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December 9, 2024 RBL 001.01

Gregory Fusco, PE, PP, CME
Key Engineers, Inc.
80 South White Horse Pike
Berlin, NJ 08009

RE: Stormwater Summary
Proposed Cannabis Retail Development
Block 5.08, Lots 6, 14 & 14.01
Haddon Township, Camden County, New Jersey

Dear Mr. Fusco,

This letter will provide a stormwater summary for the above referenced application, as shown on the plans titled “Cannabis Retail Development, Block 5.08, Lots 6, 14 & 14.01, Haddon Township, Camden County, New Jersey Preliminary and Final Site Plans", prepared by Marathon Engineering, dated December 11, 2024.

RBLJ Property Holdings, LLC (Applicant) is seeking to develop a Cannabis Retail Microbusiness consisting of a 5,946 sf two story building (2,973 sf footprint) with associated parking.

Stormwater Management Summary

The proposed improvements are classified as a “major development” under the stormwater management rules (N.J.A.C. 7:8) since the proposed site disturbance is greater than 1 acre. Therefore, the following shows how the proposed improvements will meet the requirements for Water Quantity, Water Quality, Green Infrastructure, and Groundwater Recharge.

Water Quantity

The proposed improvements will disturb more than 1 acre; therefore, the Water Quantity standards as defined in N.J.A.C. 7:8-5.6 are applicable. The Water Quantity standards at N.J.A.C. 7:8-5.6(b)2 state “*Demonstrate through hydrologic and hydraulic analysis that there is no increase, as compared to the pre-construction condition, in the peak runoff rates of stormwater leaving the site for the current and projected 2-, 10-, and 100-year storm events, as defined and determined pursuant to N.J.A.C. 7:8-5.7(c) and (d), respectively, and that the increased volume or change in timing of stormwater runoff will not increase flood damage at or downstream of the site.*”

The existing conditions contain a total of 0.841 acres of impervious cover, consisting of 0.806 acres of pavement/concrete/buildings and 0.035 acres of gravel. The proposed conditions contain a total of 0.553 acres of impervious cover. Therefore, there is a net reduction of 0.288 acres of impervious coverage.

The reduction of impervious surfaces will thereby reduce the volume of stormwater runoff volume from the site. Existing drainage areas are maintained, and the stormwater runoff is conveyed to the existing site discharge points.

Stormwater calculations are included in the Appendix, which utilize NOAA Atlas 14 precipitation-frequency data, and a Type C rainfall distribution.

NOAA 24 Hour Rainfall Point Precipitation Frequency Estimate			
	2-Yr Storm	**10-Yr Storm**	**100-Yr Storm**
From NOAA PFDS	*3.27 in.*	*4.92 in.*	*8.09 in.*
Adjusted Current Rainfall Depths	**3.37 in.** *(NOAA x 1.03)*	**5.12 in.** *(NOAA x 1.04)*	**8.49 in.** *(NOAA x 1.05)*
Adjusted Future Rainfall Depths	**3.86 in.** *(NOAA x 1.18)*	**6.00 in.** *(NOAA x 1.22)*	**11.25 in.** *(NOAA x 1.39)*

- The rainfall depths for the current storm events have been adjusted per N.J.A.C. 7:8, Table 5.5, which provides the current precipitation adjustment factors.
- The rainfall depths for the future (projected) storm events have been adjusted per N.J.A.C. 7:8, Table 5.6, which provides the current precipitation adjustment factors.

The following tables provide the existing and developed peak discharge rates for the current and future storm events.

Peak Discharge Rate Summary for "Adjusted Current" Storm Events

"Current" Storm Event	**Existing Peak Discharge Rate for Adjusted "Current" Storm Events**	**Developed Peak Discharge Rate for Adjusted "Current" Storm Events**
2-Year	2.85 CFS	**2.32 CFS**
10-Year	4.57 CFS	**3.92 CFS**
100-Year	7.93 CFS	**7.14 CFS**

Peak Discharge Rate Summary for "Adjusted Future" Storm Events

"Future" Storm Event	**Existing Peak Discharge Rate for Adjusted "Future" Storm Events**	**Developed Peak Discharge Rate for Adjusted "Future" Storm Events**
2-Year	3.33 CFS	**2.76 CFS**
10-Year	5.45 CFS	**4.75 CFS**
100-Year	10.67 CFS	**9.84 CFS**

The following tables provide the existing and developed peak discharge volumes for the current and future storm events.

Peak Discharge Volume Summary for "Adjusted Current" Storm Events

"Current" Storm Event	Existing Peak Discharge Volume for Adjusted "Current" Storm Events	Developed Peak Discharge Volume for Adjusted "Current" Storm Events
2-Year	0.250 ac-ft	**0.217 ac-ft**
10-Year	0.406 ac-ft	**0.366 ac-ft**
100-Year	0.712 ac-ft	**0.667 ac-ft**

Peak Discharge Volume Summary for "Adjusted Future" Storm Events

"Future" Storm Event	Existing Peak Discharge Volume for Adjusted "Future" Storm Events	Developed Peak Discharge Volume for Adjusted "Future" Storm Events
2-Year	0.293 ac-ft	**0.258 ac-ft**
10-Year	0.485 ac-ft	**0.444 ac-ft**
100-Year	0.966 ac-ft	**0.918 ac-ft**

Water Quality

The Water Quality standards at N.J.A.C. 7:8-5.5(a) state that "*stormwater runoff quality standards are applicable when the major development results in an increase of one-quarter acre or more of regulated motor vehicle surface.*"

The total regulated motor vehicle surface area will be **decreased** in the post-construction conditions from 0.541 acres to 0.431 acres. Since the regulated motor vehicle surface area will be decreased, the proposed improvements are exempt from the Water Quality standards.

Groundwater Recharge

The Groundwater Recharge standards at N.J.A.C. 7:8-5.4(b) state "*Demonstrate through hydrologic and hydraulic analysis that the increase of stormwater runoff volume from pre-construction to post-construction for the projected two-year storm, as defined and determined pursuant to N.J.A.C. 7:8-5.7(d), is infiltrated.*"

Since the total impervious area is being reduced from the pre-construction condition, the total volume of stormwater being discharged for each storm event will be reduced. Further, the tables above show the projected 2-year discharge volume will be reduced from 0.293 ac-ft to 0.258 ac-ft. Therefore, the Groundwater Recharge standards are met.

Exhibits and Hydraulic Calculations are attached to depict the change in impervious and motor vehicle surfaces.

Should you have any questions or require additional information, please contact me via email at Kyle.Humphreys@marathonconsultants.com or call our office at (856) 241-9705.

Sincerely,

Marathon Engineering & Environmental Services, Inc.

Kyle Humphreys, PE
Senior Project Manager

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Appendix 1

Hydraulic Calculations

County: Camden

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	2-Yr	10-Yr	25-Yr (*)	100-Yr
Rainfall Depth from NOAA	3.27	4.92		8.09
Camden County - Current Precipitation Adjustment Factors	1.03	1.04		1.05
Adjusted Rainfall Depth for the Current Storm	**3.37**	**5.12**		**8.49**

	2-Yr	10-Yr	25-Yr (*)	100-Yr
Rainfall Depth from NOAA	3.27	4.92	0.00	8.09
Camden County - Future Precipitation Change Factors	1.18	1.22		1.39
Adjusted Rainfall Depth for the Future (Year 2100) Storm	**3.86**	**6.00**		**11.25**

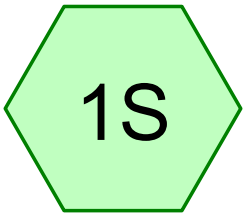
(*) 25Yr Factor = 10Yr Factor + [(100Yr Factor - 10Yr Factor)*(15/90)]

Table 5-5: Current Precipitation Adjustment Factors

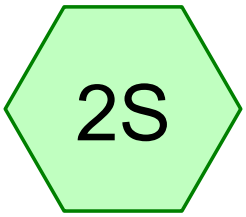
County	Current Precipitation Adjustment Factors		
	2-year Design Storm	10-year Design Storm	100-year Design Storm
Atlantic	1.01	1.02	1.03
Bergen	1.01	1.03	1.06
Burlington	0.99	1.01	1.04
Camden	1.03	1.04	1.05
Cape May	1.03	1.03	1.04
Cumberland	1.03	1.03	1.01
Essex	1.01	1.03	1.06
Gloucester	1.05	1.06	1.06
Hudson	1.03	1.05	1.09
Hunterdon	1.02	1.05	1.13
Mercer	1.01	1.02	1.04
Middlesex	1.00	1.01	1.03
Monmouth	1.00	1.01	1.02
Morris	1.01	1.03	1.06
Ocean	1.00	1.01	1.03
Passaic	1.00	1.02	1.05
Salem	1.02	1.03	1.03
Somerset	1.00	1.03	1.09
Sussex	1.03	1.04	1.07
Union	1.01	1.03	1.06
Warren	1.02	1.07	1.15

Table 5-6: Future Precipitation Change Factors

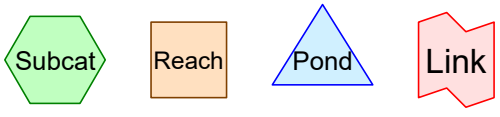
County	Future Precipitation Change Factors		
	2-year Design Storm	10-year Design Storm	100-year Design Storm
Atlantic	1.22	1.24	1.39
Bergen	1.20	1.23	1.37
Burlington	1.17	1.18	1.32
Camden	1.18	1.22	1.39
Cape May	1.21	1.24	1.32
Cumberland	1.20	1.21	1.39
Essex	1.19	1.22	1.33
Gloucester	1.19	1.23	1.41
Hudson	1.19	1.19	1.23
Hunterdon	1.19	1.23	1.42
Mercer	1.16	1.17	1.36
Middlesex	1.19	1.21	1.33
Monmouth	1.19	1.19	1.26
Morris	1.23	1.28	1.46
Ocean	1.18	1.19	1.24
Passaic	1.21	1.27	1.50
Salem	1.20	1.23	1.32
Somerset	1.19	1.24	1.48
Sussex	1.24	1.29	1.50
Union	1.20	1.23	1.35
Warren	1.20	1.25	1.37



Existing Conditions



Proposed Conditions



Rainfall Events Listing

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	002-Yr Current	NOAA 24-hr	C	Default	24.00	1	3.37	2
2	002-Yr Future	NOAA 24-hr	C	Default	24.00	1	3.86	2
3	010-Yr Current	NOAA 24-hr	C	Default	24.00	1	5.12	2
4	010-Yr Future	NOAA 24-hr	C	Default	24.00	1	6.00	2
5	100-Yr Current	NOAA 24-hr	C	Default	24.00	1	8.49	2
6	100-Yr Future	NOAA 24-hr	C	Default	24.00	1	11.25	2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.881	80	>75% Grass cover, Good, HSG D (1S, 2S)
1.359	98	Paved parking, HSG D (1S, 2S)
2.240	**91**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
0.000	HSG C	
2.240	HSG D	1S, 2S
0.000	Other	
2.240		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.000	0.881	0.000	0.881	>75% Grass cover, Good	1S, 2S
0.000	0.000	0.000	1.359	0.000	1.359	Paved parking	1S, 2S
0.000	**0.000**	**0.000**	**2.240**	**0.000**	**2.240**	**TOTAL AREA**	

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

Subcatchment 1S: Existing Conditions Runoff Area=1.120 ac 71.96% Impervious Runoff Depth>2.68"
Flow Length=353' Tc=5.6 min CN=WQ Runoff=2.85 cfs 0.250 af

Subcatchment 2S: Proposed Conditions Runoff Area=1.120 ac 49.37% Impervious Runoff Depth>2.32"
Flow Length=291' Tc=4.9 min CN=WQ Runoff=2.61 cfs 0.217 af

Total Runoff Area = 2.240 ac Runoff Volume = 0.467 af Average Runoff Depth = 2.50"
39.33% Pervious = 0.881 ac 60.67% Impervious = 1.359 ac

Summary for Subcatchment 1S: Existing Conditions

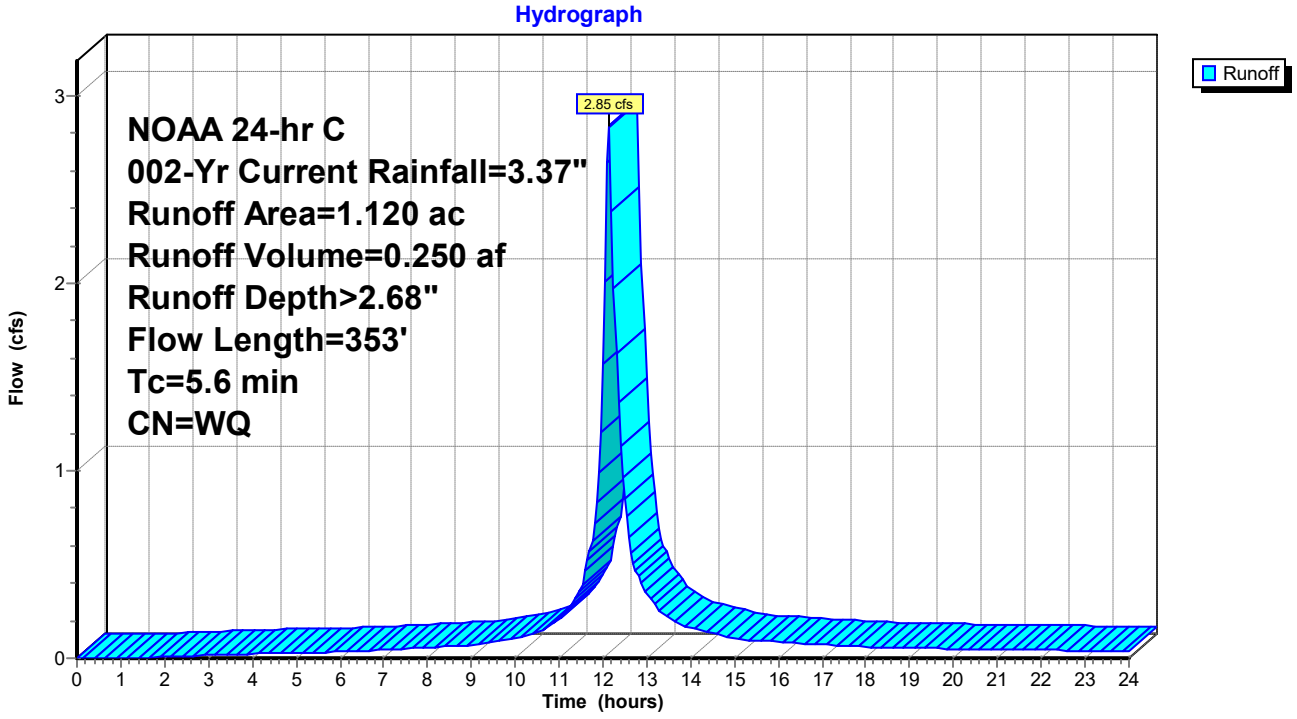
Runoff = 2.85 cfs @ 12.14 hrs, Volume= 0.250 af, Depth> 2.68"

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 002-Yr Current Rainfall=3.37"

Area (ac)	CN	Description
0.806	98	Paved parking, HSG D
0.035	80	>75% Grass cover, Good, HSG D
0.279	80	>75% Grass cover, Good, HSG D
1.120		Weighted Average
0.314		28.04% Pervious Area
0.806		71.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0068	0.92		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.37"
0.7	59	0.0047	1.39		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
3.1	194	0.0047	1.03		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
5.6	353	Total			

Subcatchment 1S: Existing Conditions



Summary for Subcatchment 2S: Proposed Conditions

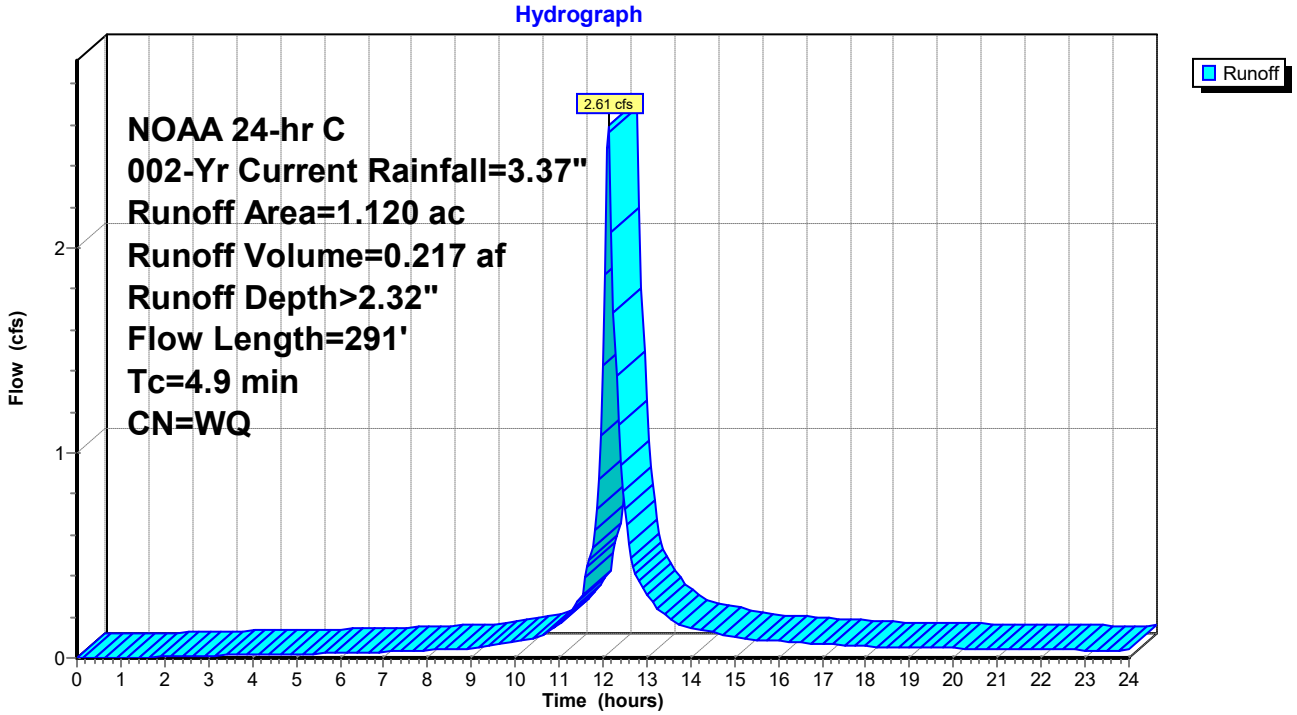
Runoff = 2.61 cfs @ 12.13 hrs, Volume= 0.217 af, Depth> 2.32"

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 002-Yr Current Rainfall=3.37"

Area (ac)	CN	Description
0.553	98	Paved parking, HSG D
0.567	80	>75% Grass cover, Good, HSG D
1.120		Weighted Average
0.567		50.62% Pervious Area
0.553		49.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0	100	0.0056	0.85		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.37"
0.3	25	0.0056	1.52		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.6	166	0.0051	1.07		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
4.9	291	Total			

Subcatchment 2S: Proposed Conditions



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

Subcatchment 1S: Existing Conditions Runoff Area=1.120 ac 71.96% Impervious Runoff Depth>3.14"
Flow Length=353' Tc=5.6 min CN=WQ Runoff=3.33 cfs 0.293 af

Subcatchment 2S: Proposed Conditions Runoff Area=1.120 ac 49.37% Impervious Runoff Depth>2.76"
Flow Length=291' Tc=4.9 min CN=WQ Runoff=3.10 cfs 0.258 af

Total Runoff Area = 2.240 ac Runoff Volume = 0.551 af Average Runoff Depth = 2.95"
39.33% Pervious = 0.881 ac 60.67% Impervious = 1.359 ac

Summary for Subcatchment 1S: Existing Conditions

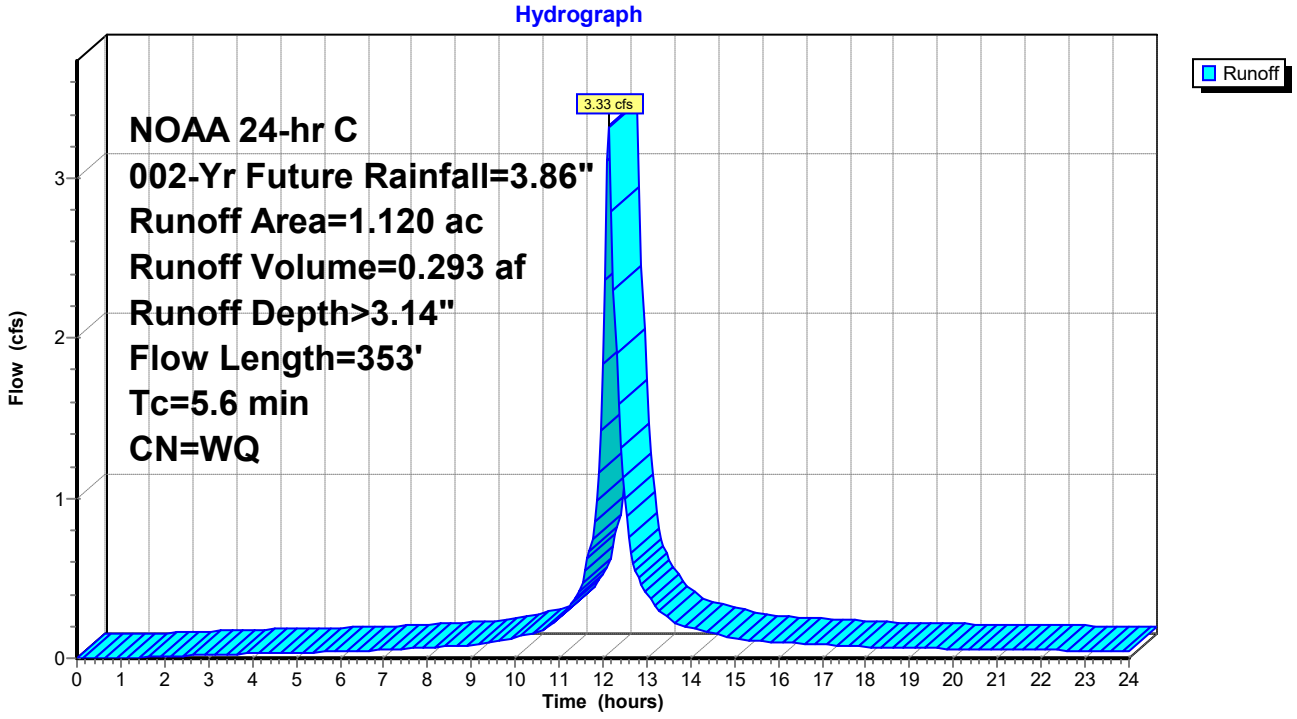
Runoff = 3.33 cfs @ 12.14 hrs, Volume= 0.293 af, Depth> 3.14"

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 002-Yr Future Rainfall=3.86"

Area (ac)	CN	Description
0.806	98	Paved parking, HSG D
0.035	80	>75% Grass cover, Good, HSG D
0.279	80	>75% Grass cover, Good, HSG D
1.120		Weighted Average
0.314		28.04% Pervious Area
0.806		71.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0068	0.92		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.37"
0.7	59	0.0047	1.39		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
3.1	194	0.0047	1.03		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
5.6	353	Total			

Subcatchment 1S: Existing Conditions



Summary for Subcatchment 2S: Proposed Conditions

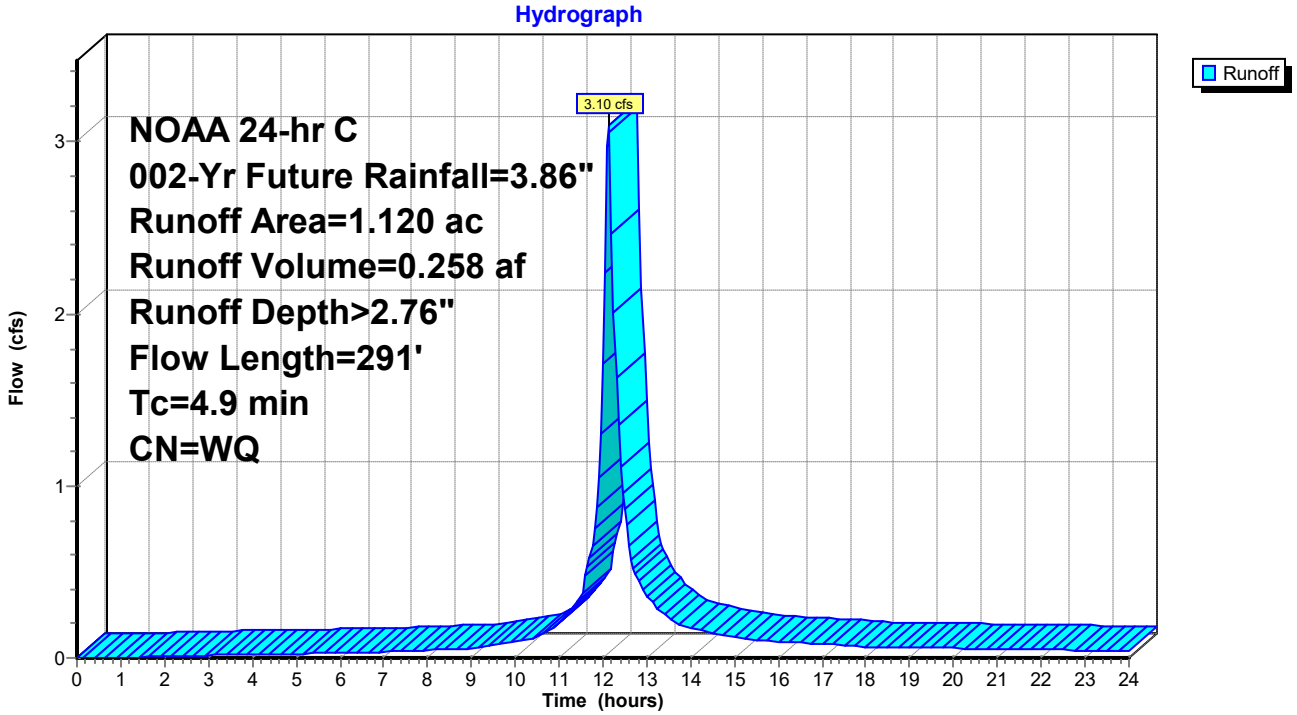
Runoff = 3.10 cfs @ 12.13 hrs, Volume= 0.258 af, Depth> 2.76"

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 002-Yr Future Rainfall=3.86"

Area (ac)	CN	Description
0.553	98	Paved parking, HSG D
0.567	80	>75% Grass cover, Good, HSG D
1.120		Weighted Average
0.567		50.62% Pervious Area
0.553		49.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0	100	0.0056	0.85		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.37"
0.3	25	0.0056	1.52		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.6	166	0.0051	1.07		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
4.9	291	Total			

Subcatchment 2S: Proposed Conditions



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

Subcatchment 1S: Existing Conditions Runoff Area=1.120 ac 71.96% Impervious Runoff Depth>4.35"
Flow Length=353' Tc=5.6 min CN=WQ Runoff=4.57 cfs 0.406 af

Subcatchment 2S: Proposed Conditions Runoff Area=1.120 ac 49.37% Impervious Runoff Depth>3.92"
Flow Length=291' Tc=4.9 min CN=WQ Runoff=4.39 cfs 0.366 af

Total Runoff Area = 2.240 ac Runoff Volume = 0.772 af Average Runoff Depth = 4.14"
39.33% Pervious = 0.881 ac 60.67% Impervious = 1.359 ac

Summary for Subcatchment 1S: Existing Conditions

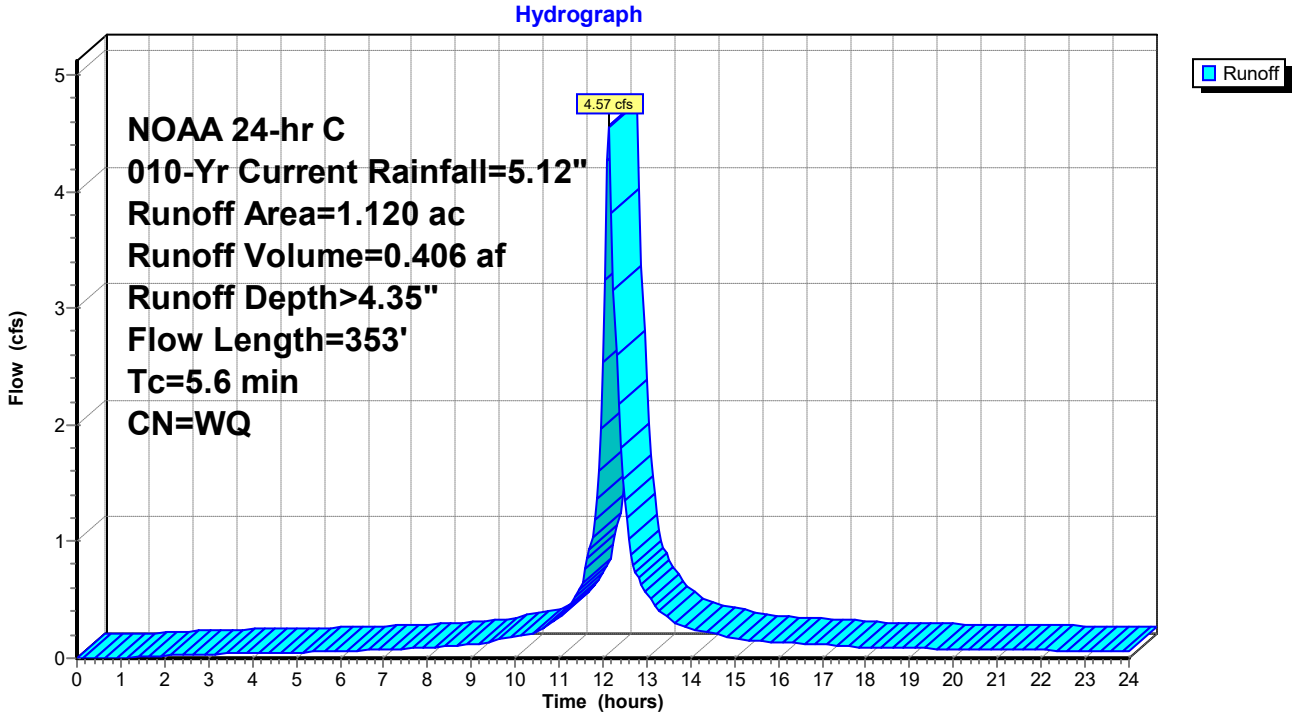
Runoff = 4.57 cfs @ 12.14 hrs, Volume= 0.406 af, Depth> 4.35"

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 010-Yr Current Rainfall=5.12"

Area (ac)	CN	Description
0.806	98	Paved parking, HSG D
0.035	80	>75% Grass cover, Good, HSG D
0.279	80	>75% Grass cover, Good, HSG D
1.120		Weighted Average
0.314		28.04% Pervious Area
0.806		71.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0068	0.92		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.37"
0.7	59	0.0047	1.39		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
3.1	194	0.0047	1.03		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
5.6	353	Total			

Subcatchment 1S: Existing Conditions



Summary for Subcatchment 2S: Proposed Conditions

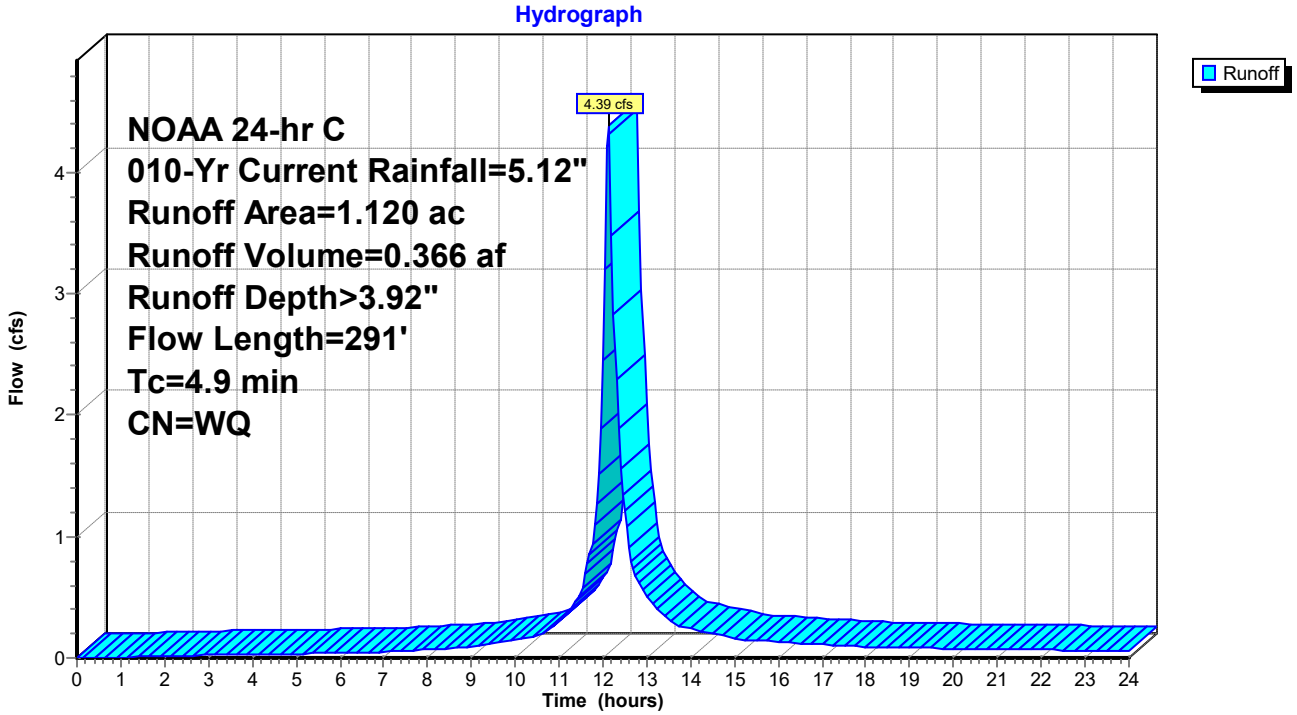
Runoff = 4.39 cfs @ 12.13 hrs, Volume= 0.366 af, Depth> 3.92"

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 010-Yr Current Rainfall=5.12"

Area (ac)	CN	Description
0.553	98	Paved parking, HSG D
0.567	80	>75% Grass cover, Good, HSG D
1.120		Weighted Average
0.567		50.62% Pervious Area
0.553		49.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0	100	0.0056	0.85		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.37"
0.3	25	0.0056	1.52		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.6	166	0.0051	1.07		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
4.9	291	Total			

Subcatchment 2S: Proposed Conditions



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

Subcatchment 1S: Existing Conditions Runoff Area=1.120 ac 71.96% Impervious Runoff Depth>5.20"
Flow Length=353' Tc=5.6 min CN=WQ Runoff=5.45 cfs 0.485 af

Subcatchment 2S: Proposed Conditions Runoff Area=1.120 ac 49.37% Impervious Runoff Depth>4.75"
Flow Length=291' Tc=4.9 min CN=WQ Runoff=5.30 cfs 0.444 af

Total Runoff Area = 2.240 ac Runoff Volume = 0.929 af Average Runoff Depth = 4.98"
39.33% Pervious = 0.881 ac 60.67% Impervious = 1.359 ac

Summary for Subcatchment 1S: Existing Conditions

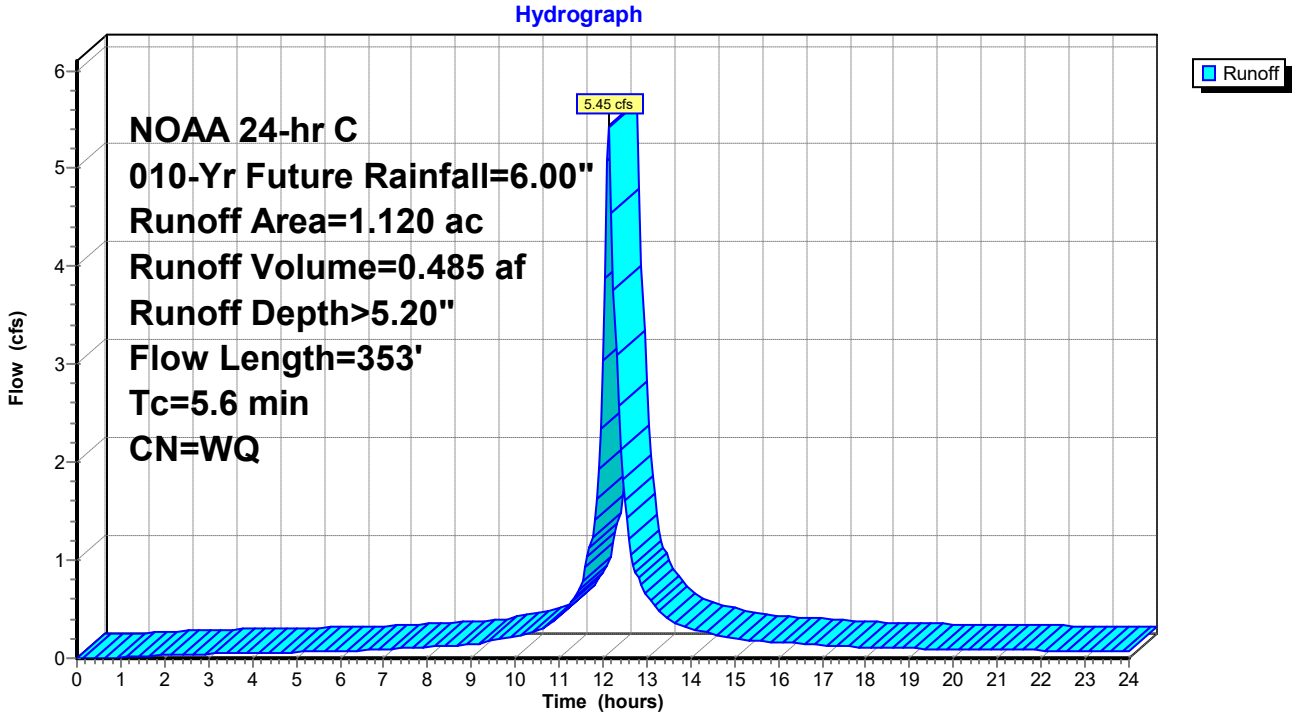
Runoff = 5.45 cfs @ 12.14 hrs, Volume= 0.485 af, Depth> 5.20"

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 010-Yr Future Rainfall=6.00"

Area (ac)	CN	Description
0.806	98	Paved parking, HSG D
0.035	80	>75% Grass cover, Good, HSG D
0.279	80	>75% Grass cover, Good, HSG D
1.120		Weighted Average
0.314		28.04% Pervious Area
0.806		71.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0068	0.92		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.37"
0.7	59	0.0047	1.39		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
3.1	194	0.0047	1.03		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
5.6	353	Total			

Subcatchment 1S: Existing Conditions



Summary for Subcatchment 2S: Proposed Conditions

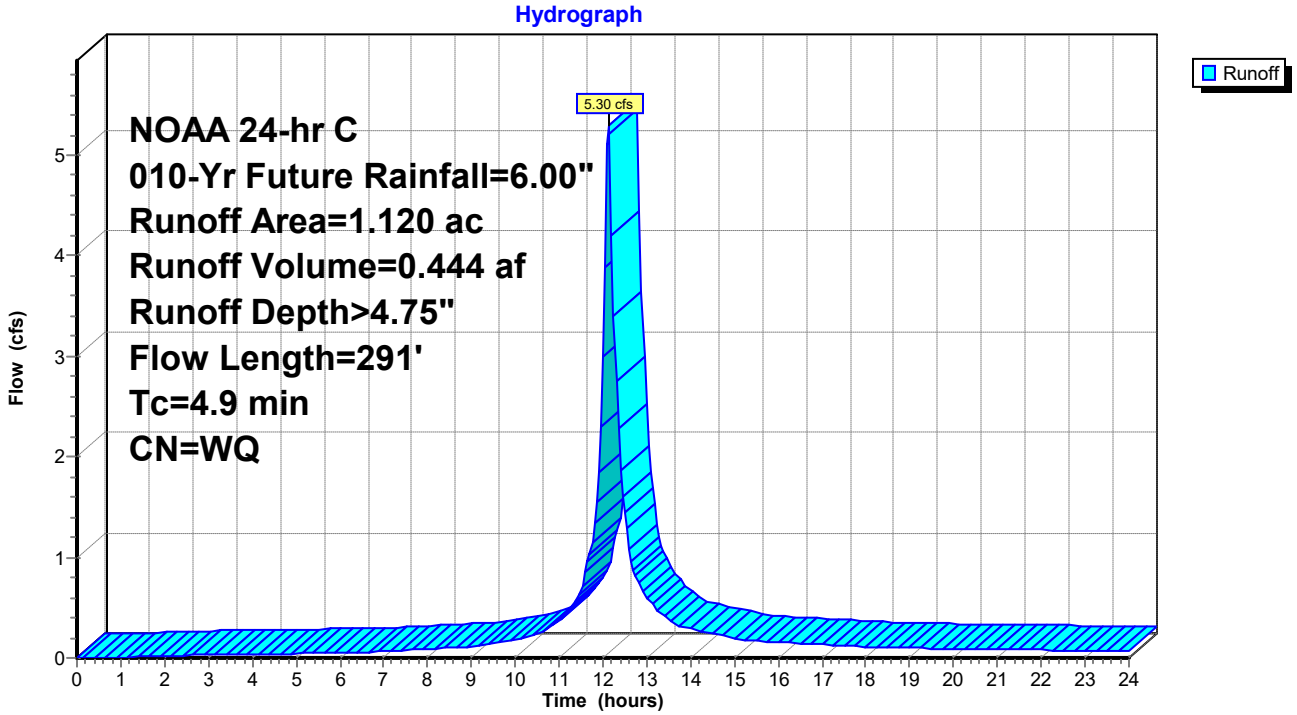
Runoff = 5.30 cfs @ 12.13 hrs, Volume= 0.444 af, Depth> 4.75"

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 010-Yr Future Rainfall=6.00"

Area (ac)	CN	Description
0.553	98	Paved parking, HSG D
0.567	80	>75% Grass cover, Good, HSG D
1.120		Weighted Average
0.567		50.62% Pervious Area
0.553		49.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0	100	0.0056	0.85		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.37"
0.3	25	0.0056	1.52		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.6	166	0.0051	1.07		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
4.9	291	Total			

Subcatchment 2S: Proposed Conditions



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

Subcatchment 1S: Existing Conditions Runoff Area=1.120 ac 71.96% Impervious Runoff Depth>7.63"
Flow Length=353' Tc=5.6 min CN=WQ Runoff=7.93 cfs 0.712 af

Subcatchment 2S: Proposed Conditions Runoff Area=1.120 ac 49.37% Impervious Runoff Depth>7.14"
Flow Length=291' Tc=4.9 min CN=WQ Runoff=7.89 cfs 0.667 af

Total Runoff Area = 2.240 ac Runoff Volume = 1.379 af Average Runoff Depth = 7.39"
39.33% Pervious = 0.881 ac 60.67% Impervious = 1.359 ac

Summary for Subcatchment 1S: Existing Conditions

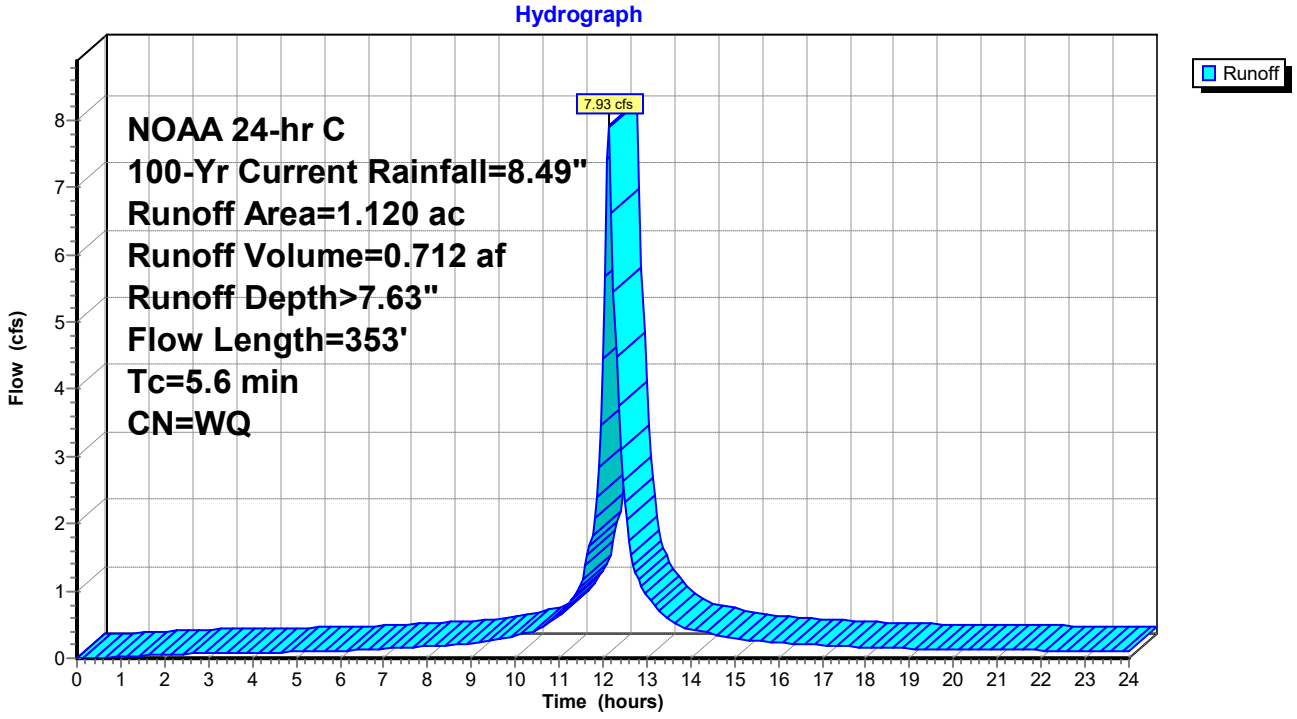
Runoff = 7.93 cfs @ 12.14 hrs, Volume= 0.712 af, Depth> 7.63"

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 100-Yr Current Rainfall=8.49"

Area (ac)	CN	Description
0.806	98	Paved parking, HSG D
0.035	80	>75% Grass cover, Good, HSG D
0.279	80	>75% Grass cover, Good, HSG D
1.120		Weighted Average
0.314		28.04% Pervious Area
0.806		71.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0068	0.92		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.37"
0.7	59	0.0047	1.39		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
3.1	194	0.0047	1.03		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
5.6	353	Total			

Subcatchment 1S: Existing Conditions



Summary for Subcatchment 2S: Proposed Conditions

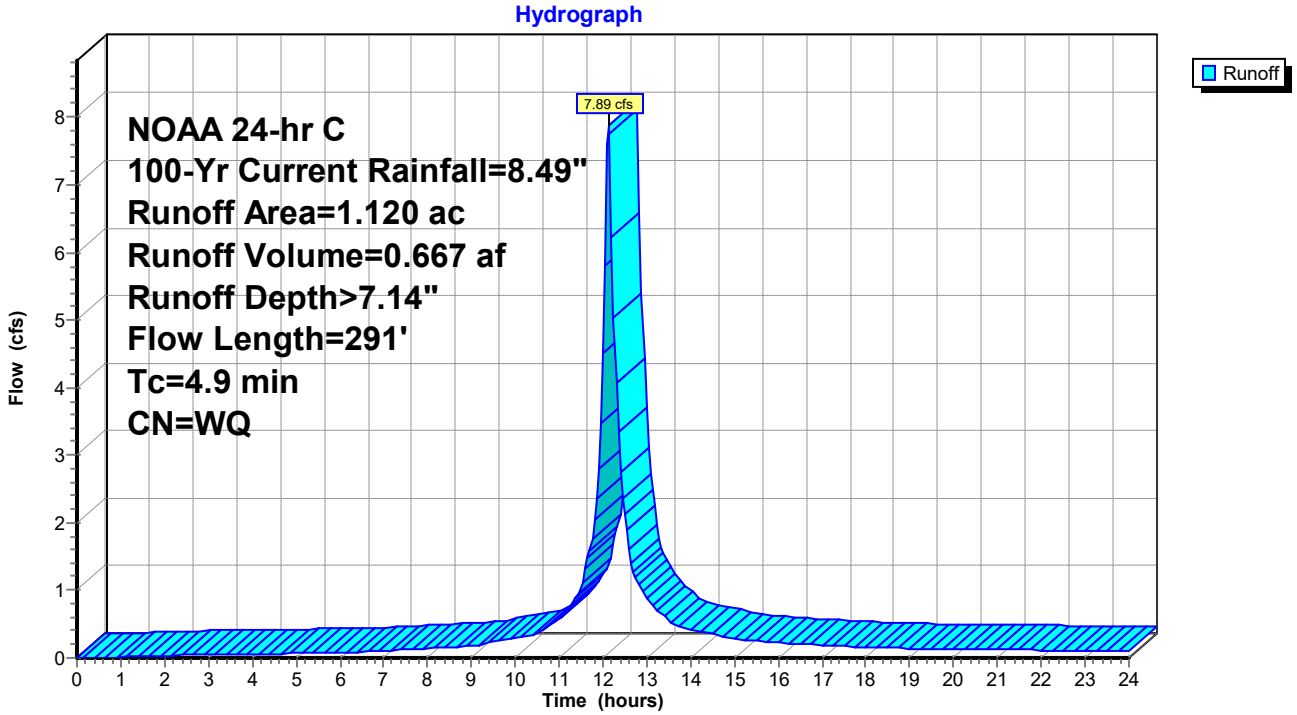
Runoff = 7.89 cfs @ 12.13 hrs, Volume= 0.667 af, Depth> 7.14"

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 100-Yr Current Rainfall=8.49"

Area (ac)	CN	Description
0.553	98	Paved parking, HSG D
0.567	80	>75% Grass cover, Good, HSG D
1.120		Weighted Average
0.567		50.62% Pervious Area
0.553		49.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0	100	0.0056	0.85		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.37"
0.3	25	0.0056	1.52		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.6	166	0.0051	1.07		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
4.9	291	Total			

Subcatchment 2S: Proposed Conditions



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

Subcatchment 1S: Existing Conditions Runoff Area=1.120 ac 71.96% Impervious Runoff Depth>10.35"
Flow Length=353' Tc=5.6 min CN=WQ Runoff=10.67 cfs 0.966 af

Subcatchment 2S: Proposed Conditions Runoff Area=1.120 ac 49.37% Impervious Runoff Depth>9.84"
Flow Length=291' Tc=4.9 min CN=WQ Runoff=10.76 cfs 0.918 af

Total Runoff Area = 2.240 ac Runoff Volume = 1.884 af Average Runoff Depth = 10.09"
39.33% Pervious = 0.881 ac 60.67% Impervious = 1.359 ac

Summary for Subcatchment 1S: Existing Conditions

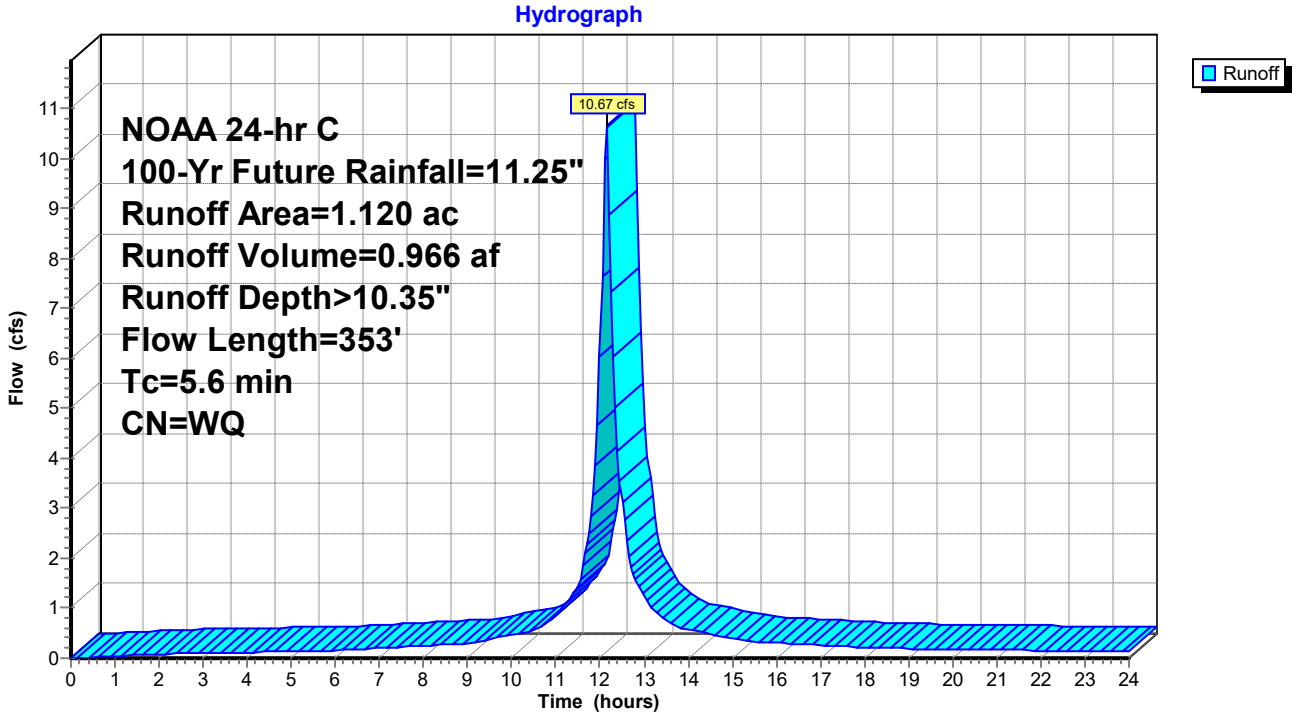
Runoff = 10.67 cfs @ 12.14 hrs, Volume= 0.966 af, Depth>10.35"

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 100-Yr Future Rainfall=11.25"

Area (ac)	CN	Description
0.806	98	Paved parking, HSG D
0.035	80	>75% Grass cover, Good, HSG D
0.279	80	>75% Grass cover, Good, HSG D
1.120		Weighted Average
0.314		28.04% Pervious Area
0.806		71.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0068	0.92		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.37"
0.7	59	0.0047	1.39		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
3.1	194	0.0047	1.03		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
5.6	353	Total			

Subcatchment 1S: Existing Conditions



Summary for Subcatchment 2S: Proposed Conditions

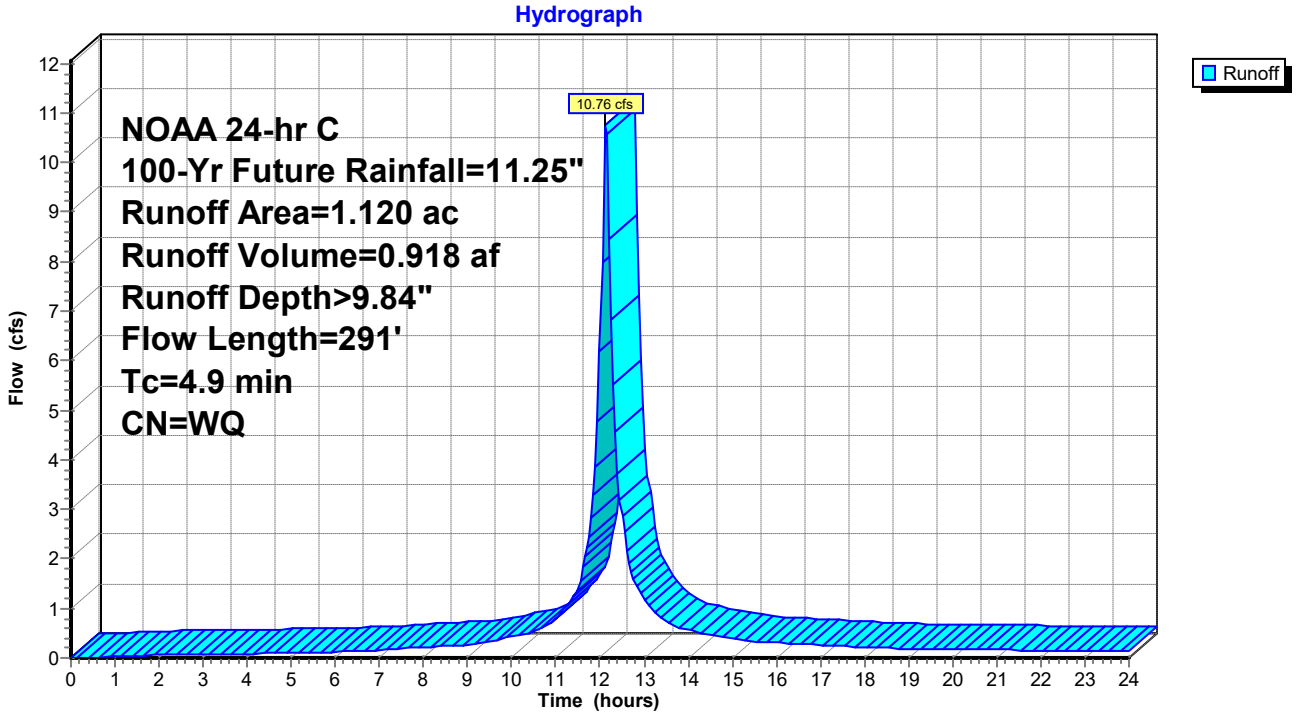
Runoff = 10.76 cfs @ 12.13 hrs, Volume= 0.918 af, Depth> 9.84"

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 100-Yr Future Rainfall=11.25"

Area (ac)	CN	Description
0.553	98	Paved parking, HSG D
0.567	80	>75% Grass cover, Good, HSG D
1.120		Weighted Average
0.567		50.62% Pervious Area
0.553		49.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0	100	0.0056	0.85		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.37"
0.3	25	0.0056	1.52		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.6	166	0.0051	1.07		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
4.9	291	Total			

Subcatchment 2S: Proposed Conditions



Appendix 2

Exhibits

LEGEND

- SUBJECT PROPERTY LIMIT
- EXISTING RIGHT-OF-WAY LINE
- ADJACENT LOT LINE
- EXISTING MOTOR VEHICLE SURFACE AREA (0.541 AC.)

ISSUE DATE	ISSUE NO.	SUBMISSION/REVISION	BY	APPR.
12/09/2024	1	INITIAL SUBMISSION	CGK	DJF

CANNABIS RETAIL DEVEOPMENT

BLOCK 5.08, LOTS 6, 14 & 14.01
HADDON TOWNSHIP, CAMDEN COUNTY, NEW JERSEY

EXISTING MOTOR VEHICLE SURFACE AREA

RBLJ PROPERTY HOLDINGS, LLC

50 W. BIG BEAVER ROAD
TROY, MICHIGAN 48084

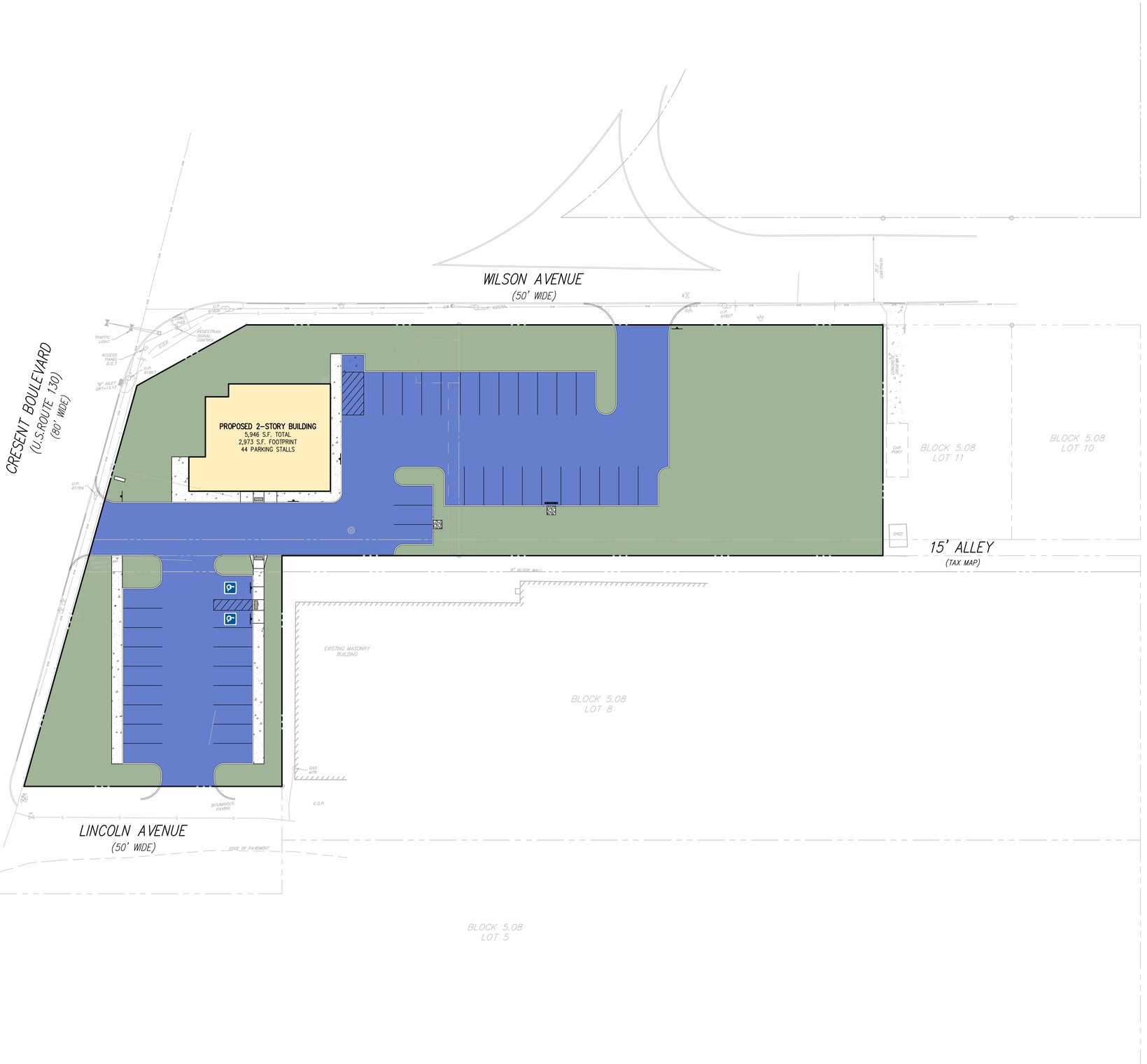
DAVID J. FLEMING, P.E.
PROFESSIONAL ENGINEER
NEW JERSEY LICENSE NO. 24GE03321600

MARATHON
Engineering & Environmental Services
Swedesboro Office
3 Killdeer Court, Suite 302, Swedesboro, NJ 08085
ph (856) 241-9705 fax (856) 241-9709
Certificate of Authorization #24GA27995700

SCALE	APPROVED
1" = 20'	DJF
DRAWN BY	SHEET
CGK	1 OF 1
DRAWING NO.	
X0001	

RBL 001.01

NORTH AND RIDGE



LEGEND

- SUBJECT PROPERTY LIMIT
- EXISTING RIGHT-OF-WAY LINE
- ADJACENT LOT LINE
- PROPOSED MOTOR VEHICLE SURFACE AREA (0.431 AC.)
- PROPOSED GRASS/PERVIOUS AREA (0.567 AC.)

GRAPHIC SCALE

20 0 10 20 40 80

1 INCH = 20 FEET

ISSUE DATE	ISSUE NO.	SUBMISSION/REVISION	BY	APPR.
12/09/2024	1	INITIAL SUBMISSION	CGK	DJF

CANNABIS RETAIL DEVEOPMENT

BLOCK 5.08, LOTS 6, 14 & 14.01
HADDON TOWNSHIP, CAMDEN COUNTY, NEW JERSEY

PROPOSED MOTOR VEHICLE SURFACE AREA

RBLJ PROPERTY HOLDINGS, LLC
50 W. BIG BEAVER ROAD
TROY, MICHIGAN 48084

DAVID J. FLEMING, P.E.
PROFESSIONAL ENGINEER
NEW JERSEY LICENSE NO. 24GE03321600

RBL 001.01

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Certificate of Authorization #24GA27995700

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1" = 20'	DJF
DRAWN BY	SHEET
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DRAWING NO.	
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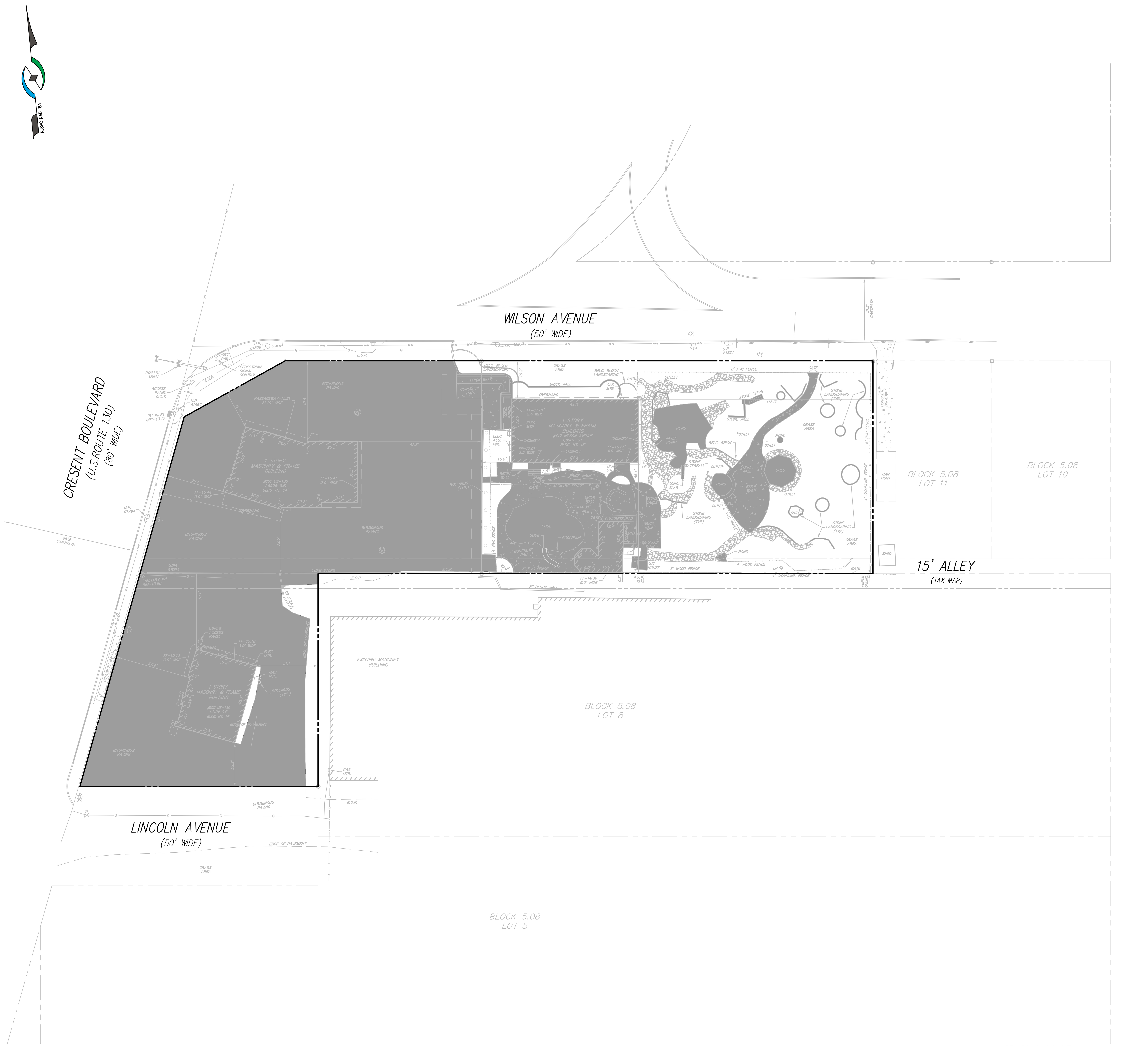

LEGEND

——— · — · ———	SUBJECT PROPERTY LIMIT
——— · — ———	EXISTING RIGHT-OF-WAY LINE
— — — — —	ADJACENT LOT LINE
(grey fill)	EXISTING IMPERVIOUS AREA (0.841 AC.)

GRAPHIC SCALE

20 0 10 20 40 80

1 INCH = 20 FEET

ISSUE DATE	ISSUE NO.	SUBMISSION/REVISION	BY	APPR.
12/09/2024	1	INITIAL SUBMISSION	CGK	DJF

CANNABIS RETAIL DEVEOPMENT

BLOCK 5.08, LOTS 6, 14 & 14.01
HADDON TOWNSHIP, CAMDEN COUNTY, NEW JERSEY

EXISTING IMPERVIOUS AREA

RBLJ PROPERTY HOLDINGS, LLC
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TROY, MICHIGAN 48084

DAVID J. FLEMING, P.E.
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RBL 001.01

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SCALE	APPROVED
1" = 20'	DJF
DRAWN BY	SHEET
CGK	1 OF 1

DRAWING NO.
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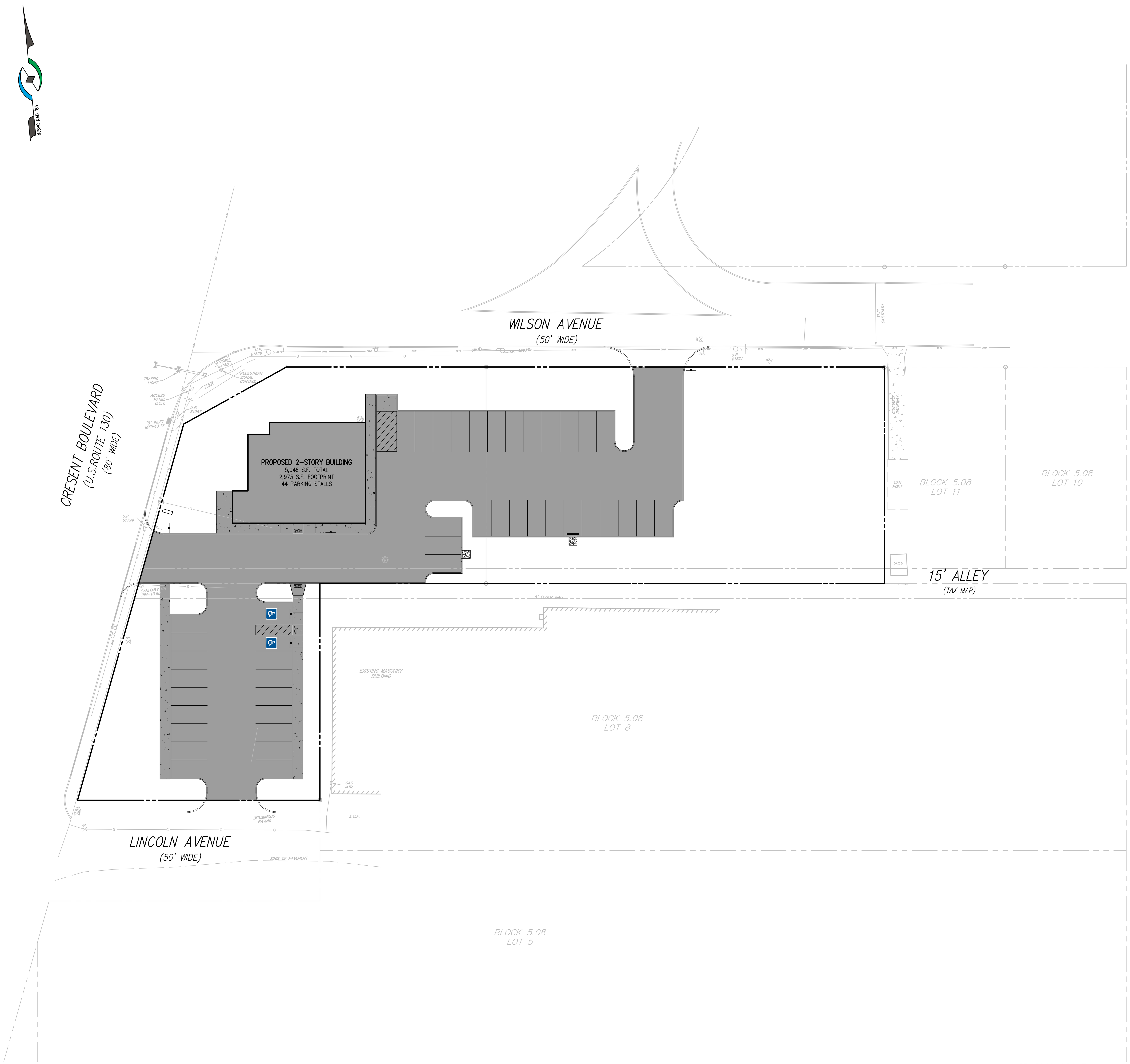

LEGEND

- SUBJECT PROPERTY LIMIT
- EXISTING RIGHT–OF–WAY LINE
- ADJACENT LOT LINE
- PROPOSED IMPERVIOUS AREA (0.553 AC.)

GRAPHIC SCALE

20 0 10 20 40 80

1 INCH = 20 FEET

ISSUE DATE	ISSUE NO.	SUBMISSION/REVISION	BY	APPR.
12/09/2024	1	INITIAL SUBMISSION	CGK	DJF

CANNABIS RETAIL DEVEOPMENT

BLOCK 5.08, LOTS 6, 14 & 14.01
HADDON TOWNSHIP, CAMDEN COUNTY, NEW JERSEY

PROPOSED IMPERVIOUS AREA

RBLJ PROPERTY HOLDINGS, LLC
50 W. BIG BEAVER ROAD
TROY, MICHIGAN 48084

DAVID J. FLEMING, P.E.
PROFESSIONAL ENGINEER
NEW JERSEY LICENSE NO. 24GE03321600

RBL 001.01

MARATHON
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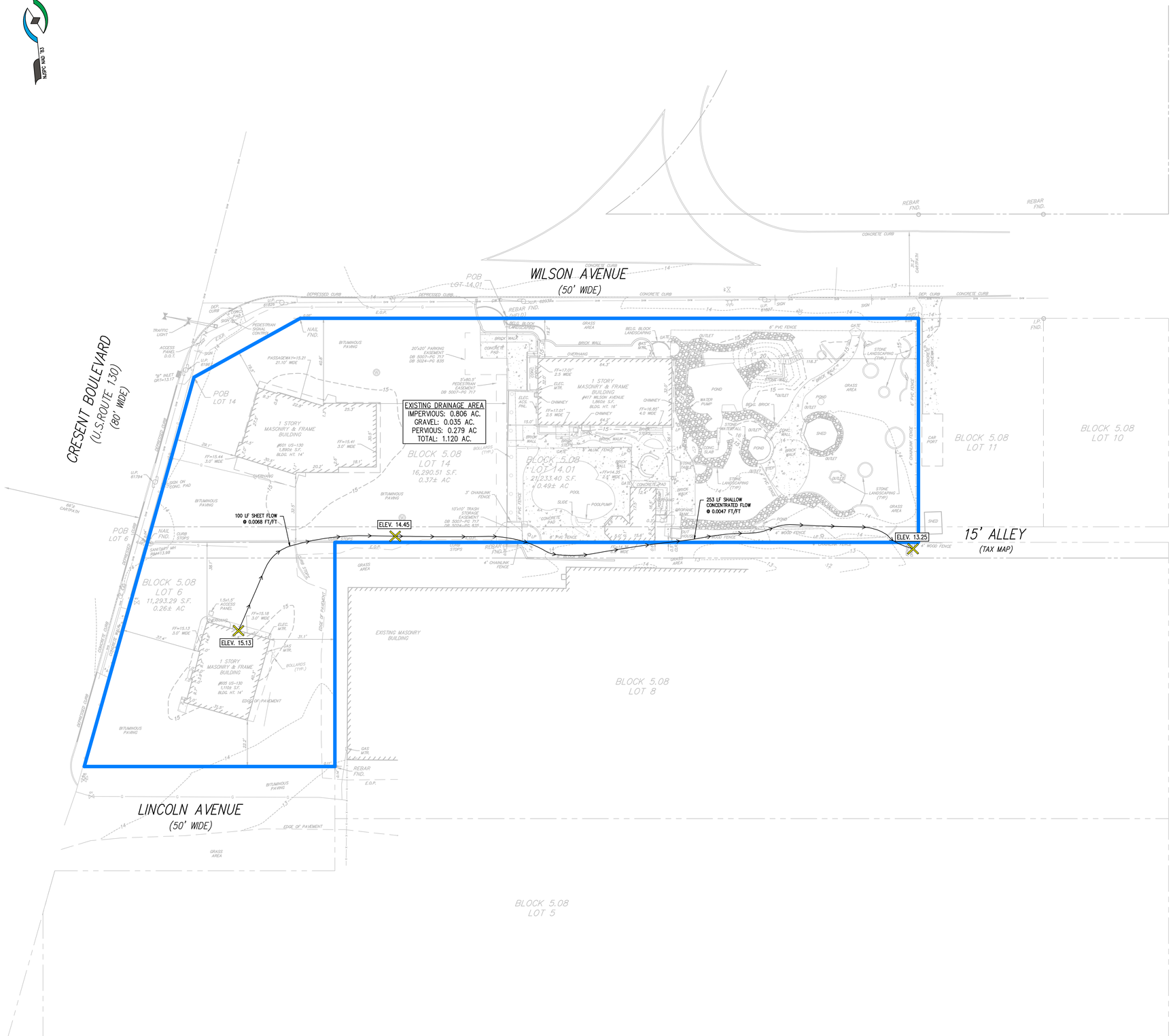
Certificate of Authorization #24GA27995700

SCALE	APPROVED
1" = 20'	DJF
DRAWN BY	SHEET
CGK	1 OF 1

DRAWING NO.
X0004

NGPC NAD '83



LEGEND

- SUBJECT PROPERTY LIMIT
- EXISTING RIGHT-OF-WAY LINE
- ADJACENT LOT LINE
- EXISTING DRAINAGE AREA LINE
- EXISTING TIME OF CONCENTRATION PATH

GRAPHIC SCALE

20 0 10 20 40 80

1 INCH = 20 FEET

ISSUE DATE	ISSUE NO.	SUBMISSION/REVISION	BY	APPR.
12/09/2024	1	INITIAL SUBMISSION	CGK	DJF

CANNABIS RETAIL DEVELOPMENT

BLOCK 5.08, LOTS 6, 14 & 14.01
HADDON TOWNSHIP, CAMDEN COUNTY, NEW JERSEY

EXISTING CONDITIONS DRAINAGE AREA PLAN

RBLJ PROPERTY HOLDINGS, LLC
50 W. BIG BEAVER ROAD
TROY, MICHIGAN 48084

DAVID J. FLEMING, P.E.
PROFESSIONAL ENGINEER
NEW JERSEY LICENSE NO. 24GE03321600

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SCALE	APPROVED
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DRAWN BY	SHEET
CGK	1 OF 2
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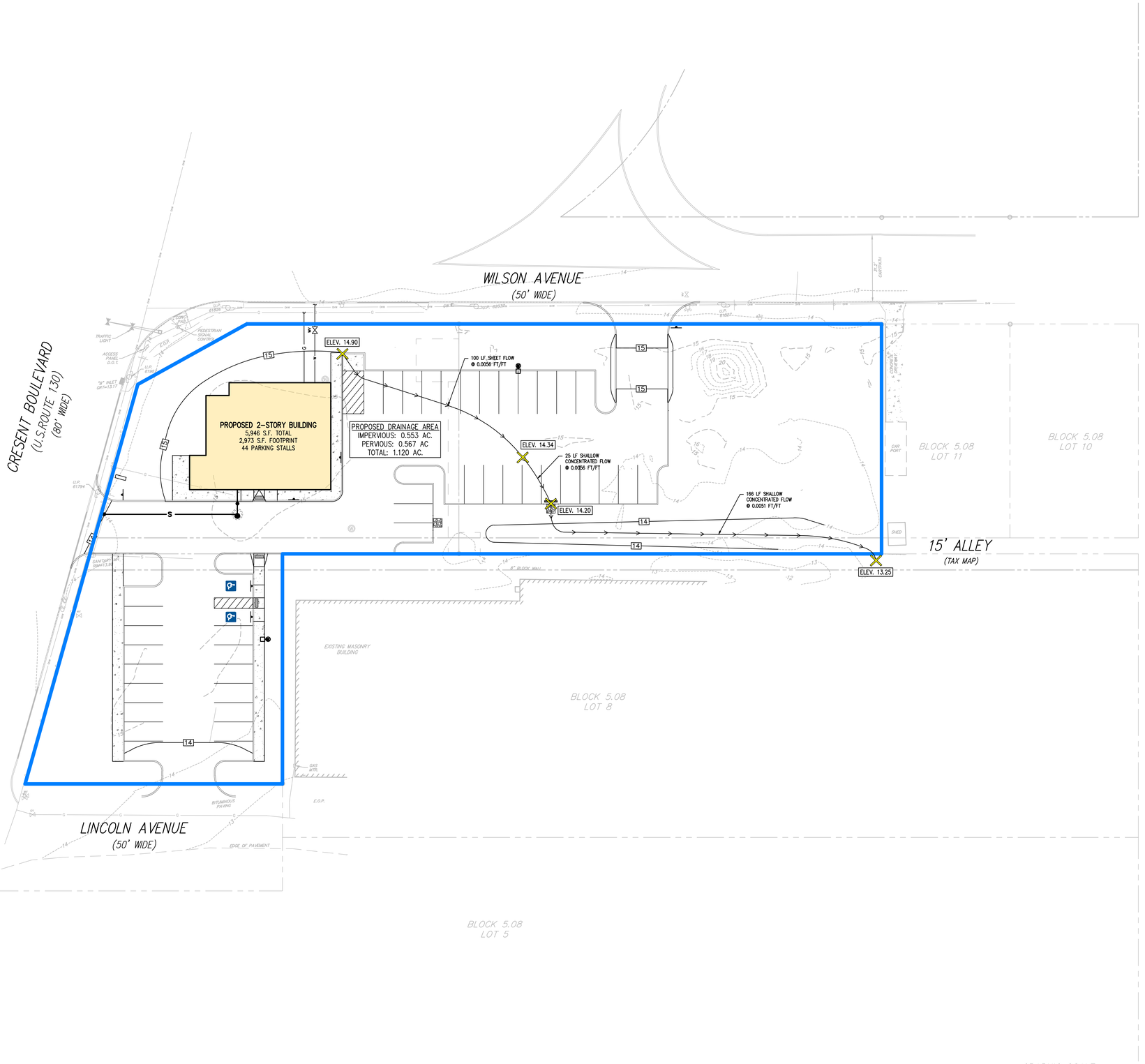
C1401	

RBL 001.01

NJSPC NAD 83



LEGEND

- SUBJECT PROPERTY LIMIT
- EXISTING RIGHT-OF-WAY LINE
- ADJACENT LOT LINE
- PROPOSED DRAINAGE AREA LINE
- PROPOSED TIME OF CONCENTRATION PATH

GRAPHIC SCALE

20 0 10 20 40 80

1 INCH = 20 FEET

ISSUE DATE	ISSUE NO.	SUBMISSION/REVISION	BY	APPR.
12/09/2024	1	INITIAL SUBMISSION	CGK	DJF

CANNABIS RETAIL DEVELOPMENT

BLOCK 5.08, LOTS 6, 14 & 14.01
HADDON TOWNSHIP, CAMDEN COUNTY, NEW JERSEY

DEVELOPED CONDITIONS DRAINAGE AREA PLAN

RBLJ PROPERTY HOLDINGS, LLC
50 W. BIG BEAVER ROAD
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DAVID J. FLEMING, P.E.
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SCALE	APPROVED
1" = 20'	DJF
DRAWN BY	SHEET
CGK	2 OF 2
DRAWING NO.	
C1402	

RBL 001.01

END OF REPORT