

STORMWATER TECHNICAL INFORMATION REPORT

BDH REALTY COMMERCIAL SUBDIVISION PRIMARY PLAT

Project Location:

2140 & 2150 N. Morton Street
Franklin, IN 46131

Prepared For:

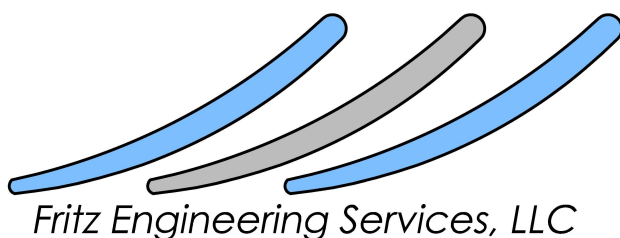
HUBLER AUTOMOTIVE
8220 S. US 31
Indianapolis, IN 46227

Date:

February 2, 2021
Last Revised:



A handwritten signature in black ink that reads "Ashton L. Fritz".



- CIVIL ENGINEERS
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- DRAINAGE CONSULTANTS
- CERTIFIED FLOODPLAIN MANAGER

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PROJECT DESCRIPTION

BDH Realty is proposing a new Commercial Subdivision including the vacant parcel at the southwest corner of Simon Road and N. Morton Street and the existing Hubler Ford dealership site at the northwest corner of N. Morton Street and Ransdell St in Franklin, Indiana. The subdivision will create 4 commercial development lots along with associated utility services, private drives and associated infrastructure. In total the overall development is approximately 12 acres. It is anticipated that the four new commercial lots will be developed with a 6 acre automotive dealership, car wash and a mixture of office and retail buildings. Access to the site will be provided from two existing entrances on N. Morton Street and a new proposed entrance on Simon Road.

This analysis is provided as part of the Primary Plat application for the above referenced commercial subdivision. Final design of the various stormwater management components will be provided with the Secondary Plat and Construction Plan application and/or the final Development Plan application for each outlot as they are developed.

For reference, the project site is located at approximately latitude 39°30'10"N and longitude 86°04'10"W.

FEMA MAP OVERVIEW

The project site is located within the FEMA Community Panel Map #18081C0139D dated August 2, 2007. Review of the map indicates the site is located within the Flood Designation 'Zone X' (unshaded). Therefore, the site is not subject to Flood Control Ordinance requirements. The FEMA Map is included in Appendix B.

WATERSHED DESCRIPTION

The project site is located within the 'Youngs Creek-Brewers/Canary Ditches' watershed as provided on the [IndianaMap](#) GIS system. The 14-digit Hydrologic Unit Codes (HUC) for this watershed is 05120204090030.

SOILS OVERVIEW

The project site contains the soils listed in the following **Table**. The Hydrologic Soil Group (HSG) for each soil is also provided. The appropriate limits of each soil type are depicted in the Soils Map provided in Appendix C.

TABLE 1 – PROJECT SOILS

Soil Symbol	Soil Name, Description	HSG
YbvA, UbaA & Br	Brookston silty clay loam, Urban land complex	B
YcIA, UcfA, & CrA	Crosby silty loam	C

ZONING INFORMATION

The site is within the corporate limits of the City of Franklin, Indiana. The underlying Zoning Classification is MXC and the site is located within the Gateway Overlay zone. The proposed uses are permitted in the noted Zoning District.

DEVELOPMENT STANDARDS

The project site is located within the City of Franklin, Johnson County, Indiana. Therefore, the proposed drainage improvements are subject to the standards of design and construction of the City of Franklin. Runoff and detention sizing will be modeled using HydroCAD version 10.00-24 utilizing the Type II rainfall distribution and rainfall depths from NOAA Precipitation Atlas. In accordance with the City of Franklin Subdivision Control Ordinance, the following shall be used as the basis of design:

TABLE 2 – FRANKLIN STORMWATER MANAGEMENT DESIGN PARAMETERS

	Franklin Subdivision Control Ordinance Design Parameter
Stormwater Measure	
Storm Sewers	<ul style="list-style-type: none"> • 10 year Peak Flow, Rational Method • Minimum pipe size, 12" • Minimum full flow velocity, 2.5 ft/s • Maximum full flow velocity, 15 ft/s • Preferred pipe material, RCP Class III
Detention	<ul style="list-style-type: none"> • 10 yr post developed released at 2 yr predeveloped • 100 yr post developed released at 10 yr predeveloped, • SCS Hydrograph Methods for storm durations of 1hr, 2hr, 3hr, 6hr, 12hr and 24hr • Dry Detention must have 1% bottom slope with underdrains • Max. bank slope of 4H:1V • Wet Pond <ul style="list-style-type: none"> ○ minimum water surface area of 0.5 acres ○ 6' safety ledge 18 inches below normal pool ○ 25% of surface area shall have depth of 10' • Spillways required to pass 125% of 100 yr design storm peak inflow.
Inlets	<ul style="list-style-type: none"> • 10 yr Peak Flow, Rational Method • 50% clogged in sag conditions • No greater than 6 inches of ponding above grate
Swales	<ul style="list-style-type: none"> • Minimum of 1% flow line slope • Maximum of 7% flow line slope • Bank slopes of 4H:1V maximum

In addition to the above Franklin Standards, the proposed stormwater management systems will discharge into the N. Morton Street roadside ditch. This section of N. Morton Street is also US 31 and under Indiana Department of Transportation jurisdiction. As such, INDOT stormwater detention standards shall also apply as follows:

TABLE 3 – INDOT STORMWATER MANAGEMENT DESIGN PARAMETERS

	INDOT Design Parameter from Indiana Design Manual, Section 203.5
Stormwater Measure	
Detention	<ul style="list-style-type: none"> • 100 yr post developed released at 10 yr predeveloped, • Minimum 1' of Freeboard above 100 yr peak stage • Detention Volume shall be entirely drainage within 72hr

The combination of the two, Franklin & INDOT, will be used for the basis of this project's stormwater management design.

EXISTING CONDITIONS

The proposed development site is currently generally developed with a Hubler Ford dealership on the southern half the project site and undeveloped on the northern half. Most of BTP is located within Zionsville to the west of this site.

Runoff from the current conditions is conveyed predominantly via overland flow in four generally directions to offsite drainage facilities as described below.

EX1 - sheet drains most of the site to the east and into the N. Morton Street/US 31 roadside ditch.

EX2 - sheet drains the northwest corner of the project area north to the Simon Road roadside ditch which flows east and into the N. Morton Street roadside ditch.

EX3 - sheet drains southwest onto the adjoining residential neighborhood. It is understood that this area is collected in the neighborhood stormwater collection system and conveyed to the existing detention pond southeast of the Mustang Road cul-de-sac. This pond is immediately to the west of the existing Hubler Ford Dealership.

EX4 - sheet drains the west and directly into the neighborhood pond noted above. It is comprised of the rear paved area of the existing dealership and the unimproved/grassed areas to the west of the pavement.

Following is a summary of the peak existing runoff/discharge rates from each of the noted existing condition basins.

TABLE 4 – EXISTING PEAK DISCHARGE RATES

Basin Name	Peak Runoff Rate, cfs				
	2 yr	10 yr	25 yr	50 yr	100 yr
EX1	15.93	23.99	29.55	35.06	41.34
EX2	0.91	1.84	2.45	2.95	3.54
SUBTOTAL TO US 31 DITCH	16.80	25.76	32.04	37.85	44.66
EX3	0.71	1.49	1.98	2.39	2.86
EX4	6.05	9.43	11.86	14.12	16.85
TOTAL TO EX. POND	6.36	10.35	13.11	15.55	18.47

For clarity, a map of the existing drainage sheds and infrastructure is illustrated in Appendix D along with the HydroCAD modeling data.

PROPOSED CONDITIONS

BDH Realty is proposing a new commercial subdivision and development along the west side of N. Morton Street/US 31 between Simon Road and Ransdell Drive in Franklin, Indiana. The subdivision will create 4 commercial development lots along with associated utility services, private drives and associated infrastructure. In total the overall development is approximately 12 acres. It is anticipated that the four new commercial lots will be developed with a 6 acre automotive dealership, car wash and a mixture of office and retail buildings. Access to the site will be provided from two existing entrances on N. Morton Street and a new proposed entrance on Simon Road.

The following sections demonstrate how the proposed improvements are consistent with the City of Franklin Subdivision Control Ordinance and stormwater management standards. Runoff calculations for the proposed conditions are computed in Appendix using the minimum 5-minute Time of Concentration. A map of the proposed basins is provided in Appendix E.

STORMWATER DETENTION

As noted above, the development will require the implementation of stormwater detention in accordance with INDOT and the City of Franklin design standards. There are two proposed stormwater detention basins. The first is a wet detention basin located in the southwest corner of the north half of the overall development. This basin will accept runoff from the three commercial outlots. The second detention basin is located in the southeast corner of the site and will accept runoff from the auto dealership development. There is a small area that will direct discharge to the US 31 ditch and a small area that will continue to convey runoff to the existing neighborhood pond to the west. However, each of these direct discharges are significantly less than existing conditions and therefore, no negative impacts are anticipated.

The following table summarizes the allowable outflows from the onsite stormwater management system to the respective downstream receiving drainage system.

TABLE 5 – PROPOSED CONDITION ALLOWABLE DETENTION OUTFLOW

Basin Name	Discharge, cfs
10 YR ALLOWABLE TO US 31 DITCH	16.80 (2yr Pre)
100yr Allowable to US 31 Ditch	25.76 (10yr Pre)

The proposed developed conditions have been modeled using HydroCAD to demonstrate the allowable release rates have been met. Following is a summary of the proposed runoff/release rates to the respective downstream drainage systems.

TABLE 6 – PROPOSED CONDITION DISCHARGE SUMMARY

Discharge Location/Basin Name	Peak Runoff/Discharge Rate, cfs				
	2 yr	10 yr	25 yr	50 yr	100 yr
US 31 DITCH (includes Det Basin 1, Det Basin 2, and PR-East)	9.32	13.54	15.78	17.50	19.19
PR3	0.58	1.12	1.48	1.77	2.14

The above demonstrates that the stormwater detention system has been sufficiently sized to meet the required parameters. As a result, no further detention is required. Reference Appendix E for the model and proposed conditions drainage calculations.

STORMWATER PIPE DESIGN

Calculations for onsite stormwater infrastructure including pipe sizing for the 10-year Rational Method peak runoffs will be provided with the final construction plans.

The proposed infrastructure improvements will have master planned pipe networks that will convey runoff from the various commercial outlots to one of the two detention basins. Final design of the pipe network will be provided with the final Construction Plans.

SUMMARY

BDH Realty is proposing a new commercial subdivision and development along the west side of N. Morton Street/US 31 between Simon Road and Ransdell Drive in Franklin, Indiana. The subdivision will create 4 commercial development lots along with associated utility services, private drives and associated infrastructure. In total the overall development is approximately 12 acres. It is anticipated that the four new commercial lots will be developed with a 6 acre automotive dealership, car wash and a mixture of office and retail buildings. Access to the site will be provided from two existing entrances on N. Morton Street and a new proposed entrance on Simon Road.

This report demonstrates that the proposed project improvements meet the stormwater design parameters, and no further stormwater detention or water quality measures are necessary.

As a result of the onsite drainage analysis, the proposed improvements are not anticipated to have adverse impacts on the surrounding or downstream drainage systems.

REFERENCES

1. Johnson County Soils Map (Web Soil Survey)
2. FEMA Flood Insurance Rate Maps, FEMA Website
3. Indiana Drainage Handbook
4. Franklin Subdivision Control Ordinance & Stormwater Technical Standards
5. INDOT – Indiana Design Manual

APPENDICES

APPENDIX A – LOCATION MAP

APPENDIX B – FEMA MAP

APPENDIX C – SOILS DATA & MAP

APPENDIX D – EXISTING DRAINAGE ANALYSIS

APPENDIX E – PROPOSED DRAINAGE ANALYSIS

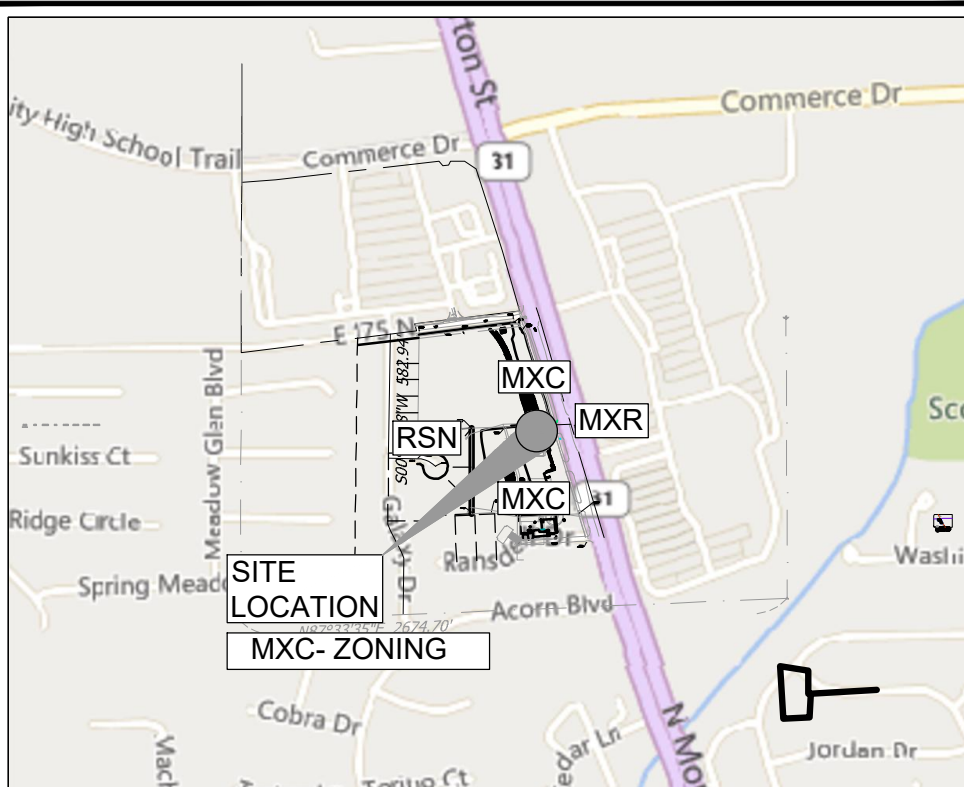
APPENDIX F – SUPPORT DOCUMENTATION

APPENDIX A – LOCATION MAP



NOT TO SCALE

SITE LOCATION MAP



SITE VICINITY & ZONING MAP



APPENDIX B – FEMA MAP

National Flood Hazard Layer FIRMMette



86°4'30"W 39°30'27"N



0 250 500 1,000 1,500 2,000 Feet 1:6,000

Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

Legend

2/2/2021

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR MAP PANEL 626

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A, V, A99
		With BFE or Depth Zone AE, AO, AH, VE, AR
		Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
		Area with Reduced Flood Risk due to Levee. See Notes. Zone X
		Area with Flood Risk due to Levee Zone D
OTHER AREAS		NO SCREEN Area of Minimal Flood Hazard Zone X
		Effective LOMRs
		Area of Undetermined Flood Hazard Zone D
GENERAL STRUCTURES		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
OTHER FEATURES		20.2 Cross Sections with 1% Annual Chance Water Surface Elevation
		17.5 Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
		Coastal Transect Baseline
		Profile Baseline
		Hydrographic Feature
		Digital Data Available
		No Digital Data Available
MAP PANELS		Unmapped



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

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

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 1/27/2021 at 4:24 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

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

APPENDIX C – SOILS DATA & MAP

Soil Map—Johnson County, Indiana
(BDH REALTY)

2/2/2021
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Natural Resources
Conservation Service

Web Soil Survey
National Cooperative Soil Survey

1/27/2021
Page 1 of 3


MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features



Blowout



Borrow Pit



Clay Spot



Closed Depression



Gravel Pit



Gravelly Spot



Landfill



Lava Flow



Marsh or swamp



Mine or Quarry



Miscellaneous Water



Perennial Water



Rock Outcrop



Saline Spot



Sandy Spot



Severely Eroded Spot



Sinkhole



Slide or Slip



Sodic Spot



Spoil Area



Stony Spot



Very Stony Spot



Wet Spot



Other



Special Line Features

Water Features



Streams and Canals

Transportation



Rails



Interstate Highways



US Routes



Major Roads



Local Roads

Background



Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

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: Johnson County, Indiana
Survey Area Data: Version 28, Jun 4, 2020

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

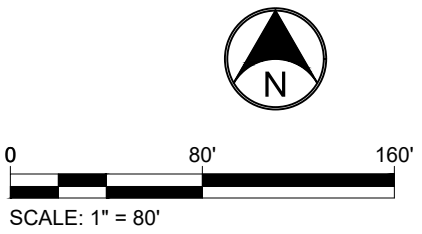
Date(s) aerial images were photographed: Jul 27, 2019—Sep 26, 2019

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
Br	Brookston silty clay loam, 0 to 2 percent slopes	2.1	18.6%
CrA	Crosby silt loam, fine-loamy subsoil, 0 to 2 percent slopes	2.0	17.9%
UbaA	Urban land-Brookston complex, 0 to 2 percent slopes	3.0	26.1%
UcfA	Urban land-Crosby silt loam complex, fine-loamy subsoil, 0 to 2 percent slopes	3.2	27.8%
YbvA	Brookston silty clay loam-Urban land complex, 0 to 2 percent slopes	1.0	8.9%
YclA	Crosby silt loam, fine-loamy subsoil-Urban land complex, 0 to 2 percent slopes	0.1	0.8%
Totals for Area of Interest		11.4	100.0%

APPENDIX D – EXISTING DRAINAGE ANALYSIS

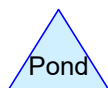
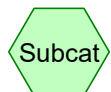
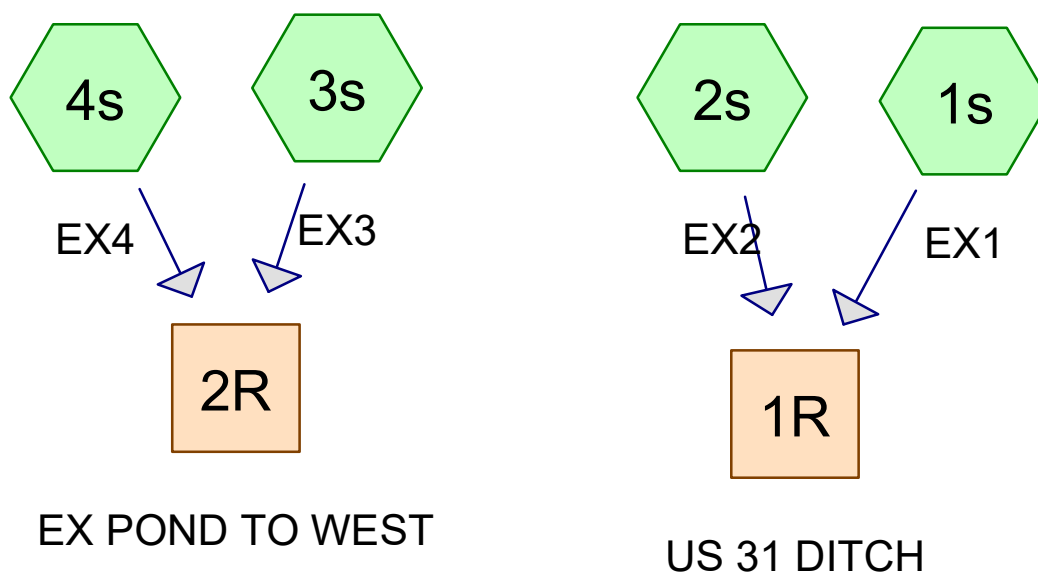


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SHEET NAME / NO.

EXISTING BASIN MAP

EXH-1



Routing Diagram for Existing Conditions

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BDH REALTY COMMERCIAL DEV-EX CONDITIONS

Existing Conditions

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Rainfall Events Listing

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	002yr-01hr	Type II 24-hr		Trim	1.00	1	1.39	2
2	002yr-02hr	Type II 24-hr		Trim	2.00	1	1.62	2
3	002yr-03hr	Type II 24-hr		Trim	3.00	1	1.72	2
4	002yr-06hr	Type II 24-hr		Trim	6.00	1	2.50	2
5	002yr-12hr	Type II 24-hr		Trim	12.00	1	2.45	2
6	002yr-24hr	Type II 24-hr		Default	24.00	1	2.92	2
7	010yr-01hr	Type II 24-hr		Trim	1.00	1	2.02	2
8	010yr-02hr	Type II 24-hr		Trim	2.00	1	2.38	2
9	010yr-03hr	Type II 24-hr		Trim	3.00	1	2.53	2
10	010yr-06hr	Type II 24-hr		Trim	6.00	1	3.04	2
11	010yr-12hr	Type II 24-hr		Trim	12.00	1	3.53	2
12	010yr-24hr	Type II 24-hr		Default	24.00	1	4.09	2
13	025yr-01hr	Type II 24-hr		Trim	1.00	1	2.40	2
14	025yr-02hr	Type II 24-hr		Trim	2.00	1	2.85	2
15	025yr-03hr	Type II 24-hr		Trim	3.00	1	3.05	2
16	025yr-06hr	Type II 24-hr		Trim	6.00	1	3.67	2
17	025yr-12hr	Type II 24-hr		Trim	12.00	1	4.21	2
18	025yr-24hr	Type II 24-hr		Default	24.00	1	4.79	2
19	050yr-01hr	Type II 24-hr		Trim	1.00	1	2.70	2
20	050yr-02hr	Type II 24-hr		Trim	2.00	1	3.23	2
21	050yr-03hr	Type II 24-hr		Trim	3.00	1	3.48	2
22	050yr-06hr	Type II 24-hr		Trim	6.00	1	4.20	2
23	050yr-12hr	Type II 24-hr		Trim	12.00	1	4.78	2
24	050yr-24hr	Type II 24-hr		Default	24.00	1	5.34	2
25	100yr-01hr	Type II 24-hr		Trim	1.00	1	3.01	2
26	100yr-02hr	Type II 24-hr		Trim	2.00	1	3.65	2
27	100yr-03hr	Type II 24-hr		Trim	3.00	1	3.94	2
28	100yr-06hr	Type II 24-hr		Trim	6.00	1	4.77	2
29	100yr-12hr	Type II 24-hr		Trim	12.00	1	5.37	2
30	100yr-24hr	Type II 24-hr		Default	24.00	1	5.91	2

BDH REALTY COMMERCIAL DEV-EX CONDITIONS

Existing Conditions

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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
6.954	74	>75% Grass cover, Good, HSG C (1s, 2s, 3s, 4s)
4.269	98	Paved parking, HSG C (1s, 4s)
0.636	98	Roofs, HSG C (1s, 4s)
11.858	84	TOTAL AREA

BDH REALTY COMMERCIAL DEV-EX CONDITIONS

Existing Conditions

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Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
11.858	HSG C	1s, 2s, 3s, 4s
0.000	HSG D	
0.000	Other	
11.858		TOTAL AREA

BDH REALTY COMMERCIAL DEV-EX CONDITIONS

Existing Conditions

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Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	6.954	0.000	0.000	6.954	>75% Grass cover, Good	1s, 2s, 3s, 4s
0.000	0.000	4.269	0.000	0.000	4.269	Paved parking	1s, 4s
0.000	0.000	0.636	0.000	0.000	0.636	Roofs	1s, 4s
0.000	0.000	11.858	0.000	0.000	11.858	TOTAL AREA	

Existing Conditions

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BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 1.00 hrs 002yr-01hr Rainfall=1.39"

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Page 6

Time span=0.01-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1s: EX1 Runoff Area=347,870 sf 51.27% Impervious Runoff Depth=0.42"
Flow Length=600' Slope=0.0100 '/' Tc=18.7 min CN=86 Runoff=7.73 cfs 0.280 af

Subcatchment 2s: EX2 Runoff Area=37,950 sf 0.00% Impervious Runoff Depth=0.11"
Flow Length=248' Slope=0.0100 '/' Tc=15.0 min CN=74 Runoff=0.22 cfs 0.008 af

Subcatchment 3s: EX3 Runoff Area=30,680 sf 0.00% Impervious Runoff Depth=0.11"
Flow Length=246' Slope=0.0100 '/' Tc=15.0 min CN=74 Runoff=0.18 cfs 0.007 af

Subcatchment 4s: EX4 Runoff Area=100,045 sf 35.28% Impervious Runoff Depth=0.29"
Flow Length=318' Slope=0.0100 '/' Tc=5.0 min CN=82 Runoff=2.82 cfs 0.055 af

Reach 1R: US 31 DITCH Inflow=7.95 cfs 0.288 af
Outflow=7.95 cfs 0.288 af

Reach 2R: EX POND TO WEST Inflow=2.82 cfs 0.062 af
Outflow=2.82 cfs 0.062 af

Total Runoff Area = 11.858 ac Runoff Volume = 0.350 af Average Runoff Depth = 0.35"
58.64% Pervious = 6.954 ac 41.36% Impervious = 4.905 ac

BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 1.00 hrs 002yr-01hr Rainfall=1.39"

Existing Conditions

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Summary for Subcatchment 1s: EX1

Runoff = 7.73 cfs @ 0.65 hrs, Volume= 0.280 af, Depth= 0.42"

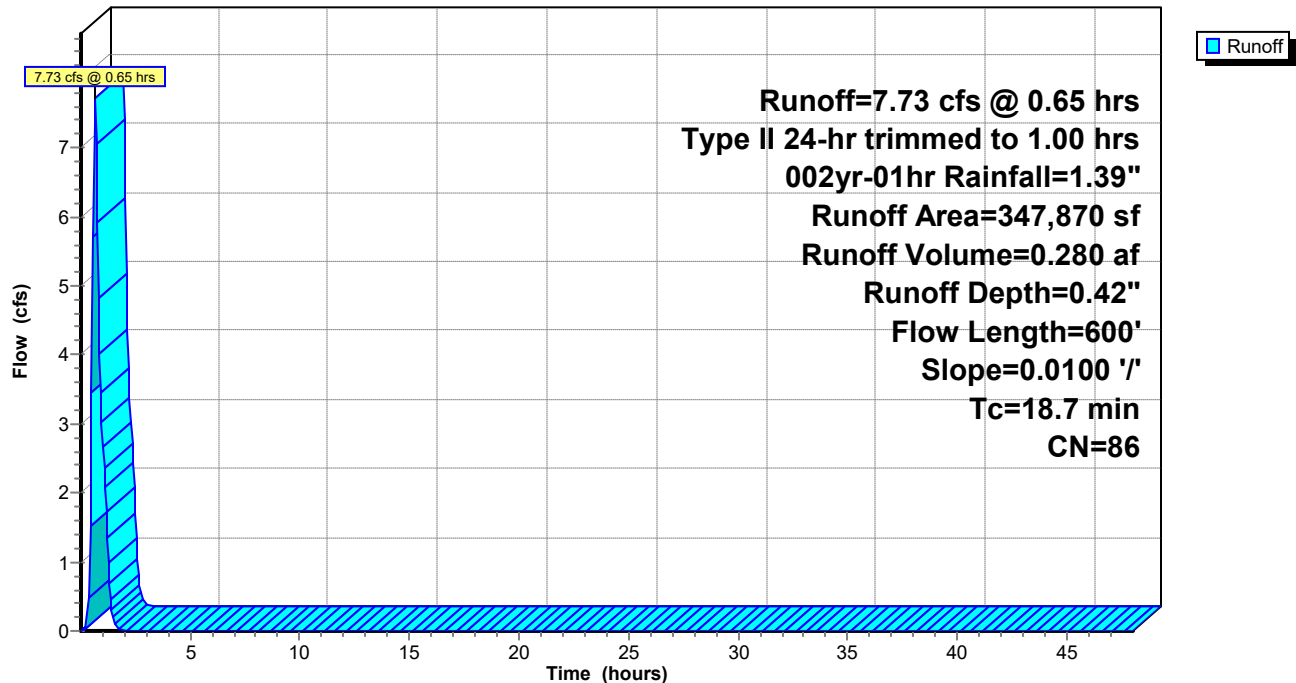
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 1.00 hrs 002yr-01hr Rainfall=1.39"

Area (sf)	CN	Description
169,520	74	>75% Grass cover, Good, HSG C
158,000	98	Paved parking, HSG C
20,350	98	Roofs, HSG C
347,870	86	Weighted Average
169,520		48.73% Pervious Area
178,350		51.27% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0100	0.12		Sheet Flow, Sheet Flow n= 0.150 P2= 2.92"
5.2	500	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc Unpaved Kv= 16.1 fps
18.7	600	Total			

Subcatchment 1s: EX1

Hydrograph



Existing Conditions

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BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 1.00 hrs 002yr-01hr Rainfall=1.39"

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Summary for Subcatchment 2s: EX2

Runoff = 0.22 cfs @ 0.65 hrs, Volume= 0.008 af, Depth= 0.11"

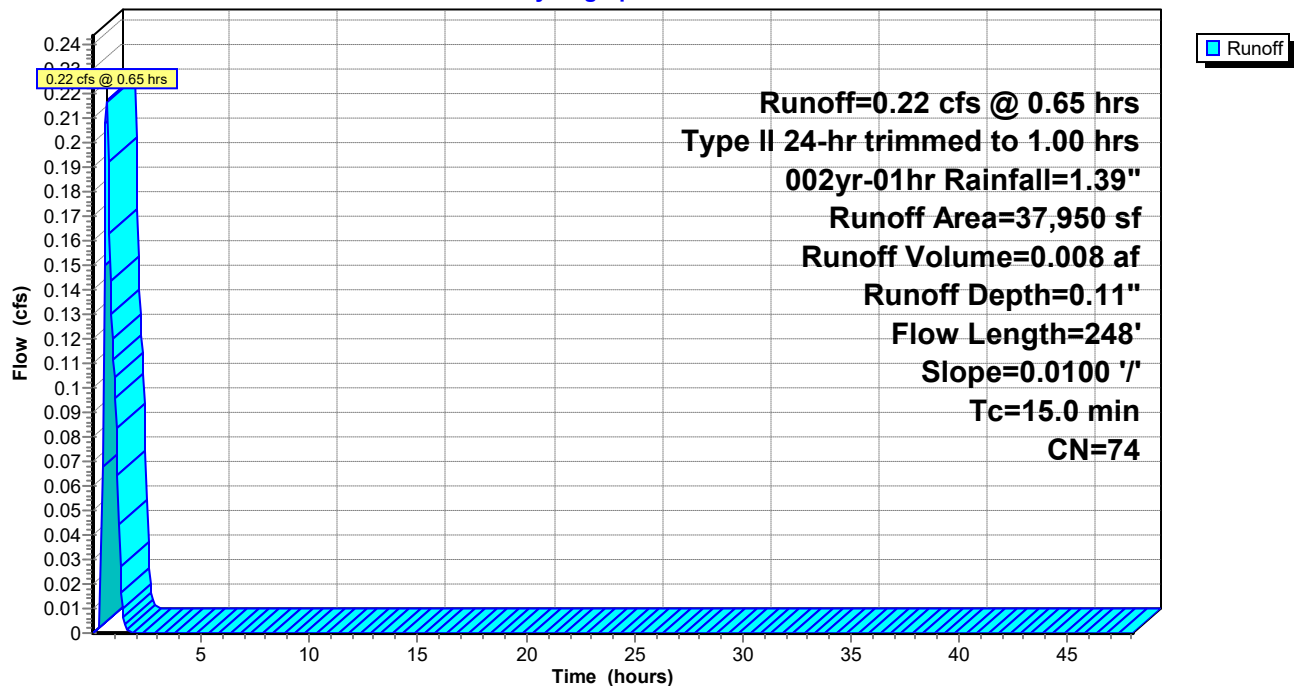
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 1.00 hrs 002yr-01hr Rainfall=1.39"

Area (sf)	CN	Description
37,950	74	>75% Grass cover, Good, HSG C
37,950		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0100	0.12		Sheet Flow, Sheet Flow Grass: Short n= 0.150 P2= 2.92"
1.5	148	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc Unpaved Kv= 16.1 fps
15.0	248	Total			

Subcatchment 2s: EX2

Hydrograph



Existing Conditions

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BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 1.00 hrs 002yr-01hr Rainfall=1.39"

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Summary for Subcatchment 3s: EX3

Runoff = 0.18 cfs @ 0.65 hrs, Volume= 0.007 af, Depth= 0.11"

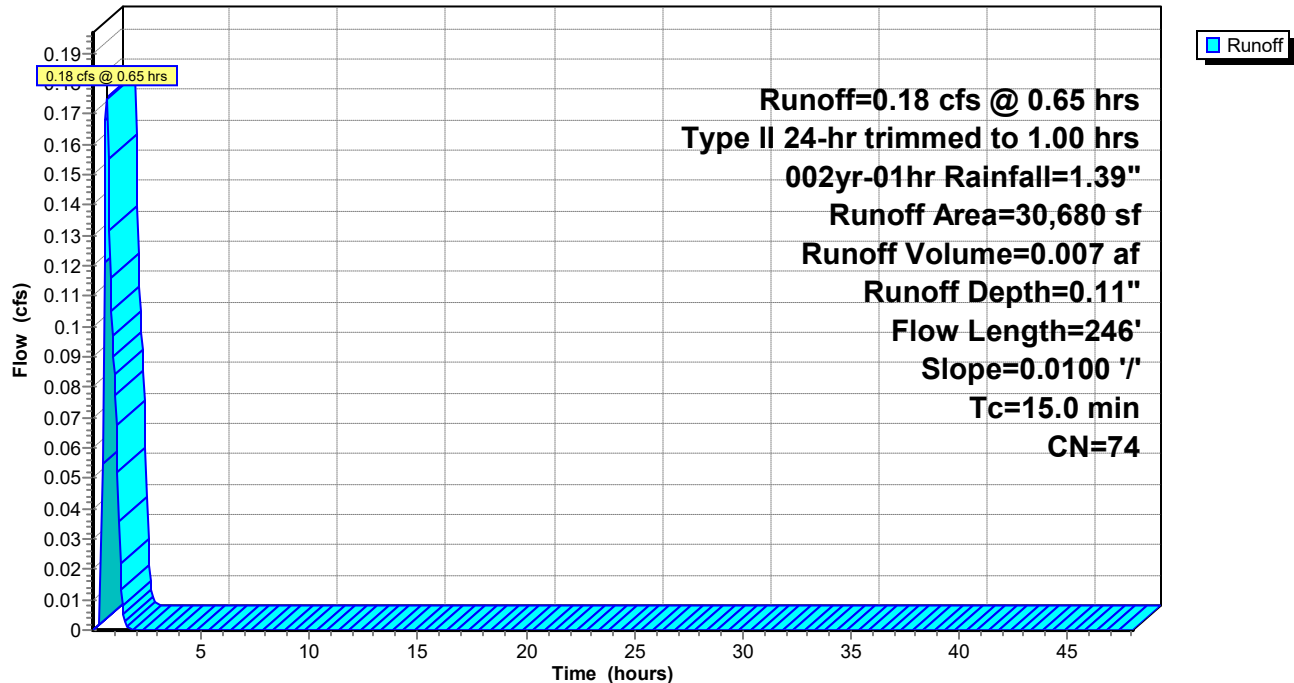
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 1.00 hrs 002yr-01hr Rainfall=1.39"

Area (sf)	CN	Description
30,680	74	>75% Grass cover, Good, HSG C
30,680		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0100	0.12		Sheet Flow, Sheet Flow Grass: Short n= 0.150 P2= 2.92"
1.5	146	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc Unpaved Kv= 16.1 fps
15.0	246	Total			

Subcatchment 3s: EX3

Hydrograph



Existing Conditions

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BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 1.00 hrs 002yr-01hr Rainfall=1.39"

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Summary for Subcatchment 4s: EX4

Runoff = 2.82 cfs @ 0.48 hrs, Volume= 0.055 af, Depth= 0.29"

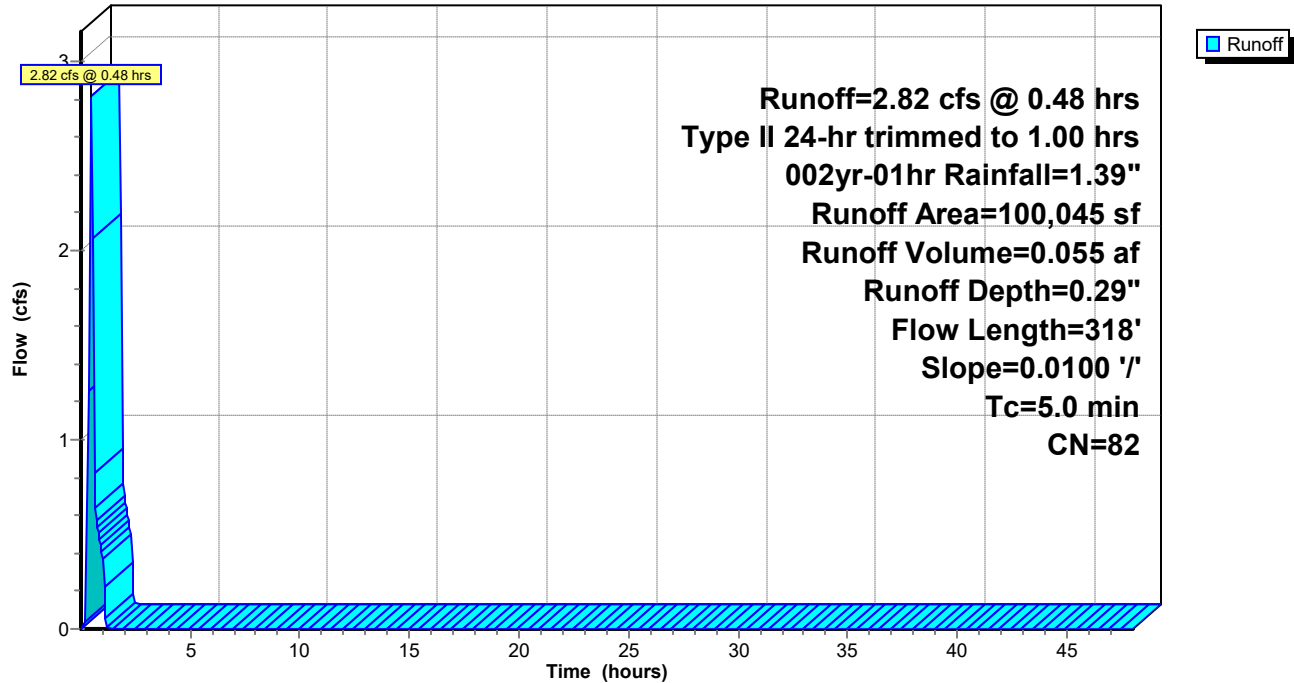
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 1.00 hrs 002yr-01hr Rainfall=1.39"

Area (sf)	CN	Description
64,745	74	>75% Grass cover, Good, HSG C
27,940	98	Paved parking, HSG C
7,360	98	Roofs, HSG C
100,045	82	Weighted Average
64,745		64.72% Pervious Area
35,300		35.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	100	0.0100	1.00		Sheet Flow, Sheet Flow
					Smooth surfaces n= 0.011 P2= 2.92"
2.3	218	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc
					Unpaved Kv= 16.1 fps
4.0	318	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 4s: EX4

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 1.00 hrs 002yr-01hr Rainfall=1.39"

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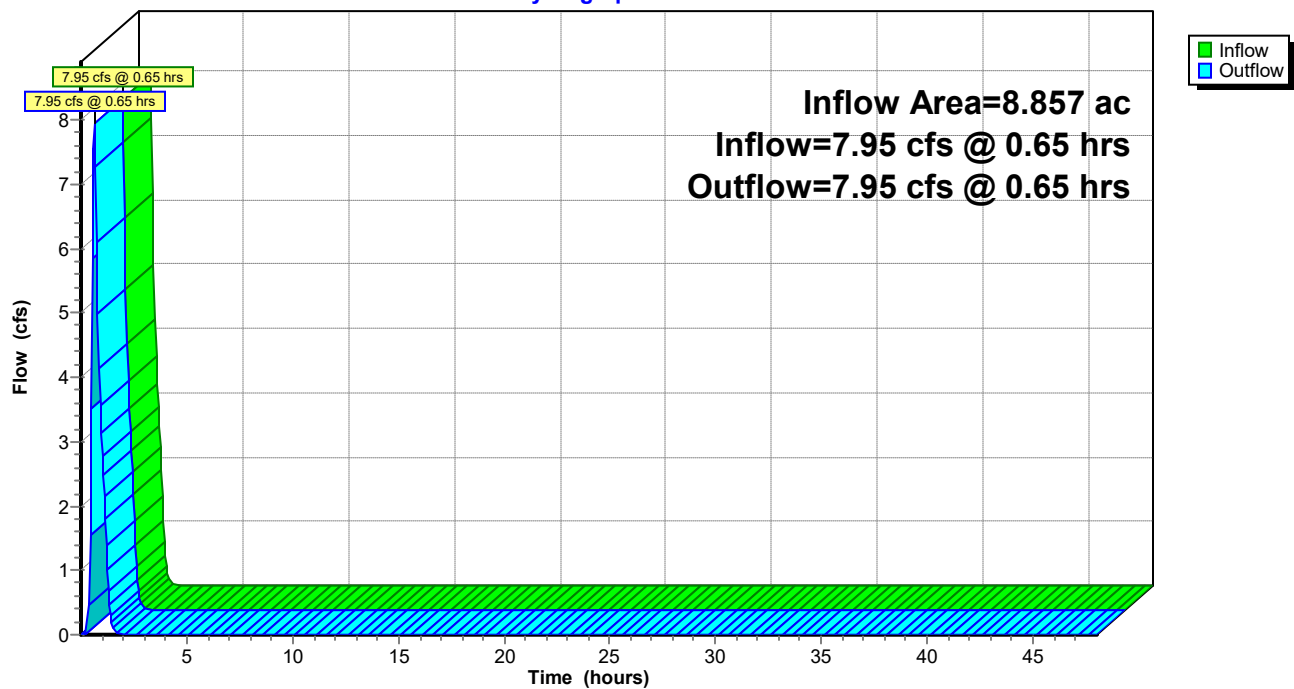
Summary for Reach 1R: US 31 DITCH

Inflow Area = 8.857 ac, 46.23% Impervious, Inflow Depth = 0.39" for 002yr-01hr event
Inflow = 7.95 cfs @ 0.65 hrs, Volume= 0.288 af
Outflow = 7.95 cfs @ 0.65 hrs, Volume= 0.288 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs

Reach 1R: US 31 DITCH

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 1.00 hrs 002yr-01hr Rainfall=1.39"

Existing Conditions

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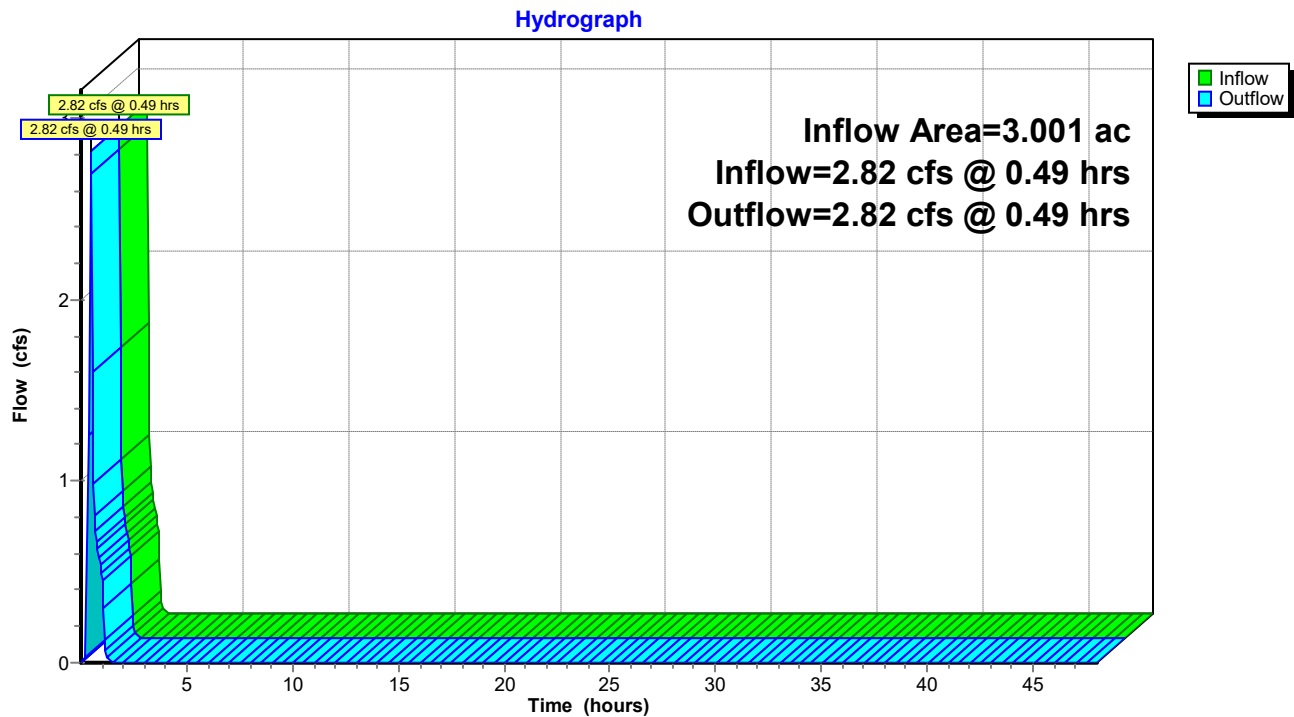
Page 12

Summary for Reach 2R: EX POND TO WEST

Inflow Area = 3.001 ac, 27.00% Impervious, Inflow Depth = 0.25" for 002yr-01hr event
Inflow = 2.82 cfs @ 0.49 hrs, Volume= 0.062 af
Outflow = 2.82 cfs @ 0.49 hrs, Volume= 0.062 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs

Reach 2R: EX POND TO WEST



Existing Conditions

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BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 2.00 hrs 002yr-02hr Rainfall=1.62"

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Time span=0.01-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1s: EX1 Runoff Area=347,870 sf 51.27% Impervious Runoff Depth=0.57"
Flow Length=600' Slope=0.0100 '/' Tc=18.7 min CN=86 Runoff=9.17 cfs 0.382 af

Subcatchment 2s: EX2 Runoff Area=37,950 sf 0.00% Impervious Runoff Depth=0.19"
Flow Length=248' Slope=0.0100 '/' Tc=15.0 min CN=74 Runoff=0.32 cfs 0.014 af

Subcatchment 3s: EX3 Runoff Area=30,680 sf 0.00% Impervious Runoff Depth=0.19"
Flow Length=246' Slope=0.0100 '/' Tc=15.0 min CN=74 Runoff=0.26 cfs 0.011 af

Subcatchment 4s: EX4 Runoff Area=100,045 sf 35.28% Impervious Runoff Depth=0.41"
Flow Length=318' Slope=0.0100 '/' Tc=5.0 min CN=82 Runoff=3.38 cfs 0.079 af

Reach 1R: US 31 DITCH Inflow=9.48 cfs 0.395 af
Outflow=9.48 cfs 0.395 af

Reach 2R: EX POND TO WEST Inflow=3.43 cfs 0.090 af
Outflow=3.43 cfs 0.090 af

Total Runoff Area = 11.858 ac Runoff Volume = 0.486 af Average Runoff Depth = 0.49"
58.64% Pervious = 6.954 ac 41.36% Impervious = 4.905 ac

BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 2.00 hrs 002yr-02hr Rainfall=1.62"

Existing Conditions

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Summary for Subcatchment 1s: EX1

Runoff = 9.17 cfs @ 1.14 hrs, Volume= 0.382 af, Depth= 0.57"

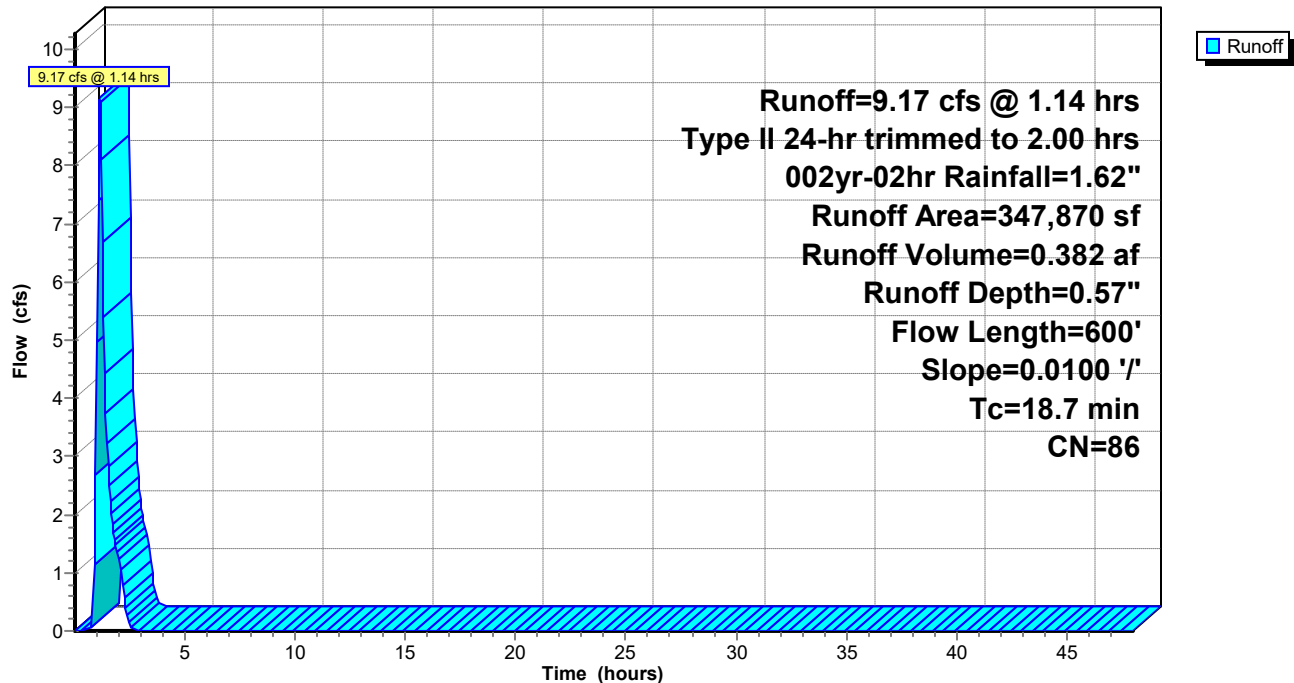
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 2.00 hrs 002yr-02hr Rainfall=1.62"

Area (sf)	CN	Description
169,520	74	>75% Grass cover, Good, HSG C
158,000	98	Paved parking, HSG C
20,350	98	Roofs, HSG C
347,870	86	Weighted Average
169,520		48.73% Pervious Area
178,350		51.27% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0100	0.12		Sheet Flow, Sheet Flow n= 0.150 P2= 2.92"
5.2	500	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc Unpaved Kv= 16.1 fps
18.7	600	Total			

Subcatchment 1s: EX1

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 2.00 hrs 002yr-02hr Rainfall=1.62"

Existing Conditions

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Summary for Subcatchment 2s: EX2

Runoff = 0.32 cfs @ 1.13 hrs, Volume= 0.014 af, Depth= 0.19"

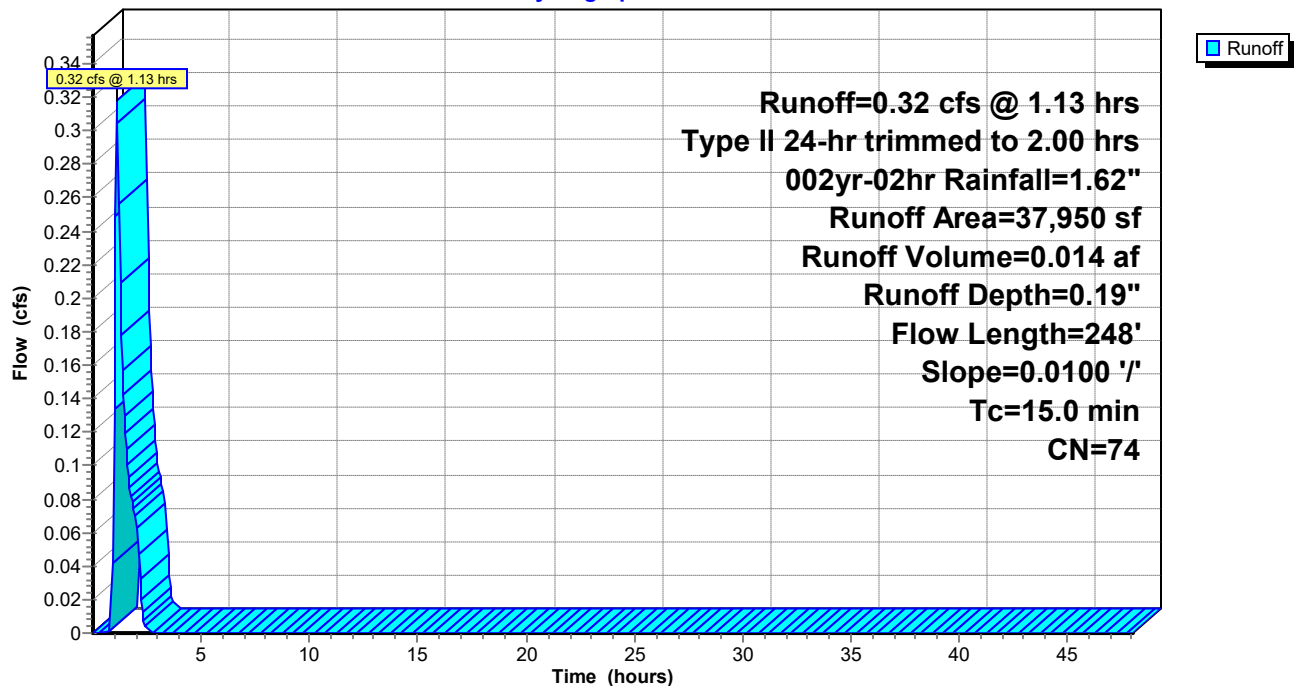
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 2.00 hrs 002yr-02hr Rainfall=1.62"

Area (sf)	CN	Description
37,950	74	>75% Grass cover, Good, HSG C
37,950		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0100	0.12		Sheet Flow, Sheet Flow Grass: Short n= 0.150 P2= 2.92"
1.5	148	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc Unpaved Kv= 16.1 fps
15.0	248	Total			

Subcatchment 2s: EX2

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 2.00 hrs 002yr-02hr Rainfall=1.62"

Existing Conditions

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Summary for Subcatchment 3s: EX3

Runoff = 0.26 cfs @ 1.13 hrs, Volume= 0.011 af, Depth= 0.19"

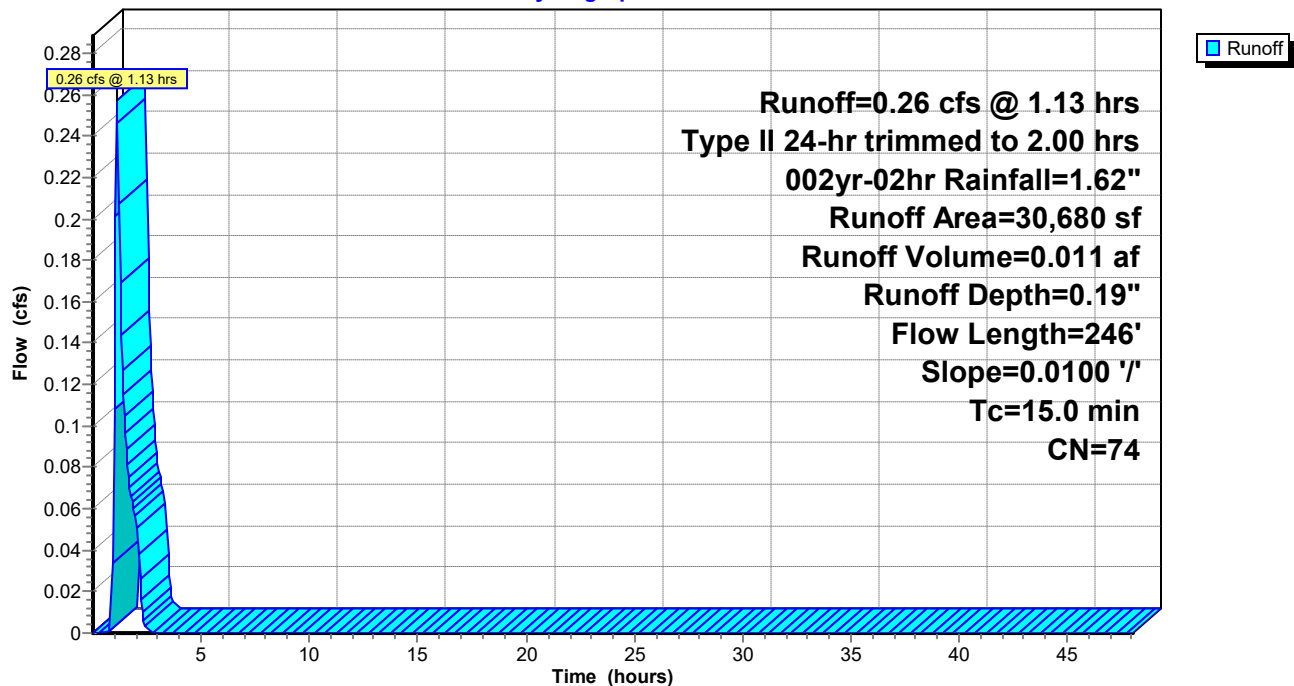
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 2.00 hrs 002yr-02hr Rainfall=1.62"

Area (sf)	CN	Description
30,680	74	>75% Grass cover, Good, HSG C
30,680		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0100	0.12		Sheet Flow, Sheet Flow Grass: Short n= 0.150 P2= 2.92"
1.5	146	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc Unpaved Kv= 16.1 fps
15.0	246	Total			

Subcatchment 3s: EX3

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 2.00 hrs 002yr-02hr Rainfall=1.62"

Existing Conditions

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Summary for Subcatchment 4s: EX4

Runoff = 3.38 cfs @ 0.98 hrs, Volume= 0.079 af, Depth= 0.41"

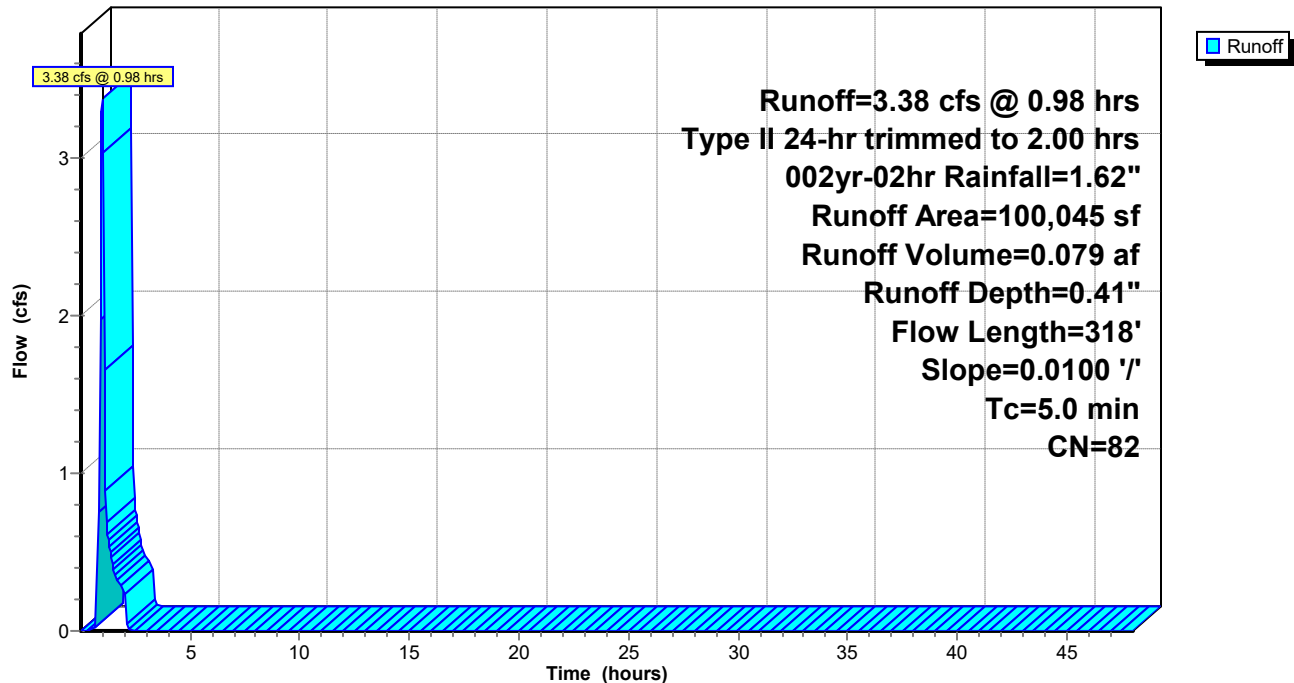
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 2.00 hrs 002yr-02hr Rainfall=1.62"

Area (sf)	CN	Description
64,745	74	>75% Grass cover, Good, HSG C
27,940	98	Paved parking, HSG C
7,360	98	Roofs, HSG C
100,045	82	Weighted Average
64,745		64.72% Pervious Area
35,300		35.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	100	0.0100	1.00		Sheet Flow, Sheet Flow
					Smooth surfaces n= 0.011 P2= 2.92"
2.3	218	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc
					Unpaved Kv= 16.1 fps
4.0	318	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 4s: EX4

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 2.00 hrs 002yr-02hr Rainfall=1.62"

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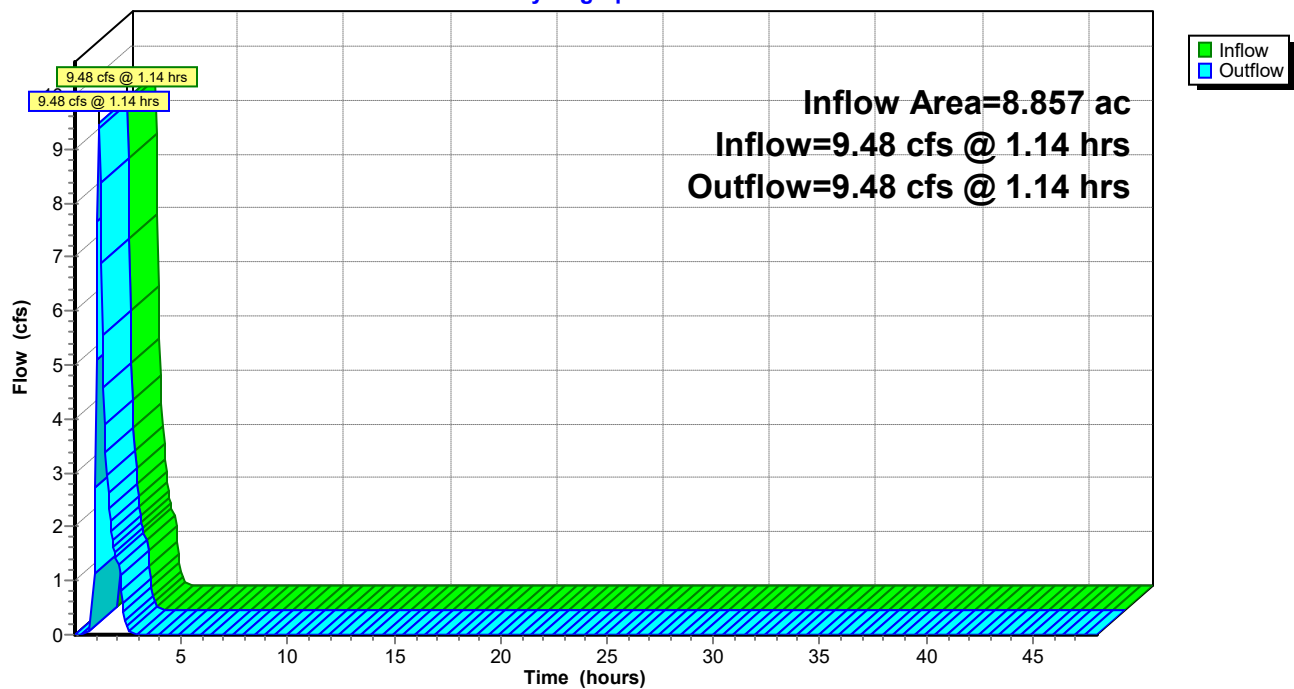
Summary for Reach 1R: US 31 DITCH

Inflow Area = 8.857 ac, 46.23% Impervious, Inflow Depth = 0.54" for 002yr-02hr event
Inflow = 9.48 cfs @ 1.14 hrs, Volume= 0.395 af
Outflow = 9.48 cfs @ 1.14 hrs, Volume= 0.395 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs

Reach 1R: US 31 DITCH

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 2.00 hrs 002yr-02hr Rainfall=1.62"

Existing Conditions

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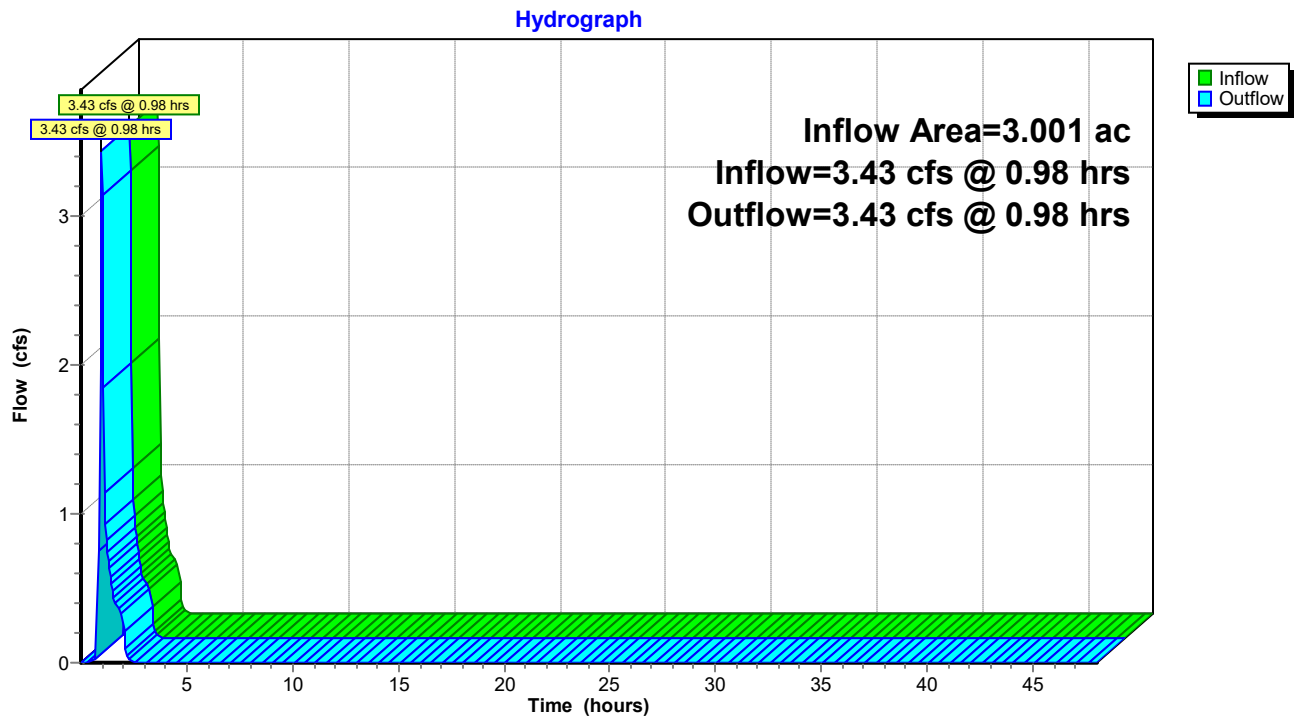
Page 19

Summary for Reach 2R: EX POND TO WEST

Inflow Area = 3.001 ac, 27.00% Impervious, Inflow Depth = 0.36" for 002yr-02hr event
Inflow = 3.43 cfs @ 0.98 hrs, Volume= 0.090 af
Outflow = 3.43 cfs @ 0.98 hrs, Volume= 0.090 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs

Reach 2R: EX POND TO WEST



Existing Conditions

BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 3.00 hrs 002yr-03hr Rainfall=1.72"

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Time span=0.01-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1s: EX1 Runoff Area=347,870 sf 51.27% Impervious Runoff Depth=0.64"
Flow Length=600' Slope=0.0100 '/' Tc=18.7 min CN=86 Runoff=9.47 cfs 0.428 af

Subcatchment 2s: EX2 Runoff Area=37,950 sf 0.00% Impervious Runoff Depth=0.23"
Flow Length=248' Slope=0.0100 '/' Tc=15.0 min CN=74 Runoff=0.35 cfs 0.017 af

Subcatchment 3s: EX3 Runoff Area=30,680 sf 0.00% Impervious Runoff Depth=0.23"
Flow Length=246' Slope=0.0100 '/' Tc=15.0 min CN=74 Runoff=0.28 cfs 0.013 af

Subcatchment 4s: EX4 Runoff Area=100,045 sf 35.28% Impervious Runoff Depth=0.47"
Flow Length=318' Slope=0.0100 '/' Tc=5.0 min CN=82 Runoff=3.45 cfs 0.090 af

Reach 1R: US 31 DITCH Inflow=9.82 cfs 0.445 af
Outflow=9.82 cfs 0.445 af

Reach 2R: EX POND TO WEST Inflow=3.52 cfs 0.104 af
Outflow=3.52 cfs 0.104 af

Total Runoff Area = 11.858 ac Runoff Volume = 0.548 af Average Runoff Depth = 0.56"
58.64% Pervious = 6.954 ac 41.36% Impervious = 4.905 ac

BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 3.00 hrs 002yr-03hr Rainfall=1.72"

Existing Conditions

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Summary for Subcatchment 1s: EX1

Runoff = 9.47 cfs @ 1.63 hrs, Volume= 0.428 af, Depth= 0.64"

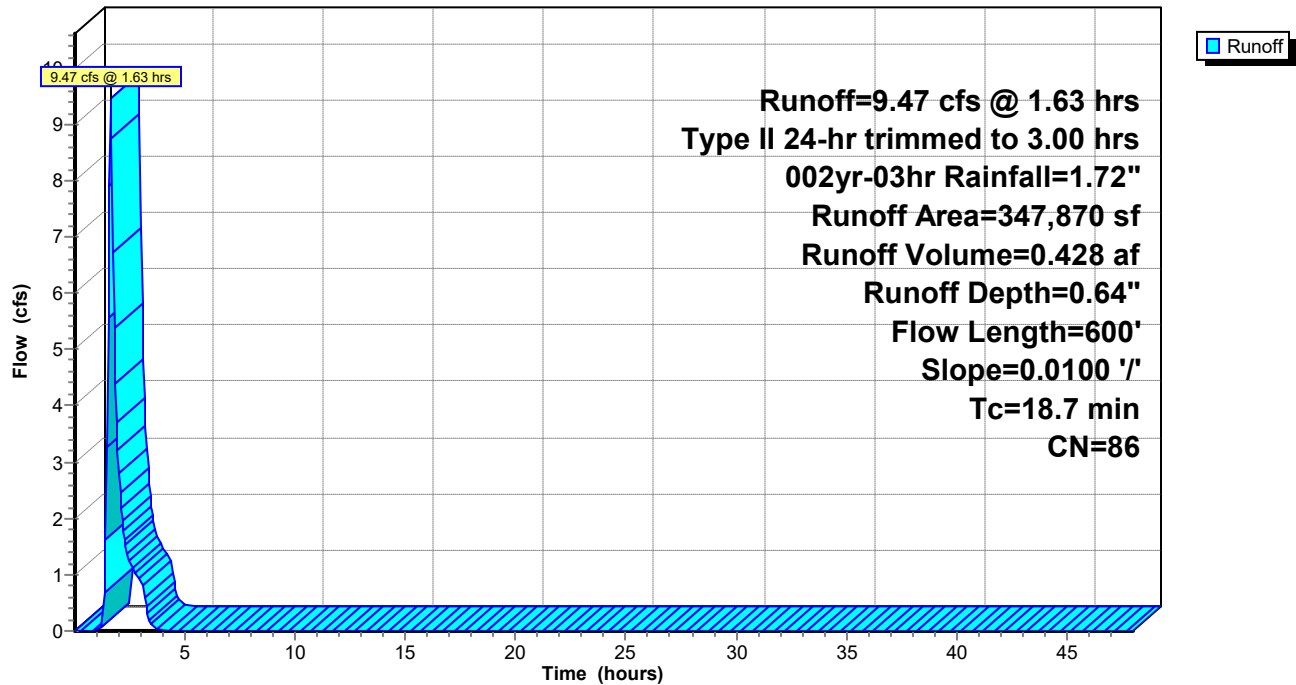
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 3.00 hrs 002yr-03hr Rainfall=1.72"

Area (sf)	CN	Description
169,520	74	>75% Grass cover, Good, HSG C
158,000	98	Paved parking, HSG C
20,350	98	Roofs, HSG C
347,870	86	Weighted Average
169,520		48.73% Pervious Area
178,350		51.27% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0100	0.12		Sheet Flow, Sheet Flow n= 0.150 P2= 2.92"
5.2	500	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc Unpaved Kv= 16.1 fps
18.7	600	Total			

Subcatchment 1s: EX1

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 3.00 hrs 002yr-03hr Rainfall=1.72"

Existing Conditions

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Summary for Subcatchment 2s: EX2

Runoff = 0.35 cfs @ 1.62 hrs, Volume= 0.017 af, Depth= 0.23"

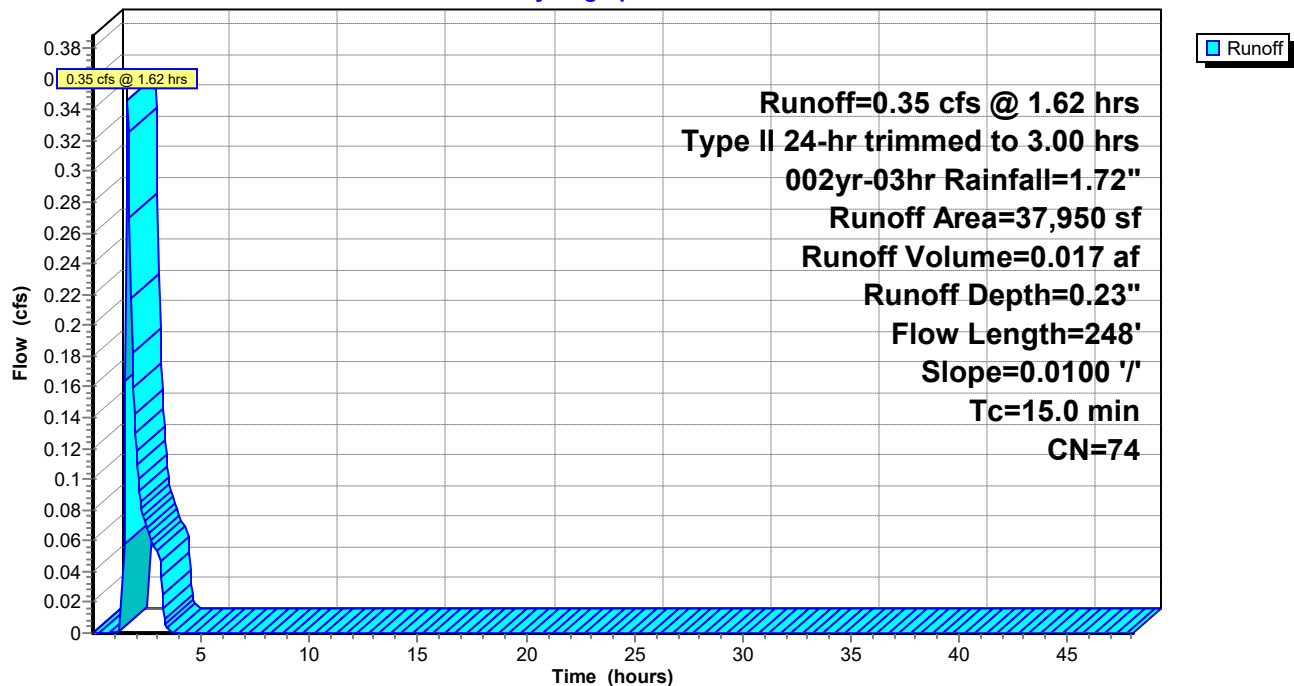
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 3.00 hrs 002yr-03hr Rainfall=1.72"

Area (sf)	CN	Description
37,950	74	>75% Grass cover, Good, HSG C
37,950		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0100	0.12		Sheet Flow, Sheet Flow
					Grass: Short n= 0.150 P2= 2.92"
1.5	148	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc
					Unpaved Kv= 16.1 fps
15.0	248	Total			

Subcatchment 2s: EX2

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 3.00 hrs 002yr-03hr Rainfall=1.72"

Existing Conditions

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Summary for Subcatchment 3s: EX3

Runoff = 0.28 cfs @ 1.62 hrs, Volume= 0.013 af, Depth= 0.23"

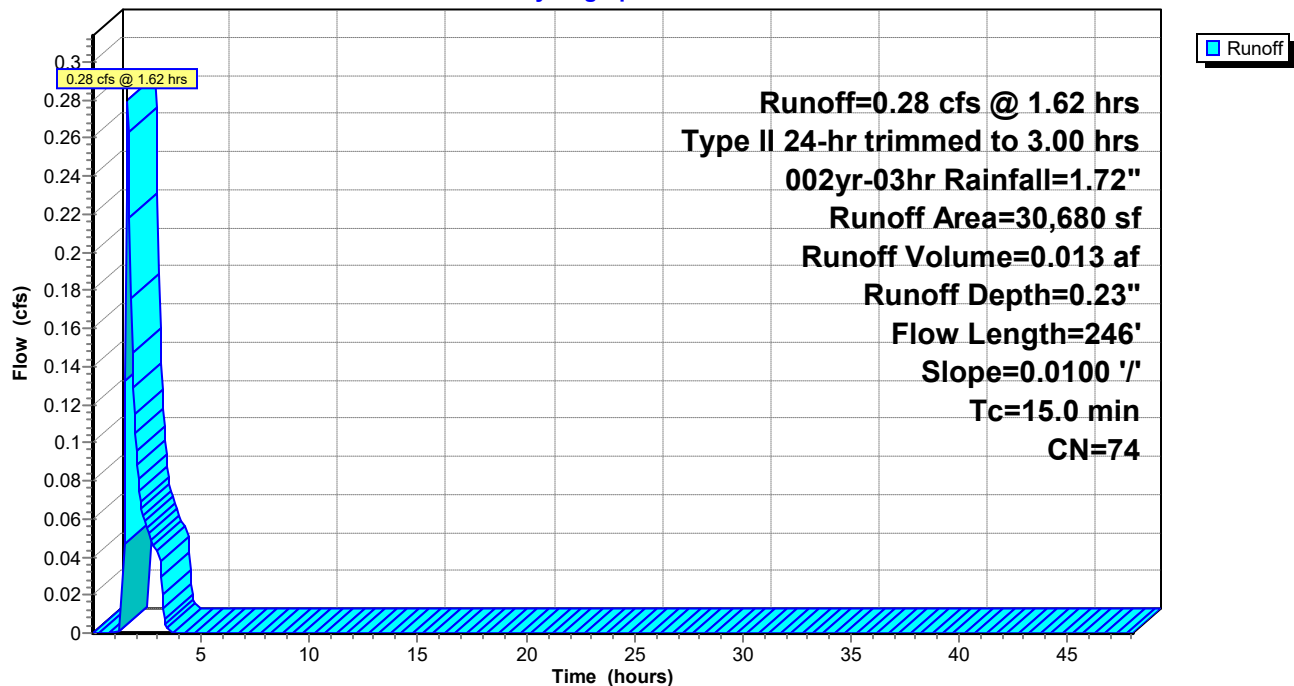
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 3.00 hrs 002yr-03hr Rainfall=1.72"

Area (sf)	CN	Description
30,680	74	>75% Grass cover, Good, HSG C
30,680		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0100	0.12		Sheet Flow, Sheet Flow Grass: Short n= 0.150 P2= 2.92"
1.5	146	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc Unpaved Kv= 16.1 fps
15.0	246	Total			

Subcatchment 3s: EX3

Hydrograph



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BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 3.00 hrs 002yr-03hr Rainfall=1.72"

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Summary for Subcatchment 4s: EX4

Runoff = 3.45 cfs @ 1.47 hrs, Volume= 0.090 af, Depth= 0.47"

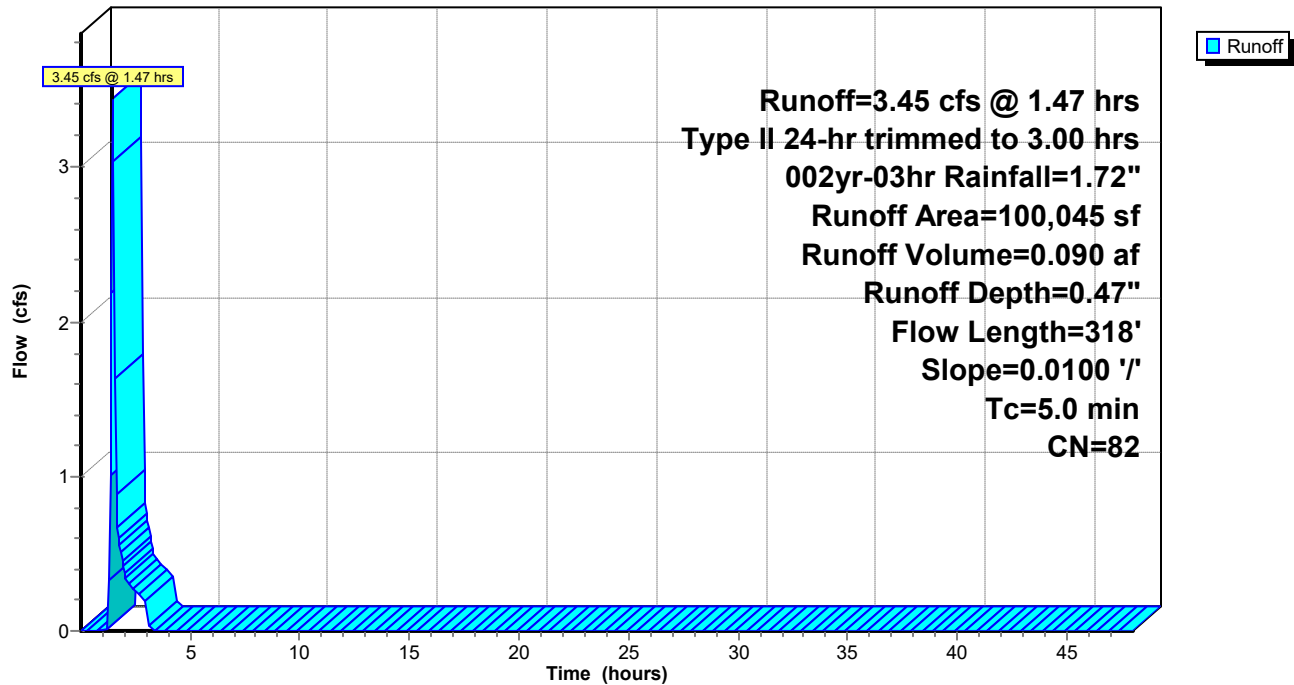
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 3.00 hrs 002yr-03hr Rainfall=1.72"

Area (sf)	CN	Description
64,745	74	>75% Grass cover, Good, HSG C
27,940	98	Paved parking, HSG C
7,360	98	Roofs, HSG C
100,045	82	Weighted Average
64,745		64.72% Pervious Area
35,300		35.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	100	0.0100	1.00		Sheet Flow, Sheet Flow Smooth surfaces n= 0.011 P2= 2.92"
2.3	218	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc Unpaved Kv= 16.1 fps
4.0	318	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 4s: EX4

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 3.00 hrs 002yr-03hr Rainfall=1.72"

Existing Conditions

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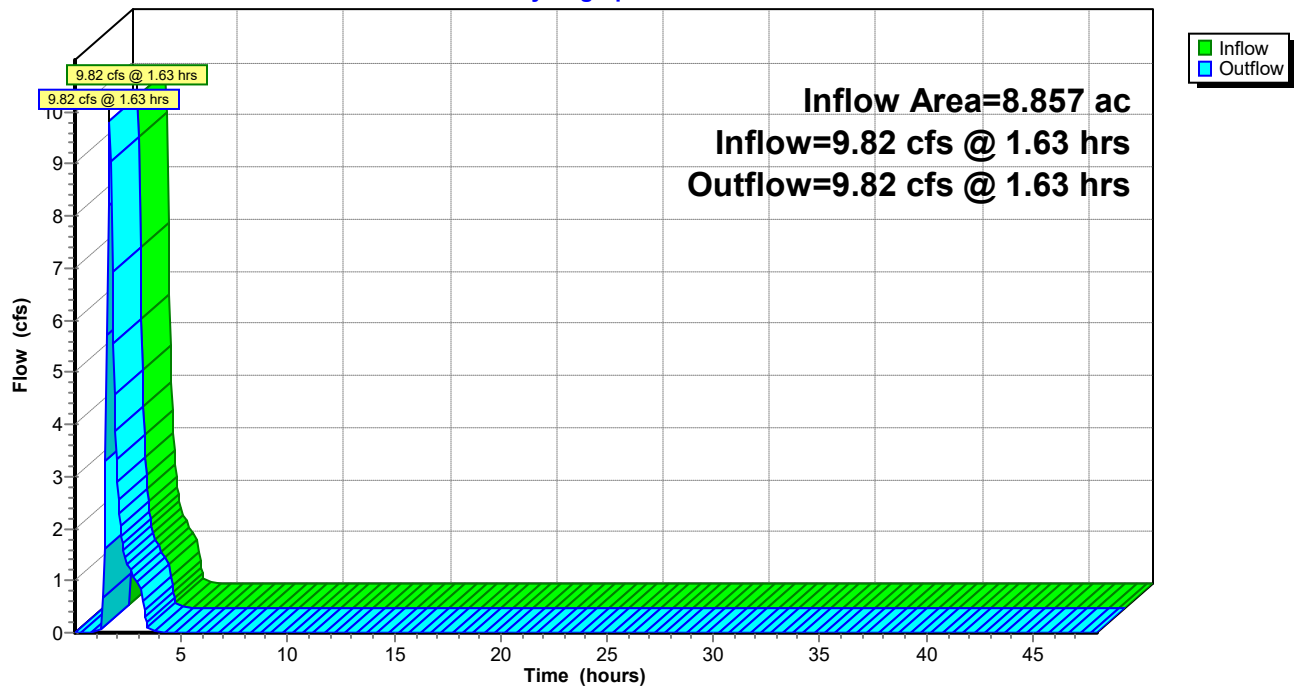
Summary for Reach 1R: US 31 DITCH

Inflow Area = 8.857 ac, 46.23% Impervious, Inflow Depth = 0.60" for 002yr-03hr event
Inflow = 9.82 cfs @ 1.63 hrs, Volume= 0.445 af
Outflow = 9.82 cfs @ 1.63 hrs, Volume= 0.445 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs

Reach 1R: US 31 DITCH

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 3.00 hrs 002yr-03hr Rainfall=1.72"

Existing Conditions

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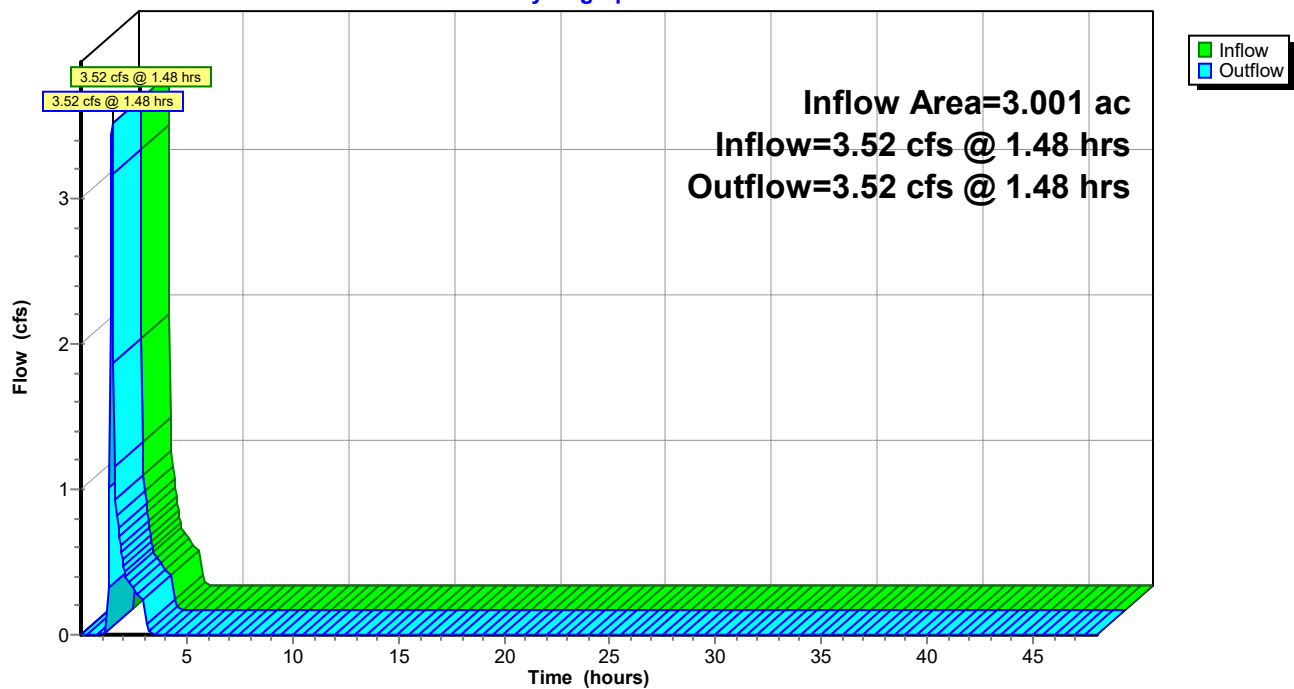
Summary for Reach 2R: EX POND TO WEST

Inflow Area = 3.001 ac, 27.00% Impervious, Inflow Depth = 0.41" for 002yr-03hr event
Inflow = 3.52 cfs @ 1.48 hrs, Volume= 0.104 af
Outflow = 3.52 cfs @ 1.48 hrs, Volume= 0.104 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs

Reach 2R: EX POND TO WEST

Hydrograph



Existing Conditions

BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 6.00 hrs 002yr-06hr Rainfall=2.50"

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Time span=0.01-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1s: EX1 Runoff Area=347,870 sf 51.27% Impervious Runoff Depth=1.24"
Flow Length=600' Slope=0.0100 '/' Tc=18.7 min CN=86 Runoff=15.93 cfs 0.828 af

Subcatchment 2s: EX2 Runoff Area=37,950 sf 0.00% Impervious Runoff Depth=0.61"
Flow Length=248' Slope=0.0100 '/' Tc=15.0 min CN=74 Runoff=0.88 cfs 0.044 af

Subcatchment 3s: EX3 Runoff Area=30,680 sf 0.00% Impervious Runoff Depth=0.61"
Flow Length=246' Slope=0.0100 '/' Tc=15.0 min CN=74 Runoff=0.71 cfs 0.036 af

Subcatchment 4s: EX4 Runoff Area=100,045 sf 35.28% Impervious Runoff Depth=1.00"
Flow Length=318' Slope=0.0100 '/' Tc=5.0 min CN=82 Runoff=6.05 cfs 0.191 af

Reach 1R: US 31 DITCH Inflow=16.80 cfs 0.872 af
Outflow=16.80 cfs 0.872 af

Reach 2R: EX POND TO WEST Inflow=6.36 cfs 0.227 af
Outflow=6.36 cfs 0.227 af

Total Runoff Area = 11.858 ac Runoff Volume = 1.098 af Average Runoff Depth = 1.11"
58.64% Pervious = 6.954 ac 41.36% Impervious = 4.905 ac

Existing Conditions

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BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 6.00 hrs 002yr-06hr Rainfall=2.50"

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Summary for Subcatchment 1s: EX1

Runoff = 15.93 cfs @ 3.12 hrs, Volume= 0.828 af, Depth= 1.24"

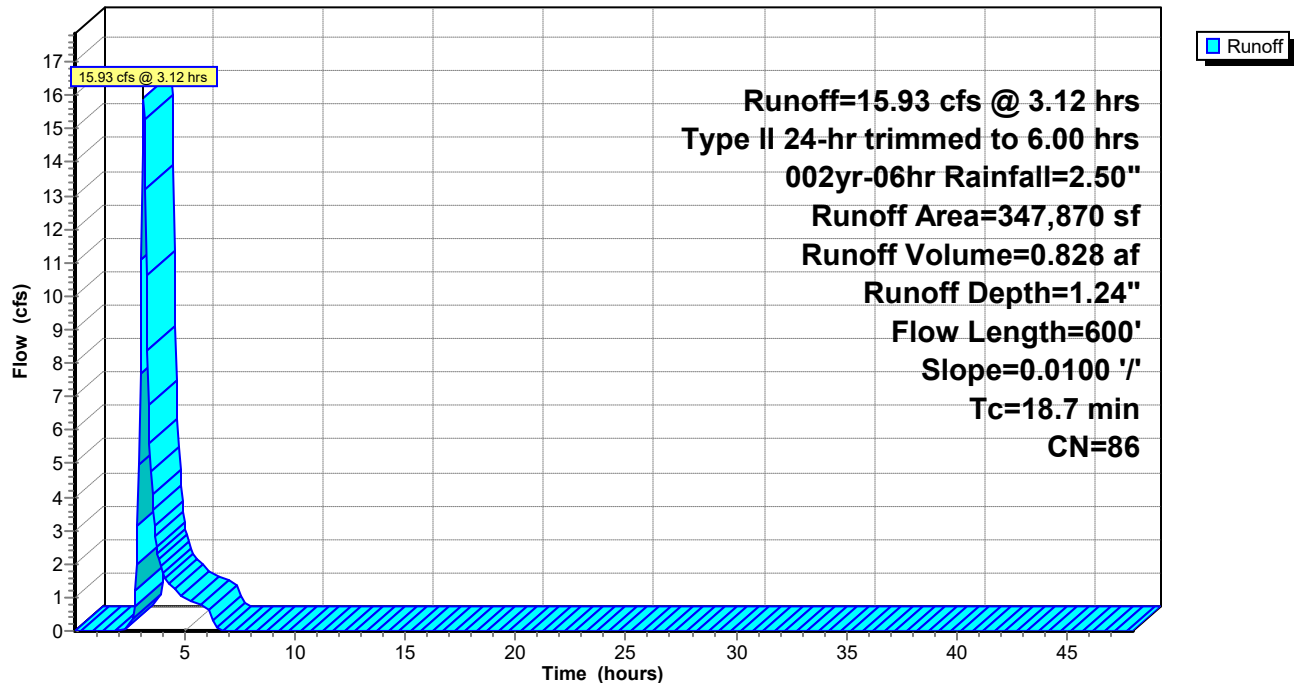
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 6.00 hrs 002yr-06hr Rainfall=2.50"

Area (sf)	CN	Description
169,520	74	>75% Grass cover, Good, HSG C
158,000	98	Paved parking, HSG C
20,350	98	Roofs, HSG C
347,870	86	Weighted Average
169,520		48.73% Pervious Area
178,350		51.27% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0100	0.12		Sheet Flow, Sheet Flow n= 0.150 P2= 2.92"
5.2	500	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc Unpaved Kv= 16.1 fps
18.7	600	Total			

Subcatchment 1s: EX1

Hydrograph



Existing Conditions

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BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 6.00 hrs 002yr-06hr Rainfall=2.50"

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Summary for Subcatchment 2s: EX2

Runoff = 0.88 cfs @ 3.10 hrs, Volume= 0.044 af, Depth= 0.61"

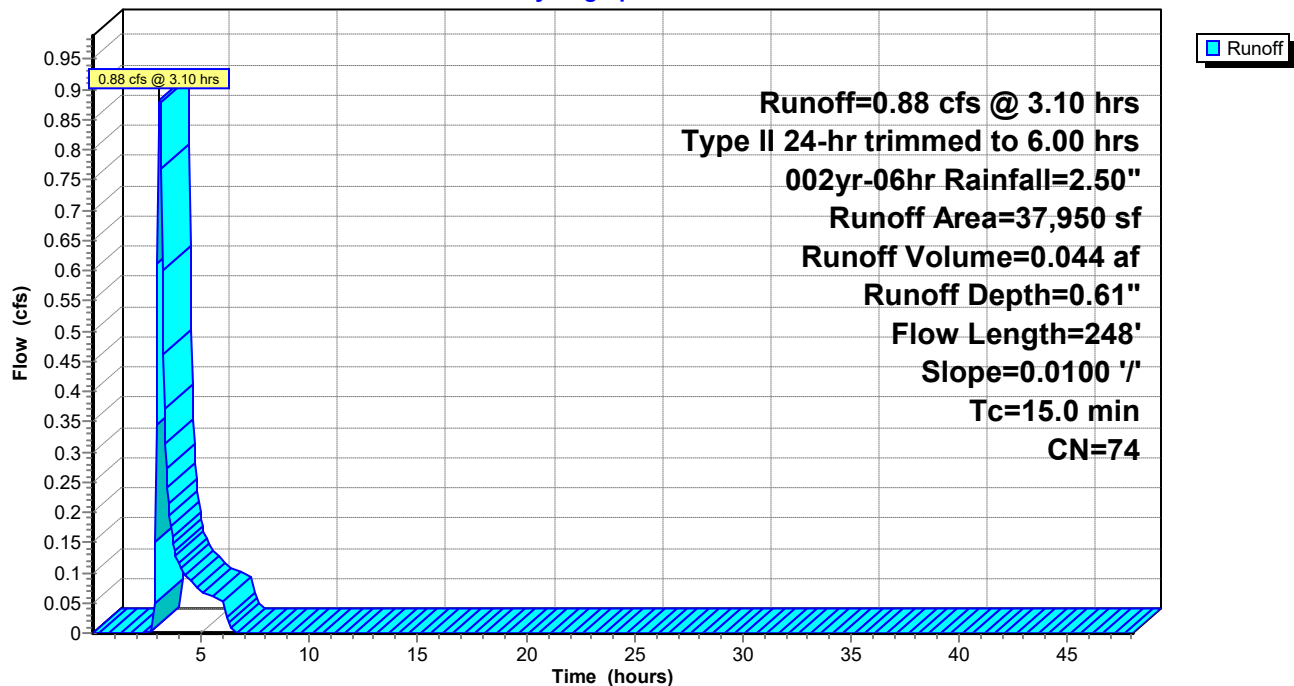
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 6.00 hrs 002yr-06hr Rainfall=2.50"

Area (sf)	CN	Description
37,950	74	>75% Grass cover, Good, HSG C
37,950		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0100	0.12		Sheet Flow, Sheet Flow
					Grass: Short n= 0.150 P2= 2.92"
1.5	148	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc
					Unpaved Kv= 16.1 fps
15.0	248	Total			

Subcatchment 2s: EX2

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 6.00 hrs 002yr-06hr Rainfall=2.50"

Existing Conditions

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Summary for Subcatchment 3s: EX3

Runoff = 0.71 cfs @ 3.10 hrs, Volume= 0.036 af, Depth= 0.61"

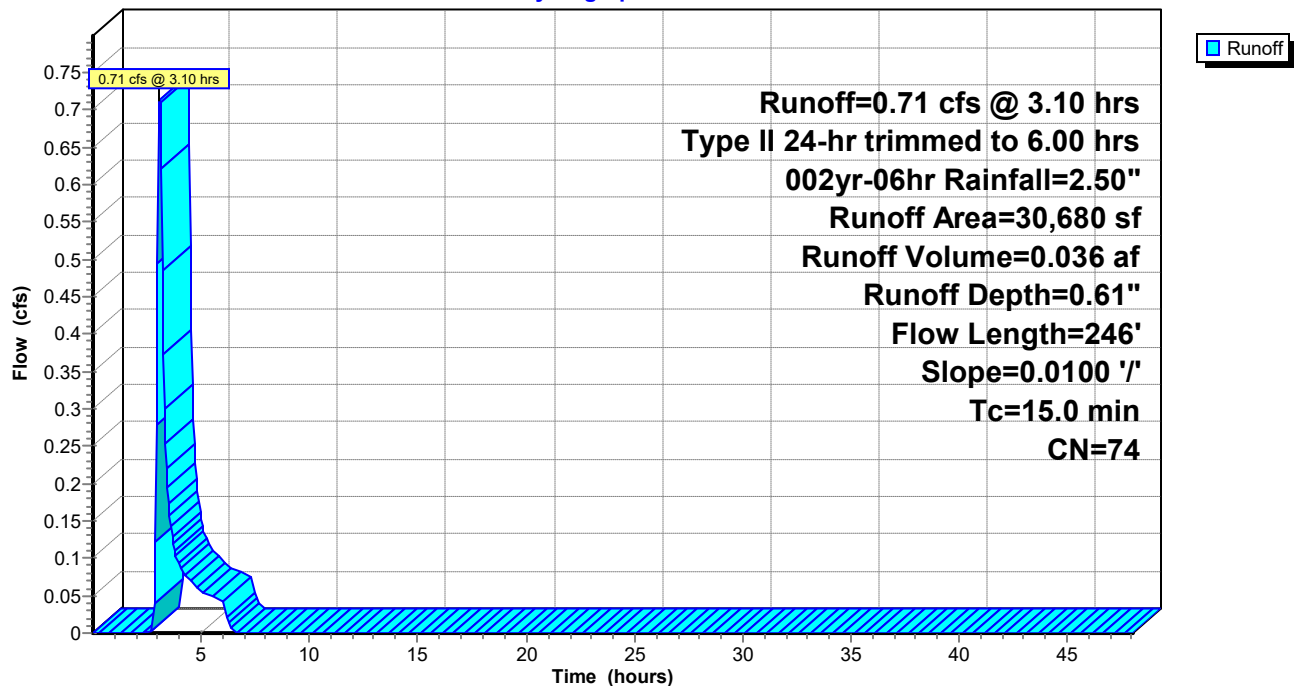
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 6.00 hrs 002yr-06hr Rainfall=2.50"

Area (sf)	CN	Description
30,680	74	>75% Grass cover, Good, HSG C
30,680		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0100	0.12		Sheet Flow, Sheet Flow Grass: Short n= 0.150 P2= 2.92"
1.5	146	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc Unpaved Kv= 16.1 fps
15.0	246	Total			

Subcatchment 3s: EX3

Hydrograph



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BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 6.00 hrs 002yr-06hr Rainfall=2.50"

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Summary for Subcatchment 4s: EX4

Runoff = 6.05 cfs @ 2.97 hrs, Volume= 0.191 af, Depth= 1.00"

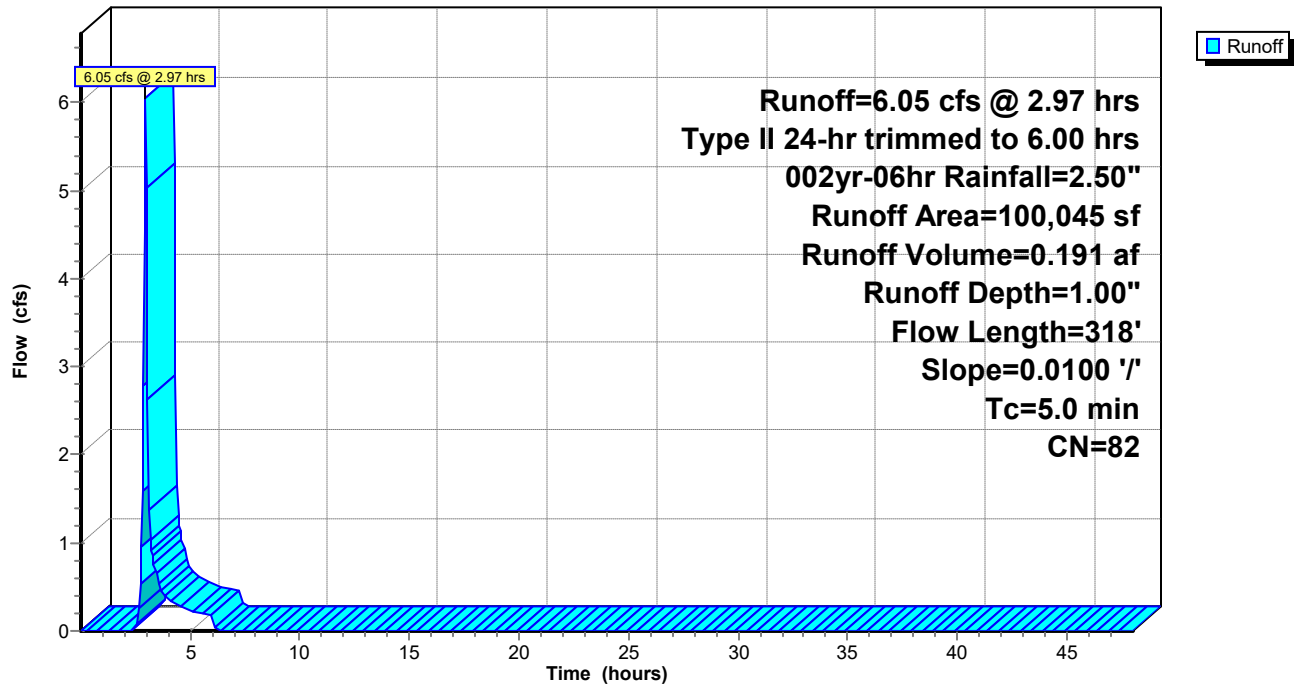
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 6.00 hrs 002yr-06hr Rainfall=2.50"

Area (sf)	CN	Description
64,745	74	>75% Grass cover, Good, HSG C
27,940	98	Paved parking, HSG C
7,360	98	Roofs, HSG C
100,045	82	Weighted Average
64,745		64.72% Pervious Area
35,300		35.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	100	0.0100	1.00		Sheet Flow, Sheet Flow
					Smooth surfaces n= 0.011 P2= 2.92"
2.3	218	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc
					Unpaved Kv= 16.1 fps
4.0	318	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 4s: EX4

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 6.00 hrs 002yr-06hr Rainfall=2.50"

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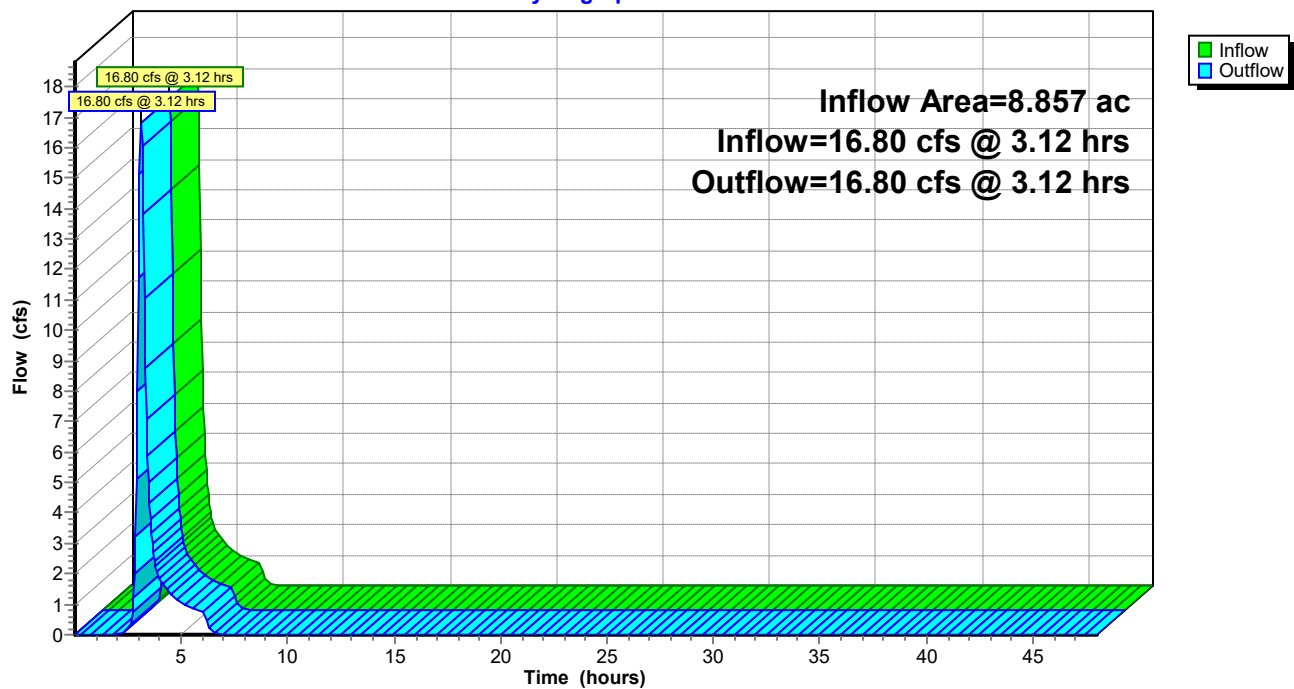
Summary for Reach 1R: US 31 DITCH

Inflow Area = 8.857 ac, 46.23% Impervious, Inflow Depth = 1.18" for 002yr-06hr event
Inflow = 16.80 cfs @ 3.12 hrs, Volume= 0.872 af
Outflow = 16.80 cfs @ 3.12 hrs, Volume= 0.872 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs

Reach 1R: US 31 DITCH

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 6.00 hrs 002yr-06hr Rainfall=2.50"

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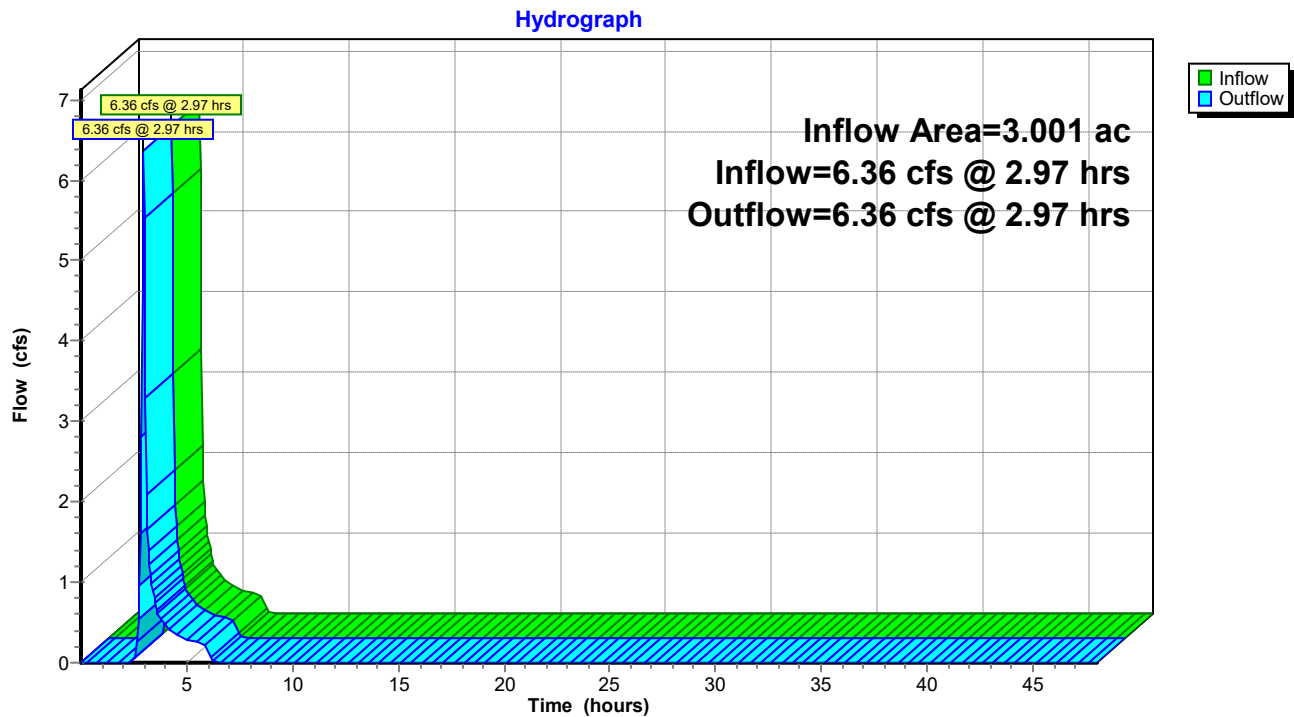
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Summary for Reach 2R: EX POND TO WEST

Inflow Area = 3.001 ac, 27.00% Impervious, Inflow Depth = 0.91" for 002yr-06hr event
Inflow = 6.36 cfs @ 2.97 hrs, Volume= 0.227 af
Outflow = 6.36 cfs @ 2.97 hrs, Volume= 0.227 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs

Reach 2R: EX POND TO WEST



BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 12.00 hrs 002yr-12hr Rainfall=2.45"

Existing Conditions

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Time span=0.01-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1s: EX1 Runoff Area=347,870 sf 51.27% Impervious Runoff Depth=1.20"
Flow Length=600' Slope=0.0100 '/' Tc=18.7 min CN=86 Runoff=13.03 cfs 0.800 af

Subcatchment 2s: EX2 Runoff Area=37,950 sf 0.00% Impervious Runoff Depth=0.58"
Flow Length=248' Slope=0.0100 '/' Tc=15.0 min CN=74 Runoff=0.69 cfs 0.042 af

Subcatchment 3s: EX3 Runoff Area=30,680 sf 0.00% Impervious Runoff Depth=0.58"
Flow Length=246' Slope=0.0100 '/' Tc=15.0 min CN=74 Runoff=0.56 cfs 0.034 af

Subcatchment 4s: EX4 Runoff Area=100,045 sf 35.28% Impervious Runoff Depth=0.96"
Flow Length=318' Slope=0.0100 '/' Tc=5.0 min CN=82 Runoff=4.83 cfs 0.184 af

Reach 1R: US 31 DITCH Inflow=13.71 cfs 0.843 af
Outflow=13.71 cfs 0.843 af

Reach 2R: EX POND TO WEST Inflow=5.09 cfs 0.218 af
Outflow=5.09 cfs 0.218 af

Total Runoff Area = 11.858 ac Runoff Volume = 1.061 af Average Runoff Depth = 1.07"
58.64% Pervious = 6.954 ac 41.36% Impervious = 4.905 ac

BDH REALTY COMMERCIAL DEV-EX CONDITIONS

Existing Conditions

Type II 24-hr trimmed to 12.00 hrs 002yr-12hr Rainfall=2.45"

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Summary for Subcatchment 1s: EX1

Runoff = 13.03 cfs @ 6.12 hrs, Volume= 0.800 af, Depth= 1.20"

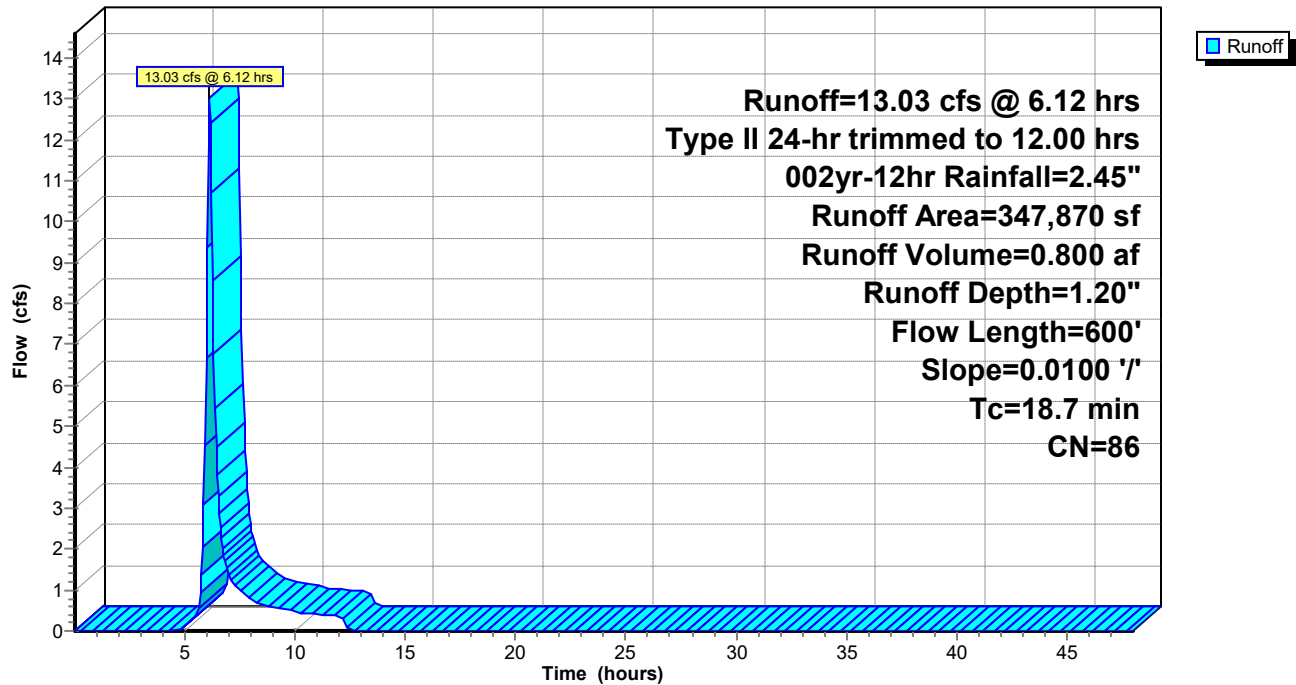
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 12.00 hrs 002yr-12hr Rainfall=2.45"

Area (sf)	CN	Description
169,520	74	>75% Grass cover, Good, HSG C
158,000	98	Paved parking, HSG C
20,350	98	Roofs, HSG C
347,870	86	Weighted Average
169,520		48.73% Pervious Area
178,350		51.27% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0100	0.12		Sheet Flow, Sheet Flow n= 0.150 P2= 2.92"
5.2	500	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc Unpaved Kv= 16.1 fps
18.7	600	Total			

Subcatchment 1s: EX1

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 12.00 hrs 002yr-12hr Rainfall=2.45"

Existing Conditions

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Summary for Subcatchment 2s: EX2

Runoff = 0.69 cfs @ 6.10 hrs, Volume= 0.042 af, Depth= 0.58"

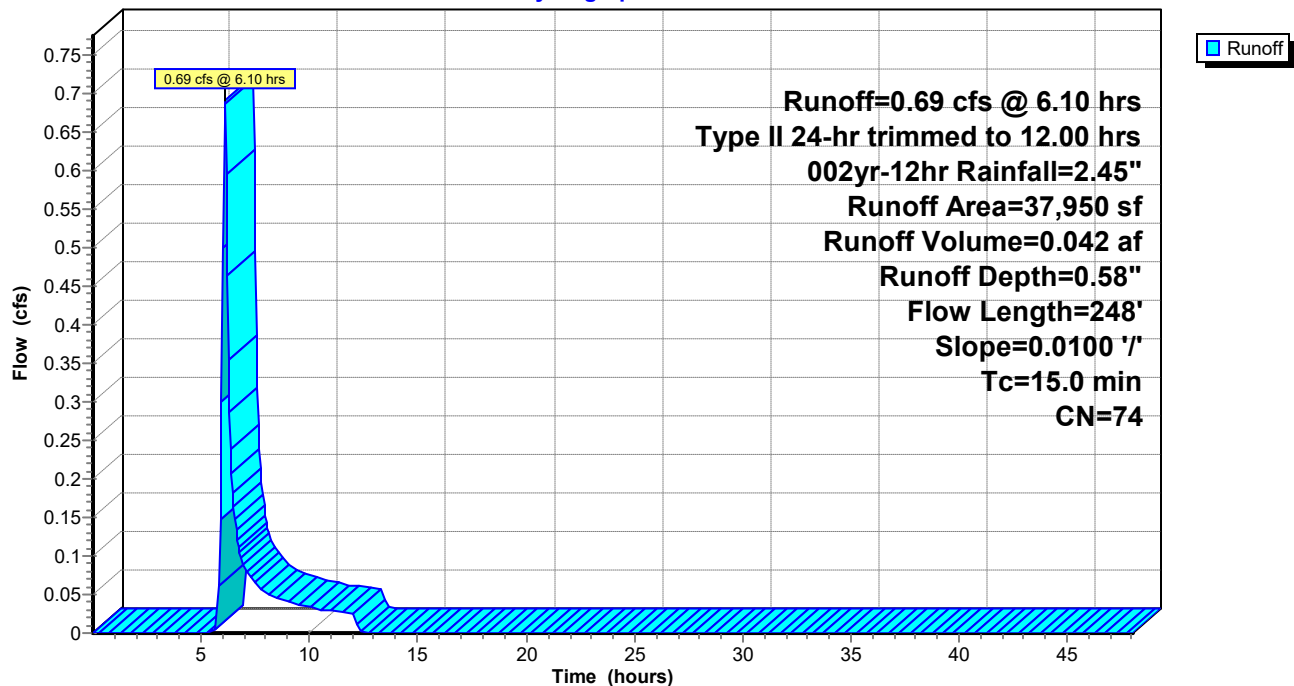
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 12.00 hrs 002yr-12hr Rainfall=2.45"

Area (sf)	CN	Description
37,950	74	>75% Grass cover, Good, HSG C
37,950		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0100	0.12		Sheet Flow, Sheet Flow
					Grass: Short n= 0.150 P2= 2.92"
1.5	148	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc
					Unpaved Kv= 16.1 fps
15.0	248	Total			

Subcatchment 2s: EX2

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 12.00 hrs 002yr-12hr Rainfall=2.45"

Existing Conditions

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Summary for Subcatchment 3s: EX3

Runoff = 0.56 cfs @ 6.10 hrs, Volume= 0.034 af, Depth= 0.58"

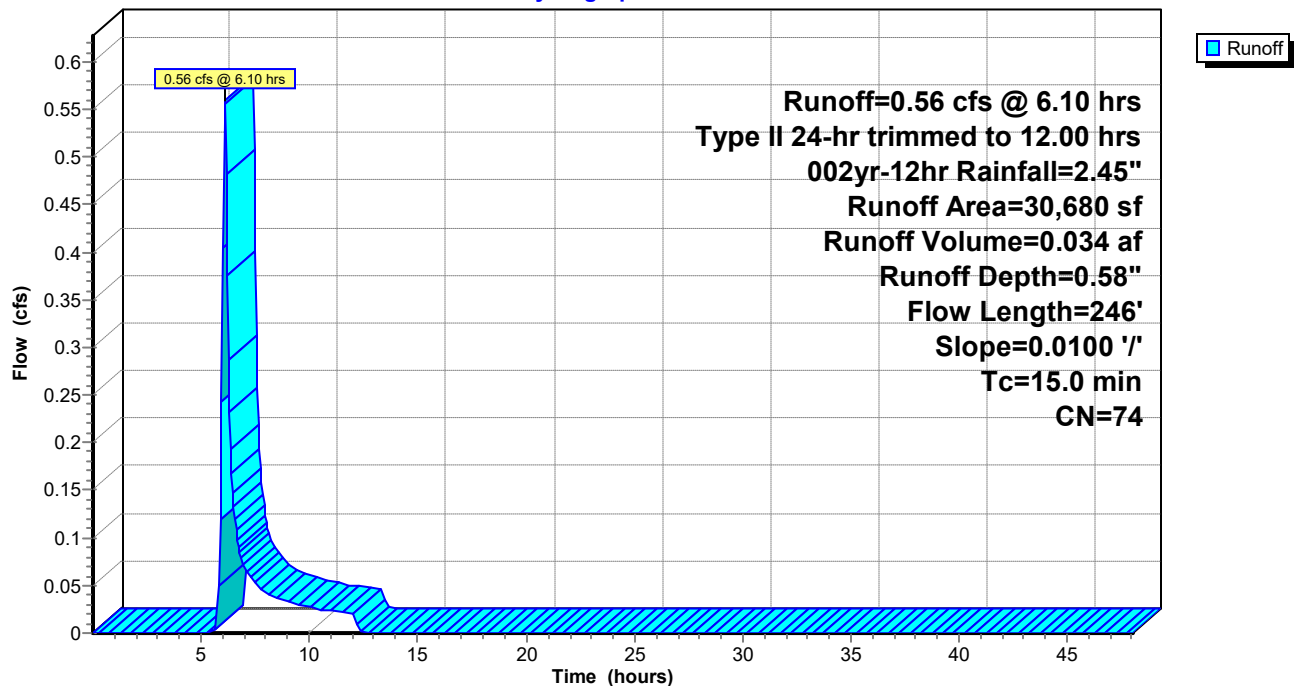
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 12.00 hrs 002yr-12hr Rainfall=2.45"

Area (sf)	CN	Description
30,680	74	>75% Grass cover, Good, HSG C
30,680		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0100	0.12		Sheet Flow, Sheet Flow
					Grass: Short n= 0.150 P2= 2.92"
1.5	146	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc
					Unpaved Kv= 16.1 fps
15.0	246	Total			

Subcatchment 3s: EX3

Hydrograph



Existing Conditions

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BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 12.00 hrs 002yr-12hr Rainfall=2.45"

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Summary for Subcatchment 4s: EX4

Runoff = 4.83 cfs @ 5.96 hrs, Volume= 0.184 af, Depth= 0.96"

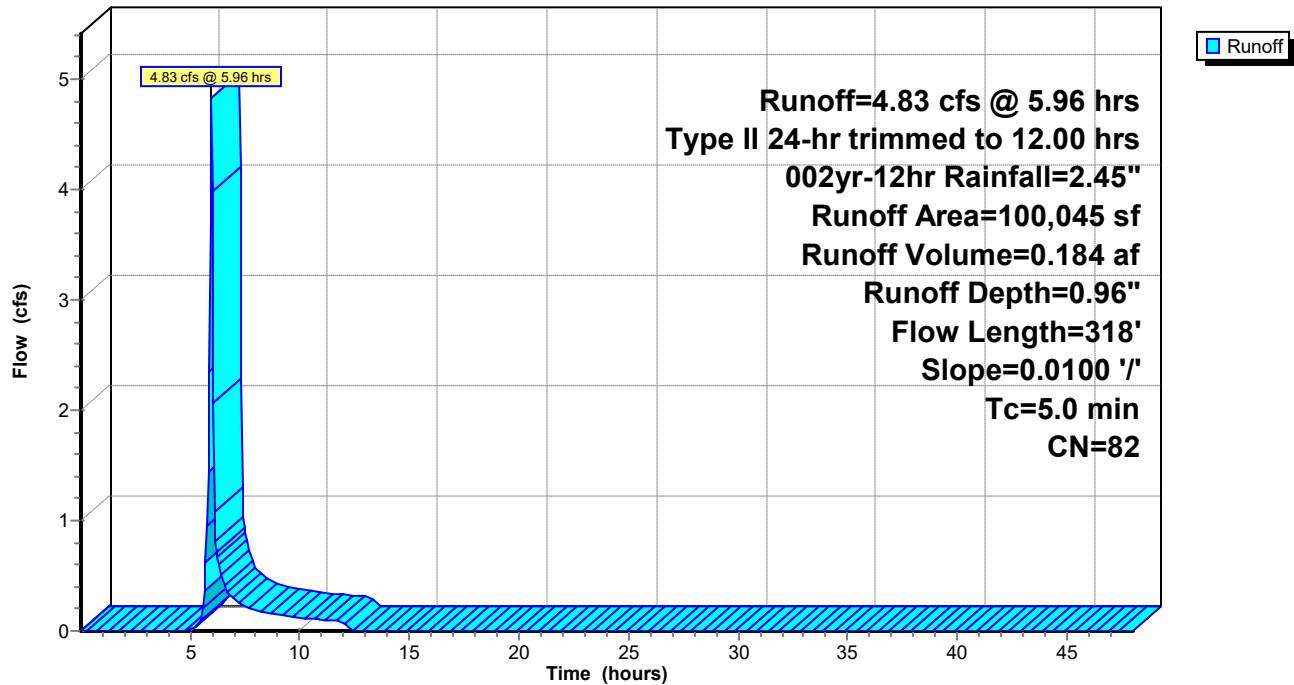
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 12.00 hrs 002yr-12hr Rainfall=2.45"

Area (sf)	CN	Description
64,745	74	>75% Grass cover, Good, HSG C
27,940	98	Paved parking, HSG C
7,360	98	Roofs, HSG C
100,045	82	Weighted Average
64,745		64.72% Pervious Area
35,300		35.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	100	0.0100	1.00		Sheet Flow, Sheet Flow
					Smooth surfaces n= 0.011 P2= 2.92"
2.3	218	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc
					Unpaved Kv= 16.1 fps
4.0	318	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 4s: EX4

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 12.00 hrs 002yr-12hr Rainfall=2.45"

Existing Conditions

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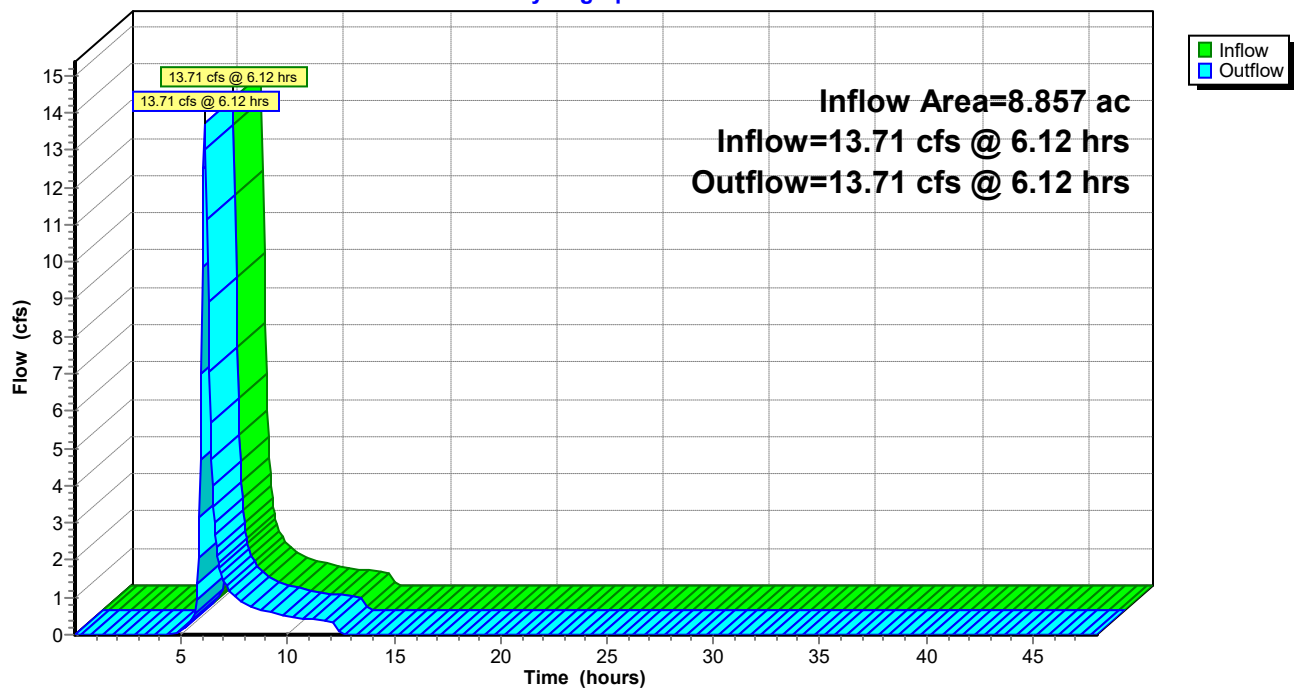
Summary for Reach 1R: US 31 DITCH

Inflow Area = 8.857 ac, 46.23% Impervious, Inflow Depth = 1.14" for 002yr-12hr event
Inflow = 13.71 cfs @ 6.12 hrs, Volume= 0.843 af
Outflow = 13.71 cfs @ 6.12 hrs, Volume= 0.843 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs

Reach 1R: US 31 DITCH

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 12.00 hrs 002yr-12hr Rainfall=2.45"

Existing Conditions

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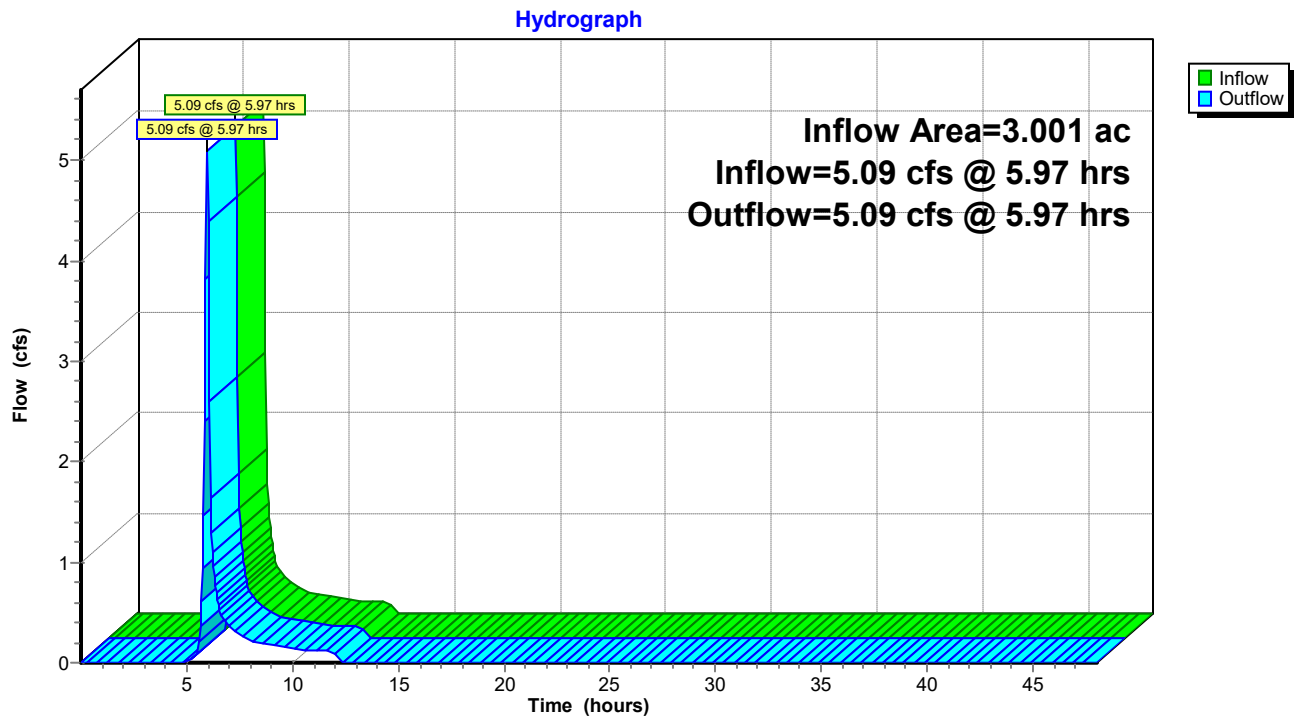
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Summary for Reach 2R: EX POND TO WEST

Inflow Area = 3.001 ac, 27.00% Impervious, Inflow Depth = 0.87" for 002yr-12hr event
Inflow = 5.09 cfs @ 5.97 hrs, Volume= 0.218 af
Outflow = 5.09 cfs @ 5.97 hrs, Volume= 0.218 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs

Reach 2R: EX POND TO WEST



BDH REALTY COMMERCIAL DEV-EX CONDITIONS

Type II 24-hr 002yr-24hr Rainfall=2.92"

Existing Conditions

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Time span=0.01-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1s: EX1 Runoff Area=347,870 sf 51.27% Impervious Runoff Depth=1.59"
Flow Length=600' Slope=0.0100 '/' Tc=18.7 min CN=86 Runoff=14.63 cfs 1.061 af

Subcatchment 2s: EX2 Runoff Area=37,950 sf 0.00% Impervious Runoff Depth=0.86"
Flow Length=248' Slope=0.0100 '/' Tc=15.0 min CN=74 Runoff=0.91 cfs 0.062 af

Subcatchment 3s: EX3 Runoff Area=30,680 sf 0.00% Impervious Runoff Depth=0.86"
Flow Length=246' Slope=0.0100 '/' Tc=15.0 min CN=74 Runoff=0.73 cfs 0.050 af

Subcatchment 4s: EX4 Runoff Area=100,045 sf 35.28% Impervious Runoff Depth=1.32"
Flow Length=318' Slope=0.0100 '/' Tc=5.0 min CN=82 Runoff=5.50 cfs 0.252 af

Reach 1R: US 31 DITCH Inflow=15.52 cfs 1.123 af
Outflow=15.52 cfs 1.123 af

Reach 2R: EX POND TO WEST Inflow=5.91 cfs 0.302 af
Outflow=5.91 cfs 0.302 af

Total Runoff Area = 11.858 ac Runoff Volume = 1.425 af Average Runoff Depth = 1.44"
58.64% Pervious = 6.954 ac 41.36% Impervious = 4.905 ac

BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr 002yr-24hr Rainfall=2.92"

Existing Conditions

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Summary for Subcatchment 1s: EX1

Runoff = 14.63 cfs @ 12.11 hrs, Volume= 1.061 af, Depth= 1.59"

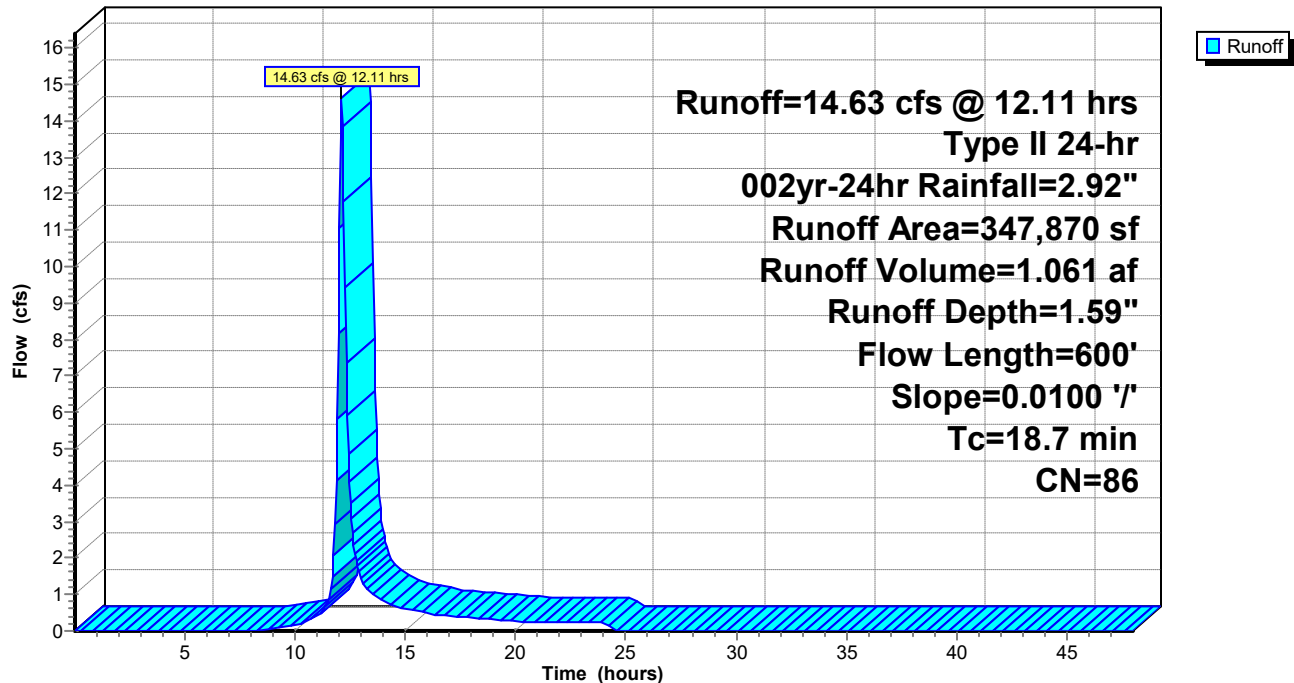
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr 002yr-24hr Rainfall=2.92"

Area (sf)	CN	Description
169,520	74	>75% Grass cover, Good, HSG C
158,000	98	Paved parking, HSG C
20,350	98	Roofs, HSG C
347,870	86	Weighted Average
169,520		48.73% Pervious Area
178,350		51.27% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0100	0.12		Sheet Flow, Sheet Flow n= 0.150 P2= 2.92"
5.2	500	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc Unpaved Kv= 16.1 fps
18.7	600	Total			

Subcatchment 1s: EX1

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS

Type II 24-hr 002yr-24hr Rainfall=2.92"

Existing Conditions

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Summary for Subcatchment 2s: EX2

Runoff = 0.91 cfs @ 12.08 hrs, Volume= 0.062 af, Depth= 0.86"

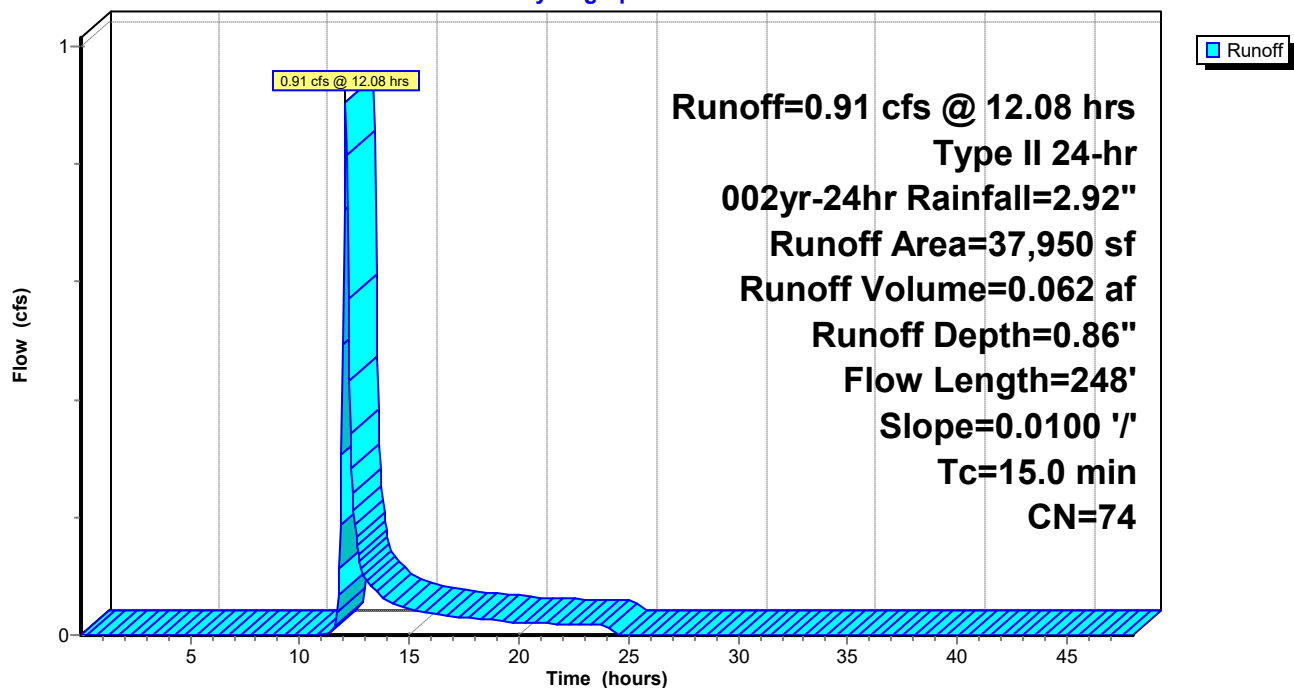
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr 002yr-24hr Rainfall=2.92"

Area (sf)	CN	Description
37,950	74	>75% Grass cover, Good, HSG C
37,950		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0100	0.12		Sheet Flow, Sheet Flow
					Grass: Short n= 0.150 P2= 2.92"
1.5	148	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc
					Unpaved Kv= 16.1 fps
15.0	248	Total			

Subcatchment 2s: EX2

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS

Type II 24-hr 002yr-24hr Rainfall=2.92"

Existing Conditions

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Summary for Subcatchment 3s: EX3

Runoff = 0.73 cfs @ 12.08 hrs, Volume= 0.050 af, Depth= 0.86"

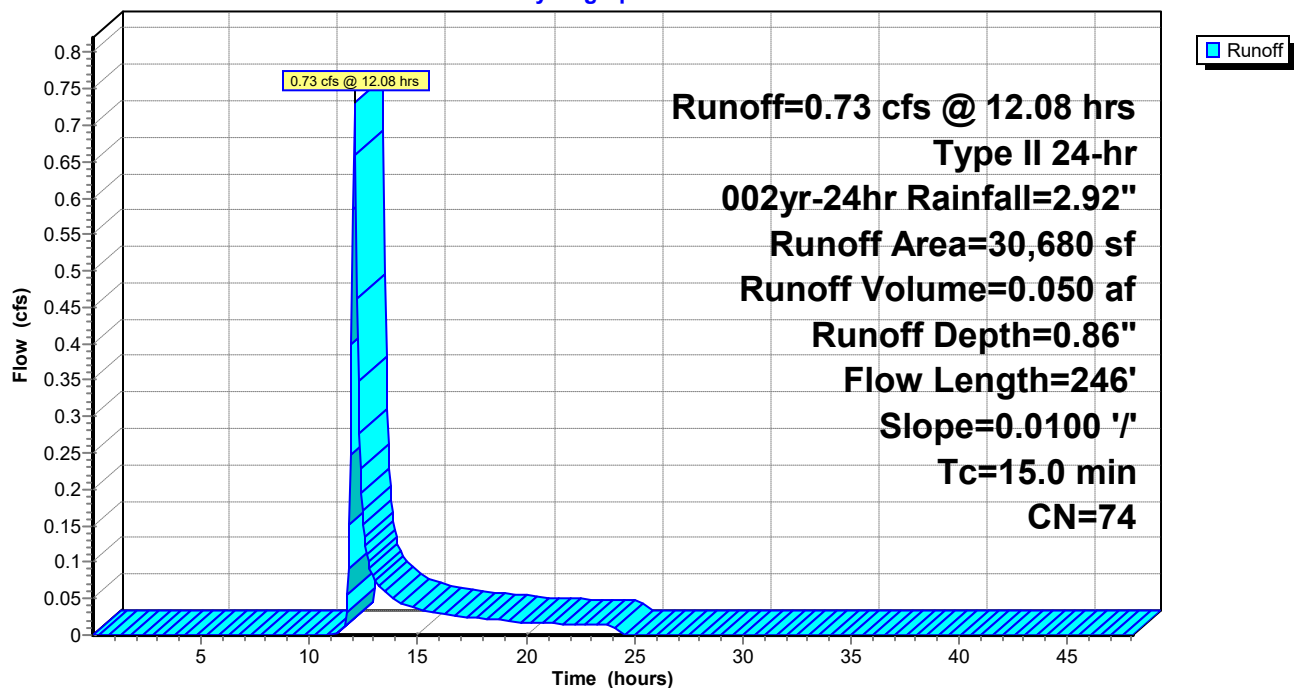
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr 002yr-24hr Rainfall=2.92"

Area (sf)	CN	Description
30,680	74	>75% Grass cover, Good, HSG C
30,680		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0100	0.12		Sheet Flow, Sheet Flow
					Grass: Short n= 0.150 P2= 2.92"
1.5	146	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc
					Unpaved Kv= 16.1 fps
15.0	246	Total			

Subcatchment 3s: EX3

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS

Type II 24-hr 002yr-24hr Rainfall=2.92"

Existing Conditions

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Summary for Subcatchment 4s: EX4

Runoff = 5.50 cfs @ 11.96 hrs, Volume= 0.252 af, Depth= 1.32"

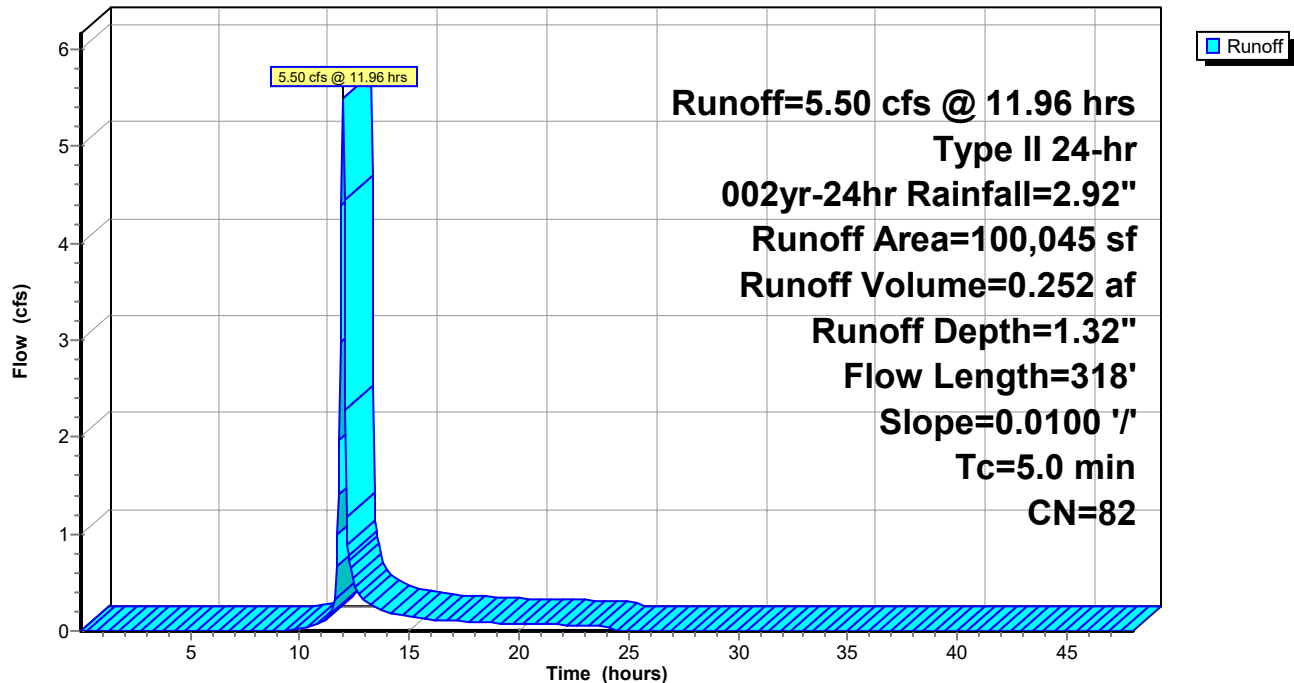
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr 002yr-24hr Rainfall=2.92"

Area (sf)	CN	Description
64,745	74	>75% Grass cover, Good, HSG C
27,940	98	Paved parking, HSG C
7,360	98	Roofs, HSG C
100,045	82	Weighted Average
64,745		64.72% Pervious Area
35,300		35.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	100	0.0100	1.00		Sheet Flow, Sheet Flow
					Smooth surfaces n= 0.011 P2= 2.92"
2.3	218	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc
					Unpaved Kv= 16.1 fps
4.0	318	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 4s: EX4

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS

Type II 24-hr 002yr-24hr Rainfall=2.92"

Existing Conditions

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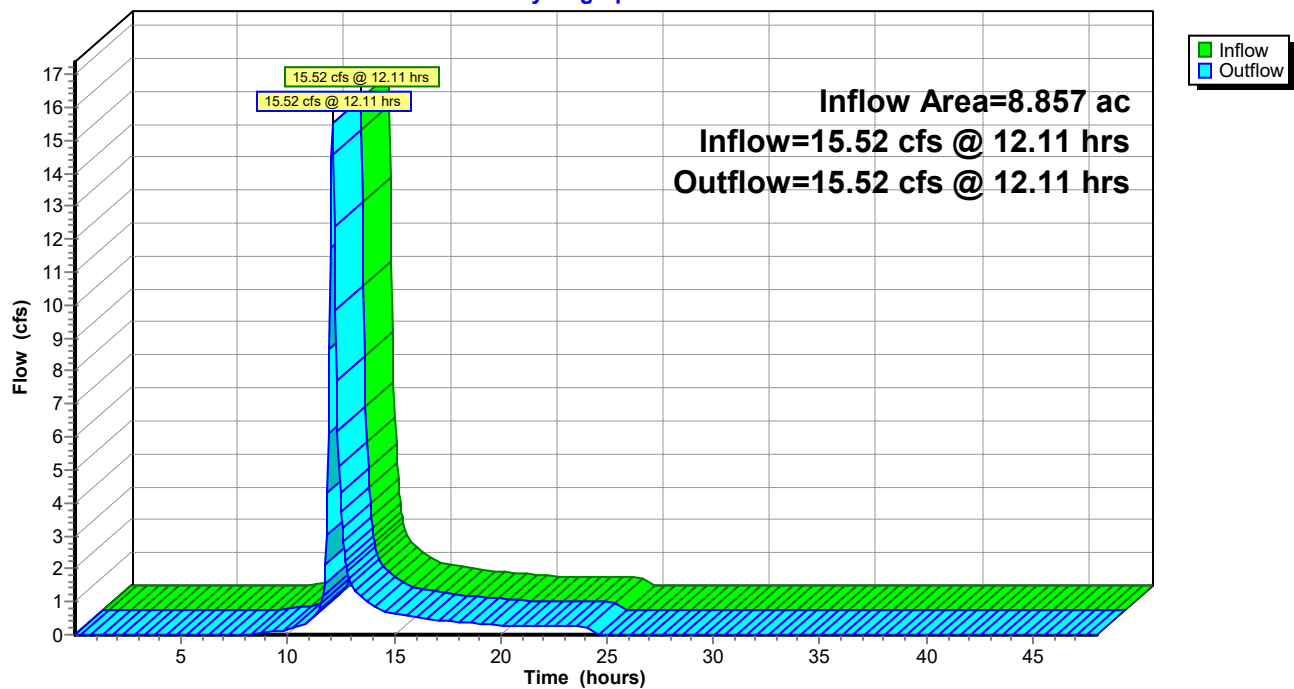
Summary for Reach 1R: US 31 DITCH

Inflow Area = 8.857 ac, 46.23% Impervious, Inflow Depth = 1.52" for 002yr-24hr event
Inflow = 15.52 cfs @ 12.11 hrs, Volume= 1.123 af
Outflow = 15.52 cfs @ 12.11 hrs, Volume= 1.123 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs

Reach 1R: US 31 DITCH

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS

Type II 24-hr 002yr-24hr Rainfall=2.92"

Existing Conditions

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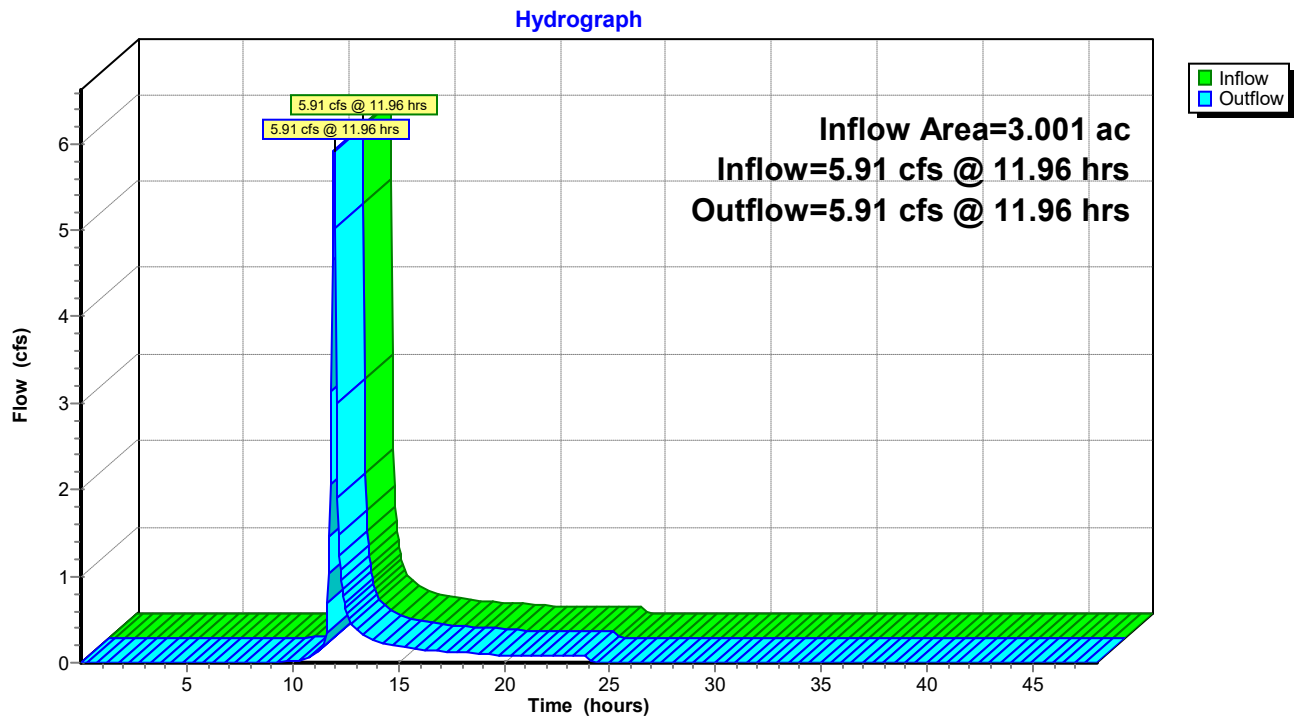
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Summary for Reach 2R: EX POND TO WEST

Inflow Area = 3.001 ac, 27.00% Impervious, Inflow Depth = 1.21" for 002yr-24hr event
Inflow = 5.91 cfs @ 11.96 hrs, Volume= 0.302 af
Outflow = 5.91 cfs @ 11.96 hrs, Volume= 0.302 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs

Reach 2R: EX POND TO WEST



Existing Conditions

BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 1.00 hrs 010yr-01hr Rainfall=2.02"

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Time span=0.01-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1s: EX1 Runoff Area=347,870 sf 51.27% Impervious Runoff Depth=0.86"
Flow Length=600' Slope=0.0100 '/' Tc=18.7 min CN=86 Runoff=16.13 cfs 0.575 af

Subcatchment 2s: EX2 Runoff Area=37,950 sf 0.00% Impervious Runoff Depth=0.36"
Flow Length=248' Slope=0.0100 '/' Tc=15.0 min CN=74 Runoff=0.80 cfs 0.026 af

Subcatchment 3s: EX3 Runoff Area=30,680 sf 0.00% Impervious Runoff Depth=0.36"
Flow Length=246' Slope=0.0100 '/' Tc=15.0 min CN=74 Runoff=0.65 cfs 0.021 af

Subcatchment 4s: EX4 Runoff Area=100,045 sf 35.28% Impervious Runoff Depth=0.66"
Flow Length=318' Slope=0.0100 '/' Tc=5.0 min CN=82 Runoff=6.47 cfs 0.127 af

Reach 1R: US 31 DITCH Inflow=16.90 cfs 0.601 af
Outflow=16.90 cfs 0.601 af

Reach 2R: EX POND TO WEST Inflow=6.64 cfs 0.148 af
Outflow=6.64 cfs 0.148 af

Total Runoff Area = 11.858 ac Runoff Volume = 0.749 af Average Runoff Depth = 0.76"
58.64% Pervious = 6.954 ac 41.36% Impervious = 4.905 ac

Existing Conditions

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BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 1.00 hrs 010yr-01hr Rainfall=2.02"

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Summary for Subcatchment 1s: EX1

Runoff = 16.13 cfs @ 0.64 hrs, Volume= 0.575 af, Depth= 0.86"

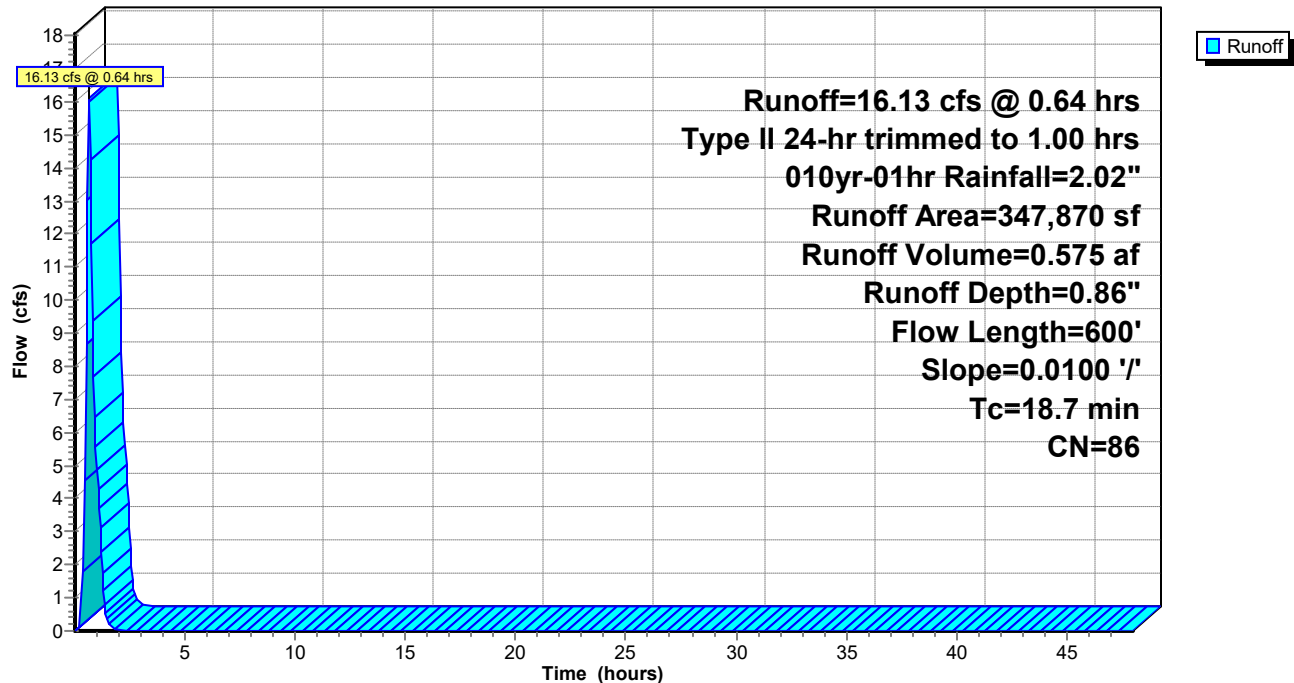
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 1.00 hrs 010yr-01hr Rainfall=2.02"

Area (sf)	CN	Description
169,520	74	>75% Grass cover, Good, HSG C
158,000	98	Paved parking, HSG C
20,350	98	Roofs, HSG C
347,870	86	Weighted Average
169,520		48.73% Pervious Area
178,350		51.27% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0100	0.12		Sheet Flow, Sheet Flow n= 0.150 P2= 2.92"
5.2	500	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc Unpaved Kv= 16.1 fps
18.7	600	Total			

Subcatchment 1s: EX1

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 1.00 hrs 010yr-01hr Rainfall=2.02"

Existing Conditions

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Summary for Subcatchment 2s: EX2

Runoff = 0.80 cfs @ 0.62 hrs, Volume= 0.026 af, Depth= 0.36"

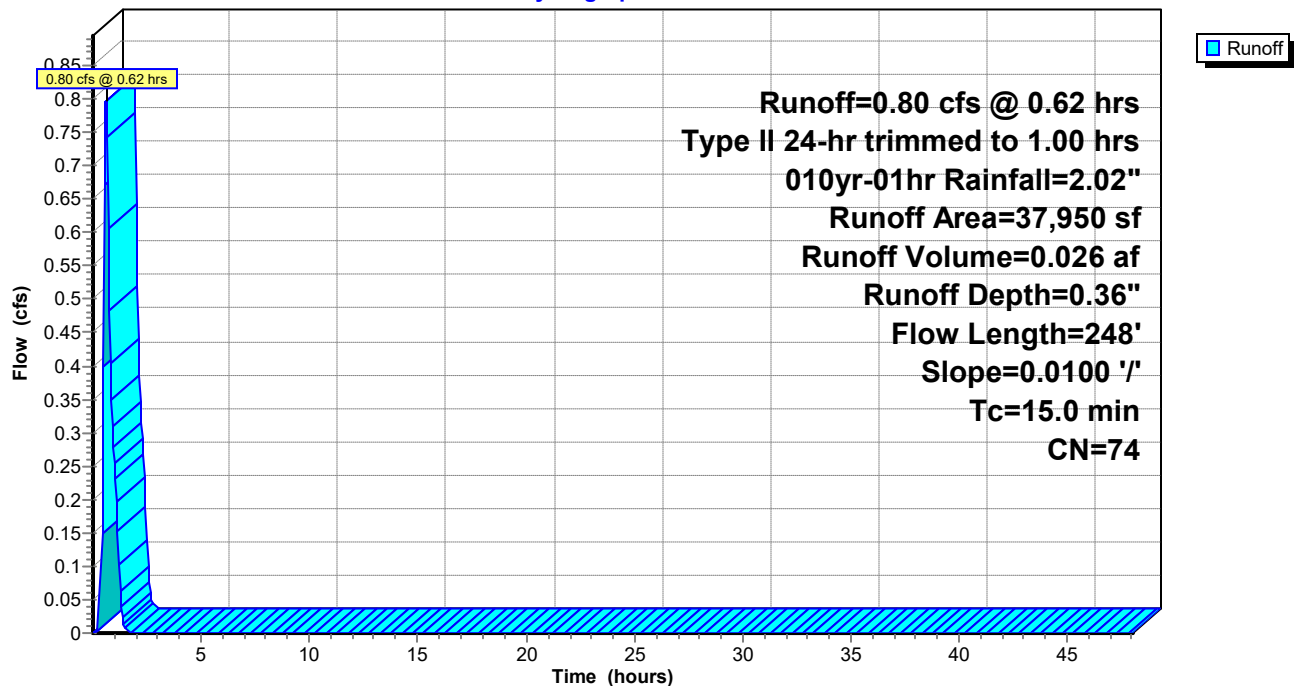
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 1.00 hrs 010yr-01hr Rainfall=2.02"

Area (sf)	CN	Description
37,950	74	>75% Grass cover, Good, HSG C
37,950		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0100	0.12		Sheet Flow, Sheet Flow Grass: Short n= 0.150 P2= 2.92"
1.5	148	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc Unpaved Kv= 16.1 fps
15.0	248	Total			

Subcatchment 2s: EX2

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 1.00 hrs 010yr-01hr Rainfall=2.02"

Existing Conditions

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Summary for Subcatchment 3s: EX3

Runoff = 0.65 cfs @ 0.62 hrs, Volume= 0.021 af, Depth= 0.36"

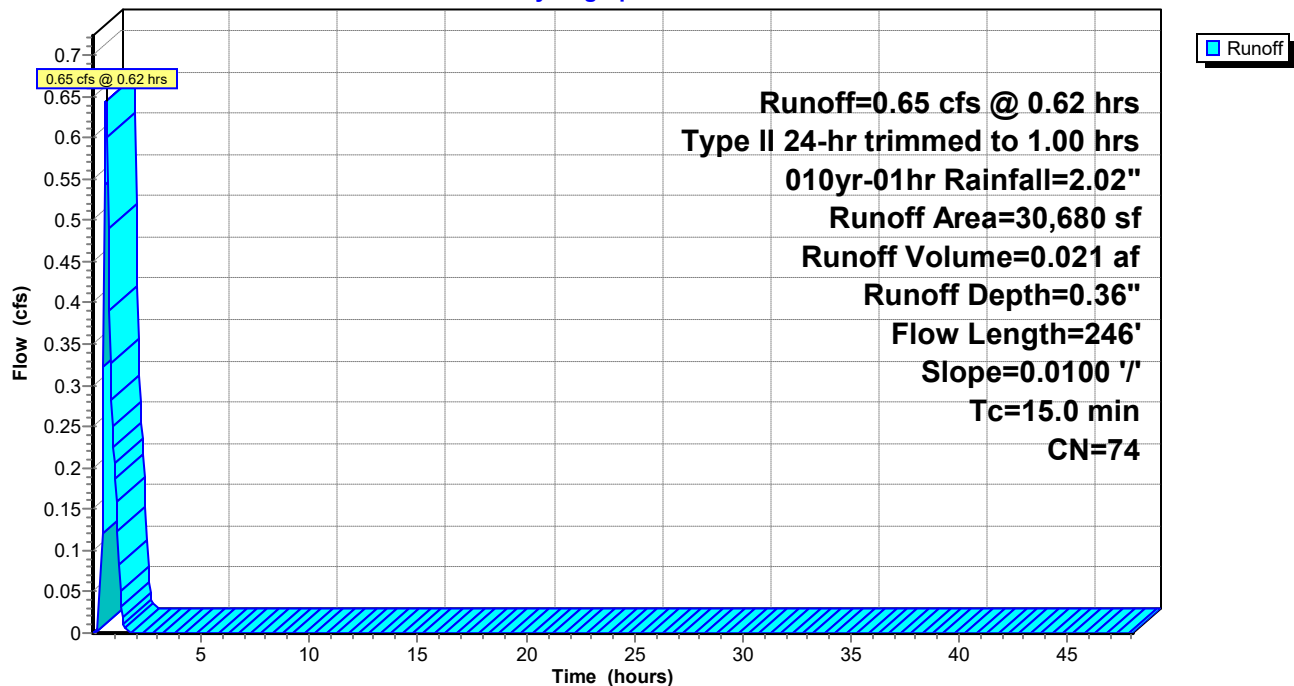
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 1.00 hrs 010yr-01hr Rainfall=2.02"

Area (sf)	CN	Description
30,680	74	>75% Grass cover, Good, HSG C
30,680		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0100	0.12		Sheet Flow, Sheet Flow Grass: Short n= 0.150 P2= 2.92"
1.5	146	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc Unpaved Kv= 16.1 fps
15.0	246	Total			

Subcatchment 3s: EX3

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 1.00 hrs 010yr-01hr Rainfall=2.02"

Existing Conditions

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Summary for Subcatchment 4s: EX4

Runoff = 6.47 cfs @ 0.47 hrs, Volume= 0.127 af, Depth= 0.66"

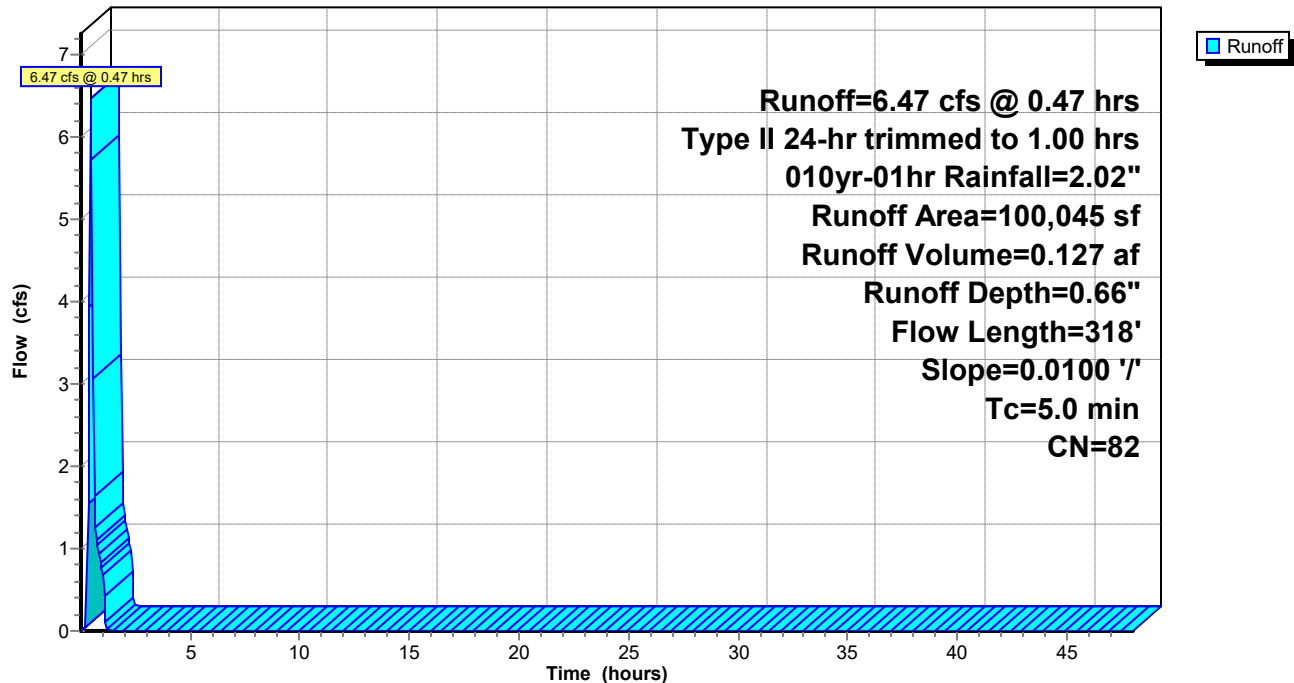
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 1.00 hrs 010yr-01hr Rainfall=2.02"

Area (sf)	CN	Description
64,745	74	>75% Grass cover, Good, HSG C
27,940	98	Paved parking, HSG C
7,360	98	Roofs, HSG C
100,045	82	Weighted Average
64,745		64.72% Pervious Area
35,300		35.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	100	0.0100	1.00		Sheet Flow, Sheet Flow Smooth surfaces n= 0.011 P2= 2.92"
2.3	218	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc Unpaved Kv= 16.1 fps
4.0	318	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 4s: EX4

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 1.00 hrs 010yr-01hr Rainfall=2.02"

Existing Conditions

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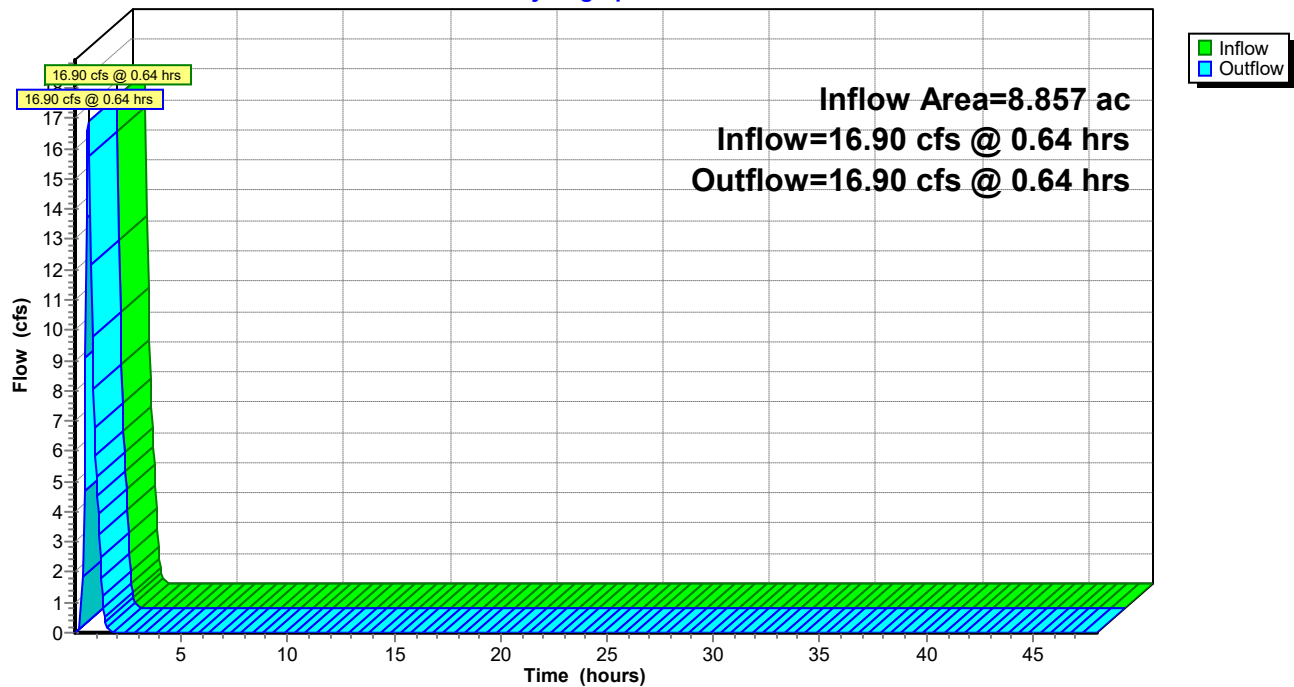
Summary for Reach 1R: US 31 DITCH

Inflow Area = 8.857 ac, 46.23% Impervious, Inflow Depth = 0.81" for 010yr-01hr event
Inflow = 16.90 cfs @ 0.64 hrs, Volume= 0.601 af
Outflow = 16.90 cfs @ 0.64 hrs, Volume= 0.601 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs

Reach 1R: US 31 DITCH

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 1.00 hrs 010yr-01hr Rainfall=2.02"

Existing Conditions

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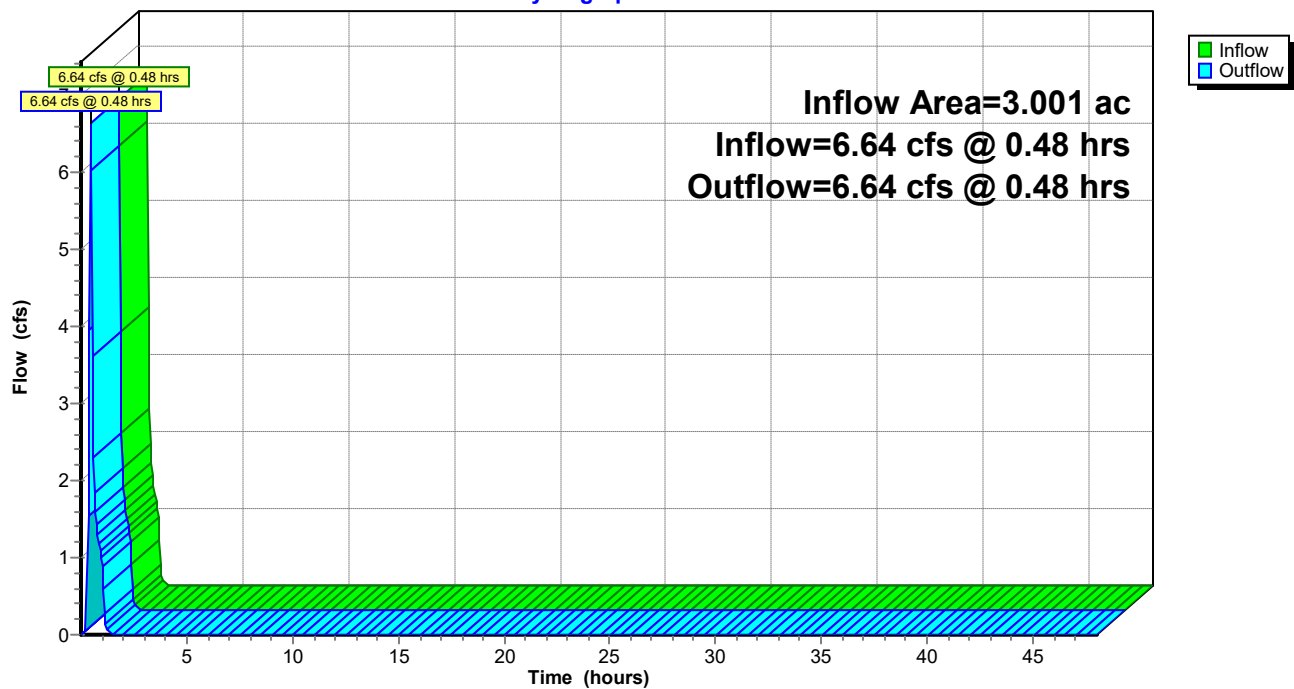
Summary for Reach 2R: EX POND TO WEST

Inflow Area = 3.001 ac, 27.00% Impervious, Inflow Depth = 0.59" for 010yr-01hr event
Inflow = 6.64 cfs @ 0.48 hrs, Volume= 0.148 af
Outflow = 6.64 cfs @ 0.48 hrs, Volume= 0.148 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs

Reach 2R: EX POND TO WEST

Hydrograph



Existing Conditions

BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 2.00 hrs 010yr-02hr Rainfall=2.38"

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Time span=0.01-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1s: EX1 Runoff Area=347,870 sf 51.27% Impervious Runoff Depth=1.15"
Flow Length=600' Slope=0.0100 '/' Tc=18.7 min CN=86 Runoff=18.76 cfs 0.763 af

Subcatchment 2s: EX2 Runoff Area=37,950 sf 0.00% Impervious Runoff Depth=0.54"
Flow Length=248' Slope=0.0100 '/' Tc=15.0 min CN=74 Runoff=1.04 cfs 0.039 af

Subcatchment 3s: EX3 Runoff Area=30,680 sf 0.00% Impervious Runoff Depth=0.54"
Flow Length=246' Slope=0.0100 '/' Tc=15.0 min CN=74 Runoff=0.84 cfs 0.032 af

Subcatchment 4s: EX4 Runoff Area=100,045 sf 35.28% Impervious Runoff Depth=0.91"
Flow Length=318' Slope=0.0100 '/' Tc=5.0 min CN=82 Runoff=7.41 cfs 0.174 af

Reach 1R: US 31 DITCH Inflow=19.79 cfs 0.802 af
Outflow=19.79 cfs 0.802 af

Reach 2R: EX POND TO WEST Inflow=7.71 cfs 0.206 af
Outflow=7.71 cfs 0.206 af

Total Runoff Area = 11.858 ac Runoff Volume = 1.008 af Average Runoff Depth = 1.02"
58.64% Pervious = 6.954 ac 41.36% Impervious = 4.905 ac

Existing Conditions

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BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 2.00 hrs 010yr-02hr Rainfall=2.38"

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Summary for Subcatchment 1s: EX1

Runoff = 18.76 cfs @ 1.13 hrs, Volume= 0.763 af, Depth= 1.15"

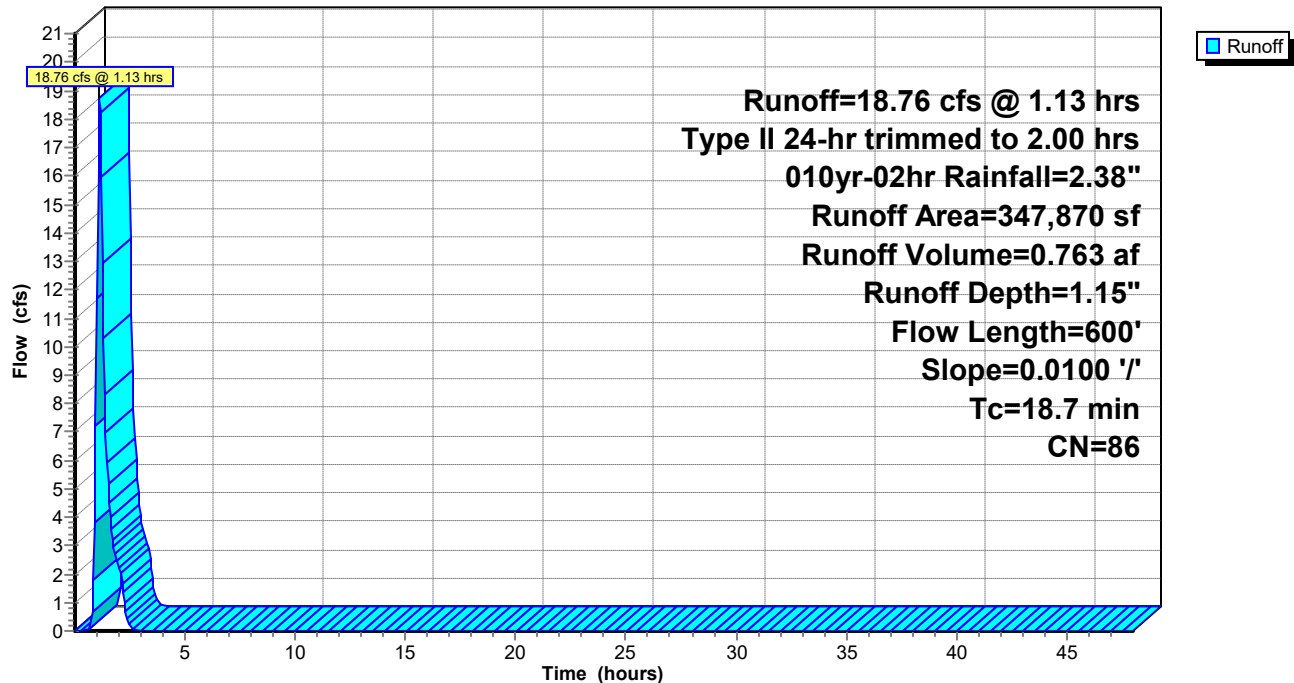
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 2.00 hrs 010yr-02hr Rainfall=2.38"

Area (sf)	CN	Description
169,520	74	>75% Grass cover, Good, HSG C
158,000	98	Paved parking, HSG C
20,350	98	Roofs, HSG C
347,870	86	Weighted Average
169,520		48.73% Pervious Area
178,350		51.27% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0100	0.12		Sheet Flow, Sheet Flow n= 0.150 P2= 2.92"
5.2	500	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc Unpaved Kv= 16.1 fps
18.7	600	Total			

Subcatchment 1s: EX1

Hydrograph



Existing Conditions

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BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 2.00 hrs 010yr-02hr Rainfall=2.38"

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Summary for Subcatchment 2s: EX2

Runoff = 1.04 cfs @ 1.11 hrs, Volume= 0.039 af, Depth= 0.54"

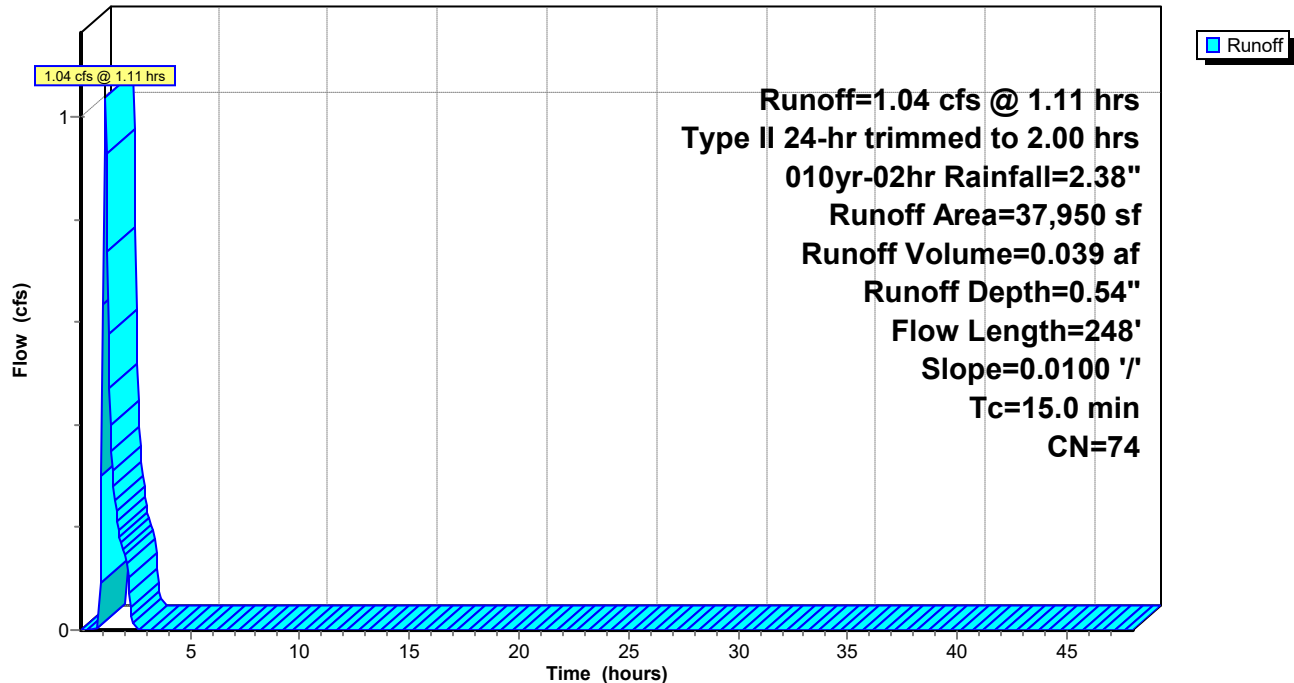
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 2.00 hrs 010yr-02hr Rainfall=2.38"

Area (sf)	CN	Description
37,950	74	>75% Grass cover, Good, HSG C
37,950		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0100	0.12		Sheet Flow, Sheet Flow Grass: Short n= 0.150 P2= 2.92"
1.5	148	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc Unpaved Kv= 16.1 fps
15.0	248	Total			

Subcatchment 2s: EX2

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 2.00 hrs 010yr-02hr Rainfall=2.38"

Existing Conditions

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Summary for Subcatchment 3s: EX3

Runoff = 0.84 cfs @ 1.11 hrs, Volume= 0.032 af, Depth= 0.54"

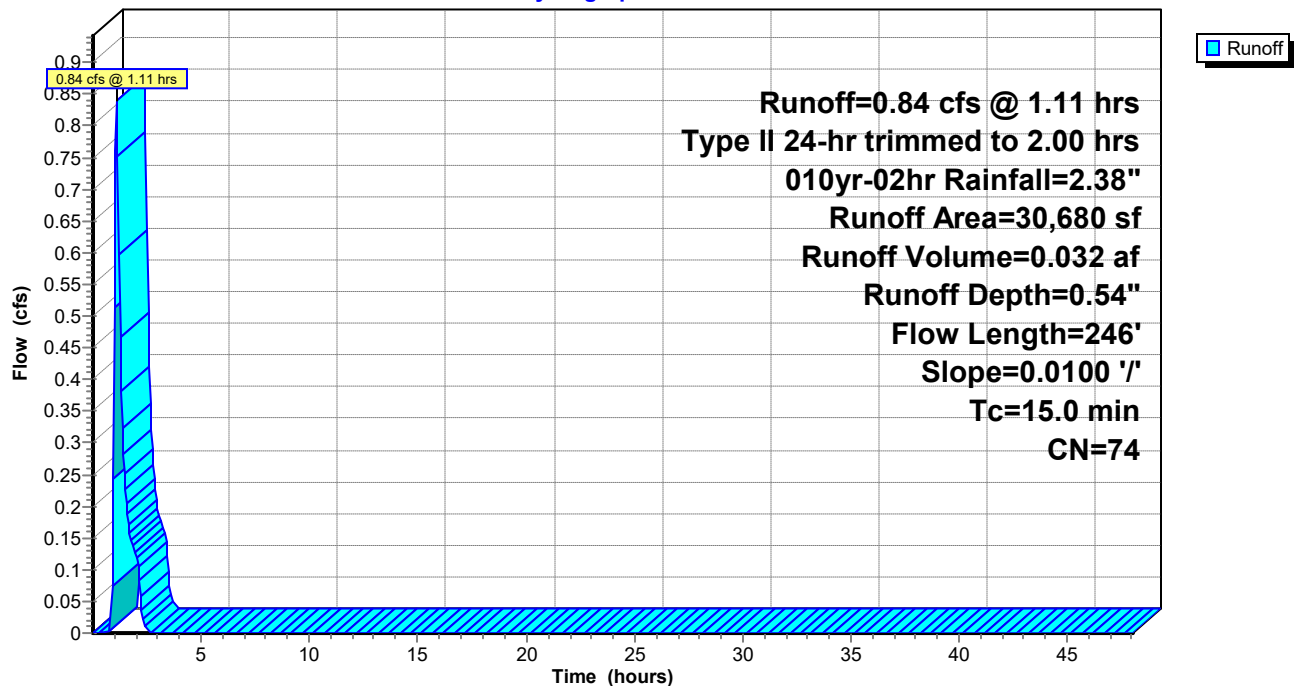
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 2.00 hrs 010yr-02hr Rainfall=2.38"

Area (sf)	CN	Description
30,680	74	>75% Grass cover, Good, HSG C
30,680		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0100	0.12		Sheet Flow, Sheet Flow Grass: Short n= 0.150 P2= 2.92"
1.5	146	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc Unpaved Kv= 16.1 fps
15.0	246	Total			

Subcatchment 3s: EX3

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 2.00 hrs 010yr-02hr Rainfall=2.38"

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Summary for Subcatchment 4s: EX4

Runoff = 7.41 cfs @ 0.97 hrs, Volume= 0.174 af, Depth= 0.91"

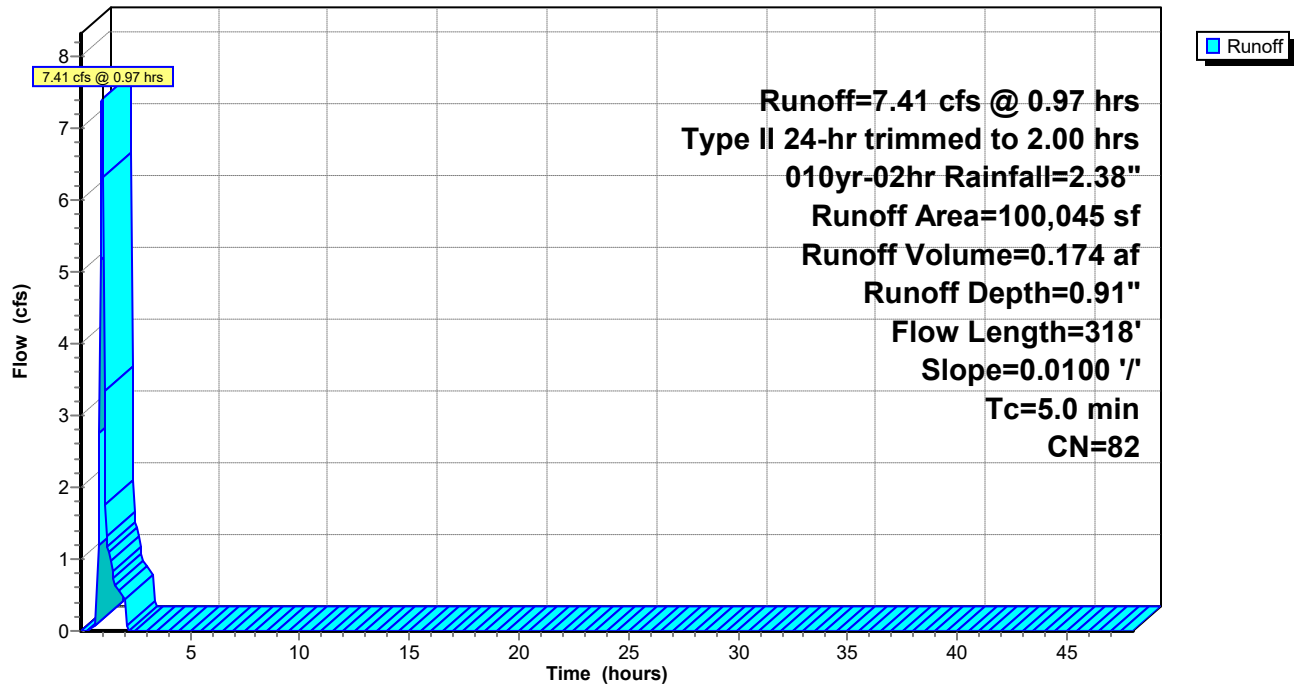
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 2.00 hrs 010yr-02hr Rainfall=2.38"

Area (sf)	CN	Description
64,745	74	>75% Grass cover, Good, HSG C
27,940	98	Paved parking, HSG C
7,360	98	Roofs, HSG C
100,045	82	Weighted Average
64,745		64.72% Pervious Area
35,300		35.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	100	0.0100	1.00		Sheet Flow, Sheet Flow Smooth surfaces n= 0.011 P2= 2.92"
2.3	218	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc Unpaved Kv= 16.1 fps
4.0	318	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 4s: EX4

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 2.00 hrs 010yr-02hr Rainfall=2.38"

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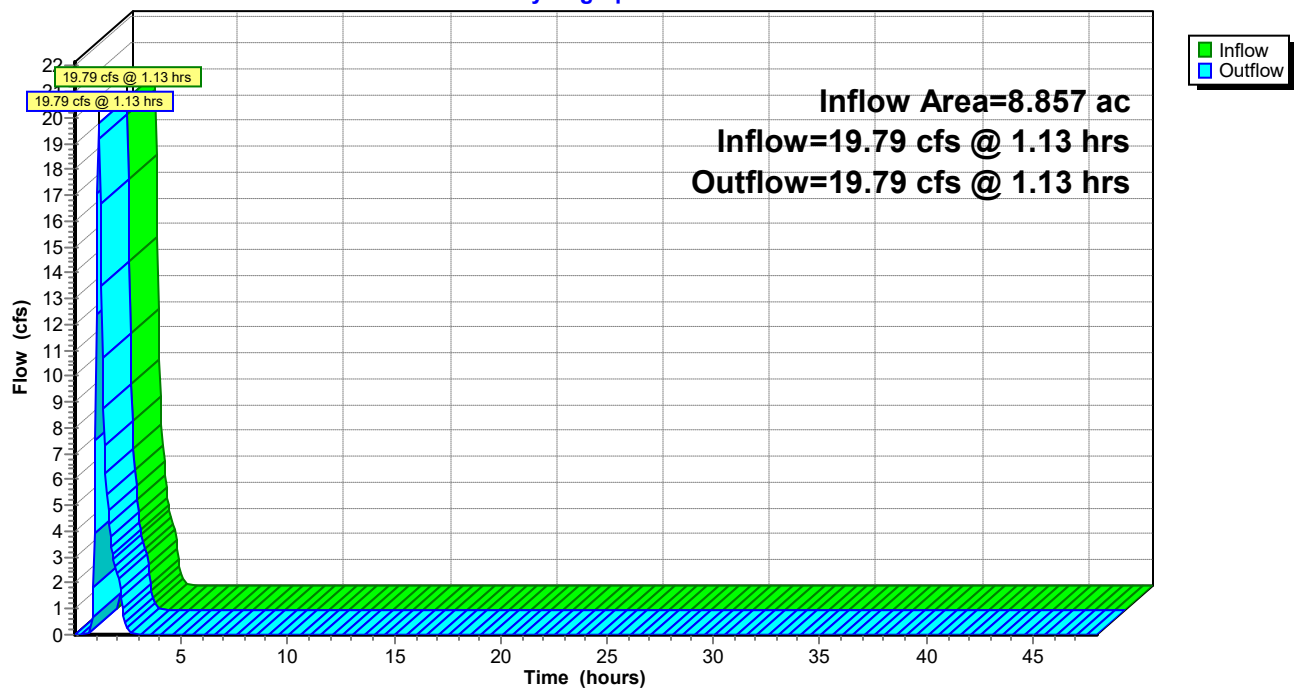
Summary for Reach 1R: US 31 DITCH

Inflow Area = 8.857 ac, 46.23% Impervious, Inflow Depth = 1.09" for 010yr-02hr event
Inflow = 19.79 cfs @ 1.13 hrs, Volume= 0.802 af
Outflow = 19.79 cfs @ 1.13 hrs, Volume= 0.802 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs

Reach 1R: US 31 DITCH

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 2.00 hrs 010yr-02hr Rainfall=2.38"

Existing Conditions

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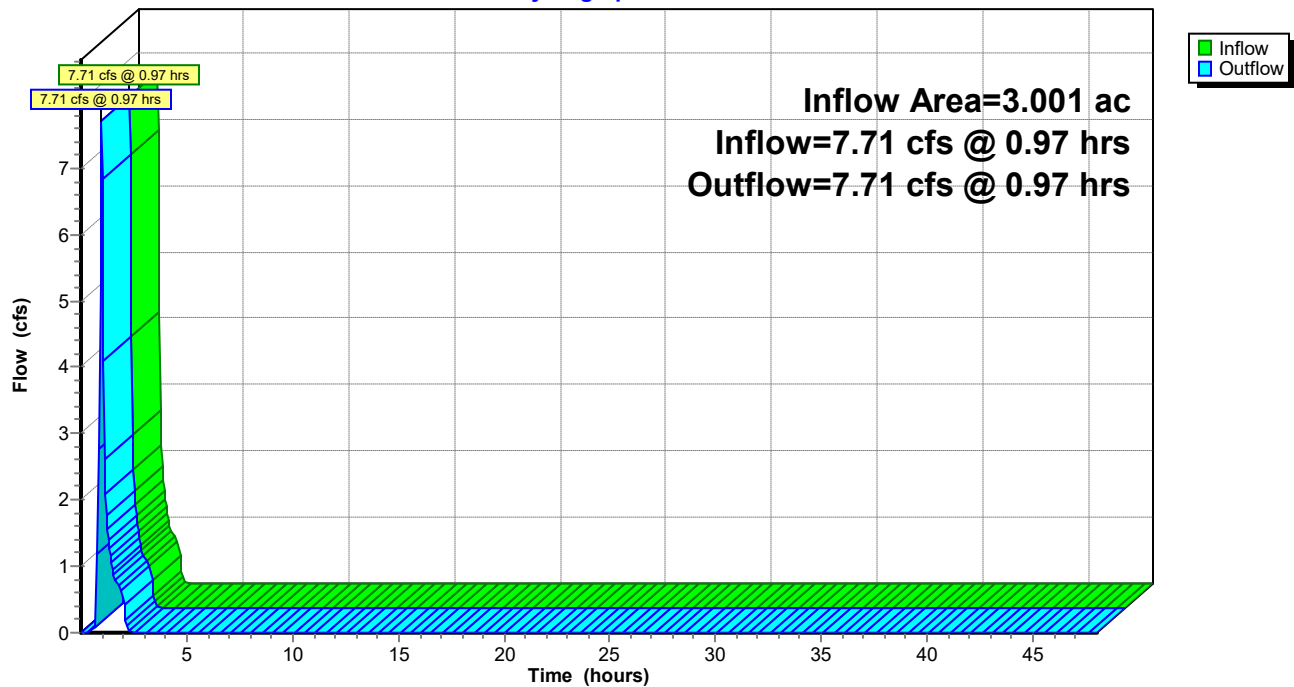
Summary for Reach 2R: EX POND TO WEST

Inflow Area = 3.001 ac, 27.00% Impervious, Inflow Depth = 0.82" for 010yr-02hr event
Inflow = 7.71 cfs @ 0.97 hrs, Volume= 0.206 af
Outflow = 7.71 cfs @ 0.97 hrs, Volume= 0.206 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs

Reach 2R: EX POND TO WEST

Hydrograph



Existing Conditions

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BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 3.00 hrs 010yr-03hr Rainfall=2.53"

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Time span=0.01-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1s: EX1 Runoff Area=347,870 sf 51.27% Impervious Runoff Depth=1.27"
Flow Length=600' Slope=0.0100 '/' Tc=18.7 min CN=86 Runoff=19.02 cfs 0.844 af

Subcatchment 2s: EX2 Runoff Area=37,950 sf 0.00% Impervious Runoff Depth=0.63"
Flow Length=248' Slope=0.0100 '/' Tc=15.0 min CN=74 Runoff=1.09 cfs 0.045 af

Subcatchment 3s: EX3 Runoff Area=30,680 sf 0.00% Impervious Runoff Depth=0.63"
Flow Length=246' Slope=0.0100 '/' Tc=15.0 min CN=74 Runoff=0.88 cfs 0.037 af

Subcatchment 4s: EX4 Runoff Area=100,045 sf 35.28% Impervious Runoff Depth=1.02"
Flow Length=318' Slope=0.0100 '/' Tc=5.0 min CN=82 Runoff=7.44 cfs 0.195 af

Reach 1R: US 31 DITCH Inflow=20.10 cfs 0.889 af
Outflow=20.10 cfs 0.889 af

Reach 2R: EX POND TO WEST Inflow=7.78 cfs 0.232 af
Outflow=7.78 cfs 0.232 af

Total Runoff Area = 11.858 ac Runoff Volume = 1.121 af Average Runoff Depth = 1.13"
58.64% Pervious = 6.954 ac 41.36% Impervious = 4.905 ac

Existing Conditions

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BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 3.00 hrs 010yr-03hr Rainfall=2.53"

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Summary for Subcatchment 1s: EX1

Runoff = 19.02 cfs @ 1.63 hrs, Volume= 0.844 af, Depth= 1.27"

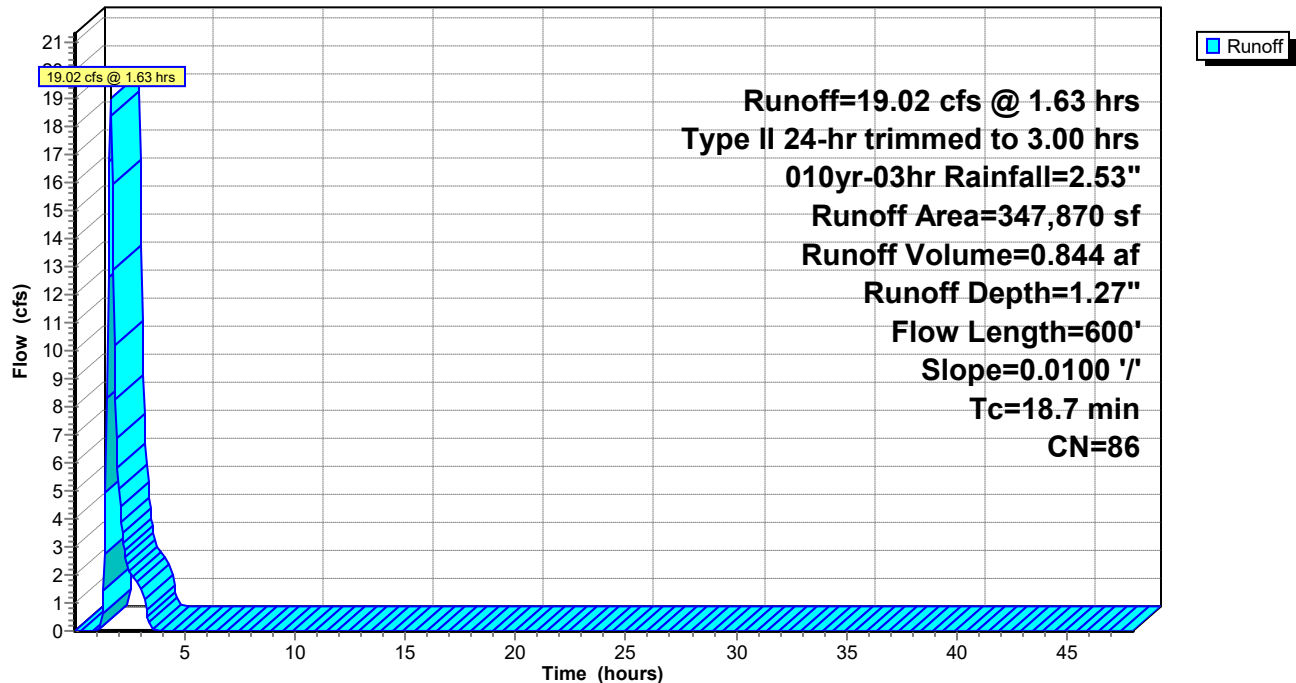
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 3.00 hrs 010yr-03hr Rainfall=2.53"

Area (sf)	CN	Description
169,520	74	>75% Grass cover, Good, HSG C
158,000	98	Paved parking, HSG C
20,350	98	Roofs, HSG C
347,870	86	Weighted Average
169,520		48.73% Pervious Area
178,350		51.27% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0100	0.12		Sheet Flow, Sheet Flow n= 0.150 P2= 2.92"
5.2	500	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc Unpaved Kv= 16.1 fps
18.7	600	Total			

Subcatchment 1s: EX1

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 3.00 hrs 010yr-03hr Rainfall=2.53"

Existing Conditions

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Summary for Subcatchment 2s: EX2

Runoff = 1.09 cfs @ 1.60 hrs, Volume= 0.045 af, Depth= 0.63"

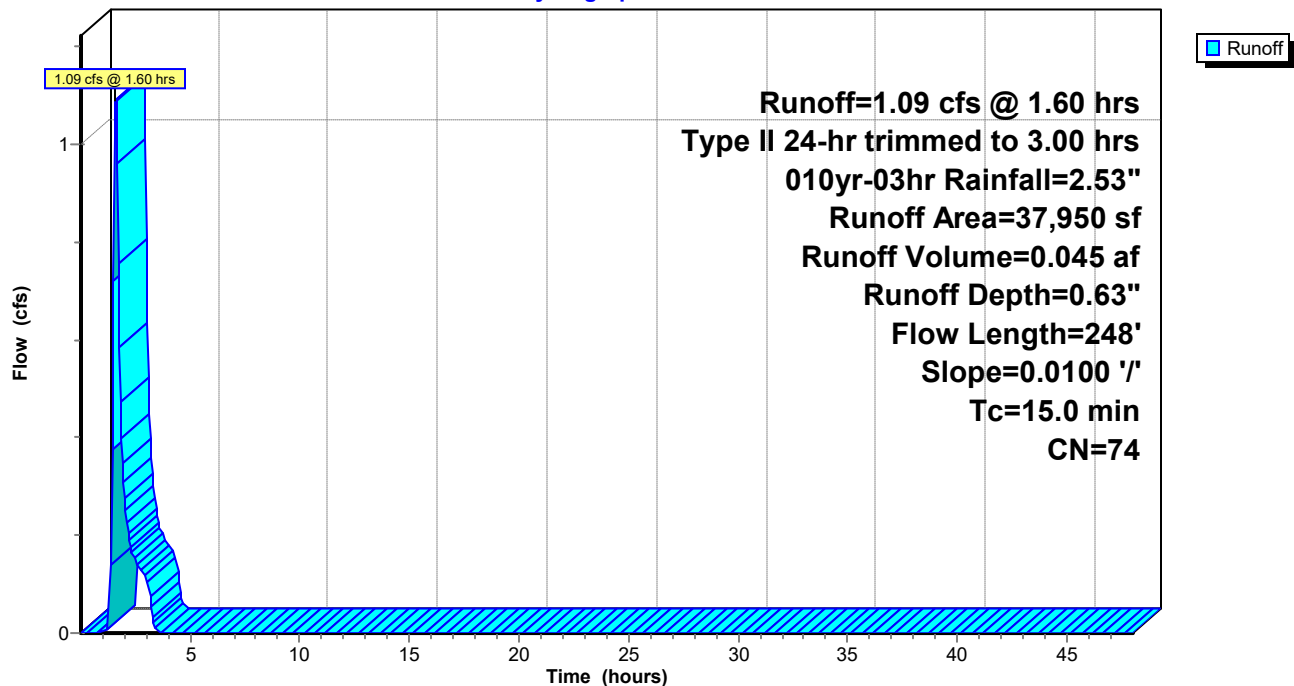
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 3.00 hrs 010yr-03hr Rainfall=2.53"

Area (sf)	CN	Description
37,950	74	>75% Grass cover, Good, HSG C
37,950		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0100	0.12		Sheet Flow, Sheet Flow Grass: Short n= 0.150 P2= 2.92"
1.5	148	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc Unpaved Kv= 16.1 fps
15.0	248	Total			

Subcatchment 2s: EX2

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 3.00 hrs 010yr-03hr Rainfall=2.53"

Existing Conditions

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Summary for Subcatchment 3s: EX3

Runoff = 0.88 cfs @ 1.60 hrs, Volume= 0.037 af, Depth= 0.63"

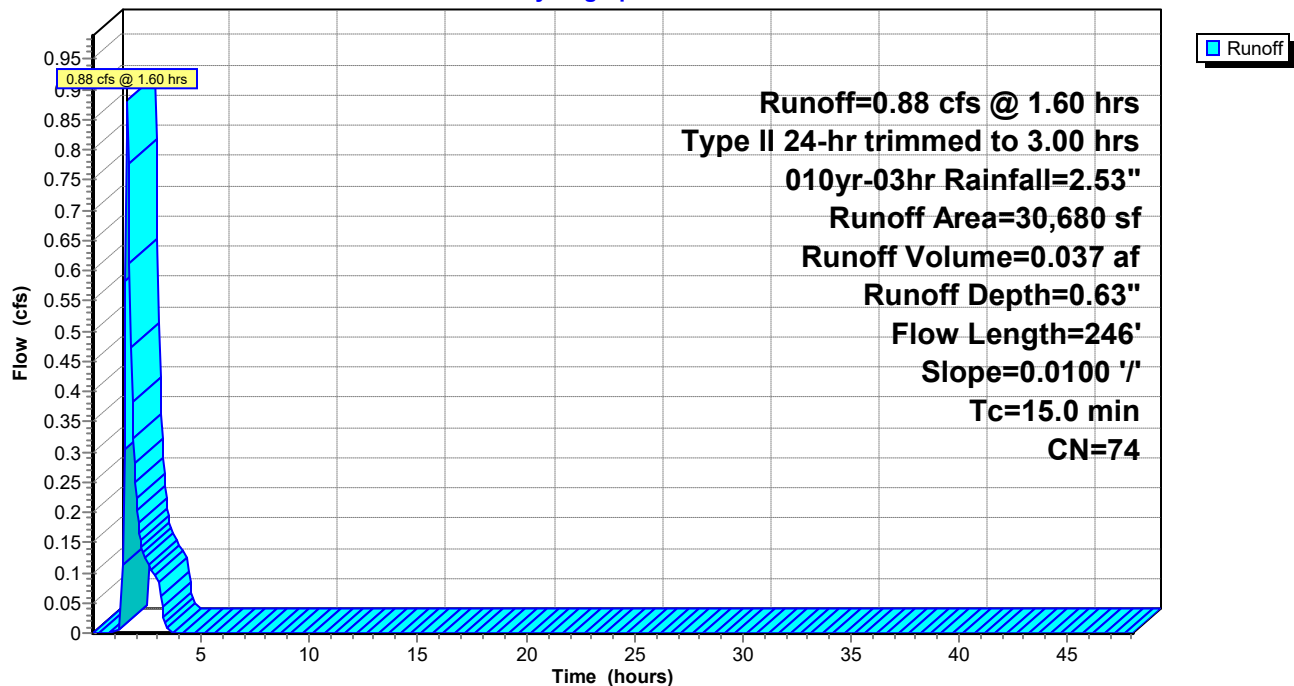
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 3.00 hrs 010yr-03hr Rainfall=2.53"

Area (sf)	CN	Description
30,680	74	>75% Grass cover, Good, HSG C
30,680		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0100	0.12		Sheet Flow, Sheet Flow
					Grass: Short n= 0.150 P2= 2.92"
1.5	146	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc
					Unpaved Kv= 16.1 fps
15.0	246	Total			

Subcatchment 3s: EX3

Hydrograph



Existing Conditions

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BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 3.00 hrs 010yr-03hr Rainfall=2.53"

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Summary for Subcatchment 4s: EX4

Runoff = 7.44 cfs @ 1.47 hrs, Volume= 0.195 af, Depth= 1.02"

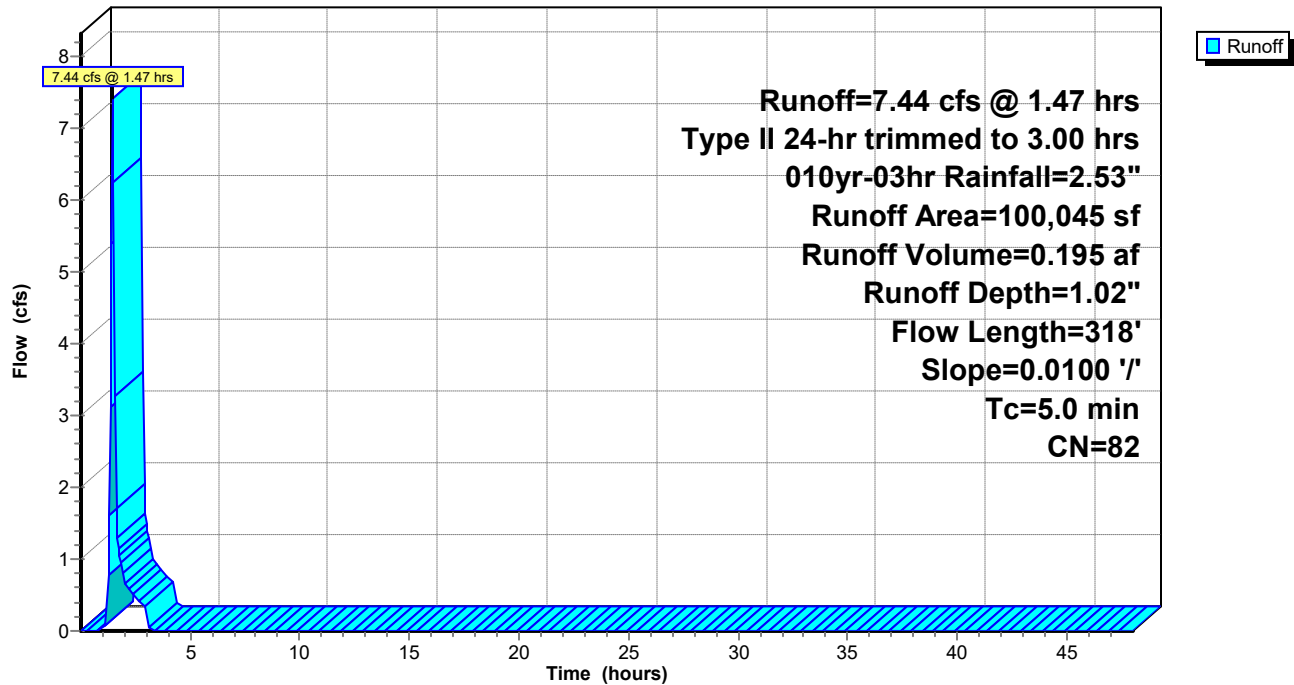
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 3.00 hrs 010yr-03hr Rainfall=2.53"

Area (sf)	CN	Description
64,745	74	>75% Grass cover, Good, HSG C
27,940	98	Paved parking, HSG C
7,360	98	Roofs, HSG C
100,045	82	Weighted Average
64,745		64.72% Pervious Area
35,300		35.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	100	0.0100	1.00		Sheet Flow, Sheet Flow Smooth surfaces n= 0.011 P2= 2.92"
2.3	218	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc Unpaved Kv= 16.1 fps
4.0	318	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 4s: EX4

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 3.00 hrs 010yr-03hr Rainfall=2.53"

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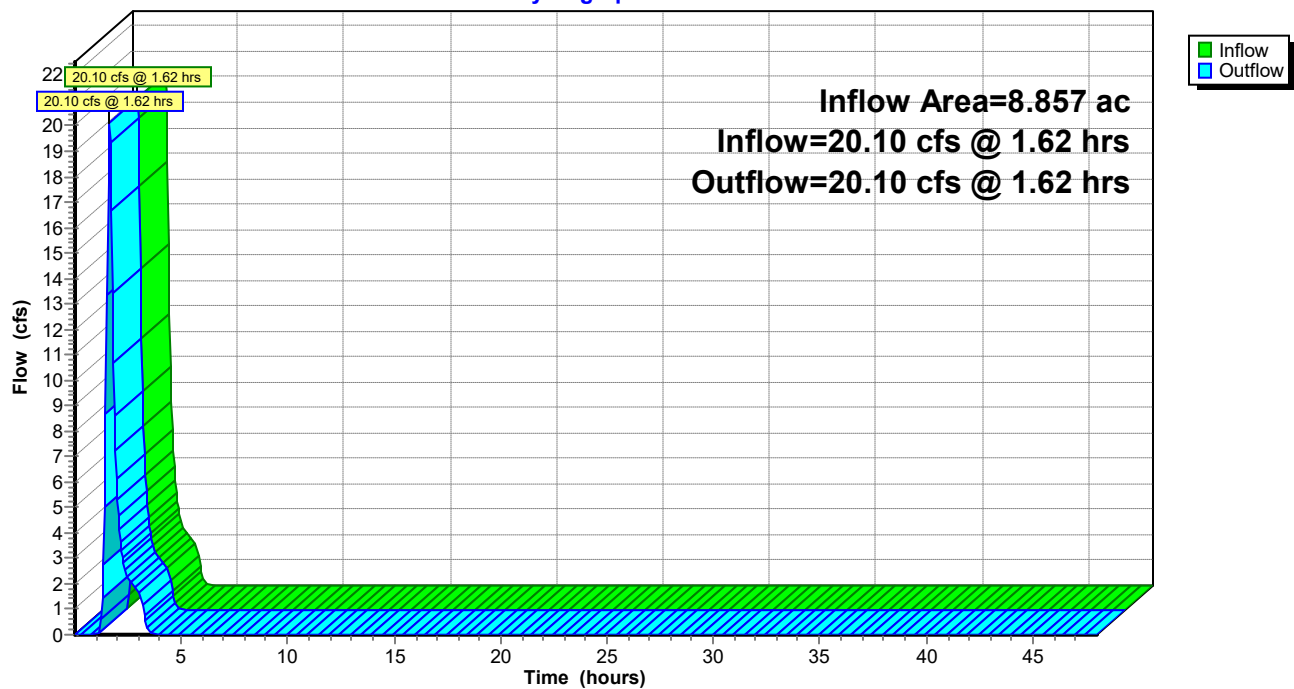
Summary for Reach 1R: US 31 DITCH

Inflow Area = 8.857 ac, 46.23% Impervious, Inflow Depth = 1.20" for 010yr-03hr event
Inflow = 20.10 cfs @ 1.62 hrs, Volume= 0.889 af
Outflow = 20.10 cfs @ 1.62 hrs, Volume= 0.889 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs

Reach 1R: US 31 DITCH

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 3.00 hrs 010yr-03hr Rainfall=2.53"

Existing Conditions

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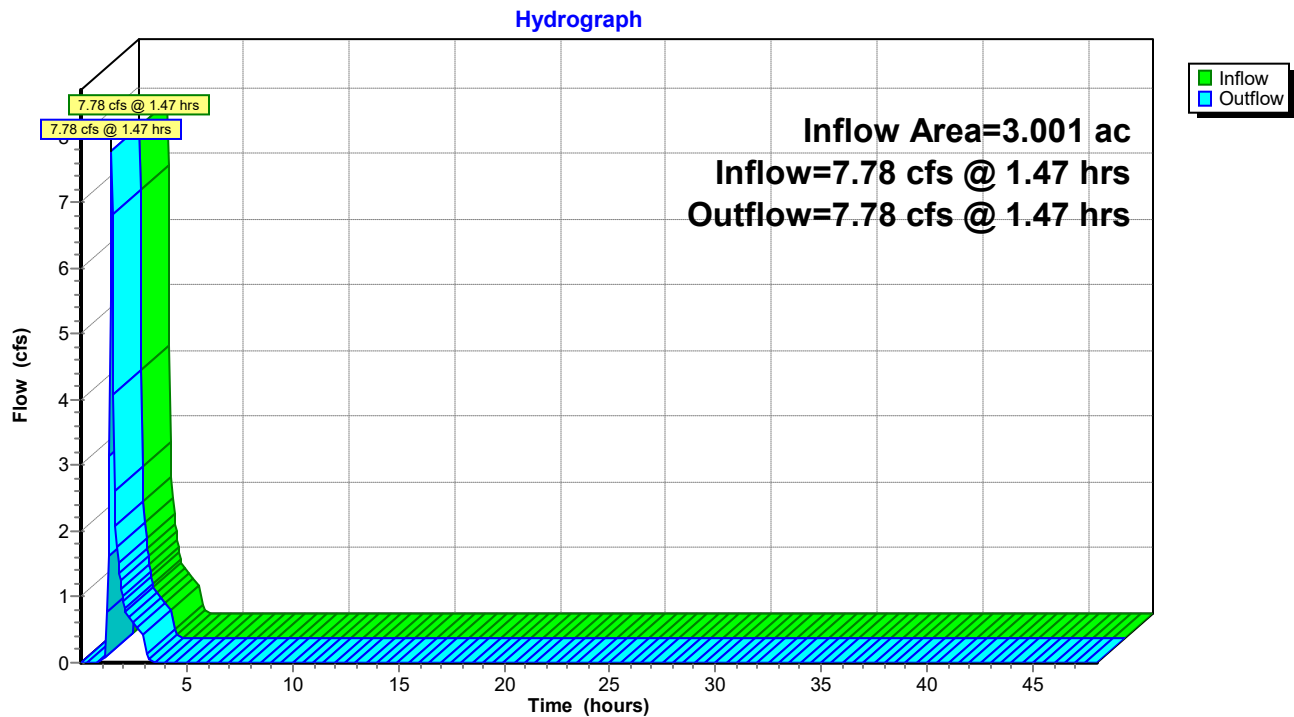
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Summary for Reach 2R: EX POND TO WEST

Inflow Area = 3.001 ac, 27.00% Impervious, Inflow Depth = 0.93" for 010yr-03hr event
Inflow = 7.78 cfs @ 1.47 hrs, Volume= 0.232 af
Outflow = 7.78 cfs @ 1.47 hrs, Volume= 0.232 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs

Reach 2R: EX POND TO WEST



Existing Conditions BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 6.00 hrs 010yr-06hr Rainfall=3.04"
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Time span=0.01-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1s: EX1 Runoff Area=347,870 sf 51.27% Impervious Runoff Depth=1.70"
Flow Length=600' Slope=0.0100 '/' Tc=18.7 min CN=86 Runoff=21.78 cfs 1.129 af

Subcatchment 2s: EX2 Runoff Area=37,950 sf 0.00% Impervious Runoff Depth=0.93"
Flow Length=248' Slope=0.0100 '/' Tc=15.0 min CN=74 Runoff=1.41 cfs 0.068 af

Subcatchment 3s: EX3 Runoff Area=30,680 sf 0.00% Impervious Runoff Depth=0.93"
Flow Length=246' Slope=0.0100 '/' Tc=15.0 min CN=74 Runoff=1.14 cfs 0.055 af

Subcatchment 4s: EX4 Runoff Area=100,045 sf 35.28% Impervious Runoff Depth=1.41"
Flow Length=318' Slope=0.0100 '/' Tc=5.0 min CN=82 Runoff=8.50 cfs 0.270 af

Reach 1R: US 31 DITCH Inflow=23.16 cfs 1.197 af
Outflow=23.16 cfs 1.197 af

Reach 2R: EX POND TO WEST Inflow=9.07 cfs 0.325 af
Outflow=9.07 cfs 0.325 af

Total Runoff Area = 11.858 ac Runoff Volume = 1.522 af Average Runoff Depth = 1.54"
58.64% Pervious = 6.954 ac 41.36% Impervious = 4.905 ac

BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 6.00 hrs 010yr-06hr Rainfall=3.04"

Existing Conditions

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Summary for Subcatchment 1s: EX1

Runoff = 21.78 cfs @ 3.12 hrs, Volume= 1.129 af, Depth= 1.70"

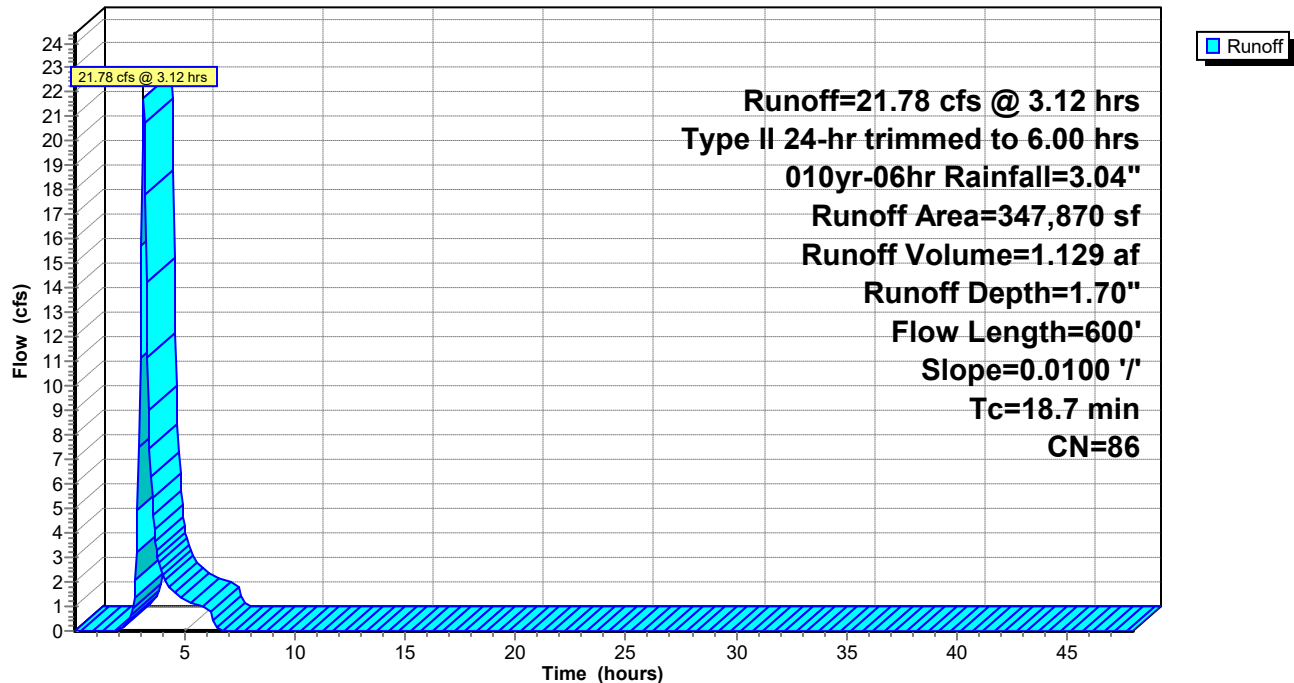
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 6.00 hrs 010yr-06hr Rainfall=3.04"

Area (sf)	CN	Description
169,520	74	>75% Grass cover, Good, HSG C
158,000	98	Paved parking, HSG C
20,350	98	Roofs, HSG C
347,870	86	Weighted Average
169,520		48.73% Pervious Area
178,350		51.27% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0100	0.12		Sheet Flow, Sheet Flow n= 0.150 P2= 2.92"
5.2	500	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc Unpaved Kv= 16.1 fps
18.7	600	Total			

Subcatchment 1s: EX1

Hydrograph



Existing Conditions

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BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 6.00 hrs 010yr-06hr Rainfall=3.04"

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Summary for Subcatchment 2s: EX2

Runoff = 1.41 cfs @ 3.09 hrs, Volume= 0.068 af, Depth= 0.93"

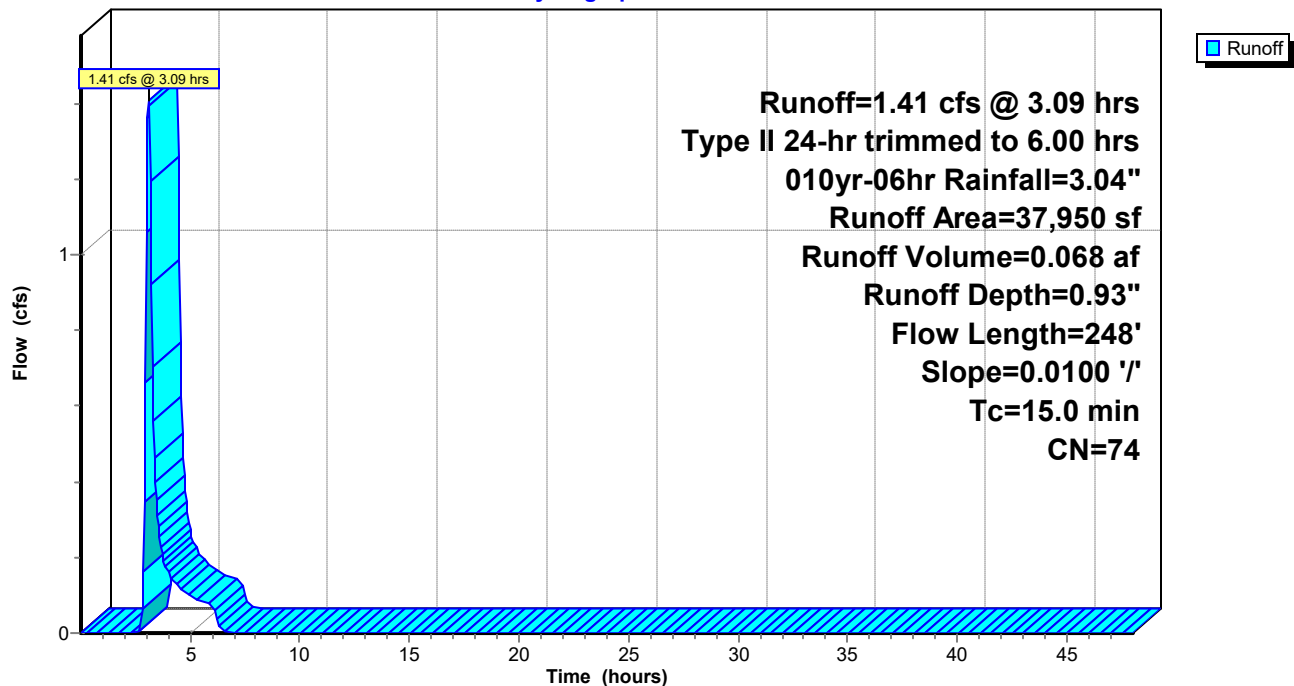
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 6.00 hrs 010yr-06hr Rainfall=3.04"

Area (sf)	CN	Description
37,950	74	>75% Grass cover, Good, HSG C
37,950		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0100	0.12		Sheet Flow, Sheet Flow
					Grass: Short n= 0.150 P2= 2.92"
1.5	148	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc
					Unpaved Kv= 16.1 fps
15.0	248	Total			

Subcatchment 2s: EX2

Hydrograph



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BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 6.00 hrs 010yr-06hr Rainfall=3.04"

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Summary for Subcatchment 3s: EX3

Runoff = 1.14 cfs @ 3.09 hrs, Volume= 0.055 af, Depth= 0.93"

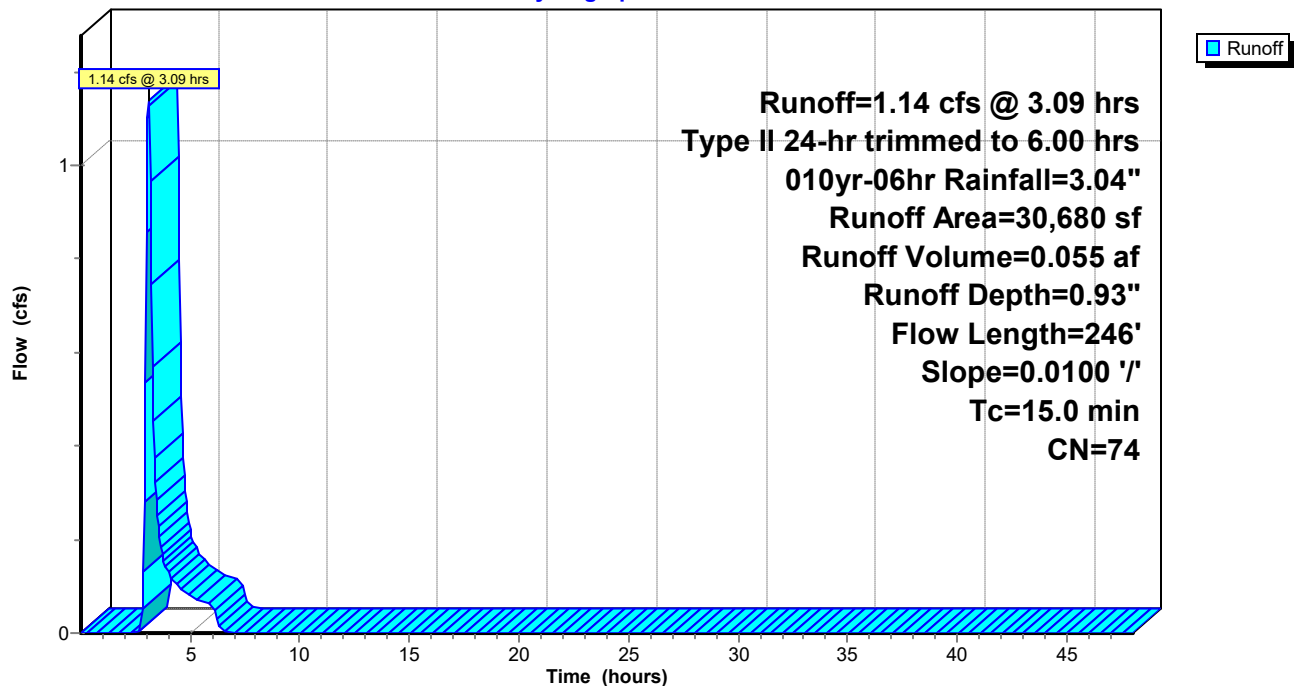
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 6.00 hrs 010yr-06hr Rainfall=3.04"

Area (sf)	CN	Description
30,680	74	>75% Grass cover, Good, HSG C
30,680		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0100	0.12		Sheet Flow, Sheet Flow
					Grass: Short n= 0.150 P2= 2.92"
1.5	146	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc
					Unpaved Kv= 16.1 fps
15.0	246	Total			

Subcatchment 3s: EX3

Hydrograph



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BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 6.00 hrs 010yr-06hr Rainfall=3.04"

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Summary for Subcatchment 4s: EX4

Runoff = 8.50 cfs @ 2.96 hrs, Volume= 0.270 af, Depth= 1.41"

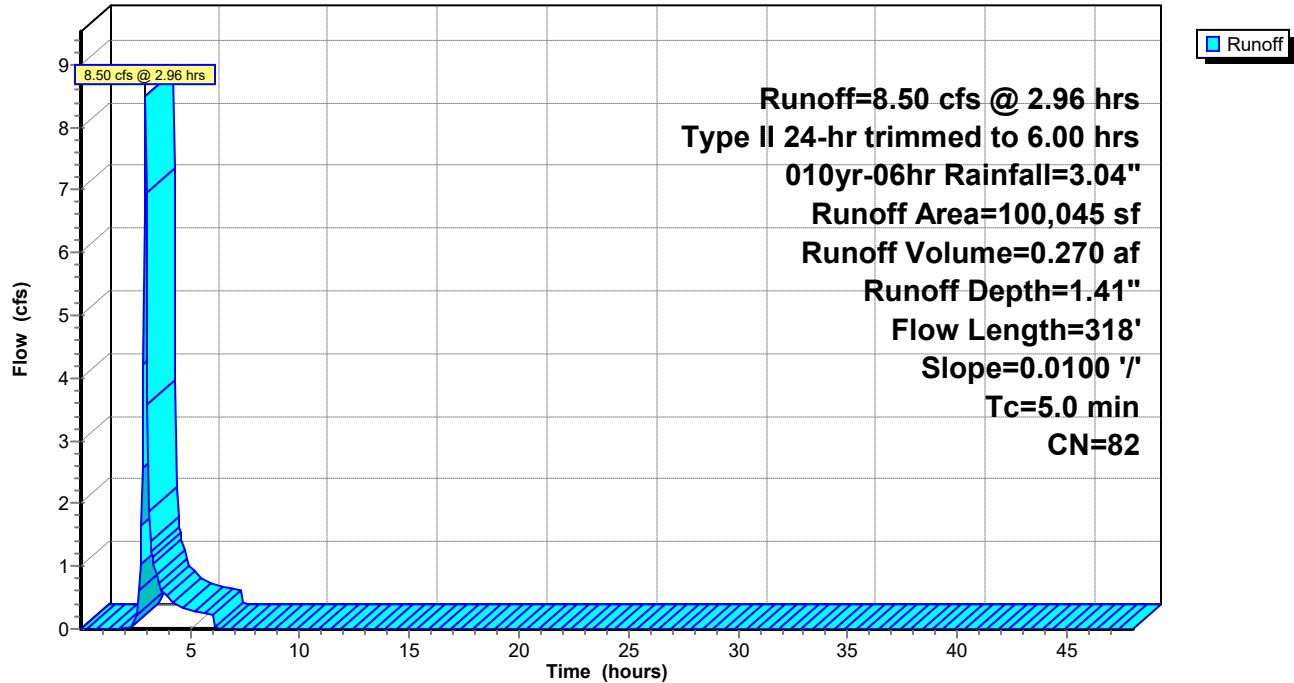
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 6.00 hrs 010yr-06hr Rainfall=3.04"

Area (sf)	CN	Description
64,745	74	>75% Grass cover, Good, HSG C
27,940	98	Paved parking, HSG C
7,360	98	Roofs, HSG C
100,045	82	Weighted Average
64,745		64.72% Pervious Area
35,300		35.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	100	0.0100	1.00		Sheet Flow, Sheet Flow
					Smooth surfaces n= 0.011 P2= 2.92"
2.3	218	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc
					Unpaved Kv= 16.1 fps
4.0	318	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 4s: EX4

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 6.00 hrs 010yr-06hr Rainfall=3.04"

Existing Conditions

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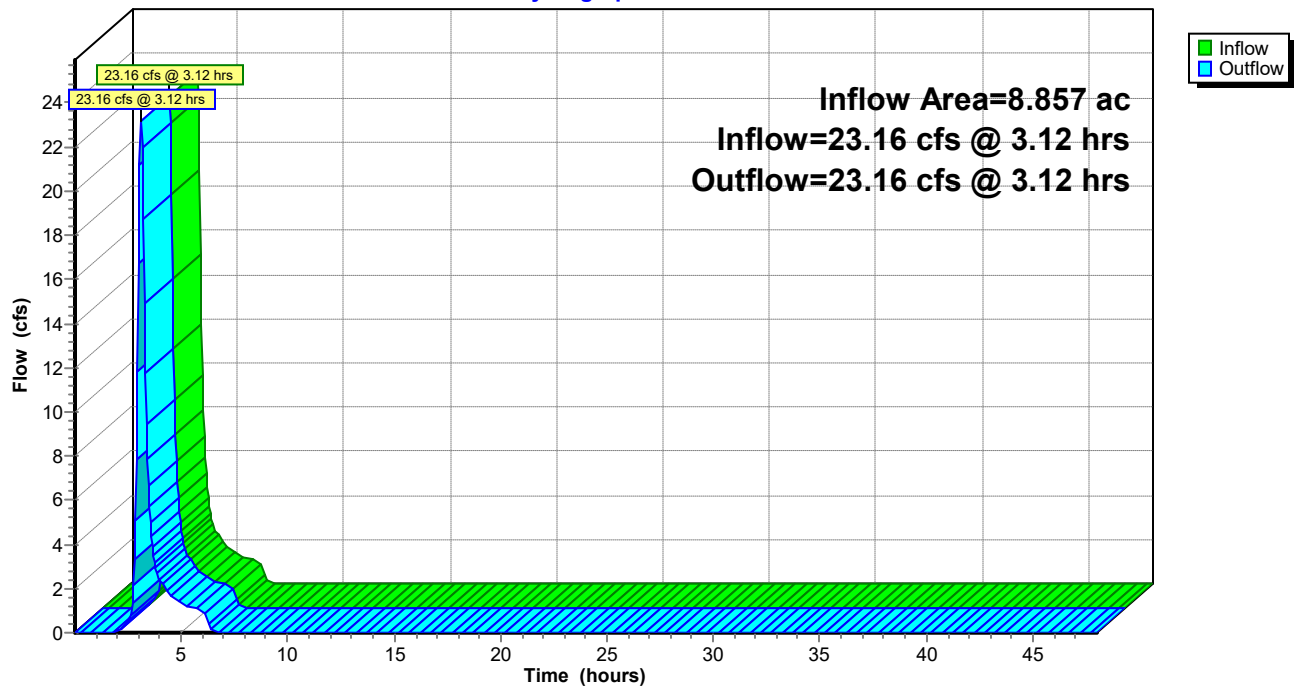
Summary for Reach 1R: US 31 DITCH

Inflow Area = 8.857 ac, 46.23% Impervious, Inflow Depth = 1.62" for 010yr-06hr event
Inflow = 23.16 cfs @ 3.12 hrs, Volume= 1.197 af
Outflow = 23.16 cfs @ 3.12 hrs, Volume= 1.197 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs

Reach 1R: US 31 DITCH

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 6.00 hrs 010yr-06hr Rainfall=3.04"

Existing Conditions

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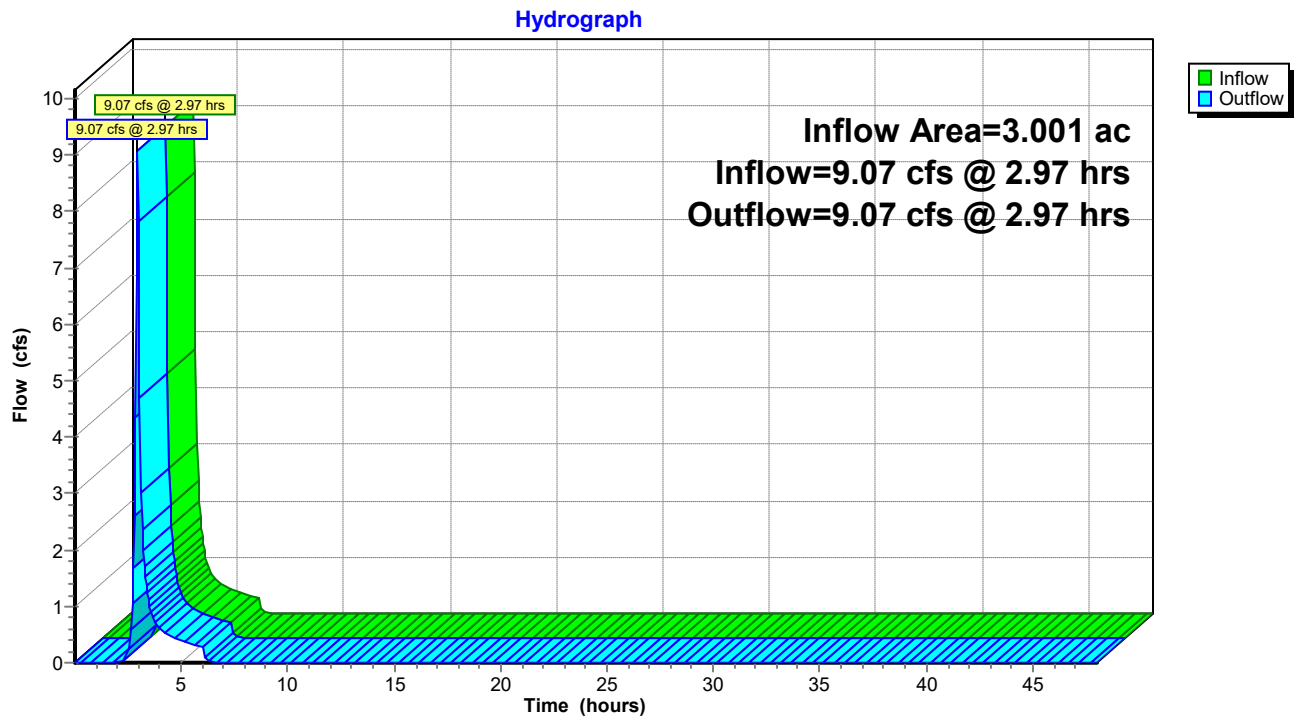
Page 75

Summary for Reach 2R: EX POND TO WEST

Inflow Area = 3.001 ac, 27.00% Impervious, Inflow Depth = 1.30" for 010yr-06hr event
Inflow = 9.07 cfs @ 2.97 hrs, Volume= 0.325 af
Outflow = 9.07 cfs @ 2.97 hrs, Volume= 0.325 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs

Reach 2R: EX POND TO WEST



Existing Conditions BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 12.00 hrs 010yr-12hr Rainfall=3.53"
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Time span=0.01-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1s: EX1 Runoff Area=347,870 sf 51.27% Impervious Runoff Depth=2.12"
Flow Length=600' Slope=0.0100 '/' Tc=18.7 min CN=86 Runoff=23.05 cfs 1.414 af

Subcatchment 2s: EX2 Runoff Area=37,950 sf 0.00% Impervious Runoff Depth=1.26"
Flow Length=248' Slope=0.0100 '/' Tc=15.0 min CN=74 Runoff=1.64 cfs 0.092 af

Subcatchment 3s: EX3 Runoff Area=30,680 sf 0.00% Impervious Runoff Depth=1.26"
Flow Length=246' Slope=0.0100 '/' Tc=15.0 min CN=74 Runoff=1.32 cfs 0.074 af

Subcatchment 4s: EX4 Runoff Area=100,045 sf 35.28% Impervious Runoff Depth=1.81"
Flow Length=318' Slope=0.0100 '/' Tc=5.0 min CN=82 Runoff=9.01 cfs 0.346 af

Reach 1R: US 31 DITCH Inflow=24.63 cfs 1.506 af
Outflow=24.63 cfs 1.506 af

Reach 2R: EX POND TO WEST Inflow=9.75 cfs 0.420 af
Outflow=9.75 cfs 0.420 af

Total Runoff Area = 11.858 ac Runoff Volume = 1.926 af Average Runoff Depth = 1.95"
58.64% Pervious = 6.954 ac 41.36% Impervious = 4.905 ac

BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 12.00 hrs 010yr-12hr Rainfall=3.53"

Existing Conditions

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Summary for Subcatchment 1s: EX1

Runoff = 23.05 cfs @ 6.11 hrs, Volume= 1.414 af, Depth= 2.12"

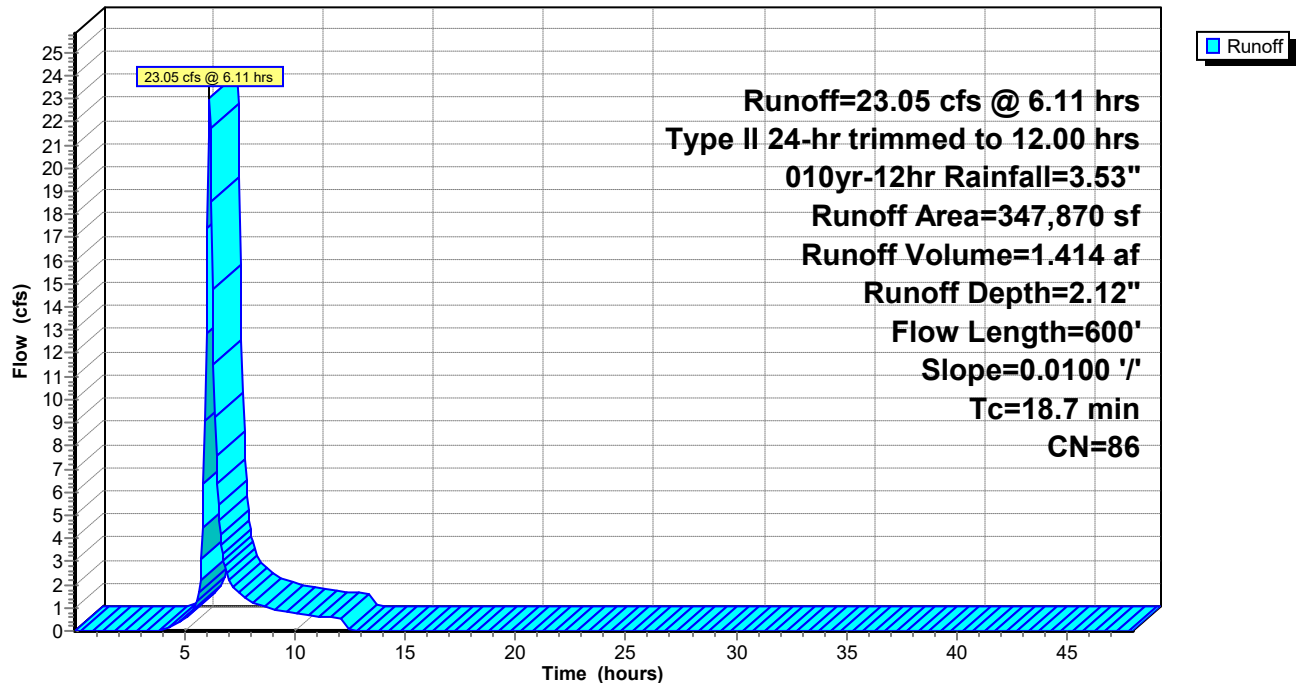
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 12.00 hrs 010yr-12hr Rainfall=3.53"

Area (sf)	CN	Description
169,520	74	>75% Grass cover, Good, HSG C
158,000	98	Paved parking, HSG C
20,350	98	Roofs, HSG C
347,870	86	Weighted Average
169,520		48.73% Pervious Area
178,350		51.27% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0100	0.12		Sheet Flow, Sheet Flow n= 0.150 P2= 2.92"
5.2	500	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc Unpaved Kv= 16.1 fps
18.7	600	Total			

Subcatchment 1s: EX1

Hydrograph



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BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 12.00 hrs 010yr-12hr Rainfall=3.53"

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Summary for Subcatchment 2s: EX2

Runoff = 1.64 cfs @ 6.08 hrs, Volume= 0.092 af, Depth= 1.26"

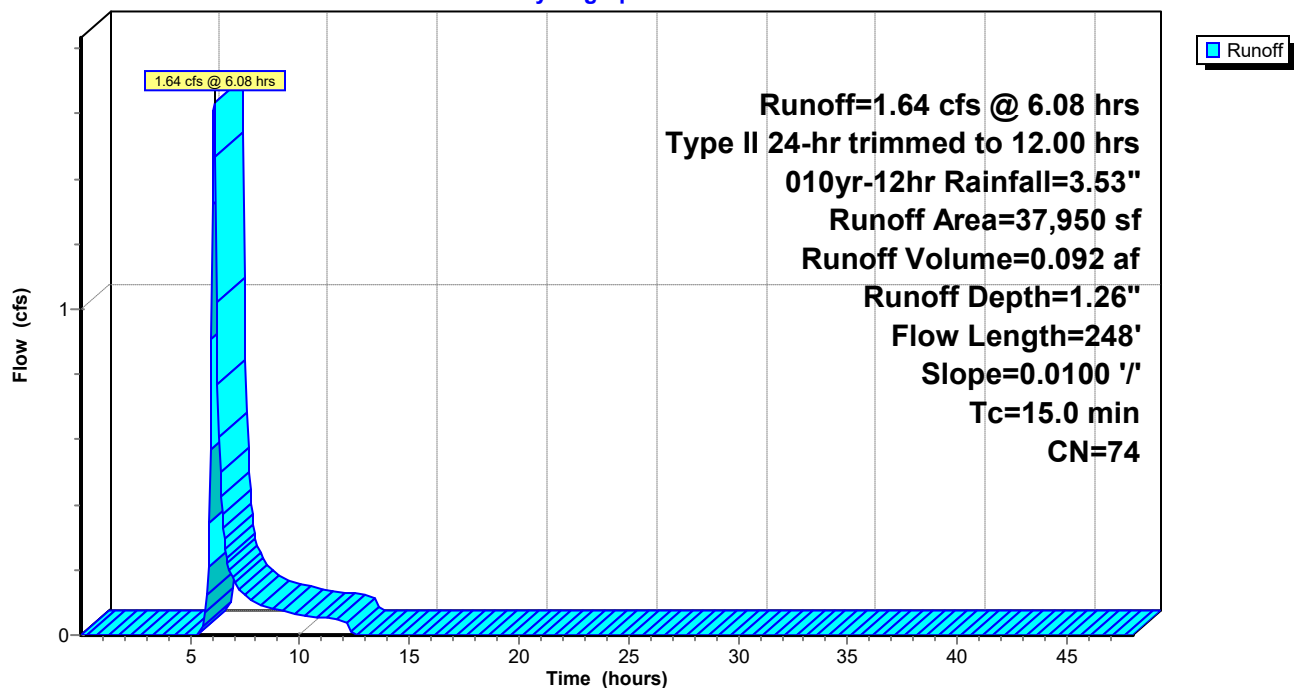
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 12.00 hrs 010yr-12hr Rainfall=3.53"

Area (sf)	CN	Description
37,950	74	>75% Grass cover, Good, HSG C
37,950		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0100	0.12		Sheet Flow, Sheet Flow
					Grass: Short n= 0.150 P2= 2.92"
1.5	148	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc
					Unpaved Kv= 16.1 fps
15.0	248	Total			

Subcatchment 2s: EX2

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 12.00 hrs 010yr-12hr Rainfall=3.53"

Existing Conditions

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Summary for Subcatchment 3s: EX3

Runoff = 1.32 cfs @ 6.08 hrs, Volume= 0.074 af, Depth= 1.26"

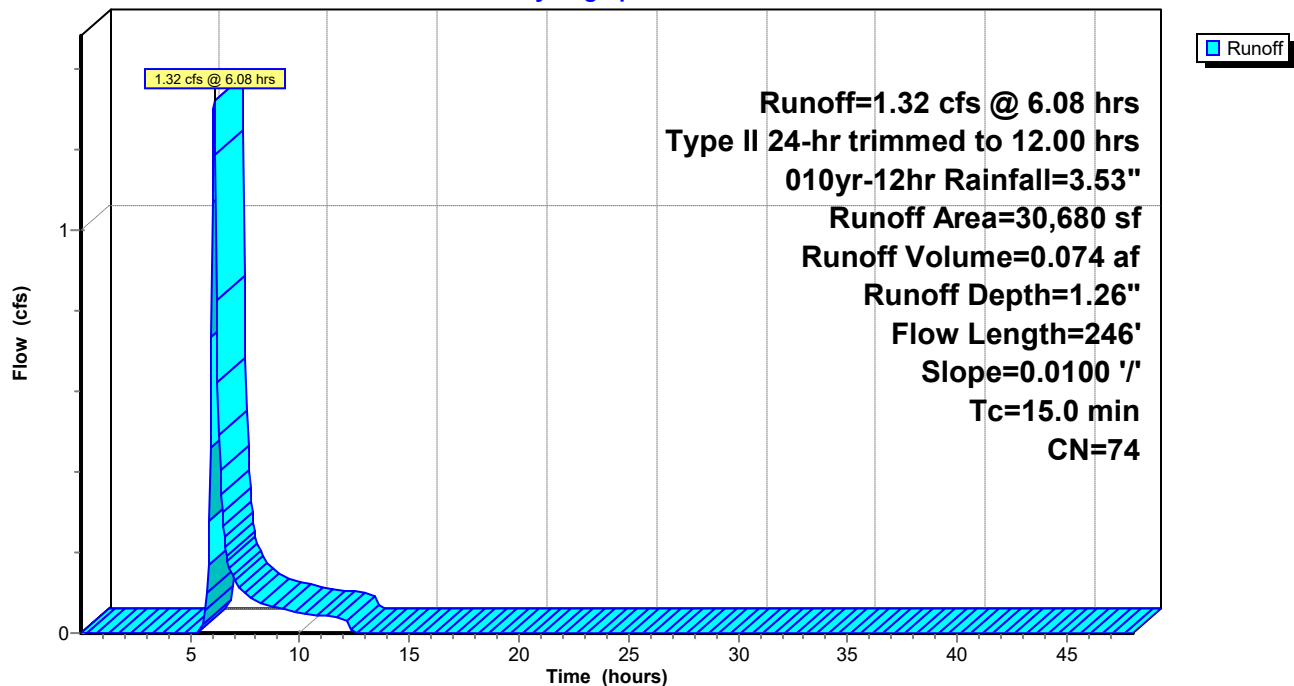
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 12.00 hrs 010yr-12hr Rainfall=3.53"

Area (sf)	CN	Description
30,680	74	>75% Grass cover, Good, HSG C
30,680		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0100	0.12		Sheet Flow, Sheet Flow
					Grass: Short n= 0.150 P2= 2.92"
1.5	146	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc
					Unpaved Kv= 16.1 fps
15.0	246	Total			

Subcatchment 3s: EX3

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 12.00 hrs 010yr-12hr Rainfall=3.53"

Existing Conditions

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Summary for Subcatchment 4s: EX4

Runoff = 9.01 cfs @ 5.96 hrs, Volume= 0.346 af, Depth= 1.81"

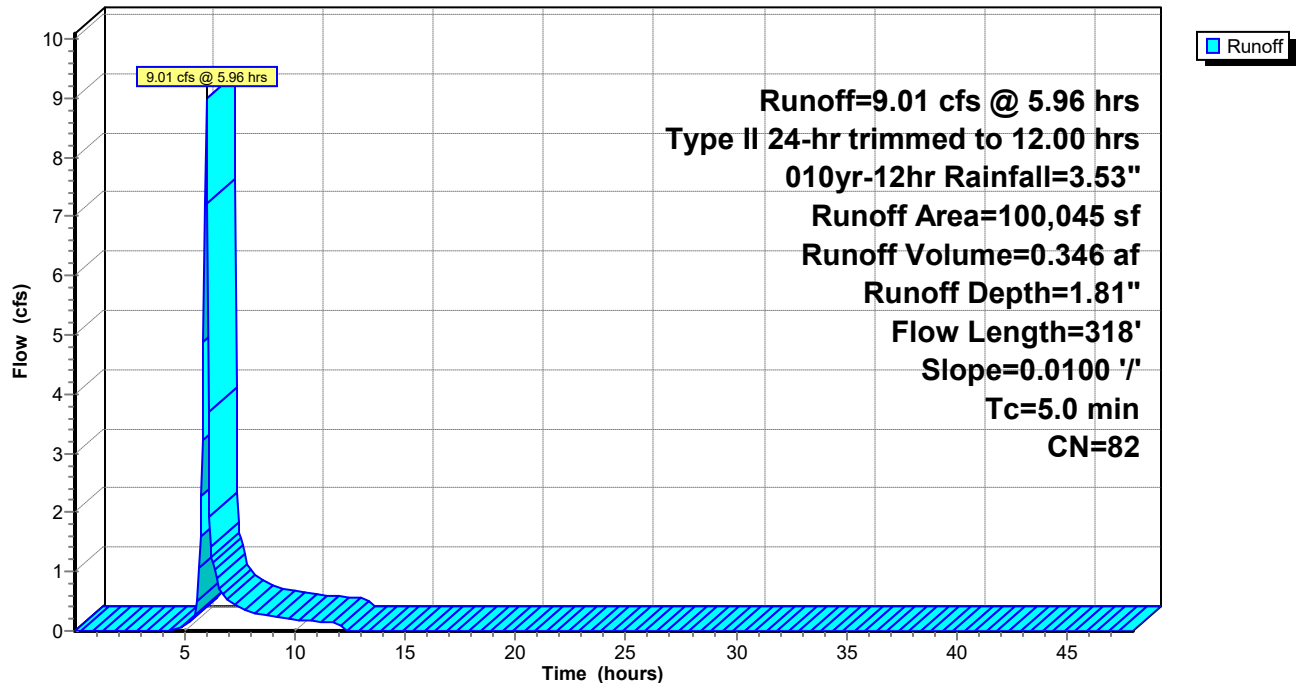
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 12.00 hrs 010yr-12hr Rainfall=3.53"

Area (sf)	CN	Description
64,745	74	>75% Grass cover, Good, HSG C
27,940	98	Paved parking, HSG C
7,360	98	Roofs, HSG C
100,045	82	Weighted Average
64,745		64.72% Pervious Area
35,300		35.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	100	0.0100	1.00		Sheet Flow, Sheet Flow Smooth surfaces n= 0.011 P2= 2.92"
2.3	218	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc Unpaved Kv= 16.1 fps
4.0	318	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 4s: EX4

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS

Existing Conditions

Type II 24-hr trimmed to 12.00 hrs 010yr-12hr Rainfall=3.53"

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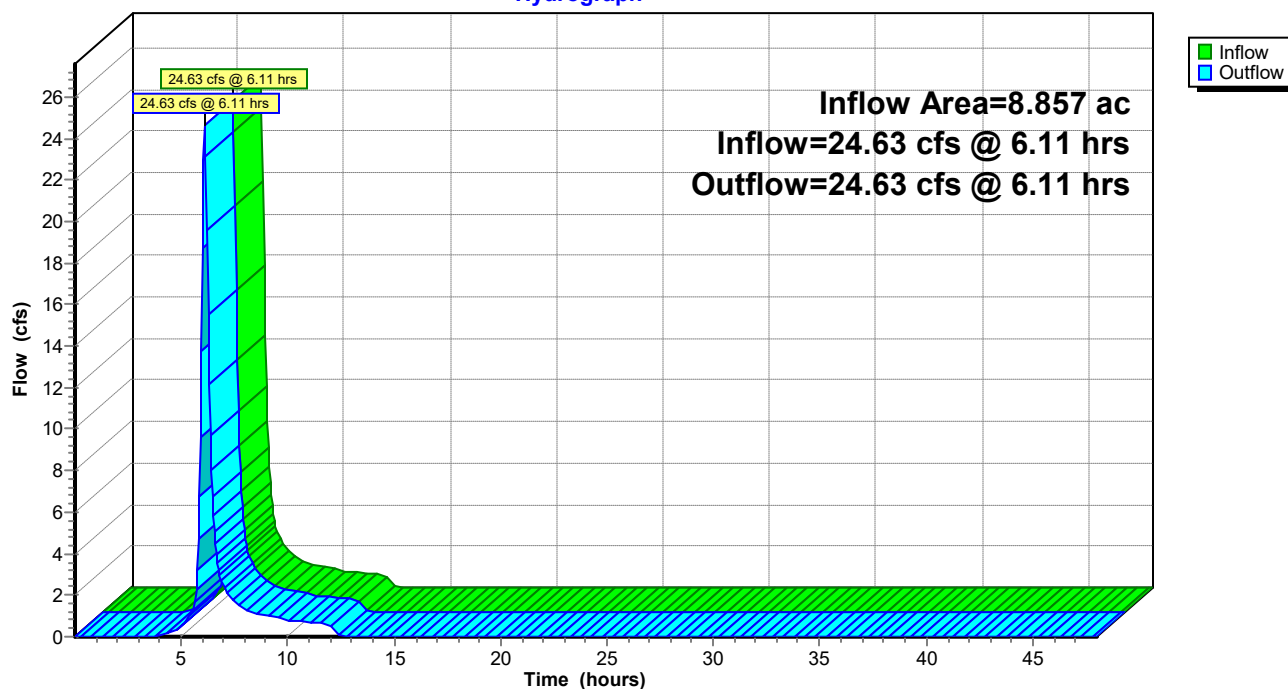
Summary for Reach 1R: US 31 DITCH

Inflow Area = 8.857 ac, 46.23% Impervious, Inflow Depth = 2.04" for 010yr-12hr event
Inflow = 24.63 cfs @ 6.11 hrs, Volume= 1.506 af
Outflow = 24.63 cfs @ 6.11 hrs, Volume= 1.506 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs

Reach 1R: US 31 DITCH

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 12.00 hrs 010yr-12hr Rainfall=3.53"

Existing Conditions

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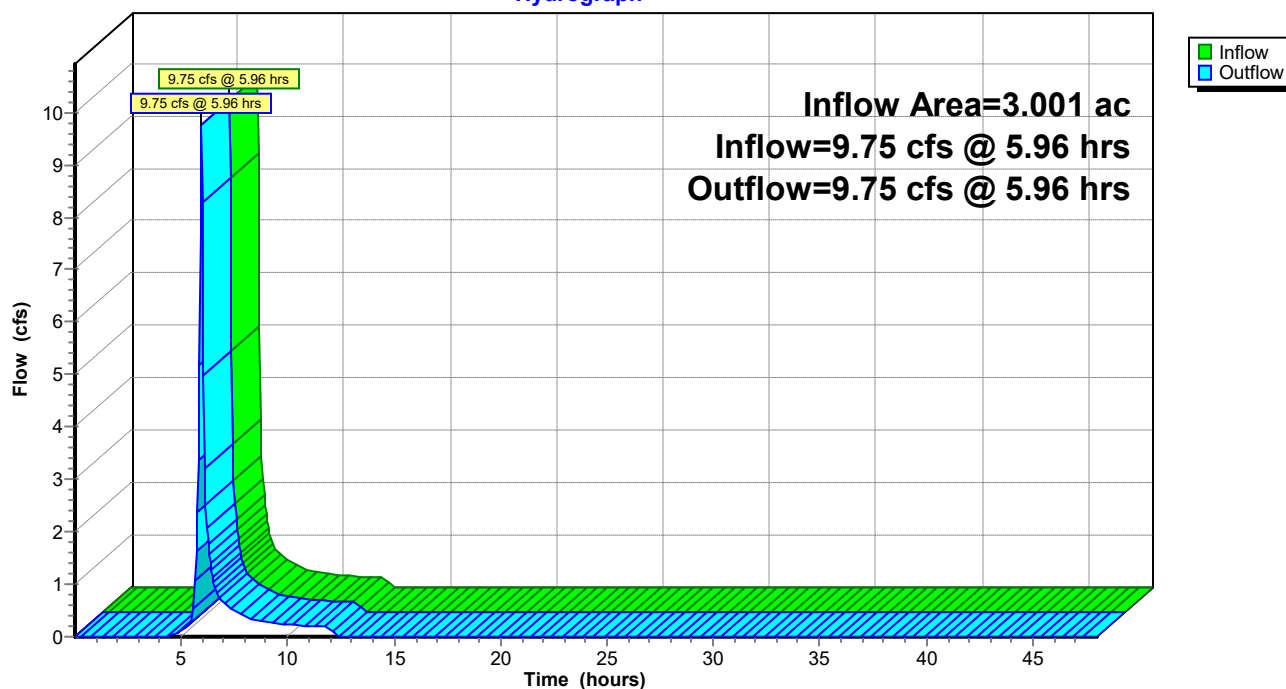
Summary for Reach 2R: EX POND TO WEST

Inflow Area = 3.001 ac, 27.00% Impervious, Inflow Depth = 1.68" for 010yr-12hr event
Inflow = 9.75 cfs @ 5.96 hrs, Volume= 0.420 af
Outflow = 9.75 cfs @ 5.96 hrs, Volume= 0.420 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs

Reach 2R: EX POND TO WEST

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS

Type II 24-hr 010yr-24hr Rainfall=4.09"

Existing Conditions

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Time span=0.01-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1s: EX1 Runoff Area=347,870 sf 51.27% Impervious Runoff Depth=2.63"
Flow Length=600' Slope=0.0100 '/' Tc=18.7 min CN=86 Runoff=23.99 cfs 1.749 af

Subcatchment 2s: EX2 Runoff Area=37,950 sf 0.00% Impervious Runoff Depth=1.66"
Flow Length=248' Slope=0.0100 '/' Tc=15.0 min CN=74 Runoff=1.84 cfs 0.121 af

Subcatchment 3s: EX3 Runoff Area=30,680 sf 0.00% Impervious Runoff Depth=1.66"
Flow Length=246' Slope=0.0100 '/' Tc=15.0 min CN=74 Runoff=1.49 cfs 0.098 af

Subcatchment 4s: EX4 Runoff Area=100,045 sf 35.28% Impervious Runoff Depth=2.28"
Flow Length=318' Slope=0.0100 '/' Tc=5.0 min CN=82 Runoff=9.43 cfs 0.436 af

Reach 1R: US 31 DITCH Inflow=25.76 cfs 1.870 af
Outflow=25.76 cfs 1.870 af

Reach 2R: EX POND TO WEST Inflow=10.35 cfs 0.534 af
Outflow=10.35 cfs 0.534 af

Total Runoff Area = 11.858 ac Runoff Volume = 2.404 af Average Runoff Depth = 2.43"
58.64% Pervious = 6.954 ac 41.36% Impervious = 4.905 ac

BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr 010yr-24hr Rainfall=4.09"

Existing Conditions

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Summary for Subcatchment 1s: EX1

Runoff = 23.99 cfs @ 12.11 hrs, Volume= 1.749 af, Depth= 2.63"

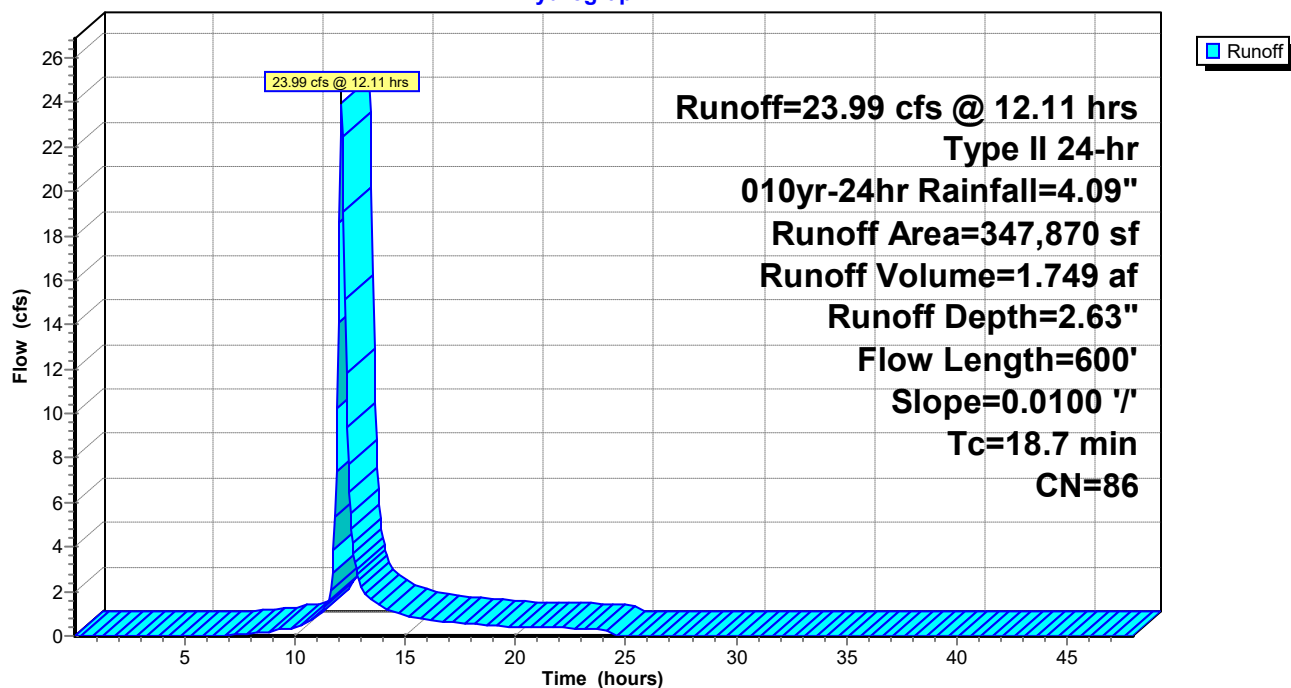
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr 010yr-24hr Rainfall=4.09"

Area (sf)	CN	Description
169,520	74	>75% Grass cover, Good, HSG C
158,000	98	Paved parking, HSG C
20,350	98	Roofs, HSG C
347,870	86	Weighted Average
169,520		48.73% Pervious Area
178,350		51.27% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0100	0.12		Sheet Flow, Sheet Flow n= 0.150 P2= 2.92"
5.2	500	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc Unpaved Kv= 16.1 fps
18.7	600	Total			

Subcatchment 1s: EX1

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS

Type II 24-hr 010yr-24hr Rainfall=4.09"

Existing Conditions

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Summary for Subcatchment 2s: EX2

Runoff = 1.84 cfs @ 12.08 hrs, Volume= 0.121 af, Depth= 1.66"

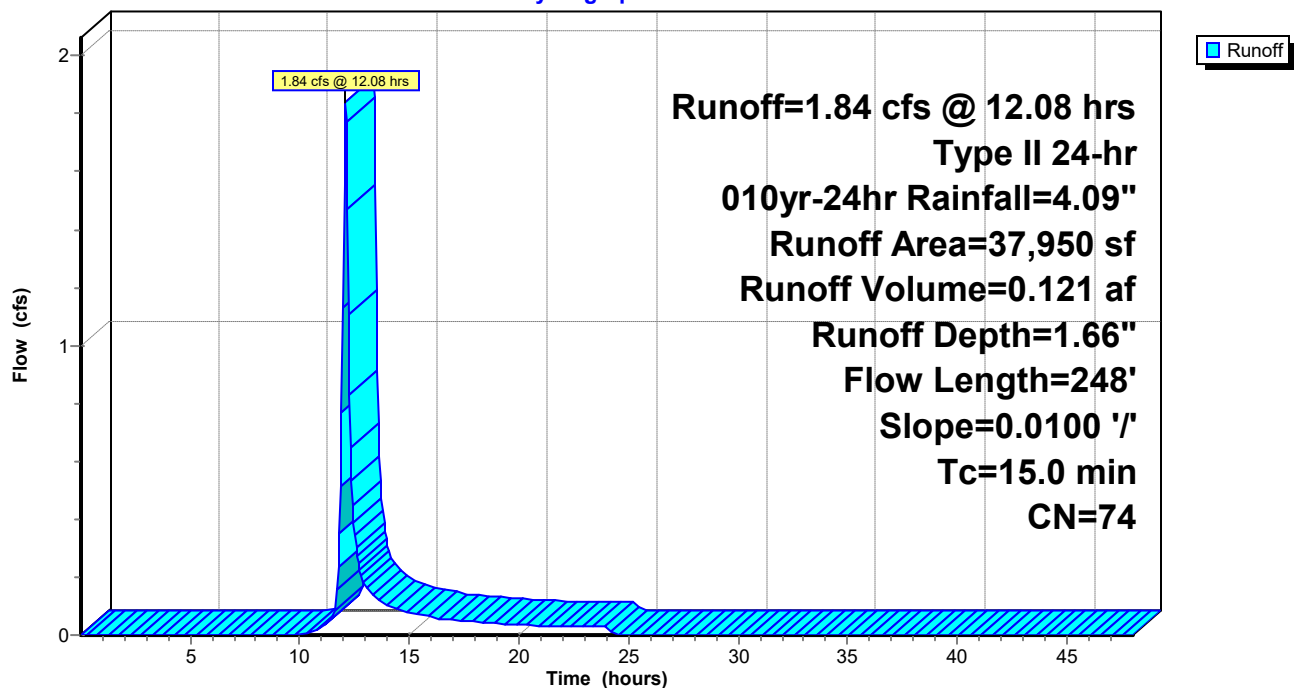
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr 010yr-24hr Rainfall=4.09"

Area (sf)	CN	Description
37,950	74	>75% Grass cover, Good, HSG C
37,950		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0100	0.12		Sheet Flow, Sheet Flow
					Grass: Short n= 0.150 P2= 2.92"
1.5	148	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc
					Unpaved Kv= 16.1 fps
15.0	248	Total			

Subcatchment 2s: EX2

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS

Type II 24-hr 010yr-24hr Rainfall=4.09"

Existing Conditions

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Summary for Subcatchment 3s: EX3

Runoff = 1.49 cfs @ 12.08 hrs, Volume= 0.098 af, Depth= 1.66"

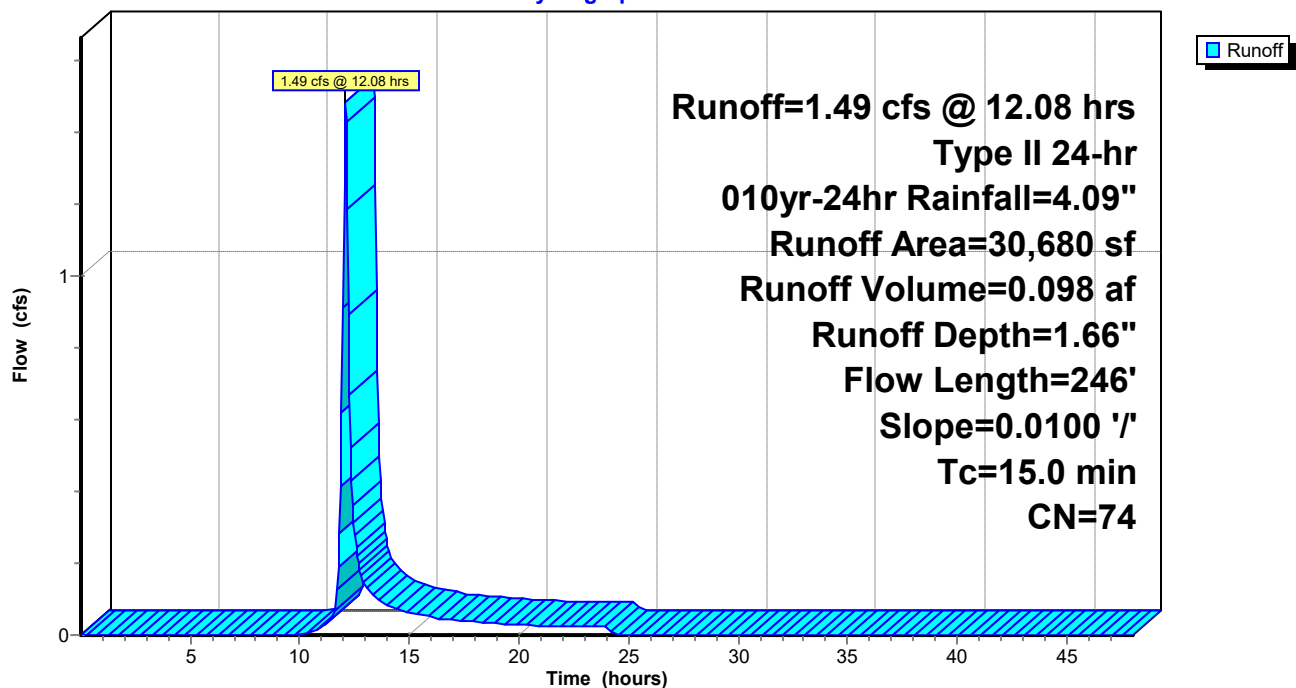
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr 010yr-24hr Rainfall=4.09"

Area (sf)	CN	Description
30,680	74	>75% Grass cover, Good, HSG C
30,680		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0100	0.12		Sheet Flow, Sheet Flow
					Grass: Short n= 0.150 P2= 2.92"
1.5	146	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc
					Unpaved Kv= 16.1 fps
15.0	246	Total			

Subcatchment 3s: EX3

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr 010yr-24hr Rainfall=4.09"

Existing Conditions

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Summary for Subcatchment 4s: EX4

Runoff = 9.43 cfs @ 11.96 hrs, Volume= 0.436 af, Depth= 2.28"

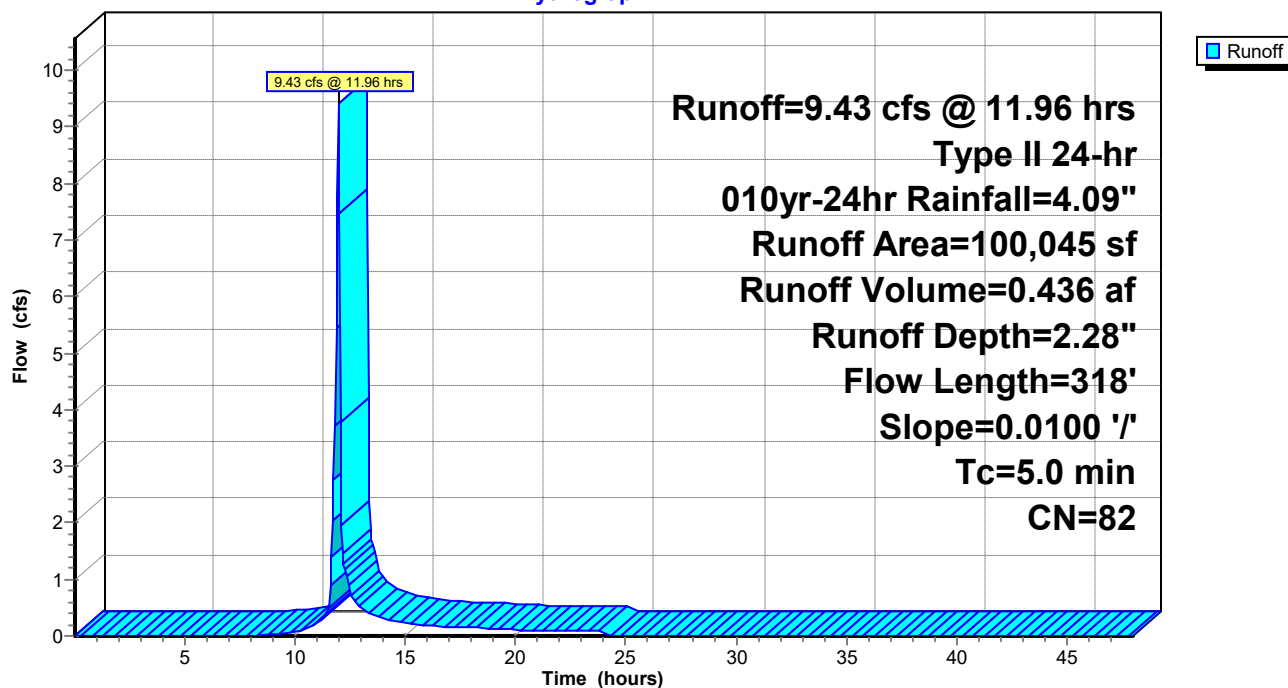
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr 010yr-24hr Rainfall=4.09"

Area (sf)	CN	Description
64,745	74	>75% Grass cover, Good, HSG C
27,940	98	Paved parking, HSG C
7,360	98	Roofs, HSG C
100,045	82	Weighted Average
64,745		64.72% Pervious Area
35,300		35.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	100	0.0100	1.00		Sheet Flow, Sheet Flow
					Smooth surfaces n= 0.011 P2= 2.92"
2.3	218	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc
					Unpaved Kv= 16.1 fps
4.0	318	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 4s: EX4

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr 010yr-24hr Rainfall=4.09"

Existing Conditions

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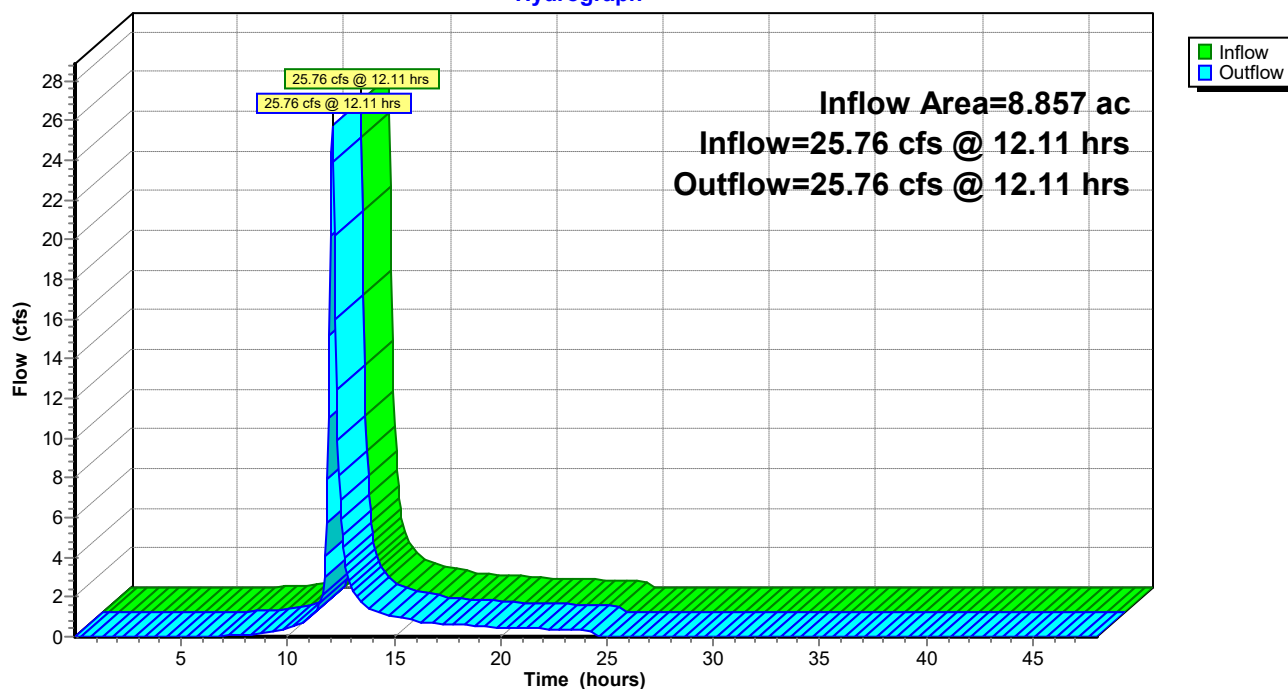
Summary for Reach 1R: US 31 DITCH

Inflow Area = 8.857 ac, 46.23% Impervious, Inflow Depth = 2.53" for 010yr-24hr event
Inflow = 25.76 cfs @ 12.11 hrs, Volume= 1.870 af
Outflow = 25.76 cfs @ 12.11 hrs, Volume= 1.870 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs

Reach 1R: US 31 DITCH

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr 010yr-24hr Rainfall=4.09"

Existing Conditions

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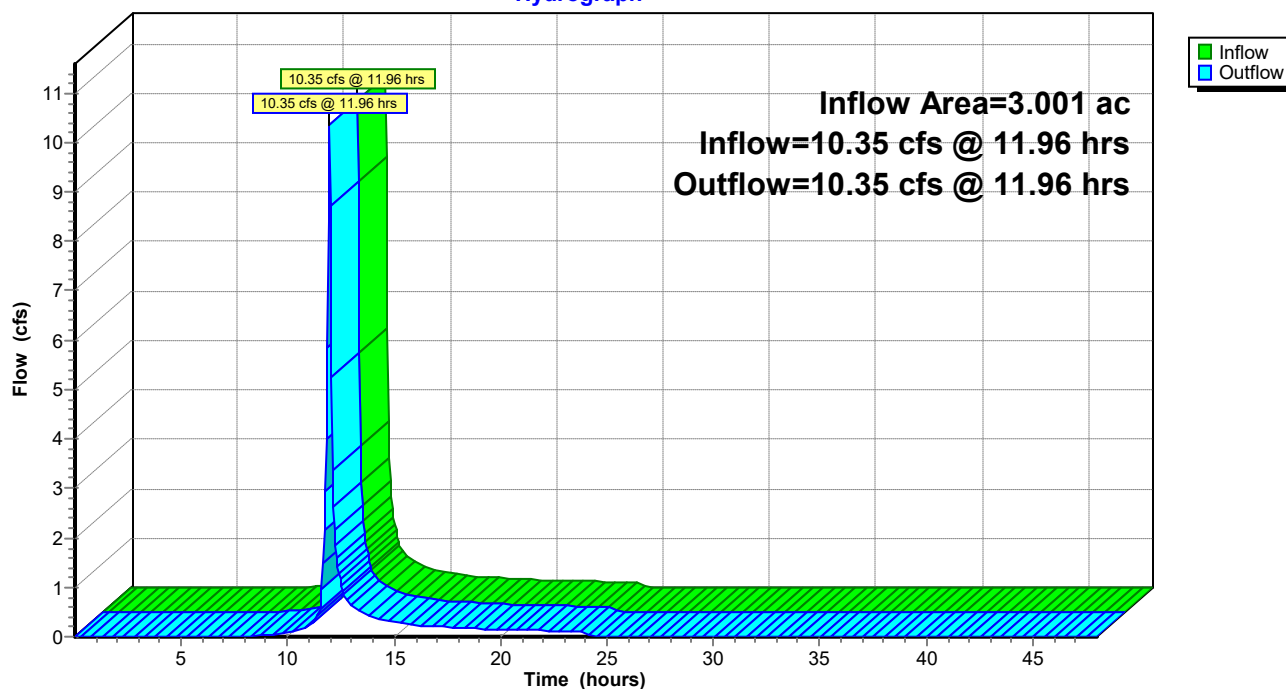
Summary for Reach 2R: EX POND TO WEST

Inflow Area = 3.001 ac, 27.00% Impervious, Inflow Depth = 2.14" for 010yr-24hr event
Inflow = 10.35 cfs @ 11.96 hrs, Volume= 0.534 af
Outflow = 10.35 cfs @ 11.96 hrs, Volume= 0.534 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs

Reach 2R: EX POND TO WEST

Hydrograph



Existing Conditions

BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 1.00 hrs 025yr-01hr Rainfall=2.40"

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Time span=0.01-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1s: EX1 Runoff Area=347,870 sf 51.27% Impervious Runoff Depth=1.16"
Flow Length=600' Slope=0.0100 '/' Tc=18.7 min CN=86 Runoff=21.86 cfs 0.774 af

Subcatchment 2s: EX2 Runoff Area=37,950 sf 0.00% Impervious Runoff Depth=0.55"
Flow Length=248' Slope=0.0100 '/' Tc=15.0 min CN=74 Runoff=1.26 cfs 0.040 af

Subcatchment 3s: EX3 Runoff Area=30,680 sf 0.00% Impervious Runoff Depth=0.55"
Flow Length=246' Slope=0.0100 '/' Tc=15.0 min CN=74 Runoff=1.02 cfs 0.032 af

Subcatchment 4s: EX4 Runoff Area=100,045 sf 35.28% Impervious Runoff Depth=0.93"
Flow Length=318' Slope=0.0100 '/' Tc=5.0 min CN=82 Runoff=8.96 cfs 0.177 af

Reach 1R: US 31 DITCH Inflow=23.10 cfs 0.814 af
Outflow=23.10 cfs 0.814 af

Reach 2R: EX POND TO WEST Inflow=9.28 cfs 0.210 af
Outflow=9.28 cfs 0.210 af

Total Runoff Area = 11.858 ac Runoff Volume = 1.023 af Average Runoff Depth = 1.04"
58.64% Pervious = 6.954 ac 41.36% Impervious = 4.905 ac

Existing Conditions

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BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 1.00 hrs 025yr-01hr Rainfall=2.40"

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Summary for Subcatchment 1s: EX1

Runoff = 21.86 cfs @ 0.63 hrs, Volume= 0.774 af, Depth= 1.16"

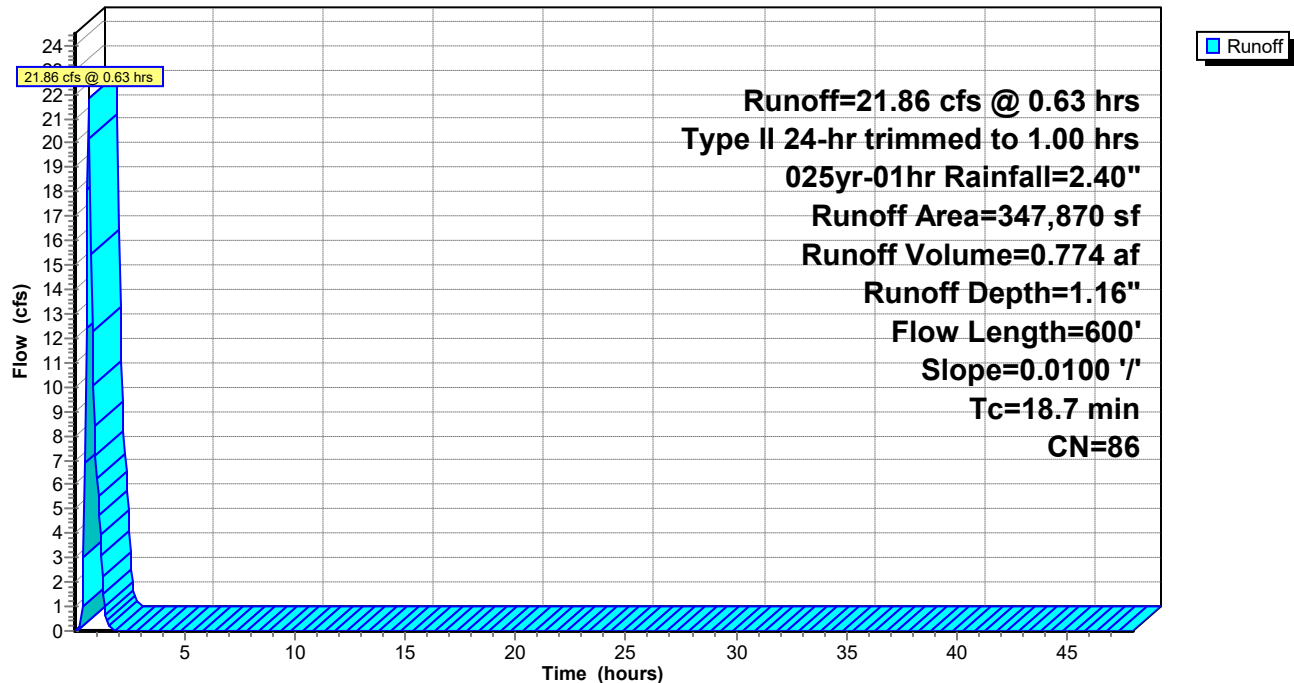
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 1.00 hrs 025yr-01hr Rainfall=2.40"

Area (sf)	CN	Description
169,520	74	>75% Grass cover, Good, HSG C
158,000	98	Paved parking, HSG C
20,350	98	Roofs, HSG C
347,870	86	Weighted Average
169,520		48.73% Pervious Area
178,350		51.27% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0100	0.12		Sheet Flow, Sheet Flow n= 0.150 P2= 2.92"
5.2	500	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc Unpaved Kv= 16.1 fps
18.7	600	Total			

Subcatchment 1s: EX1

Hydrograph



Existing Conditions

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BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 1.00 hrs 025yr-01hr Rainfall=2.40"

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Summary for Subcatchment 2s: EX2

Runoff = 1.26 cfs @ 0.61 hrs, Volume= 0.040 af, Depth= 0.55"

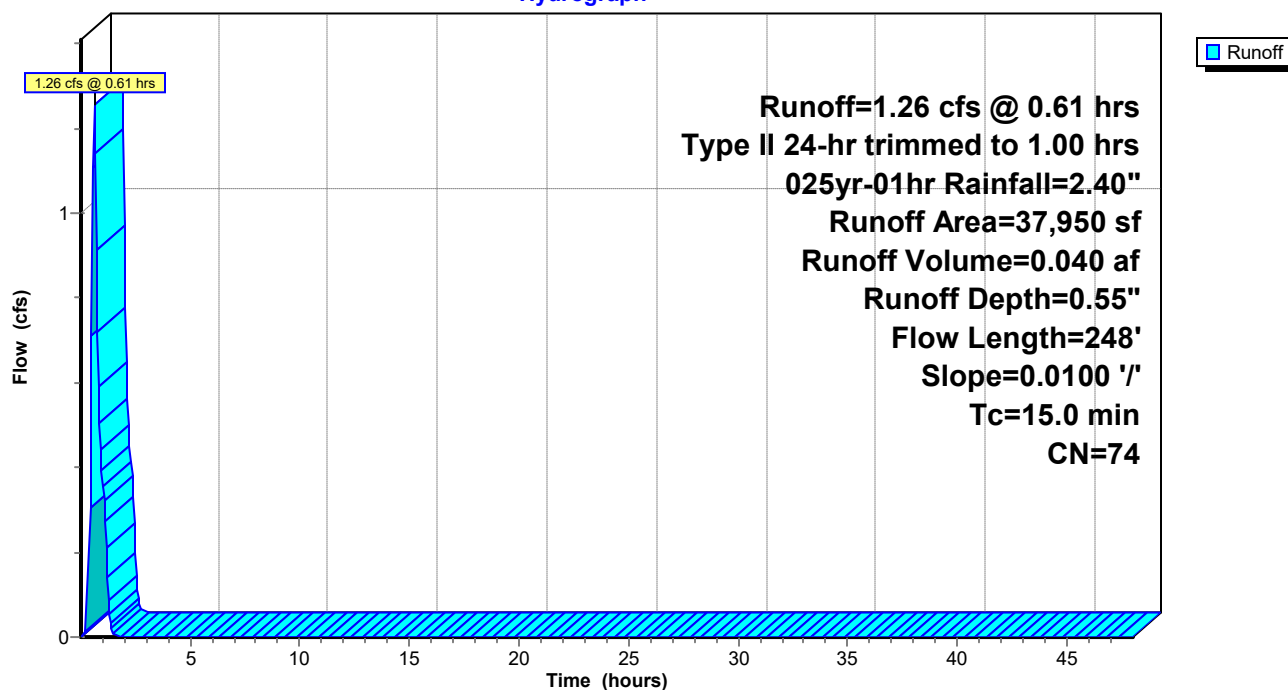
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 1.00 hrs 025yr-01hr Rainfall=2.40"

Area (sf)	CN	Description
37,950	74	>75% Grass cover, Good, HSG C
37,950		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0100	0.12		Sheet Flow, Sheet Flow Grass: Short n= 0.150 P2= 2.92"
1.5	148	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc Unpaved Kv= 16.1 fps
15.0	248	Total			

Subcatchment 2s: EX2

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 1.00 hrs 025yr-01hr Rainfall=2.40"

Existing Conditions

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Summary for Subcatchment 3s: EX3

Runoff = 1.02 cfs @ 0.61 hrs, Volume= 0.032 af, Depth= 0.55"

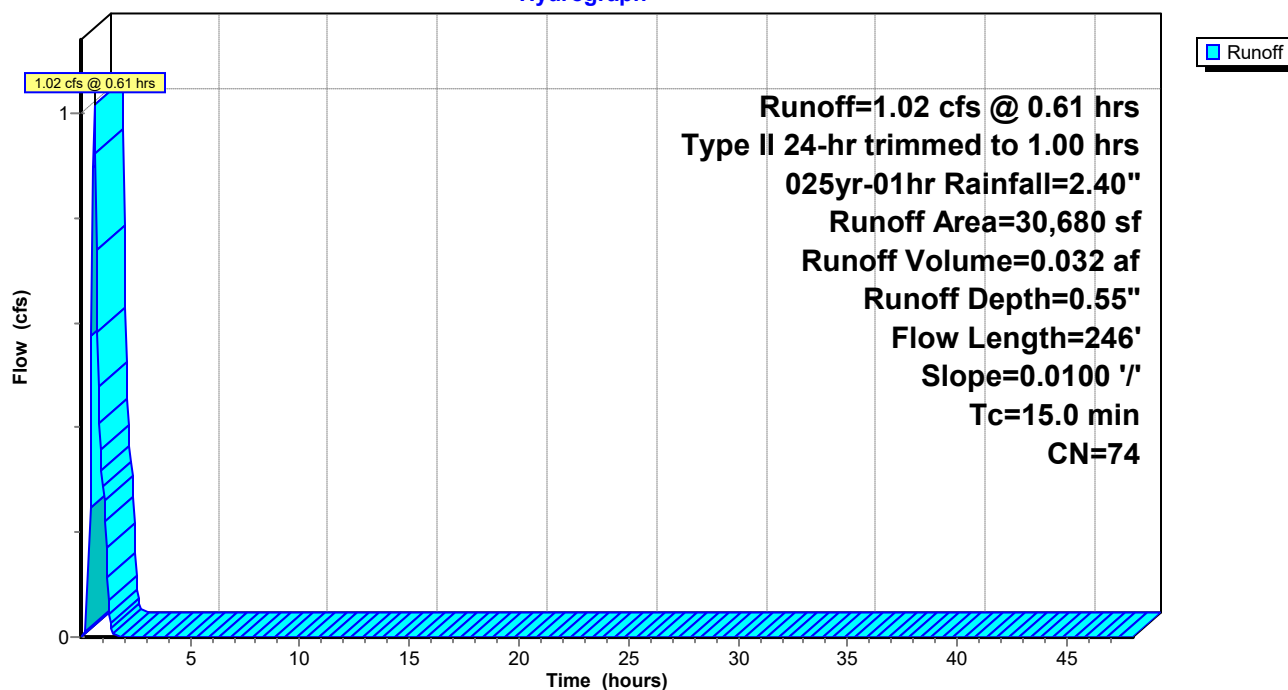
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 1.00 hrs 025yr-01hr Rainfall=2.40"

Area (sf)	CN	Description
30,680	74	>75% Grass cover, Good, HSG C
30,680		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0100	0.12		Sheet Flow, Sheet Flow Grass: Short n= 0.150 P2= 2.92"
1.5	146	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc Unpaved Kv= 16.1 fps
15.0	246	Total			

Subcatchment 3s: EX3

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS

Existing Conditions

Type II 24-hr trimmed to 1.00 hrs 025yr-01hr Rainfall=2.40"

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Summary for Subcatchment 4s: EX4

Runoff = 8.96 cfs @ 0.47 hrs, Volume= 0.177 af, Depth= 0.93"

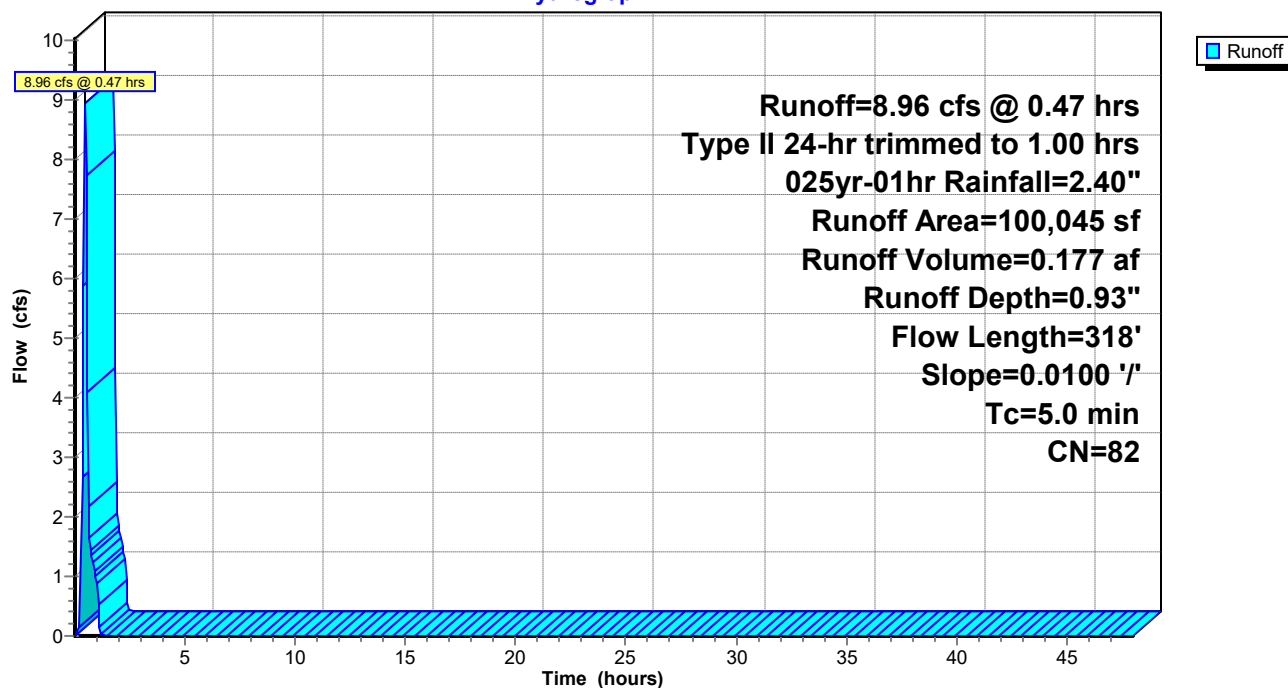
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 1.00 hrs 025yr-01hr Rainfall=2.40"

Area (sf)	CN	Description
64,745	74	>75% Grass cover, Good, HSG C
27,940	98	Paved parking, HSG C
7,360	98	Roofs, HSG C
100,045	82	Weighted Average
64,745		64.72% Pervious Area
35,300		35.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	100	0.0100	1.00		Sheet Flow, Sheet Flow
					Smooth surfaces n= 0.011 P2= 2.92"
2.3	218	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc
					Unpaved Kv= 16.1 fps
4.0	318	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 4s: EX4

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 1.00 hrs 025yr-01hr Rainfall=2.40"

Existing Conditions

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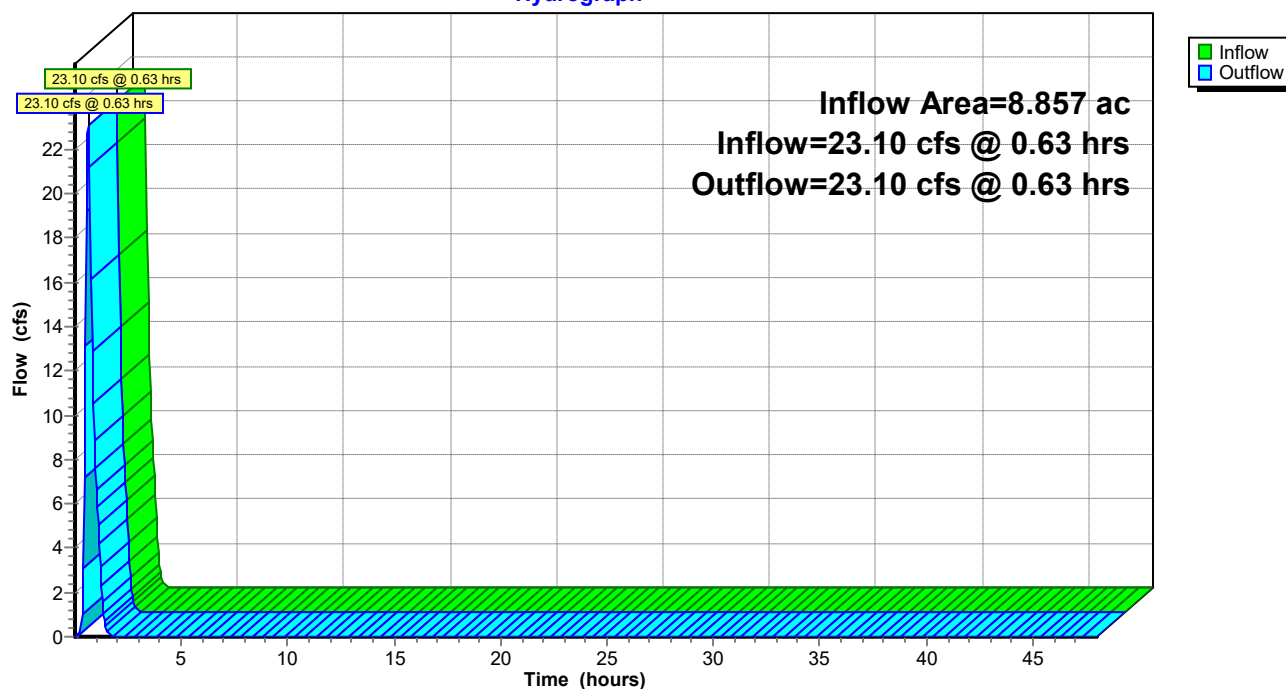
Summary for Reach 1R: US 31 DITCH

Inflow Area = 8.857 ac, 46.23% Impervious, Inflow Depth = 1.10" for 025yr-01hr event
Inflow = 23.10 cfs @ 0.63 hrs, Volume= 0.814 af
Outflow = 23.10 cfs @ 0.63 hrs, Volume= 0.814 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs

Reach 1R: US 31 DITCH

Hydrograph



Existing Conditions

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BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 1.00 hrs 025yr-01hr Rainfall=2.40"

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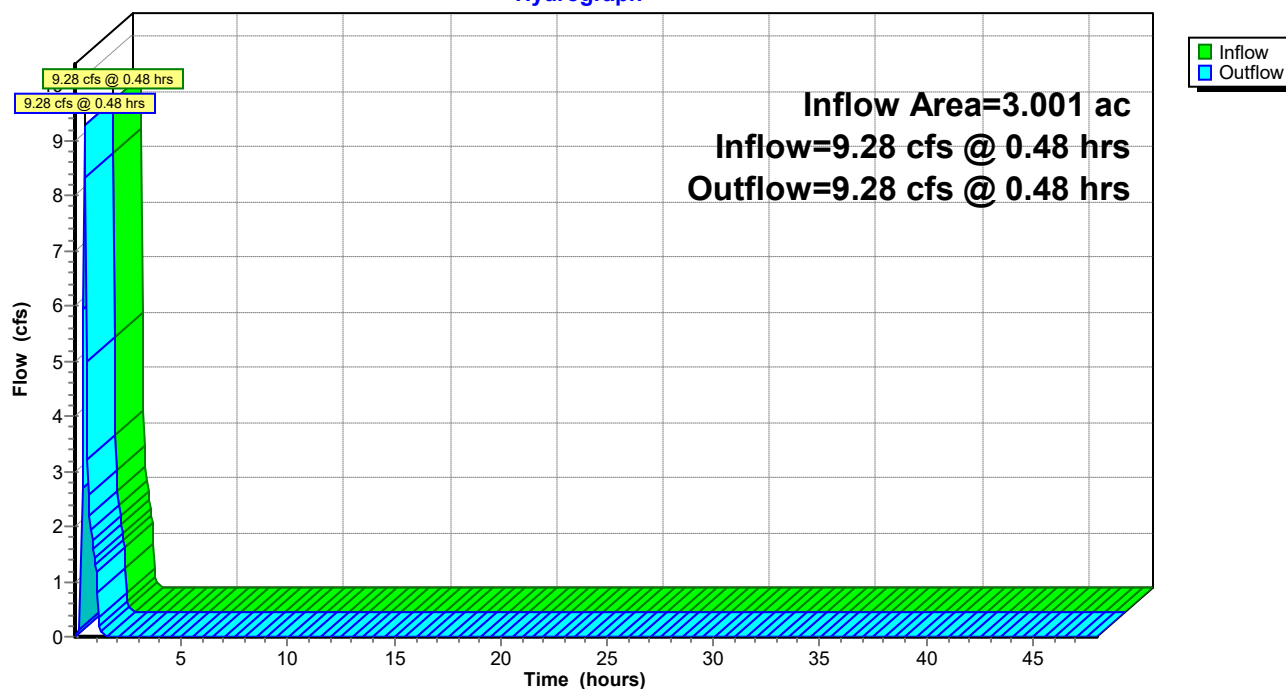
Summary for Reach 2R: EX POND TO WEST

Inflow Area = 3.001 ac, 27.00% Impervious, Inflow Depth = 0.84" for 025yr-01hr event
Inflow = 9.28 cfs @ 0.48 hrs, Volume= 0.210 af
Outflow = 9.28 cfs @ 0.48 hrs, Volume= 0.210 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs

Reach 2R: EX POND TO WEST

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS

Existing Conditions

Type II 24-hr trimmed to 2.00 hrs 025yr-02hr Rainfall=2.85"

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Time span=0.01-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1s: EX1 Runoff Area=347,870 sf 51.27% Impervious Runoff Depth=1.53"
Flow Length=600' Slope=0.0100 '/' Tc=18.7 min CN=86 Runoff=25.19 cfs 1.021 af

Subcatchment 2s: EX2 Runoff Area=37,950 sf 0.00% Impervious Runoff Depth=0.81"
Flow Length=248' Slope=0.0100 '/' Tc=15.0 min CN=74 Runoff=1.61 cfs 0.059 af

Subcatchment 3s: EX3 Runoff Area=30,680 sf 0.00% Impervious Runoff Depth=0.81"
Flow Length=246' Slope=0.0100 '/' Tc=15.0 min CN=74 Runoff=1.30 cfs 0.048 af

Subcatchment 4s: EX4 Runoff Area=100,045 sf 35.28% Impervious Runoff Depth=1.26"
Flow Length=318' Slope=0.0100 '/' Tc=5.0 min CN=82 Runoff=10.17 cfs 0.242 af

Reach 1R: US 31 DITCH Inflow=26.76 cfs 1.080 af
Outflow=26.76 cfs 1.080 af

Reach 2R: EX POND TO WEST Inflow=10.70 cfs 0.289 af
Outflow=10.70 cfs 0.289 af

Total Runoff Area = 11.858 ac Runoff Volume = 1.370 af Average Runoff Depth = 1.39"
58.64% Pervious = 6.954 ac 41.36% Impervious = 4.905 ac

Existing Conditions

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BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 2.00 hrs 025yr-02hr Rainfall=2.85"

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Summary for Subcatchment 1s: EX1

Runoff = 25.19 cfs @ 1.13 hrs, Volume= 1.021 af, Depth= 1.53"

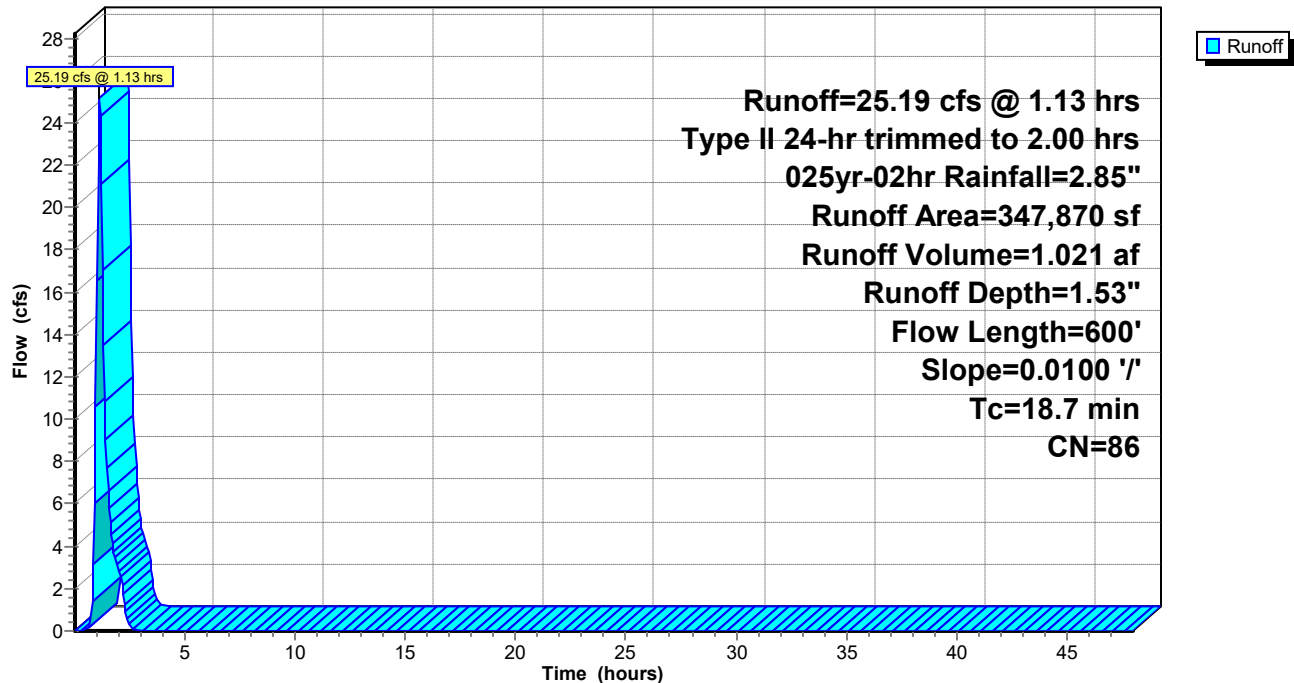
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 2.00 hrs 025yr-02hr Rainfall=2.85"

Area (sf)	CN	Description
169,520	74	>75% Grass cover, Good, HSG C
158,000	98	Paved parking, HSG C
20,350	98	Roofs, HSG C
347,870	86	Weighted Average
169,520		48.73% Pervious Area
178,350		51.27% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0100	0.12		Sheet Flow, Sheet Flow n= 0.150 P2= 2.92"
5.2	500	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc Unpaved Kv= 16.1 fps
18.7	600	Total			

Subcatchment 1s: EX1

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS

Existing Conditions

Type II 24-hr trimmed to 2.00 hrs 025yr-02hr Rainfall=2.85"

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Summary for Subcatchment 2s: EX2

Runoff = 1.61 cfs @ 1.10 hrs, Volume= 0.059 af, Depth= 0.81"

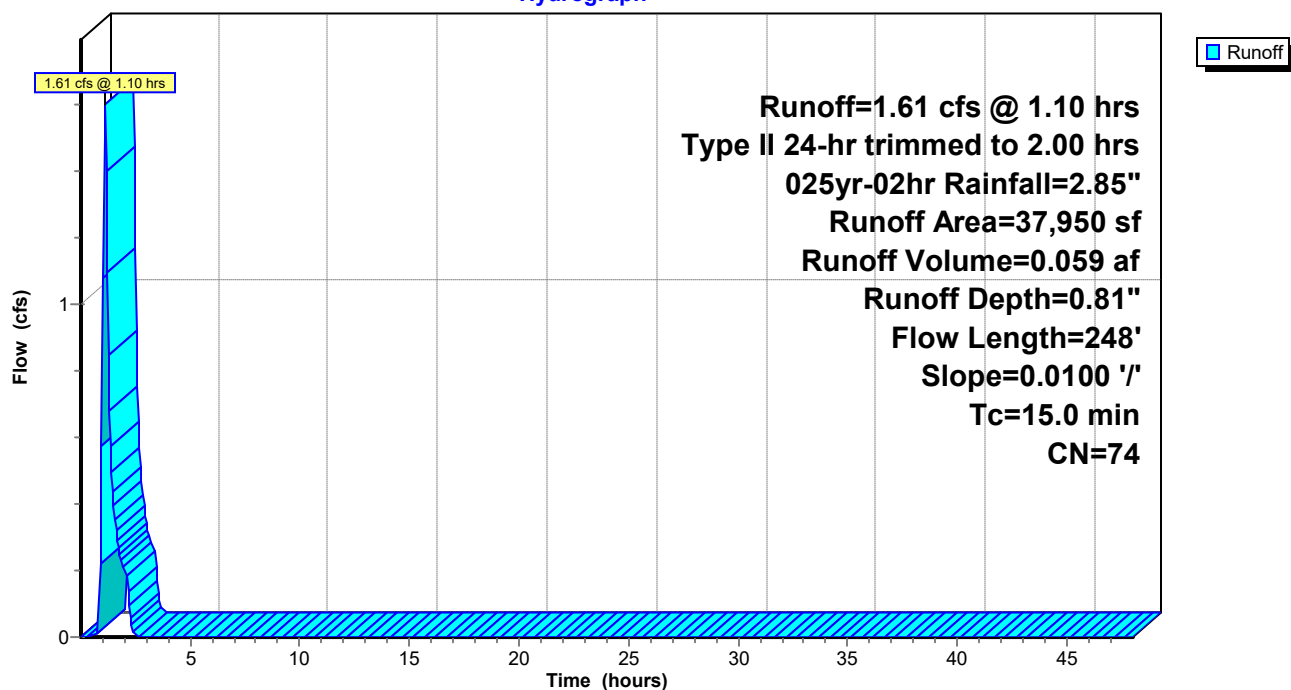
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 2.00 hrs 025yr-02hr Rainfall=2.85"

Area (sf)	CN	Description
37,950	74	>75% Grass cover, Good, HSG C
37,950		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0100	0.12		Sheet Flow, Sheet Flow
					Grass: Short n= 0.150 P2= 2.92"
1.5	148	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc
					Unpaved Kv= 16.1 fps
15.0	248	Total			

Subcatchment 2s: EX2

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 2.00 hrs 025yr-02hr Rainfall=2.85"

Existing Conditions

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Summary for Subcatchment 3s: EX3

Runoff = 1.30 cfs @ 1.10 hrs, Volume= 0.048 af, Depth= 0.81"

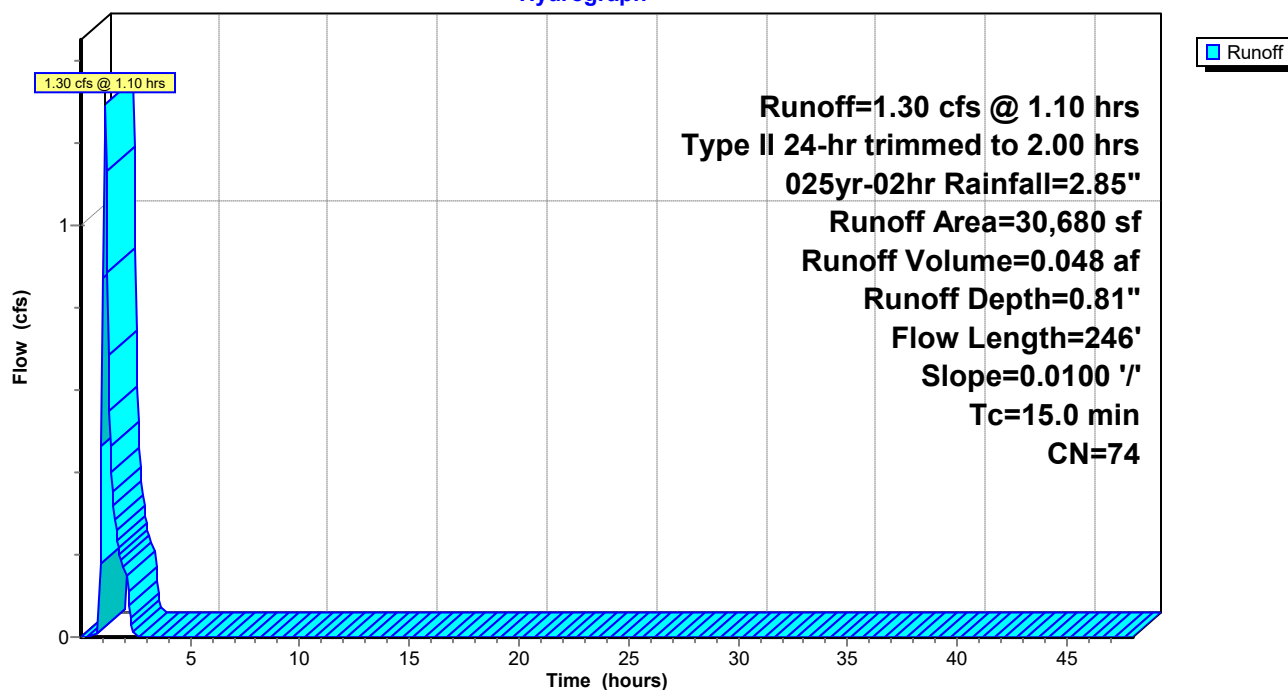
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 2.00 hrs 025yr-02hr Rainfall=2.85"

Area (sf)	CN	Description
30,680	74	>75% Grass cover, Good, HSG C
30,680		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0100	0.12		Sheet Flow, Sheet Flow Grass: Short n= 0.150 P2= 2.92"
1.5	146	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc Unpaved Kv= 16.1 fps
15.0	246	Total			

Subcatchment 3s: EX3

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 2.00 hrs 025yr-02hr Rainfall=2.85"

Existing Conditions

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Summary for Subcatchment 4s: EX4

Runoff = 10.17 cfs @ 0.97 hrs, Volume= 0.242 af, Depth= 1.26"

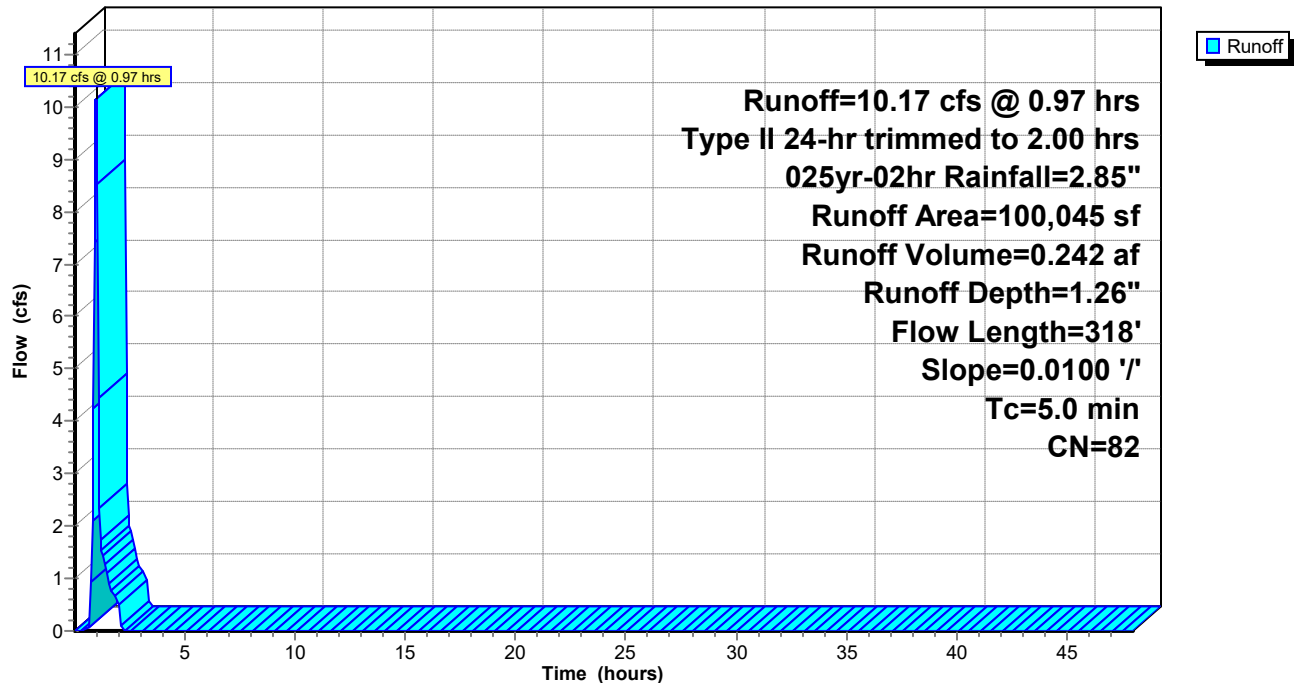
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 2.00 hrs 025yr-02hr Rainfall=2.85"

Area (sf)	CN	Description
64,745	74	>75% Grass cover, Good, HSG C
27,940	98	Paved parking, HSG C
7,360	98	Roofs, HSG C
100,045	82	Weighted Average
64,745		64.72% Pervious Area
35,300		35.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	100	0.0100	1.00		Sheet Flow, Sheet Flow Smooth surfaces n= 0.011 P2= 2.92"
2.3	218	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc Unpaved Kv= 16.1 fps
4.0	318	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 4s: EX4

Hydrograph



Existing Conditions

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BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 2.00 hrs 025yr-02hr Rainfall=2.85"

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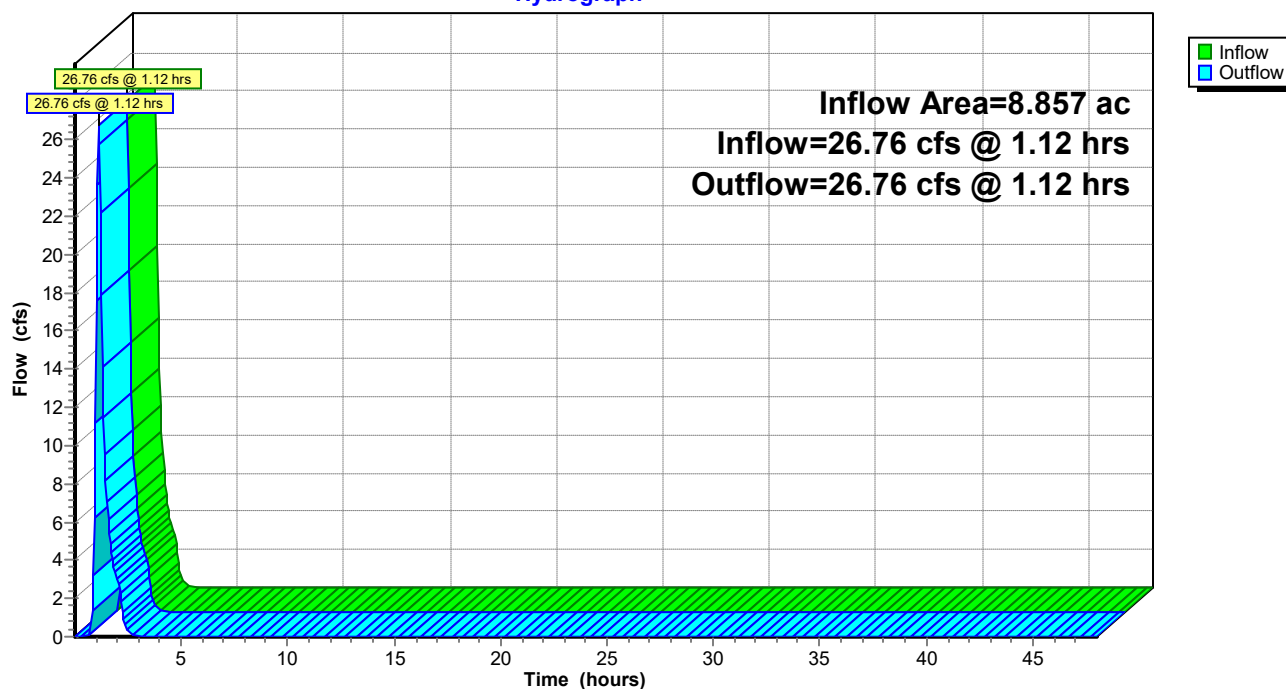
Summary for Reach 1R: US 31 DITCH

Inflow Area = 8.857 ac, 46.23% Impervious, Inflow Depth = 1.46" for 025yr-02hr event
Inflow = 26.76 cfs @ 1.12 hrs, Volume= 1.080 af
Outflow = 26.76 cfs @ 1.12 hrs, Volume= 1.080 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs

Reach 1R: US 31 DITCH

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 2.00 hrs 025yr-02hr Rainfall=2.85"

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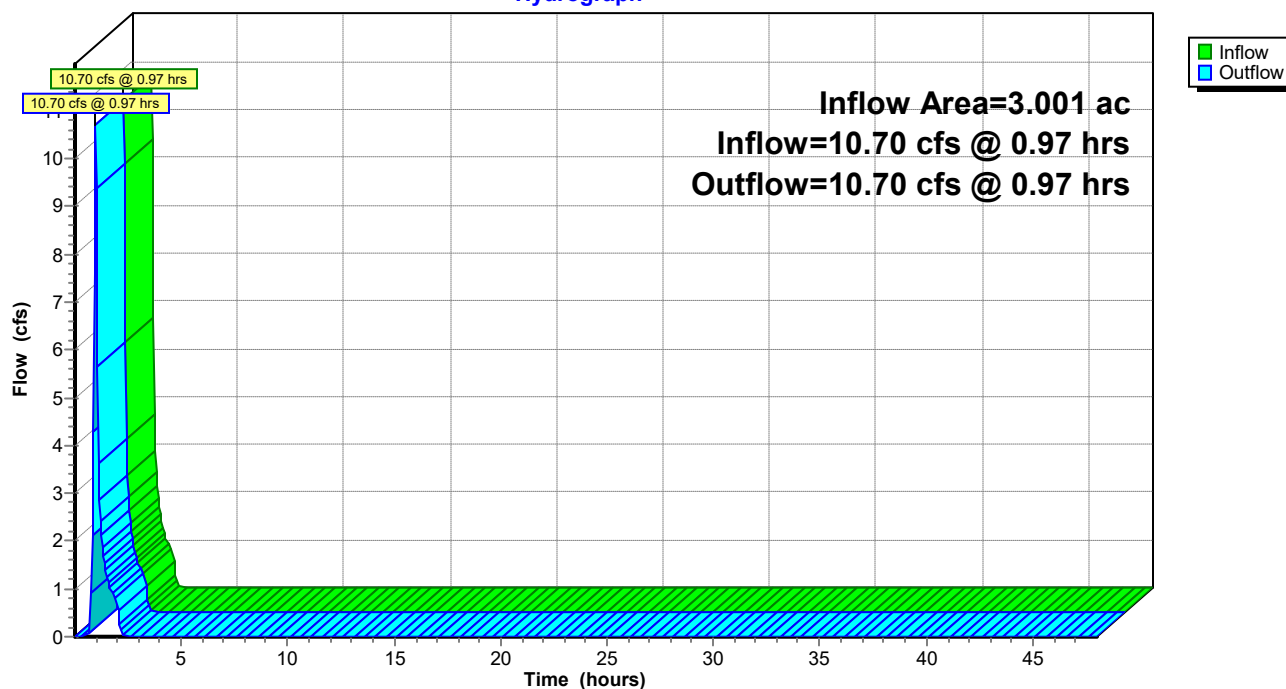
Summary for Reach 2R: EX POND TO WEST

Inflow Area = 3.001 ac, 27.00% Impervious, Inflow Depth = 1.16" for 025yr-02hr event
Inflow = 10.70 cfs @ 0.97 hrs, Volume= 0.289 af
Outflow = 10.70 cfs @ 0.97 hrs, Volume= 0.289 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs

Reach 2R: EX POND TO WEST

Hydrograph



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BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 3.00 hrs 025yr-03hr Rainfall=3.05"

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Time span=0.01-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1s: EX1 Runoff Area=347,870 sf 51.27% Impervious Runoff Depth=1.71"
Flow Length=600' Slope=0.0100 '/' Tc=18.7 min CN=86 Runoff=25.63 cfs 1.135 af

Subcatchment 2s: EX2 Runoff Area=37,950 sf 0.00% Impervious Runoff Depth=0.94"
Flow Length=248' Slope=0.0100 '/' Tc=15.0 min CN=74 Runoff=1.69 cfs 0.068 af

Subcatchment 3s: EX3 Runoff Area=30,680 sf 0.00% Impervious Runoff Depth=0.94"
Flow Length=246' Slope=0.0100 '/' Tc=15.0 min CN=74 Runoff=1.37 cfs 0.055 af

Subcatchment 4s: EX4 Runoff Area=100,045 sf 35.28% Impervious Runoff Depth=1.42"
Flow Length=318' Slope=0.0100 '/' Tc=5.0 min CN=82 Runoff=10.24 cfs 0.271 af

Reach 1R: US 31 DITCH Inflow=27.28 cfs 1.203 af
Outflow=27.28 cfs 1.203 af

Reach 2R: EX POND TO WEST Inflow=10.86 cfs 0.327 af
Outflow=10.86 cfs 0.327 af

Total Runoff Area = 11.858 ac Runoff Volume = 1.530 af Average Runoff Depth = 1.55"
58.64% Pervious = 6.954 ac 41.36% Impervious = 4.905 ac

BDH REALTY COMMERCIAL DEV-EX CONDITIONS

Existing Conditions

Type II 24-hr trimmed to 3.00 hrs 025yr-03hr Rainfall=3.05"

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Summary for Subcatchment 1s: EX1

Runoff = 25.63 cfs @ 1.62 hrs, Volume= 1.135 af, Depth= 1.71"

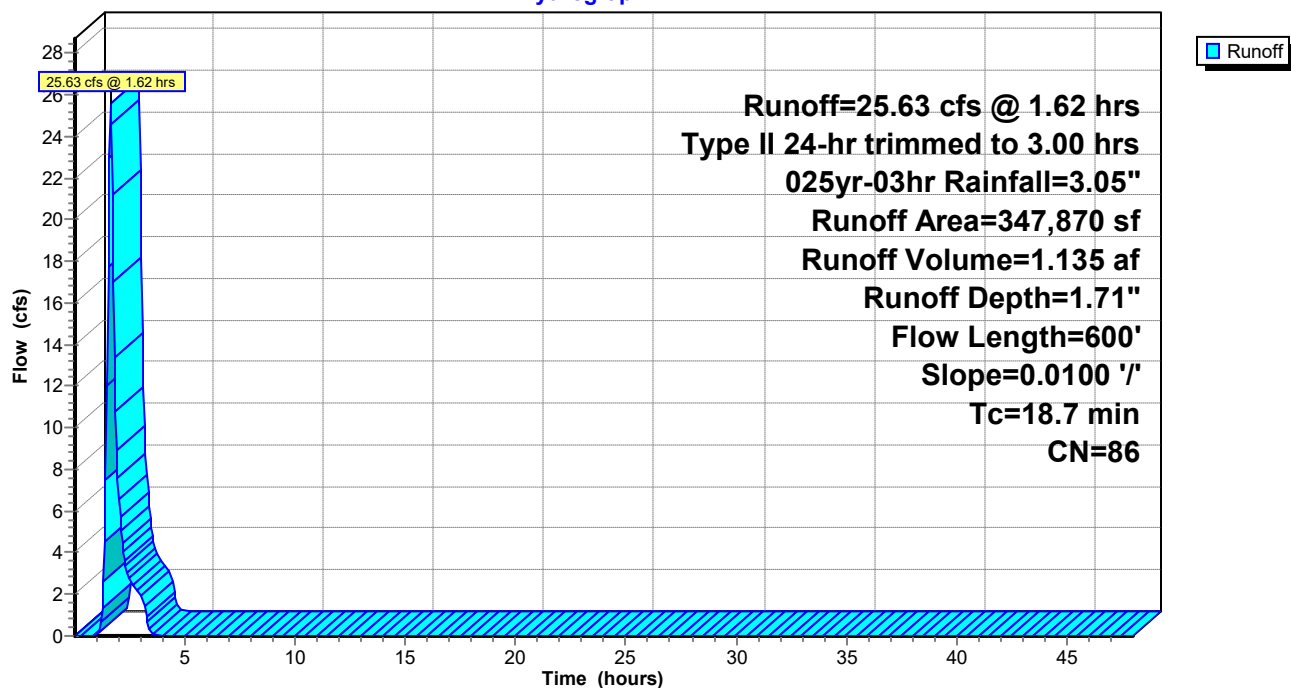
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 3.00 hrs 025yr-03hr Rainfall=3.05"

Area (sf)	CN	Description
169,520	74	>75% Grass cover, Good, HSG C
158,000	98	Paved parking, HSG C
20,350	98	Roofs, HSG C
347,870	86	Weighted Average
169,520		48.73% Pervious Area
178,350		51.27% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0100	0.12		Sheet Flow, Sheet Flow n= 0.150 P2= 2.92"
5.2	500	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc Unpaved Kv= 16.1 fps
18.7	600	Total			

Subcatchment 1s: EX1

Hydrograph



Existing Conditions

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BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 3.00 hrs 025yr-03hr Rainfall=3.05"

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Summary for Subcatchment 2s: EX2

Runoff = 1.69 cfs @ 1.60 hrs, Volume= 0.068 af, Depth= 0.94"

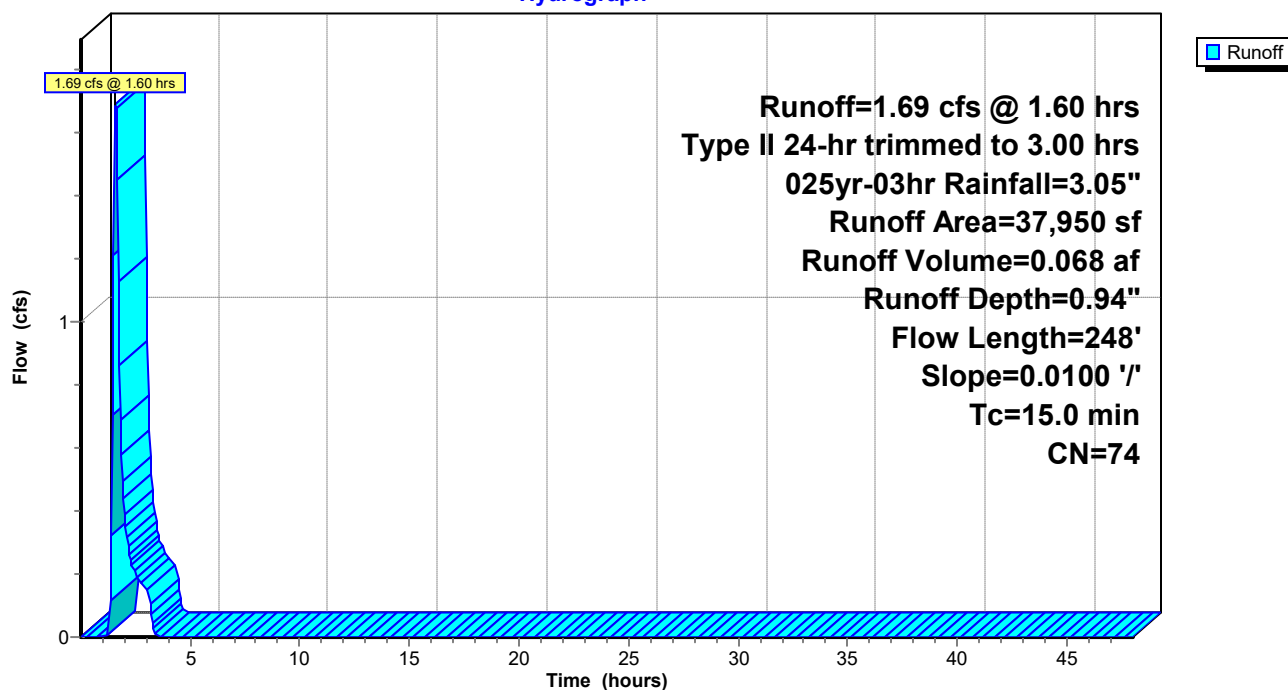
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 3.00 hrs 025yr-03hr Rainfall=3.05"

Area (sf)	CN	Description
37,950	74	>75% Grass cover, Good, HSG C
37,950		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0100	0.12		Sheet Flow, Sheet Flow
					Grass: Short n= 0.150 P2= 2.92"
1.5	148	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc
					Unpaved Kv= 16.1 fps
15.0	248	Total			

Subcatchment 2s: EX2

Hydrograph



Existing Conditions

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BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 3.00 hrs 025yr-03hr Rainfall=3.05"

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Summary for Subcatchment 3s: EX3

Runoff = 1.37 cfs @ 1.60 hrs, Volume= 0.055 af, Depth= 0.94"

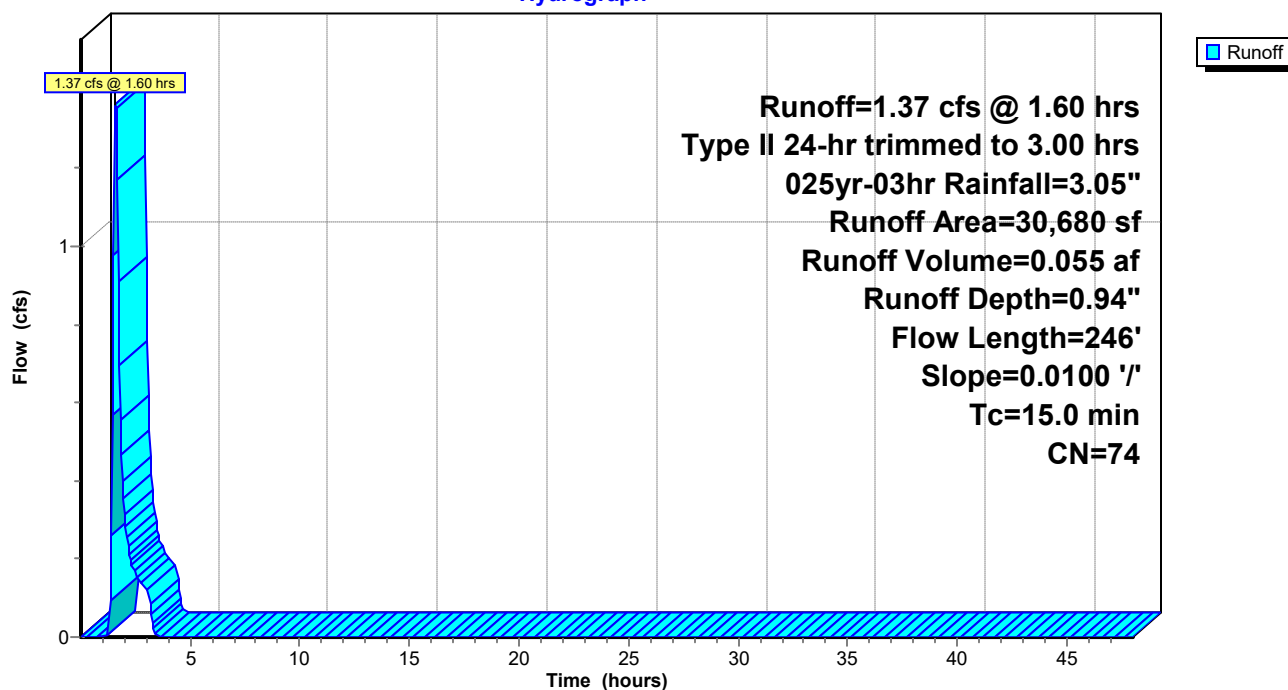
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 3.00 hrs 025yr-03hr Rainfall=3.05"

Area (sf)	CN	Description
30,680	74	>75% Grass cover, Good, HSG C
30,680		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0100	0.12		Sheet Flow, Sheet Flow
					Grass: Short n= 0.150 P2= 2.92"
1.5	146	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc
					Unpaved Kv= 16.1 fps
15.0	246	Total			

Subcatchment 3s: EX3

Hydrograph



Existing Conditions

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BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 3.00 hrs 025yr-03hr Rainfall=3.05"

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Summary for Subcatchment 4s: EX4

Runoff = 10.24 cfs @ 1.46 hrs, Volume= 0.271 af, Depth= 1.42"

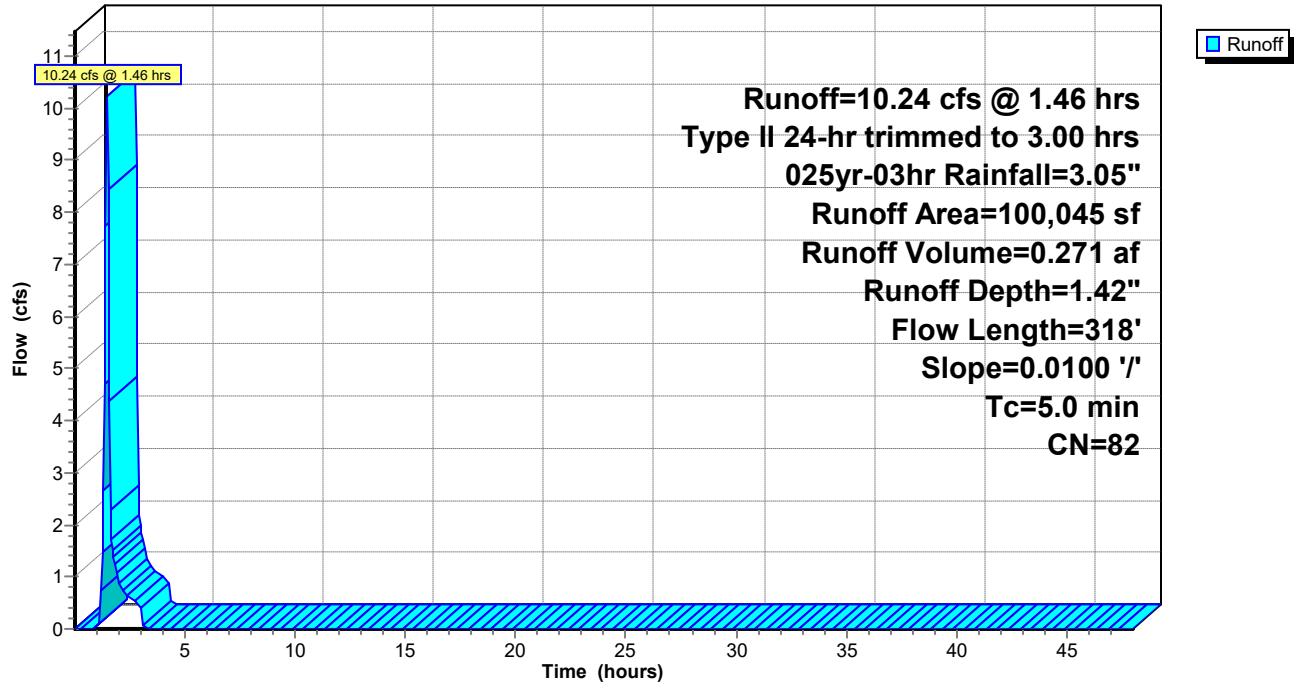
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 3.00 hrs 025yr-03hr Rainfall=3.05"

Area (sf)	CN	Description
64,745	74	>75% Grass cover, Good, HSG C
27,940	98	Paved parking, HSG C
7,360	98	Roofs, HSG C
100,045	82	Weighted Average
64,745		64.72% Pervious Area
35,300		35.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	100	0.0100	1.00		Sheet Flow, Sheet Flow Smooth surfaces n= 0.011 P2= 2.92"
2.3	218	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc Unpaved Kv= 16.1 fps
4.0	318	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 4s: EX4

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 3.00 hrs 025yr-03hr Rainfall=3.05"

Existing Conditions

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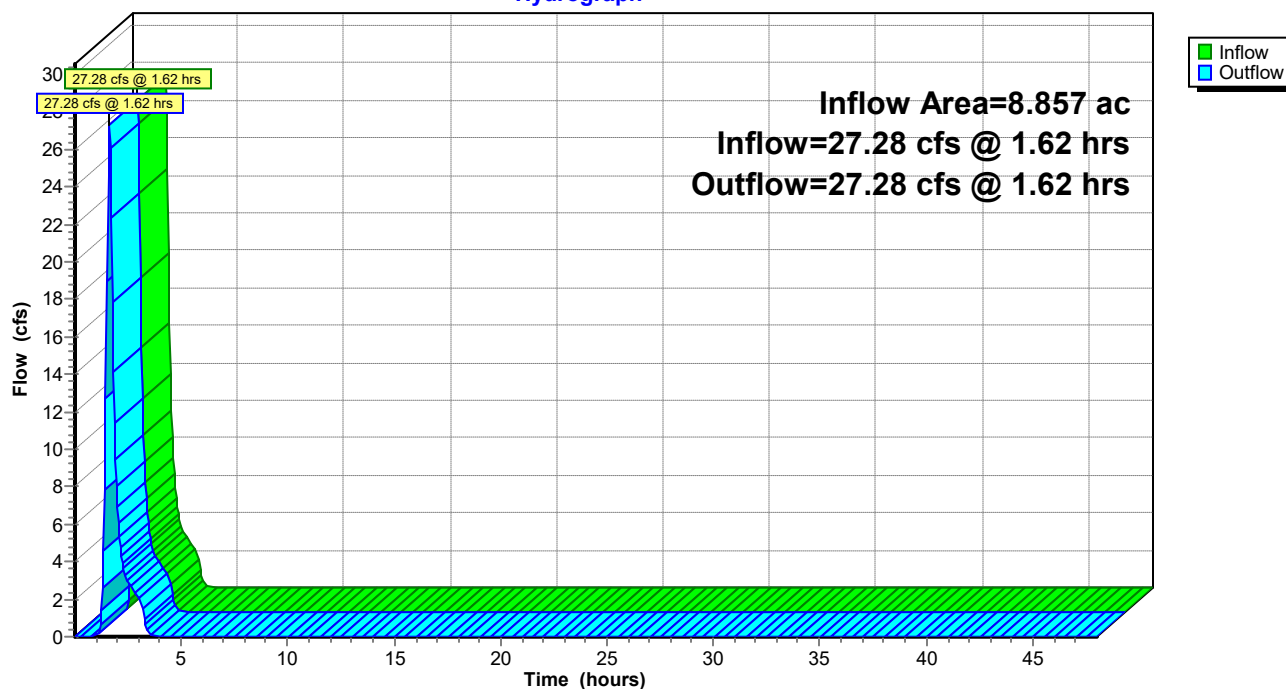
Summary for Reach 1R: US 31 DITCH

Inflow Area = 8.857 ac, 46.23% Impervious, Inflow Depth = 1.63" for 025yr-03hr event
Inflow = 27.28 cfs @ 1.62 hrs, Volume= 1.203 af
Outflow = 27.28 cfs @ 1.62 hrs, Volume= 1.203 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs

Reach 1R: US 31 DITCH

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 3.00 hrs 025yr-03hr Rainfall=3.05"

Existing Conditions

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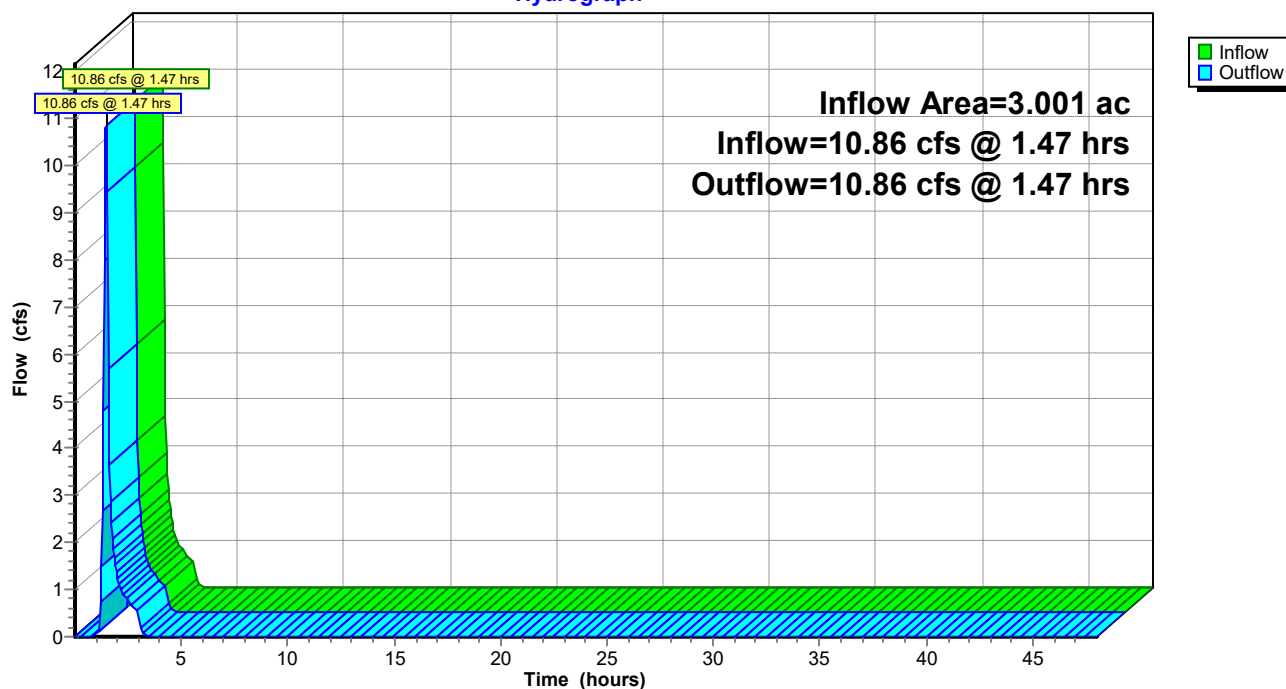
Summary for Reach 2R: EX POND TO WEST

Inflow Area = 3.001 ac, 27.00% Impervious, Inflow Depth = 1.31" for 025yr-03hr event
Inflow = 10.86 cfs @ 1.47 hrs, Volume= 0.327 af
Outflow = 10.86 cfs @ 1.47 hrs, Volume= 0.327 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs

Reach 2R: EX POND TO WEST

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS

Existing Conditions

Type II 24-hr trimmed to 6.00 hrs 025yr-06hr Rainfall=3.67"

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Time span=0.01-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1s: EX1 Runoff Area=347,870 sf 51.27% Impervious Runoff Depth=2.25"
Flow Length=600' Slope=0.0100 '/' Tc=18.7 min CN=86 Runoff=28.81 cfs 1.497 af

Subcatchment 2s: EX2 Runoff Area=37,950 sf 0.00% Impervious Runoff Depth=1.36"
Flow Length=248' Slope=0.0100 '/' Tc=15.0 min CN=74 Runoff=2.10 cfs 0.099 af

Subcatchment 3s: EX3 Runoff Area=30,680 sf 0.00% Impervious Runoff Depth=1.36"
Flow Length=246' Slope=0.0100 '/' Tc=15.0 min CN=74 Runoff=1.70 cfs 0.080 af

Subcatchment 4s: EX4 Runoff Area=100,045 sf 35.28% Impervious Runoff Depth=1.92"
Flow Length=318' Slope=0.0100 '/' Tc=5.0 min CN=82 Runoff=11.48 cfs 0.368 af

Reach 1R: US 31 DITCH Inflow=30.86 cfs 1.596 af
Outflow=30.86 cfs 1.596 af

Reach 2R: EX POND TO WEST Inflow=12.40 cfs 0.448 af
Outflow=12.40 cfs 0.448 af

Total Runoff Area = 11.858 ac Runoff Volume = 2.044 af Average Runoff Depth = 2.07"
58.64% Pervious = 6.954 ac 41.36% Impervious = 4.905 ac

BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 6.00 hrs 025yr-06hr Rainfall=3.67"

Existing Conditions

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Summary for Subcatchment 1s: EX1

Runoff = 28.81 cfs @ 3.12 hrs, Volume= 1.497 af, Depth= 2.25"

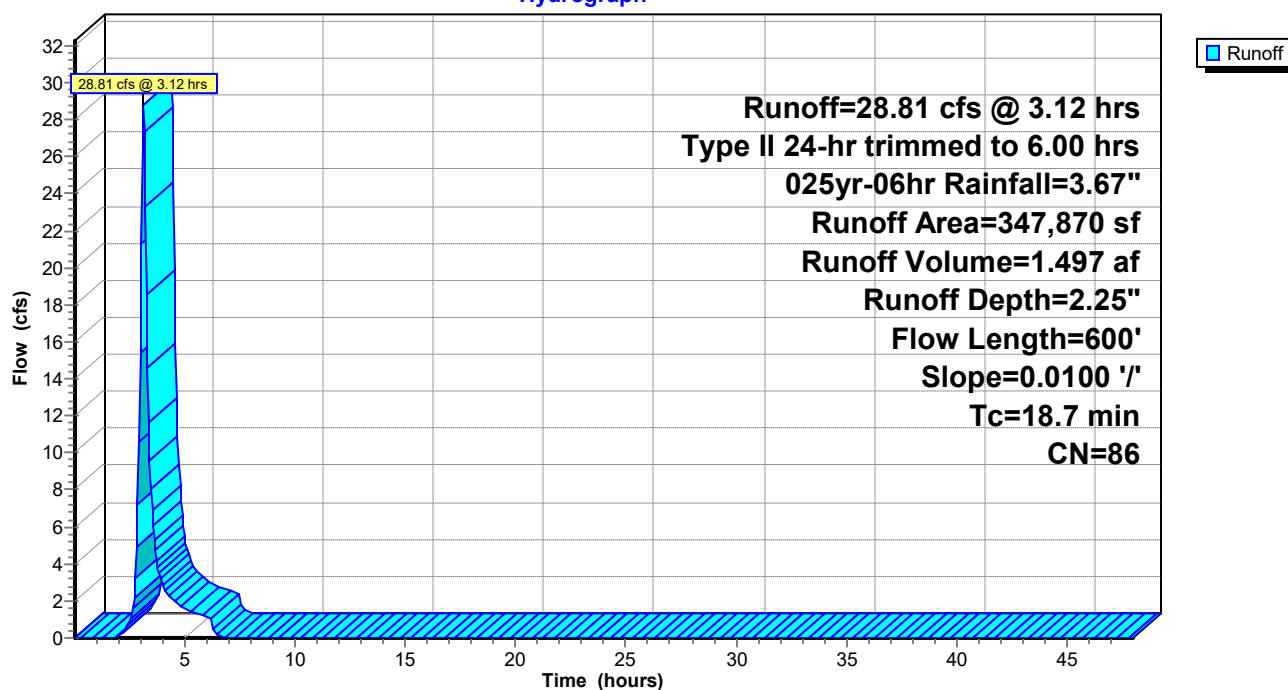
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 6.00 hrs 025yr-06hr Rainfall=3.67"

Area (sf)	CN	Description
169,520	74	>75% Grass cover, Good, HSG C
158,000	98	Paved parking, HSG C
20,350	98	Roofs, HSG C
347,870	86	Weighted Average
169,520		48.73% Pervious Area
178,350		51.27% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0100	0.12		Sheet Flow, Sheet Flow n= 0.150 P2= 2.92"
5.2	500	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc Unpaved Kv= 16.1 fps
18.7	600	Total			

Subcatchment 1s: EX1

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 6.00 hrs 025yr-06hr Rainfall=3.67"

Existing Conditions

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Summary for Subcatchment 2s: EX2

Runoff = 2.10 cfs @ 3.09 hrs, Volume= 0.099 af, Depth= 1.36"

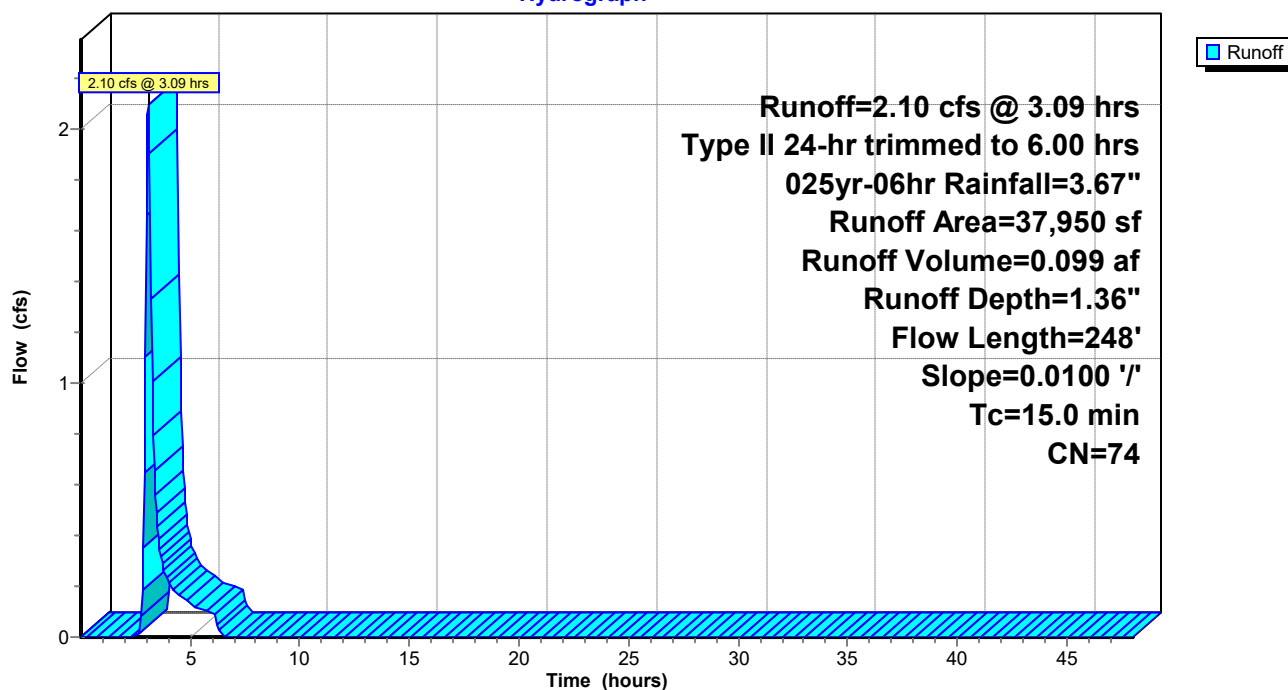
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 6.00 hrs 025yr-06hr Rainfall=3.67"

Area (sf)	CN	Description
37,950	74	>75% Grass cover, Good, HSG C
37,950		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0100	0.12		Sheet Flow, Sheet Flow
					Grass: Short n= 0.150 P2= 2.92"
1.5	148	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc
					Unpaved Kv= 16.1 fps
15.0	248	Total			

Subcatchment 2s: EX2

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 6.00 hrs 025yr-06hr Rainfall=3.67"

Existing Conditions

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Summary for Subcatchment 3s: EX3

Runoff = 1.70 cfs @ 3.09 hrs, Volume= 0.080 af, Depth= 1.36"

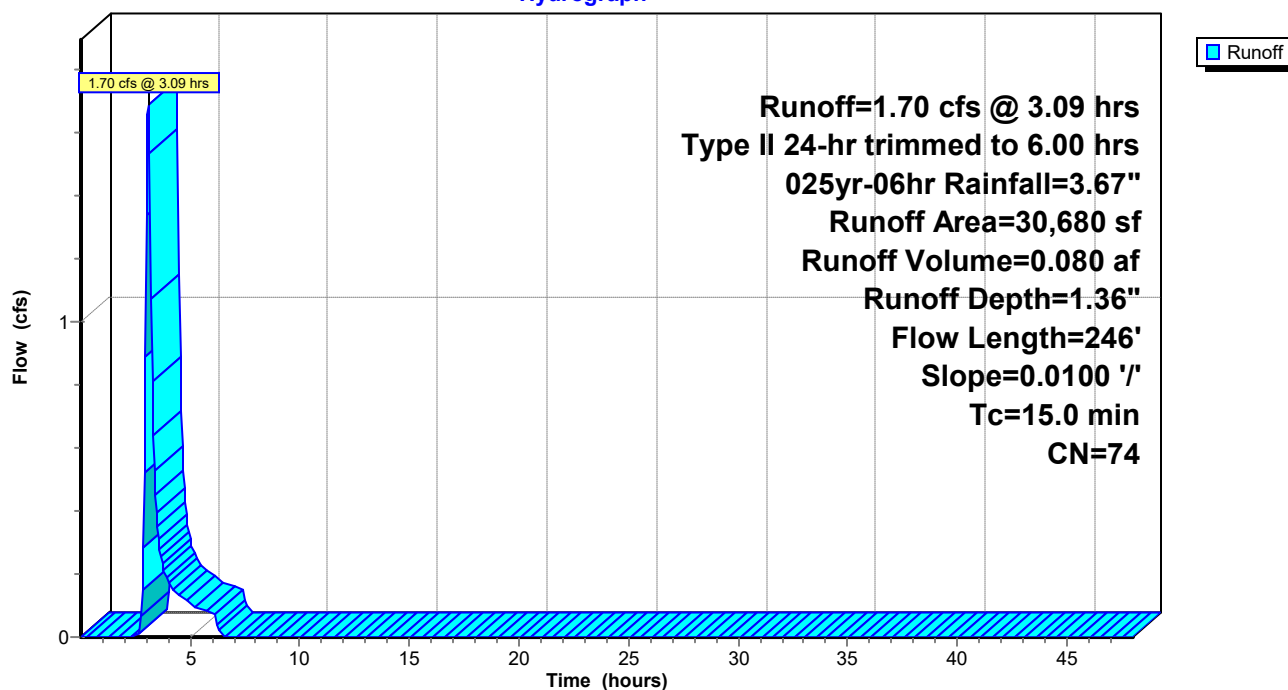
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 6.00 hrs 025yr-06hr Rainfall=3.67"

Area (sf)	CN	Description
30,680	74	>75% Grass cover, Good, HSG C
30,680		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0100	0.12		Sheet Flow, Sheet Flow
					Grass: Short n= 0.150 P2= 2.92"
1.5	146	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc
					Unpaved Kv= 16.1 fps
15.0	246	Total			

Subcatchment 3s: EX3

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 6.00 hrs 025yr-06hr Rainfall=3.67"

Existing Conditions

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Summary for Subcatchment 4s: EX4

Runoff = 11.48 cfs @ 2.96 hrs, Volume= 0.368 af, Depth= 1.92"

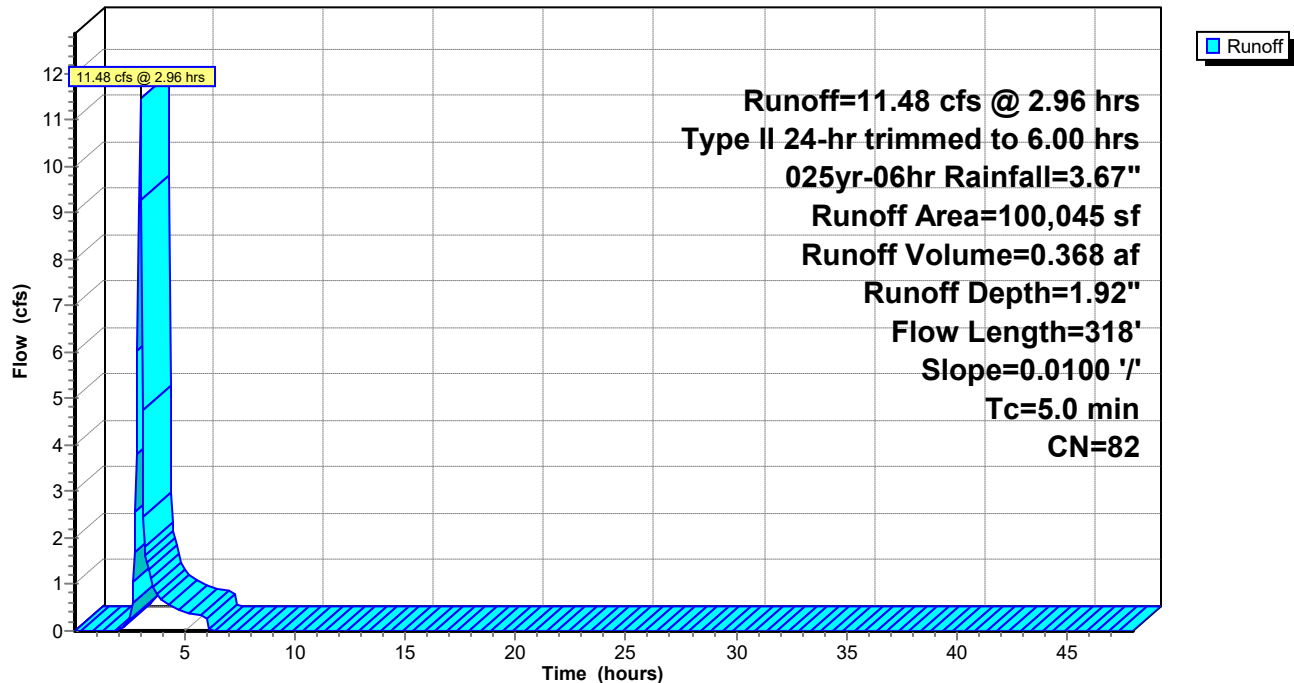
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 6.00 hrs 025yr-06hr Rainfall=3.67"

Area (sf)	CN	Description
64,745	74	>75% Grass cover, Good, HSG C
27,940	98	Paved parking, HSG C
7,360	98	Roofs, HSG C
100,045	82	Weighted Average
64,745		64.72% Pervious Area
35,300		35.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	100	0.0100	1.00		Sheet Flow, Sheet Flow
					Smooth surfaces n= 0.011 P2= 2.92"
2.3	218	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc
					Unpaved Kv= 16.1 fps
4.0	318	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 4s: EX4

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 6.00 hrs 025yr-06hr Rainfall=3.67"

Existing Conditions

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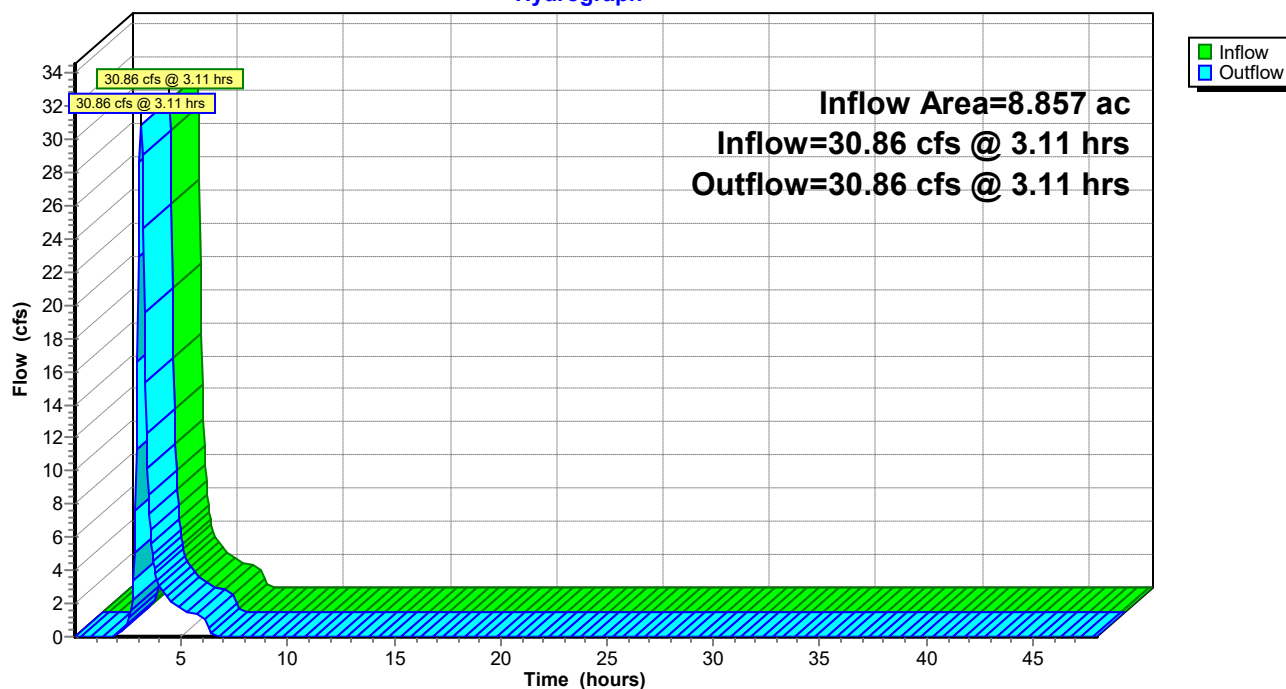
Summary for Reach 1R: US 31 DITCH

Inflow Area = 8.857 ac, 46.23% Impervious, Inflow Depth = 2.16" for 025yr-06hr event
Inflow = 30.86 cfs @ 3.11 hrs, Volume= 1.596 af
Outflow = 30.86 cfs @ 3.11 hrs, Volume= 1.596 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs

Reach 1R: US 31 DITCH

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 6.00 hrs 025yr-06hr Rainfall=3.67"

Existing Conditions

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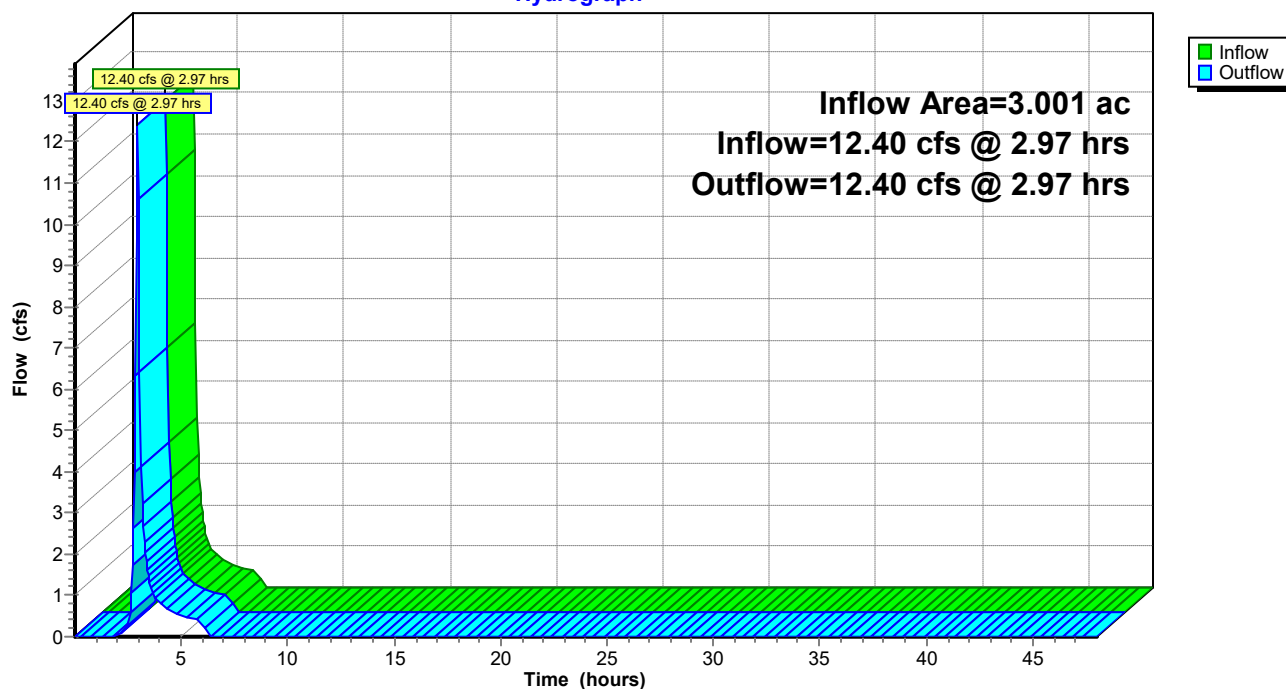
Summary for Reach 2R: EX POND TO WEST

Inflow Area = 3.001 ac, 27.00% Impervious, Inflow Depth = 1.79" for 025yr-06hr event
Inflow = 12.40 cfs @ 2.97 hrs, Volume= 0.448 af
Outflow = 12.40 cfs @ 2.97 hrs, Volume= 0.448 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs

Reach 2R: EX POND TO WEST

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS

Existing Conditions

Type II 24-hr trimmed to 12.00 hrs 025yr-12hr Rainfall=4.21"

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Time span=0.01-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1s: EX1 Runoff Area=347,870 sf 51.27% Impervious Runoff Depth=2.74"
Flow Length=600' Slope=0.0100 '/' Tc=18.7 min CN=86 Runoff=29.55 cfs 1.822 af

Subcatchment 2s: EX2 Runoff Area=37,950 sf 0.00% Impervious Runoff Depth=1.75"
Flow Length=248' Slope=0.0100 '/' Tc=15.0 min CN=74 Runoff=2.31 cfs 0.127 af

Subcatchment 3s: EX3 Runoff Area=30,680 sf 0.00% Impervious Runoff Depth=1.75"
Flow Length=246' Slope=0.0100 '/' Tc=15.0 min CN=74 Runoff=1.87 cfs 0.103 af

Subcatchment 4s: EX4 Runoff Area=100,045 sf 35.28% Impervious Runoff Depth=2.38"
Flow Length=318' Slope=0.0100 '/' Tc=5.0 min CN=82 Runoff=11.77 cfs 0.456 af

Reach 1R: US 31 DITCH Inflow=31.78 cfs 1.949 af
Outflow=31.78 cfs 1.949 af

Reach 2R: EX POND TO WEST Inflow=12.88 cfs 0.559 af
Outflow=12.88 cfs 0.559 af

Total Runoff Area = 11.858 ac Runoff Volume = 2.508 af Average Runoff Depth = 2.54"
58.64% Pervious = 6.954 ac 41.36% Impervious = 4.905 ac

BDH REALTY COMMERCIAL DEV-EX CONDITIONS

Existing Conditions

Type II 24-hr trimmed to 12.00 hrs 025yr-12hr Rainfall=4.21"

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Summary for Subcatchment 1s: EX1

Runoff = 29.55 cfs @ 6.11 hrs, Volume= 1.822 af, Depth= 2.74"

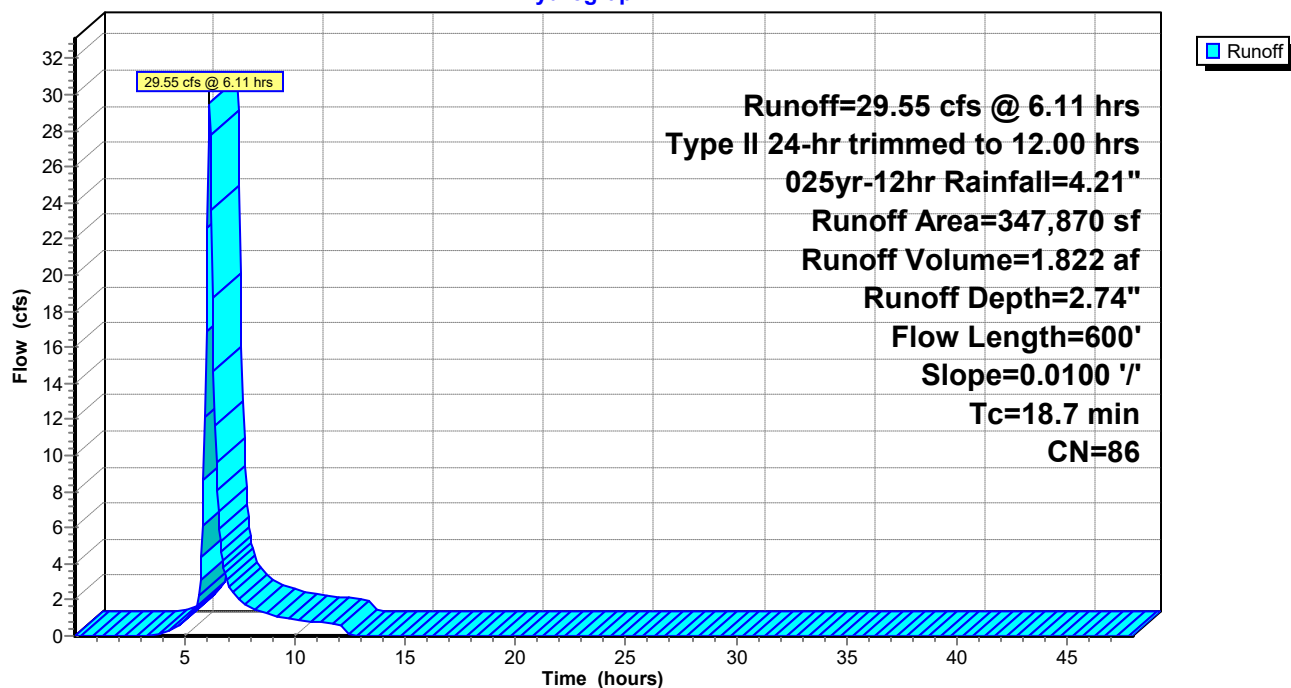
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 12.00 hrs 025yr-12hr Rainfall=4.21"

Area (sf)	CN	Description
169,520	74	>75% Grass cover, Good, HSG C
158,000	98	Paved parking, HSG C
20,350	98	Roofs, HSG C
347,870	86	Weighted Average
169,520		48.73% Pervious Area
178,350		51.27% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0100	0.12		Sheet Flow, Sheet Flow n= 0.150 P2= 2.92"
5.2	500	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc Unpaved Kv= 16.1 fps
18.7	600	Total			

Subcatchment 1s: EX1

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS

Existing Conditions

Type II 24-hr trimmed to 12.00 hrs 025yr-12hr Rainfall=4.21"

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Summary for Subcatchment 2s: EX2

Runoff = 2.31 cfs @ 6.08 hrs, Volume= 0.127 af, Depth= 1.75"

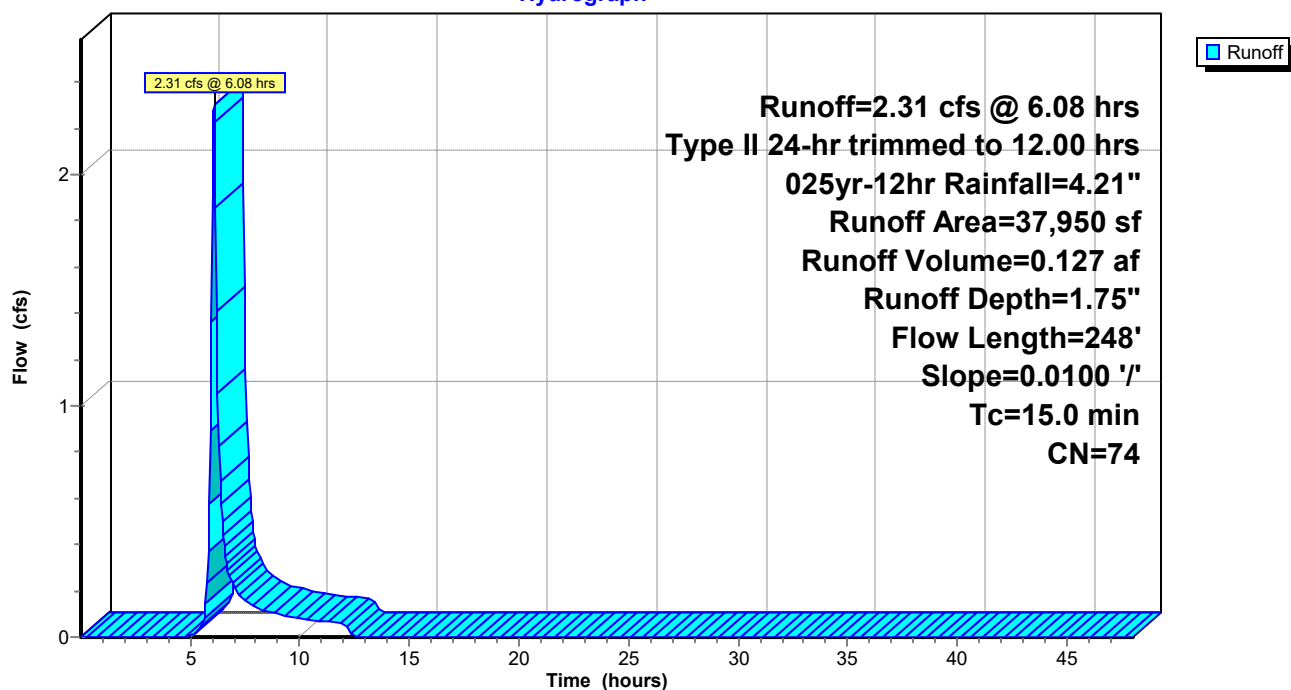
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 12.00 hrs 025yr-12hr Rainfall=4.21"

Area (sf)	CN	Description
37,950	74	>75% Grass cover, Good, HSG C
37,950		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0100	0.12		Sheet Flow, Sheet Flow
					Grass: Short n= 0.150 P2= 2.92"
1.5	148	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc
					Unpaved Kv= 16.1 fps
15.0	248	Total			

Subcatchment 2s: EX2

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS

Existing Conditions

Type II 24-hr trimmed to 12.00 hrs 025yr-12hr Rainfall=4.21"

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Summary for Subcatchment 3s: EX3

Runoff = 1.87 cfs @ 6.08 hrs, Volume= 0.103 af, Depth= 1.75"

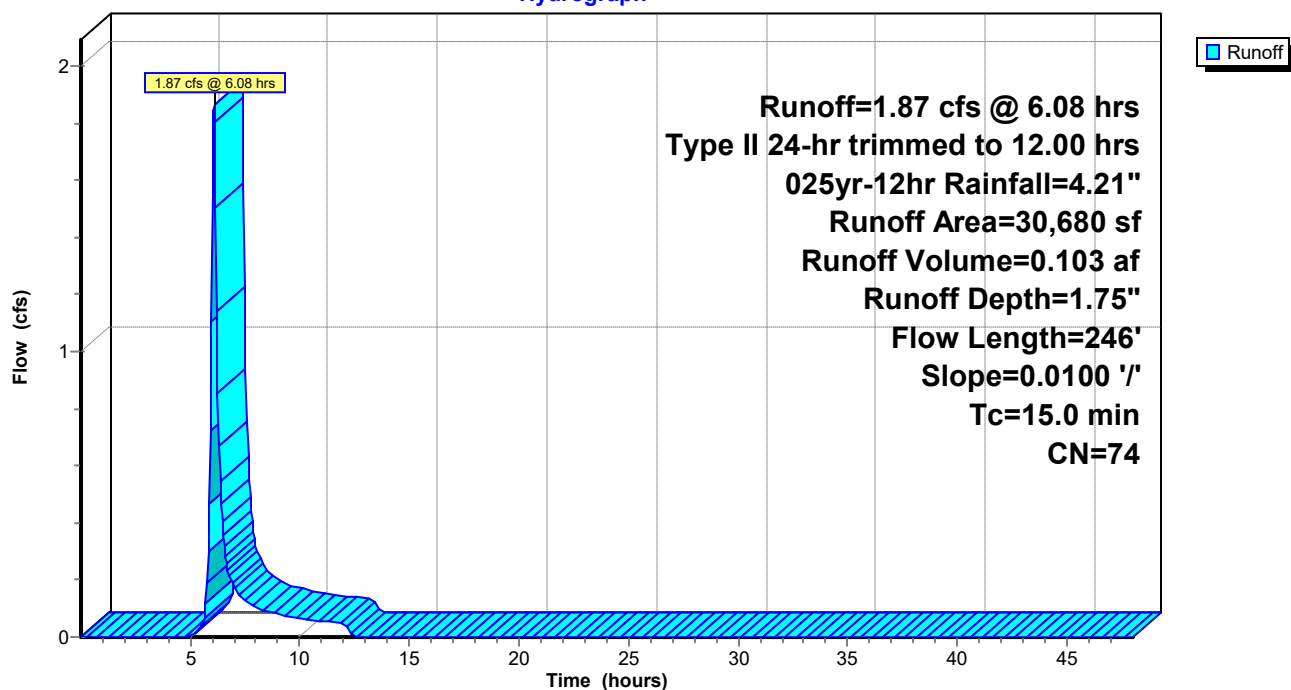
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 12.00 hrs 025yr-12hr Rainfall=4.21"

Area (sf)	CN	Description
30,680	74	>75% Grass cover, Good, HSG C
30,680		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0100	0.12		Sheet Flow, Sheet Flow
					Grass: Short n= 0.150 P2= 2.92"
1.5	146	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc
					Unpaved Kv= 16.1 fps
15.0	246	Total			

Subcatchment 3s: EX3

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS

Existing Conditions

Type II 24-hr trimmed to 12.00 hrs 025yr-12hr Rainfall=4.21"

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Summary for Subcatchment 4s: EX4

Runoff = 11.77 cfs @ 5.96 hrs, Volume= 0.456 af, Depth= 2.38"

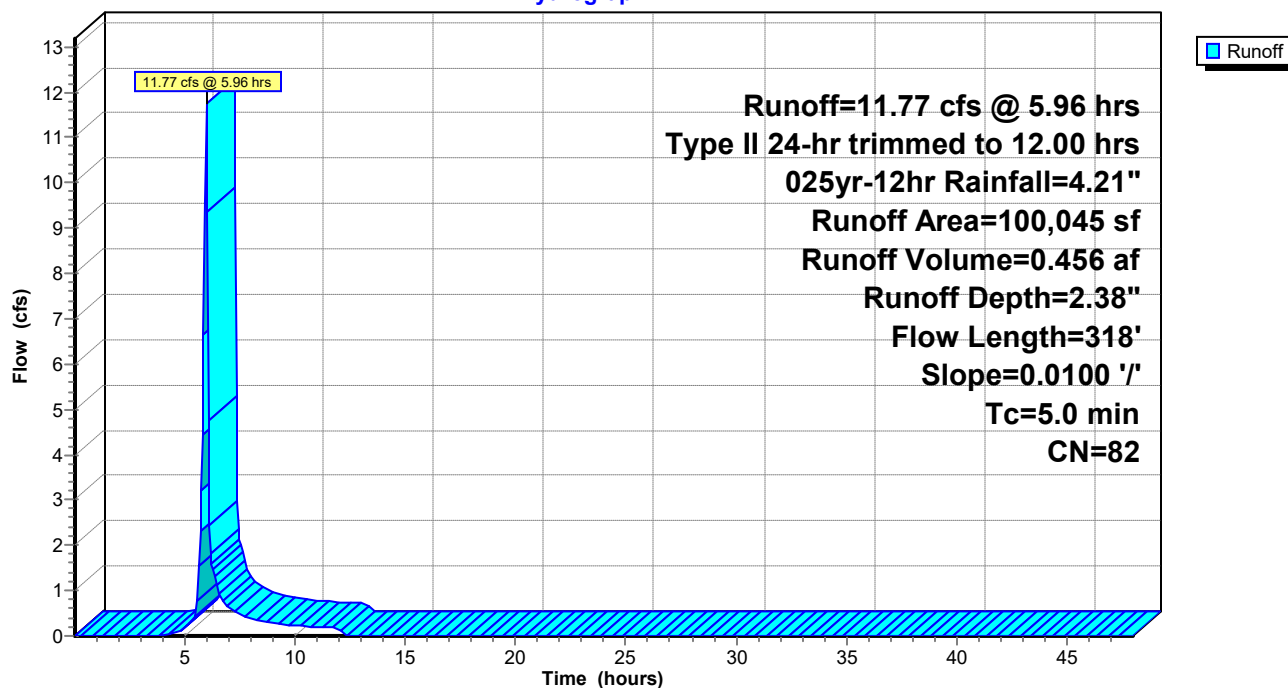
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 12.00 hrs 025yr-12hr Rainfall=4.21"

Area (sf)	CN	Description
64,745	74	>75% Grass cover, Good, HSG C
27,940	98	Paved parking, HSG C
7,360	98	Roofs, HSG C
100,045	82	Weighted Average
64,745		64.72% Pervious Area
35,300		35.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	100	0.0100	1.00		Sheet Flow, Sheet Flow
					Smooth surfaces n= 0.011 P2= 2.92"
2.3	218	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc
					Unpaved Kv= 16.1 fps
4.0	318	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 4s: EX4

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS

Existing Conditions

Type II 24-hr trimmed to 12.00 hrs 025yr-12hr Rainfall=4.21"

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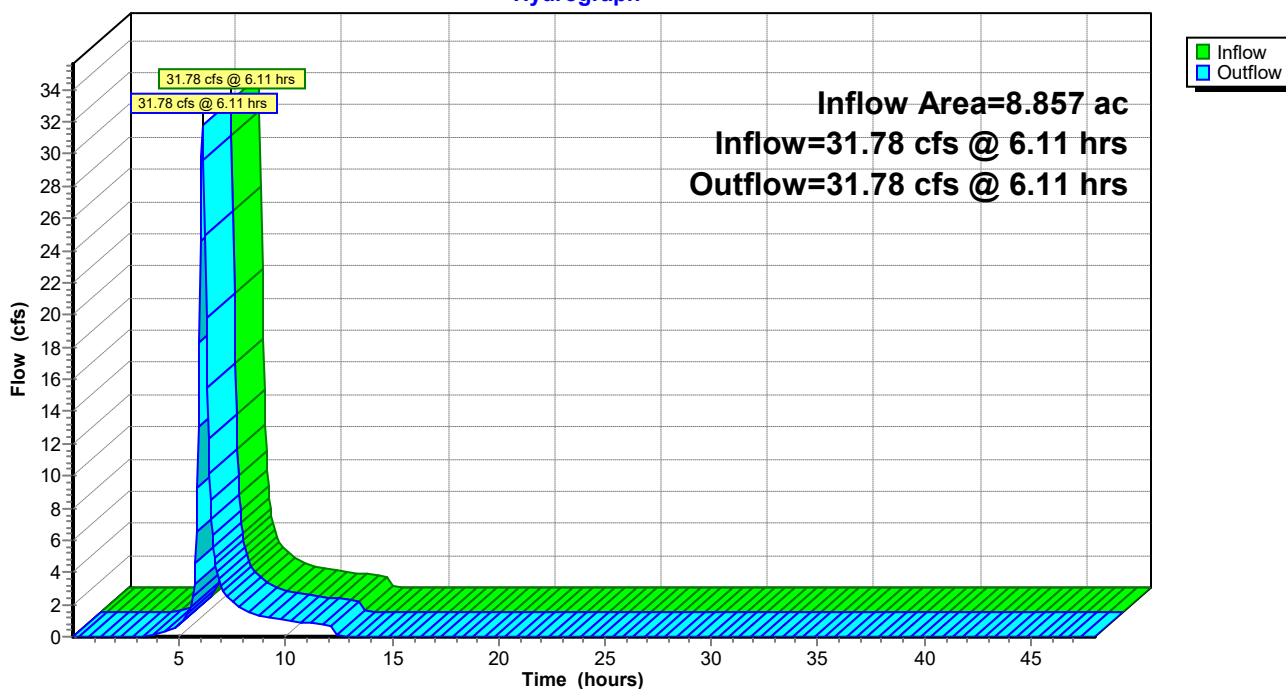
Summary for Reach 1R: US 31 DITCH

Inflow Area = 8.857 ac, 46.23% Impervious, Inflow Depth = 2.64" for 025yr-12hr event
Inflow = 31.78 cfs @ 6.11 hrs, Volume= 1.949 af
Outflow = 31.78 cfs @ 6.11 hrs, Volume= 1.949 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs

Reach 1R: US 31 DITCH

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS

Existing Conditions

Type II 24-hr trimmed to 12.00 hrs 025yr-12hr Rainfall=4.21"

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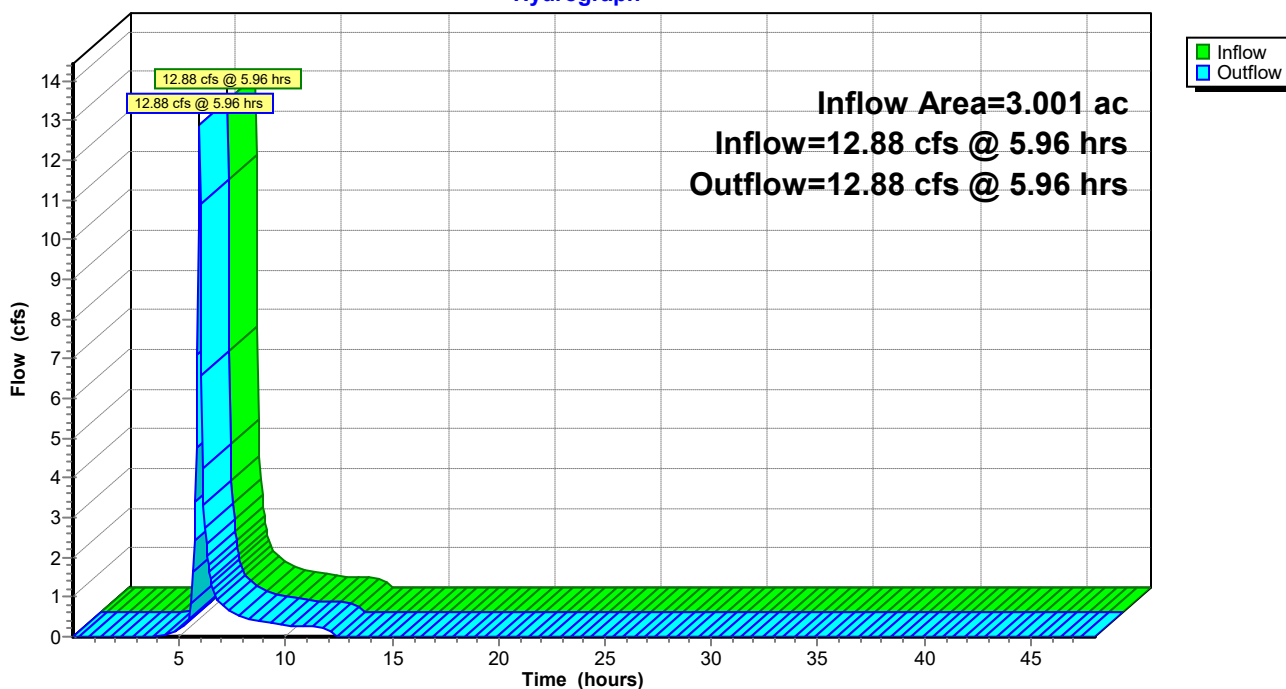
Summary for Reach 2R: EX POND TO WEST

Inflow Area = 3.001 ac, 27.00% Impervious, Inflow Depth = 2.24" for 025yr-12hr event
Inflow = 12.88 cfs @ 5.96 hrs, Volume= 0.559 af
Outflow = 12.88 cfs @ 5.96 hrs, Volume= 0.559 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs

Reach 2R: EX POND TO WEST

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS

Type II 24-hr 025yr-24hr Rainfall=4.79"

Existing Conditions

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Time span=0.01-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1s: EX1 Runoff Area=347,870 sf 51.27% Impervious Runoff Depth=3.27"
Flow Length=600' Slope=0.0100 '/' Tc=18.7 min CN=86 Runoff=29.68 cfs 2.177 af

Subcatchment 2s: EX2 Runoff Area=37,950 sf 0.00% Impervious Runoff Depth=2.20"
Flow Length=248' Slope=0.0100 '/' Tc=15.0 min CN=74 Runoff=2.45 cfs 0.160 af

Subcatchment 3s: EX3 Runoff Area=30,680 sf 0.00% Impervious Runoff Depth=2.20"
Flow Length=246' Slope=0.0100 '/' Tc=15.0 min CN=74 Runoff=1.98 cfs 0.129 af

Subcatchment 4s: EX4 Runoff Area=100,045 sf 35.28% Impervious Runoff Depth=2.89"
Flow Length=318' Slope=0.0100 '/' Tc=5.0 min CN=82 Runoff=11.86 cfs 0.553 af

Reach 1R: US 31 DITCH Inflow=32.04 cfs 2.337 af
Outflow=32.04 cfs 2.337 af

Reach 2R: EX POND TO WEST Inflow=13.11 cfs 0.683 af
Outflow=13.11 cfs 0.683 af

Total Runoff Area = 11.858 ac Runoff Volume = 3.019 af Average Runoff Depth = 3.06"
58.64% Pervious = 6.954 ac 41.36% Impervious = 4.905 ac

BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr 025yr-24hr Rainfall=4.79"

Existing Conditions

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Summary for Subcatchment 1s: EX1

Runoff = 29.68 cfs @ 12.11 hrs, Volume= 2.177 af, Depth= 3.27"

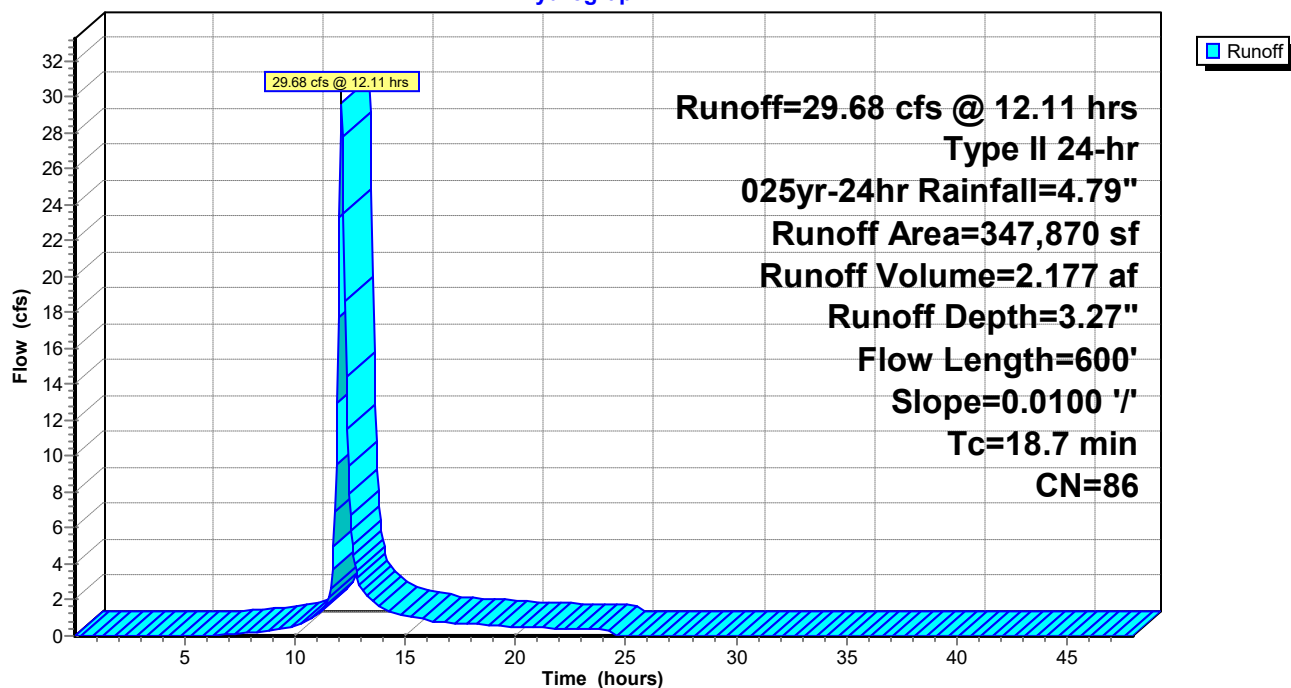
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr 025yr-24hr Rainfall=4.79"

Area (sf)	CN	Description
169,520	74	>75% Grass cover, Good, HSG C
158,000	98	Paved parking, HSG C
20,350	98	Roofs, HSG C
347,870	86	Weighted Average
169,520		48.73% Pervious Area
178,350		51.27% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0100	0.12		Sheet Flow, Sheet Flow n= 0.150 P2= 2.92"
5.2	500	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc Unpaved Kv= 16.1 fps
18.7	600	Total			

Subcatchment 1s: EX1

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS

Type II 24-hr 025yr-24hr Rainfall=4.79"

Existing Conditions

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Summary for Subcatchment 2s: EX2

Runoff = 2.45 cfs @ 12.07 hrs, Volume= 0.160 af, Depth= 2.20"

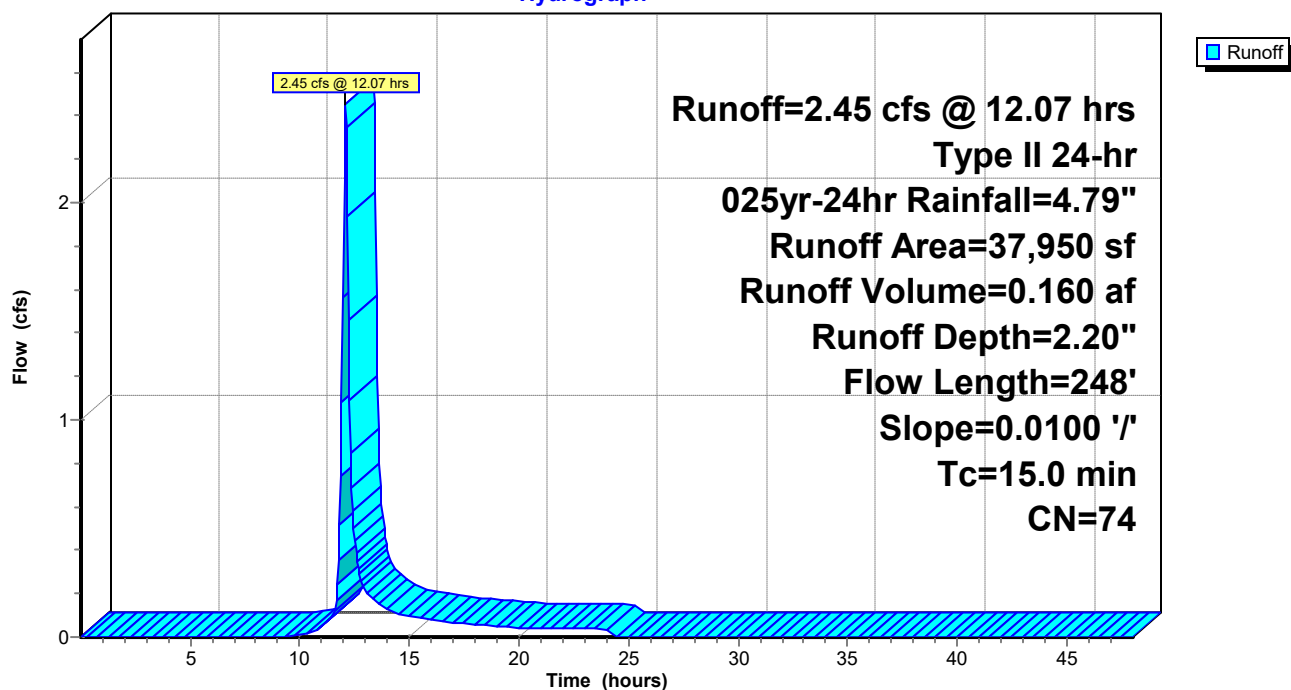
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr 025yr-24hr Rainfall=4.79"

Area (sf)	CN	Description
37,950	74	>75% Grass cover, Good, HSG C
37,950		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0100	0.12		Sheet Flow, Sheet Flow
					Grass: Short n= 0.150 P2= 2.92"
1.5	148	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc
					Unpaved Kv= 16.1 fps
15.0	248	Total			

Subcatchment 2s: EX2

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS

Type II 24-hr 025yr-24hr Rainfall=4.79"

Existing Conditions

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Summary for Subcatchment 3s: EX3

Runoff = 1.98 cfs @ 12.07 hrs, Volume= 0.129 af, Depth= 2.20"

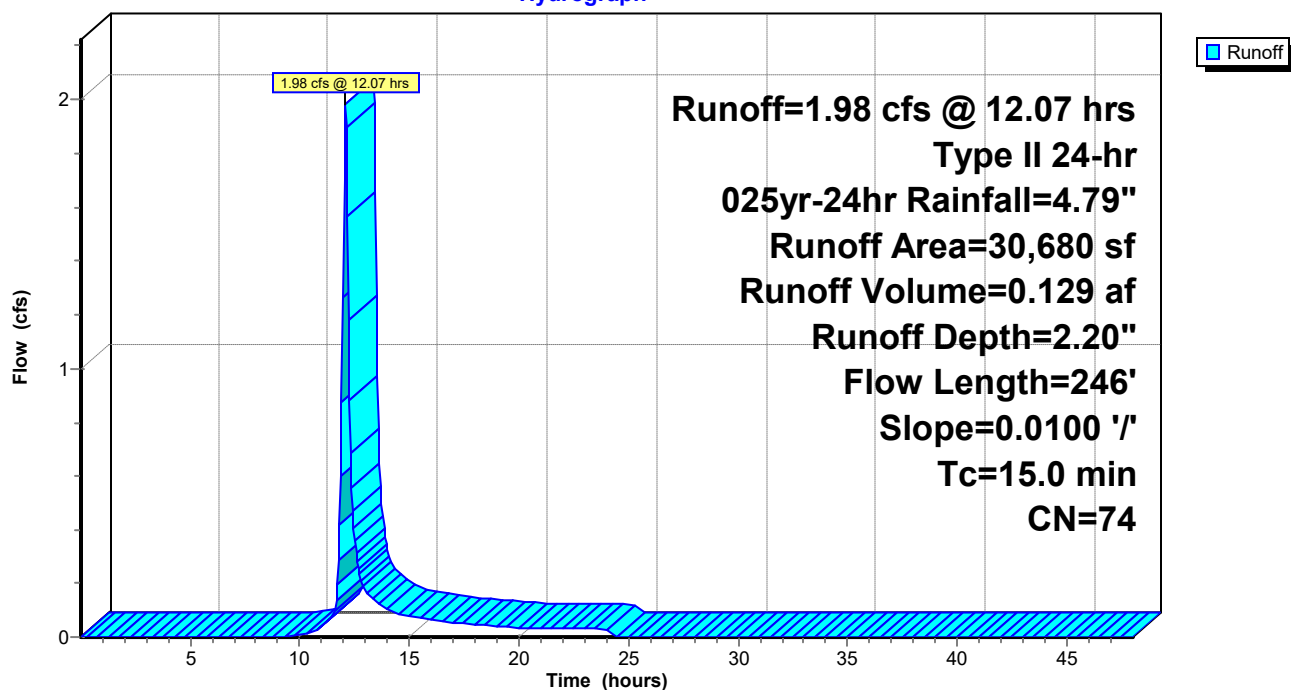
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr 025yr-24hr Rainfall=4.79"

Area (sf)	CN	Description
30,680	74	>75% Grass cover, Good, HSG C
30,680		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0100	0.12		Sheet Flow, Sheet Flow
					Grass: Short n= 0.150 P2= 2.92"
1.5	146	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc
					Unpaved Kv= 16.1 fps
15.0	246	Total			

Subcatchment 3s: EX3

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr 025yr-24hr Rainfall=4.79"

Existing Conditions

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Summary for Subcatchment 4s: EX4

Runoff = 11.86 cfs @ 11.96 hrs, Volume= 0.553 af, Depth= 2.89"

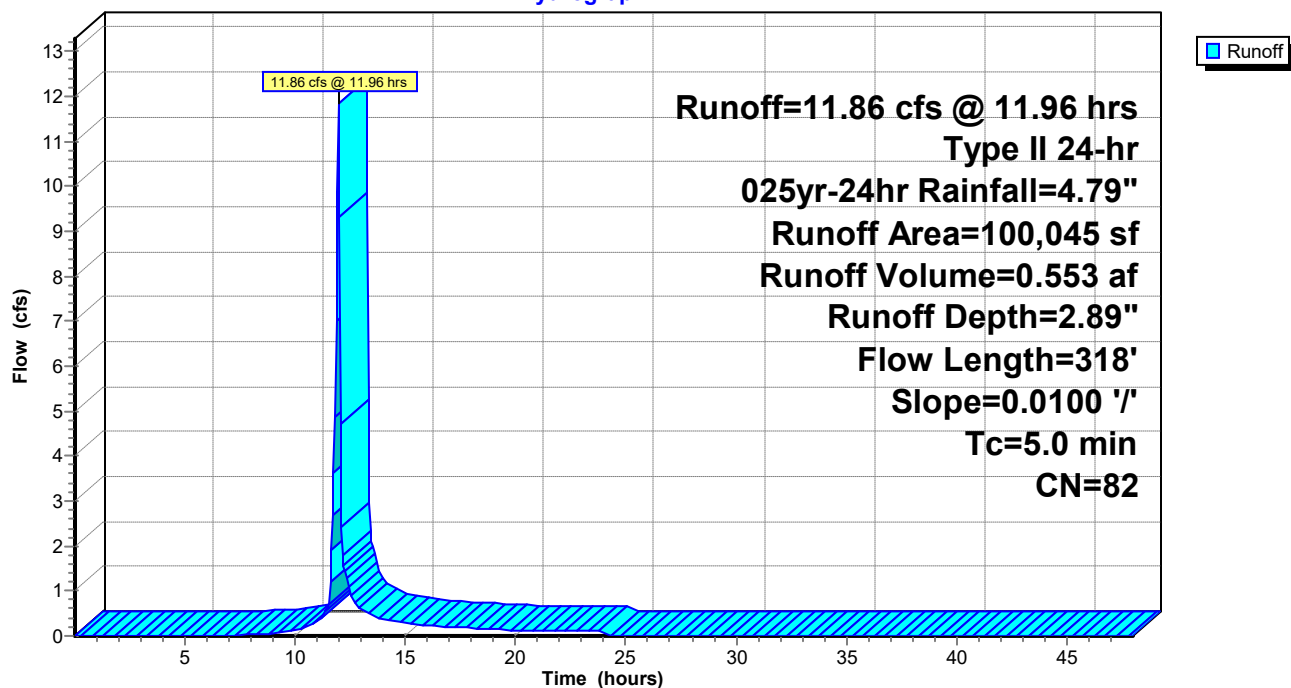
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr 025yr-24hr Rainfall=4.79"

Area (sf)	CN	Description
64,745	74	>75% Grass cover, Good, HSG C
27,940	98	Paved parking, HSG C
7,360	98	Roofs, HSG C
100,045	82	Weighted Average
64,745		64.72% Pervious Area
35,300		35.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	100	0.0100	1.00		Sheet Flow, Sheet Flow
					Smooth surfaces n= 0.011 P2= 2.92"
2.3	218	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc
					Unpaved Kv= 16.1 fps
4.0	318	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 4s: EX4

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS

Type II 24-hr 025yr-24hr Rainfall=4.79"

Existing Conditions

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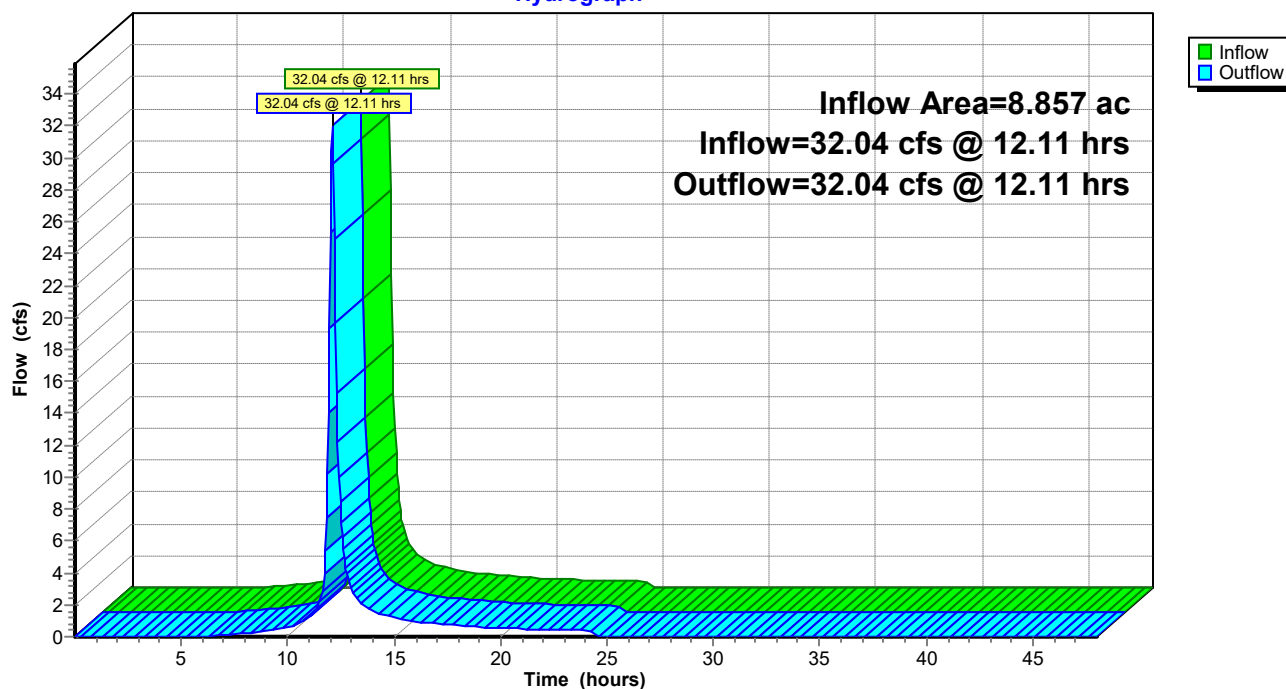
Summary for Reach 1R: US 31 DITCH

Inflow Area = 8.857 ac, 46.23% Impervious, Inflow Depth = 3.17" for 025yr-24hr event
Inflow = 32.04 cfs @ 12.11 hrs, Volume= 2.337 af
Outflow = 32.04 cfs @ 12.11 hrs, Volume= 2.337 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs

Reach 1R: US 31 DITCH

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr 025yr-24hr Rainfall=4.79"

Existing Conditions

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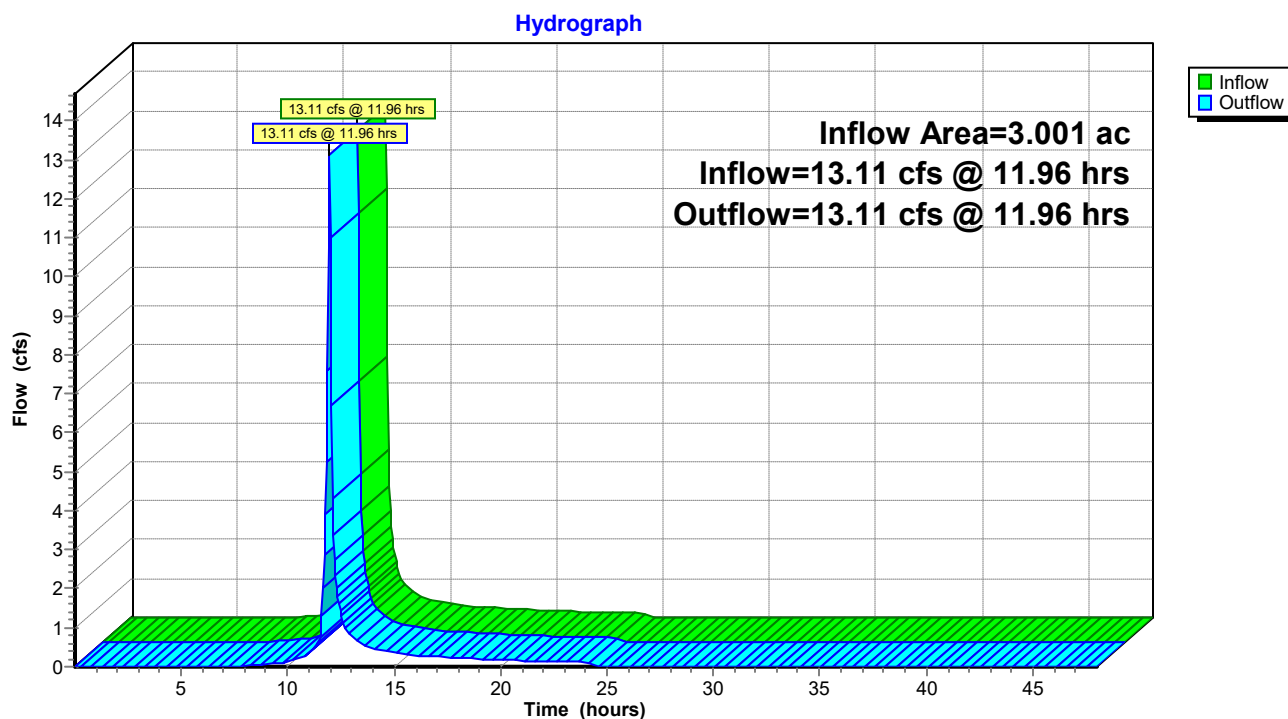
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Summary for Reach 2R: EX POND TO WEST

Inflow Area = 3.001 ac, 27.00% Impervious, Inflow Depth = 2.73" for 025yr-24hr event
Inflow = 13.11 cfs @ 11.96 hrs, Volume= 0.683 af
Outflow = 13.11 cfs @ 11.96 hrs, Volume= 0.683 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs

Reach 2R: EX POND TO WEST



Existing Conditions

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BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 1.00 hrs 050yr-01hr Rainfall=2.70"

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Time span=0.01-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1s: EX1 Runoff Area=347,870 sf 51.27% Impervious Runoff Depth=1.41"
Flow Length=600' Slope=0.0100 '/' Tc=18.7 min CN=86 Runoff=26.52 cfs 0.937 af

Subcatchment 2s: EX2 Runoff Area=37,950 sf 0.00% Impervious Runoff Depth=0.72"
Flow Length=248' Slope=0.0100 '/' Tc=15.0 min CN=74 Runoff=1.67 cfs 0.053 af

Subcatchment 3s: EX3 Runoff Area=30,680 sf 0.00% Impervious Runoff Depth=0.72"
Flow Length=246' Slope=0.0100 '/' Tc=15.0 min CN=74 Runoff=1.35 cfs 0.042 af

Subcatchment 4s: EX4 Runoff Area=100,045 sf 35.28% Impervious Runoff Depth=1.15"
Flow Length=318' Slope=0.0100 '/' Tc=5.0 min CN=82 Runoff=11.03 cfs 0.220 af

Reach 1R: US 31 DITCH Inflow=28.15 cfs 0.990 af
Outflow=28.15 cfs 0.990 af

Reach 2R: EX POND TO WEST Inflow=11.49 cfs 0.262 af
Outflow=11.49 cfs 0.262 af

Total Runoff Area = 11.858 ac Runoff Volume = 1.252 af Average Runoff Depth = 1.27"
58.64% Pervious = 6.954 ac 41.36% Impervious = 4.905 ac

BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 1.00 hrs 050yr-01hr Rainfall=2.70"

Existing Conditions

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Summary for Subcatchment 1s: EX1

Runoff = 26.52 cfs @ 0.63 hrs, Volume= 0.937 af, Depth= 1.41"

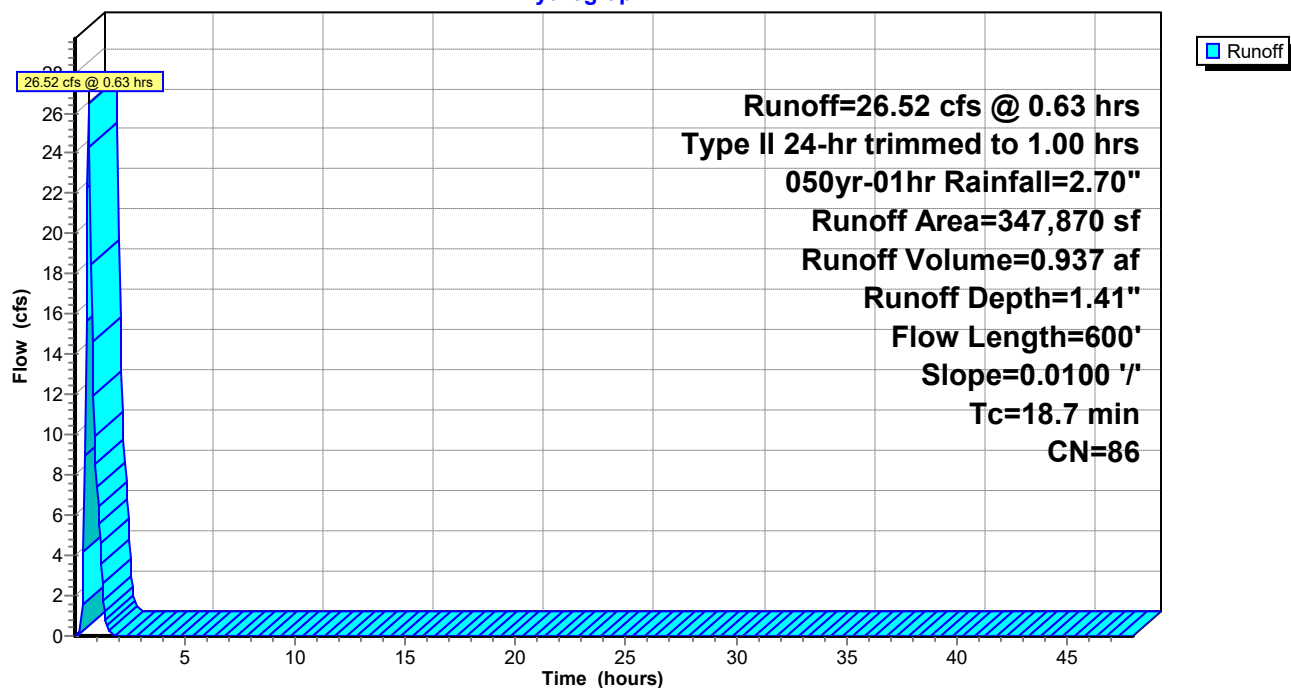
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 1.00 hrs 050yr-01hr Rainfall=2.70"

Area (sf)	CN	Description
169,520	74	>75% Grass cover, Good, HSG C
158,000	98	Paved parking, HSG C
20,350	98	Roofs, HSG C
347,870	86	Weighted Average
169,520		48.73% Pervious Area
178,350		51.27% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0100	0.12		Sheet Flow, Sheet Flow n= 0.150 P2= 2.92"
5.2	500	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc Unpaved Kv= 16.1 fps
18.7	600	Total			

Subcatchment 1s: EX1

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 1.00 hrs 050yr-01hr Rainfall=2.70"

Existing Conditions

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Summary for Subcatchment 2s: EX2

Runoff = 1.67 cfs @ 0.61 hrs, Volume= 0.053 af, Depth= 0.72"

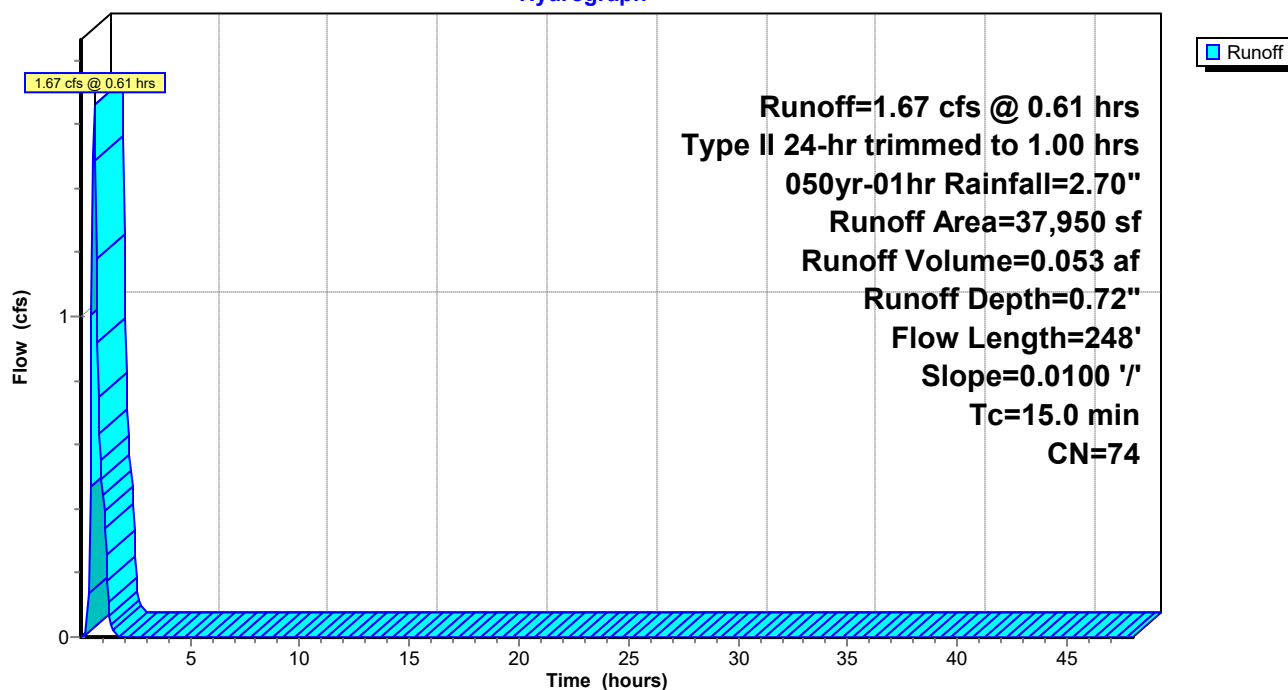
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 1.00 hrs 050yr-01hr Rainfall=2.70"

Area (sf)	CN	Description
37,950	74	>75% Grass cover, Good, HSG C
37,950		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0100	0.12		Sheet Flow, Sheet Flow
					Grass: Short n= 0.150 P2= 2.92"
1.5	148	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc
					Unpaved Kv= 16.1 fps
15.0	248	Total			

Subcatchment 2s: EX2

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 1.00 hrs 050yr-01hr Rainfall=2.70"

Existing Conditions

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Summary for Subcatchment 3s: EX3

Runoff = 1.35 cfs @ 0.61 hrs, Volume= 0.042 af, Depth= 0.72"

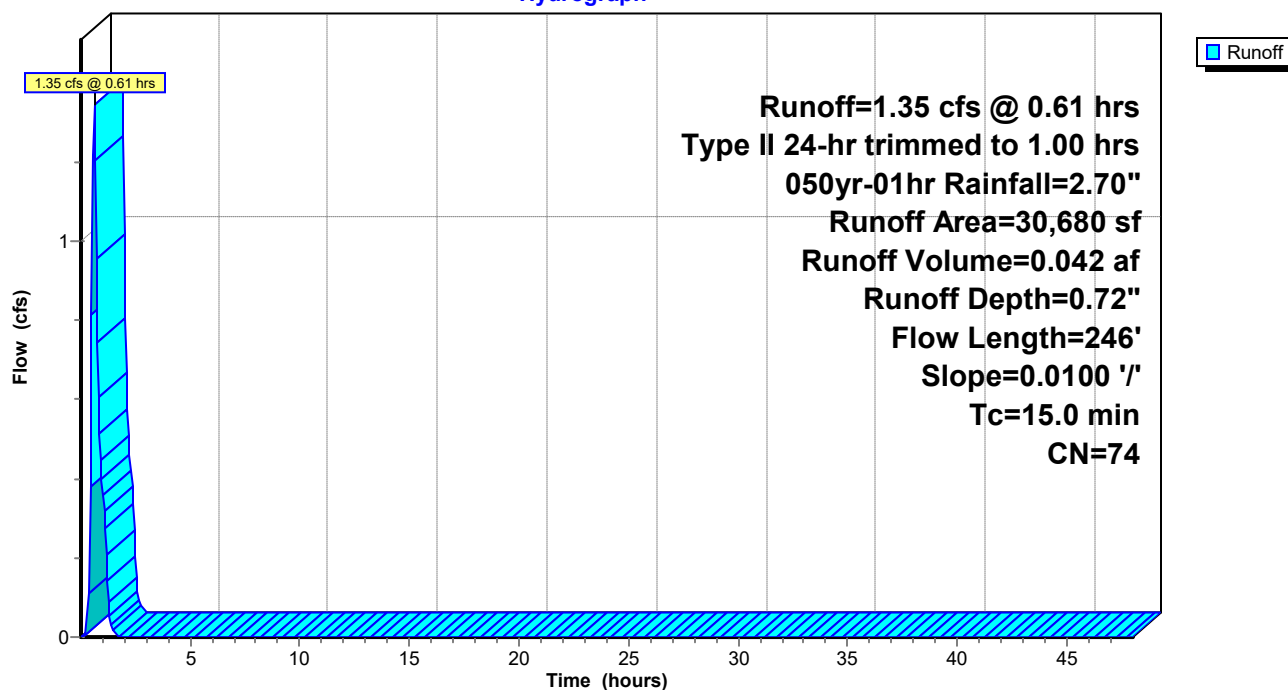
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 1.00 hrs 050yr-01hr Rainfall=2.70"

Area (sf)	CN	Description
30,680	74	>75% Grass cover, Good, HSG C
30,680		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0100	0.12		Sheet Flow, Sheet Flow Grass: Short n= 0.150 P2= 2.92"
1.5	146	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc Unpaved Kv= 16.1 fps
15.0	246	Total			

Subcatchment 3s: EX3

Hydrograph



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BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 1.00 hrs 050yr-01hr Rainfall=2.70"

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Summary for Subcatchment 4s: EX4

Runoff = 11.03 cfs @ 0.47 hrs, Volume= 0.220 af, Depth= 1.15"

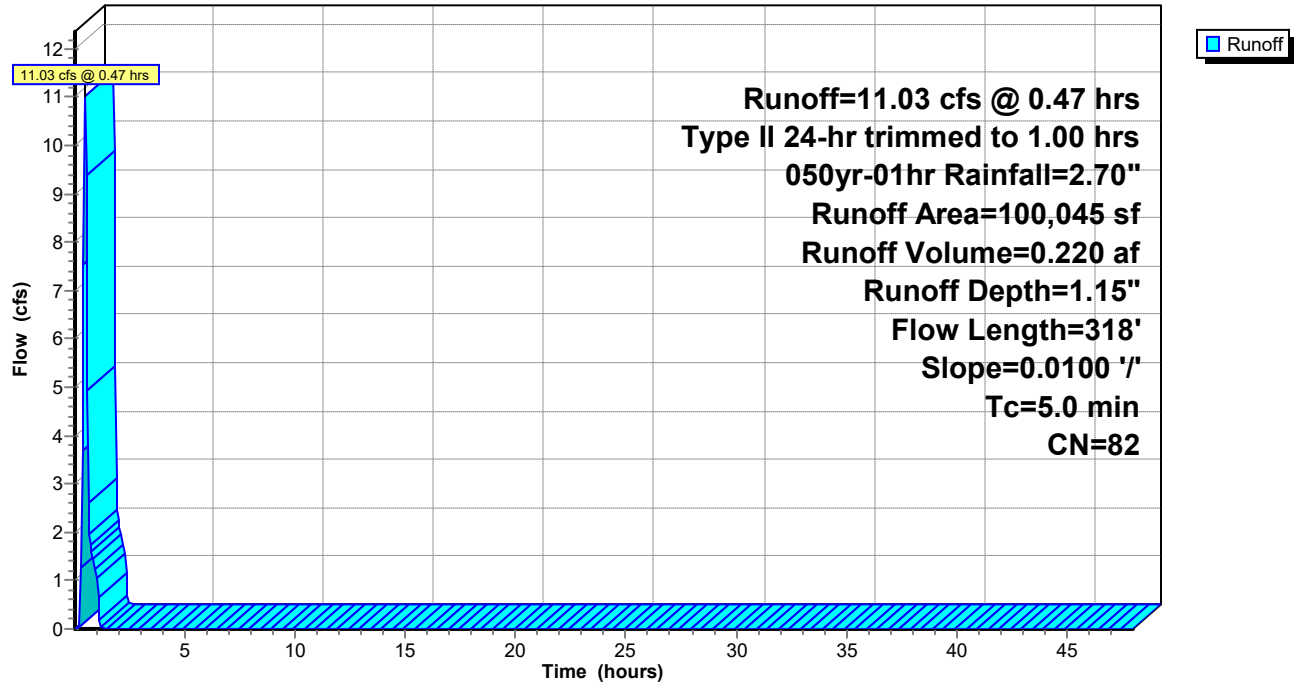
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 1.00 hrs 050yr-01hr Rainfall=2.70"

Area (sf)	CN	Description
64,745	74	>75% Grass cover, Good, HSG C
27,940	98	Paved parking, HSG C
7,360	98	Roofs, HSG C
100,045	82	Weighted Average
64,745		64.72% Pervious Area
35,300		35.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	100	0.0100	1.00		Sheet Flow, Sheet Flow
					Smooth surfaces n= 0.011 P2= 2.92"
2.3	218	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc
					Unpaved Kv= 16.1 fps
4.0	318	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 4s: EX4

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 1.00 hrs 050yr-01hr Rainfall=2.70"

Existing Conditions

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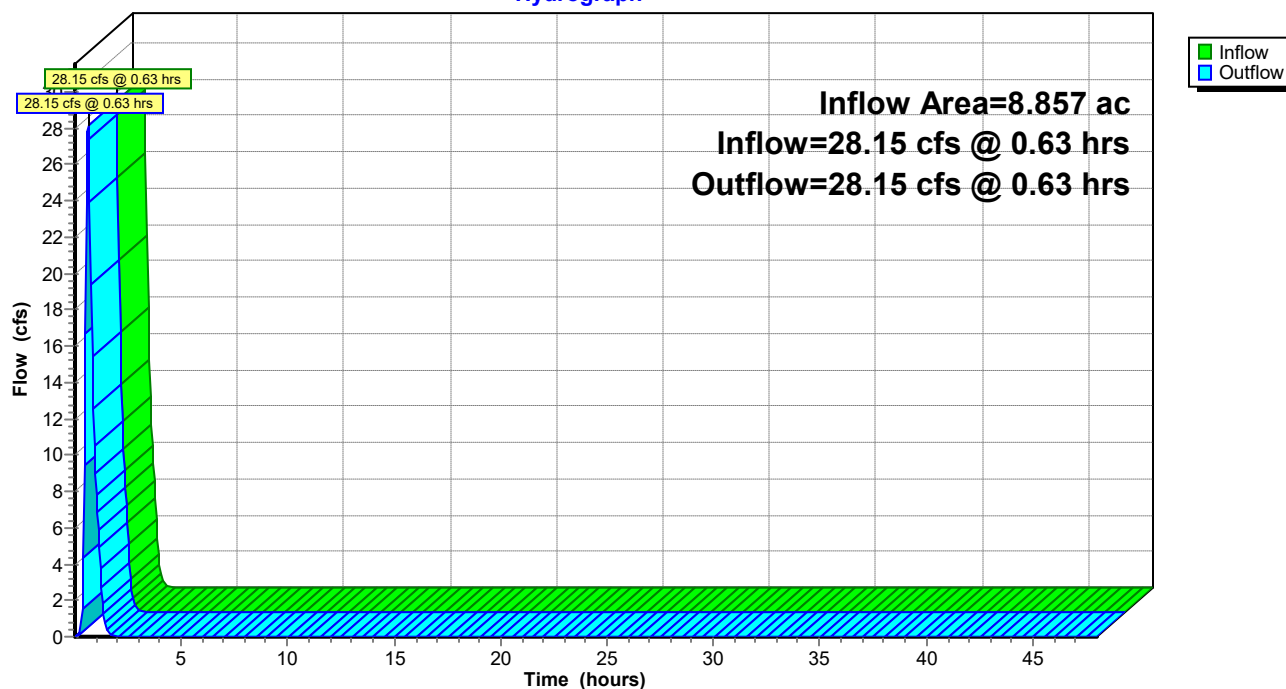
Summary for Reach 1R: US 31 DITCH

Inflow Area = 8.857 ac, 46.23% Impervious, Inflow Depth = 1.34" for 050yr-01hr event
Inflow = 28.15 cfs @ 0.63 hrs, Volume= 0.990 af
Outflow = 28.15 cfs @ 0.63 hrs, Volume= 0.990 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs

Reach 1R: US 31 DITCH

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 1.00 hrs 050yr-01hr Rainfall=2.70"

Existing Conditions

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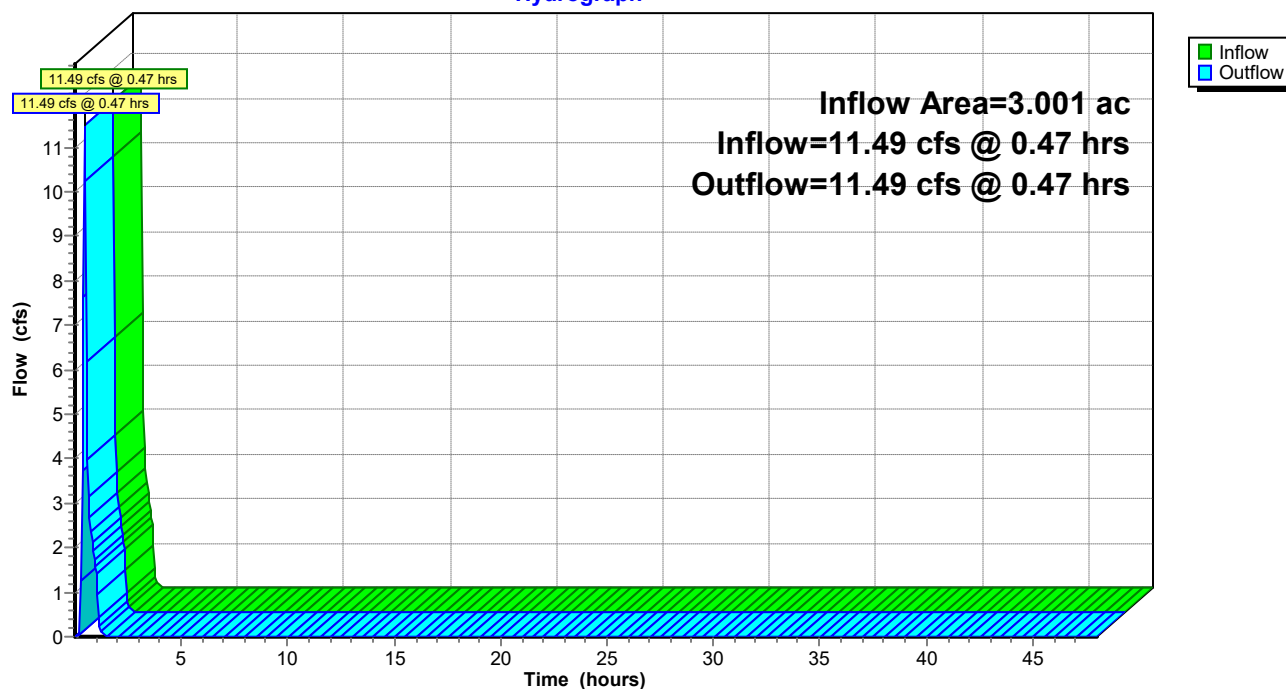
Summary for Reach 2R: EX POND TO WEST

Inflow Area = 3.001 ac, 27.00% Impervious, Inflow Depth = 1.05" for 050yr-01hr event
Inflow = 11.49 cfs @ 0.47 hrs, Volume= 0.262 af
Outflow = 11.49 cfs @ 0.47 hrs, Volume= 0.262 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs

Reach 2R: EX POND TO WEST

Hydrograph



Existing Conditions

BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 2.00 hrs 050yr-02hr Rainfall=3.23"

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Time span=0.01-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1s: EX1 Runoff Area=347,870 sf 51.27% Impervious Runoff Depth=1.86"
Flow Length=600' Slope=0.0100 '/' Tc=18.7 min CN=86 Runoff=30.55 cfs 1.239 af

Subcatchment 2s: EX2 Runoff Area=37,950 sf 0.00% Impervious Runoff Depth=1.06"
Flow Length=248' Slope=0.0100 '/' Tc=15.0 min CN=74 Runoff=2.11 cfs 0.077 af

Subcatchment 3s: EX3 Runoff Area=30,680 sf 0.00% Impervious Runoff Depth=1.06"
Flow Length=246' Slope=0.0100 '/' Tc=15.0 min CN=74 Runoff=1.70 cfs 0.062 af

Subcatchment 4s: EX4 Runoff Area=100,045 sf 35.28% Impervious Runoff Depth=1.56"
Flow Length=318' Slope=0.0100 '/' Tc=5.0 min CN=82 Runoff=12.49 cfs 0.299 af

Reach 1R: US 31 DITCH Inflow=32.61 cfs 1.315 af
Outflow=32.61 cfs 1.315 af

Reach 2R: EX POND TO WEST Inflow=13.24 cfs 0.361 af
Outflow=13.24 cfs 0.361 af

Total Runoff Area = 11.858 ac Runoff Volume = 1.676 af Average Runoff Depth = 1.70"
58.64% Pervious = 6.954 ac 41.36% Impervious = 4.905 ac

BDH REALTY COMMERCIAL DEV-EX CONDITIONS

Existing Conditions

Type II 24-hr trimmed to 2.00 hrs 050yr-02hr Rainfall=3.23"

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Summary for Subcatchment 1s: EX1

Runoff = 30.55 cfs @ 1.12 hrs, Volume= 1.239 af, Depth= 1.86"

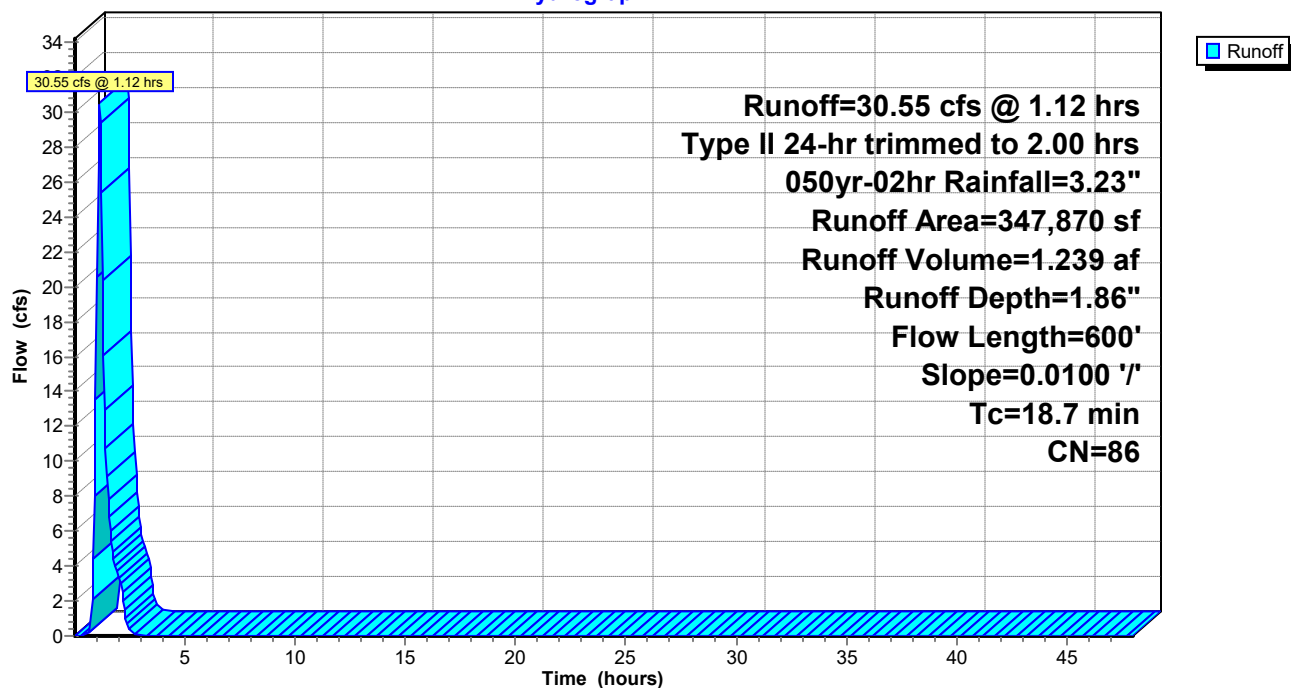
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 2.00 hrs 050yr-02hr Rainfall=3.23"

Area (sf)	CN	Description
169,520	74	>75% Grass cover, Good, HSG C
158,000	98	Paved parking, HSG C
20,350	98	Roofs, HSG C
347,870	86	Weighted Average
169,520		48.73% Pervious Area
178,350		51.27% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0100	0.12		Sheet Flow, Sheet Flow n= 0.150 P2= 2.92"
5.2	500	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc Unpaved Kv= 16.1 fps
18.7	600	Total			

Subcatchment 1s: EX1

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 2.00 hrs 050yr-02hr Rainfall=3.23"

Existing Conditions

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Summary for Subcatchment 2s: EX2

Runoff = 2.11 cfs @ 1.10 hrs, Volume= 0.077 af, Depth= 1.06"

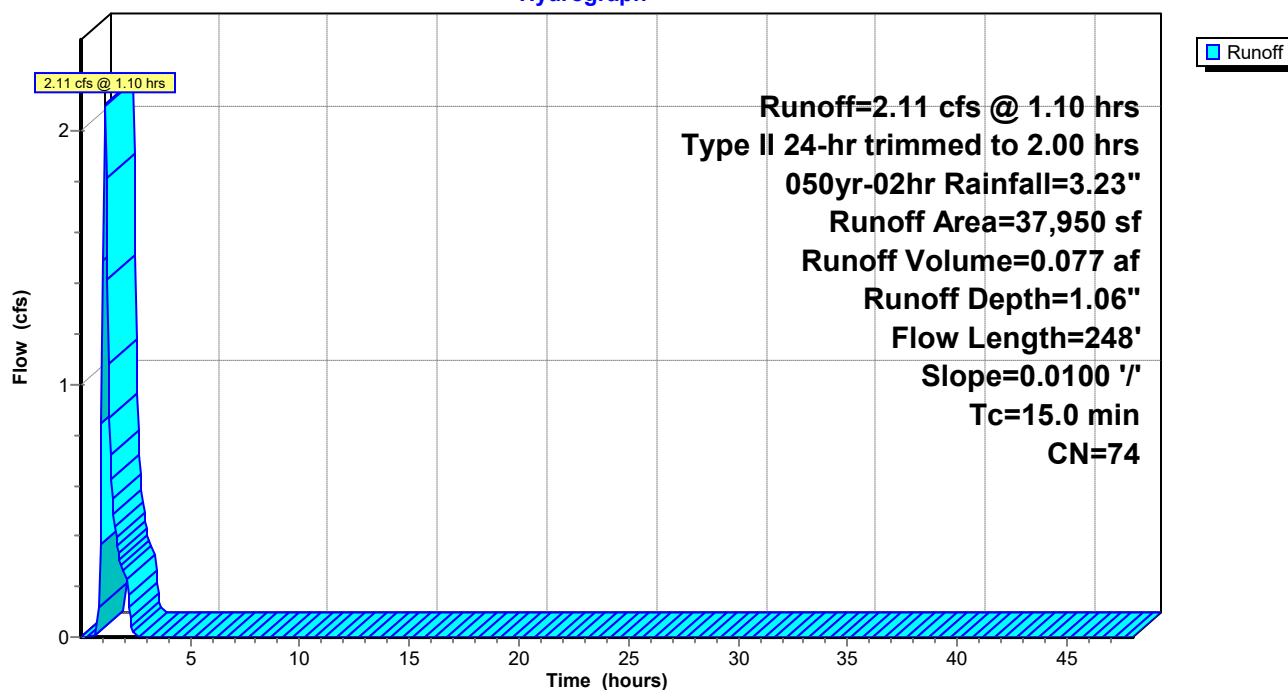
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 2.00 hrs 050yr-02hr Rainfall=3.23"

Area (sf)	CN	Description
37,950	74	>75% Grass cover, Good, HSG C
37,950		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0100	0.12		Sheet Flow, Sheet Flow Grass: Short n= 0.150 P2= 2.92"
1.5	148	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc Unpaved Kv= 16.1 fps
15.0	248	Total			

Subcatchment 2s: EX2

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 2.00 hrs 050yr-02hr Rainfall=3.23"

Existing Conditions

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Summary for Subcatchment 3s: EX3

Runoff = 1.70 cfs @ 1.10 hrs, Volume= 0.062 af, Depth= 1.06"

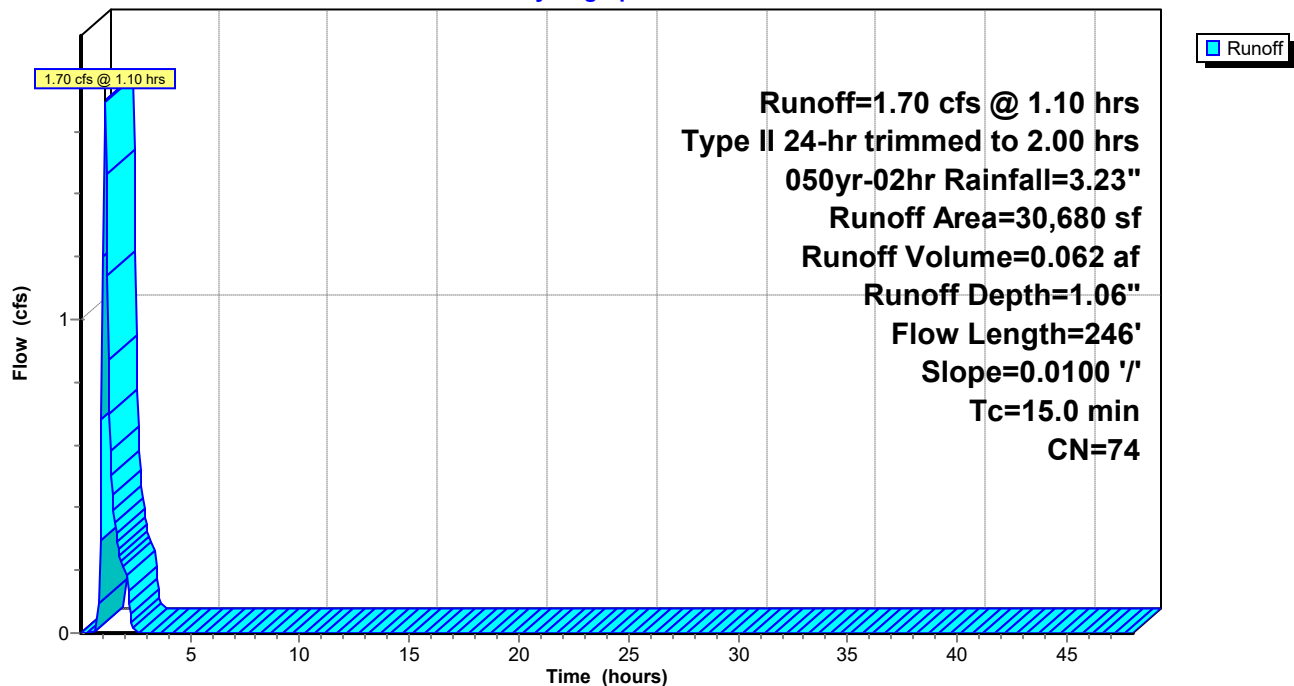
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 2.00 hrs 050yr-02hr Rainfall=3.23"

Area (sf)	CN	Description
30,680	74	>75% Grass cover, Good, HSG C
30,680		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0100	0.12		Sheet Flow, Sheet Flow
					Grass: Short n= 0.150 P2= 2.92"
1.5	146	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc
					Unpaved Kv= 16.1 fps
15.0	246	Total			

Subcatchment 3s: EX3

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS

Existing Conditions

Type II 24-hr trimmed to 2.00 hrs 050yr-02hr Rainfall=3.23"

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Summary for Subcatchment 4s: EX4

Runoff = 12.49 cfs @ 0.96 hrs, Volume= 0.299 af, Depth= 1.56"

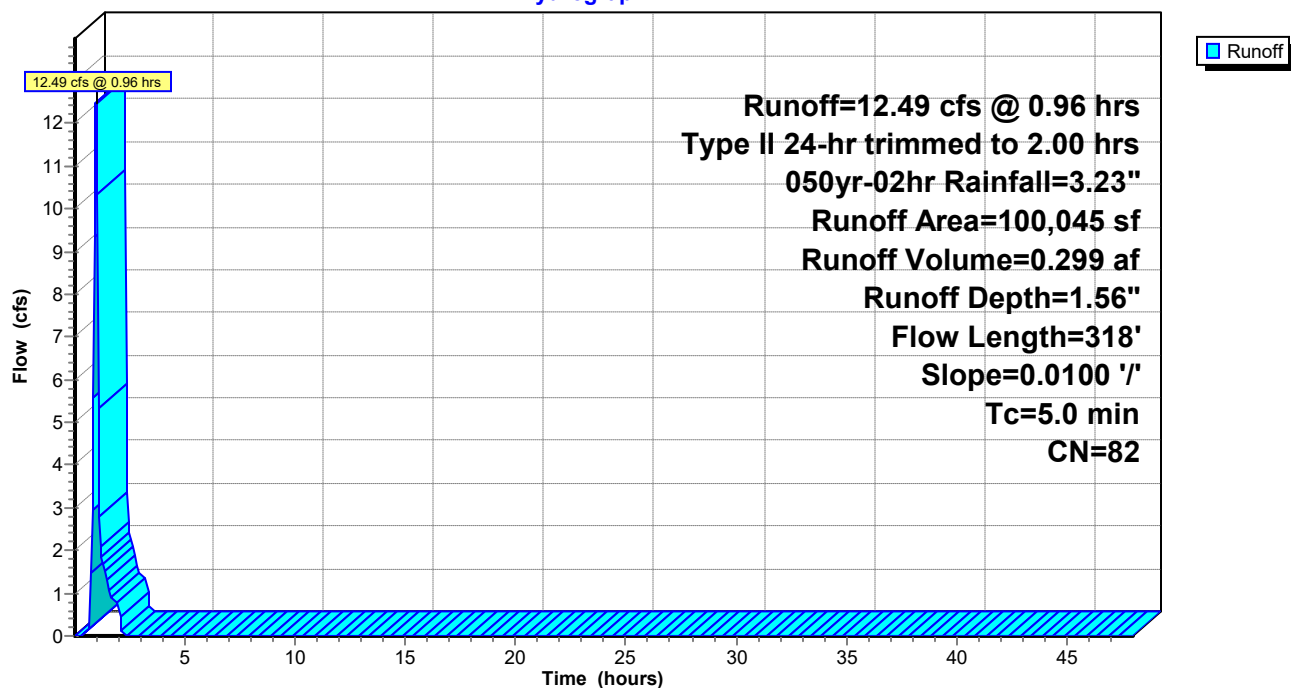
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 2.00 hrs 050yr-02hr Rainfall=3.23"

Area (sf)	CN	Description
64,745	74	>75% Grass cover, Good, HSG C
27,940	98	Paved parking, HSG C
7,360	98	Roofs, HSG C
100,045	82	Weighted Average
64,745		64.72% Pervious Area
35,300		35.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	100	0.0100	1.00		Sheet Flow, Sheet Flow
					Smooth surfaces n= 0.011 P2= 2.92"
2.3	218	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc
					Unpaved Kv= 16.1 fps
4.0	318	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 4s: EX4

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 2.00 hrs 050yr-02hr Rainfall=3.23"

Existing Conditions

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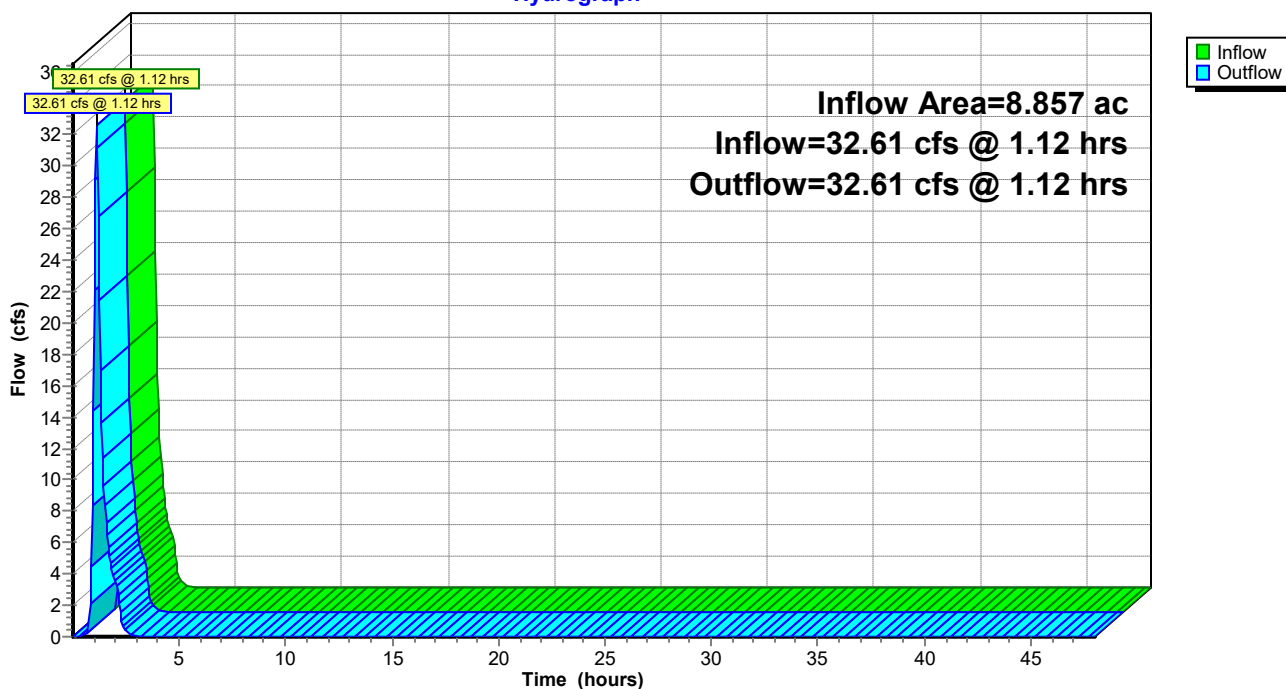
Summary for Reach 1R: US 31 DITCH

Inflow Area = 8.857 ac, 46.23% Impervious, Inflow Depth = 1.78" for 050yr-02hr event
Inflow = 32.61 cfs @ 1.12 hrs, Volume= 1.315 af
Outflow = 32.61 cfs @ 1.12 hrs, Volume= 1.315 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs

Reach 1R: US 31 DITCH

Hydrograph



Existing Conditions

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BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 2.00 hrs 050yr-02hr Rainfall=3.23"

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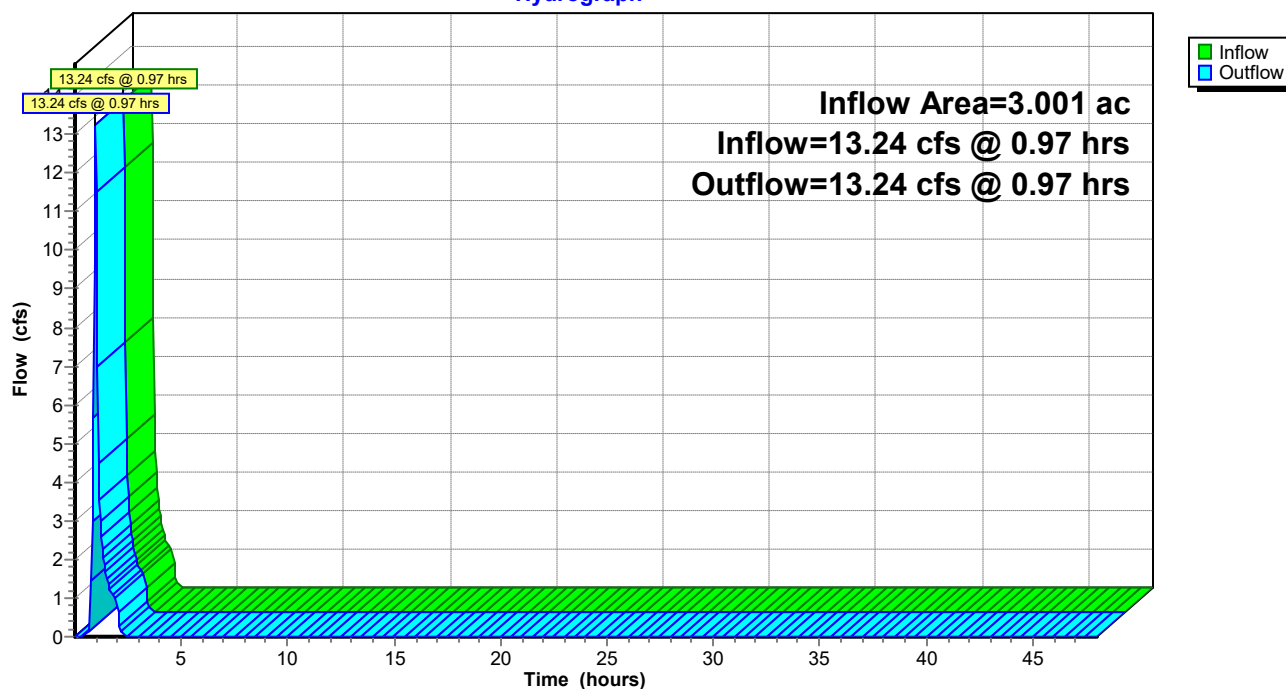
Summary for Reach 2R: EX POND TO WEST

Inflow Area = 3.001 ac, 27.00% Impervious, Inflow Depth = 1.44" for 050yr-02hr event
Inflow = 13.24 cfs @ 0.97 hrs, Volume= 0.361 af
Outflow = 13.24 cfs @ 0.97 hrs, Volume= 0.361 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs

Reach 2R: EX POND TO WEST

Hydrograph



Existing Conditions

BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 3.00 hrs 050yr-03hr Rainfall=3.48"

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Time span=0.01-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1s: EX1 Runoff Area=347,870 sf 51.27% Impervious Runoff Depth=2.08"
Flow Length=600' Slope=0.0100 '/' Tc=18.7 min CN=86 Runoff=31.24 cfs 1.385 af

Subcatchment 2s: EX2 Runoff Area=37,950 sf 0.00% Impervious Runoff Depth=1.23"
Flow Length=248' Slope=0.0100 '/' Tc=15.0 min CN=74 Runoff=2.23 cfs 0.089 af

Subcatchment 3s: EX3 Runoff Area=30,680 sf 0.00% Impervious Runoff Depth=1.23"
Flow Length=246' Slope=0.0100 '/' Tc=15.0 min CN=74 Runoff=1.80 cfs 0.072 af

Subcatchment 4s: EX4 Runoff Area=100,045 sf 35.28% Impervious Runoff Depth=1.77"
Flow Length=318' Slope=0.0100 '/' Tc=5.0 min CN=82 Runoff=12.65 cfs 0.338 af

Reach 1R: US 31 DITCH Inflow=33.42 cfs 1.474 af
Outflow=33.42 cfs 1.474 af

Reach 2R: EX POND TO WEST Inflow=13.52 cfs 0.410 af
Outflow=13.52 cfs 0.410 af

Total Runoff Area = 11.858 ac Runoff Volume = 1.884 af Average Runoff Depth = 1.91"
58.64% Pervious = 6.954 ac 41.36% Impervious = 4.905 ac

Existing Conditions

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BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 3.00 hrs 050yr-03hr Rainfall=3.48"

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Summary for Subcatchment 1s: EX1

Runoff = 31.24 cfs @ 1.62 hrs, Volume= 1.385 af, Depth= 2.08"

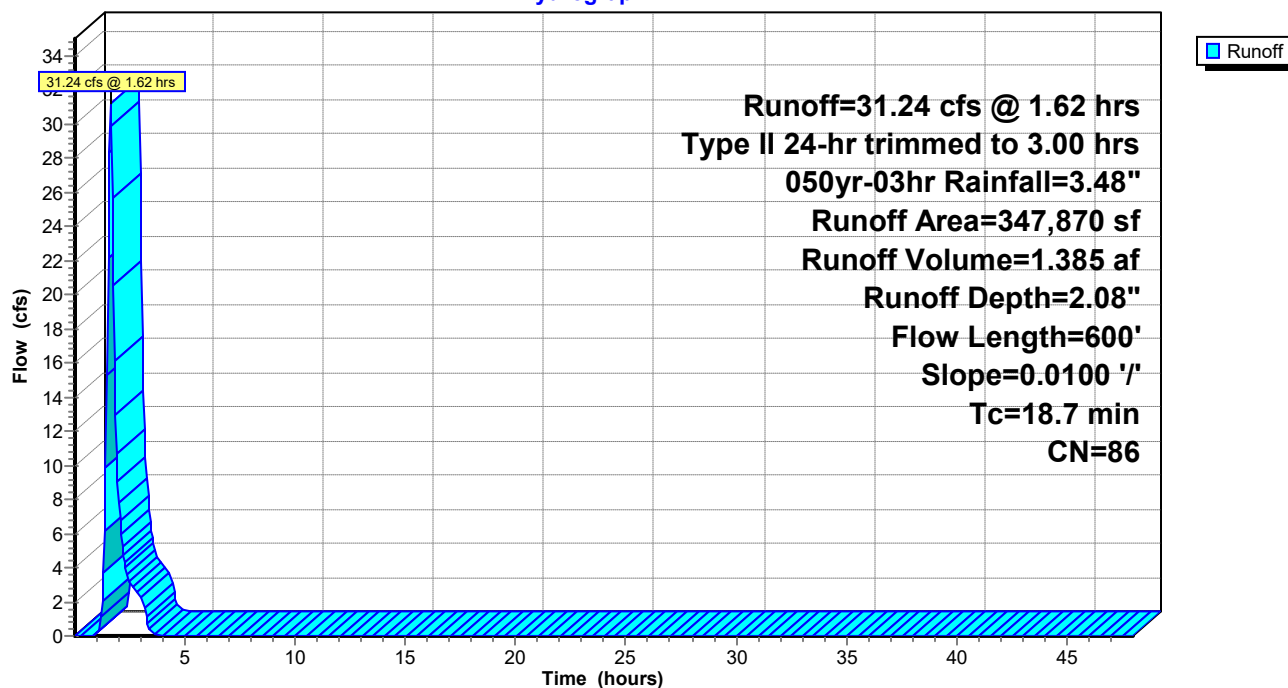
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 3.00 hrs 050yr-03hr Rainfall=3.48"

Area (sf)	CN	Description
169,520	74	>75% Grass cover, Good, HSG C
158,000	98	Paved parking, HSG C
20,350	98	Roofs, HSG C
347,870	86	Weighted Average
169,520		48.73% Pervious Area
178,350		51.27% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0100	0.12		Sheet Flow, Sheet Flow n= 0.150 P2= 2.92"
5.2	500	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc Unpaved Kv= 16.1 fps
18.7	600	Total			

Subcatchment 1s: EX1

Hydrograph



Existing Conditions

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BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 3.00 hrs 050yr-03hr Rainfall=3.48"

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Summary for Subcatchment 2s: EX2

Runoff = 2.23 cfs @ 1.59 hrs, Volume= 0.089 af, Depth= 1.23"

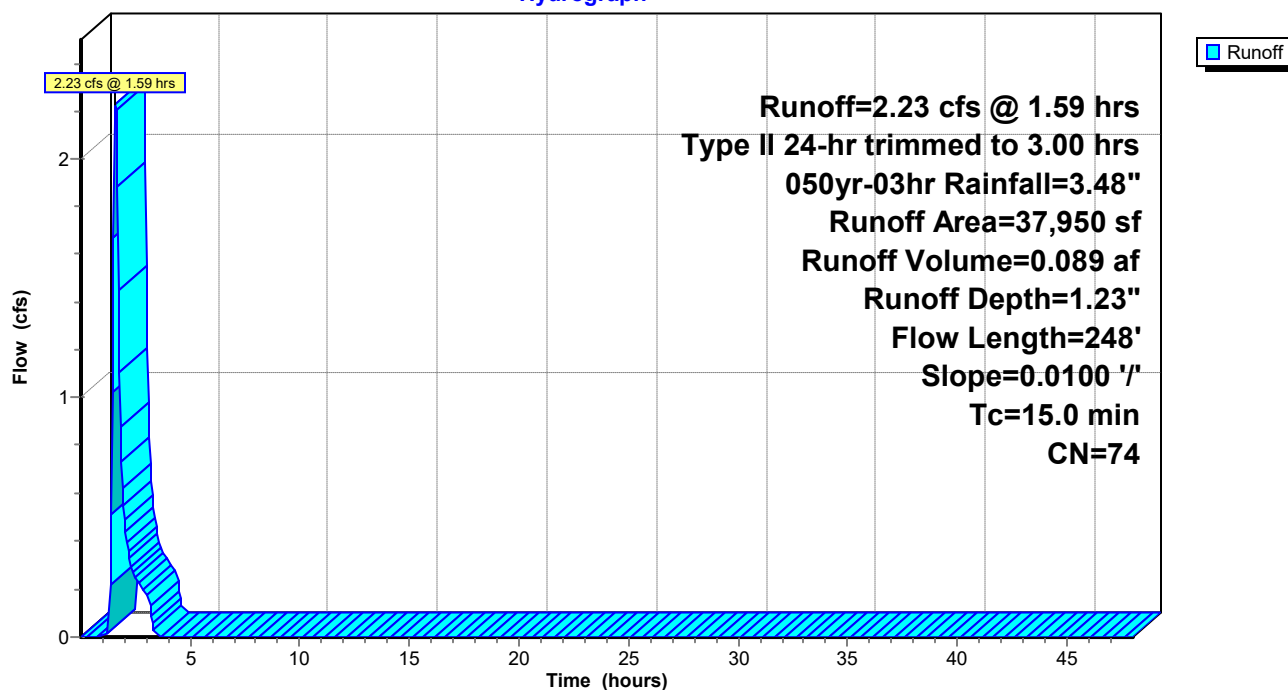
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 3.00 hrs 050yr-03hr Rainfall=3.48"

Area (sf)	CN	Description
37,950	74	>75% Grass cover, Good, HSG C
37,950		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0100	0.12		Sheet Flow, Sheet Flow
					Grass: Short n= 0.150 P2= 2.92"
1.5	148	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc
					Unpaved Kv= 16.1 fps
15.0	248	Total			

Subcatchment 2s: EX2

Hydrograph



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Type II 24-hr trimmed to 3.00 hrs 050yr-03hr Rainfall=3.48"

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Summary for Subcatchment 3s: EX3

Runoff = 1.80 cfs @ 1.59 hrs, Volume= 0.072 af, Depth= 1.23"

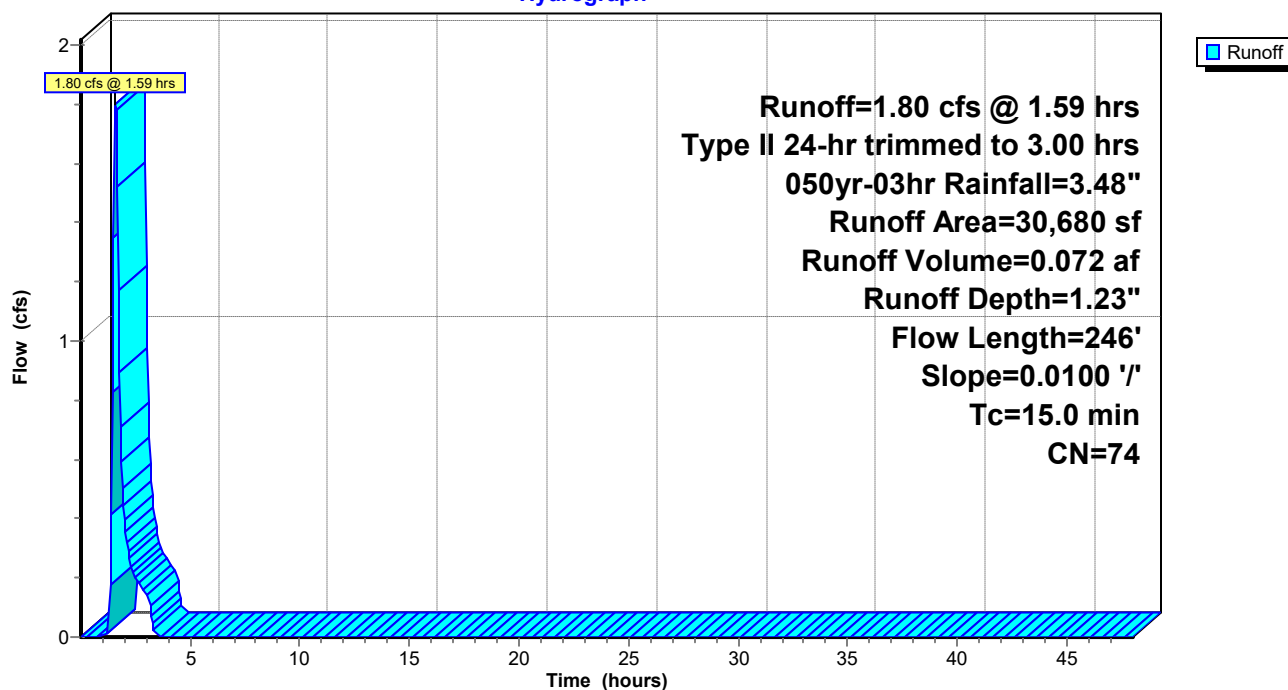
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 3.00 hrs 050yr-03hr Rainfall=3.48"

Area (sf)	CN	Description
30,680	74	>75% Grass cover, Good, HSG C
30,680		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0100	0.12		Sheet Flow, Sheet Flow
					Grass: Short n= 0.150 P2= 2.92"
1.5	146	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc
					Unpaved Kv= 16.1 fps
15.0	246	Total			

Subcatchment 3s: EX3

Hydrograph



Existing Conditions

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BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 3.00 hrs 050yr-03hr Rainfall=3.48"

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Summary for Subcatchment 4s: EX4

Runoff = 12.65 cfs @ 1.46 hrs, Volume= 0.338 af, Depth= 1.77"

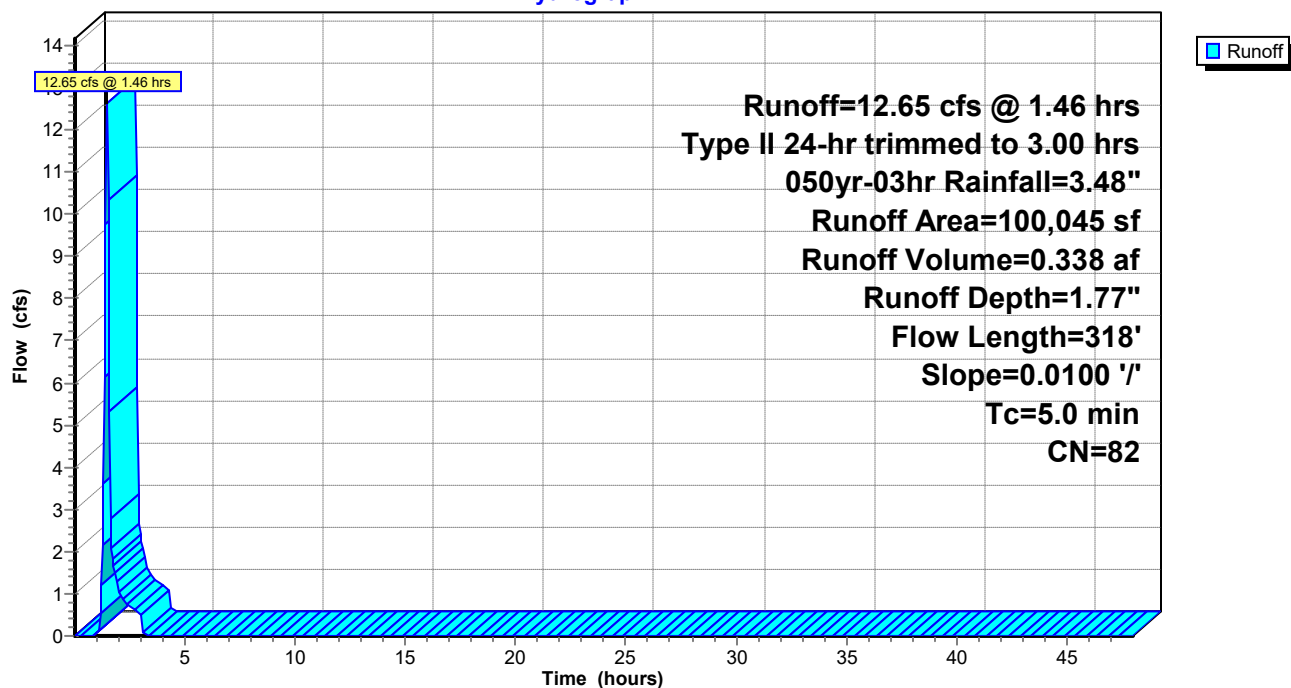
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 3.00 hrs 050yr-03hr Rainfall=3.48"

Area (sf)	CN	Description
64,745	74	>75% Grass cover, Good, HSG C
27,940	98	Paved parking, HSG C
7,360	98	Roofs, HSG C
100,045	82	Weighted Average
64,745		64.72% Pervious Area
35,300		35.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	100	0.0100	1.00		Sheet Flow, Sheet Flow Smooth surfaces n= 0.011 P2= 2.92"
2.3	218	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc Unpaved Kv= 16.1 fps
4.0	318	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 4s: EX4

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 3.00 hrs 050yr-03hr Rainfall=3.48"

Existing Conditions

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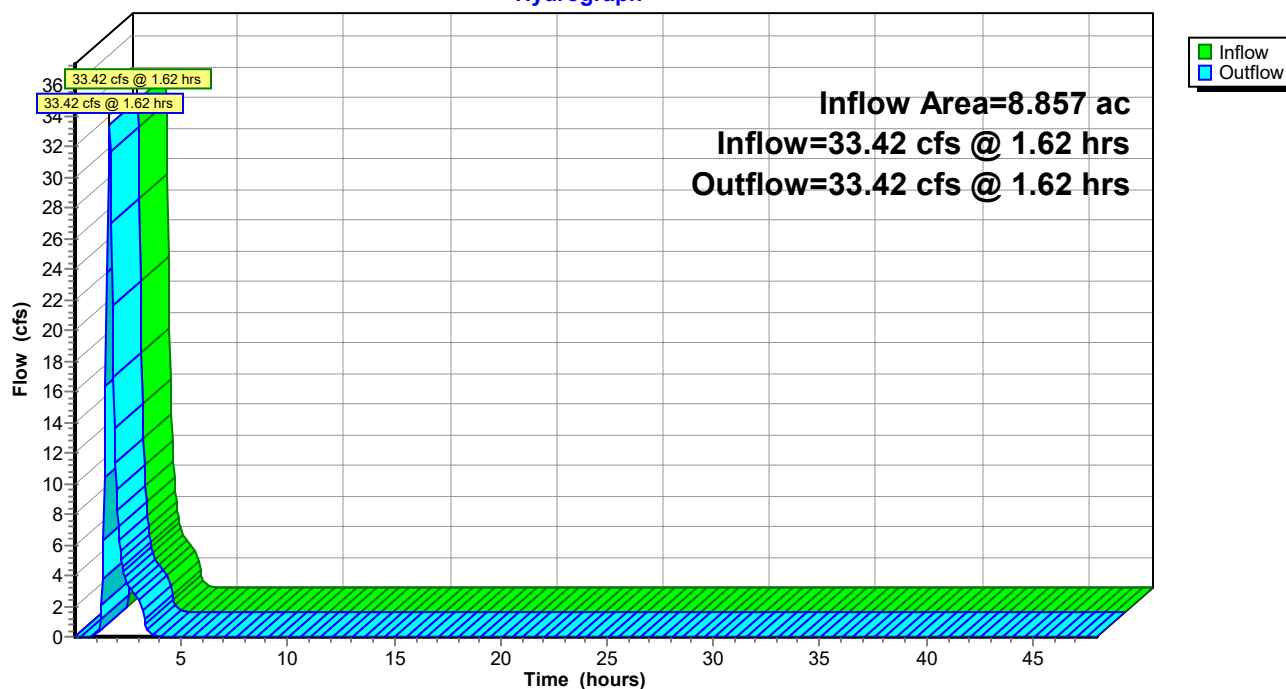
Summary for Reach 1R: US 31 DITCH

Inflow Area = 8.857 ac, 46.23% Impervious, Inflow Depth = 2.00" for 050yr-03hr event
Inflow = 33.42 cfs @ 1.62 hrs, Volume= 1.474 af
Outflow = 33.42 cfs @ 1.62 hrs, Volume= 1.474 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs

Reach 1R: US 31 DITCH

Hydrograph



Existing Conditions

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BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 3.00 hrs 050yr-03hr Rainfall=3.48"

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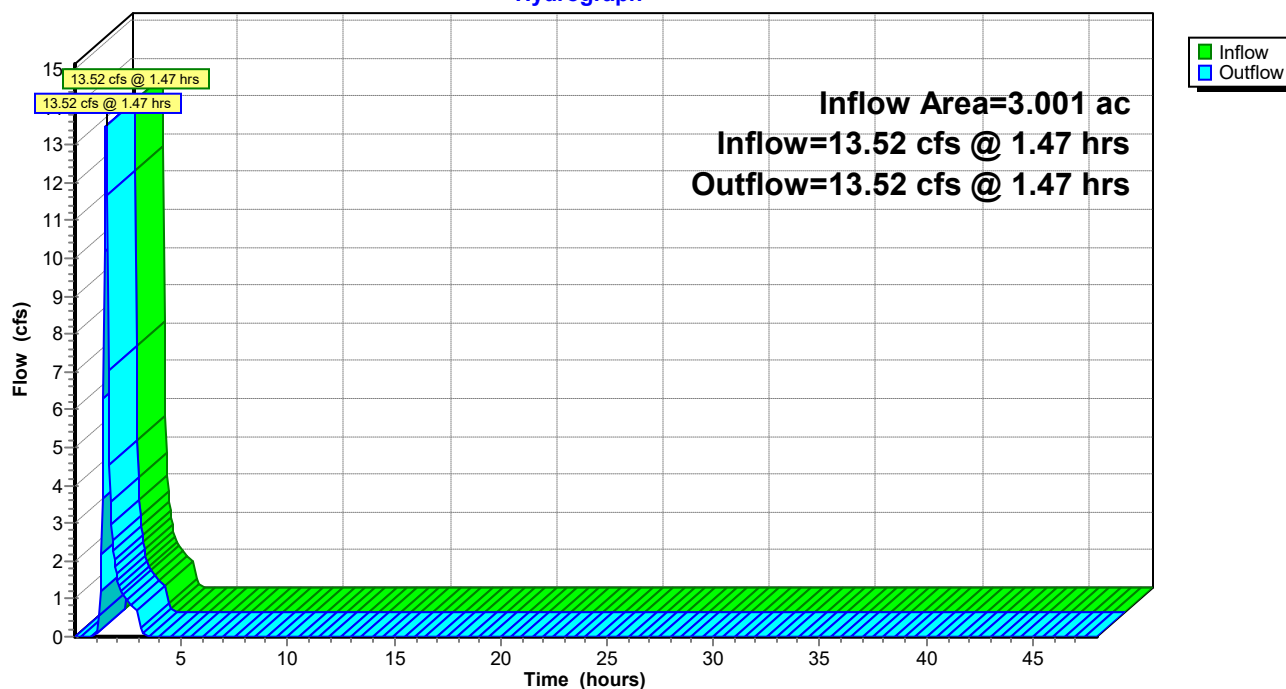
Summary for Reach 2R: EX POND TO WEST

Inflow Area = 3.001 ac, 27.00% Impervious, Inflow Depth = 1.64" for 050yr-03hr event
Inflow = 13.52 cfs @ 1.47 hrs, Volume= 0.410 af
Outflow = 13.52 cfs @ 1.47 hrs, Volume= 0.410 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs

Reach 2R: EX POND TO WEST

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS

Existing Conditions

Type II 24-hr trimmed to 6.00 hrs 050yr-06hr Rainfall=4.20"

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Time span=0.01-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1s: EX1 Runoff Area=347,870 sf 51.27% Impervious Runoff Depth=2.73"
Flow Length=600' Slope=0.0100 '/' Tc=18.7 min CN=86 Runoff=34.82 cfs 1.816 af

Subcatchment 2s: EX2 Runoff Area=37,950 sf 0.00% Impervious Runoff Depth=1.74"
Flow Length=248' Slope=0.0100 '/' Tc=15.0 min CN=74 Runoff=2.73 cfs 0.127 af

Subcatchment 3s: EX3 Runoff Area=30,680 sf 0.00% Impervious Runoff Depth=1.74"
Flow Length=246' Slope=0.0100 '/' Tc=15.0 min CN=74 Runoff=2.21 cfs 0.102 af

Subcatchment 4s: EX4 Runoff Area=100,045 sf 35.28% Impervious Runoff Depth=2.37"
Flow Length=318' Slope=0.0100 '/' Tc=5.0 min CN=82 Runoff=14.05 cfs 0.455 af

Reach 1R: US 31 DITCH Inflow=37.47 cfs 1.942 af
Outflow=37.47 cfs 1.942 af

Reach 2R: EX POND TO WEST Inflow=15.30 cfs 0.557 af
Outflow=15.30 cfs 0.557 af

Total Runoff Area = 11.858 ac Runoff Volume = 2.499 af Average Runoff Depth = 2.53"
58.64% Pervious = 6.954 ac 41.36% Impervious = 4.905 ac

Existing Conditions

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BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 6.00 hrs 050yr-06hr Rainfall=4.20"

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Summary for Subcatchment 1s: EX1

Runoff = 34.82 cfs @ 3.11 hrs, Volume= 1.816 af, Depth= 2.73"

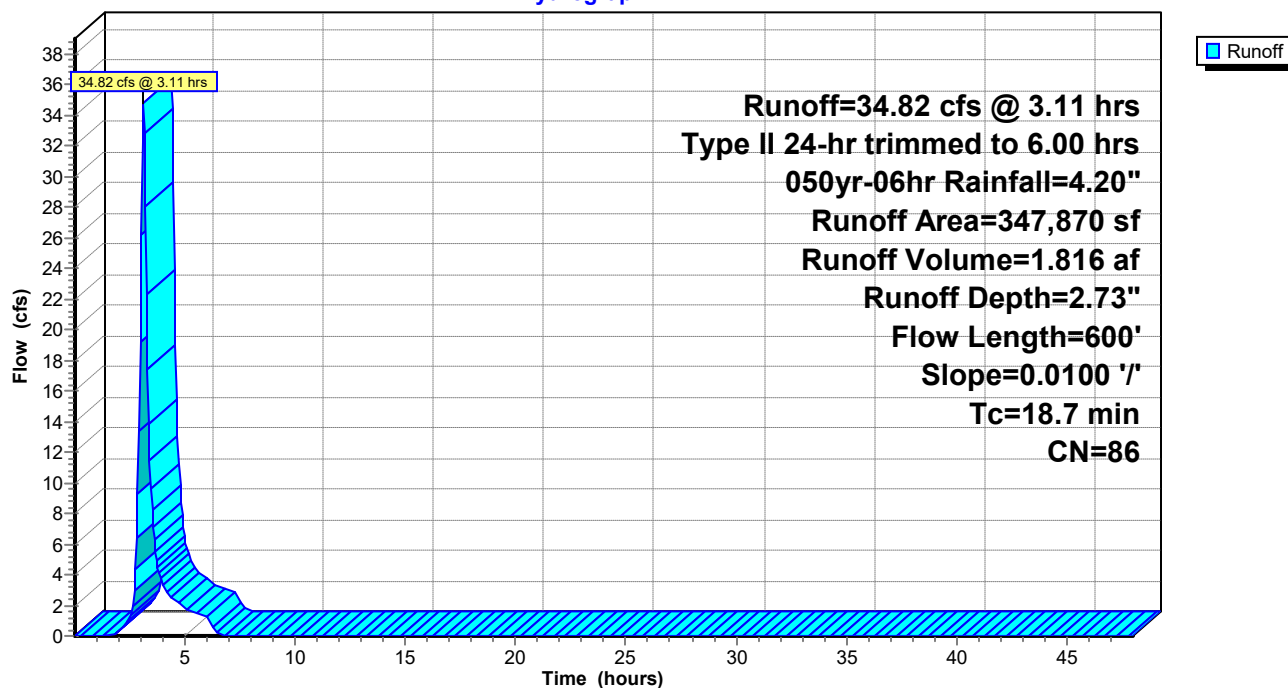
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 6.00 hrs 050yr-06hr Rainfall=4.20"

Area (sf)	CN	Description
169,520	74	>75% Grass cover, Good, HSG C
158,000	98	Paved parking, HSG C
20,350	98	Roofs, HSG C
347,870	86	Weighted Average
169,520		48.73% Pervious Area
178,350		51.27% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0100	0.12		Sheet Flow, Sheet Flow n= 0.150 P2= 2.92"
5.2	500	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc Unpaved Kv= 16.1 fps
18.7	600	Total			

Subcatchment 1s: EX1

Hydrograph



Existing Conditions

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BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 6.00 hrs 050yr-06hr Rainfall=4.20"

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Summary for Subcatchment 2s: EX2

Runoff = 2.73 cfs @ 3.08 hrs, Volume= 0.127 af, Depth= 1.74"

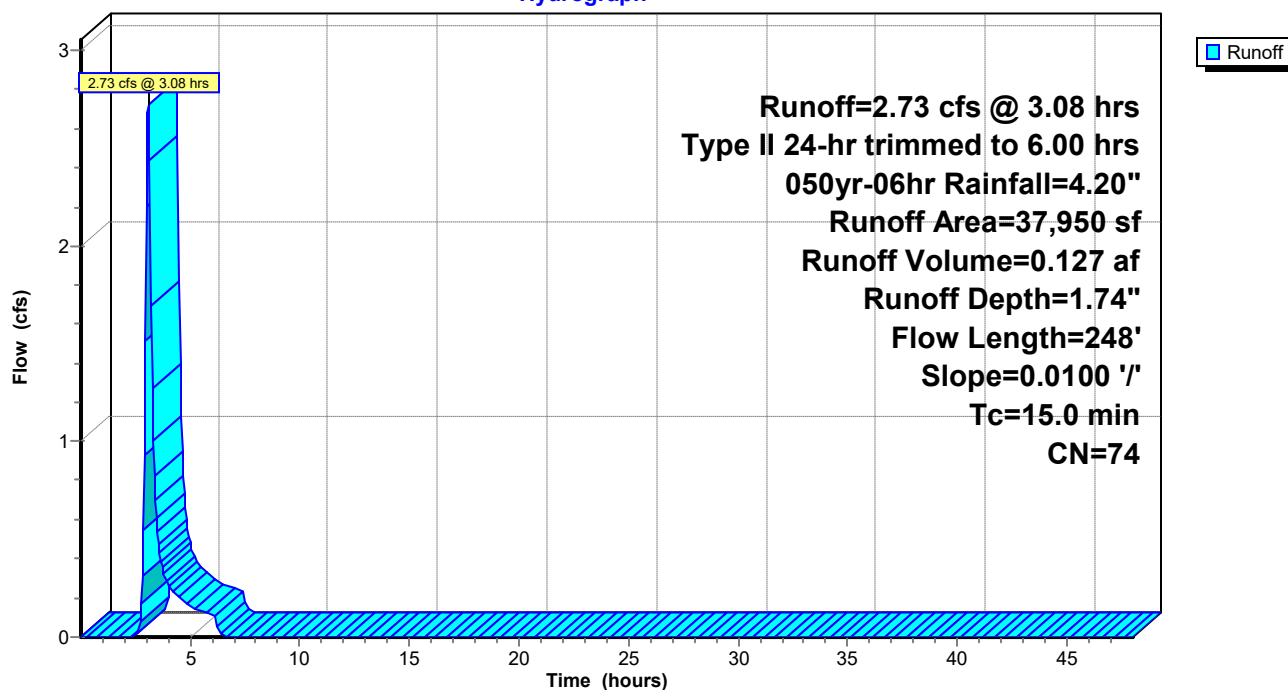
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 6.00 hrs 050yr-06hr Rainfall=4.20"

Area (sf)	CN	Description
37,950	74	>75% Grass cover, Good, HSG C
37,950		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0100	0.12		Sheet Flow, Sheet Flow
					Grass: Short n= 0.150 P2= 2.92"
1.5	148	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc
					Unpaved Kv= 16.1 fps
15.0	248	Total			

Subcatchment 2s: EX2

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 6.00 hrs 050yr-06hr Rainfall=4.20"

Existing Conditions

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Summary for Subcatchment 3s: EX3

Runoff = 2.21 cfs @ 3.08 hrs, Volume= 0.102 af, Depth= 1.74"

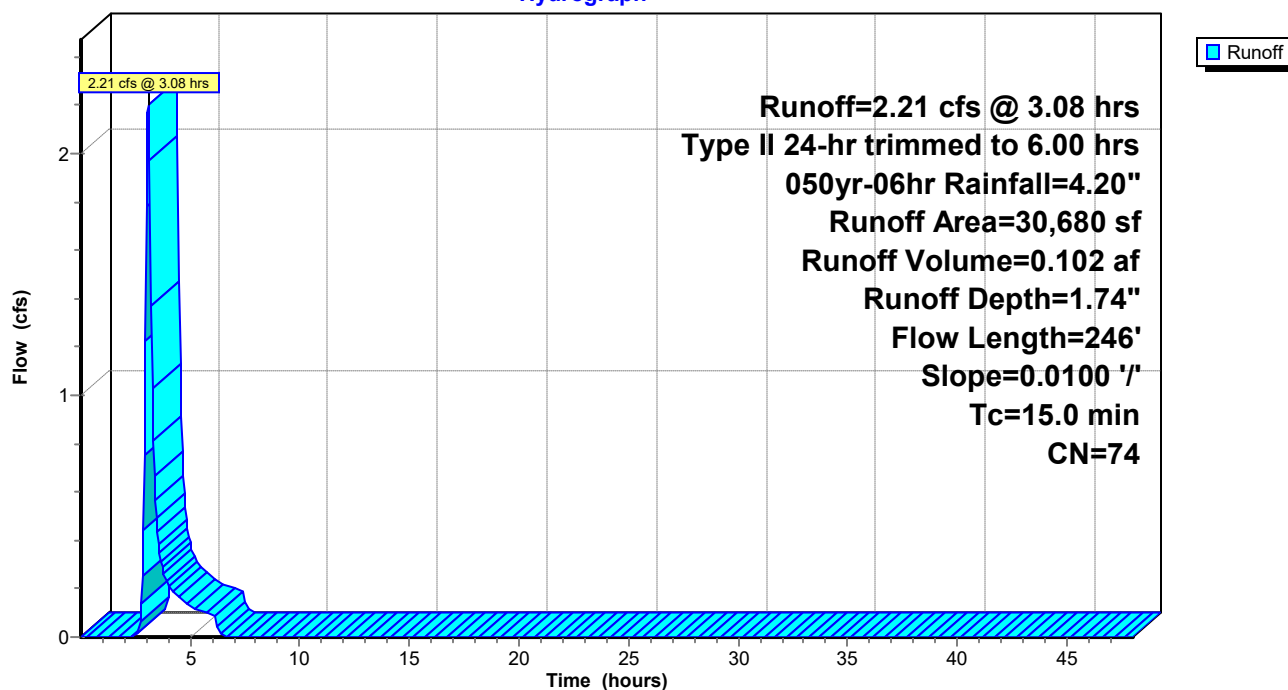
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 6.00 hrs 050yr-06hr Rainfall=4.20"

Area (sf)	CN	Description
30,680	74	>75% Grass cover, Good, HSG C
30,680		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0100	0.12		Sheet Flow, Sheet Flow Grass: Short n= 0.150 P2= 2.92"
1.5	146	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc Unpaved Kv= 16.1 fps
15.0	246	Total			

Subcatchment 3s: EX3

Hydrograph



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BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 6.00 hrs 050yr-06hr Rainfall=4.20"

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Summary for Subcatchment 4s: EX4

Runoff = 14.05 cfs @ 2.96 hrs, Volume= 0.455 af, Depth= 2.37"

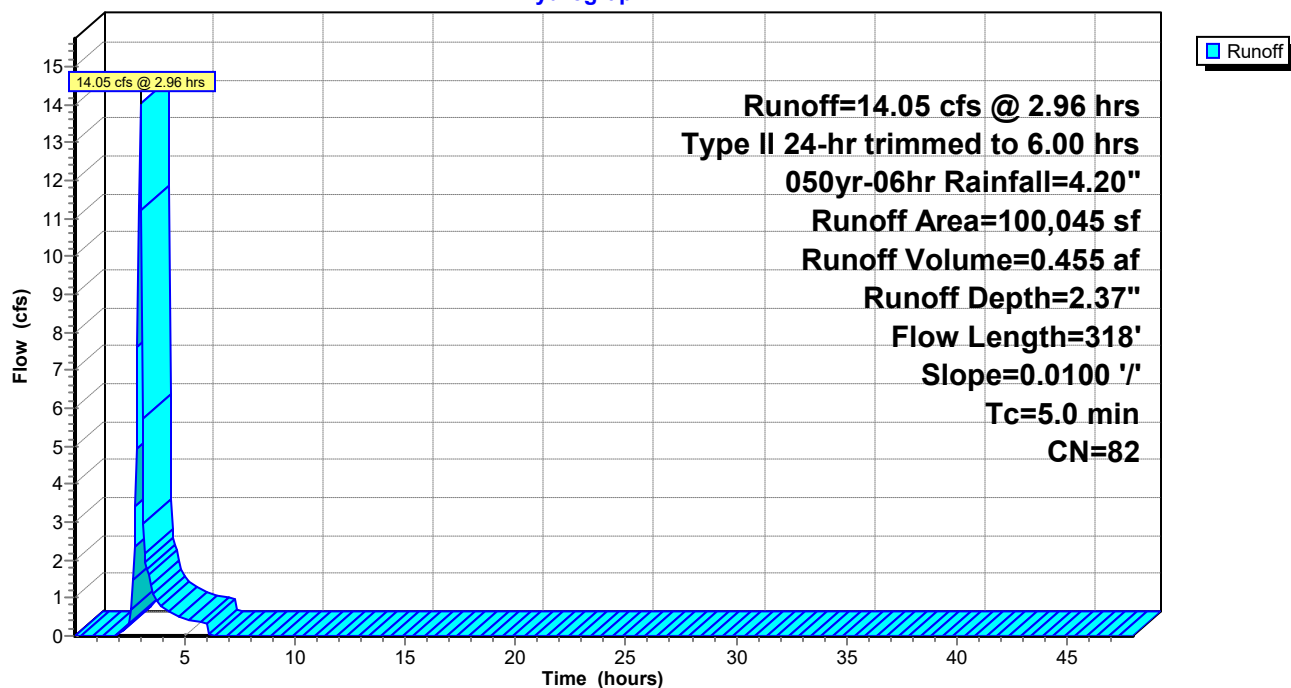
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 6.00 hrs 050yr-06hr Rainfall=4.20"

Area (sf)	CN	Description
64,745	74	>75% Grass cover, Good, HSG C
27,940	98	Paved parking, HSG C
7,360	98	Roofs, HSG C
100,045	82	Weighted Average
64,745		64.72% Pervious Area
35,300		35.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	100	0.0100	1.00		Sheet Flow, Sheet Flow Smooth surfaces n= 0.011 P2= 2.92"
2.3	218	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc Unpaved Kv= 16.1 fps
4.0	318	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 4s: EX4

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 6.00 hrs 050yr-06hr Rainfall=4.20"

Existing Conditions

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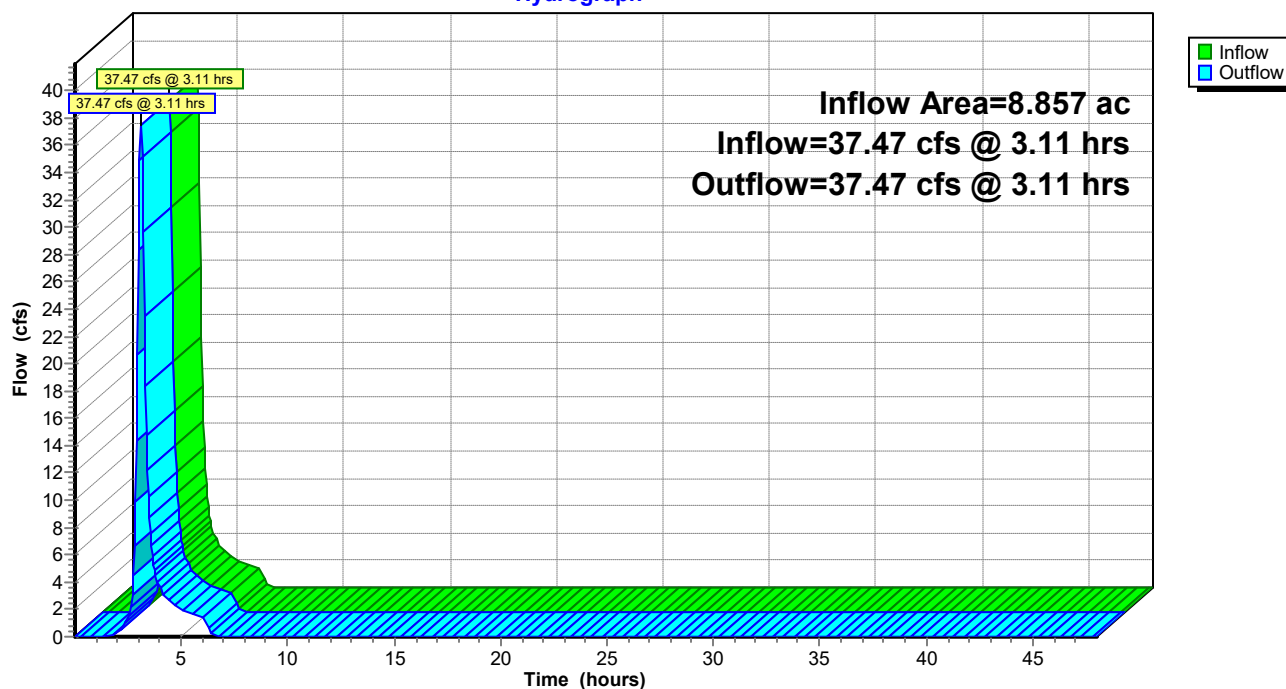
Summary for Reach 1R: US 31 DITCH

Inflow Area = 8.857 ac, 46.23% Impervious, Inflow Depth = 2.63" for 050yr-06hr event
Inflow = 37.47 cfs @ 3.11 hrs, Volume= 1.942 af
Outflow = 37.47 cfs @ 3.11 hrs, Volume= 1.942 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs

Reach 1R: US 31 DITCH

Hydrograph



Existing Conditions

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BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 6.00 hrs 050yr-06hr Rainfall=4.20"

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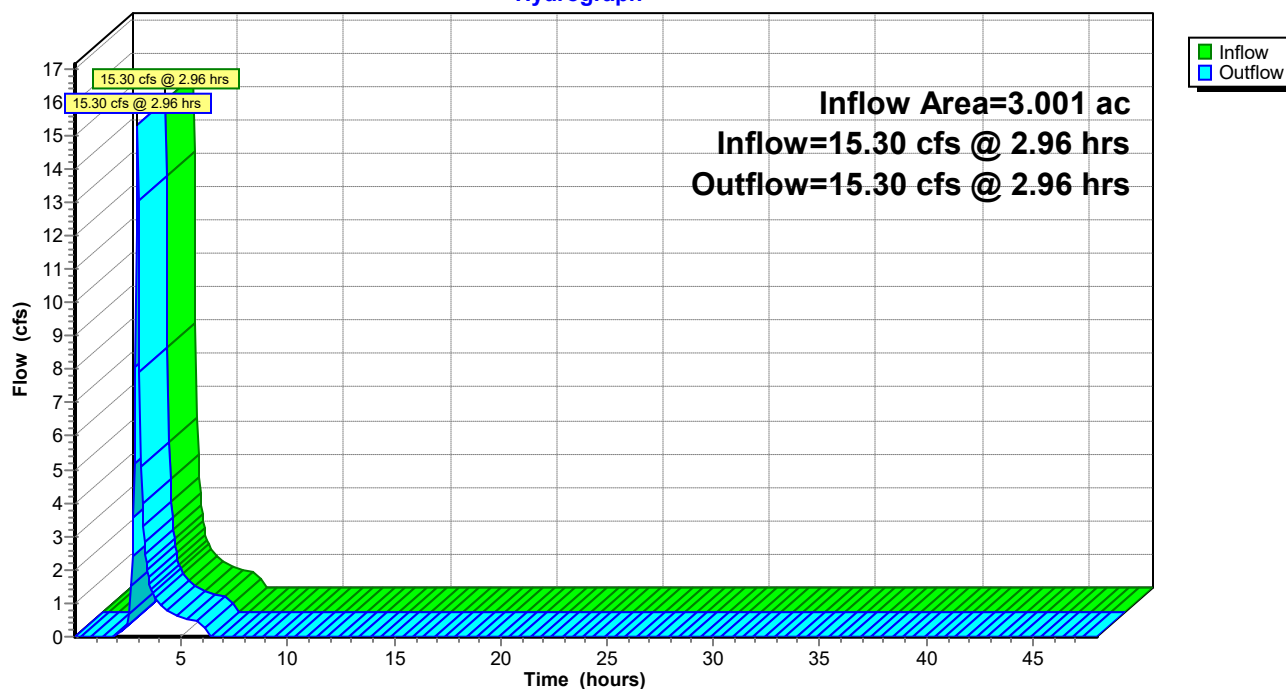
Summary for Reach 2R: EX POND TO WEST

Inflow Area = 3.001 ac, 27.00% Impervious, Inflow Depth = 2.23" for 050yr-06hr event
Inflow = 15.30 cfs @ 2.96 hrs, Volume= 0.557 af
Outflow = 15.30 cfs @ 2.96 hrs, Volume= 0.557 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs

Reach 2R: EX POND TO WEST

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS

Existing Conditions

Type II 24-hr trimmed to 12.00 hrs 050yr-12hr Rainfall=4.78"

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Time span=0.01-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1s: EX1 Runoff Area=347,870 sf 51.27% Impervious Runoff Depth=3.26"
Flow Length=600' Slope=0.0100 '/' Tc=18.7 min CN=86 Runoff=35.06 cfs 2.171 af

Subcatchment 2s: EX2 Runoff Area=37,950 sf 0.00% Impervious Runoff Depth=2.19"
Flow Length=248' Slope=0.0100 '/' Tc=15.0 min CN=74 Runoff=2.90 cfs 0.159 af

Subcatchment 3s: EX3 Runoff Area=30,680 sf 0.00% Impervious Runoff Depth=2.19"
Flow Length=246' Slope=0.0100 '/' Tc=15.0 min CN=74 Runoff=2.35 cfs 0.129 af

Subcatchment 4s: EX4 Runoff Area=100,045 sf 35.28% Impervious Runoff Depth=2.88"
Flow Length=318' Slope=0.0100 '/' Tc=5.0 min CN=82 Runoff=14.12 cfs 0.552 af

Reach 1R: US 31 DITCH Inflow=37.85 cfs 2.330 af
Outflow=37.85 cfs 2.330 af

Reach 2R: EX POND TO WEST Inflow=15.55 cfs 0.680 af
Outflow=15.55 cfs 0.680 af

Total Runoff Area = 11.858 ac Runoff Volume = 3.010 af Average Runoff Depth = 3.05"
58.64% Pervious = 6.954 ac 41.36% Impervious = 4.905 ac

BDH REALTY COMMERCIAL DEV-EX CONDITIONS

Existing Conditions

Type II 24-hr trimmed to 12.00 hrs 050yr-12hr Rainfall=4.78"

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Summary for Subcatchment 1s: EX1

Runoff = 35.06 cfs @ 6.11 hrs, Volume= 2.171 af, Depth= 3.26"

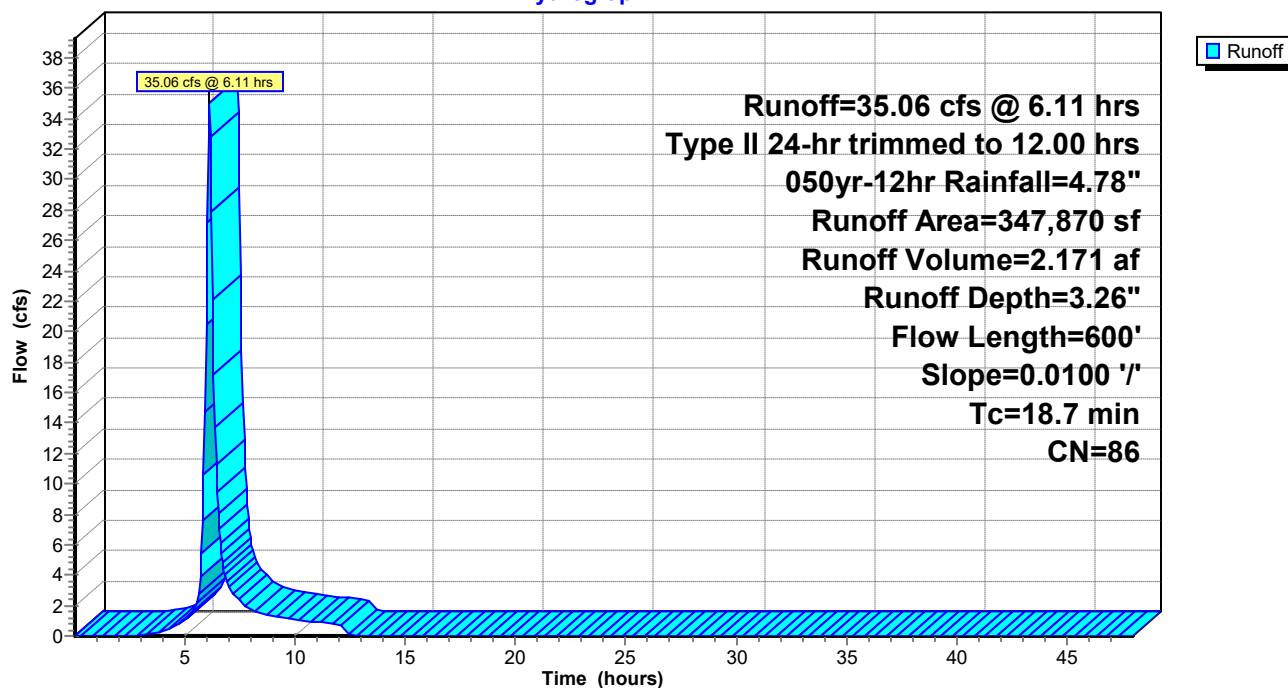
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 12.00 hrs 050yr-12hr Rainfall=4.78"

Area (sf)	CN	Description
169,520	74	>75% Grass cover, Good, HSG C
158,000	98	Paved parking, HSG C
20,350	98	Roofs, HSG C
347,870	86	Weighted Average
169,520		48.73% Pervious Area
178,350		51.27% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0100	0.12		Sheet Flow, Sheet Flow n= 0.150 P2= 2.92"
5.2	500	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc Unpaved Kv= 16.1 fps
18.7	600	Total			

Subcatchment 1s: EX1

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS

Existing Conditions

Type II 24-hr trimmed to 12.00 hrs 050yr-12hr Rainfall=4.78"

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Summary for Subcatchment 2s: EX2

Runoff = 2.90 cfs @ 6.08 hrs, Volume= 0.159 af, Depth= 2.19"

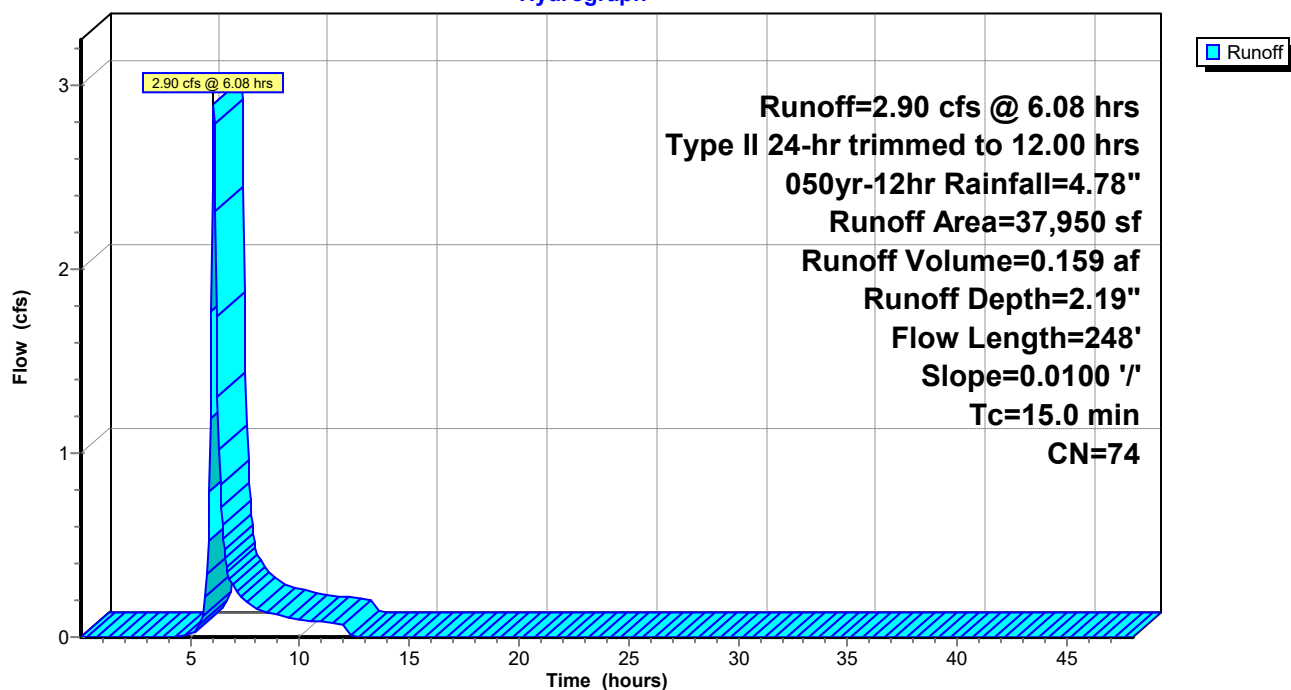
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 12.00 hrs 050yr-12hr Rainfall=4.78"

Area (sf)	CN	Description
37,950	74	>75% Grass cover, Good, HSG C
37,950		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0100	0.12		Sheet Flow, Sheet Flow
					Grass: Short n= 0.150 P2= 2.92"
1.5	148	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc
					Unpaved Kv= 16.1 fps
15.0	248	Total			

Subcatchment 2s: EX2

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS

Existing Conditions

Type II 24-hr trimmed to 12.00 hrs 050yr-12hr Rainfall=4.78"

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Summary for Subcatchment 3s: EX3

Runoff = 2.35 cfs @ 6.08 hrs, Volume= 0.129 af, Depth= 2.19"

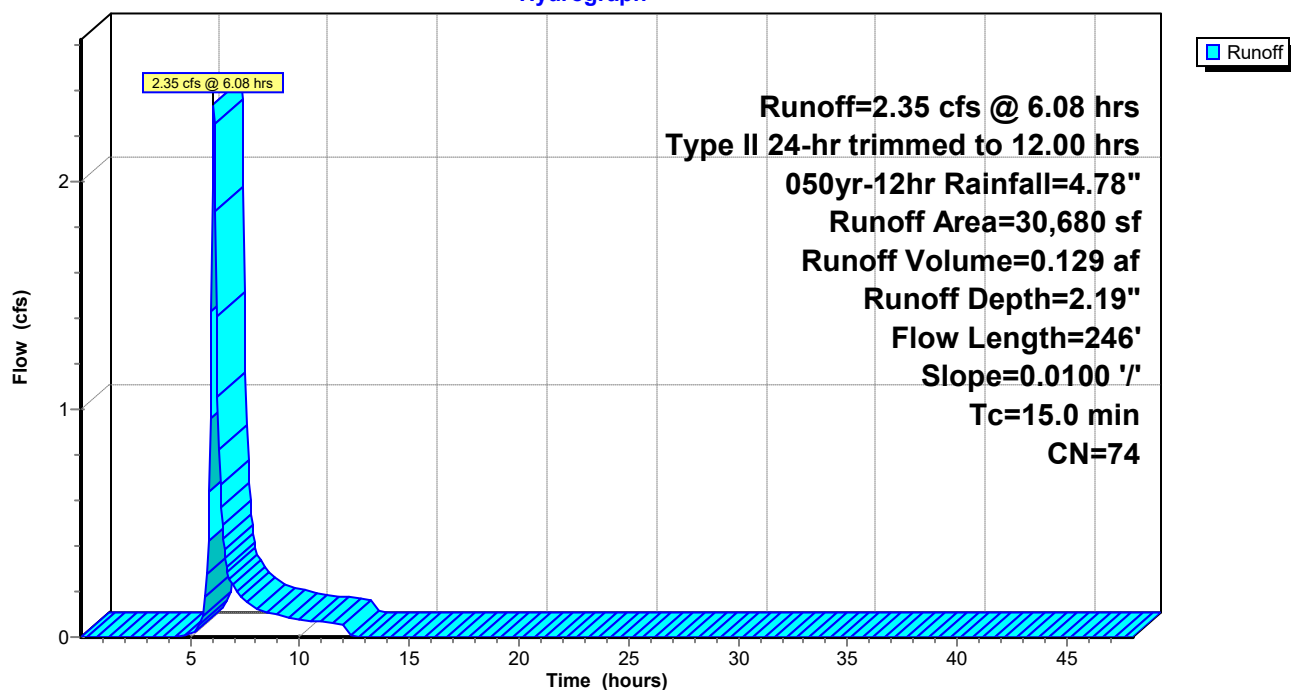
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 12.00 hrs 050yr-12hr Rainfall=4.78"

Area (sf)	CN	Description
30,680	74	>75% Grass cover, Good, HSG C
30,680		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0100	0.12		Sheet Flow, Sheet Flow
					Grass: Short n= 0.150 P2= 2.92"
1.5	146	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc
					Unpaved Kv= 16.1 fps
15.0	246	Total			

Subcatchment 3s: EX3

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS

Existing Conditions

Type II 24-hr trimmed to 12.00 hrs 050yr-12hr Rainfall=4.78"

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Summary for Subcatchment 4s: EX4

Runoff = 14.12 cfs @ 5.96 hrs, Volume= 0.552 af, Depth= 2.88"

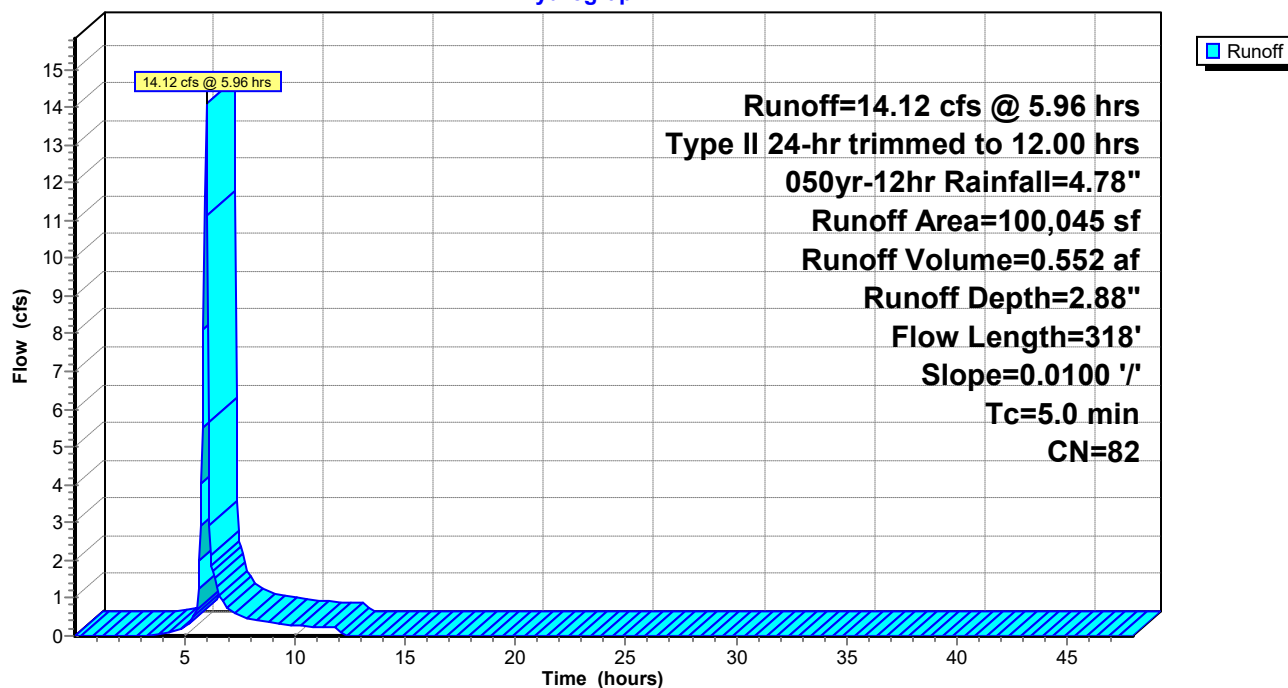
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 12.00 hrs 050yr-12hr Rainfall=4.78"

Area (sf)	CN	Description
64,745	74	>75% Grass cover, Good, HSG C
27,940	98	Paved parking, HSG C
7,360	98	Roofs, HSG C
100,045	82	Weighted Average
64,745		64.72% Pervious Area
35,300		35.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	100	0.0100	1.00		Sheet Flow, Sheet Flow
					Smooth surfaces n= 0.011 P2= 2.92"
2.3	218	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc
					Unpaved Kv= 16.1 fps
4.0	318	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 4s: EX4

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS

Existing Conditions

Type II 24-hr trimmed to 12.00 hrs 050yr-12hr Rainfall=4.78"

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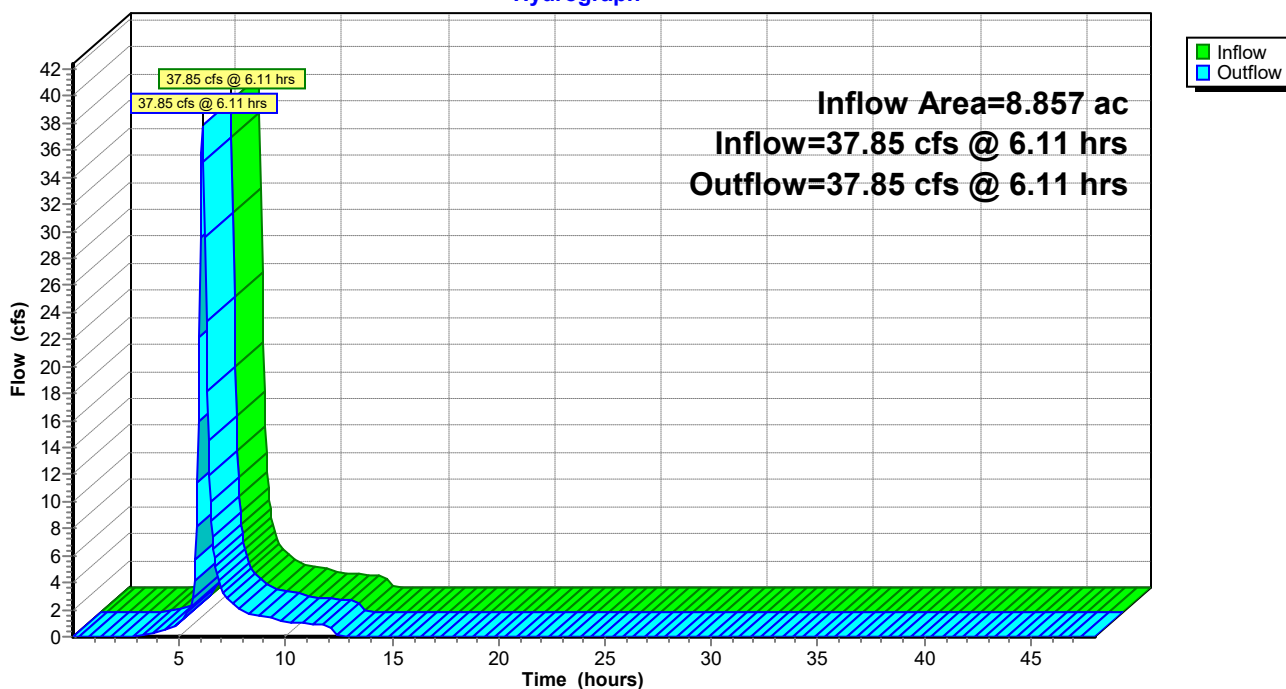
Summary for Reach 1R: US 31 DITCH

Inflow Area = 8.857 ac, 46.23% Impervious, Inflow Depth = 3.16" for 050yr-12hr event
Inflow = 37.85 cfs @ 6.11 hrs, Volume= 2.330 af
Outflow = 37.85 cfs @ 6.11 hrs, Volume= 2.330 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs

Reach 1R: US 31 DITCH

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS

Existing Conditions

Type II 24-hr trimmed to 12.00 hrs 050yr-12hr Rainfall=4.78"

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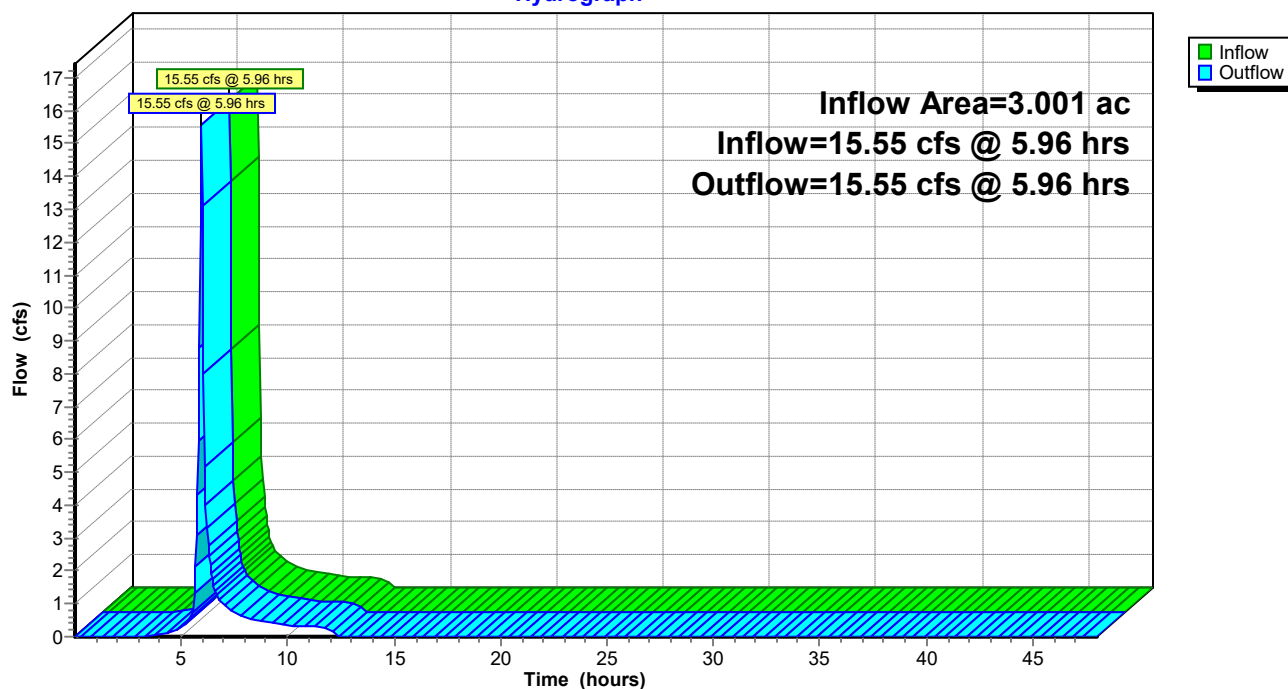
Summary for Reach 2R: EX POND TO WEST

Inflow Area = 3.001 ac, 27.00% Impervious, Inflow Depth = 2.72" for 050yr-12hr event
Inflow = 15.55 cfs @ 5.96 hrs, Volume= 0.680 af
Outflow = 15.55 cfs @ 5.96 hrs, Volume= 0.680 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs

Reach 2R: EX POND TO WEST

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS

Type II 24-hr 050yr-24hr Rainfall=5.34"

Existing Conditions

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Time span=0.01-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1s: EX1 Runoff Area=347,870 sf 51.27% Impervious Runoff Depth=3.79"
Flow Length=600' Slope=0.0100 '/' Tc=18.7 min CN=86 Runoff=34.17 cfs 2.519 af

Subcatchment 2s: EX2 Runoff Area=37,950 sf 0.00% Impervious Runoff Depth=2.64"
Flow Length=248' Slope=0.0100 '/' Tc=15.0 min CN=74 Runoff=2.95 cfs 0.192 af

Subcatchment 3s: EX3 Runoff Area=30,680 sf 0.00% Impervious Runoff Depth=2.64"
Flow Length=246' Slope=0.0100 '/' Tc=15.0 min CN=74 Runoff=2.39 cfs 0.155 af

Subcatchment 4s: EX4 Runoff Area=100,045 sf 35.28% Impervious Runoff Depth=3.38"
Flow Length=318' Slope=0.0100 '/' Tc=5.0 min CN=82 Runoff=13.78 cfs 0.648 af

Reach 1R: US 31 DITCH Inflow=37.01 cfs 2.711 af
Outflow=37.01 cfs 2.711 af

Reach 2R: EX POND TO WEST Inflow=15.32 cfs 0.803 af
Outflow=15.32 cfs 0.803 af

Total Runoff Area = 11.858 ac Runoff Volume = 3.513 af Average Runoff Depth = 3.56"
58.64% Pervious = 6.954 ac 41.36% Impervious = 4.905 ac

BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr 050yr-24hr Rainfall=5.34"

Existing Conditions

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Summary for Subcatchment 1s: EX1

Runoff = 34.17 cfs @ 12.11 hrs, Volume= 2.519 af, Depth= 3.79"

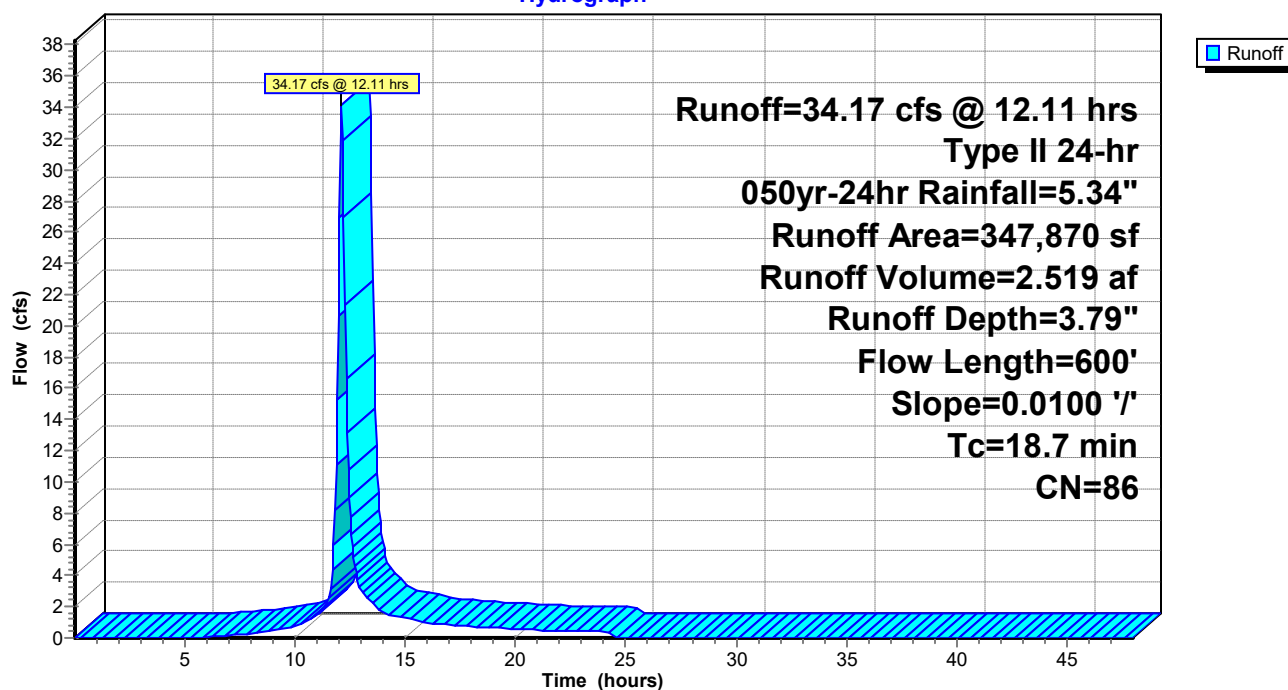
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr 050yr-24hr Rainfall=5.34"

Area (sf)	CN	Description
169,520	74	>75% Grass cover, Good, HSG C
158,000	98	Paved parking, HSG C
20,350	98	Roofs, HSG C
347,870	86	Weighted Average
169,520		48.73% Pervious Area
178,350		51.27% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0100	0.12		Sheet Flow, Sheet Flow n= 0.150 P2= 2.92"
5.2	500	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc Unpaved Kv= 16.1 fps
18.7	600	Total			

Subcatchment 1s: EX1

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS

Type II 24-hr 050yr-24hr Rainfall=5.34"

Existing Conditions

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Summary for Subcatchment 2s: EX2

Runoff = 2.95 cfs @ 12.07 hrs, Volume= 0.192 af, Depth= 2.64"

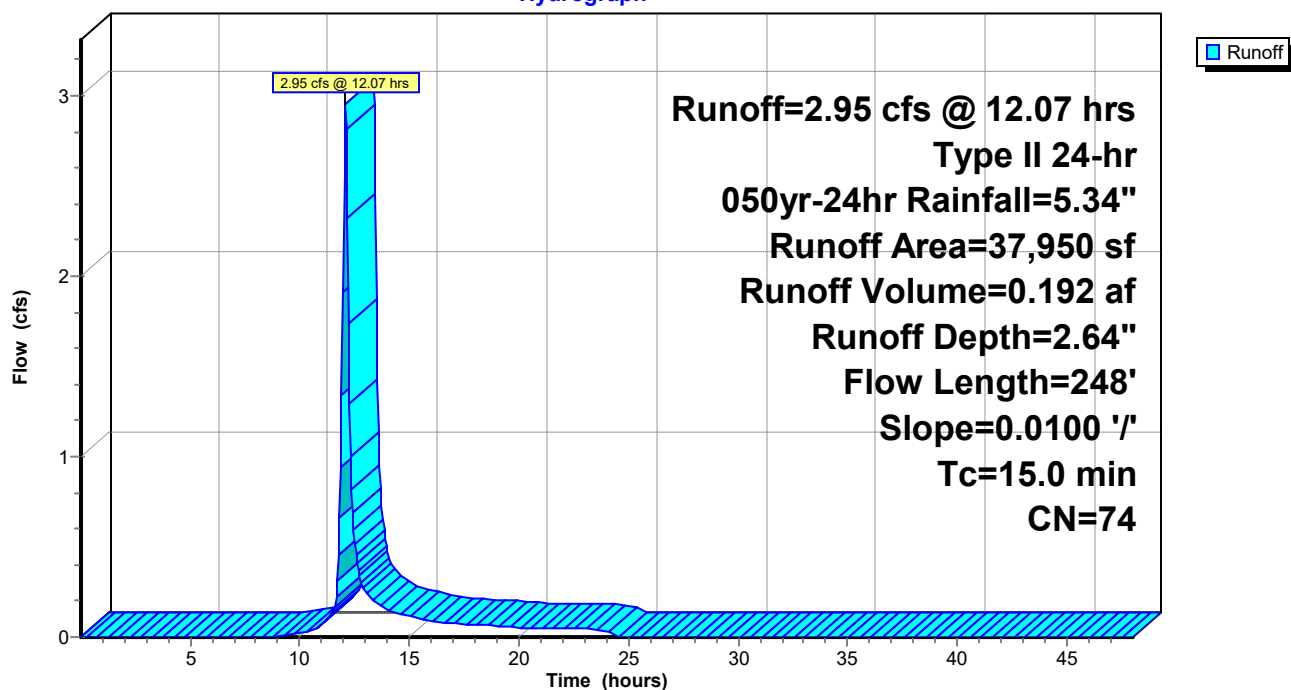
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr 050yr-24hr Rainfall=5.34"

Area (sf)	CN	Description
37,950	74	>75% Grass cover, Good, HSG C
37,950		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0100	0.12		Sheet Flow, Sheet Flow
					Grass: Short n= 0.150 P2= 2.92"
1.5	148	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc
					Unpaved Kv= 16.1 fps
15.0	248	Total			

Subcatchment 2s: EX2

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS

Type II 24-hr 050yr-24hr Rainfall=5.34"

Existing Conditions

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Summary for Subcatchment 3s: EX3

Runoff = 2.39 cfs @ 12.07 hrs, Volume= 0.155 af, Depth= 2.64"

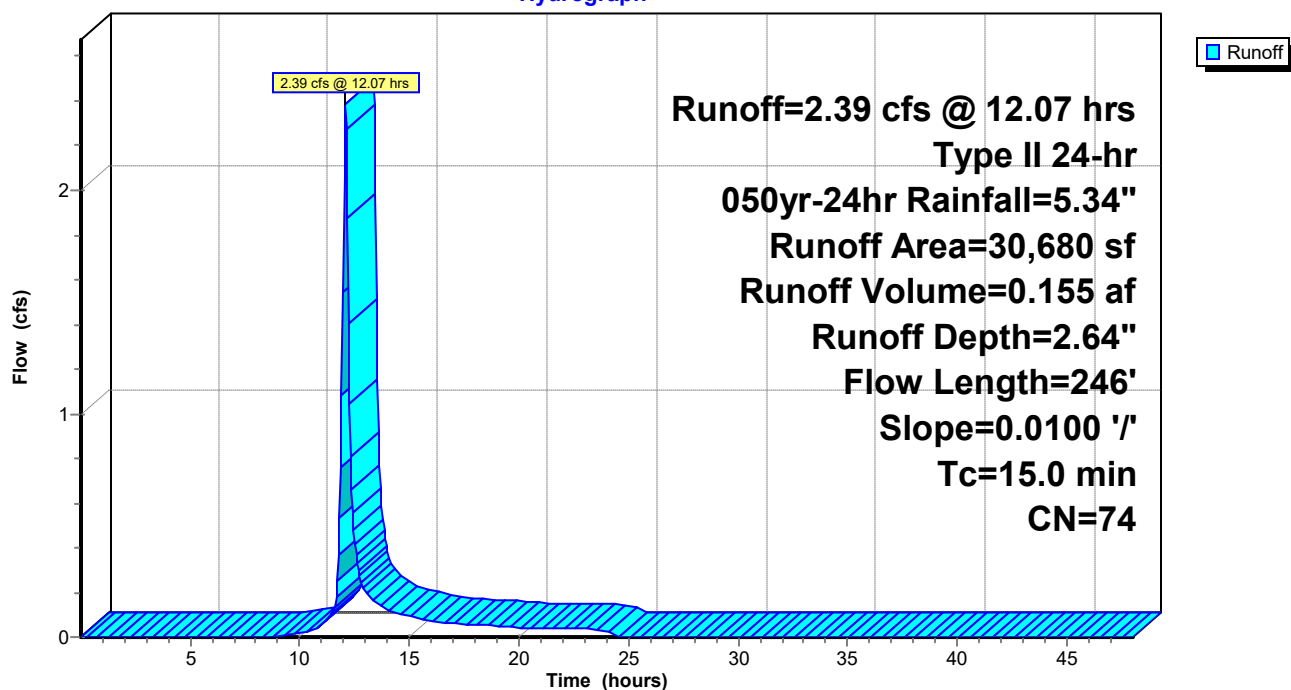
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr 050yr-24hr Rainfall=5.34"

Area (sf)	CN	Description
30,680	74	>75% Grass cover, Good, HSG C
30,680		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0100	0.12		Sheet Flow, Sheet Flow
					Grass: Short n= 0.150 P2= 2.92"
1.5	146	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc
					Unpaved Kv= 16.1 fps
15.0	246	Total			

Subcatchment 3s: EX3

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS

Type II 24-hr 050yr-24hr Rainfall=5.34"

Existing Conditions

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Summary for Subcatchment 4s: EX4

Runoff = 13.78 cfs @ 11.96 hrs, Volume= 0.648 af, Depth= 3.38"

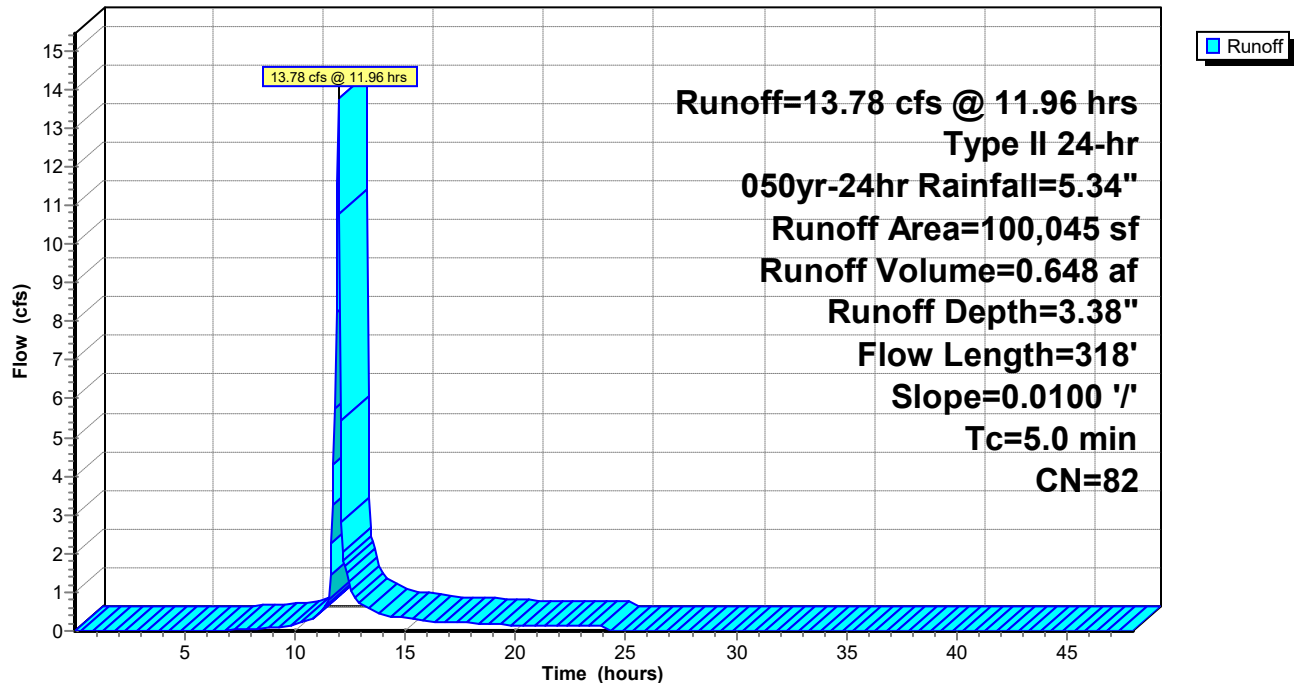
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr 050yr-24hr Rainfall=5.34"

Area (sf)	CN	Description
64,745	74	>75% Grass cover, Good, HSG C
27,940	98	Paved parking, HSG C
7,360	98	Roofs, HSG C
100,045	82	Weighted Average
64,745		64.72% Pervious Area
35,300		35.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	100	0.0100	1.00		Sheet Flow, Sheet Flow
					Smooth surfaces n= 0.011 P2= 2.92"
2.3	218	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc
					Unpaved Kv= 16.1 fps
4.0	318	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 4s: EX4

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS

Type II 24-hr 050yr-24hr Rainfall=5.34"

Existing Conditions

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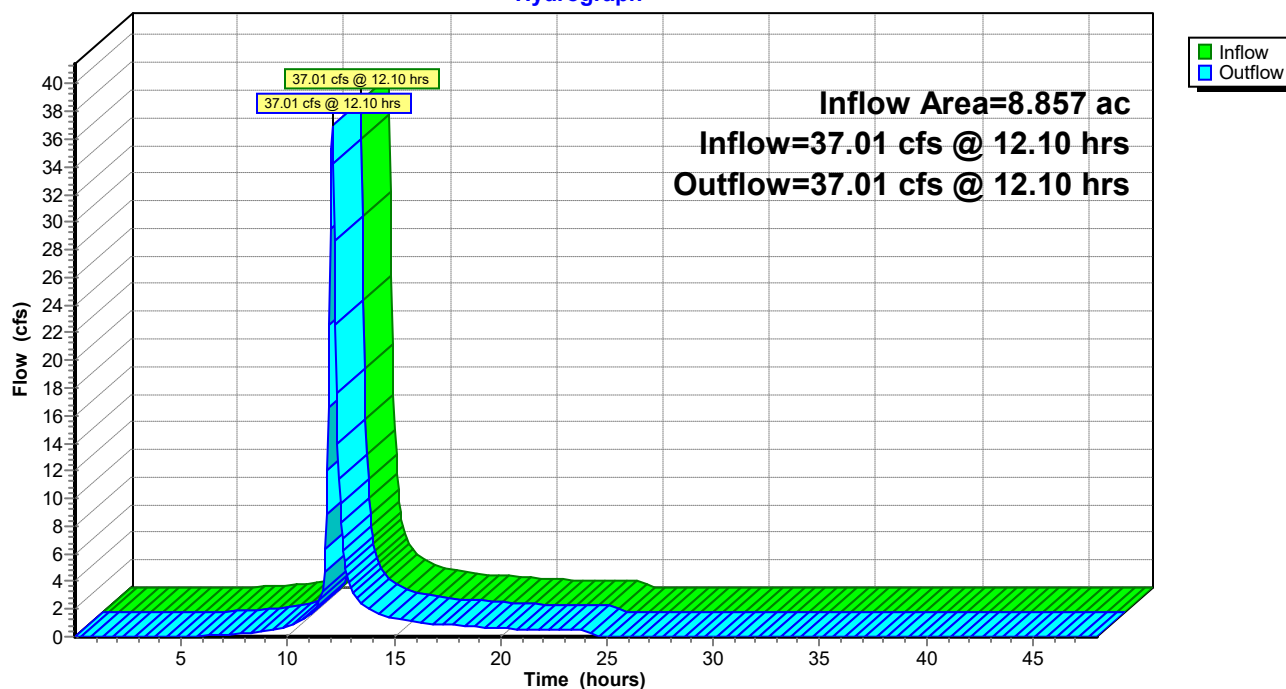
Summary for Reach 1R: US 31 DITCH

Inflow Area = 8.857 ac, 46.23% Impervious, Inflow Depth = 3.67" for 050yr-24hr event
Inflow = 37.01 cfs @ 12.10 hrs, Volume= 2.711 af
Outflow = 37.01 cfs @ 12.10 hrs, Volume= 2.711 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs

Reach 1R: US 31 DITCH

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS

Type II 24-hr 050yr-24hr Rainfall=5.34"

Existing Conditions

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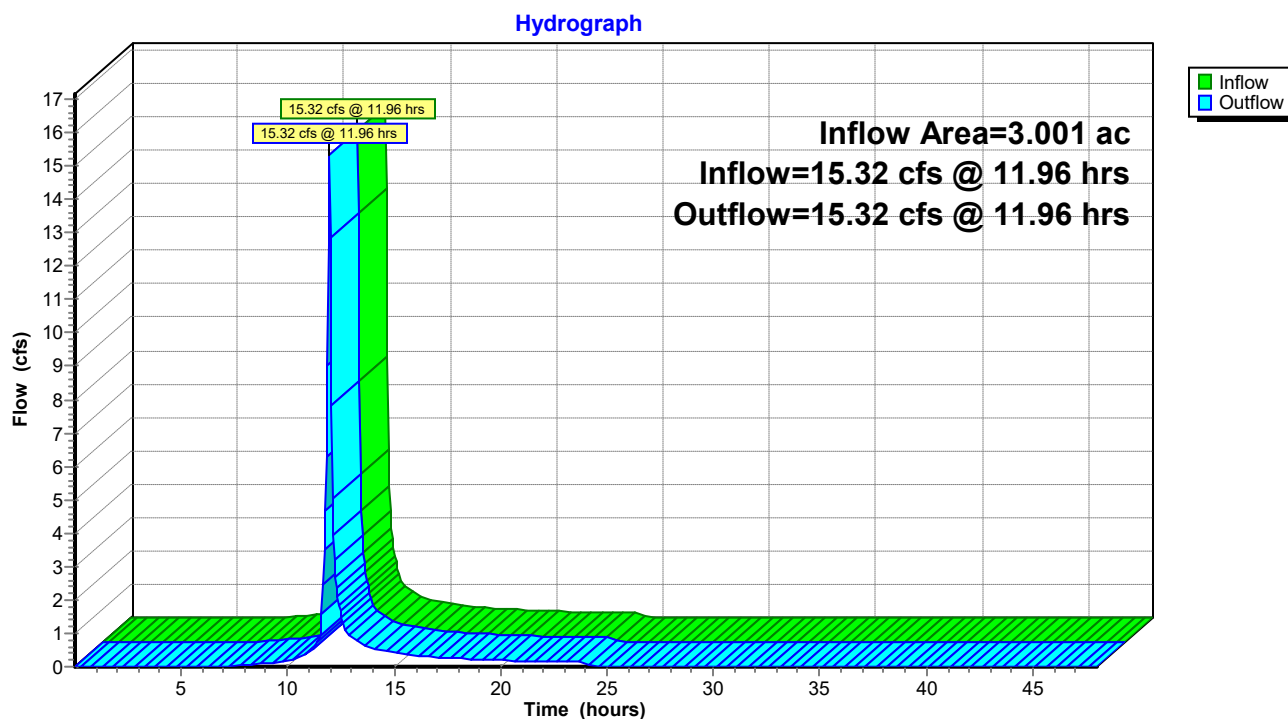
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Summary for Reach 2R: EX POND TO WEST

Inflow Area = 3.001 ac, 27.00% Impervious, Inflow Depth = 3.21" for 050yr-24hr event
Inflow = 15.32 cfs @ 11.96 hrs, Volume= 0.803 af
Outflow = 15.32 cfs @ 11.96 hrs, Volume= 0.803 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs

Reach 2R: EX POND TO WEST



BDH REALTY COMMERCIAL DEV-EX CONDITIONS

Existing Conditions

Type II 24-hr trimmed to 1.00 hrs 100yr-01hr Rainfall=3.01"

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Time span=0.01-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1s: EX1 Runoff Area=347,870 sf 51.27% Impervious Runoff Depth=1.67"
Flow Length=600' Slope=0.0100 '/' Tc=18.7 min CN=86 Runoff=31.47 cfs 1.112 af

Subcatchment 2s: EX2 Runoff Area=37,950 sf 0.00% Impervious Runoff Depth=0.91"
Flow Length=248' Slope=0.0100 '/' Tc=15.0 min CN=74 Runoff=2.12 cfs 0.066 af

Subcatchment 3s: EX3 Runoff Area=30,680 sf 0.00% Impervious Runoff Depth=0.91"
Flow Length=246' Slope=0.0100 '/' Tc=15.0 min CN=74 Runoff=1.72 cfs 0.054 af

Subcatchment 4s: EX4 Runoff Area=100,045 sf 35.28% Impervious Runoff Depth=1.39"
Flow Length=318' Slope=0.0100 '/' Tc=5.0 min CN=82 Runoff=13.23 cfs 0.265 af

Reach 1R: US 31 DITCH Inflow=33.54 cfs 1.178 af
Outflow=33.54 cfs 1.178 af

Reach 2R: EX POND TO WEST Inflow=13.87 cfs 0.319 af
Outflow=13.87 cfs 0.319 af

Total Runoff Area = 11.858 ac Runoff Volume = 1.498 af Average Runoff Depth = 1.52"
58.64% Pervious = 6.954 ac 41.36% Impervious = 4.905 ac

BDH REALTY COMMERCIAL DEV-EX CONDITIONS

Existing Conditions

Type II 24-hr trimmed to 1.00 hrs 100yr-01hr Rainfall=3.01"

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Summary for Subcatchment 1s: EX1

Runoff = 31.47 cfs @ 0.63 hrs, Volume= 1.112 af, Depth= 1.67"

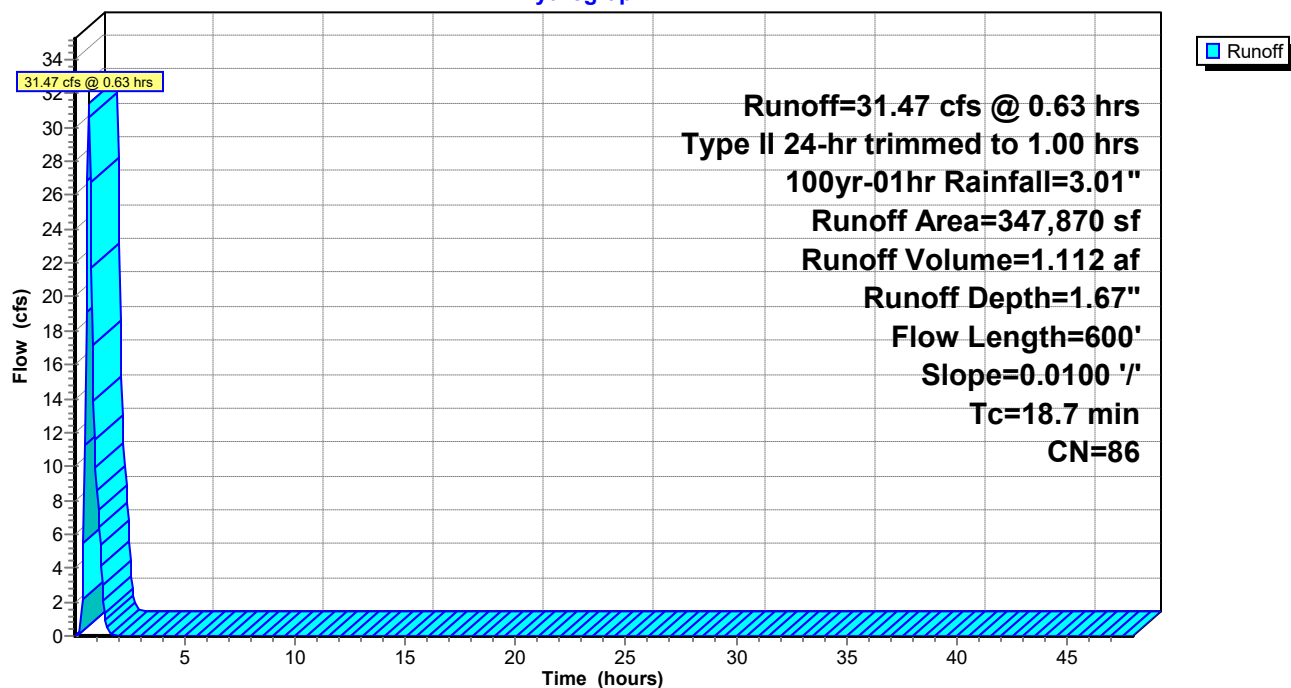
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 1.00 hrs 100yr-01hr Rainfall=3.01"

Area (sf)	CN	Description
169,520	74	>75% Grass cover, Good, HSG C
158,000	98	Paved parking, HSG C
20,350	98	Roofs, HSG C
347,870	86	Weighted Average
169,520		48.73% Pervious Area
178,350		51.27% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0100	0.12		Sheet Flow, Sheet Flow n= 0.150 P2= 2.92"
5.2	500	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc Unpaved Kv= 16.1 fps
18.7	600	Total			

Subcatchment 1s: EX1

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 1.00 hrs 100yr-01hr Rainfall=3.01"

Existing Conditions

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Summary for Subcatchment 2s: EX2

Runoff = 2.12 cfs @ 0.61 hrs, Volume= 0.066 af, Depth= 0.91"

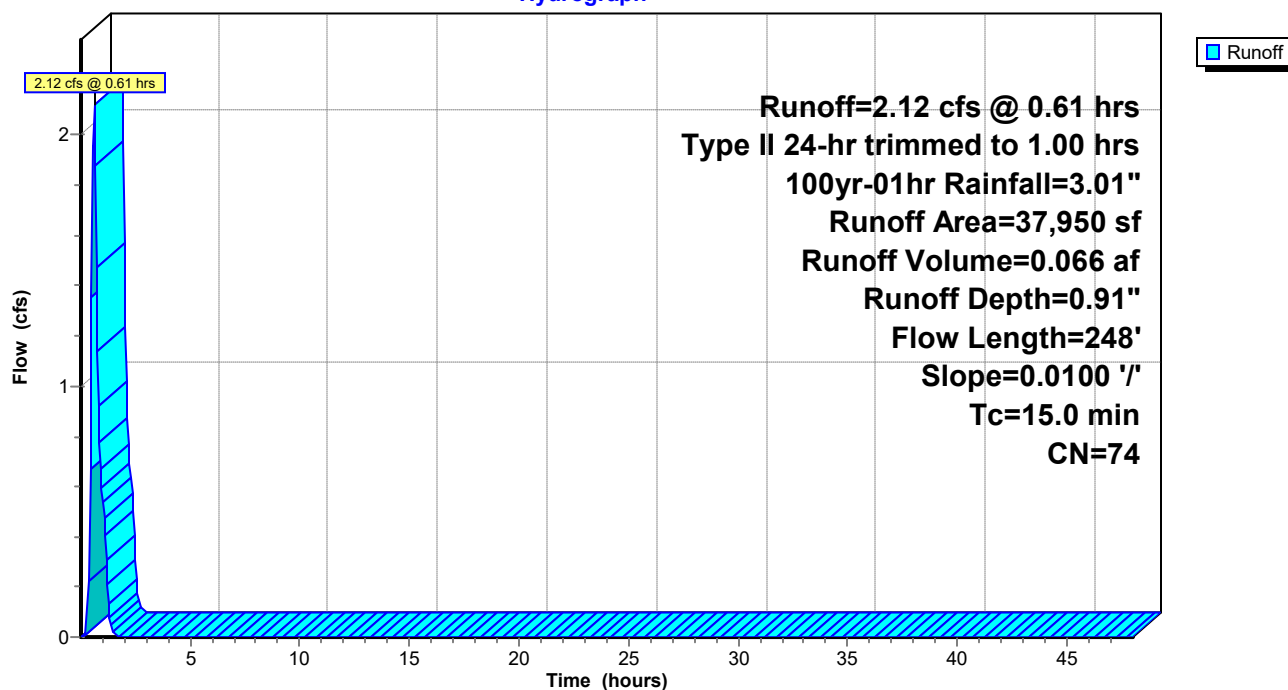
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 1.00 hrs 100yr-01hr Rainfall=3.01"

Area (sf)	CN	Description
37,950	74	>75% Grass cover, Good, HSG C
37,950		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0100	0.12		Sheet Flow, Sheet Flow Grass: Short n= 0.150 P2= 2.92"
1.5	148	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc Unpaved Kv= 16.1 fps
15.0	248	Total			

Subcatchment 2s: EX2

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 1.00 hrs 100yr-01hr Rainfall=3.01"

Existing Conditions

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Summary for Subcatchment 3s: EX3

Runoff = 1.72 cfs @ 0.61 hrs, Volume= 0.054 af, Depth= 0.91"

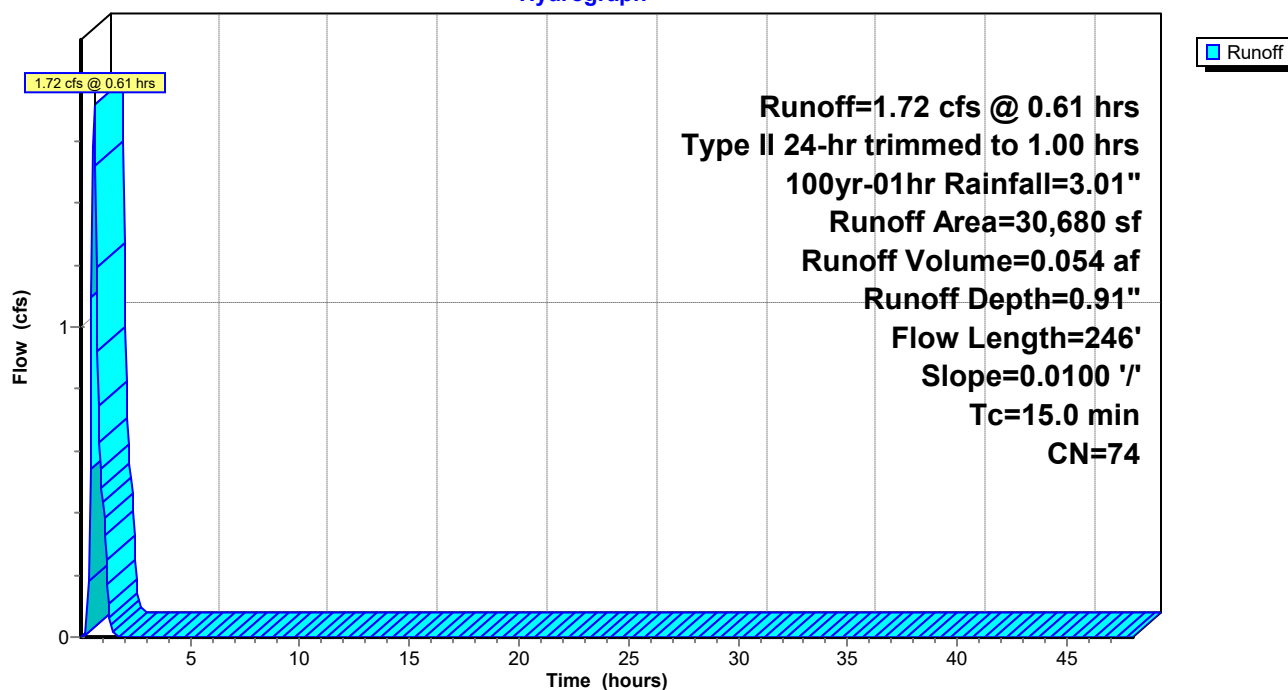
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 1.00 hrs 100yr-01hr Rainfall=3.01"

Area (sf)	CN	Description
30,680	74	>75% Grass cover, Good, HSG C
30,680		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0100	0.12		Sheet Flow, Sheet Flow Grass: Short n= 0.150 P2= 2.92"
1.5	146	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc Unpaved Kv= 16.1 fps
15.0	246	Total			

Subcatchment 3s: EX3

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 1.00 hrs 100yr-01hr Rainfall=3.01"

Existing Conditions

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Summary for Subcatchment 4s: EX4

Runoff = 13.23 cfs @ 0.47 hrs, Volume= 0.265 af, Depth= 1.39"

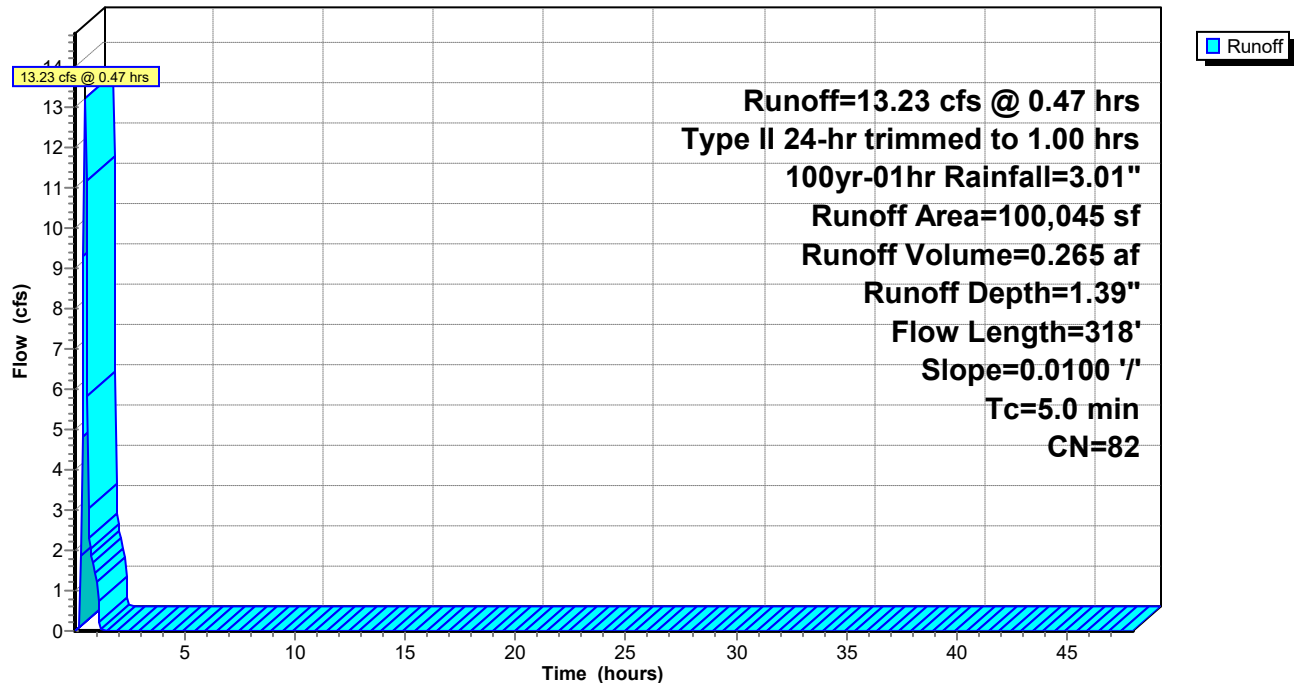
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 1.00 hrs 100yr-01hr Rainfall=3.01"

Area (sf)	CN	Description
64,745	74	>75% Grass cover, Good, HSG C
27,940	98	Paved parking, HSG C
7,360	98	Roofs, HSG C
100,045	82	Weighted Average
64,745		64.72% Pervious Area
35,300		35.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	100	0.0100	1.00		Sheet Flow, Sheet Flow Smooth surfaces n= 0.011 P2= 2.92"
2.3	218	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc Unpaved Kv= 16.1 fps
4.0	318	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 4s: EX4

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 1.00 hrs 100yr-01hr Rainfall=3.01"

Existing Conditions

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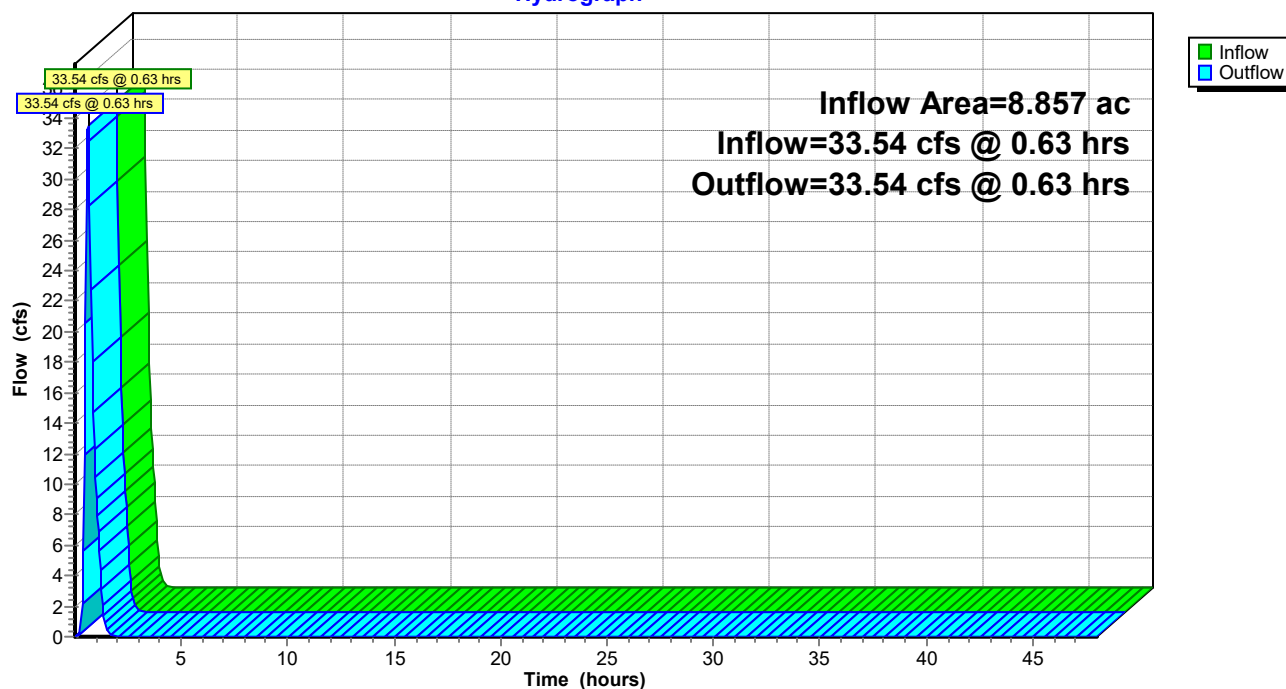
Summary for Reach 1R: US 31 DITCH

Inflow Area = 8.857 ac, 46.23% Impervious, Inflow Depth = 1.60" for 100yr-01hr event
Inflow = 33.54 cfs @ 0.63 hrs, Volume= 1.178 af
Outflow = 33.54 cfs @ 0.63 hrs, Volume= 1.178 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs

Reach 1R: US 31 DITCH

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 1.00 hrs 100yr-01hr Rainfall=3.01"

Existing Conditions

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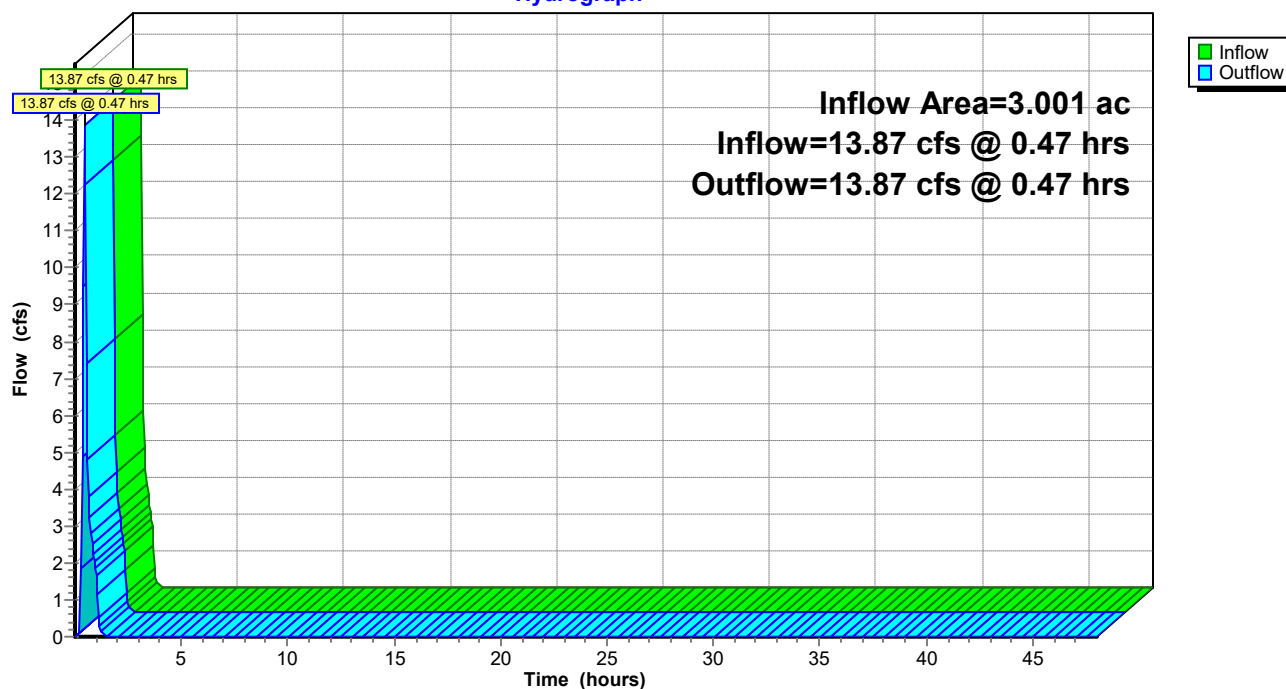
Summary for Reach 2R: EX POND TO WEST

Inflow Area = 3.001 ac, 27.00% Impervious, Inflow Depth = 1.28" for 100yr-01hr event
Inflow = 13.87 cfs @ 0.47 hrs, Volume= 0.319 af
Outflow = 13.87 cfs @ 0.47 hrs, Volume= 0.319 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs

Reach 2R: EX POND TO WEST

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 2.00 hrs 100yr-02hr Rainfall=3.65"

Existing Conditions

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Time span=0.01-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1s: EX1 Runoff Area=347,870 sf 51.27% Impervious Runoff Depth=2.23"
Flow Length=600' Slope=0.0100 '/' Tc=18.7 min CN=86 Runoff=36.59 cfs 1.485 af

Subcatchment 2s: EX2 Runoff Area=37,950 sf 0.00% Impervious Runoff Depth=1.34"
Flow Length=248' Slope=0.0100 '/' Tc=15.0 min CN=74 Runoff=2.70 cfs 0.098 af

Subcatchment 3s: EX3 Runoff Area=30,680 sf 0.00% Impervious Runoff Depth=1.34"
Flow Length=246' Slope=0.0100 '/' Tc=15.0 min CN=74 Runoff=2.18 cfs 0.079 af

Subcatchment 4s: EX4 Runoff Area=100,045 sf 35.28% Impervious Runoff Depth=1.91"
Flow Length=318' Slope=0.0100 '/' Tc=5.0 min CN=82 Runoff=15.11 cfs 0.365 af

Reach 1R: US 31 DITCH Inflow=39.23 cfs 1.583 af
Outflow=39.23 cfs 1.583 af

Reach 2R: EX POND TO WEST Inflow=16.13 cfs 0.444 af
Outflow=16.13 cfs 0.444 af

Total Runoff Area = 11.858 ac Runoff Volume = 2.027 af Average Runoff Depth = 2.05"
58.64% Pervious = 6.954 ac 41.36% Impervious = 4.905 ac

Existing Conditions

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BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 2.00 hrs 100yr-02hr Rainfall=3.65"

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Summary for Subcatchment 1s: EX1

Runoff = 36.59 cfs @ 1.12 hrs, Volume= 1.485 af, Depth= 2.23"

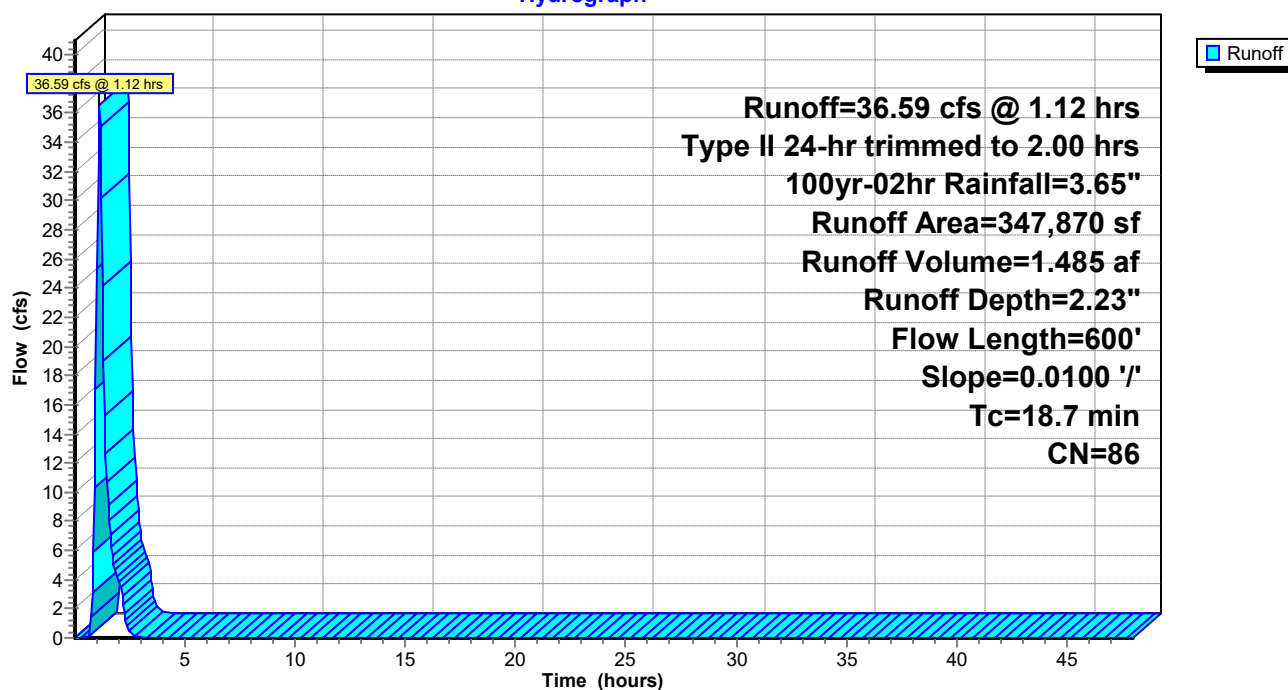
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 2.00 hrs 100yr-02hr Rainfall=3.65"

Area (sf)	CN	Description
169,520	74	>75% Grass cover, Good, HSG C
158,000	98	Paved parking, HSG C
20,350	98	Roofs, HSG C
347,870	86	Weighted Average
169,520		48.73% Pervious Area
178,350		51.27% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0100	0.12		Sheet Flow, Sheet Flow n= 0.150 P2= 2.92"
5.2	500	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc Unpaved Kv= 16.1 fps
18.7	600	Total			

Subcatchment 1s: EX1

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 2.00 hrs 100yr-02hr Rainfall=3.65"

Existing Conditions

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Summary for Subcatchment 2s: EX2

Runoff = 2.70 cfs @ 1.09 hrs, Volume= 0.098 af, Depth= 1.34"

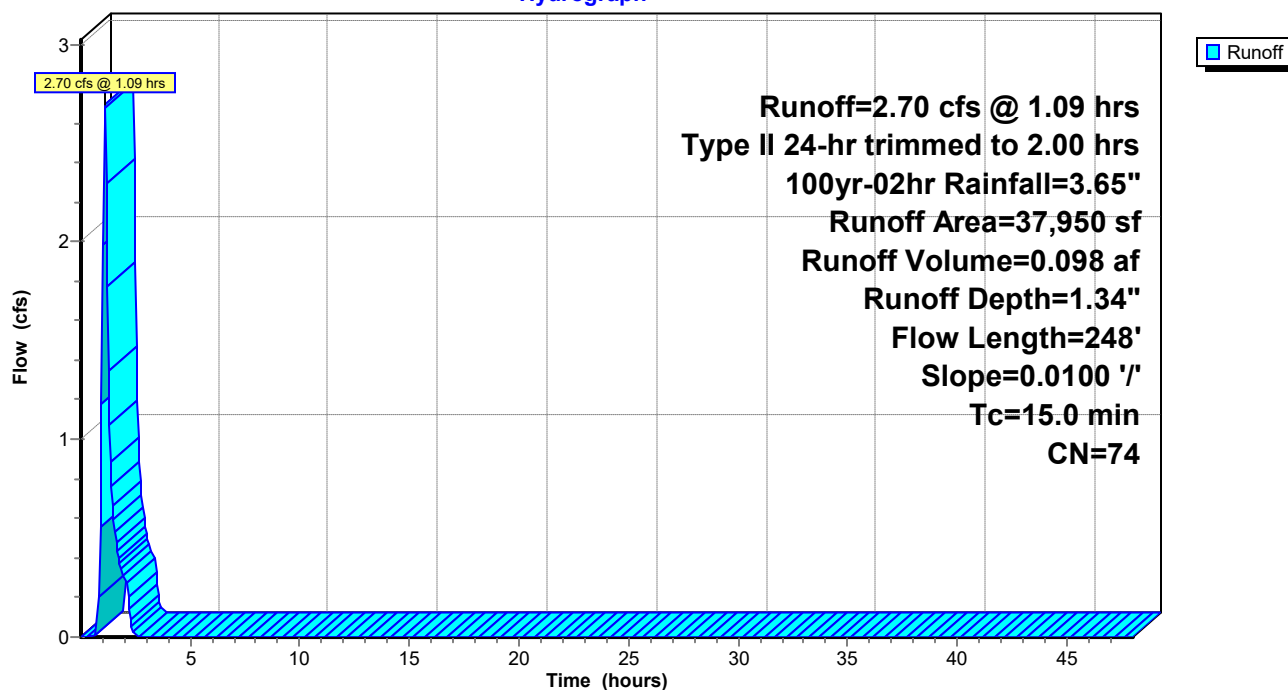
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 2.00 hrs 100yr-02hr Rainfall=3.65"

Area (sf)	CN	Description
37,950	74	>75% Grass cover, Good, HSG C
37,950		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0100	0.12		Sheet Flow, Sheet Flow
					Grass: Short n= 0.150 P2= 2.92"
1.5	148	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc
					Unpaved Kv= 16.1 fps
15.0	248	Total			

Subcatchment 2s: EX2

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 2.00 hrs 100yr-02hr Rainfall=3.65"

Existing Conditions

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Summary for Subcatchment 3s: EX3

Runoff = 2.18 cfs @ 1.09 hrs, Volume= 0.079 af, Depth= 1.34"

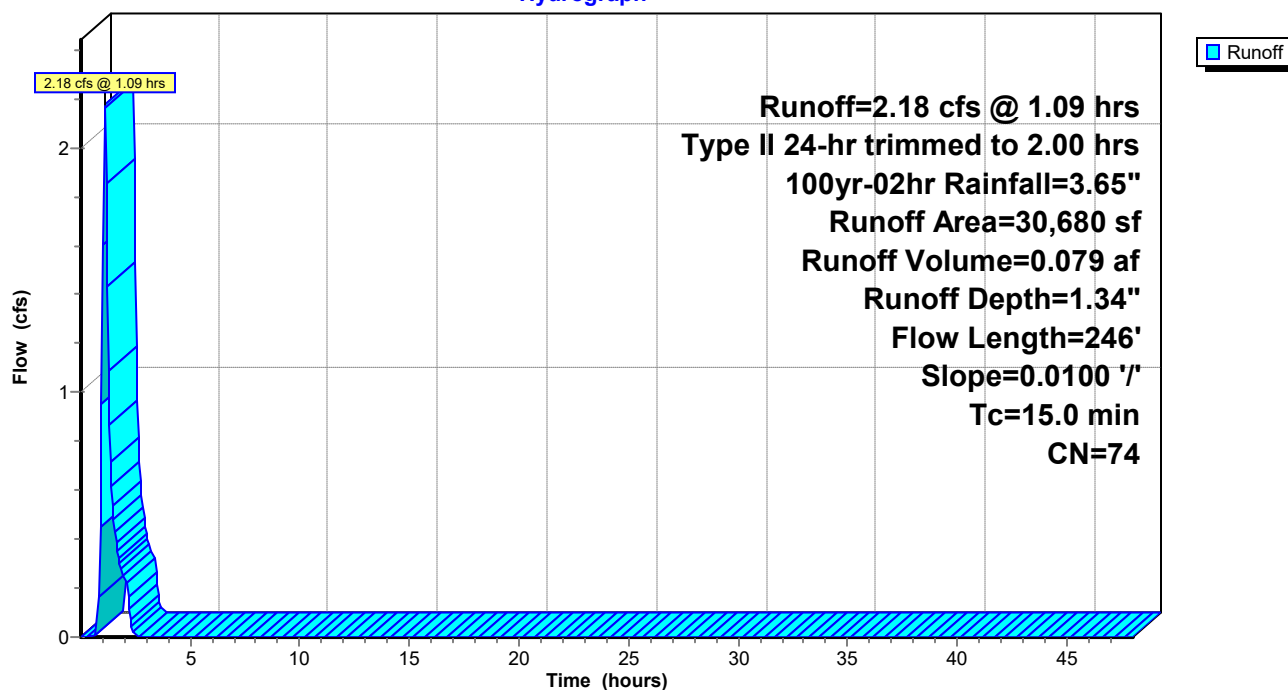
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 2.00 hrs 100yr-02hr Rainfall=3.65"

Area (sf)	CN	Description
30,680	74	>75% Grass cover, Good, HSG C
30,680		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0100	0.12		Sheet Flow, Sheet Flow
					Grass: Short n= 0.150 P2= 2.92"
1.5	146	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc
					Unpaved Kv= 16.1 fps
15.0	246	Total			

Subcatchment 3s: EX3

Hydrograph



Existing Conditions

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BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 2.00 hrs 100yr-02hr Rainfall=3.65"

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Summary for Subcatchment 4s: EX4

Runoff = 15.11 cfs @ 0.96 hrs, Volume= 0.365 af, Depth= 1.91"

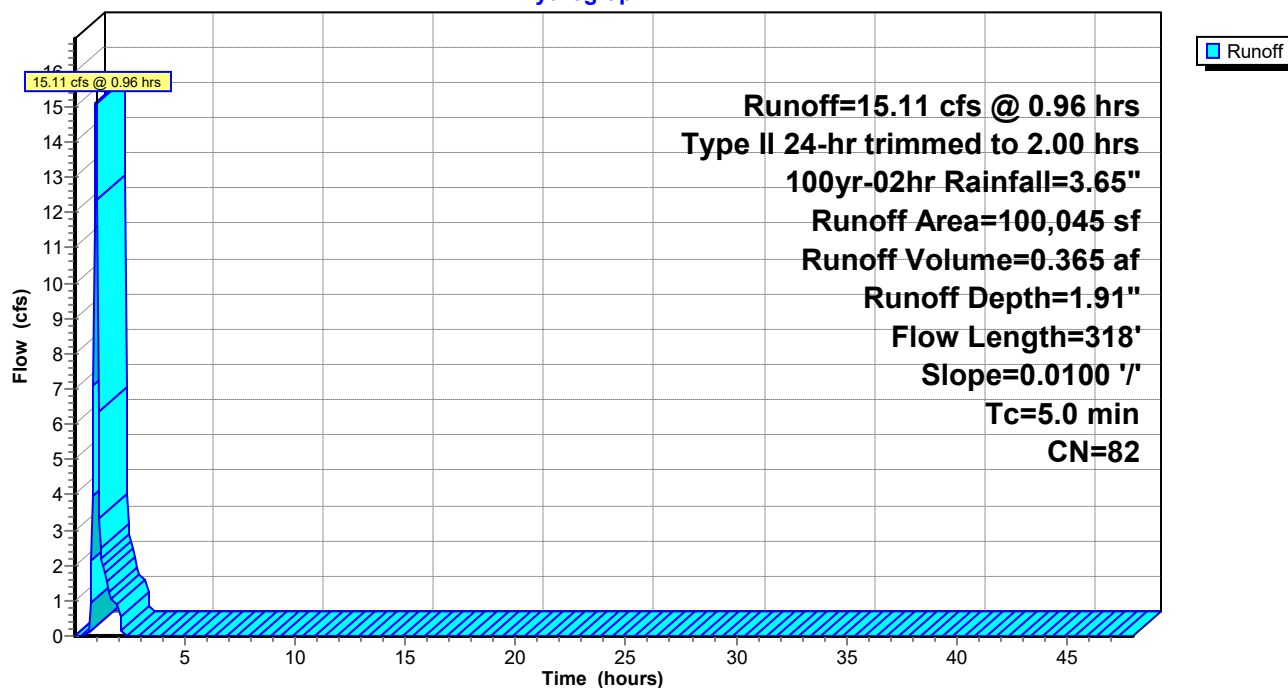
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 2.00 hrs 100yr-02hr Rainfall=3.65"

Area (sf)	CN	Description
64,745	74	>75% Grass cover, Good, HSG C
27,940	98	Paved parking, HSG C
7,360	98	Roofs, HSG C
100,045	82	Weighted Average
64,745		64.72% Pervious Area
35,300		35.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	100	0.0100	1.00		Sheet Flow, Sheet Flow
					Smooth surfaces n= 0.011 P2= 2.92"
2.3	218	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc
					Unpaved Kv= 16.1 fps
4.0	318	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 4s: EX4

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 2.00 hrs 100yr-02hr Rainfall=3.65"

Existing Conditions

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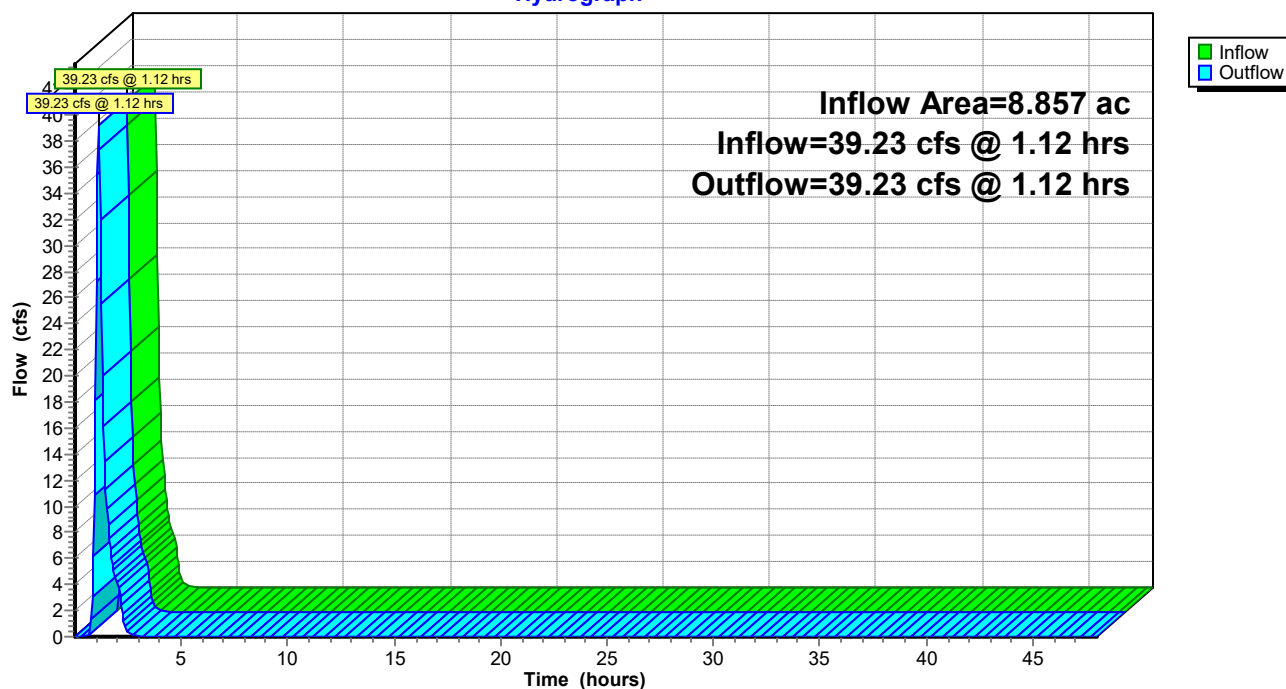
Summary for Reach 1R: US 31 DITCH

Inflow Area = 8.857 ac, 46.23% Impervious, Inflow Depth = 2.14" for 100yr-02hr event
Inflow = 39.23 cfs @ 1.12 hrs, Volume= 1.583 af
Outflow = 39.23 cfs @ 1.12 hrs, Volume= 1.583 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs

Reach 1R: US 31 DITCH

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 2.00 hrs 100yr-02hr Rainfall=3.65"

Existing Conditions

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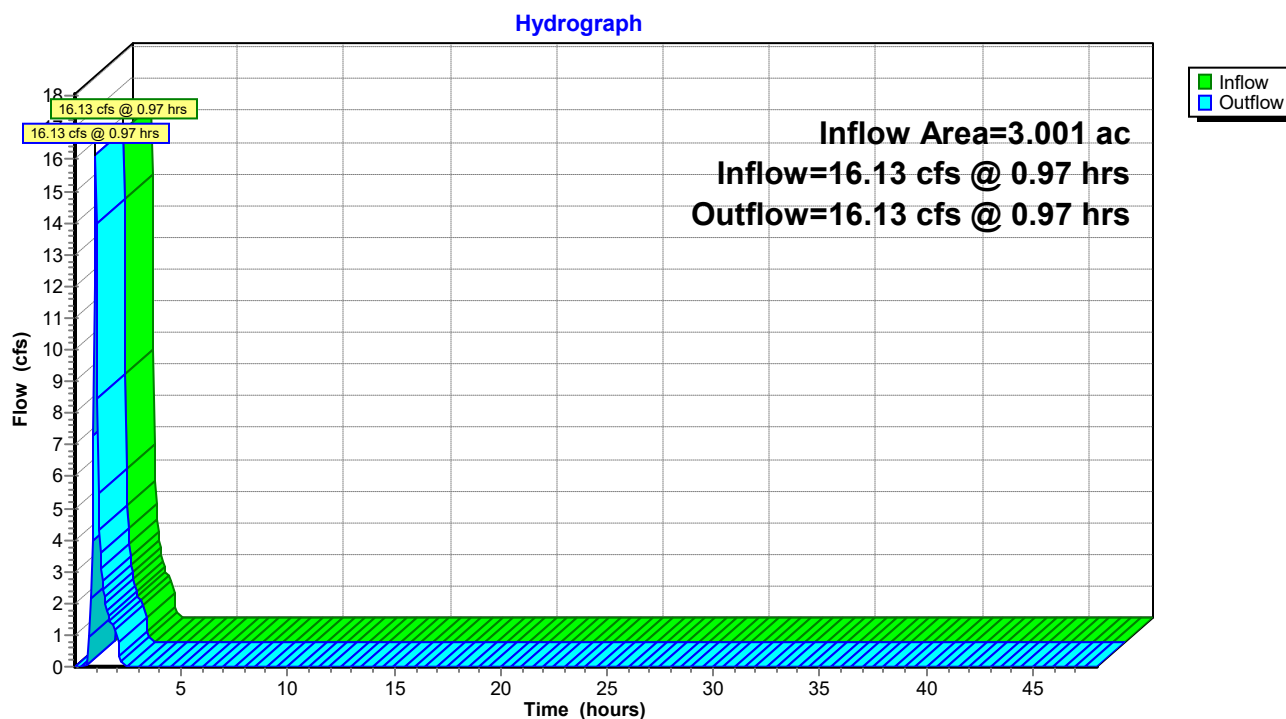
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Summary for Reach 2R: EX POND TO WEST

Inflow Area = 3.001 ac, 27.00% Impervious, Inflow Depth = 1.78" for 100yr-02hr event
Inflow = 16.13 cfs @ 0.97 hrs, Volume= 0.444 af
Outflow = 16.13 cfs @ 0.97 hrs, Volume= 0.444 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs

Reach 2R: EX POND TO WEST



Existing Conditions

BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 3.00 hrs 100yr-03hr Rainfall=3.94"

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Time span=0.01-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1s: EX1 Runoff Area=347,870 sf 51.27% Impervious Runoff Depth=2.49"
Flow Length=600' Slope=0.0100 '/' Tc=18.7 min CN=86 Runoff=37.34 cfs 1.658 af

Subcatchment 2s: EX2 Runoff Area=37,950 sf 0.00% Impervious Runoff Depth=1.55"
Flow Length=248' Slope=0.0100 '/' Tc=15.0 min CN=74 Runoff=2.84 cfs 0.113 af

Subcatchment 3s: EX3 Runoff Area=30,680 sf 0.00% Impervious Runoff Depth=1.55"
Flow Length=246' Slope=0.0100 '/' Tc=15.0 min CN=74 Runoff=2.30 cfs 0.091 af

Subcatchment 4s: EX4 Runoff Area=100,045 sf 35.28% Impervious Runoff Depth=2.15"
Flow Length=318' Slope=0.0100 '/' Tc=5.0 min CN=82 Runoff=15.27 cfs 0.412 af

Reach 1R: US 31 DITCH Inflow=40.11 cfs 1.771 af
Outflow=40.11 cfs 1.771 af

Reach 2R: EX POND TO WEST Inflow=16.45 cfs 0.503 af
Outflow=16.45 cfs 0.503 af

Total Runoff Area = 11.858 ac Runoff Volume = 2.274 af Average Runoff Depth = 2.30"
58.64% Pervious = 6.954 ac 41.36% Impervious = 4.905 ac

BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 3.00 hrs 100yr-03hr Rainfall=3.94"

Existing Conditions

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Summary for Subcatchment 1s: EX1

Runoff = 37.34 cfs @ 1.62 hrs, Volume= 1.658 af, Depth= 2.49"

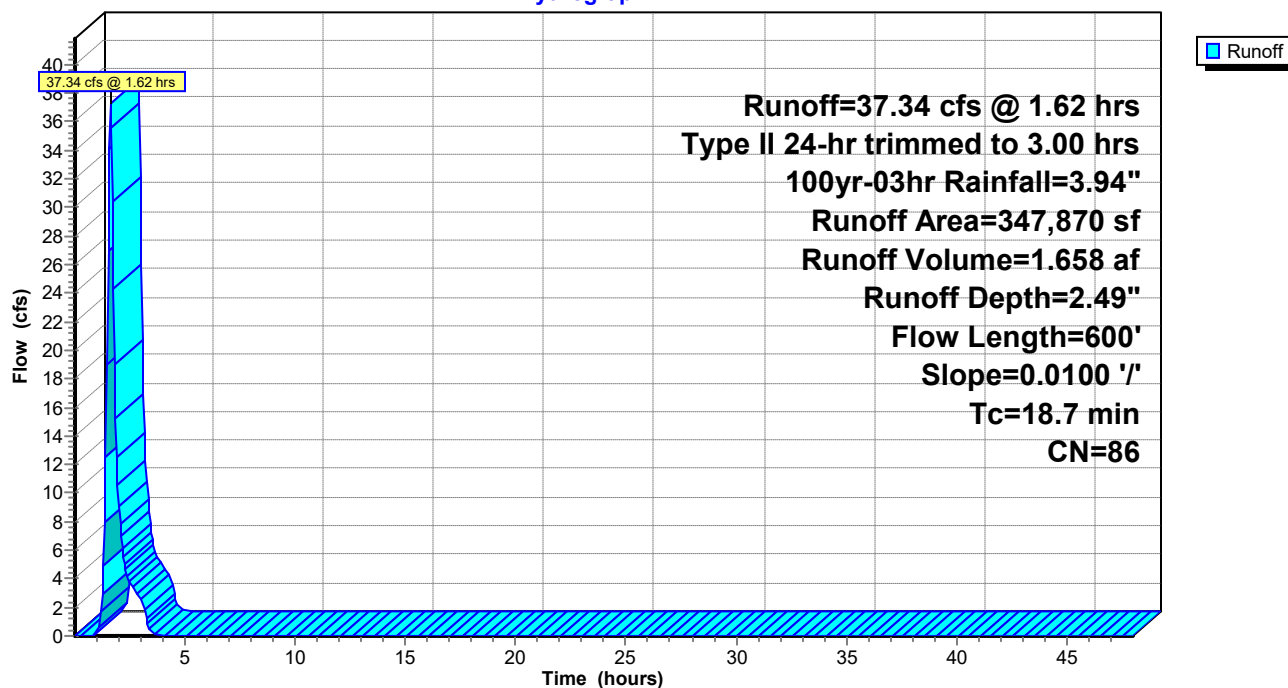
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 3.00 hrs 100yr-03hr Rainfall=3.94"

Area (sf)	CN	Description
169,520	74	>75% Grass cover, Good, HSG C
158,000	98	Paved parking, HSG C
20,350	98	Roofs, HSG C
347,870	86	Weighted Average
169,520		48.73% Pervious Area
178,350		51.27% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0100	0.12		Sheet Flow, Sheet Flow n= 0.150 P2= 2.92"
5.2	500	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc Unpaved Kv= 16.1 fps
18.7	600	Total			

Subcatchment 1s: EX1

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 3.00 hrs 100yr-03hr Rainfall=3.94"

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Summary for Subcatchment 2s: EX2

Runoff = 2.84 cfs @ 1.59 hrs, Volume= 0.113 af, Depth= 1.55"

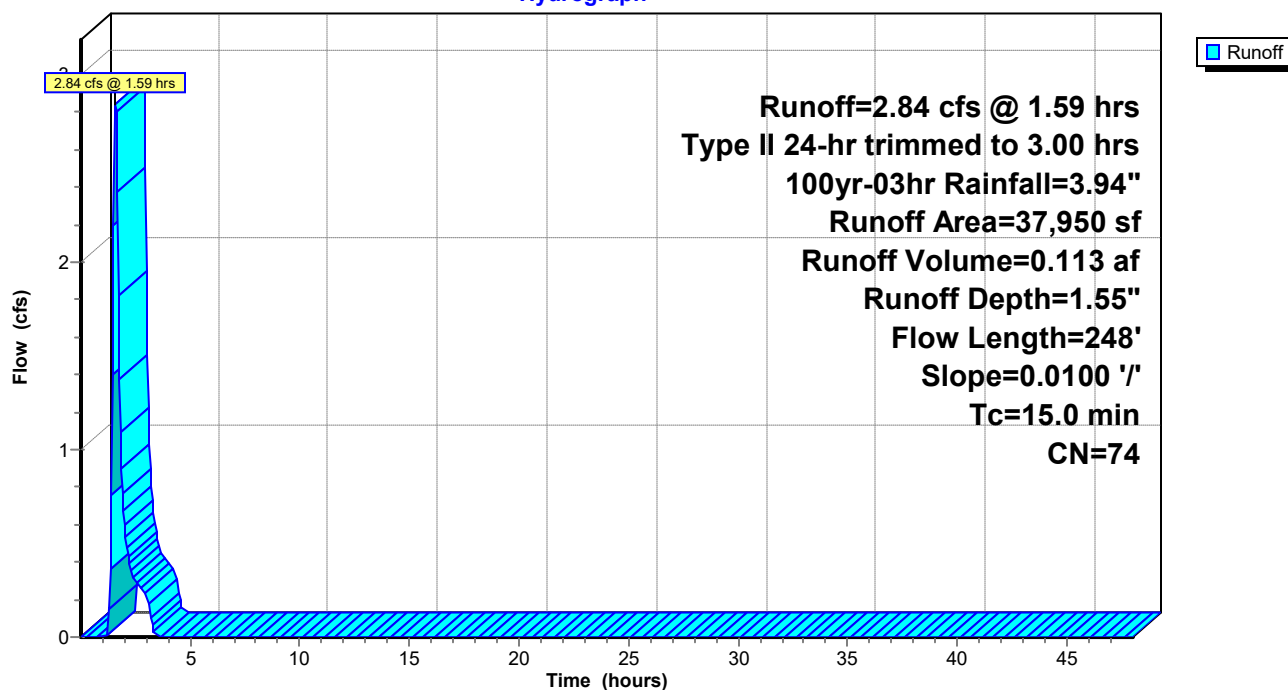
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 3.00 hrs 100yr-03hr Rainfall=3.94"

Area (sf)	CN	Description
37,950	74	>75% Grass cover, Good, HSG C
37,950		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0100	0.12		Sheet Flow, Sheet Flow
					Grass: Short n= 0.150 P2= 2.92"
1.5	148	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc
					Unpaved Kv= 16.1 fps
15.0	248	Total			

Subcatchment 2s: EX2

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 3.00 hrs 100yr-03hr Rainfall=3.94"

Existing Conditions

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Summary for Subcatchment 3s: EX3

Runoff = 2.30 cfs @ 1.59 hrs, Volume= 0.091 af, Depth= 1.55"

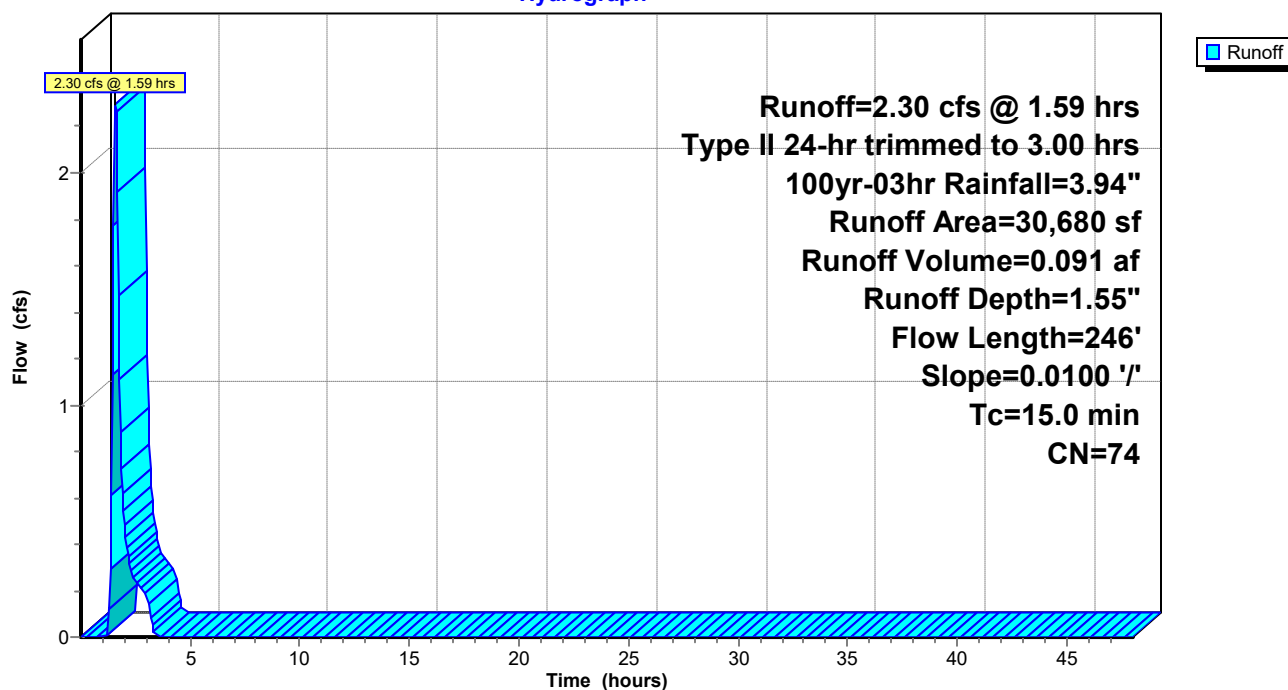
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 3.00 hrs 100yr-03hr Rainfall=3.94"

Area (sf)	CN	Description
30,680	74	>75% Grass cover, Good, HSG C
30,680		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0100	0.12		Sheet Flow, Sheet Flow Grass: Short n= 0.150 P2= 2.92"
1.5	146	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc Unpaved Kv= 16.1 fps
15.0	246	Total			

Subcatchment 3s: EX3

Hydrograph



Existing Conditions

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BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 3.00 hrs 100yr-03hr Rainfall=3.94"

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Summary for Subcatchment 4s: EX4

Runoff = 15.27 cfs @ 1.46 hrs, Volume= 0.412 af, Depth= 2.15"

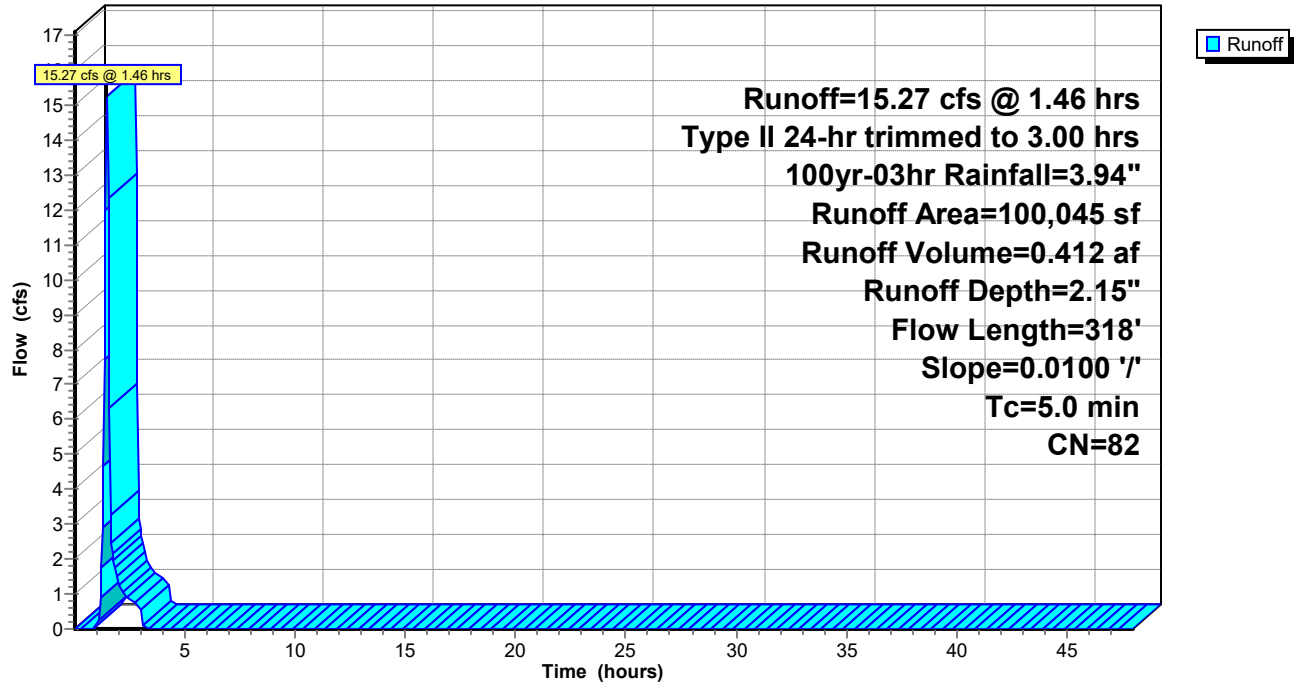
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 3.00 hrs 100yr-03hr Rainfall=3.94"

Area (sf)	CN	Description
64,745	74	>75% Grass cover, Good, HSG C
27,940	98	Paved parking, HSG C
7,360	98	Roofs, HSG C
100,045	82	Weighted Average
64,745		64.72% Pervious Area
35,300		35.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	100	0.0100	1.00		Sheet Flow, Sheet Flow
					Smooth surfaces n= 0.011 P2= 2.92"
2.3	218	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc
					Unpaved Kv= 16.1 fps
4.0	318	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 4s: EX4

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 3.00 hrs 100yr-03hr Rainfall=3.94"

Existing Conditions

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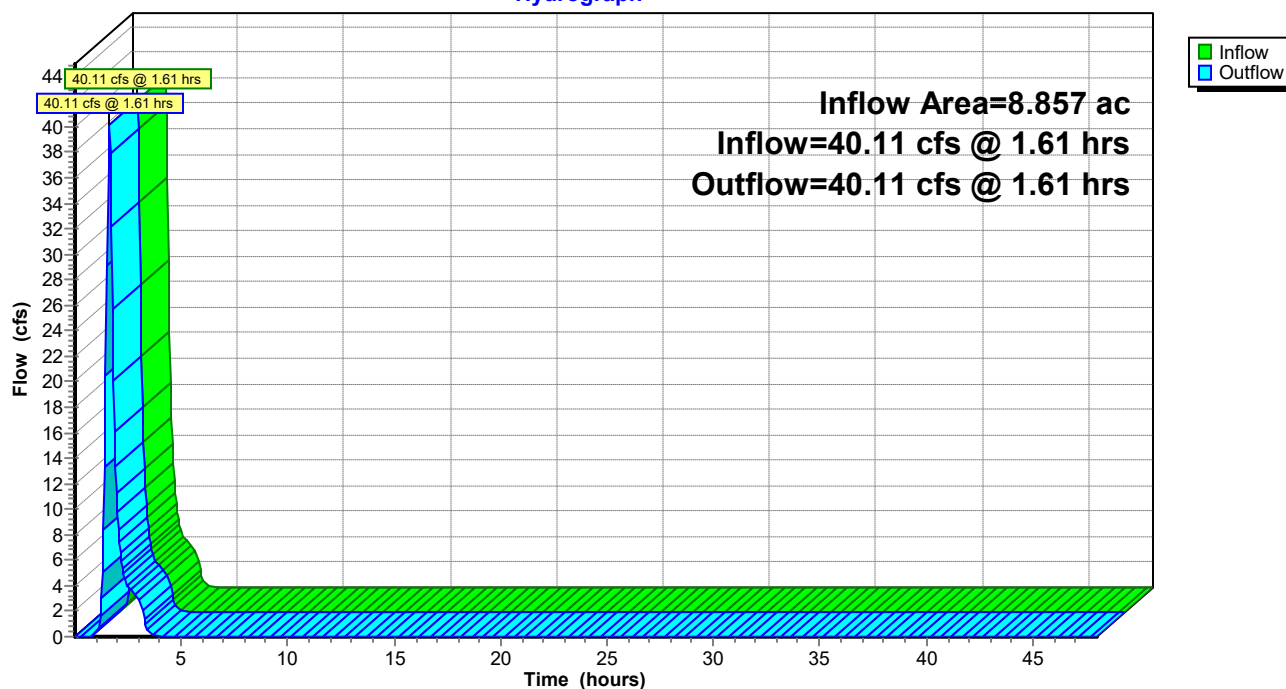
Summary for Reach 1R: US 31 DITCH

Inflow Area = 8.857 ac, 46.23% Impervious, Inflow Depth = 2.40" for 100yr-03hr event
Inflow = 40.11 cfs @ 1.61 hrs, Volume= 1.771 af
Outflow = 40.11 cfs @ 1.61 hrs, Volume= 1.771 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs

Reach 1R: US 31 DITCH

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 3.00 hrs 100yr-03hr Rainfall=3.94"

Existing Conditions

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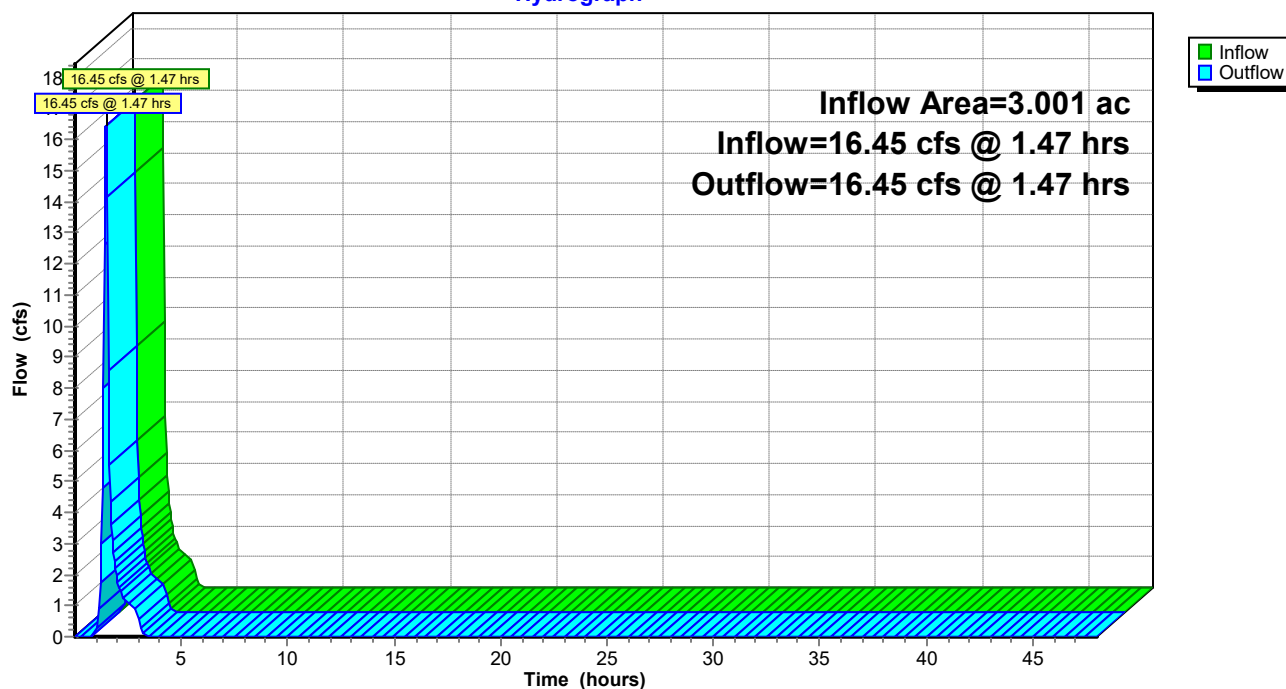
Summary for Reach 2R: EX POND TO WEST

Inflow Area = 3.001 ac, 27.00% Impervious, Inflow Depth = 2.01" for 100yr-03hr event
Inflow = 16.45 cfs @ 1.47 hrs, Volume= 0.503 af
Outflow = 16.45 cfs @ 1.47 hrs, Volume= 0.503 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs

Reach 2R: EX POND TO WEST

Hydrograph



Existing Conditions

BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 6.00 hrs 100yr-06hr Rainfall=4.77"

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Time span=0.01-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1s: EX1 Runoff Area=347,870 sf 51.27% Impervious Runoff Depth=3.25"
Flow Length=600' Slope=0.0100 '/' Tc=18.7 min CN=86 Runoff=41.34 cfs 2.165 af

Subcatchment 2s: EX2 Runoff Area=37,950 sf 0.00% Impervious Runoff Depth=2.18"
Flow Length=248' Slope=0.0100 '/' Tc=15.0 min CN=74 Runoff=3.43 cfs 0.158 af

Subcatchment 3s: EX3 Runoff Area=30,680 sf 0.00% Impervious Runoff Depth=2.18"
Flow Length=246' Slope=0.0100 '/' Tc=15.0 min CN=74 Runoff=2.77 cfs 0.128 af

Subcatchment 4s: EX4 Runoff Area=100,045 sf 35.28% Impervious Runoff Depth=2.87"
Flow Length=318' Slope=0.0100 '/' Tc=5.0 min CN=82 Runoff=16.85 cfs 0.550 af

Reach 1R: US 31 DITCH Inflow=44.66 cfs 2.323 af
Outflow=44.66 cfs 2.323 af

Reach 2R: EX POND TO WEST Inflow=18.47 cfs 0.678 af
Outflow=18.47 cfs 0.678 af

Total Runoff Area = 11.858 ac Runoff Volume = 3.001 af Average Runoff Depth = 3.04"
58.64% Pervious = 6.954 ac 41.36% Impervious = 4.905 ac

Existing Conditions

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BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 6.00 hrs 100yr-06hr Rainfall=4.77"

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Summary for Subcatchment 1s: EX1

Runoff = 41.34 cfs @ 3.11 hrs, Volume= 2.165 af, Depth= 3.25"

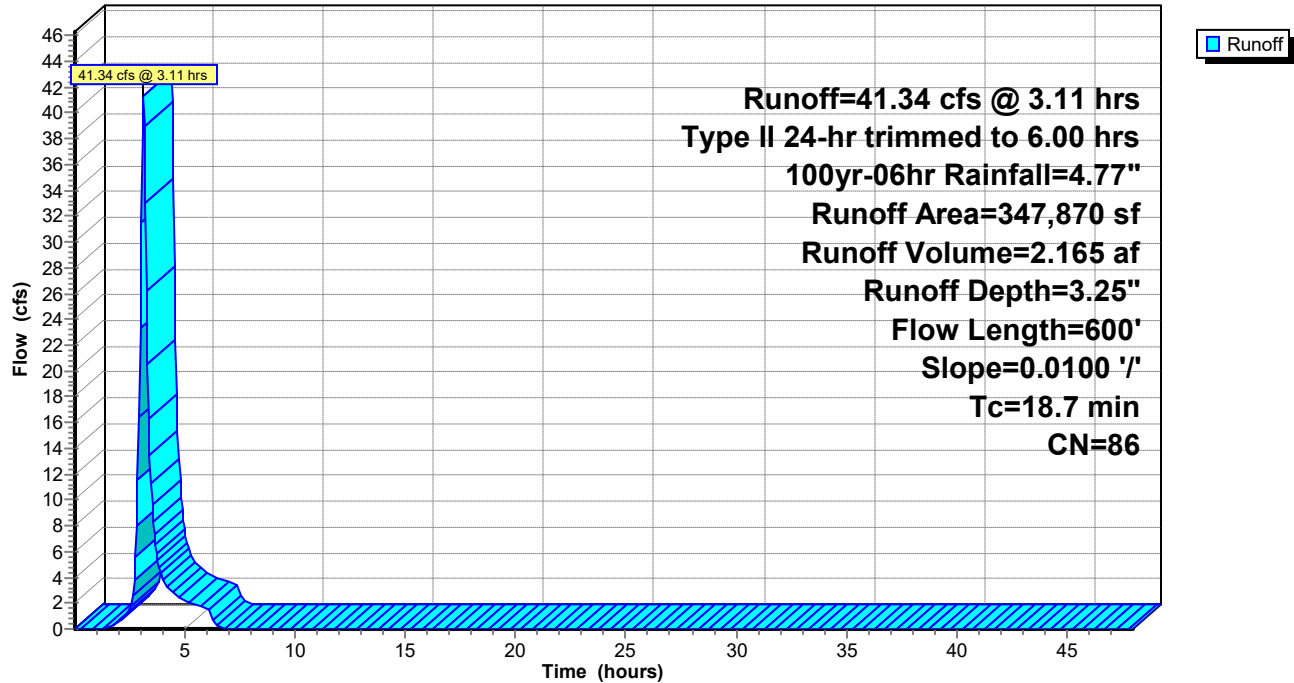
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 6.00 hrs 100yr-06hr Rainfall=4.77"

Area (sf)	CN	Description
169,520	74	>75% Grass cover, Good, HSG C
158,000	98	Paved parking, HSG C
20,350	98	Roofs, HSG C
347,870	86	Weighted Average
169,520		48.73% Pervious Area
178,350		51.27% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0100	0.12		Sheet Flow, Sheet Flow n= 0.150 P2= 2.92"
5.2	500	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc Unpaved Kv= 16.1 fps
18.7	600	Total			

Subcatchment 1s: EX1

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 6.00 hrs 100yr-06hr Rainfall=4.77"

Existing Conditions

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Summary for Subcatchment 2s: EX2

Runoff = 3.43 cfs @ 3.08 hrs, Volume= 0.158 af, Depth= 2.18"

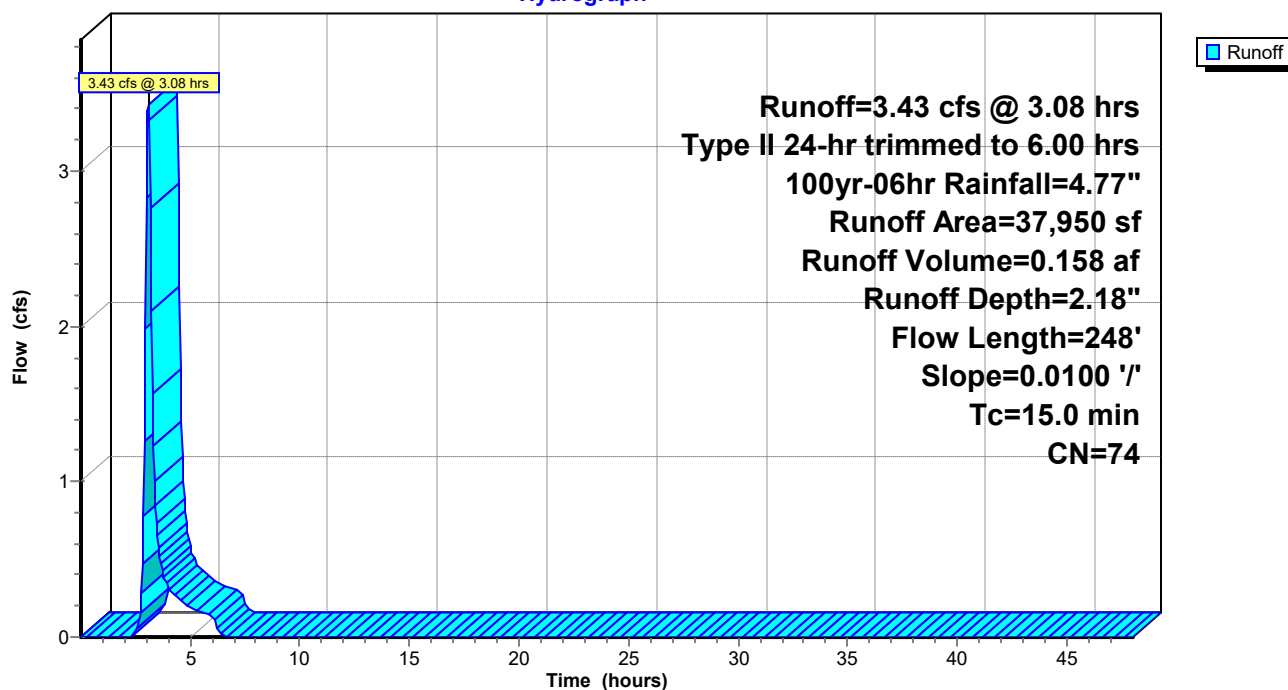
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 6.00 hrs 100yr-06hr Rainfall=4.77"

Area (sf)	CN	Description
37,950	74	>75% Grass cover, Good, HSG C
37,950		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0100	0.12		Sheet Flow, Sheet Flow
					Grass: Short n= 0.150 P2= 2.92"
1.5	148	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc
					Unpaved Kv= 16.1 fps
15.0	248	Total			

Subcatchment 2s: EX2

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 6.00 hrs 100yr-06hr Rainfall=4.77"

Existing Conditions

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Summary for Subcatchment 3s: EX3

Runoff = 2.77 cfs @ 3.08 hrs, Volume= 0.128 af, Depth= 2.18"

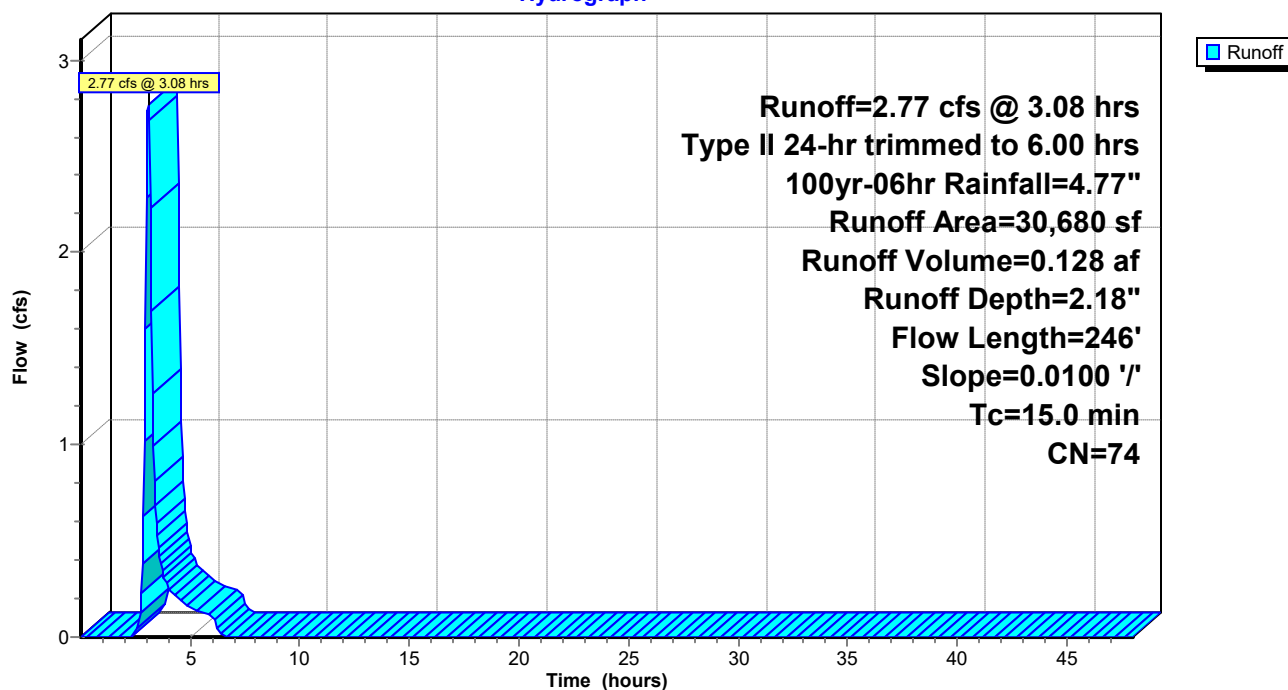
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 6.00 hrs 100yr-06hr Rainfall=4.77"

Area (sf)	CN	Description
30,680	74	>75% Grass cover, Good, HSG C
30,680		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0100	0.12		Sheet Flow, Sheet Flow
					Grass: Short n= 0.150 P2= 2.92"
1.5	146	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc
					Unpaved Kv= 16.1 fps
15.0	246	Total			

Subcatchment 3s: EX3

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 6.00 hrs 100yr-06hr Rainfall=4.77"

Existing Conditions

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Summary for Subcatchment 4s: EX4

Runoff = 16.85 cfs @ 2.96 hrs, Volume= 0.550 af, Depth= 2.87"

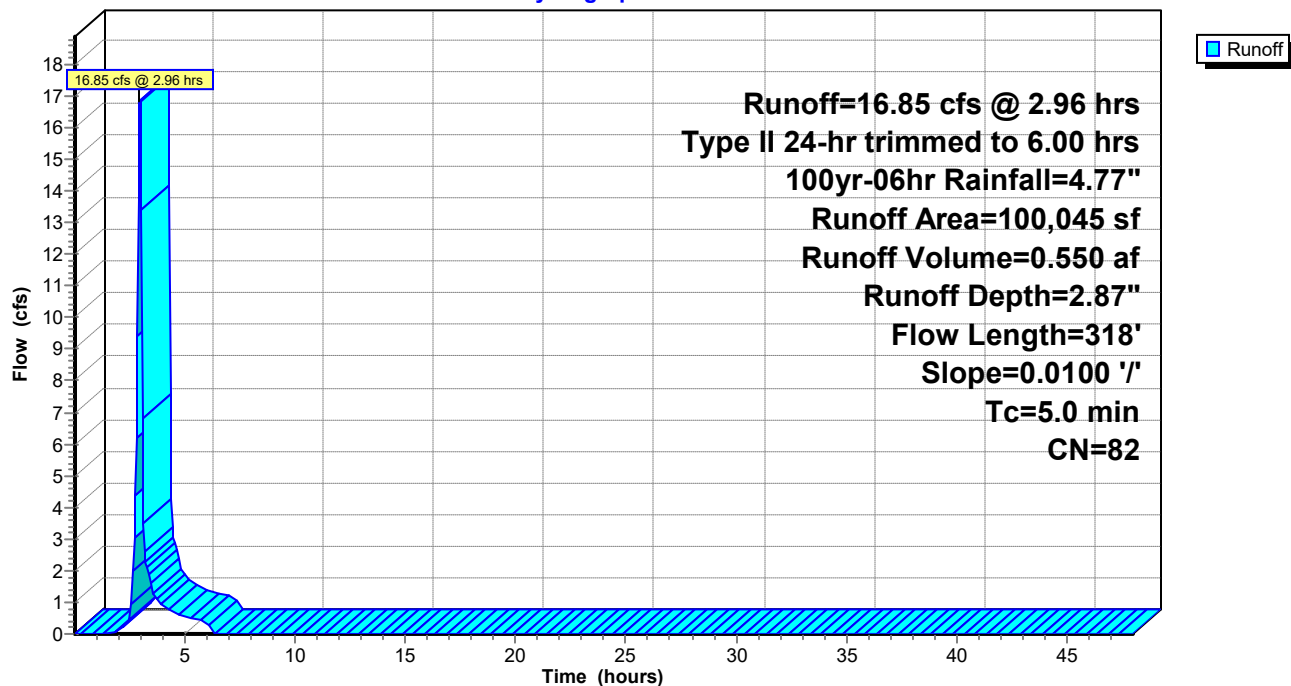
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 6.00 hrs 100yr-06hr Rainfall=4.77"

Area (sf)	CN	Description
64,745	74	>75% Grass cover, Good, HSG C
27,940	98	Paved parking, HSG C
7,360	98	Roofs, HSG C
100,045	82	Weighted Average
64,745		64.72% Pervious Area
35,300		35.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	100	0.0100	1.00		Sheet Flow, Sheet Flow Smooth surfaces n= 0.011 P2= 2.92"
2.3	218	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc Unpaved Kv= 16.1 fps
4.0	318	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 4s: EX4

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 6.00 hrs 100yr-06hr Rainfall=4.77"

Existing Conditions

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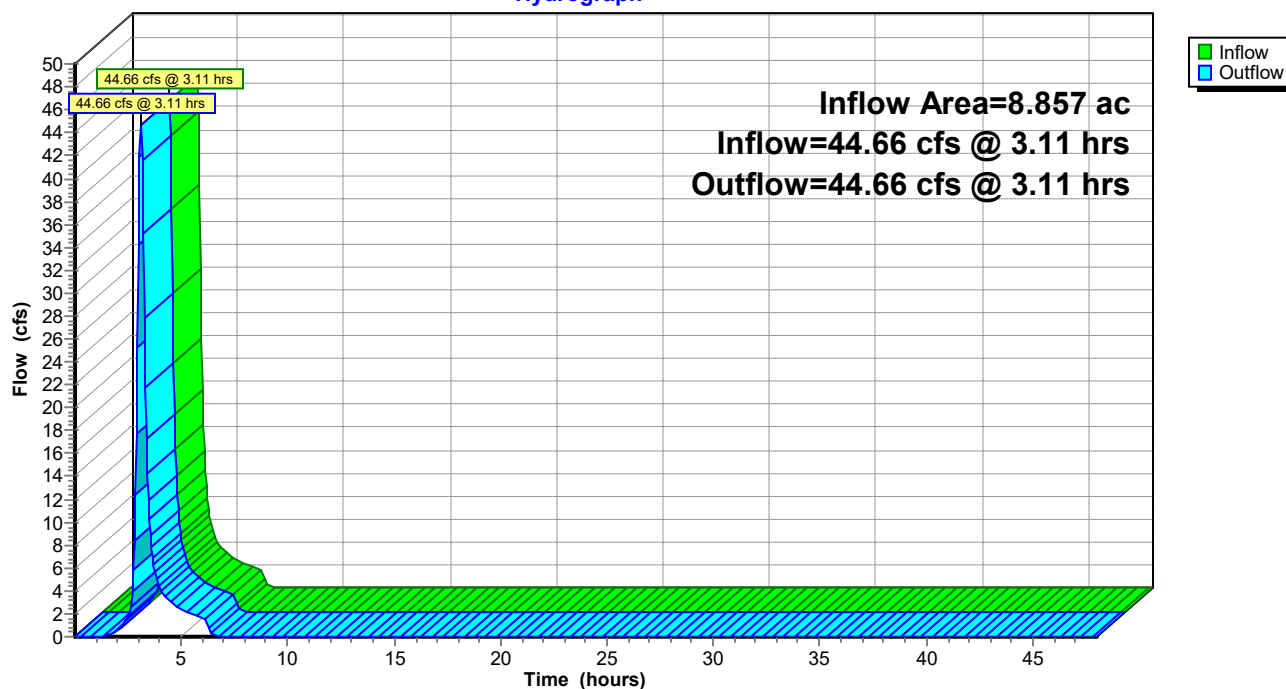
Summary for Reach 1R: US 31 DITCH

Inflow Area = 8.857 ac, 46.23% Impervious, Inflow Depth = 3.15" for 100yr-06hr event
Inflow = 44.66 cfs @ 3.11 hrs, Volume= 2.323 af
Outflow = 44.66 cfs @ 3.11 hrs, Volume= 2.323 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs

Reach 1R: US 31 DITCH

Hydrograph



Existing Conditions

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BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 6.00 hrs 100yr-06hr Rainfall=4.77"

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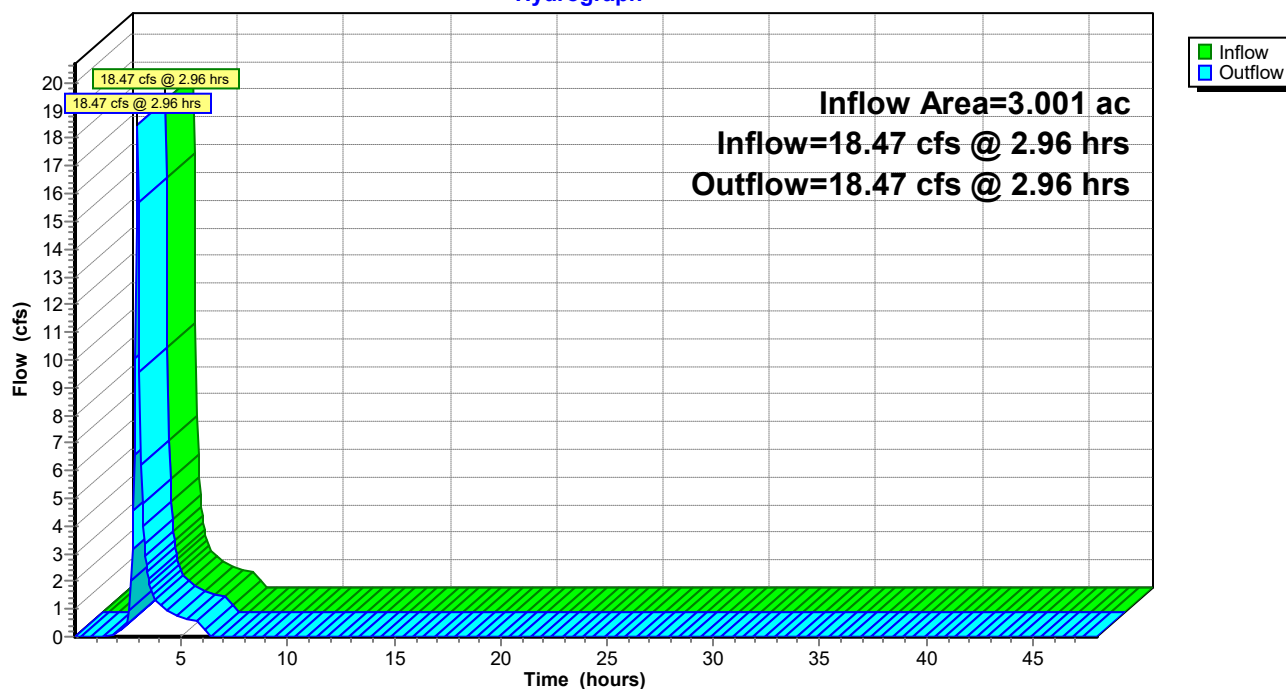
Summary for Reach 2R: EX POND TO WEST

Inflow Area = 3.001 ac, 27.00% Impervious, Inflow Depth = 2.71" for 100yr-06hr event
Inflow = 18.47 cfs @ 2.96 hrs, Volume= 0.678 af
Outflow = 18.47 cfs @ 2.96 hrs, Volume= 0.678 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs

Reach 2R: EX POND TO WEST

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS

Existing Conditions

Type II 24-hr trimmed to 12.00 hrs 100yr-12hr Rainfall=5.37"

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Time span=0.01-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1s: EX1 Runoff Area=347,870 sf 51.27% Impervious Runoff Depth=3.81"
Flow Length=600' Slope=0.0100 '/' Tc=18.7 min CN=86 Runoff=40.77 cfs 2.538 af

Subcatchment 2s: EX2 Runoff Area=37,950 sf 0.00% Impervious Runoff Depth=2.66"
Flow Length=248' Slope=0.0100 '/' Tc=15.0 min CN=74 Runoff=3.54 cfs 0.193 af

Subcatchment 3s: EX3 Runoff Area=30,680 sf 0.00% Impervious Runoff Depth=2.66"
Flow Length=246' Slope=0.0100 '/' Tc=15.0 min CN=74 Runoff=2.86 cfs 0.156 af

Subcatchment 4s: EX4 Runoff Area=100,045 sf 35.28% Impervious Runoff Depth=3.41"
Flow Length=318' Slope=0.0100 '/' Tc=5.0 min CN=82 Runoff=16.57 cfs 0.653 af

Reach 1R: US 31 DITCH Inflow=44.18 cfs 2.731 af
Outflow=44.18 cfs 2.731 af

Reach 2R: EX POND TO WEST Inflow=18.36 cfs 0.809 af
Outflow=18.36 cfs 0.809 af

Total Runoff Area = 11.858 ac Runoff Volume = 3.541 af Average Runoff Depth = 3.58"
58.64% Pervious = 6.954 ac 41.36% Impervious = 4.905 ac

BDH REALTY COMMERCIAL DEV-EX CONDITIONS

Existing Conditions

Type II 24-hr trimmed to 12.00 hrs 100yr-12hr Rainfall=5.37"

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Summary for Subcatchment 1s: EX1

Runoff = 40.77 cfs @ 6.11 hrs, Volume= 2.538 af, Depth= 3.81"

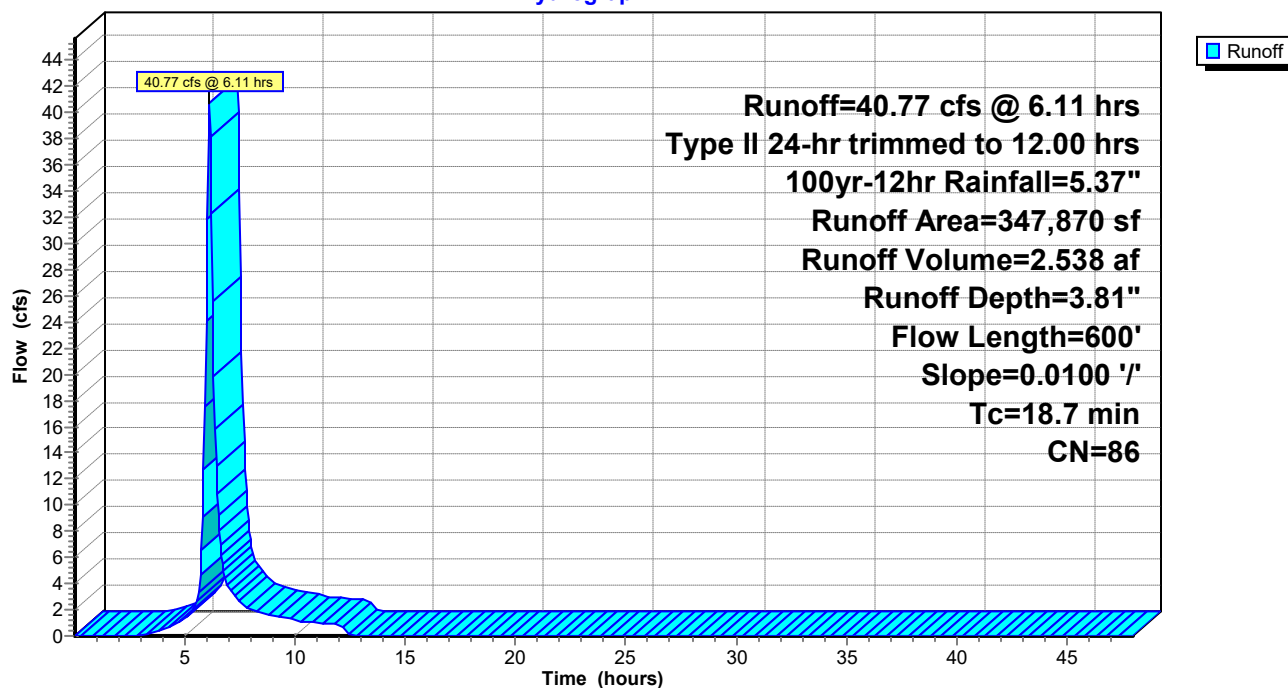
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 12.00 hrs 100yr-12hr Rainfall=5.37"

Area (sf)	CN	Description
169,520	74	>75% Grass cover, Good, HSG C
158,000	98	Paved parking, HSG C
20,350	98	Roofs, HSG C
347,870	86	Weighted Average
169,520		48.73% Pervious Area
178,350		51.27% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0100	0.12		Sheet Flow, Sheet Flow n= 0.150 P2= 2.92"
5.2	500	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc Unpaved Kv= 16.1 fps
18.7	600	Total			

Subcatchment 1s: EX1

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 12.00 hrs 100yr-12hr Rainfall=5.37"

Existing Conditions

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Summary for Subcatchment 2s: EX2

Runoff = 3.54 cfs @ 6.08 hrs, Volume= 0.193 af, Depth= 2.66"

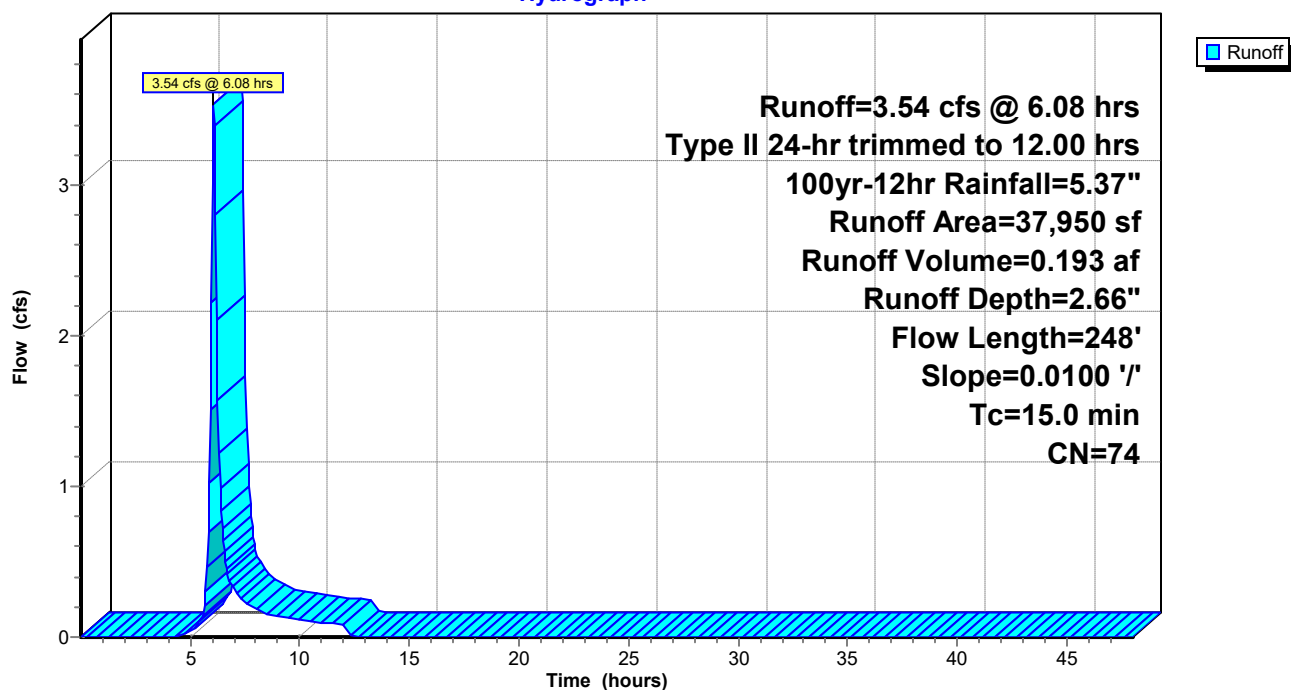
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 12.00 hrs 100yr-12hr Rainfall=5.37"

Area (sf)	CN	Description
37,950	74	>75% Grass cover, Good, HSG C
37,950		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0100	0.12		Sheet Flow, Sheet Flow Grass: Short n= 0.150 P2= 2.92"
1.5	148	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc Unpaved Kv= 16.1 fps
15.0	248	Total			

Subcatchment 2s: EX2

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 12.00 hrs 100yr-12hr Rainfall=5.37"

Existing Conditions

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Summary for Subcatchment 3s: EX3

Runoff = 2.86 cfs @ 6.08 hrs, Volume= 0.156 af, Depth= 2.66"

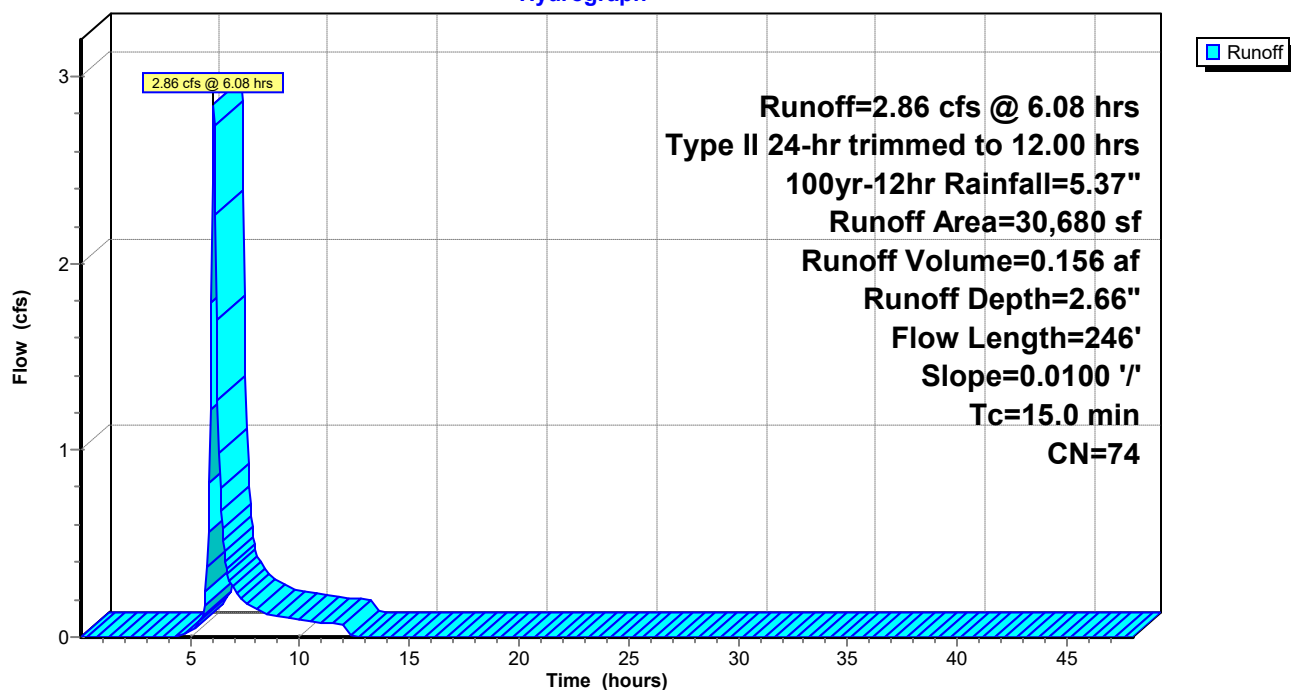
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 12.00 hrs 100yr-12hr Rainfall=5.37"

Area (sf)	CN	Description
30,680	74	>75% Grass cover, Good, HSG C
30,680		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0100	0.12		Sheet Flow, Sheet Flow
					Grass: Short n= 0.150 P2= 2.92"
1.5	146	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc
					Unpaved Kv= 16.1 fps
15.0	246	Total			

Subcatchment 3s: EX3

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS

Existing Conditions

Type II 24-hr trimmed to 12.00 hrs 100yr-12hr Rainfall=5.37"

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Summary for Subcatchment 4s: EX4

Runoff = 16.57 cfs @ 5.96 hrs, Volume= 0.653 af, Depth= 3.41"

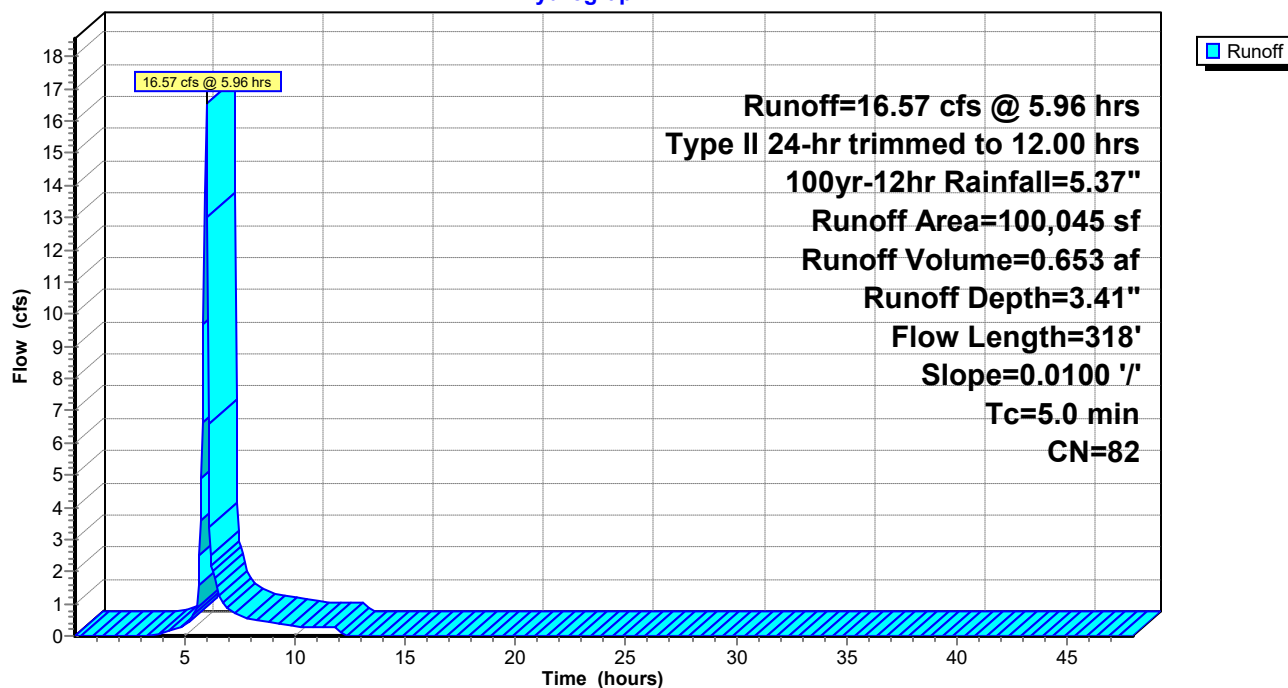
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 12.00 hrs 100yr-12hr Rainfall=5.37"

Area (sf)	CN	Description
64,745	74	>75% Grass cover, Good, HSG C
27,940	98	Paved parking, HSG C
7,360	98	Roofs, HSG C
100,045	82	Weighted Average
64,745		64.72% Pervious Area
35,300		35.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	100	0.0100	1.00		Sheet Flow, Sheet Flow
					Smooth surfaces n= 0.011 P2= 2.92"
2.3	218	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc
					Unpaved Kv= 16.1 fps
4.0	318	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 4s: EX4

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS

Existing Conditions

Type II 24-hr trimmed to 12.00 hrs 100yr-12hr Rainfall=5.37"

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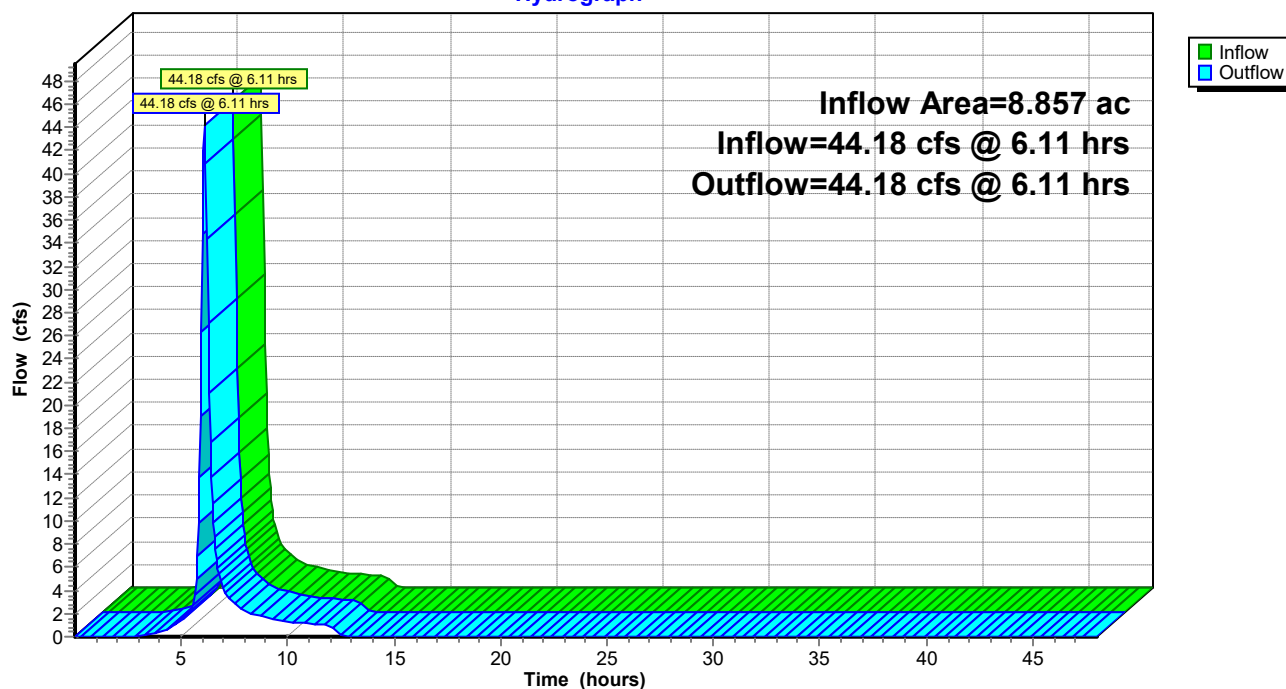
Summary for Reach 1R: US 31 DITCH

Inflow Area = 8.857 ac, 46.23% Impervious, Inflow Depth = 3.70" for 100yr-12hr event
Inflow = 44.18 cfs @ 6.11 hrs, Volume= 2.731 af
Outflow = 44.18 cfs @ 6.11 hrs, Volume= 2.731 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs

Reach 1R: US 31 DITCH

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr trimmed to 12.00 hrs 100yr-12hr Rainfall=5.37"

Existing Conditions

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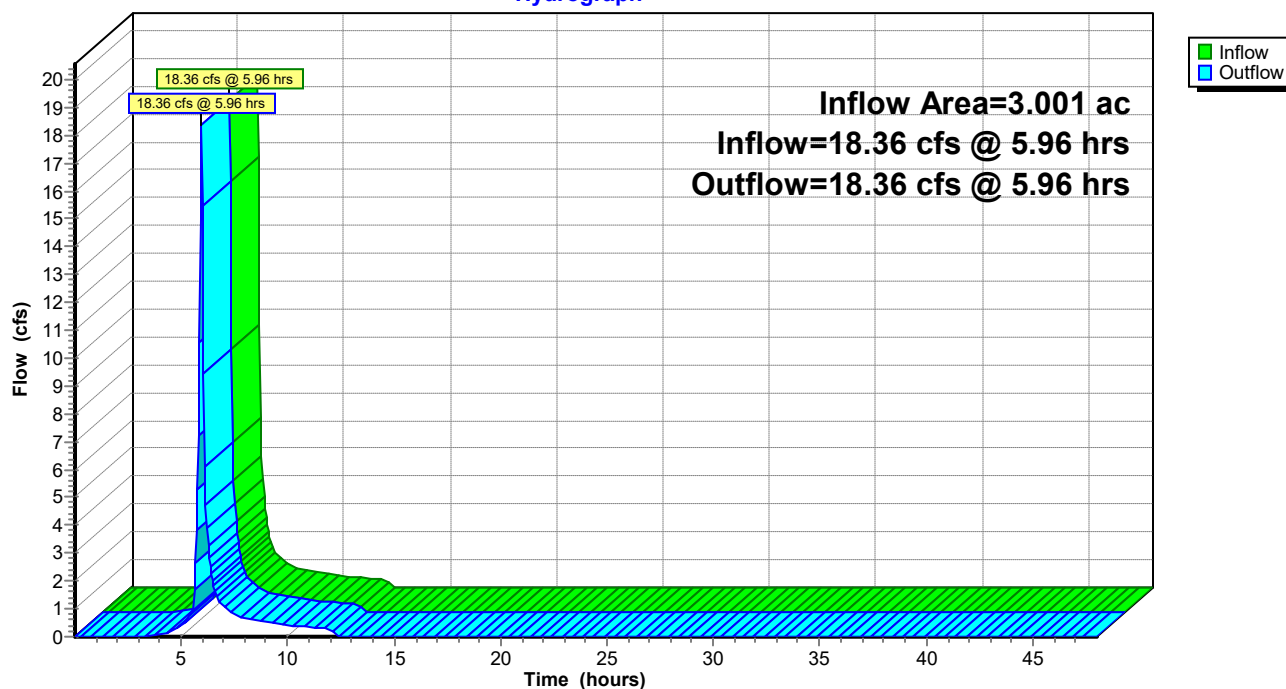
Summary for Reach 2R: EX POND TO WEST

Inflow Area = 3.001 ac, 27.00% Impervious, Inflow Depth = 3.24" for 100yr-12hr event
Inflow = 18.36 cfs @ 5.96 hrs, Volume= 0.809 af
Outflow = 18.36 cfs @ 5.96 hrs, Volume= 0.809 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs

Reach 2R: EX POND TO WEST

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS

Type II 24-hr 100yr-24hr Rainfall=5.91"

Existing Conditions

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Time span=0.01-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1s: EX1 Runoff Area=347,870 sf 51.27% Impervious Runoff Depth=4.32"
Flow Length=600' Slope=0.0100 '/' Tc=18.7 min CN=86 Runoff=38.83 cfs 2.878 af

Subcatchment 2s: EX2 Runoff Area=37,950 sf 0.00% Impervious Runoff Depth=3.11"
Flow Length=248' Slope=0.0100 '/' Tc=15.0 min CN=74 Runoff=3.48 cfs 0.226 af

Subcatchment 3s: EX3 Runoff Area=30,680 sf 0.00% Impervious Runoff Depth=3.11"
Flow Length=246' Slope=0.0100 '/' Tc=15.0 min CN=74 Runoff=2.82 cfs 0.182 af

Subcatchment 4s: EX4 Runoff Area=100,045 sf 35.28% Impervious Runoff Depth=3.90"
Flow Length=318' Slope=0.0100 '/' Tc=5.0 min CN=82 Runoff=15.79 cfs 0.747 af

Reach 1R: US 31 DITCH Inflow=42.17 cfs 3.103 af
Outflow=42.17 cfs 3.103 af

Reach 2R: EX POND TO WEST Inflow=17.62 cfs 0.930 af
Outflow=17.62 cfs 0.930 af

Total Runoff Area = 11.858 ac Runoff Volume = 4.033 af Average Runoff Depth = 4.08"
58.64% Pervious = 6.954 ac 41.36% Impervious = 4.905 ac

BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr 100yr-24hr Rainfall=5.91"

Existing Conditions

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Summary for Subcatchment 1s: EX1

Runoff = 38.83 cfs @ 12.11 hrs, Volume= 2.878 af, Depth= 4.32"

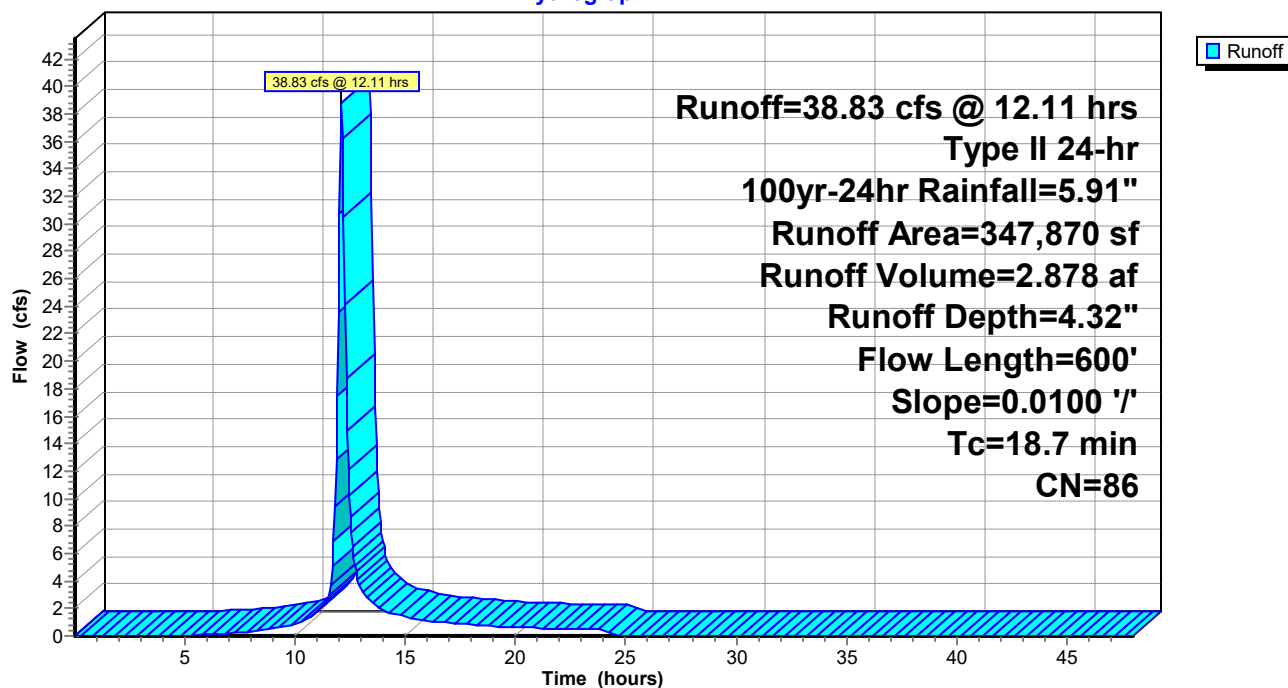
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr 100yr-24hr Rainfall=5.91"

Area (sf)	CN	Description
169,520	74	>75% Grass cover, Good, HSG C
158,000	98	Paved parking, HSG C
20,350	98	Roofs, HSG C
347,870	86	Weighted Average
169,520		48.73% Pervious Area
178,350		51.27% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0100	0.12		Sheet Flow, Sheet Flow n= 0.150 P2= 2.92"
5.2	500	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc Unpaved Kv= 16.1 fps
18.7	600	Total			

Subcatchment 1s: EX1

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS

Type II 24-hr 100yr-24hr Rainfall=5.91"

Existing Conditions

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Summary for Subcatchment 2s: EX2

Runoff = 3.48 cfs @ 12.07 hrs, Volume= 0.226 af, Depth= 3.11"

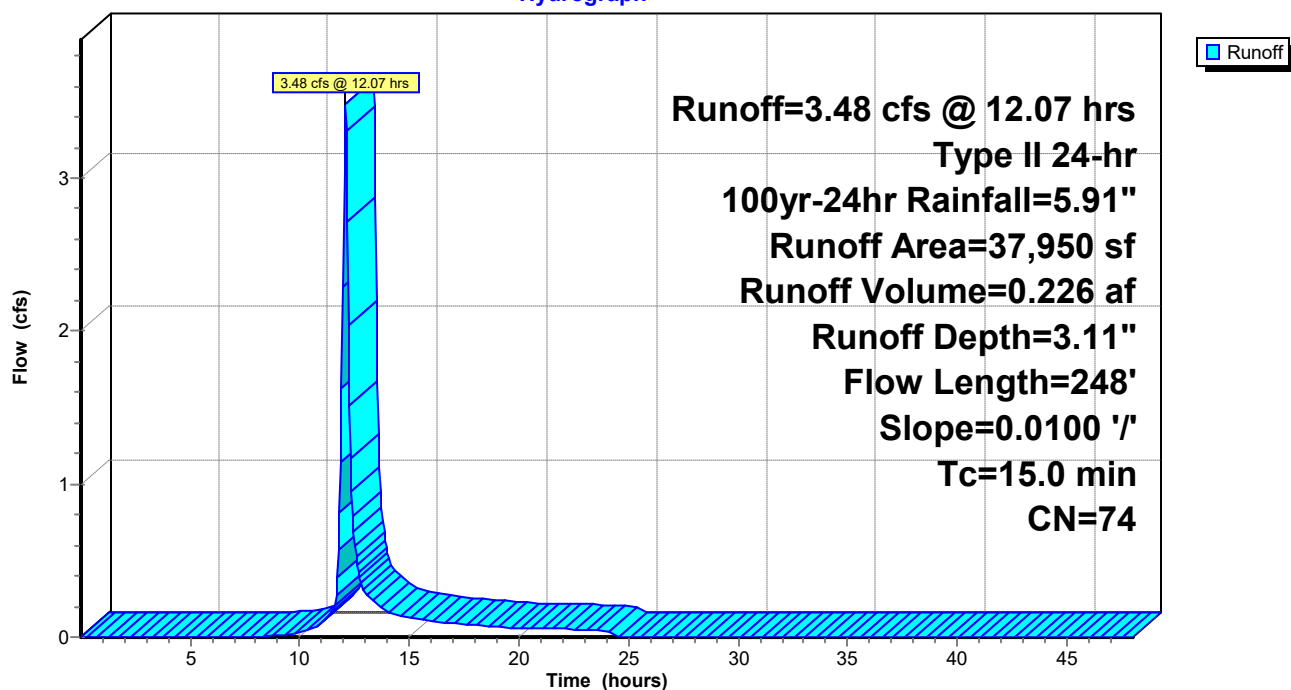
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr 100yr-24hr Rainfall=5.91"

Area (sf)	CN	Description
37,950	74	>75% Grass cover, Good, HSG C
37,950		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0100	0.12		Sheet Flow, Sheet Flow
					Grass: Short n= 0.150 P2= 2.92"
1.5	148	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc
					Unpaved Kv= 16.1 fps
15.0	248	Total			

Subcatchment 2s: EX2

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS

Type II 24-hr 100yr-24hr Rainfall=5.91"

Existing Conditions

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Summary for Subcatchment 3s: EX3

Runoff = 2.82 cfs @ 12.07 hrs, Volume= 0.182 af, Depth= 3.11"

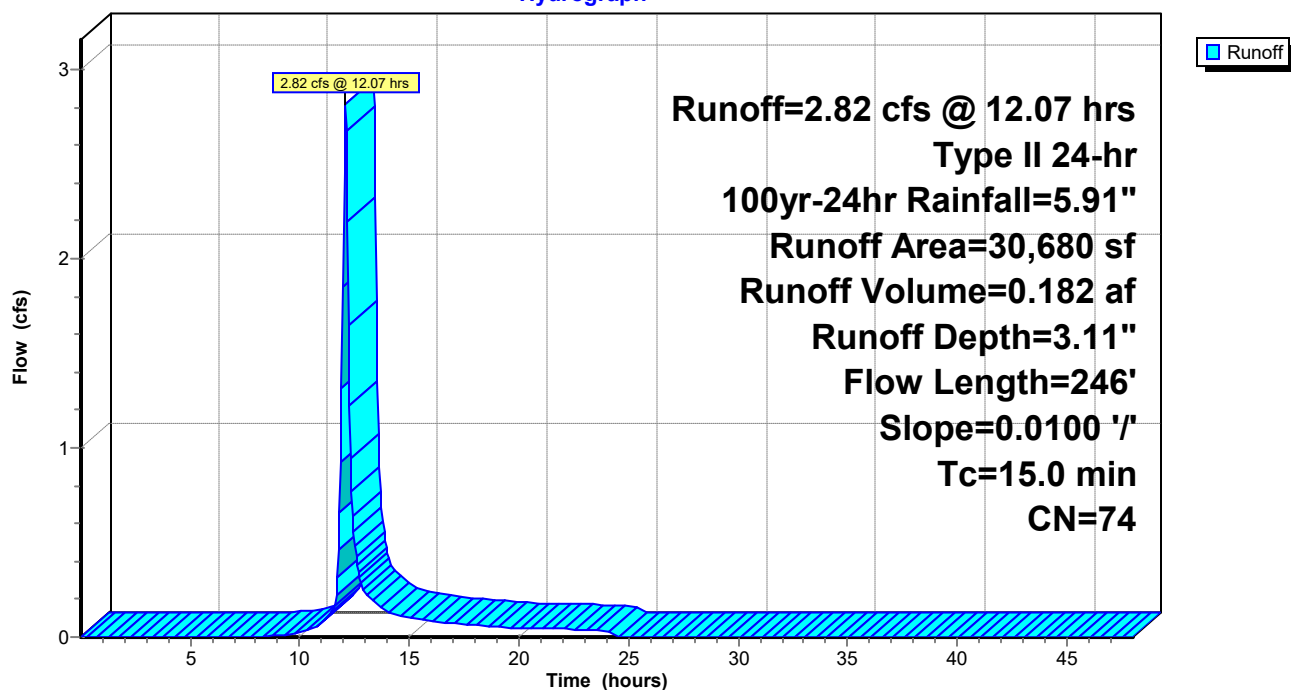
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr 100yr-24hr Rainfall=5.91"

Area (sf)	CN	Description
30,680	74	>75% Grass cover, Good, HSG C
30,680		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0100	0.12		Sheet Flow, Sheet Flow
					Grass: Short n= 0.150 P2= 2.92"
1.5	146	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc
					Unpaved Kv= 16.1 fps
15.0	246	Total			

Subcatchment 3s: EX3

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr 100yr-24hr Rainfall=5.91"

Existing Conditions

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Summary for Subcatchment 4s: EX4

Runoff = 15.79 cfs @ 11.96 hrs, Volume= 0.747 af, Depth= 3.90"

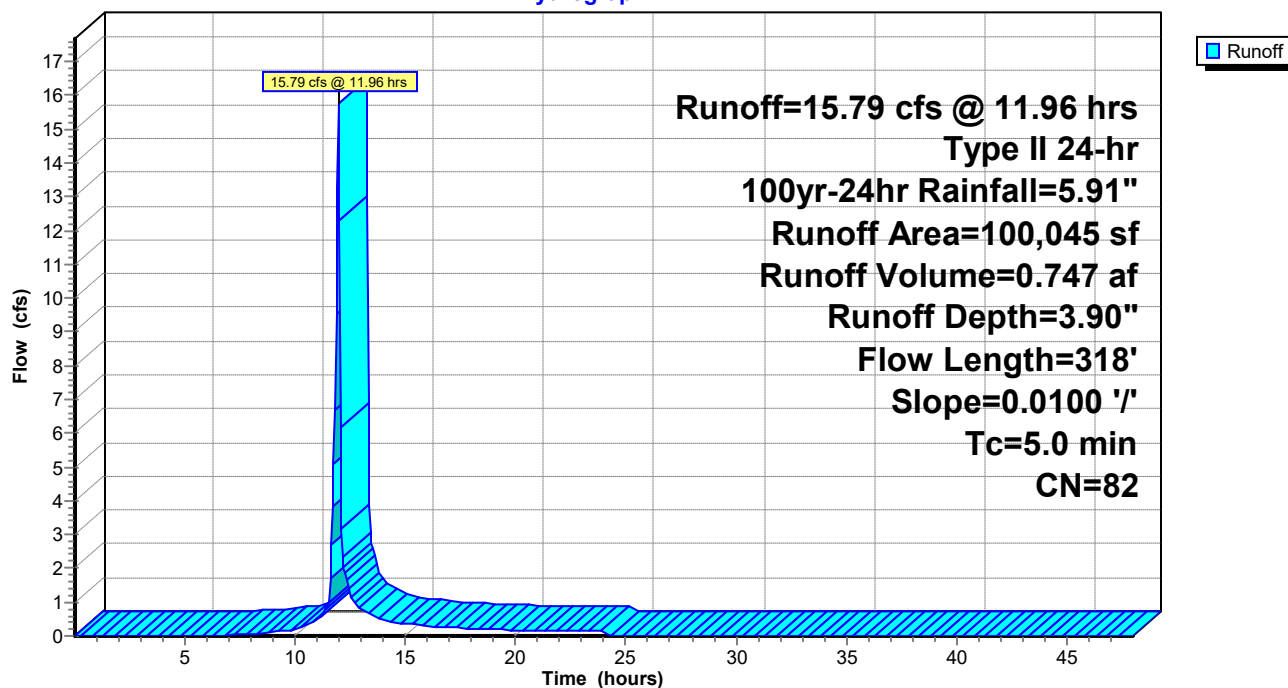
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr 100yr-24hr Rainfall=5.91"

Area (sf)	CN	Description
64,745	74	>75% Grass cover, Good, HSG C
27,940	98	Paved parking, HSG C
7,360	98	Roofs, HSG C
100,045	82	Weighted Average
64,745		64.72% Pervious Area
35,300		35.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	100	0.0100	1.00		Sheet Flow, Sheet Flow
					Smooth surfaces n= 0.011 P2= 2.92"
2.3	218	0.0100	1.61		Shallow Concentrated Flow, Shallow Conc
					Unpaved Kv= 16.1 fps
4.0	318	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 4s: EX4

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr 100yr-24hr Rainfall=5.91"

Existing Conditions

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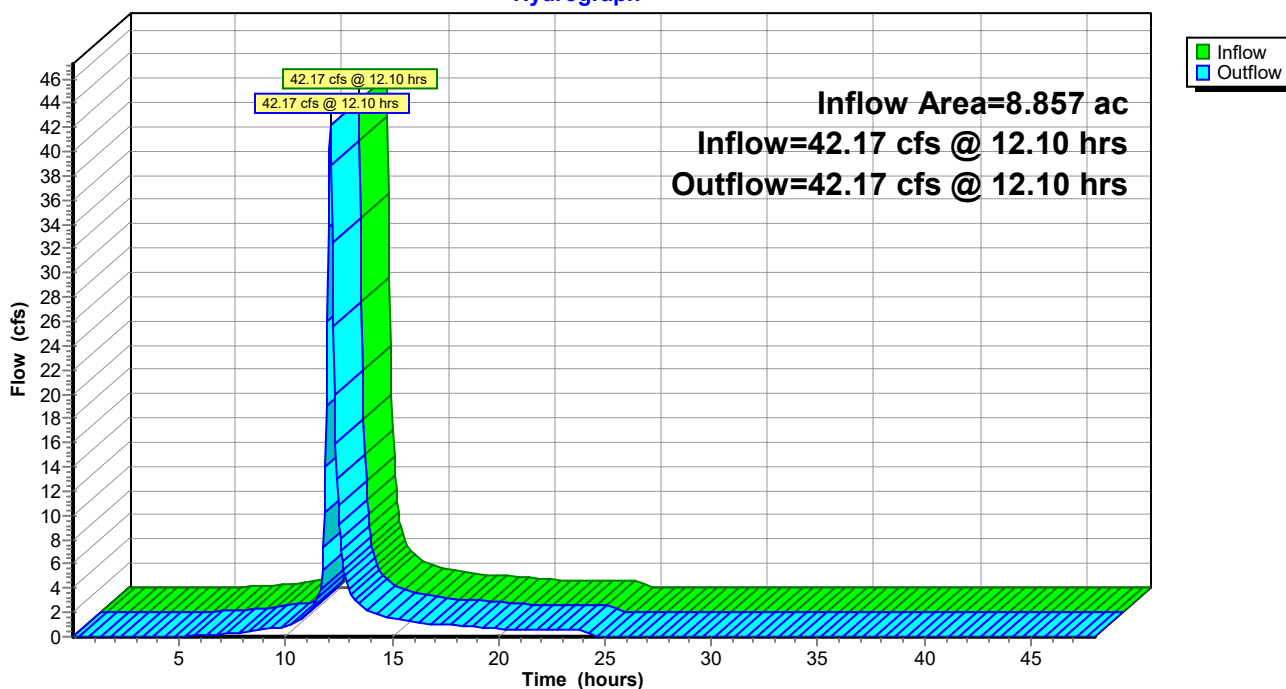
Summary for Reach 1R: US 31 DITCH

Inflow Area = 8.857 ac, 46.23% Impervious, Inflow Depth = 4.20" for 100yr-24hr event
Inflow = 42.17 cfs @ 12.10 hrs, Volume= 3.103 af
Outflow = 42.17 cfs @ 12.10 hrs, Volume= 3.103 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs

Reach 1R: US 31 DITCH

Hydrograph



BDH REALTY COMMERCIAL DEV-EX CONDITIONS
Type II 24-hr 100yr-24hr Rainfall=5.91"

Existing Conditions

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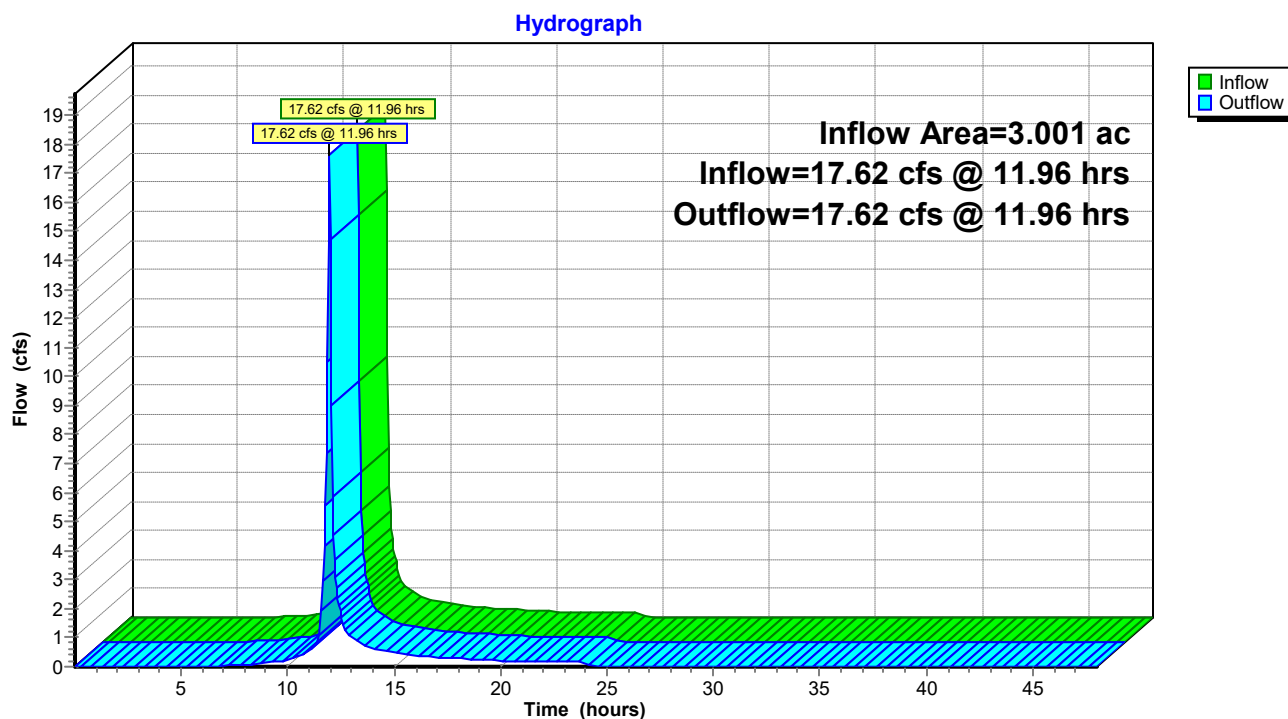
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Summary for Reach 2R: EX POND TO WEST

Inflow Area = 3.001 ac, 27.00% Impervious, Inflow Depth = 3.72" for 100yr-24hr event
Inflow = 17.62 cfs @ 11.96 hrs, Volume= 0.930 af
Outflow = 17.62 cfs @ 11.96 hrs, Volume= 0.930 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs

Reach 2R: EX POND TO WEST



BDH REALTY COMMERCIAL DEV-EX CONDITIONS

Existing Conditions

Multi-Event Tables

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Events for Subcatchment 1s: EX1

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
002yr-01hr	1.39	7.73	0.280	0.42
002yr-02hr	1.62	9.17	0.382	0.57
002yr-03hr	1.72	9.47	0.428	0.64
002yr-06hr	2.50	15.93	0.828	1.24
002yr-12hr	2.45	13.03	0.800	1.20
002yr-24hr	2.92	14.63	1.061	1.59
010yr-01hr	2.02	16.13	0.575	0.86
010yr-02hr	2.38	18.76	0.763	1.15
010yr-03hr	2.53	19.02	0.844	1.27
010yr-06hr	3.04	21.78	1.129	1.70
010yr-12hr	3.53	23.05	1.414	2.12
010yr-24hr	4.09	23.99	1.749	2.63
025yr-01hr	2.40	21.86	0.774	1.16
025yr-02hr	2.85	25.19	1.021	1.53
025yr-03hr	3.05	25.63	1.135	1.71
025yr-06hr	3.67	28.81	1.497	2.25
025yr-12hr	4.21	29.55	1.822	2.74
025yr-24hr	4.79	29.68	2.177	3.27
050yr-01hr	2.70	26.52	0.937	1.41
050yr-02hr	3.23	30.55	1.239	1.86
050yr-03hr	3.48	31.24	1.385	2.08
050yr-06hr	4.20	34.82	1.816	2.73
050yr-12hr	4.78	35.06	2.171	3.26
050yr-24hr	5.34	34.17	2.519	3.79
100yr-01hr	3.01	31.47	1.112	1.67
100yr-02hr	3.65	36.59	1.485	2.23
100yr-03hr	3.94	37.34	1.658	2.49
100yr-06hr	4.77	41.34	2.165	3.25
100yr-12hr	5.37	40.77	2.538	3.81
100yr-24hr	5.91	38.83	2.878	4.32

BDH REALTY COMMERCIAL DEV-EX CONDITIONS

Existing Conditions

Multi-Event Tables

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Events for Subcatchment 2s: EX2

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
002yr-01hr	1.39	0.22	0.008	0.11
002yr-02hr	1.62	0.32	0.014	0.19
002yr-03hr	1.72	0.35	0.017	0.23
002yr-06hr	2.50	0.88	0.044	0.61
002yr-12hr	2.45	0.69	0.042	0.58
002yr-24hr	2.92	0.91	0.062	0.86
010yr-01hr	2.02	0.80	0.026	0.36
010yr-02hr	2.38	1.04	0.039	0.54
010yr-03hr	2.53	1.09	0.045	0.63
010yr-06hr	3.04	1.41	0.068	0.93
010yr-12hr	3.53	1.64	0.092	1.26
010yr-24hr	4.09	1.84	0.121	1.66
025yr-01hr	2.40	1.26	0.040	0.55
025yr-02hr	2.85	1.61	0.059	0.81
025yr-03hr	3.05	1.69	0.068	0.94
025yr-06hr	3.67	2.10	0.099	1.36
025yr-12hr	4.21	2.31	0.127	1.75
025yr-24hr	4.79	2.45	0.160	2.20
050yr-01hr	2.70	1.67	0.053	0.72
050yr-02hr	3.23	2.11	0.077	1.06
050yr-03hr	3.48	2.23	0.089	1.23
050yr-06hr	4.20	2.73	0.127	1.74
050yr-12hr	4.78	2.90	0.159	2.19
050yr-24hr	5.34	2.95	0.192	2.64
100yr-01hr	3.01	2.12	0.066	0.91
100yr-02hr	3.65	2.70	0.098	1.34
100yr-03hr	3.94	2.84	0.113	1.55
100yr-06hr	4.77	3.43	0.158	2.18
100yr-12hr	5.37	3.54	0.193	2.66
100yr-24hr	5.91	3.48	0.226	3.11

BDH REALTY COMMERCIAL DEV-EX CONDITIONS

Existing Conditions

Multi-Event Tables

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Events for Subcatchment 3s: EX3

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
002yr-01hr	1.39	0.18	0.007	0.11
002yr-02hr	1.62	0.26	0.011	0.19
002yr-03hr	1.72	0.28	0.013	0.23
002yr-06hr	2.50	0.71	0.036	0.61
002yr-12hr	2.45	0.56	0.034	0.58
002yr-24hr	2.92	0.73	0.050	0.86
010yr-01hr	2.02	0.65	0.021	0.36
010yr-02hr	2.38	0.84	0.032	0.54
010yr-03hr	2.53	0.88	0.037	0.63
010yr-06hr	3.04	1.14	0.055	0.93
010yr-12hr	3.53	1.32	0.074	1.26
010yr-24hr	4.09	1.49	0.098	1.66
025yr-01hr	2.40	1.02	0.032	0.55
025yr-02hr	2.85	1.30	0.048	0.81
025yr-03hr	3.05	1.37	0.055	0.94
025yr-06hr	3.67	1.70	0.080	1.36
025yr-12hr	4.21	1.87	0.103	1.75
025yr-24hr	4.79	1.98	0.129	2.20
050yr-01hr	2.70	1.35	0.042	0.72
050yr-02hr	3.23	1.70	0.062	1.06
050yr-03hr	3.48	1.80	0.072	1.23
050yr-06hr	4.20	2.21	0.102	1.74
050yr-12hr	4.78	2.35	0.129	2.19
050yr-24hr	5.34	2.39	0.155	2.64
100yr-01hr	3.01	1.72	0.054	0.91
100yr-02hr	3.65	2.18	0.079	1.34
100yr-03hr	3.94	2.30	0.091	1.55
100yr-06hr	4.77	2.77	0.128	2.18
100yr-12hr	5.37	2.86	0.156	2.66
100yr-24hr	5.91	2.82	0.182	3.11

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Multi-Event Tables

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Events for Subcatchment 4s: EX4

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
002yr-01hr	1.39	2.82	0.055	0.29
002yr-02hr	1.62	3.38	0.079	0.41
002yr-03hr	1.72	3.45	0.090	0.47
002yr-06hr	2.50	6.05	0.191	1.00
002yr-12hr	2.45	4.83	0.184	0.96
002yr-24hr	2.92	5.50	0.252	1.32
010yr-01hr	2.02	6.47	0.127	0.66
010yr-02hr	2.38	7.41	0.174	0.91
010yr-03hr	2.53	7.44	0.195	1.02
010yr-06hr	3.04	8.50	0.270	1.41
010yr-12hr	3.53	9.01	0.346	1.81
010yr-24hr	4.09	9.43	0.436	2.28
025yr-01hr	2.40	8.96	0.177	0.93
025yr-02hr	2.85	10.17	0.242	1.26
025yr-03hr	3.05	10.24	0.271	1.42
025yr-06hr	3.67	11.48	0.368	1.92
025yr-12hr	4.21	11.77	0.456	2.38
025yr-24hr	4.79	11.86	0.553	2.89
050yr-01hr	2.70	11.03	0.220	1.15
050yr-02hr	3.23	12.49	0.299	1.56
050yr-03hr	3.48	12.65	0.338	1.77
050yr-06hr	4.20	14.05	0.455	2.37
050yr-12hr	4.78	14.12	0.552	2.88
050yr-24hr	5.34	13.78	0.648	3.38
100yr-01hr	3.01	13.23	0.265	1.39
100yr-02hr	3.65	15.11	0.365	1.91
100yr-03hr	3.94	15.27	0.412	2.15
100yr-06hr	4.77	16.85	0.550	2.87
100yr-12hr	5.37	16.57	0.653	3.41
100yr-24hr	5.91	15.79	0.747	3.90

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Events for Reach 1R: US 31 DITCH

Event	Inflow (cfs)	Outflow (cfs)	Elevation (feet)	Storage (cubic-feet)
002yr-01hr	7.95	7.95	0.00	0
002yr-02hr	9.48	9.48	0.00	0
002yr-03hr	9.82	9.82	0.00	0
002yr-06hr	16.80	16.80	0.00	0
002yr-12hr	13.71	13.71	0.00	0
002yr-24hr	15.52	15.52	0.00	0
010yr-01hr	16.90	16.90	0.00	0
010yr-02hr	19.79	19.79	0.00	0
010yr-03hr	20.10	20.10	0.00	0
010yr-06hr	23.16	23.16	0.00	0
010yr-12hr	24.63	24.63	0.00	0
010yr-24hr	25.76	25.76	0.00	0
025yr-01hr	23.10	23.10	0.00	0
025yr-02hr	26.76	26.76	0.00	0
025yr-03hr	27.28	27.28	0.00	0
025yr-06hr	30.86	30.86	0.00	0
025yr-12hr	31.78	31.78	0.00	0
025yr-24hr	32.04	32.04	0.00	0
050yr-01hr	28.15	28.15	0.00	0
050yr-02hr	32.61	32.61	0.00	0
050yr-03hr	33.42	33.42	0.00	0
050yr-06hr	37.47	37.47	0.00	0
050yr-12hr	37.85	37.85	0.00	0
050yr-24hr	37.01	37.01	0.00	0
100yr-01hr	33.54	33.54	0.00	0
100yr-02hr	39.23	39.23	0.00	0
100yr-03hr	40.11	40.11	0.00	0
100yr-06hr	44.66	44.66	0.00	0
100yr-12hr	44.18	44.18	0.00	0
100yr-24hr	42.17	42.17	0.00	0

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Events for Reach 2R: EX POND TO WEST

Event	Inflow (cfs)	Outflow (cfs)	Elevation (feet)	Storage (cubic-feet)
002yr-01hr	2.82	2.82	0.00	0
002yr-02hr	3.43	3.43	0.00	0
002yr-03hr	3.52	3.52	0.00	0
002yr-06hr	6.36	6.36	0.00	0
002yr-12hr	5.09	5.09	0.00	0
002yr-24hr	5.91	5.91	0.00	0
010yr-01hr	6.64	6.64	0.00	0
010yr-02hr	7.71	7.71	0.00	0
010yr-03hr	7.78	7.78	0.00	0
010yr-06hr	9.07	9.07	0.00	0
010yr-12hr	9.75	9.75	0.00	0
010yr-24hr	10.35	10.35	0.00	0
025yr-01hr	9.28	9.28	0.00	0
025yr-02hr	10.70	10.70	0.00	0
025yr-03hr	10.86	10.86	0.00	0
025yr-06hr	12.40	12.40	0.00	0
025yr-12hr	12.88	12.88	0.00	0
025yr-24hr	13.11	13.11	0.00	0
050yr-01hr	11.49	11.49	0.00	0
050yr-02hr	13.24	13.24	0.00	0
050yr-03hr	13.52	13.52	0.00	0
050yr-06hr	15.30	15.30	0.00	0
050yr-12hr	15.55	15.55	0.00	0
050yr-24hr	15.32	15.32	0.00	0
100yr-01hr	13.87	13.87	0.00	0
100yr-02hr	16.13	16.13	0.00	0
100yr-03hr	16.45	16.45	0.00	0
100yr-06hr	18.47	18.47	0.00	0
100yr-12hr	18.36	18.36	0.00	0
100yr-24hr	17.62	17.62	0.00	0

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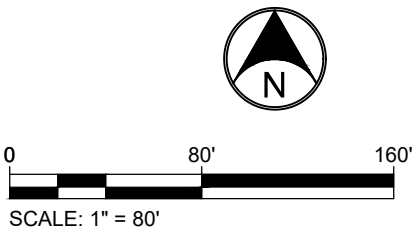
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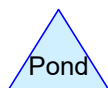
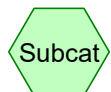
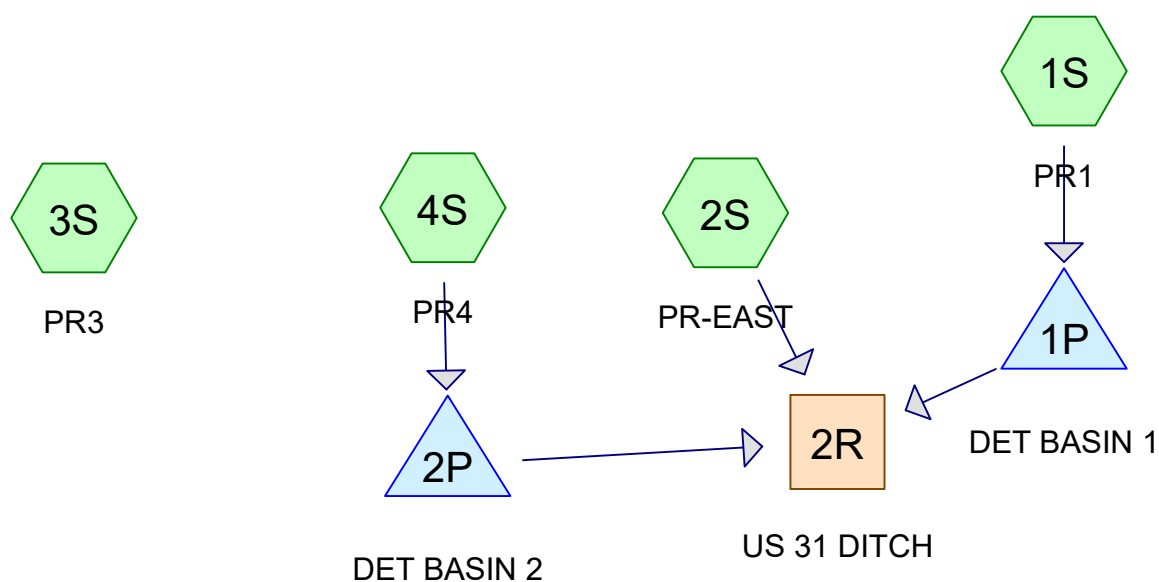
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APPENDIX E – PROPOSED DRAINAGE ANALYSIS



SHEET NAME / NO.

**PROPOSED DETENTION
BASIN MAP
EXH-2**



Routing Diagram for Proposed Conditions
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Proposed Conditions

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Rainfall Events Listing

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	002yr-01hr	Type II 24-hr		Trim	1.00	1	1.39	2
2	002yr-02hr	Type II 24-hr		Trim	2.00	1	1.62	2
3	002yr-03hr	Type II 24-hr		Trim	3.00	1	1.72	2
4	002yr-06hr	Type II 24-hr		Trim	6.00	1	2.50	2
5	002yr-12hr	Type II 24-hr		Trim	12.00	1	2.45	2
6	002yr-24hr	Type II 24-hr		Default	24.00	1	2.92	2
7	010yr-01hr	Type II 24-hr		Trim	1.00	1	2.02	2
8	010yr-02hr	Type II 24-hr		Trim	2.00	1	2.38	2
9	010yr-03hr	Type II 24-hr		Trim	3.00	1	2.53	2
10	010yr-06hr	Type II 24-hr		Trim	6.00	1	3.04	2
11	010yr-12hr	Type II 24-hr		Trim	12.00	1	3.53	2
12	010yr-24hr	Type II 24-hr		Default	24.00	1	4.09	2
13	025yr-01hr	Type II 24-hr		Trim	1.00	1	2.40	2
14	025yr-02hr	Type II 24-hr		Trim	2.00	1	2.85	2
15	025yr-03hr	Type II 24-hr		Trim	3.00	1	3.05	2
16	025yr-06hr	Type II 24-hr		Trim	6.00	1	3.67	2
17	025yr-12hr	Type II 24-hr		Trim	12.00	1	4.21	2
18	025yr-24hr	Type II 24-hr		Default	24.00	1	4.79	2
19	050yr-01hr	Type II 24-hr		Trim	1.00	1	2.70	2
20	050yr-02hr	Type II 24-hr		Trim	2.00	1	3.23	2
21	050yr-03hr	Type II 24-hr		Trim	3.00	1	3.48	2
22	050yr-06hr	Type II 24-hr		Trim	6.00	1	4.20	2
23	050yr-12hr	Type II 24-hr		Trim	12.00	1	4.78	2
24	050yr-24hr	Type II 24-hr		Default	24.00	1	5.34	2
25	100yr-01hr	Type II 24-hr		Trim	1.00	1	3.01	2
26	100yr-02hr	Type II 24-hr		Trim	2.00	1	3.65	2
27	100yr-03hr	Type II 24-hr		Trim	3.00	1	3.94	2
28	100yr-06hr	Type II 24-hr		Trim	6.00	1	4.77	2
29	100yr-12hr	Type II 24-hr		Trim	12.00	1	5.37	2
30	100yr-24hr	Type II 24-hr		Default	24.00	1	5.91	2

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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.600	74	>75% Grass cover, Good, HSG C (2S, 3S)
4.670	94	Urban commercial, 85% imp, HSG C (4S)
5.740	95	Urban commercial, 85% imp, HSG D (1S)
0.850	98	Water Surface, HSG C (1S, 4S)
11.860	94	TOTAL AREA

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Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
6.120	HSG C	1S, 2S, 3S, 4S
5.740	HSG D	1S
0.000	Other	
11.860		TOTAL AREA

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Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.600	0.000	0.000	0.600	>75% Grass cover, Good	2S, 3S
0.000	0.000	4.670	5.740	0.000	10.410	Urban commercial, 85% imp	1S, 4S
0.000	0.000	0.850	0.000	0.000	0.850	Water Surface	1S, 4S
0.000	0.000	6.120	5.740	0.000	11.860	TOTAL AREA	

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Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Diam/Width (inches)	Height (inches)	Inside-Fill (inches)
1	1P	754.40	752.80	444.0	0.0036	0.012	15.0	0.0	0.0
2	2P	751.50	751.33	50.0	0.0034	0.013	18.0	0.0	0.0

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BDH REALTY COMMERCIAL DEV-PR CONDITIONS
Type II 24-hr trimmed to 1.00 hrs 002yr-01hr Rainfall=1.39"

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Time span=0.01-48.00 hrs, dt=0.05 hrs, 961 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: PR1

Runoff Area=6.240 ac 86.20% Impervious Runoff Depth=0.91"
Tc=10.0 min CN=95 Runoff=18.39 cfs 0.474 af

Subcatchment 2S: PR-EAST

Runoff Area=0.230 ac 0.00% Impervious Runoff Depth=0.11"
Tc=5.0 min CN=74 Runoff=0.10 cfs 0.002 af

Subcatchment 3S: PR3

Runoff Area=0.370 ac 0.00% Impervious Runoff Depth=0.11"
Tc=5.0 min CN=74 Runoff=0.17 cfs 0.003 af

Subcatchment 4S: PR4

Runoff Area=5.020 ac 86.05% Impervious Runoff Depth=0.84"
Tc=5.0 min CN=94 Runoff=16.83 cfs 0.351 af

Reach 2R: US 31 DITCH

Inflow=5.91 cfs 0.782 af
Outflow=5.91 cfs 0.782 af

Pond 1P: DET BASIN 1

Peak Elev=754.95' Storage=18,634 cf Inflow=18.39 cfs 0.474 af
15.0" Round Culvert n=0.012 L=444.0' S=0.0036 '/' Outflow=0.99 cfs 0.429 af

Pond 2P: DET BASIN 2

Peak Elev=752.96' Storage=8,567 cf Inflow=16.83 cfs 0.351 af
18.0" Round Culvert n=0.013 L=50.0' S=0.0034 '/' Outflow=5.45 cfs 0.351 af

Total Runoff Area = 11.860 ac Runoff Volume = 0.830 af Average Runoff Depth = 0.84"
18.23% Pervious = 2.161 ac 81.77% Impervious = 9.699 ac

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 1.00 hrs 002yr-01hr Rainfall=1.39"

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Summary for Subcatchment 1S: PR1

Runoff = 18.39 cfs @ 0.52 hrs, Volume= 0.474 af, Depth= 0.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 1.00 hrs 002yr-01hr Rainfall=1.39"

Area (ac)	CN	Description
5.740	95	Urban commercial, 85% imp, HSG D
0.500	98	Water Surface, HSG C
6.240	95	Weighted Average
0.861		13.80% Pervious Area
5.379		86.20% Impervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 1.00 hrs 002yr-01hr Rainfall=1.39"

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Summary for Subcatchment 2S: PR-EAST

Runoff = 0.10 cfs @ 0.51 hrs, Volume= 0.002 af, Depth= 0.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 1.00 hrs 002yr-01hr Rainfall=1.39"

Area (ac)	CN	Description
0.230	74	>75% Grass cover, Good, HSG C
0.230		100.00% Pervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 1.00 hrs 002yr-01hr Rainfall=1.39"

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Summary for Subcatchment 3S: PR3

Runoff = 0.17 cfs @ 0.51 hrs, Volume= 0.003 af, Depth= 0.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 1.00 hrs 002yr-01hr Rainfall=1.39"

Area (ac)	CN	Description
0.370	74	>75% Grass cover, Good, HSG C
0.370		100.00% Pervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 1.00 hrs 002yr-01hr Rainfall=1.39"

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Summary for Subcatchment 4S: PR4

Runoff = 16.83 cfs @ 0.46 hrs, Volume= 0.351 af, Depth= 0.84"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 1.00 hrs 002yr-01hr Rainfall=1.39"

Area (ac)	CN	Description
0.350	98	Water Surface, HSG C
4.670	94	Urban commercial, 85% imp, HSG C
5.020	94	Weighted Average
0.700		13.95% Pervious Area
4.320		86.05% Impervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 1.00 hrs 002yr-01hr Rainfall=1.39"

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Summary for Reach 2R: US 31 DITCH

Inflow Area = 11.490 ac, 84.41% Impervious, Inflow Depth > 0.82" for 002yr-01hr event
Inflow = 5.91 cfs @ 0.61 hrs, Volume= 0.782 af
Outflow = 5.91 cfs @ 0.61 hrs, Volume= 0.782 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs / 2

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Type II 24-hr trimmed to 1.00 hrs 002yr-01hr Rainfall=1.39"

Proposed Conditions

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Summary for Pond 1P: DET BASIN 1

Inflow Area = 6.240 ac, 86.20% Impervious, Inflow Depth = 0.91" for 002yr-01hr event
Inflow = 18.39 cfs @ 0.52 hrs, Volume= 0.474 af
Outflow = 0.99 cfs @ 1.14 hrs, Volume= 0.429 af, Atten= 95%, Lag= 37.0 min
Primary = 0.99 cfs @ 1.14 hrs, Volume= 0.429 af

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs / 2
Peak Elev= 754.95' @ 1.14 hrs Surf.Area= 34,377 sf Storage= 18,634 cf

Plug-Flow detention time= 461.5 min calculated for 0.429 af (91% of inflow)
Center-of-Mass det. time= 458.8 min (494.6 - 35.8)

Volume	Invert	Avail.Storage	Storage Description
#1	754.40'	154,550 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
754.40	32,900	0	0
755.00	34,500	20,220	20,220
756.00	37,400	35,950	56,170
757.00	40,300	38,850	95,020
758.00	43,400	41,850	136,870
758.40	45,000	17,680	154,550

Device	Routing	Invert	Outlet Devices
#1	Primary	754.40'	15.0" Round RCP_Round 15" L= 444.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 754.40' / 752.80' S= 0.0036 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=0.99 cfs @ 1.14 hrs HW=754.95' TW=0.00' (Dynamic Tailwater)
↑1=RCP_Round 15" (Barrel Controls 0.99 cfs @ 2.77 fps)

BDH REALTY COMMERCIAL DEV-PR CONDITIONS
Type II 24-hr trimmed to 1.00 hrs 002yr-01hr Rainfall=1.39"

Proposed Conditions

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Summary for Pond 2P: DET BASIN 2

Inflow Area = 5.020 ac, 86.05% Impervious, Inflow Depth = 0.84" for 002yr-01hr event
Inflow = 16.83 cfs @ 0.46 hrs, Volume= 0.351 af
Outflow = 5.45 cfs @ 0.58 hrs, Volume= 0.351 af, Atten= 68%, Lag= 7.3 min
Primary = 5.45 cfs @ 0.58 hrs, Volume= 0.351 af

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs / 2
Peak Elev= 752.96' @ 0.58 hrs Surf.Area= 8,426 sf Storage= 8,567 cf

Plug-Flow detention time= 27.8 min calculated for 0.350 af (100% of inflow)
Center-of-Mass det. time= 28.0 min (59.6 - 31.6)

Volume	Invert	Avail.Storage	Storage Description
#1	751.50'	41,420 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
751.50	0	0	0
752.00	6,200	1,550	1,550
753.00	8,520	7,360	8,910
754.00	10,000	9,260	18,170
755.00	11,600	10,800	28,970
756.00	13,300	12,450	41,420

Device	Routing	Invert	Outlet Devices
#1	Primary	751.50'	18.0" Round RCP_Round 18" L= 50.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 751.50' / 751.33' S= 0.0034 ' / S= 0.0034 ' Cc= 0.900 n= 0.013 Concrete pipe, straight & clean, Flow Area= 1.77 sf

Primary OutFlow Max=5.37 cfs @ 0.58 hrs HW=752.95' TW=0.00' (Dynamic Tailwater)

↑ **1=RCP_Round 18"** (Barrel Controls 5.37 cfs @ 3.93 fps)

Proposed Conditions BDH REALTY COMMERCIAL DEV-PR CONDITIONS
Type II 24-hr trimmed to 2.00 hrs 002yr-02hr Rainfall=1.62"
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Time span=0.01-48.00 hrs, dt=0.05 hrs, 961 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: PR1	Runoff Area=6.240 ac 86.20% Impervious Runoff Depth=1.12" Tc=10.0 min CN=95 Runoff=19.19 cfs 0.585 af
Subcatchment 2S: PR-EAST	Runoff Area=0.230 ac 0.00% Impervious Runoff Depth=0.19" Tc=5.0 min CN=74 Runoff=0.14 cfs 0.004 af
Subcatchment 3S: PR3	Runoff Area=0.370 ac 0.00% Impervious Runoff Depth=0.19" Tc=5.0 min CN=74 Runoff=0.23 cfs 0.006 af
Subcatchment 4S: PR4	Runoff Area=5.020 ac 86.05% Impervious Runoff Depth=1.05" Tc=5.0 min CN=94 Runoff=17.47 cfs 0.437 af
Reach 2R: US 31 DITCH	Inflow=6.72 cfs 0.980 af Outflow=6.72 cfs 0.980 af
Pond 1P: DET BASIN 1	Peak Elev=755.02' Storage=20,973 cf Inflow=19.19 cfs 0.585 af 15.0" Round Culvert n=0.012 L=444.0' S=0.0036 '/' Outflow=1.23 cfs 0.539 af
Pond 2P: DET BASIN 2	Peak Elev=753.08' Storage=9,601 cf Inflow=17.47 cfs 0.437 af 18.0" Round Culvert n=0.013 L=50.0' S=0.0034 '/' Outflow=6.09 cfs 0.437 af
Total Runoff Area = 11.860 ac Runoff Volume = 1.031 af Average Runoff Depth = 1.04" 18.23% Pervious = 2.161 ac 81.77% Impervious = 9.699 ac	

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 2.00 hrs 002yr-02hr Rainfall=1.62"

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Summary for Subcatchment 1S: PR1

Runoff = 19.19 cfs @ 1.02 hrs, Volume= 0.585 af, Depth= 1.12"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 2.00 hrs 002yr-02hr Rainfall=1.62"

Area (ac)	CN	Description
5.740	95	Urban commercial, 85% imp, HSG D
0.500	98	Water Surface, HSG C
6.240	95	Weighted Average
0.861		13.80% Pervious Area
5.379		86.20% Impervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 2.00 hrs 002yr-02hr Rainfall=1.62"

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Summary for Subcatchment 2S: PR-EAST

Runoff = 0.14 cfs @ 1.00 hrs, Volume= 0.004 af, Depth= 0.19"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 2.00 hrs 002yr-02hr Rainfall=1.62"

Area (ac)	CN	Description
0.230	74	>75% Grass cover, Good, HSG C
0.230		100.00% Pervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 2.00 hrs 002yr-02hr Rainfall=1.62"

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Summary for Subcatchment 3S: PR3

Runoff = 0.23 cfs @ 1.00 hrs, Volume= 0.006 af, Depth= 0.19"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 2.00 hrs 002yr-02hr Rainfall=1.62"

Area (ac)	CN	Description
0.370	74	>75% Grass cover, Good, HSG C
0.370		100.00% Pervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 2.00 hrs 002yr-02hr Rainfall=1.62"

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Summary for Subcatchment 4S: PR4

Runoff = 17.47 cfs @ 0.96 hrs, Volume= 0.437 af, Depth= 1.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 2.00 hrs 002yr-02hr Rainfall=1.62"

Area (ac)	CN	Description
0.350	98	Water Surface, HSG C
4.670	94	Urban commercial, 85% imp, HSG C
5.020	94	Weighted Average
0.700		13.95% Pervious Area
4.320		86.05% Impervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 2.00 hrs 002yr-02hr Rainfall=1.62"

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Summary for Reach 2R: US 31 DITCH

Inflow Area = 11.490 ac, 84.41% Impervious, Inflow Depth > 1.02" for 002yr-02hr event
Inflow = 6.72 cfs @ 1.10 hrs, Volume= 0.980 af
Outflow = 6.72 cfs @ 1.10 hrs, Volume= 0.980 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs / 2

BDH REALTY COMMERCIAL DEV-PR CONDITIONS
Type II 24-hr trimmed to 2.00 hrs 002yr-02hr Rainfall=1.62"

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Summary for Pond 1P: DET BASIN 1

Inflow Area = 6.240 ac, 86.20% Impervious, Inflow Depth = 1.12" for 002yr-02hr event
Inflow = 19.19 cfs @ 1.02 hrs, Volume= 0.585 af
Outflow = 1.23 cfs @ 1.99 hrs, Volume= 0.539 af, Atten= 94%, Lag= 58.5 min
Primary = 1.23 cfs @ 1.99 hrs, Volume= 0.539 af

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs / 2
Peak Elev= 755.02' @ 1.99 hrs Surf.Area= 34,563 sf Storage= 20,973 cf

Plug-Flow detention time= 416.7 min calculated for 0.539 af (92% of inflow)
Center-of-Mass det. time= 412.7 min (481.3 - 68.7)

Volume	Invert	Avail.Storage	Storage Description
#1	754.40'	154,550 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
754.40	32,900	0	0
755.00	34,500	20,220	20,220
756.00	37,400	35,950	56,170
757.00	40,300	38,850	95,020
758.00	43,400	41,850	136,870
758.40	45,000	17,680	154,550

Device	Routing	Invert	Outlet Devices
#1	Primary	754.40'	15.0" Round RCP_Round 15" L= 444.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 754.40' / 752.80' S= 0.0036 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=1.23 cfs @ 1.99 hrs HW=755.02' TW=0.00' (Dynamic Tailwater)
↑1=RCP_Round 15" (Barrel Controls 1.23 cfs @ 2.94 fps)

BDH REALTY COMMERCIAL DEV-PR CONDITIONS
Type II 24-hr trimmed to 2.00 hrs 002yr-02hr Rainfall=1.62"

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Summary for Pond 2P: DET BASIN 2

Inflow Area = 5.020 ac, 86.05% Impervious, Inflow Depth = 1.05" for 002yr-02hr event
Inflow = 17.47 cfs @ 0.96 hrs, Volume= 0.437 af
Outflow = 6.09 cfs @ 1.08 hrs, Volume= 0.437 af, Atten= 65%, Lag= 7.2 min
Primary = 6.09 cfs @ 1.08 hrs, Volume= 0.437 af

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs / 2
Peak Elev= 753.08' @ 1.08 hrs Surf.Area= 8,639 sf Storage= 9,601 cf

Plug-Flow detention time= 27.8 min calculated for 0.437 af (100% of inflow)
Center-of-Mass det. time= 28.0 min (92.7 - 64.7)

Volume	Invert	Avail.Storage	Storage Description
#1	751.50'	41,420 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
751.50	0	0	0
752.00	6,200	1,550	1,550
753.00	8,520	7,360	8,910
754.00	10,000	9,260	18,170
755.00	11,600	10,800	28,970
756.00	13,300	12,450	41,420

Device	Routing	Invert	Outlet Devices
#1	Primary	751.50'	18.0" Round RCP_Round 18" L= 50.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 751.50' / 751.33' S= 0.0034 '/' Cc= 0.900 n= 0.013 Concrete pipe, straight & clean, Flow Area= 1.77 sf

Primary OutFlow Max=6.02 cfs @ 1.08 hrs HW=753.07' TW=0.00' (Dynamic Tailwater)

↑1=RCP_Round 18" (Barrel Controls 6.02 cfs @ 4.05 fps)

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Time span=0.01-48.00 hrs, dt=0.05 hrs, 961 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: PR1	Runoff Area=6.240 ac 86.20% Impervious Runoff Depth=1.22" Tc=10.0 min CN=95 Runoff=18.76 cfs 0.633 af
Subcatchment 2S: PR-EAST	Runoff Area=0.230 ac 0.00% Impervious Runoff Depth=0.23" Tc=5.0 min CN=74 Runoff=0.15 cfs 0.004 af
Subcatchment 3S: PR3	Runoff Area=0.370 ac 0.00% Impervious Runoff Depth=0.23" Tc=5.0 min CN=74 Runoff=0.24 cfs 0.007 af
Subcatchment 4S: PR4	Runoff Area=5.020 ac 86.05% Impervious Runoff Depth=1.14" Tc=5.0 min CN=94 Runoff=17.05 cfs 0.476 af
Reach 2R: US 31 DITCH	Inflow=6.86 cfs 1.067 af Outflow=6.86 cfs 1.067 af
Pond 1P: DET BASIN 1	Peak Elev=755.03' Storage=21,278 cf Inflow=18.76 cfs 0.633 af 15.0" Round Culvert n=0.012 L=444.0' S=0.0036 '/' Outflow=1.26 cfs 0.587 af
Pond 2P: DET BASIN 2	Peak Elev=753.10' Storage=9,742 cf Inflow=17.05 cfs 0.476 af 18.0" Round Culvert n=0.013 L=50.0' S=0.0034 '/' Outflow=6.17 cfs 0.476 af
Total Runoff Area = 11.860 ac Runoff Volume = 1.120 af Average Runoff Depth = 1.13" 18.23% Pervious = 2.161 ac 81.77% Impervious = 9.699 ac	

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Proposed Conditions

Type II 24-hr trimmed to 3.00 hrs 002yr-03hr Rainfall=1.72"

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Summary for Subcatchment 1S: PR1

Runoff = 18.76 cfs @ 1.51 hrs, Volume= 0.633 af, Depth= 1.22"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 3.00 hrs 002yr-03hr Rainfall=1.72"

Area (ac)	CN	Description
5.740	95	Urban commercial, 85% imp, HSG D
0.500	98	Water Surface, HSG C
6.240	95	Weighted Average
0.861		13.80% Pervious Area
5.379		86.20% Impervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 3.00 hrs 002yr-03hr Rainfall=1.72"

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Summary for Subcatchment 2S: PR-EAST

Runoff = 0.15 cfs @ 1.49 hrs, Volume= 0.004 af, Depth= 0.23"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 3.00 hrs 002yr-03hr Rainfall=1.72"

Area (ac)	CN	Description
0.230	74	>75% Grass cover, Good, HSG C
0.230		100.00% Pervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 3.00 hrs 002yr-03hr Rainfall=1.72"

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Summary for Subcatchment 3S: PR3

Runoff = 0.24 cfs @ 1.49 hrs, Volume= 0.007 af, Depth= 0.23"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 3.00 hrs 002yr-03hr Rainfall=1.72"

Area (ac)	CN	Description
0.370	74	>75% Grass cover, Good, HSG C
0.370		100.00% Pervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 3.00 hrs 002yr-03hr Rainfall=1.72"

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Summary for Subcatchment 4S: PR4

Runoff = 17.05 cfs @ 1.46 hrs, Volume= 0.476 af, Depth= 1.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 3.00 hrs 002yr-03hr Rainfall=1.72"

Area (ac)	CN	Description
0.350	98	Water Surface, HSG C
4.670	94	Urban commercial, 85% imp, HSG C
5.020	94	Weighted Average
0.700		13.95% Pervious Area
4.320		86.05% Impervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 3.00 hrs 002yr-03hr Rainfall=1.72"

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Summary for Reach 2R: US 31 DITCH

Inflow Area = 11.490 ac, 84.41% Impervious, Inflow Depth > 1.11" for 002yr-03hr event
Inflow = 6.86 cfs @ 1.60 hrs, Volume= 1.067 af
Outflow = 6.86 cfs @ 1.60 hrs, Volume= 1.067 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs / 2

BDH REALTY COMMERCIAL DEV-PR CONDITIONS
Type II 24-hr trimmed to 3.00 hrs 002yr-03hr Rainfall=1.72"

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Summary for Pond 1P: DET BASIN 1

Inflow Area = 6.240 ac, 86.20% Impervious, Inflow Depth = 1.22" for 002yr-03hr event
Inflow = 18.76 cfs @ 1.51 hrs, Volume= 0.633 af
Outflow = 1.26 cfs @ 2.40 hrs, Volume= 0.587 af, Atten= 93%, Lag= 53.3 min
Primary = 1.26 cfs @ 2.40 hrs, Volume= 0.587 af

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs / 2
Peak Elev= 755.03' @ 2.40 hrs Surf.Area= 34,589 sf Storage= 21,278 cf

Plug-Flow detention time= 402.3 min calculated for 0.587 af (93% of inflow)
Center-of-Mass det. time= 396.8 min (498.7 - 101.8)

Volume	Invert	Avail.Storage	Storage Description
#1	754.40'	154,550 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
754.40	32,900	0	0
755.00	34,500	20,220	20,220
756.00	37,400	35,950	56,170
757.00	40,300	38,850	95,020
758.00	43,400	41,850	136,870
758.40	45,000	17,680	154,550

Device	Routing	Invert	Outlet Devices
#1	Primary	754.40'	15.0" Round RCP_Round 15" L= 444.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 754.40' / 752.80' S= 0.0036 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=1.26 cfs @ 2.40 hrs HW=755.03' TW=0.00' (Dynamic Tailwater)
↑1=RCP_Round 15" (Barrel Controls 1.26 cfs @ 2.96 fps)

BDH REALTY COMMERCIAL DEV-PR CONDITIONS
Type II 24-hr trimmed to 3.00 hrs 002yr-03hr Rainfall=1.72"

Proposed Conditions

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Summary for Pond 2P: DET BASIN 2

Inflow Area = 5.020 ac, 86.05% Impervious, Inflow Depth = 1.14" for 002yr-03hr event
Inflow = 17.05 cfs @ 1.46 hrs, Volume= 0.476 af
Outflow = 6.17 cfs @ 1.58 hrs, Volume= 0.476 af, Atten= 64%, Lag= 7.1 min
Primary = 6.17 cfs @ 1.58 hrs, Volume= 0.476 af

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs / 2
Peak Elev= 753.10' @ 1.58 hrs Surf.Area= 8,663 sf Storage= 9,742 cf

Plug-Flow detention time= 28.0 min calculated for 0.475 af (100% of inflow)
Center-of-Mass det. time= 28.2 min (126.3 - 98.2)

Volume	Invert	Avail.Storage	Storage Description
#1	751.50'	41,420 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
751.50	0	0	0
752.00	6,200	1,550	1,550
753.00	8,520	7,360	8,910
754.00	10,000	9,260	18,170
755.00	11,600	10,800	28,970
756.00	13,300	12,450	41,420

Device	Routing	Invert	Outlet Devices
#1	Primary	751.50'	18.0" Round RCP_Round 18" L= 50.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 751.50' / 751.33' S= 0.0034 '/' Cc= 0.900 n= 0.013 Concrete pipe, straight & clean, Flow Area= 1.77 sf

Primary OutFlow Max=6.11 cfs @ 1.58 hrs HW=753.09' TW=0.00' (Dynamic Tailwater)

↑1=RCP_Round 18" (Barrel Controls 6.11 cfs @ 4.07 fps)

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BDH REALTY COMMERCIAL DEV-PR CONDITIONS
Type II 24-hr trimmed to 6.00 hrs 002yr-06hr Rainfall=2.50"

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Time span=0.01-48.00 hrs, dt=0.05 hrs, 961 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: PR1

Runoff Area=6.240 ac 86.20% Impervious Runoff Depth=1.96"
Tc=10.0 min CN=95 Runoff=24.88 cfs 1.021 af

Subcatchment 2S: PR-EAST

Runoff Area=0.230 ac 0.00% Impervious Runoff Depth=0.61"
Tc=5.0 min CN=74 Runoff=0.36 cfs 0.012 af

Subcatchment 3S: PR3

Runoff Area=0.370 ac 0.00% Impervious Runoff Depth=0.61"
Tc=5.0 min CN=74 Runoff=0.58 cfs 0.019 af

Subcatchment 4S: PR4

Runoff Area=5.020 ac 86.05% Impervious Runoff Depth=1.87"
Tc=5.0 min CN=94 Runoff=22.80 cfs 0.782 af

Reach 2R: US 31 DITCH

Inflow=9.64 cfs 1.765 af
Outflow=9.64 cfs 1.765 af

Pond 1P: DET BASIN 1

Peak Elev=755.29' Storage=30,216 cf Inflow=24.88 cfs 1.021 af
15.0" Round Culvert n=0.012 L=444.0' S=0.0036 '/ Outflow=2.28 cfs 0.971 af

Pond 2P: DET BASIN 2

Peak Elev=753.60' Storage=14,249 cf Inflow=22.80 cfs 0.782 af
18.0" Round Culvert n=0.013 L=50.0' S=0.0034 '/ Outflow=7.97 cfs 0.782 af

Total Runoff Area = 11.860 ac Runoff Volume = 1.833 af Average Runoff Depth = 1.85"
18.23% Pervious = 2.161 ac 81.77% Impervious = 9.699 ac

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Proposed Conditions

Type II 24-hr trimmed to 6.00 hrs 002yr-06hr Rainfall=2.50"

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Summary for Subcatchment 1S: PR1

Runoff = 24.88 cfs @ 3.01 hrs, Volume= 1.021 af, Depth= 1.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 6.00 hrs 002yr-06hr Rainfall=2.50"

Area (ac)	CN	Description
5.740	95	Urban commercial, 85% imp, HSG D
0.500	98	Water Surface, HSG C
6.240	95	Weighted Average
0.861		13.80% Pervious Area
5.379		86.20% Impervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 6.00 hrs 002yr-06hr Rainfall=2.50"

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Summary for Subcatchment 2S: PR-EAST

Runoff = 0.36 cfs @ 2.97 hrs, Volume= 0.012 af, Depth= 0.61"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 6.00 hrs 002yr-06hr Rainfall=2.50"

Area (ac)	CN	Description
0.230	74	>75% Grass cover, Good, HSG C
0.230		100.00% Pervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 6.00 hrs 002yr-06hr Rainfall=2.50"

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Summary for Subcatchment 3S: PR3

Runoff = 0.58 cfs @ 2.97 hrs, Volume= 0.019 af, Depth= 0.61"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 6.00 hrs 002yr-06hr Rainfall=2.50"

Area (ac)	CN	Description
0.370	74	>75% Grass cover, Good, HSG C
0.370		100.00% Pervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 6.00 hrs 002yr-06hr Rainfall=2.50"

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Summary for Subcatchment 4S: PR4

Runoff = 22.80 cfs @ 2.96 hrs, Volume= 0.782 af, Depth= 1.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 6.00 hrs 002yr-06hr Rainfall=2.50"

Area (ac)	CN	Description
0.350	98	Water Surface, HSG C
4.670	94	Urban commercial, 85% imp, HSG C
5.020	94	Weighted Average
0.700		13.95% Pervious Area
4.320		86.05% Impervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 6.00 hrs 002yr-06hr Rainfall=2.50"

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Summary for Reach 2R: US 31 DITCH

Inflow Area = 11.490 ac, 84.41% Impervious, Inflow Depth > 1.84" for 002yr-06hr event
Inflow = 9.64 cfs @ 3.11 hrs, Volume= 1.765 af
Outflow = 9.64 cfs @ 3.11 hrs, Volume= 1.765 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs / 2

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Type II 24-hr trimmed to 6.00 hrs 002yr-06hr Rainfall=2.50"

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Summary for Pond 1P: DET BASIN 1

Inflow Area = 6.240 ac, 86.20% Impervious, Inflow Depth = 1.96" for 002yr-06hr event
Inflow = 24.88 cfs @ 3.01 hrs, Volume= 1.021 af
Outflow = 2.28 cfs @ 3.57 hrs, Volume= 0.971 af, Atten= 91%, Lag= 33.4 min
Primary = 2.28 cfs @ 3.57 hrs, Volume= 0.971 af

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs / 2
Peak Elev= 755.29' @ 3.57 hrs Surf.Area= 35,330 sf Storage= 30,216 cf

Plug-Flow detention time= 321.0 min calculated for 0.970 af (95% of inflow)
Center-of-Mass det. time= 315.9 min (514.7 - 198.8)

Volume	Invert	Avail.Storage	Storage Description
#1	754.40'	154,550 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
754.40	32,900	0	0
755.00	34,500	20,220	20,220
756.00	37,400	35,950	56,170
757.00	40,300	38,850	95,020
758.00	43,400	41,850	136,870
758.40	45,000	17,680	154,550

Device	Routing	Invert	Outlet Devices
#1	Primary	754.40'	15.0" Round RCP_Round 15" L= 444.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 754.40' / 752.80' S= 0.0036 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=2.28 cfs @ 3.57 hrs HW=755.29' TW=0.00' (Dynamic Tailwater)

↑1=RCP_Round 15" (Barrel Controls 2.28 cfs @ 3.44 fps)

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Type II 24-hr trimmed to 6.00 hrs 002yr-06hr Rainfall=2.50"

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Summary for Pond 2P: DET BASIN 2

Inflow Area = 5.020 ac, 86.05% Impervious, Inflow Depth = 1.87" for 002yr-06hr event
Inflow = 22.80 cfs @ 2.96 hrs, Volume= 0.782 af
Outflow = 7.97 cfs @ 3.07 hrs, Volume= 0.782 af, Atten= 65%, Lag= 7.1 min
Primary = 7.97 cfs @ 3.07 hrs, Volume= 0.782 af

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs / 2
Peak Elev= 753.60' @ 3.08 hrs Surf.Area= 9,402 sf Storage= 14,249 cf

Plug-Flow detention time= 28.6 min calculated for 0.781 af (100% of inflow)
Center-of-Mass det. time= 28.7 min (224.5 - 195.8)

Volume	Invert	Avail.Storage	Storage Description
#1	751.50'	41,420 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
751.50	0	0	0
752.00	6,200	1,550	1,550
753.00	8,520	7,360	8,910
754.00	10,000	9,260	18,170
755.00	11,600	10,800	28,970
756.00	13,300	12,450	41,420

Device	Routing	Invert	Outlet Devices
#1	Primary	751.50'	18.0" Round RCP_Round 18" L= 50.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 751.50' / 751.33' S= 0.0034 ' / S= 0.0034 ' Cc= 0.900 n= 0.013 Concrete pipe, straight & clean, Flow Area= 1.77 sf

Primary OutFlow Max=7.92 cfs @ 3.07 hrs HW=753.58' TW=0.00' (Dynamic Tailwater)

↑1=RCP_Round 18" (Barrel Controls 7.92 cfs @ 4.48 fps)

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Type II 24-hr trimmed to 12.00 hrs 002yr-12hr Rainfall=2.45"

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Time span=0.01-48.00 hrs, dt=0.05 hrs, 961 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: PR1	Runoff Area=6.240 ac 86.20% Impervious Runoff Depth=1.91" Tc=10.0 min CN=95 Runoff=20.43 cfs 0.996 af
Subcatchment 2S: PR-EAST	Runoff Area=0.230 ac 0.00% Impervious Runoff Depth=0.58" Tc=5.0 min CN=74 Runoff=0.28 cfs 0.011 af
Subcatchment 3S: PR3	Runoff Area=0.370 ac 0.00% Impervious Runoff Depth=0.58" Tc=5.0 min CN=74 Runoff=0.45 cfs 0.018 af
Subcatchment 4S: PR4	Runoff Area=5.020 ac 86.05% Impervious Runoff Depth=1.82" Tc=5.0 min CN=94 Runoff=18.66 cfs 0.762 af
Reach 2R: US 31 DITCH	Inflow=8.60 cfs 1.715 af Outflow=8.60 cfs 1.715 af
Pond 1P: DET BASIN 1	Peak Elev=755.20' Storage=27,107 cf Inflow=20.43 cfs 0.996 af 15.0" Round Culvert n=0.012 L=444.0' S=0.0036 '/ Outflow=1.91 cfs 0.942 af
Pond 2P: DET BASIN 2	Peak Elev=753.32' Storage=11,744 cf Inflow=18.66 cfs 0.762 af 18.0" Round Culvert n=0.013 L=50.0' S=0.0034 '/ Outflow=7.19 cfs 0.762 af
Total Runoff Area = 11.860 ac Runoff Volume = 1.787 af Average Runoff Depth = 1.81" 18.23% Pervious = 2.161 ac 81.77% Impervious = 9.699 ac	

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Proposed Conditions

Type II 24-hr trimmed to 12.00 hrs 002yr-12hr Rainfall=2.45"

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Summary for Subcatchment 1S: PR1

Runoff = 20.43 cfs @ 6.01 hrs, Volume= 0.996 af, Depth= 1.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 12.00 hrs 002yr-12hr Rainfall=2.45"

Area (ac)	CN	Description
5.740	95	Urban commercial, 85% imp, HSG D
0.500	98	Water Surface, HSG C
6.240	95	Weighted Average
0.861		13.80% Pervious Area
5.379		86.20% Impervious Area

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

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Proposed Conditions

Type II 24-hr trimmed to 12.00 hrs 002yr-12hr Rainfall=2.45"

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Summary for Subcatchment 2S: PR-EAST

Runoff = 0.28 cfs @ 5.97 hrs, Volume= 0.011 af, Depth= 0.58"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 12.00 hrs 002yr-12hr Rainfall=2.45"

Area (ac)	CN	Description
0.230	74	>75% Grass cover, Good, HSG C
0.230		100.00% Pervious Area

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

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Proposed Conditions

Type II 24-hr trimmed to 12.00 hrs 002yr-12hr Rainfall=2.45"

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Summary for Subcatchment 3S: PR3

Runoff = 0.45 cfs @ 5.97 hrs, Volume= 0.018 af, Depth= 0.58"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 12.00 hrs 002yr-12hr Rainfall=2.45"

Area (ac)	CN	Description
0.370	74	>75% Grass cover, Good, HSG C
0.370		100.00% Pervious Area

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

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Proposed Conditions

Type II 24-hr trimmed to 12.00 hrs 002yr-12hr Rainfall=2.45"

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Summary for Subcatchment 4S: PR4

Runoff = 18.66 cfs @ 5.95 hrs, Volume= 0.762 af, Depth= 1.82"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 12.00 hrs 002yr-12hr Rainfall=2.45"

Area (ac)	CN	Description
0.350	98	Water Surface, HSG C
4.670	94	Urban commercial, 85% imp, HSG C
5.020	94	Weighted Average
0.700		13.95% Pervious Area
4.320		86.05% Impervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 12.00 hrs 002yr-12hr Rainfall=2.45"

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Summary for Reach 2R: US 31 DITCH

Inflow Area = 11.490 ac, 84.41% Impervious, Inflow Depth > 1.79" for 002yr-12hr event
Inflow = 8.60 cfs @ 6.10 hrs, Volume= 1.715 af
Outflow = 8.60 cfs @ 6.10 hrs, Volume= 1.715 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs / 2

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 12.00 hrs 002yr-12hr Rainfall=2.45"

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Summary for Pond 1P: DET BASIN 1

Inflow Area = 6.240 ac, 86.20% Impervious, Inflow Depth = 1.91" for 002yr-12hr event
 Inflow = 20.43 cfs @ 6.01 hrs, Volume= 0.996 af
 Outflow = 1.91 cfs @ 6.56 hrs, Volume= 0.942 af, Atten= 91%, Lag= 32.7 min
 Primary = 1.91 cfs @ 6.56 hrs, Volume= 0.942 af

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs / 2
 Peak Elev= 755.20' @ 6.56 hrs Surf.Area= 35,074 sf Storage= 27,107 cf

Plug-Flow detention time= 341.2 min calculated for 0.942 af (95% of inflow)
 Center-of-Mass det. time= 325.4 min (722.1 - 396.6)

Volume	Invert	Avail.Storage	Storage Description
#1	754.40'	154,550 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
754.40	32,900	0	0
755.00	34,500	20,220	20,220
756.00	37,400	35,950	56,170
757.00	40,300	38,850	95,020
758.00	43,400	41,850	136,870
758.40	45,000	17,680	154,550

Device	Routing	Invert	Outlet Devices
#1	Primary	754.40'	15.0" Round RCP_Round 15" L= 444.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 754.40' / 752.80' S= 0.0036 '/ Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=1.91 cfs @ 6.56 hrs HW=755.20' TW=0.00' (Dynamic Tailwater)

↑ **1=RCP_Round 15"** (Barrel Controls 1.91 cfs @ 3.30 fps)

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 12.00 hrs 002yr-12hr Rainfall=2.45"

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Summary for Pond 2P: DET BASIN 2

Inflow Area = 5.020 ac, 86.05% Impervious, Inflow Depth = 1.82" for 002yr-12hr event
Inflow = 18.66 cfs @ 5.95 hrs, Volume= 0.762 af
Outflow = 7.19 cfs @ 6.07 hrs, Volume= 0.762 af, Atten= 61%, Lag= 6.9 min
Primary = 7.19 cfs @ 6.07 hrs, Volume= 0.762 af

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs / 2
Peak Elev= 753.32' @ 6.07 hrs Surf.Area= 8,999 sf Storage= 11,744 cf

Plug-Flow detention time= 28.7 min calculated for 0.761 af (100% of inflow)
Center-of-Mass det. time= 28.8 min (424.2 - 395.4)

Volume	Invert	Avail.Storage	Storage Description
#1	751.50'	41,420 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
751.50	0	0	0
752.00	6,200	1,550	1,550
753.00	8,520	7,360	8,910
754.00	10,000	9,260	18,170
755.00	11,600	10,800	28,970
756.00	13,300	12,450	41,420

Device	Routing	Invert	Outlet Devices
#1	Primary	751.50'	18.0" Round RCP_Round 18" L= 50.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 751.50' / 751.33' S= 0.0034 '/' Cc= 0.900 n= 0.013 Concrete pipe, straight & clean, Flow Area= 1.77 sf

Primary OutFlow Max=7.15 cfs @ 6.07 hrs HW=753.31' TW=0.00' (Dynamic Tailwater)

↑1=RCP_Round 18" (Barrel Controls 7.15 cfs @ 4.25 fps)

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Type II 24-hr 002yr-24hr Rainfall=2.92"

Proposed Conditions

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Time span=0.01-48.00 hrs, dt=0.05 hrs, 961 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: PR1

Runoff Area=6.240 ac 86.20% Impervious Runoff Depth=2.37"
Tc=10.0 min CN=95 Runoff=21.02 cfs 1.233 af

Subcatchment 2S: PR-EAST

Runoff Area=0.230 ac 0.00% Impervious Runoff Depth=0.86"
Tc=5.0 min CN=74 Runoff=0.35 cfs 0.016 af

Subcatchment 3S: PR3

Runoff Area=0.370 ac 0.00% Impervious Runoff Depth=0.86"
Tc=5.0 min CN=74 Runoff=0.57 cfs 0.026 af

Subcatchment 4S: PR4

Runoff Area=5.020 ac 86.05% Impervious Runoff Depth=2.27"
Tc=5.0 min CN=94 Runoff=19.27 cfs 0.951 af

Reach 2R: US 31 DITCH

Inflow=9.32 cfs 2.132 af
Outflow=9.32 cfs 2.132 af

Pond 1P: DET BASIN 1

Peak Elev=755.29' Storage=30,517 cf Inflow=21.02 cfs 1.233 af
15.0" Round Culvert n=0.012 L=444.0' S=0.0036 '/' Outflow=2.32 cfs 1.165 af

Pond 2P: DET BASIN 2

Peak Elev=753.40' Storage=12,422 cf Inflow=19.27 cfs 0.951 af
18.0" Round Culvert n=0.013 L=50.0' S=0.0034 '/' Outflow=7.43 cfs 0.951 af

Total Runoff Area = 11.860 ac Runoff Volume = 2.227 af Average Runoff Depth = 2.25"
18.23% Pervious = 2.161 ac 81.77% Impervious = 9.699 ac

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Type II 24-hr 002yr-24hr Rainfall=2.92"

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Summary for Subcatchment 1S: PR1

Runoff = 21.02 cfs @ 12.01 hrs, Volume= 1.233 af, Depth= 2.37"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr 002yr-24hr Rainfall=2.92"

Area (ac)	CN	Description
5.740	95	Urban commercial, 85% imp, HSG D
0.500	98	Water Surface, HSG C
6.240	95	Weighted Average
0.861		13.80% Pervious Area
5.379		86.20% Impervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Type II 24-hr 002yr-24hr Rainfall=2.92"

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Summary for Subcatchment 2S: PR-EAST

Runoff = 0.35 cfs @ 11.97 hrs, Volume= 0.016 af, Depth= 0.86"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr 002yr-24hr Rainfall=2.92"

Area (ac)	CN	Description
0.230	74	>75% Grass cover, Good, HSG C
0.230		100.00% Pervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Type II 24-hr 002yr-24hr Rainfall=2.92"

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Summary for Subcatchment 3S: PR3

Runoff = 0.57 cfs @ 11.97 hrs, Volume= 0.026 af, Depth= 0.86"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr 002yr-24hr Rainfall=2.92"

Area (ac)	CN	Description
0.370	74	>75% Grass cover, Good, HSG C
0.370		100.00% Pervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Type II 24-hr 002yr-24hr Rainfall=2.92"

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Summary for Subcatchment 4S: PR4

Runoff = 19.27 cfs @ 11.95 hrs, Volume= 0.951 af, Depth= 2.27"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr 002yr-24hr Rainfall=2.92"

Area (ac)	CN	Description
0.350	98	Water Surface, HSG C
4.670	94	Urban commercial, 85% imp, HSG C
5.020	94	Weighted Average
0.700		13.95% Pervious Area
4.320		86.05% Impervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Type II 24-hr 002yr-24hr Rainfall=2.92"

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Summary for Reach 2R: US 31 DITCH

Inflow Area = 11.490 ac, 84.41% Impervious, Inflow Depth > 2.23" for 002yr-24hr event
Inflow = 9.32 cfs @ 12.11 hrs, Volume= 2.132 af
Outflow = 9.32 cfs @ 12.11 hrs, Volume= 2.132 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs / 2

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Type II 24-hr 002yr-24hr Rainfall=2.92"

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Summary for Pond 1P: DET BASIN 1

Inflow Area = 6.240 ac, 86.20% Impervious, Inflow Depth = 2.37" for 002yr-24hr event
 Inflow = 21.02 cfs @ 12.01 hrs, Volume= 1.233 af
 Outflow = 2.32 cfs @ 12.47 hrs, Volume= 1.165 af, Atten= 89%, Lag= 27.4 min
 Primary = 2.32 cfs @ 12.47 hrs, Volume= 1.165 af

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs / 2
 Peak Elev= 755.29' @ 12.47 hrs Surf.Area= 35,355 sf Storage= 30,517 cf

Plug-Flow detention time= 334.7 min calculated for 1.165 af (94% of inflow)
 Center-of-Mass det. time= 302.9 min (1,087.2 - 784.2)

Volume	Invert	Avail.Storage	Storage Description
#1	754.40'	154,550 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
754.40	32,900	0	0
755.00	34,500	20,220	20,220
756.00	37,400	35,950	56,170
757.00	40,300	38,850	95,020
758.00	43,400	41,850	136,870
758.40	45,000	17,680	154,550

Device	Routing	Invert	Outlet Devices
#1	Primary	754.40'	15.0" Round RCP_Round 15" L= 444.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 754.40' / 752.80' S= 0.0036 '/ Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=2.32 cfs @ 12.47 hrs HW=755.29' TW=0.00' (Dynamic Tailwater)

↑ **1=RCP_Round 15"** (Barrel Controls 2.32 cfs @ 3.46 fps)

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Type II 24-hr 002yr-24hr Rainfall=2.92"

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Summary for Pond 2P: DET BASIN 2

Inflow Area = 5.020 ac, 86.05% Impervious, Inflow Depth = 2.27" for 002yr-24hr event
 Inflow = 19.27 cfs @ 11.95 hrs, Volume= 0.951 af
 Outflow = 7.43 cfs @ 12.07 hrs, Volume= 0.951 af, Atten= 61%, Lag= 7.0 min
 Primary = 7.43 cfs @ 12.07 hrs, Volume= 0.951 af

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs / 2
 Peak Elev= 753.40' @ 12.07 hrs Surf.Area= 9,110 sf Storage= 12,422 cf

Plug-Flow detention time= 29.2 min calculated for 0.950 af (100% of inflow)
 Center-of-Mass det. time= 29.3 min (815.3 - 786.0)

Volume	Invert	Avail.Storage	Storage Description
#1	751.50'	41,420 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
751.50	0	0	0
752.00	6,200	1,550	1,550
753.00	8,520	7,360	8,910
754.00	10,000	9,260	18,170
755.00	11,600	10,800	28,970
756.00	13,300	12,450	41,420

Device	Routing	Invert	Outlet Devices
#1	Primary	751.50'	18.0" Round RCP_Round 18" L= 50.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 751.50' / 751.33' S= 0.0034 '/' Cc= 0.900 n= 0.013 Concrete pipe, straight & clean, Flow Area= 1.77 sf

Primary OutFlow Max=7.40 cfs @ 12.07 hrs HW=753.39' TW=0.00' (Dynamic Tailwater)

↑ **1=RCP_Round 18"** (Barrel Controls 7.40 cfs @ 4.28 fps)

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BDH REALTY COMMERCIAL DEV-PR CONDITIONS
Type II 24-hr trimmed to 1.00 hrs 010yr-01hr Rainfall=2.02"

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Time span=0.01-48.00 hrs, dt=0.05 hrs, 961 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: PR1

Runoff Area=6.240 ac 86.20% Impervious Runoff Depth=1.50"
Tc=10.0 min CN=95 Runoff=29.64 cfs 0.781 af

Subcatchment 2S: PR-EAST

Runoff Area=0.230 ac 0.00% Impervious Runoff Depth=0.36"
Tc=5.0 min CN=74 Runoff=0.35 cfs 0.007 af

Subcatchment 3S: PR3

Runoff Area=0.370 ac 0.00% Impervious Runoff Depth=0.36"
Tc=5.0 min CN=74 Runoff=0.56 cfs 0.011 af

Subcatchment 4S: PR4

Runoff Area=5.020 ac 86.05% Impervious Runoff Depth=1.42"
Tc=5.0 min CN=94 Runoff=27.47 cfs 0.592 af

Reach 2R: US 31 DITCH

Inflow=9.67 cfs 1.334 af
Outflow=9.67 cfs 1.334 af

Pond 1P: DET BASIN 1

Peak Elev=755.26' Storage=29,462 cf Inflow=29.64 cfs 0.781 af
15.0" Round Culvert n=0.012 L=444.0' S=0.0036 '/' Outflow=2.19 cfs 0.735 af

Pond 2P: DET BASIN 2

Peak Elev=753.64' Storage=14,660 cf Inflow=27.47 cfs 0.592 af
18.0" Round Culvert n=0.013 L=50.0' S=0.0034 '/' Outflow=8.21 cfs 0.592 af

Total Runoff Area = 11.860 ac Runoff Volume = 1.391 af Average Runoff Depth = 1.41"
18.23% Pervious = 2.161 ac 81.77% Impervious = 9.699 ac

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 1.00 hrs 010yr-01hr Rainfall=2.02"

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Summary for Subcatchment 1S: PR1

Runoff = 29.64 cfs @ 0.52 hrs, Volume= 0.781 af, Depth= 1.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 1.00 hrs 010yr-01hr Rainfall=2.02"

Area (ac)	CN	Description
5.740	95	Urban commercial, 85% imp, HSG D
0.500	98	Water Surface, HSG C
6.240	95	Weighted Average
0.861		13.80% Pervious Area
5.379		86.20% Impervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 1.00 hrs 010yr-01hr Rainfall=2.02"

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Summary for Subcatchment 2S: PR-EAST

Runoff = 0.35 cfs @ 0.49 hrs, Volume= 0.007 af, Depth= 0.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 1.00 hrs 010yr-01hr Rainfall=2.02"

Area (ac)	CN	Description
0.230	74	>75% Grass cover, Good, HSG C
0.230		100.00% Pervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 1.00 hrs 010yr-01hr Rainfall=2.02"

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Summary for Subcatchment 3S: PR3

Runoff = 0.56 cfs @ 0.49 hrs, Volume= 0.011 af, Depth= 0.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 1.00 hrs 010yr-01hr Rainfall=2.02"

Area (ac)	CN	Description
0.370	74	>75% Grass cover, Good, HSG C
0.370		100.00% Pervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 1.00 hrs 010yr-01hr Rainfall=2.02"

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Summary for Subcatchment 4S: PR4

Runoff = 27.47 cfs @ 0.46 hrs, Volume= 0.592 af, Depth= 1.42"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 1.00 hrs 010yr-01hr Rainfall=2.02"

Area (ac)	CN	Description
0.350	98	Water Surface, HSG C
4.670	94	Urban commercial, 85% imp, HSG C
5.020	94	Weighted Average
0.700		13.95% Pervious Area
4.320		86.05% Impervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 1.00 hrs 010yr-01hr Rainfall=2.02"

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Summary for Reach 2R: US 31 DITCH

Inflow Area = 11.490 ac, 84.41% Impervious, Inflow Depth > 1.39" for 010yr-01hr event
Inflow = 9.67 cfs @ 0.63 hrs, Volume= 1.334 af
Outflow = 9.67 cfs @ 0.63 hrs, Volume= 1.334 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs / 2

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Type II 24-hr trimmed to 1.00 hrs 010yr-01hr Rainfall=2.02"

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Summary for Pond 1P: DET BASIN 1

Inflow Area = 6.240 ac, 86.20% Impervious, Inflow Depth = 1.50" for 010yr-01hr event
Inflow = 29.64 cfs @ 0.52 hrs, Volume= 0.781 af
Outflow = 2.19 cfs @ 1.10 hrs, Volume= 0.735 af, Atten= 93%, Lag= 34.8 min
Primary = 2.19 cfs @ 1.10 hrs, Volume= 0.735 af

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs / 2
Peak Elev= 755.26' @ 1.10 hrs Surf.Area= 35,268 sf Storage= 29,462 cf

Plug-Flow detention time= 357.4 min calculated for 0.735 af (94% of inflow)
Center-of-Mass det. time= 355.5 min (390.5 - 35.0)

Volume	Invert	Avail.Storage	Storage Description
#1	754.40'	154,550 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
754.40	32,900	0	0
755.00	34,500	20,220	20,220
756.00	37,400	35,950	56,170
757.00	40,300	38,850	95,020
758.00	43,400	41,850	136,870
758.40	45,000	17,680	154,550

Device	Routing	Invert	Outlet Devices
#1	Primary	754.40'	15.0" Round RCP_Round 15" L= 444.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 754.40' / 752.80' S= 0.0036 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=2.19 cfs @ 1.10 hrs HW=755.26' TW=0.00' (Dynamic Tailwater)

↑1=RCP_Round 15" (Barrel Controls 2.19 cfs @ 3.41 fps)

BDH REALTY COMMERCIAL DEV-PR CONDITIONS
Type II 24-hr trimmed to 1.00 hrs 010yr-01hr Rainfall=2.02"

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Summary for Pond 2P: DET BASIN 2

Inflow Area = 5.020 ac, 86.05% Impervious, Inflow Depth = 1.42" for 010yr-01hr event
Inflow = 27.47 cfs @ 0.46 hrs, Volume= 0.592 af
Outflow = 8.21 cfs @ 0.59 hrs, Volume= 0.592 af, Atten= 70%, Lag= 7.7 min
Primary = 8.21 cfs @ 0.59 hrs, Volume= 0.592 af

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs / 2
Peak Elev= 753.64' @ 0.59 hrs Surf.Area= 9,466 sf Storage= 14,660 cf

Plug-Flow detention time= 28.1 min calculated for 0.591 af (100% of inflow)
Center-of-Mass det. time= 28.3 min (59.1 - 30.7)

Volume	Invert	Avail.Storage	Storage Description
#1	751.50'	41,420 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
751.50	0	0	0
752.00	6,200	1,550	1,550
753.00	8,520	7,360	8,910
754.00	10,000	9,260	18,170
755.00	11,600	10,800	28,970
756.00	13,300	12,450	41,420

Device	Routing	Invert	Outlet Devices
#1	Primary	751.50'	18.0" Round RCP_Round 18" L= 50.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 751.50' / 751.33' S= 0.0034 '/' Cc= 0.900 n= 0.013 Concrete pipe, straight & clean, Flow Area= 1.77 sf

Primary OutFlow Max=8.17 cfs @ 0.59 hrs HW=753.63' TW=0.00' (Dynamic Tailwater)

↑1=RCP_Round 18" (Barrel Controls 8.17 cfs @ 4.62 fps)

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BDH REALTY COMMERCIAL DEV-PR CONDITIONS
Type II 24-hr trimmed to 2.00 hrs 010yr-02hr Rainfall=2.38"

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Time span=0.01-48.00 hrs, dt=0.05 hrs, 961 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: PR1	Runoff Area=6.240 ac 86.20% Impervious Runoff Depth=1.85" Tc=10.0 min CN=95 Runoff=30.73 cfs 0.961 af
Subcatchment 2S: PR-EAST	Runoff Area=0.230 ac 0.00% Impervious Runoff Depth=0.54" Tc=5.0 min CN=74 Runoff=0.44 cfs 0.010 af
Subcatchment 3S: PR3	Runoff Area=0.370 ac 0.00% Impervious Runoff Depth=0.54" Tc=5.0 min CN=74 Runoff=0.71 cfs 0.017 af
Subcatchment 4S: PR4	Runoff Area=5.020 ac 86.05% Impervious Runoff Depth=1.75" Tc=5.0 min CN=94 Runoff=28.33 cfs 0.734 af
Reach 2R: US 31 DITCH	Inflow=10.98 cfs 1.658 af Outflow=10.98 cfs 1.658 af
Pond 1P: DET BASIN 1	Peak Elev=755.36' Storage=32,765 cf Inflow=30.73 cfs 0.961 af 15.0" Round Culvert n=0.012 L=444.0' S=0.0036 '/' Outflow=2.59 cfs 0.913 af
Pond 2P: DET BASIN 2	Peak Elev=753.84' Storage=16,564 cf Inflow=28.33 cfs 0.734 af 18.0" Round Culvert n=0.013 L=50.0' S=0.0034 '/' Outflow=9.16 cfs 0.734 af
Total Runoff Area = 11.860 ac Runoff Volume = 1.722 af Average Runoff Depth = 1.74" 18.23% Pervious = 2.161 ac 81.77% Impervious = 9.699 ac	

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 2.00 hrs 010yr-02hr Rainfall=2.38"

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Summary for Subcatchment 1S: PR1

Runoff = 30.73 cfs @ 1.01 hrs, Volume= 0.961 af, Depth= 1.85"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 2.00 hrs 010yr-02hr Rainfall=2.38"

Area (ac)	CN	Description
5.740	95	Urban commercial, 85% imp, HSG D
0.500	98	Water Surface, HSG C
6.240	95	Weighted Average
0.861		13.80% Pervious Area
5.379		86.20% Impervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 2.00 hrs 010yr-02hr Rainfall=2.38"

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Summary for Subcatchment 2S: PR-EAST

Runoff = 0.44 cfs @ 0.98 hrs, Volume= 0.010 af, Depth= 0.54"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 2.00 hrs 010yr-02hr Rainfall=2.38"

Area (ac)	CN	Description
0.230	74	>75% Grass cover, Good, HSG C
0.230		100.00% Pervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 2.00 hrs 010yr-02hr Rainfall=2.38"

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Summary for Subcatchment 3S: PR3

Runoff = 0.71 cfs @ 0.98 hrs, Volume= 0.017 af, Depth= 0.54"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 2.00 hrs 010yr-02hr Rainfall=2.38"

Area (ac)	CN	Description
0.370	74	>75% Grass cover, Good, HSG C
0.370		100.00% Pervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 2.00 hrs 010yr-02hr Rainfall=2.38"

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Summary for Subcatchment 4S: PR4

Runoff = 28.33 cfs @ 0.96 hrs, Volume= 0.734 af, Depth= 1.75"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 2.00 hrs 010yr-02hr Rainfall=2.38"

Area (ac)	CN	Description
0.350	98	Water Surface, HSG C
4.670	94	Urban commercial, 85% imp, HSG C
5.020	94	Weighted Average
0.700		13.95% Pervious Area
4.320		86.05% Impervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 2.00 hrs 010yr-02hr Rainfall=2.38"

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Summary for Reach 2R: US 31 DITCH

Inflow Area = 11.490 ac, 84.41% Impervious, Inflow Depth > 1.73" for 010yr-02hr event
Inflow = 10.98 cfs @ 1.12 hrs, Volume= 1.658 af
Outflow = 10.98 cfs @ 1.12 hrs, Volume= 1.658 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs / 2

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Type II 24-hr trimmed to 2.00 hrs 010yr-02hr Rainfall=2.38"

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Summary for Pond 1P: DET BASIN 1

Inflow Area = 6.240 ac, 86.20% Impervious, Inflow Depth = 1.85" for 010yr-02hr event
Inflow = 30.73 cfs @ 1.01 hrs, Volume= 0.961 af
Outflow = 2.59 cfs @ 1.62 hrs, Volume= 0.913 af, Atten= 92%, Lag= 36.7 min
Primary = 2.59 cfs @ 1.62 hrs, Volume= 0.913 af

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs / 2
Peak Elev= 755.36' @ 1.62 hrs Surf.Area= 35,539 sf Storage= 32,765 cf

Plug-Flow detention time= 321.8 min calculated for 0.913 af (95% of inflow)
Center-of-Mass det. time= 321.6 min (389.0 - 67.4)

Volume	Invert	Avail.Storage	Storage Description
#1	754.40'	154,550 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
754.40	32,900	0	0
755.00	34,500	20,220	20,220
756.00	37,400	35,950	56,170
757.00	40,300	38,850	95,020
758.00	43,400	41,850	136,870
758.40	45,000	17,680	154,550

Device	Routing	Invert	Outlet Devices
#1	Primary	754.40'	15.0" Round RCP_Round 15" L= 444.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 754.40' / 752.80' S= 0.0036 '/ Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=2.59 cfs @ 1.62 hrs HW=755.36' TW=0.00' (Dynamic Tailwater)

↑1=RCP_Round 15" (Barrel Controls 2.59 cfs @ 3.55 fps)

BDH REALTY COMMERCIAL DEV-PR CONDITIONS
Type II 24-hr trimmed to 2.00 hrs 010yr-02hr Rainfall=2.38"

Proposed Conditions

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Summary for Pond 2P: DET BASIN 2

Inflow Area = 5.020 ac, 86.05% Impervious, Inflow Depth = 1.75" for 010yr-02hr event
Inflow = 28.33 cfs @ 0.96 hrs, Volume= 0.734 af
Outflow = 9.16 cfs @ 1.08 hrs, Volume= 0.734 af, Atten= 68%, Lag= 7.5 min
Primary = 9.16 cfs @ 1.08 hrs, Volume= 0.734 af

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs / 2
Peak Elev= 753.84' @ 1.08 hrs Surf.Area= 9,759 sf Storage= 16,564 cf

Plug-Flow detention time= 28.3 min calculated for 0.733 af (100% of inflow)
Center-of-Mass det. time= 28.5 min (91.8 - 63.4)

Volume	Invert	Avail.Storage	Storage Description
#1	751.50'	41,420 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
751.50	0	0	0
752.00	6,200	1,550	1,550
753.00	8,520	7,360	8,910
754.00	10,000	9,260	18,170
755.00	11,600	10,800	28,970
756.00	13,300	12,450	41,420

Device	Routing	Invert	Outlet Devices
#1	Primary	751.50'	18.0" Round RCP_Round 18" L= 50.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 751.50' / 751.33' S= 0.0034 '/' Cc= 0.900 n= 0.013 Concrete pipe, straight & clean, Flow Area= 1.77 sf

Primary OutFlow Max=9.07 cfs @ 1.08 hrs HW=753.82' TW=0.00' (Dynamic Tailwater)
↑1=RCP_Round 18" (Barrel Controls 9.07 cfs @ 5.13 fps)

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Proposed Conditions

Type II 24-hr trimmed to 3.00 hrs 010yr-03hr Rainfall=2.53"

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Time span=0.01-48.00 hrs, dt=0.05 hrs, 961 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: PR1

Runoff Area=6.240 ac 86.20% Impervious Runoff Depth=1.99"
Tc=10.0 min CN=95 Runoff=29.87 cfs 1.036 af

Subcatchment 2S: PR-EAST

Runoff Area=0.230 ac 0.00% Impervious Runoff Depth=0.63"
Tc=5.0 min CN=74 Runoff=0.46 cfs 0.012 af

Subcatchment 3S: PR3

Runoff Area=0.370 ac 0.00% Impervious Runoff Depth=0.63"
Tc=5.0 min CN=74 Runoff=0.73 cfs 0.019 af

Subcatchment 4S: PR4

Runoff Area=5.020 ac 86.05% Impervious Runoff Depth=1.90"
Tc=5.0 min CN=94 Runoff=27.50 cfs 0.794 af

Reach 2R: US 31 DITCH

Inflow=11.15 cfs 1.794 af
Outflow=11.15 cfs 1.794 af

Pond 1P: DET BASIN 1

Peak Elev=755.38' Storage=33,382 cf Inflow=29.87 cfs 1.036 af
15.0" Round Culvert n=0.012 L=444.0' S=0.0036 '/' Outflow=2.67 cfs 0.988 af

Pond 2P: DET BASIN 2

Peak Elev=753.85' Storage=16,681 cf Inflow=27.50 cfs 0.794 af
18.0" Round Culvert n=0.013 L=50.0' S=0.0034 '/' Outflow=9.22 cfs 0.794 af

Total Runoff Area = 11.860 ac Runoff Volume = 1.861 af Average Runoff Depth = 1.88"
18.23% Pervious = 2.161 ac 81.77% Impervious = 9.699 ac

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Type II 24-hr trimmed to 3.00 hrs 010yr-03hr Rainfall=2.53"

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Summary for Subcatchment 1S: PR1

Runoff = 29.87 cfs @ 1.51 hrs, Volume= 1.036 af, Depth= 1.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 3.00 hrs 010yr-03hr Rainfall=2.53"

Area (ac)	CN	Description
5.740	95	Urban commercial, 85% imp, HSG D
0.500	98	Water Surface, HSG C
6.240	95	Weighted Average
0.861		13.80% Pervious Area
5.379		86.20% Impervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 3.00 hrs 010yr-03hr Rainfall=2.53"

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Summary for Subcatchment 2S: PR-EAST

Runoff = 0.46 cfs @ 1.48 hrs, Volume= 0.012 af, Depth= 0.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 3.00 hrs 010yr-03hr Rainfall=2.53"

Area (ac)	CN	Description
0.230	74	>75% Grass cover, Good, HSG C
0.230		100.00% Pervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 3.00 hrs 010yr-03hr Rainfall=2.53"

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Summary for Subcatchment 3S: PR3

Runoff = 0.73 cfs @ 1.48 hrs, Volume= 0.019 af, Depth= 0.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 3.00 hrs 010yr-03hr Rainfall=2.53"

Area (ac)	CN	Description
0.370	74	>75% Grass cover, Good, HSG C
0.370		100.00% Pervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 3.00 hrs 010yr-03hr Rainfall=2.53"

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Summary for Subcatchment 4S: PR4

Runoff = 27.50 cfs @ 1.46 hrs, Volume= 0.794 af, Depth= 1.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 3.00 hrs 010yr-03hr Rainfall=2.53"

Area (ac)	CN	Description
0.350	98	Water Surface, HSG C
4.670	94	Urban commercial, 85% imp, HSG C
5.020	94	Weighted Average
0.700		13.95% Pervious Area
4.320		86.05% Impervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 3.00 hrs 010yr-03hr Rainfall=2.53"

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Summary for Reach 2R: US 31 DITCH

Inflow Area = 11.490 ac, 84.41% Impervious, Inflow Depth > 1.87" for 010yr-03hr event
Inflow = 11.15 cfs @ 1.62 hrs, Volume= 1.794 af
Outflow = 11.15 cfs @ 1.62 hrs, Volume= 1.794 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs / 2

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Type II 24-hr trimmed to 3.00 hrs 010yr-03hr Rainfall=2.53"

Proposed Conditions

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Summary for Pond 1P: DET BASIN 1

Inflow Area = 6.240 ac, 86.20% Impervious, Inflow Depth = 1.99" for 010yr-03hr event
Inflow = 29.87 cfs @ 1.51 hrs, Volume= 1.036 af
Outflow = 2.67 cfs @ 2.08 hrs, Volume= 0.988 af, Atten= 91%, Lag= 34.4 min
Primary = 2.67 cfs @ 2.08 hrs, Volume= 0.988 af

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs / 2
Peak Elev= 755.38' @ 2.08 hrs Surf.Area= 35,589 sf Storage= 33,382 cf

Plug-Flow detention time= 314.6 min calculated for 0.988 af (95% of inflow)
Center-of-Mass det. time= 310.9 min (411.0 - 100.1)

Volume	Invert	Avail.Storage	Storage Description
#1	754.40'	154,550 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
754.40	32,900	0	0
755.00	34,500	20,220	20,220
756.00	37,400	35,950	56,170
757.00	40,300	38,850	95,020
758.00	43,400	41,850	136,870
758.40	45,000	17,680	154,550

Device	Routing	Invert	Outlet Devices
#1	Primary	754.40'	15.0" Round RCP_Round 15" L= 444.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 754.40' / 752.80' S= 0.0036 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=2.67 cfs @ 2.08 hrs HW=755.38' TW=0.00' (Dynamic Tailwater)

↑1=RCP_Round 15" (Barrel Controls 2.67 cfs @ 3.57 fps)

BDH REALTY COMMERCIAL DEV-PR CONDITIONS
Type II 24-hr trimmed to 3.00 hrs 010yr-03hr Rainfall=2.53"

Proposed Conditions

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Summary for Pond 2P: DET BASIN 2

Inflow Area = 5.020 ac, 86.05% Impervious, Inflow Depth = 1.90" for 010yr-03hr event
Inflow = 27.50 cfs @ 1.46 hrs, Volume= 0.794 af
Outflow = 9.22 cfs @ 1.58 hrs, Volume= 0.794 af, Atten= 66%, Lag= 7.4 min
Primary = 9.22 cfs @ 1.58 hrs, Volume= 0.794 af

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs / 2
Peak Elev= 753.85' @ 1.58 hrs Surf.Area= 9,777 sf Storage= 16,681 cf

Plug-Flow detention time= 28.4 min calculated for 0.793 af (100% of inflow)
Center-of-Mass det. time= 28.6 min (124.8 - 96.3)

Volume	Invert	Avail.Storage	Storage Description
#1	751.50'	41,420 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
751.50	0	0	0
752.00	6,200	1,550	1,550
753.00	8,520	7,360	8,910
754.00	10,000	9,260	18,170
755.00	11,600	10,800	28,970
756.00	13,300	12,450	41,420

Device	Routing	Invert	Outlet Devices
#1	Primary	751.50'	18.0" Round RCP_Round 18" L= 50.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 751.50' / 751.33' S= 0.0034 '/' Cc= 0.900 n= 0.013 Concrete pipe, straight & clean, Flow Area= 1.77 sf

Primary OutFlow Max=9.13 cfs @ 1.58 hrs HW=753.83' TW=0.00' (Dynamic Tailwater)
↑1=RCP_Round 18" (Barrel Controls 9.13 cfs @ 5.17 fps)

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BDH REALTY COMMERCIAL DEV-PR CONDITIONS
Type II 24-hr trimmed to 6.00 hrs 010yr-06hr Rainfall=3.04"

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Time span=0.01-48.00 hrs, dt=0.05 hrs, 961 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: PR1

Runoff Area=6.240 ac 86.20% Impervious Runoff Depth=2.49"
Tc=10.0 min CN=95 Runoff=31.09 cfs 1.294 af

Subcatchment 2S: PR-EAST

Runoff Area=0.230 ac 0.00% Impervious Runoff Depth=0.93"
Tc=5.0 min CN=74 Runoff=0.57 cfs 0.018 af

Subcatchment 3S: PR3

Runoff Area=0.370 ac 0.00% Impervious Runoff Depth=0.93"
Tc=5.0 min CN=74 Runoff=0.91 cfs 0.029 af

Subcatchment 4S: PR4

Runoff Area=5.020 ac 86.05% Impervious Runoff Depth=2.39"
Tc=5.0 min CN=94 Runoff=28.65 cfs 0.999 af

Reach 2R: US 31 DITCH

Inflow=12.49 cfs 2.261 af
Outflow=12.49 cfs 2.261 af

Pond 1P: DET BASIN 1

Peak Elev=755.50' Storage=37,829 cf Inflow=31.09 cfs 1.294 af
15.0" Round Culvert n=0.012 L=444.0' S=0.0036 '/ Outflow=3.19 cfs 1.244 af

Pond 2P: DET BASIN 2

Peak Elev=754.02' Storage=18,346 cf Inflow=28.65 cfs 0.999 af
18.0" Round Culvert n=0.013 L=50.0' S=0.0034 '/ Outflow=9.95 cfs 0.999 af

Total Runoff Area = 11.860 ac Runoff Volume = 2.340 af Average Runoff Depth = 2.37"
18.23% Pervious = 2.161 ac 81.77% Impervious = 9.699 ac

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 6.00 hrs 010yr-06hr Rainfall=3.04"

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Summary for Subcatchment 1S: PR1

Runoff = 31.09 cfs @ 3.01 hrs, Volume= 1.294 af, Depth= 2.49"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 6.00 hrs 010yr-06hr Rainfall=3.04"

Area (ac)	CN	Description
5.740	95	Urban commercial, 85% imp, HSG D
0.500	98	Water Surface, HSG C
6.240	95	Weighted Average
0.861		13.80% Pervious Area
5.379		86.20% Impervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 6.00 hrs 010yr-06hr Rainfall=3.04"

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Summary for Subcatchment 2S: PR-EAST

Runoff = 0.57 cfs @ 2.97 hrs, Volume= 0.018 af, Depth= 0.93"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 6.00 hrs 010yr-06hr Rainfall=3.04"

Area (ac)	CN	Description
0.230	74	>75% Grass cover, Good, HSG C
0.230		100.00% Pervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 6.00 hrs 010yr-06hr Rainfall=3.04"

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Summary for Subcatchment 3S: PR3

Runoff = 0.91 cfs @ 2.97 hrs, Volume= 0.029 af, Depth= 0.93"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 6.00 hrs 010yr-06hr Rainfall=3.04"

Area (ac)	CN	Description
0.370	74	>75% Grass cover, Good, HSG C
0.370		100.00% Pervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS
Type II 24-hr trimmed to 6.00 hrs 010yr-06hr Rainfall=3.04"

Proposed Conditions

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Summary for Subcatchment 4S: PR4

Runoff = 28.65 cfs @ 2.95 hrs, Volume= 0.999 af, Depth= 2.39"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 6.00 hrs 010yr-06hr Rainfall=3.04"

Area (ac)	CN	Description
0.350	98	Water Surface, HSG C
4.670	94	Urban commercial, 85% imp, HSG C
5.020	94	Weighted Average
0.700		13.95% Pervious Area
4.320		86.05% Impervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 6.00 hrs 010yr-06hr Rainfall=3.04"

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Summary for Reach 2R: US 31 DITCH

Inflow Area = 11.490 ac, 84.41% Impervious, Inflow Depth > 2.36" for 010yr-06hr event
Inflow = 12.49 cfs @ 3.12 hrs, Volume= 2.261 af
Outflow = 12.49 cfs @ 3.12 hrs, Volume= 2.261 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs / 2

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Type II 24-hr trimmed to 6.00 hrs 010yr-06hr Rainfall=3.04"

Proposed Conditions

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Summary for Pond 1P: DET BASIN 1

Inflow Area = 6.240 ac, 86.20% Impervious, Inflow Depth = 2.49" for 010yr-06hr event
Inflow = 31.09 cfs @ 3.01 hrs, Volume= 1.294 af
Outflow = 3.19 cfs @ 3.50 hrs, Volume= 1.244 af, Atten= 90%, Lag= 29.7 min
Primary = 3.19 cfs @ 3.50 hrs, Volume= 1.244 af

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs / 2
Peak Elev= 755.50' @ 3.50 hrs Surf.Area= 35,950 sf Storage= 37,829 cf

Plug-Flow detention time= 289.9 min calculated for 1.244 af (96% of inflow)
Center-of-Mass det. time= 283.8 min (481.0 - 197.2)

Volume	Invert	Avail.Storage	Storage Description
#1	754.40'	154,550 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
754.40	32,900	0	0
755.00	34,500	20,220	20,220
756.00	37,400	35,950	56,170
757.00	40,300	38,850	95,020
758.00	43,400	41,850	136,870
758.40	45,000	17,680	154,550

Device	Routing	Invert	Outlet Devices
#1	Primary	754.40'	15.0" Round RCP_Round 15" L= 444.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 754.40' / 752.80' S= 0.0036 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=3.19 cfs @ 3.50 hrs HW=755.50' TW=0.00' (Dynamic Tailwater)

↑1=RCP_Round 15" (Barrel Controls 3.19 cfs @ 3.72 fps)

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Type II 24-hr trimmed to 6.00 hrs 010yr-06hr Rainfall=3.04"

Proposed Conditions

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Summary for Pond 2P: DET BASIN 2

Inflow Area = 5.020 ac, 86.05% Impervious, Inflow Depth = 2.39" for 010yr-06hr event
Inflow = 28.65 cfs @ 2.95 hrs, Volume= 0.999 af
Outflow = 9.95 cfs @ 3.08 hrs, Volume= 0.999 af, Atten= 65%, Lag= 7.3 min
Primary = 9.95 cfs @ 3.08 hrs, Volume= 0.999 af

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs / 2
Peak Elev= 754.02' @ 3.08 hrs Surf.Area= 10,028 sf Storage= 18,346 cf

Plug-Flow detention time= 29.0 min calculated for 0.998 af (100% of inflow)
Center-of-Mass det. time= 29.1 min (223.2 - 194.1)

Volume	Invert	Avail.Storage	Storage Description
#1	751.50'	41,420 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
751.50	0	0	0
752.00	6,200	1,550	1,550
753.00	8,520	7,360	8,910
754.00	10,000	9,260	18,170
755.00	11,600	10,800	28,970
756.00	13,300	12,450	41,420

Device	Routing	Invert	Outlet Devices
#1	Primary	751.50'	18.0" Round RCP_Round 18" L= 50.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 751.50' / 751.33' S= 0.0034 '/' Cc= 0.900 n= 0.013 Concrete pipe, straight & clean, Flow Area= 1.77 sf

Primary OutFlow Max=9.88 cfs @ 3.08 hrs HW=754.00' TW=0.00' (Dynamic Tailwater)

↑1=RCP_Round 18" (Barrel Controls 9.88 cfs @ 5.59 fps)

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Type II 24-hr trimmed to 12.00 hrs 010yr-12hr Rainfall=3.53"
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Time span=0.01-48.00 hrs, dt=0.05 hrs, 961 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: PR1	Runoff Area=6.240 ac 86.20% Impervious Runoff Depth=2.97" Tc=10.0 min CN=95 Runoff=30.84 cfs 1.544 af
Subcatchment 2S: PR-EAST	Runoff Area=0.230 ac 0.00% Impervious Runoff Depth=1.26" Tc=5.0 min CN=74 Runoff=0.63 cfs 0.024 af
Subcatchment 3S: PR3	Runoff Area=0.370 ac 0.00% Impervious Runoff Depth=1.26" Tc=5.0 min CN=74 Runoff=1.02 cfs 0.039 af
Subcatchment 4S: PR4	Runoff Area=5.020 ac 86.05% Impervious Runoff Depth=2.86" Tc=5.0 min CN=94 Runoff=28.46 cfs 1.198 af
Reach 2R: US 31 DITCH	Inflow=13.11 cfs 2.711 af Outflow=13.11 cfs 2.711 af
Pond 1P: DET BASIN 1	Peak Elev=755.59' Storage=41,098 cf Inflow=30.84 cfs 1.544 af 15.0" Round Culvert n=0.012 L=444.0' S=0.0036 '/' Outflow=3.56 cfs 1.488 af
Pond 2P: DET BASIN 2	Peak Elev=754.05' Storage=18,705 cf Inflow=28.46 cfs 1.198 af 18.0" Round Culvert n=0.013 L=50.0' S=0.0034 '/' Outflow=10.10 cfs 1.198 af
Total Runoff Area = 11.860 ac Runoff Volume = 2.805 af Average Runoff Depth = 2.84" 18.23% Pervious = 2.161 ac 81.77% Impervious = 9.699 ac	

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 12.00 hrs 010yr-12hr Rainfall=3.53"

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Summary for Subcatchment 1S: PR1

Runoff = 30.84 cfs @ 6.01 hrs, Volume= 1.544 af, Depth= 2.97"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 12.00 hrs 010yr-12hr Rainfall=3.53"

Area (ac)	CN	Description
5.740	95	Urban commercial, 85% imp, HSG D
0.500	98	Water Surface, HSG C
6.240	95	Weighted Average
0.861		13.80% Pervious Area
5.379		86.20% Impervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 12.00 hrs 010yr-12hr Rainfall=3.53"

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Summary for Subcatchment 2S: PR-EAST

Runoff = 0.63 cfs @ 5.97 hrs, Volume= 0.024 af, Depth= 1.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 12.00 hrs 010yr-12hr Rainfall=3.53"

Area (ac)	CN	Description
0.230	74	>75% Grass cover, Good, HSG C
0.230		100.00% Pervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 12.00 hrs 010yr-12hr Rainfall=3.53"

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Summary for Subcatchment 3S: PR3

Runoff = 1.02 cfs @ 5.97 hrs, Volume= 0.039 af, Depth= 1.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 12.00 hrs 010yr-12hr Rainfall=3.53"

Area (ac)	CN	Description
0.370	74	>75% Grass cover, Good, HSG C
0.370		100.00% Pervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 12.00 hrs 010yr-12hr Rainfall=3.53"

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Summary for Subcatchment 4S: PR4

Runoff = 28.46 cfs @ 5.95 hrs, Volume= 1.198 af, Depth= 2.86"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 12.00 hrs 010yr-12hr Rainfall=3.53"

Area (ac)	CN	Description
0.350	98	Water Surface, HSG C
4.670	94	Urban commercial, 85% imp, HSG C
5.020	94	Weighted Average
0.700		13.95% Pervious Area
4.320		86.05% Impervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 12.00 hrs 010yr-12hr Rainfall=3.53"

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Summary for Reach 2R: US 31 DITCH

Inflow Area = 11.490 ac, 84.41% Impervious, Inflow Depth > 2.83" for 010yr-12hr event
Inflow = 13.11 cfs @ 6.11 hrs, Volume= 2.711 af
Outflow = 13.11 cfs @ 6.11 hrs, Volume= 2.711 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs / 2

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 12.00 hrs 010yr-12hr Rainfall=3.53"

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Summary for Pond 1P: DET BASIN 1

Inflow Area = 6.240 ac, 86.20% Impervious, Inflow Depth = 2.97" for 010yr-12hr event
Inflow = 30.84 cfs @ 6.01 hrs, Volume= 1.544 af
Outflow = 3.56 cfs @ 6.44 hrs, Volume= 1.488 af, Atten= 88%, Lag= 26.0 min
Primary = 3.56 cfs @ 6.44 hrs, Volume= 1.488 af

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs / 2
Peak Elev= 755.59' @ 6.44 hrs Surf.Area= 36,212 sf Storage= 41,098 cf

Plug-Flow detention time= 281.3 min calculated for 1.488 af (96% of inflow)
Center-of-Mass det. time= 270.3 min (661.1 - 390.8)

Volume	Invert	Avail.Storage	Storage Description
#1	754.40'	154,550 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
754.40	32,900	0	0
755.00	34,500	20,220	20,220
756.00	37,400	35,950	56,170
757.00	40,300	38,850	95,020
758.00	43,400	41,850	136,870
758.40	45,000	17,680	154,550

Device	Routing	Invert	Outlet Devices
#1	Primary	754.40'	15.0" Round RCP_Round 15" L= 444.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 754.40' / 752.80' S= 0.0036 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=3.56 cfs @ 6.44 hrs HW=755.59' TW=0.00' (Dynamic Tailwater)

↑1=RCP_Round 15" (Barrel Controls 3.56 cfs @ 3.80 fps)

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 12.00 hrs 010yr-12hr Rainfall=3.53"

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Summary for Pond 2P: DET BASIN 2

Inflow Area = 5.020 ac, 86.05% Impervious, Inflow Depth = 2.86" for 010yr-12hr event
 Inflow = 28.46 cfs @ 5.95 hrs, Volume= 1.198 af
 Outflow = 10.10 cfs @ 6.07 hrs, Volume= 1.198 af, Atten= 65%, Lag= 7.2 min
 Primary = 10.10 cfs @ 6.07 hrs, Volume= 1.198 af

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs / 2
 Peak Elev= 754.05' @ 6.07 hrs Surf.Area= 10,085 sf Storage= 18,705 cf

Plug-Flow detention time= 29.3 min calculated for 1.197 af (100% of inflow)
 Center-of-Mass det. time= 29.4 min (418.6 - 389.2)

Volume	Invert	Avail.Storage	Storage Description
#1	751.50'	41,420 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
751.50	0	0	0
752.00	6,200	1,550	1,550
753.00	8,520	7,360	8,910
754.00	10,000	9,260	18,170
755.00	11,600	10,800	28,970
756.00	13,300	12,450	41,420

Device	Routing	Invert	Outlet Devices
#1	Primary	751.50'	18.0" Round RCP_Round 18" L= 50.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 751.50' / 751.33' S= 0.0034 '/' Cc= 0.900 n= 0.013 Concrete pipe, straight & clean, Flow Area= 1.77 sf

Primary OutFlow Max=10.03 cfs @ 6.07 hrs HW=754.04' TW=0.00' (Dynamic Tailwater)

↑1=RCP_Round 18" (Barrel Controls 10.03 cfs @ 5.68 fps)

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Type II 24-hr 010yr-24hr Rainfall=4.09"

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Time span=0.01-48.00 hrs, dt=0.05 hrs, 961 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: PR1	Runoff Area=6.240 ac 86.20% Impervious Runoff Depth=3.52" Tc=10.0 min CN=95 Runoff=30.45 cfs 1.830 af
Subcatchment 2S: PR-EAST	Runoff Area=0.230 ac 0.00% Impervious Runoff Depth=1.66" Tc=5.0 min CN=74 Runoff=0.70 cfs 0.032 af
Subcatchment 3S: PR3	Runoff Area=0.370 ac 0.00% Impervious Runoff Depth=1.66" Tc=5.0 min CN=74 Runoff=1.12 cfs 0.051 af
Subcatchment 4S: PR4	Runoff Area=5.020 ac 86.05% Impervious Runoff Depth=3.41" Tc=5.0 min CN=94 Runoff=28.15 cfs 1.428 af
Reach 2R: US 31 DITCH	Inflow=13.54 cfs 3.219 af Outflow=13.54 cfs 3.219 af
Pond 1P: DET BASIN 1	Peak Elev=755.67' Storage=44,059 cf Inflow=30.45 cfs 1.830 af 15.0" Round Culvert n=0.012 L=444.0' S=0.0036 '/' Outflow=3.87 cfs 1.760 af
Pond 2P: DET BASIN 2	Peak Elev=754.06' Storage=18,765 cf Inflow=28.15 cfs 1.428 af 18.0" Round Culvert n=0.013 L=50.0' S=0.0034 '/' Outflow=10.12 cfs 1.428 af
Total Runoff Area = 11.860 ac Runoff Volume = 3.341 af Average Runoff Depth = 3.38" 18.23% Pervious = 2.161 ac 81.77% Impervious = 9.699 ac	

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Type II 24-hr 010yr-24hr Rainfall=4.09"

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Summary for Subcatchment 1S: PR1

Runoff = 30.45 cfs @ 12.01 hrs, Volume= 1.830 af, Depth= 3.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr 010yr-24hr Rainfall=4.09"

Area (ac)	CN	Description
5.740	95	Urban commercial, 85% imp, HSG D
0.500	98	Water Surface, HSG C
6.240	95	Weighted Average
0.861		13.80% Pervious Area
5.379		86.20% Impervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Type II 24-hr 010yr-24hr Rainfall=4.09"

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Summary for Subcatchment 2S: PR-EAST

Runoff = 0.70 cfs @ 11.96 hrs, Volume= 0.032 af, Depth= 1.66"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr 010yr-24hr Rainfall=4.09"

Area (ac)	CN	Description
0.230	74	>75% Grass cover, Good, HSG C
0.230		100.00% Pervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Type II 24-hr 010yr-24hr Rainfall=4.09"

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Summary for Subcatchment 3S: PR3

Runoff = 1.12 cfs @ 11.96 hrs, Volume= 0.051 af, Depth= 1.66"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr 010yr-24hr Rainfall=4.09"

Area (ac)	CN	Description
0.370	74	>75% Grass cover, Good, HSG C
0.370		100.00% Pervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Type II 24-hr 010yr-24hr Rainfall=4.09"

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Summary for Subcatchment 4S: PR4

Runoff = 28.15 cfs @ 11.95 hrs, Volume= 1.428 af, Depth= 3.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr 010yr-24hr Rainfall=4.09"

Area (ac)	CN	Description
0.350	98	Water Surface, HSG C
4.670	94	Urban commercial, 85% imp, HSG C
5.020	94	Weighted Average
0.700		13.95% Pervious Area
4.320		86.05% Impervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Type II 24-hr 010yr-24hr Rainfall=4.09"

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Summary for Reach 2R: US 31 DITCH

Inflow Area = 11.490 ac, 84.41% Impervious, Inflow Depth > 3.36" for 010yr-24hr event
Inflow = 13.54 cfs @ 12.10 hrs, Volume= 3.219 af
Outflow = 13.54 cfs @ 12.10 hrs, Volume= 3.219 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs / 2

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Type II 24-hr 010yr-24hr Rainfall=4.09"

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Summary for Pond 1P: DET BASIN 1

Inflow Area = 6.240 ac, 86.20% Impervious, Inflow Depth = 3.52" for 010yr-24hr event
 Inflow = 30.45 cfs @ 12.01 hrs, Volume= 1.830 af
 Outflow = 3.87 cfs @ 12.40 hrs, Volume= 1.760 af, Atten= 87%, Lag= 23.3 min
 Primary = 3.87 cfs @ 12.40 hrs, Volume= 1.760 af

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs / 2
 Peak Elev= 755.67' @ 12.40 hrs Surf.Area= 36,449 sf Storage= 44,059 cf

Plug-Flow detention time= 285.6 min calculated for 1.758 af (96% of inflow)
 Center-of-Mass det. time= 263.6 min (1,037.5 - 773.9)

Volume	Invert	Avail.Storage	Storage Description
#1	754.40'	154,550 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
754.40	32,900	0	0
755.00	34,500	20,220	20,220
756.00	37,400	35,950	56,170
757.00	40,300	38,850	95,020
758.00	43,400	41,850	136,870
758.40	45,000	17,680	154,550

Device	Routing	Invert	Outlet Devices
#1	Primary	754.40'	15.0" Round RCP_Round 15" L= 444.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 754.40' / 752.80' S= 0.0036 '/ Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=3.87 cfs @ 12.40 hrs HW=755.67' TW=0.00' (Dynamic Tailwater)

↑1=RCP_Round 15" (Barrel Controls 3.87 cfs @ 3.85 fps)

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Type II 24-hr 010yr-24hr Rainfall=4.09"

Proposed Conditions

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Summary for Pond 2P: DET BASIN 2

Inflow Area = 5.020 ac, 86.05% Impervious, Inflow Depth = 3.41" for 010yr-24hr event
 Inflow = 28.15 cfs @ 11.95 hrs, Volume= 1.428 af
 Outflow = 10.12 cfs @ 12.07 hrs, Volume= 1.428 af, Atten= 64%, Lag= 7.2 min
 Primary = 10.12 cfs @ 12.07 hrs, Volume= 1.428 af

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs / 2
 Peak Elev= 754.06' @ 12.07 hrs Surf.Area= 10,095 sf Storage= 18,765 cf

Plug-Flow detention time= 29.7 min calculated for 1.426 af (100% of inflow)
 Center-of-Mass det. time= 29.7 min (804.8 - 775.0)

Volume	Invert	Avail.Storage	Storage Description
#1	751.50'	41,420 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
751.50	0	0	0
752.00	6,200	1,550	1,550
753.00	8,520	7,360	8,910
754.00	10,000	9,260	18,170
755.00	11,600	10,800	28,970
756.00	13,300	12,450	41,420

Device	Routing	Invert	Outlet Devices
#1	Primary	751.50'	18.0" Round RCP_Round 18" L= 50.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 751.50' / 751.33' S= 0.0034 ' / Cc= 0.900 n= 0.013 Concrete pipe, straight & clean, Flow Area= 1.77 sf

Primary OutFlow Max=10.06 cfs @ 12.07 hrs HW=754.04' TW=0.00' (Dynamic Tailwater)
 ↑1=RCP_Round 18" (Barrel Controls 10.06 cfs @ 5.69 fps)

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BDH REALTY COMMERCIAL DEV-PR CONDITIONS
Type II 24-hr trimmed to 1.00 hrs 025yr-01hr Rainfall=2.40"
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Time span=0.01-48.00 hrs, dt=0.05 hrs, 961 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: PR1	Runoff Area=6.240 ac 86.20% Impervious Runoff Depth=1.87" Tc=10.0 min CN=95 Runoff=36.45 cfs 0.971 af
Subcatchment 2S: PR-EAST	Runoff Area=0.230 ac 0.00% Impervious Runoff Depth=0.55" Tc=5.0 min CN=74 Runoff=0.54 cfs 0.011 af
Subcatchment 3S: PR3	Runoff Area=0.370 ac 0.00% Impervious Runoff Depth=0.55" Tc=5.0 min CN=74 Runoff=0.87 cfs 0.017 af
Subcatchment 4S: PR4	Runoff Area=5.020 ac 86.05% Impervious Runoff Depth>1.77" Tc=5.0 min CN=94 Runoff=33.90 cfs 0.742 af
Reach 2R: US 31 DITCH	Inflow=12.21 cfs 1.677 af Outflow=12.21 cfs 1.677 af
Pond 1P: DET BASIN 1	Peak Elev=755.45' Storage=35,994 cf Inflow=36.45 cfs 0.971 af 15.0" Round Culvert n=0.012 L=444.0' S=0.0036 '/' Outflow=2.98 cfs 0.924 af
Pond 2P: DET BASIN 2	Peak Elev=754.04' Storage=18,584 cf Inflow=33.90 cfs 0.742 af 18.0" Round Culvert n=0.013 L=50.0' S=0.0034 '/' Outflow=10.05 cfs 0.742 af
Total Runoff Area = 11.860 ac Runoff Volume = 1.740 af Average Runoff Depth = 1.76" 18.23% Pervious = 2.161 ac 81.77% Impervious = 9.699 ac	

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 1.00 hrs 025yr-01hr Rainfall=2.40"

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Summary for Subcatchment 1S: PR1

Runoff = 36.45 cfs @ 0.51 hrs, Volume= 0.971 af, Depth= 1.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 1.00 hrs 025yr-01hr Rainfall=2.40"

Area (ac)	CN	Description
5.740	95	Urban commercial, 85% imp, HSG D
0.500	98	Water Surface, HSG C
6.240	95	Weighted Average
0.861		13.80% Pervious Area
5.379		86.20% Impervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 1.00 hrs 025yr-01hr Rainfall=2.40"

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Summary for Subcatchment 2S: PR-EAST

Runoff = 0.54 cfs @ 0.48 hrs, Volume= 0.011 af, Depth= 0.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 1.00 hrs 025yr-01hr Rainfall=2.40"

Area (ac)	CN	Description
0.230	74	>75% Grass cover, Good, HSG C
0.230		100.00% Pervious Area

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

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Proposed Conditions

Type II 24-hr trimmed to 1.00 hrs 025yr-01hr Rainfall=2.40"

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Summary for Subcatchment 3S: PR3

Runoff = 0.87 cfs @ 0.48 hrs, Volume= 0.017 af, Depth= 0.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 1.00 hrs 025yr-01hr Rainfall=2.40"

Area (ac)	CN	Description
0.370	74	>75% Grass cover, Good, HSG C
0.370		100.00% Pervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 1.00 hrs 025yr-01hr Rainfall=2.40"

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Summary for Subcatchment 4S: PR4

Runoff = 33.90 cfs @ 0.46 hrs, Volume= 0.742 af, Depth> 1.77"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 1.00 hrs 025yr-01hr Rainfall=2.40"

Area (ac)	CN	Description
0.350	98	Water Surface, HSG C
4.670	94	Urban commercial, 85% imp, HSG C
5.020	94	Weighted Average
0.700		13.95% Pervious Area
4.320		86.05% Impervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 1.00 hrs 025yr-01hr Rainfall=2.40"

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Summary for Reach 2R: US 31 DITCH

Inflow Area = 11.490 ac, 84.41% Impervious, Inflow Depth > 1.75" for 025yr-01hr event
Inflow = 12.21 cfs @ 0.64 hrs, Volume= 1.677 af
Outflow = 12.21 cfs @ 0.64 hrs, Volume= 1.677 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs / 2

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Type II 24-hr trimmed to 1.00 hrs 025yr-01hr Rainfall=2.40"

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Summary for Pond 1P: DET BASIN 1

Inflow Area = 6.240 ac, 86.20% Impervious, Inflow Depth = 1.87" for 025yr-01hr event
Inflow = 36.45 cfs @ 0.51 hrs, Volume= 0.971 af
Outflow = 2.98 cfs @ 1.08 hrs, Volume= 0.924 af, Atten= 92%, Lag= 33.8 min
Primary = 2.98 cfs @ 1.08 hrs, Volume= 0.924 af

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs / 2
Peak Elev= 755.45' @ 1.08 hrs Surf.Area= 35,801 sf Storage= 35,994 cf

Plug-Flow detention time= 321.0 min calculated for 0.924 af (95% of inflow)
Center-of-Mass det. time= 319.4 min (354.0 - 34.6)

Volume	Invert	Avail.Storage	Storage Description
#1	754.40'	154,550 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
754.40	32,900	0	0
755.00	34,500	20,220	20,220
756.00	37,400	35,950	56,170
757.00	40,300	38,850	95,020
758.00	43,400	41,850	136,870
758.40	45,000	17,680	154,550

Device	Routing	Invert	Outlet Devices
#1	Primary	754.40'	15.0" Round RCP_Round 15" L= 444.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 754.40' / 752.80' S= 0.0036 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=2.98 cfs @ 1.08 hrs HW=755.45' TW=0.00' (Dynamic Tailwater)
↑1=RCP_Round 15" (Barrel Controls 2.98 cfs @ 3.66 fps)

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Type II 24-hr trimmed to 1.00 hrs 025yr-01hr Rainfall=2.40"

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Summary for Pond 2P: DET BASIN 2

Inflow Area = 5.020 ac, 86.05% Impervious, Inflow Depth > 1.77" for 025yr-01hr event
Inflow = 33.90 cfs @ 0.46 hrs, Volume= 0.742 af
Outflow = 10.05 cfs @ 0.59 hrs, Volume= 0.742 af, Atten= 70%, Lag= 7.7 min
Primary = 10.05 cfs @ 0.59 hrs, Volume= 0.742 af

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs / 2
Peak Elev= 754.04' @ 0.59 hrs Surf.Area= 10,066 sf Storage= 18,584 cf

Plug-Flow detention time= 28.9 min calculated for 0.741 af (100% of inflow)
Center-of-Mass det. time= 29.1 min (59.4 - 30.4)

Volume	Invert	Avail.Storage	Storage Description
#1	751.50'	41,420 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
751.50	0	0	0
752.00	6,200	1,550	1,550
753.00	8,520	7,360	8,910
754.00	10,000	9,260	18,170
755.00	11,600	10,800	28,970
756.00	13,300	12,450	41,420

Device	Routing	Invert	Outlet Devices
#1	Primary	751.50'	18.0" Round RCP_Round 18" L= 50.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 751.50' / 751.33' S= 0.0034 ' / ' Cc= 0.900 n= 0.013 Concrete pipe, straight & clean, Flow Area= 1.77 sf

Primary OutFlow Max=10.01 cfs @ 0.59 hrs HW=754.03' TW=0.00' (Dynamic Tailwater)
↑1=RCP_Round 18" (Barrel Controls 10.01 cfs @ 5.66 fps)

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BDH REALTY COMMERCIAL DEV-PR CONDITIONS
Type II 24-hr trimmed to 2.00 hrs 025yr-02hr Rainfall=2.85"
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Time span=0.01-48.00 hrs, dt=0.05 hrs, 961 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: PR1	Runoff Area=6.240 ac 86.20% Impervious Runoff Depth=2.30" Tc=10.0 min CN=95 Runoff=37.84 cfs 1.198 af
Subcatchment 2S: PR-EAST	Runoff Area=0.230 ac 0.00% Impervious Runoff Depth=0.81" Tc=5.0 min CN=74 Runoff=0.67 cfs 0.016 af
Subcatchment 3S: PR3	Runoff Area=0.370 ac 0.00% Impervious Runoff Depth=0.81" Tc=5.0 min CN=74 Runoff=1.08 cfs 0.025 af
Subcatchment 4S: PR4	Runoff Area=5.020 ac 86.05% Impervious Runoff Depth=2.21" Tc=5.0 min CN=94 Runoff=35.02 cfs 0.923 af
Reach 2R: US 31 DITCH	Inflow=13.73 cfs 2.088 af Outflow=13.73 cfs 2.088 af
Pond 1P: DET BASIN 1	Peak Elev=755.57' Storage=40,280 cf Inflow=37.84 cfs 1.198 af 15.0" Round Culvert n=0.012 L=444.0' S=0.0036 '/' Outflow=3.47 cfs 1.150 af
Pond 2P: DET BASIN 2	Peak Elev=754.29' Storage=21,091 cf Inflow=35.02 cfs 0.923 af 18.0" Round Culvert n=0.013 L=50.0' S=0.0034 '/' Outflow=11.01 cfs 0.923 af
Total Runoff Area = 11.860 ac Runoff Volume = 2.161 af Average Runoff Depth = 2.19" 18.23% Pervious = 2.161 ac 81.77% Impervious = 9.699 ac	

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 2.00 hrs 025yr-02hr Rainfall=2.85"

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Summary for Subcatchment 1S: PR1

Runoff = 37.84 cfs @ 1.01 hrs, Volume= 1.198 af, Depth= 2.30"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 2.00 hrs 025yr-02hr Rainfall=2.85"

Area (ac)	CN	Description
5.740	95	Urban commercial, 85% imp, HSG D
0.500	98	Water Surface, HSG C
6.240	95	Weighted Average
0.861		13.80% Pervious Area
5.379		86.20% Impervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 2.00 hrs 025yr-02hr Rainfall=2.85"

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Summary for Subcatchment 2S: PR-EAST

Runoff = 0.67 cfs @ 0.97 hrs, Volume= 0.016 af, Depth= 0.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 2.00 hrs 025yr-02hr Rainfall=2.85"

Area (ac)	CN	Description
0.230	74	>75% Grass cover, Good, HSG C
0.230		100.00% Pervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 2.00 hrs 025yr-02hr Rainfall=2.85"

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Summary for Subcatchment 3S: PR3

Runoff = 1.08 cfs @ 0.97 hrs, Volume= 0.025 af, Depth= 0.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 2.00 hrs 025yr-02hr Rainfall=2.85"

Area (ac)	CN	Description
0.370	74	>75% Grass cover, Good, HSG C
0.370		100.00% Pervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 2.00 hrs 025yr-02hr Rainfall=2.85"

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Summary for Subcatchment 4S: PR4

Runoff = 35.02 cfs @ 0.96 hrs, Volume= 0.923 af, Depth= 2.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 2.00 hrs 025yr-02hr Rainfall=2.85"

Area (ac)	CN	Description
0.350	98	Water Surface, HSG C
4.670	94	Urban commercial, 85% imp, HSG C
5.020	94	Weighted Average
0.700		13.95% Pervious Area
4.320		86.05% Impervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 2.00 hrs 025yr-02hr Rainfall=2.85"

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Summary for Reach 2R: US 31 DITCH

Inflow Area = 11.490 ac, 84.41% Impervious, Inflow Depth > 2.18" for 025yr-02hr event
Inflow = 13.73 cfs @ 1.13 hrs, Volume= 2.088 af
Outflow = 13.73 cfs @ 1.13 hrs, Volume= 2.088 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs / 2

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Type II 24-hr trimmed to 2.00 hrs 025yr-02hr Rainfall=2.85"

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Summary for Pond 1P: DET BASIN 1

Inflow Area = 6.240 ac, 86.20% Impervious, Inflow Depth = 2.30" for 025yr-02hr event
Inflow = 37.84 cfs @ 1.01 hrs, Volume= 1.198 af
Outflow = 3.47 cfs @ 1.57 hrs, Volume= 1.150 af, Atten= 91%, Lag= 33.5 min
Primary = 3.47 cfs @ 1.57 hrs, Volume= 1.150 af

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs / 2
Peak Elev= 755.57' @ 1.57 hrs Surf.Area= 36,147 sf Storage= 40,280 cf

Plug-Flow detention time= 290.1 min calculated for 1.149 af (96% of inflow)
Center-of-Mass det. time= 290.4 min (357.3 - 66.9)

Volume	Invert	Avail.Storage	Storage Description
#1	754.40'	154,550 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
754.40	32,900	0	0
755.00	34,500	20,220	20,220
756.00	37,400	35,950	56,170
757.00	40,300	38,850	95,020
758.00	43,400	41,850	136,870
758.40	45,000	17,680	154,550

Device	Routing	Invert	Outlet Devices
#1	Primary	754.40'	15.0" Round RCP_Round 15" L= 444.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 754.40' / 752.80' S= 0.0036 '/ Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=3.47 cfs @ 1.57 hrs HW=755.57' TW=0.00' (Dynamic Tailwater)

↑1=RCP_Round 15" (Barrel Controls 3.47 cfs @ 3.78 fps)

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Type II 24-hr trimmed to 2.00 hrs 025yr-02hr Rainfall=2.85"

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Summary for Pond 2P: DET BASIN 2

Inflow Area = 5.020 ac, 86.05% Impervious, Inflow Depth = 2.21" for 025yr-02hr event
Inflow = 35.02 cfs @ 0.96 hrs, Volume= 0.923 af
Outflow = 11.01 cfs @ 1.08 hrs, Volume= 0.923 af, Atten= 69%, Lag= 7.6 min
Primary = 11.01 cfs @ 1.08 hrs, Volume= 0.923 af

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs / 2
Peak Elev= 754.29' @ 1.08 hrs Surf.Area= 10,457 sf Storage= 21,091 cf

Plug-Flow detention time= 29.1 min calculated for 0.922 af (100% of inflow)
Center-of-Mass det. time= 29.2 min (92.0 - 62.8)

Volume	Invert	Avail.Storage	Storage Description
#1	751.50'	41,420 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
751.50	0	0	0
752.00	6,200	1,550	1,550
753.00	8,520	7,360	8,910
754.00	10,000	9,260	18,170
755.00	11,600	10,800	28,970
756.00	13,300	12,450	41,420

Device	Routing	Invert	Outlet Devices
#1	Primary	751.50'	18.0" Round RCP_Round 18" L= 50.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 751.50' / 751.33' S= 0.0034 '/' Cc= 0.900 n= 0.013 Concrete pipe, straight & clean, Flow Area= 1.77 sf

Primary OutFlow Max=10.93 cfs @ 1.08 hrs HW=754.26' TW=0.00' (Dynamic Tailwater)
↑1=RCP_Round 18" (Barrel Controls 10.93 cfs @ 6.18 fps)

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Time span=0.01-48.00 hrs, dt=0.05 hrs, 961 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: PR1	Runoff Area=6.240 ac 86.20% Impervious Runoff Depth=2.50" Tc=10.0 min CN=95 Runoff=36.96 cfs 1.299 af
Subcatchment 2S: PR-EAST	Runoff Area=0.230 ac 0.00% Impervious Runoff Depth=0.94" Tc=5.0 min CN=74 Runoff=0.69 cfs 0.018 af
Subcatchment 3S: PR3	Runoff Area=0.370 ac 0.00% Impervious Runoff Depth=0.94" Tc=5.0 min CN=74 Runoff=1.11 cfs 0.029 af
Subcatchment 4S: PR4	Runoff Area=5.020 ac 86.05% Impervious Runoff Depth=2.40" Tc=5.0 min CN=94 Runoff=34.17 cfs 1.003 af
Reach 2R: US 31 DITCH	Inflow=13.99 cfs 2.272 af Outflow=13.99 cfs 2.272 af
Pond 1P: DET BASIN 1	Peak Elev=755.60' Storage=41,362 cf Inflow=36.96 cfs 1.299 af 15.0" Round Culvert n=0.012 L=444.0' S=0.0036 '/' Outflow=3.59 cfs 1.251 af
Pond 2P: DET BASIN 2	Peak Elev=754.31' Storage=21,334 cf Inflow=34.17 cfs 1.003 af 18.0" Round Culvert n=0.013 L=50.0' S=0.0034 '/' Outflow=11.10 cfs 1.003 af
Total Runoff Area = 11.860 ac Runoff Volume = 2.349 af Average Runoff Depth = 2.38" 18.23% Pervious = 2.161 ac 81.77% Impervious = 9.699 ac	

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 3.00 hrs 025yr-03hr Rainfall=3.05"

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Summary for Subcatchment 1S: PR1

Runoff = 36.96 cfs @ 1.51 hrs, Volume= 1.299 af, Depth= 2.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 3.00 hrs 025yr-03hr Rainfall=3.05"

Area (ac)	CN	Description
5.740	95	Urban commercial, 85% imp, HSG D
0.500	98	Water Surface, HSG C
6.240	95	Weighted Average
0.861		13.80% Pervious Area
5.379		86.20% Impervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 3.00 hrs 025yr-03hr Rainfall=3.05"

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Summary for Subcatchment 2S: PR-EAST

Runoff = 0.69 cfs @ 1.47 hrs, Volume= 0.018 af, Depth= 0.94"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 3.00 hrs 025yr-03hr Rainfall=3.05"

Area (ac)	CN	Description
0.230	74	>75% Grass cover, Good, HSG C
0.230		100.00% Pervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 3.00 hrs 025yr-03hr Rainfall=3.05"

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Summary for Subcatchment 3S: PR3

Runoff = 1.11 cfs @ 1.47 hrs, Volume= 0.029 af, Depth= 0.94"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 3.00 hrs 025yr-03hr Rainfall=3.05"

Area (ac)	CN	Description
0.370	74	>75% Grass cover, Good, HSG C
0.370		100.00% Pervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 3.00 hrs 025yr-03hr Rainfall=3.05"

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Summary for Subcatchment 4S: PR4

Runoff = 34.17 cfs @ 1.45 hrs, Volume= 1.003 af, Depth= 2.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 3.00 hrs 025yr-03hr Rainfall=3.05"

Area (ac)	CN	Description
0.350	98	Water Surface, HSG C
4.670	94	Urban commercial, 85% imp, HSG C
5.020	94	Weighted Average
0.700		13.95% Pervious Area
4.320		86.05% Impervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 3.00 hrs 025yr-03hr Rainfall=3.05"

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Summary for Reach 2R: US 31 DITCH

Inflow Area = 11.490 ac, 84.41% Impervious, Inflow Depth > 2.37" for 025yr-03hr event
Inflow = 13.99 cfs @ 1.63 hrs, Volume= 2.272 af
Outflow = 13.99 cfs @ 1.63 hrs, Volume= 2.272 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs / 2

BDH REALTY COMMERCIAL DEV-PR CONDITIONS
Type II 24-hr trimmed to 3.00 hrs 025yr-03hr Rainfall=3.05"

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Summary for Pond 1P: DET BASIN 1

Inflow Area = 6.240 ac, 86.20% Impervious, Inflow Depth = 2.50" for 025yr-03hr event
Inflow = 36.96 cfs @ 1.51 hrs, Volume= 1.299 af
Outflow = 3.59 cfs @ 2.03 hrs, Volume= 1.251 af, Atten= 90%, Lag= 31.4 min
Primary = 3.59 cfs @ 2.03 hrs, Volume= 1.251 af

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs / 2
Peak Elev= 755.60' @ 2.03 hrs Surf.Area= 36,234 sf Storage= 41,362 cf

Plug-Flow detention time= 281.5 min calculated for 1.249 af (96% of inflow)
Center-of-Mass det. time= 281.0 min (380.2 - 99.3)

Volume	Invert	Avail.Storage	Storage Description
#1	754.40'	154,550 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
754.40	32,900	0	0
755.00	34,500	20,220	20,220
756.00	37,400	35,950	56,170
757.00	40,300	38,850	95,020
758.00	43,400	41,850	136,870
758.40	45,000	17,680	154,550

Device	Routing	Invert	Outlet Devices
#1	Primary	754.40'	15.0" Round RCP_Round 15" L= 444.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 754.40' / 752.80' S= 0.0036 '/ Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=3.59 cfs @ 2.03 hrs HW=755.60' TW=0.00' (Dynamic Tailwater)
↑1=RCP_Round 15" (Barrel Controls 3.59 cfs @ 3.80 fps)

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Type II 24-hr trimmed to 3.00 hrs 025yr-03hr Rainfall=3.05"

Proposed Conditions

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Summary for Pond 2P: DET BASIN 2

Inflow Area = 5.020 ac, 86.05% Impervious, Inflow Depth = 2.40" for 025yr-03hr event
Inflow = 34.17 cfs @ 1.45 hrs, Volume= 1.003 af
Outflow = 11.10 cfs @ 1.58 hrs, Volume= 1.003 af, Atten= 68%, Lag= 7.5 min
Primary = 11.10 cfs @ 1.58 hrs, Volume= 1.003 af

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs / 2
Peak Elev= 754.31' @ 1.58 hrs Surf.Area= 10,494 sf Storage= 21,334 cf

Plug-Flow detention time= 29.1 min calculated for 1.002 af (100% of inflow)
Center-of-Mass det. time= 29.2 min (124.7 - 95.5)

Volume	Invert	Avail.Storage	Storage Description
#1	751.50'	41,420 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
751.50	0	0	0
752.00	6,200	1,550	1,550
753.00	8,520	7,360	8,910
754.00	10,000	9,260	18,170
755.00	11,600	10,800	28,970
756.00	13,300	12,450	41,420

Device	Routing	Invert	Outlet Devices
#1	Primary	751.50'	18.0" Round RCP_Round 18" L= 50.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 751.50' / 751.33' S= 0.0034 ' / S= 0.0034 ' Cc= 0.900 n= 0.013 Concrete pipe, straight & clean, Flow Area= 1.77 sf

Primary OutFlow Max=11.02 cfs @ 1.58 hrs HW=754.29' TW=0.00' (Dynamic Tailwater)

↑ **1=RCP_Round 18"** (Barrel Controls 11.02 cfs @ 6.24 fps)

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BDH REALTY COMMERCIAL DEV-PR CONDITIONS
Type II 24-hr trimmed to 6.00 hrs 025yr-06hr Rainfall=3.67"

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Time span=0.01-48.00 hrs, dt=0.05 hrs, 961 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: PR1

Runoff Area=6.240 ac 86.20% Impervious Runoff Depth=3.11"
Tc=10.0 min CN=95 Runoff=38.28 cfs 1.615 af

Subcatchment 2S: PR-EAST

Runoff Area=0.230 ac 0.00% Impervious Runoff Depth=1.36"
Tc=5.0 min CN=74 Runoff=0.83 cfs 0.026 af

Subcatchment 3S: PR3

Runoff Area=0.370 ac 0.00% Impervious Runoff Depth=1.36"
Tc=5.0 min CN=74 Runoff=1.33 cfs 0.042 af

Subcatchment 4S: PR4

Runoff Area=5.020 ac 86.05% Impervious Runoff Depth=3.00"
Tc=5.0 min CN=94 Runoff=35.42 cfs 1.256 af

Reach 2R: US 31 DITCH

Inflow=15.37 cfs 2.846 af
Outflow=15.37 cfs 2.846 af

Pond 1P: DET BASIN 1

Peak Elev=755.75' Storage=46,920 cf Inflow=38.28 cfs 1.615 af
15.0" Round Culvert n=0.012 L=444.0' S=0.0036 '/' Outflow=4.13 cfs 1.564 af

Pond 2P: DET BASIN 2

Peak Elev=754.49' Storage=23,290 cf Inflow=35.42 cfs 1.256 af
18.0" Round Culvert n=0.013 L=50.0' S=0.0034 '/' Outflow=11.77 cfs 1.256 af

Total Runoff Area = 11.860 ac Runoff Volume = 2.939 af Average Runoff Depth = 2.97"
18.23% Pervious = 2.161 ac 81.77% Impervious = 9.699 ac

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 6.00 hrs 025yr-06hr Rainfall=3.67"

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Summary for Subcatchment 1S: PR1

Runoff = 38.28 cfs @ 3.01 hrs, Volume= 1.615 af, Depth= 3.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 6.00 hrs 025yr-06hr Rainfall=3.67"

Area (ac)	CN	Description
5.740	95	Urban commercial, 85% imp, HSG D
0.500	98	Water Surface, HSG C
6.240	95	Weighted Average
0.861		13.80% Pervious Area
5.379		86.20% Impervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 6.00 hrs 025yr-06hr Rainfall=3.67"

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Summary for Subcatchment 2S: PR-EAST

Runoff = 0.83 cfs @ 2.97 hrs, Volume= 0.026 af, Depth= 1.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 6.00 hrs 025yr-06hr Rainfall=3.67"

Area (ac)	CN	Description
0.230	74	>75% Grass cover, Good, HSG C
0.230		100.00% Pervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 6.00 hrs 025yr-06hr Rainfall=3.67"

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Summary for Subcatchment 3S: PR3

Runoff = 1.33 cfs @ 2.97 hrs, Volume= 0.042 af, Depth= 1.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 6.00 hrs 025yr-06hr Rainfall=3.67"

Area (ac)	CN	Description
0.370	74	>75% Grass cover, Good, HSG C
0.370		100.00% Pervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 6.00 hrs 025yr-06hr Rainfall=3.67"

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Summary for Subcatchment 4S: PR4

Runoff = 35.42 cfs @ 2.95 hrs, Volume= 1.256 af, Depth= 3.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 6.00 hrs 025yr-06hr Rainfall=3.67"

Area (ac)	CN	Description
0.350	98	Water Surface, HSG C
4.670	94	Urban commercial, 85% imp, HSG C
5.020	94	Weighted Average
0.700		13.95% Pervious Area
4.320		86.05% Impervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 6.00 hrs 025yr-06hr Rainfall=3.67"

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Summary for Reach 2R: US 31 DITCH

Inflow Area = 11.490 ac, 84.41% Impervious, Inflow Depth > 2.97" for 025yr-06hr event
Inflow = 15.37 cfs @ 3.12 hrs, Volume= 2.846 af
Outflow = 15.37 cfs @ 3.12 hrs, Volume= 2.846 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs / 2

BDH REALTY COMMERCIAL DEV-PR CONDITIONS
Type II 24-hr trimmed to 6.00 hrs 025yr-06hr Rainfall=3.67"

Proposed Conditions

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Summary for Pond 1P: DET BASIN 1

Inflow Area = 6.240 ac, 86.20% Impervious, Inflow Depth = 3.11" for 025yr-06hr event
Inflow = 38.28 cfs @ 3.01 hrs, Volume= 1.615 af
Outflow = 4.13 cfs @ 3.48 hrs, Volume= 1.564 af, Atten= 89%, Lag= 28.0 min
Primary = 4.13 cfs @ 3.48 hrs, Volume= 1.564 af

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs / 2
Peak Elev= 755.75' @ 3.48 hrs Surf.Area= 36,676 sf Storage= 46,920 cf

Plug-Flow detention time= 265.2 min calculated for 1.564 af (97% of inflow)
Center-of-Mass det. time= 260.2 min (456.0 - 195.8)

Volume	Invert	Avail.Storage	Storage Description
#1	754.40'	154,550 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
754.40	32,900	0	0
755.00	34,500	20,220	20,220
756.00	37,400	35,950	56,170
757.00	40,300	38,850	95,020
758.00	43,400	41,850	136,870
758.40	45,000	17,680	154,550

Device	Routing	Invert	Outlet Devices
#1	Primary	754.40'	15.0" Round RCP_Round 15" L= 444.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 754.40' / 752.80' S= 0.0036 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=4.13 cfs @ 3.48 hrs HW=755.75' TW=0.00' (Dynamic Tailwater)
↑1=RCP_Round 15" (Barrel Controls 4.13 cfs @ 3.88 fps)

BDH REALTY COMMERCIAL DEV-PR CONDITIONS
Type II 24-hr trimmed to 6.00 hrs 025yr-06hr Rainfall=3.67"

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Summary for Pond 2P: DET BASIN 2

Inflow Area = 5.020 ac, 86.05% Impervious, Inflow Depth = 3.00" for 025yr-06hr event
Inflow = 35.42 cfs @ 2.95 hrs, Volume= 1.256 af
Outflow = 11.77 cfs @ 3.08 hrs, Volume= 1.256 af, Atten= 67%, Lag= 7.5 min
Primary = 11.77 cfs @ 3.08 hrs, Volume= 1.256 af

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs / 2
Peak Elev= 754.49' @ 3.08 hrs Surf.Area= 10,788 sf Storage= 23,290 cf

Plug-Flow detention time= 29.6 min calculated for 1.254 af (100% of inflow)
Center-of-Mass det. time= 29.8 min (222.4 - 192.6)

Volume	Invert	Avail.Storage	Storage Description
#1	751.50'	41,420 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
751.50	0	0	0
752.00	6,200	1,550	1,550
753.00	8,520	7,360	8,910
754.00	10,000	9,260	18,170
755.00	11,600	10,800	28,970
756.00	13,300	12,450	41,420

Device	Routing	Invert	Outlet Devices
#1	Primary	751.50'	18.0" Round RCP_Round 18" L= 50.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 751.50' / 751.33' S= 0.0034 ' / S= 0.0034 ' Cc= 0.900 n= 0.013 Concrete pipe, straight & clean, Flow Area= 1.77 sf

Primary OutFlow Max=11.70 cfs @ 3.08 hrs HW=754.47' TW=0.00' (Dynamic Tailwater)

↑ **1=RCP_Round 18"** (Barrel Controls 11.70 cfs @ 6.62 fps)

BDH REALTY COMMERCIAL DEV-PR CONDITIONS
Type II 24-hr trimmed to 12.00 hrs 025yr-12hr Rainfall=4.21"

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Time span=0.01-48.00 hrs, dt=0.05 hrs, 961 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: PR1	Runoff Area=6.240 ac 86.20% Impervious Runoff Depth=3.64" Tc=10.0 min CN=95 Runoff=37.33 cfs 1.892 af
Subcatchment 2S: PR-EAST	Runoff Area=0.230 ac 0.00% Impervious Runoff Depth=1.75" Tc=5.0 min CN=74 Runoff=0.88 cfs 0.034 af
Subcatchment 3S: PR3	Runoff Area=0.370 ac 0.00% Impervious Runoff Depth=1.75" Tc=5.0 min CN=74 Runoff=1.42 cfs 0.054 af
Subcatchment 4S: PR4	Runoff Area=5.020 ac 86.05% Impervious Runoff Depth=3.53" Tc=5.0 min CN=94 Runoff=34.57 cfs 1.477 af
Reach 2R: US 31 DITCH	Inflow=15.72 cfs 3.346 af Outflow=15.72 cfs 3.346 af
Pond 1P: DET BASIN 1	Peak Elev=755.84' Storage=50,098 cf Inflow=37.33 cfs 1.892 af 15.0" Round Culvert n=0.012 L=444.0' S=0.0036 '/' Outflow=4.37 cfs 1.836 af
Pond 2P: DET BASIN 2	Peak Elev=754.48' Storage=23,203 cf Inflow=34.57 cfs 1.477 af 18.0" Round Culvert n=0.013 L=50.0' S=0.0034 '/' Outflow=11.74 cfs 1.477 af
Total Runoff Area = 11.860 ac Runoff Volume = 3.456 af Average Runoff Depth = 3.50" 18.23% Pervious = 2.161 ac 81.77% Impervious = 9.699 ac	

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 12.00 hrs 025yr-12hr Rainfall=4.21"

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Summary for Subcatchment 1S: PR1

Runoff = 37.33 cfs @ 6.01 hrs, Volume= 1.892 af, Depth= 3.64"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 12.00 hrs 025yr-12hr Rainfall=4.21"

Area (ac)	CN	Description
5.740	95	Urban commercial, 85% imp, HSG D
0.500	98	Water Surface, HSG C
6.240	95	Weighted Average
0.861		13.80% Pervious Area
5.379		86.20% Impervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 12.00 hrs 025yr-12hr Rainfall=4.21"

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Summary for Subcatchment 2S: PR-EAST

Runoff = 0.88 cfs @ 5.96 hrs, Volume= 0.034 af, Depth= 1.75"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 12.00 hrs 025yr-12hr Rainfall=4.21"

Area (ac)	CN	Description
0.230	74	>75% Grass cover, Good, HSG C
0.230		100.00% Pervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 12.00 hrs 025yr-12hr Rainfall=4.21"

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Summary for Subcatchment 3S: PR3

Runoff = 1.42 cfs @ 5.96 hrs, Volume= 0.054 af, Depth= 1.75"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 12.00 hrs 025yr-12hr Rainfall=4.21"

Area (ac)	CN	Description
0.370	74	>75% Grass cover, Good, HSG C
0.370		100.00% Pervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 12.00 hrs 025yr-12hr Rainfall=4.21"

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Summary for Subcatchment 4S: PR4

Runoff = 34.57 cfs @ 5.95 hrs, Volume= 1.477 af, Depth= 3.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 12.00 hrs 025yr-12hr Rainfall=4.21"

Area (ac)	CN	Description
0.350	98	Water Surface, HSG C
4.670	94	Urban commercial, 85% imp, HSG C
5.020	94	Weighted Average
0.700		13.95% Pervious Area
4.320		86.05% Impervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 12.00 hrs 025yr-12hr Rainfall=4.21"

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Summary for Reach 2R: US 31 DITCH

Inflow Area = 11.490 ac, 84.41% Impervious, Inflow Depth > 3.49" for 025yr-12hr event
Inflow = 15.72 cfs @ 6.11 hrs, Volume= 3.346 af
Outflow = 15.72 cfs @ 6.11 hrs, Volume= 3.346 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs / 2

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 12.00 hrs 025yr-12hr Rainfall=4.21"

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Summary for Pond 1P: DET BASIN 1

Inflow Area = 6.240 ac, 86.20% Impervious, Inflow Depth = 3.64" for 025yr-12hr event
 Inflow = 37.33 cfs @ 6.01 hrs, Volume= 1.892 af
 Outflow = 4.37 cfs @ 6.43 hrs, Volume= 1.836 af, Atten= 88%, Lag= 25.4 min
 Primary = 4.37 cfs @ 6.43 hrs, Volume= 1.836 af

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs / 2
 Peak Elev= 755.84' @ 6.43 hrs Surf.Area= 36,926 sf Storage= 50,098 cf

Plug-Flow detention time= 261.5 min calculated for 1.836 af (97% of inflow)
 Center-of-Mass det. time= 252.2 min (640.4 - 388.2)

Volume	Invert	Avail.Storage	Storage Description
#1	754.40'	154,550 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
754.40	32,900	0	0
755.00	34,500	20,220	20,220
756.00	37,400	35,950	56,170
757.00	40,300	38,850	95,020
758.00	43,400	41,850	136,870
758.40	45,000	17,680	154,550

Device	Routing	Invert	Outlet Devices
#1	Primary	754.40'	15.0" Round RCP_Round 15" L= 444.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 754.40' / 752.80' S= 0.0036 '/ Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=4.37 cfs @ 6.43 hrs HW=755.84' TW=0.00' (Dynamic Tailwater)
 ↑1=RCP_Round 15" (Barrel Controls 4.37 cfs @ 3.89 fps)

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 12.00 hrs 025yr-12hr Rainfall=4.21"

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Summary for Pond 2P: DET BASIN 2

Inflow Area = 5.020 ac, 86.05% Impervious, Inflow Depth = 3.53" for 025yr-12hr event
 Inflow = 34.57 cfs @ 5.95 hrs, Volume= 1.477 af
 Outflow = 11.74 cfs @ 6.08 hrs, Volume= 1.477 af, Atten= 66%, Lag= 7.4 min
 Primary = 11.74 cfs @ 6.08 hrs, Volume= 1.477 af

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs / 2

Peak Elev= 754.48' @ 6.08 hrs Surf.Area= 10,775 sf Storage= 23,203 cf

Plug-Flow detention time= 29.9 min calculated for 1.475 af (100% of inflow)

Center-of-Mass det. time= 30.0 min (416.4 - 386.4)

Volume	Invert	Avail.Storage	Storage Description
#1	751.50'	41,420 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
751.50	0	0	0
752.00	6,200	1,550	1,550
753.00	8,520	7,360	8,910
754.00	10,000	9,260	18,170
755.00	11,600	10,800	28,970
756.00	13,300	12,450	41,420

Device	Routing	Invert	Outlet Devices
#1	Primary	751.50'	18.0" Round RCP_Round 18" L= 50.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 751.50' / 751.33' S= 0.0034 ' / Cc= 0.900 n= 0.013 Concrete pipe, straight & clean, Flow Area= 1.77 sf

Primary OutFlow Max=11.67 cfs @ 6.08 hrs HW=754.47' TW=0.00' (Dynamic Tailwater)

↑ **1=RCP_Round 18"** (Barrel Controls 11.67 cfs @ 6.61 fps)

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Type II 24-hr 025yr-24hr Rainfall=4.79"

Proposed Conditions

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Time span=0.01-48.00 hrs, dt=0.05 hrs, 961 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: PR1

Runoff Area=6.240 ac 86.20% Impervious Runoff Depth=4.21"
Tc=10.0 min CN=95 Runoff=36.04 cfs 2.190 af

Subcatchment 2S: PR-EAST

Runoff Area=0.230 ac 0.00% Impervious Runoff Depth=2.20"
Tc=5.0 min CN=74 Runoff=0.92 cfs 0.042 af

Subcatchment 3S: PR3

Runoff Area=0.370 ac 0.00% Impervious Runoff Depth=2.20"
Tc=5.0 min CN=74 Runoff=1.48 cfs 0.068 af

Subcatchment 4S: PR4

Runoff Area=5.020 ac 86.05% Impervious Runoff Depth=4.10"
Tc=5.0 min CN=94 Runoff=33.42 cfs 1.716 af

Reach 2R: US 31 DITCH

Inflow=15.78 cfs 3.876 af
Outflow=15.78 cfs 3.876 af

Pond 1P: DET BASIN 1

Peak Elev=755.89' Storage=52,207 cf Inflow=36.04 cfs 2.190 af
15.0" Round Culvert n=0.012 L=444.0' S=0.0036 '/' Outflow=4.49 cfs 2.119 af

Pond 2P: DET BASIN 2

Peak Elev=754.43' Storage=22,643 cf Inflow=33.42 cfs 1.716 af
18.0" Round Culvert n=0.013 L=50.0' S=0.0034 '/' Outflow=11.55 cfs 1.716 af

Total Runoff Area = 11.860 ac Runoff Volume = 4.015 af Average Runoff Depth = 4.06"
18.23% Pervious = 2.161 ac 81.77% Impervious = 9.699 ac

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Type II 24-hr 025yr-24hr Rainfall=4.79"

Proposed Conditions

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Summary for Subcatchment 1S: PR1

Runoff = 36.04 cfs @ 12.01 hrs, Volume= 2.190 af, Depth= 4.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr 025yr-24hr Rainfall=4.79"

Area (ac)	CN	Description
5.740	95	Urban commercial, 85% imp, HSG D
0.500	98	Water Surface, HSG C
6.240	95	Weighted Average
0.861		13.80% Pervious Area
5.379		86.20% Impervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Type II 24-hr 025yr-24hr Rainfall=4.79"

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Summary for Subcatchment 2S: PR-EAST

Runoff = 0.92 cfs @ 11.96 hrs, Volume= 0.042 af, Depth= 2.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr 025yr-24hr Rainfall=4.79"

Area (ac)	CN	Description
0.230	74	>75% Grass cover, Good, HSG C
0.230		100.00% Pervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Type II 24-hr 025yr-24hr Rainfall=4.79"

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Summary for Subcatchment 3S: PR3

Runoff = 1.48 cfs @ 11.96 hrs, Volume= 0.068 af, Depth= 2.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr 025yr-24hr Rainfall=4.79"

Area (ac)	CN	Description
0.370	74	>75% Grass cover, Good, HSG C
0.370		100.00% Pervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Type II 24-hr 025yr-24hr Rainfall=4.79"

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Summary for Subcatchment 4S: PR4

Runoff = 33.42 cfs @ 11.95 hrs, Volume= 1.716 af, Depth= 4.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr 025yr-24hr Rainfall=4.79"

Area (ac)	CN	Description
0.350	98	Water Surface, HSG C
4.670	94	Urban commercial, 85% imp, HSG C
5.020	94	Weighted Average
0.700		13.95% Pervious Area
4.320		86.05% Impervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Type II 24-hr 025yr-24hr Rainfall=4.79"

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Summary for Reach 2R: US 31 DITCH

Inflow Area = 11.490 ac, 84.41% Impervious, Inflow Depth > 4.05" for 025yr-24hr event
Inflow = 15.78 cfs @ 12.10 hrs, Volume= 3.876 af
Outflow = 15.78 cfs @ 12.10 hrs, Volume= 3.876 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs / 2

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Type II 24-hr 025yr-24hr Rainfall=4.79"

Proposed Conditions

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Summary for Pond 1P: DET BASIN 1

Inflow Area = 6.240 ac, 86.20% Impervious, Inflow Depth = 4.21" for 025yr-24hr event
 Inflow = 36.04 cfs @ 12.01 hrs, Volume= 2.190 af
 Outflow = 4.49 cfs @ 12.40 hrs, Volume= 2.119 af, Atten= 88%, Lag= 23.7 min
 Primary = 4.49 cfs @ 12.40 hrs, Volume= 2.119 af

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs / 2
 Peak Elev= 755.89' @ 12.40 hrs Surf.Area= 37,091 sf Storage= 52,207 cf

Plug-Flow detention time= 271.1 min calculated for 2.119 af (97% of inflow)
 Center-of-Mass det. time= 250.9 min (1,020.4 - 769.5)

Volume	Invert	Avail.Storage	Storage Description
#1	754.40'	154,550 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
754.40	32,900	0	0
755.00	34,500	20,220	20,220
756.00	37,400	35,950	56,170
757.00	40,300	38,850	95,020
758.00	43,400	41,850	136,870
758.40	45,000	17,680	154,550

Device	Routing	Invert	Outlet Devices
#1	Primary	754.40'	15.0" Round RCP_Round 15" L= 444.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 754.40' / 752.80' S= 0.0036 '/ Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=4.49 cfs @ 12.40 hrs HW=755.89' TW=0.00' (Dynamic Tailwater)

↑ **1=RCP_Round 15"** (Barrel Controls 4.49 cfs @ 3.88 fps)

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Type II 24-hr 025yr-24hr Rainfall=4.79"

Proposed Conditions

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Summary for Pond 2P: DET BASIN 2

Inflow Area = 5.020 ac, 86.05% Impervious, Inflow Depth = 4.10" for 025yr-24hr event
 Inflow = 33.42 cfs @ 11.95 hrs, Volume= 1.716 af
 Outflow = 11.55 cfs @ 12.08 hrs, Volume= 1.716 af, Atten= 65%, Lag= 7.3 min
 Primary = 11.55 cfs @ 12.08 hrs, Volume= 1.716 af

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs / 2
 Peak Elev= 754.43' @ 12.08 hrs Surf.Area= 10,692 sf Storage= 22,643 cf

Plug-Flow detention time= 30.0 min calculated for 1.714 af (100% of inflow)
 Center-of-Mass det. time= 30.1 min (800.4 - 770.3)

Volume	Invert	Avail.Storage	Storage Description
#1	751.50'	41,420 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
751.50	0	0	0
752.00	6,200	1,550	1,550
753.00	8,520	7,360	8,910
754.00	10,000	9,260	18,170
755.00	11,600	10,800	28,970
756.00	13,300	12,450	41,420

Device	Routing	Invert	Outlet Devices
#1	Primary	751.50'	18.0" Round RCP_Round 18" L= 50.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 751.50' / 751.33' S= 0.0034 '/' Cc= 0.900 n= 0.013 Concrete pipe, straight & clean, Flow Area= 1.77 sf

Primary OutFlow Max=11.49 cfs @ 12.08 hrs HW=754.41' TW=0.00' (Dynamic Tailwater)

↑ **1=RCP_Round 18"** (Barrel Controls 11.49 cfs @ 6.50 fps)

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BDH REALTY COMMERCIAL DEV-PR CONDITIONS
Type II 24-hr trimmed to 1.00 hrs 050yr-01hr Rainfall=2.70"

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Time span=0.01-48.00 hrs, dt=0.05 hrs, 961 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: PR1

Runoff Area=6.240 ac 86.20% Impervious Runoff Depth>2.16"
Tc=10.0 min CN=95 Runoff=41.81 cfs 1.122 af

Subcatchment 2S: PR-EAST

Runoff Area=0.230 ac 0.00% Impervious Runoff Depth=0.72"
Tc=5.0 min CN=74 Runoff=0.71 cfs 0.014 af

Subcatchment 3S: PR3

Runoff Area=0.370 ac 0.00% Impervious Runoff Depth=0.72"
Tc=5.0 min CN=74 Runoff=1.15 cfs 0.022 af

Subcatchment 4S: PR4

Runoff Area=5.020 ac 86.05% Impervious Runoff Depth>2.06"
Tc=5.0 min CN=94 Runoff=38.97 cfs 0.862 af

Reach 2R: US 31 DITCH

Inflow=14.06 cfs 1.951 af
Outflow=14.06 cfs 1.951 af

Pond 1P: DET BASIN 1

Peak Elev=755.59' Storage=41,219 cf Inflow=41.81 cfs 1.122 af
15.0" Round Culvert n=0.012 L=444.0' S=0.0036 '/' Outflow=3.57 cfs 1.075 af

Pond 2P: DET BASIN 2

Peak Elev=754.35' Storage=21,808 cf Inflow=38.97 cfs 0.862 af
18.0" Round Culvert n=0.013 L=50.0' S=0.0034 '/' Outflow=11.27 cfs 0.862 af

Total Runoff Area = 11.860 ac Runoff Volume = 2.020 af Average Runoff Depth = 2.04"
18.23% Pervious = 2.161 ac 81.77% Impervious = 9.699 ac

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 1.00 hrs 050yr-01hr Rainfall=2.70"

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Summary for Subcatchment 1S: PR1

Runoff = 41.81 cfs @ 0.51 hrs, Volume= 1.122 af, Depth> 2.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 1.00 hrs 050yr-01hr Rainfall=2.70"

Area (ac)	CN	Description
5.740	95	Urban commercial, 85% imp, HSG D
0.500	98	Water Surface, HSG C
6.240	95	Weighted Average
0.861		13.80% Pervious Area
5.379		86.20% Impervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 1.00 hrs 050yr-01hr Rainfall=2.70"

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Summary for Subcatchment 2S: PR-EAST

Runoff = 0.71 cfs @ 0.48 hrs, Volume= 0.014 af, Depth= 0.72"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 1.00 hrs 050yr-01hr Rainfall=2.70"

Area (ac)	CN	Description
0.230	74	>75% Grass cover, Good, HSG C
0.230		100.00% Pervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 1.00 hrs 050yr-01hr Rainfall=2.70"

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Summary for Subcatchment 3S: PR3

Runoff = 1.15 cfs @ 0.48 hrs, Volume= 0.022 af, Depth= 0.72"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 1.00 hrs 050yr-01hr Rainfall=2.70"

Area (ac)	CN	Description
0.370	74	>75% Grass cover, Good, HSG C
0.370		100.00% Pervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 1.00 hrs 050yr-01hr Rainfall=2.70"

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Summary for Subcatchment 4S: PR4

Runoff = 38.97 cfs @ 0.46 hrs, Volume= 0.862 af, Depth> 2.06"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 1.00 hrs 050yr-01hr Rainfall=2.70"

Area (ac)	CN	Description
0.350	98	Water Surface, HSG C
4.670	94	Urban commercial, 85% imp, HSG C
5.020	94	Weighted Average
0.700		13.95% Pervious Area
4.320		86.05% Impervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 1.00 hrs 050yr-01hr Rainfall=2.70"

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Summary for Reach 2R: US 31 DITCH

Inflow Area = 11.490 ac, 84.41% Impervious, Inflow Depth > 2.04" for 050yr-01hr event
Inflow = 14.06 cfs @ 0.65 hrs, Volume= 1.951 af
Outflow = 14.06 cfs @ 0.65 hrs, Volume= 1.951 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs / 2

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Type II 24-hr trimmed to 1.00 hrs 050yr-01hr Rainfall=2.70"

Proposed Conditions

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Summary for Pond 1P: DET BASIN 1

Inflow Area = 6.240 ac, 86.20% Impervious, Inflow Depth > 2.16" for 050yr-01hr event
 Inflow = 41.81 cfs @ 0.51 hrs, Volume= 1.122 af
 Outflow = 3.57 cfs @ 1.07 hrs, Volume= 1.075 af, Atten= 91%, Lag= 33.1 min
 Primary = 3.57 cfs @ 1.07 hrs, Volume= 1.075 af

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs / 2
 Peak Elev= 755.59' @ 1.07 hrs Surf.Area= 36,222 sf Storage= 41,219 cf

Plug-Flow detention time= 297.4 min calculated for 1.074 af (96% of inflow)
 Center-of-Mass det. time= 298.6 min (333.1 - 34.4)

Volume	Invert	Avail.Storage	Storage Description
#1	754.40'	154,550 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
754.40	32,900	0	0
755.00	34,500	20,220	20,220
756.00	37,400	35,950	56,170
757.00	40,300	38,850	95,020
758.00	43,400	41,850	136,870
758.40	45,000	17,680	154,550

Device	Routing	Invert	Outlet Devices
#1	Primary	754.40'	15.0" Round RCP_Round 15" L= 444.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 754.40' / 752.80' S= 0.0036 '/ Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=3.57 cfs @ 1.07 hrs HW=755.59' TW=0.00' (Dynamic Tailwater)

↑ **1=RCP_Round 15"** (Barrel Controls 3.57 cfs @ 3.80 fps)

BDH REALTY COMMERCIAL DEV-PR CONDITIONS
Type II 24-hr trimmed to 1.00 hrs 050yr-01hr Rainfall=2.70"

Proposed Conditions

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Summary for Pond 2P: DET BASIN 2

Inflow Area = 5.020 ac, 86.05% Impervious, Inflow Depth > 2.06" for 050yr-01hr event
Inflow = 38.97 cfs @ 0.46 hrs, Volume= 0.862 af
Outflow = 11.27 cfs @ 0.59 hrs, Volume= 0.862 af, Atten= 71%, Lag= 7.9 min
Primary = 11.27 cfs @ 0.59 hrs, Volume= 0.862 af

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs / 2
Peak Elev= 754.35' @ 0.59 hrs Surf.Area= 10,566 sf Storage= 21,808 cf

Plug-Flow detention time= 29.5 min calculated for 0.861 af (100% of inflow)
Center-of-Mass det. time= 29.7 min (59.9 - 30.1)

Volume	Invert	Avail.Storage	Storage Description
#1	751.50'	41,420 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
751.50	0	0	0
752.00	6,200	1,550	1,550
753.00	8,520	7,360	8,910
754.00	10,000	9,260	18,170
755.00	11,600	10,800	28,970
756.00	13,300	12,450	41,420

Device	Routing	Invert	Outlet Devices
#1	Primary	751.50'	18.0" Round RCP_Round 18" L= 50.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 751.50' / 751.33' S= 0.0034 ' / Cc= 0.900 n= 0.013 Concrete pipe, straight & clean, Flow Area= 1.77 sf

Primary OutFlow Max=11.23 cfs @ 0.59 hrs HW=754.34' TW=0.00' (Dynamic Tailwater)
↑1=RCP_Round 18" (Barrel Controls 11.23 cfs @ 6.35 fps)

Proposed Conditions BDH REALTY COMMERCIAL DEV-PR CONDITIONS
Type II 24-hr trimmed to 2.00 hrs 050yr-02hr Rainfall=3.23"
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Time span=0.01-48.00 hrs, dt=0.05 hrs, 961 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: PR1	Runoff Area=6.240 ac 86.20% Impervious Runoff Depth=2.67" Tc=10.0 min CN=95 Runoff=43.56 cfs 1.391 af
Subcatchment 2S: PR-EAST	Runoff Area=0.230 ac 0.00% Impervious Runoff Depth=1.06" Tc=5.0 min CN=74 Runoff=0.87 cfs 0.020 af
Subcatchment 3S: PR3	Runoff Area=0.370 ac 0.00% Impervious Runoff Depth=1.06" Tc=5.0 min CN=74 Runoff=1.39 cfs 0.033 af
Subcatchment 4S: PR4	Runoff Area=5.020 ac 86.05% Impervious Runoff Depth=2.57" Tc=5.0 min CN=94 Runoff=40.40 cfs 1.076 af
Reach 2R: US 31 DITCH	Inflow=15.69 cfs 2.439 af Outflow=15.69 cfs 2.439 af
Pond 1P: DET BASIN 1	Peak Elev=755.74' Storage=46,526 cf Inflow=43.56 cfs 1.391 af 15.0" Round Culvert n=0.012 L=444.0' S=0.0036 '/' Outflow=4.10 cfs 1.342 af
Pond 2P: DET BASIN 2	Peak Elev=754.64' Storage=24,896 cf Inflow=40.40 cfs 1.076 af 18.0" Round Culvert n=0.013 L=50.0' S=0.0034 '/' Outflow=12.28 cfs 1.076 af
Total Runoff Area = 11.860 ac Runoff Volume = 2.520 af Average Runoff Depth = 2.55" 18.23% Pervious = 2.161 ac 81.77% Impervious = 9.699 ac	

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 2.00 hrs 050yr-02hr Rainfall=3.23"

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Summary for Subcatchment 1S: PR1

Runoff = 43.56 cfs @ 1.01 hrs, Volume= 1.391 af, Depth= 2.67"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 2.00 hrs 050yr-02hr Rainfall=3.23"

Area (ac)	CN	Description
5.740	95	Urban commercial, 85% imp, HSG D
0.500	98	Water Surface, HSG C
6.240	95	Weighted Average
0.861		13.80% Pervious Area
5.379		86.20% Impervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 2.00 hrs 050yr-02hr Rainfall=3.23"

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Summary for Subcatchment 2S: PR-EAST

Runoff = 0.87 cfs @ 0.97 hrs, Volume= 0.020 af, Depth= 1.06"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 2.00 hrs 050yr-02hr Rainfall=3.23"

Area (ac)	CN	Description
0.230	74	>75% Grass cover, Good, HSG C
0.230		100.00% Pervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 2.00 hrs 050yr-02hr Rainfall=3.23"

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Summary for Subcatchment 3S: PR3

Runoff = 1.39 cfs @ 0.97 hrs, Volume= 0.033 af, Depth= 1.06"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 2.00 hrs 050yr-02hr Rainfall=3.23"

Area (ac)	CN	Description
0.370	74	>75% Grass cover, Good, HSG C
0.370		100.00% Pervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 2.00 hrs 050yr-02hr Rainfall=3.23"

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Summary for Subcatchment 4S: PR4

Runoff = 40.40 cfs @ 0.96 hrs, Volume= 1.076 af, Depth= 2.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 2.00 hrs 050yr-02hr Rainfall=3.23"

Area (ac)	CN	Description
0.350	98	Water Surface, HSG C
4.670	94	Urban commercial, 85% imp, HSG C
5.020	94	Weighted Average
0.700		13.95% Pervious Area
4.320		86.05% Impervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 2.00 hrs 050yr-02hr Rainfall=3.23"

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Summary for Reach 2R: US 31 DITCH

Inflow Area = 11.490 ac, 84.41% Impervious, Inflow Depth > 2.55" for 050yr-02hr event
Inflow = 15.69 cfs @ 1.14 hrs, Volume= 2.439 af
Outflow = 15.69 cfs @ 1.14 hrs, Volume= 2.439 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs / 2

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Type II 24-hr trimmed to 2.00 hrs 050yr-02hr Rainfall=3.23"

Proposed Conditions

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Summary for Pond 1P: DET BASIN 1

Inflow Area = 6.240 ac, 86.20% Impervious, Inflow Depth = 2.67" for 050yr-02hr event
Inflow = 43.56 cfs @ 1.01 hrs, Volume= 1.391 af
Outflow = 4.10 cfs @ 1.55 hrs, Volume= 1.342 af, Atten= 91%, Lag= 32.4 min
Primary = 4.10 cfs @ 1.55 hrs, Volume= 1.342 af

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs / 2
Peak Elev= 755.74' @ 1.55 hrs Surf.Area= 36,645 sf Storage= 46,526 cf

Plug-Flow detention time= 275.3 min calculated for 1.342 af (97% of inflow)
Center-of-Mass det. time= 273.2 min (339.8 - 66.5)

Volume	Invert	Avail.Storage	Storage Description
#1	754.40'	154,550 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
754.40	32,900	0	0
755.00	34,500	20,220	20,220
756.00	37,400	35,950	56,170
757.00	40,300	38,850	95,020
758.00	43,400	41,850	136,870
758.40	45,000	17,680	154,550

Device	Routing	Invert	Outlet Devices
#1	Primary	754.40'	15.0" Round RCP_Round 15" L= 444.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 754.40' / 752.80' S= 0.0036 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=4.10 cfs @ 1.55 hrs HW=755.74' TW=0.00' (Dynamic Tailwater)

↑1=RCP_Round 15" (Barrel Controls 4.10 cfs @ 3.88 fps)

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Type II 24-hr trimmed to 2.00 hrs 050yr-02hr Rainfall=3.23"

Proposed Conditions

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Summary for Pond 2P: DET BASIN 2

Inflow Area = 5.020 ac, 86.05% Impervious, Inflow Depth = 2.57" for 050yr-02hr event
 Inflow = 40.40 cfs @ 0.96 hrs, Volume= 1.076 af
 Outflow = 12.28 cfs @ 1.08 hrs, Volume= 1.076 af, Atten= 70%, Lag= 7.7 min
 Primary = 12.28 cfs @ 1.08 hrs, Volume= 1.076 af

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs / 2
 Peak Elev= 754.64' @ 1.08 hrs Surf.Area= 11,024 sf Storage= 24,896 cf

Plug-Flow detention time= 29.9 min calculated for 1.075 af (100% of inflow)
 Center-of-Mass det. time= 30.1 min (92.5 - 62.4)

Volume	Invert	Avail.Storage	Storage Description
#1	751.50'	41,420 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
751.50	0	0	0
752.00	6,200	1,550	1,550
753.00	8,520	7,360	8,910
754.00	10,000	9,260	18,170
755.00	11,600	10,800	28,970
756.00	13,300	12,450	41,420

Device	Routing	Invert	Outlet Devices
#1	Primary	751.50'	18.0" Round RCP_Round 18" L= 50.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 751.50' / 751.33' S= 0.0034 '/' Cc= 0.900 n= 0.013 Concrete pipe, straight & clean, Flow Area= 1.77 sf

Primary OutFlow Max=12.19 cfs @ 1.08 hrs HW=754.62' TW=0.00' (Dynamic Tailwater)

↑1=RCP_Round 18" (Barrel Controls 12.19 cfs @ 6.90 fps)

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BDH REALTY COMMERCIAL DEV-PR CONDITIONS
Type II 24-hr trimmed to 3.00 hrs 050yr-03hr Rainfall=3.48"

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Time span=0.01-48.00 hrs, dt=0.05 hrs, 961 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: PR1

Runoff Area=6.240 ac 86.20% Impervious Runoff Depth=2.92"
Tc=10.0 min CN=95 Runoff=42.80 cfs 1.518 af

Subcatchment 2S: PR-EAST

Runoff Area=0.230 ac 0.00% Impervious Runoff Depth=1.23"
Tc=5.0 min CN=74 Runoff=0.90 cfs 0.024 af

Subcatchment 3S: PR3

Runoff Area=0.370 ac 0.00% Impervious Runoff Depth=1.23"
Tc=5.0 min CN=74 Runoff=1.45 cfs 0.038 af

Subcatchment 4S: PR4

Runoff Area=5.020 ac 86.05% Impervious Runoff Depth=2.82"
Tc=5.0 min CN=94 Runoff=39.66 cfs 1.178 af

Reach 2R: US 31 DITCH

Inflow=16.08 cfs 2.671 af
Outflow=16.08 cfs 2.671 af

Pond 1P: DET BASIN 1

Peak Elev=755.78' Storage=48,165 cf Inflow=42.80 cfs 1.518 af
15.0" Round Culvert n=0.012 L=444.0' S=0.0036 '/' Outflow=4.23 cfs 1.469 af

Pond 2P: DET BASIN 2

Peak Elev=754.68' Storage=25,361 cf Inflow=39.66 cfs 1.178 af
18.0" Round Culvert n=0.013 L=50.0' S=0.0034 '/' Outflow=12.42 cfs 1.178 af

Total Runoff Area = 11.860 ac Runoff Volume = 2.757 af Average Runoff Depth = 2.79"
18.23% Pervious = 2.161 ac 81.77% Impervious = 9.699 ac

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Type II 24-hr trimmed to 3.00 hrs 050yr-03hr Rainfall=3.48"

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Summary for Subcatchment 1S: PR1

Runoff = 42.80 cfs @ 1.51 hrs, Volume= 1.518 af, Depth= 2.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 3.00 hrs 050yr-03hr Rainfall=3.48"

Area (ac)	CN	Description
5.740	95	Urban commercial, 85% imp, HSG D
0.500	98	Water Surface, HSG C
6.240	95	Weighted Average
0.861		13.80% Pervious Area
5.379		86.20% Impervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 3.00 hrs 050yr-03hr Rainfall=3.48"

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Summary for Subcatchment 2S: PR-EAST

Runoff = 0.90 cfs @ 1.47 hrs, Volume= 0.024 af, Depth= 1.23"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 3.00 hrs 050yr-03hr Rainfall=3.48"

Area (ac)	CN	Description
0.230	74	>75% Grass cover, Good, HSG C
0.230		100.00% Pervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 3.00 hrs 050yr-03hr Rainfall=3.48"

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Summary for Subcatchment 3S: PR3

Runoff = 1.45 cfs @ 1.47 hrs, Volume= 0.038 af, Depth= 1.23"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 3.00 hrs 050yr-03hr Rainfall=3.48"

Area (ac)	CN	Description
0.370	74	>75% Grass cover, Good, HSG C
0.370		100.00% Pervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 3.00 hrs 050yr-03hr Rainfall=3.48"

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Summary for Subcatchment 4S: PR4

Runoff = 39.66 cfs @ 1.45 hrs, Volume= 1.178 af, Depth= 2.82"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 3.00 hrs 050yr-03hr Rainfall=3.48"

Area (ac)	CN	Description
0.350	98	Water Surface, HSG C
4.670	94	Urban commercial, 85% imp, HSG C
5.020	94	Weighted Average
0.700		13.95% Pervious Area
4.320		86.05% Impervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 3.00 hrs 050yr-03hr Rainfall=3.48"

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Summary for Reach 2R: US 31 DITCH

Inflow Area = 11.490 ac, 84.41% Impervious, Inflow Depth > 2.79" for 050yr-03hr event
Inflow = 16.08 cfs @ 1.63 hrs, Volume= 2.671 af
Outflow = 16.08 cfs @ 1.63 hrs, Volume= 2.671 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs / 2

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Type II 24-hr trimmed to 3.00 hrs 050yr-03hr Rainfall=3.48"

Proposed Conditions

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Summary for Pond 1P: DET BASIN 1

Inflow Area = 6.240 ac, 86.20% Impervious, Inflow Depth = 2.92" for 050yr-03hr event
Inflow = 42.80 cfs @ 1.51 hrs, Volume= 1.518 af
Outflow = 4.23 cfs @ 2.02 hrs, Volume= 1.469 af, Atten= 90%, Lag= 30.7 min
Primary = 4.23 cfs @ 2.02 hrs, Volume= 1.469 af

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs / 2
Peak Elev= 755.78' @ 2.02 hrs Surf.Area= 36,774 sf Storage= 48,165 cf

Plug-Flow detention time= 267.5 min calculated for 1.469 af (97% of inflow)
Center-of-Mass det. time= 264.8 min (363.5 - 98.8)

Volume	Invert	Avail.Storage	Storage Description
#1	754.40'	154,550 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
754.40	32,900	0	0
755.00	34,500	20,220	20,220
756.00	37,400	35,950	56,170
757.00	40,300	38,850	95,020
758.00	43,400	41,850	136,870
758.40	45,000	17,680	154,550

Device	Routing	Invert	Outlet Devices
#1	Primary	754.40'	15.0" Round RCP_Round 15" L= 444.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 754.40' / 752.80' S= 0.0036 '/ Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=4.23 cfs @ 2.02 hrs HW=755.78' TW=0.00' (Dynamic Tailwater)

↑1=RCP_Round 15" (Barrel Controls 4.23 cfs @ 3.89 fps)

BDH REALTY COMMERCIAL DEV-PR CONDITIONS
Type II 24-hr trimmed to 3.00 hrs 050yr-03hr Rainfall=3.48"

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Summary for Pond 2P: DET BASIN 2

Inflow Area = 5.020 ac, 86.05% Impervious, Inflow Depth = 2.82" for 050yr-03hr event
Inflow = 39.66 cfs @ 1.45 hrs, Volume= 1.178 af
Outflow = 12.42 cfs @ 1.58 hrs, Volume= 1.178 af, Atten= 69%, Lag= 7.6 min
Primary = 12.42 cfs @ 1.58 hrs, Volume= 1.178 af

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs / 2
Peak Elev= 754.68' @ 1.58 hrs Surf.Area= 11,091 sf Storage= 25,361 cf

Plug-Flow detention time= 29.9 min calculated for 1.177 af (100% of inflow)
Center-of-Mass det. time= 30.0 min (124.9 - 94.9)

Volume	Invert	Avail.Storage	Storage Description
#1	751.50'	41,420 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
751.50	0	0	0
752.00	6,200	1,550	1,550
753.00	8,520	7,360	8,910
754.00	10,000	9,260	18,170
755.00	11,600	10,800	28,970
756.00	13,300	12,450	41,420

Device	Routing	Invert	Outlet Devices
#1	Primary	751.50'	18.0" Round RCP_Round 18" L= 50.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 751.50' / 751.33' S= 0.0034 '/' Cc= 0.900 n= 0.013 Concrete pipe, straight & clean, Flow Area= 1.77 sf

Primary OutFlow Max=12.34 cfs @ 1.58 hrs HW=754.66' TW=0.00' (Dynamic Tailwater)

↑1=RCP_Round 18" (Barrel Controls 12.34 cfs @ 6.98 fps)

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BDH REALTY COMMERCIAL DEV-PR CONDITIONS
Type II 24-hr trimmed to 6.00 hrs 050yr-06hr Rainfall=4.20"

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Time span=0.01-48.00 hrs, dt=0.05 hrs, 961 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: PR1

Runoff Area=6.240 ac 86.20% Impervious Runoff Depth=3.63"
Tc=10.0 min CN=95 Runoff=44.30 cfs 1.887 af

Subcatchment 2S: PR-EAST

Runoff Area=0.230 ac 0.00% Impervious Runoff Depth=1.74"
Tc=5.0 min CN=74 Runoff=1.06 cfs 0.033 af

Subcatchment 3S: PR3

Runoff Area=0.370 ac 0.00% Impervious Runoff Depth=1.74"
Tc=5.0 min CN=74 Runoff=1.70 cfs 0.054 af

Subcatchment 4S: PR4

Runoff Area=5.020 ac 86.05% Impervious Runoff Depth=3.52"
Tc=5.0 min CN=94 Runoff=41.08 cfs 1.473 af

Reach 2R: US 31 DITCH

Inflow=17.38 cfs 3.342 af
Outflow=17.38 cfs 3.342 af

Pond 1P: DET BASIN 1

Peak Elev=755.97' Storage=54,966 cf Inflow=44.30 cfs 1.887 af
15.0" Round Culvert n=0.012 L=444.0' S=0.0036 '/' Outflow=4.58 cfs 1.835 af

Pond 2P: DET BASIN 2

Peak Elev=754.87' Storage=27,525 cf Inflow=41.08 cfs 1.473 af
18.0" Round Culvert n=0.013 L=50.0' S=0.0034 '/' Outflow=13.05 cfs 1.473 af

Total Runoff Area = 11.860 ac Runoff Volume = 3.447 af Average Runoff Depth = 3.49"
18.23% Pervious = 2.161 ac 81.77% Impervious = 9.699 ac

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 6.00 hrs 050yr-06hr Rainfall=4.20"

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Summary for Subcatchment 1S: PR1

Runoff = 44.30 cfs @ 3.01 hrs, Volume= 1.887 af, Depth= 3.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 6.00 hrs 050yr-06hr Rainfall=4.20"

Area (ac)	CN	Description
5.740	95	Urban commercial, 85% imp, HSG D
0.500	98	Water Surface, HSG C
6.240	95	Weighted Average
0.861		13.80% Pervious Area
5.379		86.20% Impervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 6.00 hrs 050yr-06hr Rainfall=4.20"

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Summary for Subcatchment 2S: PR-EAST

Runoff = 1.06 cfs @ 2.96 hrs, Volume= 0.033 af, Depth= 1.74"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 6.00 hrs 050yr-06hr Rainfall=4.20"

Area (ac)	CN	Description
0.230	74	>75% Grass cover, Good, HSG C
0.230		100.00% Pervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 6.00 hrs 050yr-06hr Rainfall=4.20"

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Summary for Subcatchment 3S: PR3

Runoff = 1.70 cfs @ 2.96 hrs, Volume= 0.054 af, Depth= 1.74"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 6.00 hrs 050yr-06hr Rainfall=4.20"

Area (ac)	CN	Description
0.370	74	>75% Grass cover, Good, HSG C
0.370		100.00% Pervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 6.00 hrs 050yr-06hr Rainfall=4.20"

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Summary for Subcatchment 4S: PR4

Runoff = 41.08 cfs @ 2.95 hrs, Volume= 1.473 af, Depth= 3.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 6.00 hrs 050yr-06hr Rainfall=4.20"

Area (ac)	CN	Description
0.350	98	Water Surface, HSG C
4.670	94	Urban commercial, 85% imp, HSG C
5.020	94	Weighted Average
0.700		13.95% Pervious Area
4.320		86.05% Impervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 6.00 hrs 050yr-06hr Rainfall=4.20"

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Summary for Reach 2R: US 31 DITCH

Inflow Area = 11.490 ac, 84.41% Impervious, Inflow Depth > 3.49" for 050yr-06hr event
Inflow = 17.38 cfs @ 3.11 hrs, Volume= 3.342 af
Outflow = 17.38 cfs @ 3.11 hrs, Volume= 3.342 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs / 2

BDH REALTY COMMERCIAL DEV-PR CONDITIONS
Type II 24-hr trimmed to 6.00 hrs 050yr-06hr Rainfall=4.20"

Proposed Conditions

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Summary for Pond 1P: DET BASIN 1

Inflow Area = 6.240 ac, 86.20% Impervious, Inflow Depth = 3.63" for 050yr-06hr event
Inflow = 44.30 cfs @ 3.01 hrs, Volume= 1.887 af
Outflow = 4.58 cfs @ 3.49 hrs, Volume= 1.835 af, Atten= 90%, Lag= 29.0 min
Primary = 4.58 cfs @ 3.49 hrs, Volume= 1.835 af

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs / 2
Peak Elev= 755.97' @ 3.49 hrs Surf.Area= 37,306 sf Storage= 54,966 cf

Plug-Flow detention time= 251.6 min calculated for 1.833 af (97% of inflow)
Center-of-Mass det. time= 249.5 min (444.3 - 194.8)

Volume	Invert	Avail.Storage	Storage Description
#1	754.40'	154,550 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
754.40	32,900	0	0
755.00	34,500	20,220	20,220
756.00	37,400	35,950	56,170
757.00	40,300	38,850	95,020
758.00	43,400	41,850	136,870
758.40	45,000	17,680	154,550

Device	Routing	Invert	Outlet Devices
#1	Primary	754.40'	15.0" Round RCP_Round 15" L= 444.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 754.40' / 752.80' S= 0.0036 '/ Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=4.58 cfs @ 3.49 hrs HW=755.97' TW=0.00' (Dynamic Tailwater)
↑1=RCP_Round 15" (Barrel Controls 4.58 cfs @ 3.83 fps)

BDH REALTY COMMERCIAL DEV-PR CONDITIONS
Type II 24-hr trimmed to 6.00 hrs 050yr-06hr Rainfall=4.20"

Proposed Conditions

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Summary for Pond 2P: DET BASIN 2

Inflow Area = 5.020 ac, 86.05% Impervious, Inflow Depth = 3.52" for 050yr-06hr event
Inflow = 41.08 cfs @ 2.95 hrs, Volume= 1.473 af
Outflow = 13.05 cfs @ 3.08 hrs, Volume= 1.473 af, Atten= 68%, Lag= 7.6 min
Primary = 13.05 cfs @ 3.08 hrs, Volume= 1.473 af

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs / 2
Peak Elev= 754.87' @ 3.08 hrs Surf.Area= 11,399 sf Storage= 27,525 cf

Plug-Flow detention time= 30.3 min calculated for 1.471 af (100% of inflow)
Center-of-Mass det. time= 30.4 min (222.0 - 191.6)

Volume	Invert	Avail.Storage	Storage Description
#1	751.50'	41,420 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
751.50	0	0	0
752.00	6,200	1,550	1,550
753.00	8,520	7,360	8,910
754.00	10,000	9,260	18,170
755.00	11,600	10,800	28,970
756.00	13,300	12,450	41,420

Device	Routing	Invert	Outlet Devices
#1	Primary	751.50'	18.0" Round RCP_Round 18" L= 50.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 751.50' / 751.33' S= 0.0034 ' / Cc= 0.900 n= 0.013 Concrete pipe, straight & clean, Flow Area= 1.77 sf

Primary OutFlow Max=12.98 cfs @ 3.08 hrs HW=754.85' TW=0.00' (Dynamic Tailwater)
↑1=RCP_Round 18" (Barrel Controls 12.98 cfs @ 7.34 fps)

Proposed Conditions BDH REALTY COMMERCIAL DEV-PR CONDITIONS
Type II 24-hr trimmed to 12.00 hrs 050yr-12hr Rainfall=4.78"
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Time span=0.01-48.00 hrs, dt=0.05 hrs, 961 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: PR1 Runoff Area=6.240 ac 86.20% Impervious Runoff Depth=4.20"
Tc=10.0 min CN=95 Runoff=42.75 cfs 2.185 af

Subcatchment 2S: PR-EAST Runoff Area=0.230 ac 0.00% Impervious Runoff Depth=2.19"
Tc=5.0 min CN=74 Runoff=1.10 cfs 0.042 af

Subcatchment 3S: PR3 Runoff Area=0.370 ac 0.00% Impervious Runoff Depth=2.19"
Tc=5.0 min CN=74 Runoff=1.77 cfs 0.068 af

Subcatchment 4S: PR4 Runoff Area=5.020 ac 86.05% Impervious Runoff Depth=4.09"
Tc=5.0 min CN=94 Runoff=39.67 cfs 1.711 af

Reach 2R: US 31 DITCH Inflow=17.50 cfs 3.882 af
Outflow=17.50 cfs 3.882 af

Pond 1P: DET BASIN 1 Peak Elev=756.05' Storage=58,152 cf Inflow=42.75 cfs 2.185 af
15.0" Round Culvert n=0.012 L=444.0' S=0.0036 '/' Outflow=4.59 cfs 2.128 af

Pond 2P: DET BASIN 2 Peak Elev=754.83' Storage=27,025 cf Inflow=39.67 cfs 1.711 af
18.0" Round Culvert n=0.013 L=50.0' S=0.0034 '/' Outflow=12.91 cfs 1.711 af

Total Runoff Area = 11.860 ac Runoff Volume = 4.006 af Average Runoff Depth = 4.05"
18.23% Pervious = 2.161 ac 81.77% Impervious = 9.699 ac

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 12.00 hrs 050yr-12hr Rainfall=4.78"

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Summary for Subcatchment 1S: PR1

Runoff = 42.75 cfs @ 6.01 hrs, Volume= 2.185 af, Depth= 4.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 12.00 hrs 050yr-12hr Rainfall=4.78"

Area (ac)	CN	Description
5.740	95	Urban commercial, 85% imp, HSG D
0.500	98	Water Surface, HSG C
6.240	95	Weighted Average
0.861		13.80% Pervious Area
5.379		86.20% Impervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 12.00 hrs 050yr-12hr Rainfall=4.78"

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Summary for Subcatchment 2S: PR-EAST

Runoff = 1.10 cfs @ 5.96 hrs, Volume= 0.042 af, Depth= 2.19"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 12.00 hrs 050yr-12hr Rainfall=4.78"

Area (ac)	CN	Description
0.230	74	>75% Grass cover, Good, HSG C
0.230		100.00% Pervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 12.00 hrs 050yr-12hr Rainfall=4.78"

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Summary for Subcatchment 3S: PR3

Runoff = 1.77 cfs @ 5.96 hrs, Volume= 0.068 af, Depth= 2.19"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 12.00 hrs 050yr-12hr Rainfall=4.78"

Area (ac)	CN	Description
0.370	74	>75% Grass cover, Good, HSG C
0.370		100.00% Pervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 12.00 hrs 050yr-12hr Rainfall=4.78"

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Summary for Subcatchment 4S: PR4

Runoff = 39.67 cfs @ 5.95 hrs, Volume= 1.711 af, Depth= 4.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 12.00 hrs 050yr-12hr Rainfall=4.78"

Area (ac)	CN	Description
0.350	98	Water Surface, HSG C
4.670	94	Urban commercial, 85% imp, HSG C
5.020	94	Weighted Average
0.700		13.95% Pervious Area
4.320		86.05% Impervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 12.00 hrs 050yr-12hr Rainfall=4.78"

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Summary for Reach 2R: US 31 DITCH

Inflow Area = 11.490 ac, 84.41% Impervious, Inflow Depth > 4.05" for 050yr-12hr event
Inflow = 17.50 cfs @ 6.09 hrs, Volume= 3.882 af
Outflow = 17.50 cfs @ 6.09 hrs, Volume= 3.882 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs / 2

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 12.00 hrs 050yr-12hr Rainfall=4.78"

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Summary for Pond 1P: DET BASIN 1

Inflow Area = 6.240 ac, 86.20% Impervious, Inflow Depth = 4.20" for 050yr-12hr event
 Inflow = 42.75 cfs @ 6.01 hrs, Volume= 2.185 af
 Outflow = 4.59 cfs @ 6.97 hrs, Volume= 2.128 af, Atten= 89%, Lag= 57.9 min
 Primary = 4.59 cfs @ 6.97 hrs, Volume= 2.128 af

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs / 2
 Peak Elev= 756.05' @ 6.48 hrs Surf.Area= 37,553 sf Storage= 58,152 cf

Plug-Flow detention time= 251.8 min calculated for 2.126 af (97% of inflow)
 Center-of-Mass det. time= 245.5 min (631.9 - 386.4)

Volume	Invert	Avail.Storage	Storage Description
#1	754.40'	154,550 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
754.40	32,900	0	0
755.00	34,500	20,220	20,220
756.00	37,400	35,950	56,170
757.00	40,300	38,850	95,020
758.00	43,400	41,850	136,870
758.40	45,000	17,680	154,550

Device	Routing	Invert	Outlet Devices
#1	Primary	754.40'	15.0" Round RCP_Round 15" L= 444.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 754.40' / 752.80' S= 0.0036 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=4.59 cfs @ 6.97 hrs HW=755.99' TW=0.00' (Dynamic Tailwater)
 ↑1=RCP_Round 15" (Barrel Controls 4.59 cfs @ 3.80 fps)

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 12.00 hrs 050yr-12hr Rainfall=4.78"

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Summary for Pond 2P: DET BASIN 2

Inflow Area = 5.020 ac, 86.05% Impervious, Inflow Depth = 4.09" for 050yr-12hr event
Inflow = 39.67 cfs @ 5.95 hrs, Volume= 1.711 af
Outflow = 12.91 cfs @ 6.08 hrs, Volume= 1.711 af, Atten= 67%, Lag= 7.5 min
Primary = 12.91 cfs @ 6.08 hrs, Volume= 1.711 af

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs / 2
Peak Elev= 754.83' @ 6.08 hrs Surf.Area= 11,329 sf Storage= 27,025 cf

Plug-Flow detention time= 30.4 min calculated for 1.710 af (100% of inflow)
Center-of-Mass det. time= 30.5 min (415.0 - 384.5)

Volume	Invert	Avail.Storage	Storage Description
#1	751.50'	41,420 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
751.50	0	0	0
752.00	6,200	1,550	1,550
753.00	8,520	7,360	8,910
754.00	10,000	9,260	18,170
755.00	11,600	10,800	28,970
756.00	13,300	12,450	41,420

Device	Routing	Invert	Outlet Devices
#1	Primary	751.50'	18.0" Round RCP_Round 18" L= 50.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 751.50' / 751.33' S= 0.0034 ' / S= 0.0034 ' Cc= 0.900 n= 0.013 Concrete pipe, straight & clean, Flow Area= 1.77 sf

Primary OutFlow Max=12.84 cfs @ 6.08 hrs HW=754.81' TW=0.00' (Dynamic Tailwater)

↑1=RCP_Round 18" (Barrel Controls 12.84 cfs @ 7.26 fps)

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Type II 24-hr 050yr-24hr Rainfall=5.34"

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Time span=0.01-48.00 hrs, dt=0.05 hrs, 961 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: PR1	Runoff Area=6.240 ac 86.20% Impervious Runoff Depth=4.76" Tc=10.0 min CN=95 Runoff=40.42 cfs 2.473 af
Subcatchment 2S: PR-EAST	Runoff Area=0.230 ac 0.00% Impervious Runoff Depth=2.64" Tc=5.0 min CN=74 Runoff=1.10 cfs 0.051 af
Subcatchment 3S: PR3	Runoff Area=0.370 ac 0.00% Impervious Runoff Depth=2.64" Tc=5.0 min CN=74 Runoff=1.77 cfs 0.081 af
Subcatchment 4S: PR4	Runoff Area=5.020 ac 86.05% Impervious Runoff Depth=4.64" Tc=5.0 min CN=94 Runoff=37.54 cfs 1.943 af
Reach 2R: US 31 DITCH	Inflow=17.26 cfs 4.394 af Outflow=17.26 cfs 4.394 af
Pond 1P: DET BASIN 1	Peak Elev=756.08' Storage=59,082 cf Inflow=40.42 cfs 2.473 af 15.0" Round Culvert n=0.012 L=444.0' S=0.0036 '/' Outflow=4.59 cfs 2.401 af
Pond 2P: DET BASIN 2	Peak Elev=754.71' Storage=25,706 cf Inflow=37.54 cfs 1.943 af 18.0" Round Culvert n=0.013 L=50.0' S=0.0034 '/' Outflow=12.52 cfs 1.943 af
Total Runoff Area = 11.860 ac Runoff Volume = 4.548 af Average Runoff Depth = 4.60" 18.23% Pervious = 2.161 ac 81.77% Impervious = 9.699 ac	

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Type II 24-hr 050yr-24hr Rainfall=5.34"

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Summary for Subcatchment 1S: PR1

Runoff = 40.42 cfs @ 12.01 hrs, Volume= 2.473 af, Depth= 4.76"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr 050yr-24hr Rainfall=5.34"

Area (ac)	CN	Description
5.740	95	Urban commercial, 85% imp, HSG D
0.500	98	Water Surface, HSG C
6.240	95	Weighted Average
0.861		13.80% Pervious Area
5.379		86.20% Impervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Type II 24-hr 050yr-24hr Rainfall=5.34"

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Summary for Subcatchment 2S: PR-EAST

Runoff = 1.10 cfs @ 11.96 hrs, Volume= 0.051 af, Depth= 2.64"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr 050yr-24hr Rainfall=5.34"

Area (ac)	CN	Description
0.230	74	>75% Grass cover, Good, HSG C
0.230		100.00% Pervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Type II 24-hr 050yr-24hr Rainfall=5.34"

Proposed Conditions

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Summary for Subcatchment 3S: PR3

Runoff = 1.77 cfs @ 11.96 hrs, Volume= 0.081 af, Depth= 2.64"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr 050yr-24hr Rainfall=5.34"

Area (ac)	CN	Description
0.370	74	>75% Grass cover, Good, HSG C
0.370		100.00% Pervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Type II 24-hr 050yr-24hr Rainfall=5.34"

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Summary for Subcatchment 4S: PR4

Runoff = 37.54 cfs @ 11.95 hrs, Volume= 1.943 af, Depth= 4.64"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr 050yr-24hr Rainfall=5.34"

Area (ac)	CN	Description
0.350	98	Water Surface, HSG C
4.670	94	Urban commercial, 85% imp, HSG C
5.020	94	Weighted Average
0.700		13.95% Pervious Area
4.320		86.05% Impervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Type II 24-hr 050yr-24hr Rainfall=5.34"

Proposed Conditions

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Summary for Reach 2R: US 31 DITCH

Inflow Area = 11.490 ac, 84.41% Impervious, Inflow Depth > 4.59" for 050yr-24hr event
Inflow = 17.26 cfs @ 12.08 hrs, Volume= 4.394 af
Outflow = 17.26 cfs @ 12.08 hrs, Volume= 4.394 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs / 2

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Type II 24-hr 050yr-24hr Rainfall=5.34"

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Summary for Pond 1P: DET BASIN 1

Inflow Area = 6.240 ac, 86.20% Impervious, Inflow Depth = 4.76" for 050yr-24hr event
 Inflow = 40.42 cfs @ 12.01 hrs, Volume= 2.473 af
 Outflow = 4.59 cfs @ 13.06 hrs, Volume= 2.401 af, Atten= 89%, Lag= 63.4 min
 Primary = 4.59 cfs @ 13.06 hrs, Volume= 2.401 af

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs / 2
 Peak Elev= 756.08' @ 12.47 hrs Surf.Area= 37,625 sf Storage= 59,082 cf

Plug-Flow detention time= 264.0 min calculated for 2.399 af (97% of inflow)
 Center-of-Mass det. time= 247.0 min (1,013.5 - 766.6)

Volume	Invert	Avail.Storage	Storage Description
#1	754.40'	154,550 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
754.40	32,900	0	0
755.00	34,500	20,220	20,220
756.00	37,400	35,950	56,170
757.00	40,300	38,850	95,020
758.00	43,400	41,850	136,870
758.40	45,000	17,680	154,550

Device	Routing	Invert	Outlet Devices
#1	Primary	754.40'	15.0" Round RCP_Round 15" L= 444.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 754.40' / 752.80' S= 0.0036 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=4.59 cfs @ 13.06 hrs HW=755.99' TW=0.00' (Dynamic Tailwater)

↑ **1=RCP_Round 15"** (Barrel Controls 4.59 cfs @ 3.81 fps)

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Type II 24-hr 050yr-24hr Rainfall=5.34"

Proposed Conditions

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Summary for Pond 2P: DET BASIN 2

Inflow Area = 5.020 ac, 86.05% Impervious, Inflow Depth = 4.64" for 050yr-24hr event
 Inflow = 37.54 cfs @ 11.95 hrs, Volume= 1.943 af
 Outflow = 12.52 cfs @ 12.08 hrs, Volume= 1.943 af, Atten= 67%, Lag= 7.5 min
 Primary = 12.52 cfs @ 12.08 hrs, Volume= 1.943 af

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs / 2

Peak Elev= 754.71' @ 12.08 hrs Surf.Area= 11,141 sf Storage= 25,706 cf

Plug-Flow detention time= 30.3 min calculated for 1.941 af (100% of inflow)

Center-of-Mass det. time= 30.4 min (797.6 - 767.2)

Volume	Invert	Avail.Storage	Storage Description
#1	751.50'	41,420 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
751.50	0	0	0
752.00	6,200	1,550	1,550
753.00	8,520	7,360	8,910
754.00	10,000	9,260	18,170
755.00	11,600	10,800	28,970
756.00	13,300	12,450	41,420

Device	Routing	Invert	Outlet Devices
#1	Primary	751.50'	18.0" Round RCP_Round 18" L= 50.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 751.50' / 751.33' S= 0.0034 '/' Cc= 0.900 n= 0.013 Concrete pipe, straight & clean, Flow Area= 1.77 sf

Primary OutFlow Max=12.46 cfs @ 12.08 hrs HW=754.69' TW=0.00' (Dynamic Tailwater)

↑1=RCP_Round 18" (Barrel Controls 12.46 cfs @ 7.05 fps)

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BDH REALTY COMMERCIAL DEV-PR CONDITIONS
Type II 24-hr trimmed to 1.00 hrs 100yr-01hr Rainfall=3.01"

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Time span=0.01-48.00 hrs, dt=0.05 hrs, 961 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: PR1

Runoff Area=6.240 ac 86.20% Impervious Runoff Depth>2.46"
Tc=10.0 min CN=95 Runoff=47.35 cfs 1.279 af

Subcatchment 2S: PR-EAST

Runoff Area=0.230 ac 0.00% Impervious Runoff Depth=0.91"
Tc=5.0 min CN=74 Runoff=0.90 cfs 0.018 af

Subcatchment 3S: PR3

Runoff Area=0.370 ac 0.00% Impervious Runoff Depth=0.91"
Tc=5.0 min CN=74 Runoff=1.44 cfs 0.028 af

Subcatchment 4S: PR4

Runoff Area=5.020 ac 86.05% Impervious Runoff Depth>2.36"
Tc=5.0 min CN=94 Runoff=44.19 cfs 0.987 af

Reach 2R: US 31 DITCH

Inflow=15.80 cfs 2.236 af
Outflow=15.80 cfs 2.236 af

Pond 1P: DET BASIN 1

Peak Elev=755.75' Storage=46,736 cf Inflow=47.35 cfs 1.279 af
15.0" Round Culvert n=0.012 L=444.0' S=0.0036 '/' Outflow=4.12 cfs 1.231 af

Pond 2P: DET BASIN 2

Peak Elev=754.67' Storage=25,215 cf Inflow=44.19 cfs 0.987 af
18.0" Round Culvert n=0.013 L=50.0' S=0.0034 '/' Outflow=12.38 cfs 0.987 af

Total Runoff Area = 11.860 ac Runoff Volume = 2.312 af Average Runoff Depth = 2.34"
18.23% Pervious = 2.161 ac 81.77% Impervious = 9.699 ac

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 1.00 hrs 100yr-01hr Rainfall=3.01"

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Summary for Subcatchment 1S: PR1

Runoff = 47.35 cfs @ 0.51 hrs, Volume= 1.279 af, Depth> 2.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 1.00 hrs 100yr-01hr Rainfall=3.01"

Area (ac)	CN	Description
5.740	95	Urban commercial, 85% imp, HSG D
0.500	98	Water Surface, HSG C
6.240	95	Weighted Average
0.861		13.80% Pervious Area
5.379		86.20% Impervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 1.00 hrs 100yr-01hr Rainfall=3.01"

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Summary for Subcatchment 2S: PR-EAST

Runoff = 0.90 cfs @ 0.48 hrs, Volume= 0.018 af, Depth= 0.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 1.00 hrs 100yr-01hr Rainfall=3.01"

Area (ac)	CN	Description
0.230	74	>75% Grass cover, Good, HSG C
0.230		100.00% Pervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 1.00 hrs 100yr-01hr Rainfall=3.01"

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Summary for Subcatchment 3S: PR3

Runoff = 1.44 cfs @ 0.48 hrs, Volume= 0.028 af, Depth= 0.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 1.00 hrs 100yr-01hr Rainfall=3.01"

Area (ac)	CN	Description
0.370	74	>75% Grass cover, Good, HSG C
0.370		100.00% Pervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 1.00 hrs 100yr-01hr Rainfall=3.01"

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Summary for Subcatchment 4S: PR4

Runoff = 44.19 cfs @ 0.46 hrs, Volume= 0.987 af, Depth> 2.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 1.00 hrs 100yr-01hr Rainfall=3.01"

Area (ac)	CN	Description
0.350	98	Water Surface, HSG C
4.670	94	Urban commercial, 85% imp, HSG C
5.020	94	Weighted Average
0.700		13.95% Pervious Area
4.320		86.05% Impervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Type II 24-hr trimmed to 1.00 hrs 100yr-01hr Rainfall=3.01"

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Summary for Reach 2R: US 31 DITCH

Inflow Area = 11.490 ac, 84.41% Impervious, Inflow Depth > 2.34" for 100yr-01hr event
Inflow = 15.80 cfs @ 0.66 hrs, Volume= 2.236 af
Outflow = 15.80 cfs @ 0.66 hrs, Volume= 2.236 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs / 2

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Type II 24-hr trimmed to 1.00 hrs 100yr-01hr Rainfall=3.01"

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Summary for Pond 1P: DET BASIN 1

Inflow Area = 6.240 ac, 86.20% Impervious, Inflow Depth > 2.46" for 100yr-01hr event
 Inflow = 47.35 cfs @ 0.51 hrs, Volume= 1.279 af
 Outflow = 4.12 cfs @ 1.06 hrs, Volume= 1.231 af, Atten= 91%, Lag= 32.8 min
 Primary = 4.12 cfs @ 1.06 hrs, Volume= 1.231 af

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs / 2
 Peak Elev= 755.75' @ 1.06 hrs Surf.Area= 36,661 sf Storage= 46,736 cf

Plug-Flow detention time= 283.7 min calculated for 1.231 af (96% of inflow)
 Center-of-Mass det. time= 282.5 min (316.7 - 34.2)

Volume	Invert	Avail.Storage	Storage Description
#1	754.40'	154,550 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
754.40	32,900	0	0
755.00	34,500	20,220	20,220
756.00	37,400	35,950	56,170
757.00	40,300	38,850	95,020
758.00	43,400	41,850	136,870
758.40	45,000	17,680	154,550

Device	Routing	Invert	Outlet Devices
#1	Primary	754.40'	15.0" Round RCP_Round 15" L= 444.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 754.40' / 752.80' S= 0.0036 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=4.12 cfs @ 1.06 hrs HW=755.75' TW=0.00' (Dynamic Tailwater)

↑1=RCP_Round 15" (Barrel Controls 4.12 cfs @ 3.88 fps)

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 1.00 hrs 100yr-01hr Rainfall=3.01"

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Summary for Pond 2P: DET BASIN 2

Inflow Area = 5.020 ac, 86.05% Impervious, Inflow Depth > 2.36" for 100yr-01hr event
 Inflow = 44.19 cfs @ 0.46 hrs, Volume= 0.987 af
 Outflow = 12.38 cfs @ 0.59 hrs, Volume= 0.987 af, Atten= 72%, Lag= 8.1 min
 Primary = 12.38 cfs @ 0.59 hrs, Volume= 0.987 af

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs / 2
 Peak Elev= 754.67' @ 0.59 hrs Surf.Area= 11,070 sf Storage= 25,215 cf

Plug-Flow detention time= 30.3 min calculated for 0.986 af (100% of inflow)
 Center-of-Mass det. time= 30.5 min (60.4 - 29.9)

Volume	Invert	Avail.Storage	Storage Description
#1	751.50'	41,420 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
751.50	0	0	0
752.00	6,200	1,550	1,550
753.00	8,520	7,360	8,910
754.00	10,000	9,260	18,170
755.00	11,600	10,800	28,970
756.00	13,300	12,450	41,420

Device	Routing	Invert	Outlet Devices
#1	Primary	751.50'	18.0" Round RCP_Round 18" L= 50.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 751.50' / 751.33' S= 0.0034 ' / Cc= 0.900 n= 0.013 Concrete pipe, straight & clean, Flow Area= 1.77 sf

Primary OutFlow Max=12.34 cfs @ 0.59 hrs HW=754.66' TW=0.00' (Dynamic Tailwater)

↑1=RCP_Round 18" (Barrel Controls 12.34 cfs @ 6.98 fps)

Proposed Conditions BDH REALTY COMMERCIAL DEV-PR CONDITIONS
Type II 24-hr trimmed to 2.00 hrs 100yr-02hr Rainfall=3.65"
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Time span=0.01-48.00 hrs, dt=0.05 hrs, 961 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: PR1	Runoff Area=6.240 ac 86.20% Impervious Runoff Depth=3.09" Tc=10.0 min CN=95 Runoff=49.86 cfs 1.605 af
Subcatchment 2S: PR-EAST	Runoff Area=0.230 ac 0.00% Impervious Runoff Depth=1.34" Tc=5.0 min CN=74 Runoff=1.10 cfs 0.026 af
Subcatchment 3S: PR3	Runoff Area=0.370 ac 0.00% Impervious Runoff Depth=1.34" Tc=5.0 min CN=74 Runoff=1.77 cfs 0.041 af
Subcatchment 4S: PR4	Runoff Area=5.020 ac 86.05% Impervious Runoff Depth=2.98" Tc=5.0 min CN=94 Runoff=46.33 cfs 1.247 af
Reach 2R: US 31 DITCH	Inflow=17.65 cfs 2.830 af Outflow=17.65 cfs 2.830 af
Pond 1P: DET BASIN 1	Peak Elev=755.94' Storage=53,771 cf Inflow=49.86 cfs 1.605 af 15.0" Round Culvert n=0.012 L=444.0' S=0.0036 '/' Outflow=4.56 cfs 1.556 af
Pond 2P: DET BASIN 2	Peak Elev=755.00' Storage=29,026 cf Inflow=46.33 cfs 1.247 af 18.0" Round Culvert n=0.013 L=50.0' S=0.0034 '/' Outflow=13.46 cfs 1.247 af
Total Runoff Area = 11.860 ac Runoff Volume = 2.920 af Average Runoff Depth = 2.95" 18.23% Pervious = 2.161 ac 81.77% Impervious = 9.699 ac	

BDH REALTY COMMERCIAL DEV-PR CONDITIONS
Type II 24-hr trimmed to 2.00 hrs 100yr-02hr Rainfall=3.65"

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Summary for Subcatchment 1S: PR1

Runoff = 49.86 cfs @ 1.01 hrs, Volume= 1.605 af, Depth= 3.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 2.00 hrs 100yr-02hr Rainfall=3.65"

Area (ac)	CN	Description
5.740	95	Urban commercial, 85% imp, HSG D
0.500	98	Water Surface, HSG C
6.240	95	Weighted Average
0.861		13.80% Pervious Area
5.379		86.20% Impervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 2.00 hrs 100yr-02hr Rainfall=3.65"

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Summary for Subcatchment 2S: PR-EAST

Runoff = 1.10 cfs @ 0.97 hrs, Volume= 0.026 af, Depth= 1.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 2.00 hrs 100yr-02hr Rainfall=3.65"

Area (ac)	CN	Description
0.230	74	>75% Grass cover, Good, HSG C
0.230		100.00% Pervious Area

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

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Proposed Conditions

Type II 24-hr trimmed to 2.00 hrs 100yr-02hr Rainfall=3.65"

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Summary for Subcatchment 3S: PR3

Runoff = 1.77 cfs @ 0.97 hrs, Volume= 0.041 af, Depth= 1.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 2.00 hrs 100yr-02hr Rainfall=3.65"

Area (ac)	CN	Description
0.370	74	>75% Grass cover, Good, HSG C
0.370		100.00% Pervious Area

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

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Proposed Conditions

Type II 24-hr trimmed to 2.00 hrs 100yr-02hr Rainfall=3.65"

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Summary for Subcatchment 4S: PR4

Runoff = 46.33 cfs @ 0.95 hrs, Volume= 1.247 af, Depth= 2.98"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 2.00 hrs 100yr-02hr Rainfall=3.65"

Area (ac)	CN	Description
0.350	98	Water Surface, HSG C
4.670	94	Urban commercial, 85% imp, HSG C
5.020	94	Weighted Average
0.700		13.95% Pervious Area
4.320		86.05% Impervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 2.00 hrs 100yr-02hr Rainfall=3.65"

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Summary for Reach 2R: US 31 DITCH

Inflow Area = 11.490 ac, 84.41% Impervious, Inflow Depth > 2.96" for 100yr-02hr event
Inflow = 17.65 cfs @ 1.13 hrs, Volume= 2.830 af
Outflow = 17.65 cfs @ 1.13 hrs, Volume= 2.830 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs / 2

BDH REALTY COMMERCIAL DEV-PR CONDITIONS
Type II 24-hr trimmed to 2.00 hrs 100yr-02hr Rainfall=3.65"

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Summary for Pond 1P: DET BASIN 1

Inflow Area = 6.240 ac, 86.20% Impervious, Inflow Depth = 3.09" for 100yr-02hr event
Inflow = 49.86 cfs @ 1.01 hrs, Volume= 1.605 af
Outflow = 4.56 cfs @ 1.56 hrs, Volume= 1.556 af, Atten= 91%, Lag= 33.1 min
Primary = 4.56 cfs @ 1.56 hrs, Volume= 1.556 af

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs / 2
Peak Elev= 755.94' @ 1.56 hrs Surf.Area= 37,214 sf Storage= 53,771 cf

Plug-Flow detention time= 260.5 min calculated for 1.555 af (97% of inflow)
Center-of-Mass det. time= 261.3 min (327.5 - 66.2)

Volume	Invert	Avail.Storage	Storage Description
#1	754.40'	154,550 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
754.40	32,900	0	0
755.00	34,500	20,220	20,220
756.00	37,400	35,950	56,170
757.00	40,300	38,850	95,020
758.00	43,400	41,850	136,870
758.40	45,000	17,680	154,550

Device	Routing	Invert	Outlet Devices
#1	Primary	754.40'	15.0" Round RCP_Round 15" L= 444.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 754.40' / 752.80' S= 0.0036 '/ Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=4.56 cfs @ 1.56 hrs HW=755.94' TW=0.00' (Dynamic Tailwater)

↑1=RCP_Round 15" (Barrel Controls 4.56 cfs @ 3.85 fps)

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 2.00 hrs 100yr-02hr Rainfall=3.65"

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Summary for Pond 2P: DET BASIN 2

Inflow Area = 5.020 ac, 86.05% Impervious, Inflow Depth = 2.98" for 100yr-02hr event
 Inflow = 46.33 cfs @ 0.95 hrs, Volume= 1.247 af
 Outflow = 13.46 cfs @ 1.09 hrs, Volume= 1.247 af, Atten= 71%, Lag= 7.8 min
 Primary = 13.46 cfs @ 1.09 hrs, Volume= 1.247 af

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs / 2
 Peak Elev= 755.00' @ 1.09 hrs Surf.Area= 11,608 sf Storage= 29,026 cf

Plug-Flow detention time= 30.9 min calculated for 1.246 af (100% of inflow)
 Center-of-Mass det. time= 31.1 min (93.2 - 62.1)

Volume	Invert	Avail.Storage	Storage Description
#1	751.50'	41,420 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
751.50	0	0	0
752.00	6,200	1,550	1,550
753.00	8,520	7,360	8,910
754.00	10,000	9,260	18,170
755.00	11,600	10,800	28,970
756.00	13,300	12,450	41,420

Device	Routing	Invert	Outlet Devices
#1	Primary	751.50'	18.0" Round RCP_Round 18" L= 50.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 751.50' / 751.33' S= 0.0034 '/' Cc= 0.900 n= 0.013 Concrete pipe, straight & clean, Flow Area= 1.77 sf

Primary OutFlow Max=13.43 cfs @ 1.09 hrs HW=754.99' TW=0.00' (Dynamic Tailwater)

↑1=RCP_Round 18" (Barrel Controls 13.43 cfs @ 7.60 fps)

Proposed Conditions

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Type II 24-hr trimmed to 3.00 hrs 100yr-03hr Rainfall=3.94"

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Time span=0.01-48.00 hrs, dt=0.05 hrs, 961 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: PR1

Runoff Area=6.240 ac 86.20% Impervious Runoff Depth=3.37"
Tc=10.0 min CN=95 Runoff=49.01 cfs 1.753 af

Subcatchment 2S: PR-EAST

Runoff Area=0.230 ac 0.00% Impervious Runoff Depth=1.55"
Tc=5.0 min CN=74 Runoff=1.13 cfs 0.030 af

Subcatchment 3S: PR3

Runoff Area=0.370 ac 0.00% Impervious Runoff Depth=1.55"
Tc=5.0 min CN=74 Runoff=1.83 cfs 0.048 af

Subcatchment 4S: PR4

Runoff Area=5.020 ac 86.05% Impervious Runoff Depth=3.27"
Tc=5.0 min CN=94 Runoff=45.51 cfs 1.366 af

Reach 2R: US 31 DITCH

Inflow=17.98 cfs 3.100 af
Outflow=17.98 cfs 3.100 af

Pond 1P: DET BASIN 1

Peak Elev=755.99' Storage=55,885 cf Inflow=49.01 cfs 1.753 af
15.0" Round Culvert n=0.012 L=444.0' S=0.0036 '/' Outflow=4.59 cfs 1.704 af

Pond 2P: DET BASIN 2

Peak Elev=755.06' Storage=29,723 cf Inflow=45.51 cfs 1.366 af
18.0" Round Culvert n=0.013 L=50.0' S=0.0034 '/' Outflow=13.65 cfs 1.366 af

Total Runoff Area = 11.860 ac Runoff Volume = 3.197 af Average Runoff Depth = 3.23"
18.23% Pervious = 2.161 ac 81.77% Impervious = 9.699 ac

BDH REALTY COMMERCIAL DEV-PR CONDITIONS
Type II 24-hr trimmed to 3.00 hrs 100yr-03hr Rainfall=3.94"

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Summary for Subcatchment 1S: PR1

Runoff = 49.01 cfs @ 1.51 hrs, Volume= 1.753 af, Depth= 3.37"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 3.00 hrs 100yr-03hr Rainfall=3.94"

Area (ac)	CN	Description
5.740	95	Urban commercial, 85% imp, HSG D
0.500	98	Water Surface, HSG C
6.240	95	Weighted Average
0.861		13.80% Pervious Area
5.379		86.20% Impervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 3.00 hrs 100yr-03hr Rainfall=3.94"

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Summary for Subcatchment 2S: PR-EAST

Runoff = 1.13 cfs @ 1.47 hrs, Volume= 0.030 af, Depth= 1.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 3.00 hrs 100yr-03hr Rainfall=3.94"

Area (ac)	CN	Description
0.230	74	>75% Grass cover, Good, HSG C
0.230		100.00% Pervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 3.00 hrs 100yr-03hr Rainfall=3.94"

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Summary for Subcatchment 3S: PR3

Runoff = 1.83 cfs @ 1.47 hrs, Volume= 0.048 af, Depth= 1.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 3.00 hrs 100yr-03hr Rainfall=3.94"

Area (ac)	CN	Description
0.370	74	>75% Grass cover, Good, HSG C
0.370		100.00% Pervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 3.00 hrs 100yr-03hr Rainfall=3.94"

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Summary for Subcatchment 4S: PR4

Runoff = 45.51 cfs @ 1.45 hrs, Volume= 1.366 af, Depth= 3.27"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 3.00 hrs 100yr-03hr Rainfall=3.94"

Area (ac)	CN	Description
0.350	98	Water Surface, HSG C
4.670	94	Urban commercial, 85% imp, HSG C
5.020	94	Weighted Average
0.700		13.95% Pervious Area
4.320		86.05% Impervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 3.00 hrs 100yr-03hr Rainfall=3.94"

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Summary for Reach 2R: US 31 DITCH

Inflow Area = 11.490 ac, 84.41% Impervious, Inflow Depth > 3.24" for 100yr-03hr event
Inflow = 17.98 cfs @ 1.62 hrs, Volume= 3.100 af
Outflow = 17.98 cfs @ 1.62 hrs, Volume= 3.100 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs / 2

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Type II 24-hr trimmed to 3.00 hrs 100yr-03hr Rainfall=3.94"

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Summary for Pond 1P: DET BASIN 1

Inflow Area = 6.240 ac, 86.20% Impervious, Inflow Depth = 3.37" for 100yr-03hr event
Inflow = 49.01 cfs @ 1.51 hrs, Volume= 1.753 af
Outflow = 4.59 cfs @ 2.15 hrs, Volume= 1.704 af, Atten= 91%, Lag= 38.6 min
Primary = 4.59 cfs @ 2.15 hrs, Volume= 1.704 af

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs / 2
Peak Elev= 755.99' @ 2.05 hrs Surf.Area= 37,378 sf Storage= 55,885 cf

Plug-Flow detention time= 255.3 min calculated for 1.702 af (97% of inflow)
Center-of-Mass det. time= 255.4 min (353.7 - 98.3)

Volume	Invert	Avail.Storage	Storage Description
#1	754.40'	154,550 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
754.40	32,900	0	0
755.00	34,500	20,220	20,220
756.00	37,400	35,950	56,170
757.00	40,300	38,850	95,020
758.00	43,400	41,850	136,870
758.40	45,000	17,680	154,550

Device	Routing	Invert	Outlet Devices
#1	Primary	754.40'	15.0" Round RCP_Round 15" L= 444.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 754.40' / 752.80' S= 0.0036 '/ Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=4.59 cfs @ 2.15 hrs HW=755.99' TW=0.00' (Dynamic Tailwater)

↑1=RCP_Round 15" (Barrel Controls 4.59 cfs @ 3.80 fps)

BDH REALTY COMMERCIAL DEV-PR CONDITIONS
Type II 24-hr trimmed to 3.00 hrs 100yr-03hr Rainfall=3.94"

Proposed Conditions

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Summary for Pond 2P: DET BASIN 2

Inflow Area = 5.020 ac, 86.05% Impervious, Inflow Depth = 3.27" for 100yr-03hr event
Inflow = 45.51 cfs @ 1.45 hrs, Volume= 1.366 af
Outflow = 13.65 cfs @ 1.58 hrs, Volume= 1.366 af, Atten= 70%, Lag= 7.8 min
Primary = 13.65 cfs @ 1.58 hrs, Volume= 1.366 af

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs / 2
Peak Elev= 755.06' @ 1.58 hrs Surf.Area= 11,710 sf Storage= 29,723 cf

Plug-Flow detention time= 30.8 min calculated for 1.365 af (100% of inflow)
Center-of-Mass det. time= 30.9 min (125.3 - 94.4)

Volume	Invert	Avail.Storage	Storage Description
#1	751.50'	41,420 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
751.50	0	0	0
752.00	6,200	1,550	1,550
753.00	8,520	7,360	8,910
754.00	10,000	9,260	18,170
755.00	11,600	10,800	28,970
756.00	13,300	12,450	41,420

Device	Routing	Invert	Outlet Devices
#1	Primary	751.50'	18.0" Round RCP_Round 18" L= 50.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 751.50' / 751.33' S= 0.0034 '/' Cc= 0.900 n= 0.013 Concrete pipe, straight & clean, Flow Area= 1.77 sf

Primary OutFlow Max=13.56 cfs @ 1.58 hrs HW=755.04' TW=0.00' (Dynamic Tailwater)

↑1=RCP_Round 18" (Barrel Controls 13.56 cfs @ 7.68 fps)

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BDH REALTY COMMERCIAL DEV-PR CONDITIONS
Type II 24-hr trimmed to 6.00 hrs 100yr-06hr Rainfall=4.77"

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Time span=0.01-48.00 hrs, dt=0.05 hrs, 961 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: PR1

Runoff Area=6.240 ac 86.20% Impervious Runoff Depth=4.19"
Tc=10.0 min CN=95 Runoff=50.75 cfs 2.180 af

Subcatchment 2S: PR-EAST

Runoff Area=0.230 ac 0.00% Impervious Runoff Depth=2.18"
Tc=5.0 min CN=74 Runoff=1.32 cfs 0.042 af

Subcatchment 3S: PR3

Runoff Area=0.370 ac 0.00% Impervious Runoff Depth=2.18"
Tc=5.0 min CN=74 Runoff=2.12 cfs 0.067 af

Subcatchment 4S: PR4

Runoff Area=5.020 ac 86.05% Impervious Runoff Depth=4.08"
Tc=5.0 min CN=94 Runoff=47.15 cfs 1.707 af

Reach 2R: US 31 DITCH

Inflow=19.19 cfs 3.877 af
Outflow=19.19 cfs 3.877 af

Pond 1P: DET BASIN 1

Peak Elev=756.22' Storage=64,582 cf Inflow=50.75 cfs 2.180 af
15.0" Round Culvert n=0.012 L=444.0' S=0.0036 '/' Outflow=4.59 cfs 2.128 af

Pond 2P: DET BASIN 2

Peak Elev=755.28' Storage=32,269 cf Inflow=47.15 cfs 1.707 af
18.0" Round Culvert n=0.013 L=50.0' S=0.0034 '/' Outflow=14.28 cfs 1.707 af

Total Runoff Area = 11.860 ac Runoff Volume = 3.996 af Average Runoff Depth = 4.04"
18.23% Pervious = 2.161 ac 81.77% Impervious = 9.699 ac

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 6.00 hrs 100yr-06hr Rainfall=4.77"

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Summary for Subcatchment 1S: PR1

Runoff = 50.75 cfs @ 3.01 hrs, Volume= 2.180 af, Depth= 4.19"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 6.00 hrs 100yr-06hr Rainfall=4.77"

Area (ac)	CN	Description
5.740	95	Urban commercial, 85% imp, HSG D
0.500	98	Water Surface, HSG C
6.240	95	Weighted Average
0.861		13.80% Pervious Area
5.379		86.20% Impervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 6.00 hrs 100yr-06hr Rainfall=4.77"

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Summary for Subcatchment 2S: PR-EAST

Runoff = 1.32 cfs @ 2.96 hrs, Volume= 0.042 af, Depth= 2.18"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 6.00 hrs 100yr-06hr Rainfall=4.77"

Area (ac)	CN	Description
0.230	74	>75% Grass cover, Good, HSG C
0.230		100.00% Pervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 6.00 hrs 100yr-06hr Rainfall=4.77"

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Summary for Subcatchment 3S: PR3

Runoff = 2.12 cfs @ 2.96 hrs, Volume= 0.067 af, Depth= 2.18"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 6.00 hrs 100yr-06hr Rainfall=4.77"

Area (ac)	CN	Description
0.370	74	>75% Grass cover, Good, HSG C
0.370		100.00% Pervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 6.00 hrs 100yr-06hr Rainfall=4.77"

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Summary for Subcatchment 4S: PR4

Runoff = 47.15 cfs @ 2.95 hrs, Volume= 1.707 af, Depth= 4.08"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 6.00 hrs 100yr-06hr Rainfall=4.77"

Area (ac)	CN	Description
0.350	98	Water Surface, HSG C
4.670	94	Urban commercial, 85% imp, HSG C
5.020	94	Weighted Average
0.700		13.95% Pervious Area
4.320		86.05% Impervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 6.00 hrs 100yr-06hr Rainfall=4.77"

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Summary for Reach 2R: US 31 DITCH

Inflow Area = 11.490 ac, 84.41% Impervious, Inflow Depth > 4.05" for 100yr-06hr event
Inflow = 19.19 cfs @ 3.08 hrs, Volume= 3.877 af
Outflow = 19.19 cfs @ 3.08 hrs, Volume= 3.877 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs / 2

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Type II 24-hr trimmed to 6.00 hrs 100yr-06hr Rainfall=4.77"

Proposed Conditions

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Summary for Pond 1P: DET BASIN 1

Inflow Area = 6.240 ac, 86.20% Impervious, Inflow Depth = 4.19" for 100yr-06hr event
 Inflow = 50.75 cfs @ 3.01 hrs, Volume= 2.180 af
 Outflow = 4.59 cfs @ 4.91 hrs, Volume= 2.128 af, Atten= 91%, Lag= 114.2 min
 Primary = 4.59 cfs @ 4.91 hrs, Volume= 2.128 af

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs / 2
 Peak Elev= 756.22' @ 3.57 hrs Surf.Area= 38,047 sf Storage= 64,582 cf

Plug-Flow detention time= 255.1 min calculated for 2.128 af (98% of inflow)
 Center-of-Mass det. time= 251.2 min (445.1 - 193.9)

Volume	Invert	Avail.Storage	Storage Description
#1	754.40'	154,550 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
754.40	32,900	0	0
755.00	34,500	20,220	20,220
756.00	37,400	35,950	56,170
757.00	40,300	38,850	95,020
758.00	43,400	41,850	136,870
758.40	45,000	17,680	154,550

Device	Routing	Invert	Outlet Devices
#1	Primary	754.40'	15.0" Round RCP_Round 15" L= 444.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 754.40' / 752.80' S= 0.0036 '/ Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=4.59 cfs @ 4.91 hrs HW=755.99' TW=0.00' (Dynamic Tailwater)

↑ **1=RCP_Round 15"** (Barrel Controls 4.59 cfs @ 3.80 fps)

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Type II 24-hr trimmed to 6.00 hrs 100yr-06hr Rainfall=4.77"

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Summary for Pond 2P: DET BASIN 2

Inflow Area = 5.020 ac, 86.05% Impervious, Inflow Depth = 4.08" for 100yr-06hr event
Inflow = 47.15 cfs @ 2.95 hrs, Volume= 1.707 af
Outflow = 14.28 cfs @ 3.08 hrs, Volume= 1.707 af, Atten= 70%, Lag= 7.8 min
Primary = 14.28 cfs @ 3.08 hrs, Volume= 1.707 af

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs / 2
Peak Elev= 755.28' @ 3.08 hrs Surf.Area= 12,074 sf Storage= 32,269 cf

Plug-Flow detention time= 31.2 min calculated for 1.706 af (100% of inflow)
Center-of-Mass det. time= 31.3 min (222.0 - 190.6)

Volume	Invert	Avail.Storage	Storage Description
#1	751.50'	41,420 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
751.50	0	0	0
752.00	6,200	1,550	1,550
753.00	8,520	7,360	8,910
754.00	10,000	9,260	18,170
755.00	11,600	10,800	28,970
756.00	13,300	12,450	41,420

Device	Routing	Invert	Outlet Devices
#1	Primary	751.50'	18.0" Round RCP_Round 18" L= 50.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 751.50' / 751.33' S= 0.0034 '/' Cc= 0.900 n= 0.013 Concrete pipe, straight & clean, Flow Area= 1.77 sf

Primary OutFlow Max=14.21 cfs @ 3.08 hrs HW=755.25' TW=0.00' (Dynamic Tailwater)

↑1=RCP_Round 18" (Barrel Controls 14.21 cfs @ 8.04 fps)

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 12.00 hrs 100yr-12hr Rainfall=5.37"

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Time span=0.01-48.00 hrs, dt=0.05 hrs, 961 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: PR1	Runoff Area=6.240 ac 86.20% Impervious Runoff Depth=4.79" Tc=10.0 min CN=95 Runoff=48.33 cfs 2.489 af
Subcatchment 2S: PR-EAST	Runoff Area=0.230 ac 0.00% Impervious Runoff Depth=2.66" Tc=5.0 min CN=74 Runoff=1.33 cfs 0.051 af
Subcatchment 3S: PR3	Runoff Area=0.370 ac 0.00% Impervious Runoff Depth=2.66" Tc=5.0 min CN=74 Runoff=2.14 cfs 0.082 af
Subcatchment 4S: PR4	Runoff Area=5.020 ac 86.05% Impervious Runoff Depth=4.67" Tc=5.0 min CN=94 Runoff=44.92 cfs 1.955 af
Reach 2R: US 31 DITCH	Inflow=19.03 cfs 4.438 af Outflow=19.03 cfs 4.438 af
Pond 1P: DET BASIN 1	Peak Elev=756.28' Storage=66,944 cf Inflow=48.33 cfs 2.489 af 15.0" Round Culvert n=0.012 L=444.0' S=0.0036 '/' Outflow=4.59 cfs 2.432 af
Pond 2P: DET BASIN 2	Peak Elev=755.18' Storage=31,126 cf Inflow=44.92 cfs 1.955 af 18.0" Round Culvert n=0.013 L=50.0' S=0.0034 '/' Outflow=14.00 cfs 1.955 af
Total Runoff Area = 11.860 ac Runoff Volume = 4.577 af Average Runoff Depth = 4.63" 18.23% Pervious = 2.161 ac 81.77% Impervious = 9.699 ac	

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 12.00 hrs 100yr-12hr Rainfall=5.37"

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Summary for Subcatchment 1S: PR1

Runoff = 48.33 cfs @ 6.01 hrs, Volume= 2.489 af, Depth= 4.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 12.00 hrs 100yr-12hr Rainfall=5.37"

Area (ac)	CN	Description
5.740	95	Urban commercial, 85% imp, HSG D
0.500	98	Water Surface, HSG C
6.240	95	Weighted Average
0.861		13.80% Pervious Area
5.379		86.20% Impervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 12.00 hrs 100yr-12hr Rainfall=5.37"

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Summary for Subcatchment 2S: PR-EAST

Runoff = 1.33 cfs @ 5.96 hrs, Volume= 0.051 af, Depth= 2.66"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 12.00 hrs 100yr-12hr Rainfall=5.37"

Area (ac)	CN	Description
0.230	74	>75% Grass cover, Good, HSG C
0.230		100.00% Pervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 12.00 hrs 100yr-12hr Rainfall=5.37"

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Summary for Subcatchment 3S: PR3

Runoff = 2.14 cfs @ 5.96 hrs, Volume= 0.082 af, Depth= 2.66"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 12.00 hrs 100yr-12hr Rainfall=5.37"

Area (ac)	CN	Description
0.370	74	>75% Grass cover, Good, HSG C
0.370		100.00% Pervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 12.00 hrs 100yr-12hr Rainfall=5.37"

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Summary for Subcatchment 4S: PR4

Runoff = 44.92 cfs @ 5.95 hrs, Volume= 1.955 af, Depth= 4.67"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr trimmed to 12.00 hrs 100yr-12hr Rainfall=5.37"

Area (ac)	CN	Description
0.350	98	Water Surface, HSG C
4.670	94	Urban commercial, 85% imp, HSG C
5.020	94	Weighted Average
0.700		13.95% Pervious Area
4.320		86.05% Impervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 12.00 hrs 100yr-12hr Rainfall=5.37"

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Summary for Reach 2R: US 31 DITCH

Inflow Area = 11.490 ac, 84.41% Impervious, Inflow Depth > 4.63" for 100yr-12hr event
Inflow = 19.03 cfs @ 6.06 hrs, Volume= 4.438 af
Outflow = 19.03 cfs @ 6.06 hrs, Volume= 4.438 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs / 2

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Proposed Conditions

Type II 24-hr trimmed to 12.00 hrs 100yr-12hr Rainfall=5.37"

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Summary for Pond 1P: DET BASIN 1

Inflow Area = 6.240 ac, 86.20% Impervious, Inflow Depth = 4.79" for 100yr-12hr event
Inflow = 48.33 cfs @ 6.01 hrs, Volume= 2.489 af
Outflow = 4.59 cfs @ 8.06 hrs, Volume= 2.432 af, Atten= 91%, Lag= 123.2 min
Primary = 4.59 cfs @ 8.06 hrs, Volume= 2.432 af

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs / 2
Peak Elev= 756.28' @ 6.53 hrs Surf.Area= 38,226 sf Storage= 66,944 cf

Plug-Flow detention time= 254.5 min calculated for 2.432 af (98% of inflow)
Center-of-Mass det. time= 247.1 min (632.0 - 384.9)

Volume	Invert	Avail.Storage	Storage Description
#1	754.40'	154,550 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
754.40	32,900	0	0
755.00	34,500	20,220	20,220
756.00	37,400	35,950	56,170
757.00	40,300	38,850	95,020
758.00	43,400	41,850	136,870
758.40	45,000	17,680	154,550

Device	Routing	Invert	Outlet Devices
#1	Primary	754.40'	15.0" Round RCP_Round 15" L= 444.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 754.40' / 752.80' S= 0.0036 '/ Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=4.59 cfs @ 8.06 hrs HW=755.99' TW=0.00' (Dynamic Tailwater)
↑1=RCP_Round 15" (Barrel Controls 4.59 cfs @ 3.80 fps)

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Proposed Conditions

Type II 24-hr trimmed to 12.00 hrs 100yr-12hr Rainfall=5.37"

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Summary for Pond 2P: DET BASIN 2

Inflow Area = 5.020 ac, 86.05% Impervious, Inflow Depth = 4.67" for 100yr-12hr event
 Inflow = 44.92 cfs @ 5.95 hrs, Volume= 1.955 af
 Outflow = 14.00 cfs @ 6.08 hrs, Volume= 1.955 af, Atten= 69%, Lag= 7.7 min
 Primary = 14.00 cfs @ 6.08 hrs, Volume= 1.955 af

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs / 2
 Peak Elev= 755.18' @ 6.08 hrs Surf.Area= 11,912 sf Storage= 31,126 cf

Plug-Flow detention time= 31.0 min calculated for 1.953 af (100% of inflow)
 Center-of-Mass det. time= 31.1 min (414.0 - 382.9)

Volume	Invert	Avail.Storage	Storage Description
#1	751.50'	41,420 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
751.50	0	0	0
752.00	6,200	1,550	1,550
753.00	8,520	7,360	8,910
754.00	10,000	9,260	18,170
755.00	11,600	10,800	28,970
756.00	13,300	12,450	41,420

Device	Routing	Invert	Outlet Devices
#1	Primary	751.50'	18.0" Round RCP_Round 18" L= 50.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 751.50' / 751.33' S= 0.0034 ' / Cc= 0.900 n= 0.013 Concrete pipe, straight & clean, Flow Area= 1.77 sf

Primary OutFlow Max=13.93 cfs @ 6.08 hrs HW=755.16' TW=0.00' (Dynamic Tailwater)

↑1=RCP_Round 18" (Barrel Controls 13.93 cfs @ 7.88 fps)

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Type II 24-hr 100yr-24hr Rainfall=5.91"

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Time span=0.01-48.00 hrs, dt=0.05 hrs, 961 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: PR1	Runoff Area=6.240 ac 86.20% Impervious Runoff Depth=5.32" Tc=10.0 min CN=95 Runoff=44.95 cfs 2.768 af
Subcatchment 2S: PR-EAST	Runoff Area=0.230 ac 0.00% Impervious Runoff Depth=3.11" Tc=5.0 min CN=74 Runoff=1.29 cfs 0.060 af
Subcatchment 3S: PR3	Runoff Area=0.370 ac 0.00% Impervious Runoff Depth=3.11" Tc=5.0 min CN=74 Runoff=2.08 cfs 0.096 af
Subcatchment 4S: PR4	Runoff Area=5.020 ac 86.05% Impervious Runoff Depth=5.21" Tc=5.0 min CN=94 Runoff=41.79 cfs 2.178 af
Reach 2R: US 31 DITCH	Inflow=18.49 cfs 4.933 af Outflow=18.49 cfs 4.933 af
Pond 1P: DET BASIN 1	Peak Elev=756.27' Storage=66,244 cf Inflow=44.95 cfs 2.768 af 15.0" Round Culvert n=0.012 L=444.0' S=0.0036 '/' Outflow=4.59 cfs 2.695 af
Pond 2P: DET BASIN 2	Peak Elev=755.00' Storage=28,991 cf Inflow=41.79 cfs 2.178 af 18.0" Round Culvert n=0.013 L=50.0' S=0.0034 '/' Outflow=13.45 cfs 2.178 af
Total Runoff Area = 11.860 ac Runoff Volume = 5.101 af Average Runoff Depth = 5.16" 18.23% Pervious = 2.161 ac 81.77% Impervious = 9.699 ac	

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Type II 24-hr 100yr-24hr Rainfall=5.91"

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Summary for Subcatchment 1S: PR1

Runoff = 44.95 cfs @ 12.01 hrs, Volume= 2.768 af, Depth= 5.32"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr 100yr-24hr Rainfall=5.91"

Area (ac)	CN	Description
5.740	95	Urban commercial, 85% imp, HSG D
0.500	98	Water Surface, HSG C
6.240	95	Weighted Average
0.861		13.80% Pervious Area
5.379		86.20% Impervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Type II 24-hr 100yr-24hr Rainfall=5.91"

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Summary for Subcatchment 2S: PR-EAST

Runoff = 1.29 cfs @ 11.96 hrs, Volume= 0.060 af, Depth= 3.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr 100yr-24hr Rainfall=5.91"

Area (ac)	CN	Description
0.230	74	>75% Grass cover, Good, HSG C
0.230		100.00% Pervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Type II 24-hr 100yr-24hr Rainfall=5.91"

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Summary for Subcatchment 3S: PR3

Runoff = 2.08 cfs @ 11.96 hrs, Volume= 0.096 af, Depth= 3.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr 100yr-24hr Rainfall=5.91"

Area (ac)	CN	Description
0.370	74	>75% Grass cover, Good, HSG C
0.370		100.00% Pervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Type II 24-hr 100yr-24hr Rainfall=5.91"

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Summary for Subcatchment 4S: PR4

Runoff = 41.79 cfs @ 11.95 hrs, Volume= 2.178 af, Depth= 5.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs
Type II 24-hr 100yr-24hr Rainfall=5.91"

Area (ac)	CN	Description
0.350	98	Water Surface, HSG C
4.670	94	Urban commercial, 85% imp, HSG C
5.020	94	Weighted Average
0.700		13.95% Pervious Area
4.320		86.05% Impervious Area

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

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Type II 24-hr 100yr-24hr Rainfall=5.91"

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Summary for Reach 2R: US 31 DITCH

Inflow Area = 11.490 ac, 84.41% Impervious, Inflow Depth > 5.15" for 100yr-24hr event
Inflow = 18.49 cfs @ 12.06 hrs, Volume= 4.933 af
Outflow = 18.49 cfs @ 12.06 hrs, Volume= 4.933 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs / 2

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Type II 24-hr 100yr-24hr Rainfall=5.91"

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Summary for Pond 1P: DET BASIN 1

Inflow Area = 6.240 ac, 86.20% Impervious, Inflow Depth = 5.32" for 100yr-24hr event
Inflow = 44.95 cfs @ 12.01 hrs, Volume= 2.768 af
Outflow = 4.59 cfs @ 13.91 hrs, Volume= 2.695 af, Atten= 90%, Lag= 114.0 min
Primary = 4.59 cfs @ 13.91 hrs, Volume= 2.695 af

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs / 2
Peak Elev= 756.27' @ 12.50 hrs Surf.Area= 38,173 sf Storage= 66,244 cf

Plug-Flow detention time= 263.7 min calculated for 2.695 af (97% of inflow)
Center-of-Mass det. time= 246.9 min (1,010.9 - 764.0)

Volume	Invert	Avail.Storage	Storage Description
#1	754.40'	154,550 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
754.40	32,900	0	0
755.00	34,500	20,220	20,220
756.00	37,400	35,950	56,170
757.00	40,300	38,850	95,020
758.00	43,400	41,850	136,870
758.40	45,000	17,680	154,550

Device	Routing	Invert	Outlet Devices
#1	Primary	754.40'	15.0" Round RCP_Round 15" L= 444.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 754.40' / 752.80' S= 0.0036 '/ Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=4.59 cfs @ 13.91 hrs HW=755.99' TW=0.00' (Dynamic Tailwater)

↑1=RCP_Round 15" (Barrel Controls 4.59 cfs @ 3.80 fps)

BDH REALTY COMMERCIAL DEV-PR CONDITIONS

Type II 24-hr 100yr-24hr Rainfall=5.91"

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Summary for Pond 2P: DET BASIN 2

Inflow Area = 5.020 ac, 86.05% Impervious, Inflow Depth = 5.21" for 100yr-24hr event
Inflow = 41.79 cfs @ 11.95 hrs, Volume= 2.178 af
Outflow = 13.45 cfs @ 12.08 hrs, Volume= 2.178 af, Atten= 68%, Lag= 7.6 min
Primary = 13.45 cfs @ 12.08 hrs, Volume= 2.178 af

Routing by Dyn-Stor-Ind method, Time Span= 0.01-48.01 hrs, dt= 0.05 hrs / 2

Peak Elev= 755.00' @ 12.08 hrs Surf.Area= 11,603 sf Storage= 28,991 cf

Plug-Flow detention time= 30.7 min calculated for 2.176 af (100% of inflow)

Center-of-Mass det. time= 30.8 min (795.2 - 764.4)

Volume	Invert	Avail.Storage	Storage Description
#1	751.50'	41,420 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
751.50	0	0	0
752.00	6,200	1,550	1,550
753.00	8,520	7,360	8,910
754.00	10,000	9,260	18,170
755.00	11,600	10,800	28,970
756.00	13,300	12,450	41,420

Device	Routing	Invert	Outlet Devices
#1	Primary	751.50'	18.0" Round RCP_Round 18" L= 50.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 751.50' / 751.33' S= 0.0034 '/' Cc= 0.900 n= 0.013 Concrete pipe, straight & clean, Flow Area= 1.77 sf

Primary OutFlow Max=13.38 cfs @ 12.08 hrs HW=754.98' TW=0.00' (Dynamic Tailwater)

↑1=RCP_Round 18" (Barrel Controls 13.38 cfs @ 7.57 fps)

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Multi-Event Tables

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Events for Subcatchment 1S: PR1

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
002yr-01hr	1.39	18.39	0.474	0.91
002yr-02hr	1.62	19.19	0.585	1.12
002yr-03hr	1.72	18.76	0.633	1.22
002yr-06hr	2.50	24.88	1.021	1.96
002yr-12hr	2.45	20.43	0.996	1.91
002yr-24hr	2.92	21.02	1.233	2.37
010yr-01hr	2.02	29.64	0.781	1.50
010yr-02hr	2.38	30.73	0.961	1.85
010yr-03hr	2.53	29.87	1.036	1.99
010yr-06hr	3.04	31.09	1.294	2.49
010yr-12hr	3.53	30.84	1.544	2.97
010yr-24hr	4.09	30.45	1.830	3.52
025yr-01hr	2.40	36.45	0.971	1.87
025yr-02hr	2.85	37.84	1.198	2.30
025yr-03hr	3.05	36.96	1.299	2.50
025yr-06hr	3.67	38.28	1.615	3.11
025yr-12hr	4.21	37.33	1.892	3.64
025yr-24hr	4.79	36.04	2.190	4.21
050yr-01hr	2.70	41.81	1.122	2.16
050yr-02hr	3.23	43.56	1.391	2.67
050yr-03hr	3.48	42.80	1.518	2.92
050yr-06hr	4.20	44.30	1.887	3.63
050yr-12hr	4.78	42.75	2.185	4.20
050yr-24hr	5.34	40.42	2.473	4.76
100yr-01hr	3.01	47.35	1.279	2.46
100yr-02hr	3.65	49.86	1.605	3.09
100yr-03hr	3.94	49.01	1.753	3.37
100yr-06hr	4.77	50.75	2.180	4.19
100yr-12hr	5.37	48.33	2.489	4.79
100yr-24hr	5.91	44.95	2.768	5.32

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Multi-Event Tables

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Events for Subcatchment 2S: PR-EAST

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
002yr-01hr	1.39	0.10	0.002	0.11
002yr-02hr	1.62	0.14	0.004	0.19
002yr-03hr	1.72	0.15	0.004	0.23
002yr-06hr	2.50	0.36	0.012	0.61
002yr-12hr	2.45	0.28	0.011	0.58
002yr-24hr	2.92	0.35	0.016	0.86
010yr-01hr	2.02	0.35	0.007	0.36
010yr-02hr	2.38	0.44	0.010	0.54
010yr-03hr	2.53	0.46	0.012	0.63
010yr-06hr	3.04	0.57	0.018	0.93
010yr-12hr	3.53	0.63	0.024	1.26
010yr-24hr	4.09	0.70	0.032	1.66
025yr-01hr	2.40	0.54	0.011	0.55
025yr-02hr	2.85	0.67	0.016	0.81
025yr-03hr	3.05	0.69	0.018	0.94
025yr-06hr	3.67	0.83	0.026	1.36
025yr-12hr	4.21	0.88	0.034	1.75
025yr-24hr	4.79	0.92	0.042	2.20
050yr-01hr	2.70	0.71	0.014	0.72
050yr-02hr	3.23	0.87	0.020	1.06
050yr-03hr	3.48	0.90	0.024	1.23
050yr-06hr	4.20	1.06	0.033	1.74
050yr-12hr	4.78	1.10	0.042	2.19
050yr-24hr	5.34	1.10	0.051	2.64
100yr-01hr	3.01	0.90	0.018	0.91
100yr-02hr	3.65	1.10	0.026	1.34
100yr-03hr	3.94	1.13	0.030	1.55
100yr-06hr	4.77	1.32	0.042	2.18
100yr-12hr	5.37	1.33	0.051	2.66
100yr-24hr	5.91	1.29	0.060	3.11

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Events for Subcatchment 3S: PR3

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
002yr-01hr	1.39	0.17	0.003	0.11
002yr-02hr	1.62	0.23	0.006	0.19
002yr-03hr	1.72	0.24	0.007	0.23
002yr-06hr	2.50	0.58	0.019	0.61
002yr-12hr	2.45	0.45	0.018	0.58
002yr-24hr	2.92	0.57	0.026	0.86
010yr-01hr	2.02	0.56	0.011	0.36
010yr-02hr	2.38	0.71	0.017	0.54
010yr-03hr	2.53	0.73	0.019	0.63
010yr-06hr	3.04	0.91	0.029	0.93
010yr-12hr	3.53	1.02	0.039	1.26
010yr-24hr	4.09	1.12	0.051	1.66
025yr-01hr	2.40	0.87	0.017	0.55
025yr-02hr	2.85	1.08	0.025	0.81
025yr-03hr	3.05	1.11	0.029	0.94
025yr-06hr	3.67	1.33	0.042	1.36
025yr-12hr	4.21	1.42	0.054	1.75
025yr-24hr	4.79	1.48	0.068	2.20
050yr-01hr	2.70	1.15	0.022	0.72
050yr-02hr	3.23	1.39	0.033	1.06
050yr-03hr	3.48	1.45	0.038	1.23
050yr-06hr	4.20	1.70	0.054	1.74
050yr-12hr	4.78	1.77	0.068	2.19
050yr-24hr	5.34	1.77	0.081	2.64
100yr-01hr	3.01	1.44	0.028	0.91
100yr-02hr	3.65	1.77	0.041	1.34
100yr-03hr	3.94	1.83	0.048	1.55
100yr-06hr	4.77	2.12	0.067	2.18
100yr-12hr	5.37	2.14	0.082	2.66
100yr-24hr	5.91	2.08	0.096	3.11

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Events for Subcatchment 4S: PR4

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
002yr-01hr	1.39	16.83	0.351	0.84
002yr-02hr	1.62	17.47	0.437	1.05
002yr-03hr	1.72	17.05	0.476	1.14
002yr-06hr	2.50	22.80	0.782	1.87
002yr-12hr	2.45	18.66	0.762	1.82
002yr-24hr	2.92	19.27	0.951	2.27
010yr-01hr	2.02	27.47	0.592	1.42
010yr-02hr	2.38	28.33	0.734	1.75
010yr-03hr	2.53	27.50	0.794	1.90
010yr-06hr	3.04	28.65	0.999	2.39
010yr-12hr	3.53	28.46	1.198	2.86
010yr-24hr	4.09	28.15	1.428	3.41
025yr-01hr	2.40	33.90	0.742	1.77
025yr-02hr	2.85	35.02	0.923	2.21
025yr-03hr	3.05	34.17	1.003	2.40
025yr-06hr	3.67	35.42	1.256	3.00
025yr-12hr	4.21	34.57	1.477	3.53
025yr-24hr	4.79	33.42	1.716	4.10
050yr-01hr	2.70	38.97	0.862	2.06
050yr-02hr	3.23	40.40	1.076	2.57
050yr-03hr	3.48	39.66	1.178	2.82
050yr-06hr	4.20	41.08	1.473	3.52
050yr-12hr	4.78	39.67	1.711	4.09
050yr-24hr	5.34	37.54	1.943	4.64
100yr-01hr	3.01	44.19	0.987	2.36
100yr-02hr	3.65	46.33	1.247	2.98
100yr-03hr	3.94	45.51	1.366	3.27
100yr-06hr	4.77	47.15	1.707	4.08
100yr-12hr	5.37	44.92	1.955	4.67
100yr-24hr	5.91	41.79	2.178	5.21

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Events for Reach 2R: US 31 DITCH

Event	Inflow (cfs)	Outflow (cfs)	Elevation (feet)	Storage (cubic-feet)
002yr-01hr	5.91	5.91	0.00	0
002yr-02hr	6.72	6.72	0.00	0
002yr-03hr	6.86	6.86	0.00	0
002yr-06hr	9.64	9.64	0.00	0
002yr-12hr	8.60	8.60	0.00	0
002yr-24hr	9.32	9.32	0.00	0
010yr-01hr	9.67	9.67	0.00	0
010yr-02hr	10.98	10.98	0.00	0
010yr-03hr	11.15	11.15	0.00	0
010yr-06hr	12.49	12.49	0.00	0
010yr-12hr	13.11	13.11	0.00	0
010yr-24hr	13.54	13.54	0.00	0
025yr-01hr	12.21	12.21	0.00	0
025yr-02hr	13.73	13.73	0.00	0
025yr-03hr	13.99	13.99	0.00	0
025yr-06hr	15.37	15.37	0.00	0
025yr-12hr	15.72	15.72	0.00	0
025yr-24hr	15.78	15.78	0.00	0
050yr-01hr	14.06	14.06	0.00	0
050yr-02hr	15.69	15.69	0.00	0
050yr-03hr	16.08	16.08	0.00	0
050yr-06hr	17.38	17.38	0.00	0
050yr-12hr	17.50	17.50	0.00	0
050yr-24hr	17.26	17.26	0.00	0
100yr-01hr	15.80	15.80	0.00	0
100yr-02hr	17.65	17.65	0.00	0
100yr-03hr	17.98	17.98	0.00	0
100yr-06hr	19.19	19.19	0.00	0
100yr-12hr	19.03	19.03	0.00	0
100yr-24hr	18.49	18.49	0.00	0

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Events for Pond 1P: DET BASIN 1

Event	Inflow (cfs)	Primary (cfs)	Elevation (feet)	Storage (cubic-feet)
002yr-01hr	18.39	0.99	754.95	18,634
002yr-02hr	19.19	1.23	755.02	20,973
002yr-03hr	18.76	1.26	755.03	21,278
002yr-06hr	24.88	2.28	755.29	30,216
002yr-12hr	20.43	1.91	755.20	27,107
002yr-24hr	21.02	2.32	755.29	30,517
010yr-01hr	29.64	2.19	755.26	29,462
010yr-02hr	30.73	2.59	755.36	32,765
010yr-03hr	29.87	2.67	755.38	33,382
010yr-06hr	31.09	3.19	755.50	37,829
010yr-12hr	30.84	3.56	755.59	41,098
010yr-24hr	30.45	3.87	755.67	44,059
025yr-01hr	36.45	2.98	755.45	35,994
025yr-02hr	37.84	3.47	755.57	40,280
025yr-03hr	36.96	3.59	755.60	41,362
025yr-06hr	38.28	4.13	755.75	46,920
025yr-12hr	37.33	4.37	755.84	50,098
025yr-24hr	36.04	4.49	755.89	52,207
050yr-01hr	41.81	3.57	755.59	41,219
050yr-02hr	43.56	4.10	755.74	46,526
050yr-03hr	42.80	4.23	755.78	48,165
050yr-06hr	44.30	4.58	755.97	54,966
050yr-12hr	42.75	4.59	756.05	58,152
050yr-24hr	40.42	4.59	756.08	59,082
100yr-01hr	47.35	4.12	755.75	46,736
100yr-02hr	49.86	4.56	755.94	53,771
100yr-03hr	49.01	4.59	755.99	55,885
100yr-06hr	50.75	4.59	756.22	64,582
100yr-12hr	48.33	4.59	756.28	66,944
100yr-24hr	44.95	4.59	756.27	66,244

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Events for Pond 2P: DET BASIN 2

Event	Inflow (cfs)	Primary (cfs)	Elevation (feet)	Storage (cubic-feet)
002yr-01hr	16.83	5.45	752.96	8,567
002yr-02hr	17.47	6.09	753.08	9,601
002yr-03hr	17.05	6.17	753.10	9,742
002yr-06hr	22.80	7.97	753.60	14,249
002yr-12hr	18.66	7.19	753.32	11,744
002yr-24hr	19.27	7.43	753.40	12,422
010yr-01hr	27.47	8.21	753.64	14,660
010yr-02hr	28.33	9.16	753.84	16,564
010yr-03hr	27.50	9.22	753.85	16,681
010yr-06hr	28.65	9.95	754.02	18,346
010yr-12hr	28.46	10.10	754.05	18,705
010yr-24hr	28.15	10.12	754.06	18,765
025yr-01hr	33.90	10.05	754.04	18,584
025yr-02hr	35.02	11.01	754.29	21,091
025yr-03hr	34.17	11.10	754.31	21,334
025yr-06hr	35.42	11.77	754.49	23,290
025yr-12hr	34.57	11.74	754.48	23,203
025yr-24hr	33.42	11.55	754.43	22,643
050yr-01hr	38.97	11.27	754.35	21,808
050yr-02hr	40.40	12.28	754.64	24,896
050yr-03hr	39.66	12.42	754.68	25,361
050yr-06hr	41.08	13.05	754.87	27,525
050yr-12hr	39.67	12.91	754.83	27,025
050yr-24hr	37.54	12.52	754.71	25,706
100yr-01hr	44.19	12.38	754.67	25,215
100yr-02hr	46.33	13.46	755.00	29,026
100yr-03hr	45.51	13.65	755.06	29,723
100yr-06hr	47.15	14.28	755.28	32,269
100yr-12hr	44.92	14.00	755.18	31,126
100yr-24hr	41.79	13.45	755.00	28,991

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APPENDIX F – SUPPORT DOCUMENTATION



NOAA Atlas 14, Volume 2, Version 3
 Location name: Franklin, Indiana, USA*
 Latitude: 39.4845°, Longitude: -86.058°
 Elevation: 739.2 ft**
 * source: ESRI Maps
 ** source: USGS



POINT PRECIPITATION FREQUENCY ESTIMATES

G.M. Bonnin, D. Martin, B. Lin, T. Parzybok, M. Yekta, and D. Riley

NOAA, National Weather Service, Silver Spring, Maryland

[PF_tabular](#) | [PF_graphical](#) | [Maps_&_aerials](#)

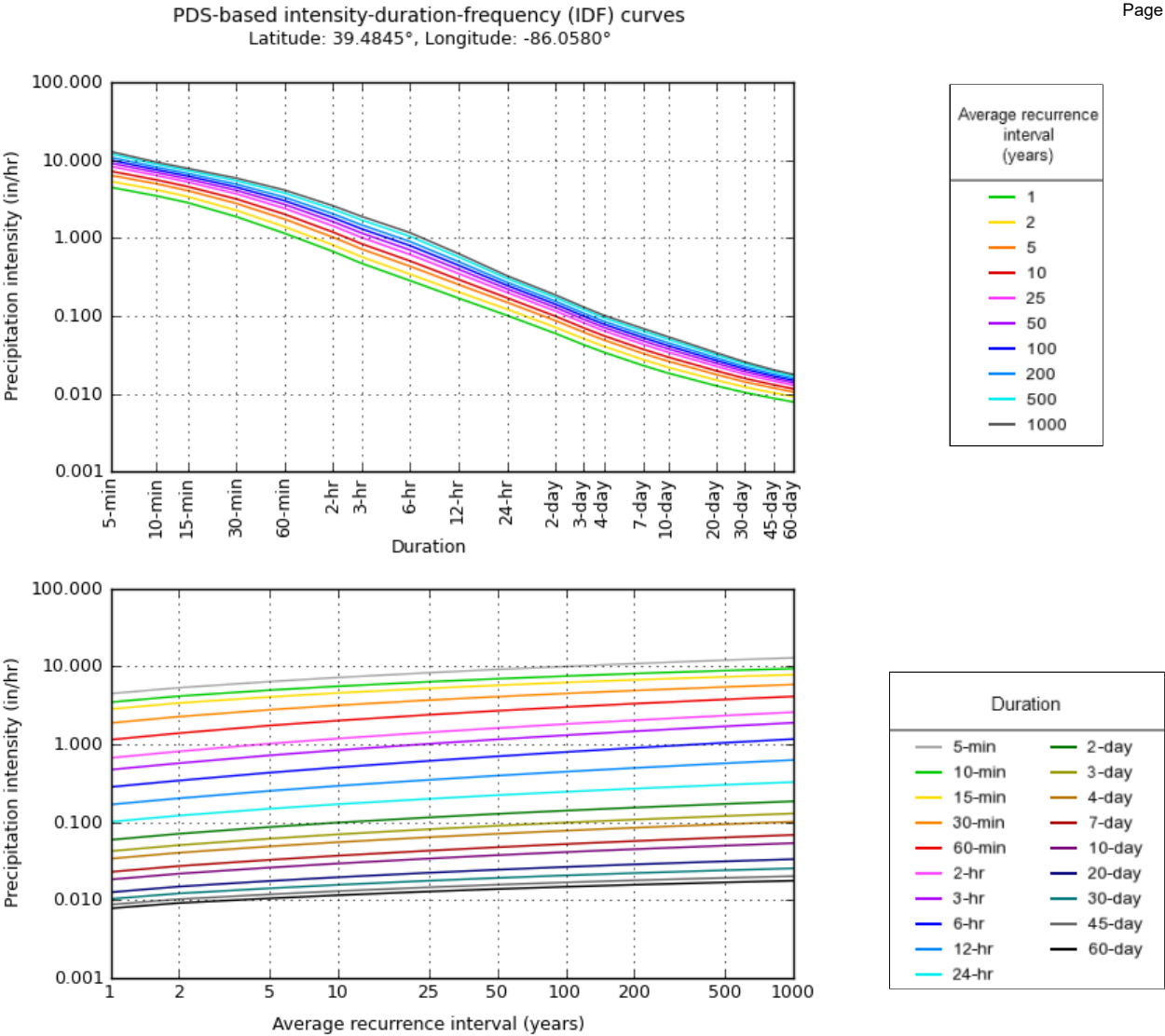
PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches/hour) ¹										
Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	4.48 (3.98-5.06)	5.33 (4.74-6.01)	6.38 (5.66-7.20)	7.21 (6.38-8.14)	8.30 (7.30-9.37)	9.16 (7.99-10.4)	9.98 (8.63-11.3)	10.9 (9.30-12.4)	12.0 (10.1-13.8)	12.9 (10.7-14.9)
10-min	3.47 (3.10-3.93)	4.16 (3.70-4.69)	4.96 (4.40-5.60)	5.57 (4.93-6.28)	6.35 (5.58-7.16)	6.94 (6.05-7.85)	7.52 (6.50-8.52)	8.11 (6.94-9.23)	8.84 (7.44-10.1)	9.39 (7.79-10.8)
15-min	2.84 (2.53-3.21)	3.39 (3.02-3.83)	4.06 (3.61-4.58)	4.57 (4.04-5.15)	5.23 (4.60-5.90)	5.73 (5.00-6.47)	6.23 (5.38-7.06)	6.72 (5.76-7.65)	7.36 (6.19-8.43)	7.82 (6.49-9.03)
30-min	1.88 (1.68-2.12)	2.27 (2.02-2.56)	2.78 (2.47-3.14)	3.17 (2.81-3.57)	3.69 (3.25-4.17)	4.09 (3.57-4.63)	4.50 (3.89-5.10)	4.91 (4.20-5.58)	5.45 (4.59-6.24)	5.86 (4.86-6.77)
60-min	1.15 (1.02-1.30)	1.39 (1.24-1.57)	1.74 (1.55-1.97)	2.02 (1.79-2.27)	2.40 (2.11-2.70)	2.70 (2.35-3.05)	3.01 (2.60-3.41)	3.33 (2.85-3.79)	3.77 (3.17-4.32)	4.12 (3.42-4.75)
2-hr	0.670 (0.598-0.760)	0.812 (0.722-0.921)	1.02 (0.907-1.16)	1.19 (1.05-1.34)	1.42 (1.25-1.61)	1.62 (1.41-1.83)	1.82 (1.57-2.06)	2.04 (1.73-2.31)	2.34 (1.95-2.67)	2.59 (2.12-2.97)
3-hr	0.473 (0.423-0.538)	0.573 (0.510-0.650)	0.722 (0.642-0.820)	0.843 (0.746-0.954)	1.01 (0.888-1.15)	1.16 (1.00-1.31)	1.31 (1.12-1.49)	1.47 (1.24-1.67)	1.70 (1.40-1.95)	1.89 (1.53-2.18)
6-hr	0.284 (0.252-0.325)	0.343 (0.305-0.393)	0.433 (0.384-0.494)	0.507 (0.447-0.577)	0.613 (0.534-0.696)	0.702 (0.606-0.796)	0.797 (0.679-0.905)	0.899 (0.753-1.02)	1.05 (0.857-1.20)	1.17 (0.937-1.35)
12-hr	0.169 (0.151-0.191)	0.203 (0.182-0.230)	0.253 (0.226-0.286)	0.293 (0.261-0.331)	0.350 (0.308-0.393)	0.397 (0.347-0.446)	0.446 (0.385-0.501)	0.498 (0.423-0.561)	0.571 (0.476-0.648)	0.630 (0.517-0.720)
24-hr	0.101 (0.094-0.111)	0.122 (0.112-0.133)	0.149 (0.137-0.163)	0.171 (0.157-0.186)	0.200 (0.183-0.218)	0.223 (0.203-0.243)	0.246 (0.223-0.269)	0.270 (0.243-0.295)	0.302 (0.270-0.331)	0.328 (0.291-0.365)
2-day	0.059 (0.055-0.064)	0.071 (0.066-0.077)	0.087 (0.080-0.094)	0.099 (0.091-0.107)	0.115 (0.106-0.125)	0.128 (0.117-0.139)	0.141 (0.128-0.153)	0.154 (0.139-0.168)	0.172 (0.154-0.188)	0.186 (0.165-0.203)
3-day	0.043 (0.040-0.046)	0.051 (0.047-0.055)	0.062 (0.057-0.066)	0.070 (0.065-0.075)	0.081 (0.075-0.087)	0.090 (0.083-0.097)	0.099 (0.091-0.107)	0.108 (0.099-0.116)	0.120 (0.109-0.130)	0.130 (0.117-0.140)
4-day	0.034 (0.032-0.036)	0.041 (0.038-0.043)	0.049 (0.046-0.052)	0.056 (0.052-0.059)	0.064 (0.060-0.069)	0.071 (0.066-0.076)	0.078 (0.072-0.083)	0.085 (0.079-0.091)	0.094 (0.087-0.101)	0.102 (0.093-0.109)
7-day	0.023 (0.022-0.025)	0.027 (0.026-0.029)	0.033 (0.031-0.035)	0.037 (0.035-0.040)	0.043 (0.040-0.046)	0.048 (0.044-0.051)	0.053 (0.049-0.056)	0.057 (0.053-0.061)	0.064 (0.058-0.068)	0.069 (0.063-0.074)
10-day	0.018 (0.017-0.020)	0.022 (0.021-0.023)	0.026 (0.025-0.028)	0.030 (0.028-0.032)	0.034 (0.032-0.036)	0.038 (0.035-0.040)	0.041 (0.038-0.044)	0.045 (0.042-0.048)	0.050 (0.046-0.053)	0.054 (0.049-0.058)
20-day	0.013 (0.012-0.013)	0.015 (0.014-0.016)	0.018 (0.017-0.019)	0.020 (0.019-0.021)	0.022 (0.021-0.024)	0.025 (0.023-0.026)	0.027 (0.025-0.028)	0.029 (0.027-0.031)	0.032 (0.029-0.033)	0.034 (0.031-0.036)
30-day	0.010 (0.010-0.011)	0.012 (0.012-0.013)	0.014 (0.013-0.015)	0.016 (0.015-0.017)	0.018 (0.017-0.019)	0.019 (0.018-0.020)	0.021 (0.019-0.022)	0.022 (0.021-0.024)	0.024 (0.022-0.026)	0.026 (0.024-0.027)
45-day	0.009 (0.008-0.009)	0.010 (0.010-0.011)	0.012 (0.011-0.013)	0.013 (0.012-0.014)	0.015 (0.014-0.015)	0.016 (0.015-0.017)	0.017 (0.016-0.018)	0.018 (0.017-0.019)	0.019 (0.018-0.020)	0.020 (0.019-0.022)
60-day	0.008 (0.007-0.008)	0.009 (0.009-0.010)	0.011 (0.010-0.011)	0.012 (0.011-0.012)	0.013 (0.012-0.014)	0.014 (0.013-0.015)	0.015 (0.014-0.016)	0.016 (0.015-0.017)	0.017 (0.016-0.018)	0.018 (0.017-0.019)

¹ Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS). Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values. Please refer to NOAA Atlas 14 document for more information.

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 Latitude: 39.4845°, Longitude: -86.058°
 Elevation: 739.2 ft**
 * source: ESRI Maps
 ** source: USGS



POINT PRECIPITATION FREQUENCY ESTIMATES

G.M. Bonnin, D. Martin, B. Lin, T. Parzybok, M. Yekta, and D. Riley

NOAA, National Weather Service, Silver Spring, Maryland

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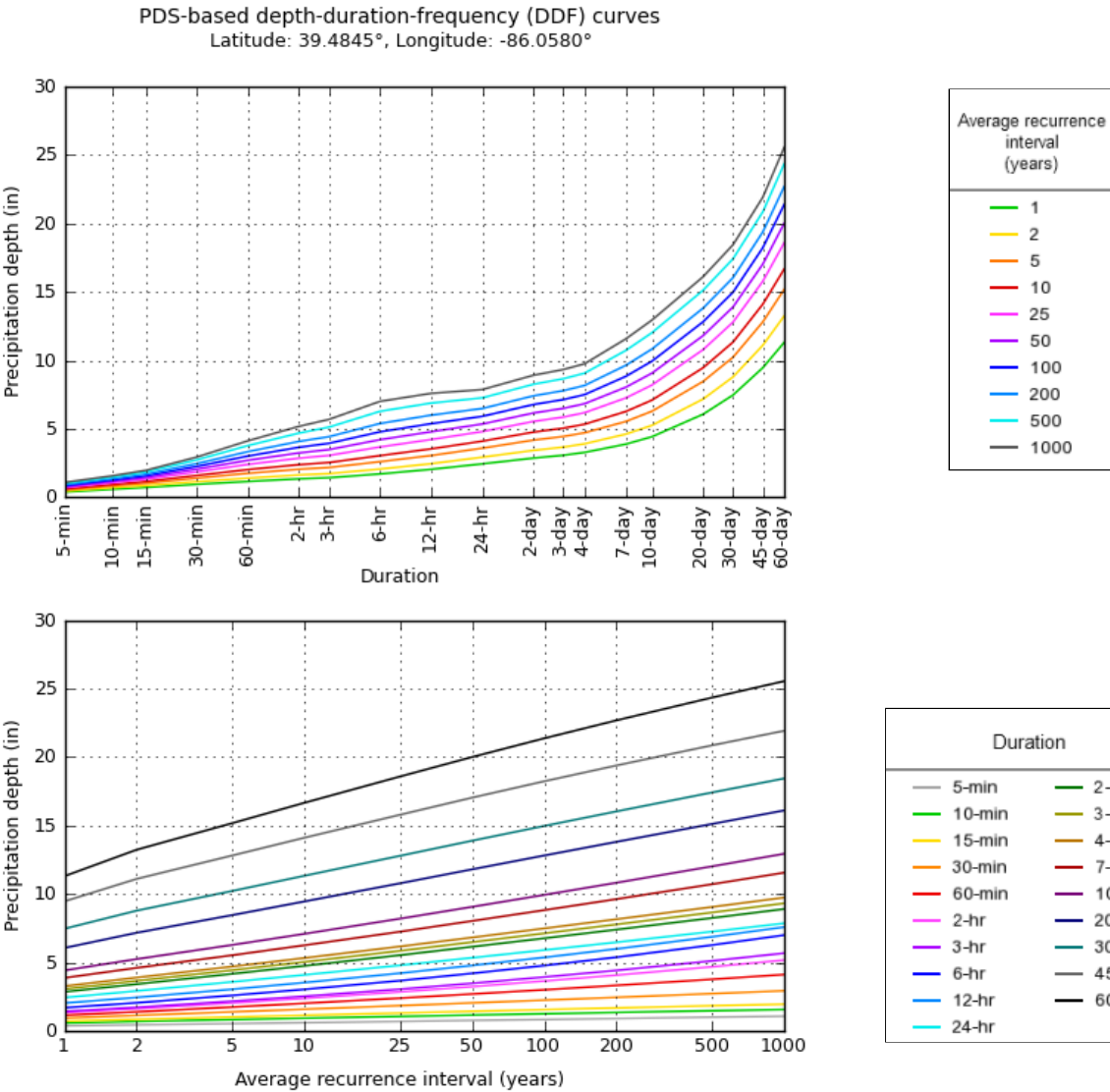
PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches) ¹										
Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.373 (0.332-0.422)	0.444 (0.395-0.501)	0.532 (0.472-0.600)	0.601 (0.532-0.678)	0.692 (0.608-0.781)	0.763 (0.666-0.863)	0.832 (0.719-0.943)	0.905 (0.775-1.03)	1.00 (0.844-1.15)	1.08 (0.892-1.24)
10-min	0.579 (0.517-0.655)	0.693 (0.617-0.782)	0.827 (0.734-0.933)	0.928 (0.822-1.05)	1.06 (0.930-1.19)	1.16 (1.01-1.31)	1.25 (1.08-1.42)	1.35 (1.16-1.54)	1.47 (1.24-1.69)	1.57 (1.30-1.81)
15-min	0.710 (0.633-0.803)	0.848 (0.755-0.957)	1.01 (0.902-1.15)	1.14 (1.01-1.29)	1.31 (1.15-1.48)	1.43 (1.25-1.62)	1.56 (1.35-1.76)	1.68 (1.44-1.91)	1.84 (1.55-2.11)	1.96 (1.62-2.26)
30-min	0.939 (0.838-1.06)	1.13 (1.01-1.28)	1.39 (1.24-1.57)	1.59 (1.40-1.79)	1.85 (1.62-2.08)	2.05 (1.79-2.31)	2.25 (1.94-2.55)	2.45 (2.10-2.79)	2.73 (2.29-3.12)	2.93 (2.43-3.39)
60-min	1.15 (1.02-1.30)	1.39 (1.24-1.57)	1.74 (1.55-1.97)	2.02 (1.79-2.27)	2.40 (2.11-2.70)	2.70 (2.35-3.05)	3.01 (2.60-3.41)	3.33 (2.85-3.79)	3.77 (3.17-4.32)	4.12 (3.42-4.75)
2-hr	1.34 (1.20-1.52)	1.62 (1.45-1.84)	2.04 (1.81-2.31)	2.38 (2.10-2.69)	2.85 (2.50-3.22)	3.23 (2.82-3.65)	3.65 (3.13-4.12)	4.08 (3.46-4.61)	4.68 (3.90-5.34)	5.17 (4.23-5.94)
3-hr	1.42 (1.27-1.62)	1.72 (1.53-1.95)	2.17 (1.93-2.46)	2.53 (2.24-2.86)	3.05 (2.67-3.44)	3.48 (3.01-3.93)	3.94 (3.37-4.46)	4.42 (3.73-5.02)	5.12 (4.22-5.86)	5.68 (4.59-6.55)
6-hr	1.70 (1.51-1.95)	2.05 (1.83-2.35)	2.59 (2.30-2.96)	3.04 (2.67-3.46)	3.67 (3.20-4.17)	4.20 (3.63-4.77)	4.77 (4.06-5.42)	5.38 (4.51-6.14)	6.27 (5.13-7.17)	7.00 (5.61-8.06)
12-hr	2.03 (1.82-2.30)	2.45 (2.19-2.77)	3.04 (2.72-3.44)	3.53 (3.14-3.99)	4.21 (3.72-4.74)	4.78 (4.18-5.37)	5.37 (4.64-6.04)	5.99 (5.10-6.76)	6.88 (5.73-7.81)	7.59 (6.22-8.68)
24-hr	2.43 (2.25-2.66)	2.92 (2.69-3.19)	3.58 (3.30-3.90)	4.09 (3.76-4.46)	4.79 (4.38-5.22)	5.34 (4.87-5.83)	5.91 (5.35-6.45)	6.48 (5.84-7.08)	7.26 (6.48-7.95)	7.86 (6.97-8.76)
2-day	2.86 (2.64-3.09)	3.42 (3.16-3.70)	4.17 (3.85-4.51)	4.75 (4.37-5.15)	5.53 (5.07-6.00)	6.15 (5.61-6.67)	6.77 (6.15-7.36)	7.40 (6.69-8.06)	8.25 (7.40-9.01)	8.91 (7.93-9.77)
3-day	3.06 (2.85-3.29)	3.66 (3.41-3.93)	4.43 (4.12-4.77)	5.04 (4.68-5.42)	5.85 (5.41-6.29)	6.49 (5.98-6.97)	7.13 (6.55-7.67)	7.78 (7.11-8.38)	8.65 (7.86-9.34)	9.32 (8.42-10.1)
4-day	3.27 (3.06-3.49)	3.90 (3.65-4.16)	4.70 (4.40-5.03)	5.33 (4.98-5.69)	6.17 (5.75-6.58)	6.83 (6.35-7.27)	7.49 (6.95-7.99)	8.16 (7.54-8.70)	9.06 (8.32-9.67)	9.74 (8.91-10.4)
7-day	3.87 (3.62-4.15)	4.61 (4.30-4.93)	5.53 (5.16-5.92)	6.26 (5.83-6.70)	7.25 (6.74-7.75)	8.03 (7.44-8.58)	8.82 (8.16-9.43)	9.63 (8.87-10.3)	10.7 (9.83-11.5)	11.6 (10.5-12.4)
10-day	4.42 (4.14-4.72)	5.25 (4.92-5.61)	6.28 (5.88-6.71)	7.09 (6.64-7.57)	8.20 (7.65-8.74)	9.07 (8.44-9.66)	9.94 (9.23-10.6)	10.8 (10.0-11.5)	12.0 (11.1-12.8)	12.9 (11.9-13.8)
20-day	6.06 (5.71-6.45)	7.17 (6.75-7.63)	8.46 (7.96-9.00)	9.46 (8.88-10.1)	10.8 (10.1-11.5)	11.8 (11.0-12.5)	12.8 (12.0-13.6)	13.8 (12.8-14.7)	15.1 (14.0-16.1)	16.1 (14.9-17.1)
30-day	7.47 (7.04-7.90)	8.79 (8.29-9.31)	10.2 (9.64-10.8)	11.3 (10.7-12.0)	12.8 (12.0-13.5)	13.9 (13.0-14.7)	15.0 (14.0-15.9)	16.0 (15.0-17.0)	17.4 (16.2-18.5)	18.4 (17.1-19.6)
45-day	9.47 (8.92-10.0)	11.1 (10.5-11.8)	12.8 (12.1-13.6)	14.1 (13.3-14.9)	15.8 (14.8-16.7)	17.0 (16.0-18.0)	18.2 (17.1-19.3)	19.4 (18.1-20.5)	20.9 (19.4-22.1)	21.9 (20.4-23.3)
60-day	11.3 (10.7-12.0)	13.2 (12.5-14.0)	15.2 (14.3-16.1)	16.7 (15.7-17.7)	18.6 (17.5-19.7)	20.0 (18.8-21.2)	21.4 (20.0-22.6)	22.7 (21.2-24.1)	24.4 (22.7-25.8)	25.6 (23.8-27.2)

¹ Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS). Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values. Please refer to NOAA Atlas 14 document for more information.

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storm-sewer system. The results from an electronic or manual method should be provided in an accepted tabular method as shown in Figure [203-4 I](#).

203-4.05(03) Hydraulic Grade Line Check

The final storm-sewer design should be checked to determine its adequacy by analysis using a 2% annual EP through the entire system of the hydraulic gradient. The gradient line should not exceed the elevation of an opening into the system. A tabular summary or plotted profile should be provided in the hydraulics-report submittal.

203-4.05(04) Plan and Profile

Road plans for a storm-drain project should be submitted so that the appropriate inlet and storm drain pipe locations can be identified. The plan view should be simplified to show the pipe type, slope, and size; structure identifier, road grade, and other information necessary to evaluate the storm-drain system. The plans structure numbers should match the computer and tabular results in the report submittal. All discrepancies should be addressed prior to report submittal.

203-4.05(05) Additional Information

Other information that the designer deems necessary toward validation of the design should be provided in the hydraulics report. Non-traditional methodology requires the approval of the Office of Hydraulics manager.

203-5.0 STORMWATER MANAGEMENT AND DETENTION

203-5.01 Introduction

The traditional design of a storm-drainage system has been to collect and convey storm runoff as rapidly as possible to a suitable location where it can be discharged. However, the impact of such a traditional storm-drainage design has not always been favorable. Rapidly conveying stormwater can cause environmental impacts to karst topography and wetlands downstream, overwhelm limited outlet capacities, and flood downstream properties, especially where the amount of impervious area is increased as part of a roadway project. To reduce these impacts, various forms of stormwater management have been developed, for an open-system or closed-system facility, as described below.

203-5.02 General Policy

203-5.02(01) Reasons for Storage

Controlling the quantity of stormwater release using a storage facility can provide the potential benefits as follows:

1. prevention or reduction of peak runoff rate increase;
2. mitigation of downstream drainage-capacity problems;
3. reduction or elimination of the need for downstream outfall improvements; and
4. protection of environmentally-sensitive areas, such as karst topography.

203-5.02(02) Downstream Conditions

Storage can be developed in a depressed area in a parking lot, road embankment, freeway interchange, or a small lake, pond, or depression. The utility of a storage facility depends on the amount of storage, its location within the system, and its operational characteristics. An analysis of such a storage facility should consist of comparing the design flow at a point or points downstream of the proposed storage site, with or without storage. Other flows in excess of the design flow that can be expected to pass through the storage facility may be required in the analysis, i.e., 1% annual EP flood. The design criteria for a storage facility should include the following:

1. release rate;
2. storage volume;
3. grading and depth requirements;
4. outlet works; and
5. location.

At a minimum, a storage facility should be designed to detain the 1% annual EP, post-development peak runoff rate, and release it at the 10% annual EP, pre-developed peak runoff rate. An emergency overflow capable of accommodating the 1% annual EP post-development discharge may be required.

203-5.02(03) Local Jurisdictional Requirements

A local jurisdiction can be more restrictive than INDOT drainage requirements. INDOT requirements need not be in accordance with local jurisdictional rules and regulations. However, the local design parameters should be followed as much as practical.

203-5.03 Design Considerations

A pump station may be required to outlet from an infiltration/detention facility. The use of a pump station to outlet a facility is not desirable. If a pump station is being considered, the Office of Hydraulics should be contacted for approval.

Dam safety should be considered for a berm or embankment created as part of a detention facility. An embankment should not be subject to IDNR regulation and inspection requirements. Per the Indiana Code, IDNR has jurisdiction over all structures, except where the embankment is lower than 20 ft, the contributing drainage area is less than 1 sq mi, or the storage volume behind the structure is less than 100 ac-ft. For more information, see *Indiana Code* 14-27-7.5: Regulation of Dams.

203-5.03(01) Detention Pond

A detention pond is designed to reduce the peak discharge and detain runoff only for a specific duration. A detention basin should have a positive outlet that empties all runoff between storms. The excavation of a detention pond can extend below the water table or outlet level where the bottom is sealed due to sedimentation. This is a detention pond or wet-bottom detention basin. The detention pond also has a positive outlet and releases all temporary storage.

A dry-bottom detention facility should be used. A detention basin will require additional right of way. The basin will require a certain amount of space, and it should be outside the clear-zone for safety purposes. The pond location and outlet should be considered, especially for flood routing. The overflow location should avoid impacting nearby property and the roadway.

203-5.03(02) Retention Pond

A retention pond retains runoff for an indefinite time and has no positive outlet. Runoff is removed only by means of infiltration through a permeable bottom or by means of evaporation. A retention pond or lake is an example of a retention facility. A retention pond is designed to drain into the groundwater table.

Soil characteristics are the primary concern in designing a retention pond. A geotechnical report should be obtained from the Office of Geotechnical Services, county surveyor's office, etc, to determine the infiltration capacity of the substratum.

A retention pond will require additional right of way. It should be located outside the clear-zone for safety purposes.

203-5.03(03) Roadside Ditch Detention

A roadside ditch detention system takes advantage of the additional capacity of the roadside and median ditches created by the clear-zone requirements. A roadside ditch detains runoff from the roadway and discharges it at a restricted rate to a positive outlet.

A roadside ditch is the least expensive open-detention system, since it does not require additional right of way or significant additional maintenance. Since the ditch is within the right of way, safety considerations and roadway serviceability should be evaluated.

203-5.03(04) Underground Storage

Underground detention is best suited to an urbanized area where right of way and available land are constrained. It is desirable for where an underground storage structure is to be located outside the pavement limits. Coordination with local utilities is required. Conflicts should be minimized. Clearances should be observed between stormwater and other systems such as drinking water and sanitary sewers. In considering underground detention, the native soil should be determined to ensure constructability. All inline detention should have a positive grade to minimize sedimentation. Access should be provided for cleaning of the underground facility. The grade should be set to avoid the need for a pump station if possible.

The types of underground detention include underground storage, inline detention, parallel storage systems, oversize storm-sewer system, and infiltration trench. Underground storage can be built as one single unit with one inlet and one outlet, under a large area such as a parking lot. It can also be built as a pipe network or conduit system with multiple inlets and only one outlet, under a large area such as a parking lot. Inline detention replaces part of a storm-sewer system with a larger structure near the outlet to detain water within the system. A parallel storage system runs parallel to the existing storm-sewer system to provide additional storage. An oversize storm-sewer system increases the pipe sizes as needed in parts of the storm sewer to add storage to the entire system. An infiltration trench functions like a roadway underdrain, but it can be used only in sandy soil, where the infiltration rate is high.

203-5.03(05) Outlet Conditions

An outlet work can take the form of combinations of a drop inlet, pipe, weir, or orifice. An outlet work selected for a storage facility includes a principal spillway or an emergency overflow. It should be able to accomplish the design functions of the facility.

A slotted-riser pipe should not be used due to clogging problems. A curb opening can be used for parking-lot storage. The principal spillway is intended to convey the design storm without allowing flow to enter an emergency outlet.

An emergency spillway is an outlet provided to allow excess water to exit the pond once the design storm is exceeded. Usually in the shape of a weir, the emergency outlet should be located so that the excess stormwater flows to an adequate outlet and does not damage nearby property. An emergency spillway should be included in a storage-facility design if possible. However, a viable emergency spillway location may not exist.

203-5.03(06) Maintenance

To ensure acceptable performance and function, a storage facility that requires extensive maintenance is discouraged. The maintenance problems that are typical of a detention facility are as follows:

1. weed growth;
2. grass and vegetation maintenance;
3. bank deterioration;
4. standing water or soggy surface;
5. mosquito control;
6. blockage of outlet structures;
7. litter accumulation; or
8. maintenance of fences and perimeter plantings.

The design should focus on the elimination or reduction of maintenance requirements by addressing the potential for problems as follows:

1. Both weed growth and grass maintenance can be addressed by constructing side slopes that can be maintained using available power-driven equipment, such as a tractor mower.
2. Bank deterioration can be controlled with protective lining or by limiting bank slopes.
3. Standing water or soggy surfaces can be eliminated by means of sloping the basin bottom toward the outlet, or by means of constructing a low-flow pilot channel across the basin bottom, from the inlet to the outlet.

4. Once the problems listed above are addressed, mosquito control will not be a major problem.
5. An outlet structure should be selected to minimize the possibility of blockage. A pipe of diameter of less than 6 in. tends to block easily and should be avoided.
6. The facility should be located for easy access where the maintenance associated with litter and damage to fences or perimeter plantings can be conducted regularly.

Routine maintenance activities include an annual inspection, preferably during wet weather, and mowing, as required.

203-5.03(07) Safety Issues

Ponding of water for a significant period of time, at a relatively shallow depth, can introduce an additional risk factor for property damage, personal injury, or loss of life. Safety considerations include reducing the chance of drowning by fencing the basin, reducing the maximum depth, or including ledges or mild slopes to prevent a person from falling in and to facilitate his or her escape from the basin. A storage facility in a location that is easily accessible to the public should be provided with fencing adequate to prevent entry onto the site by unauthorized persons. A storage facility located adjacent to a roadway should be provided with an adequate clear zone to minimize the accidental entry of an errant vehicle.

Protective treatment is required to prevent entry to a facility that poses a hazard to all persons. Fences and signs are required for a detention or retention pond with a locked gate to allow for maintenance access.

Where a storage facility is located near a roadway, the road should be provided with an adequate clear zone. The maximum operating-pool depth is limited to 5 ft unless otherwise approved by the Office of Hydraulics.

203-5.04 Design Procedure

A storage facility will require an inflow rate and an outflow rate to determine the necessary storage volume.

The amount of water flowing into the storage facility should be determined. This inflow rate is the post-developed 1% annual EP. However, an additional smaller inflow rate should be considered, if a stricter local ordinance is being followed. The outflow rate should then be determined. The outflow rate is the pre-developed 10% annual EP. However, additional smaller outflow rate should be considered, if a stricter local ordinance is being followed.

The required storage volume should be calculated, based on the inflow and outflow rates, and storm duration. If the watershed draining into a storage facility is greater than 2 ac, the design should be based on reservoir-routing methods which develop hydrographs for both inflow and outflow. WinTR-20 and HEC-HMS are available public-domain hydrographic programs. A basin regulating less than 2 ac can be analyzed using the Rational Method to create a triangular hydrograph.

203-5.04(01) Detention Pond

For a detention pond, a minimum freeboard of 1 ft above the 1% annual EP storm highwater elevation should be provided. Other considerations in setting the depth include flood-elevation requirements, public safety, land availability, land value, present and future land use, water-table fluctuations, soil characteristics, maintenance requirements, and required freeboard.

The primary outlet should be designed to drain the entire detention volume within 72 h. A restrictor plate should not be used. See the INDOT *Standard Drawings*.

An emergency overflow structure should also be added. The emergency overflow structure should be placed in a location that will accept the extra flow. This may or may not outlet to the design outfall. Usually, the emergency overflow structure takes the shape of a weir.

The area above the detention pond's normal high-water elevation should be sloped towards the pond. The bottom area of the pond should be graded toward the outlet to prevent standing water conditions. A low-flow or pilot channel constructed across the facility bottom from the inlet to the outlet should be used to convey low flow. See HEC-22, Chapter 8 for example problems and more information.

203-5.04(02) Retention Pond

The inflow rate is calculated using the Rational Method, regardless of the size of the drainage area. Since the pond is retaining all of the runoff from the 1% annual EP, the outflow rate is almost negligible, because infiltration and evaporation are the only available mechanisms for drainage. To determine the infiltration rate, soil borings should be obtained to ensure accurate calculations.

A retention pond also requires an emergency spillway. The emergency spillway should overflow to an acceptable outlet. The pond should be sized to allow for 1 ft of freeboard below the emergency spillway. If an acceptable emergency overflow outlet is not available, the pond should be sized for 1.5 times the total volume required, plus 1 ft of freeboard.

The construction of a storage facility can require excavation or placement of an earthen embankment to obtain sufficient storage volume. The embankment should be of less than 6.5 ft height. A vegetated embankment should not be steeper than 3H:1V. A riprap-protected embankment should not be steeper than 2H:1V. An excavated storage facility should not have an operating design-pool depth of greater than 5 ft unless approved by the Office of Hydraulics.

203-5.04(03) Roadside Ditch Detention

A detention pond detains water from the entire drainage area. A roadside ditch detains water only from additional pavement being added during construction. However, the methodology for determining that volume remains the same. To detain the water in a roadside ditch, a berm should be built upstream of the stream receiving the flow from the ditch. The outlet structure diameter should not be smaller than 6 in. to prevent clogging. The berm should be constructed with an overflow weir for a storm event that exceeds the design storm. For more information on emergency overflow design, see HEC-22, Chapter 8. The capacity of the outfall may not allow for a normal 1% annual EP inflow and 10% annual EP outflow situation. The release rate should be considered, since the roadside ditch can be outletting upstream of existing structures.

203-5.04(04) Oversized Storm Sewer and Inline Detention

An oversized storm sewer system upsizes the pipes near the outlet of the system to provide extra capacity. An oversized storm-sewer system uses larger round or deformed pipes to provide the extra capacity, while inline detention uses vaults or boxes to provide the extra capacity.

An oversized storm sewer or inline detention should be designed in accordance with Section [203-4.0](#) for inlet spacing, water-spread calculations, trunk-line placement, and outlet tailwater conditions. However, detention-routing calculations should be performed to ensure that a sufficient amount of water is being detained. Gravity flow should be maintained for the 10% annual EP. The 2% annual EP hydraulic-grade line should remain below the structure top casting elevation. If local detention requirements require the 1% annual EP to be detained, another hydraulic-grade-line check should be made, to ensure that the hydraulic-grade line remains below the structure top casting elevation at the 1% annual EP. Since the velocity through the oversized section is likely to be lower than the suggested minimum velocity, sedimentation is a potential problem. Manholes should be oversized and placed more frequently through the oversized section, to assist maintenance personnel in removing sediment from the storm-sewer system.

Since inline detention is usually present near the outlet of the storm-sewer system, an emergency overflow structure should be placed in the underground storage vault. This consists of a pipe

placed in the upper corner of the storage vault. A pipe of diameter of at least 6 in. should be used to prevent the emergency overflow structure from clogging.

203-5.04(05) Infiltration Trench

An infiltration trench is similar to a retention pond, except it is long and narrow and may work within the right-of-way. An infiltration trench is lined with geotextiles and backfilled with aggregate. The Rational Method should be used to calculate the inflow rate. The outflow rate will then be determined based on the infiltration capacity of the soil. Only highly pervious soils should be considered. The length of the system will depend on the volume required, given the inflow and outflow rates. Only the volume of the pipe should be considered for storage. The volume of the voids available in the backfilled trench should be ignored, to provide a factor of safety. Larger pipes should be used, to allow for maintenance. An infiltration trench should be constructed in accordance with Section [203-4.0](#). For additional information, see HEC-22, Chapter 8 or Chapter 10.

203-5.05 Pump Station

A pump station requires electricity as well as regular maintenance for proper function. It requires accessibility, monitoring, has limited capacity, and can be expensive. During a large storm event, it can be prone to flooding and failure. For these reasons, use of a pump station is discouraged by INDOT. However, because of topography or geometrics, it may become necessary. If so, the Office of Hydraulics should be contacted and the design guidelines for a pump station shown in HEC-24 should be followed.

203-5.06 Documentation

The information is required for a storage-facility submittal is as follows:

1. project background, including existing and proposed structure;
2. summary of hydraulics design and assumptions, including design criteria;
3. USGS topographic map, or county 2 ft contour lines, and aerial map of the project site to determine the drainage area for the storage design;
4. Hydrology, depending on methods used, IDNR discharge letter if required, coordinated discharges, FIS information, gaged sites or TR-55 and hydrograph methodologies. See Section [203-2.0](#);

5. computation of the inflow hydrograph;
6. computation of the outflow hydrograph or the restricted outflow according to the pertinent ordinance;
7. summary performance table for the storage system used to determine the maximum storage volume and the maximum water surface elevation, and to verify the release rate relative to the INDOT, city or town, or county regulation. See Figure [203-5A](#);
8. computation of the outflow-rating curve, or stage-storage-discharge relationship;
9. plan sheet showing the geometric shape of the detention including the maximum water surface elevation inside the pond, the freeboard, and the emergency spillway if applicable; and
10. an appendix including the calculation and computer-program input and output data used to determine the data shown on the summary-performance table.

203-6.0 CHANNEL OR DITCH

203-6.01 Introduction

An open channel is a natural or constructed conveyance for water in which the water surface is exposed to the atmosphere and the gravity-force component in the direction of motion is the driving force.

The types of open channels related to a transportation facility are stream channel, or artificial channel or ditch.

The principles of open-channel-flow hydraulics are applicable to each drainage facility including a culvert or a storm drain.

A stream channel has the properties as follows:

1. a natural channel with its size and shape determined by means of natural forces;
2. compound in cross section with a main channel for conveying low flow and a floodplain to transport flood flow, and
3. shaped geomorphologically due to the long-term history of sediment load and water discharge which it experiences.