

MINOR SITE PLAN APPLICATION
City of Rochester, New Hampshire

Date: 01/28/2022

Property information

Tax map #: 230; Lot #'s: 14-2; Zoning district: Agricultural

Property address/location: 173 Walnut Street

Brief project description: Temporary Contractor's staging area

Property owner

Name (include name of individual): Donald E. Kelsey II & Kristine E. Biagotti

Mailing address: 159A Walnut Street; Rochester, NH 03867

Telephone #: _____ Email address: _____

Applicant/developer (if different from property owner)

Name (include name of individual): D & C Construction., Inc. c/o Rene Perron

Mailing address: 649 Broad Street; Weymouth, MA 02189

Telephone #: 207 332-4318 Email address: renedandcconstruction@yahoo.com

Engineer/surveyor/designer (if applicable)

Name (include name of individual): Norway Plains Associates, Inc. c/o Scott A. Lawler, PE

Mailing address: PO Box 249; Rochester, NH 03866-0249

Telephone #: 603 335-3948 Email address: slawler@norwayplains.com

Check one:

☒ Nonresidential project ☐ Home Occupation II or III

☐ Multi-Family Residential project

Check all that apply:

- ☐ change of use ☐ new building ☐ building addition
☒ new parking area ☐ expansion of existing parking area
☐ new signage; ☐ exterior lighting ☒ other site changes

Describe current use/nature of property: Vacant with woods and mowed Field

Describe proposed use/activity: The proposed project is to allow for a temporary contractor's staging area for the a
municipal water main construction project. Once completed, the land will be restored back to a field condition.

parking spaces: existing: None ; total proposed: 4 to 6

Current square footage of building None ; Proposed square footage of building 424
(job Trailer)

City water? yes ___ no x ; How far is City water from the site? n/a

City sewer? yes ___ no x ; How far is City sewer from the site? n/a

If City water, what are the estimated total daily needs? none gallons per day

Where will stormwater be discharged? Infiltration basin

Number of existing dwelling units: None Total number of proposed dwelling units: None

New building(s)? Temporary Trailer Addition(s)/modifications to existing building(s)?

Comments

Please feel free to add any comments, additional information, or requests for waivers here:

This application must be accompanied by the following:

- Site plan drawing with:
 - All building dimensions (including any additions, if applicable)
 - Parking areas or spaces with size, spaces, flow pattern, and drive aisles as applicable.
 - Location of proposed change of use/addition/home occupation.

Submission of application & acknowledgement about process

This application must be signed by the property owner, applicant/developer (if different from property owner), *and/or* the agent.

I (we) hereby submit this Site Plan application to the City of Rochester Planning Board pursuant to the City of Rochester Site Plan Regulations and attest that to the best of my knowledge all of the information on this application form and in the accompanying application materials and documentation is true and accurate. As applicant/developer (if different from property owner)/as agent, I attest that I am duly authorized to act in this capacity. **I also acknowledge that this project could be referred to the Planning Board for a new, full Planning Board review at the request of any person after any Minor Site Approval and that I would need to renotify abutters in that case** (in accordance with RSA 674:43 III).

Signature of property owner: _____

Date: _____

Signature of applicant/developer: *Gene L. Perrow*

Date: 1-28-22

Signature of agent: *[Signature]*

Date: 1-28-22

Authorization to enter property

I hereby authorize members of the Rochester Planning Board, Zoning Board of Adjustment, Conservation Commission, Planning Department, and other pertinent City departments, boards and agencies to enter my property for the purpose of evaluating this application including performing any appropriate inspections during the application phase, review phase, post-approval phase, construction phase, and occupancy phase. This authorization applies specifically to those particular individuals legitimately involved in evaluating, reviewing, or inspecting this specific application/project. It is understood that these individuals must use all reasonable care, courtesy, and diligence when entering the property.

Signature of property owner: _____

Date: _____

LETTER OF AUTHORIZATION

We, Donald E Kelsey II and Kristine E Biagotti, hereby authorize Norway Plains Associates, Inc. and their assigns to represent us at any and all meetings, and sign appropriate applications and forms on our behalf, with regard to the application for a Temporary Contractors Yard at our property located on Tax Map 230, Lot 14-2 to be submitted to the City of Rochester for a Minor Site Plan at the Rochester Planning Board for approval.



Donald E. Kelsey

Date: 1/5/2022



Kristine E. Biagotti

Date: 1/5/2022



B.H. KEITH ASSOCIATES

11 Elm Street
Post Office Box 326
Freedom, New Hampshire 03836
Tel. (603) 539-8343
Fax (603) 539-2532

January 7, 2022

Mr. Scott Lawler, P.E.
Norway Plains Associates, Inc.
PO Box 249
Rochester, NH 03866-0249

**RE: Wetland Site Reconnaissance- Construction Staging Area, (Map 230 Lot 14-2), Route 202A
Rochester, NH**

Dear Mr. Lawler:

Pursuant to your request, on January 6, 2022 I conducted a wetland site reconnaissance of the construction staging area located within the above referenced lot off of Route 202A (Walnut Street) in Rochester, New Hampshire. The staging area is to be used during water line construction improvements along Route 202A.

As you are aware, I originally was the wetland scientist of record who delineated the wetlands within the subject parcel.

Based on this review, no jurisdictional wetlands are located within the planned construction staging area.

Very truly yours,

Barry Keith, CWS, PWS



NORWAY PLAINS ASSOCIATES, INC.

LAND SURVEYORS • SEPTIC SYSTEM DESIGNERS • CIVIL ENGINEERS

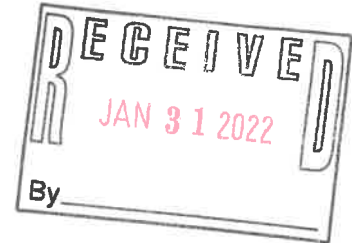
P.O. Box 249
Continental Blvd. (03867)
Rochester, NH 03866-0249
Phone (603) 335-3948
www.norwayplains.com



P. O. Box 268
31 Mooney St.
Alton, NH 03809
Phone & Fax (603) 875-3948

January 28, 2022

Ryan O'Connor, Planner
Department of Planning and Development
33 Wakefield Street
Rochester, NH 03867-1917



Re: Drainage Summary; 173 Walnut Street – Tax Map 230, Lot 14-2

Dear Mr. O'Connor,

Norway Plains Associates Inc, on behalf of D&C Construction Co, Inc., has designed a stormwater management system for their temporary contractor storage yard located at 173 Walnut Street in the City of Rochester. The site has already begun to be developed as a contractor storage yard with gravel storage area, work trailer and loam stockpile areas.

The site generally slopes from west to east with majority of the existing stormwater runoff discharging into a wetlands complex at the southeast corner of the parcel. The limits of the jurisdictional wetlands were delineated in 2004 by B.H. Keith Associates. Mr. Keith reevaluated the current work area on January 6, 2022 and did not observe any jurisdictional wetlands in the staging area. The NRCS soil report list the soils within the project area as Charlton fine sandy loam which is a well-drained soils and is listed as a hydrologic soil group B.

Prior to development the site was a grassed field with some areas of tree cover. The development created 0.54 acres of impervious cover, which is 1.69% of the entire site. To account for the changes in the existing topography and land covering, a site plan has been designed for the improved areas. The proposal will include the construction of a swale to divert stormwater around the gravel surface as well as in infiltration basin with a sediment forebay for the gravel area. The basin has been designed to handle all stormwater from the impervious surfaces during a 50-year storm event. It should be noted that all of the impervious surfaces will be removed and restored to a field in about 2 years once the contractor's storage yard is no longer needed.

A HydroCAD model was used to analyze the portion of the parcel that drains toward the wetland and Tax Map 230, Lot 14-3. The table below summarizes the results. As can be seen from the table, there is a reduction or zero change in peak rate of discharge and volume at the point of analysis during the 2-, 10- and 25-year storm event. The HydroCAD printouts for the Pre and Post Development models for the storm events can be found at the end of this letter.

	2-yr Rate	2-yr Volume	10-yr Rate	10-yr Volume	25-yr Rate	25-yr Volume
	(cfs)	(ac-ft)	(cfs)	(ac-ft)	(cfs)	(ac-ft)
POA#1 Pre	1.1	0.17	5.5	0.52	10.0	0.86
POA#1 Post	<u>0.9</u>	<u>0.15</u>	<u>4.7</u>	<u>0.49</u>	<u>8.5</u>	<u>0.86</u>
Change	-0.2	-0.02	-0.8	-0.03	-1.5	0.00

Thank you for your consideration and please do not hesitate to contact me if you have any questions or if you require any additional information.

Sincerely,

NORWAY PLAINS ASSOCIATES, INC.

By: 

Scott A. Lawler, PE, Project Engineer

CC: D & C Construction
Kelsey & Biagotti

NORWAY PLAINS ASSOCIATES, INC.

LAND SURVEYORS • SEPTIC SYSTEM DESIGNERS • CIVIL ENGINEERS

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January 28, 2022

Ryan O'Connor, Planner
Department of Planning and Development
33 Wakefield Street
Rochester, NH 03867-1917

Re: Drainage Summary; 173 Walnut Street – Tax Map 230, Lot 14-2

Dear Mr. O'Connor,

On behalf of D&C Construction Co, Inc., Norway Plains Associates Inc, hereby submits a Minor Site Plan Application for their temporary contractor storage yard located at 173 Walnut Street in the City of Rochester. This temporary contractor's yard is located on the property owned by Kristine E. Biagotti and Donald E. Kelsey, II. Please find the attached authorization letter from the property owners. The contractor's yard will be utilized as a staging and material stock pile areas for a municipal water line construction on Walnut Street and surrounding roads.

The contractor's yard will only be used for about 2 years during the construction of the water lines. At which point, the job trailers, temporary power, gravel surfaces, and all remaining materials will be removed from the site. The sediment forebay and infiltration basins will be regraded to match the existing topography and all disturbed areas will reclaimed with loam and seeded.

The site has already been roughed in with the gravel parking area, a job trailer, conex trailer and loam stockpiles. Access to the yard is via a gravel driveway off Route 202A, which was approved by NHDOT, District 6.

The site generally slopes from west to east with majority of the existing stormwater runoff discharging into a wetlands complex at the southeast corner of the parcel. The limits of the jurisdictional wetlands were delineated in 2004 by B.H. Keith Associates. Mr. Keith reevaluated the current work area on January 6, 2022 and did not observe any jurisdictional wetlands in the staging area. Please find the attached letter.

Prior to development the site was a grassed field with some areas of tree cover. The development created 0.54 acres of impervious cover, which is 1.69% of the entire site. To account for the changes in the existing topography and land covering, a site plan has been designed for the improved areas. The proposal will include the construction of a swale to divert stormwater around the gravel surface as well as in infiltration basin with a sediment forebay for the gravel area. The basin has been designed to handle all stormwater from the impervious surfaces during a 50-year storm event. Appropriate erosion and sedimentation controls will be installed at the downgradient areas of the development and the stock piles.

With the exception of temporary power from the Eversource lines on Route 202A there will not be any other utilities constructed as part of the operations. There is a porta potty on site for the employees. The hours of operations at the yard will be from 7am to 5pm, Monday through Friday. There maybe the need for workers to be on site on Saturday, but they will be very rare and will limit to the hours of 8am to 4pm.

Snow storage area will be along the easterly edge of the gravel area, so that snow melt will be into the sediment forebay. There will not be any permanent dumpster on site as all trash will be removed from the site by the operators.

Thank you for your consideration and please do not hesitate to contact me if you have any questions or if you require any additional information.

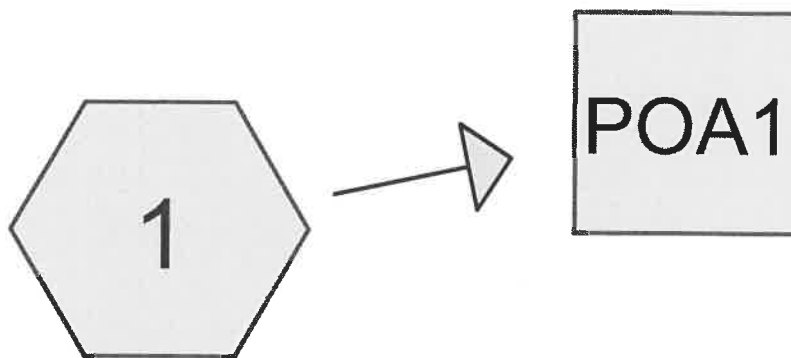
Sincerely,

NORWAY PLAINS ASSOCIATES, INC.

By: 

Scott A. Lawler, PE, Project Engineer

CC: D & C Construction
Kelsey & Biagotti



Routing Diagram for 22002 - PRE
Prepared by Norway Plains Associates, Inc., Printed 1/31/2022
HydroCAD® 10.10-5a s/n 01082 © 2020 HydroCAD Software Solutions LLC

22002 - PRE

Prepared by Norway Plains Associates, Inc.

HydroCAD® 10.10-5a s/n 01082 © 2020 HydroCAD Software Solutions LLC

Type III 24-hr 10 YR Rainfall=4.59"

Printed 1/31/2022

Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points

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

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1:

Runoff Area=5.790 ac 0.00% Impervious Runoff Depth=1.07"

Flow Length=717' Tc=9.4 min CN=60 Runoff=5.5 cfs 0.52 af

Reach POA1:

Inflow=5.5 cfs 0.52 af

Outflow=5.5 cfs 0.52 af

Total Runoff Area = 5.790 ac Runoff Volume = 0.52 af Average Runoff Depth = 1.07"
100.00% Pervious = 5.790 ac 0.00% Impervious = 0.000 ac

22002 - PRE

Prepared by Norway Plains Associates, Inc.

HydroCAD® 10.10-5a s/n 01082 © 2020 HydroCAD Software Solutions LLC

Type III 24-hr 10 YR Rainfall=4.59"

Printed 1/31/2022

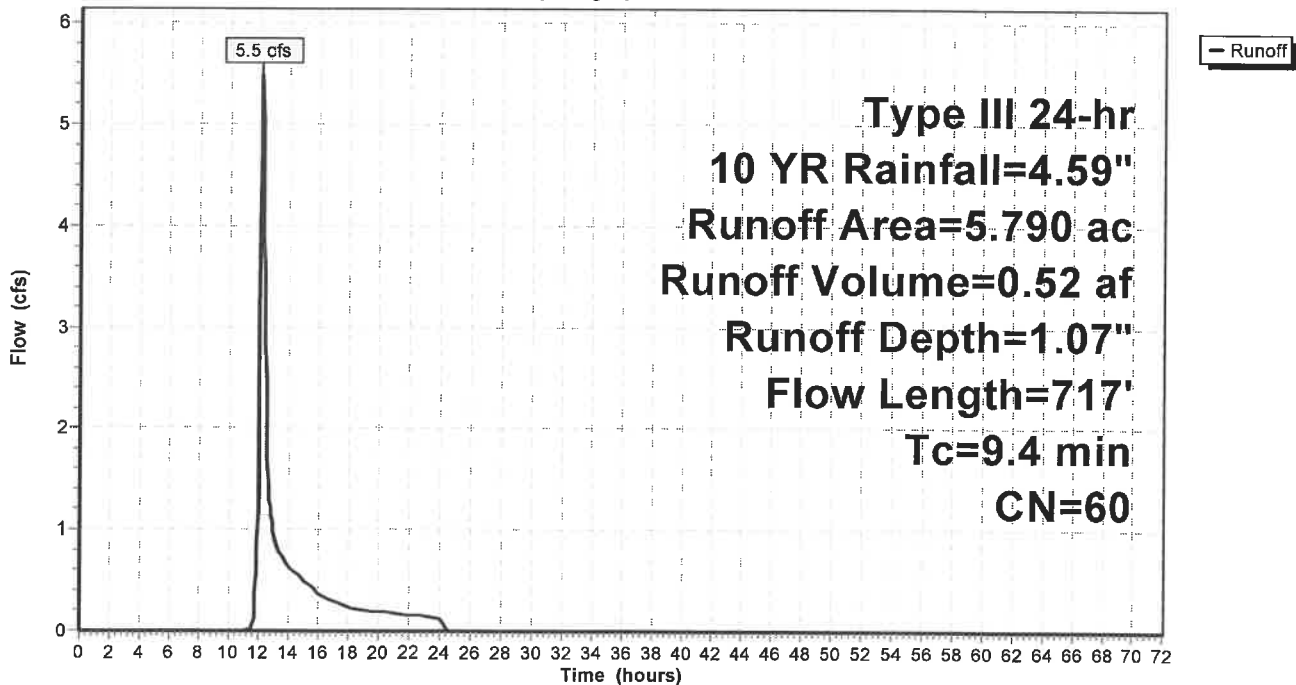
Summary for Subcatchment 1:

Runoff = 5.5 cfs @ 12.16 hrs, Volume= 0.52 af, Depth= 1.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 YR Rainfall=4.59"

Area (ac)	CN	Description
5.299	61	>75% Grass cover, Good, HSG B
0.491	55	Woods, Good, HSG B
5.790	60	Weighted Average
5.790		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.3	50	0.0800	0.25		Sheet Flow, A-->B Grass: Short n= 0.150 P2= 3.06"
4.9	580	0.0800	1.98		Shallow Concentrated Flow, B-->C Short Grass Pasture Kv= 7.0 fps
1.2	87	0.0600	1.22		Shallow Concentrated Flow, C-->D Woodland Kv= 5.0 fps
9.4	717	Total			

Subcatchment 1:**Hydrograph**

22002 - PRE

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HydroCAD® 10.10-5a s/n 01082 © 2020 HydroCAD Software Solutions LLC

Type III 24-hr 10 YR Rainfall=4.59"

Printed 1/31/2022

Summary for Reach POA1:

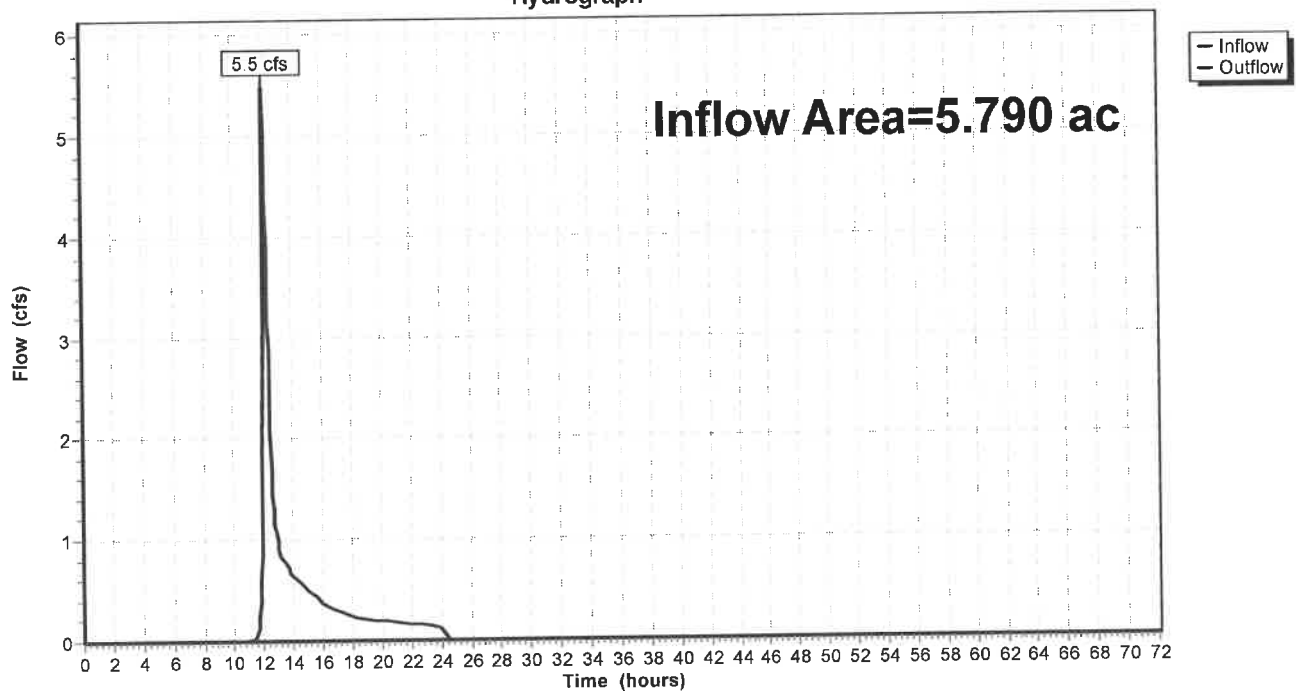
[40] Hint: Not Described (Outflow=Inflow)

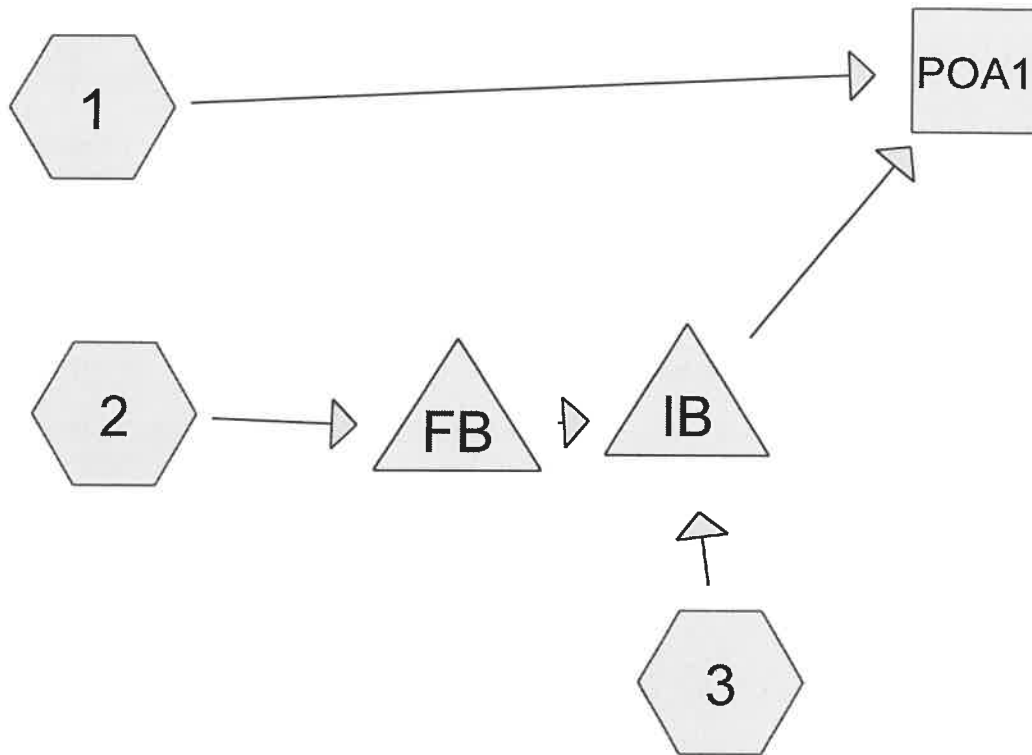
Inflow Area = 5.790 ac, 0.00% Impervious, Inflow Depth = 1.07" for 10 YR event
Inflow = 5.5 cfs @ 12.16 hrs, Volume= 0.52 af
Outflow = 5.5 cfs @ 12.16 hrs, Volume= 0.52 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Reach POA1:

Hydrograph





22002 - POST

Prepared by Norway Plains Associates, Inc.

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Type III 24-hr 10 YR Rainfall=4.59"

Printed 1/31/2022

Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points

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

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1:Runoff Area=4.931 ac 0.00% Impervious Runoff Depth=1.07"
Flow Length=717' Tc=9.4 min CN=60 Runoff=4.7 cfs 0.44 af**Subcatchment 2:**Runoff Area=0.744 ac 72.58% Impervious Runoff Depth=3.28"
Flow Length=130' Tc=6.0 min CN=88 Runoff=2.7 cfs 0.20 af**Subcatchment 3:**Runoff Area=0.115 ac 0.00% Impervious Runoff Depth=1.13"
Tc=6.0 min CN=61 Runoff=0.1 cfs 0.01 af**Reach POA1:**Inflow=4.7 cfs 0.49 af
Outflow=4.7 cfs 0.49 af**Pond FB:**Peak Elev=311.90' Storage=1,010 cf Inflow=2.7 cfs 0.20 af
Outflow=2.7 cfs 0.19 af**Pond IB:**Peak Elev=311.78' Storage=5,040 cf Inflow=2.8 cfs 0.20 af
Discarded=0.0 cfs 0.11 af Primary=0.2 cfs 0.05 af Outflow=0.3 cfs 0.17 af**Total Runoff Area = 5.790 ac Runoff Volume = 0.65 af Average Runoff Depth = 1.35"**
90.67% Pervious = 5.250 ac 9.33% Impervious = 0.540 ac

22002 - POST

Prepared by Norway Plains Associates, Inc.

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Type III 24-hr 10 YR Rainfall=4.59"

Printed 1/31/2022

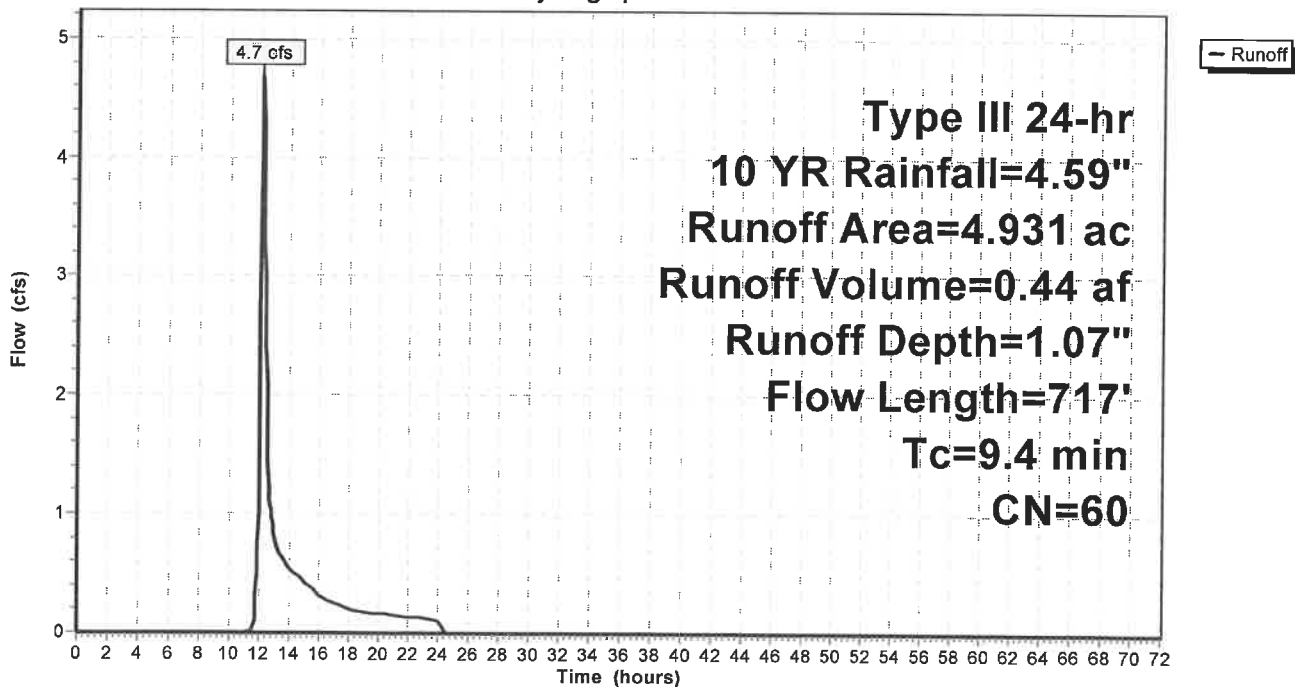
Summary for Subcatchment 1:

Runoff = 4.7 cfs @ 12.16 hrs, Volume= 0.44 af, Depth= 1.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 YR Rainfall=4.59"

Area (ac)	CN	Description
4.440	61	>75% Grass cover, Good, HSG B
0.491	55	Woods, Good, HSG B
4.931	60	Weighted Average
4.931		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.3	50	0.0800	0.25		Sheet Flow, A-->B Grass: Short n= 0.150 P2= 3.06"
4.9	580	0.0800	1.98		Shallow Concentrated Flow, B-->C Short Grass Pasture Kv= 7.0 fps
1.2	87	0.0600	1.22		Shallow Concentrated Flow, C-->D Woodland Kv= 5.0 fps
9.4	717	Total			

Subcatchment 1:**Hydrograph**

22002 - POST

Prepared by Norway Plains Associates, Inc.

HydroCAD® 10.10-5a s/n 01082 © 2020 HydroCAD Software Solutions LLC

Type III 24-hr 10 YR Rainfall=4.59"

Printed 1/31/2022

Summary for Subcatchment 2:

Runoff = 2.7 cfs @ 12.09 hrs, Volume= 0.20 af, Depth= 3.28"

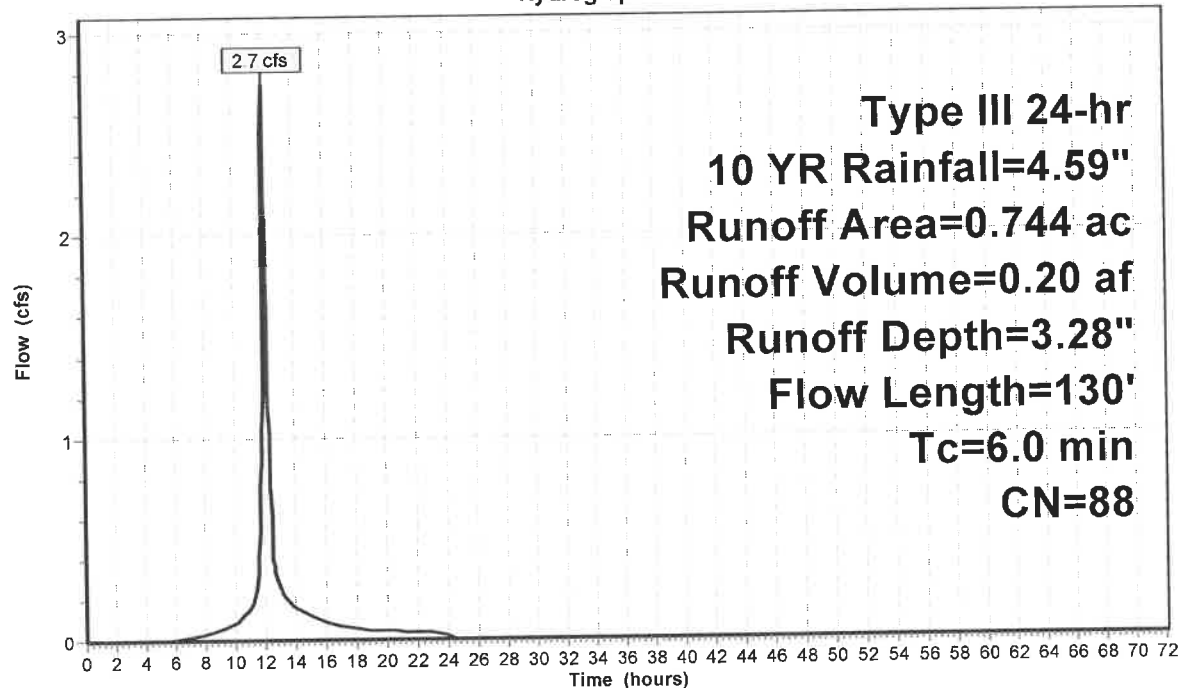
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 YR Rainfall=4.59"

Area (ac)	CN	Description
* 0.530	98	Gravel, HSG B
0.204	61	>75% Grass cover, Good, HSG B
* 0.010	98	Building, HSG B
0.744	88	Weighted Average
0.204		27.42% Pervious Area
0.540		72.58% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.5	50	0.0600	1.82		Sheet Flow, A-->B Smooth surfaces n= 0.011 P2= 3.06"
0.3	69	0.0600	3.94		Shallow Concentrated Flow, B-->C Unpaved Kv= 16.1 fps
0.0	11	0.3300	4.02		Shallow Concentrated Flow, C-->D Short Grass Pasture Kv= 7.0 fps
0.8	130	Total, Increased to minimum Tc = 6.0 min			

Subcatchment 2:

Hydrograph



22002 - POST

Prepared by Norway Plains Associates, Inc.

HydroCAD® 10.10-5a s/n 01082 © 2020 HydroCAD Software Solutions LLC

Type III 24-hr 10 YR Rainfall=4.59"

Printed 1/31/2022

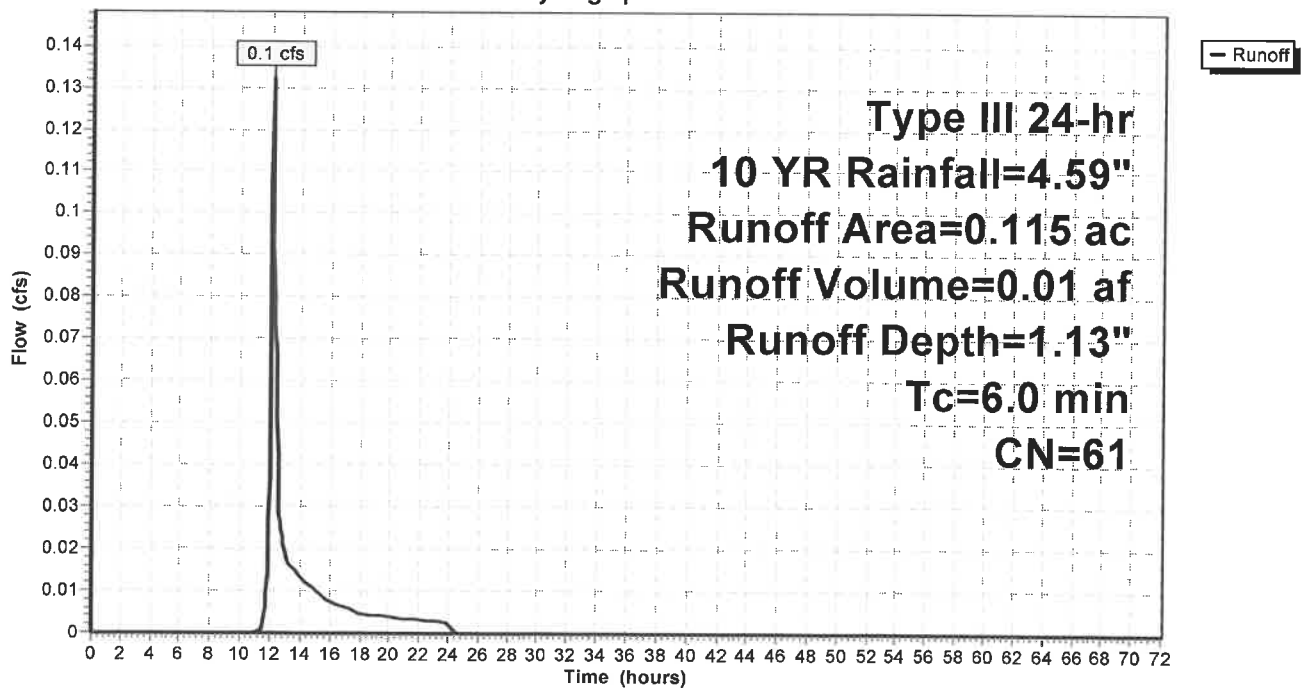
Summary for Subcatchment 3:

Runoff = 0.1 cfs @ 12.11 hrs, Volume= 0.01 af, Depth= 1.13"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 YR Rainfall=4.59"

Area (ac)	CN	Description
0.115	61	>75% Grass cover, Good, HSG B
0.115		100.00% Pervious Area

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

Subcatchment 3:**Hydrograph**

22002 - POST

Prepared by Norway Plains Associates, Inc.

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Type III 24-hr 10 YR Rainfall=4.59"

Printed 1/31/2022

Summary for Reach POA1:

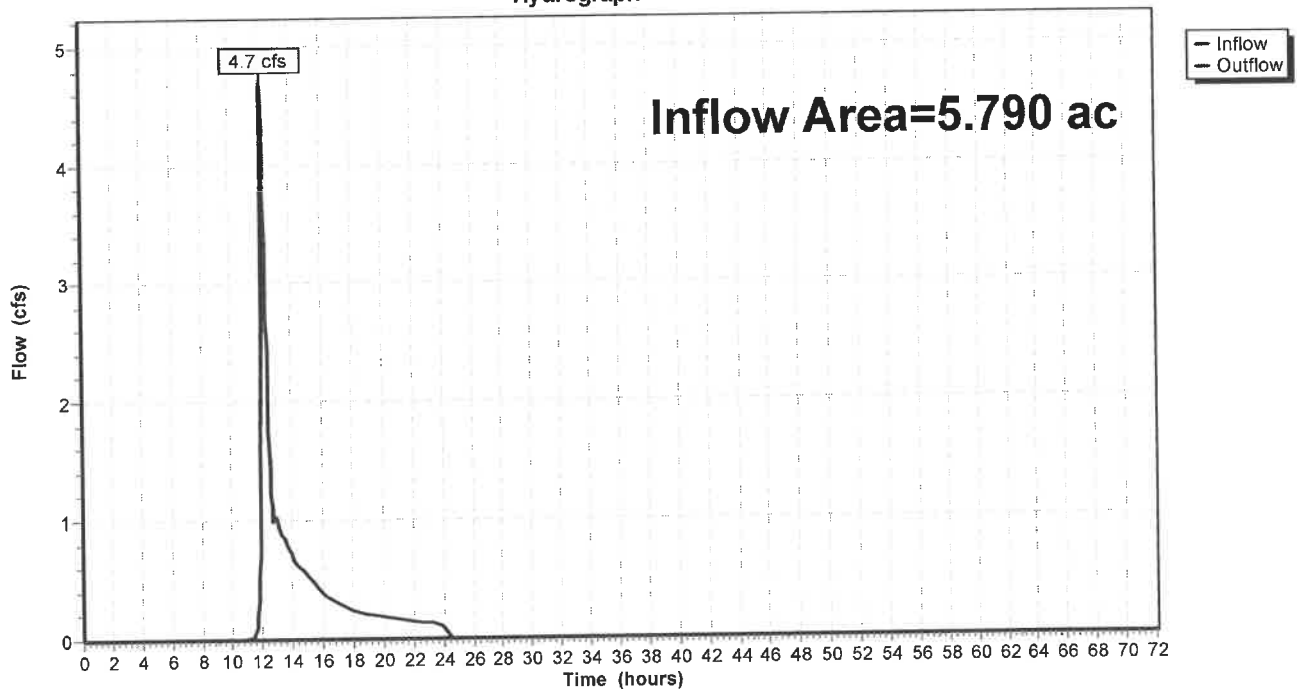
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 5.790 ac, 9.33% Impervious, Inflow Depth = 1.02" for 10 YR event
Inflow = 4.7 cfs @ 12.16 hrs, Volume= 0.49 af
Outflow = 4.7 cfs @ 12.16 hrs, Volume= 0.49 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Reach POA1:

Hydrograph



22002 - POST

Type III 24-hr 10 YR Rainfall=4.59"

Prepared by Norway Plains Associates, Inc.

Printed 1/31/2022

HydroCAD® 10.10-5a s/n 01082 © 2020 HydroCAD Software Solutions LLC

Summary for Pond FB:

Inflow Area = 0.744 ac, 72.58% Impervious, Inflow Depth = 3.28" for 10 YR event
 Inflow = 2.7 cfs @ 12.09 hrs, Volume= 0.20 af
 Outflow = 2.7 cfs @ 12.11 hrs, Volume= 0.19 af, Atten= 1%, Lag= 1.0 min
 Primary = 2.7 cfs @ 12.11 hrs, Volume= 0.19 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 311.90' @ 12.11 hrs Surf.Area= 1,586 sf Storage= 1,010 cf

Plug-Flow detention time= 71.0 min calculated for 0.19 af (91% of inflow)
 Center-of-Mass det. time= 25.8 min (826.8 - 801.0)

Volume	Invert	Avail.Storage	Storage Description
#1	311.00'	1,177 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
311.00	663	0	0
312.00	1,691	1,177	1,177

Device	Routing	Invert	Outlet Devices
#1	Primary	311.75'	10.0' long x 6.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.52 2.70 2.68 2.68 2.67 2.66 2.65 2.65 2.65 2.66 2.65 2.67 2.68 2.71 2.75 2.81
#2	Primary	311.75'	10.0' long x 6.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.52 2.70 2.68 2.68 2.67 2.66 2.65 2.65 2.65 2.66 2.65 2.67 2.68 2.71 2.75 2.81

Primary OutFlow Max=2.7 cfs @ 12.11 hrs HW=311.90' TW=311.00' (Dynamic Tailwater)

1=Broad-Crested Rectangular Weir (Weir Controls 1.3 cfs @ 0.91 fps)

2=Broad-Crested Rectangular Weir (Weir Controls 1.3 cfs @ 0.91 fps)

22002 - POST

Prepared by Norway Plains Associates, Inc.

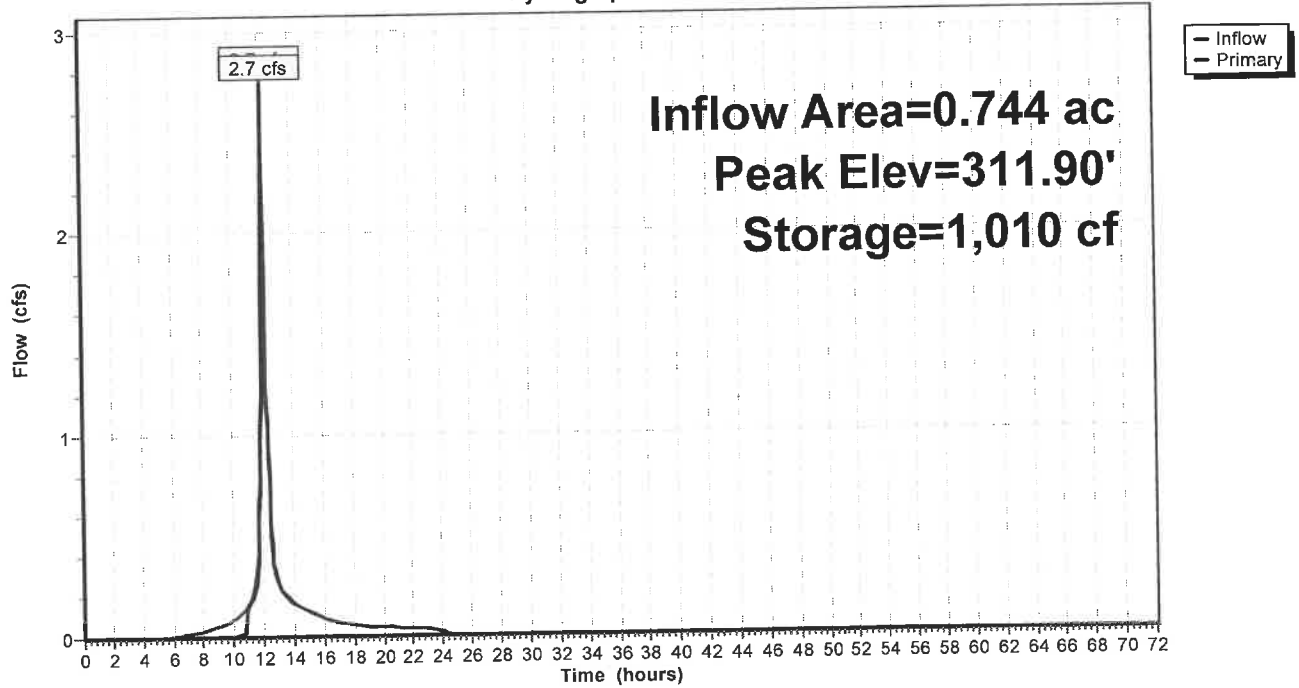
HydroCAD® 10.10-5a s/n 01082 © 2020 HydroCAD Software Solutions LLC

Type III 24-hr 10 YR Rainfall=4.59"

Printed 1/31/2022

Pond FB:

Hydrograph



22002 - POST

Type III 24-hr 10 YR Rainfall=4.59"

Prepared by Norway Plains Associates, Inc.

Printed 1/31/2022

HydroCAD® 10.10-5a s/n 01082 © 2020 HydroCAD Software Solutions LLC

Summary for Pond IB:

Inflow Area = 0.859 ac, 62.86% Impervious, Inflow Depth = 2.74" for 10 YR event
 Inflow = 2.8 cfs @ 12.11 hrs, Volume= 0.20 af
 Outflow = 0.3 cfs @ 13.09 hrs, Volume= 0.17 af, Atten= 91%, Lag= 58.9 min
 Discarded = 0.0 cfs @ 13.09 hrs, Volume= 0.11 af
 Primary = 0.2 cfs @ 13.09 hrs, Volume= 0.05 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 311.78' @ 13.09 hrs Surf.Area= 3,826 sf Storage= 5,040 cf

Plug-Flow detention time= 1,130.4 min calculated for 0.17 af (86% of inflow)
 Center-of-Mass det. time= 1,069.4 min (1,899.1 - 829.7)

Volume	Invert	Avail.Storage	Storage Description	
#1	310.00'	5,917 cf	Custom Stage Data (Conic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
310.00	1,881	0	0	1,881
311.00	2,967	2,403	2,403	2,981
312.00	4,090	3,514	5,917	4,123

Device	Routing	Invert	Outlet Devices
#1	Discarded	310.00'	0.300 in/hr Exfiltration over Wetted area
#2	Primary	311.75'	10.0' long x 6.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.52 2.70 2.68 2.68 2.67 2.66 2.65 2.65 2.65 2.66 2.65 2.67 2.68 2.71 2.75 2.81
#3	Primary	311.75'	10.0' long x 6.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.52 2.70 2.68 2.68 2.67 2.66 2.65 2.65 2.65 2.66 2.65 2.67 2.68 2.71 2.75 2.81

Discarded OutFlow Max=0.0 cfs @ 13.09 hrs HW=311.78' (Free Discharge)
 ↳1=Exfiltration (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.2 cfs @ 13.09 hrs HW=311.78' TW=0.00' (Dynamic Tailwater)
 ↳2=Broad-Crested Rectangular Weir (Weir Controls 0.1 cfs @ 0.40 fps)
 ↳3=Broad-Crested Rectangular Weir (Weir Controls 0.1 cfs @ 0.40 fps)

22002 - POST

Prepared by Norway Plains Associates, Inc.

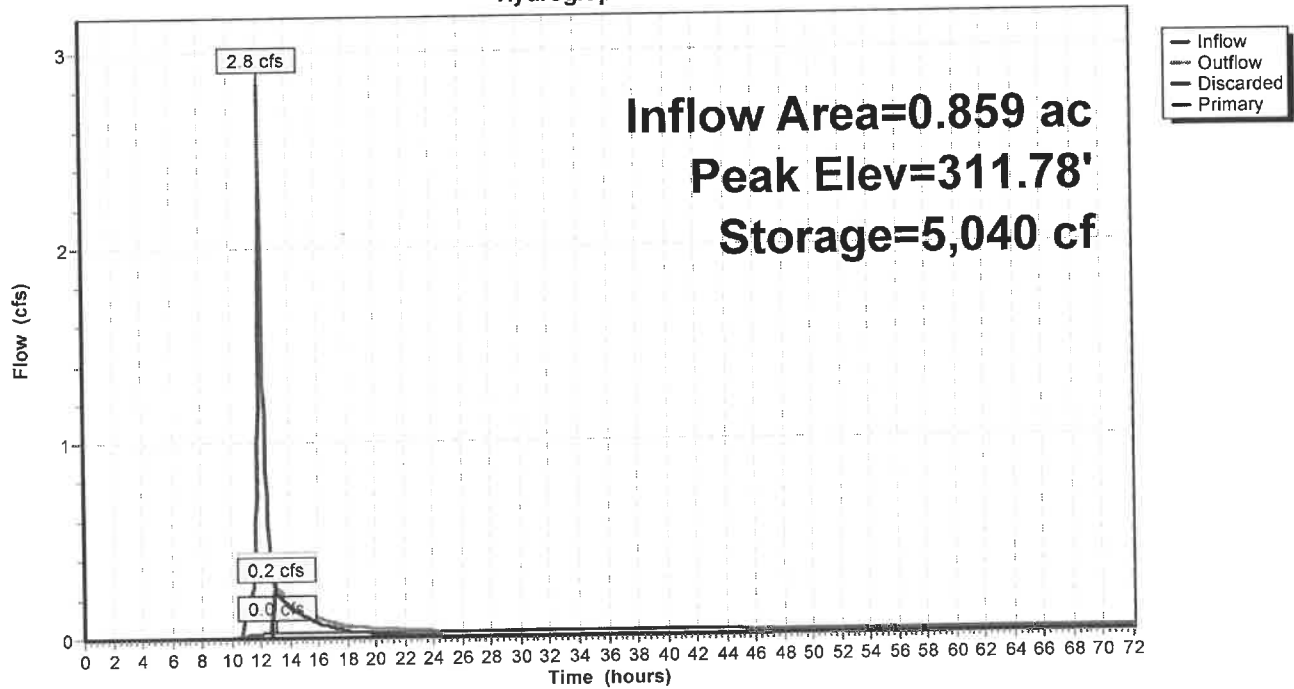
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Type III 24-hr 10 YR Rainfall=4.59"

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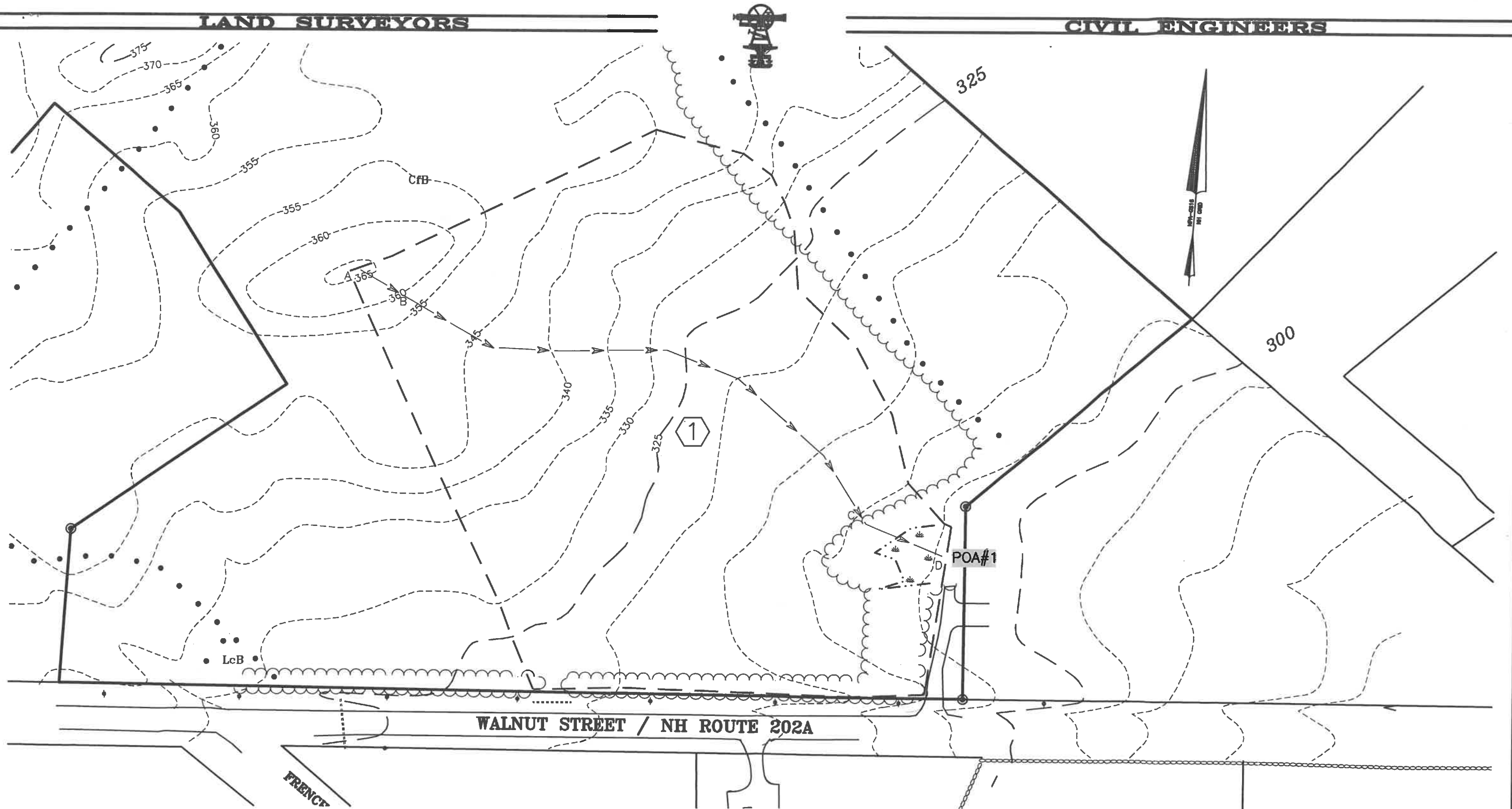
Pond IB:

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LAND SURVEYORS

CIVIL ENGINEERS



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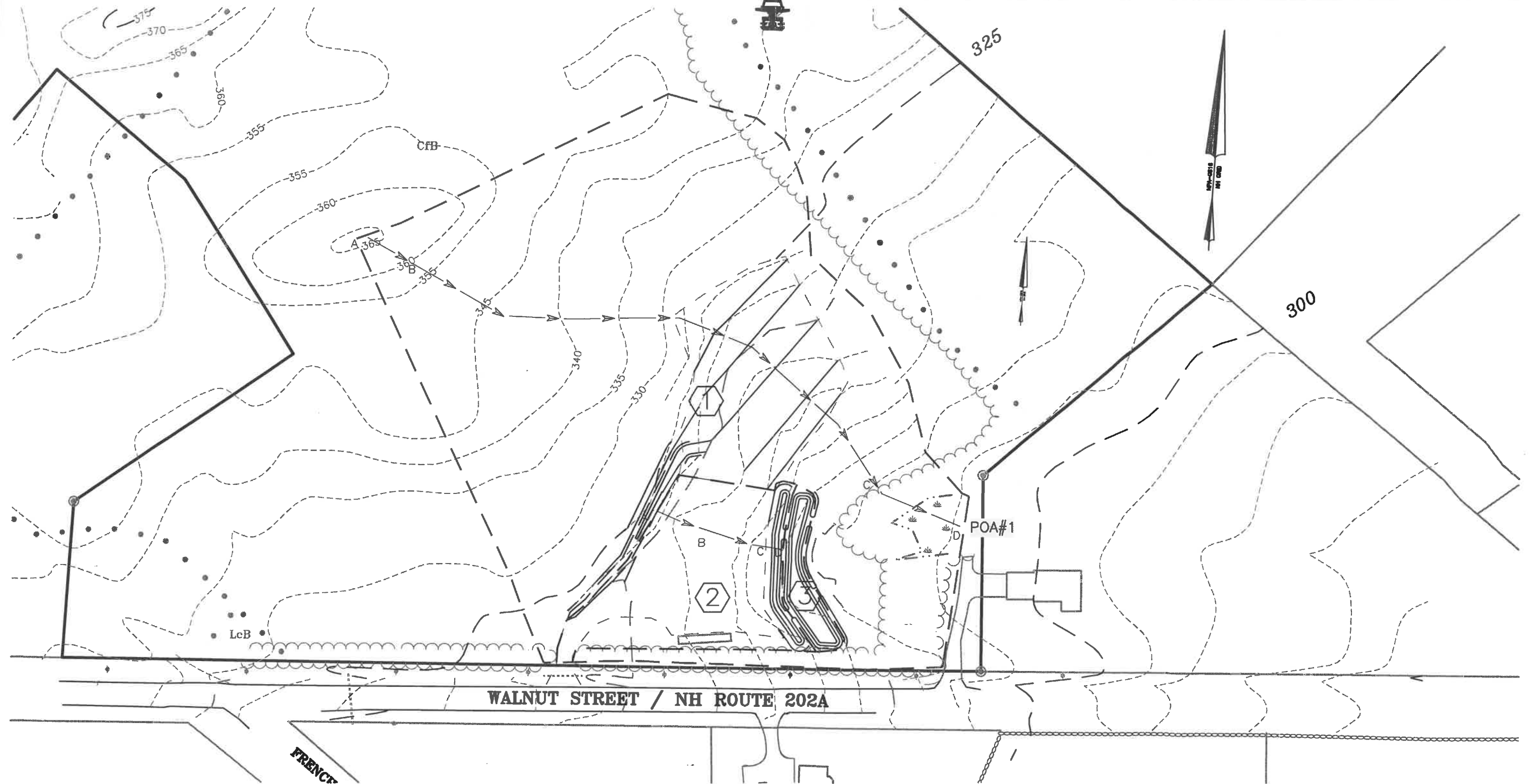
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PRE-DEVELOPMENT DRAINAGE ANALYSIS

FN:141
JN:22002

DATE: JAN. 2022
SCALE: 1"=100'

CIVIL ENGINEERS



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