

**CIVIL ENGINEERS, SURVEYORS & LAND PLANNERS**

80 Montvale Ave., Suite 201
Stoneham, MA 02180
781-279-0180

www.rjoconnell.com

June 22, 2023

Planning and Zoning Commission
Town of Waterford
15 Rope Ferry Road
Waterford, CT 06385
Attn: Jonathan Mullen, Planning Director

**Regarding: Phase II Site Plan Drainage Design
122-124 Boston Post Road
Waterford, Connecticut**

Dear Mr. Mullen & Members of the Commission:

On behalf of Kincora Waterford, LLC (Applicant and Owner), RJ O'Connell & Associates, Inc. (RJOC) is respectfully submitting this Phase II Site Plan drainage design for the project previously approved by the Waterford Planning and Zoning Commission on 8/8/2016. The design plans and associated documents included in this submission depict the proposed modifications to the western portion of the site, previously known as "Phase II". These additions and/or revisions are as follows:

- One Chipotle fast food restaurant will be built instead of two retail stores,
- Driveway and parking improvements in the Phase II area to serve the new Chipotle,
- Utility service connections,
- Minor adjustment to the location of the proposed subsurface stormwater infiltration system (PSIS-01),
- Grading and drainage improvements associated with the new parking layout,
- Increase in ± 400 sf (0.01 acres) impervious area.

Pre-development, approved development, and post-development peak flow rates were compared to ensure the proposed development will not adversely impact the previously approved stormwater drainage design. As depicted in the attached Watershed Plans (Figure 5 & Figure 5A), the project modifications are located within drainage area PR-2, which eventually discharges runoff into the closed drainage system on Miner Lane at Point of Analysis 2 (POA-2). PR-2 and POA-2 are the drainage area and point of analysis from the approved design. Below is a summary of the peak rates of runoff to POA-2 under pre-development, approved, and proposed development conditions:

Peak Rates of Runoff in Cubic Feet per Second (cfs)

Point of Analysis 2 (POA-2)			
Storm Event	Pre-Development	Approved (8/8/16)	Proposed
1 year (2.7 in.)	7.12 cfs	0.57 cfs	0.57 cfs
2 year (3.4 in.)	9.23 cfs	2.36 cfs	2.11 cfs
10 year (5.0 in.)	14.00 cfs	11.00 cfs	11.00 cfs
25 year (5.7 in.)	16.07 cfs	13.00 cfs	13.17 cfs
100 year (7.1 in.)	20.19 cfs	16.18 cfs	16.34 cfs

As shown in the table above, the peak rates of runoff to the closed drainage system on Miner Lane (POA-2) have been significantly reduced from pre-development conditions. The rates of runoff for POA-1 and POA-3 remain unchanged from the approved project and thus are not included in the above table. Attached to this letter are the hydrologic calculations that were performed using HydroCAD to generate the various rates of runoff summarized in the table above. Rainfall amounts were selected for Type III distribution, 24-hour events per the Connecticut Stormwater Quality Manual.

The proposed drainage design for the Phase II Site Plan is consistent with the approved drainage design. Thank you for your consideration of this matter. Please do not hesitate to contact me at rich.oconnell@rjoconnell.com or at 781-279-0180 if you have any questions or need any additional information.

Sincerely,

RJO'CONNELL & ASSOCIATES



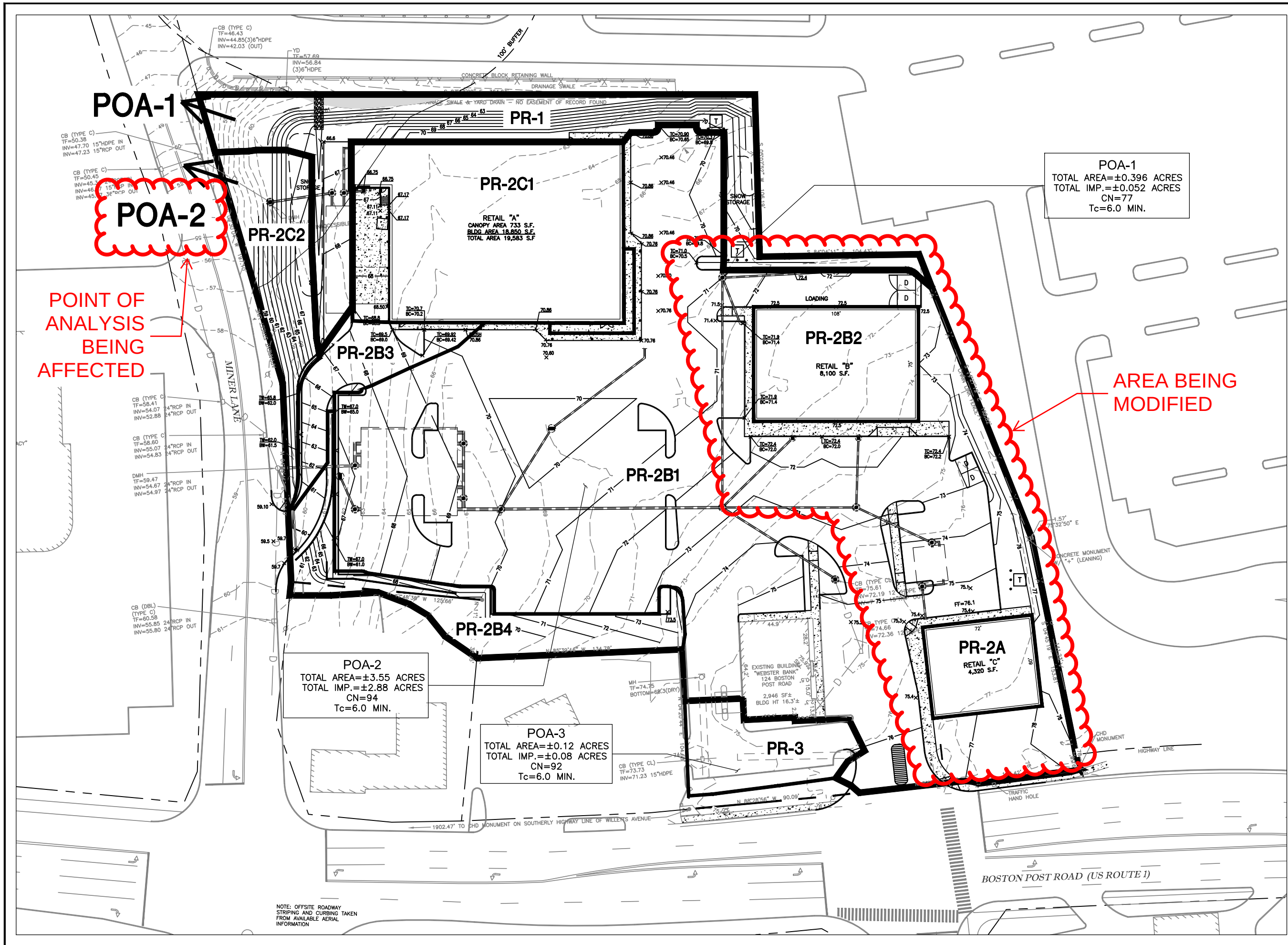
Richard J O'Connell, PE
President



6/22/2023

cc: William McCabe (Kincora Development)
Mark Mancuso (Kincora Development)
William R. Sweeney, Esq. (Tobin, Carberry, O'Malley, Riley & Selinger, P.C.)

Drawing name: G:\CT\Waterford\Kincora Development\122-124 Boston Post Road\Reports\Stormwater Report\Figures\14051_Fig.5 Postdevelopment.dwg
Jun 15, 2016 - 16:20pm



No.	Revision	Date

Designed by:	AK
Drawn by:	AK
Checked by:	BJM
Scale:	1"=60'
Date:	06/09/2016

Prepared For:	
KINCORA DEVELOPMENT	
800 SOUTH STREET SUITE 355 WALTHAM, MA 02453	

Prepared By:	RJO'CONNELL & ASSOCIATES, INC.
CIVIL ENGINEERS, SURVEYORS & LAND PLANNERS	
80 MONTVALE AVE STONEHAM, MA 02180 PHONE: 781-279-0180 FAX: 781-279-0173	

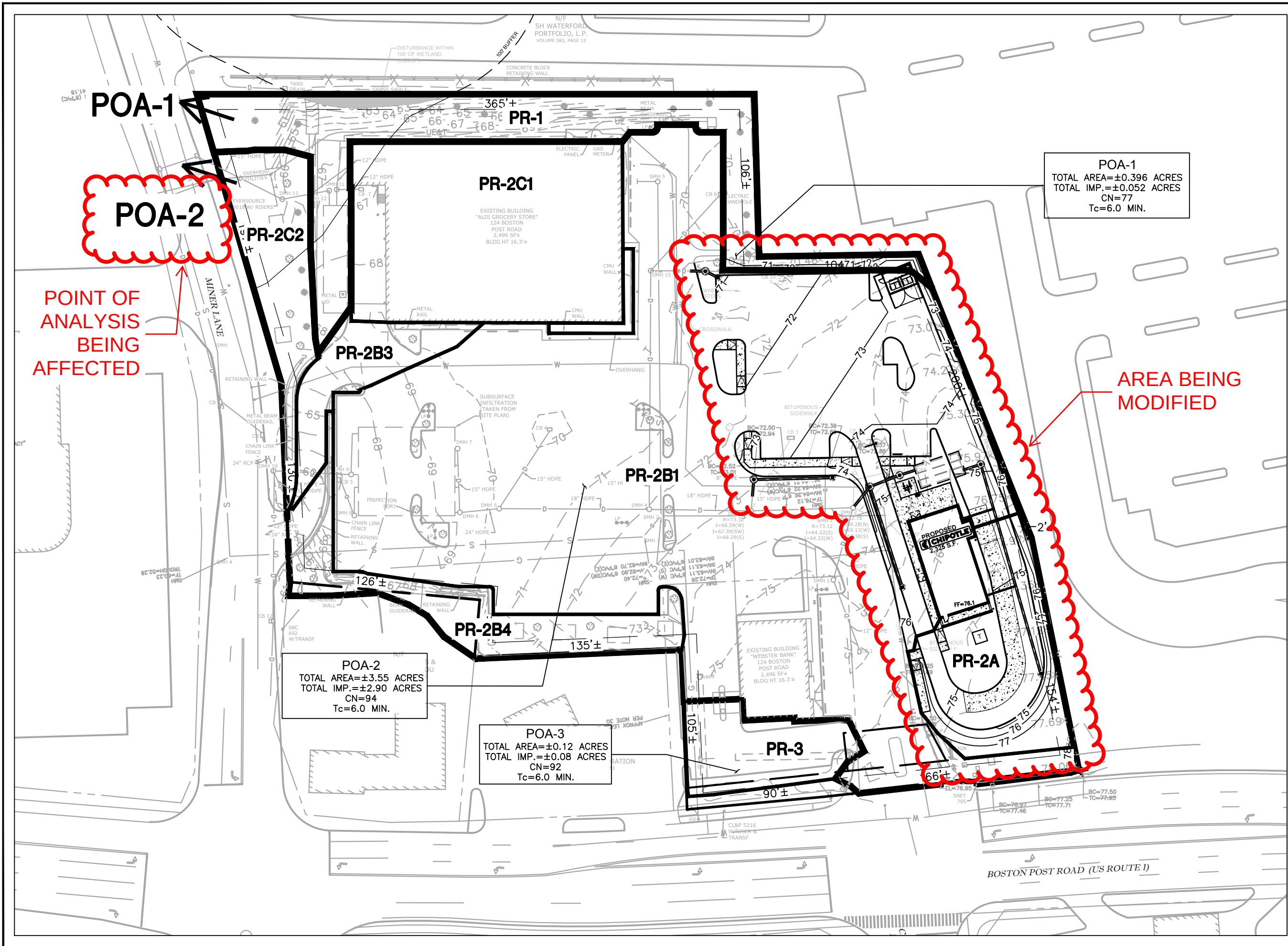
Project Name:	122-124 BOSTON POST ROAD WATERFORD, CT
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Drawing Name:	PROPOSED WATERSHED PLAN
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Drawing No.:	FIG. 5
Project No.:	14051

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Drawing name: G:\CT\Waterford\Kincora Development\122-124 Boston Post Road\Reports\Stormwater Report\Figures\23001_Fig.7 Postdevelopment.dwg
May 31, 2023 - 13:48pm



POA-1
TOTAL AREA=±0.396 ACRES
TOTAL IMP.=±0.052 ACRES
CN=77
Tc=6.0 MIN.

POA-2
TOTAL AREA=±3.55 ACRES
TOTAL IMP.=±2.90 ACRES
CN=94
Tc=6.0 MIN.

POA-3
TOTAL AREA=±0.12 ACRES
TOTAL IMP.=±0.08 ACRES
CN=92
Tc=6.0 MIN.

AREA BEING
MODIFIED

POINT OF
ANALYSIS
BEING
AFFECTED

No.	Revision	Date

Designed by:	DRG
Drawn by:	DRG
Checked by:	BJM
Scale:	1"=60'
Date:	05/31/2023

Prepared For:

**KINCORA
DEVELOPMENT**
800 SOUTH STREET
SUITE 355
WALTHAM, MA 02453

Prepared By:

**RJO'CONNELL
& ASSOCIATES, INC.**
CIVIL ENGINEERS, SURVEYORS
& LAND PLANNERS
80 MONTVALE AVE
STONEHAM, MA 02180
PHONE: 781-279-0180
FAX: 781-279-0173

Project Name:

**122-124 BOSTON
POST ROAD
WATERFORD, CT**

Drawing Name:

**PROPOSED
WATERSHED
PLAN (REVISED)**

Drawing No.:

FIG. 5A

Project No.: 23001

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APPENDIX A

Hydrological Computations

Pre-Development Hydrological Computations
Approved-Development Hydrological Computations
Post-Development Hydrological Computations

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APPENDIX A

Pre-Development Hydrological Computations



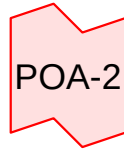
To drainage swale along
southern property line



Drainage Swale at
South PL



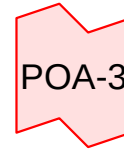
Majority of Site



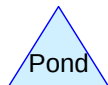
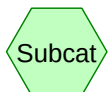
East PL



NE Area by Bank



NE CB to Infiltration



Routing Diagram for Existing Conditions

Prepared by RJ O'Connell & Associates, Inc., Printed 6/28/2016
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Existing Conditions

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Page 2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.065	61	>75% Grass cover, Good, HSG B (EX-1, EX-2)
0.834	80	>75% Grass cover, Good, HSG D (EX-1, EX-2, EX-3)
2.473	98	Paved parking, HSG D (EX-2)
0.605	98	Roofs, HSG D (EX-1, EX-2, EX-3)
0.067	60	Woods, Fair, HSG B (EX-1, EX-2)
4.044	93	TOTAL AREA

Existing Conditions

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14051: Pre-Development Analysis

Type III 24-hr 1-Year Rainfall=2.70"

Printed 6/28/2016

Page 3

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment EX-1: To drainage swale	Runoff Area=0.911 ac 51.04% Impervious Runoff Depth>1.48" Tc=6.0 min CN=87 Runoff=1.55 cfs 0.112 af
Subcatchment EX-2: Majority of Site	Runoff Area=3.012 ac 84.00% Impervious Runoff Depth>2.16" Tc=6.0 min CN=95 Runoff=7.12 cfs 0.541 af
Subcatchment EX-3: NE Area by Bank	Runoff Area=0.121 ac 68.60% Impervious Runoff Depth>1.88" Tc=6.0 min CN=92 Runoff=0.26 cfs 0.019 af
Link POA-1: Drainage Swale at South PL	Inflow=1.55 cfs 0.112 af Primary=1.55 cfs 0.112 af
Link POA-2: East PL	Inflow=7.12 cfs 0.541 af Primary=7.12 cfs 0.541 af
Link POA-3: NE CB to Infiltration	Inflow=0.26 cfs 0.019 af Primary=0.26 cfs 0.019 af

Total Runoff Area = 4.044 ac Runoff Volume = 0.672 af Average Runoff Depth = 1.99"
23.89% Pervious = 0.966 ac 76.11% Impervious = 3.078 ac

Existing Conditions

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14051: Pre-Development Analysis
Type III 24-hr 1-Year Rainfall=2.70"

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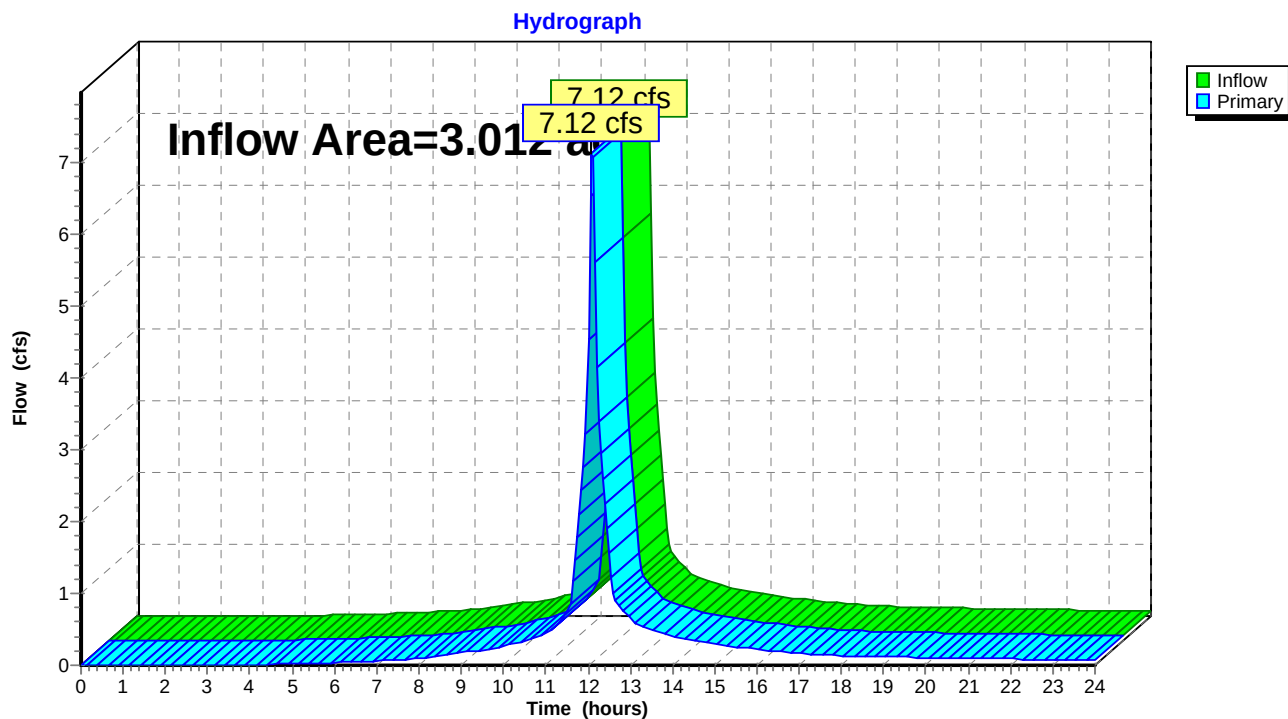
Page 8

Summary for Link POA-2: East PL

Inflow Area = 3.012 ac, 84.00% Impervious, Inflow Depth > 2.16" for 1-Year event
Inflow = 7.12 cfs @ 12.09 hrs, Volume= 0.541 af
Primary = 7.12 cfs @ 12.09 hrs, Volume= 0.541 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link POA-2: East PL



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Type III 24-hr 2-Year Rainfall=3.40"

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Page 10

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment EX-1: To drainage swale	Runoff Area=0.911 ac 51.04% Impervious Runoff Depth>2.09" Tc=6.0 min CN=87 Runoff=2.18 cfs 0.159 af
Subcatchment EX-2: Majority of Site	Runoff Area=3.012 ac 84.00% Impervious Runoff Depth>2.84" Tc=6.0 min CN=95 Runoff=9.23 cfs 0.713 af
Subcatchment EX-3: NE Area by Bank	Runoff Area=0.121 ac 68.60% Impervious Runoff Depth>2.54" Tc=6.0 min CN=92 Runoff=0.34 cfs 0.026 af
Link POA-1: Drainage Swale at South PL	Inflow=2.18 cfs 0.159 af Primary=2.18 cfs 0.159 af
Link POA-2: East PL	Inflow=9.23 cfs 0.713 af Primary=9.23 cfs 0.713 af
Link POA-3: NE CB to Infiltration	Inflow=0.34 cfs 0.026 af Primary=0.34 cfs 0.026 af

Total Runoff Area = 4.044 ac Runoff Volume = 0.897 af Average Runoff Depth = 2.66"
23.89% Pervious = 0.966 ac 76.11% Impervious = 3.078 ac

Existing Conditions

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14051: Pre-Development Analysis
Type III 24-hr 2-Year Rainfall=3.40"

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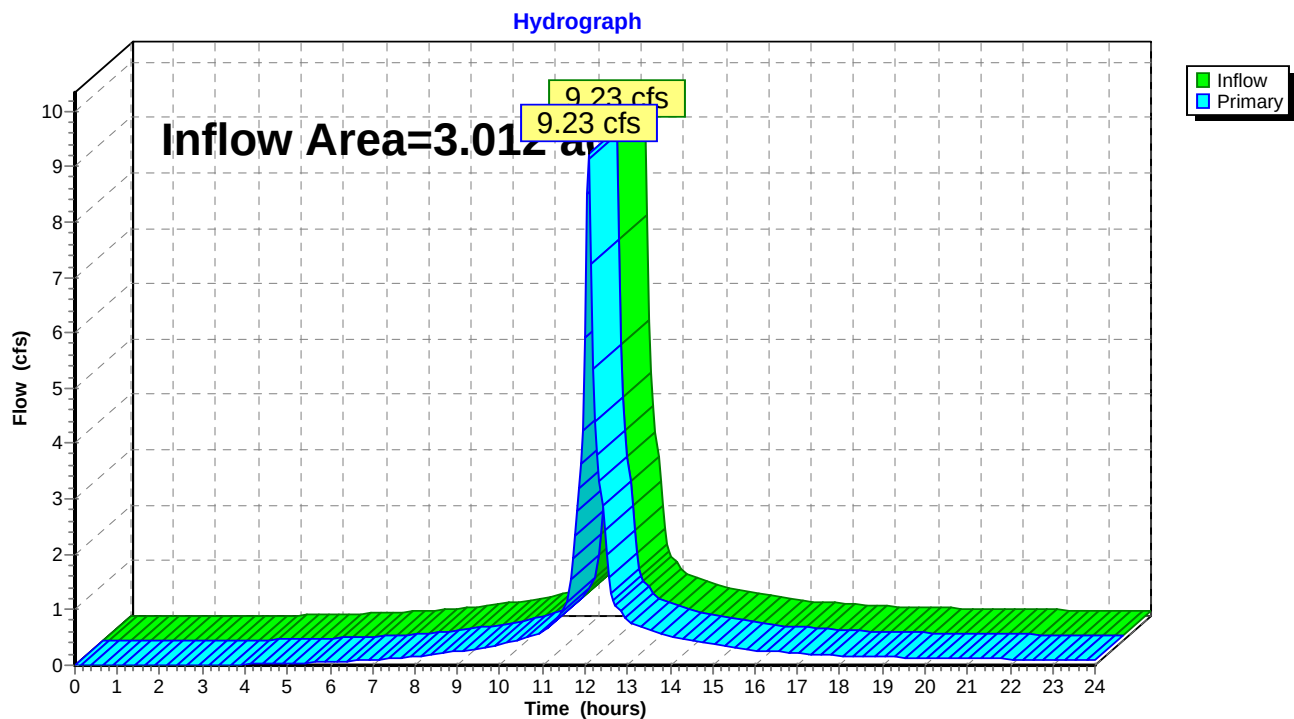
Page 15

Summary for Link POA-2: East PL

Inflow Area = 3.012 ac, 84.00% Impervious, Inflow Depth > 2.84" for 2-Year event
Inflow = 9.23 cfs @ 12.09 hrs, Volume= 0.713 af
Primary = 9.23 cfs @ 12.09 hrs, Volume= 0.713 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link POA-2: East PL



Existing Conditions

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14051: Pre-Development Analysis

Type III 24-hr 10-Year Rainfall=5.00"

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Page 17

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment EX-1: To drainage swale	Runoff Area=0.911 ac 51.04% Impervious Runoff Depth>3.56" Tc=6.0 min CN=87 Runoff=3.66 cfs 0.271 af
Subcatchment EX-2: Majority of Site	Runoff Area=3.012 ac 84.00% Impervious Runoff Depth>4.42" Tc=6.0 min CN=95 Runoff=14.00 cfs 1.109 af
Subcatchment EX-3: NE Area by Bank	Runoff Area=0.121 ac 68.60% Impervious Runoff Depth>4.09" Tc=6.0 min CN=92 Runoff=0.54 cfs 0.041 af
Link POA-1: Drainage Swale at South PL	Inflow=3.66 cfs 0.271 af Primary=3.66 cfs 0.271 af
Link POA-2: East PL	Inflow=14.00 cfs 1.109 af Primary=14.00 cfs 1.109 af
Link POA-3: NE CB to Infiltration	Inflow=0.54 cfs 0.041 af Primary=0.54 cfs 0.041 af

Total Runoff Area = 4.044 ac Runoff Volume = 1.420 af Average Runoff Depth = 4.21"
23.89% Pervious = 0.966 ac 76.11% Impervious = 3.078 ac

Existing Conditions

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14051: Pre-Development Analysis
Type III 24-hr 10-Year Rainfall=5.00"

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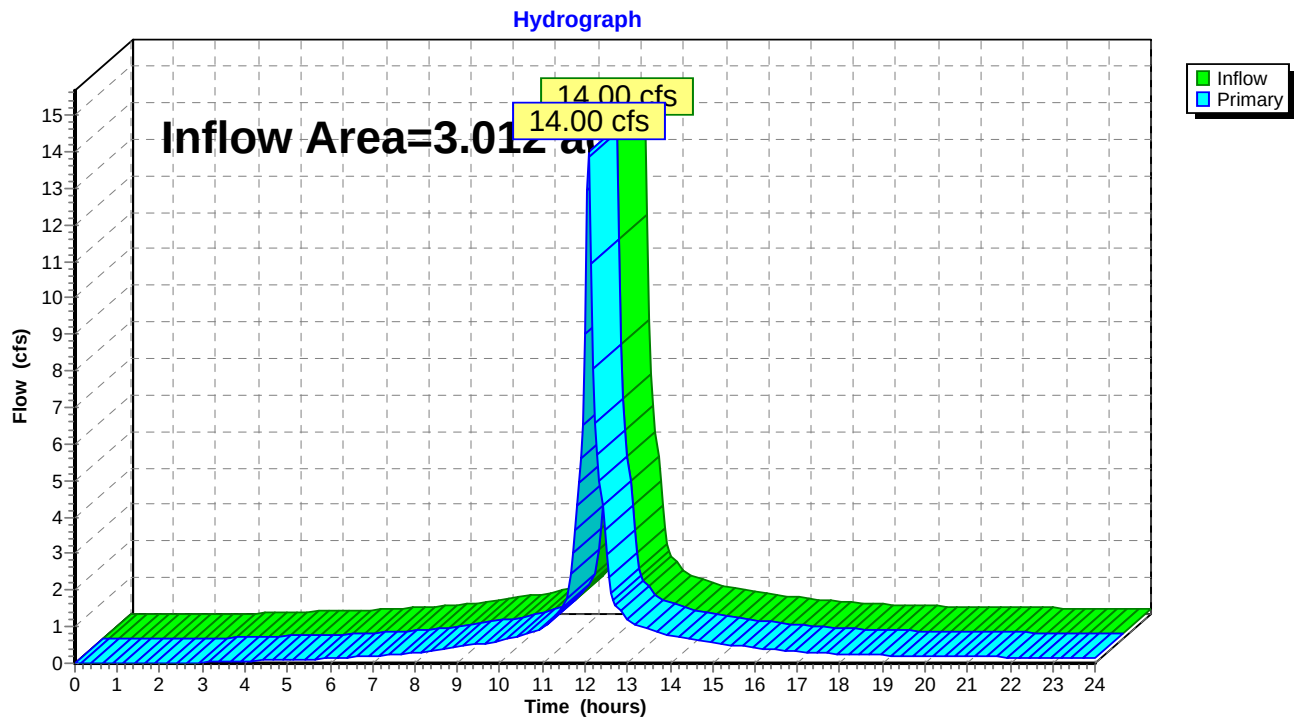
Page 22

Summary for Link POA-2: East PL

Inflow Area = 3.012 ac, 84.00% Impervious, Inflow Depth > 4.42" for 10-Year event
Inflow = 14.00 cfs @ 12.09 hrs, Volume= 1.109 af
Primary = 14.00 cfs @ 12.09 hrs, Volume= 1.109 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link POA-2: East PL



Existing Conditions

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14051: Pre-Development Analysis
Type III 24-hr 25-Year Rainfall=5.70"

Printed 6/28/2016

Page 24

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment EX-1: To drainage swale	Runoff Area=0.911 ac 51.04% Impervious Runoff Depth>4.23" Tc=6.0 min CN=87 Runoff=4.31 cfs 0.321 af
Subcatchment EX-2: Majority of Site	Runoff Area=3.012 ac 84.00% Impervious Runoff Depth>5.11" Tc=6.0 min CN=95 Runoff=16.07 cfs 1.283 af
Subcatchment EX-3: NE Area by Bank	Runoff Area=0.121 ac 68.60% Impervious Runoff Depth>4.77" Tc=6.0 min CN=92 Runoff=0.62 cfs 0.048 af
Link POA-1: Drainage Swale at South PL	Inflow=4.31 cfs 0.321 af Primary=4.31 cfs 0.321 af
Link POA-2: East PL	Inflow=16.07 cfs 1.283 af Primary=16.07 cfs 1.283 af
Link POA-3: NE CB to Infiltration	Inflow=0.62 cfs 0.048 af Primary=0.62 cfs 0.048 af

Total Runoff Area = 4.044 ac Runoff Volume = 1.652 af Average Runoff Depth = 4.90"
23.89% Pervious = 0.966 ac 76.11% Impervious = 3.078 ac

Existing Conditions

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14051: Pre-Development Analysis
Type III 24-hr 25-Year Rainfall=5.70"

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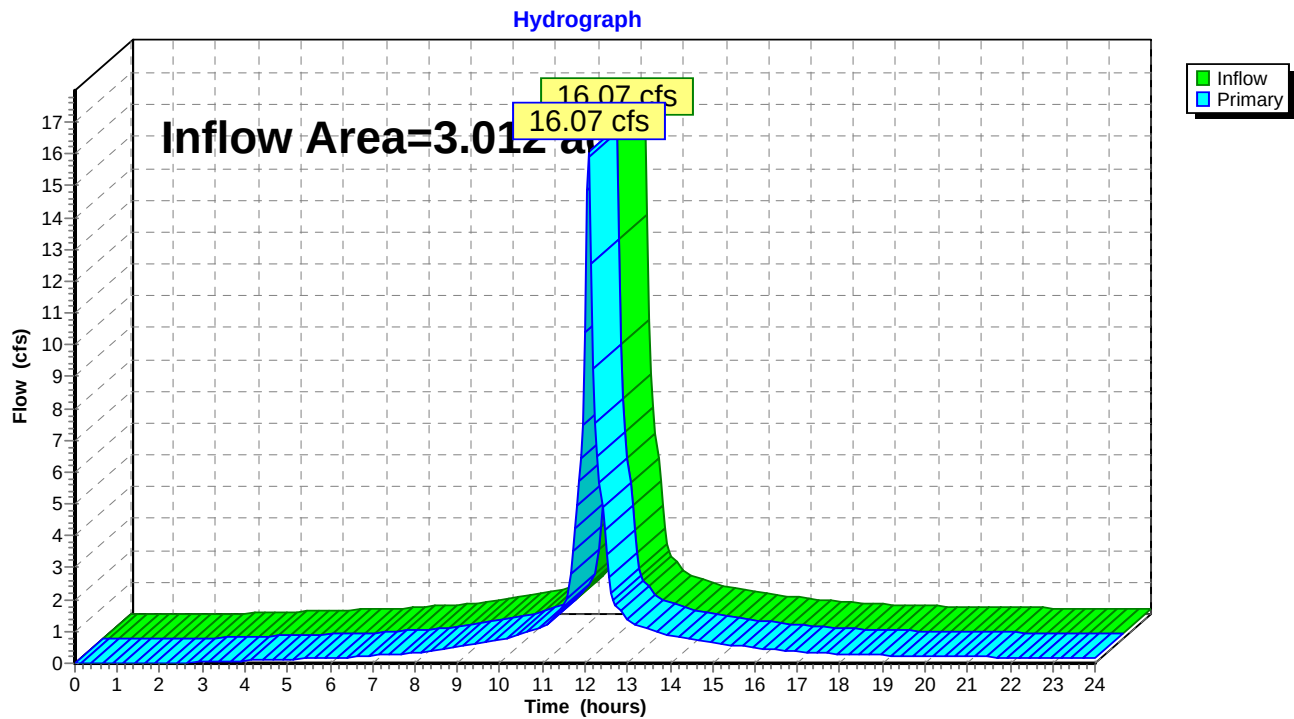
Page 29

Summary for Link POA-2: East PL

Inflow Area = 3.012 ac, 84.00% Impervious, Inflow Depth > 5.11" for 25-Year event
Inflow = 16.07 cfs @ 12.09 hrs, Volume= 1.283 af
Primary = 16.07 cfs @ 12.09 hrs, Volume= 1.283 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link POA-2: East PL



Existing Conditions

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14051: Pre-Development Analysis
Type III 24-hr 100-Year Rainfall=7.10"

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Page 31

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment EX-1: To drainage swale	Runoff Area=0.911 ac 51.04% Impervious Runoff Depth>5.57" Tc=6.0 min CN=87 Runoff=5.60 cfs 0.423 af
Subcatchment EX-2: Majority of Site	Runoff Area=3.012 ac 84.00% Impervious Runoff Depth>6.50" Tc=6.0 min CN=95 Runoff=20.19 cfs 1.632 af
Subcatchment EX-3: NE Area by Bank	Runoff Area=0.121 ac 68.60% Impervious Runoff Depth>6.15" Tc=6.0 min CN=92 Runoff=0.79 cfs 0.062 af
Link POA-1: Drainage Swale at South PL	Inflow=5.60 cfs 0.423 af Primary=5.60 cfs 0.423 af
Link POA-2: East PL	Inflow=20.19 cfs 1.632 af Primary=20.19 cfs 1.632 af
Link POA-3: NE CB to Infiltration	Inflow=0.79 cfs 0.062 af Primary=0.79 cfs 0.062 af

Total Runoff Area = 4.044 ac Runoff Volume = 2.117 af Average Runoff Depth = 6.28"
23.89% Pervious = 0.966 ac 76.11% Impervious = 3.078 ac

Existing Conditions

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14051: Pre-Development Analysis
Type III 24-hr 100-Year Rainfall=7.10"

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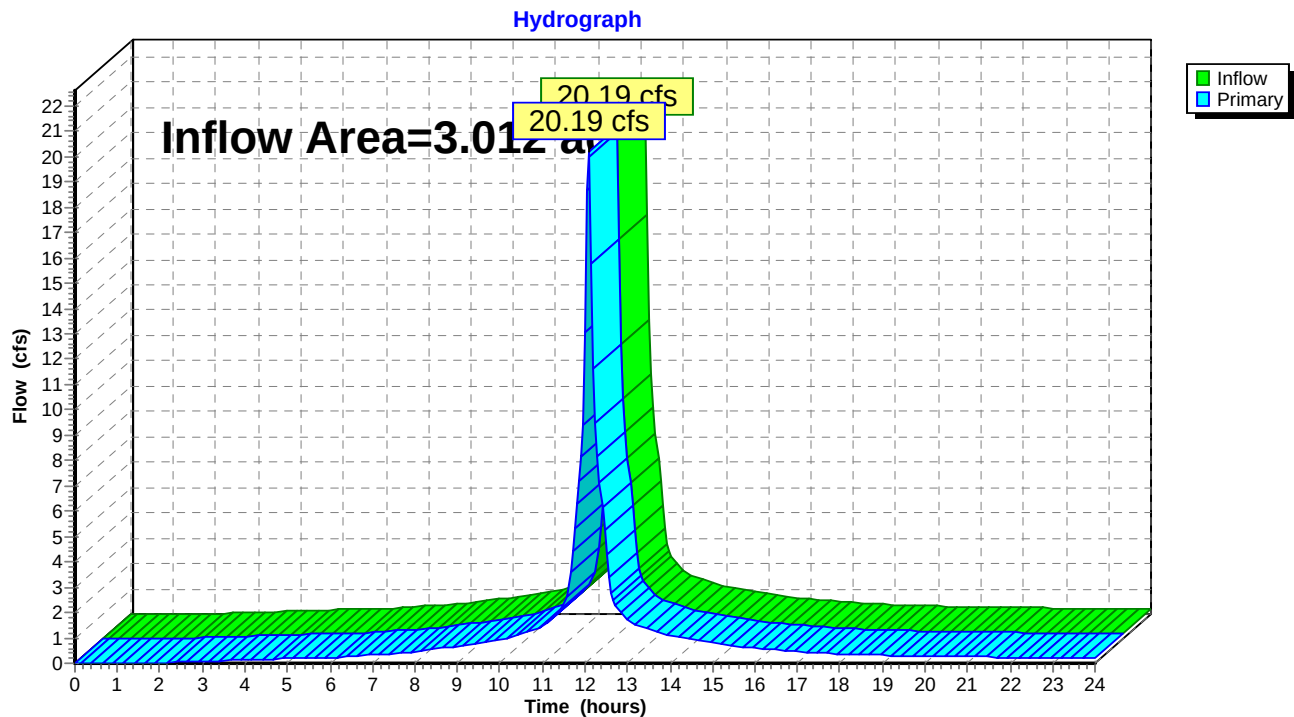
Page 36

Summary for Link POA-2: East PL

Inflow Area = 3.012 ac, 84.00% Impervious, Inflow Depth > 6.50" for 100-Year event
Inflow = 20.19 cfs @ 12.09 hrs, Volume= 1.632 af
Primary = 20.19 cfs @ 12.09 hrs, Volume= 1.632 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link POA-2: East PL

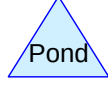
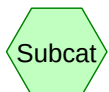
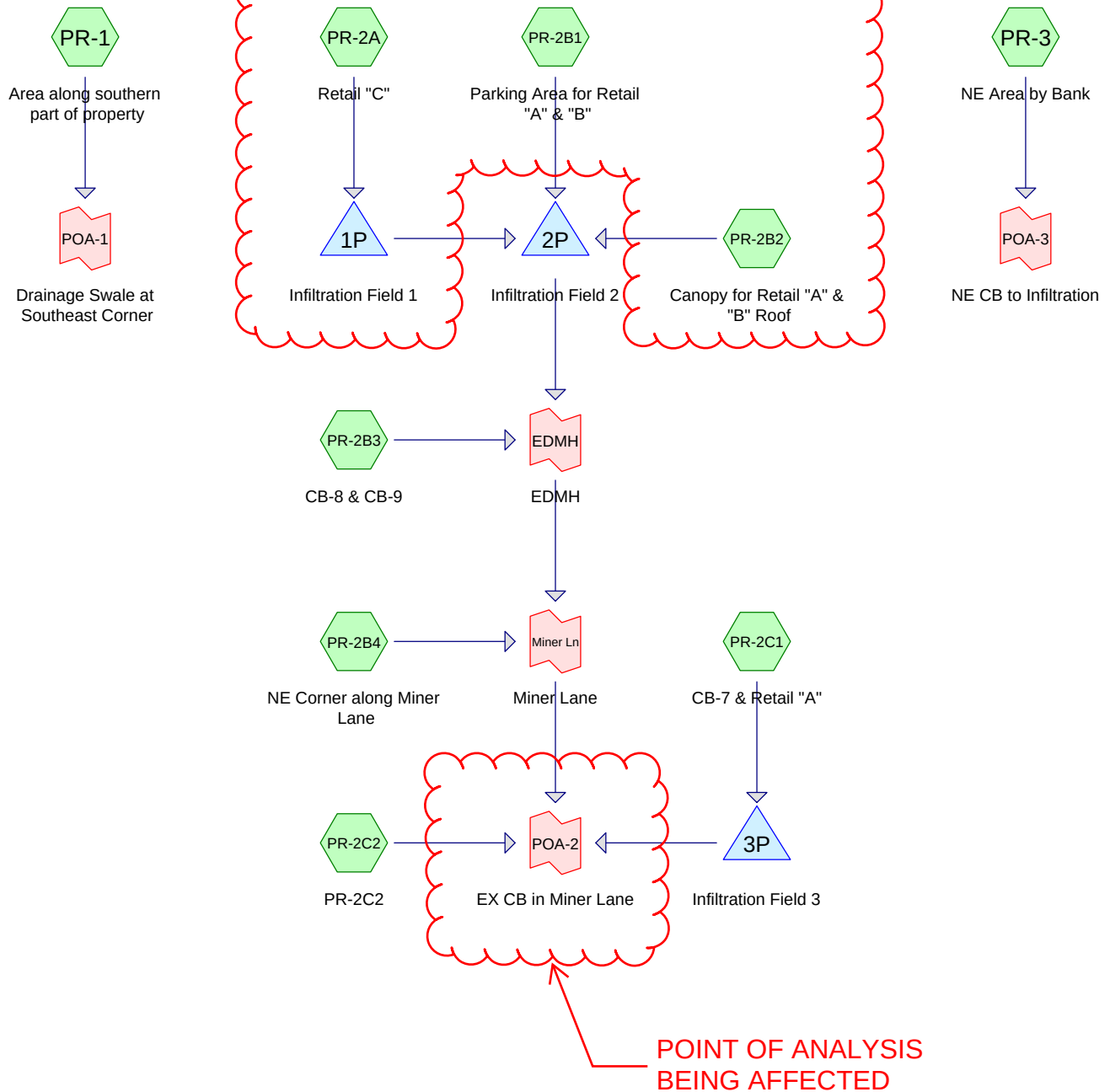


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APPENDIX A

Approved-Development Hydrological Computations

AREA & INFILTRATION
SYSTEM BEING MODIFIED



Proposed Conditions-Current

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Page 2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.212	61	>75% Grass cover, Good, HSG B (PR-1, PR-2C2)
0.813	80	>75% Grass cover, Good, HSG D (PR-1, PR-2B1, PR-2B3, PR-2B4, PR-2C2, PR-3)
2.302	98	Pavement (PR-1, PR-2B1, PR-2B3, PR-2B4, PR-2C1, PR-3)
0.736	98	Roof (PR-2A, PR-2B2, PR-2C1)
4.063	92	TOTAL AREA

Proposed Conditions-Current

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14051: Post-Development Analysis

Type III 24-hr 1-Year Rainfall=2.70"

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Page 3

Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment PR-1: Area along southern Runoff Area=0.396 ac 13.13% Impervious Runoff Depth=0.87"
Tc=6.0 min CN=77 Runoff=0.38 cfs 0.029 af

Subcatchment PR-2A: Retail "C" Runoff Area=0.099 ac 100.00% Impervious Runoff Depth=2.47"
Flow Length=25' Tc=6.0 min CN=98 Runoff=0.25 cfs 0.020 af

Subcatchment PR-2B1: Parking Area for Runoff Area=2.302 ac 87.45% Impervious Runoff Depth=2.26"
Tc=6.0 min CN=96 Runoff=5.60 cfs 0.433 af

Subcatchment PR-2B2: Canopy for Retail Runoff Area=0.202 ac 100.00% Impervious Runoff Depth=2.47"
Tc=6.0 min CN=98 Runoff=0.51 cfs 0.042 af

Subcatchment PR-2B3: CB-8 & CB-9 Runoff Area=0.116 ac 81.03% Impervious Runoff Depth=2.16"
Tc=6.0 min CN=95 Runoff=0.27 cfs 0.021 af

Subcatchment PR-2B4: NE Corner along Runoff Area=0.183 ac 6.56% Impervious Runoff Depth=1.09"
Tc=6.0 min CN=81 Runoff=0.22 cfs 0.017 af

Subcatchment PR-2C1: CB-7 & Retail "A" Runoff Area=0.483 ac 100.00% Impervious Runoff Depth=2.47"
Tc=6.0 min CN=98 Runoff=1.23 cfs 0.099 af

Subcatchment PR-2C2: PR-2C2 Runoff Area=0.161 ac 0.00% Impervious Runoff Depth=0.52"
Tc=6.0 min CN=69 Runoff=0.08 cfs 0.007 af

Subcatchment PR-3: NE Area by Bank Runoff Area=0.121 ac 68.60% Impervious Runoff Depth=1.88"
Tc=6.0 min CN=92 Runoff=0.26 cfs 0.019 af

Pond 1P: Infiltration Field 1 Peak Elev=69.20' Storage=175 cf Inflow=0.25 cfs 0.020 af
Discarded=0.07 cfs 0.020 af Primary=0.00 cfs 0.000 af Outflow=0.07 cfs 0.020 af

Pond 2P: Infiltration Field 2 Peak Elev=62.40' Storage=8,446 cf Inflow=6.12 cfs 0.475 af
Discarded=0.44 cfs 0.475 af Primary=0.00 cfs 0.000 af Outflow=0.44 cfs 0.475 af

Pond 3P: Infiltration Field 3 Peak Elev=60.27' Storage=1,343 cf Inflow=1.23 cfs 0.099 af
Discarded=0.18 cfs 0.099 af Primary=0.00 cfs 0.000 af Outflow=0.18 cfs 0.099 af

Link EDMH: EDMH Inflow=0.27 cfs 0.021 af
Primary=0.27 cfs 0.021 af

Link Miner Ln: Miner Lane Inflow=0.50 cfs 0.037 af
Primary=0.50 cfs 0.037 af

Link POA-1: Drainage Swale at Southeast Corner Inflow=0.38 cfs 0.029 af
Primary=0.38 cfs 0.029 af

Link POA-2: EX CB in Miner Lane Inflow=0.57 cfs 0.044 af
Primary=0.57 cfs 0.044 af

Proposed Conditions-Current

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14051: Post-Development Analysis
Type III 24-hr 1-Year Rainfall=2.70"

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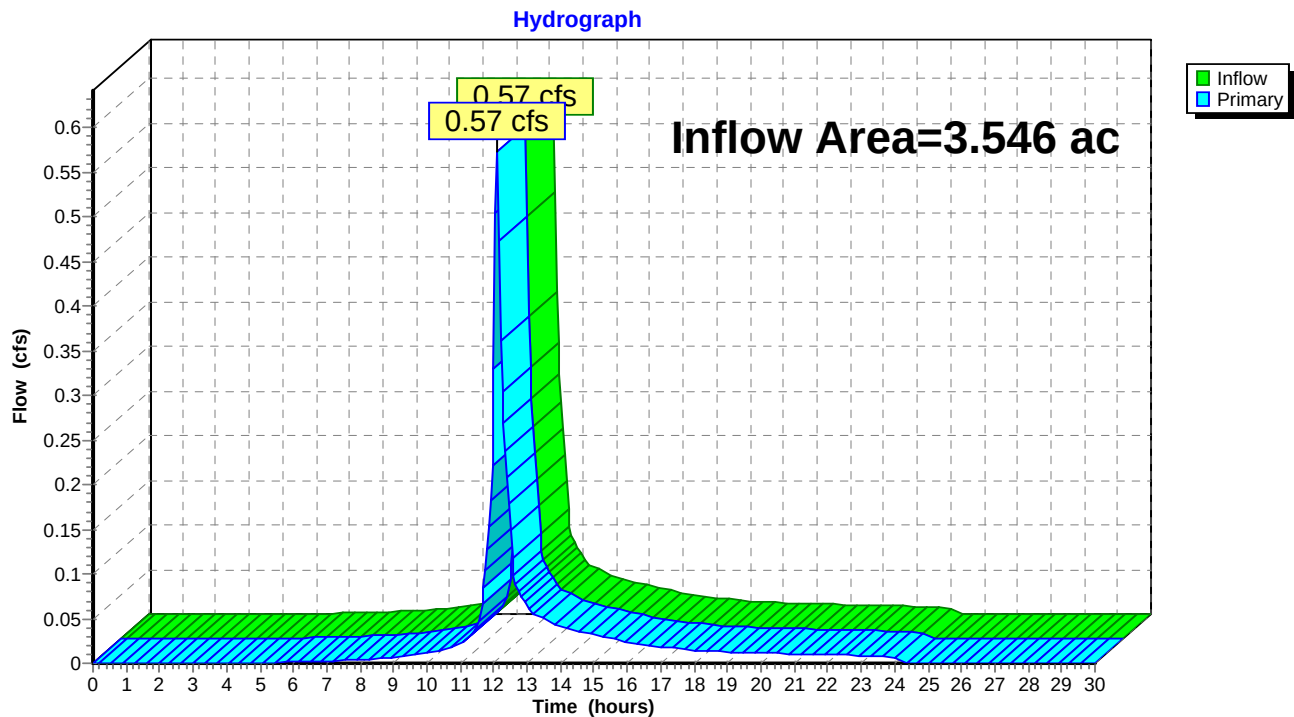
Page 26

Summary for Link POA-2: EX CB in Miner Lane

Inflow Area = 3.546 ac, 81.87% Impervious, Inflow Depth = 0.15" for 1-Year event
Inflow = 0.57 cfs @ 12.10 hrs, Volume= 0.044 af
Primary = 0.57 cfs @ 12.10 hrs, Volume= 0.044 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link POA-2: EX CB in Miner Lane



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Type III 24-hr 2-Year Rainfall=3.40"

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Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment PR-1: Area along southern Runoff Area=0.396 ac 13.13% Impervious Runoff Depth=1.36"
Tc=6.0 min CN=77 Runoff=0.61 cfs 0.045 af

Subcatchment PR-2A: Retail "C" Runoff Area=0.099 ac 100.00% Impervious Runoff Depth=3.17"
Flow Length=25' Tc=6.0 min CN=98 Runoff=0.32 cfs 0.026 af

Subcatchment PR-2B1: Parking Area for Runoff Area=2.302 ac 87.45% Impervious Runoff Depth=2.95"
Tc=6.0 min CN=96 Runoff=7.20 cfs 0.565 af

Subcatchment PR-2B2: Canopy for Retail Runoff Area=0.202 ac 100.00% Impervious Runoff Depth=3.17"
Tc=6.0 min CN=98 Runoff=0.65 cfs 0.053 af

Subcatchment PR-2B3: CB-8 & CB-9 Runoff Area=0.116 ac 81.03% Impervious Runoff Depth=2.84"
Tc=6.0 min CN=95 Runoff=0.36 cfs 0.027 af

Subcatchment PR-2B4: NE Corner along Runoff Area=0.183 ac 6.56% Impervious Runoff Depth=1.63"
Tc=6.0 min CN=81 Runoff=0.34 cfs 0.025 af

Subcatchment PR-2C1: CB-7 & Retail "A" Runoff Area=0.483 ac 100.00% Impervious Runoff Depth=3.17"
Tc=6.0 min CN=98 Runoff=1.56 cfs 0.127 af

Subcatchment PR-2C2: PR-2C2 Runoff Area=0.161 ac 0.00% Impervious Runoff Depth=0.89"
Tc=6.0 min CN=69 Runoff=0.15 cfs 0.012 af

Subcatchment PR-3: NE Area by Bank Runoff Area=0.121 ac 68.60% Impervious Runoff Depth=2.54"
Tc=6.0 min CN=92 Runoff=0.34 cfs 0.026 af

Pond 1P: Infiltration Field 1 Peak Elev=69.42' Storage=261 cf Inflow=0.32 cfs 0.026 af
Discarded=0.07 cfs 0.026 af Primary=0.00 cfs 0.000 af Outflow=0.07 cfs 0.026 af

Pond 2P: Infiltration Field 2 Peak Elev=62.82' Storage=9,488 cf Inflow=7.85 cfs 0.619 af
Discarded=0.44 cfs 0.541 af Primary=2.05 cfs 0.078 af Outflow=2.50 cfs 0.619 af

Pond 3P: Infiltration Field 3 Peak Elev=60.87' Storage=1,855 cf Inflow=1.56 cfs 0.127 af
Discarded=0.19 cfs 0.127 af Primary=0.00 cfs 0.000 af Outflow=0.19 cfs 0.127 af

Link EDMH: EDMH Inflow=2.16 cfs 0.105 af
Primary=2.16 cfs 0.105 af

Link Miner Ln: Miner Lane Inflow=2.29 cfs 0.130 af
Primary=2.29 cfs 0.130 af

Link POA-1: Drainage Swale at Southeast Corner Inflow=0.61 cfs 0.045 af
Primary=0.61 cfs 0.045 af

Link POA-2: EX CB in Miner Lane Inflow=2.36 cfs 0.142 af
Primary=2.36 cfs 0.142 af

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Type III 24-hr 2-Year Rainfall=3.40"

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Link POA-3: NE CB to Infiltration

Inflow=0.34 cfs 0.026 af

Primary=0.34 cfs 0.026 af

Total Runoff Area = 4.063 ac Runoff Volume = 0.907 af Average Runoff Depth = 2.68"
25.23% Pervious = 1.025 ac 74.77% Impervious = 3.038 ac

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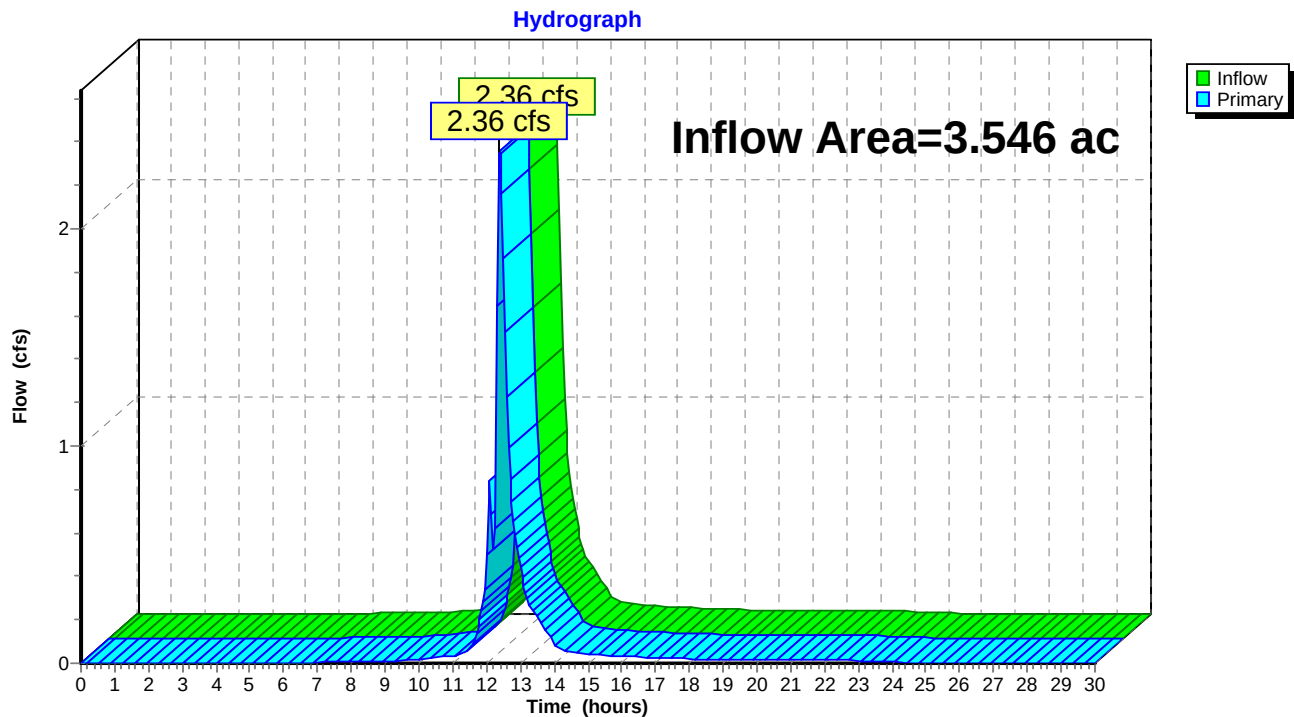
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Summary for Link POA-2: EX CB in Miner Lane

Inflow Area = 3.546 ac, 81.87% Impervious, Inflow Depth = 0.48" for 2-Year event
Inflow = 2.36 cfs @ 12.39 hrs, Volume= 0.142 af
Primary = 2.36 cfs @ 12.39 hrs, Volume= 0.142 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link POA-2: EX CB in Miner Lane



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Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment PR-1: Area along southern Runoff Area=0.396 ac 13.13% Impervious Runoff Depth=2.62"
Tc=6.0 min CN=77 Runoff=1.19 cfs 0.087 af

Subcatchment PR-2A: Retail "C" Runoff Area=0.099 ac 100.00% Impervious Runoff Depth=4.76"
Flow Length=25' Tc=6.0 min CN=98 Runoff=0.47 cfs 0.039 af

Subcatchment PR-2B1: Parking Area for Runoff Area=2.302 ac 87.45% Impervious Runoff Depth=4.53"
Tc=6.0 min CN=96 Runoff=10.82 cfs 0.869 af

Subcatchment PR-2B2: Canopy for Retail Runoff Area=0.202 ac 100.00% Impervious Runoff Depth=4.76"
Tc=6.0 min CN=98 Runoff=0.96 cfs 0.080 af

Subcatchment PR-2B3: CB-8 & CB-9 Runoff Area=0.116 ac 81.03% Impervious Runoff Depth=4.42"
Tc=6.0 min CN=95 Runoff=0.54 cfs 0.043 af

Subcatchment PR-2B4: NE Corner along Runoff Area=0.183 ac 6.56% Impervious Runoff Depth=2.99"
Tc=6.0 min CN=81 Runoff=0.63 cfs 0.046 af

Subcatchment PR-2C1: CB-7 & Retail "A" Runoff Area=0.483 ac 100.00% Impervious Runoff Depth=4.76"
Tc=6.0 min CN=98 Runoff=2.31 cfs 0.192 af

Subcatchment PR-2C2: PR-2C2 Runoff Area=0.161 ac 0.00% Impervious Runoff Depth=1.96"
Tc=6.0 min CN=69 Runoff=0.35 cfs 0.026 af

Subcatchment PR-3: NE Area by Bank Runoff Area=0.121 ac 68.60% Impervious Runoff Depth=4.09"
Tc=6.0 min CN=92 Runoff=0.54 cfs 0.041 af

Pond 1P: Infiltration Field 1 Peak Elev=69.98' Storage=468 cf Inflow=0.47 cfs 0.039 af
Discarded=0.08 cfs 0.039 af Primary=0.00 cfs 0.000 af Outflow=0.08 cfs 0.039 af

Pond 2P: Infiltration Field 2 Peak Elev=63.32' Storage=10,594 cf Inflow=11.78 cfs 0.950 af
Discarded=0.45 cfs 0.647 af Primary=9.78 cfs 0.303 af Outflow=10.23 cfs 0.950 af

Pond 3P: Infiltration Field 3 Peak Elev=62.30' Storage=2,930 cf Inflow=2.31 cfs 0.192 af
Discarded=0.22 cfs 0.186 af Primary=0.36 cfs 0.006 af Outflow=0.58 cfs 0.192 af

Link EDMH: EDMH Inflow=10.20 cfs 0.345 af
Primary=10.20 cfs 0.345 af

Link Miner Ln: Miner Lane Inflow=10.71 cfs 0.391 af
Primary=10.71 cfs 0.391 af

Link POA-1: Drainage Swale at Southeast Corner Inflow=1.19 cfs 0.087 af
Primary=1.19 cfs 0.087 af

Link POA-2: EX CB in Miner Lane Inflow=11.00 cfs 0.423 af
Primary=11.00 cfs 0.423 af

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Type III 24-hr 10-Year Rainfall=5.00"

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Link POA-3: NE CB to Infiltration

Inflow=0.54 cfs 0.041 af

Primary=0.54 cfs 0.041 af

Total Runoff Area = 4.063 ac Runoff Volume = 1.423 af Average Runoff Depth = 4.20"
25.23% Pervious = 1.025 ac 74.77% Impervious = 3.038 ac

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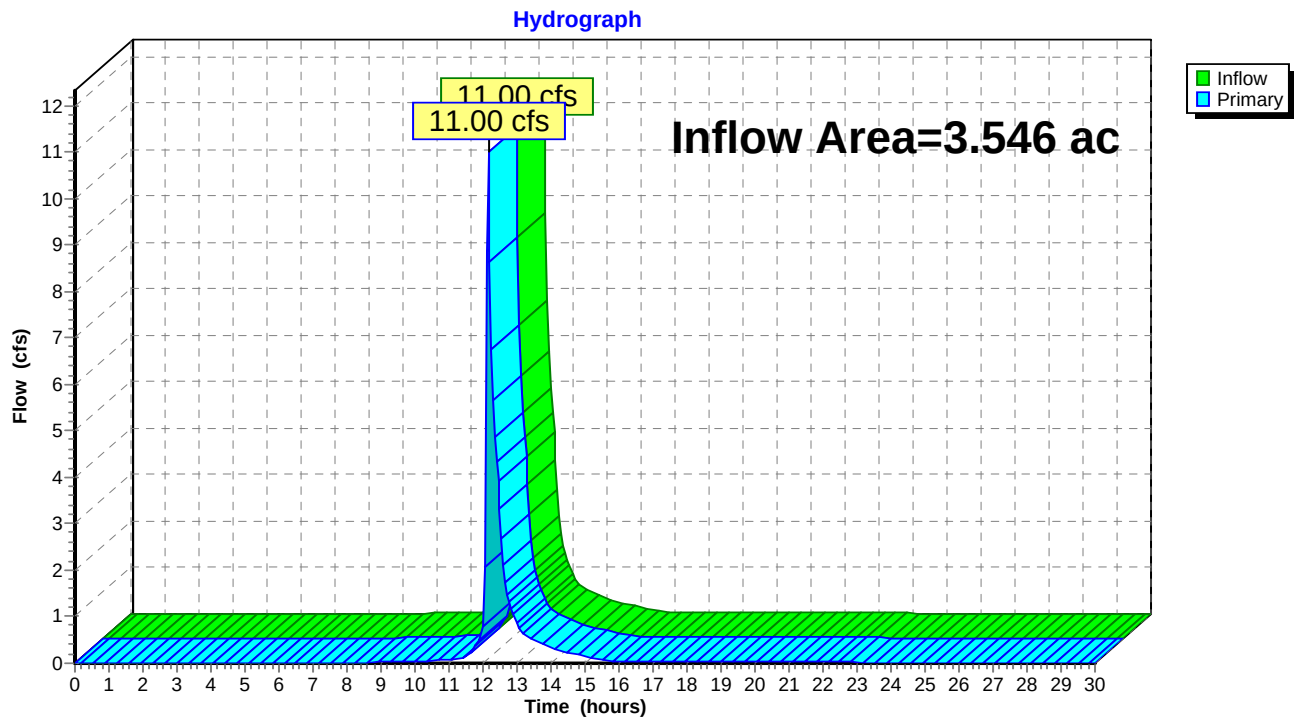
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Summary for Link POA-2: EX CB in Miner Lane

Inflow Area = 3.546 ac, 81.87% Impervious, Inflow Depth = 1.43" for 10-Year event
Inflow = 11.00 cfs @ 12.15 hrs, Volume= 0.423 af
Primary = 11.00 cfs @ 12.15 hrs, Volume= 0.423 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link POA-2: EX CB in Miner Lane



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Type III 24-hr 25-Year Rainfall=5.70"

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Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment PR-1: Area along southern	Runoff Area=0.396 ac 13.13% Impervious Runoff Depth=3.22" Tc=6.0 min CN=77 Runoff=1.46 cfs 0.106 af
Subcatchment PR-2A: Retail "C"	Runoff Area=0.099 ac 100.00% Impervious Runoff Depth=5.46" Flow Length=25' Tc=6.0 min CN=98 Runoff=0.54 cfs 0.045 af
Subcatchment PR-2B1: Parking Area for	Runoff Area=2.302 ac 87.45% Impervious Runoff Depth=5.23" Tc=6.0 min CN=96 Runoff=12.39 cfs 1.003 af
Subcatchment PR-2B2: Canopy for Retail	Runoff Area=0.202 ac 100.00% Impervious Runoff Depth=5.46" Tc=6.0 min CN=98 Runoff=1.10 cfs 0.092 af
Subcatchment PR-2B3: CB-8 & CB-9	Runoff Area=0.116 ac 81.03% Impervious Runoff Depth=5.11" Tc=6.0 min CN=95 Runoff=0.62 cfs 0.049 af
Subcatchment PR-2B4: NE Corner along	Runoff Area=0.183 ac 6.56% Impervious Runoff Depth=3.61" Tc=6.0 min CN=81 Runoff=0.76 cfs 0.055 af
Subcatchment PR-2C1: CB-7 & Retail "A"	Runoff Area=0.483 ac 100.00% Impervious Runoff Depth=5.46" Tc=6.0 min CN=98 Runoff=2.63 cfs 0.220 af
Subcatchment PR-2C2: PR-2C2	Runoff Area=0.161 ac 0.00% Impervious Runoff Depth=2.48" Tc=6.0 min CN=69 Runoff=0.45 cfs 0.033 af
Subcatchment PR-3: NE Area by Bank	Runoff Area=0.121 ac 68.60% Impervious Runoff Depth=4.77" Tc=6.0 min CN=92 Runoff=0.62 cfs 0.048 af
Pond 1P: Infiltration Field 1	Peak Elev=70.24' Storage=562 cf Inflow=0.54 cfs 0.045 af Discarded=0.09 cfs 0.045 af Primary=0.00 cfs 0.000 af Outflow=0.09 cfs 0.045 af
Pond 2P: Infiltration Field 2	Peak Elev=63.60' Storage=11,079 cf Inflow=13.49 cfs 1.095 af Discarded=0.45 cfs 0.685 af Primary=10.92 cfs 0.410 af Outflow=11.36 cfs 1.095 af
Pond 3P: Infiltration Field 3	Peak Elev=62.38' Storage=2,982 cf Inflow=2.63 cfs 0.220 af Discarded=0.23 cfs 0.199 af Primary=0.88 cfs 0.021 af Outflow=1.10 cfs 0.220 af
Link EDMH: EDMH	Inflow=11.44 cfs 0.460 af Primary=11.44 cfs 0.460 af
Link Miner Ln: Miner Lane	Inflow=12.56 cfs 0.515 af Primary=12.56 cfs 0.515 af
Link POA-1: Drainage Swale at Southeast Corner	Inflow=1.46 cfs 0.106 af Primary=1.46 cfs 0.106 af
Link POA-2: EX CB in Miner Lane	Inflow=13.00 cfs 0.569 af Primary=13.00 cfs 0.569 af

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Type III 24-hr 25-Year Rainfall=5.70"

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Link POA-3: NE CB to Infiltration

Inflow=0.62 cfs 0.048 af

Primary=0.62 cfs 0.048 af

Total Runoff Area = 4.063 ac Runoff Volume = 1.652 af Average Runoff Depth = 4.88"
25.23% Pervious = 1.025 ac 74.77% Impervious = 3.038 ac

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Type III 24-hr 25-Year Rainfall=5.70"

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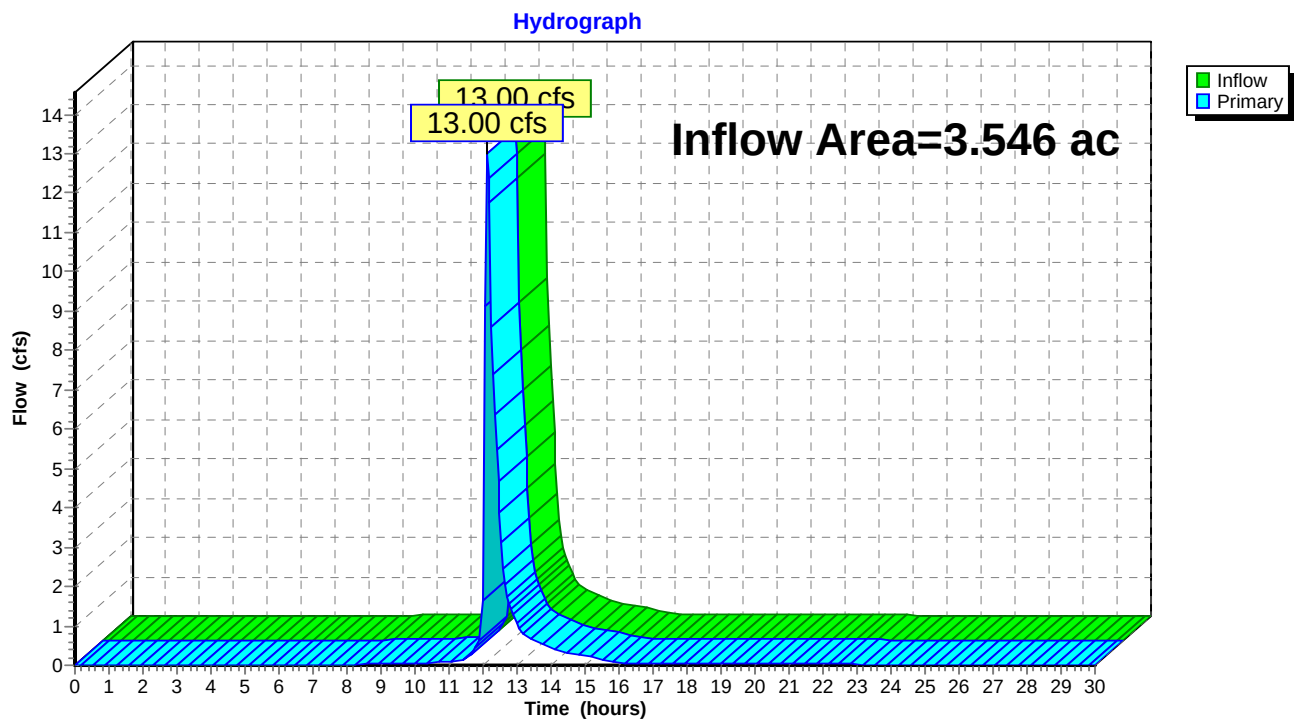
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Summary for Link POA-2: EX CB in Miner Lane

Inflow Area = 3.546 ac, 81.87% Impervious, Inflow Depth = 1.93" for 25-Year event
Inflow = 13.00 cfs @ 12.12 hrs, Volume= 0.569 af
Primary = 13.00 cfs @ 12.12 hrs, Volume= 0.569 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link POA-2: EX CB in Miner Lane



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Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment PR-1: Area along southern Runoff Area=0.396 ac 13.13% Impervious Runoff Depth=4.46"
Tc=6.0 min CN=77 Runoff=2.02 cfs 0.147 af

Subcatchment PR-2A: Retail "C" Runoff Area=0.099 ac 100.00% Impervious Runoff Depth=6.86"
Flow Length=25' Tc=6.0 min CN=98 Runoff=0.67 cfs 0.057 af

Subcatchment PR-2B1: Parking Area for Runoff Area=2.302 ac 87.45% Impervious Runoff Depth=6.62"
Tc=6.0 min CN=96 Runoff=15.52 cfs 1.271 af

Subcatchment PR-2B2: Canopy for Retail Runoff Area=0.202 ac 100.00% Impervious Runoff Depth=6.86"
Tc=6.0 min CN=98 Runoff=1.37 cfs 0.115 af

Subcatchment PR-2B3: CB-8 & CB-9 Runoff Area=0.116 ac 81.03% Impervious Runoff Depth=6.51"
Tc=6.0 min CN=95 Runoff=0.78 cfs 0.063 af

Subcatchment PR-2B4: NE Corner along Runoff Area=0.183 ac 6.56% Impervious Runoff Depth=4.90"
Tc=6.0 min CN=81 Runoff=1.01 cfs 0.075 af

Subcatchment PR-2C1: CB-7 & Retail "A" Runoff Area=0.483 ac 100.00% Impervious Runoff Depth=6.86"
Tc=6.0 min CN=98 Runoff=3.29 cfs 0.276 af

Subcatchment PR-2C2: PR-2C2 Runoff Area=0.161 ac 0.00% Impervious Runoff Depth=3.60"
Tc=6.0 min CN=69 Runoff=0.66 cfs 0.048 af

Subcatchment PR-3: NE Area by Bank Runoff Area=0.121 ac 68.60% Impervious Runoff Depth=6.15"
Tc=6.0 min CN=92 Runoff=0.79 cfs 0.062 af

Pond 1P: Infiltration Field 1 Peak Elev=70.84' Storage=758 cf Inflow=0.67 cfs 0.057 af
Discarded=0.10 cfs 0.057 af Primary=0.00 cfs 0.000 af Outflow=0.10 cfs 0.057 af

Pond 2P: Infiltration Field 2 Peak Elev=64.52' Storage=12,412 cf Inflow=16.90 cfs 1.386 af
Discarded=0.45 cfs 0.751 af Primary=11.80 cfs 0.635 af Outflow=12.25 cfs 1.386 af

Pond 3P: Infiltration Field 3 Peak Elev=62.57' Storage=3,093 cf Inflow=3.29 cfs 0.276 af
Discarded=0.23 cfs 0.224 af Primary=2.53 cfs 0.051 af Outflow=2.76 cfs 0.275 af

Link EDMH: EDMH Inflow=12.39 cfs 0.698 af
Primary=12.39 cfs 0.698 af

Link Miner Ln: Miner Lane Inflow=13.29 cfs 0.772 af
Primary=13.29 cfs 0.772 af

Link POA-1: Drainage Swale at Southeast Corner Inflow=2.02 cfs 0.147 af
Primary=2.02 cfs 0.147 af

Link POA-2: EX CB in Miner Lane Inflow=16.18 cfs 0.872 af
Primary=16.18 cfs 0.872 af

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Type III 24-hr 100-Year Rainfall=7.10"

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Link POA-3: NE CB to Infiltration

Inflow=0.79 cfs 0.062 af

Primary=0.79 cfs 0.062 af

Total Runoff Area = 4.063 ac Runoff Volume = 2.114 af Average Runoff Depth = 6.24"
25.23% Pervious = 1.025 ac 74.77% Impervious = 3.038 ac

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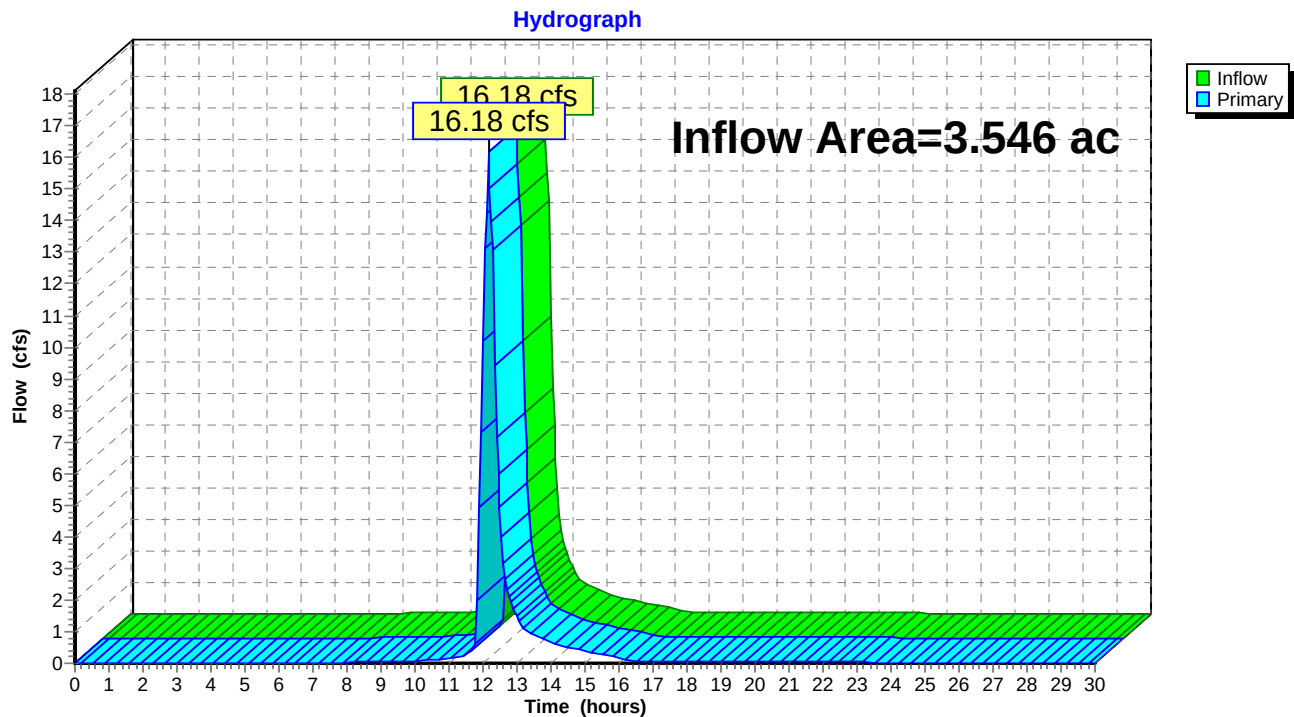
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Summary for Link POA-2: EX CB in Miner Lane

Inflow Area = 3.546 ac, 81.87% Impervious, Inflow Depth = 2.95" for 100-Year event
Inflow = 16.18 cfs @ 12.16 hrs, Volume= 0.872 af
Primary = 16.18 cfs @ 12.16 hrs, Volume= 0.872 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

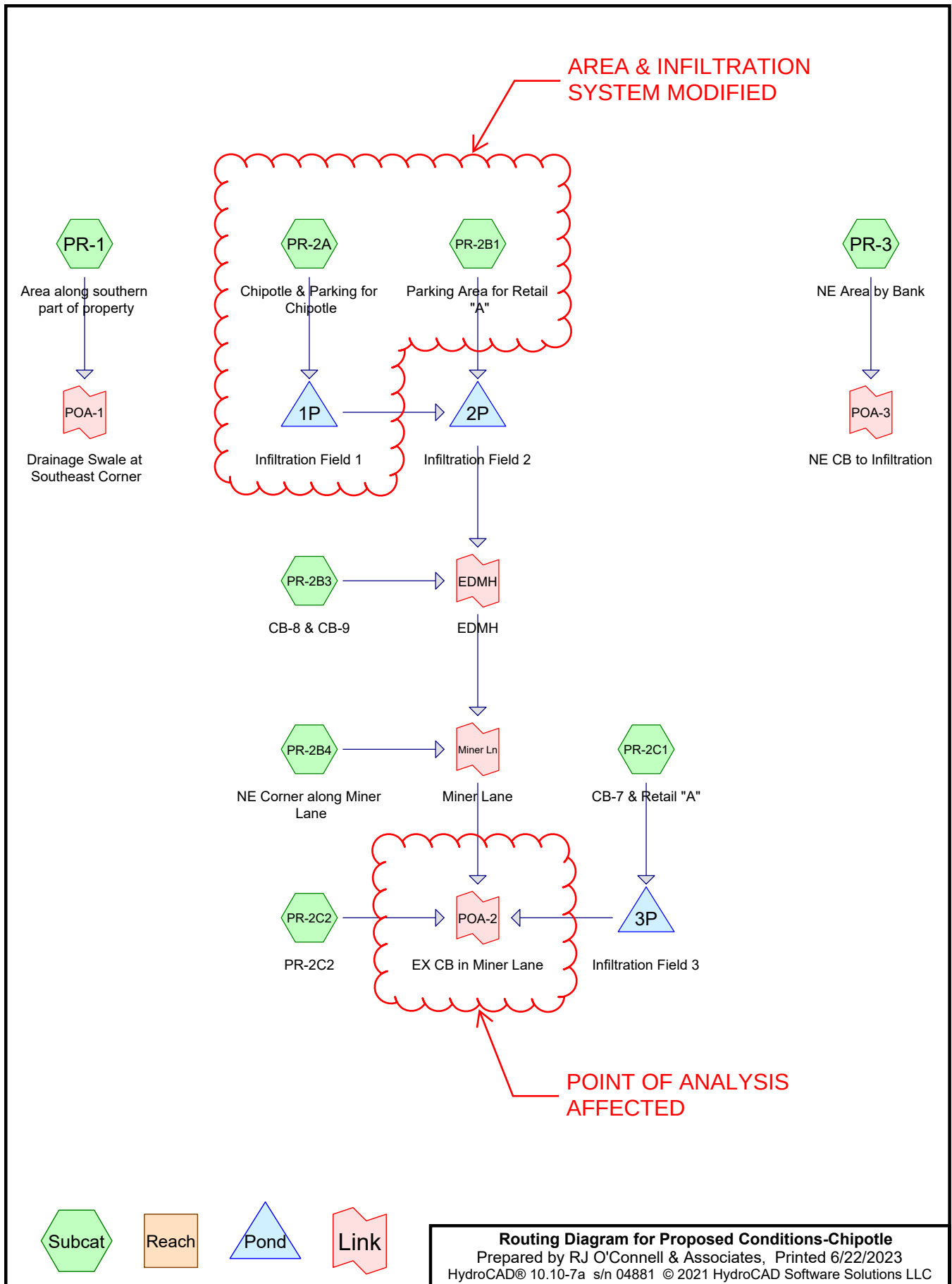
Link POA-2: EX CB in Miner Lane



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APPENDIX A

Post-Development Hydrological Computations



Proposed Conditions-Chipotle

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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.212	61	>75% Grass cover, Good, HSG B (PR-1, PR-2C2)
0.812	80	>75% Grass cover, Good, HSG D (PR-1, PR-2B1, PR-2B3, PR-2B4, PR-2C2, PR-3)
0.111	98	Paved parking, HSG D (PR-2A)
2.440	98	Pavement (PR-1, PR-2B1, PR-2B3, PR-2B4, PR-2C1, PR-3)
0.488	98	Roof (PR-2A, PR-2C1)
4.063	92	TOTAL AREA

Proposed Conditions-Chipotle

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Type III 24-hr 1-Year Rainfall=2.70"

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Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment PR-2A: Chipotle & Parking Runoff Area=0.164 ac 100.00% Impervious Runoff Depth=2.47"
Flow Length=25' Tc=6.0 min CN=98 Runoff=0.42 cfs 0.034 af

Subcatchment PR-2B1: Parking Area for Runoff Area=2.439 ac 88.19% Impervious Runoff Depth=2.26"
Tc=6.0 min CN=96 Runoff=5.94 cfs 0.459 af

Pond 1P: Infiltration Field 1 Peak Elev=70.53' Storage=656 cf Inflow=0.42 cfs 0.034 af
Discarded=0.03 cfs 0.034 af Primary=0.00 cfs 0.000 af Outflow=0.03 cfs 0.034 af

Link POA-2: EX CB in Miner Lane Inflow=0.57 cfs 0.044 af
Primary=0.57 cfs 0.044 af

Total Runoff Area = 2.603 ac Runoff Volume = 0.493 af Average Runoff Depth = 2.27"
11.06% Pervious = 0.288 ac 88.94% Impervious = 2.315 ac

Proposed Conditions-Chipotle

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Type III 24-hr 1-Year Rainfall=2.70"

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Summary for Subcatchment PR-2A: Chipotle & Parking for Chipotle

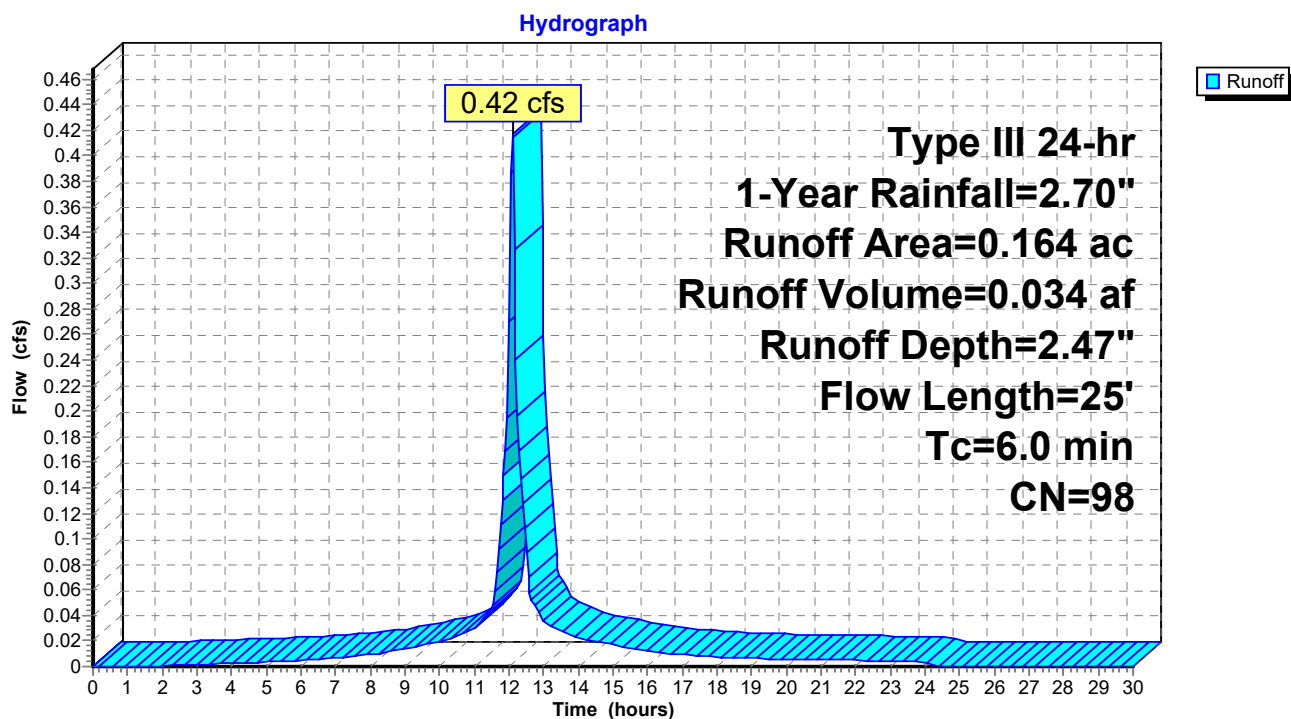
Runoff = 0.42 cfs @ 12.09 hrs, Volume= 0.034 af, Depth= 2.47"
Routed to Pond 1P : Infiltration Field 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Year Rainfall=2.70"

Area (ac)	CN	Description
* 0.053	98	Roof
0.111	98	Paved parking, HSG D
0.164	98	Weighted Average
0.164	98	100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0	25		0.07		Direct Entry, Direct

Subcatchment PR-2A: Chipotle & Parking for Chipotle



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Type III 24-hr 1-Year Rainfall=2.70"

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Summary for Subcatchment PR-2B1: Parking Area for Retail "A"

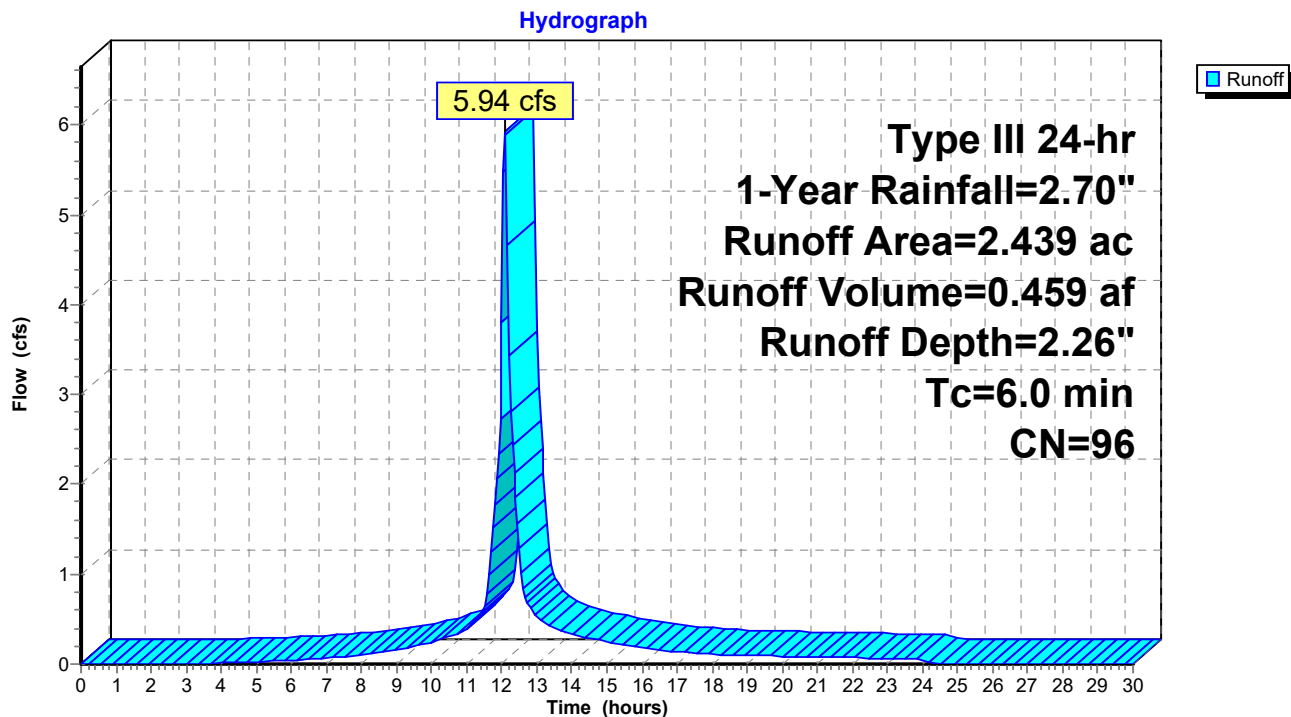
Runoff = 5.94 cfs @ 12.09 hrs, Volume= 0.459 af, Depth= 2.26"
Routed to Pond 2P : Infiltration Field 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Year Rainfall=2.70"

Area (ac)	CN	Description
* 2.151	98	Pavement
0.288	80	>75% Grass cover, Good, HSG D
2.439	96	Weighted Average
0.288	80	11.81% Pervious Area
2.151	98	88.19% Impervious Area

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

Subcatchment PR-2B1: Parking Area for Retail "A"



Proposed Conditions-Chipotle

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Type III 24-hr 1-Year Rainfall=2.70"

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Summary for Pond 1P: Infiltration Field 1

Inflow Area = 0.164 ac, 100.00% Impervious, Inflow Depth = 2.47" for 1-Year event
Inflow = 0.42 cfs @ 12.09 hrs, Volume= 0.034 af
Outflow = 0.03 cfs @ 13.47 hrs, Volume= 0.034 af, Atten= 93%, Lag= 82.9 min
Discarded = 0.03 cfs @ 13.47 hrs, Volume= 0.034 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond 2P : Infiltration Field 2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Peak Elev= 70.53' @ 13.47 hrs Surf.Area= 487 sf Storage= 656 cf

Plug-Flow detention time= 216.1 min calculated for 0.034 af (100% of inflow)
Center-of-Mass det. time= 215.9 min (976.1 - 760.1)

Volume	Invert	Avail.Storage	Storage Description
#1A	68.50'	458 cf	15.75'W x 30.92'L x 3.50'H Field A 1,704 cf Overall - 560 cf Embedded = 1,145 cf x 40.0% Voids
#2A	69.00'	560 cf	ADS_StormTech SC-740 x 12 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap Row Length Adjustment= +0.44' x 6.45 sf x 3 rows
		1,018 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	68.50'	1.500 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 65.50'
#2	Primary	71.20'	4.0' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#3	Primary	70.70'	6.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.03 cfs @ 13.47 hrs HW=70.53' (Free Discharge)

↑ **1=Exfiltration** (Controls 0.03 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=68.50' (Free Discharge)

↑ **2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

↑ **3=Orifice/Grate** (Controls 0.00 cfs)

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Type III 24-hr 1-Year Rainfall=2.70"

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Pond 1P: Infiltration Field 1 - Chamber Wizard Field A

Chamber Model = ADS_StormTech SC-740 (ADS StormTech® SC-740 without end caps)

Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf

Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

Row Length Adjustment= +0.44' x 6.45 sf x 3 rows

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

4 Chambers/Row x 7.12' Long +0.44' Row Adjustment = 28.92' Row Length +12.0" End Stone x 2 = 30.92' Base Length

3 Rows x 51.0" Wide + 6.0" Spacing x 2 + 12.0" Side Stone x 2 = 15.75' Base Width

6.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 3.50' Field Height

12 Chambers x 45.9 cf +0.44' Row Adjustment x 6.45 sf x 3 Rows = 559.8 cf Chamber Storage

1,704.4 cf Field - 559.8 cf Chambers = 1,144.6 cf Stone x 40.0% Voids = 457.8 cf Stone Storage

Chamber Storage + Stone Storage = 1,017.6 cf = 0.023 af

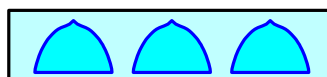
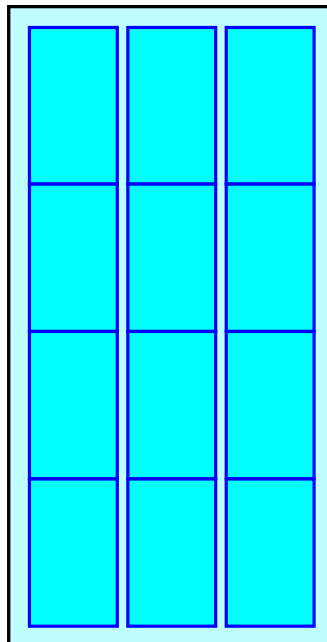
Overall Storage Efficiency = 59.7%

Overall System Size = 30.92' x 15.75' x 3.50'

12 Chambers

63.1 cy Field

42.4 cy Stone



Proposed Conditions-Chipotle

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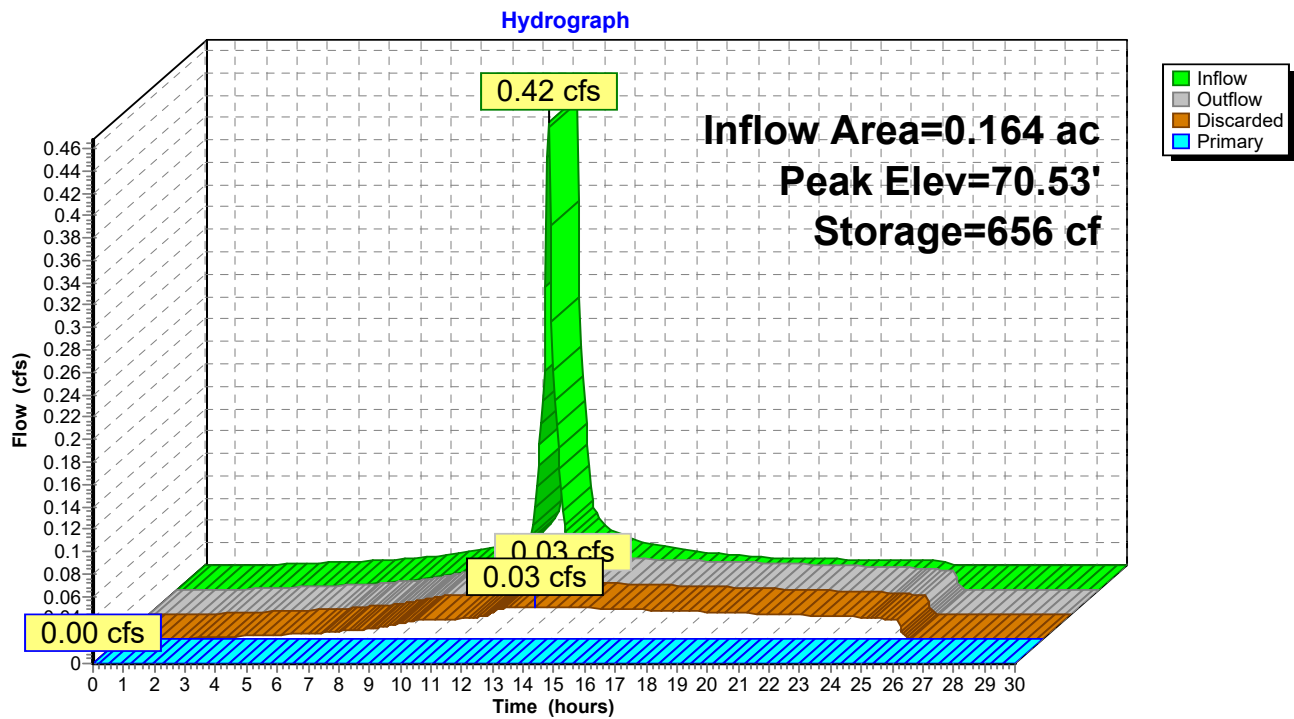
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Type III 24-hr 1-Year Rainfall=2.70"

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Pond 1P: Infiltration Field 1



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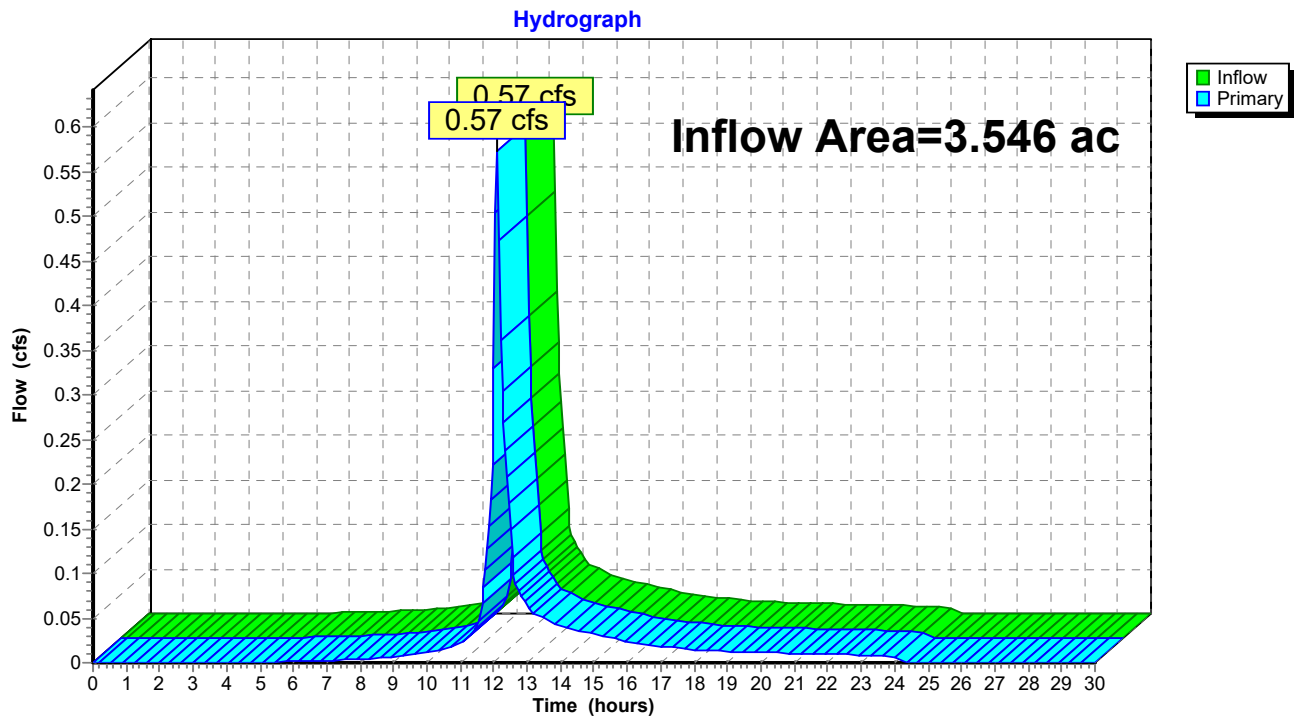
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Summary for Link POA-2: EX CB in Miner Lane

Inflow Area = 3.546 ac, 81.90% Impervious, Inflow Depth = 0.15" for 1-Year event
Inflow = 0.57 cfs @ 12.10 hrs, Volume= 0.044 af
Primary = 0.57 cfs @ 12.10 hrs, Volume= 0.044 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link POA-2: EX CB in Miner Lane



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Type III 24-hr 2-Year Rainfall=3.40"

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Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment PR-2A: Chipotle & Parking Runoff Area=0.164 ac 100.00% Impervious Runoff Depth=3.17"
Flow Length=25' Tc=6.0 min CN=98 Runoff=0.53 cfs 0.043 af

Subcatchment PR-2B1: Parking Area for Runoff Area=2.439 ac 88.19% Impervious Runoff Depth=2.95"
Tc=6.0 min CN=96 Runoff=7.63 cfs 0.599 af

Pond 1P: Infiltration Field 1 Peak Elev=70.89' Storage=771 cf Inflow=0.53 cfs 0.043 af
Discarded=0.03 cfs 0.039 af Primary=0.11 cfs 0.004 af Outflow=0.14 cfs 0.043 af

Link POA-2: EX CB in Miner Lane Inflow=2.11 cfs 0.135 af
Primary=2.11 cfs 0.135 af

Total Runoff Area = 2.603 ac Runoff Volume = 0.642 af Average Runoff Depth = 2.96"
11.06% Pervious = 0.288 ac 88.94% Impervious = 2.315 ac

Proposed Conditions-Chipotle

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Type III 24-hr 2-Year Rainfall=3.40"

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Summary for Subcatchment PR-2A: Chipotle & Parking for Chipotle

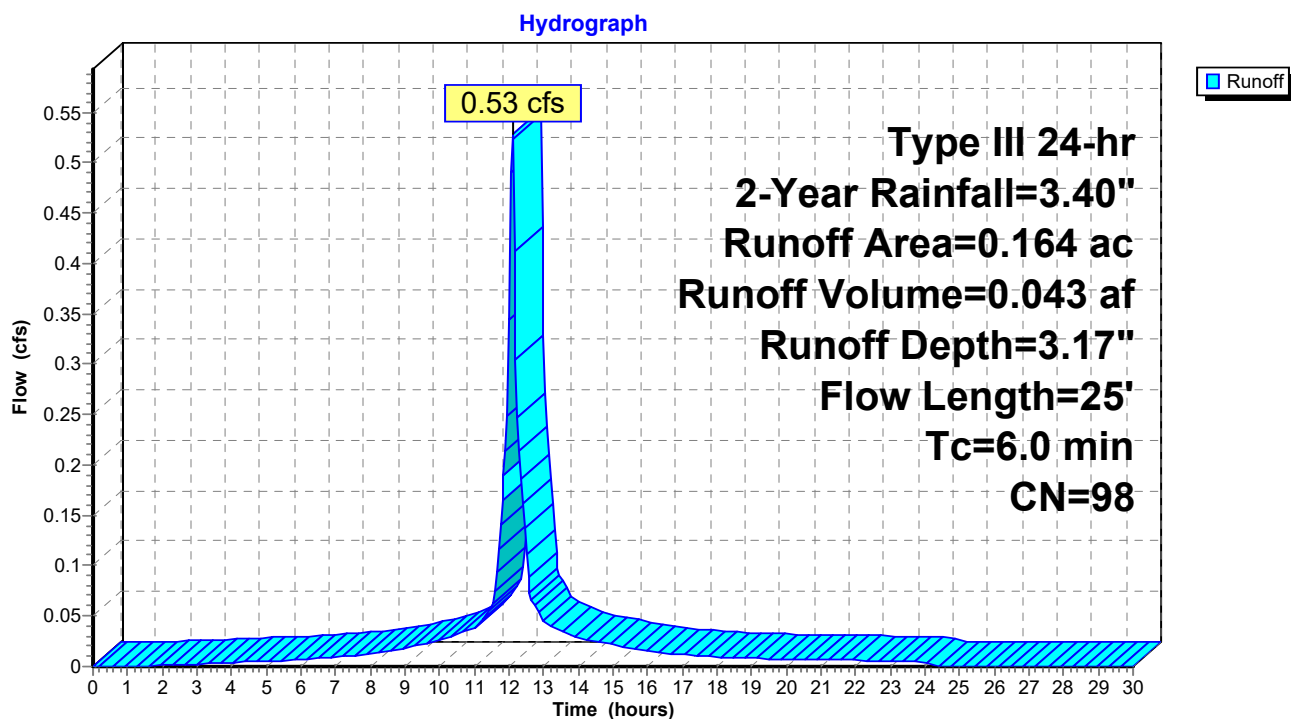
Runoff = 0.53 cfs @ 12.09 hrs, Volume= 0.043 af, Depth= 3.17"
Routed to Pond 1P : Infiltration Field 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.40"

Area (ac)	CN	Description
* 0.053	98	Roof
0.111	98	Paved parking, HSG D
0.164	98	Weighted Average
0.164	98	100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0	25		0.07		Direct Entry, Direct

Subcatchment PR-2A: Chipotle & Parking for Chipotle



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Type III 24-hr 2-Year Rainfall=3.40"

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Summary for Subcatchment PR-2B1: Parking Area for Retail "A"

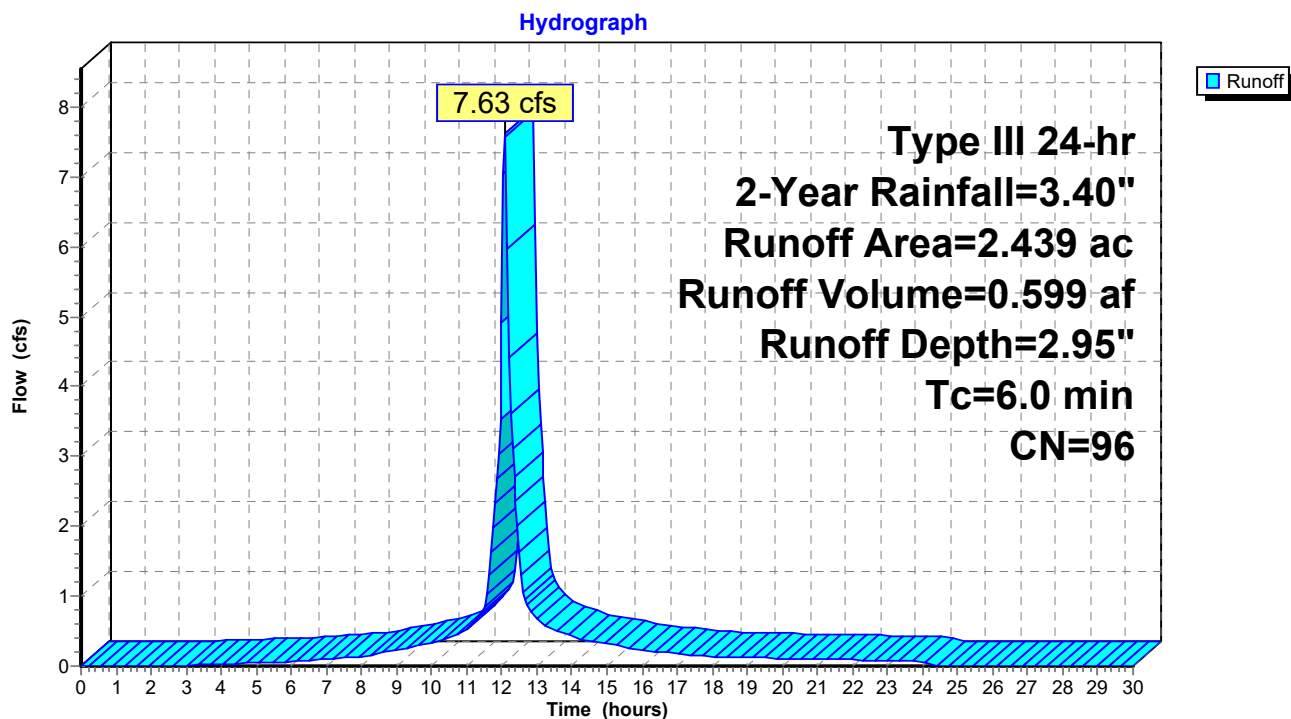
Runoff = 7.63 cfs @ 12.09 hrs, Volume= 0.599 af, Depth= 2.95"
Routed to Pond 2P : Infiltration Field 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.40"

Area (ac)	CN	Description
* 2.151	98	Pavement
0.288	80	>75% Grass cover, Good, HSG D
2.439	96	Weighted Average
0.288	80	11.81% Pervious Area
2.151	98	88.19% Impervious Area

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

Subcatchment PR-2B1: Parking Area for Retail "A"



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Type III 24-hr 2-Year Rainfall=3.40"

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Summary for Pond 1P: Infiltration Field 1

Inflow Area = 0.164 ac, 100.00% Impervious, Inflow Depth = 3.17" for 2-Year event
 Inflow = 0.53 cfs @ 12.09 hrs, Volume= 0.043 af
 Outflow = 0.14 cfs @ 12.46 hrs, Volume= 0.043 af, Atten= 74%, Lag= 22.3 min
 Discarded = 0.03 cfs @ 12.46 hrs, Volume= 0.039 af
 Primary = 0.11 cfs @ 12.46 hrs, Volume= 0.004 af
 Routed to Pond 2P : Infiltration Field 2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 Peak Elev= 70.89' @ 12.46 hrs Surf.Area= 487 sf Storage= 771 cf

Plug-Flow detention time= 214.0 min calculated for 0.043 af (100% of inflow)
 Center-of-Mass det. time= 213.9 min (969.1 - 755.1)

Volume	Invert	Avail.Storage	Storage Description
#1A	68.50'	458 cf	15.75'W x 30.92'L x 3.50'H Field A 1,704 cf Overall - 560 cf Embedded = 1,145 cf x 40.0% Voids
#2A	69.00'	560 cf	ADS_StormTech SC-740 x 12 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap Row Length Adjustment= +0.44' x 6.45 sf x 3 rows
		1,018 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	68.50'	1.500 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 65.50'
#2	Primary	71.20'	4.0' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#3	Primary	70.70'	6.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.03 cfs @ 12.46 hrs HW=70.89' (Free Discharge)↑ **1=Exfiltration** (Controls 0.03 cfs)**Primary OutFlow** Max=0.10 cfs @ 12.46 hrs HW=70.89' (Free Discharge)↑ **2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)↑ **3=Orifice/Grate** (Orifice Controls 0.10 cfs @ 1.49 fps)

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Type III 24-hr 2-Year Rainfall=3.40"

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Pond 1P: Infiltration Field 1 - Chamber Wizard Field A

Chamber Model = ADS_StormTech SC-740 (ADS StormTech® SC-740 without end caps)

Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf

Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

Row Length Adjustment= +0.44' x 6.45 sf x 3 rows

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

4 Chambers/Row x 7.12' Long +0.44' Row Adjustment = 28.92' Row Length +12.0" End Stone x 2 = 30.92' Base Length

3 Rows x 51.0" Wide + 6.0" Spacing x 2 + 12.0" Side Stone x 2 = 15.75' Base Width

6.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 3.50' Field Height

12 Chambers x 45.9 cf +0.44' Row Adjustment x 6.45 sf x 3 Rows = 559.8 cf Chamber Storage

1,704.4 cf Field - 559.8 cf Chambers = 1,144.6 cf Stone x 40.0% Voids = 457.8 cf Stone Storage

Chamber Storage + Stone Storage = 1,017.6 cf = 0.023 af

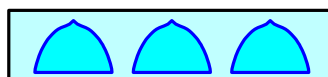
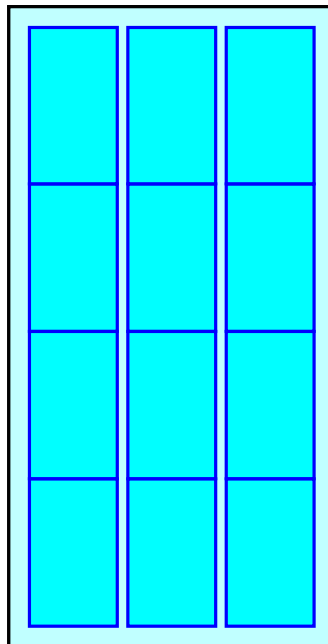
Overall Storage Efficiency = 59.7%

Overall System Size = 30.92' x 15.75' x 3.50'

12 Chambers

63.1 cy Field

42.4 cy Stone



Proposed Conditions-Chipotle

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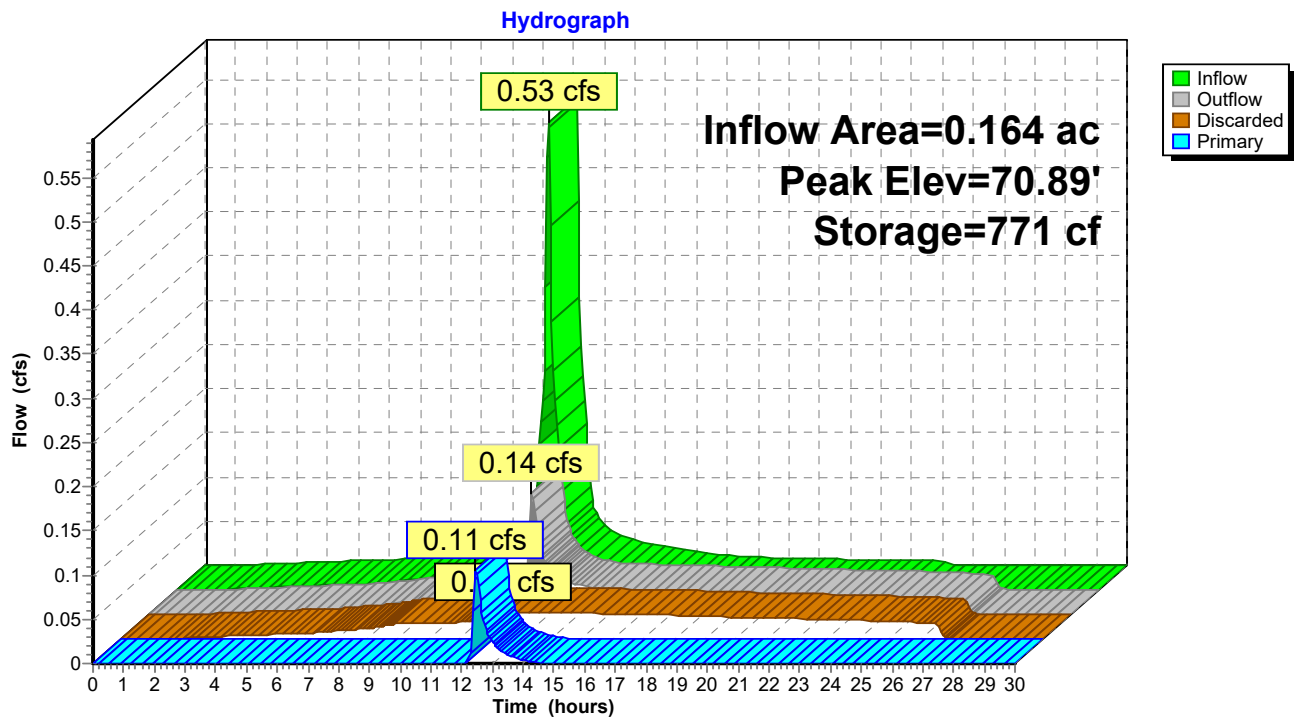
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Pond 1P: Infiltration Field 1



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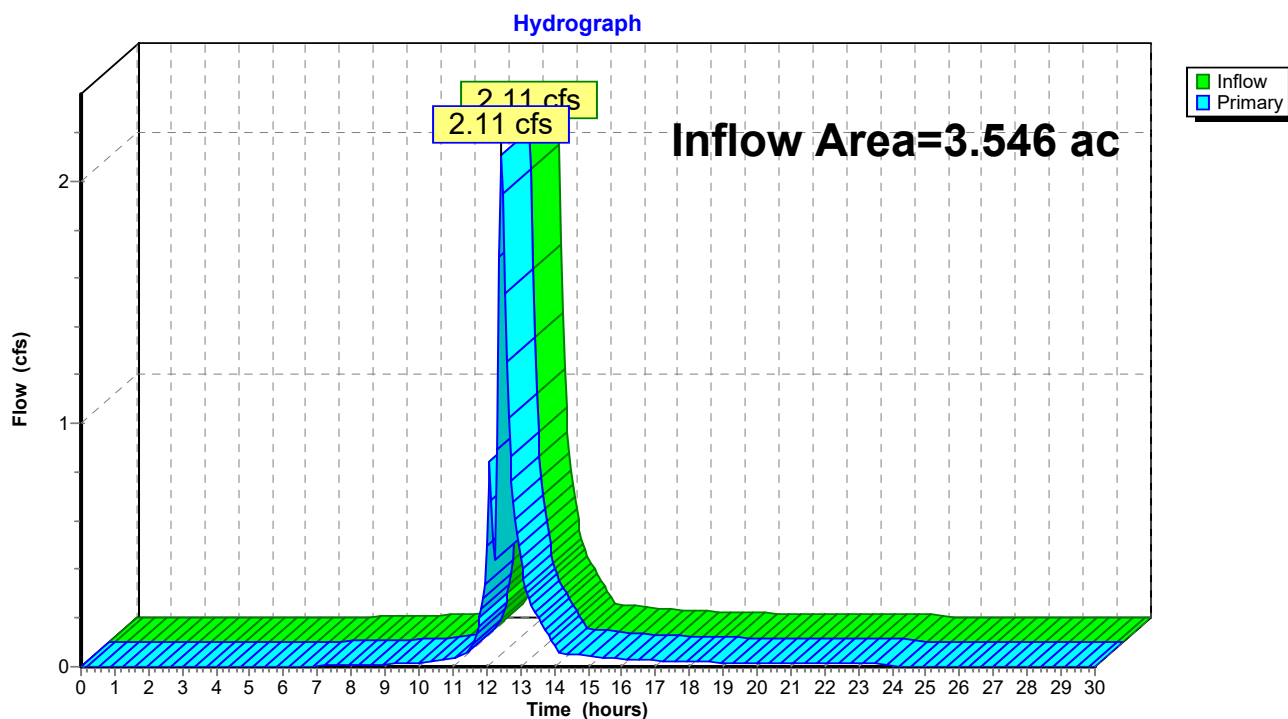
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Summary for Link POA-2: EX CB in Miner Lane

Inflow Area = 3.546 ac, 81.90% Impervious, Inflow Depth = 0.46" for 2-Year event
Inflow = 2.11 cfs @ 12.42 hrs, Volume= 0.135 af
Primary = 2.11 cfs @ 12.42 hrs, Volume= 0.135 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link POA-2: EX CB in Miner Lane



Proposed Conditions-Chipotle

Type III 24-hr 10-Year Rainfall=5.00"

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Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment PR-2A: Chipotle & Parking Runoff Area=0.164 ac 100.00% Impervious Runoff Depth=4.76"
Flow Length=25' Tc=6.0 min CN=98 Runoff=0.78 cfs 0.065 af

Subcatchment PR-2B1: Parking Area for Runoff Area=2.439 ac 88.19% Impervious Runoff Depth=4.53"
Tc=6.0 min CN=96 Runoff=11.46 cfs 0.921 af

Pond 1P: Infiltration Field 1 Peak Elev=71.24' Storage=866 cf Inflow=0.78 cfs 0.065 af
Discarded=0.03 cfs 0.045 af Primary=0.59 cfs 0.020 af Outflow=0.62 cfs 0.065 af

Link POA-2: EX CB in Miner Lane Inflow=11.00 cfs 0.423 af
Primary=11.00 cfs 0.423 af

Total Runoff Area = 2.603 ac Runoff Volume = 0.986 af Average Runoff Depth = 4.55"
11.06% Pervious = 0.288 ac 88.94% Impervious = 2.315 ac

Proposed Conditions-Chipotle

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Type III 24-hr 10-Year Rainfall=5.00"

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Summary for Subcatchment PR-2A: Chipotle & Parking for Chipotle

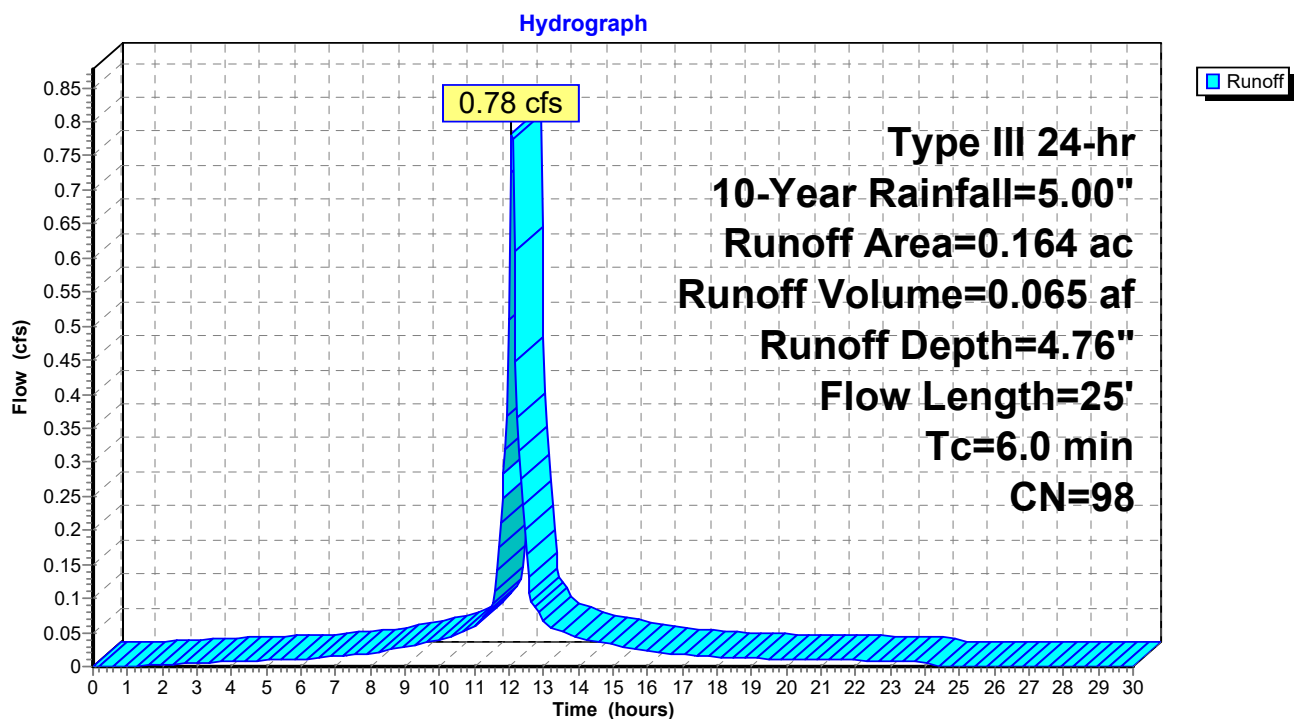
Runoff = 0.78 cfs @ 12.09 hrs, Volume= 0.065 af, Depth= 4.76"
Routed to Pond 1P : Infiltration Field 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=5.00"

Area (ac)	CN	Description
* 0.053	98	Roof
0.111	98	Paved parking, HSG D
0.164	98	Weighted Average
0.164	98	100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0	25		0.07		Direct Entry, Direct

Subcatchment PR-2A: Chipotle & Parking for Chipotle



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Type III 24-hr 10-Year Rainfall=5.00"

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Summary for Subcatchment PR-2B1: Parking Area for Retail "A"

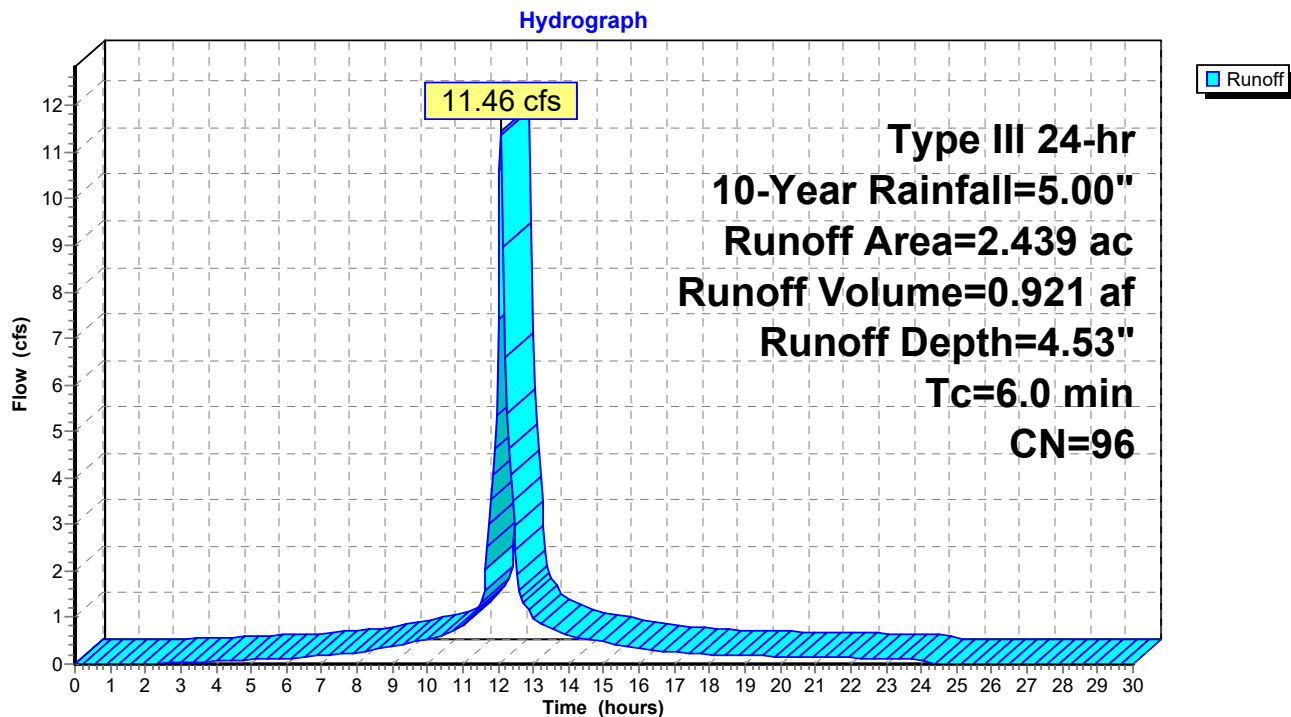
Runoff = 11.46 cfs @ 12.09 hrs, Volume= 0.921 af, Depth= 4.53"
Routed to Pond 2P : Infiltration Field 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=5.00"

Area (ac)	CN	Description
* 2.151	98	Pavement
0.288	80	>75% Grass cover, Good, HSG D
2.439	96	Weighted Average
0.288	80	11.81% Pervious Area
2.151	98	88.19% Impervious Area

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

Subcatchment PR-2B1: Parking Area for Retail "A"



Proposed Conditions-Chipotle

Type III 24-hr 10-Year Rainfall=5.00"

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Summary for Pond 1P: Infiltration Field 1

Inflow Area = 0.164 ac, 100.00% Impervious, Inflow Depth = 4.76" for 10-Year event
 Inflow = 0.78 cfs @ 12.09 hrs, Volume= 0.065 af
 Outflow = 0.62 cfs @ 12.16 hrs, Volume= 0.065 af, Atten= 20%, Lag= 4.4 min
 Discarded = 0.03 cfs @ 12.17 hrs, Volume= 0.045 af
 Primary = 0.59 cfs @ 12.16 hrs, Volume= 0.020 af
 Routed to Pond 2P : Infiltration Field 2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 Peak Elev= 71.24' @ 12.17 hrs Surf.Area= 487 sf Storage= 866 cf

Plug-Flow detention time= 174.6 min calculated for 0.065 af (100% of inflow)
 Center-of-Mass det. time= 174.7 min (922.8 - 748.0)

Volume	Invert	Avail.Storage	Storage Description
#1A	68.50'	458 cf	15.75'W x 30.92'L x 3.50'H Field A 1,704 cf Overall - 560 cf Embedded = 1,145 cf x 40.0% Voids
#2A	69.00'	560 cf	ADS_StormTech SC-740 x 12 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap Row Length Adjustment= +0.44' x 6.45 sf x 3 rows
		1,018 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	68.50'	1.500 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 65.50'
#2	Primary	71.20'	4.0' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#3	Primary	70.70'	6.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.03 cfs @ 12.17 hrs HW=71.23' (Free Discharge)

↑1=Exfiltration (Controls 0.03 cfs)

Primary OutFlow Max=0.56 cfs @ 12.16 hrs HW=71.23' (Free Discharge)

↑2=Broad-Crested Rectangular Weir (Weir Controls 0.06 cfs @ 0.49 fps)

↑3=Orifice/Grate (Orifice Controls 0.50 cfs @ 2.55 fps)

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Type III 24-hr 10-Year Rainfall=5.00"

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Pond 1P: Infiltration Field 1 - Chamber Wizard Field A

Chamber Model = ADS_StormTech SC-740 (ADS StormTech® SC-740 without end caps)

Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf

Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

Row Length Adjustment= +0.44' x 6.45 sf x 3 rows

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

4 Chambers/Row x 7.12' Long +0.44' Row Adjustment = 28.92' Row Length +12.0" End Stone x 2 = 30.92' Base Length

3 Rows x 51.0" Wide + 6.0" Spacing x 2 + 12.0" Side Stone x 2 = 15.75' Base Width

6.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 3.50' Field Height

12 Chambers x 45.9 cf +0.44' Row Adjustment x 6.45 sf x 3 Rows = 559.8 cf Chamber Storage

1,704.4 cf Field - 559.8 cf Chambers = 1,144.6 cf Stone x 40.0% Voids = 457.8 cf Stone Storage

Chamber Storage + Stone Storage = 1,017.6 cf = 0.023 af

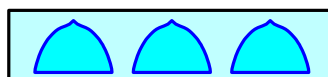
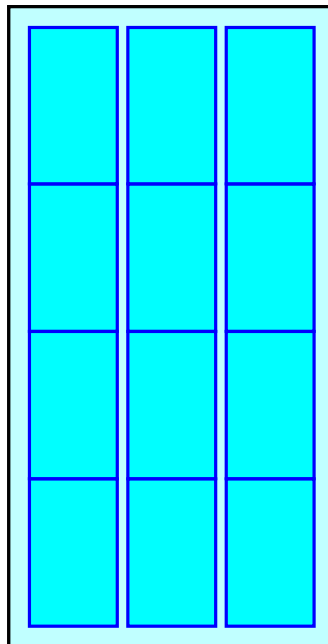
Overall Storage Efficiency = 59.7%

Overall System Size = 30.92' x 15.75' x 3.50'

12 Chambers

63.1 cy Field

42.4 cy Stone



Proposed Conditions-Chipotle

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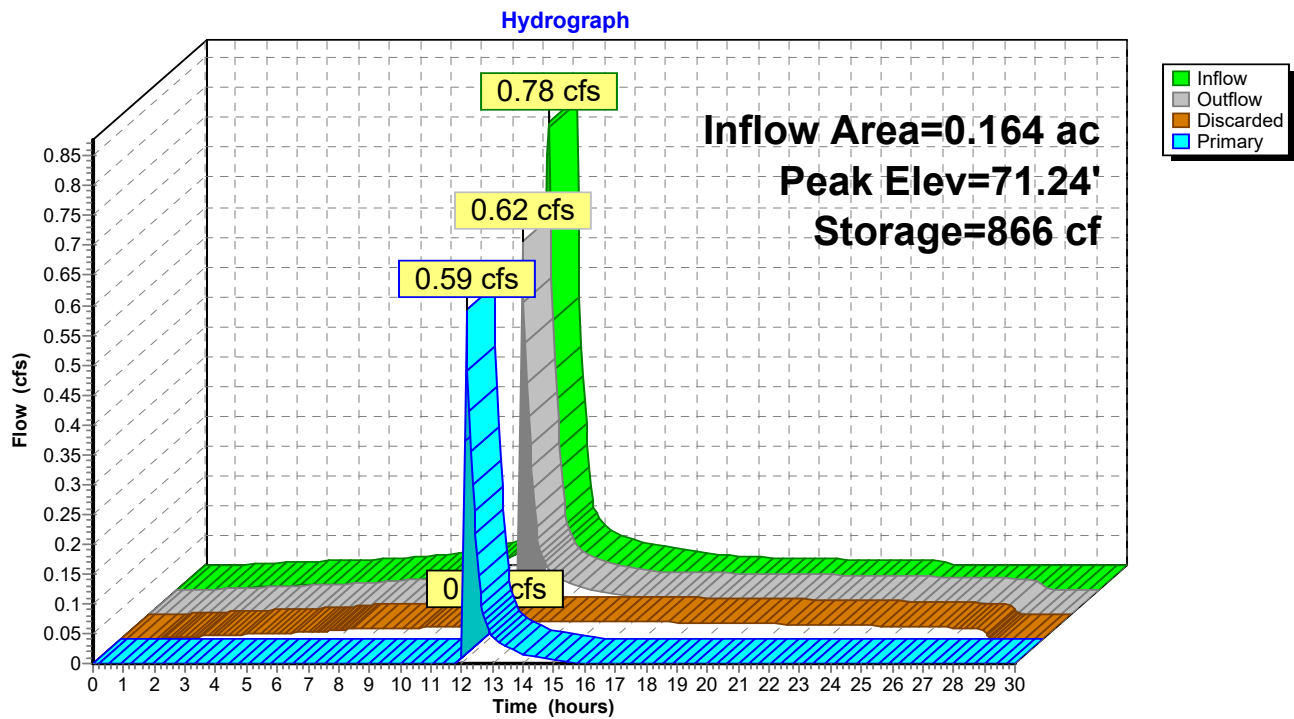
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Type III 24-hr 10-Year Rainfall=5.00"

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Pond 1P: Infiltration Field 1



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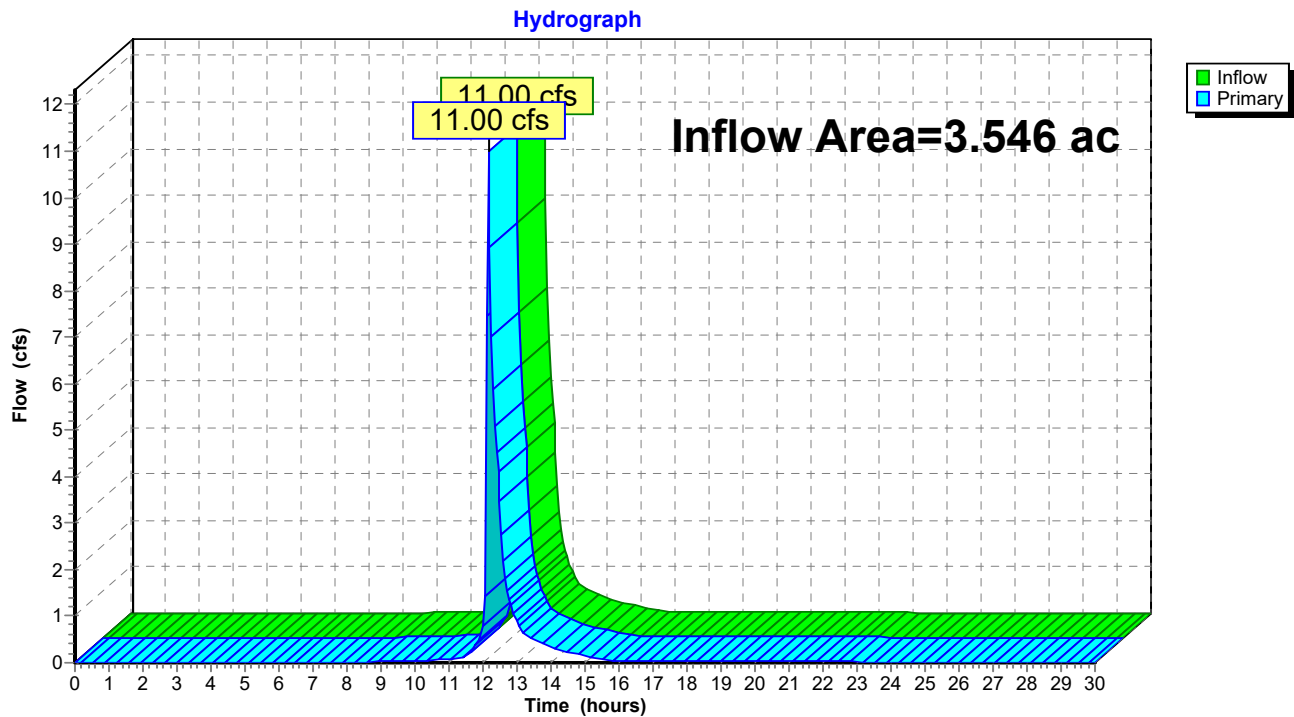
Page 26

Summary for Link POA-2: EX CB in Miner Lane

Inflow Area = 3.546 ac, 81.90% Impervious, Inflow Depth = 1.43" for 10-Year event
Inflow = 11.00 cfs @ 12.16 hrs, Volume= 0.423 af
Primary = 11.00 cfs @ 12.16 hrs, Volume= 0.423 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link POA-2: EX CB in Miner Lane



Proposed Conditions-Chipotle

Type III 24-hr 25-Year Rainfall=5.70"

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Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment PR-2A: Chipotle & Parking Runoff Area=0.164 ac 100.00% Impervious Runoff Depth=5.46"
Flow Length=25' Tc=6.0 min CN=98 Runoff=0.89 cfs 0.075 af

Subcatchment PR-2B1: Parking Area for Runoff Area=2.439 ac 88.19% Impervious Runoff Depth=5.23"
Tc=6.0 min CN=96 Runoff=13.13 cfs 1.063 af

Pond 1P: Infiltration Field 1 Peak Elev=71.30' Storage=879 cf Inflow=0.89 cfs 0.075 af
Discarded=0.03 cfs 0.048 af Primary=0.85 cfs 0.027 af Outflow=0.89 cfs 0.075 af

Link POA-2: EX CB in Miner Lane Inflow=13.17 cfs 0.572 af
Primary=13.17 cfs 0.572 af

Total Runoff Area = 2.603 ac Runoff Volume = 1.137 af Average Runoff Depth = 5.24"
11.06% Pervious = 0.288 ac 88.94% Impervious = 2.315 ac

Proposed Conditions-Chipotle

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Type III 24-hr 25-Year Rainfall=5.70"

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Summary for Subcatchment PR-2A: Chipotle & Parking for Chipotle

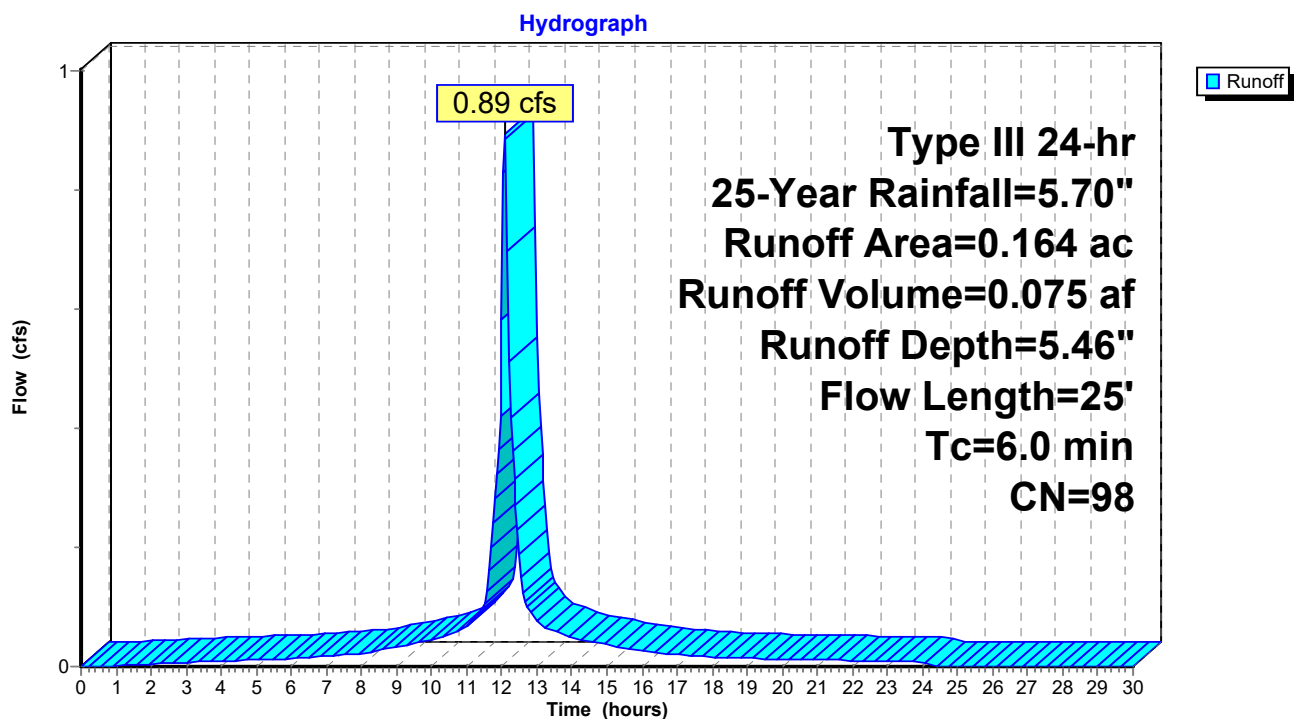
Runoff = 0.89 cfs @ 12.09 hrs, Volume= 0.075 af, Depth= 5.46"
Routed to Pond 1P : Infiltration Field 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.70"

Area (ac)	CN	Description
* 0.053	98	Roof
0.111	98	Paved parking, HSG D
0.164	98	Weighted Average
0.164	98	100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0	25		0.07		Direct Entry, Direct

Subcatchment PR-2A: Chipotle & Parking for Chipotle



Proposed Conditions-Chipotle

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Type III 24-hr 25-Year Rainfall=5.70"

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Summary for Subcatchment PR-2B1: Parking Area for Retail "A"

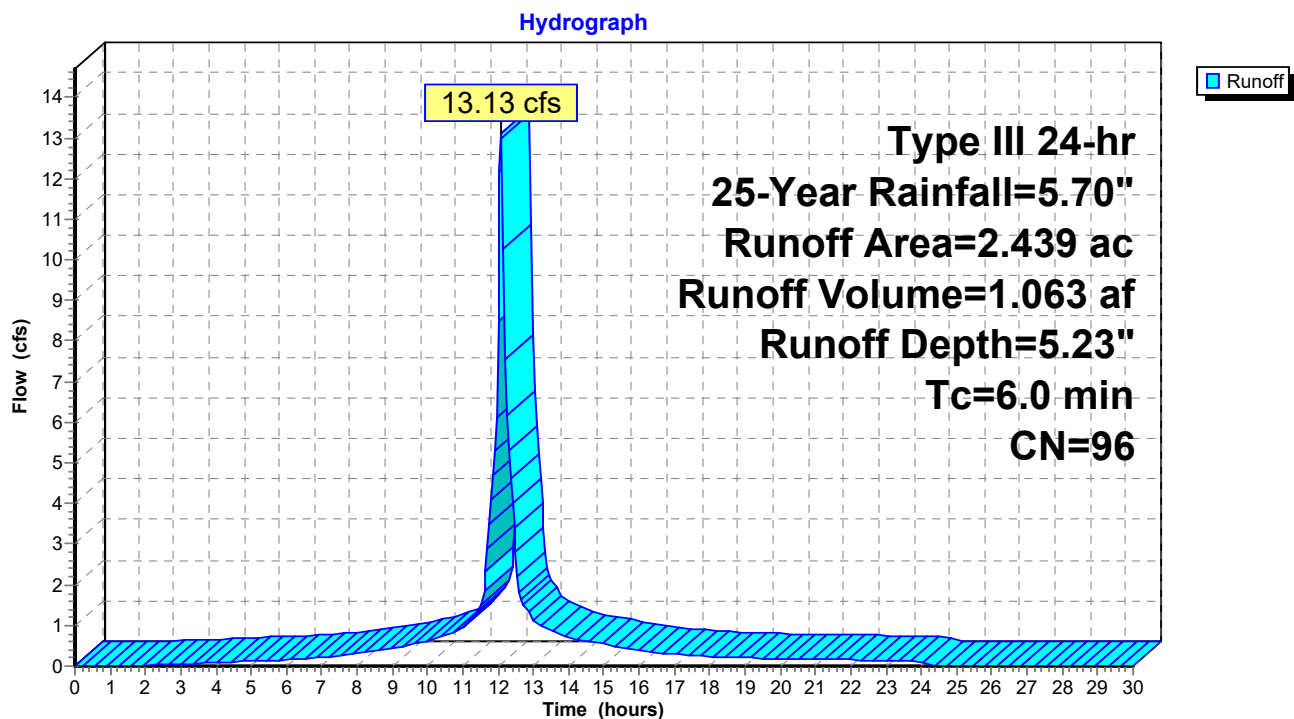
Runoff = 13.13 cfs @ 12.09 hrs, Volume= 1.063 af, Depth= 5.23"
Routed to Pond 2P : Infiltration Field 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.70"

Area (ac)	CN	Description
* 2.151	98	Pavement
0.288	80	>75% Grass cover, Good, HSG D
2.439	96	Weighted Average
0.288	80	11.81% Pervious Area
2.151	98	88.19% Impervious Area

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

Subcatchment PR-2B1: Parking Area for Retail "A"



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Type III 24-hr 25-Year Rainfall=5.70"

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Summary for Pond 1P: Infiltration Field 1

Inflow Area = 0.164 ac, 100.00% Impervious, Inflow Depth = 5.46" for 25-Year event
Inflow = 0.89 cfs @ 12.09 hrs, Volume= 0.075 af
Outflow = 0.89 cfs @ 12.12 hrs, Volume= 0.075 af, Atten= 1%, Lag= 1.8 min
Discarded = 0.03 cfs @ 12.12 hrs, Volume= 0.048 af
Primary = 0.85 cfs @ 12.12 hrs, Volume= 0.027 af
Routed to Pond 2P : Infiltration Field 2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Peak Elev= 71.30' @ 12.12 hrs Surf.Area= 487 sf Storage= 879 cf

Plug-Flow detention time= 163.3 min calculated for 0.075 af (100% of inflow)
Center-of-Mass det. time= 163.5 min (909.5 - 745.9)

Volume	Invert	Avail.Storage	Storage Description
#1A	68.50'	458 cf	15.75'W x 30.92'L x 3.50'H Field A 1,704 cf Overall - 560 cf Embedded = 1,145 cf x 40.0% Voids
#2A	69.00'	560 cf	ADS_StormTech SC-740 x 12 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap Row Length Adjustment= +0.44' x 6.45 sf x 3 rows
		1,018 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	68.50'	1.500 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 65.50'
#2	Primary	71.20'	4.0' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#3	Primary	70.70'	6.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.03 cfs @ 12.12 hrs HW=71.28' (Free Discharge)

↑ **1=Exfiltration** (Controls 0.03 cfs)

Primary OutFlow Max=0.79 cfs @ 12.12 hrs HW=71.28' (Free Discharge)

↑ **2=Broad-Crested Rectangular Weir** (Weir Controls 0.25 cfs @ 0.79 fps)

↑ **3=Orifice/Grate** (Orifice Controls 0.54 cfs @ 2.76 fps)

Proposed Conditions-Chipotle

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Type III 24-hr 25-Year Rainfall=5.70"

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Pond 1P: Infiltration Field 1 - Chamber Wizard Field A

Chamber Model = ADS_StormTech SC-740 (ADS StormTech® SC-740 without end caps)

Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf

Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

Row Length Adjustment= +0.44' x 6.45 sf x 3 rows

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

4 Chambers/Row x 7.12' Long +0.44' Row Adjustment = 28.92' Row Length +12.0" End Stone x 2 = 30.92' Base Length

3 Rows x 51.0" Wide + 6.0" Spacing x 2 + 12.0" Side Stone x 2 = 15.75' Base Width

6.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 3.50' Field Height

12 Chambers x 45.9 cf +0.44' Row Adjustment x 6.45 sf x 3 Rows = 559.8 cf Chamber Storage

1,704.4 cf Field - 559.8 cf Chambers = 1,144.6 cf Stone x 40.0% Voids = 457.8 cf Stone Storage

Chamber Storage + Stone Storage = 1,017.6 cf = 0.023 af

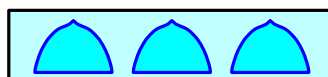
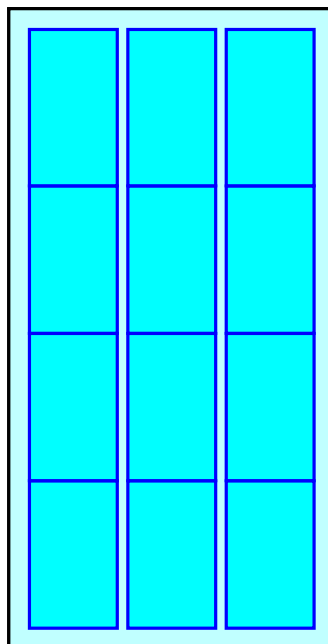
Overall Storage Efficiency = 59.7%

Overall System Size = 30.92' x 15.75' x 3.50'

12 Chambers

63.1 cy Field

42.4 cy Stone



Proposed Conditions-Chipotle

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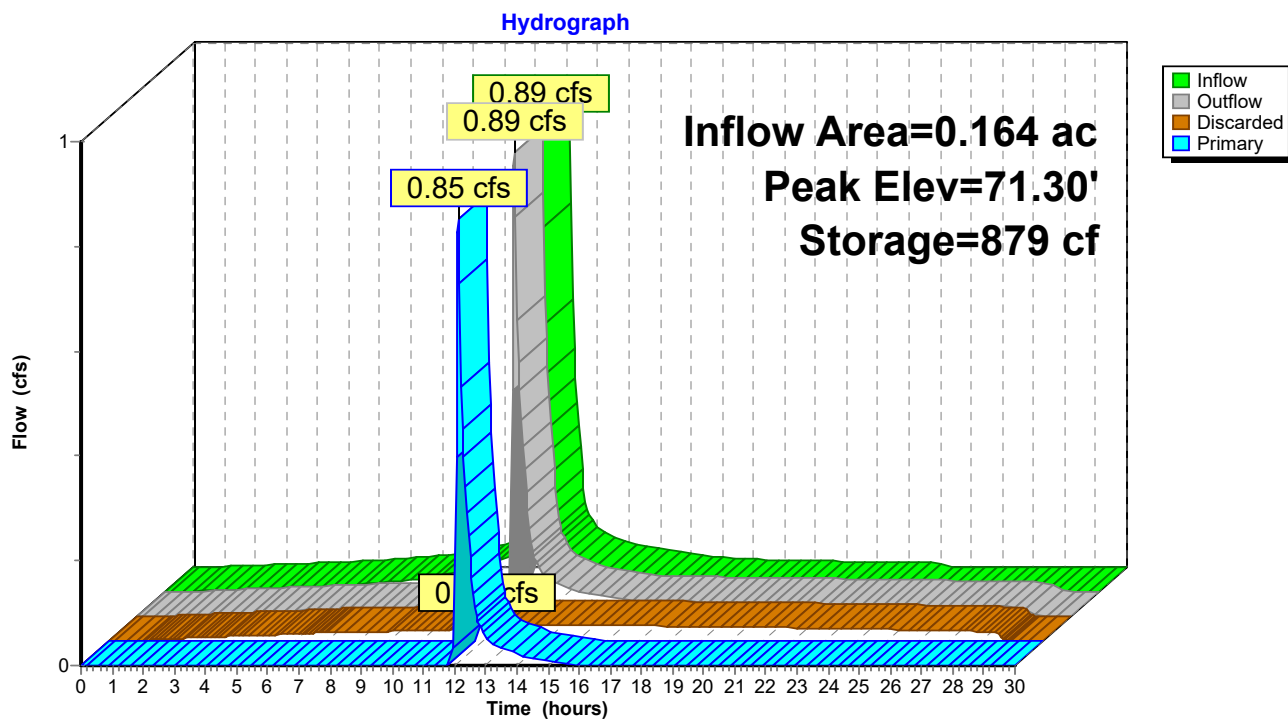
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Type III 24-hr 25-Year Rainfall=5.70"

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Pond 1P: Infiltration Field 1



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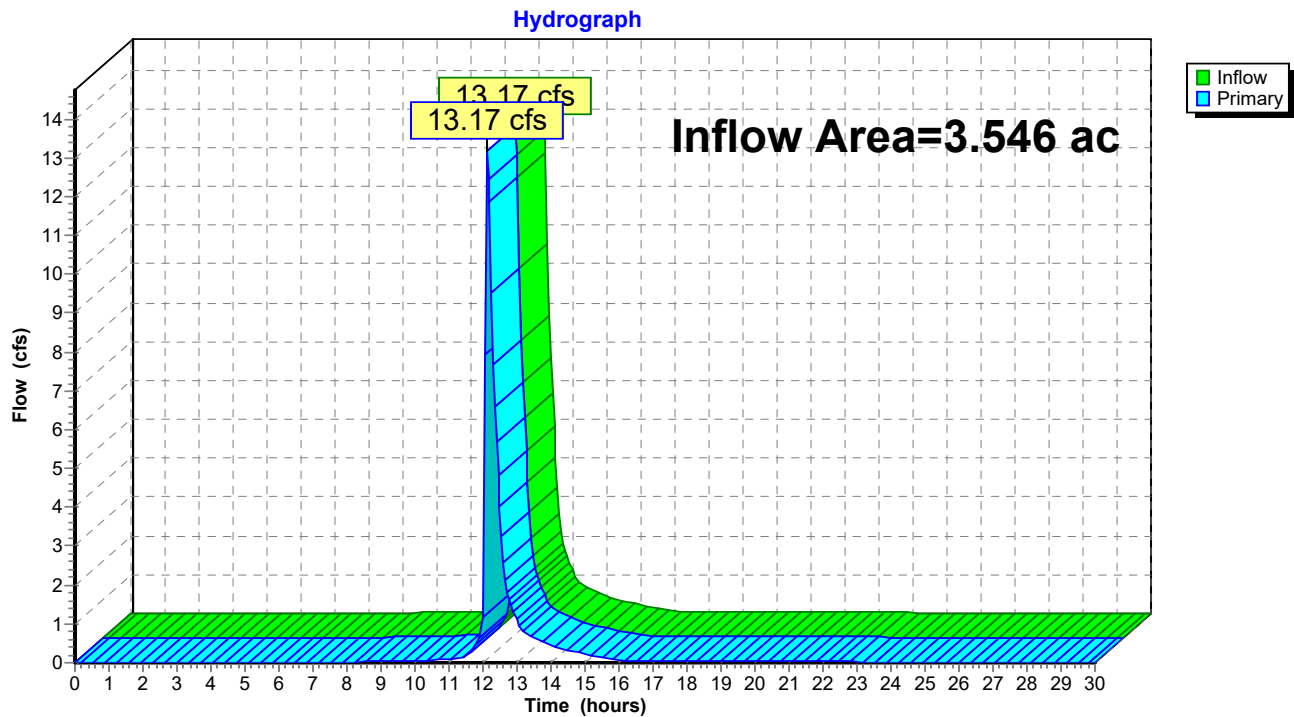
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Summary for Link POA-2: EX CB in Miner Lane

Inflow Area = 3.546 ac, 81.90% Impervious, Inflow Depth = 1.94" for 25-Year event
Inflow = 13.17 cfs @ 12.12 hrs, Volume= 0.572 af
Primary = 13.17 cfs @ 12.12 hrs, Volume= 0.572 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link POA-2: EX CB in Miner Lane



Proposed Conditions-Chipotle

Type III 24-hr 50-Year Rainfall=6.30"

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Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment PR-2A: Chipotle & Parking Runoff Area=0.164 ac 100.00% Impervious Runoff Depth=6.06"
Flow Length=25' Tc=6.0 min CN=98 Runoff=0.99 cfs 0.083 af

Subcatchment PR-2B1: Parking Area for Runoff Area=2.439 ac 88.19% Impervious Runoff Depth=5.83"
Tc=6.0 min CN=96 Runoff=14.55 cfs 1.184 af

Pond 1P: Infiltration Field 1 Peak Elev=71.32' Storage=882 cf Inflow=0.99 cfs 0.083 af
Discarded=0.03 cfs 0.050 af Primary=1.01 cfs 0.033 af Outflow=1.05 cfs 0.083 af

Link POA-2: EX CB in Miner Lane Inflow=13.93 cfs 0.703 af
Primary=13.93 cfs 0.703 af

Total Runoff Area = 2.603 ac Runoff Volume = 1.267 af Average Runoff Depth = 5.84"
11.06% Pervious = 0.288 ac 88.94% Impervious = 2.315 ac

Proposed Conditions-Chipotle

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Type III 24-hr 50-Year Rainfall=6.30"

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Summary for Subcatchment PR-2A: Chipotle & Parking for Chipotle

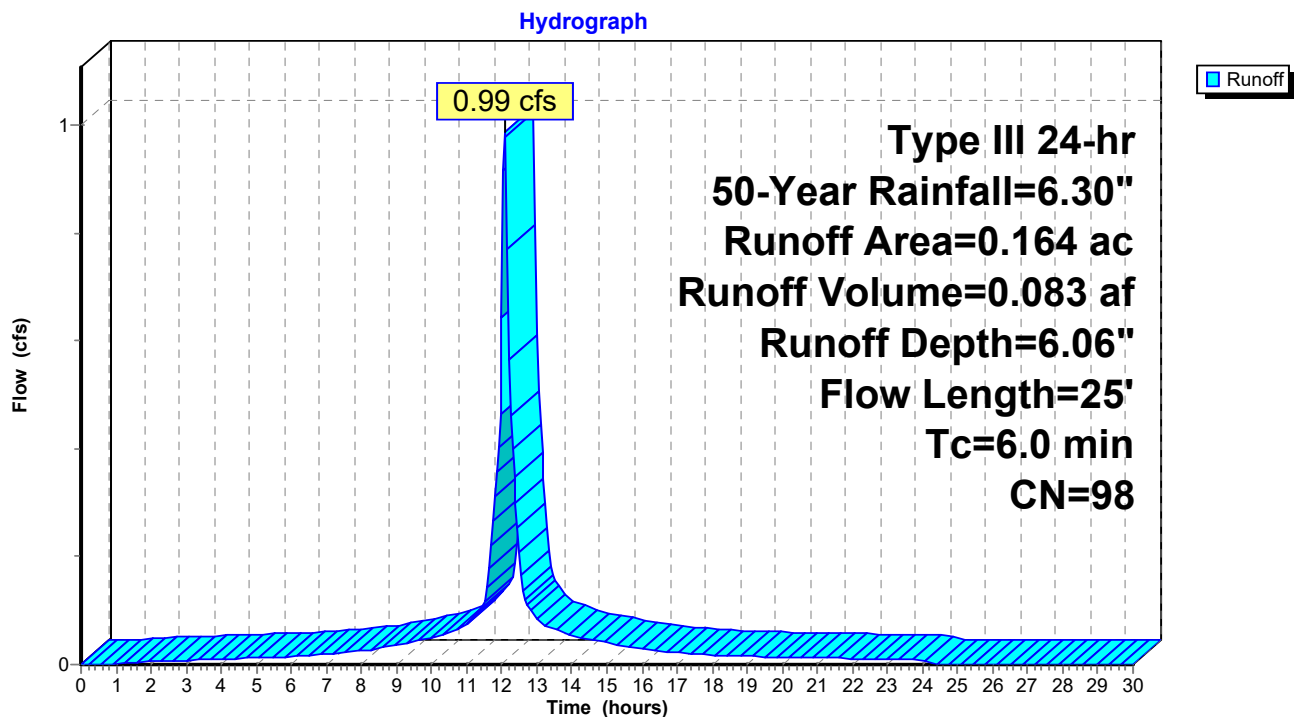
Runoff = 0.99 cfs @ 12.09 hrs, Volume= 0.083 af, Depth= 6.06"
Routed to Pond 1P : Infiltration Field 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-Year Rainfall=6.30"

Area (ac)	CN	Description
* 0.053	98	Roof
0.111	98	Paved parking, HSG D
0.164	98	Weighted Average
0.164	98	100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0	25		0.07		Direct Entry, Direct

Subcatchment PR-2A: Chipotle & Parking for Chipotle



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Type III 24-hr 50-Year Rainfall=6.30"

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Summary for Subcatchment PR-2B1: Parking Area for Retail "A"

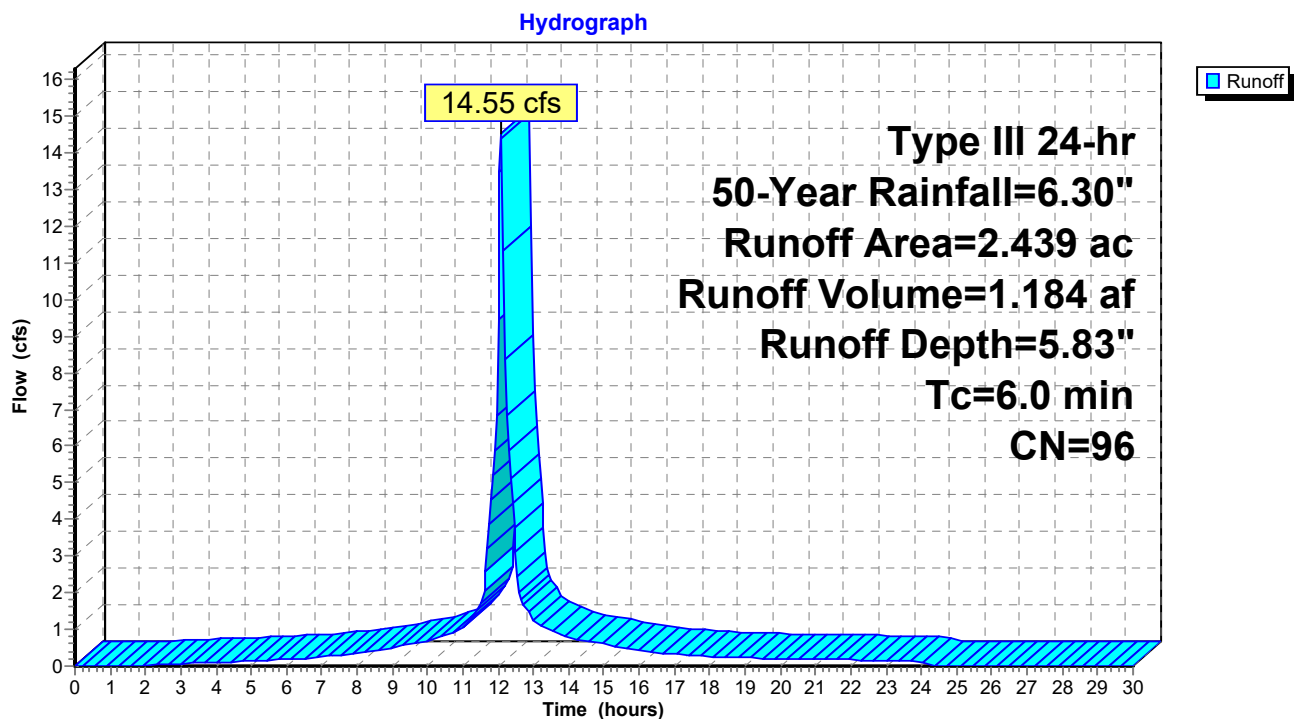
Runoff = 14.55 cfs @ 12.09 hrs, Volume= 1.184 af, Depth= 5.83"
Routed to Pond 2P : Infiltration Field 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-Year Rainfall=6.30"

Area (ac)	CN	Description
* 2.151	98	Pavement
0.288	80	>75% Grass cover, Good, HSG D
2.439	96	Weighted Average
0.288	80	11.81% Pervious Area
2.151	98	88.19% Impervious Area

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

Subcatchment PR-2B1: Parking Area for Retail "A"



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Type III 24-hr 50-Year Rainfall=6.30"

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Summary for Pond 1P: Infiltration Field 1

[88] Warning: Qout>Qin may require smaller dt or Finer Routing

Inflow Area = 0.164 ac, 100.00% Impervious, Inflow Depth = 6.06" for 50-Year event
Inflow = 0.99 cfs @ 12.09 hrs, Volume= 0.083 af
Outflow = 1.05 cfs @ 12.10 hrs, Volume= 0.083 af, Atten= 0%, Lag= 1.1 min
Discarded = 0.03 cfs @ 12.10 hrs, Volume= 0.050 af
Primary = 1.01 cfs @ 12.10 hrs, Volume= 0.033 af
Routed to Pond 2P : Infiltration Field 2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Peak Elev= 71.32' @ 12.10 hrs Surf.Area= 487 sf Storage= 882 cf

Plug-Flow detention time= 155.5 min calculated for 0.083 af (100% of inflow)
Center-of-Mass det. time= 155.7 min (900.1 - 744.4)

Volume	Invert	Avail.Storage	Storage Description
#1A	68.50'	458 cf	15.75'W x 30.92'L x 3.50'H Field A 1,704 cf Overall - 560 cf Embedded = 1,145 cf x 40.0% Voids
#2A	69.00'	560 cf	ADS_StormTech SC-740 x 12 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap Row Length Adjustment= +0.44' x 6.45 sf x 3 rows
		1,018 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	68.50'	1.500 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 65.50'
#2	Primary	71.20'	4.0' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#3	Primary	70.70'	6.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.03 cfs @ 12.10 hrs HW=71.31' (Free Discharge)
↑ **1=Exfiltration** (Controls 0.03 cfs)

Primary OutFlow Max=0.99 cfs @ 12.10 hrs HW=71.31' (Free Discharge)
↑ **2=Broad-Crested Rectangular Weir** (Weir Controls 0.42 cfs @ 0.94 fps)
↑ **3=Orifice/Grate** (Orifice Controls 0.57 cfs @ 2.90 fps)

Proposed Conditions-Chipotle

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Type III 24-hr 50-Year Rainfall=6.30"

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Pond 1P: Infiltration Field 1 - Chamber Wizard Field A

Chamber Model = ADS_StormTech SC-740 (ADS StormTech® SC-740 without end caps)

Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf

Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

Row Length Adjustment= +0.44' x 6.45 sf x 3 rows

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

4 Chambers/Row x 7.12' Long +0.44' Row Adjustment = 28.92' Row Length +12.0" End Stone x 2 = 30.92' Base Length

3 Rows x 51.0" Wide + 6.0" Spacing x 2 + 12.0" Side Stone x 2 = 15.75' Base Width

6.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 3.50' Field Height

12 Chambers x 45.9 cf +0.44' Row Adjustment x 6.45 sf x 3 Rows = 559.8 cf Chamber Storage

1,704.4 cf Field - 559.8 cf Chambers = 1,144.6 cf Stone x 40.0% Voids = 457.8 cf Stone Storage

Chamber Storage + Stone Storage = 1,017.6 cf = 0.023 af

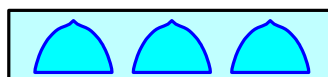
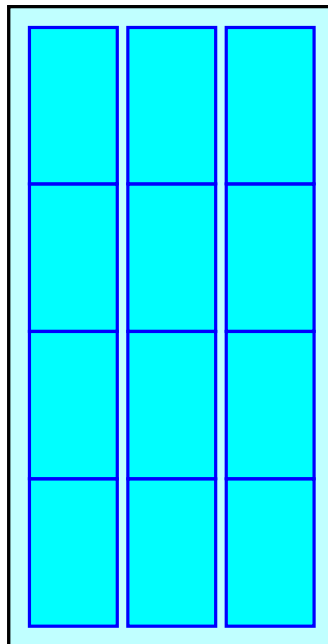
Overall Storage Efficiency = 59.7%

Overall System Size = 30.92' x 15.75' x 3.50'

12 Chambers

63.1 cy Field

42.4 cy Stone



Proposed Conditions-Chipotle

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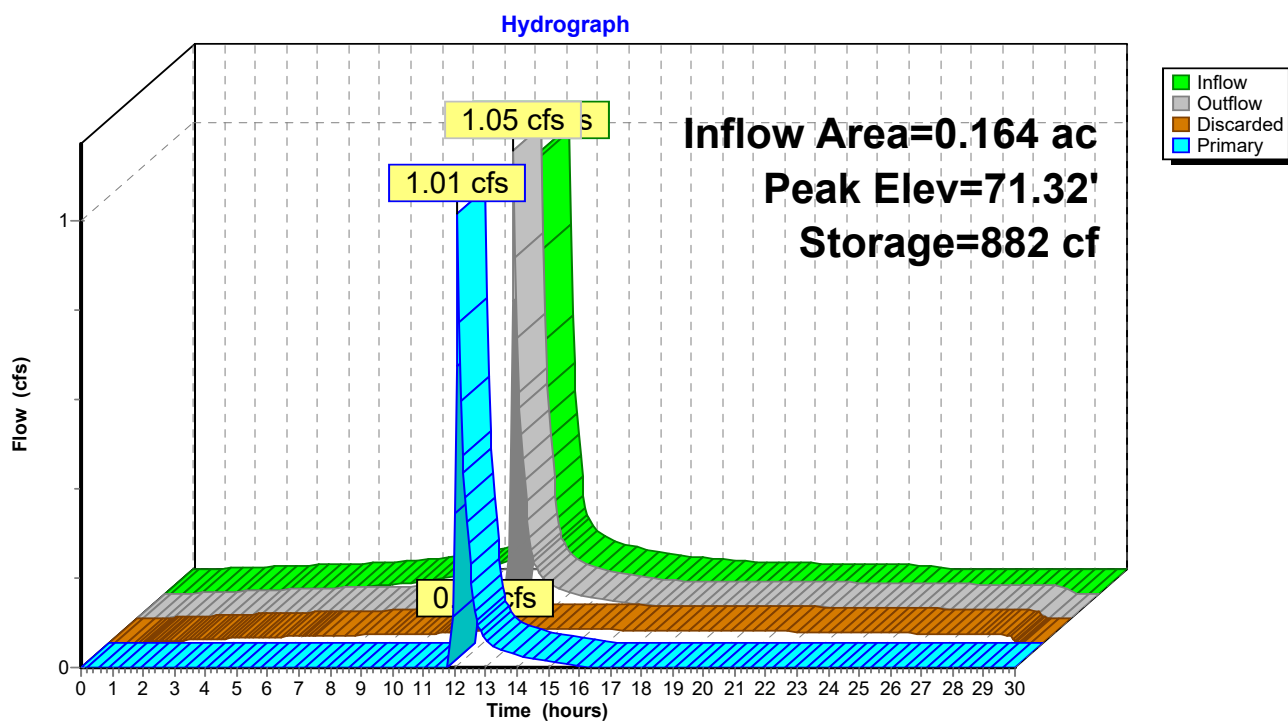
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Type III 24-hr 50-Year Rainfall=6.30"

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Pond 1P: Infiltration Field 1



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Type III 24-hr 50-Year Rainfall=6.30"

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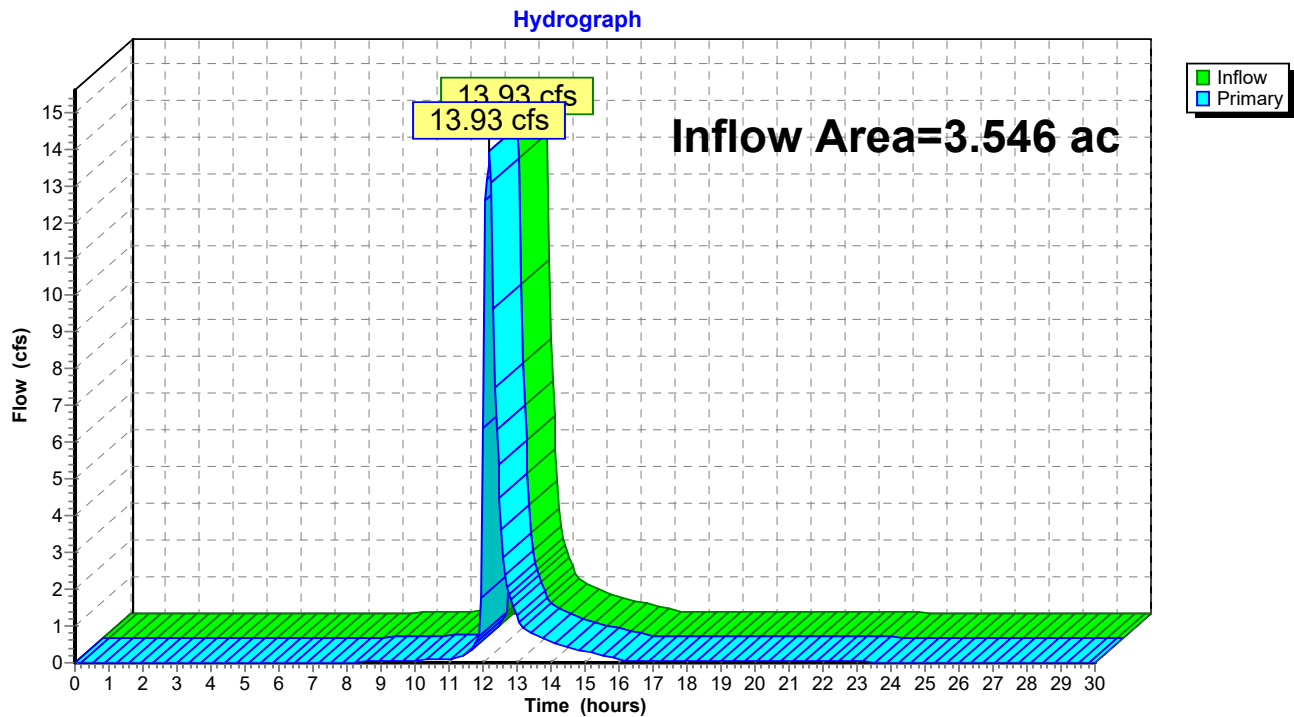
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Summary for Link POA-2: EX CB in Miner Lane

Inflow Area = 3.546 ac, 81.90% Impervious, Inflow Depth = 2.38" for 50-Year event
Inflow = 13.93 cfs @ 12.20 hrs, Volume= 0.703 af
Primary = 13.93 cfs @ 12.20 hrs, Volume= 0.703 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link POA-2: EX CB in Miner Lane



Proposed Conditions-Chipotle

Type III 24-hr 100-Year Rainfall=7.10"

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Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment PR-2A: Chipotle & Parking Runoff Area=0.164 ac 100.00% Impervious Runoff Depth=6.86"
Flow Length=25' Tc=6.0 min CN=98 Runoff=1.12 cfs 0.094 af

Subcatchment PR-2B1: Parking Area for Runoff Area=2.439 ac 88.19% Impervious Runoff Depth=6.62"
Tc=6.0 min CN=96 Runoff=16.45 cfs 1.346 af

Pond 1P: Infiltration Field 1 Peak Elev=71.33' Storage=884 cf Inflow=1.12 cfs 0.094 af
Discarded=0.03 cfs 0.052 af Primary=1.08 cfs 0.042 af Outflow=1.11 cfs 0.094 af

Link POA-2: EX CB in Miner Lane Inflow=16.34 cfs 0.883 af
Primary=16.34 cfs 0.883 af

Total Runoff Area = 2.603 ac Runoff Volume = 1.440 af Average Runoff Depth = 6.64"
11.06% Pervious = 0.288 ac 88.94% Impervious = 2.315 ac

Proposed Conditions-Chipotle

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Type III 24-hr 100-Year Rainfall=7.10"

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Summary for Subcatchment PR-2A: Chipotle & Parking for Chipotle

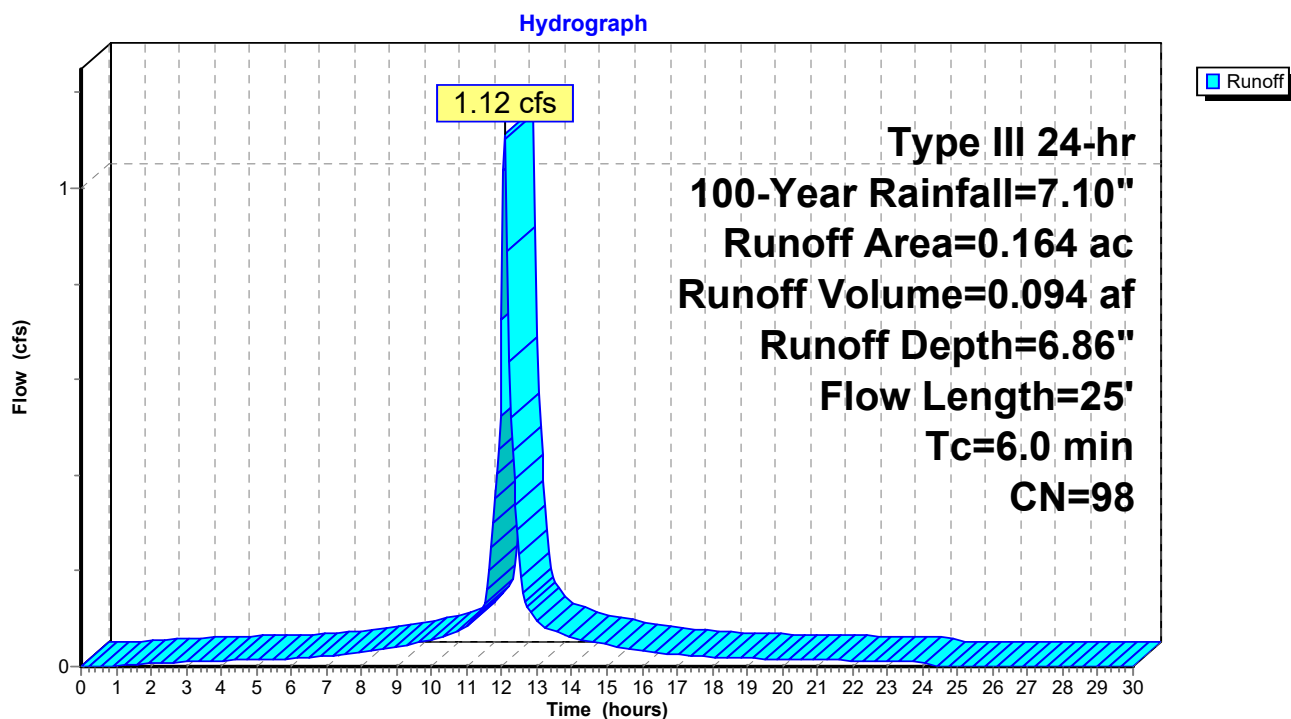
Runoff = 1.12 cfs @ 12.09 hrs, Volume= 0.094 af, Depth= 6.86"
Routed to Pond 1P : Infiltration Field 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=7.10"

Area (ac)	CN	Description
* 0.053	98	Roof
0.111	98	Paved parking, HSG D
0.164	98	Weighted Average
0.164	98	100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0	25		0.07		Direct Entry, Direct

Subcatchment PR-2A: Chipotle & Parking for Chipotle



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Type III 24-hr 100-Year Rainfall=7.10"

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Summary for Subcatchment PR-2B1: Parking Area for Retail "A"

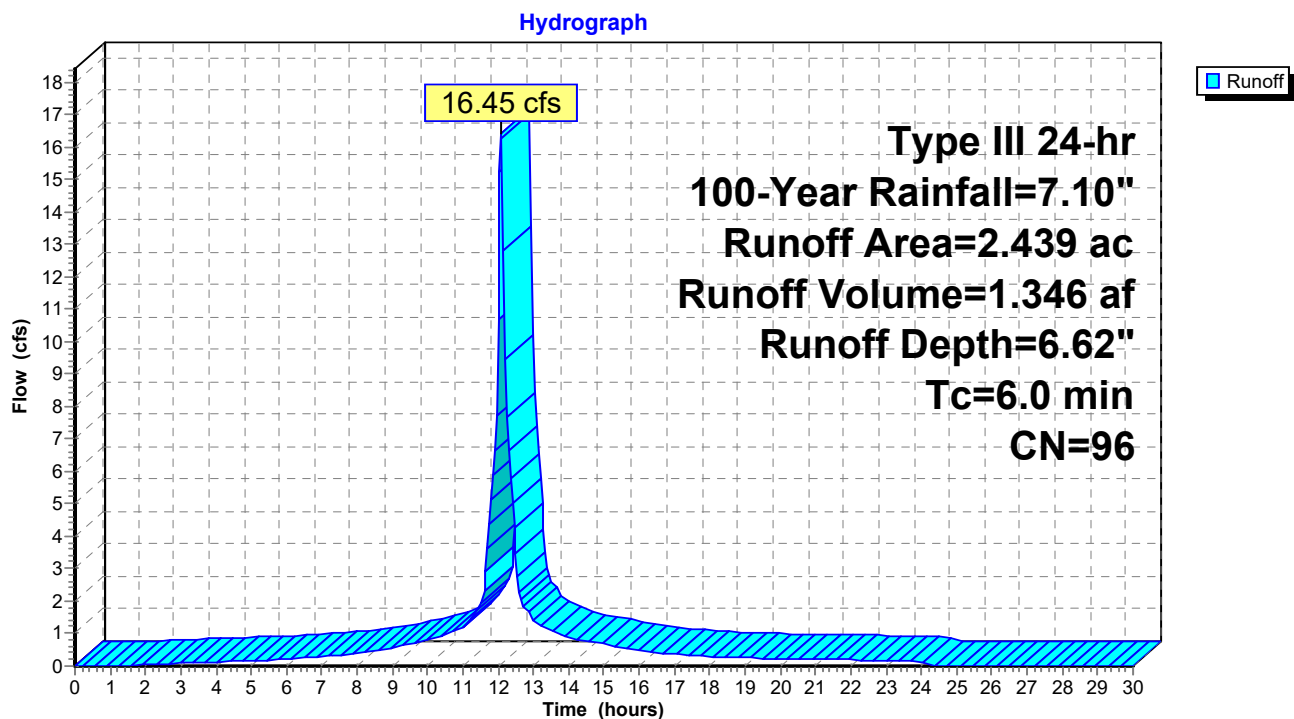
Runoff = 16.45 cfs @ 12.09 hrs, Volume= 1.346 af, Depth= 6.62"
Routed to Pond 2P : Infiltration Field 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=7.10"

Area (ac)	CN	Description
* 2.151	98	Pavement
0.288	80	>75% Grass cover, Good, HSG D
2.439	96	Weighted Average
0.288	80	11.81% Pervious Area
2.151	98	88.19% Impervious Area

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

Subcatchment PR-2B1: Parking Area for Retail "A"



Proposed Conditions-Chipotle

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Type III 24-hr 100-Year Rainfall=7.10"

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Summary for Pond 1P: Infiltration Field 1

Inflow Area = 0.164 ac, 100.00% Impervious, Inflow Depth = 6.86" for 100-Year event
Inflow = 1.12 cfs @ 12.09 hrs, Volume= 0.094 af
Outflow = 1.11 cfs @ 12.10 hrs, Volume= 0.094 af, Atten= 0%, Lag= 0.6 min
Discarded = 0.03 cfs @ 12.10 hrs, Volume= 0.052 af
Primary = 1.08 cfs @ 12.10 hrs, Volume= 0.042 af
Routed to Pond 2P : Infiltration Field 2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Peak Elev= 71.33' @ 12.10 hrs Surf.Area= 487 sf Storage= 884 cf

Plug-Flow detention time= 146.7 min calculated for 0.094 af (100% of inflow)
Center-of-Mass det. time= 147.0 min (889.8 - 742.8)

Volume	Invert	Avail.Storage	Storage Description
#1A	68.50'	458 cf	15.75'W x 30.92'L x 3.50'H Field A 1,704 cf Overall - 560 cf Embedded = 1,145 cf x 40.0% Voids
#2A	69.00'	560 cf	ADS_StormTech SC-740 x 12 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap Row Length Adjustment= +0.44' x 6.45 sf x 3 rows
		1,018 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	68.50'	1.500 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 65.50'
#2	Primary	71.20'	4.0' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#3	Primary	70.70'	6.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.03 cfs @ 12.10 hrs HW=71.32' (Free Discharge)

↑ **1=Exfiltration** (Controls 0.03 cfs)

Primary OutFlow Max=1.06 cfs @ 12.10 hrs HW=71.32' (Free Discharge)

↑ **2=Broad-Crested Rectangular Weir** (Weir Controls 0.49 cfs @ 0.98 fps)

↑ **3=Orifice/Grate** (Orifice Controls 0.58 cfs @ 2.94 fps)

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Pond 1P: Infiltration Field 1 - Chamber Wizard Field A

Chamber Model = ADS_StormTech SC-740 (ADS StormTech® SC-740 without end caps)

Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf

Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

Row Length Adjustment= +0.44' x 6.45 sf x 3 rows

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

4 Chambers/Row x 7.12' Long +0.44' Row Adjustment = 28.92' Row Length +12.0" End Stone x 2 = 30.92' Base Length

3 Rows x 51.0" Wide + 6.0" Spacing x 2 + 12.0" Side Stone x 2 = 15.75' Base Width

6.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 3.50' Field Height

12 Chambers x 45.9 cf +0.44' Row Adjustment x 6.45 sf x 3 Rows = 559.8 cf Chamber Storage

1,704.4 cf Field - 559.8 cf Chambers = 1,144.6 cf Stone x 40.0% Voids = 457.8 cf Stone Storage

Chamber Storage + Stone Storage = 1,017.6 cf = 0.023 af

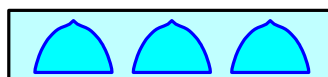
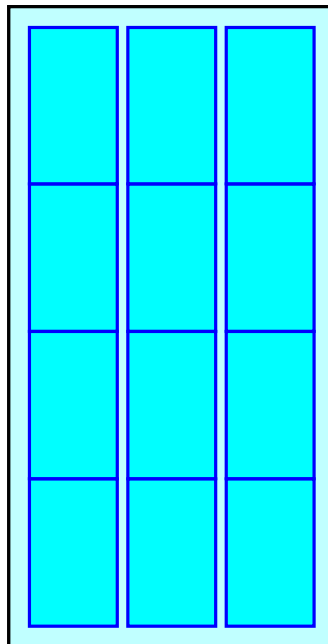
Overall Storage Efficiency = 59.7%

Overall System Size = 30.92' x 15.75' x 3.50'

12 Chambers

63.1 cy Field

42.4 cy Stone



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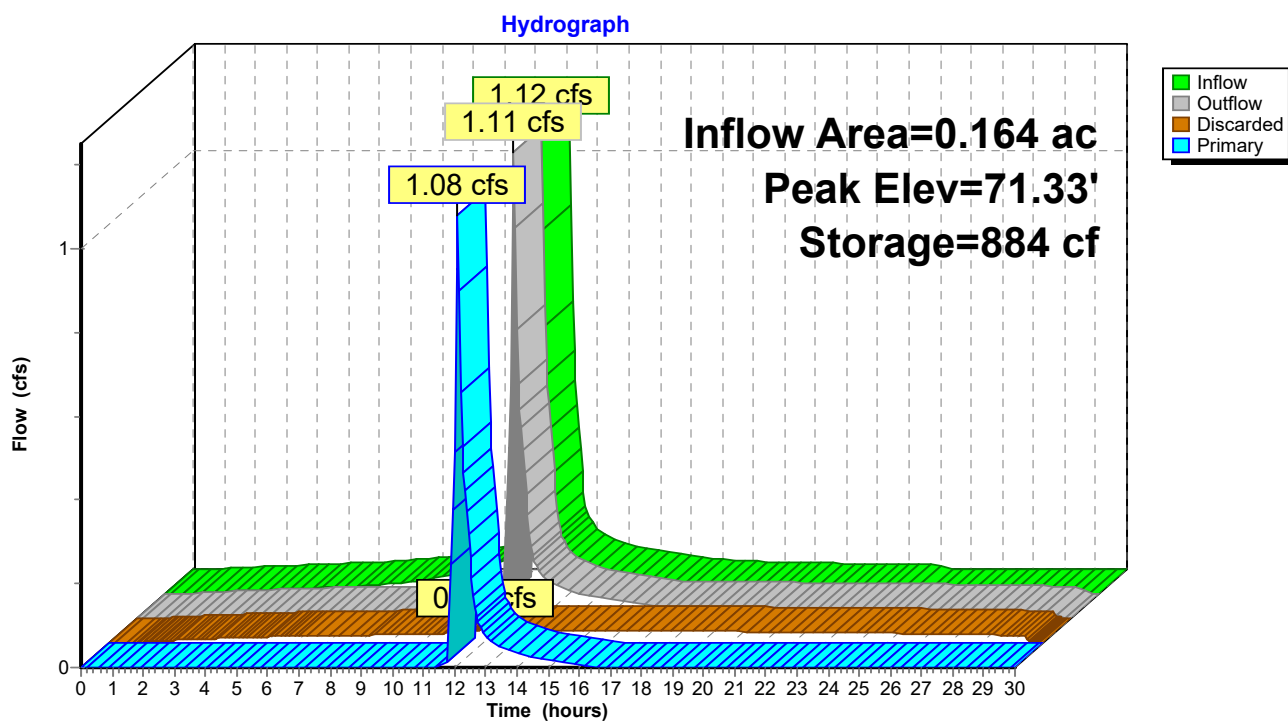
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Pond 1P: Infiltration Field 1



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Summary for Link POA-2: EX CB in Miner Lane

Inflow Area = 3.546 ac, 81.90% Impervious, Inflow Depth = 2.99" for 100-Year event
Inflow = 16.34 cfs @ 12.16 hrs, Volume= 0.883 af
Primary = 16.34 cfs @ 12.16 hrs, Volume= 0.883 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link POA-2: EX CB in Miner Lane

