stage	£	00.00	0.50	0 5	2.00	2.50	2.90

Suffix key: ic = inlet control, oc = outlet control, s = submerged weir

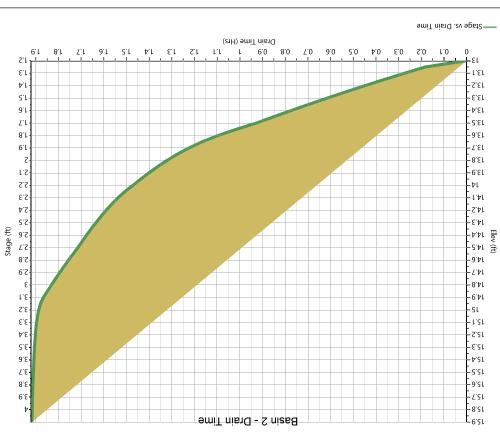
Pond Report

06-14-2022 Project Name:

Basin 2

06-14-2022 Project Name:

Pond Drawdown Stage (ft)



Post Basin 1

06-14-2022

Project Name:

Hyd. No. 17

Time to Peak Hydrograph Volume Max. Storage Max. Storage	Storm Frequency = 2-yr Time Interval = 2 min Inflow Hydrograph = 14 - Rain Gardi Pond Name = BASIN 1 Pond Routing by Storage Indication Method 0.28 0.28 0.29 0.29	Qp = 0.00 cfs	o Peak graph Volume Storage	= 13.67 hrs = 0.001 cuft = 14.45 ft = 286 cuft
Hydrograph Volume 1 Max. Storage Ap = 0.00 cfs	Time Interval	Δp = 0.00 cfs	graph Volume Elevation Storage	= 0.001 cuft = 14.45 ft = 286 cuft
Ap = 0.00 cfs Qp = 0.00 cfs Qp = 0.00 cfs	Inflow Hydrograph	Qp = 0.00 cfs	Storage	= 14.45 ft = 286 cuft
Qp = 0.00 cfs Qp = 0.00 cfs 4	Pond Name = BASIN 1 Pond Routing by Storage Indication Method 0.32 0.28 0.26 0.27 0.29		Storage	= 286 cuff
Qp = 0.00 cfs Application of the state of t	Pand Routing by Starage Indication Method 0.32 0.28 0.26 0.26 0.27	Qp = 0.00 cfs		
Op = 0.00 cfs The second of t	0.32 0.28 0.24 0.22	Qp = 0.00 cfs		
2 3 4 5 6 7 1 1 1 2 1 1 1 1 2 1 1 1 1 2 1 1 1 1 1	0.28			
2 3 4 6 6 7 8 9 9 10 11 12 8 1 10 12 12 12 12 12 12 12 12 12 12 12 12 12	0.28 0.26 0.24 0.22			
2 1 1 2 3 4 5 6 7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	028			
2 3 4 5 6 7 1 1 1 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	0.26			
2 3 4 5 6 6 7 8 9 9 10 11 12 12 12 12 12 12 12 12 12 12 12 12	0.22			
1 2 3 4 5 6 7 7 8 9 10 11 12	0.22			
1 2 3 4 6 6 7 8 9 9 10 11 12 12 12 14 15 15 15 15 15 15 15 15 15 15 15 15 15	0.22			
1 2 3 4 5 6 7 7 8 9 10 11 12 12 11 12 12 11 12 12 11 12 12 11 12 1	0.2			
1 2 3 4 5 6 7 8 9 10 11 12 Time Area				
1 2 3 4 5 6 7 8 9 10 11 12 Time Area	0.18			
1 2 3 4 5 6 7 8 9 10 11 12 Time Area	Q 0.16-			
1 2 3 4 5 6 7 8 9 10 11 12 Time Amer)	0.14			
1 2 3 4 5 6 7 8 9 10 11 12 Time Ame)	0.12			
1 2 3 4 5 6 7 8 9 10 11 12 Time Amer)	0.1			
1 2 3 4 5 6 7 8 9 10 11 12 Time Ame)	0.08			
1 2 3 4 5 6 7 8 9 10 11 12 Time Area	0.06			
1 2 3 4 5 6 7 8 9 10 11 12 12 12 12 12 12 12 12 12 12 12 12	0.04			
0 1 2 3 4 5 6 7 8 9 10 11 12 Time Area	0.02			
1 2 3 4 5 6 7 8 9 10 11 12 Timother	-0			
Time (hre)	1 2 3	6 7 8		}
(611)		Time (hrs)		

Pond Report

BASIN 1

06-14-2022

Project Name:

Stage-Storage

1		
3		
,		

	ge											Stag	e (ft)					
	Total Storage (cuft)	0000	320	760	1,859		<u>.</u>	1.8	1.6	1.4	12	!		9:0	0.4	0.2		2000
Table	Incr. Storage (cuft)		320	440	1,199												-	1600 1800
Stage / Storage Table	Contour Area (sqft)		760	666	1,526			\	\								-	1400
	Elevation (ft)	14 00	14.50	15.00	15.95	Stage-Storage				1							-	800 1000 1200 Total Storage (cuft) Contours — Top of Pond
	Stage (ff)	000	0.50	1.00	60.00	Stage-S						\					+	800 10 Total Sto Contours
SI	Input	14.00	100.00	None													+	0009
User Defined Contours	Description	evation, ft	Voids (%)	Volume Calc														400
Jser Defin	Dec	Bottom Elevation, ft		loy													+	200
٦							<u></u>	15.8	15.6	15.4	15.2		Elev	14.6	14.4	14.2	4	0

Pond Report

BASIN 1

Stage-Discharge

06-14-2022

Project Name:

Culyart / Originas	trovino		Orifices		Orifice Diste	
coming (allege)		*	2	ო	O III CO I I I I I	
Rise, in	12	2.5			Orifice Dia, in	
Span, in	12	2.5			No. Orifices	
No. Barrels	-	~			Invert Elevation, ft	
Invert Elevation, ft	10.23	14.50			Height, ft	
Orifice Coefficient, Co	09:0	09'0			Orifice Coefficient, Co	
Length, ft	100					
Barrel Slope, %	e,					
N-Value, n	0.013					
Meion	***************************************		Weirs		, and live V	
n E	D N N	-	5*	က	Allcillary	
Shape / Type	Вох	Broad Crested Rectangular	Rectangular		Exfiltration, in/hr	3.25**
Crest Elevation, ft	14.95	14.95	14.6			
Crest Length, ft	12	20	~			
Angle, deg						
Weir Coefficient, Cw	3.3	3,3	3.3			
'Routes through Culvert. "Exfiltration extracted from outflow hydrograph. Rate applied to contours."	outflow hydrograph. Rate	applied to contours.				

Stage (ft) 4. 5. -0.8 -1.6 9.0-- 22 Stage-Discharge 35 40 Discharge (cfs) - 52 50 15.6-15.2-(#) valid 15.4-15.8-

Pond Report

Stage-Storage-Discharge Summary

Project Name: 06-14-2022

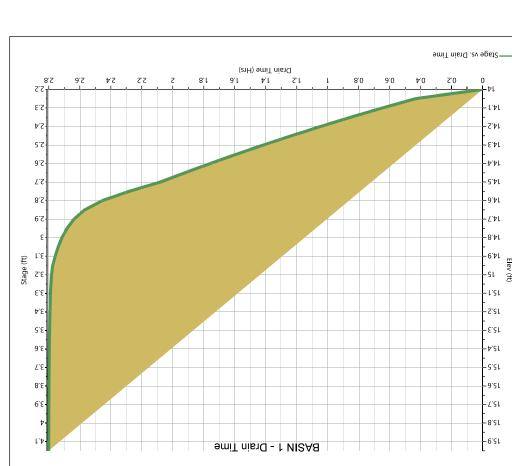
Summ
ischarge
torage-D
Stage-S
BASIN 1

_						
Total	(cfs)	0.000	0.057	2.194	72.70	
User	(cfs)					
Exfil	(cfs)	0.000	0.057	0.075	0.115	
Pf Riser	(cfs)					
	3					
Weirs, cfs	2	0.000	0.000	0.835	0.000	
	-	0.000	0.000	0.738	99.00	
Riser	(cfs)	0.000	0.000	0.443	0.000	
	3					
Orifices, cfs	2					
ľ	-	0.000	0.000		0.000	
Culvert	(cfs)	0.000	0.000 00	1.381 oc	6.585 oc	
Storage	(cuft)				1,959	
Elev.	(¥)	14.00	14.50	15.00	15.95	
Stage	Œ	00.00	0.50	1.00	1.95	

Suffix key; ic = inlet control, oc = outlet control, s = submerged weir



06-14-2022 Pond Drawdown Hydrology Studio v 3.0.0.24 **BASIN 1**



h Report
Hydrograph

Hydrology Studio v 3.0.0.24

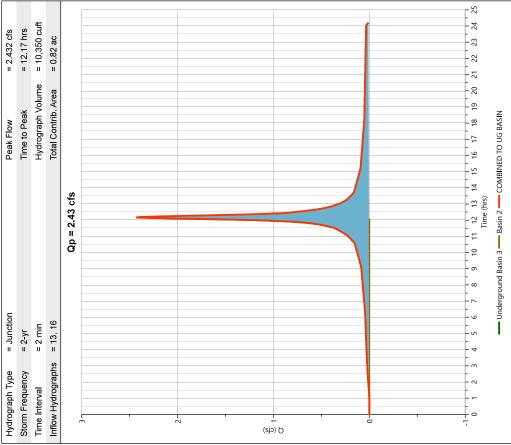
Post COMBINED TO UG BASIN

Hyd. No. 18

06-14-2022

Project Name:

raph Type = Junctic Frequency = 2-yr terval = 2 min	= Junction = 2-yr = 2 min = 13 16	2.432 cfs	= 2.432 cfs = 12.17 hrs = 10,350 cuft = 0.82 ac
yal ogi api is	01,51	Iotal Colling. Area	- 0.02 ac



- Z.Þſ 14.3

-9[.]Þl

- L'tl

-6'tl Elev (ft) -51 - 1.21

- Z.2 I

- 5.21

- 12.4-

-5.21

-9[.]51

- Z.2 I

-8.21 ₽6.21

Post UG Basin 3

Project Name:

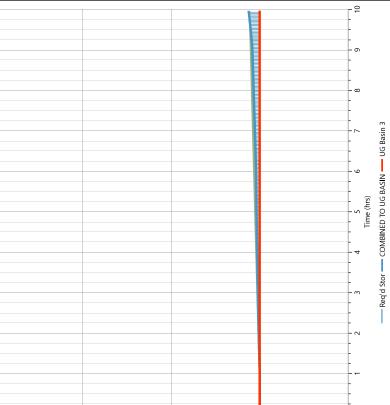
Project Name:

06-14-2022

06-14-2022 Hyd. No. 19

Hydrograph Type	= Pond Route	Peak Flow	= 0.000 cfs
Storm Frequency	= 2-yr	Time to Peak	= 9.93 hrs
Time Interval	= 2 min	Hydrograph Volume = 0.000 cuft	= 0.000 cuft
Inflow Hydrograph	= 18 - COMBINED TO UG BASIN	Max. Elevation	= 12.36 ft
Pond Name	= UG BASIN	Max. Storage	= 1,890 cuft
Pool Bouting by Stored Parished back	Mothod		





Q (cfs)

Pond Report

Stage-Storage

UG BASIN

StormTech® SC-310™ Chamber	namber			Stage / Storage Table	ge Table	
Description	Input	Stage (in)	Elevation (#)	Contour Area	Incr. Storage	Total Storage
Chamber Height, in	16	(11)	44 00	(subs)	(time)	(max)
Chamber Shape	Arch	1.4	11 92	7 703	359	359
Chamber Width in	34	2.8	12.03	7,703	359	719
5,55	5	4.2	12.15	7,703	359	1,078
Installed Length, ft	7.12	5.6	12.27	7,703	359	1,438
No. Chambers	309	7.0	12.38	7,703	564	2,002
		8.4	12.50	7,703	099	2,662
Bare Chamber Stor, cuft	4,542	8.0	12.62	7,703	929	3,318
No. Rows	20	11.2	12.73	7,703	650	3,967
	,	12.6	12.85	7,703	640	4,608
Space Between Rows, in	ဖ	14.0	12.97	7,703	628	5,236
Stone Above, in	9	15.4	13.08	7,703	613	5,849
	,	16.8	13.20	7,703	594	6,443
Stone Below, in	ဖ	18.2	13.32	7,703	569	7,013
Stone Sides, in	12	19.6	13.43	7,703	538	7,550
i	ę	21.0	13.55	7,703	494	8,044
Stone Ends, in	12	22.4	13.67	7,703	433	8,477
Encasement Voids, %	40.00	23.8	13.78	7,703	359	8,837
		25.2	13.90	7,703	359	9,196
Encasement Bottom Elevation, ft	11.80	26.6	14.02	7,703	359	9,555
		28.0	14.13	7,703	359	9,915
	S	tage-S	Stage-Storage			
41		H				2.2
7000					1	
0.5.						۷.
13.6				-		1.8
	_				1	

,	2.2	2 1 1.8 1.8 1.4 1.6	Stage (ft)	0.6	Î
400 5000 6000 7000					0 1000 2000 3000 4000 5000 6000 7000 8000 9000 Total Storage (cuft)
4000 5 0000 - 00					8000
0004					7000
4	200				0009 (tJn:
4					0 5000 (Total Storage (cuft)
000					4000 Tota
					3000
- 000					5000
-000					1000
13.6 13.6 13.6 13.6 13.6 13.6 13.6 13.6	4	13.8	13.8	12.4	0

Pond Report

UG BASIN

Stage-Discharge

occipie C. Hoylu C	tioning		Orifices		2000
canvert Offices		*	2*	ო	religiated Nisel
Rise, in	12	2.5	4.5		Hole Diameter, in
Span, in	12	2.5	4.5		No. holes
No. Barrels	-	~	m		Invert Elevation, ft
Invert Elevation, ft	12.20	13.00	13.20		Height, ft
Orifice Coefficient, Co	09'0	09.0	09.0		Orifice Coefficient, Co
Length, ft	30				
Barrel Slope, %	ю.				
N-Value, n	0.013				
Moise	***************************************		Weirs		Vacilian A
0	Nise	*	7	ო	Allollialy
Shape / Type		Rectangular			Exfiltration, in/hr 3.75**
Crest Elevation, ft		14.13			
Crest Length, ft		2			
Angle, deg					
Weir Coefficient, Cw		3.3			
*Routes through Culvert. **Extitration extracted from outflow hydrograph. Rate applied to contours.	outflow hydrograph. Rate	applied to contours.			

Stage-Discharge Curver **Extraction extracted from outlieur hydrograph, Rate upplied to continue. Stage-Discharge 13.4		Stage (ft)	_
13.8 13.8 13.2 12.8 12.2 12.2 12.2 12.2	or. "Editiration extracted from cultion hydrograph. Rate applied to contours. Stagge-Discharge	118 118 118 118 118 118 118 118 118 118	
# (c.)	es through Culvert.	(ft) val3 4 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	

Pond Report

Project Name: 06-14-2022

UG BASIN

06-14-2022

Project Name:

Stage-Storage-Discharge Summary

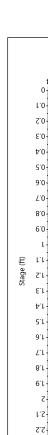
Pf Riser					0.000 0.670 0.671 0.673 0.673	0.000 0.670 0.671 0.672 0.673	0.000 0.670 0.671 0.672 0.673 0.674	0.000 0.670 0.671 0.673 0.673 0.673 0.675	0,000 0,670 0,671 0,673 0,674 0,674 0,676 0,678	0.000 0.670 0.671 0.673 0.674 0.675 0.676 0.676									
3	T.				0.000 0.670 0.671 0.672 0.673	0.000 0.670 0.671 0.673 0.673	0.000 0.670 0.671 0.673 0.673	0.000 0.670 0.677 0.673 0.674 0.676 0.676	0000 0670 0671 0673 0674 0676 0676	0.000 0.671 0.673 0.674 0.676 0.676 0.676 0.677	0.000 0.670 0.672 0.673 0.674 0.676 0.676 0.677	0.000 0.670 0.672 0.673 0.674 0.676 0.677 0.678 0.680 0.681	0.000 0.670 0.673 0.673 0.674 0.676 0.677 0.680 0.681	0.000 0.671 0.673 0.673 0.675 0.676 0.677 0.689 0.681 0.683	0.000 0.671 0.673 0.673 0.675 0.676 0.677 0.689 0.684	0.000 0.671 0.673 0.673 0.676 0.676 0.680 0.681 0.683 0.683 0.683	0.000 0.674 0.673 0.674 0.676 0.676 0.677 0.680 0.681 0.683 0.684 0.683 0.684 0.683	0.000 0.070 0.672 0.673 0.674 0.676 0.678 0.680 0.681 0.682 0.683 0.684 0.685 0.685 0.685	0.000 0.670 0.673 0.673 0.674 0.676 0.677 0.680 0.681 0.683 0.683 0.683 0.684 0.685 0.685 0.686
					0.670 0.671 0.673 0.673	0.670 0.671 0.672 0.673	0.670 0.671 0.673 0.673 0.674	0.670 0.671 0.673 0.674 0.676 0.676	0.670 0.671 0.672 0.673 0.674 0.676 0.676 0.677	0.670 0.671 0.673 0.674 0.676 0.676 0.677 0.677	0.670 0.671 0.673 0.674 0.676 0.676 0.677 0.678 0.679 0.679	0.670 0.671 0.673 0.674 0.676 0.677 0.677 0.678 0.679 0.679	0.670 0.671 0.673 0.673 0.676 0.677 0.680 0.681	0.670 0.671 0.673 0.674 0.676 0.677 0.678 0.680 0.681	0.670 0.671 0.673 0.674 0.676 0.676 0.677 0.680 0.681 0.681	0.670 0.671 0.673 0.673 0.674 0.676 0.677 0.680 0.681 0.683	0.670 0.671 0.673 0.673 0.674 0.676 0.677 0.680 0.681 0.683 0.683 0.683	0.670 0.671 0.673 0.673 0.674 0.676 0.676 0.680 0.681 0.683 0.683 0.684 0.685	0.670 0.671 0.673 0.674 0.676 0.677 0.689 0.681 0.681 0.683 0.683 0.684 0.683 0.684 0.685
L																			
i									Ш										
0.000	0.000	0.000	0.000	0.000		0.000	00000	0.000	00000	0.000	0.000.000.000.000.0000.0000.0000.0000.0000	000000000000000000000000000000000000000	000000000000000000000000000000000000000	000000000000000000000000000000000000000	000000000000000000000000000000000000000	000000000000000000000000000000000000000	000000000000000000000000000000000000000	000000000000000000000000000000000000000	000000000000000000000000000000000000000
0 0 0	0 0		3 8	0		ö	8 8 8	0 0 0	0 0 0 0								3 3 3 3 3 3 3 3 3 3 3 3 3	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	
		_																	
0		0 0				0	0 0 (0000	0 0 0 0	0 0 0 0 0	00000	000000	00000004	000000048	000000000000000000000000000000000000000	00000004 00 00	00000004 00 00 4	00000000400840	000000000000000000000000000000000000000
0.000		0.000	0.000	0.000	0000		0.000	0.000	0.000	0.000	0.000	0.000	0.000 0.000 0.000 0.000 0.000 0.000 0.000	0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000	0.000 0.000 0.000 0.000 0.000 0.000 0.104 0.358	0.000 0.000 0.000 0.000 0.000 0.000 0.104 0.358 0.649	0.000 0.000	0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.104 0.358 0.843	0.000 0.000
0.000		0 9	0 0		_	٠	_				000000000000000000000000000000000000000	0.000 0.000 0.000 0.000 0.0013	0.000 0.000 0.000 0.000 0.000 0.013	0.0000	0.000 0.000 0.000 0.000 0.000 0.0013 0.0076 0.0076	0.000 0.000 0.000 0.000 0.001 0.001 0.007 0.007 0.007 0.010	2,000 2,000 2,000 2,000 2,001 3,001	0.000 0.000 0.000 0.000 0.001 0.0051 0.0076 0.0084 0.0110	0.000 0.000 0.000 0.000 0.001 0.005
		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.00	0.0 0.0 0.0								
	0.000		0.000 0.000										0.000 0.000 0.000 0.000 0.000 0.000 0.051 oc	0.000 0.000 0.000 0.000 0.000 0.000 0.0013 oc 0.051 oc	0.000 0.000 0.000 0.000 0.000 0.013 oc 0.013 oc 0.0151 oc 0.051 oc 0.055 oc				
(cnu)	\vdash	0.000			0.000	0.000	00000	000.0	000000000000000000000000000000000000000	000000000000000000000000000000000000000	0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.0013 oc	0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000				0.000 0.000 0.000 0.000 0.000 0.000 0.051 oc 0.051 oc 0.051 oc 0.051 oc	0.000 0.000 0.000 0.000 0.000 0.003	0.000 0.000 0.000 0.000 0.000 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.000 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.000 0.001	0.000 0.000 0.000 0.000 0.000 0.000 0.001 0.051 oc 0.051 oc 0.052 oc 0.053 oc 0.138 oc 0.258 oc 0.258 oc 1.138 oc
(#)	0.000	359 0.000	719 0.000	1,078 0.000	0.000	1,078 0.000 1,438 0.000 2,002 0.000	1,078 0.000 1,438 0.000 2,002 0.000 2,662 0.000	1,078 0,000 1,438 0,000 2,002 0,000 2,662 0,000 3,318 0,000 3,967 0,000	1,078 0,000 1,438 0,000 2,002 0,000 2,662 0,000 3,318 0,000 4,608 0,000	1,078 0,000 2,002 0,000 2,662 0,000 3,318 0,000 4,608 0,000 6,236 0,000	1,078 0000 2,002 0000 2,662 0000 3,318 0000 4,608 0,000 5,238 0,000 6,238 0,000 6,349 0,013 oo	1,078 0000 2,002 0000 2,662 0000 3,318 0000 4,608 0,000 5,349 0,013 oc 6,849 0,013 oc 6,443 0,051 oc	1,078 1,438 2,002 2,662 3,318 3,967 4,608 5,236 5,849 6,443	1,078 1,438 2,002 2,662 3,318 3,967 4,608 6,236 6,443 7,013	1,078 1,438 2,002 2,662 3,348 4,608 5,236 6,443 7,013 7,550 8,044	1,078 0000 2,000 2,602 0,000 3,318 0,000 4,608 0,000 5,849 0,013 ∞ 6,443 0,013 ∞ 7,550 0,452 ∞ 8,044 0,758 ∞ 8,044 0,758 ∞	1,078 0000 2,000 2,000 2,662 0,000 3,318 0,000 4,608 0,000 6,236 0,000 6,443 0,013 oo 6,444 0,756 0 8,044 0,758 oo 8,044 0,758 oo	1,078 0000 2,000 2,000 2,662 0,000 3,318 0,000 4,608 0,000 6,236 0,000 6,443 0,045 oc 8,044 0,786 oc	1,078 0.000 2,000 2,000 2,662 0.000 3,316 0.000 4,608 0.000 6,443 0.051 0.000 7,013 0.180 0.00 7,550 0.452 0.09 8,477 0.966 0.00 8,447 0.096 0.00

Pond Report Hydrology Studio v 3.0.0.24

06-14-2022 Pond Drawdown

UG BASIN

٤.٤



0+



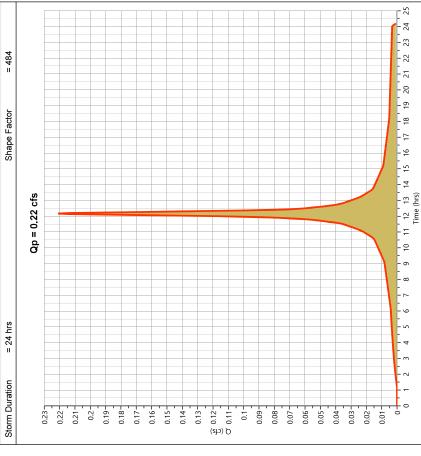
06-14-2022

Hyd. No. 20

Project Name:

S
⊃
0
5
α
Ш
Δ.
≥
_
7
⋖
Ω
re
а.

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.221 cfs
Storm Frequency	= 2-yr	Time to Peak	= 12.17 hrs
Time Interval	= 2 min	Runoff Volume	= 978 cuft
Drainage Area	= 0.08 ac	Curve Number	86 =
Tc Method	= User	Time of Conc. (Tc)	= 11.1 min
Total Rainfall	= 3.50 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



Drain Time (Hrs)

9miT nisıQ - NISAB ƏU

-----Stage vs. Drain Time

-8.11

-6.11

-21

-1.21

-2.21 . - ٤.Δ1

- 2.S1

-9.Sr - 7.21

-8.21

-6.21

. - ٤١

- 1.81 -2.E1

- ٤.٤1

-17.E1

- 2.51

-9.E1

- 7.51 -8.E1

. -6.٤1

Γtι

1.4.1

Elev (ft)

Hydrology Studio v 3.0.0.24

Project Name:

06-14-2022

06-14-2022 Project Name:

Hyd. No. 21 Pre DA 2 - PERVIOUS

= 0.000 cfs = 0.00 hrs = 0.000 cuft = 11.1 min = NOAA-D = 36* = 484 Curve Number Time of Conc. (Tc) Design Storm Runoff Volume Time to Peak Shape Factor Peak Flow = NRCS Runoff = 0.86 ac = 3.50 in = 24 hrs = 2-yr = 2 min = User * Composite CN Worksheet Hydrograph Type Storm Frequency Storm Duration Drainage Area Time Interval Total Rainfall Tc Method

Qp = 0.00 cfs

DESCRIPTION
OPEN SPACE
WOODS
Weighted CN Method Employed

AREA (ac) CN 0.58 39 0.28 30 0.86 36

Hydrograph Report

Hyd. No. 22

Pre DA 2

Storm Frequency = 2-yr Time Interval = 2 min	= 2v, Three to Peak	= 2-yr	Storm Fragillopov			
Hydrograph Volume = 20, 21 Op = 0.22 cfs	#ydrograph Volume = 978 cuft = 20, 21 Qp = 0,22 cfs Qp = 0,22 cfs	# Hydrograph Volume = 978 cuft	otolili i jequelicy	= 2-yr	Time to Peak	= 12.17 hrs
= 20, 21 Op = 0.22 cfs	20, 21 Qp = 0,22 cfs Qp = 0,22 cfs	Ap = 0.22 cfs Op = 0.22 cfs Ap = 0.22 cfs Total Contrib. Area = 0.94 ac	Time Interval	= 2 min	Hydrograph Volume	= 978 cuft
	Qp = 0.22 cfs	Qp = 0.22 cfs Qp = 0.22 cfs	Inflow Hydrographs	= 20, 21	Total Contrib. Area	= 0.94 ac
Q(ds)		1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24		Qp = 0.22 cfs		
Q(ds)		The first of the f	0.23			
Q (ds) Q 000 000 000 000 000 000 000 000 000		The first of the f	0.22			
Q (cfs) Q (cfs		The (hrs) The (hrs)	0.21			
(sta) D (st		Time (hrs)	0.2			
(dx)) D (0.00 (0.0		Time (hts)	0.19			
Q(dx) 0.10 0.13 0.00 0.00 0.00 0.00 0.00 0.00		Time (hrs)	0.18			
Q (ch) Q		Time (hrs)	0.17			
O (cip) O (cip		Time (hrs)	0.16			
0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0		Time (hrs)	110			
(sb) D 2.0.0 (sb) D 2.0.0 000 000 000 000 000 000 000 000 00		Time (hrs)				
O (045) O 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		Time (hrs)	0.0			
(ab) O (a		Time (hrs)	5.0			
		Time (hrs)	(cfs) (cfs)			
0.03		Time (hrs)) E. 2			
0.00		Time (hrs)	- a			
0.05	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23	Time (hrs)	- 800			
0.05	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23	Time (hrs)	20:0			
0.03	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23	Time (hrs)	-90:0			
0.03	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23	Time (hrs)	0.05			
0.03	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23	Time (hrs)	0.04			
0.00	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23	Time (hrs)	0.03			
0.001	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23	Time (hrs)	0.02			
	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 Time (hrs)	0.01			

Pre DA 3 - PERVIOUS

06-14-2022

Hyd No. 23

Project Name:

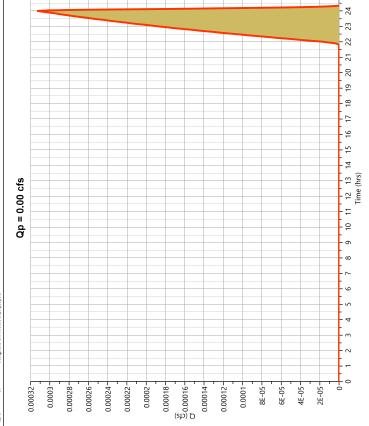
Hydrograph Report

06-14-2022

Project Name:

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.000 cfs
Storm Frequency	= 2-yr	Time to Peak	= 24.00 hrs
Time Interval	= 2 min	Runoff Volume	= 1.47 cuft
Drainage Area	= 0.75 ac	Curve Number	= 37*
Tc Method	= User	Time of Conc. (Tc)	= 10.3 min
Total Rainfall	= 3.50 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484
* Composite CN Worksheet	±:		

AREA (ac)		DESCRIPTION ODERN SEACE
0.02	8 8	MODES
0.75	3 2	Weighted CN Method Employed



0.01

--- DA 2 --- DA 3 - PERVIOUS --- COMBINED TO POA 1

Pre COMBINED TO POA 1	I AOA O		•
Hydrograph Type	= Junction	Peak Flow	= 0.221 cfs
Storm Frequency	= 2-yr	Time to Peak	= 12.17 hrs
Time Interval	= 2 min	Hydrograph Volume	= 980 cuft
Inflow Hydrographs	= 22, 23	Total Contrib. Area	= 1.69 ac
	Qp = 0.22 cfs		
0.23			
0.22			
0.21			
0.2			
0.19			
0.18			
0.17			
01.0			
0.15			
7			
0.13			
(sts) (cfs) (cfs)			
5 6			
, , , , , , , , , , , , , , , , , , ,			
0.00			
0.08			
0.07			
0.00			
0.00			
0.04			
0.03			
0.02			

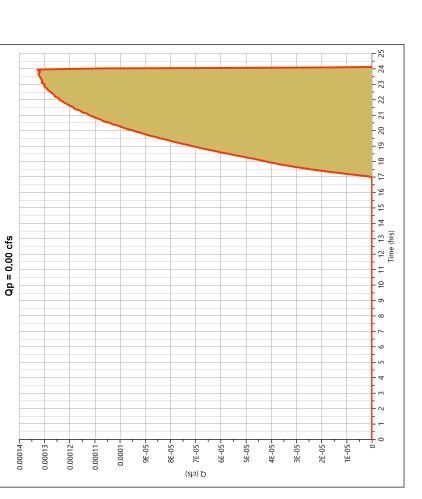
Post IMP BYPASS INLET N.

06-14-2022

Project Name:

Hyd No 25

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.000 cfs
Storm Frequency	= 2-yr	Time to Peak	= 24.00 hrs
Time Interval	= 2 min	Runoff Volume	= 2.35 cuft
Drainage Area	= 0.08 ac	Curve Number	= 39
Tc Method	= User	Time of Conc. (Tc)	= 6.0 min
Total Rainfall	= 3.50 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



Hydrograph Report

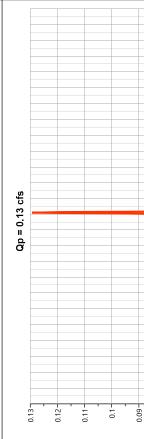
06-14-2022

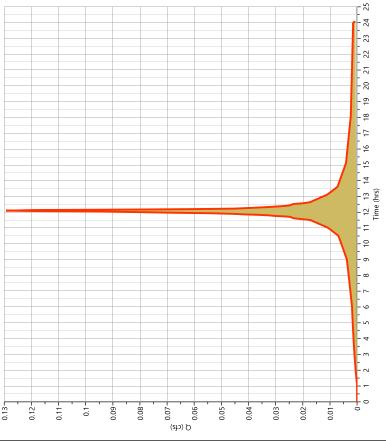
Project Name:

Hyd. No. 26

ż
LET
Š
PAS
B
Σ
Post

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.129 cfs
Storm Frequency	= 2-yr	Time to Peak	= 12.10 hrs
Time Interval	= 2 min	Runoff Volume	= 445 cuft
Drainage Area	= 0.04 ac	Curve Number	86 =
Tc Method	= User	Time of Conc. (Tc)	= 6.0 min
Total Rainfall	= 3.50 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484





Project Name:

COMB. INLET N.

06-14-2022

Hyd. No. 27

Hydrograph Type	Qp = 0.13 cfs Peak Flow = 0.129 cfs Time to Peak = 12.10 hrs Hydrograph Volume = 447 cuft Total Contrib. Area = 0.12 ac
= 25, 26	Time to Peak Hydrograph Volume Total Contrib. Area
= 25, 26	Hydrograph Volume Total Contrib. Area
= 52 58 = = 52 58	Total Contrib. Area
ii à di	0.13 cfs

Hydrograph Report

Hvd. No. 28

06-14-2022

Project Name:

Post COMBINED TO POA 1

•	
٠	
2	
•	
_	
3	
•	
_	
-	

Peak Flow = 0.129 cfs Time to Peak = 12.10 hrs	olume	Total Contrib. Area = 0.12 ac	cfs												13 14 15 16 17 18 19 20 21 22 23 24 25 (hrs)
= Junction = 2-yr	= 2 min	= 17, 19, 27	Qp = 0.13 cfs												4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 Time (hrs) Time (hrs) — Basin 1 — UG Basin 3 — COMB. INLET N. — COMBINED TO POA 1
Hydrograph Type Storm Frequency	Time Interval	Inflow Hydrographs		0.13	0.11	0.1	- 60.0	0.00	(sJ2)	0000	50.0		- 1000		0 1 2 3

+	
tro	
2	
Ω	
Ž	
קפיר	
קפיר	
קפיר	
קפיר	

Hydrology Studio v 3.0.2.4

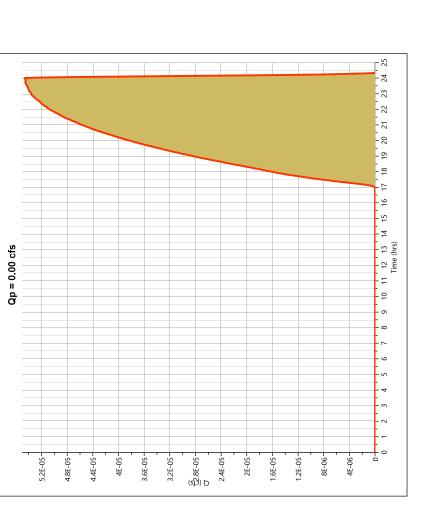
Pre Bypass Memorial

06-14-2022

Hyd. No. 29

Project Name:

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.000 cfs
Storm Frequency	= 2-yr	Time to Peak	= 24.00 hrs
Time Interval	= 2 min	Runoff Volume	= 0.969 cuft
Drainage Area	= 0.03 ac	Curve Number	= 39
Tc Method	= User	Time of Conc. (Tc)	= 12.9 min
Total Rainfall	= 3.50 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



Hydrograph Report

06-14-2022

Project Name:

Hyd No 30

orial	
ass Mem	
ost Bypa	

= 0.000 cfs	= 24.00 hrs
Peak Flow	Time to Peak

= 2-yr = 2 m Runoff Volume = 0.08 ac	Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.000 cfs
= 2 min	Storm Frequency	= 2-yr	Time to Peak	= 24.00 hrs
= 0.08 ac	Time Interval	= 2 min	Runoff Volume	= 2.59 cuft
= 0.5er	Drainage Area	= 0.08 ac	Curve Number	= 39
= 3.50 in	Tc Method	= User	Time of Conc. (Tc)	= 12.9 min
Ap = 0.00 cfs Ap = 0.00 cfs Ap = 0.00 cfs	Total Rainfall	= 3.50 in	Design Storm	= NOAA-D
000013 0.00011	Storm Duration	= 24 hrs	Shape Factor	= 484
000013 000013 000010 00001 000000	500	Qp = 0.00 cfs		
0.00013 0.00011 0.00011 0.00011 0.00011 0.00011 0.00012 0.	5100010			
0.00012 0.00011 9E-05 6E-05 6E-05 1E-05 1E-05 1E-05 1E-05 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	41000.0			
0.00011 0.0	0.00013			
0.0001 0.0001	0.00012			
9E-05 7E-05 6E-05 6E-05 9E-05 1E	0.00011			
9E-05 FE-05 6E-05 9E-05 1E	0.0001			
RE-05 6E-05 4E-05 3E-05 1E	9E-05			
6E-05 4E-05 4E-05 2E-05 1E-05 1E-05 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24				
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 33 24				
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	- SE-05			
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	SE-05			
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	4E-05-			
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	3E-05			
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	2E-05-			
) 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	1E-05			
		4 5 6 7 8 9 10 11 12 13	15 16 17 18 19	21 22 23 24

4	E	
(چ	
9	ā)
ב	ľ	
4	ב	
(π)
1000	7	
()	2	
. (

Hydrology Studio v 3.0.0.24

06-14-2022 Project Name:

06-14-2022

Project Name:

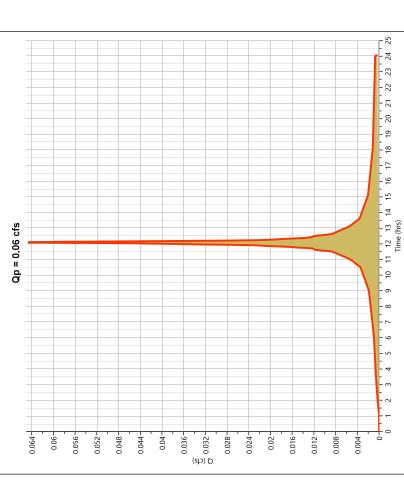
Hydrograph Report

Post Perv Bypass Inlet S.

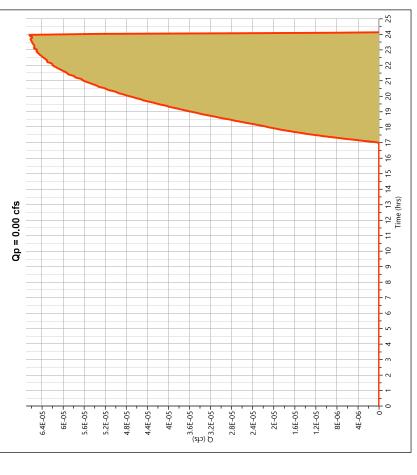
Hyd. No. 32

Hyd. No. 31 Post Imp Bypass Inlet S.

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.065 cfs
Storm Frequency	= 2-yr	Time to Peak	= 12.10 hrs
Time Interval	= 2 min	Runoff Volume	= 222 cuft
Drainage Area	= 0.02 ac	Curve Number	86 =
Tc Method	= User	Time of Conc. (Tc)	= 6.0 min
Total Rainfall	= 3.50 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.000 cfs
Storm Frequency	= 2-yr	Time to Peak	= 24.00 hrs
Time Interval	= 2 min	Runoff Volume	= 1.18 cuft
Drainage Area	= 0.04 ac	Curve Number	= 39
Tc Method	= User	Time of Conc. (Tc)	= 6.0 min
Total Rainfall	= 3.50 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



٠	t	
	C)
		2
	u	١
(7	_
	_	
•	۲	5
	ב	
	בפק	2
	קיייי	2
•	למפונים	2
	Š	2
	Š	2

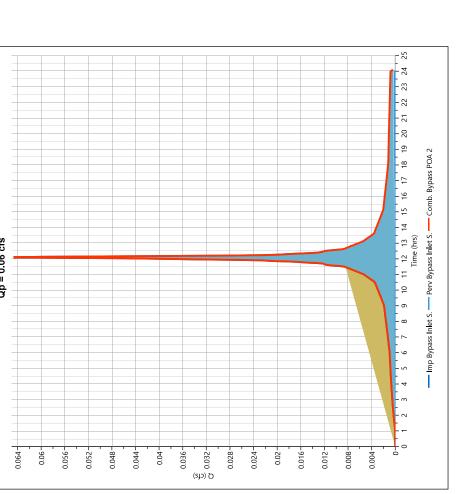
Hydrology Studio v 3.0.0.24

Post Comb. Bypass POA 2

06-14-2022 Project Name:

Hyd. No. 33

= 12.10 hrs= 0.065 cfs = 223 cuft = 0.06 ac Time to Peak Hydrograph Volume Total Contrib. Area Peak Flow Qp = 0.06 cfs = Junction = 2 min = 31, 32 = 2-yr Inflow Hydrographs Hydrograph Type Storm Frequency Time Interval



Hydrograph 10-yr Summary

06-14-2022 Project Name:

Hydrograph Hydrograph Fpw. Fpw. Fpw. Fpw. Pinkogarabh Brand Hydrograph Hydrograph Remain Brand Hydrograph Hydrograph Hydrograph Hydrograph Hydrograph Prominion Brand Pinkogarabh Hydrograph Hydrograph	yalang) u	Hydrology Studio V 3.0.0.24							
NRCS Rundt Pea DA 1-MPERVIOUS 0.187 12.13 75.9 — NRCS Rundt Pea DA 1-MPERVIOUS 0.02 1287 38.7 — NRCS Rundt Peat DA 1-PERVIOUS 12.77 56236 — — NRCS Rundt Peat Root Area DA 3 13.77 12.17 5628 — — NRCS Rundt Peat Reviews DA 1 0.003 12.50 48.8 — — NRCS Rundt Peat Reviews DA 1 0.003 12.50 48.8 — — NRCS Rundt Peat Reviews DA 1 0.003 12.00 17.64 — — NRCS Rundt Peat Reviews DA 1 0.003 12.10 17.64 — — NRCS Rundt Peat Reviews DA 1 0.003 12.10 17.64 — — NRCS Rundt Peat Lebrands DA 2 0.15 12.10 17.64 — — NRCS Rundt Peat Resident Peat Resident Peat Resident Peat Resident Peat Resident Peat Resident	Hyd. No	Hydrograph Type	Hydrograph Name	Peak Flow (cfs)	Time to Peak (hrs)	Hydrograph Volume (cuft)		Maximum Elevation (ft)	Maximum Storage (cuft)
NRCS Rundt Per DA 1-PERVIOUS 0000 1287 387 — NRCS Rundt Post Road-Area DA3 1377 1217 5623 — NRCS Rundt Post Road-Area DA3 1377 1217 5628 — NRCS Rundt Post Pervious Pavement 0.646 1217 2810 — NRCS Rundt Post Road-Area DA1 0.003 1250 48.8 — NRCS Rundt Post Road-Area DA2 2.519 12.10 17.84 — NRCS Rundt Post Road-Area DA2 2.519 12.10 88.88 — NRCS Rundt Post Rangewous DA3 0.01 12.00 88.88 — Junction Post Rangewous DA3 0.215 12.10 88.88 — NRCS Rundt Post Rangewous DA3 0.210 12.10 14.47 14.66 Junction Post Rangewous DA3 0.250 12.10 18.94 14.77 Pont Rangewous DA3 0.201 12.10 18.94 14.77 Pon	-	NRCS Runoff	Pre DA 1 - IMPERVIOUS	0.187	12.13	753	1		
NRCS Rundf Peat Read Area DA3 1246 1217 5628 — NRCS Rundf Peat Desit DA3 1377 1217 6208 — NRCS Rundf Peat Desit Desit DA3 1377 1217 2510 — NRCS Rundf Peat Roule Mase DA1 0.003 1250 49.8 — NRCS Rundf Peat Roule Mase DA2 0.005 1250 1210 49.8 NRCS Rundf Peat Roule Mase DA2 0.005 1250 120 12.1 NRCS Rundf Peat Roule Mase DA2 0.005 12.10 8818 — Junction Peat Roule Mase DA2 0.187 12.13 791 1.12 Junction Peat Integration Basin 3 0.001 12.10 18.14 14.47 Junction Peat Basin 2 0.157 12.10 18.14 14.66 Pond Roule Peat DA2 - MPERVIOUS 0.000 12.10 18.14 14.66 NRCS Rundf Peat DA2 - MPERVIOUS 0.021 12.10 18.1 14.17 </td <td>2</td> <td>NRCS Runoff</td> <td>Pre DA 1 - PERVIOUS</td> <td>0.002</td> <td>12.97</td> <td>38.7</td> <td>1</td> <td></td> <td></td>	2	NRCS Runoff	Pre DA 1 - PERVIOUS	0.002	12.97	38.7	1		
NRCS Runoff Post Pavinse Pavines 1377 1217 6:208 — NRCS Runoff Post Pavinse Pavines 0:46 12.17 2:910 — NRCS Runoff Post Pavinse Pavines 0:64 12.17 2:910 — NRCS Runoff Post Pavines DA.1 0:055 12:00 48.8 — NRCS Runoff Post Pavines DA.2 0:055 12:10 1764 — NRCS Runoff Post Pavines DA.2 0:187 12:10 88.18 — NRCS Runoff Post Pavines DA.2 0:187 12:17 17:1 11:2 NRCS Runoff Post Da.2 0:187 12:17 14:1 14:1 Junction Post Basin 2 2:519 12:17 17:43 8:0 Junction Post Basin 2 0:09 12:17 17:44 14:0 NRCS Runoff Post Basin 2 0:09 12:17 17:44 14:0 NRCS Runoff Post Basin 2 0:09 12:17 17:44 14:0	ю	NRCS Runoff	Post Roof Area DA3	1.248	12.17	5,626	1		
NRCS Runoff Post Penvious Da1 0.646 12.17 2.910 — NRCS Runoff Post Penvious DA1 0.003 12.50 48.8 — NRCS Runoff Post Penvious DA1 0.005 12.00 17.74 — NRCS Runoff Post Penvious DA2 0.005 12.50 88.7 — Junction Post Penvious DA2 0.005 12.00 88.8 — NRCS Runoff Post Penvious DA3 0.001 12.00 11.72 — Junction Post Undergound Basin 3 3.486 12.77 15.72 3.46.11.12 Junction Post Undergound Basin 3 0.001 12.10 8.98 8.9 Junction Post Gasin 1 0.004 12.70 157.4 14.77 Pond Route Post Gasin 2 0.709 12.70 1.794 14.77 Pond Route Post Gasin 2 0.709 12.70 1.794 14.77 Pond Route Post Gasin 2 0.709 12.70 1.709 1.9	4	NRCS Runoff	Post Deck DA3	1.377	12.17	6,208	1		
NRCS Runoff Post Pervious DA1 0.003 1250 46.8 — NRCS Runoff Post Rorl Area DA1 0.504 12.10 1,764 — NRCS Runoff Post Pervious DA2 0.055 12.50 8816 — NRCS Runoff Post Pervious DA2 0.055 12.70 8816 — NRCS Runoff Post Pervious DA3 0.011 12.00 11.0 — Junction Post Dest Impervious DA3 0.215 12.17 970 — Junction Post Endingerund Basin 3 0.001 12.77 16.72 3.4.5.11, 12 Junction Post Underground Basin 2 0.504 12.17 17.09 8.7 Junction Post Endingerund Basin 3 0.001 12.77 17.434 13.16 Pond Route Post Challes TO UG BASIN 3 0.000 12.77 17.434 13.16 NRCS Runoff Post DA2 - PERVIOUS 0.024 12.17 2.122 20.21 NRCS Runoff Post DA2 12.00 12.00	2	NRCS Runoff	Post Pervious Pavement	0.646	12.17	2,910	1		
NRCS Runoff Post Rool/Area DA1 0.504 12.10 1,764 — NRCS Runoff Post Rool/Area DA2 2.519 12.10 8,818 — Junction Pre DA1 - PoA2 2.519 12.10 8,818 — NRCS Runoff Post Inpervious DA3 0.001 12.00 11.0 — Junction Post Renincytour Basin 3 3.488 12.17 15,728 3.4.5,11,12 Junction Post Renincytour Basin 3 3.488 12.17 15,728 3.4.5,11,12 Junction Post Rain Garden 1 0.504 12.20 1,709 1.4 14.66 Junction Post Rain Garden 1 0.504 12.20 1,709 1.4 14.66 Junction Post Basin 2 0.509 12.70 1,7434 13.16 14.17 Pond Route Post Basin 2 0.509 12.70 1,7434 13.16 14.17 Pond Route Post Basin 2 0.509 12.70 1,709 1.4 14.66 NRCS Run	ဖ	NRCS Runoff	Post Pervious DA 1	0.003	12.50	49.8	1		
NRCS Runoff Post Pervious DA2 1550 887 — Junction Pre DA1 - POA2 2519 1210 8,818 — Junction Pre DA1 - POA2 0.187 1210 110 — NRCS Runoff Pre DA1 - POA2 0.187 1210 110 — NRCS Runoff Post Impervious DA3 0.215 1217 15726 3.4, 5, 11, 12 Junction Post Underground Basin 3 3.486 12.17 15726 3.4, 5, 11, 12 Junction Post Underground Basin 3 3.486 12.17 15726 3.4, 5, 11, 12 Junction Post Basin 1 0.024 12.10 8,908 8, 9 Pond Route Post Underground Basin 3 0.000 12.70 14,17 Pond Route Post Basin 1 0.000 12.70 14,17 Pond Route Post LOSBINED TO US BASIN LES 12.10 17,434 13, 16 NRCS Runoff Pre DA 2 - PERVIOUS 0.24 12.17 2,122 Junction Post LOSBINED	7	NRCS Runoff	Post Roof Area DA1	0.504	12.10	1,764	1		
NRCS Runoff Post Roof Area DA2 2519 12.10 68.818 — Junction Pre DA1 - POA2 0.187 12.13 791 1.2 NRCS Runoff Post Impervious DA3 0.015 12.17 15.725 3.4.5.11,12 Junction Post Impervious DA3 0.215 12.17 15.725 3.4.5.11,12 Junction Post Rain Garden 1 0.504 12.10 15.725 3.4.5.11,12 Junction Post Rain Garden 1 0.504 12.10 15.725 3.4.5.11,12 Junction Post Basin 2 0.769 12.20 1,709 16 14.17 Pond Route Post Basin 3 0.000 12.73 161 14.17 14.66 Junction Post UnberKVIOUS 0.009 12.73 161 14.17 14.66 NRCS Runoff Pre DA2 - IMPERVIOUS 0.000 12.73 16.00 18 12.10 14.73 12.22 NRCS Runoff Pre DA2 - IMPERVIOUS 0.024 12.17 12.72 22.23	00	NRCS Runoff	Post Pervious DA2	0.005	12.50	7.68	1		
Junction Pre DA 1-POA2 0.187 12.13 791 1.2 NRCS Runoff Post Pervious DA3 0.001 12.00 11.0 — UNCS Runoff Post Impervious DA3 0.2015 12.17 15.725 3.4,6.11,12 Junction Post Basin 2 2.519 12.17 15.725 3.4,6.11,12 Junction Post Basin 2 2.519 12.10 8.908 8.9 Pond Route Post Basin 1 0.004 12.20 1709 16 14.17 Pond Route Post Uc Basin 3 0.000 12.73 0.000 18 12.22 Pond Route Post Uc Basin 3 0.000 12.73 0.000 18 12.22 NRCS Runoff Pre DA2 - PERVIOUS 0.034 12.17 1,744 13.16 14.17 NRCS Runoff Pre DA2 - PERVIOUS 0.021 12.17 1,724 13.16 14.17 NRCS Runoff Pre DA2 - PERVIOUS 0.024 12.17 2,122 20.21 NRCS Runoff	0	NRCS Runoff	Post Roof Area DA2	2.519	12.10	8,818	1		
NRCS Runoff Post Pervious DA3 0.001 12.60 11.0 — Junction Post Impervious DA3 0.215 12.17 970 — Junction Post Impervious DA3 3.466 12.17 15.726 3.4.6.11,12 Junction Post Basin 2 2.519 12.10 1,814 6.7 Junction Post Basin 2 2.519 12.10 1,814 6.7 Junction Post Basin 3 0.769 12.20 1,709 1,6 14.17 Pond Route Post Basin 1 0.009 12.73 0.000 18 1,2,9 Junction Post UG Basin 3 0.000 12.73 0.000 18 1,2,9 Junction Post Wile Basin 3 0.000 12.73 0.000 18 1,2,9 NRCS Runoff Pre DA2 - PERVIOUS 0.031 13.10 576 — 1,2,17 NRCS Runoff Pre DA3 - PERVIOUS 0.032 12.10 705 22.23 NRCS Runoff Pre DA3 - PERVIOUS	10	Junction	Pre DA 1 - POA 2	0.187	12.13	791	1,2		
NRCS Runoff Post Impervious DA3 0.215 12.17 15.725 3.4,5,11,12 Junction Post Underground Basin 3 3.486 12.17 15.725 3.4,5,11,12 Junction Post Basin 2 2.519 12.10 8.908 8.9 14.17 Pond Route Post Basin 2 2.519 12.10 8.908 8.9 14.17 Pond Route Post CoMBINED TO UG BASINA 226 12.20 1,709 15 14.17 Pond Route Post COMBINED TO UG BASINA 226 12.17 17.434 13.46 12.82 NRCS Runoff Pre DA2 - IMPERVIOUS 0.000 12.73 0.000 18 12.82 Junction Pre DA2 - PERVIOUS 0.021 12.17 1,552 — — NRCS Runoff Pre DA3 - PERVIOUS 0.020 13.30 570 — — NRCS Runoff Pre DA3 - PERVIOUS 0.020 12.10 79.4 17,19,27 — NRCS Runoff Pre CABINED TO POA1 0.202 12.10 79.4 <	£	NRCS Runoff	Post Pervious DA3	0.001	12.60	11.0	1		
Junction Post Underground Basin 3 3.486 12.17 15,726 3.4,5,11,12 Junction Post Rain Garden 1 0.504 12.10 1,814 6,7 Junction Post Basin 2 2.519 12.20 1,709 15 Pond Route Post Los Basin 2 0.769 12.20 1,709 15 Pond Route Post LOS Basin 3 0.004 12.77 1,7434 14.17 Pond Route Post LOS Basin 3 0.000 12.73 0.000 18 12.92 NRCS Rundf Pre DA 2 - IMPERVIOUS 0.344 12.17 1,434 13.16 12.92 Junction Pre DA 2 - ERVIOUS 0.021 12.17 1,434 12.92 12.92 NRCS Rundf Pre DA 2 - ERVIOUS 0.021 12.17 1,434 12.92 12.92 Junction Pre DA 2 - ERVIOUS 0.021 12.17 2,122 20.21 12.92 Junction Pre DA 2 - ERVIOUS 0.025 12.00 12.00 12.00 12.00	12	NRCS Runoff	Post Impervious DA3	0.215	12.17	970	1		
Junction Post Basin 2 2519 1210 1,814 6,7 Junction Post Basin 2 2519 1210 8,908 8,9 Pond Route Post Basin 2 0.769 1220 1,709 14 14.17 Pond Route Post Basin 3 0.000 12.73 0.000 18 12.92 NRCS Rundt Pre DA2 - IMPERVIOUS 0.344 12.17 1,552 — 12.92 NRCS Rundt Pre DA2 - IMPERVIOUS 0.021 13.30 570 — — 12.92 Junction Pre DA3 - PERVIOUS 0.024 12.17 1,552 — — — 12.92 — <	13	Junction	Post Underground Basin 3	3.486	12.17	15,725	4, 5, 11,		
Junction Post Basin 2 2.519 12.10 8,908 8,9 Pond Route Post Basin 2 0.769 12.20 1,709 14 14.17 Pond Route Post Basin 1 0.084 12.30 161 14 14.66 Junction Post COMBINED TO UG BAS NA 226 12.17 17.434 13.16 14.06 NRCS Rundf Pre DA2 - MPERVIOUS 0.344 12.17 1,582 — Junction Pre DA2 - MPERVIOUS 0.021 13.30 570 — Junction Pre DA3 - PERVIOUS 0.024 12.17 2,122 20,21 NRCS Rundf Pre DA3 - PERVIOUS 0.026 12.00 598 — Junction Pre CAMBINED TO POA1 0.344 12.17 2,122 20,21 NRCS Rundf Pre LA3 - PERVIOUS 0.025 12.00 79.7 — Junction Post Wass Memorial 0.005 12.60 78.5 25.26 Junction Post Comb Bypass Inlet S. 0.101 12.10	4	Junction	Post Rain Garden 1	0.504	12.10	1,814	6,7		
Pond Route Post Basin 2 0.769 12.20 1,709 14 14.17 Junction Post Basin 1 0.084 12.30 161 14 14.86 Junction Post COMBINED TO UG BASIN 3 0.000 12.73 0.000 18 12.82 NRCS Runoff Pre DA2 - PERVIOUS 0.344 12.17 1,582 — 12.82 Juncton Pre DA2 - PERVIOUS 0.021 13.30 570 — — NRCS Runoff Pre DA3 - PERVIOUS 0.024 12.17 2,122 20,21 12.80 Junction Pre DA3 - PERVIOUS 0.026 13.00 598 — — NRCS Runoff Pre DA3 - PERVIOUS 0.026 12.00 79.7 — — Junction Pre LA3 - PERVIOUS 0.025 12.10 705 22.23 12.10 NRCS Runoff Prest Mp BYPASS INLET N 0.005 12.60 79.7 — 12.10 12.10 705 — NRCS Runoff Pret Dy	15	Junction	Post Basin 2	2.519	12.10	8,908	6,8		
Pond Route Post Basin 1 0.084 12.30 161 14 14.86 Junction Post COMBINED TO UG BASIN 3 0.000 12.73 0.000 18 12.92 NRCS Runoff Pre DA2 - MPERVIOUS 0.344 12.17 1,552 — 12.92 NRCS Runoff Pre DA2 - PERVIOUS 0.026 13.30 570 — — Junction Pre DA3 - PERVIOUS 0.026 13.00 598 — — NRCS Runoff Pre COMBINED TO POA 1 0.344 12.17 2,122 20,21 1 NRCS Runoff Pre COMBINED TO POA 1 0.344 12.17 2,120 22,23 1 Junction Prest MP BYPASS INLET N. 0.005 12.50 79.7 — 1 Junction Post COMBINED TO POA 1 0.202 12.10 785 26.28 1 NRCS Runoff Post Daysass Memorial 0.005 12.60 32.9 — 17.19, 27 NRCS Runoff Post Uppass Poas S Inlet S. 0.101	16	Pond Route	Post Basin 2	0.769	12.20	1,709	15	14.17	1,838
Junction Post COMBINED TO UG BASIN 4228 12,17 17,434 13,16 NRCS Runoff Pre DA2 - IMPERVIOUS 0.000 12,73 0.000 18 12,92 NRCS Runoff Pre DA2 - IMPERVIOUS 0.024 12,17 1,562 — — Junction Pre DA2 - PERVIOUS 0.024 12,17 2,122 20,21 — NRCS Runoff Pre DA3 - PERVIOUS 0.026 13,00 596 — — Junction Pre COMBINED TO POA1 0.344 12,17 2,122 20,21 — NRCS Runoff Prest MP BYPASS INLET N. 0.005 12,50 79,7 — — Junction Post COMBINED TO POA1 0.202 12,10 765 — — Junction Post CoMBINED TO POA1 0.202 12,10 765 — — NRCS Runoff Post Dayses Memorial 0.005 12,60 87,7 — — NRCS Runoff Post Opet Imp Bypass POA2 0.101 12,10 363	17	Pond Route	Post Basin 1	0.084	12.30	161	14	14.66	458
Pond Route Post UG Basin 3 0.000 12.32 12.92 NRCS Runoff Pre DA2 - IMPERVIOUS 0.344 12.17 1,562 — Junction Pre DA2 - PERVIOUS 0.021 13.00 570 — NRCS Runoff Pre DA3 - PERVIOUS 0.026 13.00 598 — Junction Pre COMBINED TO POA1 0.344 12.17 2,122 20.21 NRCS Runoff Pre COMBINED TO POA1 0.344 12.17 2,720 22.23 Junction COMB. INLET N. 0.005 12.50 79.7 — Junction Post CoMBINED TO POA1 0.202 12.10 785 26.26 Junction Post CoMBINED TO POA1 0.202 12.10 785 — NRCS Runoff Post Dypass Memorial 0.005 12.60 87.7 — NRCS Runoff Post Expass Memorial 0.005 12.60 32.9 — NRCS Runoff Post Expass Places 0.101 12.10 383 31.32	18	Junction	Post COMBINED TO UG BAS		12.17	17,434	13, 16		
NRCS Runoff Pre DA2 - IMPERVIOUS 0.344 12.17 1,552 NRCS Runoff Pre DA2 - PERVIOUS 0.021 13.30 570 Junction Pre DA3 - PERVIOUS 0.026 13.00 568 Junction Pre COMBINED TO POA1 0.344 12.17 2,122 NRCS Runoff Post IMP BYPASS INLETN 0.005 12.50 79.7 NRCS Runoff Post IMP BYPASS INLETN 0.202 12.10 765 Junction COMB INLETN 0.202 12.10 765 Junction Post COMBINED TO POA1 0.202 12.10 765 Junction Post Combine Inlets 0.002 12.60 87.7 NRCS Runoff Post Uppass Memorial 0.005 12.60 87.7 NRCS Runoff Post Uppass Inlet S. 0.101 12.10 38.9 NRCS Runoff Post Comb. Bypass Inlet S. 0.101 12.10 38.9	19	Pond Route	Post UG Basin 3	0.000	12.73	0.000	18	12.92	4,962
NRCS Runoff Pre DA2 - PERVIOUS 0.021 13.30 570 Junction Pre DA2 0.344 12.17 2,122 NRCS Runoff Pre CAMBINED TO POA1 0.026 13.00 668 Junction Prost IMP BYPASS INLET N. 0.005 12.50 79.7 NRCS Runoff Post IMP BYPASS INLET N. 0.202 12.10 705 Junction COMB INLET N. 0.202 12.10 705 Junction Post COMBINED TO POA1 0.202 12.10 946 NRCS Runoff Pre Bypass Memorial 0.002 12.60 87.7 NRCS Runoff Post Ump Bypass Inlet S. 0.101 12.10 36.9 NRCS Runoff Post Comb. Bypass Inlet S. 0.101 12.10 39.9	20	NRCS Runoff	Pre DA 2 - IMPERVIOUS	0.344	12.17	1,552	1		
Junction Pre DA 2 0.344 12.17 2,122 NRCS Runoff Pre DA 3 - PERVIOUS 0.026 13.00 568 Junction Pre COMBINED TO POA 1 0.344 12.17 2,720 NRCS Runoff Post IMP BYPASS INLET N. 0.005 12.50 79.7 Junction COMB INLET N. 0.202 12.10 705 Junction Post COMBINED TO POA 1 0.202 12.10 946 NRCS Runoff Pre Bypass Memorial 0.002 12.60 87.7 NRCS Runoff Post Ump Bypass Inlet S. 0.101 12.10 38.9 NRCS Runoff Post Comb. Bypass POA 2 0.101 12.10 39.9	21	NRCS Runoff	Pre DA 2 - PERVIOUS	0.021	13.30	920	1		
NRCS Runoff Pre DA 3 - PERVIOUS 0.026 13.00 598 Junction Pre COMBINED TO POA 1 0.344 12.17 2.720 NRCS Runoff Post IMP BYPASS INLET N. 0.005 12.60 79.7 Junction COMB. INLET N. 0.202 12.10 705 Junction Post COMBINED TO POA 1 0.202 12.10 785 NRCS Runoff Pre Bypass Memorial 0.002 12.60 946 NRCS Runoff Post Uppass Memorial 0.005 12.60 87.7 NRCS Runoff Post Uppass Memorial 0.005 12.60 87.7 NRCS Runoff Post Pow Bypass Inlet S. 0.101 12.10 38.9 Junction Post Comb. Bypass POA 2 0.101 12.10 399	22	Junction	Pre DA 2	0.344	12.17	2,122	20, 21		
Junction Pre COMBINED TO POA 1 0.344 12.17 2,720 NRCS Runoff Post IMP BYPASS INLET N. 0.005 12.50 79.7 NRCS Runoff Post COMB.INLET N. 0.202 12.10 705 Junction COMB.INLET N. 0.202 12.10 785 Junction Post COMBINED TO POA 1 0.202 12.10 346 NRCS Runoff Pre Bypass Memorial 0.002 12.60 32.9 NRCS Runoff Post Uppass Memorial 0.005 12.60 37.7 NRCS Runoff Post Pows Uppass Inlet S. 0.101 12.10 38.9 Junction Post Comb. Bypass POA 2 0.101 12.10 38.9	23	NRCS Runoff	Pre DA 3 - PERVIOUS	0.026	13.00	598	I		
NRCS Runoff Post MP BYPASS INLET N. 0.005 12.50 79.7 Junction COMB. INLET N. 0.202 12.10 705 Junction COMB. INLET N. 0.202 12.10 785 Junction Post COMBINED TO POA 1 0.204 12.10 346 NRCS Runoff Pre Bypass Memorial 0.002 12.60 37.9 NRCS Runoff Post Uppass Memorial 0.005 12.60 87.7 NRCS Runoff Post Uppass Inlet S. 0.101 12.10 38.9 Junction Post Comb. Bypass POA 2 0.101 12.10 38.9	24	Junction	Pre COMBINED TO POA 1	0.344	12.17	2,720	22, 23		
NRCS Runoff Post MP BYPASS INLET N. 0.202 12.10 765 Junction COMB. INLET N. 0.202 12.10 785 Junction Post COMB. INLET N. 0.204 12.10 785 NRCS Runoff Pre Bypass Memorial 0.002 12.60 32.9 NRCS Runoff Post Imp Bypass Inlet S. 0.101 12.10 353 NRCS Runoff Post Pow Bypass Inlet S. 0.002 12.50 38.9 Junction Post Comb. Bypass POA2 0.101 12.10 383	25	NRCS Runoff	Post IMP BYPASS INLET N.	0.005	12.50	7.67	ı		
Junction COMB. INLET N. 0.202 12.10 785 Junction Post COMBINED TO POA 1 0.204 12.10 946 NRCS Runoff Pre Bypass Memorial 0.002 12.60 32.9 NRCS Runoff Post Bypass Memorial 0.005 12.60 87.7 NRCS Runoff Post Bypass Inlet S. 0.101 12.10 353 Junction Post Comb. Bypass POA2 0.101 12.10 38.9	56	NRCS Runoff	Post IMP BYPASS INLET N.	0.202	12.10	705	1		
Junction Post COMBINED TO POA1 0.204 12.10 946 NRCS Runoff Pre Bypass Memorial 0.002 12.60 32.9 NRCS Runoff Post Bypass Memorial 0.005 12.60 87.7 NRCS Runoff Post Bypass Inlet S. 0.101 12.10 353 NRCS Runoff Post Comb. Bypass Inlet S. 0.002 12.50 38.9 Junction Post Comb. Bypass POA2 0.101 12.10 383	27	Junction	COMB. INLET N.	0.202	12.10	785	25, 26		
NRCS Runoff Pre Bypass Memorial 0.002 12.60 32.9 NRCS Runoff Post Bypass Memorial 0.005 12.60 87.7 NRCS Runoff Post Imp Bypass Inlet S. 0.101 12.10 353 NRCS Runoff Post Parv Bypass Inlet S. 0.002 12.50 39.9 Junction Post Comb. Bypass POA.2 0.101 12.10 399	28	Junction	Post COMBINED TO POA 1	0.204	12.10	946	17, 19, 27		
NRCS Runoff Post Bypass Memorial 0.005 12.60 87.7 NRCS Runoff Post Imp Bypass Inlet S. 0.101 12.10 353 NRCS Runoff Post Perv Bypass Inlet S. 0.002 12.50 39.9 Junction Post Comb. Bypass POA.2 0.101 12.10 393	29	NRCS Runoff	Pre Bypass Memorial	0.002	12.60	32.9	1		
NRCS Runoff Post Imp Bypass Inlet S. 0.101 12.10 353 NRCS Runoff Post Perv Bypass Inlet S. 0.002 12.50 39.9 Junction Post Comb. Bypass POA 2 0.101 12.10 393	30	NRCS Runoff	Post Bypass Memorial	0.005	12.60	7.78	1		
NRCS Runoff Post Perv Bypass Inlet S. 0.002 12.50 39.9 Junction Post Comb. Bypass POA.2 0.101 12.10 393	31	NRCS Runoff	Post Imp Bypass Inlet S.	0.101	12.10	353	1		
Junction Post Comb. Bypass POA 2 0.101 12.10 393	32	NRCS Runoff	Post Perv Bypass Inlet S.	0.002	12.50	39.9	1		
	33	Junction	Post Comb. Bypass POA 2	0.101	12.10	393	31, 32		

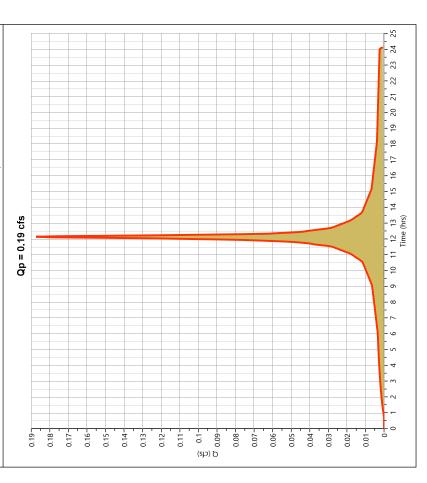
Pre DA 1 - IMPERVIOUS

06-14-2022

Project Name:

Hyd. No. 1

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.187 cfs
Storm Frequency	= 10-yr	Time to Peak	= 12.13 hrs
Time Interval	= 2 min	Runoff Volume	= 753 cuft
Drainage Area	= 0.04 ac	Curve Number	86 =
Tc Method	= User	Time of Conc. (Tc)	= 9.8 min
Total Rainfall	= 5.42 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



Hydrograph Report

06-14-2022

Project Name:

Hyd. No. 2

Pre DA 1 - PERVIOUS

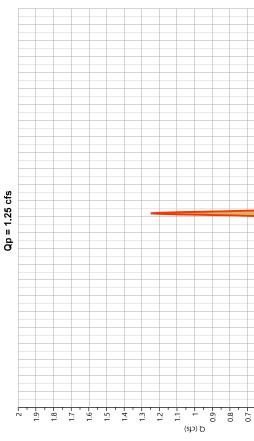
Peak Flow	Time to Peak	Runoff Volume	Curve Number	Time of Conc. (Tc)	Design Storm	Shape Factor		Qp = 0.00 cfs	•																
= NRCS Runoff	= 10-yr	= 2 min	= 0.05 ac	= User	= 5.42 in	= 24 hrs	rksheet DESCRIPTION open space wooded Weighted CN Method Employed																		
Hydrograph Type	Storm Frequency	Time Interval	Drainage Area	Tc Method	Total Rainfall	Storm Duration	* Composite CN Worksheet AREA(ac) CN DESCRIPTION 0.04 39 open space 0.01 30 wooded 0.05 37 Weighted CN M		0.001/	0.0016	0.0015	0.0014	0.0013	0.0012	0.0011	0.001	e0000.0 (st	Ø 0.0008	0.0007	9000:0	0.0005	0.0004	0.0003	0.0002	0.0001

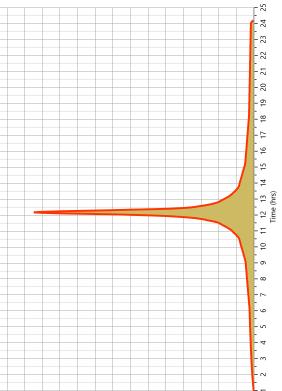
06-14-2022

Project Name:

Hyd. No. 3 Post Roof Area DA3

Hydrograph Type	= NRCS Runoff	Peak Flow	= 1.248 cfs
Storm Frequency	= 10-yr	Time to Peak	= 12.17 hrs
Time Interval	= 2 min	Runoff Volume	= 5,626 cuft
Drainage Area	= 0.29 ac	Curve Number	86 =
Tc Method	= User	Time of Conc. (Tc)	= 10.0 min
Total Rainfall	= 5.42 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484





0.6

0.3

Hydrograph Report

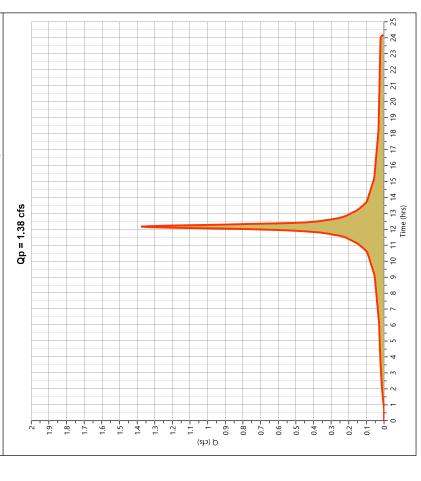
Post Deck DA3

06-14-2022

Project Name:

4yd. No. 4
lyd. No.
lyd. No
lyd. N
yd. N
yd.
<u>7</u>
<u>Š</u>
_
_
_

Hydrograph Type	= NRCS Runoff	Peak Flow	= 1.377 cfs
Storm Frequency	= 10-yr	Time to Peak	= 12.17 hrs
Time Interval	= 2 min	Runoff Volume	= 6,208 cuft
Drainage Area	= 0.32 ac	Curve Number	86 =
Tc Method	= User	Time of Conc. (Tc)	= 12.8 min
Total Rainfall	= 5.42 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



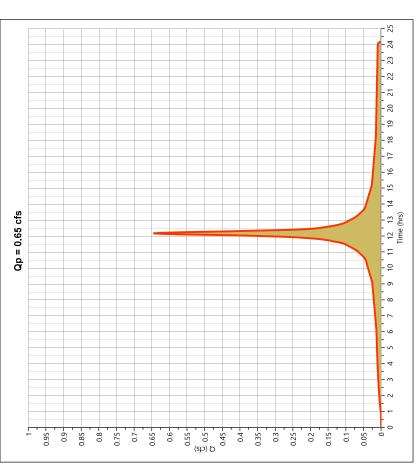
Post Pervious Pavement

Project Name:

06-14-2022

Hyd. No. 5

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.646 cfs
Storm Frequency	= 10-yr	Time to Peak	= 12.17 hrs
Time Interval	= 2 min	Runoff Volume	= 2,910 cuft
Drainage Area	= 0.15 ac	Curve Number	= 98
Tc Method	= User	Time of Conc. (Tc)	= 12.8 min
Total Rainfall	= 5.42 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



Hydrograph Report

06-14-2022

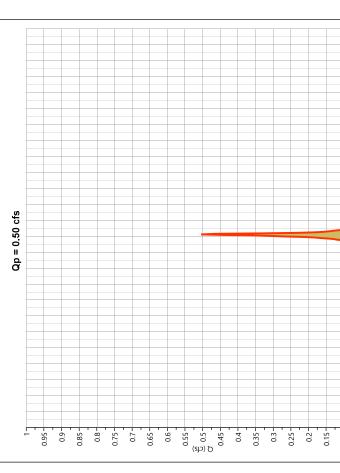
Project Name:

06-14-2022	Hyd. No. 6
	_
Hydrology Studio v 3.0.0.24	Post Pervious DA 1

Storm Frequency = 10-yr Time to Peak = 12.50 hrs Time Interval = 2 min Runoff Volume = 49.8 curt Drainage Area = 0.05 ac Curve Number = 39 Trow Method = 1.9 er Time of Conc. (Tc) = 6.0 min Total Rainfall = 5.42 in Design Storm = 10.00 ers Storm Duration = 24 hrs Shape Factor = 48.4 Co.00026 Co.0014 Co.0016 Co.0016 Co.0016 Co.0017 Co.0017 Co.0017 Co.0017 Co.0017 Co.0017 Co.0017 Co.0017 Co.0017 Co.0017 Co.0017 Co.0				
Runoff Volume ea = 0.05 ac Lure Number = User The of Conc. (Tc) = 5.42 in = 5.42 in Design Storm fron = 24 hrs Qp = 0.00 cfs	Storm Frequency	= 10-yr	Time to Peak	= 12.50 hrs
Ea = 0.05 ac Curve Number = User Time of Conc. (Tc) = 5.42 in Design Storm Shape Factor Qp = 0.00 cfs	Time Interval	= 2 min	Runoff Volume	= 49.8 cuft
if = 5.42 in Design Storm tion = 24 hrs Qp = 0.00 cfs	Drainage Area	= 0.05 ac	Curve Number	= 39
tion = 24 hrs Shape Factor Qp = 0.00 cfs	Tc Method	= User	Time of Conc. (Tc)	= 6.0 min
Qp = 0.00 cfs	Total Rainfall	= 5.42 in	Design Storm	= NOAA-D
	Storm Duration	= 24 hrs	Shape Factor	= 484
0.0028 0.0024 0.0028 0.0029 0.		Qp = 0.00 cfs		
00000 00000 00000 00000 00000 00000 0000	0.003			
O 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.0028			
Q (cfs) Q 00000 00000 00000 00000 00000 00000 0000	0.0026			
Q(cfs) Q (cds) Q (cds)	0.0024			
00002 00001 00001 00000 00000 00000 00000 00000 00000 0000	,			
Q(sty) D Q(sty)	0.0022			
O (cts)	0.002			
(c(x)) D 00 00 00 00 00 00 00 00 00 00 00 00 00	0.0018			
0.0001 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000	© 0.0016			
0.0012	eto) D			
0.0008	0.00		_/	
0.0008	0.0012			
0.0006	0.001			
0.0006	0.0008			
0.0004	0.0006			
0,0000	0.0004			
70000				
	70000			

Post Roof Area DA1

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.504 cfs
Storm Frequency	= 10-yr	Time to Peak	= 12.10 hrs
Time Interval	= 2 min	Runoff Volume	= 1,764 cuft
Drainage Area	= 0.1 ac	Curve Number	86 =
Tc Method	= User	Time of Conc. (Tc)	= 6.0 min
Total Rainfall	= 5.42 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



Hydrograph Report

06-14-2022 Project Name:

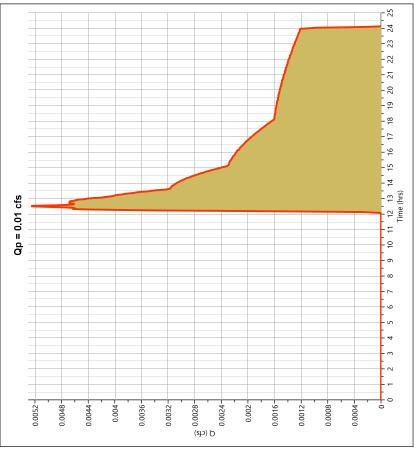
Hyd No. 7

Hyd. No. 8

06-14-2022 Project Name:

Post Pervious DA2

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.005 cfs
Storm Frequency	= 10-yr	Time to Peak	= 12.50 hrs
Time Interval	= 2 min	Runoff Volume	= 89.7 cuft
Drainage Area	= 0.09 ac	Curve Number	= 39
Tc Method	= User	Time of Conc. (Tc)	= 6.0 min
Total Rainfall	= 5.42 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



22 23 24

- 12 - 2 - 6 - 8 - 1

- 6

- ∞

Post Roof Area DA2

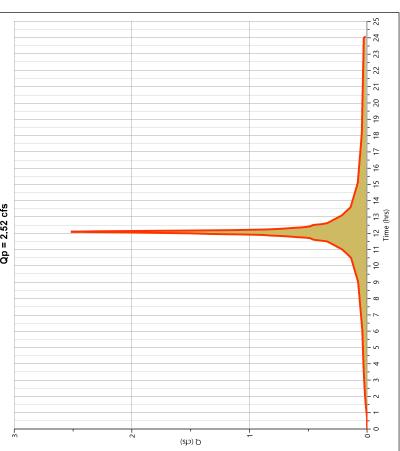
06-14-2022

Project Name:

Hyd. No. 9

Hydrograph Type	= NRCS Runoff	Peak Flow	= 2.519 cfs
Storm Frequency	= 10-yr	Time to Peak	= 12.10 hrs
Time Interval	= 2 min	Runoff Volume	= 8,818 cuft
Drainage Area	= 0.5 ac	Curve Number	86 =
Tc Method	= User	Time of Conc. (Tc)	= 6.0 min
Total Rainfall	= 5.42 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484





Hydrograph Report

06-14-2022

Project Name:

Hyd. No. 10

Pre DA 1 - POA 2

7	
ร	
Š	
7	
_	
_	

Hydrograph Type	= Junction	Peak Flow	= 0.187 cfs
Storm Frequency	= 10-yr	Time to Peak	= 12.13 hrs
Time Interval	= 2 min	Hydrograph Volume	= 791 cuft
Inflow Hydrographs	= 1, 2	Total Contrib. Area	= 0.09 ac
	Qp = 0.19 cfs		
0.19			
0.18			
0.17			
0.16			
0.15			
0.14			
0.13			
0.57			
(cfs) Q			
- 60.0			
0.00			
70.0			
- 1900			
- 40.0			
0.03			
0.02			
0.01			
0 1 2 3	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 Time(hts)	14 15 16 17 18 19 20	21 22 23 24 25
	DA 1 - IMPERVIOUS DA 1 - PERVIOUS DA 1 - POA 2	OUS DA 1 - POA 2	

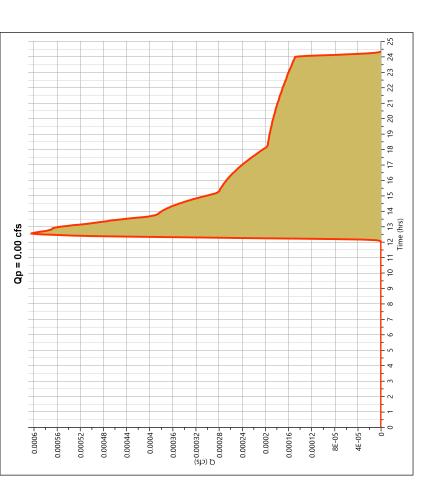
Post Pervious DA3

06-14-2022

Hyd. No. 11

Project Name:

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.001 cfs
Storm Frequency	= 10-yr	Time to Peak	= 12.60 hrs
Time Interval	= 2 min	Runoff Volume	= 11.0 cuft
Drainage Area	= 0.01 ac	Curve Number	= 39
Tc Method	= User	Time of Conc. (Tc)	= 12.8 min
Total Rainfall	= 5.42 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



Hydrograph Report

Project Name:

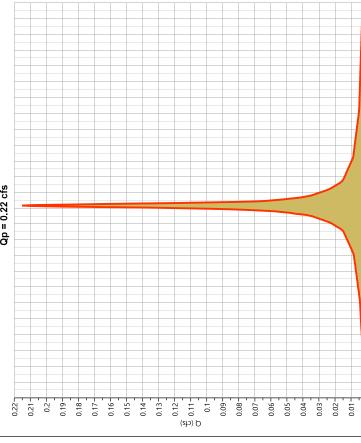
06-14-2022

Hyd. No. 12

A3
Δ
S _I
٥.
2
ğ
트
st
2

= 0.215 cfs	= 12.17 hrs	= 970 cuft	86 =	= 12.8 min	= NOAA-D	= 484
Peak Flow	Time to Peak	Runoff Volume	Curve Number	Time of Conc. (Tc)	Design Storm	Shape Factor
= NRCS Runoff	= 10-yr	= 2 min	= 0.05 ac	= User	= 5.42 in	= 24 hrs
Hydrograph Type	Storm Frequency	Time Interval	Drainage Area	Tc Method	Total Rainfall	Storm Duration

	ŀ
	ŀ
	ŀ
	ŀ
cfs	L
Ñ	
0.22	
Ш	
g	
Ø	ŀ
	ŀ
	ŀ
	ŀ



19 20 21

- 8

8

- 9

	۶	
	۶	
	ò	
		Ļ
1	1	_
	_	
	c	
	2	
	c	
	2	
•	2	
	2	
	2	
	2	

Hydrology Studio v 3.0.0.24

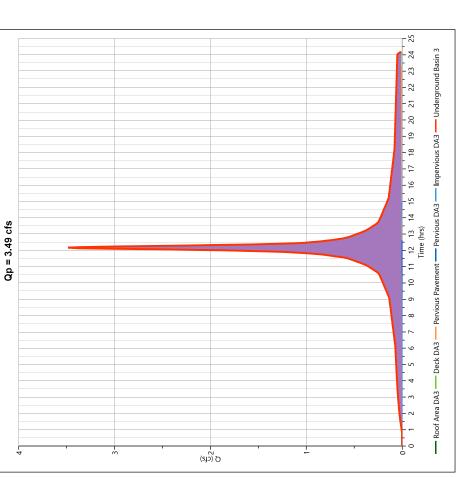
Post Underground Basin 3

Project Name:

06-14-2022

Hyd. No. 13

= 3.486 cfs	= 12.17 hrs	Hydrograph Volume = 15,725 cuft	a = 0.82 ac	
Peak Flow	Time to Peak	Hydrograph Volun	Total Contrib. Area = 0.82 ac	
= Junction	= 10-yr	= 2 min	= 3, 4, 5, 11, 12	
Hydrograph Type	Storm Frequency	Time Interval	Inflow Hydrographs = 3, 4, 5, 11, 12	



Hydrograph Report

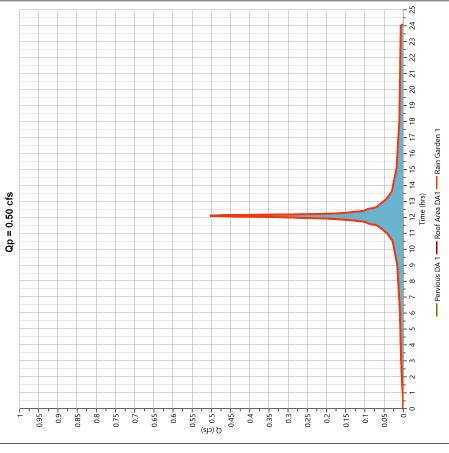
Post Rain Garden 1

06-14-2022

Project Name:

Hyd. No. 14

Hydrograph Type	= Junction	Peak Flow	= 0.504 cfs
Storm Frequency	= 10-yr	Time to Peak	= 12.10 hrs
Time Interval	= 2 min	Hydrograph Volume = 1,814 cuft	= 1,814 cuft
Inflow Hydrographs = 6, 7	= 6, 7	Total Contrib. Area = 0.15 ac	= 0.15 ac



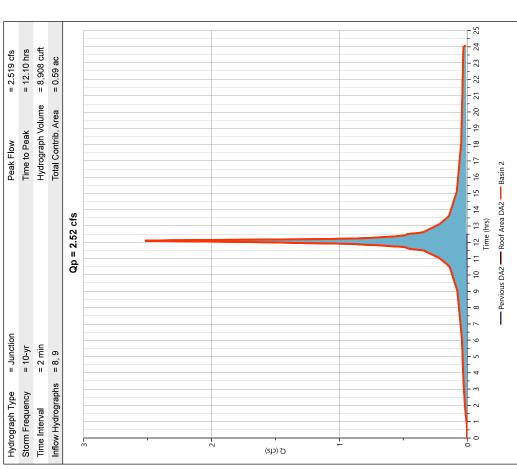
port	
h Re	
ograph	
Jydr c	
_	

Hydrology Studio v 3.0.0.24

Post Basin 2

Hyd No 15

rdrograph Type	= Junction	Peak Flow	= 2.519 cfs	
orm Frequency	= 10-yr	Time to Peak	= 12.10 hrs	
100 000	::	4	4: :-	



Hydrograph Report

06-14-2022

Project Name:

Post Basin 2

06-14-2022

Project Name:

Hyd. No. 16

Storm Frequency = 10-yr Time Interval = 2 min Inflow Hydrograph = 15 - Basin 2 Pond Name = Basin 2 Pond Routing by Storage Indication Method		Time to Peak Hydrograph Volume	= 12.20 hrs = 1,709 cuft
Time Interval = 2 min Inflow Hydrograph = 15 - B Pond Name = Basin Pond Routing by Storage Indication Meth.		Hydrograph Volume	= 1,709 cuft
Inflow Hydrograph = 15 - B Pond Name = Basin Pond Routing by Storage Indication Meth.			
Pond Name = Basin Pond Routing by Storage Indication Meth.	3asin 2	Max. Elevation	= 14.17 ft
Pond Routing by Storage Indication Metho	12	Max. Storage	= 1,838 cuft
3	ро	Center of m≀	Center of mass detention time = 1 min
	Qp = 0.77 cfs		
,			
2			
Q (cfs)			
-1	4 5 6 7 8	- 10 - 11	12 13
	Time (hrs)		

Hydrology Studio v 3.0.0.24

Post Basin 1

06-14-2022

Hyd No. 17

Project Name:

= 0.084 cfs Peak Flow = Pond Route

= 12.30 hrs = 14.66 ft = 458 cuft = 161 cuft Hydrograph Volume Max. Elevation Time to Peak Max. Storage = 14 - Rain Garden 1 = BASIN 1 = 10-yr Inflow Hydrograph Storm Frequency Hydrograph Type Time Interval Pond Name

Pond Routing by Storage Indication Method

Qp = 0.08 cfs

0.85 0.8 0.65

-9.0

0.95 -6:0 --- Rain Garden 1 --- Basin 1

0.35

Q (cfs) 0.45

0.55

0.3

0.2 0.15 0.1

Hydrograph Report

Hydrology Studio v 3.0.0.24

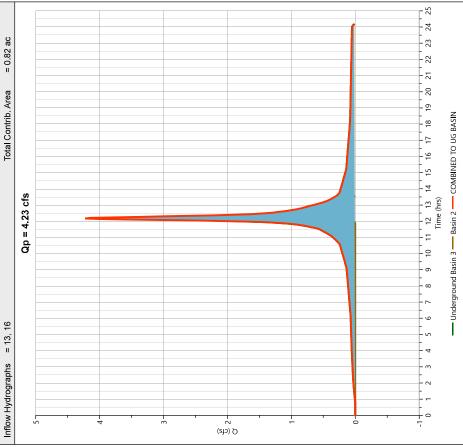
Hyd No. 18

06-14-2022

Project Name:

Post COMBINED TO UG BASIN

= 0.82 ac	Total Contrib. Area	= 13, 16	Inflow Hydrographs
= 17,434 cuf	Hydrograph Volume	= 2 min	Time Interval
= 12.17 hrs	Time to Peak	= 10-yr	Storm Frequency
= 4.226 cfs	Peak Flow	= Junction	Hydrograph Type



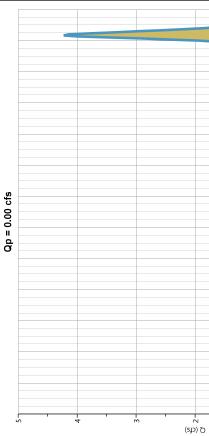
Post UG Basin 3

Project Name:

06-14-2022

Hyd. No. 19

Hydrograph Type	= Pond Route	Peak Flow	= 0.000 cfs
Storm Frequency	= 10-yr	Time to Peak	= 12.73 hrs
Time Interval	= 2 min	Hydrograph Volume	= 0.000 cuft
Inflow Hydrograph	= 18 - COMBINED TO UG BASIN	Max. Elevation	= 12.92 ft
Pond Name	= UG BASIN	Max. Storage	= 4,962 cuft
boothed professional controls with pathood based	discriptor Mathod		



Hydrograph Report

Hyd. No. 20

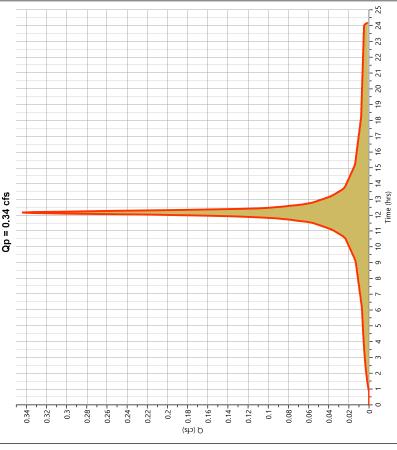
06-14-2022

Project Name:

ဟ
\supset
0
5
Ŕ
Ш
Д
Σ
Ξ
~
×
5
۵

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.344 cfs
Storm Frequency	= 10-yr	Time to Peak	= 12.17 hrs
Time Interval	= 2 min	Runoff Volume	= 1,552 cuft
Drainage Area	= 0.08 ac	Curve Number	86 =
Tc Method	= User	Time of Conc. (Tc)	= 11 1 min
Total Rainfall	= 5.42 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484





- ლ

- 2

- 6

--- COMBINED TO UG BASIN --- UG Basin 3

06-14-2022

Project Name:

Pre DA 2 - PERVIOUS

Hyd. No. 21

Hydrograph Type	oh Type	= NRCS Runoff	Peak Flow	= 0.021 cfs
Storm Frequency	quency	= 10-yr	Time to Peak	= 13.30 hrs
Time Interval	val	= 2 min	Runoff Volume	= 570 cuft
Drainage Area	Area	= 0.86 ac	Curve Number	= 36*
Tc Method	_	= User	Time of Conc. (Tc)	= 11.1 min
Total Rainfall	tall	= 5.42 in	Design Storm	= NOAA-D
Storm Duration	ation	= 24 hrs	Shape Factor	= 484
* Composite CN Worksheet	CN Workshee	ų		
AREA (ac) CN		DESCRIPTION		
0.58 39	OPEN SPACE	PACE		
0.28 30	WOODS			
0.86 36	Weighte	Weighted CN Method Employed		

- 54 23 - 25 - 12 16 17 18 19 20 11 12 13 14 15 Time (hrs) Qp = 0.02 cfs -- 은 Q (cfs) Q 0.012 0.022 0.021 0.019 0.018 0.016 0.016 0.016 0.009 0.003 0.002

Hydrograph Report

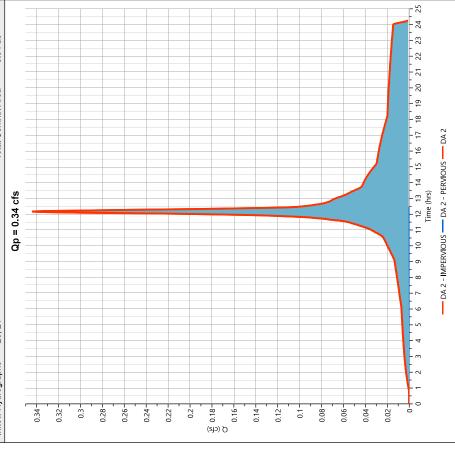
06-14-2022

Project Name:

Hyd. No. 22

Pre DA 2

raph Type = Junction = 0.344 cfs	requency = 10-yr = 12.17 hrs	terval = 2 min Hydrograph Volume = 2,122 cuft	nflow Hydrographs = 20, 21 Total Contrib. Area = 0.94 ac
Hydrograph Type	Storm Frequency	Time Interval	Inflow Hydrograph



Project Name:

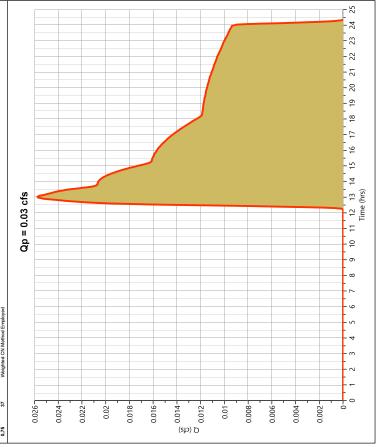
Pre DA 3 - PERVIOUS

06-14-2022

Hyd No. 23

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.026 cfs
Storm Frequency	= 10-yr	Time to Peak	= 13.00 hrs
Time Interval	= 2 min	Runoff Volume	= 598 cuft
Drainage Area	= 0.75 ac	Curve Number	= 37*
Tc Method	= User	Time of Conc. (Tc)	= 10.3 min
Total Rainfall	= 5.42 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484
* Composite CN Worksheet	te		
AREA (ac) CN DESCR 0.62 39 OPEN	DESCRIPTION OPEN SPACE		

WOODS Weighted CN Method Employed 30 0.13



Hydrograph Report

06-14-2022

Project Name:

Hyd No 24

Pre COMBINED TO POA 1

= 0.344 cfs	- 12 17 hrs
ak Flow	7000 0

Hydrograph Type	= Junction	Peak Flow	= 0.344 cfs
Storm Frequency	= 10-yr	Time to Peak	= 12.17 hrs
Time Interval	= 2 min	Hydrograph Volume	= 2,720 cuft
Inflow Hydrographs	= 22, 23	Total Contrib. Area	= 1.69 ac
	Qp = 0.34 cfs		
0.34			
1			
0.32			
0.3			
0.28			
0.26			
- 47.0			
0.22			
0.2			
(cfs) (0.000) (0.000)			
0.16			
0.14			
0.12			
0.1			
80.0			
90.00			
0.04			
0.02			
		- 5	24 23 23 24 35
N -	t 3 % / 0 % IO II IZ I3	02 61 01 /1 01	+ 7 C7 77
	DA 2 DA 3 - PERVIOUS COMBINED TO POA 1	NED TO POA 1	

Hydrology Studio v 3.0.0.24

Post IMP BYPASS INLET N.

= NRCS Runoff

= 10-yr = 2 min

Storm Frequency Hydrograph Type

= 0.08 ac

Drainage Area Time Interval

Tc Method

= 5.42 in

Total Rainfall

= User

= 24 hrs

Storm Duration

0.0046

0.0042

0.0044

0.0038 0.0036

0.004

0.0034

0.0032

0.003

0.0028 0.0026

Hydrograph Report Hydrology Studio v 3.0.0.24

Project Name: 06-14-2022

06-14-2022 Project Name:

Hyd No 26

Post IMP BYPASS INLET N.

Hyd No 25

= 12.50 hrs = 0.005 cfs

= 79.7 cuft

Runoff Volume Curve Number

Time to Peak

Peak Flow

= NOAA-D

= 484

Shape Factor

Qp = 0.00 cfs

= 6.0 min

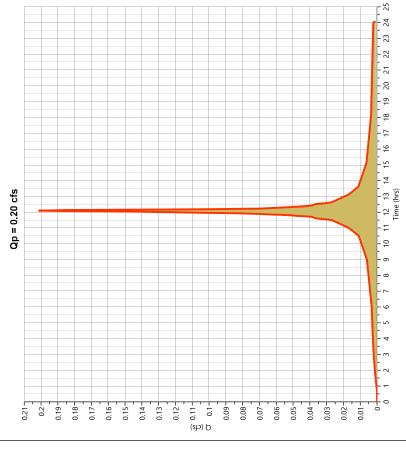
Time of Conc. (Tc)

Design Storm

= 39

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.202 cfs
Storm Frequency	= 10-yr	Time to Peak	= 12.10 hrs
Time Interval	= 2 min	Runoff Volume	= 705 cuft
Drainage Area	= 0.04 ac	Curve Number	86 =
Tc Method	= User	Time of Conc. (Tc)	= 6.0 min
Total Rainfall	= 5.42 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

= 0.202 cfs	= 12.10 hrs	= 705 cuft	86 =	= 6.0 min	= NOAA-D	= 484
Peak Flow	Time to Peak	Runoff Volume	Curve Number	Time of Conc. (Tc)	Design Storm	Shape Factor
= NRCS Runoff	= 10-yr	= 2 min	= 0.04 ac	= User	= 5.42 in	= 24 hrs
Hydrograph Type	Storm Frequency	Time Interval	Drainage Area	Tc Method	Total Rainfall	Storm Duration



(む) Q (00024 0.0022

0.0018

0.0016

0.002

0.0014

0.0012 0.001 0.0008 -900000 0.0004 0.0002 - 24

23

- 22

. - = - 6

- 2

Project Name:

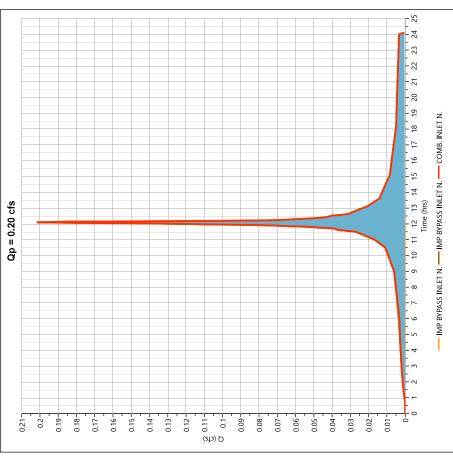
Hydrograph Report

COMB. INLET N.

06-14-2022

Hyd. No. 27

Hydrograph Type	= Junction	Peak Flow	= 0.202 cfs
Storm Frequency	= 10-yr	Time to Peak	= 12.10 hrs
Time Interval	= 2 min	Hydrograph Volume	= 785 cuft
Inflow Hydrographs = 25, 26	= 25, 26	Total Contrib. Area	= 0.12 ac
	Qp = 0.20 cfs		
0.21			
0.2			



Hydrograph Report

06-14-2022

Project Name:

Hyd. No. 28

Post COMBINED TO POA 1

= Junction

Hydrograph Type

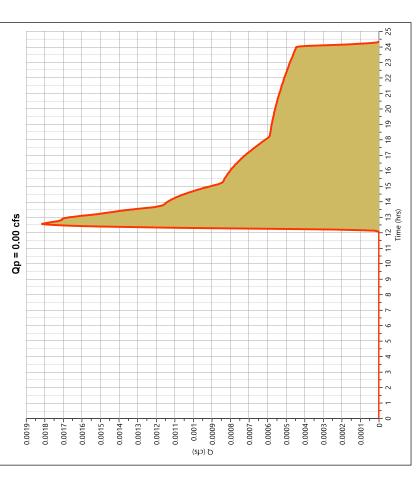
= 0.204 cfs	= 12.10 hrs
Peak Flow	Time to Peak

Storm Frequency	= 10-yr	Time to Peak	= 12.10 hrs
Time Interval	= 2 min	Hydrograph Volume	= 946 cuft
Inflow Hydrographs	= 17, 19, 27	Total Contrib. Area	= 0.12 ac
Ç	Qp = 0.20 cfs		
17.0			
0.2			
0.00			
0			
00			
01.0			
0.19			
00			
0.12			
(sìo			
60.0			
0.08			
- 90.0			
- 50.0			
0.04			
0.03			
0.02			
0.01			
0			
-0.01	3 4 5 6 7 8 9 10 11 12 13	14 15 16 17 18 19 20	21 22 23 24 25
	Time (hrs)		
	Basin 1 UG Basin 3 COMB. INLET N COMBINED TO POA 1	N. —— COMBINED TO POA 1	

_	
	=
۶	2
2	_
(Ľ
۵	_
_	
7	=
	-
į	C
27.7	Ċ
ŗ	2
	2
ŗ	

Pre Bypass Memorial

<i>₹</i>	= NRCS Runoff	Peak Flow	= 0.002 cfs
al rea	= 10-yr	Time to Peak	= 12.60 hrs
rea all	= 2 min	Runoff Volume	= 32.9 cuft
	= 0.03 ac	Curve Number	= 39
	= User	Time of Conc. (Tc)	= 12.9 min
	= 5.42 in	Design Storm	= NOAA-D
Storm Duration = 24 hrs	= 24 hrs	Shape Factor	= 484



Hydrograph Report

06-14-2022 Project Name:

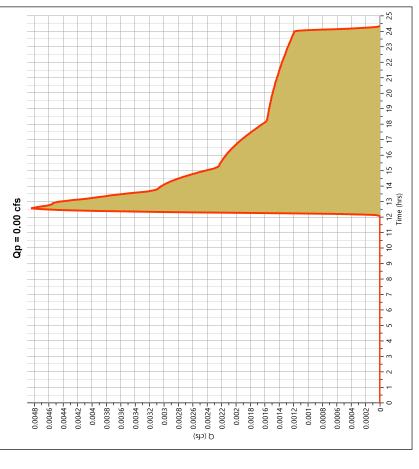
Hyd. No. 29

06-14-2022

Project Name:

Hyd No 30

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.005 cfs
Storm Frequency	= 10-yr	Time to Peak	= 12.60 hrs
Time Interval	= 2 min	Runoff Volume	= 87.7 cuft
Drainage Area	= 0.08 ac	Curve Number	= 39
Tc Method	= User	Time of Conc. (Tc)	= 12.9 min
Total Rainfall	= 5.42 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



	t		
	Ì	_	
	Š	_	
	(l	Ì
(1	_	
	C		
	c	_	١
	į	•	
	į	֡	
	֡֜֝֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜		֡
	į		
	֡֜֝֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜		
	֡֜֝֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜		

Post Imp By

Hydrograph Report

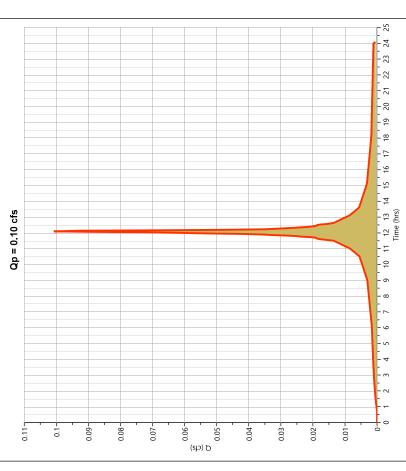
06-14-2022 Project Name:

Project Name:

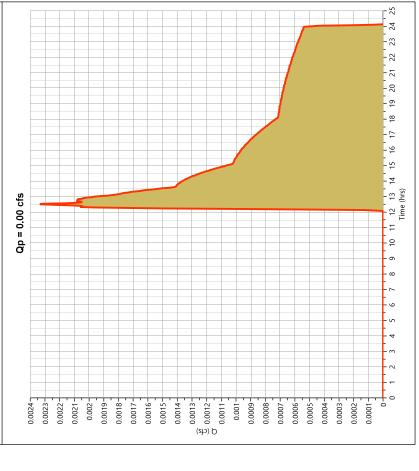
06-14-2022

_	
Hyd. No. 31	
pass Inlet S.	

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.101 cfs
; - >			
Storm Frequency	= 10-yr	Time to Peak	= 12.10 hrs
Time Interval	= 2 min	Runoff Volume	= 353 cuft
Drainage Area	= 0.02 ac	Curve Number	86 =
Tc Method	= User	Time of Conc. (Tc)	= 6.0 min
Total Rainfall	= 5.42 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



_	Post Perv Bypass Inlet S.	s Inlet S.		Hyd. No. 32
	Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.002 cfs
	Storm Frequency	= 10-yr	Time to Peak	= 12.50 hrs
	Time Interval	= 2 min	Runoff Volume	= 39.9 cuft
	Drainage Area	= 0.04 ac	Curve Number	= 39
	Tc Method	= User	Time of Conc. (Tc)	= 6.0 min
	Total Rainfall	= 5.42 in	Design Storm	= NOAA-D
	Storm Duration	= 24 hrs	Shape Factor	= 484



τ	_
C	כ
Č	2
Ō	D
۵	2
ď	=
	5
7	
2	n
7	σ
	5
	5
	5
	505
	505
	5050
	5050

Post Comb. Bypass POA 2

Project Name:

06-14-2022

Hyd. No. 33

Time to Peak	Storm Frequency Time Interval Inflow Hydrographs	= 10-yr	Time to Peak	= 12.10 hrs
Hydrograph Volume = 31, 32 Qp = 0.10 cfs				
a 31, 32 Op = 0.10 cfs	w Hydrographs	= 2 min	Hydrograph Volume	= 393 cuft
		= 31, 32	Total Contrib. Area	= 0.06 ac
	;	Qp = 0.10 cfs		
		1		
00-00-00-00-00-00-00-00-00-00-00-00-00-				
	200			
03-				
	90			
02-	5			
	1			
01	1 7 7			
	05			
	5			

Hydrograph 25-yr Summary

Project Name: 06-14-2022

]	1		Peak	Time to	Hydrograph	Inflow	Maximum	Maximum
o N	Type	Name	Flow (cfs)	Peak (hrs)	Volume (cuft)	Hyd(s)	Elevation (ft)	Storage (cuft)
-	NRCS Runoff	Pre DA 1 - IMPERVIOUS	0.234	12.13	947	I		
2	NRCS Runoff	Pre DA1 - PERVIOUS	0.010	12.27	100	I		
е	NRCS Runoff	Post Roof Area DA3	1.559	12.17	7,079	ı		
4	NRCS Runoff	Post Deck DA3	1.721	12.17	7,812	ı		
2	NRCS Runoff	Post Pervious Pavement	908.0	12.17	3,662	1		
9	NRCS Runoff	Post Pervious DA 1	0:020	12.13	116	1		
7	NRCS Runoff	Post Roof Area DA1	0.629	12.10	2,219	1		
60	NRCS Runoff	Post Pervious DA2	0.036	12.13	210	1		
0	NRCS Runoff	Post Roof Area DA2	3.147	12.10	11,096	ı		
10	Junction	Pre DA1-POA2	0.240	12.13	1,047	1, 2		
Ξ	NRCS Runoff	Post Pervious DA3	0.003	12.30	25.6	1		
12	NRCS Runoff	Post Impervious DA3	0.269	12.17	1,221	I		
13	Junction	Post Underground Basin 3	4.357	12.17	19,799	3, 4, 5, 11, 12		
4	Junction	Post Rain Garden 1	0.645	12.10	2,336	6,7		
15	Junction	Post Basin 2	3.175	12.10	11,306	6,8		
16	Pond Route	Post Basin 2	1.060	12.20	2,790	15	14.41	2,316
17	Pond Route	Post Basin 1	0.256	12.20	398	14	14.75	541
9	Junction	Post COMBINED TO UG BAS	N5.394	12.17	22,589	13, 16		
19	Pond Route	Post UG Basin 3	0.260	12.93	833	18	13.36	7,196
20	NRCS Runoff	Pre DA 2 - IMPERVIOUS	0.430	12.17	1,953	I		
21	NRCS Runoff	Pre DA 2 - PERVIOUS	0.120	12.37	1,574	I		
22	Junction	Pre DA 2	0.486	12.20	3,527	20, 21		
23	NRCS Runoff	Pre DA 3 - PERVIOUS	0.140	12.33	1,549	I		
24	Junction	Pre COMBINED TO POA 1	0.588	12.20	5,077	22, 23		
25	NRCS Runoff	Post IMP BYPASS INLET N.	0.032	12.13	186	I		
56	NRCS Runoff	Post IMP BYPASS INLET N.	0.252	12.10	888	ı		
27	Junction	COMB. INLET N.	0.277	12.10	1,074	25, 26		
28	Junction	Post COMBINED TO POA 1	0.443	12.13	2,305	17, 19, 27		
59	NRCS Runoff	Pre Bypass Memorial	0.009	12.30	76.9	ı		
30	NRCS Runoff	Post Bypass Memorial	0.024	12.30	205	ı		
31	NRCS Runoff	Post Imp Bypass Inlet S.	0.126	12.10	444	I		
32	NRCS Runoff	Post Perv Bypass Inlet S.	0.016	12.13	93.2	1		
33	Junction	Post Comb. Bypass POA 2	0.139	12.10	537	31, 32		

Pre DA 1 - IMPERVIOUS

Project Name: 06-14-2022 Hyd. No. 1

06-14-2022

Project Name:

Hydrograph Report

Hyd. No. 2

S
\supset
ō
×
~
2
ш
_
_
٩
Ф
-
₽.

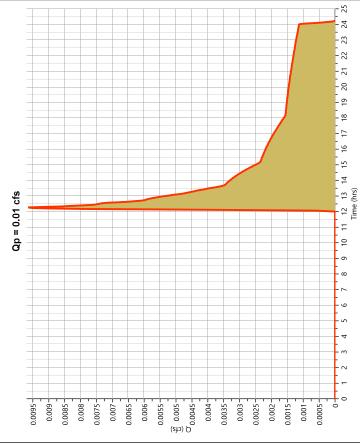
ī		
1		

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.234 cfs		Hydrograph Type	= NRC
Storm Frequency	= 25-yr	Time to Peak	= 12.13 hrs	S	Storm Frequency	= 25-yr
Time Interval	= 2 min	Runoff Volume	= 947 cuft		ime Interval	= 2 mir
Drainage Area	= 0.04 ac	Curve Number	86 =	Δ	Orainage Area	= 0.05
Tc Method	= User	Time of Conc. (Tc)	= 9.8 min		rc Method	= User
Total Rainfall	= 6.76 in	Design Storm	= NOAA-D	<u> </u>	Fotal Rainfall	= 6.76
Storm Duration	= 24 hrs	Shape Factor	= 484	S	Storm Duration	= 24 hr

Qp = 0.23 cfs

(2) D (2) D (2) D (2) D (3) D (4) D (5) D (5) D (6) D (6) D (7) D

Hydrograph Iype	e = NKCS Kunott	Peak Flow	= 0.010 cts
Storm Frequency	y = 25-yr	Time to Peak	= 12.27 hrs
Time Interval	= 2 min	Runoff Volume	= 100 cuft
Drainage Area	= 0.05 ac	Curve Number	= 37*
Tc Method	= User	Time of Conc. (Tc)	= 9.8 min
Total Rainfall	= 6.76 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484
* Composite CN Worksheet	sheet		
AREA(ac) CN 0.04	DESCRIPTION OPEN SPREE		
30	pepoon		
0.05 37 \	Weighted CN Method Employed		



19 20 21

_ ∞ -=

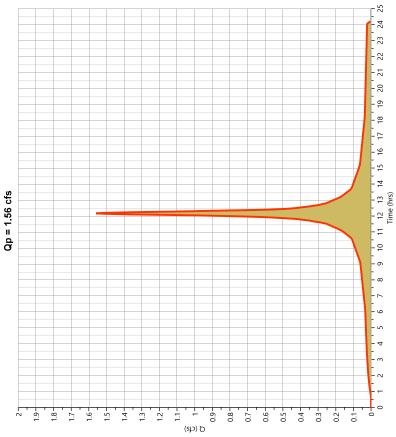
. - e

- ∞

Post Roof Area DA3

Hydrograph Type	= NRCS Runoff	Peak Flow	= 1.559 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.17 hrs
Time Interval	= 2 min	Runoff Volume	= 7,079 cuft
Drainage Area	= 0.29 ac	Curve Number	86 =
Tc Method	= User	Time of Conc. (Tc)	= 10 0 min
Total Rainfall	= 6.76 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484





Hydrograph Report

06-14-2022 Project Name:

Hyd. No. 3

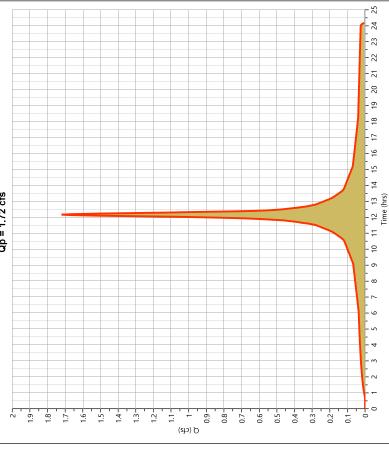
Project Name:

06-14-2022

3	
₹	
×	
ĕ	
Δ	
ĭ	
Ö	

Hydrograph Type	= NRCS Runoff	Peak Flow	= 1.721 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.17 hrs
Time Interval	= 2 min	Runoff Volume	= 7,812 cuft
Drainage Area	= 0.32 ac	Curve Number	86 =
Tc Method	= User	Time of Conc. (Tc)	= 12.8 min
Total Rainfall	= 6.76 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

cts
72
П
å



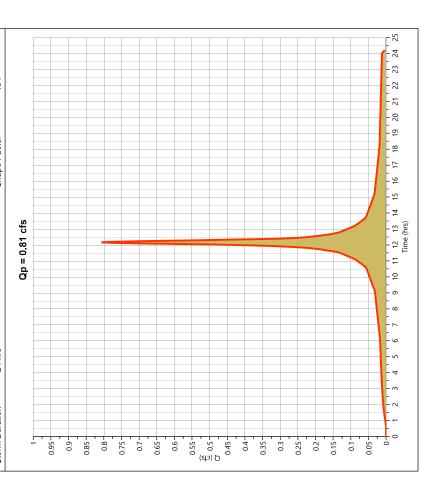
Post Pervious Pavement

06-14-2022

Hyd No. 5

Project Name:

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.806 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.17 hrs
Time Interval	= 2 min	Runoff Volume	= 3,662 cuft
Drainage Area	= 0.15 ac	Curve Number	86 =
Tc Method	= User	Time of Conc. (Tc)	= 12.8 min
Total Rainfall	= 6.76 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



19 20 21

- 8

ω

9

0.001

0.003 0.002

Hydrograph Report

06-14-2022

Project Name:

No. 6

3.0.0.24 06-	ious DA 1 Hyd. N
Hydrology Studio v 3.0.0.24	Post Pervious DA 1

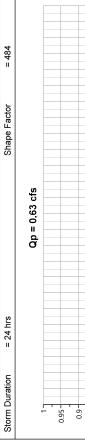
Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.020 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.13 hrs
Time Interval	= 2 min	Runoff Volume	= 116 cuft
Drainage Area	= 0.05 ac	Curve Number	= 39
Tc Method	= User	Time of Conc. (Tc)	= 6.0 min
Total Rainfall	= 6.76 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484
	Qp = 0.02 cfs		
0.02			
0.019			
0.018			
0.017			
0.016			
0.015			
- 1000			
0.00			
0.013			
0.012			
(s)			
O (O			
- 600:0			
0.008			
0.007			
0.006			
0.005			
0.004			

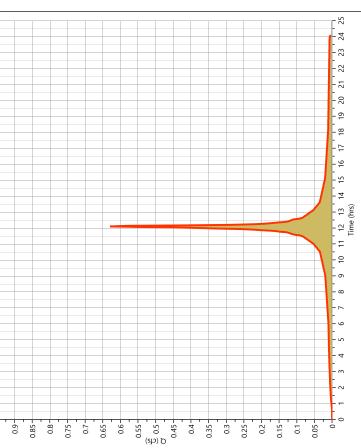
Hydrology Studio v 3.0.0.24

Project Name:

06-14-2022

Hyd. No. 7 = 12.10 hrs = 2,219 cuft = 0.629 cfs= NOAA-D = 6.0 min = 98 = 484 Time of Conc. (Tc) Design Storm Runoff Volume Curve Number Time to Peak Shape Factor Peak Flow = NRCS Runoff = 6.76 in = 0.1 ac = 25-yr = 24 hrs = 2 min = User Post Roof Area DA1 Storm Frequency Hydrograph Type Drainage Area Time Interval Total Rainfall Tc Method





Hydrograph Report

06-14-2022

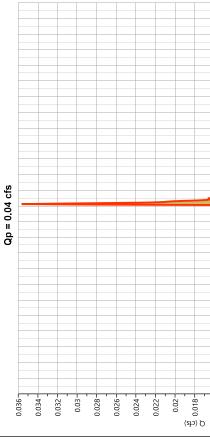
Project Name:

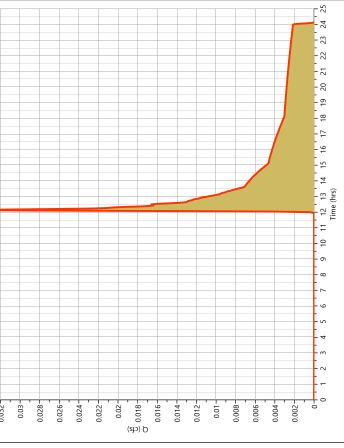
Ö
_
_
_
0
≥
÷
Í

DA2	!
rvious D)
Post Pe	

1	
1	

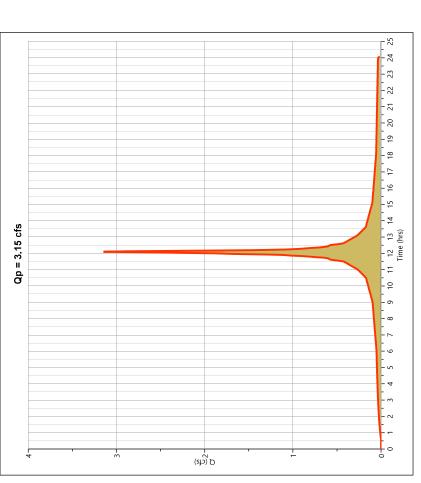
Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.036 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.13 hrs
Time Interval	= 2 min	Runoff Volume	= 210 cuft
Drainage Area	= 0.09 ac	Curve Number	= 39
Tc Method	= User	Time of Conc. (Tc)	= 6.0 min
Total Rainfall	= 6.76 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484





Post Roof Area DA2

Hydrograph Type	= NRCS Runoff	Peak Flow	= 3.147 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.10 hrs
Time Interval	= 2 min	Runoff Volume	= 11,096 cuft
Drainage Area	= 0.5 ac	Curve Number	86 =
Tc Method	= User	Time of Conc. (Tc)	= 6.0 min
Total Rainfall	= 6.76 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



Hydrograph Report

06-14-2022

Project Name:

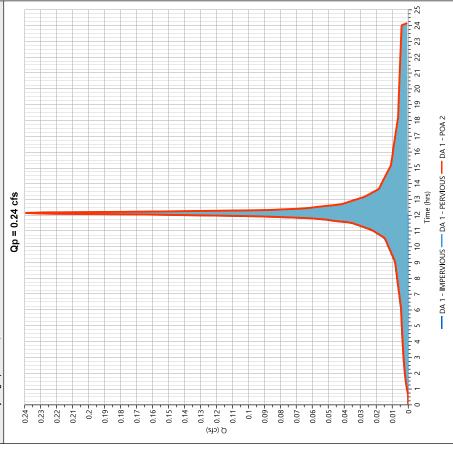
Hyd. No. 9

Project Name:

06-14-2022

7
℄
2
1
•
_
⋖
2
ø
5

= 0.240 cfs	= 12.13 hrs	= 1,047 cuft	= 0.09 ac
Peak Flow	Time to Peak	Hydrograph Volume = 1,047 cuft	Total Contrib. Area
= Junction	= 25-yr	= 2 min	= 1, 2
Hydrograph Type	Storm Frequency	Time Interval	Inflow Hydrographs = 1, 2



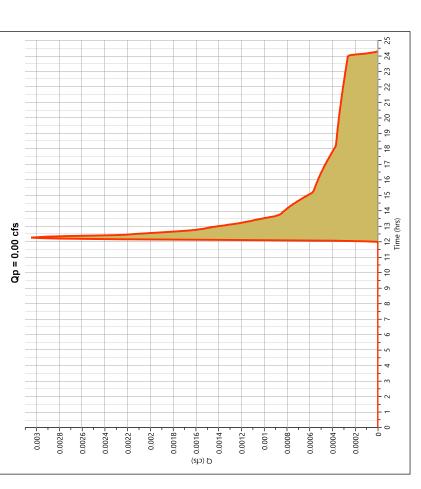
Post Pervious DA3

06-14-2022

Hyd. No. 11

Project Name:

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.003 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.30 hrs
Time Interval	= 2 min	Runoff Volume	= 25.6 cuft
Drainage Area	= 0.01 ac	Curve Number	= 39
Tc Method	= User	Time of Conc. (Tc)	= 12.8 min
Total Rainfall	= 6.76 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



Hydrograph Report

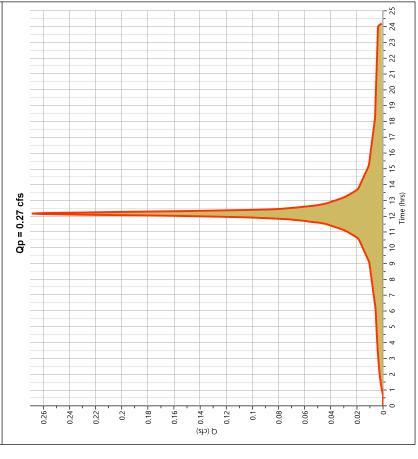
Hydrology Studio v 3.0.0.24

Post Impervious DA3

06-14-2022

Project Name:

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.269 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.17 hrs
Time Interval	= 2 min	Runoff Volume	= 1,221 cuft
Drainage Area	= 0.05 ac	Curve Number	86 =
Tc Method	= User	Time of Conc. (Tc)	= 12.8 min
Total Rainfall	= 6.76 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

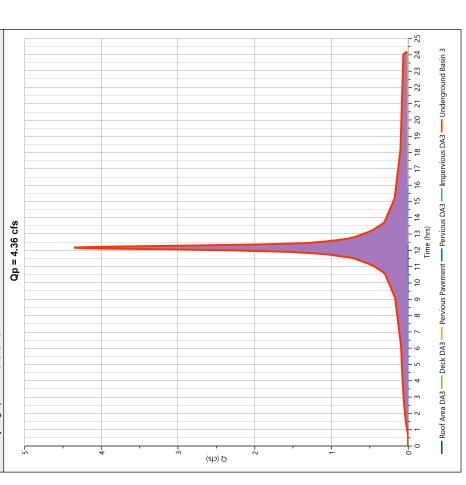


	ţ	_
	r	כ
	Š	2
	0	۵
ı	n	-
	_	
	г	
0	-	-
•	Ċ	5
	200	ס
	У	ס
	202	ם ס
	У	
	У	
	У	
	У	
	У	

Project Name:

06-14-2022

Post Underground Basin 3	nd Basin 3		Hyd. No. 13
Hydrograph Type	= Junction	Peak Flow	= 4.357 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.17 hrs
Time Interval	= 2 min	Hydrograph Volume = 19,799 cuft	= 19,799 cuft
Inflow Hydrographs = 3, 4, 5, 11, 12	= 3, 4, 5, 11, 12	Total Contrib. Area	= 0.82 ac



Hydrograph Report

06-14-2022

Project Name:

_	
Garden 1	
st Rain	
Pos	

= 25-yr = 2 min = 6, 7 Qp = 0.65 cfs Qp = 0.65 cfs	= 25-yr = 2 min Hydrograph Volume = 6, 7 Op = 0.65 cfs Op = 0.65 cfs	= 25-yr = 2 min = 6, 7	Time to Peak Hydrograph Volume Total Contrib. Area	= 12.10 hrs
= 2 min Hydrograph Volume = 6, 7 Qp = 0.65 cfs	#ydrograph Volume = 2,336 cur = 6, 7 Qp = 0.65 cfs Qp = 0.65 cfs	= 2 min = 6, 7	Hydrograph Volume Total Contrib. Area	
Adrographs = 6, 7 Op = 0.65 cfs	2p = 0.65 cfs Qp = 0.65 cfs Qp = 0.65 cfs	Q Q	Total Contrib. Area	= 2,336 cuf
	Qp = 0.65 cfs			= 0.15 ac
0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0		0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0		
0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0		0.09 0.09 0.07 0.07 0.05 0.05 0.05 0.05 0.03 0.03		
0.09 0.08 0.07 0.05 0.05 0.03 0.03 0.03 0.03 0.03 0.03		0.09 0.08 0.07 0.05 0.05 0.05 0.05 0.05 0.03 0.03 0.03		
0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0		0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0		
0.055 0.		0.5 0.7 0.5 0.5 0.5 0.5 0.5 0.3 0.3 0.3 0.3 0.3 0.3		
0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0		0.05		
0.055 (cfs) 0.055		0.5 0.6 0.5 0.4 0.3 0.3 0.3 0.3 0.3		
0.05 (a) (b) (c) (c) (c) (c) (c) (c) (c) (c) (c) (c		0.05 0.05 0.05 0.04 0.03 0.03		
0.0 (%) 0.0 (%		0.55- 0.5- 0.4- 0.3- 0.3- 0.2- 0.2- 0.2- 0.3- 0.3- 0.3- 0.3- 0.3- 0.3- 0.3- 0.3		
0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15		0.5		
0.45		0.4 0.3 0.3 0.3 0.3		
0.35 0.25 0.15 0.15 0.10		0.4		
0.35		0.3 0.3 0.2		
0.15		0.35		
0.25	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23	0.02		
0.15	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23	002		
0.15	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23	7.0		
0.05	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23			
000	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23			
	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23	100		
) 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23	COX		

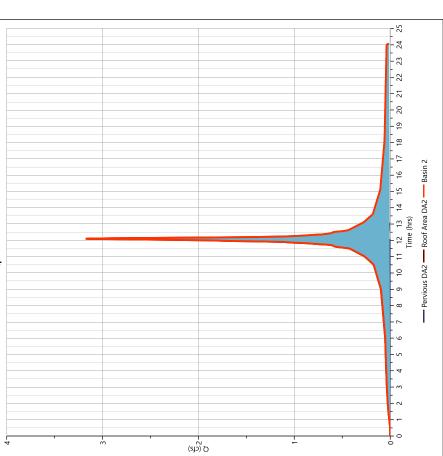
Post Basin 2

06-14-2022

Project Name:

Hyd. No. 15

	= 12.10 hrs	= 11,306 cuft	= 0.59 ac		
rear low	Time to Peak	Hydrograph Volume	Total Contrib. Area		
				Qp = 3.18 cfs	
	= 25-yr	= 2 min	8,9		
- iyaloglabii iybo	Storm Frequency =	Time Interval	Inflow Hydrographs = 8, 9	Î	4



Hydrograph Report

06-14-2022

Project Name:

Hyd. No. 16	= 1 OEO ofc
	- Dond Bouto
Post Basin 2	Third Day of a

Post Basin 1

06-14-2022 Hyd. No. 17

aguency = 25-yr rval = 2 min rval = 2 min Hydrograph Volume = 398 cuft drograph = 14 - Rain Garden 1 Max. Storage = 541 cuft p by Storage Indication Method Qp = 0.26 cfs Qp = 0.26 cfs	Time to Peak Hydrograph Volume 1 Qp = 0.26 cfs Qp = 0.26 cfs 4 5 6 7 7 8 9 10 11	Frequency				12 20 55
Hydrograph Volume = 398 cuft Max. Elevation = 14.75 ft Max. Storage = 541 cuft Qp = 0.26 cfs	Hydrograph Volume = 398 cuft Max. Storage = 541 cuft Qp = 0.26 cfs Qp = 0.26 cfs Qp = 0.26 cfs Qp = 0.26 cfs		= 25-yr	lime to Pear	~	- 12.20 1115
1 Max. Storage	Ap = 0.26 cfs Qp = 0.26 cfs Qp = 0.26 cfs Qp = 0.26 cfs	terval	= 2 min	Hydrograph '	Volume	= 398 cuft
Qp = 0.26 cfs	Qp = 0.26 cfs Qp = 0.26 cfs	lydrograph	= 14 - Rain Garden 1	Max. Elevati	on	= 14.75 ft
Qp = 0.26 cfs	Qp = 0.26 cfs	ame	= BASIN 1	Max. Storage	ø)	= 541 cuft
Qp = 0.26 cfs	Qp = 0.26 cfs Qp = 0.26 cfs The state of t	ing by Storage In	rdication Method			
			0 = d o).26 cfs		
	1 2 3 4 5 6 7 7 8 9 10 11 12 13					
	1 2 3 4 5 6 7 8 9 10 11 12 13					
	1 2 3 4 5 6 7 8 9 10 11 12 13					
	1 2 3 4 5 6 7 8 9 10 11 12 13					
	1 2 3 4 5 6 7 8 9 10 11 12 13					
	1 2 3 4 5 6 7 8 9 10 11 12 13					
	1 2 3 4 5 6 7 8 9 10 11 12 13					
	1 2 3 4 5 6 7 8 9 10 11 12 13					
	1 2 3 4 5 6 7 8 9 10 11 12 13 13 13 13 13 13 13 13 13 13 13 14 5 6 7 18 13 13 13 13 13 13 13 13 13 13 13 13 13					
	1 2 3 4 5 6 7 8 9 10 11 12 13 15 15 15 15 15 15 15 15 15 15 15 15 15					
	0 1 2 3 4 5 6 7 8 9 10 11 12 13 13 13 14 5 6 7 8 9 10 11 12 13					
	1 2 3 4 5 6 7 8 9 10 11 12 13 13 13 14 15 15 15 15 15 15 15 15 15 15 15 15 15					4
	1 2 3 4 5 6 7 8 9 10 11 12 13 Time Action				1	
	1 2 3 4 5 6 / 8 9 10 11 12 13	∏ ,		 	 ;	+

Hydrograph Report

Project Name:

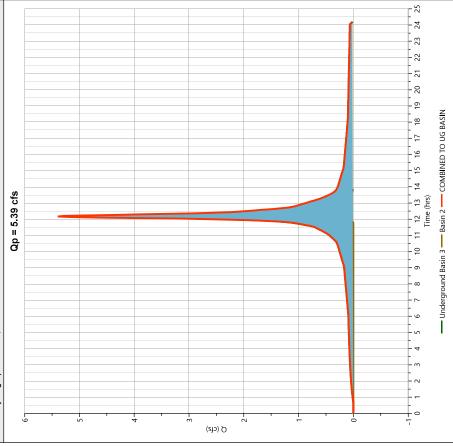
06-14-2022

Project Name:

Z
☴
0)
٩
$\mathbf{\omega}$
G
\neg
0
Ĕ
Ω
ш
Z
≂
8
2
0
Ö
S
Ö
Δ.

Peak Flo	= .lunction	ranh Tvne
	אווסעם סס סו קיאווקוווס	

Hydrograph Type	= Junction	Peak Flow	= 5.394 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.17 hrs
Time Interval	= 2 min	Hydrograph Volume = 22,589 cuft	= 22,589 cuft
Inflow Hydrographs = 13, 16	= 13, 16	Total Contrib. Area	= 0.82 ac



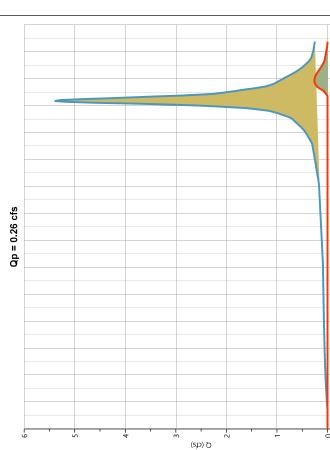
Post UG Basin 3

06-14-2022

Hyd. No. 19

Project Name:

Time to Pea Hydrograph MBINED TO UG BASIN Max. Elevat SIN Max. Storag	Hydrograph Type	= Pond Route	Peak Flow	= 0.260 cfs
I = 2 min Hydrograph graph = 18 - COMBINED TO UG BASIN Max. Elevat = UG BASIN Max. Storag	Storm Frequency	= 25-yr	Time to Peak	= 12.93 hrs
graph = 18 - COMBINED TO UG BASIN Max. Elevat = UG BASIN Max. Storag	Time Interval	= 2 min	Hydrograph Volume	= 833 cuft
= UG BASIN Max. Storag	Inflow Hydrograph	= 18 - COMBINED TO UG BASIN	Max. Elevation	= 13.36 ft
	Pond Name	= UG BASIN	Max. Storage	= 7,196 cuft
Pond Routing by Storage Indication Method	Pond Routing by Storage Inc	dication Method	Center of mas	Center of mass detention time = 37 min



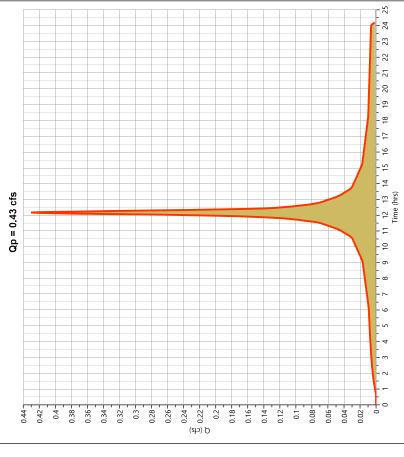
Hydrograph Report

Pre DA 2 - IMPERVIOUS

Hyd. No. 20

06-14-2022 Project Name:

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.430 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.17 hrs
Time Interval	= 2 min	Runoff Volume	= 1,953 cuft
Drainage Area	= 0.08 ac	Curve Number	86 =
Tc Method	= User	Time of Conc. (Tc)	= 11.1 min
Total Rainfall	= 6.76 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



- 52

. 2

15

--- COMBINED TO UG BASIN --- UG Basin 3

+0

Project Name:

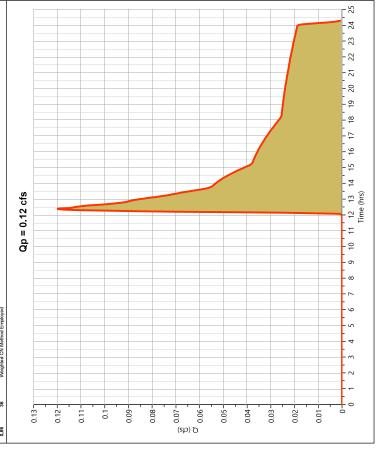
Pre DA 2 - PERVIOUS

06-14-2022

Hyd. No. 21

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.120 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.37 hrs
Time Interval	= 2 min	Runoff Volume	= 1,574 cuft
Drainage Area	= 0.86 ac	Curve Number	= 36*
Tc Method	= User	Time of Conc. (Tc)	= 11.1 min
Total Rainfall	= 6.76 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

DESCRIPTION
OPEN SPACE
WOODS
Weighted CN Method Employed Composite CN Worksheet
 AREA (ac) CN DESCRIPTION
 C.58 39 WOODEN SPACE
 C.58 30 Woodsheed
 C.58 36 Weighted CN N



Hydrograph Report

06-14-2022

Project Name:

Pre DA 2	
Pre	

equency = 25-yr Time to Peak Hydrograph Volume Adrographs = 20, 21 Qp = 0.49 cfs Qp = 0.49 cfs	" " "		Time to Peak Hydrograph Volume	= 12.20 hrs
Hydrograph Volume = 20, 21 Qp = 0.49 cfs	" "		Hydrograph Volume	
= 20, 21 Op = 0.49 cfs	"	20, 21	المادية المادية	= 3,527 cuft
Op = 0.49 cfs	0.48	Qp = 0.49 cfs	Total Contrib. Area	= 0.94 ac
	0.48 0.46 0.42 0.42			
	0.46			
	0.42			
	0.42			
	0.42			
	0.4			
	0.38			
	0.36			
	1 60			
	0.34			
	0.32			
	0.3			
	0.28			
	·s 0.26			
	G 0.24			
	0.22			
	-20			
	187			
	5 7			
	00			
	0.14			
	0.12			
	0.1			
	0.08			
	-90.0			
	0.04			
	0.02			
		- - - - - - - - - - - - - - - - - - -	-	-

Pre DA 3 - PERVIOUS

06-14-2022

Project Name:

Hyd. No. 23
3 - PERVIOUS

Hydrograph Type	oe = NRCS Runoff	Peak Flow	= 0.140 cfs
Storm Frequency	cy = 25-yr	Time to Peak	= 12.33 hrs
Time Interval	= 2 min	Runoff Volume	= 1,549 cuft
Drainage Area	= 0.75 ac	Curve Number	= 37*
Tc Method	= User	Time of Conc. (Tc)	= 10.3 min
Total Rainfall	= 6.76 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484
* Composite CN Worksheet	rksheet		
AREA (ac) CN	DESCRIPTION		
0.62 39	OPEN SPACE		
0.13 30	WOODS		
0.75 37	Weighted CN Method Employed		

			13 14 15 16 17 18 19 20 21 22 23 24 25 (firs)
			3 4 5 6 7 8 9 10 11 12 13 Time (hrs)

Hydrograph Report

06-14-2022 Project Name:

Hyd. No. 24

Pre COMBINED TO POA 1

Hydrograph Type	= Junction	Peak Flow	= 0.588 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.20 hrs
Time Interval	= 2 min	Hydrograph Volume	= 5,077 cuft
Inflow Hydrographs	= 22, 23	Total Contrib. Area	= 1.69 ac
	Qp = 0.59 cfs		
0.95			
6.0			
0.85			
0.8			
0.75			
0.7			
0.65			
0.6			
(sto			
00			
0.45			
0.4			
0.35			
0.3			
0.25			
2.0			
7 7			
- 100			
0 1 2 3	4 5 6 7 8 9 10 11 12 13	14 15 16 17 18 19 20	21 22 23 24 25
	(Sun) print		
	—— DA 2 —— DA 3 - PERVIOUS —— COMBINED TO POA 1	OMBINED 10 POA 1	

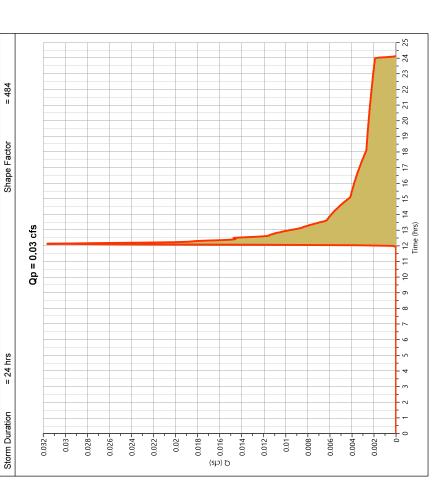
Hydrology Studio v 3.0.0.24

06-14-2022

25

Project Name:

3			
Post IMP BYPASS INLET N.	SS INLET N.		Hyd. No.
Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.032 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.13 hrs
Time Interval	= 2 min	Runoff Volume	= 186 cuft
Drainage Area	= 0.08 ac	Curve Number	= 39
Tc Method	= User	Time of Conc. (Tc)	= 6.0 min
Total Rainfall	= 6.76 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shane Factor	= 484



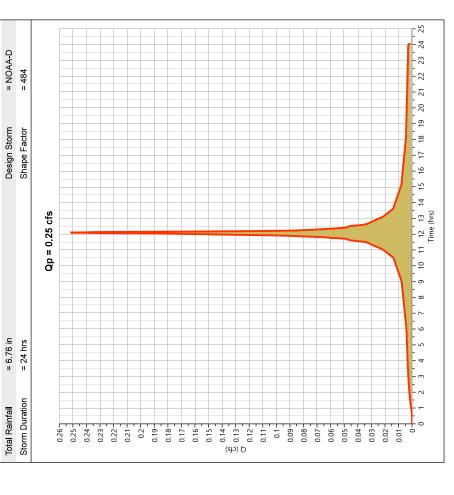
Hydrograph Report

06-14-2022 Hyd. No. 26

Project Name:

_
Z
ᆸ
_
Z
S
Ś
ď
Š
a
M
Post

= 0.252 cfs	= 12.10 hrs	= 888 cuft	86 =	(Tc) = 6.0 min	= NOAA-D
Peak Flow	Time to Peak	Runoff Volume	Curve Number	Time of Conc. (Tc)	Design Storm
= NRCS Runoff	= 25-yr	= 2 min	= 0.04 ac	= User	= 6.76 in
Hydrograph Type	Storm Frequency	Time Interval	Drainage Area	Tc Method	Total Rainfall



COMB. INLET N.

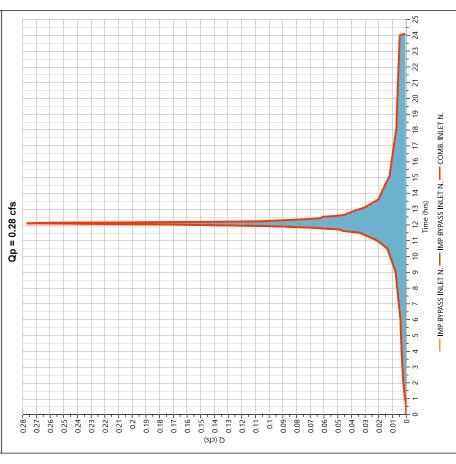
06-14-2022

Hyd No 27

Project Name:

Hydrology Studio v 3.0.0.24

		4	
= 0.12 ac	Total Contrib. Area = 0.12 ac	= 25, 26	Inflow Hydrographs = 25, 26
= 1,074 cuft	Hydrograph Volume = 1,074 cuft	= 2 min	Time Interval
= 12.10 hrs	Time to Peak	= 25-yr	Storm Frequency
= 0.277 cfs	Peak Flow	= Junction	Hydrograph Type



Hydrograph Report

Hydrology Studio v 3.0.0.24

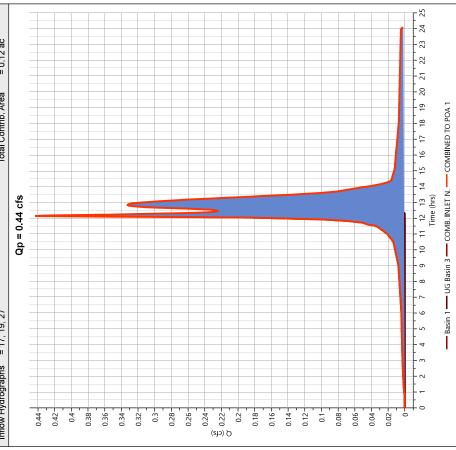
06-14-2022 28

Project Name:

Post COMBINED TO POA 1

		٠
	c	3
٠	-	i
	4	_
		d
		i
	•	ı
	2	>
٠	÷	-
•	4	

Hydrograph Type	= Junction	Peak Flow	= 0.443 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.13 hrs
Time Interval	= 2 min	Hydrograph Volume = 2,305 cuft	= 2,305 cuft
Inflow Hydrographs = 17, 19, 27	= 17, 19, 27	Total Contrib. Area	= 0 12 ac



•	į		
	9		
	ì	1	١
ſ	٦	r	•
	(
	٤		
	Ì	١	
	,	_	
	ζ	=	
	(=	
	(
	(
	(
	(

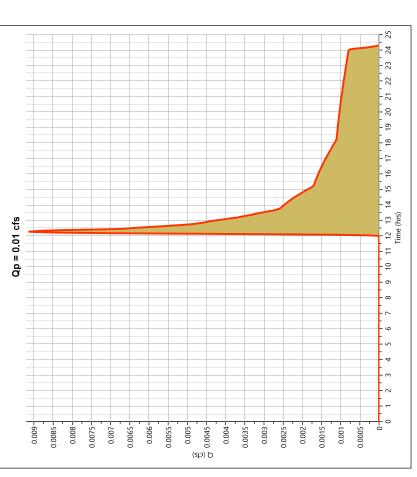
06-14-2022

Hyd No 29

Project Name:

Pre Bypass Memorial

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.009 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.30 hrs
Time Interval	= 2 min	Runoff Volume	= 76.9 cuft
Drainage Area	= 0.03 ac	Curve Number	= 39
Tc Method	= User	Time of Conc. (Tc)	= 12.9 min
Total Rainfall	= 6.76 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



Hydrograph Report

Post Bypass Memorial

06-14-2022

Project Name:

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.024 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.30 hrs
Time Interval	= 2 min	Runoff Volume	= 205 cuft
Drainage Area	= 0.08 ac	Curve Number	= 39
Tc Method	= User	Time of Conc. (Tc)	= 12.9 min
Total Rainfall	= 6.76 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shane Factor	= 484

	0.0 = 0.00 efs	ď	
		,	
0.025			
0.024			
0.00			
0.022			
0.021			
0.02			
0.019			
0.018			
0.017			
0.016			
0.015			
0.014			
(cfs) 0.013-1			
Ø 0.012			
0.011			
0.01			
0.009			
0.008			
0.007			
0.006			
0.005		/	
0.004 -		/	
0.003			
0.002			
0.001			

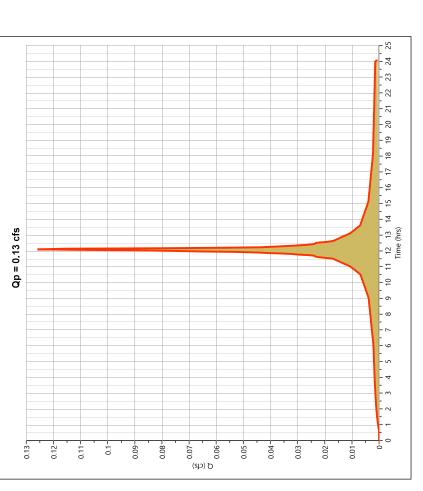
Post Imp Bypass Inlet S.

06-14-2022

Hyd. No. 31

Project Name:

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.126 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.10 hrs
Time Interval	= 2 min	Runoff Volume	= 444 cuft
Drainage Area	= 0.02 ac	Curve Number	86 =
Tc Method	= User	Time of Conc. (Tc)	= 6.0 min
Total Rainfall	= 6.76 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



Hydrograph Report

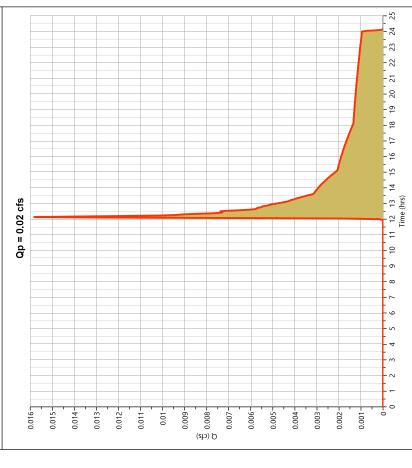
06-14-2022

Project Name:

Hyd. No. 32

Post Perv Bypass Inlet S.

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.016 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.13 hrs
Time Interval	= 2 min	Runoff Volume	= 93.2 cuft
Drainage Area	= 0.04 ac	Curve Number	= 39
Tc Method	= User	Time of Conc. (Tc)	= 6.0 min
Total Rainfall	= 6.76 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



セ
eport
$\frac{R}{R}$
_
눔
raph
ᆽ

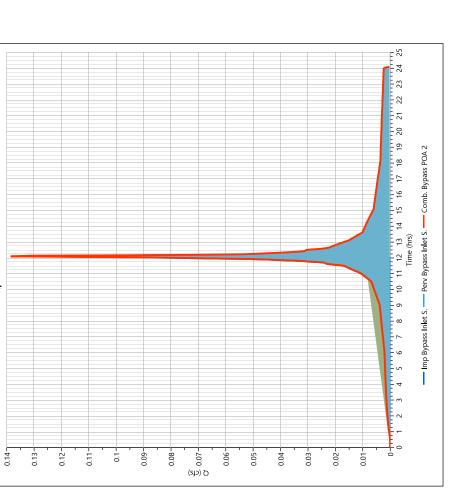
Post Comb. Bypass POA 2

Project Name:

06-14-2022

Hyd. No. 33

= 12.10 hrs= 0.139 cfs = 537 cuft = 0.06 ac Time to Peak Hydrograph Volume Total Contrib. Area Peak Flow Qp = 0.14 cfs = Junction = 25-yr = 2 min = 31, 32 Inflow Hydrographs Hydrograph Type Storm Frequency Time Interval



Hydrograph 100-yr Summary

06-14-2022 Project Name:

yarology st	Hydrology Studio V 3.U.U.24							
No.	Hydrograph Type	Hydrograph Name	Peak Flow (cfs)	Time to Peak (hrs)	Hydrograph Volume (cuft)	Inflow Hyd(s)	Maximum Elevation (ft)	Maximum Storage (cuft)
-	NRCS Runoff	Pre DA 1 - IMPERVIOUS	0.322	12.13	1,311	I		
2	NRCS Runoff	Pre DA 1 - PERVIOUS	090'0	12.17	273	1		
ю	NRCS Runoff	Post Roof Area DA3	2.141	12.17	9,802	1		
4	NRCS Runoff	Post Deck DA3	2.363	12.17	10,816	I		
2	NRCS Runoff	Post Pervious Pavement	1.108	12.17	5,070	ı		
9	NRCS Runoff	Post Pervious DA 1	0.083	12.13	295	I		
7	NRCS Runoff	Post Roof Area DA1	0.864	12.10	3,073	1		
œ	NRCS Runoff	Post Pervious DA2	0.149	12.13	530	1		
0	NRCS Runoff	Post Roof Area DA2	4.321	12.10	15,364	1		
10	Junction	Pre DA1-POA2	0.379	12.13	1,584	1,2		
£	NRCS Runoff	Post Pervious DA3	0.014	12.20	64.8	1		
12	NRCS Runoff	Post Impervious DA3	0.369	12.17	1,690	I		
13	Junction	Post Underground Basin 3	5.994	12.17	27,444	3, 4, 5, 11, 12		
4	Junction	Post Rain Garden 1	0.946	12.10	3,368	6, 7		
15	Junction	Post Basin 2	4.468	12.10	15,895	6,8		
16	Pond Route	Post Basin 2	1 424	12.20	5,077	15	14.84	3,273
17	Pond Route	Post Basin 1	0.613	12.17	939	14	14.90	999
18	Junction	Post COMBINED TO UG BASI	IN7.392	12.17	32,521	13, 16		
19	Pond Route	Post UG Basin 3	1.475	12.67	6,303	18	14.08	9,744
20	NRCS Runoff	Pre DA 2 - IMPERVIOUS	0.591	12.17	2,704	I		
21	NRCS Runoff	Pre DA 2 - PERVIOUS	0.810	12.20	4,475	1		
22	Junction	Pre DA 2	1.381	12.20	7,179	20, 21		
23	NRCS Runoff	Pre DA 3 - PERVIOUS	0.809	12.20	4,218	1		
24	Junction	Pre COMBINED TO POA 1	2.190	12.20	11,397	22, 23		
25	NRCS Runoff	Post IMP BYPASS INLET N.	0.132	12.13	471	1		
56	NRCS Runoff	Post IMP BYPASS INLET N.	0.346	12.10	1,229	I		
27	Junction	COMB. INLET N.	0.476	12.10	1,701	25, 26		
28	Junction	Post COMBINED TO POA 1	1.685	12.53	8,943	17, 19, 27		
29	NRCS Runoff	Pre Bypass Memorial	0.041	12.20	194	1		
30	NRCS Runoff	Post Bypass Memorial	0.108	12.20	519	1		
31	NRCS Runoff	Post Imp Bypass Inlet S.	0.173	12.10	615	1		
32	NRCS Runoff	Post Perv Bypass Inlet S.	0.066	12.13	236	ı		
33	Junction	Post Comb. Bypass POA2	0.238	12.10	850	31, 32		

Hydrology Studio v 3.0.0.24

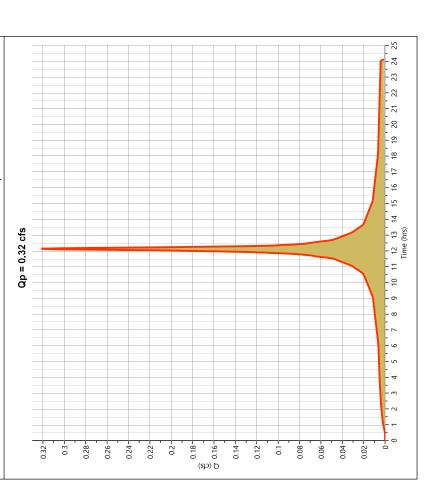
Pre DA 1 - IMPERVIOUS

06-14-2022

Hyd. No. 1

Project Name:

= 12.13 hrs = 1,311 cuft = 0.322 cfs= NOAA-D = 9.8 min = 98 = 484 Time of Conc. (Tc) Runoff Volume Curve Number Design Storm Time to Peak Shape Factor Peak Flow = NRCS Runoff = 0.04 ac = User = 100-yr = 9.27 in = 2 min = 24 hrs Hydrograph Type Storm Frequency Storm Duration Drainage Area Time Interval Total Rainfall Tc Method



Hydrograph Report

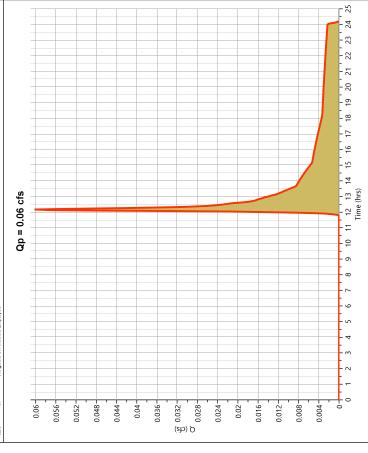
06-14-2022

Project Name:

ഗ
ń
PERVIOUS
₹
~
щ
ш
٠
~
⋖
δ
Pre
Δ.

drograph Type	= NRCS Runoff	Peak Flow	= 0.060 cfs
rm Frequency	= 100-yr	Time to Peak	= 12.17 hrs
ie Interval	= 2 min	Runoff Volume	= 273 cuft

Hyaroc	Hydrograph Type	= NACV AUDON	Peak Flow	= 0.060 crs
Storm	Storm Frequency	= 100-yr	Time to Peak	= 12.17 hrs
Time Interval	nterval	= 2 min	Runoff Volume	= 273 cuft
Draina	Drainage Area	= 0.05 ac	Curve Number	= 37*
Tc Method	hod	= User	Time of Conc. (Tc)	= 9.8 min
Total Rainfall	ainfall	= 9.27 in	Design Storm	= NOAA-D
Storm	Storm Duration	= 24 hrs	Shape Factor	= 484
* Compo	* Composite CN Worksheet			
AREA (ac) CN	CN DESCRIPTION	NOLL		
0.04	39 oben space	8		
0.01	30 wooded			
90.0	37 Weighted	Weighted CN Method Employed		

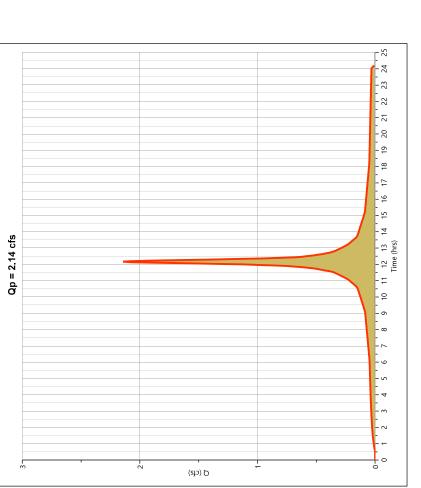


eport
Rep
q
graph
vdrogra

Post Roof Area DA3

Hyd No. 3

Hydrograph Type	= NRCS Runoff	Peak Flow	= 2.141 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.17 hrs
Time Interval	= 2 min	Runoff Volume	= 9,802 cuft
Drainage Area	= 0.29 ac	Curve Number	86 =
Tc Method	= User	Time of Conc. (Tc)	= 10.0 min
Total Rainfall	= 9.27 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



Hydrograph Report

06-14-2022

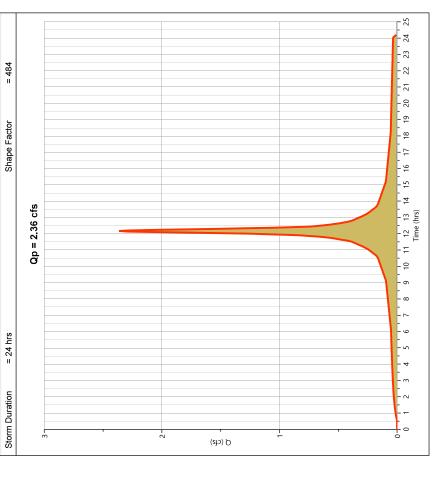
Project Name:

Post Deck DA3

06-14-2022

Project Name:

Hydrograph Type	= NRCS Runoff	Peak Flow	= 2.363 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.17 hrs
Time Interval	= 2 min	Runoff Volume	= 10,816 cuft
Drainage Area	= 0.32 ac	Curve Number	86 =
Tc Method	= User	Time of Conc. (Tc)	= 12.8 min
Total Rainfall	= 9.27 in	Design Storm	= NOAA-D



	١	=	
	(_)
	(2
	(1)
Ĺ	1	Ľ	
_	(
	()
	(Į)
	t)
	(_)
	3		
-	7	-	•
	ζ)
		2	
-			2
	-	TOUCH DOUGH	aranh Re

06-14-2022

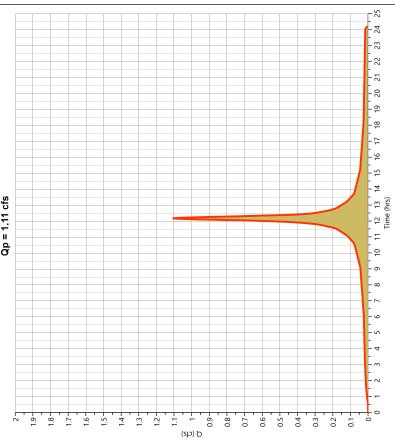
Hyd. No. 5

Project Name:

Post Pervious Pavement

Hydrograph Type	= NRCS Runoff	Peak Flow	= 1.108 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.17 hrs
Time Interval	= 2 min	Runoff Volume	= 5,070 cuft
Drainage Area	= 0.15 ac	Curve Number	86 =
Tc Method	= User	Time of Conc. (Tc)	= 12.8 min
Total Rainfall	= 9.27 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484





Hydrograph Report

06-14-2022

Project Name:

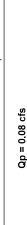
Hyd. No. 6

_
•
⋖
\Box
G
Sin
2
<u>.</u>
viou
viou
<u>.</u>
viou

_
DA
Sno
Σ̈
Pe
ost
а.

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.083 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.13 hrs
Time Interval	= 2 min	Runoff Volume	= 295 cuft
Drainage Area	= 0.05 ac	Curve Number	= 39
Tc Method	= User	Time of Conc. (Tc)	= 6.0 min
Total Rainfall	= 9.27 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

Qp = 0.08 cfs





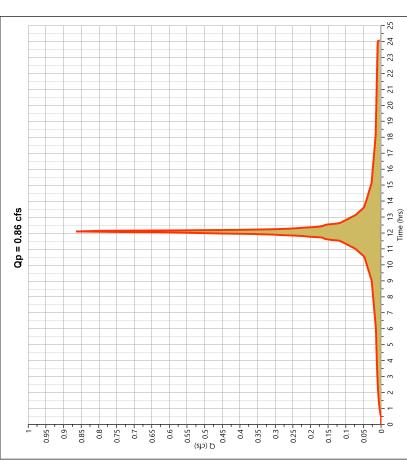
Post Roof Area DA1

Hyd. No. 7

Project Name:

06-14-2022

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.864 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.10 hrs
Time Interval	= 2 min	Runoff Volume	= 3,073 cuft
Drainage Area	= 0.1 ac	Curve Number	86 =
Tc Method	= User	Time of Conc. (Tc)	= 6.0 min
Total Rainfall	= 9.27 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



- 6

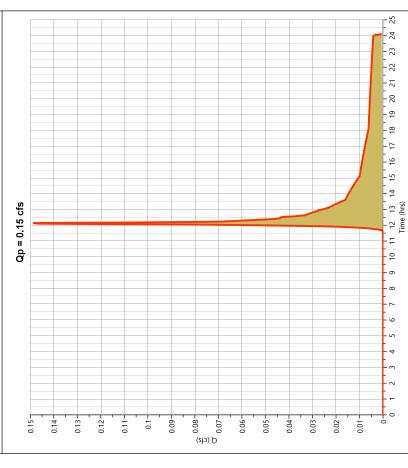
Hydrograph Report

Hyd. No. 8

06-14-2022 Project Name:

Post Pervious DA2

= 0.149 cfs	k = 12.13 hrs	ne = 530 cuft	er = 39	c. (Tc) = 6.0 min	n = NOAA-D	or = 484
Peak Flow	Time to Peak	Runoff Volume	Curve Number	Time of Conc. (Tc)	Design Storm	Shape Factor
= NRCS Runoff	= 100-yr	= 2 min	= 0.09 ac	= User	= 9.27 in	= 24 hrs
Hydrograph Type	Storm Frequency	Time Interval	Drainage Area	Tc Method	Total Rainfall	Storm Duration

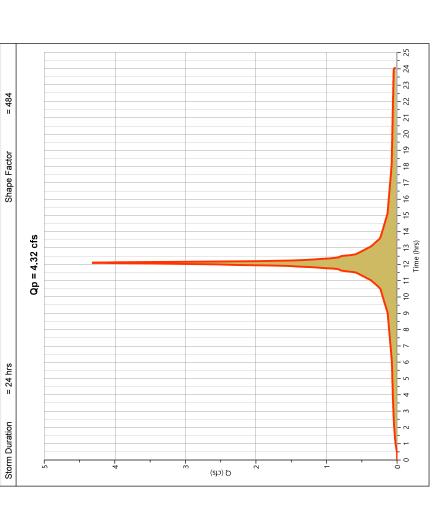


Hydrology Studio v 3.0.0.24

06-14-2022

Project Name:

Hyd. No. 9 = 15,364 cuft = 12.10 hrs = 4.321 cfs = NOAA-D = 6.0 min = 98 Time of Conc. (Tc) Design Storm Runoff Volume Curve Number Time to Peak Peak Flow = NRCS Runoff = 100-yr = User = 9.27 in = 24 hrs = 0.5 ac = 2 min Post Roof Area DA2 Hydrograph Type Storm Frequency Drainage Area Time Interval Total Rainfall Tc Method



Hydrograph Report

06-14-2022

Project Name:

	Peak Flow
QI.	= Junction
Pre DA 1 - POA 2	Hydrograph Type

Hydrograph Type	= Junction	Peak Flow	= 0.379 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.13 hrs
Time Interval	= 2 min	Hydrograph Volume	= 1,584 cuft
Inflow Hydrographs	= 1, 2	Total Contrib. Area	= 0.09 ac
	Qp = 0.38 cfs		
0.38			
0.36			
0.34			
0.32			
0.3			
0.28			
0.26			
0.24			
(cfs) (C			
0.18			
0.16			
44.0			
0.52			
- 80.00			
90.0			
0.04			
0.02			
0 1 2 3	3 4 5 6 7 8 9 10 11 12 13	14 15 16 17 18 19 20	21 22 23 24 25
	Inne (ms) — DA 1 - IMPERVIOUS — DA 1 - PERVIOUS — DA 1 - POA 2	OUS DA 1 - POA 2	

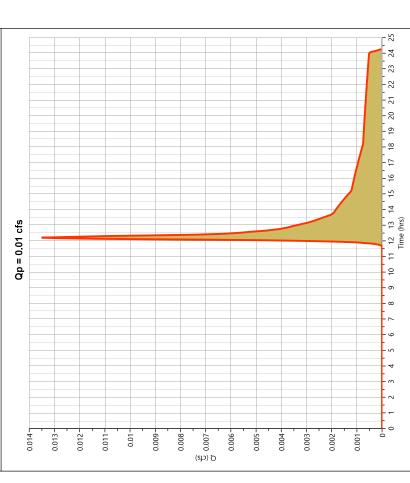
Post Pervious DA3

06-14-2022

Hyd. No. 11

Project Name:

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.014 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.20 hrs
Time Interval	= 2 min	Runoff Volume	= 64.8 cuft
Drainage Area	= 0.01 ac	Curve Number	= 39
Tc Method	= User	Time of Conc. (Tc)	= 12.8 min
Total Rainfall	= 9.27 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



Hydrograph Report

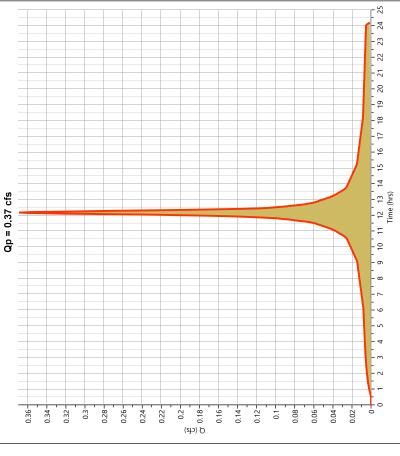
Project Name:

06-14-2022

Hyd. No. 12

Post Impervious DA3

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.369 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.17 hrs
Time Interval	= 2 min	Runoff Volume	= 1,690 cuft
Drainage Area	= 0.05 ac	Curve Number	86 =
Tc Method	= User	Time of Conc. (Tc)	= 12.8 min
Total Rainfall	= 9.27 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484
	Qp = 0.37 cfs		



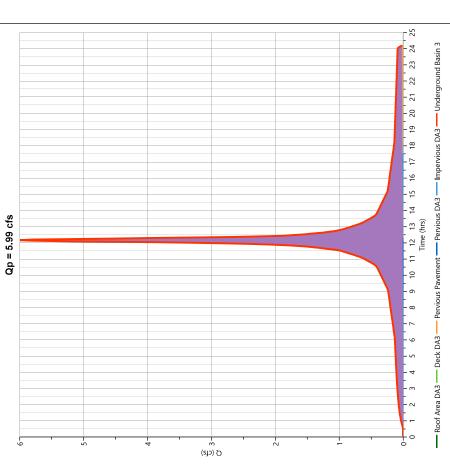
Hydrology Studio v 3.0.0.24

06-14-2022 Project Name:

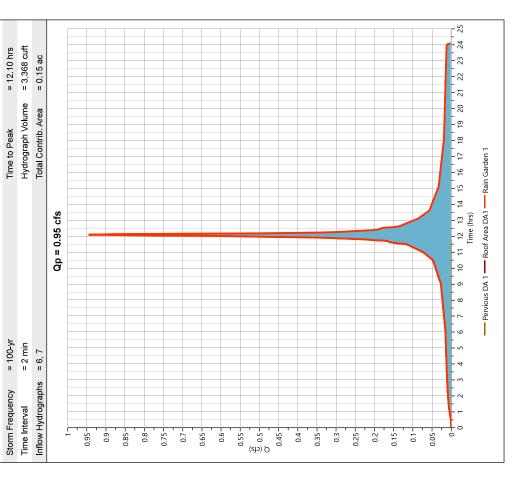
Hyd. No. 13

Post Underground Basin 3

Hydrograph Type	= Junction	Peak Flow	= 5.994 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.17 hrs
Time Interval	= 2 min	Hydrograph Volume = 27,444 cuft	= 27,444 cuft
Inflow Hydrographs = 3, 4, 5, 11, 12	= 3, 4, 5, 11, 12	Total Contrib. Area = 0.82 ac	= 0.82 ac



Hydrograph Report		Project Name:
Hydrology Studio v 3.0.0.24		06-14-2022
Post Rain Garden 1		Hyd. No. 14
Hydrograph Type = Junction	Peak Flow	= 0.946 cfs



Post Basin 2

06-14-2022

Project Name:

= 4.468 cfs	= 12.10 hrs	= 15,895 cuft	= 0.59 ac		21 22 23 24 25
Peak Flow	Time to Peak	Hydrograph Volume	Total Contrib. Area		16 17 18 19 20
				Qp = 4.47 cfs	12 13 14 15 Time (hrs)
				ਰ	7 8 9 10 11 T
= Junction	= 100-yr	= 2 min	= 8, 9	ď	9 10 11

— Pervious DA2 — Roof Area DA2 — Basin 2

Hydrograph Report

Post Basin 2

Hyd. No. 15

06-14-2022 Project Name:

Post Basin 1

Hydrograph Type	ype	= Pond Route	onte					Peal	Peak Flow		= 0.613 cfs	ıfs
Storm Frequency	ncy	= 100-yr						Time	Time to Peak		= 12.17 hrs	S
Time Interval		= 2 min						Hyd	Hydrograph Volume	/olume	= 939 cuft	
Inflow Hydrograph	raph	= 14 - Rain Garden 1	ו Garden 1					Max	Max. Elevation	Ē	= 14.90 ft	
Pond Name		= BASIN 1						Max	Max Storage		= 666 cuft	.
Pond Routing by Storage Indication Method	forage In	dication Method										
*				J	Qp = 0.61 cfs	61 cf	"					
-												
0.95										_		
-6:0												
0.85												
30 J												
0.75												
7.0												
0.00										_		
9:0												
(sj:												
Q (c												
24.0												
4.0												
0.3												
0.23												
0.7												
5. 6											4	

--- Rain Garden 1 --- Basin 1

Hydrograph Report

06-14-2022 Project Name:

Hyd. No. 17

06-14-2022

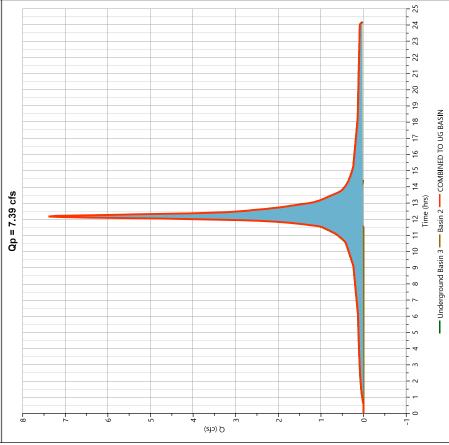
Project Name:

Hyd. No. 18

Post CO

5	7	,
i		
(1)
4		ĺ
٥	1	1
,	•	,
•	_	,
ı		Ì
1		Ĺ
C		1
Ì		
	_	۰
Ĺ	_	1
L	1	J
5	2	
ē	=	
٤	ľ	1
ī	5	
	=	
1		١

Hydrograph Type	= Junction	Peak Flow	= 7.392 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.17 hrs
Time Interval	= 2 min	Hydrograph Volume = 32,521 cuft	= 32,521 cuft
Inflow Hydrographs = 13, 16	= 13, 16	Total Contrib. Area	= 0.82 ac



Post UG Basin 3

Project Name:

06-14-2022

Hyd No 19

= 1.475 cfs	= 12.67 hrs	= 6,303 cuft	= 14.08 ft	= 9,744 cuft	Center of mass detention time = 34 min			13 14 15
Peak Flow	Time to Peak	Hydrograph Volume	Max. Elevation	Max. Storage	Center of ma			9 10 11 12
= Pond Route	= 100-yr	= 2 min	= 18 - COMBINED TO UG BASIN	= UG BASIN	dication Method	Qp = 1.48 cfs		3 4 5 6 7 8 Time (hrs) ——COMBINED TO UG BASIN —
Hydrograph Type	Storm Frequency	Time Interval	Inflow Hydrograph	Pond Name	Pond Routing by Storage Indication Method		Q(dfs) Q	-1001

Hydrograph Report

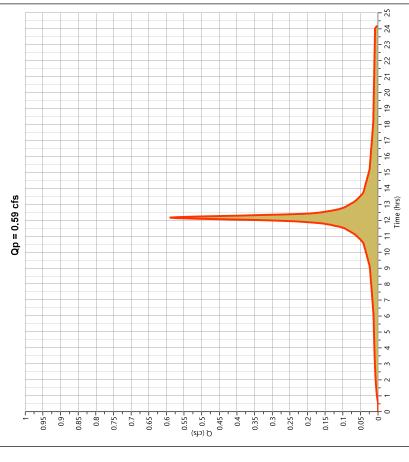
06-14-2022 Project Name:

Hyd. No. 20

Pre DA 2 - IMPERVIOUS

= 0.591 cfs	= 12.17 hrs	
Peak Flow	Time to Peak	
S Runoff		
SR	_	

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.591 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.17 hrs
Time Interval	= 2 min	Runoff Volume	= 2,704 cuft
Drainage Area	= 0.08 ac	Curve Number	86 =
Tc Method	= User	Time of Conc. (Tc)	= 11.1 min
Total Rainfall	= 9.27 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



06-14-2022

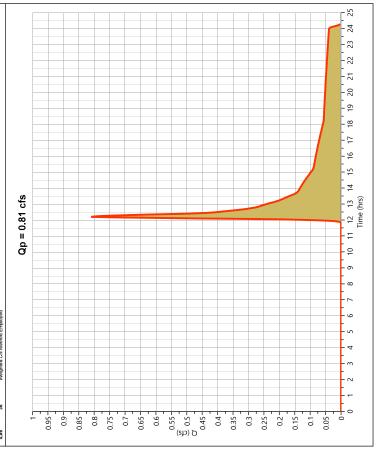
Project Name:

Pre DA 2 - PERVIOUS

Hyd. No. 21

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.810 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.20 hrs
Time Interval	= 2 min	Runoff Volume	= 4,475 cuft
Drainage Area	= 0.86 ac	Curve Number	= 36*
Tc Method	= User	Time of Conc. (Tc)	= 11.1 min
Total Rainfall	= 9.27 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484
* Composite CN Worksheet	ā		

DESCRIPTION
OPEN SPACE
WOODS
Weighted CN Method Employed AREA (ac) CN 0.58 39 0.26 30 0.86 36



Hydrograph Report

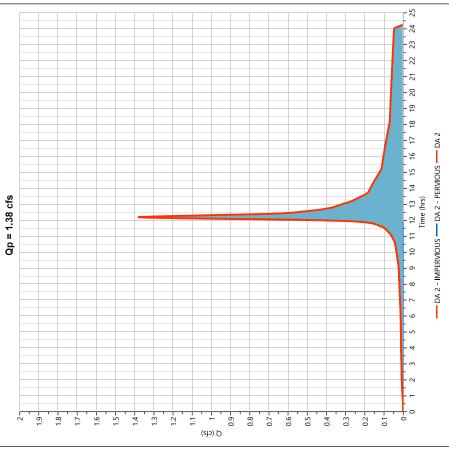
06-14-2022

Project Name:

Hyd. No. 22

Pre DA 2

Hydrograph Type	= Junction	Peak Flow	= 1.381 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.20 hrs
Time Interval	= 2 min	Hydrograph Volume = 7,179 cuft	= 7,179 cuft
Inflow Hydrographs = 20, 21	= 20, 21	Total Contrib. Area	= 0.94 ac



ţ	_
۶	3
Ò	Ľ
۵	
2	
2	5
700	0
Ţ	
Ţ	
Ţ	

Hydrograph Kep

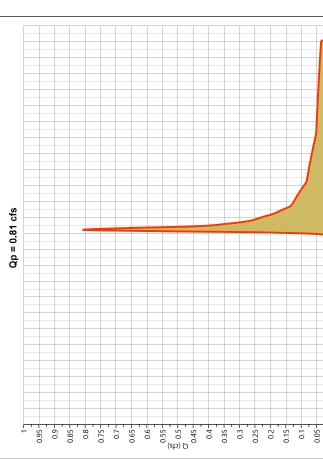
06-14-2022

Project Name:

Pre DA 3 - PERVIOUS

Hyd. No. 23
VIOUS

Hydrograph Type	pe = NRCS Runoff	Peak Flow	= 0.809 cfs
Storm Frequency	icy = 100-yr	Time to Peak	= 12.20 hrs
Time Interval	= 2 min	Runoff Volume	= 4,218 cuft
Drainage Area	= 0.75 ac	Curve Number	= 37*
Tc Method	= User	Time of Conc. (Tc)	= 10.3 min
Total Rainfall	= 9.27 in	Design Storm	= NOAA-D
Storm Duration	n = 24 hrs	Shape Factor	= 484
* Composite CN Worksheet	orksheet		
AREA (ac) CN	DESCRIPTION		
0.62 39	OPEN SPACE		
0.13 30	WOODS		
0.75 37	Weighted CN Method Employed		



- 24 - 23 - 25 - 12 - 8 - 6 - 8

- 01

Hydrograph Report

06-14-2022 Project Name:

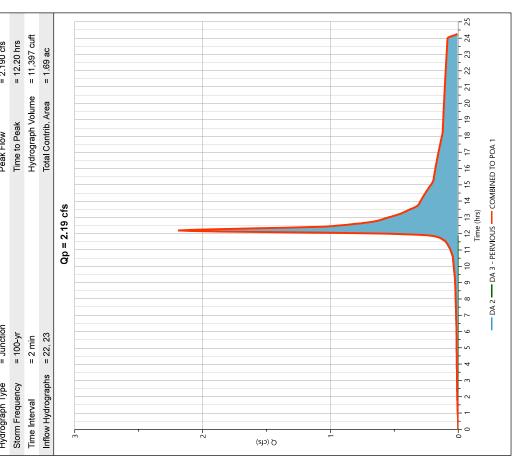
Hyd. No. 24

~
⋖
Õ
ĭ
_
Ö
F
Ω
Ш
Z
==
9
2
0
Ö
Pre

= Junction = 100-yr

Hydrograph Type Storm Frequency

= 2.190 cfs	= 12.20 hrs	= 11,397 cuft
Peak Flow	Time to Peak	Hydrograph Volume



Project Name:

Hydrograph Report

06-14-2022

Post IMP BYPASS INLET N.

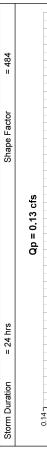
06-14-2022

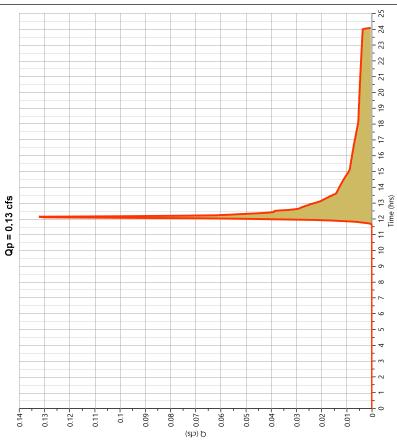
Project Name:

Hyd. No. 26

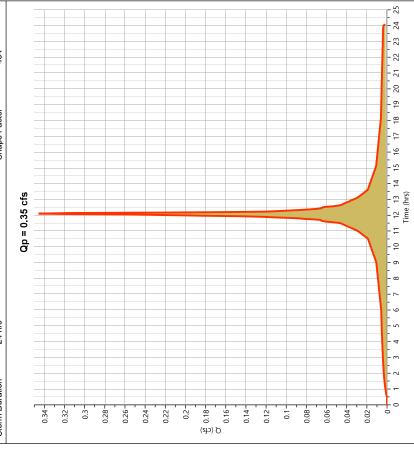
Hyd. No. 25	
IT N.	
Post IMP BYPASS INLET N.	

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.132 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.13 hrs
Time Interval	= 2 min	Runoff Volume	= 471 cuft
Drainage Area	= 0.08 ac	Curve Number	= 39
Tc Method	= User	Time of Conc. (Tc)	= 6.0 min
Total Rainfall	= 9.27 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484





Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.346 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.10 hrs
Time Interval	= 2 min	Runoff Volume	= 1,229 cuft
Drainage Area	= 0.04 ac	Curve Number	86 =
Tc Method	= User	Time of Conc. (Tc)	= 6.0 min
Total Rainfall	= 9.27 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



Hydrology Studio v 3.0.0.24

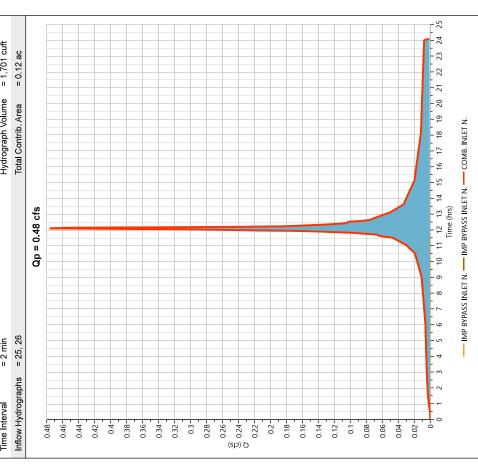
06-14-2022

Project Name:

COMB. INLET N.

Hyd. No. 27

Hydrograph Type	= Junction	Peak Flow	= 0.476 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.10 hrs
Time Interval	= 2 min	Hydrograph Volume	= 1,701 cuft
Inflow Hydrographs	= 25, 26	Total Contrib. Area	= 0.12 ac



Hydrograph Report

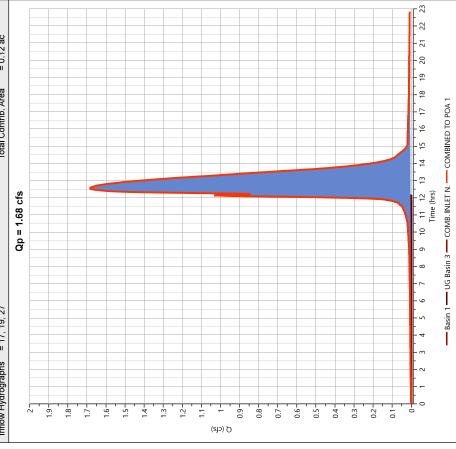
Hydrology Studio v 3.0.0.24

Hyd. No. 28

Project Name: 06-14-2022

Post COMBINED TO POA 1

Hydrograph Type	= Junction	Peak Flow	= 1.685 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.53 hrs
Time Interval	= 2 min	Hydrograph Volume = 8,943 cuft	= 8,943 cuft
Inflow Hydrographs = 17, 19, 27	= 17, 19, 27	Total Contrib. Area	= 0.12 ac



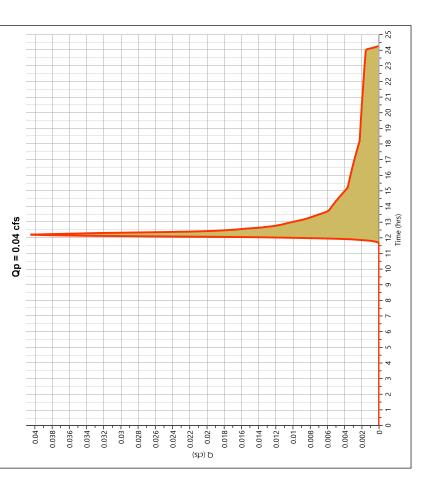
Pre Bypass Memorial

06-14-2022

Hyd. No. 29

Project Name:

quency ral rrea		0
rea rea	Time to Peak	= 12.20 hrs
rea	Runoff Volume	= 194 cuft
	Curve Number	= 39
Tc Method = User	Time of Conc. (Tc)	= 12.9 min
Total Rainfall = 9.27 in	Design Storm	= NOAA-D
Storm Duration = 24 hrs	Shape Factor	= 484



Hydrograph Report

Hydrology Studio v 3.0.0.24

Post Bypass Memorial

06-14-2022

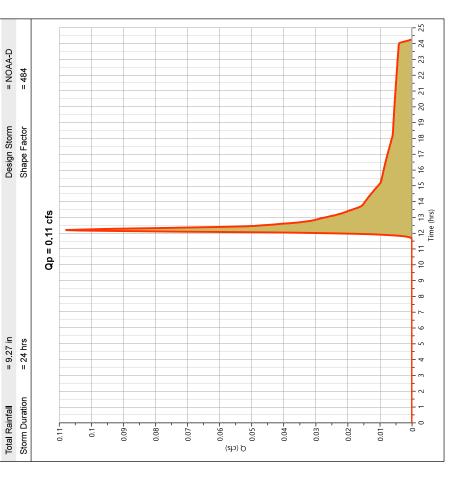
Project Name:

Hyd. No. 30

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.108 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.20 hrs
Time Interval	= 2 min	Runoff Volume	= 519 cuft
Drainage Area	= 0.08 ac	Curve Number	= 39
Tc Method	= User	Time of Conc. (Tc)	= 12.9 min

= 9.27 in

Total Rainfall



tood	
C	2
C	3
ā	Ľ
Ď	
_	
2	
Ω	3
2	0
5	C
Gro	
derec	
de la contraction	
drogram	
Lydrodran	
Lydrograph	
ログランプンプロ	

Hydrology Studio v 3.0.0.24

Project Name: 06-14-2022

Project Name:

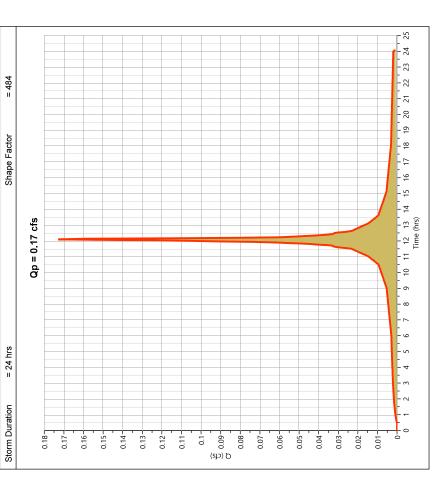
06-14-2022

Hyd No 32

Post Imp Bypass Inlet S.

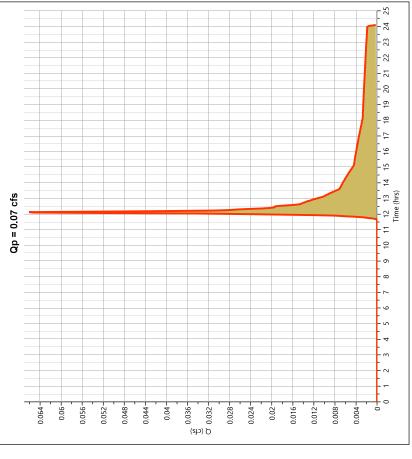
Hyd No. 31 = 12.10 hrs = 0.173 cfs = NOAA-D = 615 cuft = 6.0 min = 98 Time of Conc. (Tc) Design Storm Shape Factor Runoff Volume Curve Number Time to Peak Peak Flow = NRCS Runoff = 0.02 ac = User = 100-yr = 2 min = 9.27 in Hydrograph Type Storm Frequency Drainage Area Time Interval Total Rainfall

Tc Method



Report		s Inlet S.	= NBCS Brino#
Hydrograph Report	Hydrology Studio v 3.0.0.24	Post Perv Bypass Inlet S.	Mydrograph Type

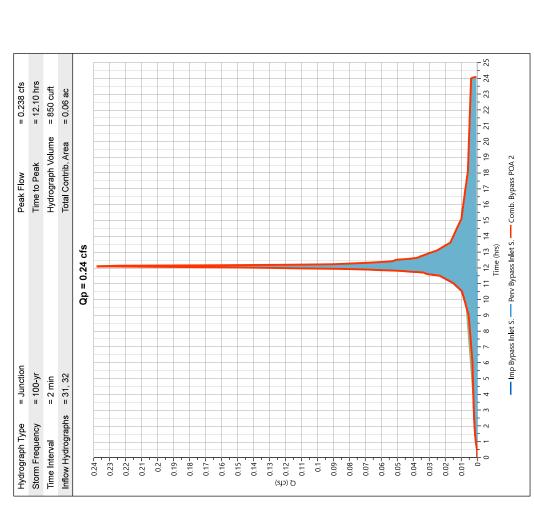
Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.066 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.13 hrs
Time Interval	= 2 min	Runoff Volume	= 236 cuft
Drainage Area	= 0.04 ac	Curve Number	= 39
Tc Method	= User	Time of Conc. (Tc)	= 6.0 min
Total Rainfall	= 9.27 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



06-14-2022 Project Name:

POA 2	
Bypass	
Comb.	
Post	

33
۲,
0
Z
ن
≥
I



HYDROGRAPH SUMMARY REPORTS – EXISTING & PROPOSED WATER QUALITY STORM

Basin Model

06-14-2022 Project Name:

Hydrograph 1-yr Summary

Project Name: 06-14-2022

hydrology	Studio V 5.0.0.24							
Hyd. No.	Hydrograph Type	Hydrograph Name	Peak Flow (cfs)	Time to Peak (hrs)	Hydrograph Volume (cuft)	Inflow Hyd(s)	Maximum Elevation (ft)	Maximum Storage (cuft)
-	NRCS Runoff	Pre DA1 - IMPERVIOUS	0.041	12.13	150	ı		
2	NRCS Runoff	Pre DA 1 - PERVIOUS	0.000	00.00	0.000	ı		
е	NRCS Runoff	Post Roof Area DA3	0.270	12.17	1,123	1		
4	NRCS Runoff	Post Deck DA3	0.298	12.17	1,239	ı		
9	NRCS Runoff	Post Pervious Pavement	0.140	12.17	581	ı		
φ	NRCS Runoff	Post Pervious DA 1	0.000	0.00	0.000	I		
7	NRCS Runoff	Post Roof Area DA1	0.109	12.10	352	1		
60	NRCS Runoff	Post Pervious DA2	0.000	00.00	0.000	I		
o	NRCS Runoff	Post Roof Area DA2	0.547	12.10	1,760	ı		
10	Junction	Pre DA 1 - POA 2	0.041	12.13	150	1,2		
£	NRCS Runoff	Post Pervious DA3	0.000	00:00	0.000	I		
12	NRCS Runoff	Post Impervious DA3	0.047	12.17	194	1		
13	Junction	Post Underground Basin 3	0.754	12.17	3,137	3, 4, 5, 11, 12		
41	Junction	Post Rain Garden 1	0.109	12.10	352	6, 7		
15	Junction	Post Basin 2	0.547	12.10	1,760	6,8		
16	Pond Route	Post Basin 2	0.000	12.53	0.000	15	13.17	231
17	Pond Route	Post Basin 1	0.000	12.03	0.000	14	14.09	58.9
18	Junction	Post COMBINED TO UG BASI	NO.754	12.17	3,137	13, 16		
19	Pond Route	Post UG Basin 3	0.000	12.47	0.000	18	11.82	59.6
20	NRCS Runoff	Pre DA 2 - IMPERVIOUS	0.075	12.17	310	ı		
21	NRCS Runoff	Pre DA 2 - PERVIOUS	0.000	00:00	0.000	I		
22	Junction	Pre DA 2	0.075	12.17	310	20, 21		
23	NRCS Runoff	Pre DA 3 - PERVIOUS	0.000	00:00	0.000	1		
24	Junction	Pre COMBINED TO POA 1	0.075	12.17	310	22, 23		
25	NRCS Runoff	Post IMP BYPASS INLET N.	0.000	00:00	0.000	I		
26	NRCS Runoff	Post IMP BYPASS INLET N.	0.044	12.10	141	I		
27	Junction	COMB. INLET N.	0.044	12.10	141	25, 26		
28	Junction	Post COMBINED TO POA 1	0.044	12.10	141	17, 19, 27		
59	NRCS Runoff	Pre Bypass Memorial	0.000	00:00	0.000	I		
30	NRCS Runoff	Post Bypass Memorial	0.000	00.00	0.000	I		
31	NRCS Runoff	Post Imp Bypass Inlet S.	0.022	12.10	70.4	1		
32	NRCS Runoff	Post Perv Bypass Inlet S.	0.000	00:00	0.000	1		
33	Junction	Post Comb. Bypass POA 2	0.022	12.10	70.4	31, 32		

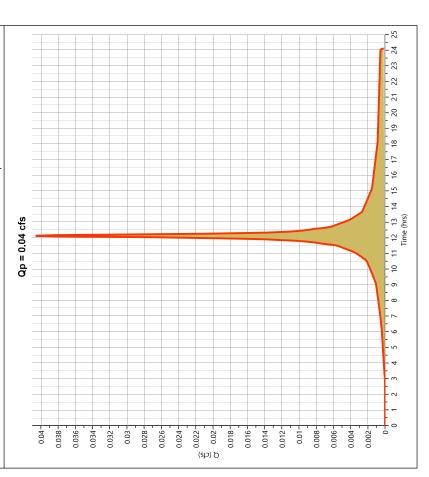
Pre DA 1 - IMPERVIOUS

06-14-2022

Hyd. No. 1

Project Name:

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.041 cfs
Storm Frequency	= 1-yr	Time to Peak	= 12.13 hrs
Time Interval	= 2 min	Runoff Volume	= 150 cuft
Drainage Area	= 0.04 ac	Curve Number	= 98
Tc Method	= User	Time of Conc. (Tc)	= 9.8 min
Total Rainfall	= 1.25 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



Hydrograph Report

Pre DA 1 - PERVIOUS

06-14-2022

Project Name:

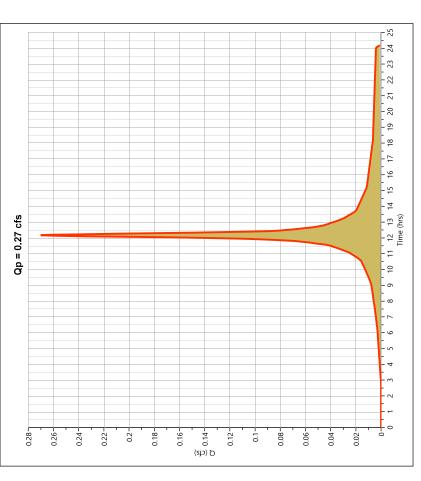
Hyd. No. 2

Hydrog	Hydrograph Type	e = NRCS Runoff	off Peak Flow	Flow	= 0.000 cfs
Storm !	Storm Frequency	y = 1-yr	Time t	Time to Peak	= 0.00 hrs
Time Interval	iterval	= 2 min	Runof	Runoff Volume	= 0.000 cuft
Draina	Drainage Area	= 0.05 ac	Curve	Curve Number	= 37*
Tc Method	poq	= User	Time	Time of Conc. (Tc)	= 9.8 min
Total Rainfall	ainfall	= 1.25 in	Design	Design Storm	= NOAA-D
Storm I	Storm Duration	= 24 hrs	Shape	Shape Factor	= 484
* Compos	* Composite CN Worksheet	sheet			
AREA (ac)	CN	DESCRIPTION			
0.04	39	obeu sbace			
0.01	30 %	papaow			
0.05	37	Meighted CN Method Employed			

Qp = 0.00 cfs

Post Roof Area DA3

= 0.270 cfs	= 12.17 hrs	= 1,123 cuft	86 =	= 10.0 min	= NOAA-D	= 484
Peak Flow	Time to Peak	Runoff Volume	Curve Number	Time of Conc. (Tc)	Design Storm	Shape Factor
= NRCS Runoff	= 1-yr	= 2 min	= 0.29 ac	= User	= 1.25 in	= 24 hrs
Hydrograph Type	Storm Frequency	Time Interval	Drainage Area	Tc Method	Total Rainfall	Storm Duration



Hydrograph Report

06-14-2022 Project Name:

Hyd. No. 3

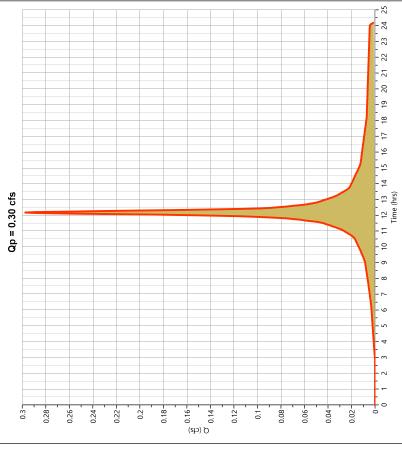
06-14-2022

Project Name:

4

Hyd No	
~	
Post Deck DA3	

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.298 cfs
Storm Frequency	= 1-yr	Time to Peak	= 12.17 hrs
Time Interval	= 2 min	Runoff Volume	= 1,239 cuft
Drainage Area	= 0.32 ac	Curve Number	86 =
Tc Method	= User	Time of Conc. (Tc)	= 12.8 min
Total Rainfall	= 1.25 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

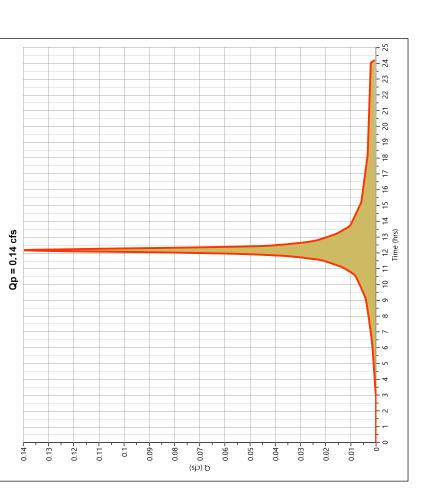


Hydrology Studio v 3.0.0.24

06-14-2022

Project Name:

Post Pervious Pavement	Pavement		Hyd. No. 5
Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.140 cfs
Storm Frequency	= 1-yr	Time to Peak	= 12.17 hrs
Time Interval	= 2 min	Runoff Volume	= 581 cuft
Drainage Area	= 0.15 ac	Curve Number	= 98
Tc Method	= User	Time of Conc. (Tc)	= 12.8 min
Total Rainfall	= 1.25 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



Hydrograph Report

Hydrology Studio v 3.0.0.24

Post Pervious DA 1

06-14-2022

Project Name:

Hyd. No. 6

= 0.000 cfs = 0.00 hrs = 0.000 cuft

Time to Peak Peak Flow

= NRCS Runoff

Hydrograph Type Storm Frequency

Runoff Volume Design Storm Curve Number

= 0.05 ac

Drainage Area Time Interval

Tc Method

= 1-yr = 2 min

= 1.25 in

= User

= 24 hrs

Total Rainfall Storm Duration

Time of Conc. (Tc)

= NOAA-D = 6.0 min = 39

= 484

Shape Factor

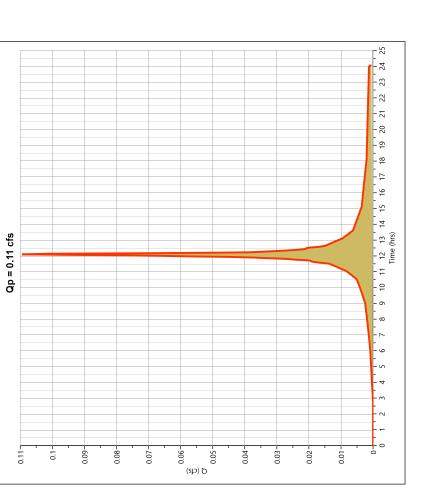
Qp = 0.00 cfs

Post Roof Area DA1

06-14-2022

Project Name:

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.109 cfs
Storm Frequency	= 1-yr	Time to Peak	= 12.10 hrs
Time Interval	= 2 min	Runoff Volume	= 352 cuft
Drainage Area	= 0.1 ac	Curve Number	86 =
Tc Method	= User	Time of Conc. (Tc)	= 6.0 min
Total Rainfall	= 1.25 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



Hydrograph Report

Post Pervious DA2

Hyd. No. 7

06-14-2022

Project Name:

∞
0
Z
0
>
I
_

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.000 cfs
Storm Frequency	= 1-yr	Time to Peak	= 0.00 hrs
Time Interval	= 2 min	Runoff Volume	= 0.000 cuft
Drainage Area	= 0.09 ac	Curve Number	= 39
Tc Method	= User	Time of Conc. (Tc)	= 6.0 min
Total Rainfall	= 1.25 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

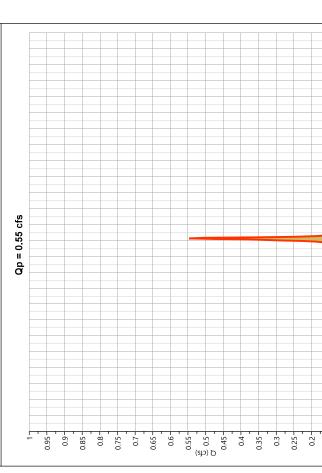
Qp = 0.00 cfs

Project Name:

06-14-2022

Post Roof Area DA2

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.547 cfs
Storm Frequency	= 1-yr	Time to Peak	= 12.10 hrs
Time Interval	= 2 min	Runoff Volume	= 1,760 cuft
Drainage Area	= 0.5 ac	Curve Number	86 =
Tc Method	= User	Time of Conc. (Tc)	= 6.0 min
Total Rainfall	= 1.25 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



- 6

0.15

Hydrograph Report

06-14-2022 Hyd. No. 9

Project Name:

Hyd. No. 10

Pre DA 1 - POA 2

Hydrograph Type	= linction	Deak Flow	= 0.041 cfs
Storm Frequency	= 1-yr	Time to Peak	= 12.13 hrs
Time Interval	= 2 min	Hydrograph Volume	= 150 cuft
Inflow Hydrographs	= 1, 2	Total Contrib. Area	= 0.09 ac
	Qp = 0.04 cfs		
0.04			
0.038			
-9500			
0.034			
0.032			
0.03			
) (6			
0.028			
0.026 –			
0.024			
(złɔ) 0.022 1			
Ø 0.02			
0.018			
0.016			
0.014 -			
0.012			
0.01			
0.008			
- 900.0			
0.004			
0.002			
0 1 2	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25	14 15 16 17 18 19 20	21 22 23 24 25
	Time (hrs)		
	—— DA 1 - IMPERVIOUS —— DA 1 - POA 2	v 1 – POA 2	

	ŧ	_
	ζ	5
	2	2
(ì	2
		_
	c	=
	2	5
	200	<u>2</u>
	2022	200
	פֿב	
	פֿב	
	פֿב	

Hydrology Studio v 3.0.0.24

06-14-2022

Hyd. No. 11

Project Name:

Post Pervious DA3

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.000 cfs
Storm Frequency	= 1-yr	Time to Peak	= 0.00 hrs
Time Interval	= 2 min	Runoff Volume	= 0.000 cuft
Drainage Area	= 0.01 ac	Curve Number	= 39
Tc Method	= User	Time of Conc. (Tc)	= 12.8 min
Total Rainfall	= 1.25 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

Qp = 0.00 cfs

Hydrograph Report

06-14-2022

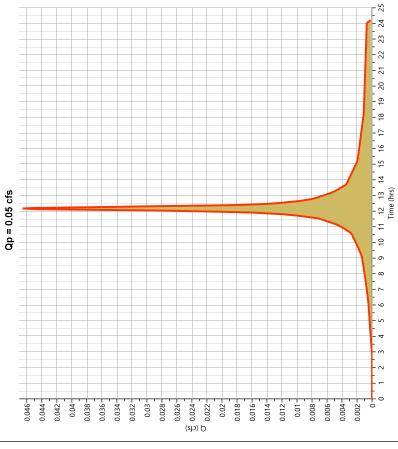
Project Name:

Hyd. No. 12

ຕ
⋖
Ω
S
3
ō
.≃
≥
-
ě
_ ≃
⊱
=
+
S
0
Δ.

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.047 cfs
Storm Frequency	= 1-yr	Time to Peak	= 12.17 hrs
Time Interval	= 2 min	Runoff Volume	= 194 cuft
Drainage Area	= 0.05 ac	Curve Number	86 =
Tc Method	= User	Time of Conc. (Tc)	= 12.8 min
Total Rainfall	= 1.25 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484





•	į		
	()
	9	=	2
,	(1	,
L		L	
	9	Ξ	
	(2
		١.	_
	į		2
	()
•	7		
	•	2	
•		L	

Hydrology Studio v 3.0.0.24

06-14-2022

Project Name:

Hyd. No. 13 Post Underground Basin 3

Storm Frequency = 1-yr Time to Peak = 12.17 hrs Time Inflow Hydrograph Volume = 3,137 cutf Inflow Hydrograph Volume = 1,137 cutf Inflow Hydrograph Volume = 1,137 cutf Inflow Hydrograph Volume = 1,137 cutf In	= 3, 4, 5, 11, 12 Qp = 0.75 cfs Qp = 0.75 cfs Total Conf.	Hydrograph Type	= Junction	Peak Flow	= 0.754 cfs
Hydrograp = 3, 4, 5, 11, 12 Qp = 0.75 cfs Qp = 0.75 cfs	#ydrograp = 3, 4, 5, 11, 12 Qp = 0.75 cfs Qp = 0.75 cfs	Storm Frequency	= 1-yr	Time to Peak	= 12.17 hrs
Ap = 0.75 cfs Op = 0.75 cfs	Ap = 0.75 cfs Op = 0.75 cfs Total Cont Ap = 0.75 cfs Total Cont Ap = 0.75 cfs Total Cont Ap = 0.75 cfs	Time Interval	= 2 min	Hydrograph Volume	= 3,137 cuft
Qp = 0.75 cfs Qp = 0.75 cfs	Qp = 0.75 cfs Qp = 0.75 cfs Time (in s)	Inflow Hydrographs	= 3, 4, 5, 11, 12	Total Contrib. Area	= 0.82 ac
	Time (hrs)	,	Qp = 0.75 cfs		
	T 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 1				
	Time (hrs)	- 56.0			
	T 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 1	1 .			
	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 1 Time (hrs)	0.85			
	Time (hrs)	0.8			
	Time (hrs)	0.75			
	Time (hrs)	0.7			
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 1	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 1 Time (hrs)	0.65			
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 1	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 1 Time (hrs)	0.0			
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 1	Time (hrs)	(sja			
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 1	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 1 Time (hrs)	Q (C.5)			
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 1	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 1 Time (hrs)	0.45			
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 1	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 1 Time (hrs)	1.00			
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 1	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 1 Time (hrs)	0.33			
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 1	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 1 Time (hrs)	- 2-0			
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 1	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 1 Time (hrs)	0.2			
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 1	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 1 Time (hrs)	0.15			
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 1	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 1	0.1			
8 9 10 11 12 13 14 15 16 17 1	. 8 9 10 11 12 13 14 15 16 17 1 Time (hrs)	0.05			
	Time (hrs)	0 1 2 3	8 9 10 11	15 16 17 1	21 22 23 24 25

(sto) Q

0.05

- 20.0

0.04

0.03

0.05

-10.0

Hydrograph Report

Post Rain Garden 1

06-14-2022

Project Name:

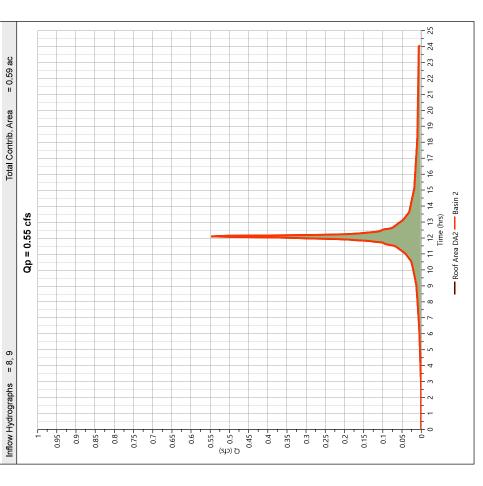
Hyd. No. 14

Hydrograph Type	= Junction	Peak Flow	= 0.109 cfs
Storm Frequency	= 1-yr	Time to Peak	= 12.10 hrs
Time Interval	= 2 min	Hydrograph Volume	= 352 cuft
Inflow Hydrographs = 6, 7	= 6, 7	Total Contrib. Area	= 0.15 ac
	Qp = 0.11 cfs		
0.11			
1			
0.1			
- 5000			
0.08			

Hydrology Studio v 3.0.0.24

Post Basin 2

Hyd No. 15 = 12.10 hrs= 1,760 cuft = 0.547 cfs = 0.59 ac Hydrograph Volume Total Contrib. Area Time to Peak Peak Flow = Junction = 1-yr = 2 min Hydrograph Type Storm Frequency Time Interval



Hydrograph Report

06-14-2022 Project Name:

06-14-2022 16

Project Name:

Hyd. No. `	sjo UUU U =
	Mola Veed
	- Dond Doute
Post Basin 2	Hydrograph Type – Page Boute

Storm Frequency	= 1-yr	Time to Peak	= 12.53 hrs
Time Interval	= 2 min	Hydrograph Volume	= 0.000 cuft
Inflow Hydrograph	= 15 - Basin 2	Max. Elevation	= 13.17 ft
Pond Name	= Basin 2	Max. Storage	= 231 cuft
Pond Routing by Storage Indication Method	ication Method		
,	Qp = 0.00 cfs		
0.95			
-6:0			
0.85			
0.8			
0.75			
0.7			
0.65			
0.0			
Q (C)			
0.45			
0.4			
0.35			
0.3			
0.25			
0.7			
0.15			
			1
0.05			
0	2 3 4 5 6 7	8 9 10	11 12
	Time (hrs)		

Pond Report

Basin 2

06-14-2022

Project Name:

Basin 2

Stage-Storage

	Total Storage (cuft)	0.000	678	1,508	2,500	3,659	4,991	00Z'9		7.8	0	2.6	2.4	2.2	5	6. 8.	tage		ž -	- 0.8	9.0	0.4	0.2	0009	
ge Table	Incr. Storage (cuft)	0.000	678	831	991	1,159	1,333	,1,209			\													2000	
Stage / Storage Table	Contour Area (sqft)	1.201	1,509	1,814	2,151	2,486	2,844	3,202					\											4000	75
	Elevation (ft)	13.00	13.50	14.00	14.50	15.00	15.50	590	Stage-Storage						\									je (cuft)	-Contours Top of Pond
	Stage (ft)	0.00	0.50	1.00	1.50	2.00	2.50	5.80	tage-6							1								3000 Total Stora	ontours -
S	Input	13.00	100.00	Ave End Area					S								1	\						5000	
User Defined Contours	Description	Bottom Elevation, ft	Voids (%)	Volume Calc																				1000	
Ň		ш								15.8	0 !	15.6	15.4	15.2	15-		(Ħ) v	Ele	14.2	13.8	13.6	13.4	13.2	- 0	

Pond Report

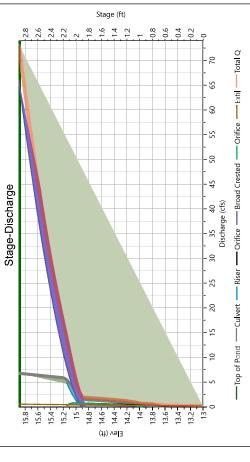
Project Name:

06-14-2022

Stage-Discharge

Outrost / Original	toring		Orifices		otelle collision	
calliver () Olillices	Jan	*	2*	ო	OIIICE L'AIE	13
Rise, in	12	3.5	-		Orifice Dia, in	
Span, in	12	3.5	24		No. Orifices	
No. Barrels	-	2	-		Invert Elevation, ft	
Invert Elevation, ft	12.19	13.50	13.98		Height, ft	
Orifice Coefficient, Co	09'0	09'0	09'0		Orifice Coefficient, Co	
Length, ft	30					
Barrel Slope, %	e,					
N-Value, n	0.013					
Media	ž		Weirs			
o III	D A E	-	7	ო	Allcinaly	
Shape / Type	Вох	Broad Crested			Exfiltration, in/hr	7.20**
Crest Elevation, ft	14.9	14.9				
Crest Length, ft	12	20				
Angle, deg						
Weir Coefficient, Cw	3.3	3.3				

*Routes through Culvert. **Exfiltration extracted from outflow hydrograph. Rate applied to contours.



Pond Report

Basin 2

Stage-Storage-Discharge Summary

|--|

Total	(cfs)	0.000	0.251	0.704	5.296	37.41	73.30
User	(cfs)						
Exfi	(cts)	0.000	0.252	0.302	0.414	0.474	.534
Pf Riser	(cfs)						
	3						
Weirs, cfs	2						
,	-	0.000	0.000	0.000	2.087	30.67	099.00
Riser	(cfs)	0.000	0.000	0.000	1.252	0.000	0000 o
•	3						
Orifices, cfs	2	0.000	0.000	0.019	0.794	0.000	0000:0
0	-	0.000	0.000	0.383	0.749	0.000	0000
Culvert		0.000	0.000 oc	0.402 oc	2.795 00	6.264 oc	8 766 00
Storage	(cnft)	0.000	678	1,508	3,659	4,991	6,200
Elev.	(¥)	13.00	13.50	14.00	15.00	15.50	6 9
Stage	£	00.00	0.50	0 5	2.00	2.50	2.90

Suffix key: ic = inlet control, oc = outlet control, s = submerged weir

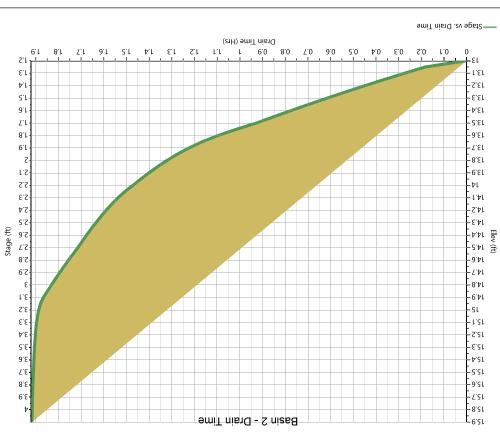
Pond Report

06-14-2022 Project Name:

Basin 2

06-14-2022 Project Name:

Pond Drawdown Stage (ft)



Post Basin 1

06-14-2022

Project Name:

Pond Report

BASIN 1

Hyd. No. 17

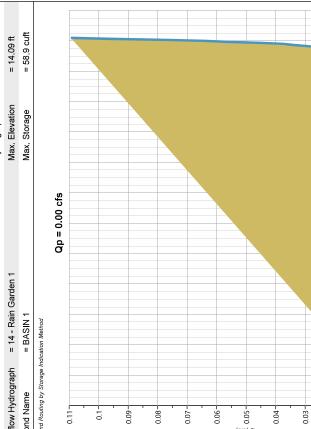
Project Name:

06-14-2022

Stage-Storage

= 0.000 cfs
Peak Flow
= Pond Route
rograph Type

Hydrograph Type	= Pond Route	Peak Flow	= 0.000 cfs
Storm Frequency	= 1-yr	Time to Peak	= 12.03 hrs
Time Interval	= 2 min	Hydrograph Volume = 0.000 cuft	= 0.000 cuft
Inflow Hydrograph	nflow Hydrograph = 14 - Rain Garden 1	Max. Elevation	= 14.09 ft
Pond Name	= BASIN 1	Max. Storage	= 58.9 cuft
Pond Routing by Storage Indication Method	dication Method		



0.1

	orage			σ.		8: 0: 4: 7: 1: 0: 0: 0: 0: 0: 0: 0: 0: 0: 0: 0: 0: 0:
	Total Storage (cuft)	0.000	320	1,959		9000
ge Table	Incr. Storage (cuft)	0.000	320	1.199		0091
Stage / Storage Table	Contour Area (sqft)	520	09/	1.556		- 1400
	Elevation (ft)	14.00	14.50	15.865	Stage-Storage	1200
	Stage (ft)	00:00	0.50	1.95	tage-S	
ß	Input	14.00	2	None	O)	008
User Defined Contours	Description	Bottom Elevation, π	(cr) conce	Volume Calic		200 400
User D		Вощо				(#) vəl3 82 22 22 23 24 25 25 25 25 25 25 25 25 25 25 25 25 25

---Contours --- Top of Pond

Lπ

--- Rain Garden 1 --- Basin 1

6 7 Time (hrs)

0.02

Q (cfs)

- 20.0

0.04

0.01

Pond Report

BASIN 1

Stage-Discharge

06-14-2022

Project Name:

Culyart / Originas	trovino		Orifices		Orifice Diste	
coming (allege)		*	2	ო	O III CO I I I I I	
Rise, in	12	2.5			Orifice Dia, in	
Span, in	12	2.5			No. Orifices	
No. Barrels	-	~			Invert Elevation, ft	
Invert Elevation, ft	10.23	14.50			Height, ft	
Orifice Coefficient, Co	09:0	09'0			Orifice Coefficient, Co	
Length, ft	100					
Barrel Slope, %	e,					
N-Value, n	0.013					
Meion	***************************************		Weirs		, and live V	
n E	D N N	-	5*	က	Allcillary	
Shape / Type	Вох	Broad Crested Rectangular	Rectangular		Exfiltration, in/hr	3.25**
Crest Elevation, ft	14.95	14.95	14.6			
Crest Length, ft	12	20	~			
Angle, deg						
Weir Coefficient, Cw	3.3	3,3	3.3			
'Routes through Culvert. "Exfiltration extracted from outflow hydrograph. Rate applied to contours."	outflow hydrograph. Rate	applied to contours.				

Stage (ft) 4. 5. -0.8 -1.6 9.0-- 22 Stage-Discharge 35 40 Discharge (cfs) - 52 50 15.6-15.2-(#) valid 15.4-15.8-

Pond Report

Stage-Storage-Discharge Summary

Project Name: 06-14-2022

Summ
ischarge
torage-D
Stage-S
BASIN 1

_						
Total	(cfs)	0.000	0.057	2.194	72.70	
User	(cfs)					
Exfil	(cfs)	0.000	0.057	0.075	0.115	
Pf Riser	(cfs)					
	3					
Weirs, cfs	2	0.000	0.000	0.835	0.000	
	-	0.000	0.000	0.738	99.00	
Riser	(cfs)	0.000	0.000	0.443	0.000	
	3					
Orifices, cfs	2					
ľ	-	0.000	0.000		0.000	
Culvert	(cfs)	0.000	0.000 00	1.381 oc	6.585 oc	
Storage	(cuft)				1,959	
Elev.	(¥)	14.00	14.50	15.00	15.95	
Stage	Œ	00.00	0.50	1.00	1.95	

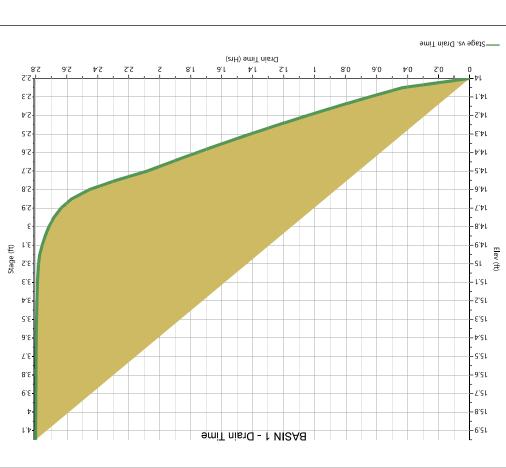
Suffix key; ic = inlet control, oc = outlet control, s = submerged weir



Hydrology Studio v 3.00.24

BASIN 1

(#) Observe (#)



Hydrograph Report

i

Project Name: 06-14-2022

Pond Drawdown

Project Name: 06-14-2022

			200
Storm Frequency	= 1-yr	Time to Peak	= 12.17 hrs
Time Interval	= 2 min	Hydrograph Volume	= 3,137 cuft
Inflow Hydrographs	= 13, 16	Total Contrib. Area	= 0.82 ac
ļ	Qp = 0.75 cfs		
- 000			
- 66:0			
-6:0			
0.85			
0.8			
0.75			
0.7			
0.65			
-9.0			
_			
Q (C			
0.45			
0.4			
0.35			
0.3			
0.25			
0.2 -			
0.15			
0.1			

Post UG Basin 3

06-14-2022

Project Name:

Hydrograph Type	= Pond Route	Peak Flow	= 0.000 cfs
Storm Frequency	= 1-yr	Time to Peak	= 12.47 hrs
Time Interval	= 2 min	Hydrograph Volume = 0.000 cuft	= 0.000 cuft
Inflow Hydrograph	= 18 - COMBINED TO UG BASIN	Max. Elevation	= 11.82 ft
Pond Name	= UG BASIN	Max. Storage	= 59.6 cuft

Pond Routing by Storage Indication Method

Qp = 0.00 cfs0.95 0.85

--- COMBINED TO UG BASIN --- UG Basin 3 0.65 0.35 0.3 0.2 -9:0 0.55 Q (cfs) 0.45 0.1

Pond Report

UG BASIN

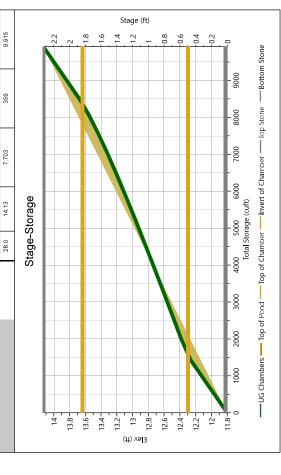
Hyd. No. 19

Project Name:

06-14-2022

Stage-Storage

StormTech® SC-310™ Chamber	namber			Stage / Storage Table	ige Table		
Description	Input	Stage	Elevation	Contour Area	Incr. Storage	Total Storage	
Chamber Height in	16	(IIII)	(III)	(squ)	(cuit)	(cant)	
Citation I de Galic, III	2	0.0	11.80	7,703	00000	0.000	
Chamber Shape	Arch	1.4	11.92	7,703	359	359	
Chamber Width, in	34	2.8	12.03	7,703	359	719	
		4.2	12.15	7,703	359	1,078	
Installed Length, ft	7.12	5.6	12.27	7,703	359	1,438	
No. Chambers	309	7.0	12.38	7,703	564	2,002	
		8.4	12.50	7,703	099	2,662	
Bare Chamber Stor, cuft	4,542	8.0	12.62	7,703	656	3,318	
No. Rows	20	11.2	12.73	7,703	650	3,967	
	4	12.6	12.85	7,703	640	4,608	
Space Between Rows, in	စ	14.0	12.97	7,703	628	5,236	
Stone Above, in	9	15.4	13.08	7,703	613	5,849	
		16.8	13.20	7,703	594	6,443	
Stone Below, in	9	18.2	13.32	7,703	569	7,013	
Stone Sides, in	12	19.6	13.43	7,703	538	7,550	
		21.0	13.55	7,703	494	8,044	
Stone Ends, in	12	22.4	13.67	7,703	433	8,477	
Encasement Voids, %	40.00	23.8	13.78	7,703	359	8,837	
		25.2	13.90	7,703	359	9,196	
Encasement Bottom Elevation, ft	11.80	26.6	14.02	7,703	359	9,555	
		o ac	14.13	7 703	350	0 0 1 5	



Pond Report

UG BASIN

Stage-Discharge

occipie C. Hoylu C	tioning		Orifices		2000
canvert Offices		*	2*	ო	religiated Nisel
Rise, in	12	2.5	4.5		Hole Diameter, in
Span, in	12	2.5	4.5		No. holes
No. Barrels	-	~	m		Invert Elevation, ft
Invert Elevation, ft	12.20	13.00	13.20		Height, ft
Orifice Coefficient, Co	09'0	09.0	09.0		Orifice Coefficient, Co
Length, ft	30				
Barrel Slope, %	ю.				
N-Value, n	0.013				
Moise	***************************************		Weirs		Vacilian A
0	Nise	*	7	ო	Allollialy
Shape / Type		Rectangular			Exfiltration, in/hr 3.75**
Crest Elevation, ft		14.13			
Crest Length, ft		2			
Angle, deg					
Weir Coefficient, Cw		3.3			
*Routes through Culvert. **Extitration extracted from outflow hydrograph. Rate applied to contours.	outflow hydrograph. Rate	applied to contours.			

Stage-Discharge Curver **Extraction extracted from outlieur hydrograph, Rate upplied to continue. Stage-Discharge 13.4		Stage (ft)	_
13.8 13.8 13.2 13.6 12.8 12.2 12.2 12.2 12.2	or. "Editration extracted from cultion hydrograph. Rate applied to contours. Stagge-Discharge	118 118 118 118 118 118 118 118 118 118	
# (c.)	es through Culvert.	(ft) val3 4 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	

Pond Report

Project Name: 06-14-2022

UG BASIN

06-14-2022

Project Name:

Stage-Storage-Discharge Summary

Pf Riser					0.000 0.670 0.671 0.673 0.673	0.000 0.670 0.671 0.672 0.673	0.000 0.670 0.671 0.672 0.673 0.674	0.000 0.670 0.671 0.673 0.673 0.673 0.675	0,000 0,670 0,671 0,673 0,674 0,674 0,676 0,678	0.000 0.670 0.671 0.673 0.674 0.675 0.676 0.677									
3	T.				0.000 0.670 0.671 0.672 0.673	0.000 0.670 0.671 0.673 0.674	0.000 0.670 0.671 0.673 0.673	0.000 0.670 0.677 0.673 0.674 0.676 0.676	0000 0670 0671 0673 0674 0676 0676	0.000 0.671 0.673 0.674 0.676 0.676 0.676 0.677	0.000 0.670 0.672 0.673 0.674 0.676 0.676 0.677	0.000 0.670 0.672 0.674 0.676 0.676 0.678 0.680 0.681	0.000 0.670 0.673 0.673 0.674 0.676 0.677 0.680 0.681	0.000 0.671 0.673 0.673 0.675 0.676 0.677 0.689 0.681 0.683	0.000 0.671 0.673 0.673 0.675 0.676 0.677 0.689 0.684	0.000 0.671 0.673 0.673 0.676 0.677 0.680 0.681 0.683 0.683 0.683	0.000 0.674 0.673 0.674 0.676 0.676 0.677 0.680 0.681 0.683 0.684 0.683 0.684 0.683	0.000 0.070 0.672 0.673 0.674 0.676 0.678 0.680 0.681 0.682 0.683 0.684 0.685 0.685 0.685	0.000 0.670 0.673 0.673 0.674 0.676 0.677 0.680 0.681 0.683 0.683 0.683 0.684 0.685 0.685 0.686
					0.670 0.671 0.673 0.673	0.670 0.672 0.672 0.673	0.670 0.671 0.673 0.673 0.674	0.670 0.671 0.673 0.674 0.676 0.676	0.670 0.671 0.672 0.673 0.674 0.676 0.676 0.677	0.670 0.671 0.673 0.674 0.676 0.676 0.677 0.677	0.670 0.671 0.673 0.674 0.676 0.676 0.677 0.677 0.678	0.670 0.671 0.673 0.674 0.676 0.677 0.677 0.678 0.679 0.679	0.670 0.671 0.673 0.673 0.676 0.677 0.680 0.681	0.670 0.671 0.673 0.674 0.676 0.677 0.678 0.680 0.681	0.670 0.671 0.673 0.674 0.676 0.676 0.677 0.680 0.681	0.670 0.671 0.673 0.673 0.675 0.676 0.676 0.680 0.681 0.683	0.670 0.671 0.673 0.673 0.674 0.676 0.677 0.680 0.681 0.683 0.683 0.683	0.670 0.671 0.673 0.673 0.674 0.676 0.676 0.680 0.681 0.684 0.685	0.670 0.671 0.673 0.674 0.676 0.677 0.689 0.681 0.681 0.683 0.683 0.684 0.683 0.684 0.685
L																			
i									Ш										
0.000	0.000	0.000	0.000	0.000		0.000	00000	0.000	00000	0.000	0.000.000.000.000.0000.0000.0000.0000.0000	000000000000000000000000000000000000000	000000000000000000000000000000000000000	000000000000000000000000000000000000000	000000000000000000000000000000000000000	000000000000000000000000000000000000000	000000000000000000000000000000000000000	000000000000000000000000000000000000000	000000000000000000000000000000000000000
0 0 0	0 0		3 8	0		ö	8 8 8	0 0 0	0 0 0 0								3 3 3 3 3 3 3 3 3 3 3 3 3	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	
		_																	
0		0 0				0	0 0 (0000	0 0 0 0	0 0 0 0 0	000000	000000	00000004	000000048	000000000000000000000000000000000000000	00000004 00 00	00000004 00 00 4	00000000400840	000000000000000000000000000000000000000
0.000		0.000	0.000	0.000	0000		0.000	0.000	0.000	0.000	0.000	0.000	0.000 0.000 0.000 0.000 0.000 0.000 0.000	0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000	0.000 0.000 0.000 0.000 0.000 0.000 0.104 0.358	0.000 0.000 0.000 0.000 0.000 0.000 0.104 0.358 0.649	0.000 0.000	0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.104 0.358 0.843	0.000 0.000
0.000		0 9	0 0		_	٠	_				000000000000000000000000000000000000000	0.000 0.000 0.000 0.000 0.0013	0.000 0.000 0.000 0.000 0.000 0.013	0.0000	0.000 0.000 0.000 0.000 0.000 0.0013 0.0076 0.0076	0.000 0.000 0.000 0.000 0.001 0.001 0.007 0.007 0.007 0.010	2,000 2,000 2,000 2,000 2,001 3,001	0.000 0.000 0.000 0.000 0.001 0.0051 0.0076 0.0094 0.110	0.000 0.000 0.000 0.000 0.001 0.005
		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.00	0.0 0.0 0.0								
	0.000		0.000 0.000										0.000 0.000 0.000 0.000 0.000 0.000 0.051 oc	0.000 0.000 0.000 0.000 0.000 0.000 0.0013 oc 0.051 oc	0.000 0.000 0.000 0.000 0.000 0.013 oc 0.013 oc 0.0151 oc 0.051 oc 0.055 oc				
(cnu)	\vdash	0.000			0.000	0.000	00000	000.0	000000000000000000000000000000000000000	000000000000000000000000000000000000000	0.000 0.000 0.000 0.000 0.000 0.000 0.000	0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000				0.000 0.000 0.000 0.000 0.000 0.000 0.051 oc 0.051 oc 0.051 oc 0.051 oc	0.000 0.000 0.000 0.000 0.000 0.003 0.003 0.003 0.004 0.003 0.004 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.004	0.000 0.000 0.000 0.000 0.000 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.000 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.000 0.001	0.000 0.000 0.000 0.000 0.000 0.000 0.001 0.051 oc 0.051 oc 0.052 oc 0.053 oc 0.138 oc 0.258 oc 0.258 oc 1.118 oc
(#)	0.000	359 0.000	719 0.000	1,078 0.000	0.000	1,078 0.000 1,438 0.000 2,002 0.000	1,078 0.000 1,438 0.000 2,002 0.000 2,662 0.000	1,078 0,000 1,438 0,000 2,002 0,000 2,662 0,000 3,318 0,000 3,967 0,000	1,078 0,000 1,438 0,000 2,002 0,000 2,662 0,000 3,318 0,000 4,608 0,000	1,078 0,000 2,002 0,000 2,662 0,000 3,318 0,000 4,608 0,000 6,236 0,000	1,078 0000 2,002 0000 2,662 0000 3,318 0000 4,608 0,000 5,238 0,000 6,238 0,000 6,349 0,013 oc	1,078 0000 2,002 0.000 2,662 0.000 3,318 0.000 4,608 0.000 5,349 0.013 oc 6,349 0.013 oc 6,443 0.051 oc	1,078 1,438 2,002 2,662 3,318 3,967 4,608 5,236 5,849 6,443	1,078 1,438 2,002 2,662 3,318 3,967 4,608 6,236 6,443 7,013	1,078 1,438 2,002 2,662 3,348 4,608 5,236 6,443 7,013 7,550 8,044	1,078 0000 2,000 2,602 0,000 3,318 0,000 4,608 0,000 5,849 0,013 ∞ 6,443 0,013 ∞ 7,550 0,452 ∞ 8,044 0,758 ∞ 8,044 0,758 ∞	1,078 0000 2,000 2,000 2,662 0,000 3,318 0,000 4,608 0,000 6,236 0,000 6,443 0,013 oo 6,444 0,756 0 8,044 0,758 oo 8,044 0,758 oo	1,078 0000 2,000 2,000 2,662 0,000 3,318 0,000 4,608 0,000 6,236 0,000 6,443 0,045 oc 8,044 0,786 oc	1,078 0.000 2,000 2,000 2,662 0.000 3,316 0.000 4,608 0.000 6,443 0.051 0.000 7,013 0.180 0.00 7,550 0.452 0.09 8,477 0.966 0.00 8,447 0.096 0.00

Pond Report Project Name:

Hydrology Studio v 3.0.0.24 Project Name:

OG-14-2022

Hydrology Studio v 3.0.0.24

UG BASIN

Pond Drawdown

-----Stage vs. Drain Time Drain Time (Hrs) 0+ ₩8.11 1.0--6.11 2.0--21 . - 1.51 €.0t.0--2.21 . - ٤.Δ1 2.0 9.0 7.0-- 2.S1 -9.Sr 8.0-- 7.21 6.0--8.21 Stage (ft) 15.9-1.1 Elev (ft) . - ٤١ ۱.2 ٤.٢٠ - 1.81 - 2.81 **⊅**′l . - ٤.٤١ ۲٦ 9.1 -Þ.E1 Ľl - 2.E1 8.1 -9.E1 ا'6 ٦.٤١ -8.E1 1.5--6.E1 2.2 -tl UG BASIN - Drain Time ٤.2 1.4.1

Hydrograph Report	Report		Project Name:
Hydrology Studio v 3.0.0.24			06-14-2022
Pre DA 2 - IMPERVIOUS	RVIOUS		Hyd. No. 20
Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.075 cfs
Storm Frequency	= 1-yr	Time to Peak	= 12.17 hrs
Time Interval	= 2 min	Runoff Volume	= 310 cuft
Drainage Area	= 0.08 ac	Curve Number	86 =
Tc Method	= User	Time of Conc. (Tc)	= 11.1 min
Total Rainfall	= 1.25 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484
	Qp = 0.07 cfs		
0.072			
0.068			
0.064			
- 90:0			
, ,,			
0.000			
0.052			
0.048			
0.044			
0.04			
) (cfg			
0.000			
0.032			
0.028			
0.024			
- 20.0			
1 0			
0.016-			

22 23 24

0.012

Hydrology Studio v 3.0.0.24

Project Name:

06-14-2022

Hyd No. 21 = 0.000 cfs = 0.00 hrs Time to Peak Peak Flow = NRCS Runoff = 1-yr Pre DA 2 - PERVIOUS

= 0.000 cuft = NOAA-D = 11.1 min = 36* = 484 Time of Conc. (Tc) Design Storm Runoff Volume Curve Number Shape Factor DESCRIPTION
OPEN SPACE
WOODS
Weighted CN Method Employed = 0.86 ac = 1.25 in = 2 min = 24 hrs = User * Composite CN Worksheet Hydrograph Type Storm Frequency Drainage Area Tc Method Storm Duration Time Interval Total Rainfall AREA (ac) CN 0.58 39 0.28 30 0.86 36

Qp = 0.00 cfs

Hydrograph Report

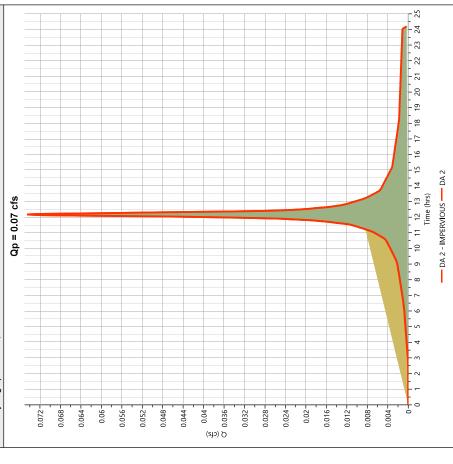
06-14-2022

Project Name:

Hyd. No. 22

Hyd.	
_	
7	
Pre DA	
Pré	L

Hydrograph Type	= Junction	Peak Flow	= 0.075 cfs
Storm Frequency	= 1-yr	Time to Peak	= 12.17 hrs
Time Interval	= 2 min	Hydrograph Volume = 310 cuft	= 310 cuft
Inflow Hydrographs = 20, 21	= 20, 21	Total Contrib. Area	= 0.94 ac



Hydrology Studio v 3.0.0.24

Pre DA 3 - PERVIOUS

06-14-2022

Hyd No. 23

Project Name:

= 0.000 cfs = 0.00 hrs = 0.000 cuft = NOAA-D = 10.3 min = 37* = 484 Time of Conc. (Tc) Design Storm Runoff Volume Curve Number Time to Peak Shape Factor Peak Flow = NRCS Runoff = 0.75 ac = 1.25 in = 1-yr = 2 min = 24 hrs = User Hydrograph Type Storm Frequency Drainage Area Tc Method Storm Duration Time Interval Total Rainfall

Qp = 0.00 cfs

DESCRIPTION
OPEN SPACE
WOODS
Weighted CN Method Employed

AREA (ac) CN 0.62 39 0.13 30 0.76 37

* Composite CN Worksheet

Hydrograph Report

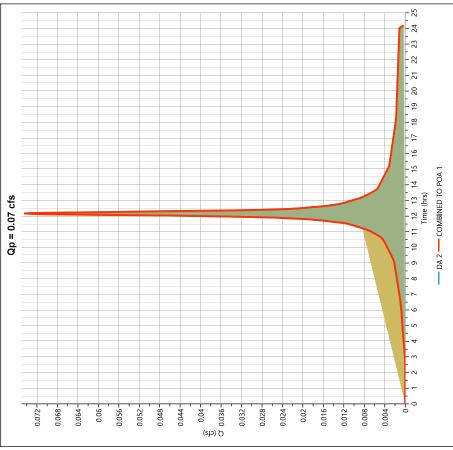
Hydrology Studio v 3.0.0.24

Hyd No 24

06-14-2022 Project Name:

Pre COMBINED TO POA 1

Hydrograph Type	= Junction	Peak Flow	= 0.075 cfs
Storm Frequency	= 1-yr	Time to Peak	= 12.17 hrs
Time Interval	= 2 min	Hydrograph Volume = 310 cuft	= 310 cuft
Inflow Hydrographs = 22, 23	= 22, 23	Total Contrib. Area	= 1.69 ac



•	ב	
,	š Š	
	유	
	grag	
	<u>0</u>	
	Í	

Hydrology Studio v 3.0.0.24

Post IMP BYPASS INLET N.

= 0.000 cfs = 0.00 hrs = 0.000 cuft = NOAA-D = 6.0 min = 39 = 484 Time of Conc. (Tc) Design Storm Runoff Volume Curve Number Time to Peak Shape Factor Peak Flow = NRCS Runoff = 0.08 ac = 1.25 in = 24 hrs = 1-yr = 2 min = User Hydrograph Type Storm Frequency Storm Duration Drainage Area Time Interval Total Rainfall Tc Method

Qp = 0.00 cfs

Hydrograph Report

06-14-2022 Project Name:

Hyd. No. 25

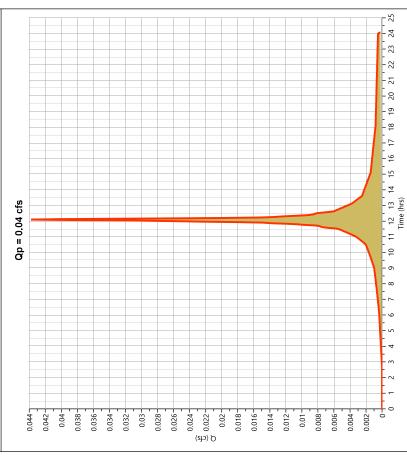
Hyd. No. 26

06-14-2022

Project Name:

N⊢
NE
SSAC
IP BYP
ost IM
ď

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.044 cfs
Storm Frequency	= 1-yr	Time to Peak	= 12.10 hrs
Time Interval	= 2 min	Runoff Volume	= 141 cuft
Drainage Area	= 0.04 ac	Curve Number	= 98
Tc Method	= User	Time of Conc. (Tc)	= 6.0 min
Total Rainfall	= 1.25 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



Project Name: 06-14-2022

Hyd. No. 27 COMB. INLET N.

Storm Frequency = 1-yr Time Interval = 2 min Inflow Hydrographs = 25, 26 0.044 0.038 0.038 0.038 0.028 0.028 0.028 0.009 0.0016 0.018 0.019 0.019	Time to Peak Hydrograph Volume	
= 25, 26	Hydrograph Volume	
= 55 26		= 141 cuft
	Total Contrib. Area	= 0.12 ac
0.042 0.038 0.038 0.032 0.028 0.018 0.016 0.016 0.016		
0.042 0.038 0.038 0.032 0.0028 0.0016 0.016 0.016 0.016		
0.036 0.036 0.037 0.032 0.028 0.028 0.018 0.018 0.019		
0.036 0.036 0.037 0.038 0.028 0.028 0.016 0.016 0.016		
0.036 0.032 0.028 0.026 0.018 0.018 0.016 0.016		
0.032 0.028 0.028 0.020 0.018 0.018 0.016 0.019		
Q (cfs) Q (cfs		
0.028 0.028 0.026 0.020 0.016 0.014 0.012		
0.028 0.026 0.027 0.018 0.018 0.018 0.019 0.019		
0.022 0.022 0.018 0.016 0.016 0.017 0.017 0.0018		
(d)		
0.0016 0.0016 0.0016 0.0017 0.0017		
0.018 0.014 0.014 0.0012		
0.014		
0.012		
0.000		
100		
0.008		
- 900.0		
0.004		
0.002		

Hydrograph Report

06-14-2022 Project Name:

Post COMBINED TO POA 1

Hyd. No. 28

Storm Frequency = 1-yr Time Interval = 2 min	= 1-yr			
Hydrog = 17, 19, 27 Qp = 0.04 cfs	= 2 min			
Ap = 0.04 cfs Ap = 0.04 cfs	Ap = 0.04 cfs Op = 0.04 cfs Op = 0.04 cfs			= 0.12 ac
Qp = 0.04 cfs 0.042 0.036 0.036 0.037 0.03	Qp = 0.04 cfs 0.032 0.0332 0.		Qp = 0.04 cfs	
0.036 0.038 0.038 0.039 0.029 0.020 0.010 0.010 0.010 0.010 0.010 0.000 0.000	0.002 0.022 0.022 0.022 0.023 0.024 0.016 0.016 0.017 0.017 0.009 0.0000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.0000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.0000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.0000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.0000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.0000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.0000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.0000 0.000 0.00			
0.036 0.038 0.036 0.036 0.027 0.016 0.016 0.016 0.016 0.016 0.016 0.016 0.016 0.016	0.036 0.037 0.038 0.039 0.032 0.022 0.022 0.019 0.011 0.011 0.001 0.0000 0.0000			
0.036 0.037 0.038 0.039 0.028 0.020 0.019 0.019 0.010 0.010 0.010 0.000 0.000	0.036 0.037 0.038 0.039 0.030 0.020 0.020 0.010 0.011 0.001 0.000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.00000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.00000 0.00000 0.0000 0.00000 0.00000 0.00000 0.00000 0.000000			
0.036 0.037 0.028 0.026 0.026 0.019 0.019 0.019 0.010 0.010 0.010 0.000 0.000	0.036 0.037 0.038 0.032 0.028 0.027 0.027 0.016 0.017 0.008 0.006 0.006 0.006 0.007 0.007 0.008 0.006 0.006 0.007 0.008 0.006 0.006 0.007 0.008 0.006 0.007 0.008 0.006 0.007 0.008 0.007 0.008			
0.035 0.032 0.025 0.026 0.027 0.019 0.019 0.019 0.010 0.010	0.035 0.032 0.032 0.025 0.026 0.027 0.016 0.017 0.017 0.019 0.006 0.006 0.006 0.007			
0.032 0.026 0.027 0.027 0.016 0.011 0.010 0.010 0.000 0.000	0.032 0.026 0.027 0.019 0.019 0.010 0.			
0.028 0.028 0.020 0.020 0.016 0.016 0.017 0.016 0.000 0.000	0.026 0.026 0.019 0.019 0.010 0.000			
0.028 0.026 0.027 0.018 0.019 0.010 0.000 0.000	0.026 0.027 0.019 0.019 0.010 0.000 0.000 0.000 0.000 0.000 0.00000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.00000 0.0000 0.0000 0.0000 0.0000 0.0000 0.00000 0.00000 0.0000 0.00000 0.00000 0.00000 0.00000 0.00000 0.000000			
0.022 0.022 0.022 0.013 0.014 0.016 0.004 0.006	0.002 0.001 0.001 0.000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.00000 0.0000 0.0000 0.0000 0.0000 0.0000 0.00000 0.00000 0.00000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0			
0.022 0.022 0.016 0.016 0.017 0.016 0.006 0.006	0.002 0.001 0.001 0.000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.00000 0.0000 0.0000 0.0000 0.0000 0.0000 0.00000 0.00000 0.00000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0			
0.002 0.013 0.014 0.015 0.001 0.000 0.0004	0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.00000 0.00000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.00000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.00000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.00000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.00000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.00000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.00000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.00000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.00000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.00000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.00000 0.00000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.00000 0.0000 0.0000 0.0000 0.0000 0.0000 0.00000 0.00000 0.0000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.0	(817) 5 4 7 2 20.00		
0.000	0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.00000 0.00000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.00000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.00000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.00000 0.0000 0	- C.O.O.O.O.O.O.O.O.O.O.O.O.O.O.O.O.O.O.O		
	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24			
	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23	- 0.018		
	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	0.016		
	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	0.014		
	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	0.012		
	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	0.01		
	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	0.008		
	1 2 3 4 5 6 7 8 9 10 11 11 11 11 15 16 17 18 19 20 21 22 23 24	90000		
	0 1 2 3 4 5 6 7 8 9 10 11 13 14 15 16 17 18 19 20 21 22 23 24	0.004		
) 1 2 3 4 5 6 7 8 9 10 11 13 14 15 16 17 18 19 20 21 22 23 24	0.002))	
	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24			

Hydrology Studio v 3.0.0.24			06-14-2022	Hydrology Studio v 3.0.0.24	
Pre Bypass Memorial	norial		Hyd. No. 29	Post Bypass Memorial	morial
Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.000 cfs	Hydrograph Type	= NRCS Runoff
Storm Frequency	= 1-yr	Time to Peak	= 0.00 hrs	Storm Frequency	= 1-yr
Time Interval	= 2 min	Runoff Volume	= 0.000 cuft	Time Interval	= 2 min
Drainage Area	= 0.03 ac	Curve Number	= 39	Drainage Area	= 0.08 ac
Tc Method	= User	Time of Conc. (Tc)	= 12.9 min	Tc Method	= User
Total Rainfall	= 1.25 in	Design Storm	= NOAA-D	Total Rainfall	= 1.25 in
Storm Duration	= 24 hrs	Shape Factor	= 484	Storm Duration	= 24 hrs

Project Name: 06-14-2022

Hyd. No. 30

= 1-yr Time to Peak How = 1-yr Time to Peak = 2 min Rundf Volume = 0.08 ac Curve Number = 0.08 ac Curve Number = 1.25 in Design Storm = 2.4 hrs Shape Factor	-			
y = 1-yr = 2 min	Hydrograph lype	= NRCS Runo#	Peak Flow	= 0.000 cts
= 2 min Runoff Volume = 0.08 ac Curve Number = 0.08 ac Time of Conc. (Tc) = 1.25 in Design Storm = 24 hrs Qp = 0.00 cfs	Storm Frequency	= 1-yr	Time to Peak	= 0.00 hrs
= 0.08 ac Curve Number = User Time of Conc. (Tc) = 1.25 in Design Storm = 24 hrs Qp = 0.00 cfs	Time Interval	= 2 min	Runoff Volume	= 0.000 cuft
= User = 1.25 in = 24 hrs Qp = 0.00 cfs Time of Conc. (Tc) Besign Storm Shape Factor Qp = 0.00 cfs	Drainage Area	= 0.08 ac	Curve Number	= 39
= 1.25 in Design Storm = 24 hrs Shape Factor Qp = 0.00 cfs	Tc Method	= User	Time of Conc. (Tc)	= 12.9 min
Appe Factor Qp = 0.00 cfs	Total Rainfall	= 1.25 in	Design Storm	= NOAA-D
Qp = 0.00 cfs	Storm Duration	= 24 hrs	Shape Factor	= 484

	+	_
	$\frac{1}{c}$	3
(d T	ט
	ç	=
	Š	<u> </u>
	ζ	3
	ζ	3
	Í	=

Hydrology Studio v 3.0.0.24

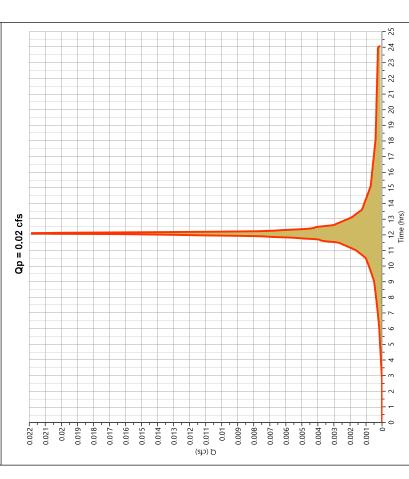
Post Imp Bypass Inlet S.

Project Name:

06-14-2022

Hyd. No. 31

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.022 cfs
Storm Frequency	= 1-yr	Time to Peak	= 12.10 hrs
Time Interval	= 2 min	Runoff Volume	= 70.4 cuft
Drainage Area	= 0.02 ac	Curve Number	86 =
Tc Method	= User	Time of Conc. (Tc)	= 6.0 min
Total Rainfall	= 1.25 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



Hydrograph Report

Hyd. No. 32

06-14-2022 Project Name:

Post F

ഗ
<u>let</u>
SS _
ypa
2
Pe

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.000 cfs
Storm Frequency	= 1-yr	Time to Peak	= 0.00 hrs
Time Interval	= 2 min	Runoff Volume	= 0.000 cuft
Drainage Area	= 0.04 ac	Curve Number	= 39
Tc Method	= User	Time of Conc. (Tc)	= 6.0 min
Total Rainfall	= 1.25 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

Qp = 0.00 cfs

Project Name:

Post Comb. Bypass POA 2

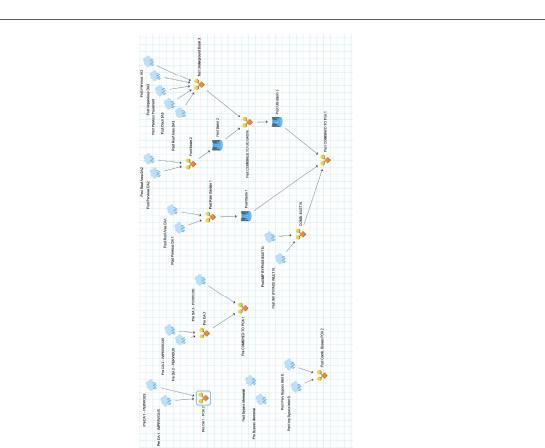
06-14-2022 Hyd. No. 33

= 0.022 cfs	= 12.10 hrs	= 70.4 cuft	= 0.06 ac																						21 22 23 24 25
Peak Flow	Time to Peak	Hydrograph Volume	Total Contrib. Area	ofs																					13 14 15 16 17 18 19 20 (hrs)
ction		i	32	Qp = 0.02 cfs																					0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 Time (hrs)
Hydrograph Type = Junction	Storm Frequency = 1-yr	Time Interval = 2 min	Inflow Hydrographs = 31, 32		0.022	0.021	0.02	0.019	0.018	0.01/	0.016	0.015	0.014	0.013	(sto	- 1000	- 60000	-8000	2000	0.006	0.005	0.004	0.002	0.001	0 1 2 3 4

HYDROGRAPH SUMMARY REPORTS – EMERGENCY SPILLWAY

Project Name: Basin Model

06-14-2022



Hydrograph 2-yr Summary

12.13 12.400 12.17 12.17 12.17 12.17 12.10	Hydrology Studio v 3.0.0.24							
NRCS Runoff Pre DA1 - IMPERVIOUS 0.120 12.13 NRCS Runoff Pre DA1 - PERVIOUS 0.000 24.00 NRCS Runoff Post Book Ma3 0.801 12.17 NRCS Runoff Post Pervious DA3 0.801 12.17 NRCS Runoff Post Pervious DA3 0.000 24.00 NRCS Runoff Post Roof Area DA4 0.323 12.10 NRCS Runoff Post Pervious DA3 0.000 24.00 NRCS Runoff Post Pervious DA3 0.000 24.00 NRCS Runoff Post Pervious DA3 1.217 12.10 Junction Post Pervious DA3 0.000 24.00 NRCS Runoff Post Basin 2 1.617 12.17 Junction Post Basin 2 1.617 12.17 Pond Route Post Basin 3 0.000 24.00 Pond Route Post Basin 3 0.000 12.17 NRCS Runoff Post UD4 BASS INLET N 0.000 24.00 Junction Post WP BYPASS INLET N 0.129 12.10		/drograph ame	Peak Flow (cfs)	Time to Peak (hrs)	Hydrograph Volume (cuft)	Inflow Hyd(s)	Maximum Elevation (ft)	Maximum Storage (cuft)
NRCS Runoff Pre DA 1 - PERVIOUS 0.000 24.00 NRCS Runoff Post Roof Area DA3 0.801 12.17 NRCS Runoff Post Devicus DA4 0.894 12.17 NRCS Runoff Post Pervious DA4 0.000 24.00 NRCS Runoff Post Pervious DA2 0.000 24.00 NRCS Runoff Post Pervious DA2 0.000 24.00 NRCS Runoff Post Pervious DA3 0.120 12.13 Junction Pre DA 1 - POA2 1.617 12.17 Junction Pre DA2 - PERVIOUS 0.000 24.00 NRCS Runoff Post Basin 2 1.617 12.17 Junction Post Basin 2 0.000 14.00 Pond Route Post Basin 3 0.000 12.17 NRCS Runoff Post UDE BA2 - PERVIOUS 0.000 12.10		e DA 1 - IMPERVIOUS	0.120	12.13	474	—		
NRCS Runoff Post Roof Area DA3 0.801 12.17 NRCS Runoff Post Deck DA3 0.884 12.17 NRCS Runoff Post Pervious Pavement 0.414 12.17 NRCS Runoff Post Pervious DA1 0.000 24.00 NRCS Runoff Post Pervious DA2 0.000 24.00 NRCS Runoff Post Pervious DA3 0.120 24.00 NRCS Runoff Post Pervious DA3 0.120 24.00 NRCS Runoff Post Pervious DA3 0.128 12.17 Junction Post Pervious DA3 0.128 12.17 Junction Post Pervious DA3 0.138 12.17 Junction Post Impervious DA3 0.000 24.00 Pond Route Post Basin 2 0.000 12.17 Junction Post Basin 3 0.000 12.17 NRCS Runoff Pre DA2 - PERVIDUS 0.000 24.00 Junction Pre DA3 - PERVIDUS 0.129 12.10 Junction Pre DA3 - PERVIDUS 0.129 12.10		e DA 1 - PERVIOUS	0.000	24.00	0.095	ı		
NRCS Runoff Post Deck DA3 0.884 12.17 NRCS Runoff Post Pervious Pavement 0.414 12.17 NRCS Runoff Post Pervious DA1 0.000 24.00 NRCS Runoff Post Roof Area DA2 0.000 24.00 NRCS Runoff Post Pervious DA3 0.120 12.10 Junction Pre DA 1 - POA2 0.120 12.17 Junction Pre DA 1 - POA2 0.120 24.00 NRCS Runoff Post Roar Garden 1 0.323 12.17 Junction Post Basin 2 0.000 24.00 NRCS Runoff Post Basin 2 0.000 14.00 Pond Route Post Basin 3 0.000 11.57 Vanction Post Basin 2 0.000 11.57 NRCS Runoff Pre DA2 - MPERVICUS 0.000 12.17 NRCS Runoff Pre DA3 - PERVICUS 0.000 24.00 Junction Pre DA3 - PERVICUS 0.000 24.00 Junction Post IMP BYPASS INLET N 0.129 12.10		ost Roof Area DA3	0.801	12.17	3,546	ı		
NRCS Runoff Post Pervious Pavement 0.414 12.17 NRCS Runoff Post Pervious DA1 0.000 24.00 NRCS Runoff Post Roof Area DA2 0.000 24.00 NRCS Runoff Post Pervious DA2 0.120 12.10 Junction Pre DA 1-POA2 0.120 12.13 NRCS Runoff Post Pervious DA3 0.000 24.00 NRCS Runoff Post Pervious DA3 0.138 12.17 Junction Post Pervious DA3 0.138 12.17 Junction Post Basin 2 0.000 24.00 Pond Route Post Basin 2 1.617 12.17 Pond Route Post Basin 3 0.000 14.00 Pond Route Post Basin 3 0.000 11.57 NRCS Runoff Pre DA2 - PERVIOUS 0.000 24.00 Junction Pre DA3 - PERVIOUS 0.0221 12.17 NRCS Runoff Pre DA3 - PERVIOUS 0.000 24.00 Junction Post MP BYPASS INLET N 0.129 12.10 <tr< td=""><td></td><td>ost Deck DA3</td><td>0.884</td><td>12.17</td><td>3,913</td><td>1</td><td></td><td></td></tr<>		ost Deck DA3	0.884	12.17	3,913	1		
NRCS Runoff Post Pervious DA1 0.000 24.00 NRCS Runoff Post Roof Area DA1 0.323 12.10 NRCS Runoff Post Roof Area DA2 0.000 24.00 NRCS Runoff Post Pervious DA3 0.120 12.10 Junction Pre DA1 - POA2 0.120 12.11 Junction Pres DA1 - POA2 0.138 12.17 Junction Post Pervious DA3 0.000 24.00 NRCS Runoff Post Basin 2 1.617 12.17 Junction Post Basin 2 0.000 14.00 Pond Route Post Basin 3 0.000 14.00 Pond Route Post Basin 3 0.000 11.67 NRCS Runoff Pre DA2 - MPERVIOUS 0.000 11.67 NRCS Runoff Pre DA3 - PERVIOUS 0.000 24.00 Junction Pre DA3 - PERVIOUS 0.129 12.10 Junction Pre DA3 - PERVIOUS 0.000 24.00 Junction Post IMP BYPASS INLET N 0.129 12.10		ost Pervious Pavement	0.414	12.17	1,834	ı		
NRCS Runoff Post Roof Area DA1 0323 12.10 NRCS Runoff Post Pervious DA2 0000 24.00 NRCS Runoff Post Roof Area DA2 1617 12.10 Junction Pre DA1 - POA2 12.13 12.10 NRCS Runoff Post Pervious DA3 0.000 24.00 NRCS Runoff Post Pervious DA3 0.138 12.17 Junction Post Basin 2 1.617 12.17 Junction Post Basin 2 0.000 14.00 Pond Route Post Basin 3 0.000 14.00 Pond Route Post Basin 3 0.000 11.67 NRCS Runoff Pre DA2 - MPERVIOUS 0.000 11.67 NRCS Runoff Pre DA3 - PERVIOUS 0.000 24.00 Junction Pre DA3 - PERVIOUS 0.129 12.10 NRCS Runoff Pre DA3 - PERVIOUS 0.000 24.00 Junction Post IMP BYPASS INLET N 0.129 12.10 Junction Post IMP BYPASS INLET N 0.129 12.10 <tr< td=""><td></td><td>ost Pervious DA 1</td><td>0.000</td><td>24.00</td><td>1.47</td><td>ı</td><td></td><td></td></tr<>		ost Pervious DA 1	0.000	24.00	1.47	ı		
NRCS Runoff Post Pervious DA2 0.000 24.00 NRCS Runoff Post Roof Area DA2 1617 12.10 Junction Pre DA1 - POA2 0.120 12.13 NRCS Runoff Post Pervious DA3 0.000 24.00 NRCS Runoff Post Pervious DA3 0.138 12.17 Junction Post Rain Garden 1 0.323 12.17 Junction Post Basin 2 1.617 12.10 Pond Route Post Basin 2 0.000 14.00 Pond Route Post Basin 3 0.000 11.57 NRCS Runoff Post DA2 - MPERVIOUS 0.000 11.57 NRCS Runoff Pre DA3 - PERVIOUS 0.000 24.00 Junction Pre DA3 - PERVIOUS 0.129 12.10 NRCS Runoff Pre DA3 - PERVIOUS 0.129 12.10 Junction Prest MP BYPASS INLET N. 0.129 12.10 Junction Post MP BYPASS INLET N. 0.129 12.10 NRCS Runoff Prest MP BYPASS INLET N. 0.129 12.10	Н	ost Roof Area DA1	0.323	12.10	1,112	1		
NRCS Runoff Post Roof Area DA2 1617 12.10 Junction Pre DA1 - POA2 0.120 12.13 NRCS Runoff Post Pervious DA3 0.000 24.00 NRCS Runoff Post Pervious DA3 0.138 12.17 Junction Post Pasin 2 0.323 12.10 Junction Post Basin 2 1.617 12.10 Pond Route Post Basin 2 0.000 14.00 Pond Route Post Basin 3 0.000 11.57 Pond Route Post Basin 3 0.000 11.57 NRCS Runoff Pre DA 2 - IMPERVIOUS 0.000 1.157 NRCS Runoff Pre DA 2 - FERVIOUS 0.000 24.00 Junction Pre DA 2 - FERVIOUS 0.129 12.10 NRCS Runoff Pre DA 2 - FERVIOUS 0.129 12.10 Junction Prest IMP BYPASS INLET N. 0.129 12.10 Junction Post IMP BYPASS INLET N. 0.129 12.10 NRCS Runoff Prest Expansas Memorial 0.000 24.00 <td></td> <td>ost Pervious DA2</td> <td>0.000</td> <td>24.00</td> <td>2.64</td> <td>ı</td> <td></td> <td></td>		ost Pervious DA2	0.000	24.00	2.64	ı		
Junction Pre DA 1 - POA 2 0.120 12.13 NRCS Runoff Post Pervious DA3 0.000 24.00 NRCS Runoff Post Impervious DA3 0.138 12.17 Junction Post Basin 2 1.237 12.17 Junction Post Basin 2 1.617 12.10 Pond Route Post Basin 2 0.000 14.00 Pond Route Post Basin 3 0.000 14.00 Pond Route Post LOMBINED TO UG BASIN 237 12.17 Pond Route Post LOG Basin 3 0.000 11.67 NRCS Runoff Pre DA 2 - IMPERVIOUS 0.221 12.17 NRCS Runoff Pre DA 2 - PERVIOUS 0.000 24.00 Junction Pre DA 2 - PERVIOUS 0.020 24.00 NRCS Runoff Pre DA 2 - PERVIOUS 0.129 12.10 Junction Pre COMBINED TO POA 1 0.129 12.10 Junction Post IMP BYPASS INLET N. 0.129 12.10 NRCS Runoff Pre Day Sypass Memorial 0.000 24.00 <t< td=""><td>Н</td><td>ost Roof Area DA2</td><td>1.617</td><td>12.10</td><td>5,558</td><td>ı</td><td></td><td></td></t<>	Н	ost Roof Area DA2	1.617	12.10	5,558	ı		
NRCS Runoff Post Pervious DA3 0.000 24.00 NRCS Runoff Post Impervious DA3 0.138 12.17 Junction Post Basin 2 1.237 12.17 Junction Post Basin 2 1.617 12.10 Pond Route Post Basin 2 0.000 14.00 Pond Route Post Basin 3 0.000 13.67 Junction Post LOG Basin 3 0.000 13.67 NRCS Runoff Pre DA2 - IMPERVIOUS 0.000 11.57 NRCS Runoff Pre DA3 - PERVIOUS 0.000 24.00 Junction Pre DA3 - PERVIOUS 0.000 24.00 Junction Pre DA3 - PERVIOUS 0.000 24.00 NRCS Runoff Pre DA3 - PERVIOUS 0.129 12.10 Junction Pret IMP BYPASS INLET N. 0.129 12.10 Junction Post IMP BYPASS INLET N. 0.129 12.10 Junction Post Expass Memorial 0.000 24.00 NRCS Runoff Pret Bypass Memorial 0.000 24.00 <td></td> <td>e DA1-POA2</td> <td>0.120</td> <td>12.13</td> <td>474</td> <td>1, 2</td> <td></td> <td></td>		e DA1-POA2	0.120	12.13	474	1, 2		
NRCS Runoff Post Impervious DA3 0.138 12.17 Junction Post Basin 2 2.237 12.17 Junction Post Basin 2 1617 12.10 Junction Post Basin 2 1617 12.10 Pond Route Post Basin 1 0.000 14.00 Pond Route Post Basin 3 0.000 13.67 Junction Post COMBINED TO UG BAS/N2.237 12.17 Pond Route Post COMBINED TO UG BAS/N2.237 12.17 NRCS Runoff Pre DA2 - PERVICIOUS 0.000 24.00 Junction Pre DA3 - PERVICIOUS 0.000 24.00 Junction Pre DA3 - PERVICIOUS 0.000 24.00 NRCS Runoff Pre DA3 - PERVICIOUS 0.129 12.10 Junction Prest IMP BYPASS INLET N. 0.129 12.10 Junction Post COMBINED TO POA1 0.129 12.10 Junction Prest Bypass Memorial 0.000 24.00 NRCS Runoff Prest Bypass Memorial 0.006 24.00 NR		ost Pervious DA3	0.000	24.00	0.323	ı		
Junction Post Underground Basin 3 2.237 12.17 Junction Post Basin 2 1617 12.10 Junction Post Basin 2 1617 12.10 Pond Route Post Basin 2 1617 12.10 Pond Route Post Basin 3 0.000 14.00 Pond Route Post LOB Basin 3 0.000 11.57 NRCS Runoff Pre DA 2 - PERVIOUS 0.000 11.57 NRCS Runoff Pre DA 3 - PERVIOUS 0.000 24.00 Junction Pre DA 3 - PERVIOUS 0.000 24.00 NRCS Runoff Pre DA 3 - PERVIOUS 0.000 24.00 NRCS Runoff Post IMP BYPASS INLET N. 0.129 12.10 Junction COMB. INLET N. 0.129 12.10 Junction Post COMBINED TO POA 1 0.129 12.10 NRCS Runoff Post Bypass Memorial 0.000 24.00 NRCS Runoff Post IMP Bypass Inlet S. 0.000 24.00 NRCS Runoff Post Comb. Bypass Inlet S. 0.000 24.		ost Impervious DA3	0.138	12.17	611	1		
Junction Post Rain Garden 1 0.323 12.10 Junction Post Basin 2 1617 12.10 Pond Route Post Basin 2 0.000 14.00 Pond Route Post LOS Basin 3 0.000 13.67 Junction Post LOS Basin 3 0.000 11.57 NRCS Runoff Pre DA2 - PERVICOUS 0.000 11.57 NRCS Runoff Pre DA3 - PERVICOUS 0.000 24.00 Junction Pre CAMBINED TO POA1 0.221 12.17 NRCS Runoff Pre CAMBINED TO POA1 0.220 24.00 NRCS Runoff Post IMP BYPASS INLET N. 0.129 12.10 Junction COMB INLET N. 0.129 12.10 Junction Post IMP Bypass Memorial 0.000 24.00 NRCS Runoff Post Bypass Memorial 0.000 24.00 NRCS Runoff Post Imp Bypass Inlet S. 0.000 24.00 NRCS Runoff Post Bypass Memorial 0.000 24.00 NRCS Runoff Post Dypass Inlet S. 0.000 <		ost Underground Basin 3	2.237	12.17	9,905	3, 4, 5, 11, 12		
Junction Post Basin 2 1617 12.10 Pond Route Post Basin 1 0.000 14.00 Pond Route Post ComBINED TO UG BASIN 2237 12.17 Pond Route Post COMBINED TO UG BASIN 2237 12.17 NRCS Runoff Pre DA 2 - MPERVIOUS 0.000 Junction Pre DA 3 - PERVIOUS 0.000 Junction Pre DA 3 - PERVIOUS 0.000 Junction Pre COMBINED TO POA 1 0.221 12.17 NRCS Runoff Post IMP BYPASS INLET N. 0.000 24.00 NRCS Runoff Post IMP BYPASS INLET N. 0.129 12.10 Junction COMB INLET N. 0.129 12.10 Junction Post EOMBINED TO POA 1 0.129 12.10 NRCS Runoff Post EOMBINED TO POA 1 0.129 12.10 Junction COMB INLET N. 0.129 12.10 NRCS Runoff Post EOMBINED TO POA 1 0.129 12.10 NRCS Runoff Post EOMBINED TO POA 1 0.000 24.00 NRCS Runoff Post EOWBINED TO		ost Rain Garden 1	0.323	12.10	1,113	6, 7		
Pond Route Post Basin 1 0.000 14.00 Pond Route Post Basin 1 0.000 13.67 Junction Post COMBINED TO UG BASIN2237 12.17 Pond Route Post UG Basin 3 0.000 11.57 NRCS Runoff Pre DA 2 - PERVIOUS 0.000 11.57 NRCS Runoff Pre DA 3 - PERVIOUS 0.000 24.00 Junction Pre COMBINED TO POA 1 0.221 12.17 NRCS Runoff Post IMP BYPASS INLET N. 0.000 24.00 NRCS Runoff Post IMP BYPASS INLET N. 0.129 12.10 Junction COMB. INLET N. 0.129 12.10 NRCS Runoff Post Bypass Memorial 0.000 24.00 NRCS Runoff Post Exphass Memorial 0.000 24.00 NRCS Runoff Post Exphass Memorial 0.000 24.00 NRCS Runoff Post Exphass Memorial 0.000 24.00 NRCS Runoff Post Comb. Bypass Inlet S. 0.005 24.00 NRCS Runoff Post Comb. Bypass POA2 0.005		ost Basin 2	1.617	12.10	5,561	6,8		
Pond Route Post Basin 1 0.000 13.67 Junction Pest COMBINED TO UG BASINZ237 12.17 Pond Route Post UG Basin 3 0.000 11.57 NRCS Runoff Pre DA 2 - IMPERVIOUS 0.000 11.67 Junction Pre DA 3 - PERVIOUS 0.000 24.00 Junction Pre COMBINED TO POA 1 0.221 12.17 NRCS Runoff Post IMP BYPASS INLET N. 0.000 24.00 NRCS Runoff Post IMP BYPASS INLET N. 0.129 12.10 Junction COMB. INLET N. 0.129 12.10 NRCS Runoff Post Bypass Memorial 0.000 24.00 NRCS Runoff Post Bypass Memorial 0.000 24.00 NRCS Runoff Post Eov Bypass Memorial 0.000 24.00 NRCS Runoff Post Bypass Memorial 0.000 24.00 NRCS Runoff Post Eov Bypass Inlet S. 0.005 24.00 NRCS Runoff Post Eov Bypass POA 2 0.005 24.00		ost Basin 2	0.000	14.00	-0.001	15	13.89	1,317
Junction Post COMBINED TO UG BASIN2237 12.17 Pond Route Post UG Basin 3 0.000 11.57 NRCS Runoff Pre DA2 - IMPERVIOUS 0.221 12.17 NRCS Runoff Pre DA3 - PERVIOUS 0.000 0.00 Junction Pre DA3 - PERVIOUS 0.000 24.00 Junction Pre COMBINED TO POA1 0.221 12.17 NRCS Runoff Post IMP BYPASS INLET N 0.000 24.00 NRCS Runoff Post WB PPASS INLET N 0.129 12.10 Junction Post Edypass Memorial 0.000 24.00 NRCS Runoff Post Bypass Memorial 0.000 24.00 NRCS Runoff Post Bypass Memorial 0.000 24.00 NRCS Runoff Post Imp Bypass Inlet S. 0.005 24.00 NRCS Runoff Post Imp Bypass Inlet S. 0.000 24.00 Junction Post Comb. Bypass POA2 0.005 12.10		ost Basin 1	0.000	13.67	0.001	14	14.45	286
Pond Route Post UG Basin 3 0.000 11.57 NRCS Runoff Pre DA2 - IMPERVIOUS 0.221 12.17 NRCS Runoff Pre DA3 - PERVIOUS 0.000 0.00 Junction Pre DA3 - PERVIOUS 0.000 24.00 Junction Pre COMBINED TO POA1 0.221 12.17 NRCS Runoff Post IMP BYPASS INLET N. 0.000 24.00 NRCS Runoff Post IMP BYPASS INLET N. 0.129 12.10 Junction COMB. INLET N. 0.129 12.10 NRCS Runoff Post Bypass Memorial 0.000 24.00 NRCS Runoff Post Bypass Memorial 0.000 24.00 NRCS Runoff Post Imp Bypass Inlet S. 0.000 24.00 NRCS Runoff Post Imp Bypass Inlet S. 0.000 24.00 NRCS Runoff Post Fow Bypass Inlet S. 0.000 24.00 Junction Post Fow Bypass POA2 0.005 12.10		ost COMBINED TO UG BAS	N2.237	12.17	9,905	13, 16		
NRCS Runoff Pre DA2 - IMPERVIOUS 0.021 12.17 NRCS Runoff Pre DA2 - PERVIOUS 0.000 0.00 Junction Pre DA3 - PERVIOUS 0.021 12.17 NRCS Runoff Pre COMBINED TO POA1 0.221 12.17 NRCS Runoff Post IMP BYPASS INLET N. 0.000 24.00 NRCS Runoff Post IMP BYPASS INLET N. 0.129 12.10 Junction COMBINED TO POA1 0.129 12.10 NRCS Runoff Post Bypass Memorial 0.000 24.00 NRCS Runoff Post Imp Bypass Inlet S. 0.005 24.00 NRCS Runoff Post Imp Bypass Inlet S. 0.000 24.00 NRCS Runoff Post Imp Bypass Inlet S. 0.000 24.00 NRCS Runoff Post Imp Bypass Inlet S. 0.000 24.00 Junction Post Comb. Bypass Inlet S. 0.000 24.00		ost UG Basin 3	0.000	11.57	0.000	18	12.31	1,608
NRCS Runoff Pre DA2 - PERVIOUS 0.000 0.000 Junction Pre DA3 - PERVIOUS 0.000 24.00 Junction Pre COMBINED TO POA1 0.221 12.17 NRCS Runoff Prest IMP BYPASS INLET N 0.000 24.00 NRCS Runoff Poest IMP BYPASS INLET N 0.129 12.10 Junction COMB INLET N 0.129 12.10 Junction Poest Bypass Memorial 0.000 24.00 NRCS Runoff Poest Bypass Memorial 0.000 24.00 NRCS Runoff Poest Imp Bypass Inlet S. 0.000 24.00 NRCS Runoff Poest Bypass POA2 0.005 24.00		e DA 2 - IMPERVIOUS	0.221	12.17	978	1		
Junction Pre DA 2 0.221 12.17 NRCS Runoff Pre DA 3 - PERVIOUS 0.000 24.00 Junction Pre COMBINED TO POA 1 0.221 12.17 NRCS Runoff Post IMP BYPASS INLET N. 0.000 24.00 Junction COMB. INLET N. 0.129 12.10 Junction COMB. INLET N. 0.129 12.10 NRCS Runoff Pre Bypass Memorial 0.000 24.00 NRCS Runoff Post Bypass Memorial 0.000 24.00 NRCS Runoff Post Imp Bypass Inlet S. 0.005 24.00 NRCS Runoff Post Tomb. Bypass Inlet S. 0.000 24.00 Junction Post Comb. Bypass POA 2 0.005 24.00		e DA 2 - PERVIOUS	0.000	0.00	0.000	ı		
NRCS Runoff Pre DA 3 - PERVIOUS 0.000 24.00 Junkton Pre COMBINED TO POA 1 0.221 12.17 NRCS Runoff Post IMP BYPASS INLET N. 0.000 24.00 Junction Post COMBINED TO POA 1 0.129 12.10 Junction Post COMBINED TO POA 1 0.129 12.10 NRCS Runoff Pre Bypass Memorial 0.000 24.00 NRCS Runoff Post Bypass Memorial 0.000 24.00 NRCS Runoff Post Imp Bypass Inlet S. 0.005 12.10 NRCS Runoff Post Pow Bypass Inlet S. 0.005 24.00 Junction Post Comb. Bypass POA 2 0.065 12.10		e DA 2	0.221	12.17	978	20, 21		
Junction Pre COMBINED TO POA1 0.221 12.17 NRCS Runoff Post IMP BYPASS INLET N. 0.000 24.00 NRCS Runoff Post CMB INLET N. 0.129 12.10 Junction COMB INLET N. 0.129 12.10 NRCS Runoff Pre Bypass Memorial 0.000 24.00 NRCS Runoff Pret Bypass Memorial 0.000 24.00 NRCS Runoff Post Imp Bypass Inlet S. 0.006 24.00 NRCS Runoff Post Imp Bypass Inlet S. 0.006 24.00 URCS Runoff Post Comb. Bypass Inlet S. 0.006 24.00		e DA 3 - PERVIOUS	0.000	24.00	1.47	ı		
NRCS Runoff Post IMP BYPASS INLET N. 0.000 24.00 NRCS Runoff Post IMP BYPASS INLET N. 0.129 12.10 Junction COMB INLET N. 0.129 12.10 Junction Post COMBINED TO POA 1 0.129 12.10 NRCS Runoff Post Bypass Memorial 0.000 24.00 NRCS Runoff Post Imp Bypass Inlet S. 0.006 24.00 NRCS Runoff Post Imp Bypass Inlet S. 0.006 24.00 Junction Post Comb. Bypass POA 2 0.0065 12.10		e COMBINED TO POA 1	0.221	12.17	086	22, 23		
NRCS Runoff Post IMP BYPASS INLET N. 0.129 12.10 Junction COMB. INLET N. 0.129 12.10 Junction Post COMBINED TO POA 1 0.129 12.10 NRCS Runoff Pre Bypass Memorial 0.000 24.00 NRCS Runoff Post typess Memorial 0.000 24.00 NRCS Runoff Post typess Inlet S. 0.005 24.00 NRCS Runoff Post Eavi Bypass Inlet S. 0.000 24.00 Junction Post Comb. Bypass POA 2 0.065 12.10		ost IMP BYPASS INLET N.	0.000	24.00	2.35	I		
Junction COMB. INLET N. 0.129 12.10 Junction Post COMBINED TO POA 1 0.129 12.10 NRCS Runoff Pre Bypass Memorial 0.000 24.00 NRCS Runoff Post Bypass Memorial 0.000 24.00 NRCS Runoff Post Ever Bypass Inlet S. 0.065 12.10 NRCS Runoff Post Comb. Bypass Inlet S. 0.000 24.00 Junction Post Comb. Bypass POA 2 0.065 12.10		ost IMP BYPASS INLET N.	0.129	12.10	445	ı		
Junction Post COMBINED TO POA 1 0.129 12.10 NRCS Runoff Pre Bypass Memorial 0.000 24.00 NRCS Runoff Post Bypass Memorial 0.000 24.00 NRCS Runoff Post Imp Bypass Inlet S. 0.005 12.10 NRCS Runoff Post Pavv Bypass Inlet S. 0.000 24.00 Junction Post Comb. Bypass POA 2 0.065 12.10		OMB. INLET N.	0.129	12.10	447	25, 26		
NRCS Runoff Pre Bypass Memorial 0.000 24.00 NRCS Runoff Post Bypass Inlet S. 0.000 24.00 NRCS Runoff Post Perv Bypass Inlet S. 0.005 12.10 NRCS Runoff Post Downbass Inlet S. 0.000 24.00 Junction Post Comb. Bypass POA 2 0.005 12.10		ost COMBINED TO POA 1	0.129	12.10	447	17, 19, 27		
NRCS Runoff Post Bypass Memorial 0.000 24.00 NRCS Runoff Post Imp Bypass Inlet S. 0.065 12.10 NRCS Runoff Post Perv Bypass Inlet S. 0.000 24.00 Junction Post Comb. Bypass POA.2 0.065 12.10		e Bypass Memorial	0.000	24.00	696.0	1		
NRCS Runoff Post Imp Bypass Inlet S. 0.065 12.10 NRCS Runoff Post Perv Bypass Inlet S. 0.000 24.00 Junction Post Comb. Bypass POA 2 0.065 12.10		ost Bypass Memorial	0.000	24.00	2.59	1		
NRCS Runoff Post Perv Bypass Inlet S. 0.000 24.00 Junction Post Comb. Bypass POA 2 0.065 12.10		ost Imp Bypass Inlet S.	0.065	12.10	222	ı		
Junction Post Comb. Bypass POA 2 0.085 12.10		ost Perv Bypass Inlet S.	0.000	24.00	1.18	1		
		ost Comb. Bypass POA 2	0.065	12.10	223	31, 32		
_								

Hydrology Studio v 3.0.0.24

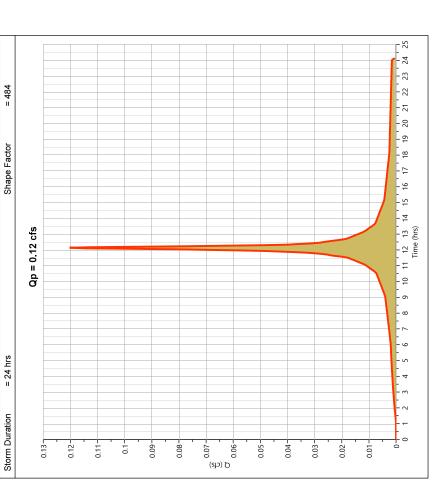
Pre DA 1 - IMPERVIOUS

Project Name:

06-14-2022

Hyd. No. 1 = 12.13 hrs= 0.120 cfs= NOAA-D = 474 cuft = 9.8 min = 98 = 484 Time of Conc. (Tc) Design Storm Runoff Volume Curve Number Shape Factor Time to Peak Peak Flow = NRCS Runoff = 0.04 ac = User = 3.50 in = 2 min = 24 hrs = 2-yr Hydrograph Type Storm Frequency Drainage Area Time Interval Total Rainfall

Tc Method



Hydrograph Report

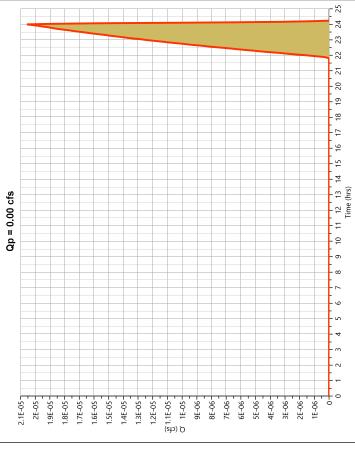
Hydrology Studio v 3.0.0.24

06-14-2022

Project Name:

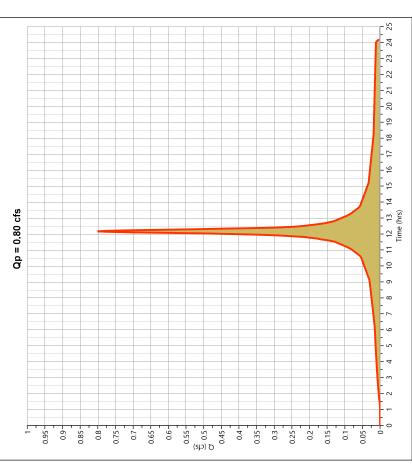
Hyd. No. 2
I - PERVIOUS
Pre DA 1 -

Storm Frequency = 2-yr Time to Peak = 22	Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.000 cfs
Part = 2 min Runoff Volume	Storm Frequency		Time to Peak	= 24.00 hrs
Integer Area = 0.05 ac Curve Number	Time Interval	= 2 min	Runoff Volume	= 0.095 cuft
Method = User Time of Conc. (Tc) al Rainfall = 3.50 in Design Storm m Duration = 24 hrs Shape Factor mposite CN Worksheat Shape Factor (sc) DN OWNSHeat Open space (sc)	Drainage Area	= 0.05 ac	Curve Number	= 37*
al Rainfall = 3.50 in Design Storm m Duration = 24 hrs Shape Factor mposite CN Worksheat (sc) CN Order Storm youn space wooding CN Windmand Employed Qp = 0.00 cfs 2E-05 19E-05	Tc Method	= User	Time of Conc. (Tc)	= 9.8 min
Manage Pactor Shape Factor Shape Factor Manage Pactor	Total Rainfall	= 3.50 in	Design Storm	= NOAA-D
(sa) CN Worksheet (sa) CN DESCRIPTON (sa) Open capace 30 open capace 31 Weighted CN Method Employed 21-05 22-05	Storm Duration	= 24 hrs	Shape Factor	= 484
(ex) CN DESCRIPTION 39 Open space 37 Weighted CN Method Employed 2.1E-05 2E-05	* Composite CN Works	sheet		
30 wooded 21 Weighted CN Method Employed 2. 1E-0.5	(ac) CN 39	SCRIPTION as space		
	37	oded sighted CN Method Employed		
2.1E-05 2E-05 1.9E-05	!	ď	= 0.00 cfs	
1.9E-05	2.1E-05			
1.9E-05	ZE-02-			
	1.9E-05			



Post Roof Area DA3

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.801 cfs
Storm Frequency	= 2-yr	Time to Peak	= 12.17 hrs
Time Interval	= 2 min	Runoff Volume	= 3,546 cuft
Drainage Area	= 0.29 ac	Curve Number	86 =
Tc Method	= User	Time of Conc. (Tc)	= 10.0 min
Total Rainfall	= 3.50 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



Hydrograph Report

06-14-2022 Project Name:

Hyd No. 3

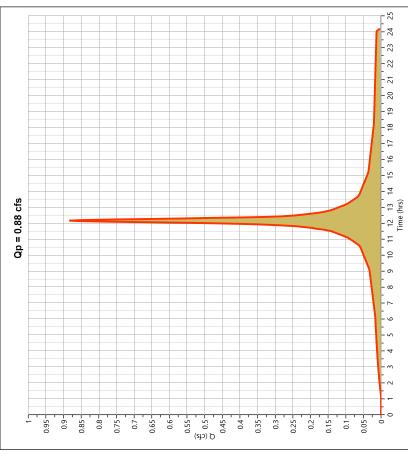
06-14-2022

Project Name:

4
0
Z
7
>
I

Hyd.
က
K DA
Decl
Post Deck DA3

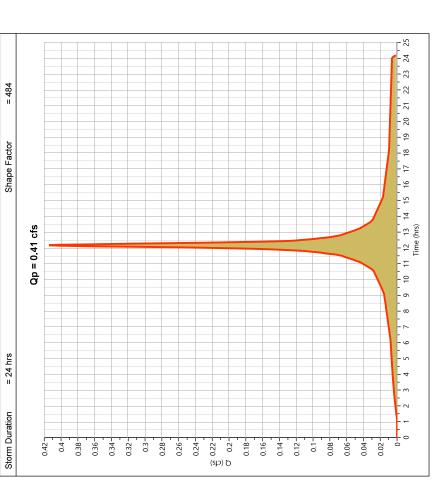
H	0000	ū	3. 100.0
Hydrograph Type	= NKCS Kuno#	Peak Flow	= 0.884 cfs
Storm Frequency	= 2-yr	Time to Peak	= 12.17 hrs
Time Interval	= 2 min	Runoff Volume	= 3,913 cuft
Drainage Area	= 0.32 ac	Curve Number	86 =
Tc Method	= User	Time of Conc. (Tc)	= 12.8 min
Total Rainfall	= 3.50 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



06-14-2022

Project Name:

Post Pervious Pavement	avement		Hyd. No. 5
Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.414 cfs
Storm Frequency	= 2-yr	Time to Peak	= 12.17 hrs
Time Interval	= 2 min	Runoff Volume	= 1,834 cuft
Drainage Area	= 0.15 ac	Curve Number	= 98
Tc Method	= User	Time of Conc. (Tc)	= 12.8 min
Total Rainfall	= 3.50 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



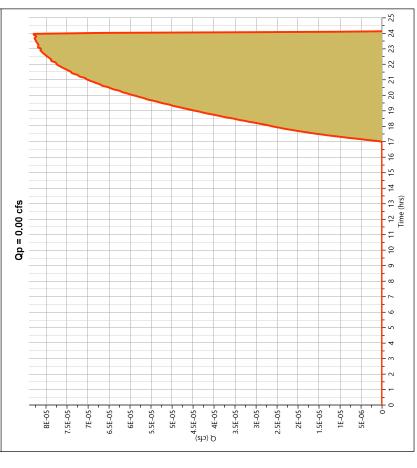
Hydrograph Report

06-14-2022

Project Name:

_
3 DA 1
ious
Per∨
Post

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.000 cfs
Storm Frequency	= 2-yr	Time to Peak	= 24.00 hrs
Time Interval	= 2 min	Runoff Volume	= 1.47 cuft
Drainage Area	= 0.05 ac	Curve Number	= 39
Tc Method	= User	Time of Conc. (Tc)	= 6.0 min
Total Rainfall	= 3.50 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



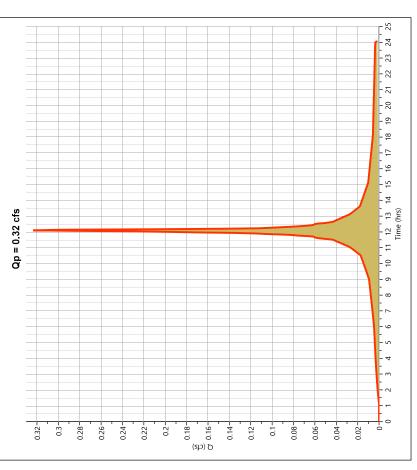
Post Roof Area DA1

06-14-2022

Project Name:

Hyd No. 7

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.323 cfs
Storm Frequency	= 2-yr	Time to Peak	= 12.10 hrs
Time Interval	= 2 min	Runoff Volume	= 1,112 cuft
Drainage Area	= 0.1 ac	Curve Number	86 =
Tc Method	= User	Time of Conc. (Tc)	= 6.0 min
Total Rainfall	= 3.50 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



Hydrograph Report

Post Pervious DA2

06-14-2022

Project Name:

Vd. No. 8	
I	

2 min			- 250	5
= 2 min		2-yr	Time to Peak	= 24.00 hrs
1 2.09 ac		2 min	Runoff Volume	= 2.64 cuft
= User = 3.50 in = 24 hrs Op = 0.00 cfs Op = 0.00 cfs		0.09 ac	Curve Number	= 39
an = 24 hrs Shape Factor Qp = 0.00 cfs		User	Time of Conc. (Tc)	= 6.0 min
Appe Factor Qp = 0.00 cfs		3.50 in	Design Storm	= NOAA-D
200015 200011 200011 200011 200011 6E-05 6E-05 6E-05 6E-05 1E-05 1E-05		24 hrs	Shape Factor	= 484
0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 1.0000 0.0000 1.00000 1.00000 1.00000 1.00000 1.00000 1.00000 1.00000 1.00000 1		Qp = 0.00 cfs		
0.0000 0.0000 0.0000 0.000 9E-6 6E-6 5E-7	0.00015			1
0.0000 0.0000 0.0000 9E-6 6E-7 7E-7 1E-6	0.00014			
0.0000 0.0000 9E-0 9E-0 7E-0 6E-0 5E-0 1E-0	0.00013			_
0.0000 9E-0 9E-0 6E-6 6E-1 1E-0	0.00012			
0.000 9E-0 6E-0 5E-0 1E-0	0.00011			
9E-0 8E-0 6E-0 9E-0 1E-0	0.0001			
8E-0 7E-0 6E-0 5E-0 2E-0 1E-0	9E-05			
7E-7 7E-7 7E-7 7E-7 7E-7 7E-7 7E-7 7E-7				
7E-0 6E-0 5E-0 1E-0 1E-0				
6E-05- 5E-05- 4E-05- 3E-05- 1E-05- 1E-05-				
4E-05- 3E-05- 1E-05- 1E-05-	6E-05			
4E-05- 3E-05- 1E-05-	SE-05-			
3E-05-	4E-05-			
2E-05-	3E-05-			
1E-05-	2E-05-			
	1E-05 -			

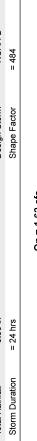
Post Roof Area DA2

06-14-2022

Hyd. No. 9

Project Name:

Hydrograph Type	= NRCS Runoff	Peak Flow	= 1.617 cfs
Storm Frequency	= 2-yr	Time to Peak	= 12.10 hrs
Time Interval	= 2 min	Runoff Volume	= 5,558 cuft
Drainage Area	= 0.5 ac	Curve Number	86 =
Tc Method	= User	Time of Conc. (Tc)	= 6.0 min
Total Rainfall	= 3.50 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



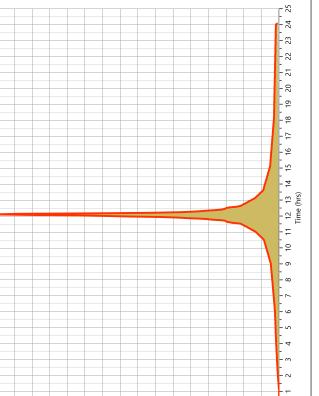
Qp = 1 62 cfs 1.9

13 1.1

Q (cfs)

0.6

0.3



Hydrograph Report

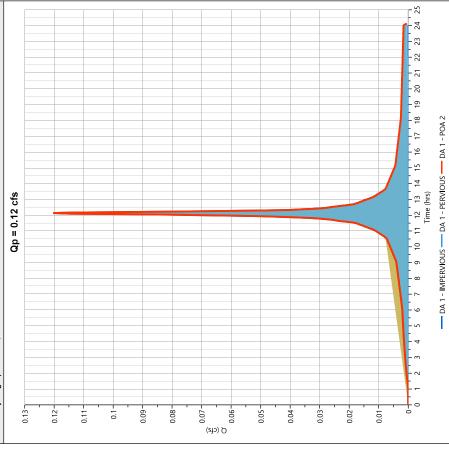
Hyd. No. 10

06-14-2022

Project Name:

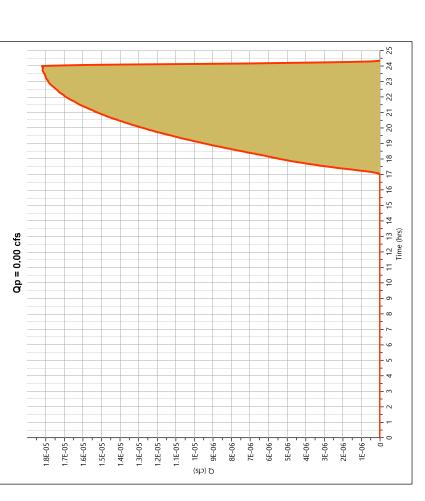
Pre DA 1 - POA 2

= 0.120 cfs	= 12.13 hrs	= 474 cuft	= 0.09 ac	
Peak Flow	Time to Peak	Hydrograph Volume = 474 cuft	Total Contrib. Area	
= Junction	= 2-yr	= 2 min	= 1, 2	
Hydrograph Type	Storm Frequency :	Time Interval	Inflow Hydrographs = 1, 2	



Post Pervious DA3

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.000 cfs
Storm Frequency	= 2-yr	Time to Peak	= 24.00 hrs
Time Interval	= 2 min	Runoff Volume	= 0.323 cuft
Drainage Area	= 0.01 ac	Curve Number	= 39
Tc Method	= User	Time of Conc. (Tc)	= 12.8 min
Total Rainfall	= 3.50 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



Hydrograph Report

06-14-2022 Project Name:

Hyd. No. 11

06-14-2022

Project Name:

DA3	0000
Post Impervious DA3	

Storm Frequency = 2-yr Time Interval = 2 min Drainage Area = 0.05 ac To Method = User Total Rainfall = 3.50 in Storm Duration = 24 hrs	in 5 ac on in one of the contract of the contr	Time to Peak Runoff Volume Curve Number Time of Conc. (Tc) Design Storm Shape Factor	= 12.17 hrs = 611 cuft = 98 = 12.8 min
	2 5 0	Runoff Volume Curve Number Time of Conc. (Tc) Design Storm Shape Factor	= 611 cuft = 98 = 12.8 min
	2 5 0	Curve Number Time of Conc. (Tc) Design Storm Shape Factor	= 98 = 12.8 min
	5.0	Time of Conc. (Tc) Design Storm Shape Factor	= 12.8 min
		Design Storm Shape Factor	2
		Shape Factor	1-KCN1-
0.13	Qp = 0.14 cfs		= 484
0.13			
0.12			
- 21.0			
0.11			
0.1			
60.0			
(sJ:			
φ (0.00) Φ (0.00)			
0.06			
0.05			
0.04			
0.03			
0.02			
10:0			

-	ţ		
	Ì)
	Š		1
	(1)
۵	1	ľ	
	,		
-	7	_	
-	3		
	ׅׅׅׅׅ֡֒֝֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜	Ţ	
-	֡֝֝֓֜֜֜֜֝֓֜֜֜֓֓֓֓֓֓֜֜֜֓֓֓֓֓֓֜֓֜֓֜֓֜֓֜֓֡֓֜֡֓֜֡֓֡֓֡֓֜֡֓֡֡֡֡֓֜֡֡֡֡֓֜֜֡֡֡֡֡֡	Ţ	2
-	<u>כ</u> ככ	7	
	200	7	2
-	2000		
-	2020		
-	2017017		

Hydrology Studio v 3.0.0.24

Post Underground Basin 3

06-14-2022

Project Name:

Hyd. No. 13

	H			
= 2.237 cfs = 12.17 hrs	= 9,905 cuft	= 0.82 ac		
Peak Flow Time to Peak	Hydrograph Volume	Total Contrib. Area		16 17 18 19 20 3
			Qp = 2.24 cfs	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 Time (hrs)
				- 6
= Junction = 2-yr	= 2 min	= 3, 4, 5, 11, 12		4 5 6 7 8

Hydrograph Report

06-14-2022

Project Name:

No 14

Hyd.
_
_
rden
in Ga
Post Rain Garden
Po

Time to Peak = 12.10 hrs Hydrograph Volume = 1,113 cuft Total Contrib. Area = 0.15 ac Total Contrib. Area = 10.15 ac Total Contrib. Area = 10.15 ac Total Contrib. Area = 10.15 ac Total Contrib. Area = 10.15 ac Total Contrib. Area = 10.15 ac Total Contrib. Area = 10.15 ac Total Contrib. Area = 1.11 ac	= 2-yr		= 7-vr	Time to Deal	
Hydrograph Volume = 1,113 cu	= 6, 7 Qp = 0.32 cfs Total Contrib. Area = 0.15 ac Qp = 0.32 cfs		- 2 -yı	IIMe to Peak	= 12.10 hrs
Ap = 0.32 cfs Op = 0.32 cfs Ap = 0.32 cfs	April 2 13 14 15 16 17 18 19 20 21 22 23 24 18 19 20 21 22 23 24 18 19 20 21 22 23 24 18 19 20 21 22 23 24 18 19 20 21 22 23 24 18 19 20 21 22 23 24		= 2 min	Hydrograph Volume	= 1,113 cuft
Qp = 0.32 cfs	Qp = 0.32 cfs The last is 14 15 16 17 18 19 20 21 22 23 24 Three last is 14 15 16 17 18 19 20 21 22 23 24 Three last is 15 16 17 18 19 20 21 22 23 24 Three last is 15 16 17 18 19 20 21 22 23 24 Three last is 15 16 17 18 19 20 21 22 23 24 Three last is 16 17 18 19 20 21 22 23 24 Three last is 16 17 18 19 20 21 22 23 24 Three last is 16 17 18 19 20 21 22 23 24 Three last is 16 17 18 19 20 21 22 23 24 Three last is 16 17 18 19 20 21 22 23 24 Three last is 16 17 18 19 20 21 22 23 24 Three last is 16 17 18 19 20 21 22 23 24 Three last is 16 17 18 18 19 20 21 22 23 24 Three last is 16 17 18 18 19 20 21 22 23 24 Three last is 16 17 18 18 18 20 21 22 23 24 Three last is 16 17 18 18 18 20 21 22 23 24 Three last is 16 17 18 18 18 20 21 22 23 24 Three last is 16 17 18 20 21 22 21 22 22 22 22 22 22 22 22 22 22	0.32	= 6, 7	Total Contrib. Area	= 0.15 ac
	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 Time (hs)	0.32	Qp = 0.32 cfs		
	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 Time (hrs)				
	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 Time (hrs)				
	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 Time (frs.)	0.3			
	Time (frs.) Time (frs.) Time (frs.) Time (frs.)	0.28			
	Time (hrs) Time (hrs) Time (hrs)				
	Time (hrs) 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 Time (hrs)	0.26			
	Time (hrs) 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 Time (hrs)	0.24			
	Time (hrs) Time (hrs) Time (hrs)	0.22			
	Time (hrs) Time (hrs)	, (
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	Time (hrs) Time (hrs) Time (hrs)	0.2			
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	Time (hrs) Time (hrs) Time (hrs)	(s):			
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	Time (hrs) Time (hrs) Time (hrs)	Q 0.16			
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	Time (hrs.) 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 10 11 2 13 14 15 16 17 18 19 20 21 22 23 24 24 24 24 24 24 24 24 24 24 24 24 24	0.14			
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	Time (hrs)	0.12			
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 Time (hrs)	0.1			
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	Time (hts)	0.08			
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	Time (hrs)	0.06			
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 1me (hts)	0.04			
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 Time (hrs)	- 0.00			
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 Time (hrs)				
	Time (hrs) Time (hrs)	- 1 -	5 6 7 8 9 10 11	14 15 16 17 18 19 20	22 23 24

Hydrology Studio v 3.0.0.24

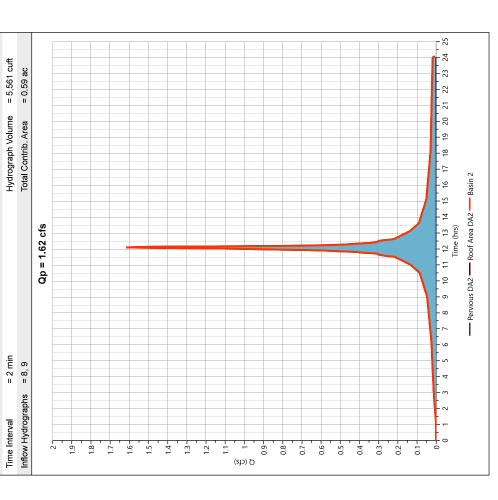
Post Basin 2

06-14-2022

Hyd. No. 15

Project Name:

= 12.10 hrs = 5,561 cuft = 1.617 cfs Time to Peak Peak Flow = Junction = 2-yr = 2 min Hydrograph Type Storm Frequency Time Interval



Hydrograph Report

06-14-2022 Project Name:

Hyd. No. 16

Post Basin 2

Time to Peak	Storm Frequency			
Hydrograph Volume Max. Storage Max. Storage Ap = 0.00 cfs Ap = 0.00 cfs Ap = 0.00 cfs Ap = 0.00 cfs		= 2-yr	Time to Peak	= 14.00 hrs
Max. Storage Max. Storage Qp = 0.00 cfs 4 5 6 7 8 9 10 11 12	Time Interval	= 2 min	Hydrograph Volume	= -0.001 cuft
Ap = 0.00 cfs Ap = 0.00 cfs Ap = 0.00 cfs Ap = 0.00 cfs	Inflow Hydrograph	= 15 - Basin 2	Max. Elevation	= 13.89 ft
A Pourting by Storage Indication Method Qp = 0.00 cfs 1.9 1.1 1.1 1.1 1.1 1.1 1.1 1.	Pond Name	= Basin 2	Max. Storage	= 1,317 cuft
Qp = 0.00 cfs	Pond Routing by Storage	ndication Method		
1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1		= do	: 0.00 cfs	
1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1				
1.1 1.2 1.3 1.3 1.3 1.3 1.3 1.3 1.3 1.3	1.9			
1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1	1.8			
1.5 1.2 1.3 1.2 1.1 1.1 1.1 1.1 1.1 1.1 1.1	1.7			
1.5 1.1 1.1 1.1 1.1 1.1 1.1 1.1	1.6			
1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1	1.5			
1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1	1.4			
1.1. 1.1.	1,0			
1.1. 1.1.	j ,			
0.05	Ŋ. F			
0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	_			
2				
2 3 4 5 6 7 8 9 10 11 12 13	6.0			
2 3 4 5 6 7 8 9 10 11 12 13 13 14 5 15 15 15 15 15 15 15 15 15 15 15 15 1	8.0			
1 2 3 4 5 6 7 8 9 10 11 12 13	0.7			
2 3 4 5 6 7 8 9 10 11 12 13 13 14 15 13 15 15 15 15 15 15 15 15 15 15 15 15 15	9.0			
2 3 4 5 6 7 8 9 10 11 12 13	0.5			
1 2 3 4 5 6 7 8 9 10 11 12 13	0.4			
2 3 4 5 6 7 8 9 10 11 12 13	0.3			
1 2 3 4 5 6 7 8 9 10 11 12 13	0.7			
1 2 3 4 5 6 7 8 9 10 11 12 13	;			
		3 4 5	9 10 11	ŀ

Pond Report

Basin 2

Pond Report

Basin 2

06-14-2022

Project Name:

Stage-Storage	
	1

Stage-Storage	Descrip	otion	Input	Stage	Elevation	Confour Area	Incr. Storage	Total Storage
Notine Calc None 13:00			-	Œ	£	(sqft)	(cnft)	(cnft)
Volume Calc None 1350 1509 678 678 678 Volume Calc None 1500 1400 1814 831 1500 1500 2 00 1500 2.486 1,159 941 2,699 1,599 9,699 9,699 2 50 1550 2.844 1,1333 4,4991 9,200 9,200 9,200 9,200 9,200 9,200 9,200 9,200 9,200 1,209 9,200 9,200 1,209 9,200 9,000 <	Bottom Elevati	on, ft	13.00	000	13.00	1 201	,	0000
Stage-Storage Stage-Storage Stage-Storage Stage-Storage Time 1844 831 1550 2 151 1520 2 1520 2 1541 1533 2 1520 2 1541 1533 2 1541 1541 1541 1541 1541 1541 1541 154	Void	(%) s	100.00	0.50	13.50	1,509	678	678
Stage-Storage Stage-Storage Stage-Storage Time Stage Storage S	Volume	Calc	None	1.00	14.00	1,814	831	1,508
Stage-Storage Stage-Storage Stage-Storage Stage-Storage Stage-Storage Stage-Storage Stage-Storage				1.50	14.50	2,151	991	2,500
Stage-Storage Stage-Storage Stage-Storage Stage-Storage Stage-Storage Stage-Storage Stage-Storage Stage-Storage				2.00	15.00	2,486	1,159	3,659
Stage-Storage Stage-Storage				2.50	15.50	2,844	1,333	4,991
Stage-Storage Stage-Storage 1000 Stage-Storage Stage-Sto				2.90	15.90	3,202	1,209	6,200
Stage-Storage								
Stage-Storage Stage-Storage 1000 2000 3000 4000 5000 6000								
Stage-Storage Stage-Storage								
Stage-Storage Stage-Storage								
Stage-Storage Stage-Storage 2.6 2.7 2.7 2.7 2.7 2.7 2.7 2.7 2.7 2.7 2.7								
Stage-Storage Stage-Storage 1000 Stage-Storage 24 24 24 24 24 24 24 24 24 2								
Stage-Storage Stage-Storage 2.6 2.7 2.7 2.7 2.7 2.7 2.7 2.7 2.7 2.7 2.7								
26 27 27 27 27 27 27 27 27 27 27 27 27 27				Stage-5	Storage			
1000 2000 4000 5000 6000	15.8							5.8
1000 2000 4000 5000 6000	5.6							2.6
1000 2000 4000 5000 6000	15.4					\		2.4
1000 2000 4000 5000 6000	15.2				\			2.2
1000 2000 4000 5000 6000	0,7							7.
1000 2000 4000 5000 6000	24.0			1	1			
1000 2000 3000 4000 5000 6000 1000 1000 1000 1000 1000 1	44							
1000 2000 3000 4000 5000 6000	14.2							
1000 2000 3000 4000 5000 6000	14_	1						-
1000 2000 3000 4000 5000 6000	13.8							0.8
1000 2000 3000 4000 5000 6000	13.6							9.0
0 1000 2000 3000 4000 5000 6000	13.4							0.4
) 1000 2000 3000 4000 5000 6000	13.	1			1			
			2000	3000	. 0	4000	2000	

06-14-2022

Project Name:

Stage-Discharge

Culvert / Orifices	Culvert		Orifices		Orifice Plate	a
		-	5	က		,
Rise, in	12	3.5	-		Orifice Dia, in	
Span, in	12	3.5	24		No. Orifices	
No. Barrels	~	2	-		Invert Elevation, ft	
Invert Elevation, ft	12.19	13.50	13.98		Height, ft	
Orifice Coefficient, Co	09'0	09'0	09.0		Orifice Coefficient, Co	
Length, ft	30					
Barrel Slope, %	e,					
N-Value, n	0.013					
eri o M	i i		Weirs		A CHICAN	
Weirs	Kiser	-	2	က	Ancillary	
Shape / Type	Вох	Broad Crested			Exfiltration, in/hr	7.20**
Crest Elevation, ft	14.9	14.9				
Crest Length, ft	12	20				
Angle, deg						
Weir Coefficient, Cw	3.3	3.3				
*Routes through Culvert. **Exflitation extracted from outflow hydrograph. Rate applied to contours.	n outflow hydrograph. Rate	applied to contours.				
		Stage-D	Stage-Discharge			
(f) Ved Hand Hand Hand Hand Hand Hand Hand Han	20 52 52	30-8	04	8	SS 60 65 70	Stage (ft) Stage (ft)
	•	Discha	Discharge (cfs)			

Top of Pond —Culvert — Riser — Broad Crested — Extrl — Total Q

Pond Report

Basin 2

Stage (ft)

0.00 0.50 1.00 1.50 2.00 2.50 2.90

Stage-Storage-Discharge Summary

Total	(cfs)	0.000	0.251	0.302	0.359	3.754	37.41	73.30
User	(cfs)							
Exfi	(cfs)	0.000	0.252	0.302	0.359	0.414	0.474	5.5.3.4 1
Pf Riser	(cfs)							
	3							
Weirs, cfs	2							
	-	0.000	0.000	0.000	0.000	2.087	30.67	00.00
Riser	(cfs)	0.000	0.000	0.000	0.000	1.252	0.000	0 000 O
	9							
Orifices, cfs	2	0.000	0.000	0.000	0.000	0.000	0.000	00000
0	-	0.000	0.000	0.000	0.000	0.000	0.000	0000.0
Culvert	(cfs)	0.000	0.000 oc	0.000 00	0.000 00	1.252 oc	6.264 oc	6.766.00
Storage	(cnft)	0.000	678					6,200
Elev.	£)	13.00	13.50	14.00	14.50	15.00	15.50	15.90

Basin 2 - Drain Time

Drain Time (Hrs)

-Stage vs. Drain Time

13 +

- ι.ει

13.2 - 8.81

- 4.81

- 2.51

. - 9.£1

- 7.81 -8.E1

. -6.51

. - †l

. - L'tL . - 2.41

- 8.41 (#)

- 7.41 -8.41 . -6'tl

- SI

- 1.21 -8.21 -2.21

- Þ.21

. -5:51

-7.21 -0.21 8.21 F

Suffix key: ic = inlet control, oc = outlet control, s = submerged weir

Pond Report

06-14-2022 Project Name:

Basin 2

06-14-2022 Pond Drawdown

Project Name:

1.3 1.2

2.1 ·

9.1

Ľ٦٠

8.1

6.1

7-1.5-

2.2

£.2.

Stage (ft)

۱.٤-Z.E -

£.£

Þ.E ⋅ 2.5 9.E

7.E -

8.E -

Post Basin 1

06-14-2022

Project Name:

Hyd. No. 17

Time to Peak Hydrograph Volume Max. Storage Max. Storage	Storm Frequency = 2-yr Time Interval = 2 min Inflow Hydrograph = 14 - Rain Gardi Pond Name = BASIN 1 Pond Routing by Storage Indication Method 0.28 0.28 0.29 0.29	Qp = 0.00 cfs	o Peak graph Volume Storage	= 13.67 hrs = 0.001 cuft = 14.45 ft = 286 cuft
Hydrograph Volume 1 Max. Storage Ap = 0.00 cfs	Time Interval	Δp = 0.00 cfs	graph Volume Elevation Storage	= 0.001 cuft = 14.45 ft = 286 cuft
Ap = 0.00 cfs Qp = 0.00 cfs Qp = 0.00 cfs	Inflow Hydrograph	Qp = 0.00 cfs	Storage	= 14.45 ft = 286 cuft
Qp = 0.00 cfs Qp = 0.00 cfs	Pond Name = BASIN 1 Pond Routing by Storage Indication Method 0.32 0.28 0.26 0.27 0.29		Storage	= 286 cuff
Qp = 0.00 cfs Qp = 0.00 cfs The second sec	Pand Routing by Starage Indication Method 0.32 0.28 0.26 0.26 0.27	Qp = 0.00 cfs		
Op = 0.00 cfs The second of t	0.32 0.28 0.24 0.22	Qp = 0.00 cfs		
2 3 4 5 6 7 1 1 1 2 1 1 1 1 2 1 1 1 1 2 1 1 1 1 1	0.28			
2 3 4 6 6 7 8 9 9 10 11 12 8 1 10 12 12 12 12 12 12 12 12 12 12 12 12 12	0.28 0.26 0.24 0.22			
2 1 1 2 3 4 5 6 7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	0.28			
2 3 4 5 6 7 1 1 1 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	0.26			
2 3 4 5 6 6 7 8 9 9 10 11 12 12 12 12 12 12 12 12 12 12 12 12	0.22			
1 2 3 4 5 6 7 7 8 9 10 11 12	0.22			
1 2 3 4 6 6 7 8 9 9 10 11 12 12 12 14 15 15 15 15 15 15 15 15 15 15 15 15 15	0.22			
1 2 3 4 5 6 7 7 8 9 10 11 12 12 11 12 12 11 12 12 11 12 12 11 12 1	0.2			
1 2 3 4 5 6 7 8 9 10 11 12 Time Area				
1 2 3 4 5 6 7 8 9 10 11 12 Time Area	0.18			
1 2 3 4 5 6 7 8 9 10 11 12 Time Area	Q 0.16-			
1 2 3 4 5 6 7 8 9 10 11 12 Time Amer)	0.14			
1 2 3 4 5 6 7 8 9 10 11 12 Time Ame)	0.12			
1 2 3 4 5 6 7 8 9 10 11 12 Time Amer)	0.1			
1 2 3 4 5 6 7 8 9 10 11 12 Time Ame)	0.08			
1 2 3 4 5 6 7 8 9 10 11 12 Time Area	0.06			
1 2 3 4 5 6 7 8 9 10 11 12 12 12 12 12 12 12 12 12 12 12 12	0.04			
0 1 2 3 4 5 6 7 8 9 10 11 12 Time Area	0.02			
1 2 3 4 5 6 7 8 9 10 11 12 Timother	-0			
Time (hre)	1 2 3	6 7 8		}
(611)		Time (hrs)		

Pond Report

BASIN 1

06-14-2022

Project Name:

Stage-Storage

1		
3		
,		

	ge											Stag	e (ft)					
	Total Storage (cuft)	0000	320	760	1,859		<u>.</u>	1.8	1.6	1.4	12	!		9:0	0.4	0.2		2000
Table	Incr. Storage (cuft)		320	440	1,199												-	1600 1800
Stage / Storage Table	Contour Area (sqft)		760	666	1,526			\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	\								-	1400
	Elevation (ft)	14 00	14.50	15.00	15.95	Stage-Storage				1							-	800 1000 1200 Total Storage (cuft) Contours — Top of Pond
	Stage (ff)	000	0.50	1.00	60.00	Stage-S						\					+	800 10 Total Sto Contours
SI	Input	14.00	100.00	None													+	0009
User Defined Contours	Description	evation, ft	Voids (%)	Volume Calc														400
Jser Defin	Dec	Bottom Elevation, ft		loy													+	200
٦							<u></u>	15.8	15.6	15.4	15.2		Elev	14.6	14.4	14.2	4 4	0

Pond Report

BASIN 1

06-14-2022

Stage-Discharge

Project Name:

ō
1* 2
2.5
2.5
14.50
09'0
Weirs
2*
Broad Crested Rectangular
14.95 14.6
20 1
3.3 3.3

Stage (ft) -1.6 4. 5. -0.8 9.0-- 2 - 62 -- Top of Pond --- Culvert --- Riser ---- Broad Crested ---- Extil ---- Total Q Thoutes through Oulvert "Edithration extracted from outflow hydrograph. Rate applied to contours.

Stagge-Discharge 35 40 Discharge (cfs) - 8 - 52 - 6 14.6 15.6-15.2-(ft) vəl3 14.8 15.8-15.4-

Pond Report

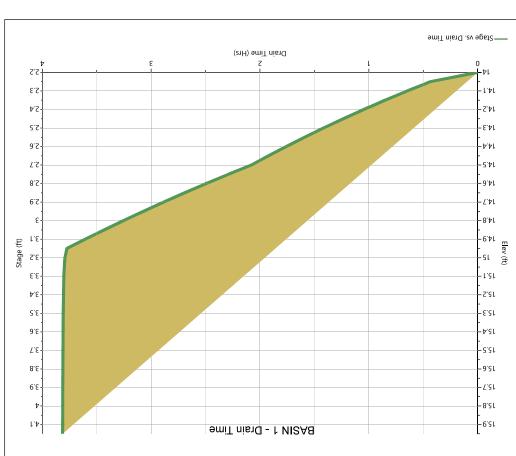
BASIN 1

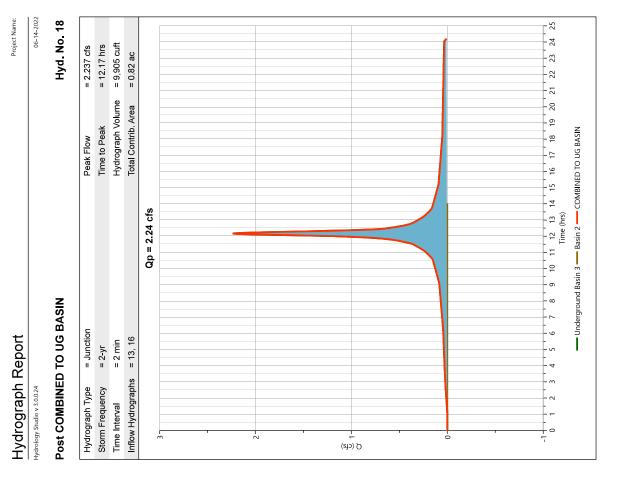
Project Name: 06-14-2022

Stage-Storage-Discharge Summary

- F	(cfs)	0.000	0.057	1.256	72.70
-	(cfs)				
iii	(cfs)	0.000	0.057	0.075	911.0
90	(cfs)				
	3				
Weirs, cfs	2	0.000	0.000	0.000	0000
	-	0.000	0.000	0.738	90 90
30.00	(cfs)	0.000	0.000	0.443	0000
,	8				
Orifices, cfs	2				
	-	0.000	0.000	0.000	00000
100	(cfs)	0.000	0.000 00	0.443 oc	90.00
0101010	(cuff)				1,959
	Œ	14.00	14.50	15.00	15.96
04000	and (E)	00:00	0.50	1.00	987







Post UG Basin 3

06-14-2022

Project Name:

Hydrograph Type	= Pond Route	Peak Flow	= 0.000 cfs
Storm Frequency	= 2-yr	Time to Peak	= 11.57 hrs
Time Interval	= 2 min	Hydrograph Volume	= 0.000 cuft
Inflow Hydrograph	= 18 - COMBINED TO UG BASIN	Max. Elevation	= 12.31 ft
Pond Name	= UG BASIN 3	Max. Storage	= 1,608 cuft
Pond Routing by Storage Indication Method	dication Method		

Qp = 0.00 cfs

Q (cfs)

Pond Report

UG BASIN 3

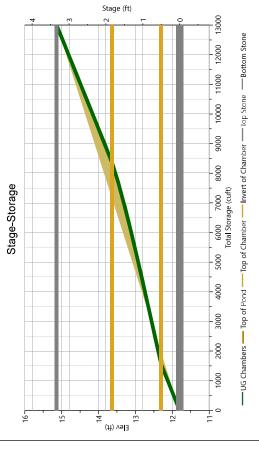
Hyd No 19

06-14-2022

Project Name:

Stage-Storage

StormTech® SC-310™ Chamber	namber			Stage / Storage Table	ge Table	
Description	Input	Stage	Elevation	Contour Area	Incr. Storage	Total Storage
Chamber Height, in	16	fun)	(iii)	(ahe)	(can)	(ninc)
-		0.0	11.80	7,703	0.000	0.000
Chamber Shape	Arch	2.0	11.97	7,703	514	514
Chamber Width, in	34	4.0	12.13	7,703	514	1,027
		0.9	12.30	7,703	514	1,541
Installed Length, ft	7.12	8.0	12.47	7,703	933	2,474
No. Chambers	309	10.0	12.63	7,703	938	3,411
		12.0	12.80	7,703	924	4,335
Bare Chamber Stor, cuft	4,542	14.0	12.97	7,703	902	5,236
No. Rows	20	16.0	13.13	7,703	870	6,106
		18.0	13.30	7,703	826	6,933
Space Between Rows, in	9	20.0	13.47	7,703	764	7,697
Stone Above, in	18	22.0	13.63	7,703	655	8,352
		24.0	13.80	7,703	536	8,888
Stone Below, in	9	26.0	13.97	7,703	514	9,401
Stone Sides, in	12	28.0	14.13	7,703	514	9,915
	•	30.0	14.30	7,703	514	10,428
Stone Ends, in	12	32.0	14.47	7,703	514	10,942
Encasement Voids, %	40.00	34.0	14.63	7,703	514	11,456
i i	00 17	36.0	14.80	7,703	514	11,969
Encasement Bottom Elevation, rt	11.80	38.0	14.97	7,703	514	12,483
		40.0	15.13	7,703	514	12,996



F 22

- 6

--- COMBINED TO UG BASIN --- UG Basin 3

Pond Report

UG BASIN 3

Stage-Discharge

06-14-2022

Project Name:

oorifico / traylor	field		Orifices		Dorforated Disar	
Soullo Ciliano		*	2*	ဗ	reflorated Mae	
Rise, in	12	2.5	4.5		Hole Diameter, in	
Span, in	12	2.5	4.5		No. holes	
No. Barrels	-	-	က		Invert Elevation, ft	
Invert Elevation, ft	12.20	13.00	13.20		Height, ft	
Orifice Coefficient, Co	09.0	09.0	09'0		Orifice Coefficient, Co	
Length, ft	30					
Barrel Slope, %	ю.					
N-Value, n	0.013					
Moiss			Weirs		Yacillica A	
n III D N	i i	*-	7	က	Allcillary	
Shape / Type		Rectangular			Exfiltration, in/hr 3.7	3.75**
Crest Elevation, ft		14.13				
Crest Length, ft		2				
Angle, deg						
Weir Coefficient, Cw		3.3				
*Routes through Culvert. **Exfiltration extracted from outflow hydrograph. Rate applied to contours.	outflow hydrograph. Rate	pplied to contours.				

Stage (ft) --- Top of Pand ---- Culvert ---- Rectangular ----- Extrl ----- Total Q Stage-Discharge Discharge (cfs) 13 12-14-(Ħ) və**l**∃

Pond Report

UG BASIN 3

Stage-Storage-Discharge Summary

Project Name: 06-14-2022

Total	(cfs)	0.000	0.670	0.671	0.672	0.673	0.674	0.675	9/9:0	0.677	0.678	0.679	0.680	0.681	0.682	0.686	1.840	3.908	5.331	5.777	6.100	6.379
User	(cfs)																					
Exfil	(cfs)	0.000	0.670	0.671	0.672	0.673	0.674	0.675	9/9:0	0.677	0.678	0.679	0.680	0.681	0.682	0.683	0.684	0.685	0.686	0.687	0.688	0.689
PfRiser	(cfs)																					
	ь																					
Weirs, cfs	2																					
	-	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003	1,157	3.223	4.645 s	5.090 s	5.412 s	6.691 8
Riser	(cts)																					
	3																					
Orifices, cfs	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0000
	-	000.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0000
Culvert	(cfs)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003 oc	1.157 oc	3.223 oc	4.645 oc	5.090 oc	5.412 oc	0.691
Storage	(cuff)	0.000	514	1,027	1,541	2,474	3,411	4,335	5,236	6,106	6,933	7,697	8,352	8,888	9,401	9,915	10,428	10,942	11,456	11,969	12,483	12,996
Elev.	£	11.80	11.97	12.13	12.30	12.47	12.63	12.80	12.97	13.13	13.30	13.47	13.63	13.80	13.97	14.13	14.30	14.47	14.63	14.80	14.97	6.13
Stage	Œ	00.0	0.17	0.33	0.50	29.0	0.83	1.00	1.17	1.33	1.50	1.67	1.83	2.00	2.17	2.33	2.50	2.67	2.83	3.00	3.17	စ စ စ

Suffix key: ic = inlet control, oc = outlet control, s = submerged weir



Project Name: 06-14-2022

Hydrograph Report

Hydrology Studio v 3.0.0.24

Hyd No 20

= 12.17 hrs = 978 cuft = 0.221 cfs

Runoff Volume

Time to Peak

Peak Flow

= NRCS Runoff

Hydrograph Type Storm Frequency

= 2 min

Time Interval

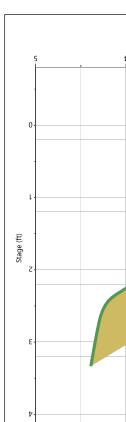
Pre DA 2 - IMPERVIOUS

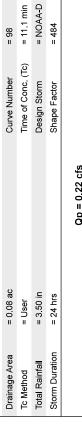
Pond Drawdown **UG BASIN 3**

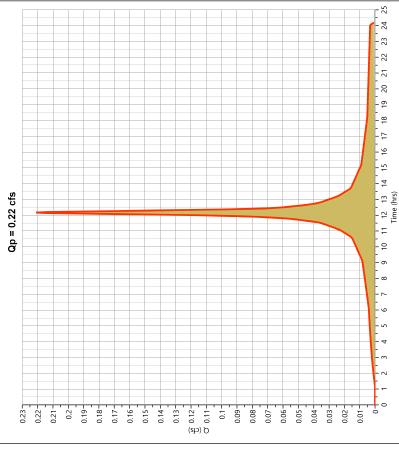












Drain Time (Hrs)

UG BASIN 3 - Drain Time

-|-

15-

-81

-11

-51

Elev (ft)

Hydrology Studio v 3.0.0.24

Project Name:

06-14-2022

06-14-2022 Project Name:

Hyd. No. 21 Pre DA 2 - PERVIOUS

= 0.000 cfs = 0.00 hrs = 0.000 cuft = 11.1 min = NOAA-D = 36* = 484 Curve Number Time of Conc. (Tc) Design Storm Runoff Volume Time to Peak Shape Factor Peak Flow = NRCS Runoff = 0.86 ac = 3.50 in = 24 hrs = 2-yr = 2 min = User * Composite CN Worksheet Hydrograph Type Storm Frequency Storm Duration Drainage Area Time Interval Total Rainfall Tc Method

Qp = 0.00 cfs

DESCRIPTION
OPEN SPACE
WOODS
Weighted CN Method Employed

AREA (ac) CN 0.58 39 0.28 30 0.86 36

Hydrograph Report

Hyd. No. 22

Pre DA 2

Storm Frequency = 2-yr Time Interval = 2 min	= 2v, Three to Peak	= 2-yr	Storm Fragillopov			
Hydrograph Volume = 20, 21 Op = 0.22 cfs	#ydrograph Volume = 978 cuft	# Hydrograph Volume = 978 cuft	otolili i jequelicy	= 2-yr	Time to Peak	= 12.17 hrs
= 20, 21 Op = 0.22 cfs	20, 21 Qp = 0,22 cfs Qp = 0,22 cfs	Ap = 0.22 cfs Op = 0.22 cfs Ap = 0.22 cfs Total Contrib. Area = 0.94 ac	Time Interval	= 2 min	Hydrograph Volume	= 978 cuft
	Qp = 0.22 cfs	Qp = 0.22 cfs Qp = 0.22 cfs	Inflow Hydrographs	= 20, 21	Total Contrib. Area	= 0.94 ac
Q(ds)		1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24		Qp = 0.22 cfs		
Q(ds)		The first of the f	0.23			
Q (ds) Q 000 000 000 000 000 000 000 000 000		The first of the f	0.22			
Q (cfs) Q (cfs		The (hrs) The (hrs)	0.21			
(sta) D (st		Time (hrs)	0.2			
(dx)) D (0.00 (0.0		Time (hts)	0.19			
Q(dx) 0.10 0.13 0.00 0.00 0.00 0.00 0.00 0.00		Time (hrs)	0.18			
Q (ch) Q		Time (hrs)	0.17			
O (cip) O (cip		Time (hrs)	0.16			
0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0		Time (hrs)	110			
(sb) D 2.0.0 (sb) D 2.0.0 00 00 00 00 00 00 00 00 00 00 00 00		Time (hrs)				
O (045) O 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		Time (hrs)	0.0			
(ab) O (a		Time (hrs)	5.0			
		Time (hrs)	(cfs) (cfs)			
0.03		Time (hrs)) E. 2			
0.00		Time (hrs)	- a			
0.05	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23	Time (hrs)	- 800			
0.05	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23	Time (hrs)	20:0			
0.03	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23	Time (hrs)	-90:0			
0.03	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23	Time (hrs)	0.05			
0.03	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23	Time (hrs)	0.04			
0.00	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23	Time (hrs)	0.03			
0.001	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23	Time (hrs)	0.02			
	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 Time (hrs)	0.01			

Pre DA 3 - PERVIOUS

06-14-2022

Hyd No. 23

Project Name:

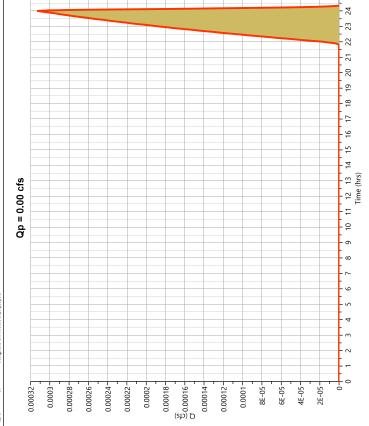
Hydrograph Report

06-14-2022

Project Name:

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.000 cfs
Storm Frequency	= 2-yr	Time to Peak	= 24.00 hrs
Time Interval	= 2 min	Runoff Volume	= 1.47 cuft
Drainage Area	= 0.75 ac	Curve Number	= 37*
Tc Method	= User	Time of Conc. (Tc)	= 10.3 min
Total Rainfall	= 3.50 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484
* Composite CN Worksheet	±:		

AREA (ac)		DESCRIPTION ODERN SEACE
0.02	8 8	MODES
0.75	3 2	Weighted CN Method Employed



0.01

--- DA 2 --- DA 3 - PERVIOUS --- COMBINED TO POA 1

Pre COMBINED TO POA 1	I AOA O		•
Hydrograph Type	= Junction	Peak Flow	= 0.221 cfs
Storm Frequency	= 2-yr	Time to Peak	= 12.17 hrs
Time Interval	= 2 min	Hydrograph Volume	= 980 cuft
Inflow Hydrographs	= 22, 23	Total Contrib. Area	= 1.69 ac
	Qp = 0.22 cfs		
0.23			
0.22			
0.21			
0.2			
0.19			
0.18			
0.17			
01.0			
0.15			
7			
0.13			
(sts) (cfs) (cfs)			
5 6			
, , , , , , , , , , , , , , , , , , ,			
0.09			
0.08			
0.07			
0.00			
0.00			
0.04			
0.03			
0.02			

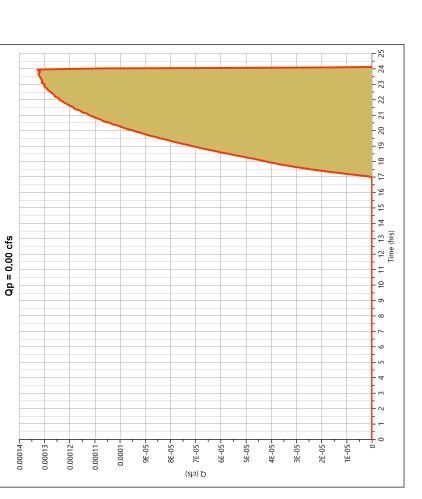
Post IMP BYPASS INLET N.

06-14-2022

Project Name:

Hyd No 25

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.000 cfs
Storm Frequency	= 2-yr	Time to Peak	= 24.00 hrs
Time Interval	= 2 min	Runoff Volume	= 2.35 cuft
Drainage Area	= 0.08 ac	Curve Number	= 39
Tc Method	= User	Time of Conc. (Tc)	= 6.0 min
Total Rainfall	= 3.50 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



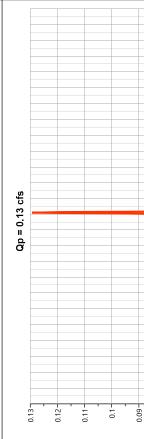
Hydrograph Report

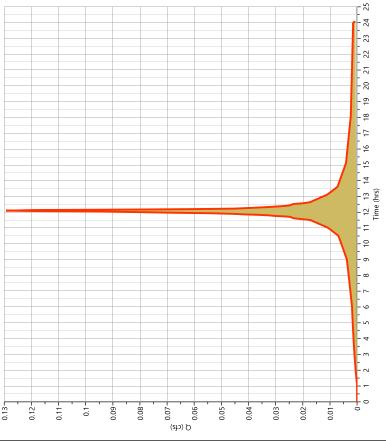
06-14-2022

Project Name:

ż
LET
Š
PAS
B
Σ
Post

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.129 cfs
Storm Frequency	= 2-yr	Time to Peak	= 12.10 hrs
Time Interval	= 2 min	Runoff Volume	= 445 cuft
Drainage Area	= 0.04 ac	Curve Number	86 =
Tc Method	= User	Time of Conc. (Tc)	= 6.0 min
Total Rainfall	= 3.50 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484





COMB. INLET N.

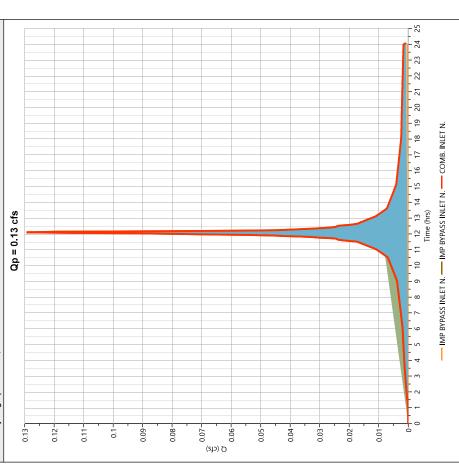
Project Name:

Hydrograph Report

06-14-2022

Hyd. No. 27

Hydrograph Type	= Junction	Peak Flow	= 0.129 cfs
Storm Frequency	= 2-yr	Time to Peak	= 12.10 hrs
Time Interval	= 2 min	Hydrograph Volume = 447 cuft	= 447 cuft
Inflow Hydrographs	= 25, 26	Total Contrib. Area	= 0.12 ac



Hydrograph Report

06-14-2022 28

Project Name:

Post COMBINED TO POA 1

٠	

= 2-yr = 2 min Hydrograph Volume Is = 17, 19, 27 Qp = 0.13 cfs Qp = 0.13 cfs	= 2-yr = 2 min Hydrograph Volume = 17, 19, 27	= 2-yr = 2 min Hydrograph Volume = 17, 19, 27 Qp = 0.13 cfs Qp = 0.13 cfs	= 2-yr	Hydrograph Type	= Junction	Peak Flow	= 0.129 cfs
= 2 min Hydrograph Volume = 17, 19, 27 Op = 0.13 cfs	### Hydrograph Volume = 447 cuft	= 2 min Hydrograph Volume = 17, 19, 27 Op = 0.13 cfs Op = 0.13 cfs	### Hydrograph Volume = 447 cuff	Storm Frequency	= 2-yr	Time to Peak	= 12.10 hrs
app = 0.13 cfs Opp = 0.13 cfs	Ap = 0.13 cfs Op = 0.13 cfs Op = 0.13 cfs	Ap = 0.13 cfs Op = 0.13 cfs Op = 0.13 cfs	Qp = 0.13 cfs Qp = 0.13 cfs Qp = 0.13 cfs Total Contrib. Area = 0.12 ac Qp = 0.13 cfs Total Contrib. Area = 0.12 ac Total Contribution Area = 0.12 ac Total Contribut	Time Interval	= 2 min	Hydrograph Volume	= 447 cuft
	Qp = 0.13 cfs	Qp = 0.13 cfs Qp = 0.13 cfs	Qp = 0.13 cfs 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 Time (hrs) - Resign 1 — IIC Basin 2 — COMBINIST N —	Inflow Hydrographs	= 17, 19, 27	Total Contrib. Area	= 0.12 ac
Q(cfs) Q(1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 Time (hrs.)	!	Qp = 0.13 cfs		
Q (cts) D			Basin 1 — 11G Basin 3 — COMBINET DE DOM 1	2.1.0			
O (cfs)			Basin 1 — 11G Basin 3 — COMBINET DE DOM 1	0.12			
(eb) D			Pagin 1 — ILG Basin 3 — COMB MIFTN — COMBINED TO DOD 1	0.11			
(etb) D (ctb) D (ctc) D (ct			Pagin 1 — ILG Basin 3 — COMB MIFTON — COMBINED TO DOD 1	0.1			
(sty) D		1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22	Pagin 1 — ILG Basin 3 — COMB, IMIETN — COMBINED TO DODA 1				
Q (cts) Q (cts	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22	Pagin 1 — IIG Basin 3 — COMB, MIETN — COMBINED TO POA 1	80.00			
000 000	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22	Pagin 1 — IIG Basin 3 — COMB INIETN — COMBINED TO POLA 1	(sjo			
0.00	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22	Racin 1 — IIG Basin 3 — COMB INI ET N — COMBINED TO POA 1	0 (0.05			
0.000	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 Time (hrs) Racin 1 — HG Basin 3 — COMB IMIETN — COMBINED TO POA 1	6000			
0.00	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 Time (hrs) Radia 1 — HG Basin 3 — COMB IMIETN — COMBINED TO POLA 1	- 60.00			
0001	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 Time (hrs) Radia 1 — HG Basin 3 — COMB INI ET N — COMBINED TO POB 1	0.03			
	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 Time (hrs) Rasin 1 — HG Basin 3 — COMB INI ETN — COMBINED TO POL 1	0.02			
	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 Time (hrs) Resin 1 — HG Basin 3 — COMR INIETN — COMBINED TO POLE 1	0.01			
	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 Time (hrs)	-0			

+	
tro	
2	
Ω	
Ž	
קפיר	
קפיר	
קפיר	
קפיר	

Hydrology Studio v 3.0.2.4

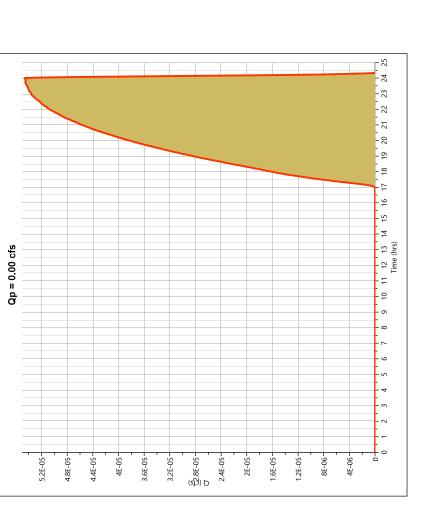
Pre Bypass Memorial

06-14-2022

Hyd. No. 29

Project Name:

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.000 cfs
Storm Frequency	= 2-yr	Time to Peak	= 24.00 hrs
Time Interval	= 2 min	Runoff Volume	= 0.969 cuft
Drainage Area	= 0.03 ac	Curve Number	= 39
Tc Method	= User	Time of Conc. (Tc)	= 12.9 min
Total Rainfall	= 3.50 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



Hydrograph Report

06-14-2022

Project Name:

orial	
ass Mem	
ost Bypa	

= 0.000 cfs	= 24.00 hrs
Peak Flow	Time to Peak

= 2-yr = 2 m Runoff Volume = 0.08 ac	Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.000 cfs
= 2 min	Storm Frequency	= 2-yr	Time to Peak	= 24.00 hrs
= 0.08 ac	Time Interval	= 2 min	Runoff Volume	= 2.59 cuft
= 0.5er	Drainage Area	= 0.08 ac	Curve Number	= 39
= 3.50 in	Tc Method	= User	Time of Conc. (Tc)	= 12.9 min
Ap = 0.00 cfs Ap = 0.00 cfs Ap = 0.00 cfs	Total Rainfall	= 3.50 in	Design Storm	= NOAA-D
000013 0.00011	Storm Duration	= 24 hrs	Shape Factor	= 484
000013 000013 000010 00001 000000	500	Qp = 0.00 cfs		
0.00013 0.00011 0.00011 0.00011 0.00011 0.00011 0.00012 0.	5100010			
0.00012 0.00011 9E-05 6E-05 6E-05 1E-05 1E-05 1E-05 1E-05 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	41000.0			
0.00011 0.0	0.00013			
0.0001 0.0001	0.00012			
9E-05 7E-05 6E-05 6E-05 9E-05 1E	0.00011			
9E-05 FE-05 6E-05 9E-05 1E	0.0001			
RE-05 6E-05 4E-05 3E-05 1E	9E-05			
6E-05 4E-05 4E-05 2E-05 1E-05 1E-05 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24				
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 33 24				
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	- SE-05			
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	SE-05			
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	4E-05-			
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	3E-05			
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	2E-05-			
) 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	1E-05			
		4 5 6 7 8 9 10 11 12 13	15 16 17 18 19	21 22 23 24

4	E	
(چ	
9	ā)
ב	ľ	
4	ב	
(π)
1000	7	
()	2	
. (

Hydrology Studio v 3.0.0.24

06-14-2022 Project Name:

06-14-2022

Project Name:

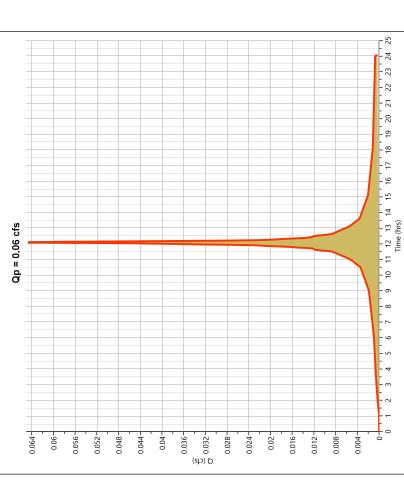
Hydrograph Report

Post Perv Bypass Inlet S.

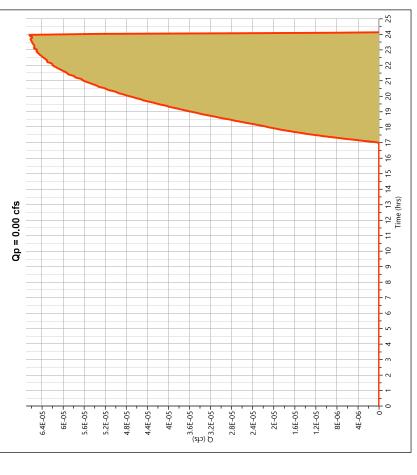
Hyd. No. 32

Hyd. No. 31 Post Imp Bypass Inlet S.

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.065 cfs
Storm Frequency	= 2-yr	Time to Peak	= 12.10 hrs
Time Interval	= 2 min	Runoff Volume	= 222 cuft
Drainage Area	= 0.02 ac	Curve Number	86 =
Tc Method	= User	Time of Conc. (Tc)	= 6.0 min
Total Rainfall	= 3.50 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.000 cfs
Storm Frequency	= 2-yr	Time to Peak	= 24.00 hrs
Time Interval	= 2 min	Runoff Volume	= 1.18 cuft
Drainage Area	= 0.04 ac	Curve Number	= 39
Tc Method	= User	Time of Conc. (Tc)	= 6.0 min
Total Rainfall	= 3.50 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



֡
֡
֡

Hydrology Studio v 3.0.0.24

Post Comb. Bypass POA 2

Project Name:

06-14-2022

Hyd. No. 33

= 12.10 hrs= 0.065 cfs = 223 cuft = 0.06 ac Time to Peak Hydrograph Volume Total Contrib. Area Peak Flow Qp = 0.06 cfs = Junction = 2 min = 31, 32 = 2-yr Inflow Hydrographs Hydrograph Type Storm Frequency Time Interval 0.064 0.048 0.044 Q (cfs) -90.0 0.056 0.04 0.028 0.024 0.05 0.016 0.012 0.052 0.036

-800.0 0.004 --- Imp Bypass Inlet S. --- Perv Bypass Inlet S. --- Comb. Bypass POA 2

Hydrograph 10-yr Summary

06-14-2022 Project Name:

diology at	ryanology studio v s.c.o.c+	-						
Hyd. No.	Hydrograph Type	Hydrograph Name	Peak Flow (cfs)	Time to Peak (hrs)	Hydrograph Volume (cuft)	Inflow Hyd(s)	Maximum Elevation (ft)	Maximum Storage (cuft)
-	NRCS Runoff	Pre DA 1 - IMPERVIOUS	0.187	12.13	753	1		
2	NRCS Runoff	Pre DA 1 - PERVIOUS	0.002	12.97	38.7	1		
ю	NRCS Runoff	Post Roof Area DA3	1.248	12.17	5,626	1		
4	NRCS Runoff	Post Deck DA3	1.377	12.17	6,208	1		
2	NRCS Runoff	Post Pervious Pavement	0.646	12.17	2,910	1		
9	NRCS Runoff	Post Pervious DA1	0.003	12.50	49.8	1		
7	NRCS Runoff	Post Roof Area DA1	0.504	12.10	1,764	ı		
œ	NRCS Runoff	Post Pervious DA2	0.005	12.50	7.68	1		
o	NRCS Runoff	Post Roof Area DA2	2.519	12.10	8,818	1		
10	Junction	Pre DA1-POA2	0.187	12.13	791	1, 2		
Ξ	NRCS Runoff	Post Pervious DA3	0.001	12.60	11.0	1		
12	NRCS Runoff	Post Impervious DA3	0.215	12.17	970	1		
13	Junction	Post Underground Basin 3	3.486	12.17	15,725	3, 4, 5, 11, 12		
4	Junction	Post Rain Garden 1	0.504	12.10	1,814	6,7		
15	Junction	Post Basin 2	2.519	12.10	8,908	6,8		
16	Pond Route	Post Basin 2	0.000	14.57	0.000	15	14.51	2,516
17	Pond Route	Post Basin 1	0.000	15.77	0.001	14	14.75	538
18	Junction	Post COMBINED TO UG BASIN3.486	N3.486	12.17	15,725	13, 16		
19	Pond Route	Post UG Basin 3	0.000	12.33	0.000	18	12.66	3,570
20	NRCS Runoff	Pre DA 2 - IMPERVIOUS	0.344	12.17	1,552	1		
21	NRCS Runoff	Pre DA 2 - PERVIOUS	0.021	13.30	920	1		
22	Junction	Pre DA 2	0.344	12.17	2,122	20, 21		
23	NRCS Runoff	Pre DA 3 - PERVIOUS	0.026	13.00	598	1		
24	Junction	Pre COMBINED TO POA 1	0.344	12.17	2,720	22, 23		
25	NRCS Runoff	Post IMP BYPASS INLET N.	0.005	12.50	7.67	I		
56	NRCS Runoff	Post IMP BYPASS INLET N.	0.202	12.10	705	1		
27	Junction	COMB. INLET N.	0.202	12.10	785	25, 26		
28	Junction	Post COMBINED TO POA 1	0.202	12.10	785	17, 19, 27		
59	NRCS Runoff	Pre Bypass Memorial	0.002	12.60	32.9	1		
30	NRCS Runoff	Post Bypass Memorial	0.005	12.60	7.78	1		
31	NRCS Runoff	Post Imp Bypass Inlet S.	0.101	12.10	353	1		
32	NRCS Runoff	Post Perv Bypass Inlet S.	0.002	12.50	39.9	1		
33	Junction	Post Comb. Bypass POA 2	0.101	12.10	393	31, 32		
			_					

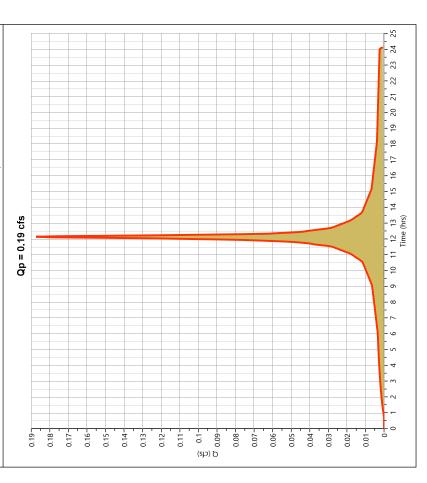
Pre DA 1 - IMPERVIOUS

06-14-2022

Project Name:

Hyd. No. 1

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.187 cfs
Storm Frequency	= 10-yr	Time to Peak	= 12.13 hrs
Time Interval	= 2 min	Runoff Volume	= 753 cuft
Drainage Area	= 0.04 ac	Curve Number	86 =
Tc Method	= User	Time of Conc. (Tc)	= 9.8 min
Total Rainfall	= 5.42 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



Hydrograph Report

06-14-2022

Project Name:

Hyd. No. 2

Pre DA 1 - PERVIOUS

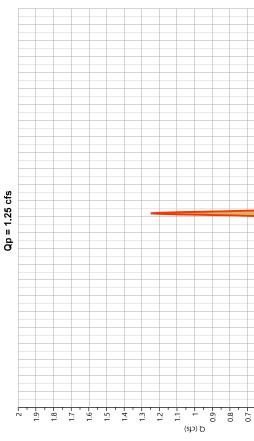
Peak Flow	Time to Peak	Runoff Volume	Curve Number	Time of Conc. (Tc)	Design Storm	Shape Factor		Qp = 0.00 cfs	•																
= NRCS Runoff	= 10-yr	= 2 min	= 0.05 ac	= User	= 5.42 in	= 24 hrs	rksheet DESCRIPTION open space wooded Weighted CN Method Employed																		
Hydrograph Type	Storm Frequency	Time Interval	Drainage Area	Tc Method	Total Rainfall	Storm Duration	* Composite CN Worksheet AREA(ac) CN DESCRIPTION 0.04 39 open space 0.01 30 wooded 0.05 37 Weighted CN M		0.001/	0.0016	0.0015	0.0014	0.0013	0.0012	0.0011	0.001	e0000.0 (st	Ø 0.0008	0.0007	9000:0	0.0005	0.0004	0.0003	0.0002	0.0001

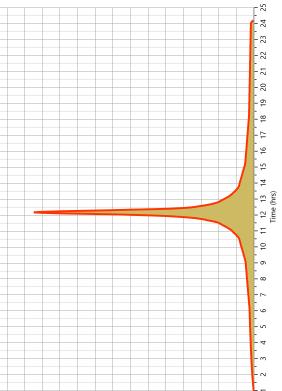
06-14-2022

Project Name:

Hyd. No. 3 Post Roof Area DA3

Hydrograph Type	= NRCS Runoff	Peak Flow	= 1.248 cfs
Storm Frequency	= 10-yr	Time to Peak	= 12.17 hrs
Time Interval	= 2 min	Runoff Volume	= 5,626 cuft
Drainage Area	= 0.29 ac	Curve Number	86 =
Tc Method	= User	Time of Conc. (Tc)	= 10.0 min
Total Rainfall	= 5.42 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484





0.6

0.3

Hydrograph Report

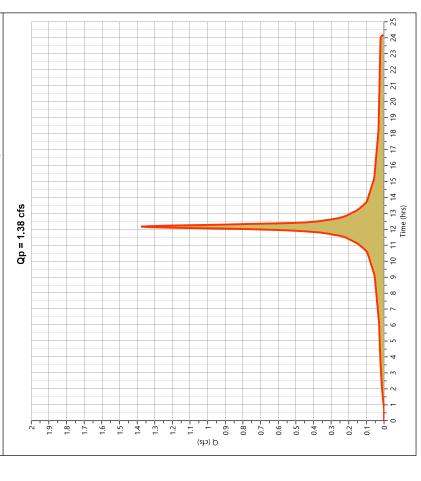
Post Deck DA3

06-14-2022

Project Name:

4yd. No. 4
lyd. No.
lyd. No
lyd. N
yd. N
yd.
<u>7</u>
<u>Š</u>
_
_
_

Hydrograph Type	= NRCS Runoff	Peak Flow	= 1.377 cfs
Storm Frequency	= 10-yr	Time to Peak	= 12.17 hrs
Time Interval	= 2 min	Runoff Volume	= 6,208 cuft
Drainage Area	= 0.32 ac	Curve Number	86 =
Tc Method	= User	Time of Conc. (Tc)	= 12.8 min
Total Rainfall	= 5.42 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



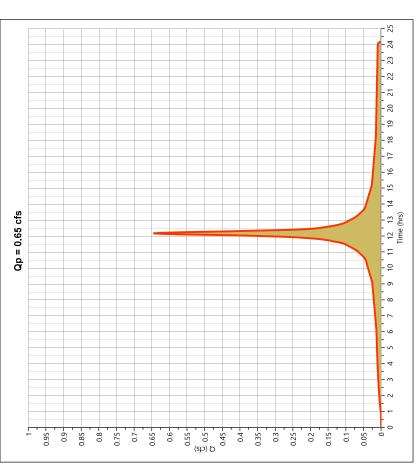
Post Pervious Pavement

Project Name:

06-14-2022

Hyd. No. 5

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.646 cfs
Storm Frequency	= 10-yr	Time to Peak	= 12.17 hrs
Time Interval	= 2 min	Runoff Volume	= 2,910 cuft
Drainage Area	= 0.15 ac	Curve Number	= 98
Tc Method	= User	Time of Conc. (Tc)	= 12.8 min
Total Rainfall	= 5.42 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



Hydrograph Report

06-14-2022

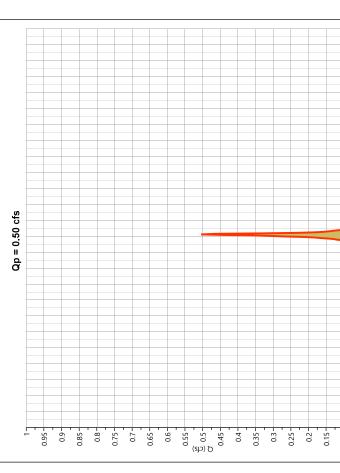
Project Name:

06-14-2022	Hyd. No. 6
	_
Hydrology Studio v 3.0.0.24	Post Pervious DA 1

Storm Frequency = 10-yr Time to Peak = 12.50 hrs Time Interval = 2 min Runoff Volume = 49.8 curt Drainage Area = 0.05 ac Curve Number = 39 Trow Method = 1.9 er Time of Conc. (Tc) = 6.0 min Total Rainfall = 5.42 in Design Storm = 10.00 ers Storm Duration = 24 hrs Shape Factor = 48.4 Co.00026 Co.0014 Co.0016 Co.0016 Co.0016 Co.0017 Co.0017 Co.0017 Co.0017 Co.0017 Co.0017 Co.0017 Co.0017 Co.0017 Co.0017 Co.0017 Co.0				
Runoff Volume ea = 0.05 ac Curve Number = 0.42 in = 5.42 in = 5.42 in Design Storm fron = 24 hrs Qp = 0.00 cfs	Storm Frequency	= 10-yr	Time to Peak	= 12.50 hrs
Ea = 0.05 ac Curve Number = User Time of Conc. (Tc) = 5.42 in Design Storm Shape Factor Qp = 0.00 cfs	Time Interval	= 2 min	Runoff Volume	= 49.8 cuft
if = 5.42 in Design Storm tion = 24 hrs Qp = 0.00 cfs	Drainage Area	= 0.05 ac	Curve Number	= 39
tion = 24 hrs Shape Factor Qp = 0.00 cfs	Tc Method	= User	Time of Conc. (Tc)	= 6.0 min
Qp = 0.00 cfs	Total Rainfall	= 5.42 in	Design Storm	= NOAA-D
	Storm Duration	= 24 hrs	Shape Factor	= 484
0.0028 0.0024 0.0028 0.0024 0.0028 0.0029 0.		Qp = 0.00 cfs		
00000 00000 00000 00000 00000 00000 0000	0.003			
O 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.0028			
Q (cfs) Q 00000 00000 00000 00000 00000 00000 0000	0.0026			
Q(cfs) Q (cds) Q (cds)	0.0024			
00002 00001 00001 00000 00000 00000 00000 00000 00000 0000	,			
Q(sty) D Q(sty)	0.0022			
O (cts)	0.002			
(c(x)) D 00 00 00 00 00 00 00 00 00 00 00 00 00	0.0018			
0.0001 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000	© 0.0016			
0.0012	eto) D			
0.0008	0.00		_/	
0.0008	0.0012			
0.0006	0.001			
0.0006	0.0008			
0.0004	0.0006			
0,0000	0.0004			
70000				
	70000			

Post Roof Area DA1

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.504 cfs
Storm Frequency	= 10-yr	Time to Peak	= 12.10 hrs
Time Interval	= 2 min	Runoff Volume	= 1,764 cuft
Drainage Area	= 0.1 ac	Curve Number	86 =
Tc Method	= User	Time of Conc. (Tc)	= 6.0 min
Total Rainfall	= 5.42 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



Hydrograph Report

06-14-2022 Project Name:

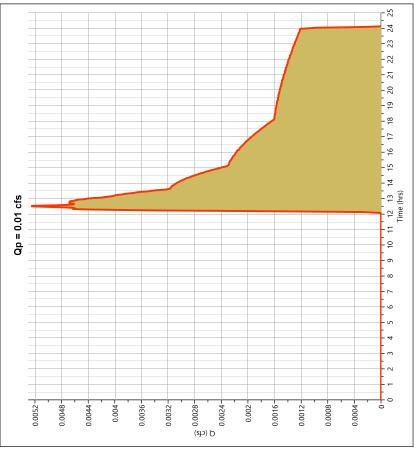
Hyd No. 7

Hyd. No. 8

06-14-2022 Project Name:

Post Pervious DA2

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.005 cfs
Storm Frequency	= 10-yr	Time to Peak	= 12.50 hrs
Time Interval	= 2 min	Runoff Volume	= 89.7 cuft
Drainage Area	= 0.09 ac	Curve Number	= 39
Tc Method	= User	Time of Conc. (Tc)	= 6.0 min
Total Rainfall	= 5.42 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



22 23 24

- 12 - 2 - 6 - 8 - 1

- 6

- ∞

Post Roof Area DA2

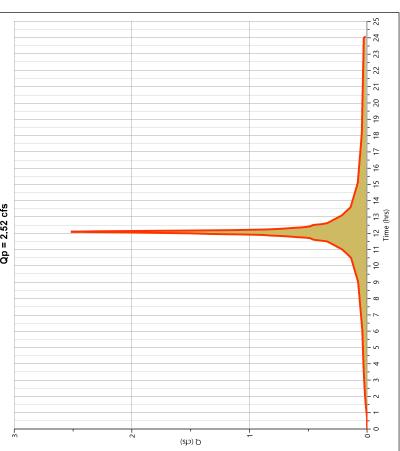
06-14-2022

Project Name:

Hyd. No. 9

Hydrograph Type	= NRCS Runoff	Peak Flow	= 2.519 cfs
Storm Frequency	= 10-yr	Time to Peak	= 12.10 hrs
Time Interval	= 2 min	Runoff Volume	= 8,818 cuft
Drainage Area	= 0.5 ac	Curve Number	86 =
Tc Method	= User	Time of Conc. (Tc)	= 6.0 min
Total Rainfall	= 5.42 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484





Hydrograph Report

06-14-2022

Project Name:

Hyd. No. 10

Pre DA 1 - POA 2

7	
ร	
Š	
7	
_	
_	

Hydrograph Type	= Junction	Peak Flow	= 0.187 cfs
Storm Frequency	= 10-yr	Time to Peak	= 12.13 hrs
Time Interval	= 2 min	Hydrograph Volume	= 791 cuft
Inflow Hydrographs	= 1, 2	Total Contrib. Area	= 0.09 ac
	Qp = 0.19 cfs		
0.19			
0.18			
0.17			
0.16			
0.15			
0.14			
0.13			
0.57			
(cfs) Q			
- 60.0			
0.00			
70.0			
- 4000			
- 40.0			
0.03			
0.02			
0.01			
0 1 2 3	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 Time(hts)	14 15 16 17 18 19 20	21 22 23 24 25
	DA 1 - IMPERVIOUS DA 1 - PERVIOUS DA 1 - POA 2	OUS DA 1 - POA 2	

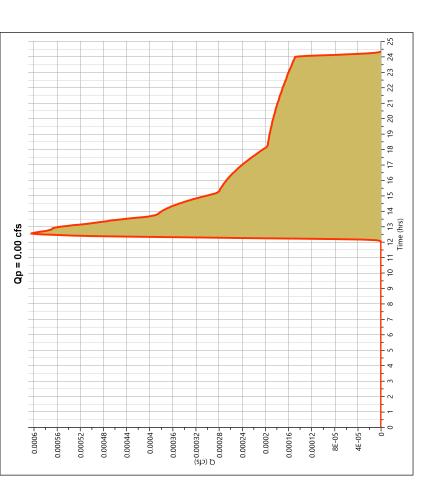
Post Pervious DA3

06-14-2022

Hyd. No. 11

Project Name:

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.001 cfs
Storm Frequency	= 10-yr	Time to Peak	= 12.60 hrs
Time Interval	= 2 min	Runoff Volume	= 11.0 cuft
Drainage Area	= 0.01 ac	Curve Number	= 39
Tc Method	= User	Time of Conc. (Tc)	= 12.8 min
Total Rainfall	= 5.42 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



Hydrograph Report

Project Name:

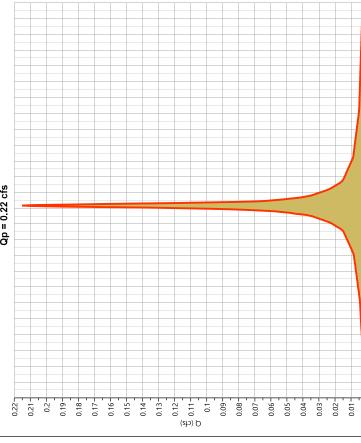
06-14-2022

Hyd. No. 12

A3
Δ
ns
٥.
2
ğ
트
st
2

= 0.215 cfs	= 12.17 hrs	= 970 cuft	86 =	= 12.8 min	= NOAA-D	= 484
Peak Flow	Time to Peak	Runoff Volume	Curve Number	Time of Conc. (Tc)	Design Storm	Shape Factor
= NRCS Runoff	= 10-yr	= 2 min	= 0.05 ac	= User	= 5.42 in	= 24 hrs
Hydrograph Type	Storm Frequency	Time Interval	Drainage Area	Tc Method	Total Rainfall	Storm Duration

	ŀ
	ŀ
	ŀ
	ŀ
cfs	L
Ñ	
0.22	
Ш	
g	
Ø	ŀ
	ŀ
	ŀ
	ŀ



19 20 21

- 8

8

- 9

	+	
	č	
	2	
		Ľ
1	1	۲.
ľ	_	
	_	
	2	
	_	
	2	
	2	
	2	

Hydrology Studio v 3.0.0.24

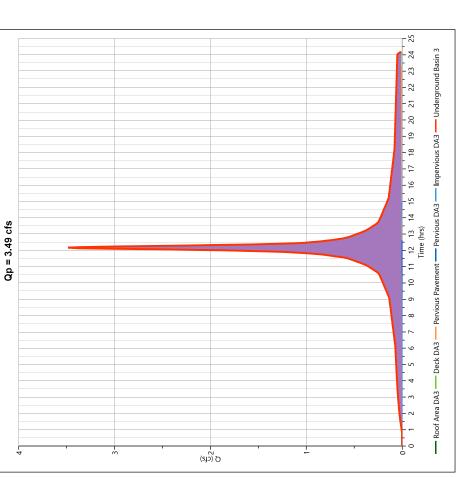
Post Underground Basin 3

Project Name:

06-14-2022

Hyd. No. 13

= 3.486 cfs	= 12.17 hrs	Hydrograph Volume = 15,725 cuft	a = 0.82 ac	
Peak Flow	Time to Peak	Hydrograph Volun	Total Contrib. Area = 0.82 ac	
= Junction	= 10-yr	= 2 min	= 3, 4, 5, 11, 12	
Hydrograph Type	Storm Frequency	Time Interval	Inflow Hydrographs = 3, 4, 5, 11, 12	



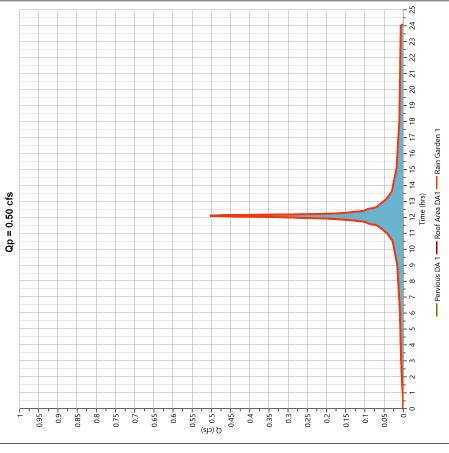
Hydrograph Report

Post Rain Garden 1

06-14-2022

Project Name:

Hydrograph Type	= Junction	Peak Flow	= 0.504 cfs
Storm Frequency	= 10-yr	Time to Peak	= 12.10 hrs
Time Interval	= 2 min	Hydrograph Volume = 1,814 cuft	= 1,814 cuft
Inflow Hydrographs = 6, 7	= 6, 7	Total Contrib. Area = 0.15 ac	= 0.15 ac



t	
Repo	
hdi	
Irogra	
Ť	

Hydrology Studio v 3.0.0.24

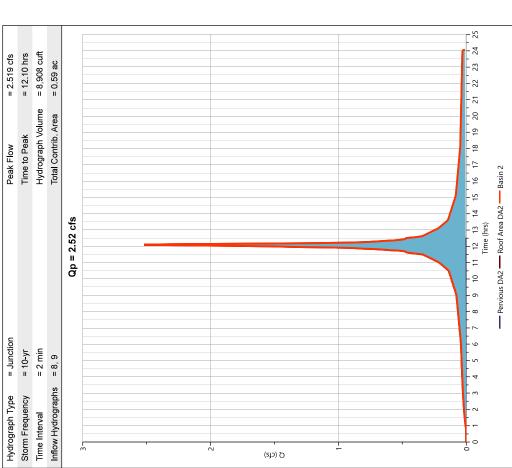
Post Basin 2

06-14-2022

Hyd. No. 15

Project Name:

Peak Flow = Junction



Hydrograph Report

06-14-2022 Project Name:

n 2	
Basi	
st	
۵	

	= 10-yr = 2 min	Time to Peak Hydrograph Volume	= 14.57 hrs = 0.000 cuft
Inflow Hydrograph	= 15 - Basin 2	Max. Elevation	= 14.51 ft
Pond Name	= Basin 2	Max. Storage	= 2,516 cuft
Pond Routing by Storage Indication Method	dication Method	Center of mass	Center of mass detention time = 8.78 hrs
·	= do	Qp = 0.00 cfs	
m			
N			
Q (cfs			
0			
-1-0	2 3 4 5 6	7 8 9 10 11 12	13 14

Post Basin 1

06-14-2022 Hyd. No. 17

Standard 1 Stan	Lydrograph Type	٩	1 0000	di id							J Jook	1			000	040	
# Hydrograph Volume	Ctorm From Cop	3 8	1 1	200						- 1	- Car	2	۷		4 4 7 7	2 4	
# Hydrograph Volume	Storm Frequenc	े	IV-VI							_	ille t	o Pea	~		// כו =	, nrs	
= 14 - Rain Garden 1	Time Interval		= 2 mir	_						_	lydro	graph	Volur		= 0.001	l cuff	
Qp = 0.00 cfs Qp = 0.00 cfs Time (hrs)	Inflow Hydrogra	aph	= 14 - F	Rain Ga	rden 1					2	Лах. Е	Elevat	ion		= 14.75) 	
Qp = 0.00 cfs 4 5 6 7 8 9 10 11 12 13 14 15 Time (hrs)	Pond Name		= BAS	Z -							Jax. S	Storag	a)		= 538 c	J.	
Qp = 0.00 cfs	Pond Routing by Store	rage Ind	lication Meth	po													
0.55 0.75	į					G) = d∢).00 cl	<u>s</u>								
0.055 0.	- L																
0.05 0.05 0.05 0.05 0.04 0.05	C8:0	-											-				
0.55 0.55 0.65 0.65 0.65 0.65 0.65 0.65	- 6:0																
0.55 0.55 0.55 0.55 0.55 0.57 0.59	0.85																
0.55 0.65 0.65 0.65 0.65 0.65 0.65 0.65	0.8																
0.65 0.65 0.45 0.45 0.45 0.45 0.45 0.45 0.45 0.4	0.75																
0.05 0.05 0.04 0.03 0.03 0.03 0.03 0.03 0.03 0.03	0.7																
0.05 0.45 0.45 0.35 0.35 0.35 0.35 0.35 0.35 0.35 0.3	0.65																
0.55 0.45 0.45 0.45 0.45 0.45 0.45 0.45	9:0																
0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05	_																
Time (hrs)																	
Time (hrs)	0.45																
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 Time (hrs)	0.4																
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 Time (hrs)	6.30																
Time (hrs)	0.3																
Time (hrs)	62.0																
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 Time (hrs)	7.0																
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 Time (hrs)	0.5																
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 Time (hrs)	0.05																
Time (hrs)	1 0														\parallel	П	
Time (hrs)	,	-	- m	4	-2	9	-	- 8	ł	<u> </u>	=	-2	- 22	- 4	15	16	ΓĖ
								Time (h	ĽS)								

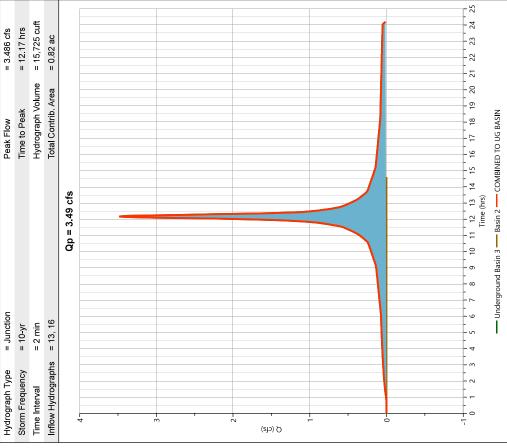
Hydrograph Report

06-14-2022 Project Name:

Hyd. No. 18

Post COMBINED TO UG BASIN

= 3.486 cfs	= 12.17 hrs	= 15,725 cuft
Peak Flow	Time to Peak	Hydrograph Volume



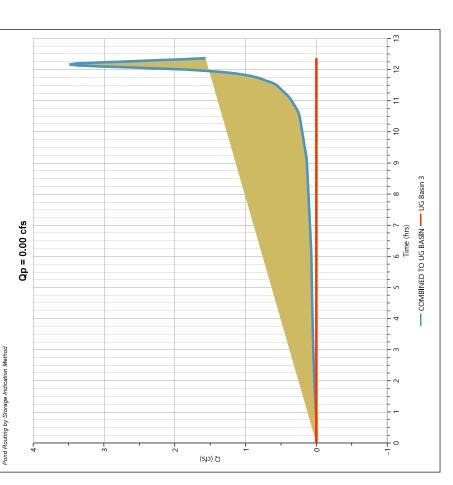
06-14-2022

Hyd. No. 19

Project Name:

Post UG Basin 3

Hydrograph Type	= Pond Route	Peak Flow	= 0.000 cfs
Storm Frequency	= 10-yr	Time to Peak	= 12.33 hrs
Time Interval	= 2 min	Hydrograph Volume = 0.000 cuft	= 0.000 cuft
Inflow Hydrograph	= 18 - COMBINED TO UG BASIN	Max. Elevation	= 12.66 ft
Pond Name	= UG BASIN 3	Max. Storage	= 3,570 cuft



Hydrograph Report

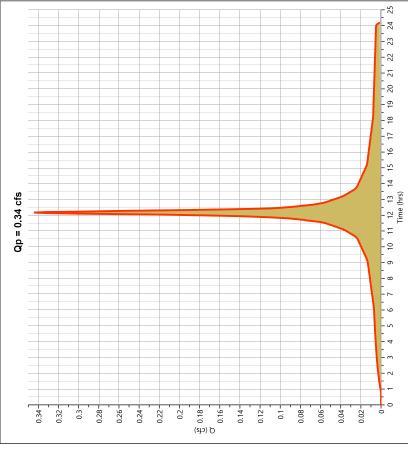
06-14-2022

Project Name:

Hyd. No. 20

Pre DA 2 - IMPERVIOUS

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.344 cfs
Storm Frequency	= 10-yr	Time to Peak	= 12.17 hrs
Time Interval	= 2 min	Runoff Volume	= 1,552 cuft
Drainage Area	= 0.08 ac	Curve Number	86 =
Tc Method	= User	Time of Conc. (Tc)	= 11.1 min
Total Rainfall	= 5.42 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



Project Name:

Pre DA 2 - PERVIOUS

06-14-2022

Hydrograph Type	Type	= NRCS Runoff	Peak Flow	= 0.021 cfs
Storm Frequency	ency	= 10-yr	Time to Peak	= 13.30 hrs
Time Interval		= 2 min	Runoff Volume	= 570 cuft
Drainage Area	æ	= 0.86 ac	Curve Number	= 36*
Tc Method		= User	Time of Conc. (Tc)	= 11.1 min
Total Rainfall		= 5.42 in	Design Storm	= NOAA-D
Storm Duration	ou	= 24 hrs	Shape Factor	= 484
* Composite CN Worksheet	Worksheel			
AREA (ac) CN	DESCRIPTION	PTION		
0.58 39	OPEN SPACE	PACE		
0.28 30	WOODS			
0.86 36	Weighter	Weighted CN Method Employed		

- 54 23 - 25 - 12 16 17 18 19 20 11 12 13 14 15 Time (hrs) Qp = 0.02 cfs - e Q (cfs) Q 0.012 0.022 0.02 0.019 0.018 0.016 0.016 0.013 0.009 0.003 0.002

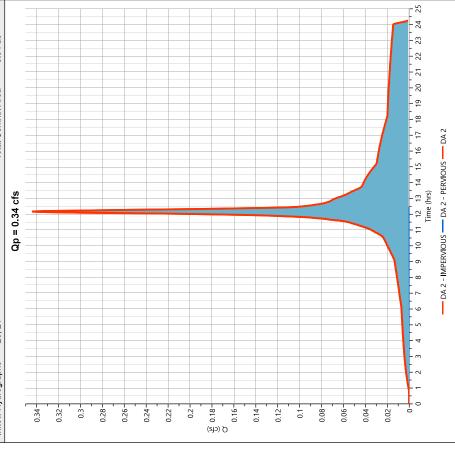
Hydrograph Report

Pre DA 2

Hyd. No. 21

06-14-2022 Project Name:

Hydrograph Type	= Junction	Peak Flow	= 0.344 cfs
Storm Frequency	= 10-yr	Time to Peak	= 12.17 hrs
Time Interval	= 2 min	Hydrograph Volume	= 2,122 cuft
Inflow Hydrographs	= 20, 21	Total Contrib. Area	= 0.94 ac
	Qp = 0.34 cfs		
- 20.04			
0.32			
1			
0.3			



06-14-2022

Project Name:

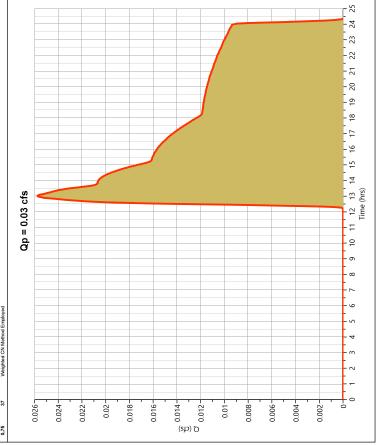
Pre DA 3 - PERVIOUS

Hyd No. 23

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.026 cfs
Storm Frequency	= 10-yr	Time to Peak	= 13.00 hrs
Time Interval	= 2 min	Runoff Volume	= 598 cuft
Drainage Area	= 0.75 ac	Curve Number	= 37*
Tc Method	= User	Time of Conc. (Tc)	= 10.3 min
Total Rainfall	= 5.42 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

* Composite CN Worksheet





Hydrograph Report

06-14-2022

Project Name:

Pre COMBINED TO POA 1	TO POA 1		Hyd. No. 2
Hydrograph Type	= Junction	Peak Flow	= 0.344 cfs
Storm Frequency	= 10-yr	Time to Peak	= 12.17 hrs
Time Interval	= 2 min	Hydrograph Volume = $2,720$ cuft	= 2,720 cuft

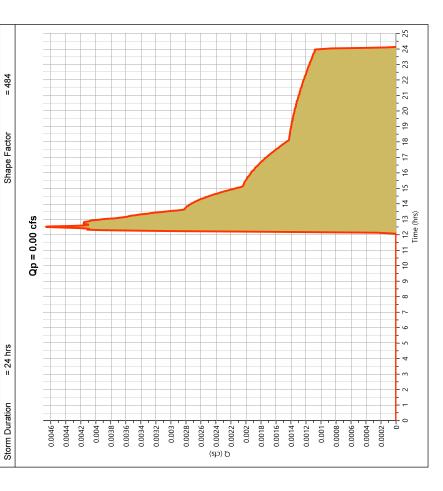
Op = 0.34 cfs			
	0.32	Qp = 0.34 cfs	
0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.32	· · · · · · · · · · · · · · · · · · ·	
0.000 0.000	0.32		
0.28 0.28 0.19 0.10 0.10 0.00 0.00 0.00 0.00 0.00			
0.12 0.13 0.14 0.16 0.19 0.10 0.10 0.00 0.00 0.00 0.00 0.00	F		
O (cfs) O (cos) O (cos	0.28		
0.12 0.13 0.14 0.10 0.10 0.00 0.00 0.00 0.00 0.00	0.26		
Q (cfs) Q (cfs	0.24		
O ((cfs)) O (12 O (14 O 0.18 O 0.10 O 0.10 O 0.00 O 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.22		
O (cfs) (cfs	0.2		
0.12	sto) Q 0 8		
0.08	0.0		
0.09	0.14		
0.06	0.12		
0.00	1.0 C		
0.00	00000		
0002	000		
	- 2000		ſ

Hydrology Studio v 3.0.0.24

Project Name:

06-14-2022

Post IMP BYPASS INLET N.	SS INLET N.		Hyd No 25	
Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.005 cfs	
Storm Frequency	= 10-yr	Time to Peak	= 12.50 hrs	
Time Interval	= 2 min	Runoff Volume	= 79.7 cuft	
Drainage Area	= 0.08 ac	Curve Number	= 39	
Tc Method	= User	Time of Conc. (Tc)	= 6.0 min	
Total Rainfall	= 5.42 in	Design Storm	= NOAA-D	
Storm Duration	= 24 hrs	Shape Factor	= 484	



Hydrograph Report

Hydrology Studio v 3.0.0.24

06-14-2022

Hyd. No. 26

Project Name:

Post IMP BYPASS INLET N.

	Peak Flow	Time to Peak	Runoff Volume	Curve Number	Time of Conc. (Tc)	Design Storm
S INLE! N.	= NRCS Runoff	= 10-yr	= 2 min	= 0.04 ac	= User	= 5.42 in

Hydrograph Type

Storm Frequency

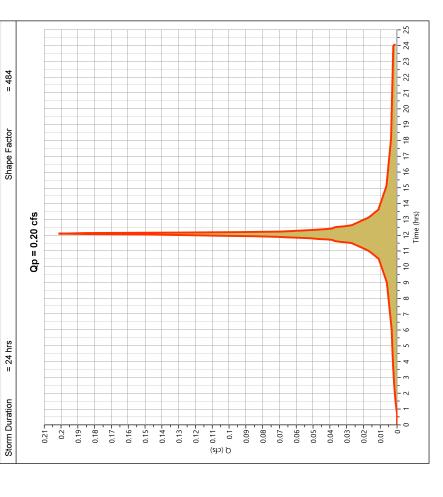
Drainage Area Time Interval

Total Rainfall Tc Method

= 12.10 hrs = 0.202 cfs

= 705 cuft

= NOAA-D = 6.0 min 86 =



COMB. INLET N.

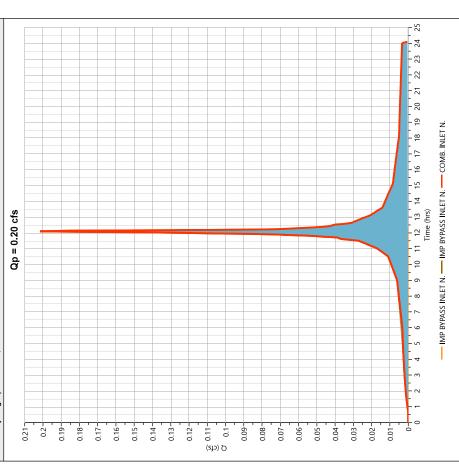
Project Name:

Hydrograph Report

06-14-2022

Hyd. No. 27

Hydrograph Type	= Junction	Peak Flow	= 0.202 cfs
Storm Frequency	= 10-yr	Time to Peak	= 12.10 hrs
Time Interval	= 2 min	Hydrograph Volume = 785 cuft	= 785 cuft
Inflow Hydrographs = 25, 26	= 25, 26	Total Contrib. Area	= 0.12 ac



Hydrograph Report

06-14-2022

Project Name:

28

Post COMBINED TO POA 1

(C)
-	ż	
4	-	-
		۰
٦	C	3
٠	Ę	i
4	í	
-	L	

Storm Frequency = 10-yr Time Introval = 2 min Inflow Hydrographs = 17, 19, 27 0.19 0.18 0.16 0.15 0.15	Time to Peak Hydrograph Volume Total Contrib. Area Qp = 0.20 cfs	m l	= 12.10 hrs = 785 cuft = 0.12 ac
	Qp = 0.20 cfs	m l	112 ac 1.12 ac 1.15 ac
	Qp = 0.20 cfs		
0.19 0.19 0.17 0.15 0.15	Qp = 0.20 cfs		
0.19 0.19 0.16 0.15 0.15			
0.19 0.18 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15			
0.19			
0.18			
0.15			
0.15			
0.15			
0.15			
0.14			
L C L U			
0.12			
(s):			
G (G			_
60.0			
2000			
0.07			
0.00			
- 700			
- 000			
- 000			
0 1 2 3 4 5 6	14 15 16 17 18	19 20 21 2	22 23 24
	Time (hre)		

-	t		
	r		
	٥		
	C	L	
۵	١	1	
Ī	_		
-	Ç		
	2	_	
	Ç	ĺ	
	ī		
	ì	=	١
	ì	_	
	C		
	֓		
-	1		
	_	trough Donat	nh Reno

Hydrology Studio v 3.0.0.24

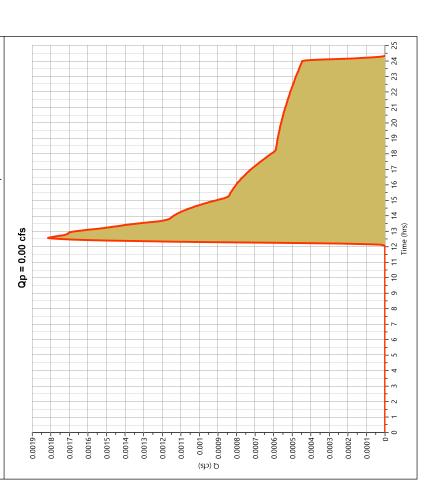
Pre Bypass Memorial

Project Name:

06-14-2022

Hyd No. 29

= 12.60 hrs = 0.002 cfs= NOAA-D = 32.9 cuft = 12.9 min = 39 = 484 Time of Conc. (Tc) Design Storm Runoff Volume Curve Number Time to Peak Shape Factor Peak Flow = NRCS Runoff = 0.03 ac = User = 5.42 in = 10-yr = 2 min = 24 hrs Hydrograph Type Storm Frequency Storm Duration Drainage Area Time Interval Total Rainfall Tc Method



Hydrograph Report

Hydrology Studio v 3.0.0.24

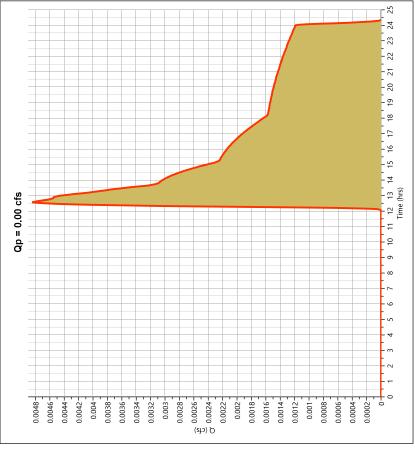
Project Name:

06-14-2022

Hyd No 30

	2	3
;	omen Memo	
1	TOO T	5

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.005 cfs
Storm Frequency	= 10-yr	Time to Peak	= 12.60 hrs
Time Interval	= 2 min	Runoff Volume	= 87.7 cuft
Drainage Area	= 0.08 ac	Curve Number	= 39
Tc Method	= User	Time of Conc. (Tc)	= 12.9 min
Total Rainfall	= 5.42 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



	t		
	Ì	_	
	Š	_	
	(l	Ì
(1	_	
	C		
	c	_	١
	į	•	
	į	֡	
	֡֜֝֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜		֡
	į		
	֡֜֝֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜		
	֡֜֝֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜		

Post Imp By

Hydrograph Report

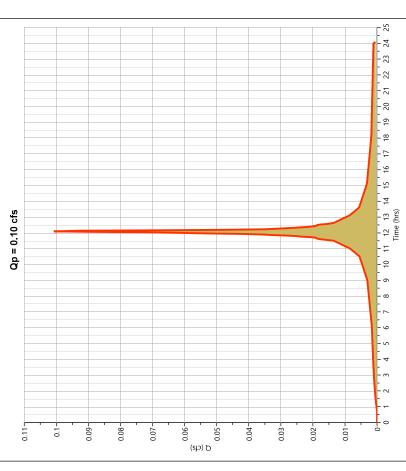
06-14-2022 Project Name:

Project Name:

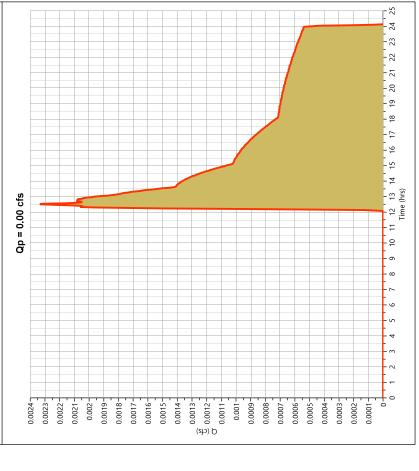
06-14-2022

_	
Hyd. No. 31	
pass Inlet S.	

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.101 cfs
; - >			
Storm Frequency	= 10-yr	Time to Peak	= 12.10 hrs
Time Interval	= 2 min	Runoff Volume	= 353 cuft
Drainage Area	= 0.02 ac	Curve Number	86 =
Tc Method	= User	Time of Conc. (Tc)	= 6.0 min
Total Rainfall	= 5.42 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



_	Post Perv Bypass Inlet S.	s Inlet S.		Hyd. No. 32
	Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.002 cfs
	Storm Frequency	= 10-yr	Time to Peak	= 12.50 hrs
	Time Interval	= 2 min	Runoff Volume	= 39.9 cuft
	Drainage Area	= 0.04 ac	Curve Number	= 39
	Tc Method	= User	Time of Conc. (Tc)	= 6.0 min
	Total Rainfall	= 5.42 in	Design Storm	= NOAA-D
	Storm Duration	= 24 hrs	Shape Factor	= 484



ゼ	
8	
ē	
œ	
누	
raph	

Post Comb. Bypass POA 2

Project Name:

06-14-2022

Hyd. No. 33

= 2 min = 31, 32 Qp = 0.10 cfs	= 2 min	Hydrodraph Type	= Julicilon	עמב אסר	20.01
= 31, 32 Qp = 0.10 cfs	= 31, 32 Qp = 0.10 cfs Apple	dneucy	= 10-yr	Time to Peak	= 12.10 hrs
a 31, 32 Qp = 0.10 cfs	Qp = 0.10 cfs Qp = 0.10 cfs	/al	= 2 min	Hydrograph Volume	= 393 cuft
	Ap = 0.10 cfs	ographs	= 31, 32	Total Contrib. Area	= 0.06 ac
	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		Qp = 0.10 cfs		
	s 9 10 11 12 13 1 1me (hrs.)				
	s 9 10 11 12 13 1 Time first				
	s 9 10 11 12 13 1 Time first				
	s 9 10 11 12 13 1 Time (hts)				
	s 9 10 11 12 13 1 Time first				
	s 9 10 11 12 13 1 Time first				
	s 9 10 11 12 13 1 Time (hs)				
	9 10 11 12 13 1 Time (frs)				
	s 9 10 11 12 13 1 Time (hs)				
	8 9 10 11 12 13 1 Time (hrs)				
	3 9 10 11 12 13 1 Time (hrs)				

Hydrograph 25-yr Summary

Hyd No	Hydrograph Type	Hydrograph Name	Peak Flow (cfs)	Time to Peak (hrs)	Hydrograph Volume (cuft)	Inflow Hyd(s)	Maximum Elevation (ft)	Maximum Storage (cuft)
-	NRCS Runoff	Pre DA 1 - IMPERVIOUS	0.234	12.13	947			
2	NRCS Runoff	Pre DA1 - PERVIOUS	0.010	12.27	100	I		
က	NRCS Runoff	Post Roof Area DA3	1.559	12.17	7,079	1		
4	NRCS Runoff	Post Deck DA3	1,721	12.17	7,812	1		
S	NRCS Runoff	Post Pervious Pavement	0.806	12.17	3,662	I		
9	NRCS Runoff	Post Pervious DA 1	0.020	12.13	116	1		
7	NRCS Runoff	Post Roof Area DA1	0.629	12.10	2,219	1		
00	NRCS Runoff	Post Pervious DA2	0.036	12.13	210	1		
o	NRCS Runoff	Post Roof Area DA2	3.147	12.10	11,096	1		
10	Junction	Pre DA 1 - POA 2	0.240	12.13	1,047	1, 2		
Έ	NRCS Runoff	Post Pervious DA3	0.003	12.30	25.6	1		
12	NRCS Runoff	Post Impervious DA3	0.269	12.17	1,221	1		
13	Junction	Post Underground Basin 3	4.357	12.17	19,799	3, 4, 5, 11, 12		
4	Junction	Post Rain Garden 1	0.645	12.10	2,336	6, 7		
15	Junction	Post Basin 2	3.175	12.10	11,306	8,9		
16	Pond Route	Post Basin 2	0.075	12.60	29.8	15	14.90	3,434
17	Pond Route	Post Basin 1	0.057	12.50	34.8	14	14.95	718
18	Junction	Post COMBINED TO UG BASI	N4.357	12.17	19,829	13, 16		
19	Pond Route	Post UG Basin 3	0.000	12.20	0.000	18	12.96	5,212
20	NRCS Runoff	Pre DA 2 - IMPERVIOUS	0.430	12.17	1,953	I		
21	NRCS Runoff	Pre DA 2 - PERVIOUS	0.120	12.37	1,574	ı		
22	Junction	Pre DA 2	0.486	12.20	3,527	20, 21		
23	NRCS Runoff	Pre DA 3 - PERVIOUS	0.140	12.33	1,549	1		
24	Junction	Pre COMBINED TO POA 1	0.588	12.20	5,077	22, 23		
25	NRCS Runoff	Post IMP BYPASS INLET N.	0.032	12.13	186	I		
56	NRCS Runoff	Post IMP BYPASS INLET N.	0.252	12.10	888	I		
27	Junction	COMB. INLET N.	0.277	12.10	1,074	25, 26		
28	Junction	Post COMBINED TO POA 1	0.277	12.10	1,109	17, 19, 27		
29	NRCS Runoff	Pre Bypass Memorial	0.009	12.30	76.9	I		
30	NRCS Runoff	Post Bypass Memorial	0.024	12.30	205	I		
31	NRCS Runoff	Post Imp Bypass Inlet S.	0.126	12.10	444	I		
32	NRCS Runoff	Post Perv Bypass Inlet S.	0.016	12.13	93.2	I		
33	Junction	Post Comb. Bypass POA 2	0.139	12.10	537	31, 32		

Pre DA 1 - IMPERVIOUS

Project Name: 06-14-2022 Hyd. No. 1

06-14-2022

Project Name:

Hydrograph Report

Hyd. No. 2

S
\supset
ō
×
~
2
ш
_
_
٩
Ф
-
₽.

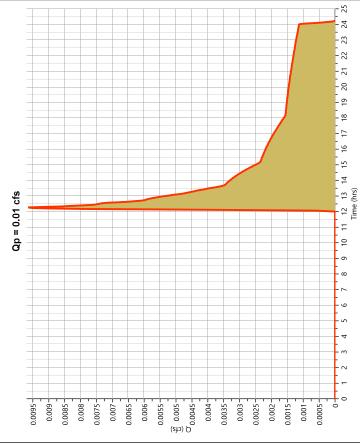
ī		
1		

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.234 cfs		Hydrograph Type	= NRC
Storm Frequency	= 25-yr	Time to Peak	= 12.13 hrs	S	Storm Frequency	= 25-yr
Time Interval	= 2 min	Runoff Volume	= 947 cuft		ime Interval	= 2 mir
Drainage Area	= 0.04 ac	Curve Number	86 =	Δ	Orainage Area	= 0.05
Tc Method	= User	Time of Conc. (Tc)	= 9.8 min		rc Method	= User
Total Rainfall	= 6.76 in	Design Storm	= NOAA-D	<u> </u>	Fotal Rainfall	= 6.76
Storm Duration	= 24 hrs	Shape Factor	= 484	S	Storm Duration	= 24 hr

Qp = 0.23 cfs

(2) D (2) D (2) D (2) D (3) D (4) D (5) D (5) D (6) D (6) D (7) D

Hydrograph Iype	e = NKCS Kunott	Peak Flow	= 0.010 cts
Storm Frequency	y = 25-yr	Time to Peak	= 12.27 hrs
Time Interval	= 2 min	Runoff Volume	= 100 cuft
Drainage Area	= 0.05 ac	Curve Number	= 37*
Tc Method	= User	Time of Conc. (Tc)	= 9.8 min
Total Rainfall	= 6.76 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484
* Composite CN Worksheet	sheet		
AREA(ac) CN 0.04	DESCRIPTION OPEN SPREE		
30	pepoon		
0.05 37 \	Weighted CN Method Employed		



19 20 21

_ ∞ -=

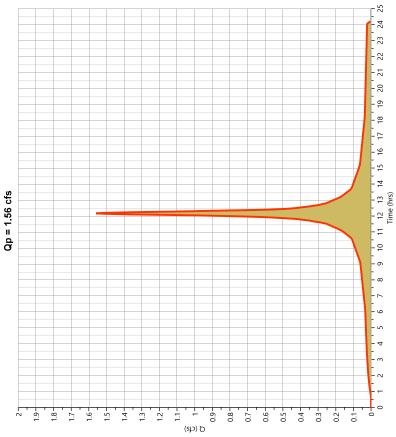
. - e

- ∞

Post Roof Area DA3

Hydrograph Type	= NRCS Runoff	Peak Flow	= 1.559 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.17 hrs
Time Interval	= 2 min	Runoff Volume	= 7,079 cuft
Drainage Area	= 0.29 ac	Curve Number	86 =
Tc Method	= User	Time of Conc. (Tc)	= 10.0 min
Total Rainfall	= 6.76 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484





Hydrograph Report

06-14-2022 Project Name:

Hyd. No. 3

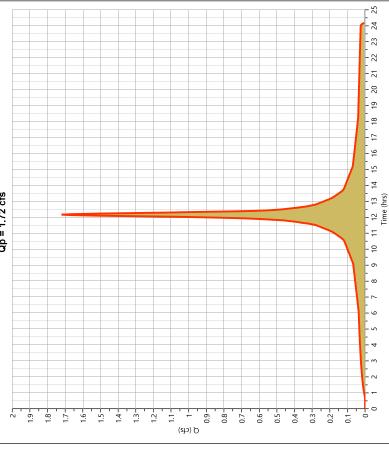
Project Name:

06-14-2022

3	
₹	
×	
ĕ	
Δ	
ĭ	
Ö	

Hydrograph Type	= NRCS Runoff	Peak Flow	= 1.721 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.17 hrs
Time Interval	= 2 min	Runoff Volume	= 7,812 cuft
Drainage Area	= 0.32 ac	Curve Number	86 =
Tc Method	= User	Time of Conc. (Tc)	= 12.8 min
Total Rainfall	= 6.76 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

cts
72
П
å



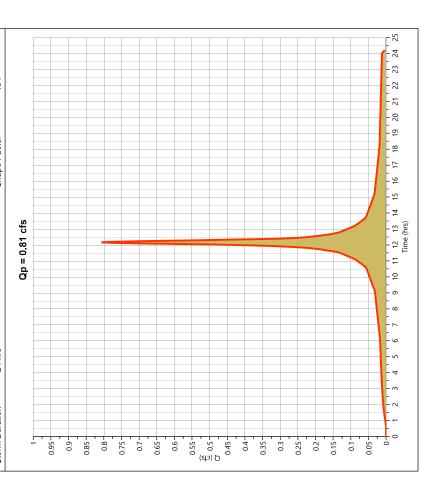
Post Pervious Pavement

06-14-2022

Hyd No. 5

Project Name:

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.806 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.17 hrs
Time Interval	= 2 min	Runoff Volume	= 3,662 cuft
Drainage Area	= 0.15 ac	Curve Number	86 =
Tc Method	= User	Time of Conc. (Tc)	= 12.8 min
Total Rainfall	= 6.76 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



19 20 21

- 8

ω

9

0.001

0.003 0.002

Hydrograph Report

06-14-2022

Project Name:

No. 6

3.0.0.24 06-	ious DA 1 Hyd. N
Hydrology Studio v 3.0.0.24	Post Pervious DA 1

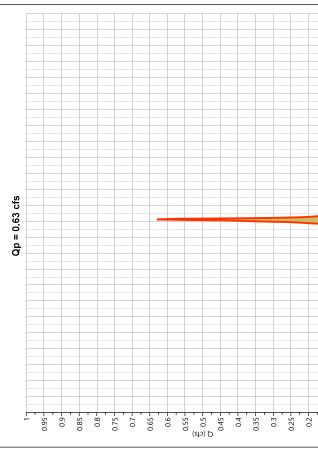
Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.020 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.13 hrs
Time Interval	= 2 min	Runoff Volume	= 116 cuft
Drainage Area	= 0.05 ac	Curve Number	= 39
Tc Method	= User	Time of Conc. (Tc)	= 6.0 min
Total Rainfall	= 6.76 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484
	Qp = 0.02 cfs		
0.02			
0.019			
0.018			
0.017			
0.016			
0.015			
- 1000			
0.00			
0.013			
0.012			
(s)			
O (O			
- 600:0			
0.008			
0.007			
0.006			
0.005			
0.004			

Post Roof Area DA1

Project Name:

06-14-2022 Hyd No. 7

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.629 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.10 hrs
Time Interval	= 2 min	Runoff Volume	= 2,219 cuft
Drainage Area	= 0.1 ac	Curve Number	86 =
Tc Method	= User	Time of Conc. (Tc)	= 6.0 min
Total Rainfall	= 6.76 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



Hydrograph Report

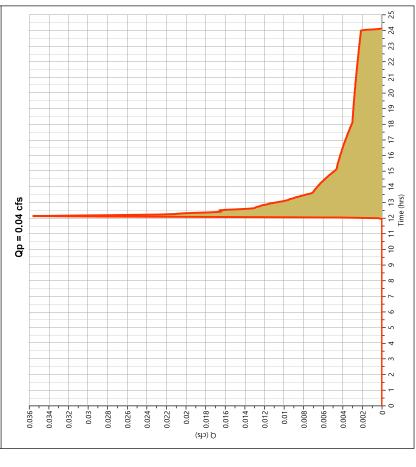
Post Pervious DA2

06-14-2022

Project Name:

Hyd. No. 8

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.036 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.13 hrs
Time Interval	= 2 min	Runoff Volume	= 210 cuft
Drainage Area	= 0.09 ac	Curve Number	= 39
Tc Method	= User	Time of Conc. (Tc)	= 6.0 min
Total Rainfall	= 6.76 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



22 23 24

- 12 - 2 - 5 - ∞ - 1

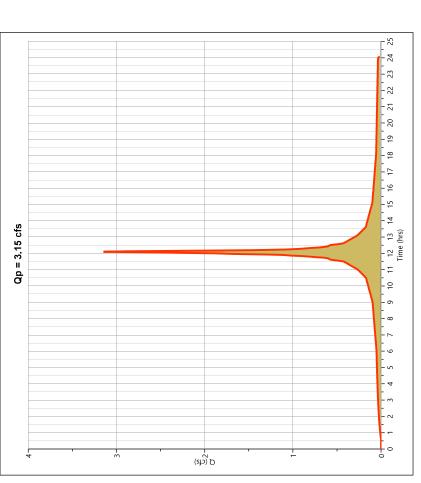
- 6

- ∞

0.15

Post Roof Area DA2

Hydrograph Type	= NRCS Runoff	Peak Flow	= 3.147 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.10 hrs
Time Interval	= 2 min	Runoff Volume	= 11,096 cuft
Drainage Area	= 0.5 ac	Curve Number	86 =
Tc Method	= User	Time of Conc. (Tc)	= 6.0 min
Total Rainfall	= 6.76 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



Hydrograph Report

06-14-2022

Project Name:

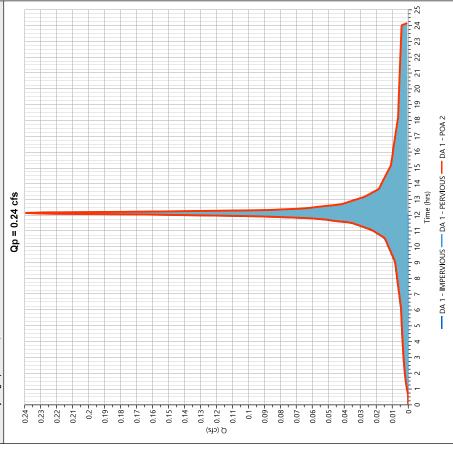
Hyd. No. 9

Project Name:

06-14-2022

7
℄
2
1
•
_
⋖
2
ø
5

= 0.240 cfs	= 12.13 hrs	= 1,047 cuft	= 0.09 ac
Peak Flow	Time to Peak	Hydrograph Volume = 1,047 cuft	Total Contrib. Area
= Junction	= 25-yr	= 2 min	= 1, 2
Hydrograph Type	Storm Frequency	Time Interval	Inflow Hydrographs = 1, 2



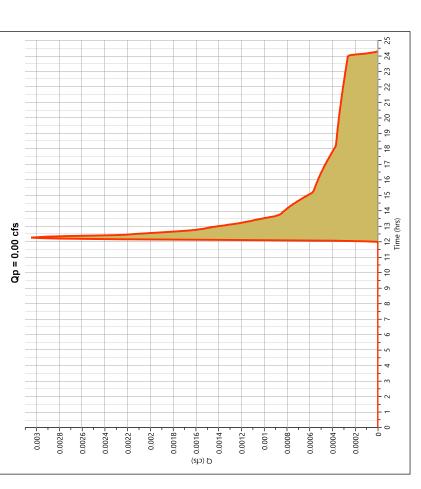
Post Pervious DA3

06-14-2022

Hyd. No. 11

Project Name:

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.003 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.30 hrs
Time Interval	= 2 min	Runoff Volume	= 25.6 cuft
Drainage Area	= 0.01 ac	Curve Number	= 39
Tc Method	= User	Time of Conc. (Tc)	= 12.8 min
Total Rainfall	= 6.76 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



Hydrograph Report

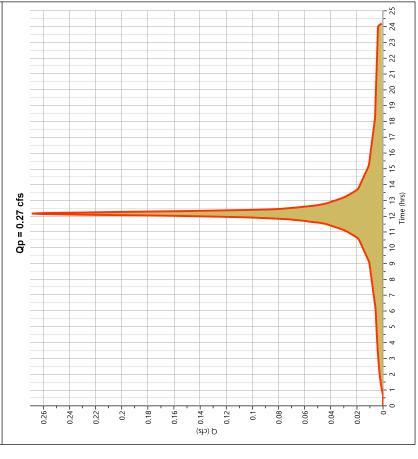
Hydrology Studio v 3.0.0.24

Post Impervious DA3

06-14-2022

Project Name:

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.269 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.17 hrs
Time Interval	= 2 min	Runoff Volume	= 1,221 cuft
Drainage Area	= 0.05 ac	Curve Number	86 =
Tc Method	= User	Time of Conc. (Tc)	= 12.8 min
Total Rainfall	= 6.76 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

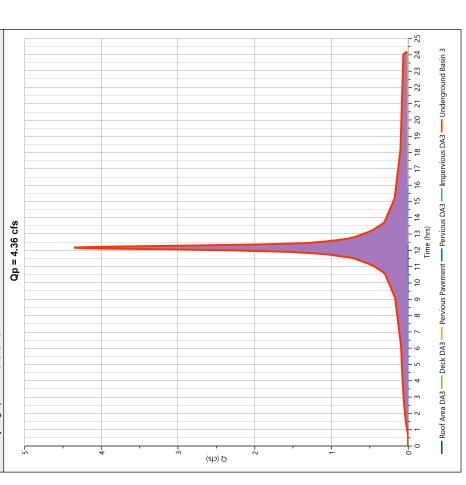


	ţ	_
	r	כ
	Š	2
	0	۵
ı	n	-
	_	
	г	
0	-	-
•	Ċ	5
	200	ס
	У	ס
	202	ם ס
	У	
	У	
	У	
	У	
	У	

Project Name:

06-14-2022

Post Underground Basin 3	nd Basin 3		Hyd. No. 13
Hydrograph Type	= Junction	Peak Flow	= 4.357 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.17 hrs
Time Interval	= 2 min	Hydrograph Volume = 19,799 cuft	= 19,799 cuft
Inflow Hydrographs = 3, 4, 5, 11, 12	= 3, 4, 5, 11, 12	Total Contrib. Area	= 0.82 ac



Hydrograph Report

06-14-2022

Project Name:

_	
Garden 1	
st Rain	
Pos	

= 25-yr = 2 min = 6, 7 Qp = 0.65 cfs Qp = 0.65 cfs	= 25-yr = 2 min Hydrograph Volume = 6, 7 Op = 0.65 cfs Op = 0.65 cfs	= 25-yr = 2 min = 6, 7	Time to Peak Hydrograph Volume Total Contrib. Area	= 12.10 hrs
= 2 min Hydrograph Volume = 6, 7 Qp = 0.65 cfs	#ydrograph Volume = 2,336 cur = 6, 7 Qp = 0.65 cfs Qp = 0.65 cfs	= 2 min = 6, 7	Hydrograph Volume Total Contrib. Area	
Adrographs = 6, 7 Op = 0.65 cfs	2p = 0.65 cfs Qp = 0.65 cfs Qp = 0.65 cfs	Q Q	Total Contrib. Area	= 2,336 cuf
	Qp = 0.65 cfs			= 0.15 ac
0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0		0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0		
0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0		0.09 0.09 0.07 0.07 0.05 0.05 0.05 0.05 0.03 0.03		
0.09 0.08 0.07 0.05 0.05 0.03 0.03 0.03 0.03 0.03 0.03		0.09 0.08 0.07 0.05 0.05 0.05 0.05 0.05 0.03 0.03 0.03		
0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0		0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0		
0.055 0.		0.5 0.7 0.5 0.5 0.5 0.5 0.5 0.3 0.3 0.3 0.3 0.3 0.3		
0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0		0.05		
0.055 (cfs) 0.055		0.5 0.6 0.5 0.4 0.3 0.3 0.3 0.3 0.3		
0.05 (a) (b) (c) (c) (c) (c) (c) (c) (c) (c) (c) (c		0.05 0.05 0.05 0.04 0.03 0.03		
0.0 (%) 0.0 (%		0.55- 0.5- 0.4- 0.3- 0.3- 0.2- 0.2- 0.2- 0.3- 0.3- 0.3- 0.3- 0.3- 0.3- 0.3- 0.3		
0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15		0.5		
0.45		0.4 0.3 0.3 0.3 0.3		
0.35 0.25 0.15 0.15 0.10		0.4		
0.35		0.3 0.3 0.2		
0.15		0.35		
0.25	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23	0.02		
0.15	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23	002		
0.15	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23	7.0		
0.05	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23			
000	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23			
	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23	100		
) 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23	COX		

Hydrology Studio v 3.0.0.24

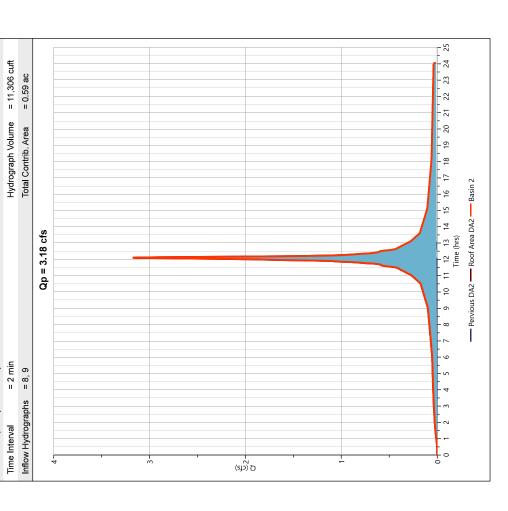
Post Basin 2

06-14-2022

Hyd. No. 15

Project Name:

= 3.175 cfs = 12.10 hrs = 11,306 cuft Time to Peak Peak Flow = Junction = 25-yr = 2 min Hydrograph Type Storm Frequency



Hydrograph Report

Post Basin 2

06-14-2022

Project Name:

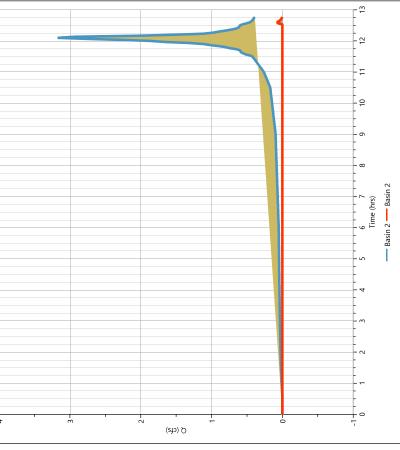
0
Z
_:
ō
2
_

16

c)
Ž	2
_	
_	•
τ	3
-	•
÷	-
_	

Hydrograph Type	= Pond Route	Peak Flow	= 0.075 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.60 hrs
Time Interval	= 2 min	Hydrograph Volume	= 29.8 cuft
Inflow Hydrograph	= 15 - Basin 2	Max. Elevation	= 14.90 ft
Pond Name	= Basin 2	Max. Storage	= 3,434 cuft
Pond Routing by Storage Indication Method	idication Method	Center of mas	Center of mass detention time = 11 min
	Qp = 0.07 cfs		
4			





Post Basin 1

Hyd. No. 17

Storm Frequency = 25-yr Time to Peak	Time to Peak Hydrograph Volume Max. Elevation Max. Storage	12.50 hrs 12.50 hrs 12.50 hrs 12.50 hrs 14.95 ft 15.50 hrs 14.95 ft 15.50 hrs 15.50
Qp = 0.06 cfs	aph Volume vvation srage Center of m	= 34.8 cuft = 14.95 ft = 718 cuft ass detention time = 2 min
Qp = 0.06 cfs	orage Center of m	= 14.95 ft = 718 cuft ass detention time = 2 min
Qp = 0.06 cfs	Center of m.	= 718 cuft ass detention time = 2 min
	Center of m	ass detention time = 2 min
Qp = 0.06 cfs		
		1
	1	
1 2 3 4 5 6 7 8 9 Time (hrs)	10	11 12 13

Hydrograph Report

06-14-2022 Project Name:

06-14-2022

Project Name:

S BASIN	
OMBINED TO UC	
Post CON	

•	

Peak Flow = 4.357 cfs Time to Deak = 12.17 hrs	olume	Total Contrib. Area = 0.82 ac	s ofs			11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 Time (hrs) — Basin 2 — COMBINED TO UG BASIN
= Junction	= 2 min	= 13, 16	Qp = 4.36 cfs			5 6 7 8 9 10 — Underground Basin 3 —
		Inflow Hydrographs				

Hydrology Studio v 3.0.0.24

Post UG Basin 3

Hydrograph Report Project Name:

Hydrology Studio v 3.0.0.24

06-14-2022

Hyd No. 19

= 12.20 hrs = 0.000 cuft

Hydrograph Volume

Time to Peak

Peak Flow

= Pond Route

= 25-yr = 2 min

Storm Frequency Hydrograph Type

Time Interval

Max. Elevation

Inflow Hydrograph = 18 - COMBINED TO UG BASIN = UG BASIN 3

Pond Routing by Storage Indication Method

Pond Name

Max. Storage

Qp = 0.00 cfs

= 5,212 cuft = 12.96 ft

= 0.000 cfs

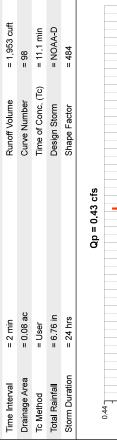
Project Name:

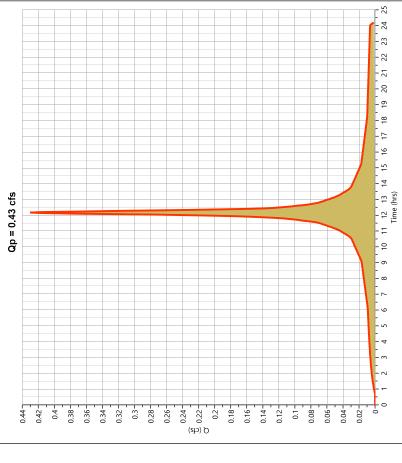
06-14-2022

Pre DA 2 - IMPERVIOUS

Hyd. No. 20

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.430 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.17 hrs
Time Interval	= 2 min	Runoff Volume	= 1,953 cuft
Drainage Area	= 0.08 ac	Curve Number	86 =
Tc Method	= User	Time of Conc. (Tc)	= 11.1 min
Total Rainfall	= 6.76 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484





Q (cfs)

Τ2

. 2

- 6

--- COMBINED TO UG BASIN --- UG Basin 3

Project Name:

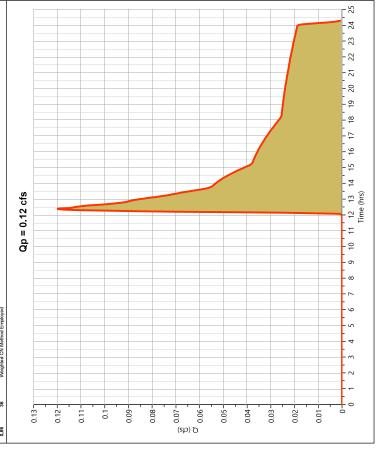
Pre DA 2 - PERVIOUS

06-14-2022

Hyd. No. 21

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.120 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.37 hrs
Time Interval	= 2 min	Runoff Volume	= 1,574 cuft
Drainage Area	= 0.86 ac	Curve Number	= 36*
Tc Method	= User	Time of Conc. (Tc)	= 11.1 min
Total Rainfall	= 6.76 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

DESCRIPTION
OPEN SPACE
WOODS
Weighted CN Method Employed Composite CN Worksheet
 AREA (ac) CN DESCRIPTION
 C.58 39 WOODEN SPACE
 C.58 30 Woodsheed
 C.58 36 Weighted CN N



Hydrograph Report

06-14-2022

Project Name:

Pre DA 2	
Pre	

equency = 25-yr Time to Peak Hydrograph Volume Adrographs = 20, 21 Qp = 0.49 cfs Qp = 0.49 cfs	" " "		Time to Peak Hydrograph Volume	= 12.20 hrs
Hydrograph Volume = 20, 21 Qp = 0.49 cfs	" "		Hydrograph Volume	
= 20, 21 Op = 0.49 cfs	"	20, 21	المادية المادية المادية	= 3,527 cuft
Op = 0.49 cfs	0.48	Qp = 0.49 cfs	Total Contrib. Area	= 0.94 ac
	0.48 0.46 0.42 0.42			
	0.46			
	0.42			
	0.42			
	0.42			
	0.4			
	0.38			
	0.36			
	1 60			
	0.34			
	0.32			
	0.3			
	0.28			
	·s 0.26			
	G 0.24			
	0.22			
	-20			
	187			
	5 7			
	00			
	0.14			
	0.12			
	0.1			
	0.08			
	-90.0			
	0.04			
	0.02			
		- - - - - - - - - - - - - - - - - - -	-	-

Pre DA 3 - PERVIOUS

06-14-2022

Project Name:

Hyd. No. 23
3 - PERVIOUS

Hydrograph Type	oe = NRCS Runoff	Peak Flow	= 0.140 cfs
Storm Frequency	cy = 25-yr	Time to Peak	= 12.33 hrs
Time Interval	= 2 min	Runoff Volume	= 1,549 cuft
Drainage Area	= 0.75 ac	Curve Number	= 37*
Tc Method	= User	Time of Conc. (Tc)	= 10.3 min
Total Rainfall	= 6.76 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484
* Composite CN Worksheet	rksheet		
AREA (ac) CN	DESCRIPTION		
0.62 39	OPEN SPACE		
0.13 30	WOODS		
0.75 37	Weighted CN Method Employed		

			13 14 15 16 17 18 19 20 21 22 23 24 25 (firs)
			3 4 5 6 7 8 9 10 11 12 13 Time (hrs)

Hydrograph Report

06-14-2022 Project Name:

Hyd. No. 24

Pre COMBINED TO POA 1

Hydrograph Type	= Junction	Peak Flow	= 0.588 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.20 hrs
Time Interval	= 2 min	Hydrograph Volume	= 5,077 cuft
Inflow Hydrographs	= 22, 23	Total Contrib. Area	= 1.69 ac
	Qp = 0.59 cfs		
0.95			
6.0			
0.85			
0.8			
0.75			
0.7			
0.65			
0.6			
(sto			
00			
0.45			
0.4			
0.35			
0.3			
0.25			
2.0			
7 7			
- 100			
0 1 2 3	4 5 6 7 8 9 10 11 12 13	14 15 16 17 18 19 20	21 22 23 24 25
	(Sun) print		
	—— DA 2 —— DA 3 - PERVIOUS —— COMBINED TO POA 1	OMBINED 10 POA 1	

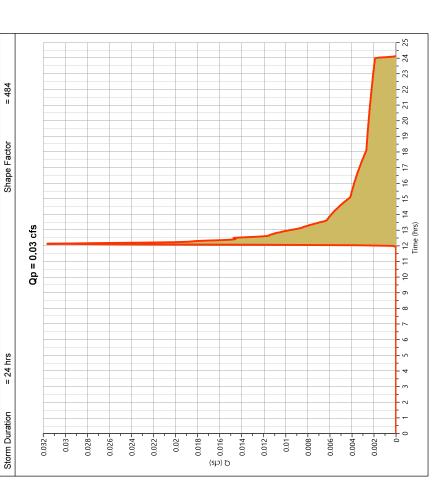
Hydrology Studio v 3.0.0.24

06-14-2022

25

Project Name:

3			
Post IMP BYPASS INLET N.	SS INLET N.		Hyd. No.
Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.032 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.13 hrs
Time Interval	= 2 min	Runoff Volume	= 186 cuft
Drainage Area	= 0.08 ac	Curve Number	= 39
Tc Method	= User	Time of Conc. (Tc)	= 6.0 min
Total Rainfall	= 6.76 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shane Factor	= 484



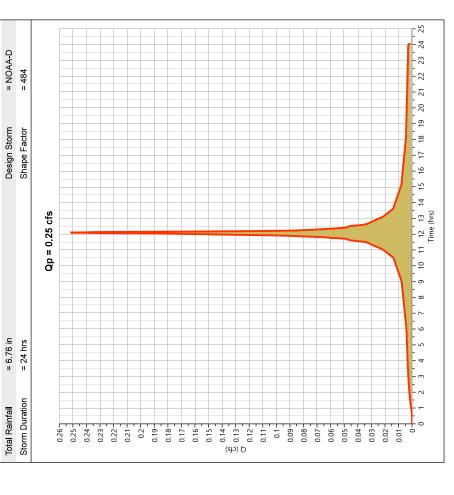
Hydrograph Report

06-14-2022 Hyd. No. 26

Project Name:

_
Z
ᆸ
_
Z
S
Ś
ď
Š
a
M
Post

= 0.252 cfs	= 12.10 hrs	= 888 cuft	86 =	(Tc) = 6.0 min	= NOAA-D
Peak Flow	Time to Peak	Runoff Volume	Curve Number	Time of Conc. (Tc)	Design Storm
= NRCS Runoff	= 25-yr	= 2 min	= 0.04 ac	= User	= 6.76 in
Hydrograph Type	Storm Frequency	Time Interval	Drainage Area	Tc Method	Total Rainfall



COMB. INLET N.

Hydrograph Report

06-14-2022

Hyd. No. 27

Storm Frequency = 25-yr Time Inflow Hydrograph Volume = 1,074 curft Inflow Hydrograph Volume =	= 25-yr = 2 25, 26			Time to Peak Hydrograph Volume Total Contrib. Area	= 12.10 hrs = 1,074 cuff = 0.12 ac
# Hydrograph Volume = 1,074 cuft	= 26, 26 Qp = 0.28 cfs Total Contrib. Area = 0.12 ac Qp = 0.28 cfs			Hydrograph Volume Total Contrib. Area	= 1,074 cuft = 0.12 ac
25, 26 Op = 0.28 cfs Op = 0.28 cfs	Ap = 0.28 cfs Op = 0.28 cfs Total Contrib. Area = 0.12 ac Total Contribution Area = 0.12 ac Total Cont			Total Contrib. Area	= 0.12 ac
Qp = 0.28 cfs	Qp = 0.28 cfs Qp = 0.28 cfs	0.27 0.26 0.25 0.24 0.23	Op = 0.28 cfs		
	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 Time (hrs)	0.28 0.27 0.26 0.25 0.23 0.23			
	Time (hrs) Time (hrs)	0.25			
	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 Time (hrs)	0.25			
	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	0.24			
	Time (hrs)	0.23			
	Time (hrs)	0.22			
	Time (hrs)	0.21			
	Time (hrs)				
	Time (hrs)				
	Time (hrs)	010			
	Time (hrs)	010			
	Time (hrs)	0.10			
	Time (hrs)	7.70			
	Time (hrs)	0.10			
	Time (hrs)	(ts)			
	Time (hrs)	Q (0.14			
	Time (hrs)	0.13			
	Time (hrs)	0.12			
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	Time (hrs)				
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	I 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 Time (hrs)	- 0000			
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	In 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 Time (hrs)	80.0			
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	Inne (hrs)	-20.0			
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	I 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 Time (hrs)	-90:0			
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 Time (hrs)	0.05			
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 Time (hrs)	0.04			
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 Time (hrs)	0.03			
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 Time (hrs)	0.02			
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 Time (hrs)	0.01			
	Time (hrs)	1 2 3 4	6 7 8 9 10 11 12 13	15 16 17 18 19	22 23 24

Hydrograph Report

06-14-2022 Project Name:

Hyd. No. 28

Post COMBINED TO POA 1

Hydrograph Type = Junction Peak Flow = 0.277 cfs Storm Frequency = 25-yr Time to Peak = 12.10 hrs Time Interval = 2 min Hydrograph Volume = 1,109 cuft Inflow Hydrographs = 17, 19, 27 Total Contrib. Area = 0.12 ac				
= 25-yr = 2 min s = 17, 19, 27	Hydrograph Type	= Junction	Peak Flow	= 0.277 cfs
	Storm Frequency	= 25-yr	Time to Peak	= 12.10 hrs
	Time Interval	= 2 min	Hydrograph Volume	= 1,109 cuft
	Inflow Hydrographs	= 17, 19, 27	Total Contrib. Area	= 0.12 ac

Inflow Hydrographs	= 17, 19, 27	Total Contrib. Area	= 0.12 ac
	Qp = 0.28 cfs		
0.28			
0.27			
0.26			
0.25			
0.24			
0.23			
0.22			
0.21			
0.2			
0.19			
0.8			
0.1/			
0.16			
0.1.0			
sìo) ! 			
0.13			
0.12			
0			
- 00			
60:0			
0.00			
0.00			
0.06			
0.00			
0.04			
0.03			
0.02			
10:0			
0 0			
1 - 2 -	3 4 5 6 7 8 9 10 11 12 13	14 15 16 17 18 19 20	21 22 23 24 25
	Time (hrs)		
	Basin 1 UG Basin 3 COMB. INLET N COMBINED TO POA 1	COMBINED TO POA 1	

•	į		
	9		
	ì	1	١
ſ	٦	r	•
	(
	٤		
	Ì	١	
	,	_	
	ζ	=	
	(=	
	(
	(
	(
	(

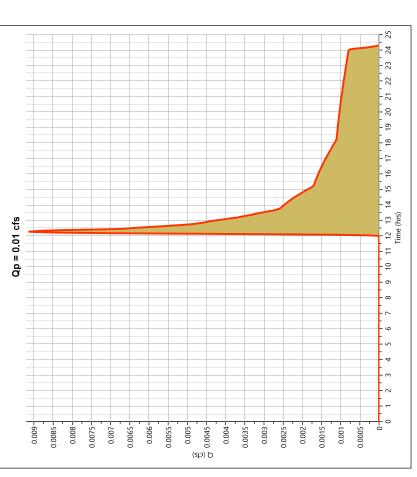
06-14-2022

Hyd No. 29

Project Name:

Pre Bypass Memorial

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.009 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.30 hrs
Time Interval	= 2 min	Runoff Volume	= 76.9 cuft
Drainage Area	= 0.03 ac	Curve Number	= 39
Tc Method	= User	Time of Conc. (Tc)	= 12.9 min
Total Rainfall	= 6.76 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



Hydrograph Report

Post Bypass Memorial

06-14-2022

Project Name:

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.024 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.30 hrs
Time Interval	= 2 min	Runoff Volume	= 205 cuft
Drainage Area	= 0.08 ac	Curve Number	= 39
Tc Method	= User	Time of Conc. (Tc)	= 12.9 min
Total Rainfall	= 6.76 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shane Factor	= 484

	0.0 = 0.00 efs	ď	
		,	
0.025			
0.024			
0.00			
0.022			
0.021			
0.02			
0.019			
0.018			
0.017			
0.016			
0.015			
0.014			
(cfs) 0.013-1			
Ø 0.012			
0.011			
0.01			
0.009			
0.008			
0.007			
0.006			
0.005		/	
0.004 -		/	
0.003			
0.002			
0.001			

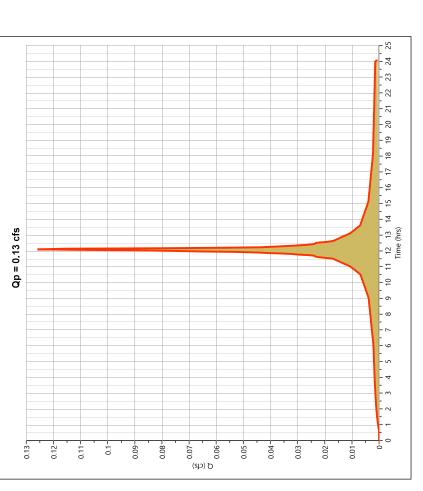
Post Imp Bypass Inlet S.

06-14-2022

Hyd. No. 31

Project Name:

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.126 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.10 hrs
Time Interval	= 2 min	Runoff Volume	= 444 cuft
Drainage Area	= 0.02 ac	Curve Number	86 =
Tc Method	= User	Time of Conc. (Tc)	= 6.0 min
Total Rainfall	= 6.76 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



Hydrograph Report

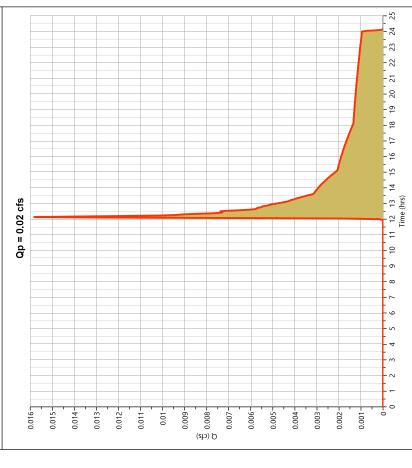
06-14-2022

Project Name:

Hyd. No. 32

Post Perv Bypass Inlet S.

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.016 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.13 hrs
Time Interval	= 2 min	Runoff Volume	= 93.2 cuft
Drainage Area	= 0.04 ac	Curve Number	= 39
Tc Method	= User	Time of Conc. (Tc)	= 6.0 min
Total Rainfall	= 6.76 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



ŧ	_
9	⊇
ì	D
۵	_
7	ξ
2	= 0
2	= 0 0 0
•	
2	
2	

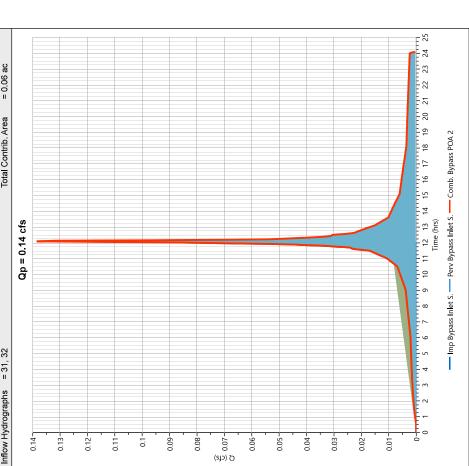
Post Comb. Bypass POA 2

Project Name:

06-14-2022

Hyd. No. 33

= 12.10 hrs= 0.139 cfs = 537 cuft = 0.06 ac Time to Peak Hydrograph Volume Total Contrib. Area Peak Flow = Junction = 25-yr = 2 min = 31, 32 Inflow Hydrographs Hydrograph Type Storm Frequency Time Interval



Hydrograph 100-yr Summary

06-14-2022 Project Name:

20 (60 0 10	tarana tanana (Salana)							
Hyd. No.	Hydrograph Type	Hydrograph Name	Peak Flow (cfs)	Time to Peak (hrs)	Hydrograph Volume (cuft)	Inflow Hyd(s)	Maximum Elevation (ft)	Maximum Storage (cuft)
-	NRCS Runoff	Pre DA 1 - IMPERVIOUS	0.322	12.13	1,311			
2	NRCS Runoff	Pre DA 1 - PERVIOUS	090'0	12.17	273	ı		
ю	NRCS Runoff	Post Roof Area DA3	2.141	12.17	9,802	1		
4	NRCS Runoff	Post Deck DA3	2.363	12.17	10,816	ı		
9	NRCS Runoff	Post Pervious Pavement	1.108	12.17	5,070	ı		
9	NRCS Runoff	Post Pervious DA 1	0.083	12.13	295	1		
7	NRCS Runoff	Post Roof Area DA1	0.864	12.10	3,073	1		
œ	NRCS Runoff	Post Pervious DA2	0.149	12.13	530	1		
0	NRCS Runoff	Post Roof Area DA2	4.321	12.10	15,364	1		
10	Junction	Pre DA 1 - POA 2	0.379	12.13	1,584	1, 2		
£	NRCS Runoff	Post Pervious DA3	0.014	12.20	64.8	ı		
12	NRCS Runoff	Post Impervious DA3	0.369	12.17	1,690	I		
13	Junction	Post Underground Basin 3	5.994	12.17	27,444	3, 4, 5, 11, 12		
4	Junction	Post Rain Garden 1	0.946	12.10	3,368	6, 7		
15	Junction	Post Basin 2	4.468	12.10	15,895	6,8		
16	Pond Route	Post Basin 2	3.504	12.13	2,202	15	15.01	3,667
17	Pond Route	Post Basin 1	1.000	12.13	551	14	15.00	753
18	Junction	Post COMBINED TO UG BASI	N9.311	12.13	29,646	13, 16		
19	Pond Route	Post UG Basin 3	0.553	12.73	881	18	14.23	10,225
20	NRCS Runoff	Pre DA 2 - IMPERVIOUS	0.591	12.17	2,704	ı		
21	NRCS Runoff	Pre DA 2 - PERVIOUS	0.810	12.20	4,475	I		
22	Junction	Pre DA 2	1.381	12.20	7,179	20, 21		
23	NRCS Runoff	Pre DA 3 - PERVIOUS	0.809	12.20	4,218	I		
24	Junction	Pre COMBINED TO POA 1	2.190	12.20	11,397	22, 23		
25	NRCS Runoff	Post IMP BYPASS INLET N.	0.132	12.13	471	I		
56	NRCS Runoff	Post IMP BYPASS INLET N.	0.346	12.10	1,229	ı		
27	Junction	COMB. INLET N.	0.476	12.10	1,701	25, 26		
28	Junction	Post COMBINED TO POA 1	1.450	12.13	3,133	17, 19, 27		
29	NRCS Runoff	Pre Bypass Memorial	0.041	12.20	194	1		
30	NRCS Runoff	Post Bypass Memorial	0.108	12.20	519	1		
31	NRCS Runoff	Post Imp Bypass Inlet S.	0.173	12.10	615	ı		
32	NRCS Runoff	Post Perv Bypass Inlet S.	0.066	12.13	236	ı		
33	Junction	Post Comb. Bypass POA2	0.238	12.10	850	31, 32		
		_	_					

Hydrology Studio v 3.0.0.24

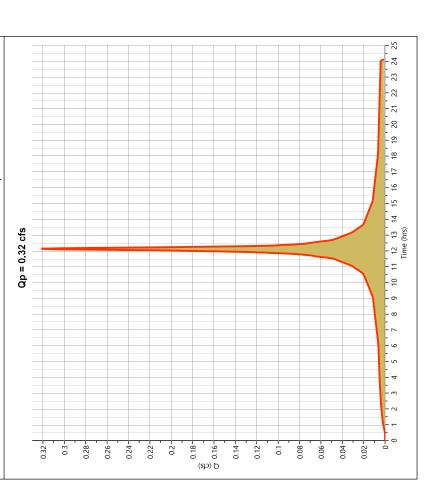
Pre DA 1 - IMPERVIOUS

06-14-2022

Hyd. No. 1

Project Name:

= 12.13 hrs = 1,311 cuft = 0.322 cfs= NOAA-D = 9.8 min = 98 = 484 Time of Conc. (Tc) Runoff Volume Curve Number Design Storm Time to Peak Shape Factor Peak Flow = NRCS Runoff = 0.04 ac = User = 100-yr = 9.27 in = 2 min = 24 hrs Hydrograph Type Storm Frequency Storm Duration Drainage Area Time Interval Total Rainfall Tc Method



Hydrograph Report

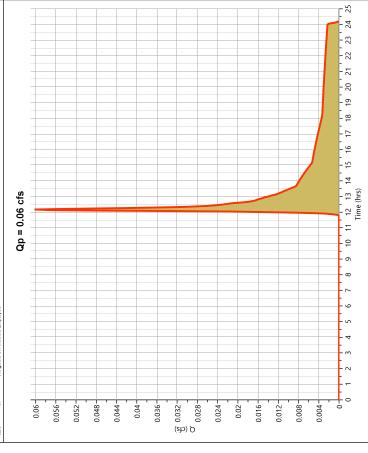
06-14-2022

Project Name:

ഗ
ń
PERVIOUS
₹
~
щ
ш
٠
~
⋖
δ
Pre
Δ.

drograph Type	= NRCS Runoff	Peak Flow	= 0.060 cfs
rm Frequency	= 100-yr	Time to Peak	= 12.17 hrs
ie Interval	= 2 min	Runoff Volume	= 273 cuft

Hyaroc	Hydrograph Type	= NACV AUDOM	Peak Flow	= 0.060 crs
Storm	Storm Frequency	= 100-yr	Time to Peak	= 12.17 hrs
Time Interval	nterval	= 2 min	Runoff Volume	= 273 cuft
Draina	Drainage Area	= 0.05 ac	Curve Number	= 37*
Tc Method	hod	= User	Time of Conc. (Tc)	= 9.8 min
Total Rainfall	ainfall	= 9.27 in	Design Storm	= NOAA-D
Storm	Storm Duration	= 24 hrs	Shape Factor	= 484
* Compo	* Composite CN Worksheet			
AREA (ac) CN	CN DESCRIPTION	NOLL		
0.04	39 oben space	8		
0.01	30 wooded			
90.0	37 Weighted	Weighted CN Method Employed		

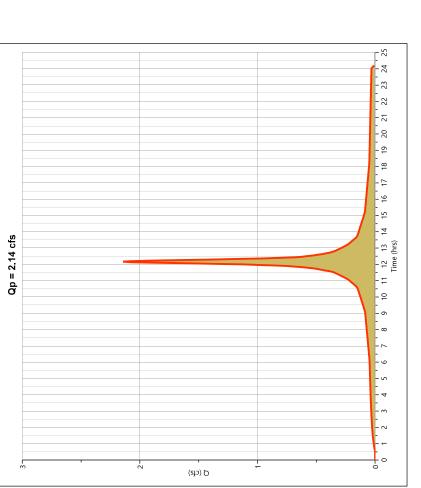


eport
Rep
q
graph
vdrogra

Post Roof Area DA3

Hyd No. 3

Hydrograph Type	= NRCS Runoff	Peak Flow	= 2.141 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.17 hrs
Time Interval	= 2 min	Runoff Volume	= 9,802 cuft
Drainage Area	= 0.29 ac	Curve Number	86 =
Tc Method	= User	Time of Conc. (Tc)	= 10.0 min
Total Rainfall	= 9.27 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



Hydrograph Report

06-14-2022

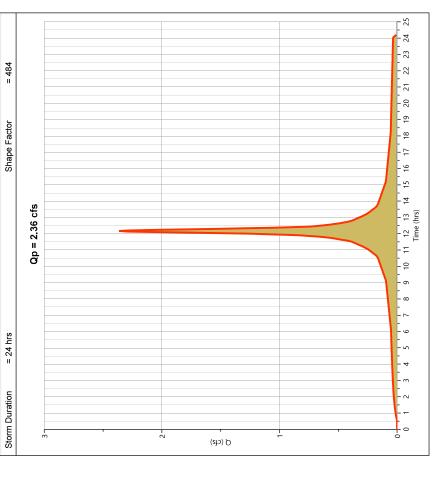
Project Name:

Post Deck DA3

06-14-2022

Project Name:

Hydrograph Type	= NRCS Runoff	Peak Flow	= 2.363 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.17 hrs
Time Interval	= 2 min	Runoff Volume	= 10,816 cuft
Drainage Area	= 0.32 ac	Curve Number	86 =
Tc Method	= User	Time of Conc. (Tc)	= 12.8 min
Total Rainfall	= 9.27 in	Design Storm	= NOAA-D



	١	=	
	(_)
	(2
	(1)
Ĺ	1	Ľ	
_	(
	()
	(١)
	t)
	(_)
	3		
-	7	-	•
	ζ)
		2	
-			2
	-	TOUR DOUGH	aranh Re

06-14-2022

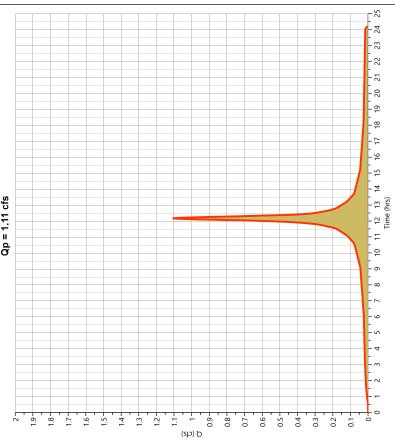
Hyd. No. 5

Project Name:

Post Pervious Pavement

Hydrograph Type	= NRCS Runoff	Peak Flow	= 1.108 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.17 hrs
Time Interval	= 2 min	Runoff Volume	= 5,070 cuft
Drainage Area	= 0.15 ac	Curve Number	86 =
Tc Method	= User	Time of Conc. (Tc)	= 12.8 min
Total Rainfall	= 9.27 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484





Hydrograph Report

06-14-2022

Project Name:

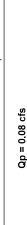
Hyd. No. 6

_
•
⋖
\Box
G
Sin
2
<u>.</u>
viou
viou
<u>.</u>
viou

_
DA
Sno
Σ̈
Pe
ost
а.

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.083 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.13 hrs
Time Interval	= 2 min	Runoff Volume	= 295 cuft
Drainage Area	= 0.05 ac	Curve Number	= 39
Tc Method	= User	Time of Conc. (Tc)	= 6.0 min
Total Rainfall	= 9.27 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

Qp = 0.08 cfs





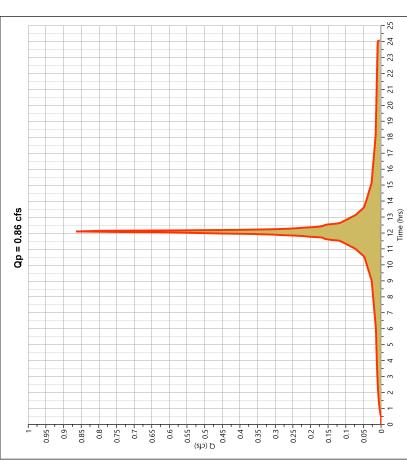
Post Roof Area DA1

Hyd. No. 7

Project Name:

06-14-2022

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.864 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.10 hrs
Time Interval	= 2 min	Runoff Volume	= 3,073 cuft
Drainage Area	= 0.1 ac	Curve Number	86 =
Tc Method	= User	Time of Conc. (Tc)	= 6.0 min
Total Rainfall	= 9.27 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



- 6

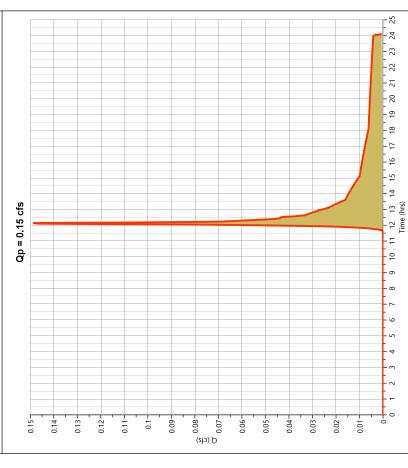
Hydrograph Report

Hyd. No. 8

06-14-2022 Project Name:

Post Pervious DA2

= 0.149 cfs	k = 12.13 hrs	ne = 530 cuft	er = 39	c. (Tc) = 6.0 min	n = NOAA-D	or = 484
Peak Flow	Time to Peak	Runoff Volume	Curve Number	Time of Conc. (Tc)	Design Storm	Shape Factor
= NRCS Runoff	= 100-yr	= 2 min	= 0.09 ac	= User	= 9.27 in	= 24 hrs
Hydrograph Type	Storm Frequency	Time Interval	Drainage Area	Tc Method	Total Rainfall	Storm Duration

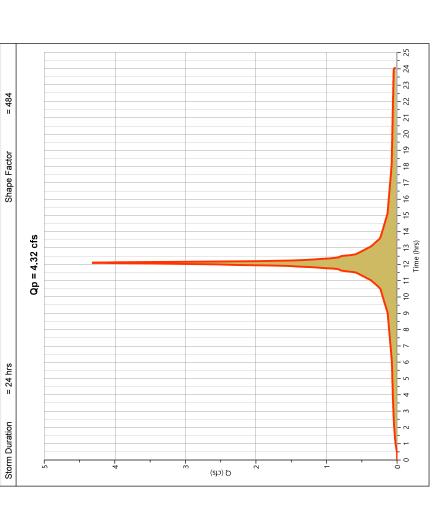


Hydrology Studio v 3.0.0.24

06-14-2022

Project Name:

Hyd. No. 9 = 15,364 cuft = 12.10 hrs = 4.321 cfs = NOAA-D = 6.0 min = 98 Time of Conc. (Tc) Design Storm Runoff Volume Curve Number Time to Peak Peak Flow = NRCS Runoff = 100-yr = User = 9.27 in = 24 hrs = 0.5 ac = 2 min Post Roof Area DA2 Hydrograph Type Storm Frequency Drainage Area Time Interval Total Rainfall Tc Method



Hydrograph Report

06-14-2022

Project Name:

	Peak Flow
QI.	= Junction
Pre DA 1 - POA 2	Hydrograph Type

Hydrograph Type	= Junction	Peak Flow	= 0.379 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.13 hrs
Time Interval	= 2 min	Hydrograph Volume	= 1,584 cuft
Inflow Hydrographs	= 1, 2	Total Contrib. Area	= 0.09 ac
	Qp = 0.38 cfs		
0.38			
0.36			
0.34			
0.32			
0.3			
0.28			
0.26			
0.24			
(cfs) (C			
0.18			
0.16			
44.0			
0.52			
- 80.00			
90.0			
0.04			
0.02			
0 1 2 3	3 4 5 6 7 8 9 10 11 12 13	14 15 16 17 18 19 20	21 22 23 24 25
	Inne (ms) — DA 1 - IMPERVIOUS — DA 1 - PERVIOUS — DA 1 - POA 2	OUS DA 1 - POA 2	

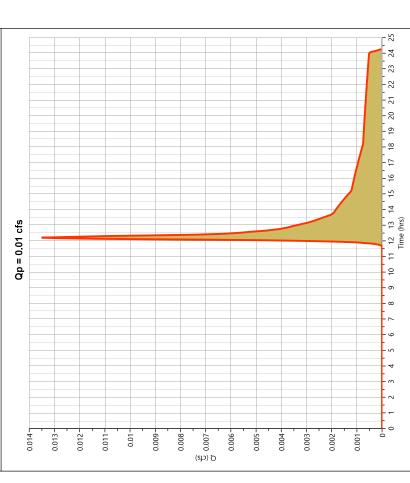
Post Pervious DA3

06-14-2022

Hyd. No. 11

Project Name:

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.014 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.20 hrs
Time Interval	= 2 min	Runoff Volume	= 64.8 cuft
Drainage Area	= 0.01 ac	Curve Number	= 39
Tc Method	= User	Time of Conc. (Tc)	= 12.8 min
Total Rainfall	= 9.27 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



Hydrograph Report

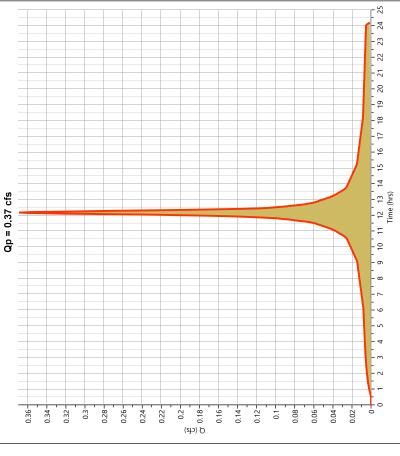
Project Name:

06-14-2022

Hyd. No. 12

Post Impervious DA3

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.369 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.17 hrs
Time Interval	= 2 min	Runoff Volume	= 1,690 cuft
Drainage Area	= 0.05 ac	Curve Number	86 =
Tc Method	= User	Time of Conc. (Tc)	= 12.8 min
Total Rainfall	= 9.27 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484
	Qp = 0.37 cfs		



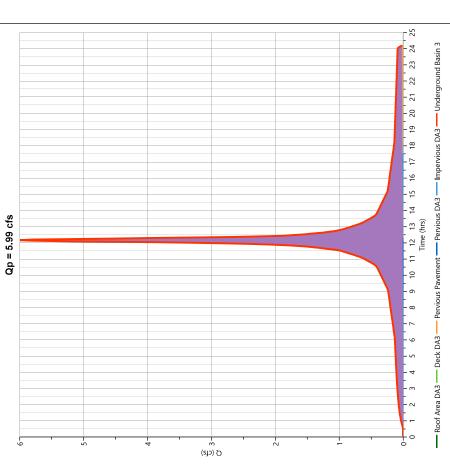
Hydrology Studio v 3.0.0.24

06-14-2022 Project Name:

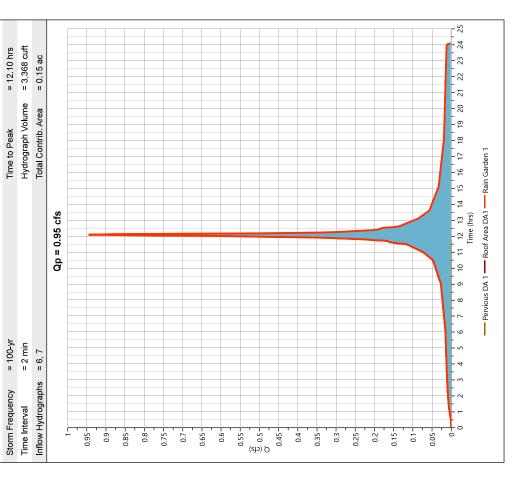
Hyd. No. 13

Post Underground Basin 3

Hydrograph Type	= Junction	Peak Flow	= 5.994 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.17 hrs
Time Interval	= 2 min	Hydrograph Volume = 27,444 cuft	= 27,444 cuft
Inflow Hydrographs = 3, 4, 5, 11, 12	= 3, 4, 5, 11, 12	Total Contrib. Area = 0.82 ac	= 0.82 ac



Hydrograph Report		Project Name:
Hydrology Studio v 3.0.0.24		06-14-2022
Post Rain Garden 1		Hyd. No. 14
Hydrograph Type = Junction	Peak Flow	= 0.946 cfs



Hydrology Studio v 3.0.0.24

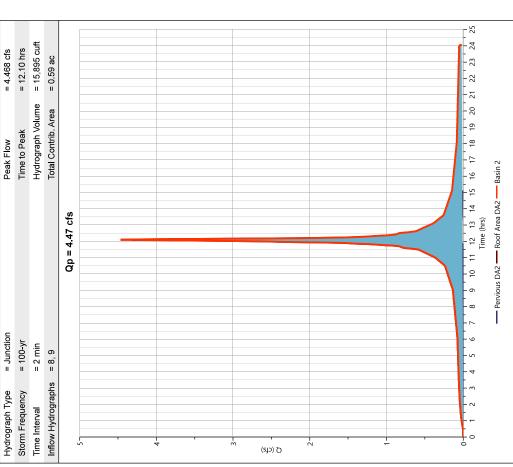
Post Basin 2

06-14-2022

Hyd. No. 15

Project Name:

= 4.468 cfs = 12.10 hrs = 15,895 cuft Time to Peak Peak Flow = Junction = 2 min



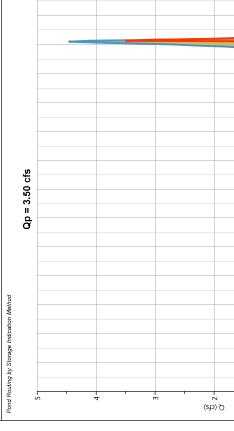
Hydrograph Report

Hyd. No. 16

06-14-2022 Project Name:

Post Basin 2

Hydrograph Type	= Pond Route	Peak Flow	= 3.504 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.13 hrs
Time Interval	= 2 min	Hydrograph Volume = 2,202 cuft	= 2,202 cuft
Inflow Hydrograph	= 15 - Basin 2	Max. Elevation	= 15.01 ft
Pond Name	= Basin 2	Max. Storage	= 3,667 cuft



- 4

. 2

. 2

=

9

Time (hrs)

Post Basin 1

Hyd No. 17

2.13 hrs 5.00 ft 5.00 ft 53 cuff	Time to Peak	Otense From Indeed			5
Hydrograph Volume = 551 cuft Max. Elevation = 15.00 ft Max. Storage = 753 cuft Qp = 1.00 cfs Qp = 1.00 cfs 4 5 6 7 8 9 10 11 12 13	Hydrograph Volume = 551 cuft Max. Elevation = 15.00 ft Max. Storage = 753 cuft Ap = 1.00 cfs	Stofrii Frequency	= 100-yr	Time to Peak	= 12.13 hrs
Ap = 1.00 fs Qp = 1.00 cfs Qp = 1.00 cfs 4 5 6 7 8 9 10 11 12 13	Ap = 1.00 cfs Qp = 1.00 cfs Qp = 1.00 cfs Ap = 1.00 cfs Qp = 1.00 cfs Ap = 1.00 cfs Ap = 1.00 cfs Ap = 1.00 cfs	Time Interval	= 2 min	Hydrograph Volume	= 551 cuft
Qp = 1.00 cfs Qp = 1.00 cfs	Qp = 1.00 cfs Qp = 1.00 cfs The state of t	Inflow Hydrograph	= 14 - Rain Garden 1	Max. Elevation	= 15.00 ft
Qp = 1.00 cfs	Qp = 1.00 cfs The contract of	Pond Name	= BASIN 1	Max. Storage	= 753 cuft
Qp = 1.00 cfs 0.85 0.8	Ope = 1.00 cfs	Pond Routing by Storage Ir	dication Method		
0.05 0.05	0.055 0.	ŗ	Qp = 1.00 cfs		
0.55 0.55	0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05	- 10			
0.05 0.05	0.05 0.05 0.05 0.04 0.04 0.03 0.03 0.03 0.03 0.03 0.03				
0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05	0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05	-6:0			
0.55 0.55 0.55 0.45	0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50	0.85			
0.75 0.65 0.65 0.65 0.75	0.75 0.65 0.65 0.65 0.65 0.65 0.65 0.65 0.6	0.8			
0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05	0.55 0.45 0.45 0.45 0.45 0.45 0.45 0.45	0.75			
0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05	0.65 0.45 0.45 0.45 0.45 0.45 0.45 0.45 0.4	0.7			
0.55 0.45 0.45 0.45 0.25 0.25 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.1	0.55 0.45 0.45 0.45 0.45 0.45 0.45 0.45	0.65			
0.55 0.45 0.45 0.25 0.25 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.1	0.55 0.45 0.45 0.35 0.35 0.35 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.1	9.0			
0.05	0.45 0.45 0.25 0.25 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.1	0.55			
0.05	0.45 0.35 0.25 0.15 0.15 0.17 0.05 0.17 0.18 0.19 0.19 0.19 0.19 0.19 0.19 0.19 0.19	cfs)			
2 1 2 3 4 5 6 7 8 9 10 11 12 13 13	1 2 3 4 5 6 7 8 9 10 11 12 13 Time (hrs)	_			
2 3 4 5 6 7 8 9 10 11 12 13	Time (hrs)	1			
2 3 4 5 6 7 8 9 10 11 12 13	Time (hrs)	1.0			
2 3 4 5 6 7 8 9 10 11 12 13	Time (hrs)	0.35			
2 3 4 5 6 7 8 9 10 11 12 13	Time (hrs)	0.3			
2 3 4 5 6 7 8 9 10 11 12 13	Time (hrs)	0.25			
2 3 4 5 6 7 8 9 10 11 12 13	Time (hrs)	0.2			
2 3 4 5 6 7 8 9 10 11 12 13	Time (hrs)	0.15			
1 5 3 4 5 6 7 8 9 10 11 12 13	Time (hrs)	0.1			
1 2 3 4 5 6 7 8 9 10 11 12 13	1 2 3 4 5 6 7 8 9 10 11 12 13 Time (hrs)	0.05			
1 2 3 4 5 6 7 8 9 10 11 12 13	1 2 3 4 5 6 7 8 9 10 11 12 13 Time (hrs)				
		0	3 4 5 6 7	10	13

Hydrograph Report

06-14-2022 Project Name:

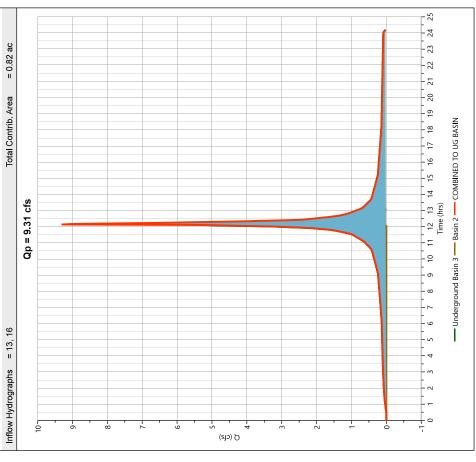
Hyd. No. 18

06-14-2022 Project Name:

NED TO UG BASIN	
Post COMBIN	

Peak Flow	= 9.311 cfs
Time to Peak	= 12.13 hrs
Hydrograph Volume	= 29,646 cuft
Cost distance leter	0000

Hydrograph Type = Junction Storm Frequency = 100-yr Time Interval = 2 min



Post UG Basin 3

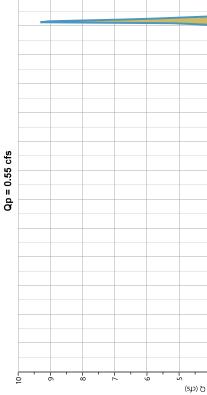
Project Name:

06-14-2022

Hyd. No. 19

Center of mass detention time = 35 min	Center of ma	dication Method	Pond Routing by Storage Indication Method
= 10,225 cuft	Max. Storage	= UG BASIN 3	Pond Name
= 14.23 ft	Max. Elevation	Inflow Hydrograph = 18 - COMBINED TO UG BASIN	Inflow Hydrograph
= 881 cuft	Hydrograph Volume = 881 cuff	= 2 min	Time Interval
= 12.73 hrs	Time to Peak	= 100-yr	Storm Frequency
= 0.553 cfs	Peak Flow	= Pond Route	Hydrograph Type

Pond Routing by Storage Indication Method



Hydrograph Report

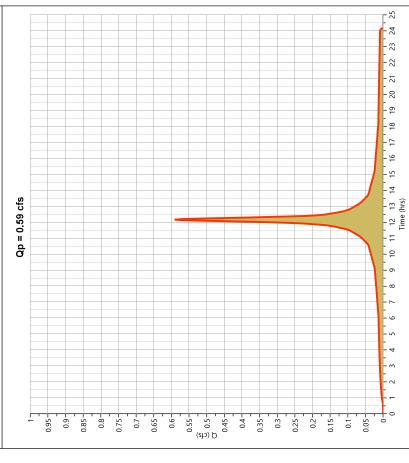
06-14-2022 Project Name:

Hyd. No. 20

Pre DA

٠,
\tilde{z}
₹
IPER
<u>P</u>
₹
7

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.591 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.17 hrs
Time Interval	= 2 min	Runoff Volume	= 2,704 cuft
Drainage Area	= 0.08 ac	Curve Number	86 =
Tc Method	= User	Time of Conc. (Tc)	= 11.1 min
Total Rainfall	= 9.27 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



- 7

- 2

15

9

--- COMBINED TO UG BASIN --- UG Basin 3

06-14-2022

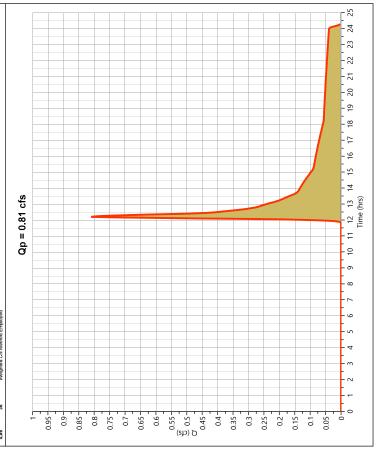
Project Name:

Pre DA 2 - PERVIOUS

Hyd. No. 21

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.810 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.20 hrs
Time Interval	= 2 min	Runoff Volume	= 4,475 cuft
Drainage Area	= 0.86 ac	Curve Number	= 36*
Tc Method	= User	Time of Conc. (Tc)	= 11.1 min
Total Rainfall	= 9.27 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484
* Composite CN Worksheet	ā		

DESCRIPTION
OPEN SPACE
WOODS
Weighted CN Method Employed AREA (ac) CN 0.58 39 0.26 30 0.86 36



Hydrograph Report

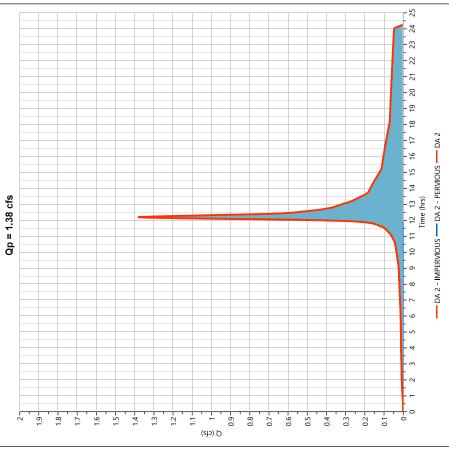
06-14-2022

Project Name:

Hyd. No. 22

Pre DA 2

Hydrograph Type	= Junction	Peak Flow	= 1.381 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.20 hrs
Time Interval	= 2 min	Hydrograph Volume = 7,179 cuft	= 7,179 cuft
Inflow Hydrographs = 20, 21	= 20, 21	Total Contrib. Area	= 0.94 ac



ţ	_
۶	3
Ò	Ľ
۵	
2	
2	5
700	0
Ţ	
Ţ	
Ţ	

Hydrograph Kep

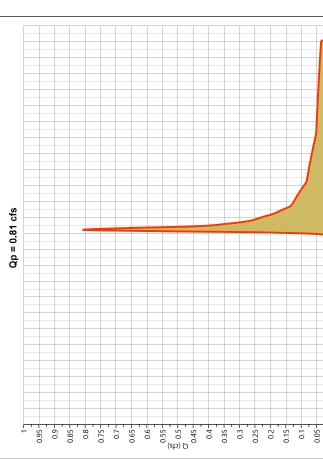
06-14-2022

Project Name:

Pre DA 3 - PERVIOUS

Hyd. No. 23
VIOUS

Hydrograph Type	pe = NRCS Runoff	Peak Flow	= 0.809 cfs
Storm Frequency	icy = 100-yr	Time to Peak	= 12.20 hrs
Time Interval	= 2 min	Runoff Volume	= 4,218 cuft
Drainage Area	= 0.75 ac	Curve Number	= 37*
Tc Method	= User	Time of Conc. (Tc)	= 10.3 min
Total Rainfall	= 9.27 in	Design Storm	= NOAA-D
Storm Duration	n = 24 hrs	Shape Factor	= 484
* Composite CN Worksheet	orksheet		
AREA (ac) CN	DESCRIPTION		
0.62 39	OPEN SPACE		
0.13 30	WOODS		
0.75 37	Weighted CN Method Employed		



- 24 - 23 - 25 - 12 - 8 - 6 - 8

- 01

Hydrograph Report

06-14-2022 Project Name:

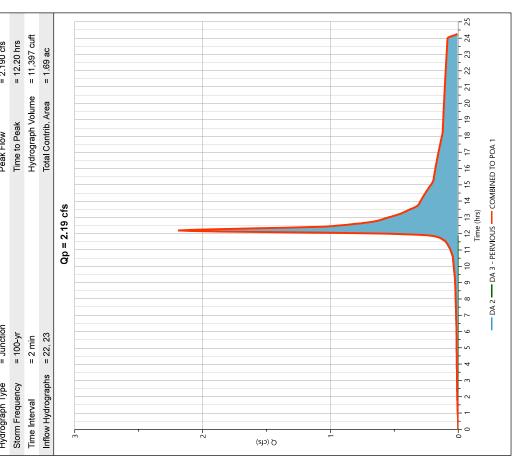
Hyd. No. 24

~
⋖
Õ
ĭ
_
Ö
F
Ω
Ш
Z
==
9
2
0
Ö
Pre

= Junction = 100-yr

Hydrograph Type Storm Frequency

= 2.190 cfs	= 12.20 hrs	= 11,397 cuft
Peak Flow	Time to Peak	Hydrograph Volume



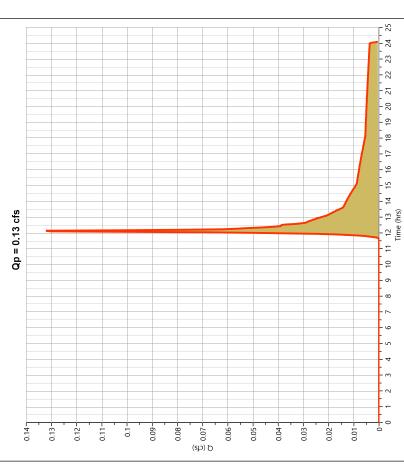
06-14-2022

Hyd. No. 25

Project Name:

Post IMP BYPASS INLET N.

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.132 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.13 hrs
Time Interval	= 2 min	Runoff Volume	= 471 cuft
Drainage Area	= 0.08 ac	Curve Number	= 39
Tc Method	= User	Time of Conc. (Tc)	= 6.0 min
Total Rainfall	= 9.27 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



Hydrograph Report

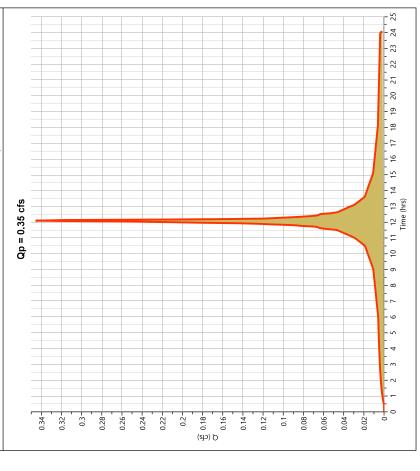
06-14-2022

Project Name:

Hyd. No. 26

Post IMP BYPASS INLET N.

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.346 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.10 hrs
Time Interval	= 2 min	Runoff Volume	= 1,229 cuft
Drainage Area	= 0.04 ac	Curve Number	86 =
Tc Method	= User	Time of Conc. (Tc)	= 6.0 min
Total Rainfall	= 9.27 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



Hydrology Studio v 3.0.0.24

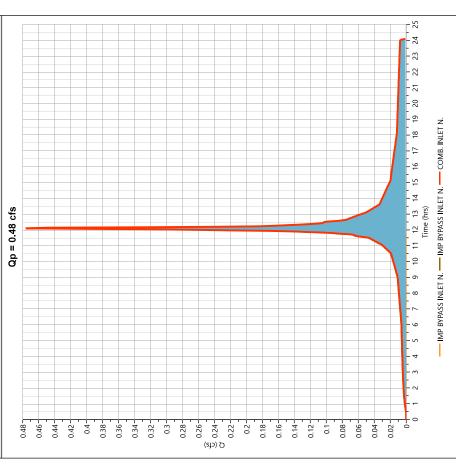
06-14-2022

Project Name:

COMB. INLET N.

Hyd. No. 27

Inilow Hydrographs = 25, 26



Hydrograph Report

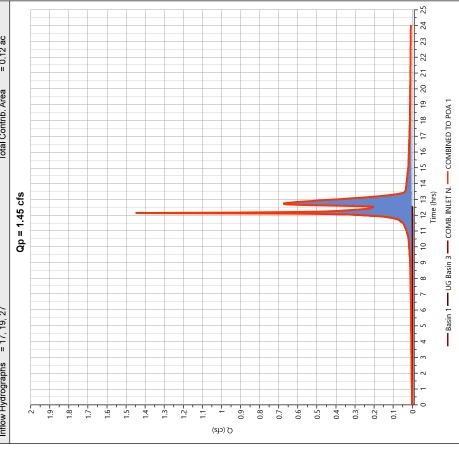
Hydrology Studio v 3.0.0.24

Hyd. No. 28

Project Name: 06-14-2022

Post COMBINED TO POA 1

				ı
	Hydrograph Type = Junction	= Junction	Peak Flow	= 1.450 cfs
(i)	Storm Frequency	= 100-yr	Time to Peak	= 12.13 hrs
_	Time Interval	= 2 min	Hydrograph Volume = 3,133 cuft	= 3,133 cuft
_	Inflow Hydrographs = 17, 19, 27	= 17, 19, 27	Total Contrib. Area = 0.12 ac	= 0.12 ac



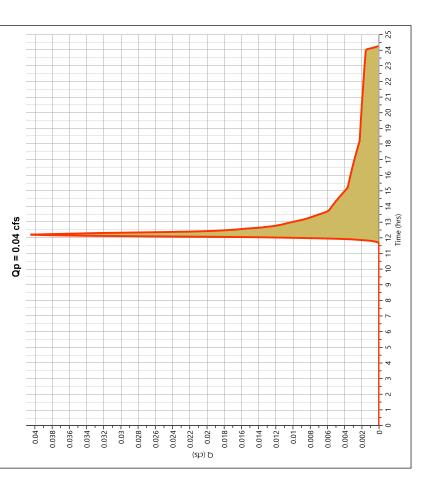
Pre Bypass Memorial

06-14-2022

Hyd. No. 29

Project Name:

quency ral rrea		0
rea rea	Time to Peak	= 12.20 hrs
rea	Runoff Volume	= 194 cuft
	Curve Number	= 39
Tc Method = User	Time of Conc. (Tc)	= 12.9 min
Total Rainfall = 9.27 in	Design Storm	= NOAA-D
Storm Duration = 24 hrs	Shape Factor	= 484



Hydrograph Report

Hydrology Studio v 3.0.0.24

Post Bypass Memorial

06-14-2022

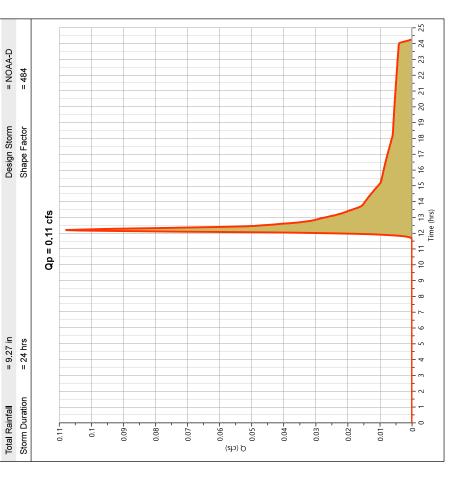
Project Name:

Hyd. No. 30

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.108 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.20 hrs
Time Interval	= 2 min	Runoff Volume	= 519 cuft
Drainage Area	= 0.08 ac	Curve Number	= 39
Tc Method	= User	Time of Conc. (Tc)	= 12.9 min

= 9.27 in

Total Rainfall



t	_
200	
ď	١
7	
7	2
ā	n
dron's	ס
rogran	2
7	5
7	

06-14-2022

Project Name:

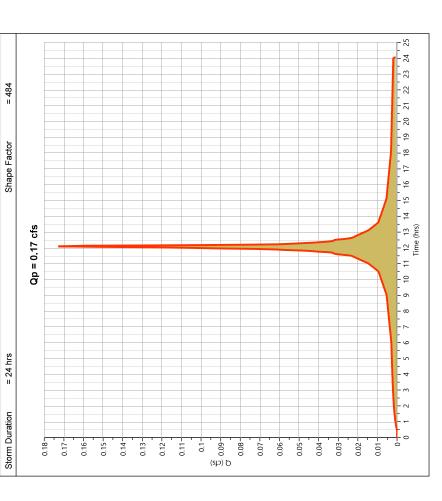
Post Imp Bypass Inlet S.

Hydrograph Type Storm Frequency

Drainage Area Time Interval

Total Rainfall Tc Method

Hyd No. 31 = 12.10 hrs= 0.173 cfs = NOAA-D = 615 cuft = 6.0 min = 98 Time of Conc. (Tc) Design Storm Shape Factor Runoff Volume Curve Number Time to Peak Peak Flow = NRCS Runoff = 0.02 ac = User = 100-yr = 9.27 in = 2 min



Hydrograph Report

Hydrology Studio v 3.0.0.24

06-14-2022

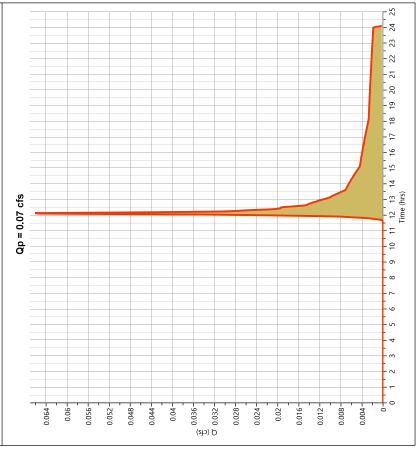
Project Name:

lo. 32

Post Perv Bypass Inlet S.

5

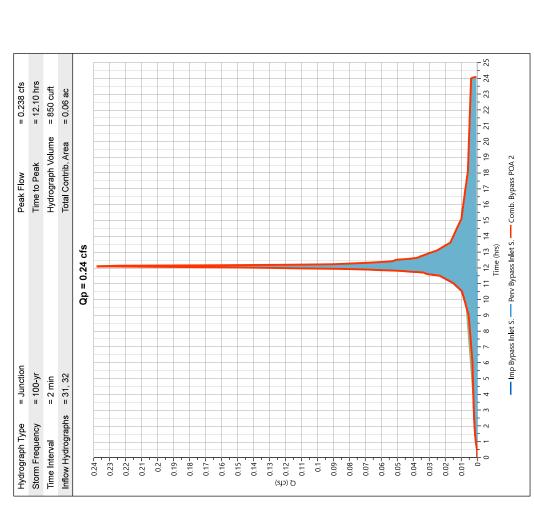
Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.066 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.13 hrs
Time Interval	= 2 min	Runoff Volume	= 236 cuft
Drainage Area	= 0.04 ac	Curve Number	= 39
Tc Method	= User	Time of Conc. (Tc)	= 6.0 min
Total Rainfall	= 9.27 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



06-14-2022 Project Name:

POA 2	
Bypass	
Comb.	
Post	

33
۲,
0
Z
ن
≥
I



HYDROGRAPH SUMMARY REPORTS – STABILITY ANALYSIS

Basin Model

06-14-2022 Project Name:

-	Hydrograph Type	Hydrograph Name	Peak Flow (cfs)	Time to Peak (hrs)	Hydrograph Volume (cuft)	Inflow Hyd(s)	Maximum Elevation (ft)	Maximum Storage (cuft)
	NRCS Runoff	Pre DA 1 - IMPERVIOUS	0.120	12.13	474	1		
2	NRCS Runoff	Pre DA 1 - PERVIOUS	0.000	24.00	0.095	1		
ю	NRCS Runoff	Post Roof Area DA3	0.801	12.17	3,546	1		
4	NRCS Runoff	Post Deck DA3	0.884	12.17	3,913	I		
so.	NRCS Runoff	Post Pervious Pavement	0.414	12.17	1,834	1		
9	NRCS Runoff	Post Pervious DA 1	0.000	24.00	1.47	1		
7	NRCS Runoff	Post Roof Area DA1	0.323	12.10	1,112	1		
00	NRCS Runoff	Post Pervious DA2	0.000	24.00	2.64	1		
o	NRCS Runoff	Post Roof Area DA2	1.617	12.10	5,558	1		
10	Junction	Pre DA 1 TO POA 2	0.120	12.13	474	1,2		
Ε	NRCS Runoff	Post Pervious DA3	0.000	24.00	0.323	1		
12	NRCS Runoff	Post Impervious DA3	0.138	12.17	611	I		
13	Junction	Post Underground Basin 3	2.237	12.17	9,905	3, 4, 5, 11, 12		
4	Junction	Post Rain Garden 1	0.323	12.10	1,113	6,7		
15	Junction	Post Basin 2	1.617	12.10	5,561	6,8		
16	Pond Route	Post Basin 2	0.790	12.20	5,554	15	14.18	1,190
17	Pond Route	Post Basin 1	0.229	12.17	1,104	14	14.74	209
8	Junction	Post COMBINED TO UG BASIN3.018	N3.018	12.17	15,459	13, 16		
19	Pond Route	Post UG Basin 3	2.614	12.23	15,223	18	13.64	6,335
20	NRCS Runoff	Pre DA 2 - IMPERVIOUS	0.221	12.17	978	ı		
21	NRCS Runoff	Pre DA 2 - PERVIOUS	0.000	00:00	0.000	1		
22	Junction	Pre DA 2	0.221	12.17	978	20, 21		
23	NRCS Runoff	Pre DA 3 - PERVIOUS	0.000	24.00	1.47	1		
24	Junction	Pre COMBINED TO POA 1	0.221	12.17	086	22, 23		
55	NRCS Runoff	Post IMP BYPASS INLET N.	0.000	24.00	2.35	ı		
56	NRCS Runoff	Post IMP BYPASS INLET N.	0.129	12.10	445	I		
27	Junction	COMB. INLET N.	0.129	12.10	447	25, 26		
58	Junction	Post COMBINED TO POA 1	2.856	12.23	16,774	17, 19, 27		
59	NRCS Runoff	Pre Bypass Memorial	0.000	24.00	696'0	1		
30	NRCS Runoff	Post Bypass Memorial	0.000	24.00	2.59	1		
31	NRCS Runoff	Post Imp Bypass Inlet S.	0.065	12.10	222	1		
32	NRCS Runoff	Post Perv Bypass Inlet S.	0.000	24.00	1.18	ı		
33	Junction	Post Comb. Bypass POA 2	0.065	12.10	223	31, 32		

Hydrograph 10-yr Summary

Project Name: 06-14-2022

raining a second (Second)								
Hyd. No.	Hydrograph Type	Hydrograph Name	Peak Flow (cfs)	Time to Peak (hrs)	Hydrograph Volume (cuft)	Inflow Hyd(s)	Maximum Elevation (ft)	Maximum Storage (cuft)
-	NRCS Runoff	Pre DA 1 - IMPERVIOUS	0.187	12.13	753	1		
7	NRCS Runoff	Pre DA 1 - PERVIOUS	0.002	12.97	38.7	1		
е	NRCS Runoff	Post Roof Area DA3	1.248	12.17	5,626	ı		
4	NRCS Runoff	Post Deck DA3	1.377	12.17	6,208	1		
s.	NRCS Runoff	Post Pervious Pavement	0.646	12.17	2,910	1		
ဖ	NRCS Runoff	Post Pervious DA 1	0.003	12.50	49.8	1		
7	NRCS Runoff	Post Roof Area DA1	0.504	12.10	1,764	1		
00	NRCS Runoff	Post Pervious DA2	0.005	12.50	7.68	1		
o	NRCS Runoff	Post Roof Area DA2	2.519	12.10	8,818	ı		
9	Junction	Pre DA 1 TO POA 2	0.187	12.13	791	1,2		
F	NRCS Runoff	Post Pervious DA3	0.001	12.60	11.0	ı		
12	NRCS Runoff	Post Impervious DA3	0.215	12.17	970	1		
5	Junction	Post Underground Basin 3	3.486	12.17	15,725	3, 4, 5, 11, 12		
4	Junction	Post Rain Garden 1	0.504	12.10	1,814	6, 7		
5	Junction	Post Basin 2	2.519	12.10	8,908	6,8		
91	Pond Route	Post Basin 2	1.136	12.20	8,901	15	14.49	1,794
17	Pond Route	Post Basin 1	0.374	12.17	1,805	14	14.81	266
8	Junction	Post COMBINED TO UG BASIN4.607	N4.607	12.17	24,627	13, 16		
19	Pond Route	Post UG Basin 3	3.795	12.27	24,379	18	14.01	6,942
20	NRCS Runoff	Pre DA 2 - IMPERVIOUS	0.344	12.17	1,552	1		
21	NRCS Runoff	Pre DA 2 - PERVIOUS	0.021	13.30	570	1		
22	Junction	Pre DA 2	0.344	12.17	2,122	20, 21		
23	NRCS Runoff	Pre DA 3 - PERVIOUS	0.026	13.00	598	ı		
24	Junction	Pre COMBINED TO POA 1	0.344	12.17	2,720	22, 23		
25	NRCS Runoff	Post IMP BYPASS INLET N.	0.005	12.50	79.7	1		
56	NRCS Runoff	Post IMP BYPASS INLET N.	0.202	12.10	705	1		
27	Junction	COMB. INLET N.	0.202	12.10	785	25, 26		
28	Junction	Post COMBINED TO POA 1	4.150	12.23	26,968	17, 19, 27		
59	NRCS Runoff	Pre Bypass Memorial	0.002	12.60	32.9	1		
30	NRCS Runoff	Post Bypass Memorial	0.005	12.60	7.78	1		
31	NRCS Runoff	Post Imp Bypass Inlet S.	0.101	12.10	353	1		
32	NRCS Runoff	Post Perv Bypass Inlet S.	0.002	12.50	39.9	1		
33	Junction	Post Comb. Bypass POA 2	0.101	12.10	393	31, 32		

STORMWATER COLLECTION CALCUL SIZING)	ATION (PIPE



Stormwater Collection System Calculations

Project: SURFSIDE CROSSING

Computed By: SMM

Job #: 2241-99-002

Checked By: SRC

Location: MEMORIAL DRIVE & 8TH AVE

Date: 6/14/2022

Design Storm:

25

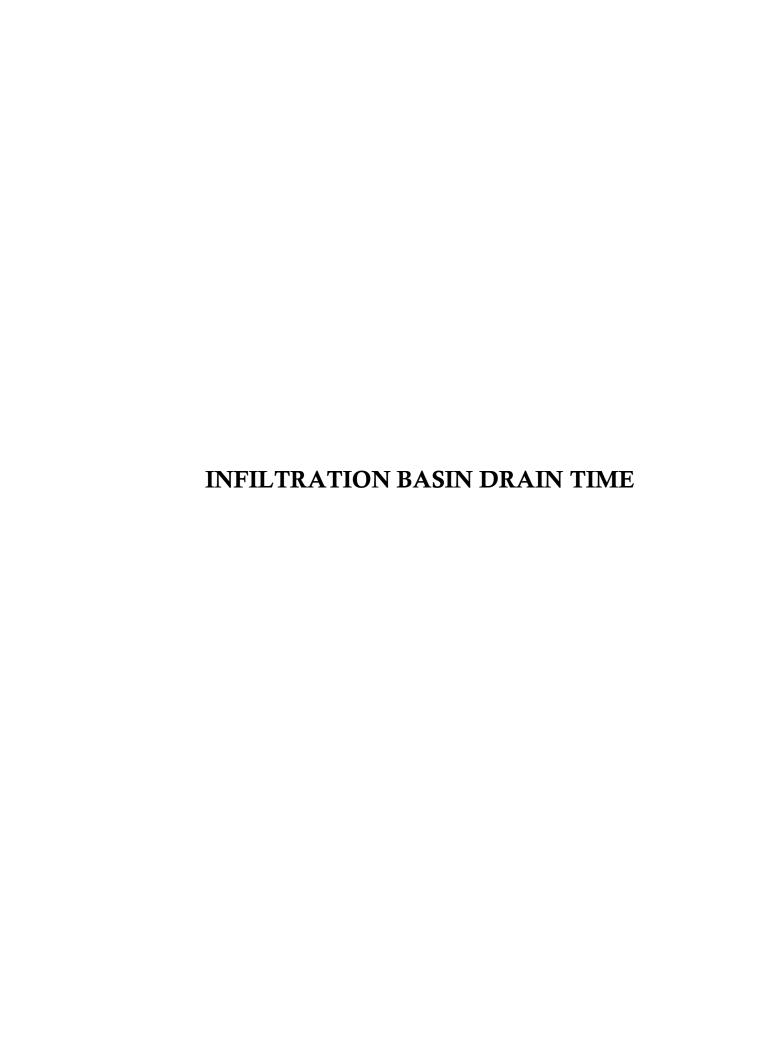
Revised: -

NOTES:

1) Design method used is Rational Method

2) Refer to Weighted Runoff Coefficient table for calculation of incremental areas and C values

PIPE SE	CCTION	SUBCATCH MENT AREA	INCF	REMENTAL	CUMULATIVE	CON	TIME OF		I	PEAK R	UNOFF	PIP	ING INP	UT		PIPIN	NG DATA	
FROM	ТО	Area (Acres)	"C"	AxC Ac	A x C (acres)	Tc to Inlet (min)	Tc in Pipe (min.)	Final Tc (min)	(In/Hr)	Q to Inlet (CFS)	Q cum. for Pipe (CFS)	Dia. (In)	Length (Ft)	Man. "n"	Slope (ft/ft)	Pipe Capacity (cfs)	Full Pipe Velocity (fps)	Actual Pipe Velocity (fps)
OCS 101	SWMH 102	0.17	0.95	0.16	0.16	10.00	0.14	10.00	6.80	1.09	1.09	12	29.0	0.011	0.0044	2.79	3.55	3.18
SWMH 102	SWMH 103	0.00	0.95	0.00	0.16	10.00	0.30	10.14	6.80	0.00	1.09	12	53.0	0.011	0.0030	2.31	2.94	2.87
OCS 201	SWMH 202	0.05	0.95	0.04	0.04	10.00	0.20	10.00	6.80	0.27	0.27	12	45.0	0.011	0.0050	2.98	3.80	1.43
OCS 301	SWMH 202	0.05	0.95	0.04	0.04	10.00	0.14	10.00	6.80	0.27	0.27	12	78.0	0.011	0.0280	7.04	8.97	2.00
SWMH 202	EX 203	0.00	0.95	0.00	0.08	10.00	0.24	10.20	6.80	0.00	0.54	12	42.0	0.011	0.0030	2.31	2.94	1.97





Infiltration Basin Drain time Calculations

Project:	Surfside Crossing		Computed By:	SMM
Job #:	2241-99-002		Checked By:	SRC
Location:	Memorial Drive & 8th Ave, Neptune, NJ		Date:	6/14/2022
			Revised:	0
Basin Name:	Basin 1			•
	Volume of Runoff to be Infiltrated =	939	cubic feet	
	Surface Area of Infiltration Area =	520	square feet	
Effective De	pth of Runoff to be Infiltrated = Volume of Runoff to be Infiltrated / Surface Area of Infiltration Area =	1.81	feet = 21.6	7 inches
	Field Tested Recharge Rate =	6.5	inches per hour	
	Design Recharge Rate * =	3.25	inches per hour	
		0.07		
	Effective Depth of Runoff to be Infiltrated / Design Recharge Rate = Time to Empty Basin =	6.67	hours**	

*Note : Factor of Safety of 2 is applied to the Field Tested Recharge Rate to establish the Design Recharge Rate

**Note: Time to Empty Basin must be less than 72 hours. Therefore;

Drain time is less than 72 Hours, therefore, design is acceptable



Infiltration Basin Drain time Calculations

Surfside Crossing		Computed By:	SMM
2241-99-002		Checked By:	SRC
Memorial Drive & 8th Ave, Neptune, NJ		Date:	6/14/2022
<u></u>		Revised:	0
Basin 2			
Volume of Runoff to be Infiltrated =	5,077	cubic feet	
Surface Area of Infiltration Area =	1,201	square feet	
pth of Runoff to be Infiltrated = Volume of Runoff to be Infiltrated / Surface Area of Infiltration Area =	4.23	feet = 50.73	3 inches
Field Tested Recharge Rate =	14.4	inches per hour	
Design Recharge Rate * =	7.2	inches per hour	
	2241-99-002 Memorial Drive & 8th Ave, Neptune, NJ Basin 2 Volume of Runoff to be Infiltrated = Surface Area of Infiltration Area = pth of Runoff to be Infiltrated = Volume of Runoff to be Infiltrated / Surface Area of Infiltration Area = Field Tested Recharge Rate =	2241-99-002 Memorial Drive & 8th Ave, Neptune, NJ Basin 2 Volume of Runoff to be Infiltrated = 5,077 Surface Area of Infiltration Area = 1,201 pth of Runoff to be Infiltrated = Volume of Runoff to be Infiltrated / Surface Area of Infiltration Area = 4.23 Field Tested Recharge Rate = 14.4	Z241-99-002 Memorial Drive & 8th Ave, Neptune, NJ Date: Revised: Volume of Runoff to be Infiltrated = 5,077 cubic feet square feet pth of Runoff to be Infiltrated / Surface Area of Infiltration Area = 1,201 square feet Field Tested Recharge Rate = 14.4 inches per hour

*Note : Factor of Safety of 2 is applied to the Field Tested Recharge Rate to establish the Design Recharge Rate

Effective Depth of Runoff to be Infiltrated / Design Recharge Rate = Time to Empty Basin =

**Note: Time to Empty Basin must be less than 72 hours. Therefore;

Drain time is less than 72 Hours, therefore, design is acceptable

7.05 hours**



Infiltration Basin Drain time Calculations

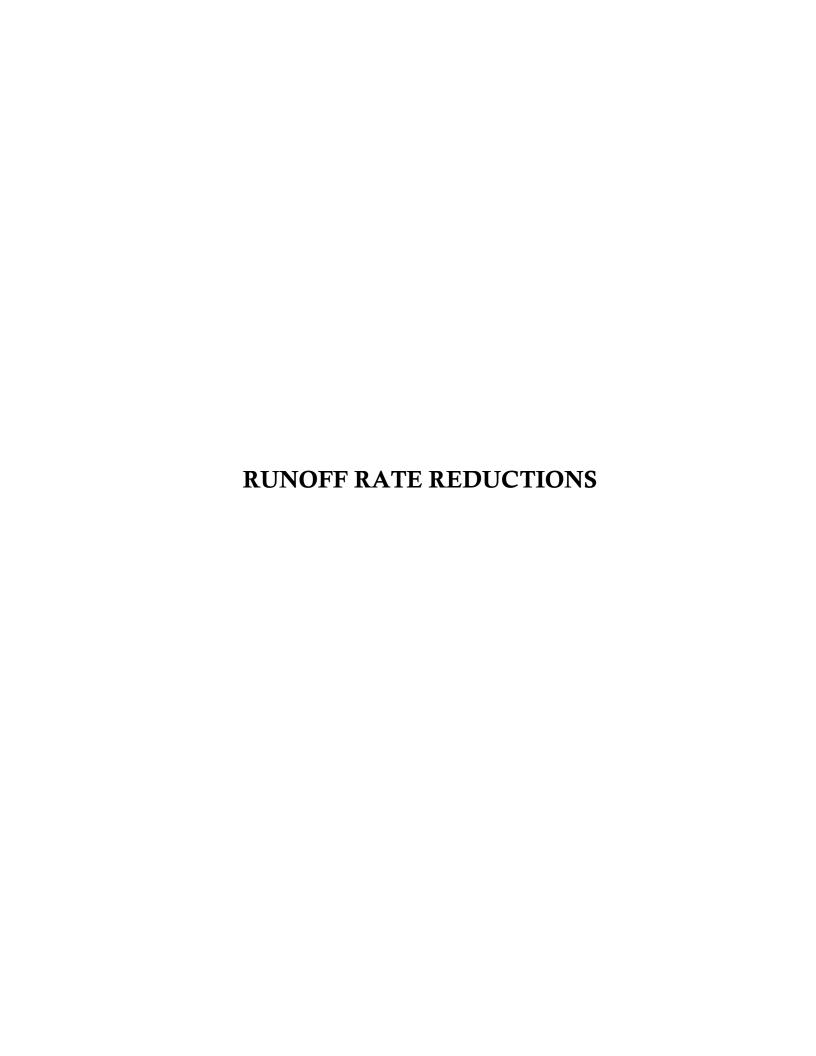
Project:	Surfside Crossing	Computed By:	SMM
Job #:	2241-99-002	Checked By:	SRC
Location:	Memorial Drive & 8th Ave, Neptune, NJ	Date:	6/14/2022
		Revised:	0
Basin Name:	Basin 2		
Effective De		,303 cubic feet ,430 square feet 0.75 feet = 8.97 7.5 inches per hour 3.75 inches per hour	inches

*Note: Factor of Safety of 2 is applied to the Field Tested Recharge Rate to establish the Design Recharge Rate

Effective Depth of Runoff to be Infiltrated / Design Recharge Rate = Time to Empty Basin =

**Note: Time to Empty Basin must be less than 72 hours. Therefore; Drain time is less than 72 Hours, therefore, design is acceptable

2.39 hours**





Runoff Rate Reduction Performance

Project: Surfside Crossing Computed By: SMM Job #: 2241-99-002 Checked By: SRC

Location: Neptune, NJ Date: 6/10/2022

FLOW TO POA 1

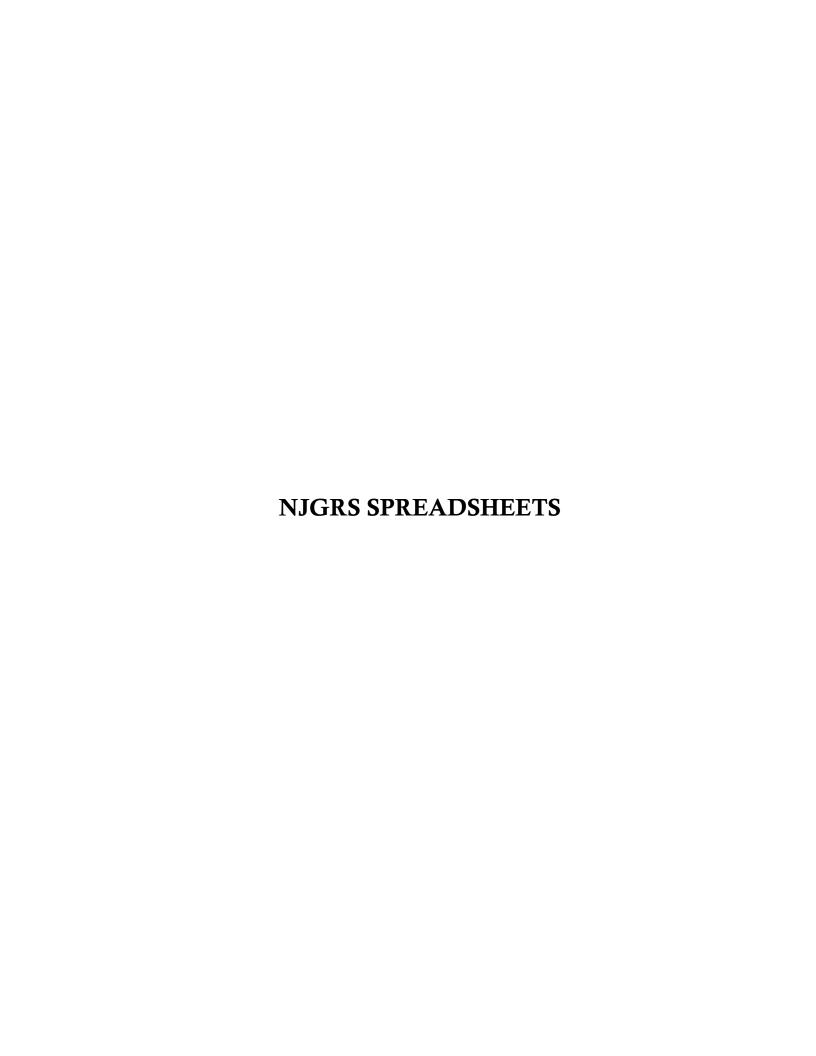
Design Storm	Existing Runoff Rate from Disturbed Area (CFS)	Hydrograph #	Runoff Rate Required Reduction	Maximum Total Allowable Runoff Rate (CFS)	Proposed Runoff Rate (CFS)	Hydrograph #
2 Year	0.22	24	50%	0.11	0.13	28
10 Year	0.34	24	25%	0.26	0.20	28
25 Year	0.59	24	0%	0.59	0.44	28
100 Year	2.19	24	20%	1.75	1.69	28

FLOW TO POA 2

Design	Existing Runoff Rate	Hydrograph #	Runoff Rate	Maximum Total	Proposed Runoff	Hydrograph
Storm	from Disturbed Area	nyurograpii #	Required	Allowable Runoff	Rate (CFS)	#
2 Year	0.12	10	50%	0.06	0.065*	33
10 Year	0.19	10	25%	0.14	0.10	33
25 Year	0.24	10	0%	0.24	0.14	33
100 Year	0.38	10	20%	0.30	0.24	33

FLOW TO POA 3

Design	Existing Runoff Rate	Hydrograph #	Runoff Rate	Maximum Total	Proposed Runoff	Hydrograph
Storm	from Disturbed Area	i iyul oglapii #	Required	Allowable Runoff	Rate (CFS)	#
2 Year	0.00	29	50%	0.00	0.00	30
10 Year	0.002	29	25%	0.00	0.005*	30
25 Year	0.01	29	0%	0.01	0.02*	30
100 Year	0.04	29	20%	0.03	0.108*	30



New Jersey
Groundwater
Recharge
Spreadsheet
Version 2.0
November 2003

Annual Groundwater Recharge Analysis (based on GSR-32)

Select Township ↓	Average Annual P (in)	Climatic Factor
MONMOUTH CO., NEPTUNE TWP	47.4	1.55

Project Name:	Surfside Crossing
Description:	78 Multi-Family Unit Dwelling
Analysis Date:	05/10/22

		Pre-Developed Cond	itions		
Land Segment	Area (acres)	TR-55 Land Cover	Soil	Annual Recharge (in)	Annual Recharge (cu.ft)
1	0.43	Woods	Fort Mott	17.1	26,693
2	0.12	Impervious areas	Fort Mott	0.0	-
3	1.26	Open space	Fort Mott	17.5	79,948
4	0				
5	0				
6	0				
7	0				
8	0				
9	0				
10	0				
11	0				
12	0				
13	0				
14	0				
15	0				
Total =	1.8			Total Annual Recharge (in)	Total Annual Recharge (cu-ft)
				16.2	106,641

		Post-Develope	d Conditions		
Land Segment	Area (acres)	TR-55 Land Cover	Soil	Annual Recharge (in)	Annual Recharge (cu.ft)
1	1.46	Impervious areas	Fort Mott	0.0	-
2	0.35	Open space	Fort Mott	17.5	22,208
3	0				
4	0				
5	0				
6	0				
7	0				
8	0				
9	0				
10	0				
11	0				
12	0				
13	0				
14	0				
15	0				
Total =	1.8		1	Total Annual Recharge (in)	Total Annual Recharge (cu.ft)
Annual	Recharg	ge Requirements Calculati	ion ↓	3.4	22,208
				Total	

Procedure to fill the Pre-Development and Post-Development Conditions Tables

For each land segment, first enter the area, then select TR-55 Land Cover, then select Soil. Start from the top of the table and proceed downward. Don't leave blank rows (with A=0) in between your segment entries. Rows with A=0 will not be displayed or used in calculations. For impervious areas outside of standard lots select "Impervious Areas" as the Land Cover. Soil type for impervious areas are only required if an infiltration facility will be built within these areas.

Post-Development Annual Recharge Deficit= 84,433

% of Pre-Developed Annual Recharge to Preserve =

84,433 (cubic feet)

100%

Impervious

Area (sq.ft)

63,598

RWC= 1.70 (in) DRWC= 0.00

RWC= 1.70 (in) DRWC= 0.00 (in)
ERWC = 0.38 (in) EDRWC= 0.00 (in)

Project Name		Description	on .		Analysis	Date	BMP or L	ID Type			
Surfside Crossing		78 Multi-F	amily Ur	nit Dwelling	05/10/22		BASIN 1				
Recharge BMP Input Pa	arameters			Root Zone Water cap	pacity Calcu	ılated Paraı	neters	Recharge Design Pa	rameters		
<u>Parameter</u>	<u>Symbol</u>	<u>Value</u>	<u>Unit</u>	<u>Parameter</u>	<u>Symbol</u>	<u>Value</u>	<u>Unit</u>	<u>Parameter</u>	<u>Symbol</u>	<u>Value</u>	<u>Unit</u>
BMP Area	ABMP	520.0	sq.ft	Empty Portion of RWC under Post-D Natural Recharge	ERWC	0.38	in	Inches of Runoff to capture	Qdesign	2.11	in
BMP Effective Depth, this is the design variable	dBMP	6.0	in	ERWC Modified to consider dEXC	EDRWC	0.00	in	Inches of Rainfall to capture	Pdesign	2.34	in
Jpper level of the BMP surface (negative if above ground)	dBMPu	-23.5	in	Empty Portion of RWC under Infilt. BMP	RERWC	0.00	in	Recharge Provided Avg. over Imp. Area		35.8	in
Depth of lower surface of BMP, must be>=dBMPu	dEXC	0.0	in					Runoff Captured Avg. over imp. Area		35.8	in
Post-development Land Segment Location of BMP , Input Zero if Location is distributed or undetermined	SegBMP	0	unitless								_
				BMP Calculated Size				CALCULATION CI			
				ABMP/Aimp	Aratio	0.01	unitless	Volume Balance->		lem to satis	fy Ann
arameters from Annua	l Doohova	o Workshoot		BMP Volume System Performance	VBMP		cu.ft	dBMP Check> dEXC Check>			
Post-D Deficit Recharge for desired recharge volume)	Vdef	10,421	cu.ft	Annual BMP Recharge Volume	Calculated	11,717		BMP Location>		selected a	s distril
Post-D Impervious Area (or target Impervious Area)	Aimp	63,598	sq.ft	Avg BMP Recharge Efficiency		100.0%	Represents % Infiltration Recharged	OTHER NOTES			
Root Zone Water Capacity	RWC	1.70	in	%Rainfall became Runoff		78.2%	%	Pdesign is accurate only after	BMP dimension	is are updated	to make r
RWC Modified to onsider dEXC	DRWC	0.00	in	%Runoff Infiltrated		6.0%	%	of BMP infiltration prior to fillir	ng and the area o	occupied by BM	1P are ign
Climatic Factor	C-factor	1.55	no units	%Runoff Recharged		6.0%	%	sensetive to dBMP, make sur	e dBMP selected	d is small enou	gh for BM
Average Annual P	Pavg	47.4	in	%Rainfall Recharged		4.7%	%	Segment Location of BMP if y	ou select "imper	vious areas" R	WC will b
echarge Requirement ver Imp. Area	dr	2.0	in					the soil type and a shallow ro	ot zone for this L	and Cover allo	wing cons

How to Solve for different recharge volumes: By default the spreadsheet assigns the values of total deficit recharge volume "Vdef" and total proposed impervious area "Aimp" from the "Annual Recharge" sheet to "Vdef" and "Aimp" on this page. This allows solution for a single BMP to handle the entire recharge requirement assuming the runoff from entire impervious area is available to the BMP.

To solve for a smaller BMP or a LID-IMP to recharge only part of the recharge requirement, set Vdef to your target value and Aimp to impervious area directly connected to your infiltration facility and then solve for ABMP or dBMP. To go back to the default configuration clik the "Default Vdef & Aimp" button.

Project Name		Description	on		Analysis	Date	BMP or L	ID Type			
Surfside Crossing		78 Multi-F	amily Un	it Dwelling	05/10/22		BASIN 2				
Recharge BMP Input Pa	arameters			Root Zone Water cap	pacity Calcu	llated Paran	neters	Recharge Design Par	rameters		
<u>Parameter</u>	<u>Symbol</u>	<u>Value</u>	<u>Unit</u>	<u>Parameter</u>	<u>Symbol</u>	<u>Value</u>	<u>Unit</u>	<u>Parameter</u>	<u>Symbol</u>	<u>Value</u>	<u>Unit</u>
BMP Area	ABMP	1201.0	sq.ft	Empty Portion of RWC under Post-D Natural Recharge	ERWC	0.38	in	Inches of Runoff to capture	Qdesign	2.11	in
BMP Effective Depth, this is the design variable	dBMP	6.0	in	ERWC Modified to consider dEXC	EDRWC	0.00	in	Inches of Rainfall to capture	Pdesign	2.34	in
Jpper level of the BMP surface (negative if above ground)	dBMPu	-34.8	in	Empty Portion of RWC under Infilt. BMP	RERWC	0.00	in	Recharge Provided Avg. over Imp. Area		35.8	in
Depth of lower surface of BMP, must be>=dBMPu	dEXC	0.0	in					Runoff Captured Avg. over imp. Area		35.8	in
Post-development Land Segment Location of BMP nput Zero if Location is distributed or undetermined	SegBMP	0	unitless								
				BMP Calculated Size				CALCULATION CI			
				ABMP/Aimp	Aratio	0.05	unitless	Volume Balance->		em to satis	fy Ann
	10.1	***	1	BMP Volume	VBMP		cu.ft	dBMP Check>			
<mark>arameters from Annua</mark> ost-D Deficit Recharge				System Performance Annual BMP Recharge	Calculated		<u> </u>	dEXC Check>	OK		
or desired recharge volume)	Vdef	26,000	cu.ft	Volume		27,061	cu.ft	BMP Location>	Location is	selected as	s distri
Post-D Impervious Area or target Impervious Area)	Aimp	22,216	sq.ft	Avg BMP Recharge Efficiency		100.0%	Represents % Infiltration Recharged	OTHER NOTES			
Root Zone Water Capacity	RWC	1.70	in	%Rainfall became Runoff		78.2%	%	Pdesign is accurate only after	BMP dimension	s are updated	to make r
RWC Modified to consider dEXC	DRWC	0.00	in	%Runoff Infiltrated		39.4%] %	of BMP infiltration prior to filling	g and the area o	occupied by BM	IP are ign
Climatic Factor	C-factor	1.55	no units	%Runoff Recharged		13.8%	%	sensetive to dBMP, make sur	e dBMP selected	d is small enoug	gh for BM
	_	47.4	lin	%Rainfall		10.8%					
verage Annual P	Pavg	47.4	in	Recharged		10.070	%	Segment Location of BMP if y	ou select "imper	vious areas" R'	WC will b

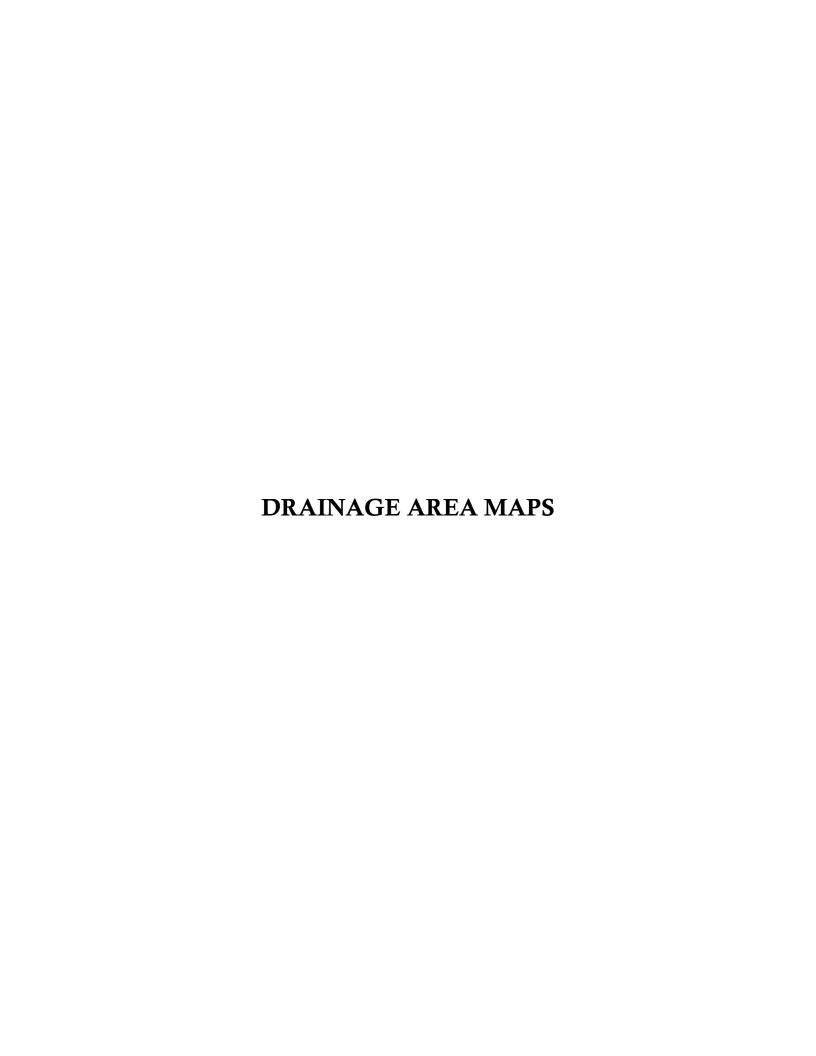
How to solve for different recharge volumes: By default the spreadsheet assigns the values of total deficit recharge volume "Vdef" and total proposed impervious area "Aimp" from the "Annual Recharge" sheet to "Vdef" and "Aimp" on this page. This allows solution for a single BMP to handle the entire recharge requirement assuming the runoff from entire impervious area is available to the BMP.

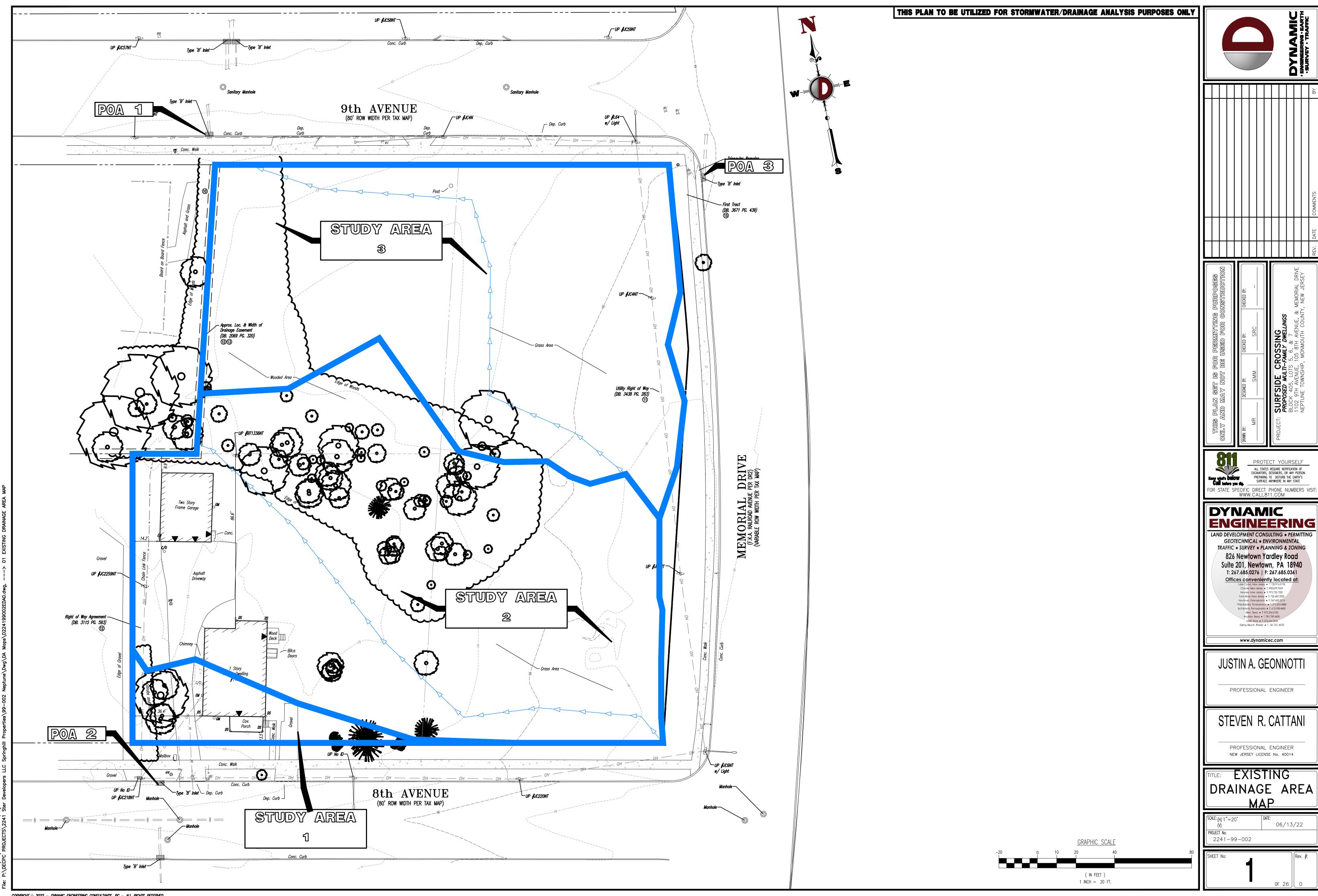
To solve for a smaller BMP or a LID-IMP to recharge only part of the recharge requirement, set Vdef to your target value and Aimp to impervious area directly connected to your infiltration facility and then solve for ABMP or dBMP. To go back to the default configuration clik the "Default Vdef & Aimp" button.

Project Name		Description	<u>on</u>		Analysis	Date	BMP or L	ID Type			
Surfside Crossing		78 Multi-F	amily Ur	nit Dwelling	05/10/22		UG BASIN				
Recharge BMP Input Pa	arameters			Root Zone Water cap	pacity Calcu	llated Paran	neters	Recharge Design Pa	rameters		
<u>Parameter</u>	<u>Symbol</u>	<u>Value</u>	<u>Unit</u>	<u>Parameter</u>	<u>Symbol</u>	<u>Value</u>	<u>Unit</u>	<u>Parameter</u>	<u>Symbol</u>	<u>Value</u>	<u>Unit</u>
BMP Area	АВМР	8430.0	sq.ft	Empty Portion of RWC under Post-D Natural Recharge	ERWC	0.38	in	Inches of Runoff to capture	Qdesign	2.11	in
BMP Effective Depth, this is the design variable	dBMP	14.4	in	ERWC Modified to consider dEXC	EDRWC	0.00	in	Inches of Rainfall to capture	Pdesign	2.34	in
Upper level of the BMP surface (negative if above ground)	dBMPu	30.0	in	Empty Portion of RWC under Infilt. BMP	RERWC	0.00	in	Recharge Provided Avg. over Imp. Area		35.8	in
Depth of lower surface of BMP, must be>=dBMPu	dEXC	48.0	in					Runoff Captured Avg. over imp. Area		35.8	in
Post-development Land Segment Location of BMP , Input Zero if Location is distributed or undetermined	SegBMP	0	unitless								
				BMP Calculated Size				CALCULATION CI			
				ABMP/Aimp	Aratio	0.13	unitless	Volume Balance->		em to satis	fy Ann
Parameters from Annua	l Dachana	Waylahaat	1	BMP Volume System Performance	VBMP	10,116	cu.π	dBMP Check> dEXC Check>			
Post-D Deficit Recharge (or desired recharge volume)	Vdef	84,433	cu.ft	Annual BMP Recharge Volume	Calculated	189,946	cu.ft	BMP Location>		selected as	s distril
Post-D Impervious Area (or target Impervious Area)	Aimp	63,598	sq.ft	Avg BMP Recharge Efficiency		100.0%	Represents % Infiltration Recharged	OTHER NOTES			
Root Zone Water Capacity	RWC	1.70	in	%Rainfall became Runoff		78.2%	%	Pdesign is accurate only after	BMP dimension	s are updated	to make r
RWC Modified to consider dEXC	DRWC	0.00	in	%Runoff Infiltrated		96.7%	%	of BMP infiltration prior to fillir	ng and the area o	occupied by BM	1P are ign
Climatic Factor	C-factor	1.55	no units	%Runoff Recharged		96.7%	%	sensetive to dBMP, make sur	e dBMP selected	is small enou	gh for BM
Average Annual P	Pavg	47.4	in	%Rainfall Recharged		75.6%	%	Segment Location of BMP if y	ou select "imper	vious areas" R	WC will b
	1										

How to solve for different recharge volumes: By default the spreadsheet assigns the values of total deficit recharge volume "Vdef" and total proposed impervious area "Aimp" from the "Annual Recharge" sheet to "Vdef" and "Aimp" on this page. This allows solution for a single BMP to handle the entire recharge requirement assuming the runoff from entire impervious area is available to the BMP.

To solve for a smaller BMP or a LID-IMP to recharge only part of the recharge requirement, set Vdef to your target value and Aimp to impervious area directly connected to your infiltration facility and then solve for ABMP or dBMP. To go back to the default configuration clik the "Default Vdef & Aimp" button.





COPYRIGHT © 2022 - DYNAMIC ENGINEERING CONSULTANTS, PC - ALL RIGHTS RESERVED

