

BOROUGH OF OAKLAND
BERGEN COUNTY, NEW JERSEY

LAND DEVELOPMENT APPLICATION

Date JUNE 7, 2022

NOTE: APPLICATION SETS MUST BE COLLATED AND
SUBMITTED IN PACKET FORM FOR PROCESSING.

Application No.	_____
Date Received	_____
Fee Submitted	_____
Jurisdiction Date	_____
Complete Date	_____
Decision Date by	_____
Board Action	_____
FOR OFFICIAL USE ONLY	

The undersigned, as Applicant/Owner of the subject property identified herein hereby makes application to the
Borough of Oakland for (check all that apply)

☐ New Application	☐ Major Subdivision Preliminary	☒ Major Site Plan Preliminary	} per Joe Russo
☐ Amendment to prior approval	☐ Major Subdivision Final	☒ Major Site Plan Final	
☐ Concept Plan (PB only)	☐ General Development Plan	☐ Conditional Use	
☐ Minor Subdivision	☐ Minor Site Plan <u>N/A</u>		
Indicate Relief to be Requested in Connection with this Application			
☐ Use Variance (N.J.S.A. 40:55D-70.d)	☒ Bulk Variance(s) (N.J.S.A. 40:55D-70.e)		
☐ RSIS Exception (N.J.A.C. 5: 21-3.2)	☐ Design Standard Waiver(s)	☐ Environmental Protection Waiver	

I. APPLICANT INFORMATION (Tenant)

a. Name: ROYAL MASTER GRINDERS, INC

b. Address: 143 BAUER DRIVE, P.O. BOX 630

c. Telephone (include fax number if desired): (201) 337-8500

d. Applicant is a: (check applicable status)

☒ Corporation ☐ Partnership ☐ Individual (s)

e. If applicant is a corporation or a partnership, please list the names and addresses of persons having a 10 %
interest or more in the corporation or partnership on a separate sheet and attach to this application.

f. Relationship of applicant to property (check applicable status):

☐ Owner ☐ Purchaser under contract ☒ Lessee

☐ Other (please specify): _____

g. If applicant is represented by an attorney: Eventually. For now coordinator is:

Name: BJORK CONSULTING, LLC GREG BJORK

Address: 92 LILYAN STREET WALDWICK, NJ 07463

Telephone: (551) 427-5068 Fax: _____ Email: Gjbjork5@gmail.com

h. Preparation of Plans by: CIVIL

ARCHITECTURAL

Name: DONOHUE ENGINEERING LLC

ARCARI + IOVINO ARCHITECTS P.C.

Address: 210 SUMMIT AVE SUITE C3

ONE KATHERINE STREET

MONTVALE, NJ 07645

LITTLE FERRY, NJ 07643

Tel: (201) 444-0500

Fax: _____ (TEL) 201-641-0600

Contact: Tom Donohue

Contact: Ed Arcari

email: Tomedonohueengineering.com email:

3/01/2005 ← Most recent?

2. PROPERTY INFORMATION

- a. Street address 143 BAUER DRIVE
- b. Tax Map Block(s) 3601 Lot (s) 35
- c. Zone District I-P
- d. Existing Use of Property OFFICE & MANUFACTURING
- e. Please list prior applications or municipal actions regarding this property:
NONE

- f. Property is located (check applicable status): N/A

☐ Within 200 feet of another municipality. ☐ Adjacent to a State Highway.
☐ Adjacent to an existing or proposed County road. ☐ Adjacent to other County land.

Note: If any category is checked, notification concerning this application to the appropriate agency is required.

- g. Property has public sanitary sewer access available? Yes (No) If not what solution is proposed to handle sanitary waste. Continue to use existing septic tank system as usage will not increase due to no change in employees or equipment

3. NATURE OF APPLICATION: (check where appropriate)

- a. ☐ Minor Subdivision/ Major Subdivision: N/A

(1) Indicate total tract size: _____ acres

(2) Proposed number of lots: _____

- b. ☐ Residential Development (clearly detail proposed use of property): N/A

- c. ☒ Non-Residential Development (clearly detail proposed use of property): Manufacturing

- d. Contemplated form of ownership (check all that apply):

☒ Fee simple ☐ Condominium ☐ Cooperative ☐ Rental

- e. Are there any existing Deed Restrictions? ☒ No ☐ Yes (attach copy of restriction)

- f. Are there any proposed Deed Restrictions? ☒ No ☐ Yes (attach copy of restriction)

- g. List exhibits accompanying this application: (attach separate sheet if necessary)

Civil Drawings & Stormwater calculations
Architectural Drawings

- h. Indicate if this is a bifurcated use variance application: ☐ yes ☒ no

If yes, note that any approval, if granted by the Board of Adjustment, shall be conditioned upon submittal of a completed site plan application being submitted to the Board of Adjustment for approval (N.J.S.A. 40:55D-76).

4. VARIANCE(S) REQUESTED: If this application requires a variance from the strict application of the Borough of Oakland Zoning Ordinance for a use permitted in the Zone in which the property is located complete the section below requesting said relief. You may attach additional sheets if needed.

Section	Required	Proposed
Max Bldg Coverage	25%	32.5%
Max Impervious Coverage	50%	63.7%
Parking	86	75
Note: Side Yard NOT a Variance as per Schedule		
A-1 (Corner Lot)	20 FT	20.3 FT

5. SPECIFIC DESIGN WAIVER (S) RELIEF REQUESTED

Section	Required	Proposed
Landscaping Plan	(None Proposed)	

#6 MISSING OR
MISNUMBERED?

Assume
misnumbered

7. SPECIFIC RELIEF REQUESTED

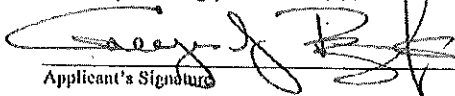
If relief is requested in connection with this development proposal for any category as indicated on the front page of this application and outlined above, attach hereto a separate exhibit(s) for each category of relief sought, stating the factual basis, legal theory, and whether they have been previously granted. Failure to supply this information if applicable will result in your application being deemed incomplete.

8. OTHER INFORMATION REQUIRED

- Attach completed checklist.
- Attach certification of payment of taxes from Township Tax Collector.
- Attach any other government approvals if received in connection with this application such as NJDEP permits, NJDOT permits, ~~Passaic~~ Bergen County Approvals etc.

9. VERIFICATION AND AUTHORIZATION

- Applicant's Statement: I hereby certify that the above statements made by me and the statements and information contained in the papers submitted in connection with this application are, to the best of my knowledge, true and accurate.


Applicant's Signature

June 7, 2022
Date

- Owner's Statement: I, the undersigned, being the owner of the property described in this application, hereby consent to the making of this application and the approval of the plans submitted. I further consent to the inspection of this property in connection with this application as deemed necessary by the municipal agency.

ROYAL ASSOCIATES, LLC

Owner's Signature Mr. John Memmelaar, Sr.

1/12/2022
Date

Sworn and Subscribed to before me

____ day of _____, _____ (Year)

(Notary)

ZONING TABLE

This **MUST** be completely filled out in order for your application to be deemed complete
 ZONE OF SUBJECT PROPERTY: I-P (INDUSTRIAL PARK) 59-55

	REQUIRED	EXISTING	PROPOSED
Lot Area	<u>3</u> acres sf min	<u>3</u> acres sf	<u>3</u> acres sf
Lot Width	<u>N/A</u> ft min	<u>N/A</u> ft	<u>N/A</u> ft
Lot Depth	<u>N/A</u> ft min	<u>N/A</u> ft	<u>N/A</u> ft
Building Coverage* (calculated: total building footprint square footage divided by lot area x 100%)	<u>25</u> % max	<u>18.4</u> %	<u>32.5</u> %
Impervious Coverage** (calculated: total impervious footprint square footage divided by lot area x 100%)	<u>50</u> % max	<u>48.5</u> %	<u>63.7</u> %
Front Setback	<u>50</u> ft min	<u>52.9</u> ft	<u>52.9</u> ft
Side Setback	<u>20</u> Sched A-1 ft min corner lot	<u>20.3</u> ft (Left) <u>115.3</u> ft (Right)	<u>20.3</u> ft (Left) <u>115.3</u> ft (Right)
Rear Setback	<u>50</u> ft min	<u>200</u> ft	<u>87.9</u> ft
Building Height	<u>40</u> ft max <u>2</u> stories max	<u>22.8</u> ft <u>1</u> stories	<u>22.8</u> ft <u>1</u> stories

*Building Coverage: that percentage of a lot covered by the roof(s) of all principal and accessory building(s), including roofed over porches and similar extensions of a building such as roofed decks.

**Impervious Surfaces: surfaces covered by roofs, pavement, walks, patios, and other materials so that underlying soils are highly resistant to infiltration of water. This includes all buildings, porous paving, paver blocks, gravel, crushed stone, decks, patios, elevated structures, and other similar structures, surfaces, or improvements.



BOROUGH OF OAKLAND, NEW JERSEY

TO: Planning Board

FROM: Glen Turi

This is to advise you that on March 15, 2022 a denial was issued to Royal Master Grinders for the location 143 Bauer Drive, Oakland, NJ 07436

Block: 3601 Lot: 35

Zoning District: IP For: Addition

For the following reasons:

- 1.) Site Plan Approval
- 2.) Maximum building Coverage 32.5% proposed, 25% Required
- 3.) Maximum Impervious Coverage 63.7% proposed, 50 % Required
- 4.) Side Yard 20.3 proposed, 25 feet Required
- 5.) Parking 75 spaces provided, 86 spaces Required

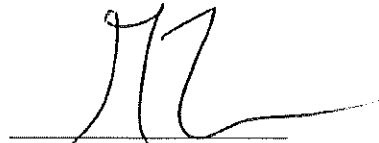
The Ordinances pertaining to this application are:

Chapter 59

Attachment 5

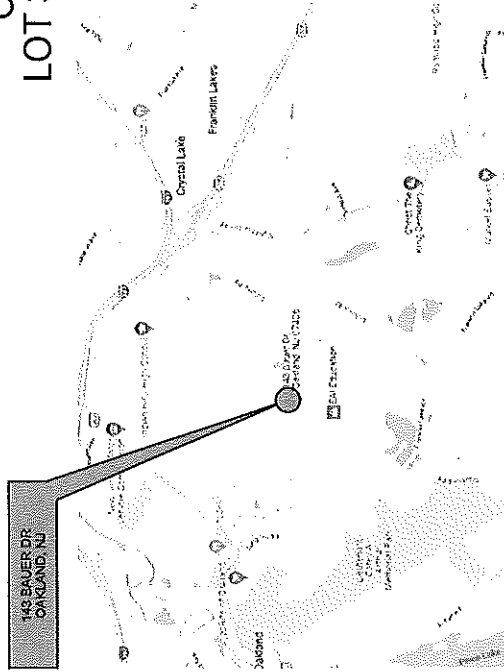
Fee: \$50.00 Paid by: #103 LOD: # 0303002

An appeal to the Planning Board of the determination must be made within twenty (20) days of the date of this determination.


Glen Turi
Zoning Official

143 BAUER DR PRELIMINARY & FINAL SITE PLAN

143 BAUER DR
OAKLAND, NJ
LOT 35 - BLOCK 3601



1 LOCATION MAP

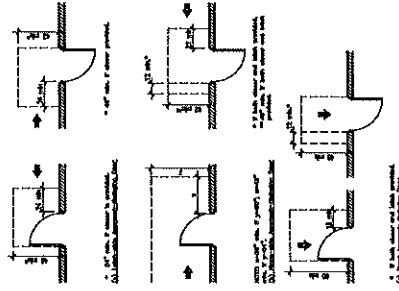
4 ABBREVIATIONS

Abbreviation	Description
143 BAUER DR	143 BAUER DRIVE
LOT 35 - BLOCK 3601	LOT 35 - BLOCK 3601
CRISTAL LAKE	CRISTAL LAKE
FRANKLIN LAKES	FRANKLIN LAKES
...	...

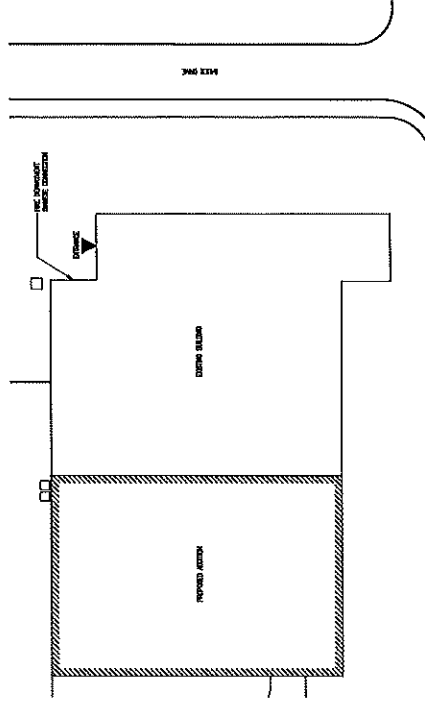
2 DRAWING SYMBOLS

Symbol	Description
[Symbol]	EXISTING CONSTRUCTION TO BE DEMOLISHED
[Symbol]	EXISTING WALL TO REMAIN
[Symbol]	NEW WALL CONSTRUCTION
[Symbol]	CEILING HEIGHT ABOVE TOP OF SLAB
[Symbol]	SPOT ELEVATION TAG
[Symbol]	ELEVATION DASH TAG
[Symbol]	INDICATES EXISTING TO REMAIN
[Symbol]	INDICATES NOT
[Symbol]	INDICATES INDICATED
[Symbol]	EXISTING DOOR TO BE DEMOLISHED
[Symbol]	NEW DOOR
[Symbol]	ELEVATION KEY
[Symbol]	SECTION KEY

2 DRAWING SYMBOLS



3 DOOR MANEUVERING CLEARANCES



5 FIRE DEPT. CONNECTION

DRAWING LIST

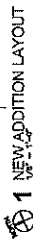
ARCHITECTURAL	LOCATION MAP, SYMBOLS, DOOR MANEUVERING CLEARANCES, ABBREVIATIONS, DRAWING LIST
G.1	CONSTRUCTION PLAN
A.1	...
A.2	...

143 BAUER DRIVE
OAKLAND, NJ 07033

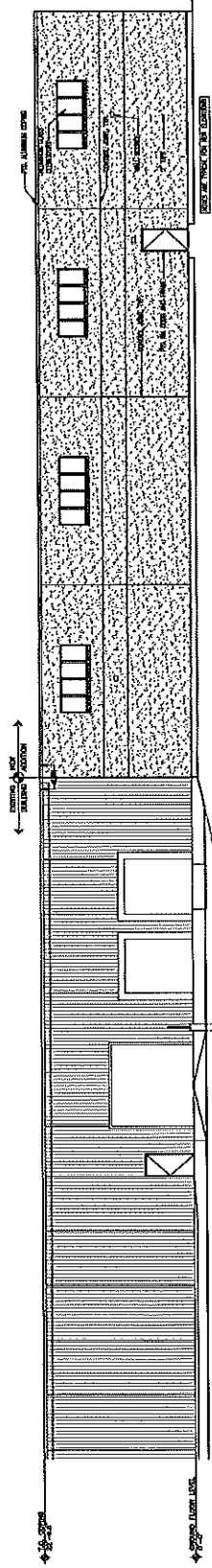
arcari + iovino
ARCHITECTS PC

143 BAUER DRIVE
OAKLAND, NJ 07033

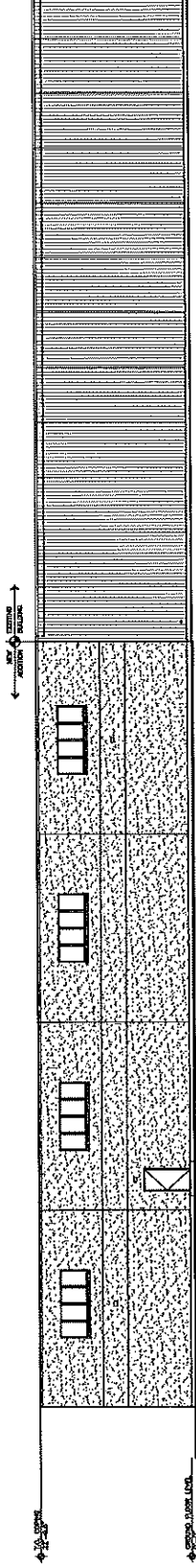
arcari + iovino ARCHITECTS PC



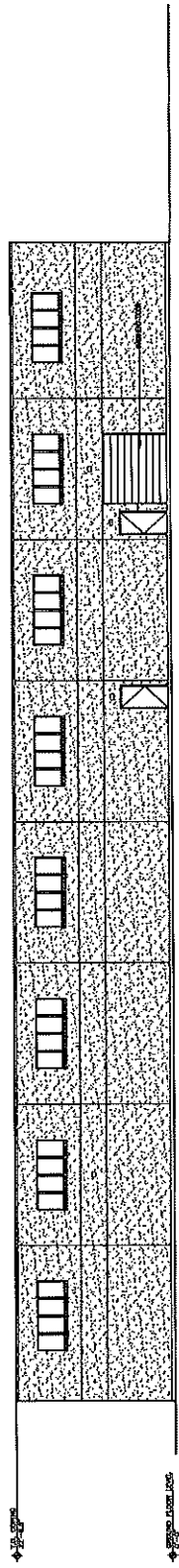
arcor + iovino architects pc



1 NORTH ELEVATION



2 SOUTH ELEVATION



3 WEST ELEVATION

06.15.22 PRELIMINARY & FINAL SITE PLAN

143 BAUER DRIVE

143 BAUER DRIVE OAKLAND, CA 94612

arcari + iovino
ARCHITECTS PC

143 BAUER DRIVE
OAKLAND, CA 94612
TEL: 510.464.1100
WWW.ARCARIOVINO.COM

CONRAD JACQUE ARCHITECT
ANTHONY GROSS NUTTIN

EXTERIOR ELEVATIONS

SCALE AS NOTED
DATE: 06.15.22
FILE: 220600000A2
A.2

©2022 ARCARIOVINO ARCHITECTS PC

PRELIMINARY & FINAL SITE PLAN

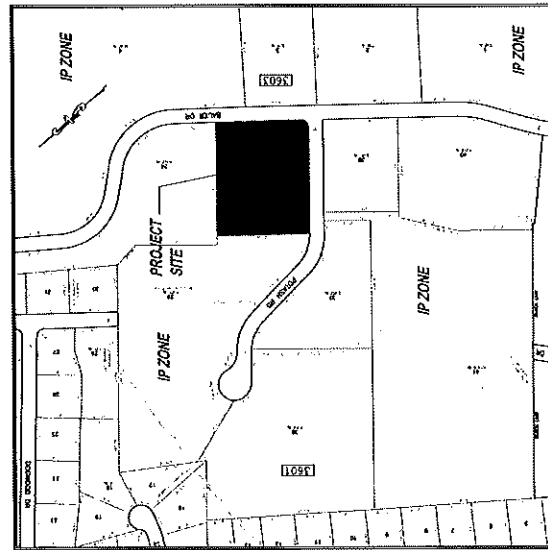
FOR

LOT NO. 35 - BLOCK 3601

BOROUGH OF OAKLAND, COUNTY OF BERGEN

PROPERTY OWNERS WITHIN 200' OF BLOCK 3601, LOT NO. 35

NAME	ADDRESS	PHONE	DATE
ROYAL MASTER GRINDERS, INC.	143 BAUER DRIVE	201-444-8800	05/15/22
THOMAS E. DONOHUE, P.E.	210 SUMMIT AVENUE, SUITE C3	201-444-8800	05/15/22



ZONE MAP
SCALE: 1"=200'



AREA MAP
SCALE: 1"=200'

SHEET	DESCRIPTION
1	TITLE SHEET
2	EXISTING CONDITIONS PLAN
3	SITE PLAN
4	GRADING & UTILITY PLAN
5	LIGHTING PLAN
6	SOIL EROSION & SEDIMENT CONTROL

APPLICANT/OWNER
ROYAL MASTER GRINDERS, INC.
143 BAUER DRIVE
OAKLAND NEW JERSEY 07436

APPROVED BY THE BOROUGH OF
OAKLAND'S LAND USE BOARD

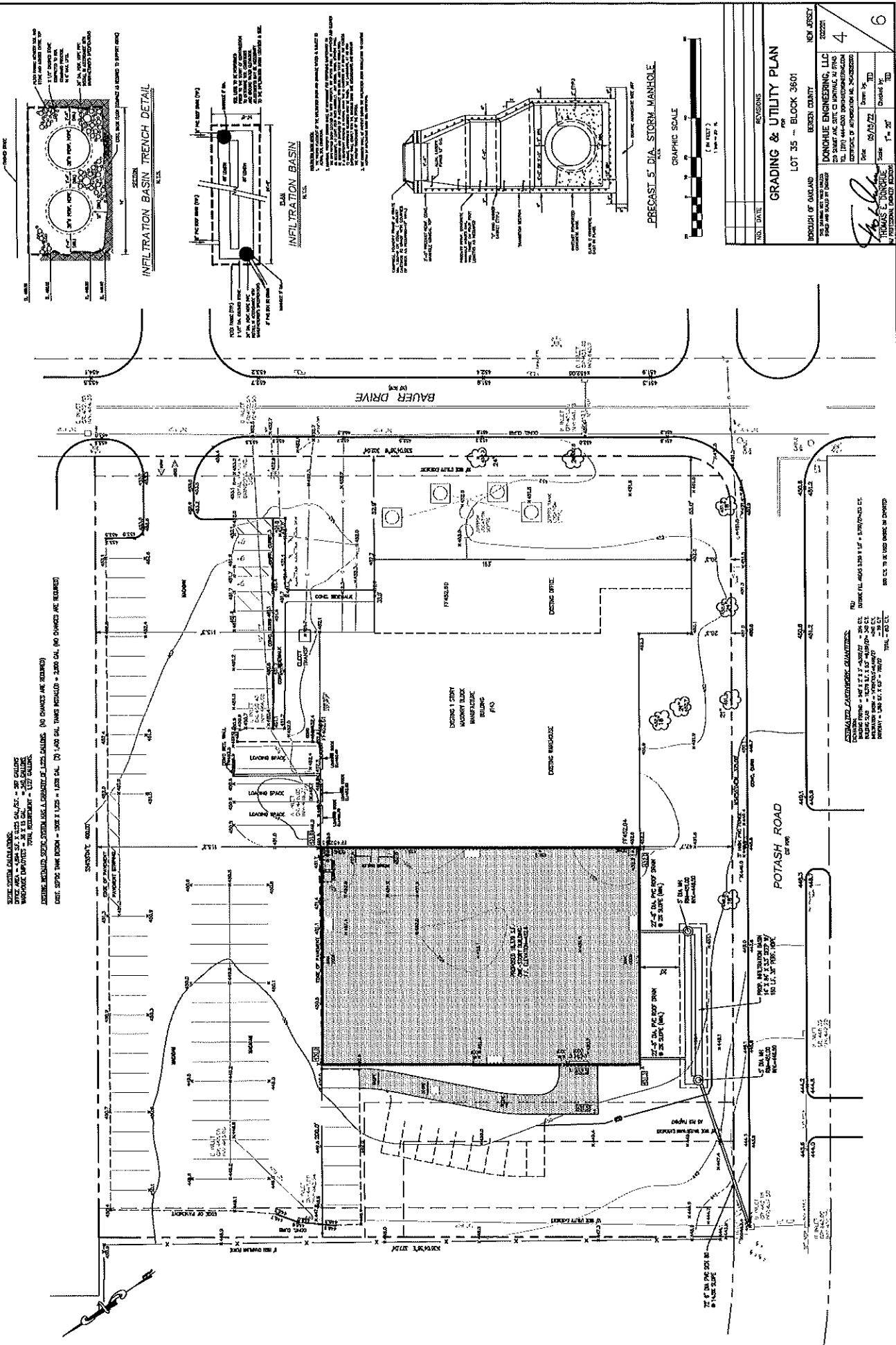
CHAIRMAN _____ DATE _____
SECRETARY _____ DATE _____
BOARD ENGINEER _____ DATE _____

APPROVED BY THE BERGEN
COUNTY PLANNING BOARD

CHAIRMAN _____ DATE _____

PREPARED BY:
DONOHUE ENGINEERING, LLC
210 SUMMIT AVENUE, SUITE C3 MONTVALE, NJ 07046
TEL (201) 444-8800

THOMAS E. DONOHUE, P.E.
NEW JERSEY PROFESSIONAL ENGINEER NO. 36598
DATE: 05/15/22
CERTIFICATE OF AUTHORIZATION NO. 36598

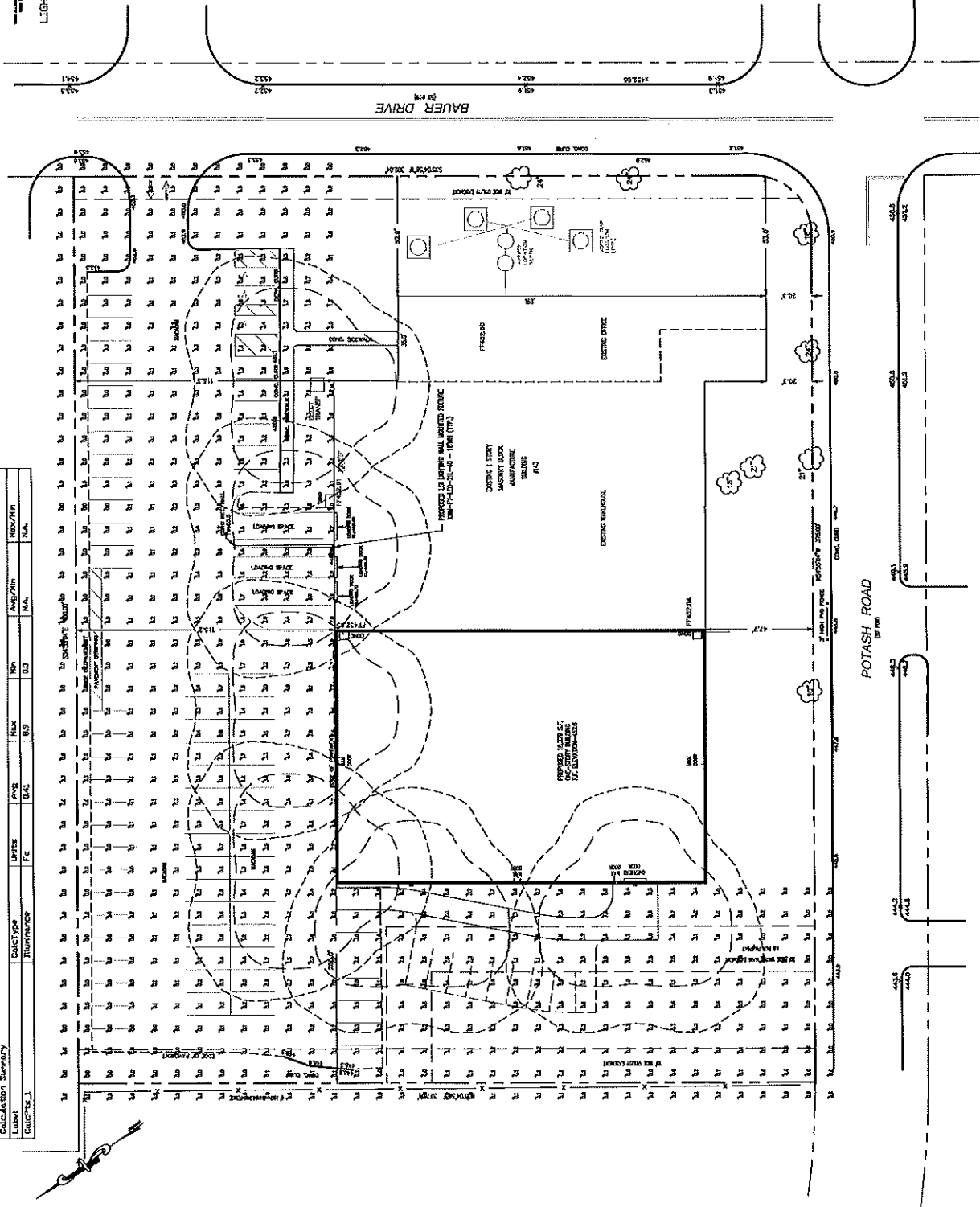




LD-155907
LIGHTING PROPOSAL

Luminaire Schedule				Description				Arr. Watts			
Qty	Label	Arrangement	Symbol	LLJ	LJD	LLF	LLP	LLJ	LJD	LLF	LLP
6	V1	SINGLE		1000	1000	1000	1000	20989	161		

Calculation Summary				Description				Arr. Watts			
Label	Quantity	Unit	Value	Label	Quantity	Unit	Value	Label	Quantity	Unit	Value
Calculation	1	Unit	1	Calculation	1	Unit	1	Calculation	1	Unit	1



LIGHTING PLAN

LOT 35 - BLOCK 3601

DATE	10/1/2021
BY	THOMAS E. BOWEN
CHECKED BY	THOMAS E. BOWEN
DATE	10/1/2021
PROJECT	LOT 35 - BLOCK 3601
CLIENT	CONSHALE ENGINEERING, LLC
ADDRESS	10000 100TH AVE, SUITE 100, BENTON, MI 49506
PHONE	(248) 444-0000
FAX	(248) 444-0000
EMAIL	info@conshale.com
WEBSITE	www.conshale.com

Stormwater Drainage Calculations

for

Lot No. 35- Block 3601

in

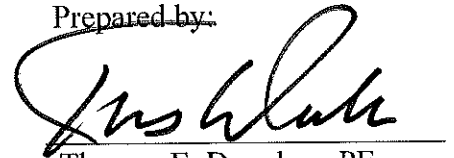
Borough of Oakland
Bergen County, NJ

Prepared for:

Royal Master Grinders, Inc.

May 9, 2022

Prepared by:

A handwritten signature in black ink, appearing to read 'Tom Donohue', written over a horizontal line.

Thomas E. Donohue, PE
NJ PE No. 36598

Donohue Engineering LLC.
210 Summit Avenue Suite C3 Montvale, NJ 07645

Pre-Development Conditions

MAP LEGEND

Area of Interest (AOI)	Area of Interest (AOI)	Spoil Area
Soils	Soil Map Unit Polygons	Stony Spot
	Soil Map Unit Lines	Very Stony Spot
	Soil Map Unit Points	Wet Spot
		Other
		Special Line Features
Special Point Features	Blowout	Water Features
	Borrow Pit	Streams and Canals
	Clay Spot	Transportation
	Closed Depression	Rails
	Gravel Pit	Interstate Highways
	Gravelly Spot	US Routes
	Landfill	Major Roads
	Lava Flow	Local Roads
	Marsh or swamp	Background
	Mine or Quarry	Aerial Photography
	Miscellaneous Water	
	Perennial Water	
	Rock Outcrop	
	Saline Spot	
	Sandy Spot	
	Severely Eroded Spot	
	Sinkhole	
	Slide or Slip	
	Sodic Spot	

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

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

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

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

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

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

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

Soil Survey Area: Bergen County, New Jersey
Survey Area Data: Version 18, Aug 30, 2021

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

Date(s) aerial images were photographed: Apr 13, 2021—Sep 14, 2021

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.

Bergen County, New Jersey

PHG—Pits, sand and gravel

Map Unit Setting

National map unit symbol: b0s6
Mean annual precipitation: 30 to 64 inches
Mean annual air temperature: 46 to 79 degrees F
Frost-free period: 131 to 178 days
Farmland classification: Not prime farmland

Map Unit Composition

Pits, sand and gravel: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pits, Sand And Gravel

Setting

Parent material: Sandy material disturbed by human activity

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Hydric soil rating: No

Data Source Information

Soil Survey Area: Bergen County, New Jersey
Survey Area Data: Version 18, Aug 30, 2021

Minor Components

Hinckley

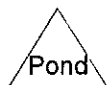
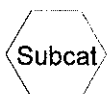
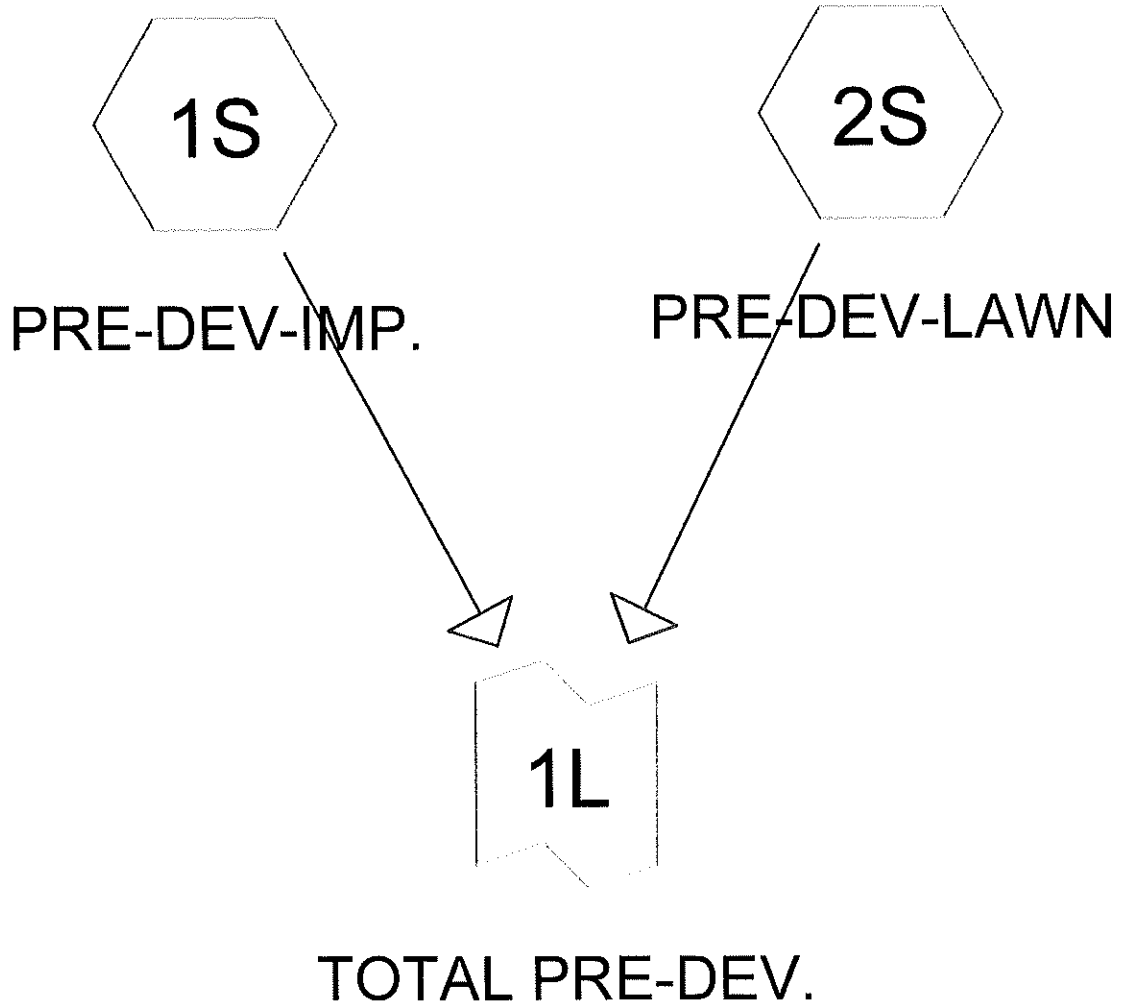
Percent of map unit: 10 percent
Landform: Outwash fans
Landform position (three-dimensional): Base slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Horseneck

Percent of map unit: 5 percent
Landform: Outwash fans
Landform position (three-dimensional): Base slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Data Source Information

Soil Survey Area: Bergen County, New Jersey
Survey Area Data: Version 18, Aug 30, 2021



143 BAUER DR OAKLAND

NOAA 24-hr D NOAA-2 Rainfall=3.41"

Prepared by Donohue Engineering, LLC

Printed 5/9/2022

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Hydrograph for Subcatchment 1S: PRE-DEV-IMP.

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	26.00	3.41	3.18	0.00
0.50	0.02	0.00	0.00	26.50	3.41	3.18	0.00
1.00	0.04	0.00	0.00	27.00	3.41	3.18	0.00
1.50	0.06	0.00	0.00	27.50	3.41	3.18	0.00
2.00	0.08	0.01	0.00	28.00	3.41	3.18	0.00
2.50	0.10	0.02	0.00	28.50	3.41	3.18	0.00
3.00	0.13	0.03	0.00	29.00	3.41	3.18	0.00
3.50	0.15	0.04	0.00	29.50	3.41	3.18	0.00
4.00	0.18	0.06	0.00	30.00	3.41	3.18	0.00
4.50	0.21	0.07	0.00	30.50	3.41	3.18	0.00
5.00	0.23	0.09	0.00	31.00	3.41	3.18	0.00
5.50	0.26	0.11	0.00	31.50	3.41	3.18	0.00
6.00	0.29	0.14	0.00	32.00	3.41	3.18	0.00
6.50	0.32	0.16	0.00	32.50	3.41	3.18	0.00
7.00	0.36	0.19	0.00	33.00	3.41	3.18	0.00
7.50	0.40	0.23	0.00	33.50	3.41	3.18	0.00
8.00	0.44	0.27	0.00	34.00	3.41	3.18	0.00
8.50	0.49	0.31	0.00	34.50	3.41	3.18	0.00
9.00	0.54	0.36	0.00	35.00	3.41	3.18	0.00
9.50	0.60	0.41	0.00	35.50	3.41	3.18	0.00
10.00	0.68	0.48	0.00	36.00	3.41	3.18	0.00
10.50	0.76	0.56	0.00				
11.00	0.89	0.68	0.01				
11.50	1.08	0.87	0.01				
12.00	1.63	1.41	0.03				
12.50	2.33	2.10	0.02				
13.00	2.52	2.29	0.01				
13.50	2.65	2.42	0.01				
14.00	2.73	2.50	0.00				
14.50	2.81	2.58	0.00				
15.00	2.87	2.64	0.00				
15.50	2.92	2.69	0.00				
16.00	2.97	2.74	0.00				
16.50	3.01	2.78	0.00				
17.00	3.05	2.82	0.00				
17.50	3.09	2.85	0.00				
18.00	3.12	2.89	0.00				
18.50	3.15	2.92	0.00				
19.00	3.18	2.94	0.00				
19.50	3.20	2.97	0.00				
20.00	3.23	3.00	0.00				
20.50	3.26	3.02	0.00				
21.00	3.28	3.05	0.00				
21.50	3.31	3.07	0.00				
22.00	3.33	3.10	0.00				
22.50	3.35	3.12	0.00				
23.00	3.37	3.14	0.00				
23.50	3.39	3.16	0.00				
24.00	3.41	3.18	0.00				
24.50	3.41	3.18	0.00				
25.00	3.41	3.18	0.00				
25.50	3.41	3.18	0.00				

143 BAUER DR OAKLAND

NOAA 24-hr D NOAA-2 Rainfall=3.41"

Prepared by Donohue Engineering, LLC

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Hydrograph for Subcatchment 2S: PRE-DEV-LAWN

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	26.00	3.41	0.53	0.00
0.50	0.02	0.00	0.00	26.50	3.41	0.53	0.00
1.00	0.04	0.00	0.00	27.00	3.41	0.53	0.00
1.50	0.06	0.00	0.00	27.50	3.41	0.53	0.00
2.00	0.08	0.00	0.00	28.00	3.41	0.53	0.00
2.50	0.10	0.00	0.00	28.50	3.41	0.53	0.00
3.00	0.13	0.00	0.00	29.00	3.41	0.53	0.00
3.50	0.15	0.00	0.00	29.50	3.41	0.53	0.00
4.00	0.18	0.00	0.00	30.00	3.41	0.53	0.00
4.50	0.21	0.00	0.00	30.50	3.41	0.53	0.00
5.00	0.23	0.00	0.00	31.00	3.41	0.53	0.00
5.50	0.26	0.00	0.00	31.50	3.41	0.53	0.00
6.00	0.29	0.00	0.00	32.00	3.41	0.53	0.00
6.50	0.32	0.00	0.00	32.50	3.41	0.53	0.00
7.00	0.36	0.00	0.00	33.00	3.41	0.53	0.00
7.50	0.40	0.00	0.00	33.50	3.41	0.53	0.00
8.00	0.44	0.00	0.00	34.00	3.41	0.53	0.00
8.50	0.49	0.00	0.00	34.50	3.41	0.53	0.00
9.00	0.54	0.00	0.00	35.00	3.41	0.53	0.00
9.50	0.60	0.00	0.00	35.50	3.41	0.53	0.00
10.00	0.68	0.00	0.00	36.00	3.41	0.53	0.00
10.50	0.76	0.00	0.00				
11.00	0.89	0.00	0.00				
11.50	1.08	0.00	0.00				
12.00	1.63	0.02	0.02				
12.50	2.33	0.15	0.08				
13.00	2.52	0.20	0.05				
13.50	2.65	0.24	0.03				
14.00	2.73	0.27	0.03				
14.50	2.81	0.30	0.02				
15.00	2.87	0.32	0.02				
15.50	2.92	0.34	0.02				
16.00	2.97	0.35	0.02				
16.50	3.01	0.37	0.01				
17.00	3.05	0.38	0.01				
17.50	3.09	0.40	0.01				
18.00	3.12	0.41	0.01				
18.50	3.15	0.42	0.01				
19.00	3.18	0.43	0.01				
19.50	3.20	0.45	0.01				
20.00	3.23	0.46	0.01				
20.50	3.26	0.47	0.01				
21.00	3.28	0.48	0.01				
21.50	3.31	0.49	0.01				
22.00	3.33	0.50	0.01				
22.50	3.35	0.51	0.01				
23.00	3.37	0.52	0.01				
23.50	3.39	0.52	0.01				
24.00	3.41	0.53	0.01				
24.50	3.41	0.53	0.00				
25.00	3.41	0.53	0.00				
25.50	3.41	0.53	0.00				

143 BAUER DR OAKLAND

NOAA 24-hr D NOAA-2 Rainfall=3.41"

Prepared by Donohue Engineering, LLC

Printed 5/9/2022

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Hydrograph for Link 1L: TOTAL PRE-DEV.

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	26.00	0.00	0.00	0.00
0.50	0.00	0.00	0.00	26.50	0.00	0.00	0.00
1.00	0.00	0.00	0.00	27.00	0.00	0.00	0.00
1.50	0.00	0.00	0.00	27.50	0.00	0.00	0.00
2.00	0.00	0.00	0.00	28.00	0.00	0.00	0.00
2.50	0.00	0.00	0.00	28.50	0.00	0.00	0.00
3.00	0.00	0.00	0.00	29.00	0.00	0.00	0.00
3.50	0.00	0.00	0.00	29.50	0.00	0.00	0.00
4.00	0.00	0.00	0.00	30.00	0.00	0.00	0.00
4.50	0.00	0.00	0.00	30.50	0.00	0.00	0.00
5.00	0.00	0.00	0.00	31.00	0.00	0.00	0.00
5.50	0.00	0.00	0.00	31.50	0.00	0.00	0.00
6.00	0.00	0.00	0.00	32.00	0.00	0.00	0.00
6.50	0.00	0.00	0.00	32.50	0.00	0.00	0.00
7.00	0.00	0.00	0.00	33.00	0.00	0.00	0.00
7.50	0.00	0.00	0.00	33.50	0.00	0.00	0.00
8.00	0.00	0.00	0.00	34.00	0.00	0.00	0.00
8.50	0.00	0.00	0.00	34.50	0.00	0.00	0.00
9.00	0.00	0.00	0.00	35.00	0.00	0.00	0.00
9.50	0.00	0.00	0.00	35.50	0.00	0.00	0.00
10.00	0.00	0.00	0.00	36.00	0.00	0.00	0.00
10.50	0.00	0.00	0.00				
11.00	0.01	0.00	0.01				
11.50	0.01	0.00	0.01				
12.00	0.05	0.00	0.05				
12.50	0.10	0.00	0.10				
13.00	0.06	0.00	0.06				
13.50	0.04	0.00	0.04				
14.00	0.03	0.00	0.03				
14.50	0.03	0.00	0.03				
15.00	0.02	0.00	0.02				
15.50	0.02	0.00	0.02				
16.00	0.02	0.00	0.02				
16.50	0.02	0.00	0.02				
17.00	0.02	0.00	0.02				
17.50	0.01	0.00	0.01				
18.00	0.01	0.00	0.01				
18.50	0.01	0.00	0.01				
19.00	0.01	0.00	0.01				
19.50	0.01	0.00	0.01				
20.00	0.01	0.00	0.01				
20.50	0.01	0.00	0.01				
21.00	0.01	0.00	0.01				
21.50	0.01	0.00	0.01				
22.00	0.01	0.00	0.01				
22.50	0.01	0.00	0.01				
23.00	0.01	0.00	0.01				
23.50	0.01	0.00	0.01				
24.00	0.01	0.00	0.01				
24.50	0.00	0.00	0.00				
25.00	0.00	0.00	0.00				
25.50	0.00	0.00	0.00				

143 BAUER DR OAKLAND

NOAA 24-hr D NOAA-10 Rainfall=5.17"

Prepared by Donohue Engineering, LLC

Printed 5/9/2022

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Hydrograph for Subcatchment 1S: PRE-DEV-IMP.

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	26.00	5.17	4.93	0.00
0.50	0.03	0.00	0.00	26.50	5.17	4.93	0.00
1.00	0.06	0.00	0.00	27.00	5.17	4.93	0.00
1.50	0.09	0.01	0.00	27.50	5.17	4.93	0.00
2.00	0.12	0.02	0.00	28.00	5.17	4.93	0.00
2.50	0.16	0.04	0.00	28.50	5.17	4.93	0.00
3.00	0.19	0.07	0.00	29.00	5.17	4.93	0.00
3.50	0.23	0.09	0.00	29.50	5.17	4.93	0.00
4.00	0.27	0.12	0.00	30.00	5.17	4.93	0.00
4.50	0.31	0.15	0.00	30.50	5.17	4.93	0.00
5.00	0.35	0.19	0.00	31.00	5.17	4.93	0.00
5.50	0.40	0.23	0.00	31.50	5.17	4.93	0.00
6.00	0.44	0.27	0.00	32.00	5.17	4.93	0.00
6.50	0.49	0.31	0.00	32.50	5.17	4.93	0.00
7.00	0.54	0.36	0.00	33.00	5.17	4.93	0.00
7.50	0.60	0.41	0.00	33.50	5.17	4.93	0.00
8.00	0.67	0.48	0.00	34.00	5.17	4.93	0.00
8.50	0.74	0.54	0.00	34.50	5.17	4.93	0.00
9.00	0.82	0.62	0.00	35.00	5.17	4.93	0.00
9.50	0.91	0.71	0.00	35.50	5.17	4.93	0.00
10.00	1.02	0.82	0.01	36.00	5.17	4.93	0.00
10.50	1.16	0.94	0.01				
11.00	1.34	1.13	0.01				
11.50	1.64	1.42	0.01				
12.00	2.48	2.25	0.04				
12.50	3.53	3.30	0.03				
13.00	3.83	3.59	0.01				
13.50	4.01	3.78	0.01				
14.00	4.15	3.91	0.01				
14.50	4.26	4.02	0.01				
15.00	4.35	4.11	0.00				
15.50	4.43	4.19	0.00				
16.00	4.50	4.26	0.00				
16.50	4.57	4.33	0.00				
17.00	4.63	4.39	0.00				
17.50	4.68	4.44	0.00				
18.00	4.73	4.49	0.00				
18.50	4.77	4.54	0.00				
19.00	4.82	4.58	0.00				
19.50	4.86	4.62	0.00				
20.00	4.90	4.66	0.00				
20.50	4.94	4.70	0.00				
21.00	4.98	4.74	0.00				
21.50	5.01	4.77	0.00				
22.00	5.05	4.81	0.00				
22.50	5.08	4.84	0.00				
23.00	5.11	4.87	0.00				
23.50	5.14	4.90	0.00				
24.00	5.17	4.93	0.00				
24.50	5.17	4.93	0.00				
25.00	5.17	4.93	0.00				
25.50	5.17	4.93	0.00				

143 BAUER DR OAKLAND

NOAA 24-hr D NOAA-10 Rainfall=5.17"

Prepared by Donohue Engineering, LLC

Printed 5/9/2022

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Hydrograph for Subcatchment 2S: PRE-DEV-LAWN

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	26.00	5.17	1.47	0.00
0.50	0.03	0.00	0.00	26.50	5.17	1.47	0.00
1.00	0.06	0.00	0.00	27.00	5.17	1.47	0.00
1.50	0.09	0.00	0.00	27.50	5.17	1.47	0.00
2.00	0.12	0.00	0.00	28.00	5.17	1.47	0.00
2.50	0.16	0.00	0.00	28.50	5.17	1.47	0.00
3.00	0.19	0.00	0.00	29.00	5.17	1.47	0.00
3.50	0.23	0.00	0.00	29.50	5.17	1.47	0.00
4.00	0.27	0.00	0.00	30.00	5.17	1.47	0.00
4.50	0.31	0.00	0.00	30.50	5.17	1.47	0.00
5.00	0.35	0.00	0.00	31.00	5.17	1.47	0.00
5.50	0.40	0.00	0.00	31.50	5.17	1.47	0.00
6.00	0.44	0.00	0.00	32.00	5.17	1.47	0.00
6.50	0.49	0.00	0.00	32.50	5.17	1.47	0.00
7.00	0.54	0.00	0.00	33.00	5.17	1.47	0.00
7.50	0.60	0.00	0.00	33.50	5.17	1.47	0.00
8.00	0.67	0.00	0.00	34.00	5.17	1.47	0.00
8.50	0.74	0.00	0.00	34.50	5.17	1.47	0.00
9.00	0.82	0.00	0.00	35.00	5.17	1.47	0.00
9.50	0.91	0.00	0.00	35.50	5.17	1.47	0.00
10.00	1.02	0.00	0.00	36.00	5.17	1.47	0.00
10.50	1.16	0.00	0.00				
11.00	1.34	0.00	0.00				
11.50	1.64	0.02	0.02				
12.00	2.48	0.19	0.19				
12.50	3.53	0.59	0.23				
13.00	3.83	0.73	0.12				
13.50	4.01	0.82	0.08				
14.00	4.15	0.89	0.06				
14.50	4.26	0.95	0.05				
15.00	4.35	1.00	0.04				
15.50	4.43	1.04	0.04				
16.00	4.50	1.08	0.04				
16.50	4.57	1.12	0.03				
17.00	4.63	1.15	0.03				
17.50	4.68	1.18	0.03				
18.00	4.73	1.21	0.03				
18.50	4.77	1.24	0.02				
19.00	4.82	1.26	0.02				
19.50	4.86	1.28	0.02				
20.00	4.90	1.31	0.02				
20.50	4.94	1.33	0.02				
21.00	4.98	1.35	0.02				
21.50	5.01	1.38	0.02				
22.00	5.05	1.40	0.02				
22.50	5.08	1.42	0.02				
23.00	5.11	1.44	0.02				
23.50	5.14	1.45	0.02				
24.00	5.17	1.47	0.02				
24.50	5.17	1.47	0.00				
25.00	5.17	1.47	0.00				
25.50	5.17	1.47	0.00				

143 BAUER DR OAKLAND

NOAA 24-hr D NOAA-100 Rainfall=8.61"

Prepared by Donohue Engineering, LLC

Printed 5/9/2022

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Hydrograph for Subcatchment 1S: PRE-DEV-IMP.

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	26.00	8.61	8.37	0.00
0.50	0.05	0.00	0.00	26.50	8.61	8.37	0.00
1.00	0.10	0.01	0.00	27.00	8.61	8.37	0.00
1.50	0.15	0.04	0.00	27.50	8.61	8.37	0.00
2.00	0.21	0.07	0.00	28.00	8.61	8.37	0.00
2.50	0.26	0.12	0.00	28.50	8.61	8.37	0.00
3.00	0.32	0.16	0.00	29.00	8.61	8.37	0.00
3.50	0.39	0.22	0.00	29.50	8.61	8.37	0.00
4.00	0.45	0.27	0.00	30.00	8.61	8.37	0.00
4.50	0.52	0.34	0.00	30.50	8.61	8.37	0.00
5.00	0.59	0.40	0.00	31.00	8.61	8.37	0.00
5.50	0.66	0.47	0.00	31.50	8.61	8.37	0.00
6.00	0.74	0.54	0.00	32.00	8.61	8.37	0.00
6.50	0.82	0.61	0.00	32.50	8.61	8.37	0.00
7.00	0.91	0.70	0.00	33.00	8.61	8.37	0.00
7.50	1.01	0.80	0.00	33.50	8.61	8.37	0.00
8.00	1.12	0.90	0.01	34.00	8.61	8.37	0.00
8.50	1.24	1.02	0.01	34.50	8.61	8.37	0.00
9.00	1.37	1.15	0.01	35.00	8.61	8.37	0.00
9.50	1.52	1.30	0.01	35.50	8.61	8.37	0.00
10.00	1.71	1.48	0.01	36.00	8.61	8.37	0.00
10.50	1.93	1.70	0.01				
11.00	2.24	2.01	0.02				
11.50	2.73	2.50	0.02				
12.00	4.12	3.89	0.08				
12.50	5.88	5.64	0.05				
13.00	6.37	6.13	0.02				
13.50	6.68	6.44	0.01				
14.00	6.90	6.66	0.01				
14.50	7.09	6.85	0.01				
15.00	7.24	7.00	0.01				
15.50	7.37	7.13	0.01				
16.00	7.49	7.25	0.01				
16.50	7.60	7.36	0.01				
17.00	7.70	7.46	0.00				
17.50	7.79	7.55	0.00				
18.00	7.87	7.64	0.00				
18.50	7.95	7.71	0.00				
19.00	8.02	7.78	0.00				
19.50	8.09	7.85	0.00				
20.00	8.16	7.92	0.00				
20.50	8.22	7.98	0.00				
21.00	8.29	8.05	0.00				
21.50	8.35	8.11	0.00				
22.00	8.40	8.16	0.00				
22.50	8.46	8.22	0.00				
23.00	8.51	8.27	0.00				
23.50	8.56	8.32	0.00				
24.00	8.61	8.37	0.00				
24.50	8.61	8.37	0.00				
25.00	8.61	8.37	0.00				
25.50	8.61	8.37	0.00				

143 BAUER DR OAKLAND

NOAA 24-hr D NOAA-100 Rainfall=8.61"

Prepared by Donohue Engineering, LLC

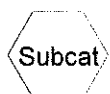
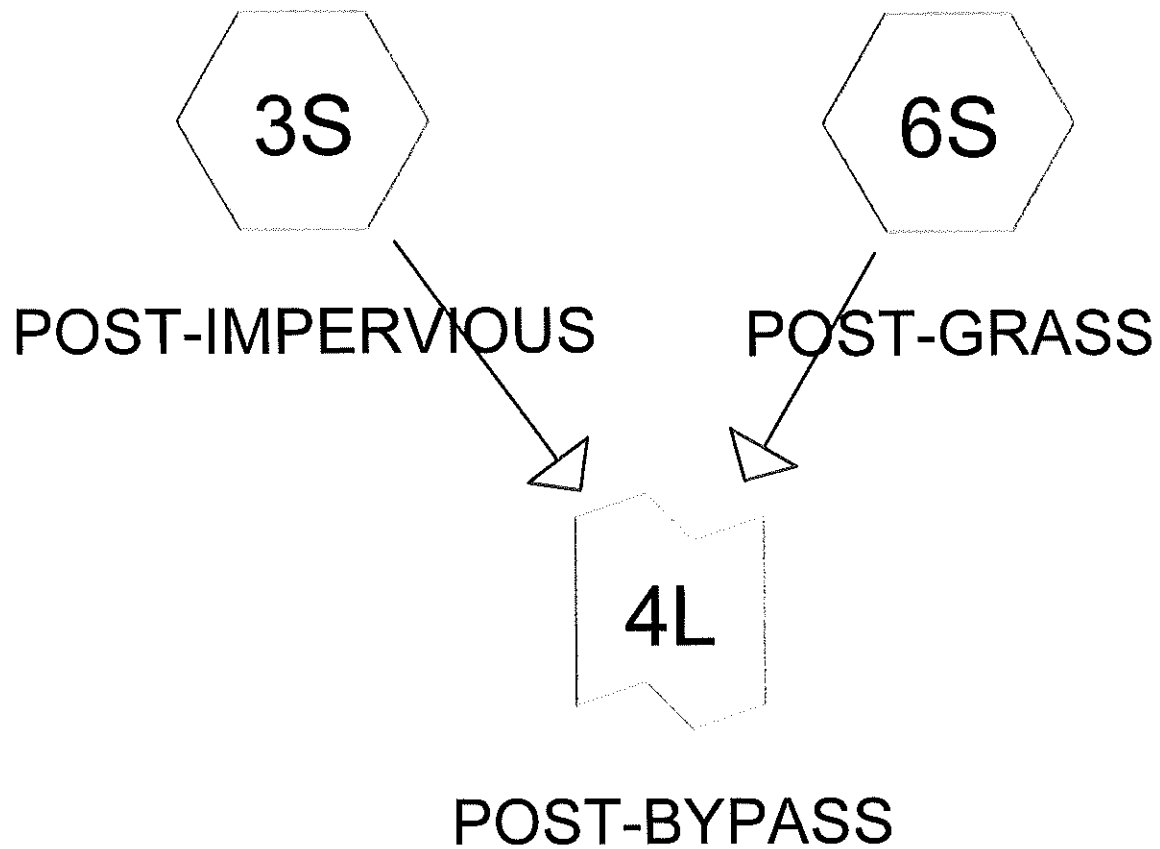
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Hydrograph for Subcatchment 2S: PRE-DEV-LAWN

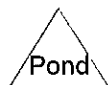
Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	26.00	8.61	3.92	0.00
0.50	0.05	0.00	0.00	26.50	8.61	3.92	0.00
1.00	0.10	0.00	0.00	27.00	8.61	3.92	0.00
1.50	0.15	0.00	0.00	27.50	8.61	3.92	0.00
2.00	0.21	0.00	0.00	28.00	8.61	3.92	0.00
2.50	0.26	0.00	0.00	28.50	8.61	3.92	0.00
3.00	0.32	0.00	0.00	29.00	8.61	3.92	0.00
3.50	0.39	0.00	0.00	29.50	8.61	3.92	0.00
4.00	0.45	0.00	0.00	30.00	8.61	3.92	0.00
4.50	0.52	0.00	0.00	30.50	8.61	3.92	0.00
5.00	0.59	0.00	0.00	31.00	8.61	3.92	0.00
5.50	0.66	0.00	0.00	31.50	8.61	3.92	0.00
6.00	0.74	0.00	0.00	32.00	8.61	3.92	0.00
6.50	0.82	0.00	0.00	32.50	8.61	3.92	0.00
7.00	0.91	0.00	0.00	33.00	8.61	3.92	0.00
7.50	1.01	0.00	0.00	33.50	8.61	3.92	0.00
8.00	1.12	0.00	0.00	34.00	8.61	3.92	0.00
8.50	1.24	0.00	0.00	34.50	8.61	3.92	0.00
9.00	1.37	0.00	0.00	35.00	8.61	3.92	0.00
9.50	1.52	0.01	0.01	35.50	8.61	3.92	0.00
10.00	1.71	0.03	0.02	36.00	8.61	3.92	0.00
10.50	1.93	0.06	0.03				
11.00	2.24	0.13	0.07				
11.50	2.73	0.27	0.15				
12.00	4.12	0.88	0.66				
12.50	5.88	1.93	0.57				
13.00	6.37	2.26	0.29				
13.50	6.68	2.47	0.19				
14.00	6.90	2.63	0.14				
14.50	7.09	2.77	0.12				
15.00	7.24	2.88	0.10				
15.50	7.37	2.97	0.09				
16.00	7.49	3.06	0.08				
16.50	7.60	3.14	0.07				
17.00	7.70	3.22	0.07				
17.50	7.79	3.29	0.06				
18.00	7.87	3.35	0.06				
18.50	7.95	3.41	0.05				
19.00	8.02	3.46	0.05				
19.50	8.09	3.51	0.05				
20.00	8.16	3.57	0.05				
20.50	8.22	3.62	0.05				
21.00	8.29	3.66	0.04				
21.50	8.35	3.71	0.04				
22.00	8.40	3.76	0.04				
22.50	8.46	3.80	0.04				
23.00	8.51	3.84	0.04				
23.50	8.56	3.88	0.04				
24.00	8.61	3.92	0.03				
24.50	8.61	3.92	0.00				
25.00	8.61	3.92	0.00				
25.50	8.61	3.92	0.00				



Subcat



Reach



Pond



Link

Routing Diagram for 143 BAUER DR OAKLAND
Prepared by Donohue Engineering, LLC, Printed 5/9/2022
HydroCAD® 10.10-5a s/n 05145 © 2020 HydroCAD Software Solutions LLC

143 BAUER DR OAKLAND

NOAA 24-hr D NOAA-2 Rainfall=3.41"

Prepared by Donohue Engineering, LLC

Printed 5/9/2022

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Hydrograph for Subcatchment 3S: POST-IMPERVIOUS

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	26.00	3.41	3.18	0.00
0.50	0.02	0.00	0.00	26.50	3.41	3.18	0.00
1.00	0.04	0.00	0.00	27.00	3.41	3.18	0.00
1.50	0.06	0.00	0.00	27.50	3.41	3.18	0.00
2.00	0.08	0.01	0.00	28.00	3.41	3.18	0.00
2.50	0.10	0.02	0.00	28.50	3.41	3.18	0.00
3.00	0.13	0.03	0.00	29.00	3.41	3.18	0.00
3.50	0.15	0.04	0.00	29.50	3.41	3.18	0.00
4.00	0.18	0.06	0.00	30.00	3.41	3.18	0.00
4.50	0.21	0.07	0.00	30.50	3.41	3.18	0.00
5.00	0.23	0.09	0.00	31.00	3.41	3.18	0.00
5.50	0.26	0.11	0.00	31.50	3.41	3.18	0.00
6.00	0.29	0.14	0.00	32.00	3.41	3.18	0.00
6.50	0.32	0.16	0.00	32.50	3.41	3.18	0.00
7.00	0.36	0.19	0.00	33.00	3.41	3.18	0.00
7.50	0.40	0.23	0.00	33.50	3.41	3.18	0.00
8.00	0.44	0.27	0.00	34.00	3.41	3.18	0.00
8.50	0.49	0.31	0.00	34.50	3.41	3.18	0.00
9.00	0.54	0.36	0.00	35.00	3.41	3.18	0.00
9.50	0.60	0.41	0.00	35.50	3.41	3.18	0.00
10.00	0.68	0.48	0.01	36.00	3.41	3.18	0.00
10.50	0.76	0.56	0.01				
11.00	0.89	0.68	0.01				
11.50	1.08	0.87	0.02				
12.00	1.63	1.41	0.06				
12.50	2.33	2.10	0.02				
13.00	2.52	2.29	0.01				
13.50	2.65	2.42	0.01				
14.00	2.73	2.50	0.01				
14.50	2.81	2.58	0.00				
15.00	2.87	2.64	0.00				
15.50	2.92	2.69	0.00				
16.00	2.97	2.74	0.00				
16.50	3.01	2.78	0.00				
17.00	3.05	2.82	0.00				
17.50	3.09	2.85	0.00				
18.00	3.12	2.89	0.00				
18.50	3.15	2.92	0.00				
19.00	3.18	2.94	0.00				
19.50	3.20	2.97	0.00				
20.00	3.23	3.00	0.00				
20.50	3.26	3.02	0.00				
21.00	3.28	3.05	0.00				
21.50	3.31	3.07	0.00				
22.00	3.33	3.10	0.00				
22.50	3.35	3.12	0.00				
23.00	3.37	3.14	0.00				
23.50	3.39	3.16	0.00				
24.00	3.41	3.18	0.00				
24.50	3.41	3.18	0.00				
25.00	3.41	3.18	0.00				
25.50	3.41	3.18	0.00				

143 BAUER DR OAKLAND

NOAA 24-hr D NOAA-2 Rainfall=3.41"

Prepared by Donohue Engineering, LLC

Printed 5/9/2022

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Hydrograph for Subcatchment 6S: POST-GRASS

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	26.00	3.41	0.53	0.00
0.50	0.02	0.00	0.00	26.50	3.41	0.53	0.00
1.00	0.04	0.00	0.00	27.00	3.41	0.53	0.00
1.50	0.06	0.00	0.00	27.50	3.41	0.53	0.00
2.00	0.08	0.00	0.00	28.00	3.41	0.53	0.00
2.50	0.10	0.00	0.00	28.50	3.41	0.53	0.00
3.00	0.13	0.00	0.00	29.00	3.41	0.53	0.00
3.50	0.15	0.00	0.00	29.50	3.41	0.53	0.00
4.00	0.18	0.00	0.00	30.00	3.41	0.53	0.00
4.50	0.21	0.00	0.00	30.50	3.41	0.53	0.00
5.00	0.23	0.00	0.00	31.00	3.41	0.53	0.00
5.50	0.26	0.00	0.00	31.50	3.41	0.53	0.00
6.00	0.29	0.00	0.00	32.00	3.41	0.53	0.00
6.50	0.32	0.00	0.00	32.50	3.41	0.53	0.00
7.00	0.36	0.00	0.00	33.00	3.41	0.53	0.00
7.50	0.40	0.00	0.00	33.50	3.41	0.53	0.00
8.00	0.44	0.00	0.00	34.00	3.41	0.53	0.00
8.50	0.49	0.00	0.00	34.50	3.41	0.53	0.00
9.00	0.54	0.00	0.00	35.00	3.41	0.53	0.00
9.50	0.60	0.00	0.00	35.50	3.41	0.53	0.00
10.00	0.68	0.00	0.00	36.00	3.41	0.53	0.00
10.50	0.76	0.00	0.00				
11.00	0.89	0.00	0.00				
11.50	1.08	0.00	0.00				
12.00	1.63	0.02	0.00				
12.50	2.33	0.15	0.00				
13.00	2.52	0.20	0.00				
13.50	2.65	0.24	0.00				
14.00	2.73	0.27	0.00				
14.50	2.81	0.30	0.00				
15.00	2.87	0.32	0.00				
15.50	2.92	0.34	0.00				
16.00	2.97	0.35	0.00				
16.50	3.01	0.37	0.00				
17.00	3.05	0.38	0.00				
17.50	3.09	0.40	0.00				
18.00	3.12	0.41	0.00				
18.50	3.15	0.42	0.00				
19.00	3.18	0.43	0.00				
19.50	3.20	0.45	0.00				
20.00	3.23	0.46	0.00				
20.50	3.26	0.47	0.00				
21.00	3.28	0.48	0.00				
21.50	3.31	0.49	0.00				
22.00	3.33	0.50	0.00				
22.50	3.35	0.51	0.00				
23.00	3.37	0.52	0.00				
23.50	3.39	0.52	0.00				
24.00	3.41	0.53	0.00				
24.50	3.41	0.53	0.00				
25.00	3.41	0.53	0.00				
25.50	3.41	0.53	0.00				

143 BAUER DR OAKLAND

NOAA 24-hr D NOAA-2 Rainfall=3.41"

Prepared by Donohue Engineering, LLC

Printed 5/9/2022

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Hydrograph for Link 4L: POST-BYPASS

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	26.00	0.00	0.00	0.00
0.50	0.00	0.00	0.00	26.50	0.00	0.00	0.00
1.00	0.00	0.00	0.00	27.00	0.00	0.00	0.00
1.50	0.00	0.00	0.00	27.50	0.00	0.00	0.00
2.00	0.00	0.00	0.00	28.00	0.00	0.00	0.00
2.50	0.00	0.00	0.00	28.50	0.00	0.00	0.00
3.00	0.00	0.00	0.00	29.00	0.00	0.00	0.00
3.50	0.00	0.00	0.00	29.50	0.00	0.00	0.00
4.00	0.00	0.00	0.00	30.00	0.00	0.00	0.00
4.50	0.00	0.00	0.00	30.50	0.00	0.00	0.00
5.00	0.00	0.00	0.00	31.00	0.00	0.00	0.00
5.50	0.00	0.00	0.00	31.50	0.00	0.00	0.00
6.00	0.00	0.00	0.00	32.00	0.00	0.00	0.00
6.50	0.00	0.00	0.00	32.50	0.00	0.00	0.00
7.00	0.00	0.00	0.00	33.00	0.00	0.00	0.00
7.50	0.00	0.00	0.00	33.50	0.00	0.00	0.00
8.00	0.00	0.00	0.00	34.00	0.00	0.00	0.00
8.50	0.00	0.00	0.00	34.50	0.00	0.00	0.00
9.00	0.00	0.00	0.00	35.00	0.00	0.00	0.00
9.50	0.00	0.00	0.00	35.50	0.00	0.00	0.00
10.00	0.01	0.00	0.01	36.00	0.00	0.00	0.00
10.50	0.01	0.00	0.01				
11.00	0.01	0.00	0.01				
11.50	0.02	0.00	0.02				
12.00	0.07	0.00	0.07				
12.50	0.03	0.00	0.03				
13.00	0.01	0.00	0.01				
13.50	0.01	0.00	0.01				
14.00	0.01	0.00	0.01				
14.50	0.01	0.00	0.01				
15.00	0.00	0.00	0.00				
15.50	0.00	0.00	0.00				
16.00	0.00	0.00	0.00				
16.50	0.00	0.00	0.00				
17.00	0.00	0.00	0.00				
17.50	0.00	0.00	0.00				
18.00	0.00	0.00	0.00				
18.50	0.00	0.00	0.00				
19.00	0.00	0.00	0.00				
19.50	0.00	0.00	0.00				
20.00	0.00	0.00	0.00				
20.50	0.00	0.00	0.00				
21.00	0.00	0.00	0.00				
21.50	0.00	0.00	0.00				
22.00	0.00	0.00	0.00				
22.50	0.00	0.00	0.00				
23.00	0.00	0.00	0.00				
23.50	0.00	0.00	0.00				
24.00	0.00	0.00	0.00				
24.50	0.00	0.00	0.00				
25.00	0.00	0.00	0.00				
25.50	0.00	0.00	0.00				

143 BAUER DR OAKLAND

NOAA 24-hr D NOAA-10 Rainfall=5.17"

Prepared by Donohue Engineering, LLC

Printed 5/9/2022

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Hydrograph for Subcatchment 3S: POST-IMPERVIOUS

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	26.00	5.17	4.93	0.00
0.50	0.03	0.00	0.00	26.50	5.17	4.93	0.00
1.00	0.06	0.00	0.00	27.00	5.17	4.93	0.00
1.50	0.09	0.01	0.00	27.50	5.17	4.93	0.00
2.00	0.12	0.02	0.00	28.00	5.17	4.93	0.00
2.50	0.16	0.04	0.00	28.50	5.17	4.93	0.00
3.00	0.19	0.07	0.00	29.00	5.17	4.93	0.00
3.50	0.23	0.09	0.00	29.50	5.17	4.93	0.00
4.00	0.27	0.12	0.00	30.00	5.17	4.93	0.00
4.50	0.31	0.15	0.00	30.50	5.17	4.93	0.00
5.00	0.35	0.19	0.00	31.00	5.17	4.93	0.00
5.50	0.40	0.23	0.00	31.50	5.17	4.93	0.00
6.00	0.44	0.27	0.00	32.00	5.17	4.93	0.00
6.50	0.49	0.31	0.00	32.50	5.17	4.93	0.00
7.00	0.54	0.36	0.00	33.00	5.17	4.93	0.00
7.50	0.60	0.41	0.00	33.50	5.17	4.93	0.00
8.00	0.67	0.48	0.00	34.00	5.17	4.93	0.00
8.50	0.74	0.54	0.00	34.50	5.17	4.93	0.00
9.00	0.82	0.62	0.01	35.00	5.17	4.93	0.00
9.50	0.91	0.71	0.01	35.50	5.17	4.93	0.00
10.00	1.02	0.82	0.01	36.00	5.17	4.93	0.00
10.50	1.16	0.94	0.01				
11.00	1.34	1.13	0.01				
11.50	1.64	1.42	0.02				
12.00	2.48	2.25	0.10				
12.50	3.53	3.30	0.03				
13.00	3.83	3.59	0.02				
13.50	4.01	3.78	0.01				
14.00	4.15	3.91	0.01				
14.50	4.26	4.02	0.01				
15.00	4.35	4.11	0.01				
15.50	4.43	4.19	0.01				
16.00	4.50	4.26	0.00				
16.50	4.57	4.33	0.00				
17.00	4.63	4.39	0.00				
17.50	4.68	4.44	0.00				
18.00	4.73	4.49	0.00				
18.50	4.77	4.54	0.00				
19.00	4.82	4.58	0.00				
19.50	4.86	4.62	0.00				
20.00	4.90	4.66	0.00				
20.50	4.94	4.70	0.00				
21.00	4.98	4.74	0.00				
21.50	5.01	4.77	0.00				
22.00	5.05	4.81	0.00				
22.50	5.08	4.84	0.00				
23.00	5.11	4.87	0.00				
23.50	5.14	4.90	0.00				
24.00	5.17	4.93	0.00				
24.50	5.17	4.93	0.00				
25.00	5.17	4.93	0.00				
25.50	5.17	4.93	0.00				

143 BAUER DR OAKLAND

NOAA 24-hr D NOAA-10 Rainfall=5.17"

Prepared by Donohue Engineering, LLC

Printed 5/9/2022

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Hydrograph for Subcatchment 6S: POST-GRASS

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	26.00	5.17	1.47	0.00
0.50	0.03	0.00	0.00	26.50	5.17	1.47	0.00
1.00	0.06	0.00	0.00	27.00	5.17	1.47	0.00
1.50	0.09	0.00	0.00	27.50	5.17	1.47	0.00
2.00	0.12	0.00	0.00	28.00	5.17	1.47	0.00
2.50	0.16	0.00	0.00	28.50	5.17	1.47	0.00
3.00	0.19	0.00	0.00	29.00	5.17	1.47	0.00
3.50	0.23	0.00	0.00	29.50	5.17	1.47	0.00
4.00	0.27	0.00	0.00	30.00	5.17	1.47	0.00
4.50	0.31	0.00	0.00	30.50	5.17	1.47	0.00
5.00	0.35	0.00	0.00	31.00	5.17	1.47	0.00
5.50	0.40	0.00	0.00	31.50	5.17	1.47	0.00
6.00	0.44	0.00	0.00	32.00	5.17	1.47	0.00
6.50	0.49	0.00	0.00	32.50	5.17	1.47	0.00
7.00	0.54	0.00	0.00	33.00	5.17	1.47	0.00
7.50	0.60	0.00	0.00	33.50	5.17	1.47	0.00
8.00	0.67	0.00	0.00	34.00	5.17	1.47	0.00
8.50	0.74	0.00	0.00	34.50	5.17	1.47	0.00
9.00	0.82	0.00	0.00	35.00	5.17	1.47	0.00
9.50	0.91	0.00	0.00	35.50	5.17	1.47	0.00
10.00	1.02	0.00	0.00	36.00	5.17	1.47	0.00
10.50	1.16	0.00	0.00				
11.00	1.34	0.00	0.00				
11.50	1.64	0.02	0.00				
12.00	2.48	0.19	0.01				
12.50	3.53	0.59	0.01				
13.00	3.83	0.73	0.01				
13.50	4.01	0.82	0.00				
14.00	4.15	0.89	0.00				
14.50	4.26	0.95	0.00				
15.00	4.35	1.00	0.00				
15.50	4.43	1.04	0.00				
16.00	4.50	1.08	0.00				
16.50	4.57	1.12	0.00				
17.00	4.63	1.15	0.00				
17.50	4.68	1.18	0.00				
18.00	4.73	1.21	0.00				
18.50	4.77	1.24	0.00				
19.00	4.82	1.26	0.00				
19.50	4.86	1.28	0.00				
20.00	4.90	1.31	0.00				
20.50	4.94	1.33	0.00				
21.00	4.98	1.35	0.00				
21.50	5.01	1.38	0.00				
22.00	5.05	1.40	0.00				
22.50	5.08	1.42	0.00				
23.00	5.11	1.44	0.00				
23.50	5.14	1.45	0.00				
24.00	5.17	1.47	0.00				
24.50	5.17	1.47	0.00				
25.00	5.17	1.47	0.00				
25.50	5.17	1.47	0.00				

143 BAUER DR OAKLAND

NOAA 24-hr D NOAA-10 Rainfall=5.17"

Prepared by Donohue Engineering, LLC

Printed 5/9/2022

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Hydrograph for Link 4L: POST-BYPASS

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	26.00	0.00	0.00	0.00
0.50	0.00	0.00	0.00	26.50	0.00	0.00	0.00
1.00	0.00	0.00	0.00	27.00	0.00	0.00	0.00
1.50	0.00	0.00	0.00	27.50	0.00	0.00	0.00
2.00	0.00	0.00	0.00	28.00	0.00	0.00	0.00
2.50	0.00	0.00	0.00	28.50	0.00	0.00	0.00
3.00	0.00	0.00	0.00	29.00	0.00	0.00	0.00
3.50	0.00	0.00	0.00	29.50	0.00	0.00	0.00
4.00	0.00	0.00	0.00	30.00	0.00	0.00	0.00
4.50	0.00	0.00	0.00	30.50	0.00	0.00	0.00
5.00	0.00	0.00	0.00	31.00	0.00	0.00	0.00
5.50	0.00	0.00	0.00	31.50	0.00	0.00	0.00
6.00	0.00	0.00	0.00	32.00	0.00	0.00	0.00
6.50	0.00	0.00	0.00	32.50	0.00	0.00	0.00
7.00	0.00	0.00	0.00	33.00	0.00	0.00	0.00
7.50	0.00	0.00	0.00	33.50	0.00	0.00	0.00
8.00	0.00	0.00	0.00	34.00	0.00	0.00	0.00
8.50	0.00	0.00	0.00	34.50	0.00	0.00	0.00
9.00	0.01	0.00	0.01	35.00	0.00	0.00	0.00
9.50	0.01	0.00	0.01	35.50	0.00	0.00	0.00
10.00	0.01	0.00	0.01	36.00	0.00	0.00	0.00
10.50	0.01	0.00	0.01				
11.00	0.01	0.00	0.01				
11.50	0.03	0.00	0.03				
12.00	0.11	0.00	0.11				
12.50	0.04	0.00	0.04				
13.00	0.02	0.00	0.02				
13.50	0.02	0.00	0.02				
14.00	0.01	0.00	0.01				
14.50	0.01	0.00	0.01				
15.00	0.01	0.00	0.01				
15.50	0.01	0.00	0.01				
16.00	0.01	0.00	0.01				
16.50	0.01	0.00	0.01				
17.00	0.01	0.00	0.01				
17.50	0.01	0.00	0.01				
18.00	0.00	0.00	0.00				
18.50	0.00	0.00	0.00				
19.00	0.00	0.00	0.00				
19.50	0.00	0.00	0.00				
20.00	0.00	0.00	0.00				
20.50	0.00	0.00	0.00				
21.00	0.00	0.00	0.00				
21.50	0.00	0.00	0.00				
22.00	0.00	0.00	0.00				
22.50	0.00	0.00	0.00				
23.00	0.00	0.00	0.00				
23.50	0.00	0.00	0.00				
24.00	0.00	0.00	0.00				
24.50	0.00	0.00	0.00				
25.00	0.00	0.00	0.00				
25.50	0.00	0.00	0.00				

143 BAUER DR OAKLAND

NOAA 24-hr D NOAA-100 Rainfall=8.61"

Prepared by Donohue Engineering, LLC

Printed 5/9/2022

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Hydrograph for Subcatchment 3S: POST-IMPERVIOUS

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	26.00	8.61	8.37	0.00
0.50	0.05	0.00	0.00	26.50	8.61	8.37	0.00
1.00	0.10	0.01	0.00	27.00	8.61	8.37	0.00
1.50	0.15	0.04	0.00	27.50	8.61	8.37	0.00
2.00	0.21	0.07	0.00	28.00	8.61	8.37	0.00
2.50	0.26	0.12	0.00	28.50	8.61	8.37	0.00
3.00	0.32	0.16	0.00	29.00	8.61	8.37	0.00
3.50	0.39	0.22	0.00	29.50	8.61	8.37	0.00
4.00	0.45	0.27	0.00	30.00	8.61	8.37	0.00
4.50	0.52	0.34	0.00	30.50	8.61	8.37	0.00
5.00	0.59	0.40	0.00	31.00	8.61	8.37	0.00
5.50	0.66	0.47	0.00	31.50	8.61	8.37	0.00
6.00	0.74	0.54	0.01	32.00	8.61	8.37	0.00
6.50	0.82	0.61	0.01	32.50	8.61	8.37	0.00
7.00	0.91	0.70	0.01	33.00	8.61	8.37	0.00
7.50	1.01	0.80	0.01	33.50	8.61	8.37	0.00
8.00	1.12	0.90	0.01	34.00	8.61	8.37	0.00
8.50	1.24	1.02	0.01	34.50	8.61	8.37	0.00
9.00	1.37	1.15	0.01	35.00	8.61	8.37	0.00
9.50	1.52	1.30	0.01	35.50	8.61	8.37	0.00
10.00	1.71	1.48	0.01	36.00	8.61	8.37	0.00
10.50	1.93	1.70	0.02				
11.00	2.24	2.01	0.02				
11.50	2.73	2.50	0.04				
12.00	4.12	3.89	0.16				
12.50	5.88	5.64	0.06				
13.00	6.37	6.13	0.03				
13.50	6.68	6.44	0.02				
14.00	6.90	6.66	0.02				
14.50	7.09	6.85	0.01				
15.00	7.24	7.00	0.01				
15.50	7.37	7.13	0.01				
16.00	7.49	7.25	0.01				
16.50	7.60	7.36	0.01				
17.00	7.70	7.46	0.01				
17.50	7.79	7.55	0.01				
18.00	7.87	7.64	0.01				
18.50	7.95	7.71	0.01				
19.00	8.02	7.78	0.01				
19.50	8.09	7.85	0.00				
20.00	8.16	7.92	0.00				
20.50	8.22	7.98	0.00				
21.00	8.29	8.05	0.00				
21.50	8.35	8.11	0.00				
22.00	8.40	8.16	0.00				
22.50	8.46	8.22	0.00				
23.00	8.51	8.27	0.00				
23.50	8.56	8.32	0.00				
24.00	8.61	8.37	0.00				
24.50	8.61	8.37	0.00				
25.00	8.61	8.37	0.00				
25.50	8.61	8.37	0.00				

143 BAUER DR OAKLAND

NOAA 24-hr D NOAA-100 Rainfall=8.61"

Prepared by Donohue Engineering, LLC

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Hydrograph for Subcatchment 6S: POST-GRASS

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	26.00	8.61	3.92	0.00
0.50	0.05	0.00	0.00	26.50	8.61	3.92	0.00
1.00	0.10	0.00	0.00	27.00	8.61	3.92	0.00
1.50	0.15	0.00	0.00	27.50	8.61	3.92	0.00
2.00	0.21	0.00	0.00	28.00	8.61	3.92	0.00
2.50	0.26	0.00	0.00	28.50	8.61	3.92	0.00
3.00	0.32	0.00	0.00	29.00	8.61	3.92	0.00
3.50	0.39	0.00	0.00	29.50	8.61	3.92	0.00
4.00	0.45	0.00	0.00	30.00	8.61	3.92	0.00
4.50	0.52	0.00	0.00	30.50	8.61	3.92	0.00
5.00	0.59	0.00	0.00	31.00	8.61	3.92	0.00
5.50	0.66	0.00	0.00	31.50	8.61	3.92	0.00
6.00	0.74	0.00	0.00	32.00	8.61	3.92	0.00
6.50	0.82	0.00	0.00	32.50	8.61	3.92	0.00
7.00	0.91	0.00	0.00	33.00	8.61	3.92	0.00
7.50	1.01	0.00	0.00	33.50	8.61	3.92	0.00
8.00	1.12	0.00	0.00	34.00	8.61	3.92	0.00
8.50	1.24	0.00	0.00	34.50	8.61	3.92	0.00
9.00	1.37	0.00	0.00	35.00	8.61	3.92	0.00
9.50	1.52	0.01	0.00	35.50	8.61	3.92	0.00
10.00	1.71	0.03	0.00	36.00	8.61	3.92	0.00
10.50	1.93	0.06	0.00				
11.00	2.24	0.13	0.00				
11.50	2.73	0.27	0.01				
12.00	4.12	0.88	0.05				
12.50	5.88	1.93	0.02				
13.00	6.37	2.26	0.01				
13.50	6.68	2.47	0.01				
14.00	6.90	2.63	0.01				
14.50	7.09	2.77	0.01				
15.00	7.24	2.88	0.00				
15.50	7.37	2.97	0.00				
16.00	7.49	3.06	0.00				
16.50	7.60	3.14	0.00				
17.00	7.70	3.22	0.00				
17.50	7.79	3.29	0.00				
18.00	7.87	3.35	0.00				
18.50	7.95	3.41	0.00				
19.00	8.02	3.46	0.00				
19.50	8.09	3.51	0.00				
20.00	8.16	3.57	0.00				
20.50	8.22	3.62	0.00				
21.00	8.29	3.66	0.00				
21.50	8.35	3.71	0.00				
22.00	8.40	3.76	0.00				
22.50	8.46	3.80	0.00				
23.00	8.51	3.84	0.00				
23.50	8.56	3.88	0.00				
24.00	8.61	3.92	0.00				
24.50	8.61	3.92	0.00				
25.00	8.61	3.92	0.00				
25.50	8.61	3.92	0.00				

143 BAUER DR OAKLAND

NOAA 24-hr D NOAA-100 Rainfall=8.61"

Prepared by Donohue Engineering, LLC

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Hydrograph for Link 4L: POST-BYPASS

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	26.00	0.00	0.00	0.00
0.50	0.00	0.00	0.00	26.50	0.00	0.00	0.00
1.00	0.00	0.00	0.00	27.00	0.00	0.00	0.00
1.50	0.00	0.00	0.00	27.50	0.00	0.00	0.00
2.00	0.00	0.00	0.00	28.00	0.00	0.00	0.00
2.50	0.00	0.00	0.00	28.50	0.00	0.00	0.00
3.00	0.00	0.00	0.00	29.00	0.00	0.00	0.00
3.50	0.00	0.00	0.00	29.50	0.00	0.00	0.00
4.00	0.00	0.00	0.00	30.00	0.00	0.00	0.00
4.50	0.00	0.00	0.00	30.50	0.00	0.00	0.00
5.00	0.00	0.00	0.00	31.00	0.00	0.00	0.00
5.50	0.00	0.00	0.00	31.50	0.00	0.00	0.00
6.00	0.01	0.00	0.01	32.00	0.00	0.00	0.00
6.50	0.01	0.00	0.01	32.50	0.00	0.00	0.00
7.00	0.01	0.00	0.01	33.00	0.00	0.00	0.00
7.50	0.01	0.00	0.01	33.50	0.00	0.00	0.00
8.00	0.01	0.00	0.01	34.00	0.00	0.00	0.00
8.50	0.01	0.00	0.01	34.50	0.00	0.00	0.00
9.00	0.01	0.00	0.01	35.00	0.00	0.00	0.00
9.50	0.01	0.00	0.01	35.50	0.00	0.00	0.00
10.00	0.02	0.00	0.02	36.00	0.00	0.00	0.00
10.50	0.02	0.00	0.02				
11.00	0.03	0.00	0.03				
11.50	0.05	0.00	0.05				
12.00	0.21	0.00	0.21				
12.50	0.08	0.00	0.08				
13.00	0.04	0.00	0.04				
13.50	0.03	0.00	0.03				
14.00	0.02	0.00	0.02				
14.50	0.02	0.00	0.02				
15.00	0.01	0.00	0.01				
15.50	0.01	0.00	0.01				
16.00	0.01	0.00	0.01				
16.50	0.01	0.00	0.01				
17.00	0.01	0.00	0.01				
17.50	0.01	0.00	0.01				
18.00	0.01	0.00	0.01				
18.50	0.01	0.00	0.01				
19.00	0.01	0.00	0.01				
19.50	0.01	0.00	0.01				
20.00	0.01	0.00	0.01				
20.50	0.01	0.00	0.01				
21.00	0.01	0.00	0.01				
21.50	0.01	0.00	0.01				
22.00	0.01	0.00	0.01				
22.50	0.01	0.00	0.01				
23.00	0.01	0.00	0.01				
23.50	0.01	0.00	0.01				
24.00	0.01	0.00	0.01				
24.50	0.00	0.00	0.00				
25.00	0.00	0.00	0.00				
25.50	0.00	0.00	0.00				

143 BAUER DR OAKLAND

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NJ DEP 2-hr WQ Rainfall=1.25"

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Summary for Subcatchment PP2: IMP TO BASIN

Runoff = 1.24 cfs @ 1.11 hrs, Volume= 0.036 af, Depth= 1.03"

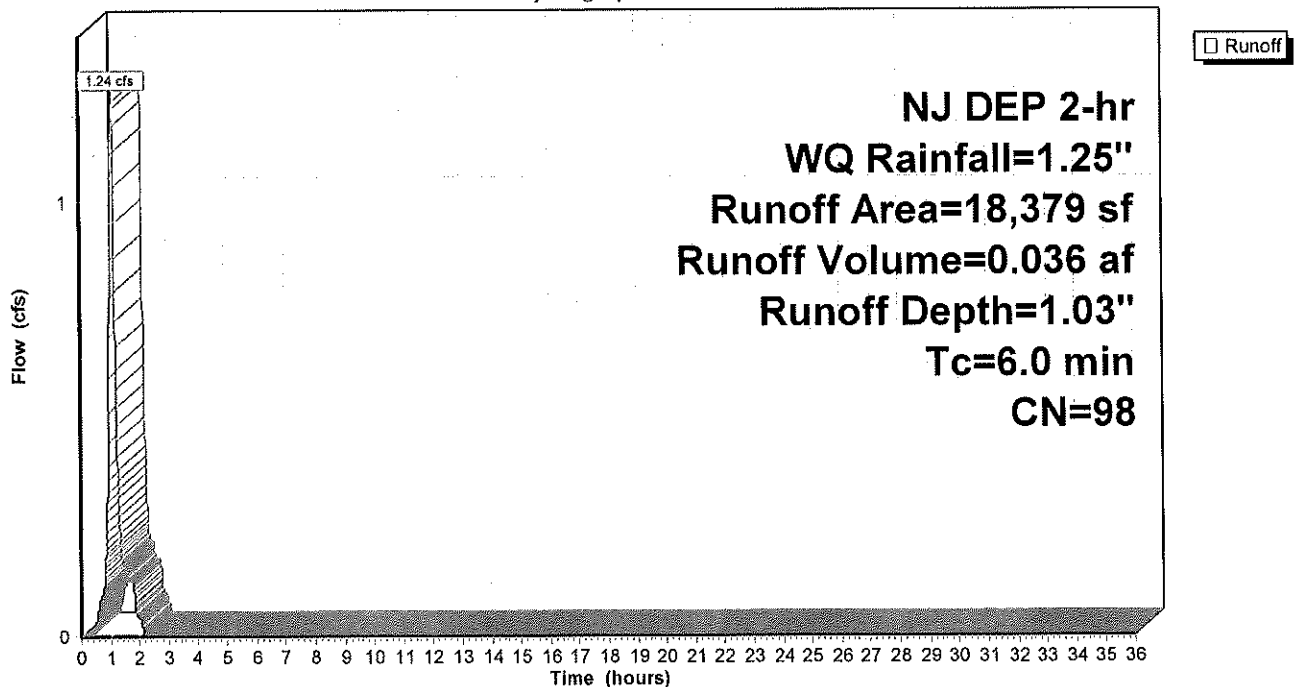
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
18,379	98	Unconnected roofs, HSG B
18,379		100.00% Impervious Area
18,379		100.00% Unconnected

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

Subcatchment PP2: IMP TO BASIN

Hydrograph



143 BAUER DR OAKLAND

NJ DEP 2-hr WQ Rainfall=1.25"

Prepared by Donohue Engineering, LLC

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Summary for Pond D1: INFILTRATION BASIN

Inflow Area = 0.422 ac, 100.00% Impervious, Inflow Depth = 1.03" for WQ event
 Inflow = 1.24 cfs @ 1.11 hrs, Volume= 0.036 af
 Outflow = 0.34 cfs @ 1.29 hrs, Volume= 0.036 af, Atten= 73%, Lag= 11.2 min
 Discarded = 0.34 cfs @ 1.29 hrs, Volume= 0.036 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
 Peak Elev= 446.40' @ 1.29 hrs Surf.Area= 1,176 sf Storage= 661 cf

Plug-Flow detention time= 18.5 min calculated for 0.036 af (100% of inflow)
 Center-of-Mass det. time= 18.5 min (88.8 - 70.3)

Volume	Invert	Avail.Storage	Storage Description
#1	445.00'	2,135 cf	14.00'W x 84.00'L x 5.50'H Prismatic 6,468 cf Overall - 1,131 cf Embedded = 5,337 cf x 40.0% Voids
#2	446.50'	1,131 cf	36.0" Round Pipe Storage x 2 Inside #1 L= 80.0'
		3,266 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Discarded	445.00'	10.000 in/hr Exfiltration over Wetted area
#2	Primary	448.50'	6.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.34 cfs @ 1.29 hrs HW=446.40' (Free Discharge)
 ↑ **1=Exfiltration** (Exfiltration Controls 0.34 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=445.00' (Free Discharge)
 ↑ **2=Orifice/Grate** (Controls 0.00 cfs)

143 BAUER DR OAKLAND

NJ DEP 2-hr WQ Rainfall=1.25"

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Hydrograph for Pond D1: INFILTRATION BASIN

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0	445.00	0.00	0.00	0.00
1.00	0.78	85	445.18	0.28	0.28	0.00
2.00	0.04	199	445.42	0.29	0.29	0.00
3.00	0.00	0	445.00	0.00	0.00	0.00
4.00	0.00	0	445.00	0.00	0.00	0.00
5.00	0.00	0	445.00	0.00	0.00	0.00
6.00	0.00	0	445.00	0.00	0.00	0.00
7.00	0.00	0	445.00	0.00	0.00	0.00
8.00	0.00	0	445.00	0.00	0.00	0.00
9.00	0.00	0	445.00	0.00	0.00	0.00
10.00	0.00	0	445.00	0.00	0.00	0.00
11.00	0.00	0	445.00	0.00	0.00	0.00
12.00	0.00	0	445.00	0.00	0.00	0.00
13.00	0.00	0	445.00	0.00	0.00	0.00
14.00	0.00	0	445.00	0.00	0.00	0.00
15.00	0.00	0	445.00	0.00	0.00	0.00
16.00	0.00	0	445.00	0.00	0.00	0.00
17.00	0.00	0	445.00	0.00	0.00	0.00
18.00	0.00	0	445.00	0.00	0.00	0.00
19.00	0.00	0	445.00	0.00	0.00	0.00
20.00	0.00	0	445.00	0.00	0.00	0.00
21.00	0.00	0	445.00	0.00	0.00	0.00
22.00	0.00	0	445.00	0.00	0.00	0.00
23.00	0.00	0	445.00	0.00	0.00	0.00
24.00	0.00	0	445.00	0.00	0.00	0.00
25.00	0.00	0	445.00	0.00	0.00	0.00
26.00	0.00	0	445.00	0.00	0.00	0.00
27.00	0.00	0	445.00	0.00	0.00	0.00
28.00	0.00	0	445.00	0.00	0.00	0.00
29.00	0.00	0	445.00	0.00	0.00	0.00
30.00	0.00	0	445.00	0.00	0.00	0.00
31.00	0.00	0	445.00	0.00	0.00	0.00
32.00	0.00	0	445.00	0.00	0.00	0.00
33.00	0.00	0	445.00	0.00	0.00	0.00
34.00	0.00	0	445.00	0.00	0.00	0.00
35.00	0.00	0	445.00	0.00	0.00	0.00
36.00	0.00	0	445.00	0.00	0.00	0.00

143 BAUER DR OAKLAND

NOAA 24-hr D NOAA-2 Rainfall=3.41"

Prepared by Donohue Engineering, LLC

Printed 5/9/2022

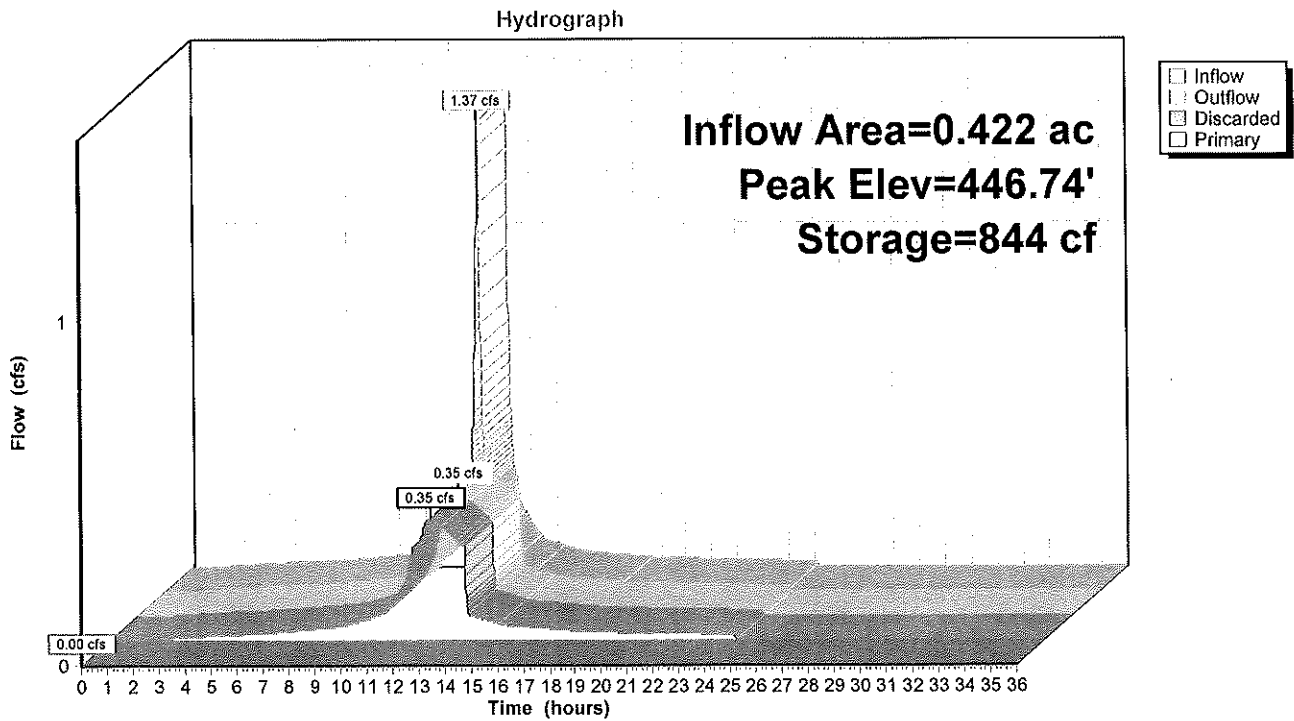
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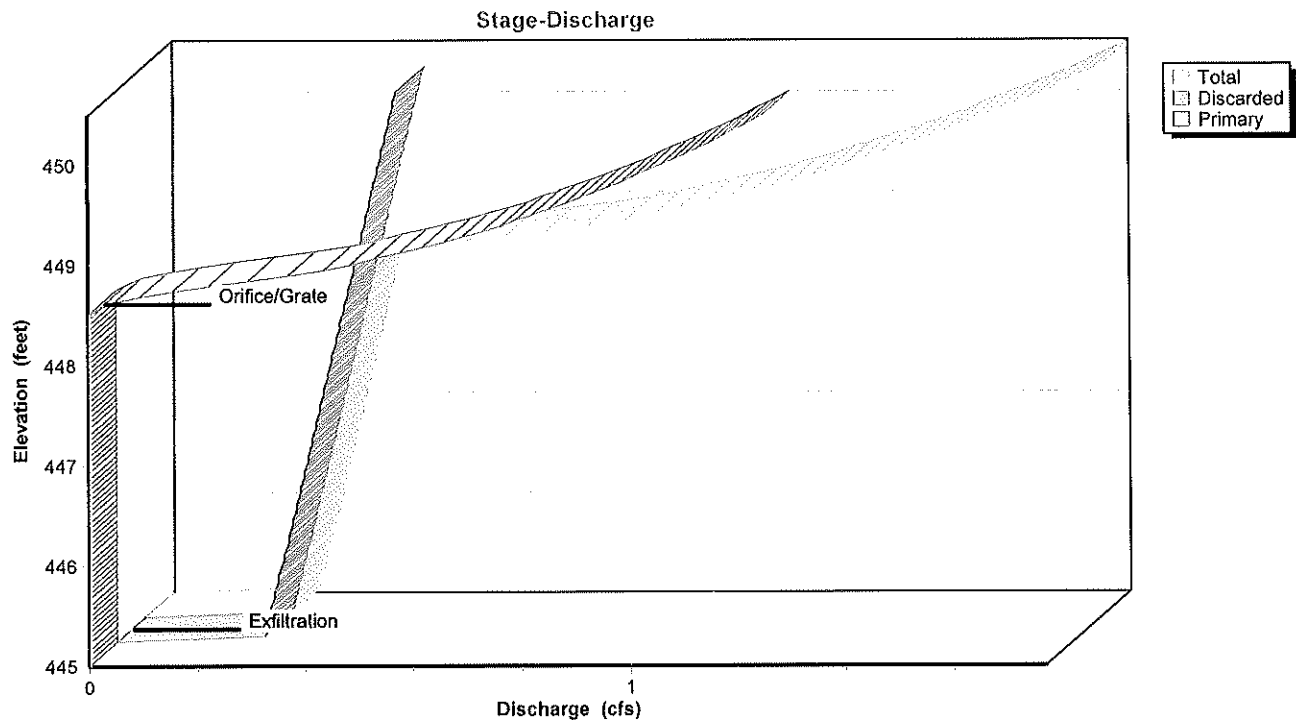
Hydrograph for Subcatchment PP2: IMP TO BASIN

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	26.00	3.41	3.18	0.00
0.50	0.02	0.00	0.00	26.50	3.41	3.18	0.00
1.00	0.04	0.00	0.00	27.00	3.41	3.18	0.00
1.50	0.06	0.00	0.00	27.50	3.41	3.18	0.00
2.00	0.08	0.01	0.01	28.00	3.41	3.18	0.00
2.50	0.10	0.02	0.01	28.50	3.41	3.18	0.00
3.00	0.13	0.03	0.01	29.00	3.41	3.18	0.00
3.50	0.15	0.04	0.01	29.50	3.41	3.18	0.00
4.00	0.18	0.06	0.01	30.00	3.41	3.18	0.00
4.50	0.21	0.07	0.02	30.50	3.41	3.18	0.00
5.00	0.23	0.09	0.02	31.00	3.41	3.18	0.00
5.50	0.26	0.11	0.02	31.50	3.41	3.18	0.00
6.00	0.29	0.14	0.02	32.00	3.41	3.18	0.00
6.50	0.32	0.16	0.02	32.50	3.41	3.18	0.00
7.00	0.36	0.19	0.03	33.00	3.41	3.18	0.00
7.50	0.40	0.23	0.03	33.50	3.41	3.18	0.00
8.00	0.44	0.27	0.03	34.00	3.41	3.18	0.00
8.50	0.49	0.31	0.04	34.50	3.41	3.18	0.00
9.00	0.54	0.36	0.04	35.00	3.41	3.18	0.00
9.50	0.60	0.41	0.05	35.50	3.41	3.18	0.00
10.00	0.68	0.48	0.06	36.00	3.41	3.18	0.00
10.50	0.76	0.56	0.07				
11.00	0.89	0.68	0.11				
11.50	1.08	0.87	0.18				
12.00	1.63	1.41	0.76				
12.50	2.33	2.10	0.27				
13.00	2.52	2.29	0.14				
13.50	2.65	2.42	0.09				
14.00	2.73	2.50	0.07				
14.50	2.81	2.58	0.06				
15.00	2.87	2.64	0.05				
15.50	2.92	2.69	0.04				
16.00	2.97	2.74	0.04				
16.50	3.01	2.78	0.04				
17.00	3.05	2.82	0.03				
17.50	3.09	2.85	0.03				
18.00	3.12	2.89	0.03				
18.50	3.15	2.92	0.02				
19.00	3.18	2.94	0.02				
19.50	3.20	2.97	0.02				
20.00	3.23	3.00	0.02				
20.50	3.26	3.02	0.02				
21.00	3.28	3.05	0.02				
21.50	3.31	3.07	0.02				
22.00	3.33	3.10	0.02				
22.50	3.35	3.12	0.02				
23.00	3.37	3.14	0.02				
23.50	3.39	3.16	0.02				
24.00	3.41	3.18	0.02				
24.50	3.41	3.18	0.00				
25.00	3.41	3.18	0.00				
25.50	3.41	3.18	0.00				

Pond D1: INFILTRATION BASIN



Pond D1: INFILTRATION BASIN



143 BAUER DR OAKLAND

NOAA 24-hr D NOAA-2 Rainfall=3.41"

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Stage-Discharge for Pond D1: INFILTRATION BASIN

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
445.00	0.00	0.00	0.00	450.20	1.65	0.51	1.14
445.10	0.28	0.28	0.00	450.30	1.69	0.51	1.18
445.20	0.28	0.28	0.00	450.40	1.73	0.52	1.21
445.30	0.29	0.29	0.00	450.50	1.77	0.52	1.25
445.40	0.29	0.29	0.00				
445.50	0.29	0.29	0.00				
445.60	0.30	0.30	0.00				
445.70	0.30	0.30	0.00				
445.80	0.31	0.31	0.00				
445.90	0.31	0.31	0.00				
446.00	0.32	0.32	0.00				
446.10	0.32	0.32	0.00				
446.20	0.33	0.33	0.00				
446.30	0.33	0.33	0.00				
446.40	0.34	0.34	0.00				
446.50	0.34	0.34	0.00				
446.60	0.34	0.34	0.00				
446.70	0.35	0.35	0.00				
446.80	0.35	0.35	0.00				
446.90	0.36	0.36	0.00				
447.00	0.36	0.36	0.00				
447.10	0.37	0.37	0.00				
447.20	0.37	0.37	0.00				
447.30	0.38	0.38	0.00				
447.40	0.38	0.38	0.00				
447.50	0.39	0.39	0.00				
447.60	0.39	0.39	0.00				
447.70	0.39	0.39	0.00				
447.80	0.40	0.40	0.00				
447.90	0.40	0.40	0.00				
448.00	0.41	0.41	0.00				
448.10	0.41	0.41	0.00				
448.20	0.42	0.42	0.00				
448.30	0.42	0.42	0.00				
448.40	0.43	0.43	0.00				
448.50	0.43	0.43	0.00				
448.60	0.47	0.44	0.03				
448.70	0.55	0.44	0.11				
448.80	0.67	0.44	0.23				
448.90	0.81	0.45	0.36				
449.00	0.93	0.45	0.47				
449.10	1.02	0.46	0.56				
449.20	1.10	0.46	0.63				
449.30	1.17	0.47	0.70				
449.40	1.23	0.47	0.76				
449.50	1.30	0.48	0.82				
449.60	1.35	0.48	0.87				
449.70	1.41	0.49	0.92				
449.80	1.46	0.49	0.97				
449.90	1.51	0.49	1.01				
450.00	1.56	0.50	1.06				
450.10	1.60	0.50	1.10				

143 BAUER DR OAKLAND

NOAA 24-hr D NOAA-10 Rainfall=5.17"

Prepared by Donohue Engineering, LLC

Printed 5/9/2022

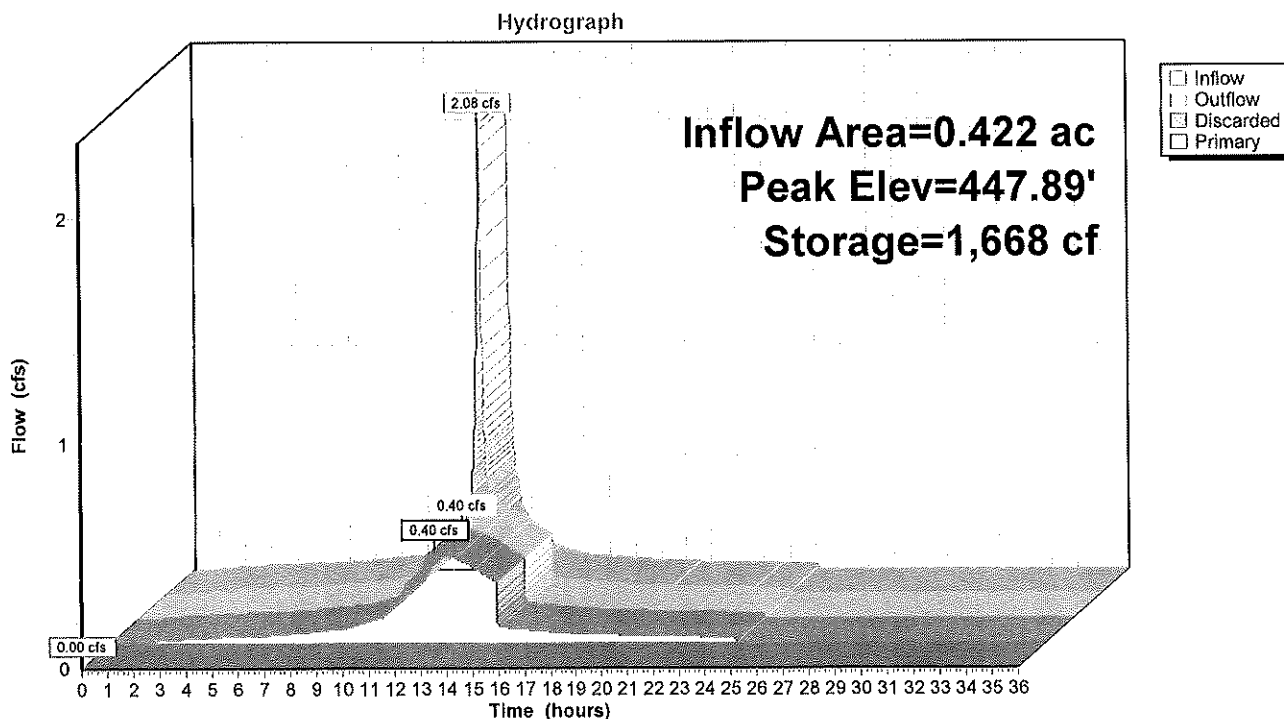
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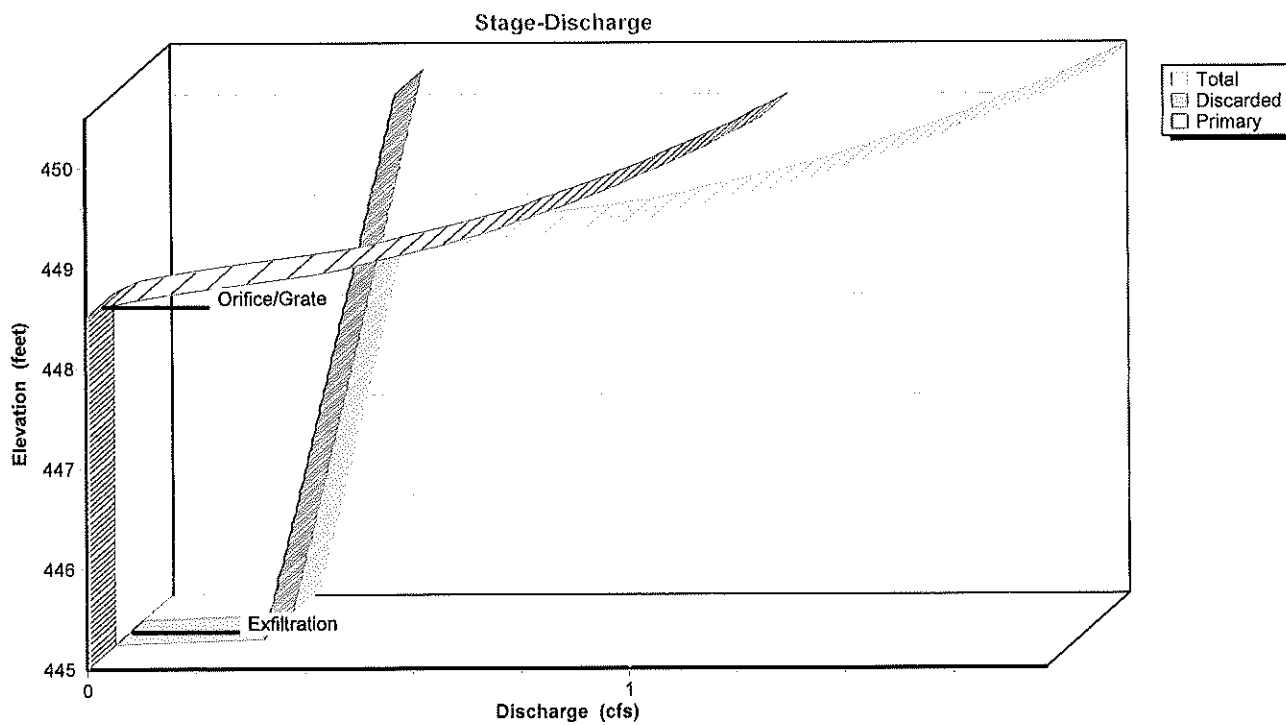
Hydrograph for Subcatchment PP2: IMP TO BASIN

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	26.00	5.17	4.93	0.00
0.50	0.03	0.00	0.00	26.50	5.17	4.93	0.00
1.00	0.06	0.00	0.00	27.00	5.17	4.93	0.00
1.50	0.09	0.01	0.01	27.50	5.17	4.93	0.00
2.00	0.12	0.02	0.01	28.00	5.17	4.93	0.00
2.50	0.16	0.04	0.02	28.50	5.17	4.93	0.00
3.00	0.19	0.07	0.02	29.00	5.17	4.93	0.00
3.50	0.23	0.09	0.02	29.50	5.17	4.93	0.00
4.00	0.27	0.12	0.03	30.00	5.17	4.93	0.00
4.50	0.31	0.15	0.03	30.50	5.17	4.93	0.00
5.00	0.35	0.19	0.03	31.00	5.17	4.93	0.00
5.50	0.40	0.23	0.03	31.50	5.17	4.93	0.00
6.00	0.44	0.27	0.03	32.00	5.17	4.93	0.00
6.50	0.49	0.31	0.04	32.50	5.17	4.93	0.00
7.00	0.54	0.36	0.04	33.00	5.17	4.93	0.00
7.50	0.60	0.41	0.05	33.50	5.17	4.93	0.00
8.00	0.67	0.48	0.05	34.00	5.17	4.93	0.00
8.50	0.74	0.54	0.06	34.50	5.17	4.93	0.00
9.00	0.82	0.62	0.06	35.00	5.17	4.93	0.00
9.50	0.91	0.71	0.08	35.50	5.17	4.93	0.00
10.00	1.02	0.82	0.10	36.00	5.17	4.93	0.00
10.50	1.16	0.94	0.12				
11.00	1.34	1.13	0.18				
11.50	1.64	1.42	0.28				
12.00	2.48	2.25	1.16				
12.50	3.53	3.30	0.41				
13.00	3.83	3.59	0.21				
13.50	4.01	3.78	0.14				
14.00	4.15	3.91	0.11				
14.50	4.26	4.02	0.09				
15.00	4.35	4.11	0.07				
15.50	4.43	4.19	0.06				
16.00	4.50	4.26	0.06				
16.50	4.57	4.33	0.05				
17.00	4.63	4.39	0.05				
17.50	4.68	4.44	0.04				
18.00	4.73	4.49	0.04				
18.50	4.77	4.54	0.04				
19.00	4.82	4.58	0.04				
19.50	4.86	4.62	0.04				
20.00	4.90	4.66	0.03				
20.50	4.94	4.70	0.03				
21.00	4.98	4.74	0.03				
21.50	5.01	4.77	0.03				
22.00	5.05	4.81	0.03				
22.50	5.08	4.84	0.03				
23.00	5.11	4.87	0.03				
23.50	5.14	4.90	0.03				
24.00	5.17	4.93	0.02				
24.50	5.17	4.93	0.00				
25.00	5.17	4.93	0.00				
25.50	5.17	4.93	0.00				

Pond D1: INFILTRATION BASIN



Pond D1: INFILTRATION BASIN



Stage-Discharge for Pond D1: INFILTRATION BASIN

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
445.00	0.00	0.00	0.00	450.20	1.65	0.51	1.14
445.10	0.28	0.28	0.00	450.30	1.69	0.51	1.18
445.20	0.28	0.28	0.00	450.40	1.73	0.52	1.21
445.30	0.29	0.29	0.00	450.50	1.77	0.52	1.25
445.40	0.29	0.29	0.00				
445.50	0.29	0.29	0.00				
445.60	0.30	0.30	0.00				
445.70	0.30	0.30	0.00				
445.80	0.31	0.31	0.00				
445.90	0.31	0.31	0.00				
446.00	0.32	0.32	0.00				
446.10	0.32	0.32	0.00				
446.20	0.33	0.33	0.00				
446.30	0.33	0.33	0.00				
446.40	0.34	0.34	0.00				
446.50	0.34	0.34	0.00				
446.60	0.34	0.34	0.00				
446.70	0.35	0.35	0.00				
446.80	0.35	0.35	0.00				
446.90	0.36	0.36	0.00				
447.00	0.36	0.36	0.00				
447.10	0.37	0.37	0.00				
447.20	0.37	0.37	0.00				
447.30	0.38	0.38	0.00				
447.40	0.38	0.38	0.00				
447.50	0.39	0.39	0.00				
447.60	0.39	0.39	0.00				
447.70	0.39	0.39	0.00				
447.80	0.40	0.40	0.00				
447.90	0.40	0.40	0.00				
448.00	0.41	0.41	0.00				
448.10	0.41	0.41	0.00				
448.20	0.42	0.42	0.00				
448.30	0.42	0.42	0.00				
448.40	0.43	0.43	0.00				
448.50	0.43	0.43	0.00				
448.60	0.47	0.44	0.03				
448.70	0.55	0.44	0.11				
448.80	0.67	0.44	0.23				
448.90	0.81	0.45	0.36				
449.00	0.93	0.45	0.47				
449.10	1.02	0.46	0.56				
449.20	1.10	0.46	0.63				
449.30	1.17	0.47	0.70				
449.40	1.23	0.47	0.76				
449.50	1.30	0.48	0.82				
449.60	1.35	0.48	0.87				
449.70	1.41	0.49	0.92				
449.80	1.46	0.49	0.97				
449.90	1.51	0.49	1.01				
450.00	1.56	0.50	1.06				
450.10	1.60	0.50	1.10				

143 BAUER DR OAKLAND

NOAA 24-hr D NOAA-100 Rainfall=8.61"

Prepared by Donohue Engineering, LLC

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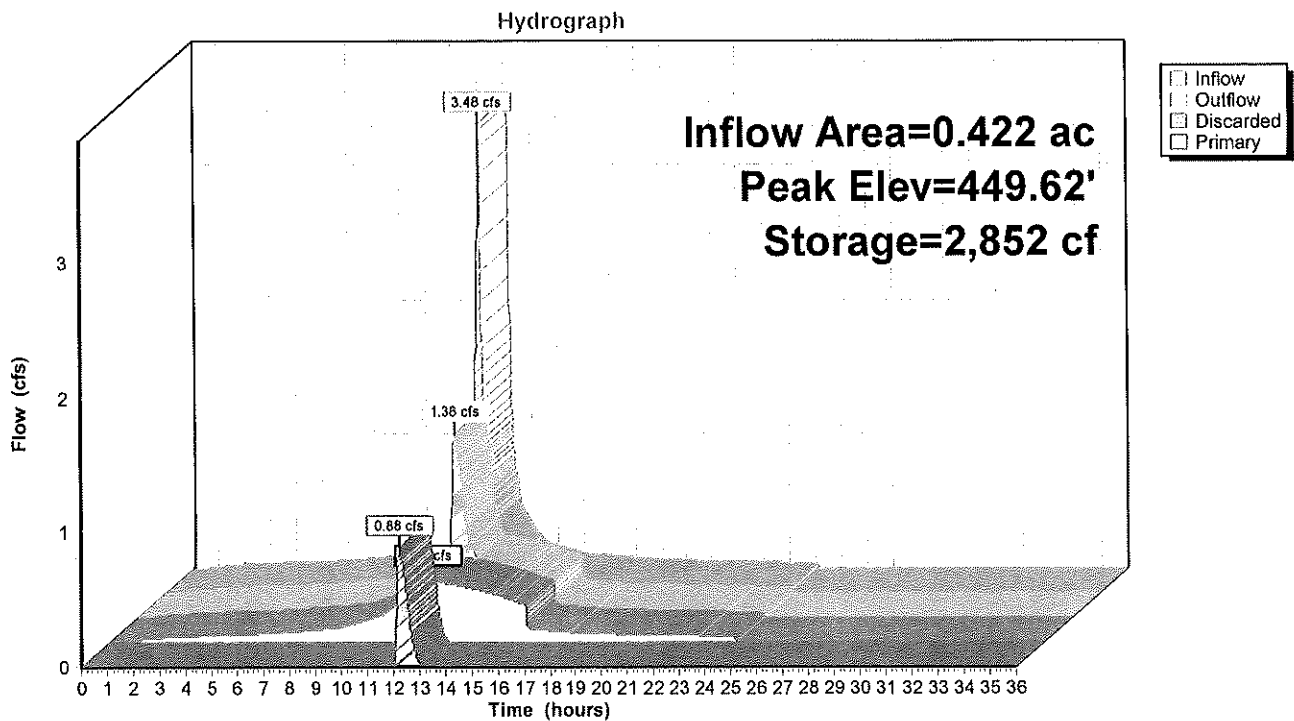
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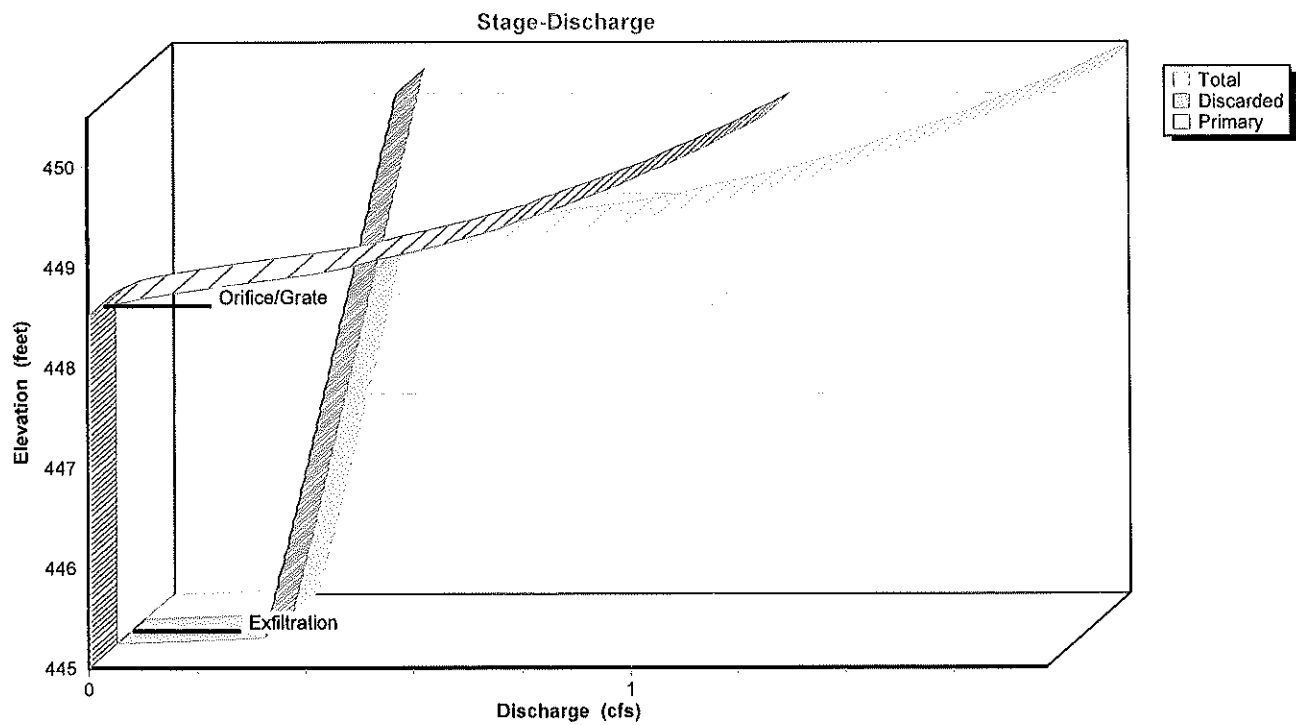
Hydrograph for Subcatchment PP2: IMP TO BASIN

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	26.00	8.61	8.37	0.00
0.50	0.05	0.00	0.00	26.50	8.61	8.37	0.00
1.00	0.10	0.01	0.02	27.00	8.61	8.37	0.00
1.50	0.15	0.04	0.03	27.50	8.61	8.37	0.00
2.00	0.21	0.07	0.03	28.00	8.61	8.37	0.00
2.50	0.26	0.12	0.04	28.50	8.61	8.37	0.00
3.00	0.32	0.16	0.04	29.00	8.61	8.37	0.00
3.50	0.39	0.22	0.05	29.50	8.61	8.37	0.00
4.00	0.45	0.27	0.05	30.00	8.61	8.37	0.00
4.50	0.52	0.34	0.05	30.50	8.61	8.37	0.00
5.00	0.59	0.40	0.06	31.00	8.61	8.37	0.00
5.50	0.66	0.47	0.06	31.50	8.61	8.37	0.00
6.00	0.74	0.54	0.06	32.00	8.61	8.37	0.00
6.50	0.82	0.61	0.07	32.50	8.61	8.37	0.00
7.00	0.91	0.70	0.08	33.00	8.61	8.37	0.00
7.50	1.01	0.80	0.09	33.50	8.61	8.37	0.00
8.00	1.12	0.90	0.09	34.00	8.61	8.37	0.00
8.50	1.24	1.02	0.10	34.50	8.61	8.37	0.00
9.00	1.37	1.15	0.11	35.00	8.61	8.37	0.00
9.50	1.52	1.30	0.14	35.50	8.61	8.37	0.00
10.00	1.71	1.48	0.17	36.00	8.61	8.37	0.00
10.50	1.93	1.70	0.20				
11.00	2.24	2.01	0.30				
11.50	2.73	2.50	0.48				
12.00	4.12	3.89	1.93				
12.50	5.88	5.64	0.68				
13.00	6.37	6.13	0.36				
13.50	6.68	6.44	0.23				
14.00	6.90	6.66	0.18				
14.50	7.09	6.85	0.15				
15.00	7.24	7.00	0.12				
15.50	7.37	7.13	0.11				
16.00	7.49	7.25	0.10				
16.50	7.60	7.36	0.09				
17.00	7.70	7.46	0.08				
17.50	7.79	7.55	0.07				
18.00	7.87	7.64	0.07				
18.50	7.95	7.71	0.06				
19.00	8.02	7.78	0.06				
19.50	8.09	7.85	0.06				
20.00	8.16	7.92	0.06				
20.50	8.22	7.98	0.05				
21.00	8.29	8.05	0.05				
21.50	8.35	8.11	0.05				
22.00	8.40	8.16	0.05				
22.50	8.46	8.22	0.05				
23.00	8.51	8.27	0.04				
23.50	8.56	8.32	0.04				
24.00	8.61	8.37	0.04				
24.50	8.61	8.37	0.00				
25.00	8.61	8.37	0.00				
25.50	8.61	8.37	0.00				

Pond D1: INFILTRATION BASIN



Pond D1: INFILTRATION BASIN



143 BAUER DR OAKLAND

NOAA 24-hr D NOAA-100 Rainfall=8.61"

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Stage-Discharge for Pond D1: INFILTRATION BASIN

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
445.00	0.00	0.00	0.00	450.20	1.65	0.51	1.14
445.10	0.28	0.28	0.00	450.30	1.69	0.51	1.18
445.20	0.28	0.28	0.00	450.40	1.73	0.52	1.21
445.30	0.29	0.29	0.00	450.50	1.77	0.52	1.25
445.40	0.29	0.29	0.00				
445.50	0.29	0.29	0.00				
445.60	0.30	0.30	0.00				
445.70	0.30	0.30	0.00				
445.80	0.31	0.31	0.00				
445.90	0.31	0.31	0.00				
446.00	0.32	0.32	0.00				
446.10	0.32	0.32	0.00				
446.20	0.33	0.33	0.00				
446.30	0.33	0.33	0.00				
446.40	0.34	0.34	0.00				
446.50	0.34	0.34	0.00				
446.60	0.34	0.34	0.00				
446.70	0.35	0.35	0.00				
446.80	0.35	0.35	0.00				
446.90	0.36	0.36	0.00				
447.00	0.36	0.36	0.00				
447.10	0.37	0.37	0.00				
447.20	0.37	0.37	0.00				
447.30	0.38	0.38	0.00				
447.40	0.38	0.38	0.00				
447.50	0.39	0.39	0.00				
447.60	0.39	0.39	0.00				
447.70	0.39	0.39	0.00				
447.80	0.40	0.40	0.00				
447.90	0.40	0.40	0.00				
448.00	0.41	0.41	0.00				
448.10	0.41	0.41	0.00				
448.20	0.42	0.42	0.00				
448.30	0.42	0.42	0.00				
448.40	0.43	0.43	0.00				
448.50	0.43	0.43	0.00				
448.60	0.47	0.44	0.03				
448.70	0.55	0.44	0.11				
448.80	0.67	0.44	0.23				
448.90	0.81	0.45	0.36				
449.00	0.93	0.45	0.47				
449.10	1.02	0.46	0.56				
449.20	1.10	0.46	0.63				
449.30	1.17	0.47	0.70				
449.40	1.23	0.47	0.76				
449.50	1.30	0.48	0.82				
449.60	1.35	0.48	0.87				
449.70	1.41	0.49	0.92				
449.80	1.46	0.49	0.97				
449.90	1.51	0.49	1.01				
450.00	1.56	0.50	1.06				
450.10	1.60	0.50	1.10				

Annual Groundwater Recharge Analysis (based on GSR-32)

Select Township ↓
BERGEN CO., OAKLAND BORO

Average Annual P (in) 49.8

Climatic Factor 1.72

Pre-Developed Conditions				
Land Segment	Area (acres)	TR-55 Land Cover	Soil	Annual Recharge (in)
1	0.45	Open space	Pits, Muck	0.0
2	0.02	Impervious areas	Pits, Muck	0.0
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
Total = 0.5				Total Annual Recharge (in) 0.0
				Total Annual Recharge (cu.ft) -

Project Name: 143 Bauer Drive Oakland NJ

Description: Proposed Development

Analysis Date: 05/09/22

Post-Developed Conditions				
Land Segment	Area (acres)	TR-55 Land Cover	Soil	Annual Recharge (in)
1	0.45	Impervious areas		0.0
2	0.02	Open space	Pits, Muck	0.0
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
Total = 0.5				Total Annual Recharge (in) 0.0
				Total Annual Recharge (cu.ft) -
Annual Recharge Requirements Calculation ↓				
% of Pre-Developed Annual Recharge to Preserve = 100%				
Post-Development Annual Recharge Deficit= 0				
Recharge Efficiency Parameters Calculations (area averages)				
RWC= #N/A	(in)	DRWC= #N/A	(in)	
ERWC= #N/A	(in)	EDRWC= #N/A	(in)	
Total Annual Recharge (cu.ft) 19,602				

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

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

2
4